

THIS E COPY OF BID DOCUMENT IS FOR INFORMATION AND INSPECTION TO THE PROSPECTIVE BIDDERS. BIDDERS MUST PURCHASE BID DOCUMENT FROM ALTERNATIVE ENERGY PROMOTION CENTER (AEPC) AS INDICATED IN THE BID NOTICE FOR BIDDING.

Government of Nepal
Ministry of Energy, Water Resources and Irrigation
ALTERNATIVE ENERGY PROMOTION CENTRE

**NEP: South Asia Sub regional Economic Cooperation Power System Expansion Project
(SASEC/ADB)**

ADB Project No: 44219, Loan No: 3139 NEP (SF), Grant No: 0398NEP (EF)

Bidding Document
for
Procurement
of

Khatyad Khola Birabagar Sera Mini Hydro
Subproject

Sukhadik, Mugu District, Nepal

(Package 2- Transmission & Distribution)

Issued on:

Invitation for Bids No.: AEPC/ADB/SASEC/NCB/MHP/06

NCB No: 06

Employer: Alternative Energy Promotion Center (AEPC)

Government of Nepal
Ministry of Energy, Water Resources and Irrigation
ALTERNATIVE ENERGY PROMOTION CENTRE
NEP: South Asia Sub regional Economic Cooperation Power System Expansion
Project (SASEC/ADB)
ADB Project No: 44219, Loan No: 3139 NEP (SF), Grant No: 0398NEP (EF)

Procurement of Khatyad Khola Birabagar Sera Mini Hydro Subproject , Sukhadik,
Mugu, District, Nepal
(Package 2- Transmission & Distribution)

Invitation for Bids

Date	22 August, 2018
Grant No and Title	ADB Grant No. 0398-NEP (EF)
Contract No.	AEPC/ADB/SASEC/NCB/MHP/06
Deadline for Submission of Bids	23 September, 2018 12:00 hours NST

1. The Government of Nepal has received financing from the Asian Development Bank (ADB) toward the cost of South Asia Sub-regional Economic Cooperation (SASEC), Power System Expansion Project, Off-grid Component, and it intends to apply part of the proceeds of this financing to payments under the contract named above.
2. Alternative Energy Promotion Centre (AEPC) invites sealed Bids from eligible Bidders for the procurement of Bidding Document for Khatyad Khola Birabagar Sera Mini Hydro Subproject, Sukhadik, Mugu District, Nepal. (Package 2- Transmission & Distribution) having the following main criteria: minimum average annual turnover of NRs 165 Million within the last three (3) years, successfully completed as main supplier of at least one contract, Supplying and Installation of Electrical Transmission and Distribution line valued at NRs 55 Million within the last five (5) years.
3. National competitive bidding will be conducted in accordance with ADB's single stage two envelope bidding procedure and is open to all bidders from eligible countries as described in the Bidding Document.

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4. To obtain further information and inspect the Bidding Documents, bidder should contact:

Alternative Energy Promotion Centre (AEPC)

Ministry of Energy, Water Resources and Irrigation

Khumaltar Height, Lalitpur Sub-Metropolitan City, Nepal

Dr. Narayan Prasad Adhikari

Project Manager, SASEC

P.O. Box: 14364

Tel: 5539390, 5539391

Fax: 5542397, 5539392

5. To purchase the Bidding Documents in English, eligible bidders should
- Write to the address requesting the Bidding Documents for Procurement Bidding Document for Procurement of Khatyad Khola Birabagar Sera Khola Mini Hydro Subproject Sukhadik, Mugu District, Nepal (Package 2- Transmission & Distribution)
 - Pay a nonrefundable fee of NRs 10,000 by cash.
6. Pre-bid meeting will be held on 6 September, 2018 at 2:00 PM in the AEPC Meeting Hall, Khumaltar, Lalitpur.
7. Bidders are requested to specify the total price of the Bid in the Letter of Bid or the Bid Price in the Price Schedule. Failure to specify the total price of the Bid in the Letter of Bid or the Bid Price in the Price Schedule may be ground for declaring the Bid nonresponsive.
8. Deliver your bid
- To the address above
 - On or before the deadline: 23 September, 2018, 12:00 Hours.
 - Together with a Bid Security as described in the Bidding Document.
 - Bids will be opened immediately after the deadline for bid submission in the presence of bidders' representatives who choose to attend.
- In case the day of final Bid submission falls on a public holiday, the final Bid submission date shall be the following working day.
9. The AEPC will not be responsible for any costs or expenses incurred by Bidders in connection with the preparation or delivery of bids.

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Section 1 - Instructions to Bidders

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A. General

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| 1. Scope of Bid | <p>1.1 In connection with the Invitation for Bids (IFB) indicated in the Bid Data Sheet (BDS), the Purchaser, as indicated in the BDS, issues this Bidding Document for the supply of Goods and Related Services incidental thereto as specified in Section 6 (Schedule of Supply). The name, identification, and number of lots of the international competitive bidding (ICB) are provided in the BDS.</p> <p>1.2 Throughout this Bidding Document,</p> <ul style="list-style-type: none"> (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 | <p>2.1 The Borrower or Recipient (hereinafter called “Borrower”) indicated in the BDS has applied for or received financing (hereinafter called “funds”) from the Asian Development Bank (hereinafter called “ADB”) toward the cost of the project named in the BDS. The Borrower intends to apply a portion of the funds to eligible payments under the contract(s) for which this Bidding Document is issued.</p> <p>2.2 Payments by ADB will be made only at the request of the Borrower and upon approval by ADB in accordance with the terms and conditions of the Financing Agreement between the Borrower and ADB (hereinafter called the Financing Agreement), and will be subject in all respects to the terms and conditions of that Financing Agreement. No party other than the Borrower shall derive any rights from the Financing Agreement or have any claim to the funds.</p> |
| 3. Fraud and Corruption | <p>3.1 ADB’s Anticorruption Policy requires Borrowers (including beneficiaries of ADB-financed activity), as well as Bidders, Suppliers, and Contractors under ADB-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, ADB</p> <ul style="list-style-type: none"> (a) defines, for the purposes of this provision, the terms set forth below as follows: <ul style="list-style-type: none"> (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;
 - (v) "obstructive practice" means (a) deliberately destroying, falsifying, altering, or concealing of evidence material to an ADB investigation; (b) making false statements to investigators in order to materially impede an ADB investigation; (c) failing to comply with requests to provide information, documents, or records in connection with an Office of Anticorruption and Integrity (OAI) investigation; (d) 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 (e) materially impeding ADB's contractual rights of audit or access to information; and
 - (vi) "integrity violation" is any act which violates ADB's Anticorruption Policy, including (i) to (v) above and the following: abuse, conflict of interest, violations of ADB sanctions, retaliation against whistleblowers or witnesses, and other violations of ADB's Anticorruption Policy, including failure to adhere to the highest ethical standard.
- (b) will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations in competing for the Contract;
 - (c) will cancel the portion of the financing allocated to a contract if it determines at any time that representatives of the borrower or of a beneficiary of ADB-financing engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations during the procurement or the execution of that contract, without the borrower having taken timely and appropriate action satisfactory to ADB to remedy the situation;
 - (d) will impose remedial actions on a firm or an individual, at any time, in accordance with ADB's Anticorruption Policy and Integrity Principles and Guidelines (both as amended from time to time), including declaring ineligible, either indefinitely or for a stated period of time, to participate¹ in ADB-financed, -administered, or -supported activities or to benefit from an ADB-financed, -administered, or -supported contract, financially or otherwise, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations; and
 - (e) will have the right to require that a provision be included in bidding documents and in contracts financed by ADB, requiring Bidders, suppliers and contractors to permit ADB or its representative to inspect their accounts and records and other documents relating to the bid submission and contract performance and to have them audited by auditors appointed by ADB.

3.2 Furthermore, Bidders shall be aware of the provision stated in Subclause 3.2 and Subclause 35.1 (c) of the General Conditions of

¹ Whether as a Contractor, Subcontractor, Consultant, Manufacturer or Supplier, or Service Provider; or in any other capacity (different names are used depending on the particular Bidding Document).

Contract.

- 4. Eligible Bidders**
- 4.1 A Bidder may be a natural person, private entity, or government-owned enterprise subject to ITB 4.5-or any combination of them with a formal intent to enter into an agreement or under an existing agreement in the form of a joint venture. In the case of a joint venture,
- (a) all parties to the Joint Venture shall be jointly and severally liable; and
 - (b) the Joint Venture shall nominate a representative who shall have the authority to conduct all businesses for and on behalf of any and all the parties of the Joint Venture during the bidding process and, in the event the Joint Venture is awarded the Contract, during contract execution.
- 4.2 A Bidder, and all parties constituting the Bidder, shall have the nationality of an eligible country, in accordance with Section 5 (Eligible Countries). A Bidder shall be deemed to have the nationality of a country if the Bidder is a citizen or is constituted, incorporated, or registered, 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 subcontractors or suppliers for any part of the Contract, including related services.
- 4.3 A Bidder shall not have a conflict of interest. All Bidders 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 any of, including but not limited to, the following apply:
- (a) they have controlling shareholders 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 material information about or improperly influence the Bid of another Bidder, or influence the decisions of the Purchaser 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, except for alternative offers permitted under ITB 13. This will result in the disqualification of all Bids in which it is involved. However, subject to any finding of a conflict of interest in terms of ITB 4.3 (a)–(d) above, this does not limit the participation of a Bidder as a subcontractor in another bid or of a firm as a subcontractor in more than one Bid; or
 - (f) a Bidder or any affiliated entity, participated as a consultant in the preparation of the design or technical specifications of the goods and services that are the subject of the Bid; or
 - (g) a Bidder was affiliated with a firm or entity that has been hired (or is proposed to be hired) by the Purchaser or Borrower as Project

Manager for the contract.

- 4.4 A firm shall not be eligible to participate in any procurement activities under an ADB-financed, -administered, or -supported project while under temporary suspension or debarment by ADB pursuant to its Anticorruption Policy (see ITB 3), whether such debarment was directly imposed by ADB, or enforced by ADB pursuant to the Agreement for Mutual Enforcement of Debarment Decisions. A bid from a temporary suspended or debarred firm will be rejected.
 - 4.5 Government-owned enterprises in the Purchaser's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) are not a dependent agency of the Purchaser.
 - 4.6 Bidders shall provide such evidence of their continued eligibility satisfactory to the Purchaser, as the Purchaser shall reasonably request.
 - 4.7 Firms shall be excluded if 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, the Borrower's country prohibits any import of goods or contracting of works or services from that country or any payments to persons or entities in that country.
- 5. Eligible Goods and Related Services**
- 5.1 All Goods and Related Services to be supplied under the Contract and financed by ADB, shall have their country of origin in eligible source countries as defined in ITB 4.2, and all expenditures under the Contract will be limited to such Goods and Related Services.
 - 5.2 For purposes of this clause, the term "goods" includes commodities, raw material, machinery, equipment, and industrial plants; and "related services" includes services such as insurance, transportation, installation, commissioning, training, and initial maintenance.
 - 5.3 The term "country of origin" means the country where the goods have been mined, grown, cultivated, produced, manufactured, or processed; or through manufacture, processing, or assembly, another commercially recognized article results that differs substantially in its basic characteristics from its imported components.
 - 5.4 The nationality of the firm that produces, assembles, distributes, or sells the goods shall not determine their origin.

B. Contents of Bidding Document

- 6. Sections of the Bidding Document**
- 6.1 The Bidding Document consists 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 1 Instructions to Bidders (ITB)
- Section 2 Bid Data Sheet (BDS)
- Section 3 Evaluation and Qualification Criteria (EQC)
- Section 4 Bidding Forms (BDF)
- Section 5 Eligible Countries (ELC)

PART II Supply Requirements

- Section 6 Schedule of Supply (SS)

PART III Conditions of Contract and Contract Forms

- Section 7 General Conditions of Contract (GCC)
- Section 8 Special Conditions of Contract (SCC)
- Section 9 Contract Forms (COF)

- 6.2 The IFB issued by the Purchaser is not part of the Bidding Document.
- 6.3 The Purchaser is not responsible for the completeness of the Bidding Document and its addenda, if they were not obtained directly from the source stated by the Purchaser in the IFB.
- 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** 7.1 A prospective Bidder requiring any clarification on the Bidding Document shall contact the Purchaser in writing at the Purchaser's address indicated in the BDS. The Purchaser will respond in writing to any request for clarification, provided that such request is received no later than 21 days prior to the deadline for submission of Bids. The Purchaser 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 Purchaser deem it necessary to amend the Bidding Document as a result of a clarification, it shall do so following the procedure under ITB 8 and ITB 24.2.
8. **Amendment of Bidding Document** 8.1 At any time prior to the deadline for submission of the Bids, the Purchaser may amend the Bidding Document by issuing addenda.
- 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 directly from the Purchaser 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 Purchaser may, at its discretion, extend the deadline for the submission of the Bids, pursuant to ITB 24.2

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 Purchaser 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 Purchaser, 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 two envelopes submitted simultaneously, one containing the Technical Bid and the other the Price Bid, both envelopes enclosed together in an outer single envelope.
- 11.2 The Technical Bid submitted by the Bidder shall comprise the following:
- (a) Technical Bid Submission Sheet;
 - (b) Bid Security or Bid-Securing Declaration, in accordance with ITB 21;
 - (c) alternative Technical Bid, if permissible, in accordance with ITB 13;
 - (d) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 22;
 - (e) documentary evidence in accordance with ITB 16, establishing the Bidder's eligibility to bid;
 - (f) documentary evidence in accordance with ITB 17, that the Goods and Related Services to be supplied by the Bidder are of eligible origin;
 - (g) documentary evidence in accordance with ITB 18 and ITB 32, that the Goods and Related Services conform to the Bidding Document;
 - (h) documentary evidence in accordance with ITB 19, establishing the Bidder's qualifications to perform the contract if its Bid is accepted; and
 - (i) any other document required in the BDS.
- 11.3 The Price Bid submitted by the Bidder shall comprise the following:

- (a) Price Bid Submission Sheet and the applicable Price Schedules, in accordance with ITB 12, ITB 14, and ITB 15;
- (b) alternative Price Bid corresponding to the alternative Technical Bid, if permissible, in accordance with ITB 13; and
- (c) any other document required in the BDS.

12. Bid Submission Sheets and Price Schedules

12.1 The Bidder shall submit the Technical Bid Submission Sheet and the Price Bid Submission Sheet using the form furnished in Section 4 (Bidding Forms). These forms must be completed without any alterations to their format, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.

12.2 The Bidder shall submit, as part of the Price Bid, the Price Schedules for Goods and Related Services, according to their origin as appropriate, using the forms furnished in Section 4 (Bidding Forms) and as required in the BDS.

13. Alternative Bids

13.1 Unless otherwise indicated in the BDS, alternative Bids shall not be considered.

14. Bid Prices and Discounts

14.1 The prices and discounts quoted by the Bidder in the Price Bid Submission Sheet and in the Price Schedules shall conform to the requirements specified below.

14.2 All items in the Schedule of Supply must be listed and priced separately in the Price Schedules. If a Price Schedule shows items listed but not priced, their prices shall be assumed to be included in the prices of other items. Items not listed in the Price Schedule shall be assumed not to be included in the Bid, and provided that the Bid is substantially responsive, the corresponding adjustment shall be applied in accordance with ITB 33.3.

14.3 The price to be quoted in the Price Bid Submission Sheet shall be the total price of the Bid excluding any discounts offered. Absence of the total bid price in the Price Bid Submission Sheet may result in the rejection of the Bid.

14.4 The Bidder shall quote discounts and the methodology for their application in the Price Bid Submission Sheet.

14.5 The terms EXW, CIF, CIP, and other similar terms shall be governed by the rules prescribed in the current edition of Incoterms, published by the International Chamber of Commerce, at the date of the Invitation for Bids or as specified in the BDS.

14.6 Prices proposed in the Price Schedule Forms for Goods and Related Services, shall be disaggregated, when appropriate, as indicated in this sub-clause. This disaggregation shall be solely for the purpose of facilitating the comparison of Bids by the Purchaser. This shall not in any way limit the Purchaser's right to contract on any of the terms

offered

- (a) for Goods offered from within the Purchaser's country:
 - (i) the price of the goods quoted EXW (ex works, ex factory, ex warehouse, ex showroom, or off-the-shelf, as applicable), including all customs duties and sales and other taxes already paid or payable on the components and raw material used in the manufacture or assembly of goods quoted ex works or ex factory, or on the previously imported goods of foreign origin quoted ex warehouse, ex showroom, or off-the-shelf;
 - (ii) sales tax and all other taxes applicable in the Purchaser's country and payable on the Goods if the Contract is awarded to the Bidder; and
 - (iii) the total price for the item.
- (b) for Goods offered from outside the Purchaser's country:
 - (i) the price of the goods quoted CIF (named port of destination), or CIP (border point), or CIP (named place of destination), in the Purchaser's country, as specified in the BDS;
 - (ii) the price of the goods quoted FOB port of shipment (or FCA, as the case may be), if specified in the BDS; and
 - (iii) the total price for the item.
- (c) for Related Services whenever such are specified in the Schedule of Supply:
 - (i) the local currency cost component of each item comprising the Related Services; and
 - (ii) the foreign currency cost component of each item comprising the Related Services, inclusive of all customs duties, sales and other similar taxes applicable in the Purchaser's country, payable on the Related Services, if the Contract is awarded to the Bidder.

14.7 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account, unless otherwise specified in the BDS. A Bid submitted with an adjustable price quotation shall be treated as nonresponsive and shall be rejected, pursuant to ITB 32. However, if in accordance with the BDS, prices quoted by the Bidder shall be subject to adjustment during the performance of the Contract, but a Bid submitted with no indexes identified in the Tables of Adjustment Data, price adjustment shall be treated as zero for the purpose of price adjustment during the performance of the contract.

14.8 If so indicated in ITB 1.1, Bids are being invited for individual contracts (lots) or for any combination of contracts (packages). Unless otherwise indicated in the BDS, prices quoted shall correspond to 100% of the items specified for each lot and to 100% of the quantities specified for each item of a lot. Bidders wishing to offer any price discount for the award of more than one Contract shall specify in their Price Bids the price discount applicable to each package, or alternatively, to individual

Contracts within the package. Price discounts shall be submitted in accordance with ITB 14.4, provided the Price Bids for all lots are submitted and opened at the same time.

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| 15. Currencies of Bid | 15.1 | <p>Bid prices shall be quoted in the following currencies:</p> <ul style="list-style-type: none"> (a) Bidders may express their bid price in any fully convertible currency. If a Bidder wishes to be paid in a combination of amounts in different currencies, it may quote its price accordingly but shall use no more than three currencies in addition to the currency of the Purchaser's country. (b) If some of the expenditures for the Related Services are to be incurred in the borrowing country, such expenditures should be expressed in the Bid and will be payable in the Purchaser's currency. |
| 16. Documents Establishing the Eligibility of the Bidder | 16.1 | <p>To establish their eligibility in accordance with ITB 4, Bidders shall</p> <ul style="list-style-type: none"> (a) complete the eligibility declarations in the Bid Submission Sheet, included in Section 4 (Bidding Forms); and (b) if the Bidder is an existing or intended Joint Venture in accordance with ITB 4.1, submit a copy of the Joint Venture Agreement, or a letter of intent to enter into such an Agreement. The respective document shall be signed by all legally authorized signatories of all the parties to the existing or intended Joint Venture, as appropriate. |
| 17. Documents Establishing the Eligibility of Goods and Related Services | 17.1 | <p>To establish the eligibility of the Goods and Related Services, in accordance with ITB 5, Bidders shall complete the country of origin declarations in the Price Schedule Forms included in Section 4 (Bidding Forms).</p> |
| 18. Documents Establishing the Conformity of the Goods and Related Services to the Bidding Document | 18.1 | <p>To establish the conformity of the Goods and Related Services to the Bidding Document, the Bidder shall furnish as part of its Technical Bid documentary evidence that the Goods and Related Services conform to the requirements specified in Section 6 (Schedule of Supply).</p> |
| | 18.2 | <p>The documentary evidence may be in the form of literature, drawings or data, and shall consist of a detailed item-by-item description of the essential technical and performance characteristics of the Goods and Related Services, demonstrating substantial responsiveness of the Goods and Related Services to those requirements, and if applicable, a statement of deviations and exceptions to the provisions of Section 6 (Schedule of Supply).</p> |
| | 18.3 | <p>Standards for workmanship, process, material, and equipment, as well as references to brand names or catalogue numbers specified by the Purchaser in Section 6 (Schedule of Supply), are intended to be</p> |

descriptive only and not restrictive. The Bidder may offer other standards of quality, brand names, and/or catalogue numbers, provided that it demonstrates, to the Purchaser's satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in Section 6 (Schedule of Supply).

**19. Documents
Establishing the
Qualifications of
the Bidder**

- 19.1 To establish its qualifications to perform the Contract, the Bidder shall submit as part of its Technical Proposal the evidence indicated for each qualification criteria specified in Section 3 (Evaluation and Qualification Criteria).
- 19.2 If so required in the BDS, a Bidder that does not manufacture or produce the Goods it offers to supply shall submit the Manufacturer's Authorization using the form included in Section 4 (Bidding Forms) to demonstrate that it has been duly authorized by the manufacturer or producer of the Goods to supply these Goods in the Purchaser's country.
- 19.3 If so required in the BDS, a Bidder that does not conduct business within the Purchaser's country shall submit evidence that it will be represented by an agent in the country equipped and able to carry out the Supplier's maintenance, repair, and spare parts-stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications.

**20. Period of
Validity of Bids**

- 20.1 Bids shall remain valid for the period specified in the BDS after the bid submission deadline date prescribed by the Purchaser. A Bid valid for a shorter period shall be rejected by the Purchaser as nonresponsive.
- 20.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Purchaser 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 21, it shall also be extended 28 days beyond the deadline of the extended bid 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.

**21. Bid Security/
Bid-Securing
Declaration**

- 21.1 Unless otherwise specified in the BDS, the Bidder shall furnish as part of its Bid, in original form, either a Bid-Securing Declaration or a bid security as specified in the BDS. In the case of a bid security, the amount and currency shall be as specified in the BDS.
- 21.2 If a Bid-Securing Declaration is required pursuant to ITB 21.1, it shall use the form included in Section 4 (Bidding Forms). The Purchaser will declare a Bidder ineligible to be awarded a Contract for a specified period of time, as indicated in the BDS, if a Bid-Securing Declaration is executed.
- 21.3 If a bid security is specified pursuant to ITB 21.1, the bid security shall be, at the Bidder's option, in any of the following forms:
- (a) an unconditional bank guarantee,
 - (b) an irrevocable letter of credit, or

- (c) a cashier's or certified check,

all from a reputable source from an eligible country as described in Section 5 (Eligible Countries). In the case of a bank guarantee, the bid security shall be submitted either using the Bid Security Form included in Section 4 (Bidding Forms), or another form acceptable to the Purchaser. The form must include the complete name of the Bidder. The bid security shall be valid for 28 days beyond the original validity period of the bid, or beyond any period of extension if requested under ITB 20.2.

- 21.4 Unless otherwise specified in the BDS, any bid not accompanied by a substantially compliant bid security or Bid-Securing Declaration, if one is required in accordance with ITB 21.1, shall be rejected by the Purchaser as nonresponsive.

- 21.5 If a bid security is specified pursuant to ITB 21.1, the bid security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's furnishing of the performance security pursuant to ITB 46.

- 21.6 If a bid security is specified pursuant to ITB 21.1, the bid security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract Agreement and furnished the required performance security.

- 21.7 The bid security may be forfeited or the Bid-Securing Declaration executed,

- (a) if a Bidder withdraws its bid during the period of bid validity as specified by the Bidder on the Technical Bid Submission Sheet, except as provided in ITB 20.2; or
- (b) if the successful Bidder fails to
 - (i) sign the Contract Agreement in accordance with ITB 45;
 - (ii) furnish a performance security in accordance with ITB 46; or
 - (iii) accept the arithmetical corrections of its bid in accordance with ITB 36.

- 21.8 The bid security or the Bid-Securing Declaration of a Joint Venture shall be in the name of the Joint Venture that submits the bid. If the Joint Venture has not been legally constituted at the time of bidding, the bid security or the Bid-Securing Declaration shall be in the names of all future partners as named in the letter of intent mentioned in ITB 4.1.

22. Format and Signing of Bid

- 22.1 The Bidder shall prepare one original set of the Technical Bid and one original set of the Price Bid as described in ITB 11 and clearly mark each "ORIGINAL - TECHNICAL BID" and "ORIGINAL - PRICE BID". In addition, the Bidder shall submit copies of the Technical Bid and the Price Bid, in the number specified in the BDS and clearly mark them "COPY NO... - TECHNICAL BID" and "COPY NO.... - PRICE BID". In the event of any discrepancy between the original and the copies, the original shall prevail.

- 22.2 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 unamended printed literature, shall be signed or initialled by the person signing the Bid. If a Bidder submits a deficient authorization, the Bid shall not be rejected in the first instance. The Purchaser shall request the Bidder to submit an acceptable authorization within the number of days as specified in the BDS. Failure to provide an acceptable authorization within the prescribed period of receiving such a request shall cause the rejection of the Bid.
- 22.3 Any amendments such as interlineations, erasures, or overwriting shall be valid only if they are signed or initialled by the person signing the bid.

D. Submission and Opening of Bids

23. Sealing and Marking of Bids

- 23.1 Bidders may submit their bids by mail or by hand. 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 or by hand shall enclose the original of the Technical Bid, the original of the Price Bid, and each copy of the Technical Bid and each copy of the Price Bid, including alternative Bids, if permitted in accordance with ITB 13, in separate sealed envelopes, duly marking the envelopes as "ORIGINAL - TECHNICAL BID", "ORIGINAL - PRICE BID" and "COPY NO... - TECHNICAL BID" and "COPY NO.... - PRICE BID", as appropriate. These envelopes containing the original and the copies shall then be enclosed in one single envelope. The rest of the procedure shall be in accordance with ITB 23.2 to ITB 23.6.
 - (b) Bidders submitting Bids electronically shall follow the electronic bid submission procedures specified in the BDS.
- 23.2 The inner and outer envelopes shall
- (a) bear the name and address of the Bidder;
 - (b) be addressed to the Purchaser in accordance with ITB 24.1; and
 - (c) bear the specific identification of this bidding process indicated in the BDS.
- 23.3 The outer envelopes and the inner envelopes containing the Technical Bids shall bear a warning not to open before the time and date for the opening of Technical Bids, in accordance with ITB 27.1.

- 23.4 The inner envelopes containing the Price Bids shall bear a warning not to open until advised by the Purchaser in accordance with ITB 27.2.
- 23.5 If all envelopes are not sealed and marked as required, the Purchaser will assume no responsibility for the misplacement or premature opening of the Bid.
- 23.6 Alternative Bids, if permissible in accordance with ITB 13, shall be prepared, sealed, marked, and delivered in accordance with the provisions of ITB 22 and ITB 23, with the inner envelopes marked in addition "ALTERNATIVE NO...." as appropriate
- 24. Deadline for Submission of Bids**
- 24.1 Bids must be received by the Purchaser at the address and no later than the date and time indicated in the BDS.
- 24.2 The Purchaser 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 Purchaser and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.
- 25. Late Bids**
- 25.1 The Purchaser shall not consider any Bid that arrives after the deadline for submission of Bids, in accordance with ITB 24. Any Bid received by the Purchaser after the deadline for submission of Bids shall be declared late, rejected, and returned unopened to the Bidder.
- 26. Withdrawal, Substitution, and Modification of Bids**
- 26.1 A Bidder may withdraw, substitute, or modify its Bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 22.2 (except that withdrawal notices do not require copies). The corresponding substitution or modification of the bid must accompany the respective written notice. All notices must be
- (a) prepared and submitted in accordance with ITB 22 and ITB 23 (except that withdrawal notices do not require copies), and in addition, the respective inner and outer envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," "MODIFICATION;" and
- (b) received by the Purchaser prior to the deadline prescribed for submission of bids, in accordance with ITB 24.
- 26.2 Bids requested to be withdrawn in accordance with ITB 26.1 shall be returned unopened to the Bidders.
- 26.3 No Bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Technical Bid Submission Sheet or any extension thereof.
- 27. Bid Opening**
- 27.1 The Purchaser shall open the Technical Bids in public at the address, on the date, and time specified in the BDS in the presence of Bidder's

designated representatives and anyone who choose to attend. Any specific electronic bid opening procedures required if electronic bidding is permitted in accordance with ITB 23.1, shall be as specified in the BDS.

- 27.2 The Price Bids will remain unopened and will be held in custody of the Purchaser until the time of opening of the Price Bids. The date, time, and location of the opening of Price Bids will be advised in writing by the Purchaser. If the Technical Bid and the Price Bid are submitted together in one envelope, the Purchaser may reject the Bid. Alternatively, the Price Bid may be immediately resealed for later evaluation.
- 27.3 First, envelopes marked "WITHDRAWAL" shall be opened, read out, and recorded, and the envelope containing 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 and recorded at bid opening.
- 27.4 Next, outer envelopes marked "SUBSTITUTION" shall be opened. The inner envelopes containing the Substitution Technical Bid and/or Substitution Price Bid shall be exchanged for the corresponding envelopes being substituted, which are to be returned to the Bidder unopened. Only the Substitution Technical Bid, if any, shall be opened, read out, and recorded. Substitution Price Bid will remain unopened in accordance with ITB 27.2. No envelope shall be substituted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out and recorded at bid opening.
- 27.5 Next, outer envelopes marked "MODIFICATION" shall be opened. No Technical Bid and/or Price Bid shall be modified unless the corresponding modification notice contains a valid authorization to request the modification and is read out and recorded at the opening of Technical Bids. Only the Technical Bids, both Original as well as Modification, are to be opened, read out, and recorded at the opening. Price Bids, both Original as well as Modification, will remain unopened in accordance with ITB 27.2.
- 27.6 All other envelopes holding the Technical Bids shall be opened one at a time, and the following read out and recorded
- (a) the name of the Bidder;
 - (b) whether there is a modification or substitution;
 - (c) the presence of a bid security or a Bid-Securing Declaration, if required; and
 - (d) any other details as the Purchaser may consider appropriate.

Only Technical Bids and alternative Technical Bids read out and recorded at bid opening shall be considered for evaluation. Unless otherwise specified in the BDS, all pages of the Technical Bid Submission Sheet are to be initialed by at least three representatives of the Purchaser attending the bid opening. No Bid shall be rejected at the opening of Technical Bids except for late bids, in accordance with ITB

25.1.

- 27.7 The Purchaser shall prepare a record of the opening of Technical Bids that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, modification, or alternative offer; and the presence or absence of a bid security or a Bid-Securing Declaration, if one was required. 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. A copy of the record shall be distributed to all Bidders.
- 27.8 At the end of the evaluation of the Technical Bids, the Purchaser will invite bidders who have submitted substantially responsive Technical Bids and who have been determined as being qualified for award to attend the opening of the Price Bids. The date, time, and location of the opening of Price Bids will be advised in writing by the Purchaser. Bidders shall be given reasonable notice of the opening of Price Bids.
- 27.9 The Purchaser will notify Bidders in writing who have been rejected on the grounds of being substantially nonresponsive to the requirements of the Bidding Document and return their Price Bids unopened.
- 27.10 The Purchaser shall conduct the opening of Price Bids of all Bidders who submitted substantially responsive Technical Bids, in the presence of Bidders' representatives who choose to attend at the address, on the date, and time specified by the Purchaser. The Bidder's representatives who are present shall be requested to sign a register evidencing their attendance.
- 27.11 All envelopes containing Price Bids shall be opened one at a time and the following read out and recorded
- (a) the name of the Bidder;
 - (b) whether there is a modification or substitution;
 - (c) the Bid Prices, including any discounts and alternative offers; and
 - (d) any other details as the Purchaser may consider appropriate.
- Only Price Bids, discounts, and alternative offers read out and recorded during the opening of Price Bids shall be considered for evaluation. Unless otherwise specified in the BDS, all pages of the Price Bid Submission Sheet and Price Schedules are to be initialed by at least three representatives of the Purchaser attending bid the opening. No Bid shall be rejected at the opening of Price Bids.
- 27.12 The Purchaser shall prepare a record of the opening of Price Bids that shall include, as a minimum: the name of the Bidder, the Bid Price (per lot if applicable), any discounts, and alternative offers. 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. A copy of the record shall be distributed to all Bidders who submitted bids on time, and posted online when electronic bidding is permitted.

E. Evaluation and Comparison of Bids

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| 28. Confidentiality | <p>28.1 Information relating to the examination, evaluation, comparison, and 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 the Contract award is communicated to all Bidders.</p> <p>28.2 Any attempt by a Bidder to influence the Purchaser in the examination, evaluation, comparison, and postqualification of the Bids or Contract award decisions may result in the rejection of its Bid.</p> <p>28.3 Notwithstanding ITB 28.2, from the time of opening the Technical Bids to the time of Contract award, if any Bidder wishes to contact the Purchaser on any matter related to the bidding process, it should do so in writing.</p> |
| 29. Clarification of Bids | <p>29.1 To assist in the examination, evaluation, comparison and post-qualification of the Bids, the Purchaser may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder with regard to its Bid and that is not in response to a request by the Purchaser shall not be considered. The Purchaser'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 Purchaser in the evaluation of the Price Bids, in accordance with ITB 36.</p> <p>29.2 If a Bidder does not provide clarifications on its Bid by the date and time set in the Purchaser's request for clarification, its bid may be rejected.</p> |
| 30. Deviations, Reservations, and Omissions | <p>30.1 During the evaluation of Bids, the following definitions apply:</p> <ul style="list-style-type: none"> (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. |
| 31. Examination of Technical Bids | <p>31.1 The Purchaser shall examine the Technical Bid to confirm that all documents and technical documentation requested in ITB 11.4 have been provided, and to determine the completeness of each document submitted.</p> <p>31.2 The Purchaser shall confirm that the following documents and information have been provided in the Technical Bid. If any of these documents or information is missing, the offer shall be rejected:</p> <ul style="list-style-type: none"> (a) Technical Bid Submission Sheet in accordance with ITB 12.1; (b) written confirmation of authorization to commit the Bidder; |

- (c) bid security or Bid-Securing Declaration, if applicable; and
- (d) Manufacturer's Authorization, if applicable.

32. Responsiveness of Technical Bid

- 32.1 The Purchaser's determination of a Technical Bid's responsiveness is to be based on the contents of the Technical Bid itself, as defined in ITB 11.
- 32.2 A substantially responsive Technical 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 Goods and Related Services specified in Section 6 (Schedule of Supply); or
 - (ii) limits in any substantial way, inconsistent with the Bidding Document, the Purchaser's rights or the Bidder's obligations under the Contract; or
 - (b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Technical Bids.
- 32.3 The Purchaser shall examine the technical aspects of the Bid in particular, to confirm that all requirements of Section 6 (Schedule of Supply) have been met without any material deviation, reservation, or omission.
- 32.4 If a Technical Bid is not substantially responsive to the Bidding Document, it shall be rejected by the Purchaser and may not subsequently be made responsive by the Bidder by correction of the material deviation, reservation, or omission.

33. Nonmaterial Nonconformities

- 33.1 Provided that a Technical Bid is substantially responsive, the Purchaser may waive nonconformities in the Bid that does not constitute a material deviation, reservation, or omission.
- 33.2 Provided that a Technical Bid is substantially responsive, the Purchaser may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the Technical Bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the Price Bid of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.
- 33.3 Provided that a Technical Bid is substantially responsive, the Purchaser shall rectify quantifiable nonmaterial nonconformities or omissions. To this effect, the Bid Price shall be adjusted during evaluation of Price Bids, for comparison purposes only, to reflect the price of the missing or non-conforming item or component. The adjustment shall be made using the method indicated in Section 3 (Evaluation and Qualification Criteria).

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| 34. Qualification of the Bidder | <p>34.1 The Purchaser shall determine to its satisfaction during the evaluation of Technical Bids whether Bidders meets the qualifying criteria specified in Section 3 (Evaluation and Qualification Criteria).</p> <p>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 19.</p> <p>34.3 An affirmative determination shall be a prerequisite for the opening and evaluation of a Bidder's Price Bid. A negative determination shall result into the disqualification of the Bid, in which event the Purchaser shall return the unopened Price Bid to the Bidder.</p> |
| 35. Examination of Price Bids | <p>35.1 Following the opening of Price Bids, the Purchaser shall examine the Price Bids to confirm that all documents and financial documentation requested in ITB 11.5 have been provided, and to determine the completeness of each document submitted.</p> <p>35.2 The Purchaser shall confirm that the following documents and information have been provided in the Price Bid. If any of these documents or information is missing, the offer shall be rejected:</p> <ul style="list-style-type: none"> (a) Price Bid Submission Sheet in accordance with ITB 12.1; and (b) Price Schedules, in accordance with ITB 12, ITB 14, and ITB 15. |
| 36. Correction of Arithmetical Errors | <p>36.1 During the evaluation of Price Bids, the Purchaser shall correct arithmetical errors on the following basis:</p> <ul style="list-style-type: none"> (a) 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 Purchaser 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. (c) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above. <p>36.2 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 may be forfeited, or its Bid-Securing Declaration executed.</p> |
| 37. Conversion to Single Currency | <p>37.1 For evaluation and comparison of Price Bids, the Purchaser shall convert all bid prices expressed in the amounts in various currencies into a single currency, using the selling exchange rates established by the source and on the date specified in the BDS.</p> |
| 38. Margin of Preference | <p>38.1 Unless otherwise specified in the BDS, a margin of preference shall not apply.</p> |

- 39. Evaluation of Price Bids**
- 39.1 The Purchaser shall use the criteria and methodologies indicated in this clause. No other criteria or methodology shall be permitted.
- 39.2 To evaluate a Price Bid, the Purchaser shall consider the following:
- (a) the bid price as quoted in accordance with ITB 14;
 - (b) price adjustment for correction of arithmetic errors in accordance with ITB 36.1;
 - (c) price adjustment due to discounts offered in accordance with ITB 14.4;
 - (d) price adjustment due to application of the evaluation criteria specified in Section 3 (Evaluation and Qualification Criteria). These criteria may include factors related to the characteristics, performance, and terms and conditions of purchase of the Goods and Related Services which shall be expressed to the extent practicable in monetary terms to facilitate comparison of bids unless otherwise specified in Section 3; and
 - (e) converting the amount resulting from applying (a) to (c) above, if relevant, to a single currency in accordance with ITB 37.
- 39.3 The Purchaser's evaluation of a bid will exclude and not take into account,
- (a) in the case of Goods offered from within the Purchaser's country, all sales tax and all other taxes, applicable in the Purchaser's country and payable on the Goods if the Contract is awarded to the Bidder;
 - (b) in the case of Goods offered from outside the Purchaser's country, all customs duties, sales tax, and other taxes, applicable in the Purchaser's country and payable on the Goods if the Contract is awarded to the Bidder; and
 - (c) any allowance for price adjustment during the period of performance of the Contract, if provided in the Bid.
- 39.4 If the Bidding Document allows Bidders to quote separate prices for different lots (contracts), and the award to a single Bidder of multiple lots (contracts), the methodology to determine the lowest evaluated price of the lot (contract) combinations, including any discounts offered in the Price Bid Submission Sheet, is as specified in Section 3 (Evaluation and Qualification Criteria).
- 40. Comparison of Bids**
- 40.1 The Purchaser shall compare all substantially responsive Bids to determine the lowest evaluated bid, in accordance with ITB 39.
- 41. Purchaser's Right to Accept Any Bid, and to Reject Any or All Bids**
- 41.1 The Purchaser 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 the Bidders. In case of annulment, all Bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.

F. Award of Contract

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| 42. Award Criteria | <p>42.1 The Purchaser 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 has remained qualified to perform the Contract satisfactorily.</p> <p>42.2 A Bid shall be rejected if the qualification criteria as specified in Section 3 (Evaluation and Qualification Criteria) are no longer met by the Bidder whose offer has been determined to be the lowest evaluated Bid. In this event the Purchaser shall proceed to the next lowest evaluated Bid to make a similar reassessment of that Bidder's capabilities to perform satisfactorily.</p> |
| 43. Purchaser's Right to Vary Quantities at Time of Award | <p>43.1 At the time the Contract is awarded, the Purchaser reserves the right to increase or decrease the quantity of Goods and Related Services originally specified in Section 6 (Schedule of Supply), provided this does not exceed the percentages indicated in the BDS, and without any change in the unit prices or other terms and conditions of the Bid and the Bidding Document.</p> |
| 44. Notification of Award | <p>44.1 Prior to the expiration of the period of bid validity, the Purchaser shall notify the successful Bidder, in writing, that its Bid has been accepted.</p> <p>44.2 At the same time, the Purchaser shall also notify all other Bidders of the results of the bidding. The Purchaser will publish in an English language newspaper or well-known freely accessible website the results identifying the Bid and lot numbers and the following information: (i) name of each Bidder who submitted a Bid; (ii) bid prices as read out at bid opening; (iii) name and evaluated prices of each Bid that was evaluated; (iv) name of Bidders whose Bids were rejected and the reasons for their rejection; and (v) name of the winning Bidder, and the price it offered, as well as the duration and summary scope of the contract awarded. After publication of the award, unsuccessful Bidders may request in writing to the Purchaser for a debriefing seeking explanations on the grounds on which their Bids were not selected. The Purchaser shall promptly respond in writing to any unsuccessful Bidder who, after publication of contract award, requests a debriefing.</p> <p>44.3 Until a formal Contract is prepared and executed, the notification of award shall constitute a binding Contract.</p> |
| 45. Signing of Contract | <p>45.1 Promptly after notification, the Purchaser shall send to the successful Bidder the Agreement.</p> <p>45.2 Within 28 days of receipt of the Agreement, the successful Bidder shall sign, date, and return it to the Purchaser.</p> |
| 46. Performance Security | <p>46.1 Within 28 days of the receipt of notification of award from the Purchaser, the successful Bidder shall furnish the Performance Security in accordance with the GCC, using for that purpose the Performance Security Form included in Section 9 (Contract Forms), or another form</p> |

acceptable to the Purchaser.

- 46.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract Agreement shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security or execution of the Bid-Securing Declaration. In that event, the Purchaser may award the Contract to the next lowest evaluated Bidder whose offer is substantially responsive and is determined by the Purchaser to be qualified to perform the Contract satisfactorily.

Section 2 - Bid Data Sheet

A. General	
ITB 1.1	The number of the Invitation for Bids is: AEPC/ADB/SASEC/NCB/MHP/06
ITB 1.1	The Purchaser is: Alternative Energy Promotion Centre (AEPC)
ITB 1.1	The name of the national competitive bidding (NCB) is: Khatyad Khola Birabagar Sera Mini Hydro Subproject, Sukhadik, Mugu District, Nepal. (Package 2- Transmission & Distribution). The identification number of the NCB is: AEPC/ADB/SASEC/NCB/MHP/06 The number and identification of lots comprising this NCB is: None
ITB 2.1	The Borrower is: <u>Nepal</u>
ITB 2.1	The name of the Project is: SASEC Power System Expansion Project
B. Contents of Bidding Document	
ITB 7.1	For <u>clarification purposes</u> only, the Purchaser's address is: Attention: Dr. Narayan Prasad Adhikari Street Address: Khumaltar Height Floor/Room number: Second Floor, AEPC Building City: Lalitpur Country: Nepal Telephone: 5539390, 5539391 Facsimile number: 5542397, 5539392 Electronic mail address: narayan.adhikari@aepec.gov.np
C. Preparation of Bids	
ITB 10.1	The language of the Bid is: English
ITB 11.2 (i)	The Bidder shall submit with its Technical Bid the following additional documents: (i) The bidder or bidder's manufacturer's experience: At least 3 years on Supply, Delivery, Construction, Installation, Testing and Commissioning of 11 kV Transmission line or greater and 400V/220V single and three phase line. (ii) Completion certificates issued by employer for similar projects.
ITB 11.3 (c)	The Bidder shall submit with its Price Bid the following additional documents: <u>None</u>
ITB 12.2	The units and rates in figures entered into the Price Schedules should be typewritten or if written by hand, must be in print form. Price Schedules not presented accordingly may be considered nonresponsive.
ITB 13.1	Alternative Bids shall not be permitted
ITB 14.3	Replace the second sentence with the following: Failure to specify the total price of the Bid in the Price Bid Submission Sheet or the Bid Price in the Price Schedule may be ground for declaring the bid nonresponsive
ITB 14.5	The Incoterms edition is: Incoterms 2010

ITB 14.6 (b) (i)	For Goods offered from outside the Purchaser's country, the Bidder shall quote prices using the following Incoterms: Not Applicable
ITB 14.6 (b) (ii)	In addition to the above, the Bidder shall quote prices for Goods offered from outside the Purchaser's country using the following Incoterms: Not applicable
ITB 14.7	The prices shall be fixed
ITB 14.8	Prices quoted for each lot shall correspond at least to _____ % of the items specified for each lot. Not applicable Prices quoted for each item of a lot shall correspond at least to _____ % of the quantities specified for this item of a lot. Not applicable
ITB 19.2	The Bidder is required to submit the Manufacturer's Authorization for Distribution Transformer, Steel Tubular Poles and Conductors and Cables using the form included in Section: 4 (Bidding Forms) to demonstrate that it has been duly authorized by the manufacturer or producer of the Goods to supply these Goods in the Purchaser's country.
ITB 20.1	The bid validity period shall be 90 days.
ITB 21.1	The Bidder shall furnish a Bid Security in the amount of NRs 2,200,000
ITB 21.2	The ineligibility period will be: Not Applicable
ITB 21.4	Subject to the succeeding sentences, any bid not accompanied by an irrevocable and callable bid security shall be rejected by the Purchaser as nonresponsive. If a Bidder submits a bid security that (i) deviates in form, amount, and/or period of validity, or (ii) does not provide sufficient identification of the Bidder (including, without limitation, failure to indicate the name of the Joint Venture or, where the Joint Venture has not yet been constituted, the names of all future Joint Venture Partners), the Purchaser shall request the Bidder to submit a compliant bid security within 7 days of receiving such a request. Failure to provide a compliant bid security within the prescribed period of receiving such a request shall cause the rejection of the Bid.
ITB 22.1	In addition to the original Bid, the number of copy is: One
ITB 22.2	The written confirmation of Authorization to sign on behalf of the Bidder shall consist of: "An organizational document, board resolution or its equivalent, or power of attorney specifying the representative's authority to sign the Bid on behalf of, and to legally bind, the Bidder. If the Bidder is an intended or an existing joint venture, the power of attorney should be signed by all partners and specify the authority of the named representative of the joint venture to sign on behalf of, and legally bind, the intended or existing joint venture. If the joint venture has not yet been formed, also include evidence from all proposed joint venture partners of their intent to enter into a joint venture in the event of a contract award in accordance with ITB 16.1 (b)".
ITB 22.2	The Bidder shall submit an acceptable authorization within 7 days.
D. Submission and Opening of Bids	
ITB 23.1	Bidders shall not have the option of submitting their bids electronically.
ITB 23.1 (b)	If Bidders shall have the option of submitting their bids electronically, the electronic bidding submission procedures shall be: Not applicable

ITB 23.2 (c)	The identification of this bidding process is: AEPC/ADB/SASEC/NCB/MHP/06
ITB 24.1	For bid submission purposes only, the Purchaser's address is : Attention: Dr. Narayan Prasad Adhikari Street Address: AEPC, Khumaltar Height Floor/Room number: Ground Floor, Reception Section City: Lalitpur, Country: Nepal
ITB 24.1	The Deadline for Bid Submission is: Date: 23 September, 2018 Time: 12:00 Noon, Local Time
ITB 27.1	The Technical Bid opening shall take place at: Street Address: AEPC, Khumaltar Height Floor/Room number: AEPC Meeting Hall City : Lalitpur, Country: Nepal Date: 23 September, 2018 Time: Immediately After Deadline for Bid Submission
ITB 27.1	Electronic bid opening procedure shall be as follows: Not applicable
ITB 27.6	The Technical Bid Submission Sheet shall be initialed by THREE representatives of the Purchaser attending Technical Bid opening.
ITB 27.11	The Price Bid Submission Sheet and Price Schedules shall be initialed by THREE representatives of the Purchaser attending Price Bid opening.
E. Evaluation and Comparison of Bids	
ITB 37.1	The currency that shall be used for bid evaluation and comparison purposes to convert all bid prices expressed in various currencies into a single currency is: No conversion is necessary as all bids must be submitted in "Nepalese Rupees" The source of the selling exchange rate shall be: Not applicable The date for the selling exchange rate shall be: Not applicable
ITB 38.1	A margin of preference shall not apply.
F. Award of Contract	
ITB 43.1	The maximum percentage by which quantities may be increased is: 15% The maximum percentage by which quantities may be decreased is: 15%

Section 3 - Evaluation and Qualification Criteria

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1. Technical Evaluation

1.1 Technical Criteria

The Bids submitted by the Bidders should comply with the technical requirements in Section-6 (Schedule of Supply). However, a minor deficiency in technical compliance may not be cause for rejection of the Bid.

The cost of all quantifiable deviations or deficiencies from the technical requirements as specified in Section 6 (Schedule of Supply) shall be evaluated. The Purchaser will make its own assessment of the cost of these deviations or deficiencies for the purpose of ensuring fair comparison of Bids.

2. Qualification Criteria

Bidders shall meet the qualification criteria set by the Purchaser on a pass-fail basis. Unless specifically indicated otherwise, it is the legal entity or entities comprising the Bidder and not the Bidder's parent companies, subsidiaries, or affiliates that must satisfy these criteria.

2.1 Eligibility and Pending Litigation

2.1.1 Eligibility

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

2.1.1.1 Nationality

Nationality in accordance with ITB Subclause 4.2.	must meet requirement	must meet requirement	must meet requirement	not applicable	Technical Bid Submission Sheet; Forms ELI – 1 and ELI - 2
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2.1.1.2 Conflict of Interest

No conflicts of interest in accordance with ITB Subclause 4.3.	must meet requirement	must meet requirement	must meet requirement	not applicable	Technical Bid Submission Sheet
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2.1.1.3 ADB Eligibility

Not having been declared ineligible by ADB, as described in ITB Subclause 4.4.	must meet requirement	must meet requirement	must meet requirement	not applicable	Technical Bid Submission Sheet
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2.1.1.4 Government-Owned Enterprise

Bidder required to meet conditions of ITB Subclause 4.5.	must meet requirement	must meet requirement	must meet requirement	not applicable	Technical Bid Submission Sheet; Forms ELI – 1 and ELI - 2
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2.1.1.5 United Nations Eligibility

Not having been excluded by an act of compliance with a United Nations Security Council resolution in accordance with ITB Subclause 4.7.	must meet requirement	must meet requirement	must meet requirement	not applicable	Technical Bid Submission Sheet
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2.1.2 Pending Litigation

Pending litigation and arbitration criterion shall not apply.

2.2 Experience and Technical Capacity

2.2.1 Contractual Experience

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
Successful completion as main supplier/contractor within the last five (5) years , of at least one contracts valued at NRs 55 Million¹ with nature, and complexity similar to the scope of supply described in Section 4 (Bidding Forms EXP-1, Contractual Experience).	must meet requirement	must meet requirement	Participation in at least one contract that has been successfully completed within the last Five (5) year and that is similar to the proposed contract exceeds NRs 27.50 Million.	not applicable	Form EXP - 1

2.2.2 Technical Experience

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
The Bidder shall demonstrate that the goods offered have (i) been in production for at least three (3) years, and (ii) been sold a minimum of three (3) units of similar type and specification over the last three (3) years; (iii) been in operation for a minimum of two (2) years.	must meet requirement	must meet requirement	not applicable	not applicable	Form EXP - 2

¹ Only the Net Amount shall be calculated after deducting the amount for VAT and such amount shall be adjusted to present value by applying wholesale price index of Nepal Rastra Bank. Same is applicable for JV.

2.2.3 Production Capacity

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
The Bidder or manufacturer shall demonstrate ^a that it can supply the type, size, and quantity of the goods as required by Purchaser in accordance with the Delivery and Completion Schedule in Section 6 (Schedule of Supply).	must meet requirement	must meet requirement	not applicable	not applicable	Form EXP - 3

- Note -

^a Bidder or Manufacturer shall provide evidence of production output.

2.3 Financial Situation

2.3.1 Historical Financial Performance

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
Submission of audited financial statements or, if not required by the law of the Bidder's country, other financial statements acceptable to the Purchaser, for the last three (3) years to demonstrate the current soundness of the Bidder's financial position. As a minimum, the Bidder's net worth for the last year calculated as the difference between total assets and total liabilities should be positive.	must meet requirement	not applicable	must meet requirement	not applicable	Form FIN - 1

2.3.2 Size of Operation (Average Annual Turnover)

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
Minimum average annual turnover of NRs 165 Million ² calculated as total payments received by the Bidder for contracts completed or under execution over the last three (3) years.	must meet requirement	must meet requirement	must meet Minimum 25% of the requirement	must meet Minimum 40% of the requirement	Form FIN - 2

3. Economic Evaluation

The economic criteria will be evaluated bid price in accordance with Section 1, Sub-clause 33 and Section 3, Sub-clause 1.2.1.1.

3.1 Adjustment for Scope

² Only the Net Amount shall be calculated after deducting the amount for VAT and such amount shall be adjusted to present value by applying wholesale price index of Nepal Rastra Bank. Same is applicable for JV.

3.1.1 Local Handling and Inland Transportation

Costs for inland transportation, insurance, and other incidental costs for delivery of the goods from the EXW premises, or port of entry, or border point to Project Site as defined in Section 6 (Schedule of Supply), shall be quoted in the Price Schedule for Related Services to Be Offered from Outside and Within the Purchaser's Country provided In Section 4 (Bidding Forms). These costs will be taken into account during bid evaluation. If a Bidder fails to include such costs in its Bid, then these costs will be estimated by the Purchaser on the basis of published tariffs by the rail or road transport agencies, insurance companies, or other appropriate sources, and added to EXW or CIF or CIP price.

3.1.2 Minor Omissions or Missing Items

Pursuant to ITB 33.3, the cost of all quantifiable nonmaterial nonconformities or omissions from the contractual and commercial conditions shall be evaluated. The Purchaser will make its own assessment of the cost of any nonmaterial nonconformities and omissions for the purpose of ensuring fair comparison of Bids.

3.2 Adjustment for Deviations from the Terms of Payment

Deviations from the Terms of Payment as specified in SCC 16.1 are not permitted.

3.3 Adjustment for Deviations in the Delivery and Completion Schedule

Bidders are required to base their prices on the Delivery and Completion Schedule specified in Section 6 (Schedule of Supply).

Deviations from the Delivery and Completion Schedule specified in Section 6 (Schedule of Supply) are not permitted.

Section 4 - Bidding Forms

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Technical Bid Submission Sheet

-- Note --

The Bidder must accomplish the Technical Bid Submission Sheet on its letterhead clearly showing the bidder's complete name and address.

Date: _____
National Competitive Bidding (NCB) No.: _____
Invitation for Bid (IFB) No.: _____

To: -----

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Document, including the Addenda issued in accordance with Instructions to Bidders (ITB) Clause 8.
- (b) We offer to supply in conformity with the Bidding Document and in accordance with the delivery schedule specified in Section 6 (Schedule of Supply), the following Goods and Related Services: AEPC/ADB/SASEC/NCB/MHP/06, Khatyad Khola Birabagar Sera Khola Mini Hydro Subproject, Sukhadik, Mugu District, Nepal. (Package 2- Transmission & Distribution).
- (c) Our Bid consisting of the Technical Bid and the Price Bid shall be valid for a period of **90 days** from the date fixed for the bid submission deadline in accordance with the Bidding Document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
- (d) Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from eligible countries in accordance with ITB 4.2.
- (e) 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.
- (f) We are not participating, as a Bidder in more than one Bid in this bidding process in accordance with ITB 4.3(e), other than alternative offers in accordance with the Bidding Document.
- (g) Our firm, its affiliates or subsidiaries, including any subcontractors or suppliers for any part of the Contract, has not been declared ineligible by the ADB, under the Purchaser's country laws or official regulations or by an act of compliance with a decision of the United Nations Security Council.

- (h) [We are not a government-owned enterprise] / [We are a government-owned enterprise but meet the requirements of ITB 4.5].¹
- (i) We agree to permit ADB 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 ADB.

Name _____

In the capacity of _____

Signed _____

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

Date _____

¹ Use one of the two options as appropriate.

Price Bid Submission Sheet

-- Note --

The Bidder must accomplish the Price Bid Submission Sheet on its letterhead clearly showing the bidder's complete name and address.

Date: _____
 National Competitive Bidding (NCB) No.: _____
 Invitation for Bid (IFB) No.: _____

To: -----

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Document, including the Addenda issued in accordance with Instructions to Bidders (ITB) 8.
- (b) We offer to supply in conformity with the Bidding Document and in accordance with the delivery schedule specified in Section 6 (Schedule of Supply), the following Goods and Related Services: AEPC/ADB/SASEC/NCB/MHP/06, Khatyad Khola Birabagar Sera Khola Mini Hydro Subproject, Sukhadik, Mugu District, Nepal. (Package 2- Transmission & Distribution).
- (c) The total price of our Bid, excluding any discounts offered in item (d) below, is

[Amount of local currency in words], [amount in figures]

The total bid price from the price schedules should be entered by the Bidder inside this box. Absence of the total bid price in the Price Bid Submission Sheet may result in the rejection of the bid.

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

Discounts: If our Bid is accepted, the following discounts shall apply: *[specify in detail each discount offered and the specific item of the Schedule of Supply to which it applies]*

Methodology of Application of the Discounts: The discounts shall be applied using the following method: *[specify in detail the method that shall be used to apply the discounts]*

- (e) Our bid shall be valid for a period of **90 days** from the date fixed for the 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 the amount of **10%** percent of the Contract Price for the due performance of the Contract.

- (g) The following commissions, gratuities, or fees have been paid or are to be paid with respect to the bidding process or execution of the Contract:¹

Name of Recipient	Address	Reason	Amount
_____	_____	_____	_____
_____	_____	_____	_____

- (h) 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.
- (i) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (j) We agree to permit ADB 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 ADB.

Name _____

In the capacity of _____

Signed _____

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

Date _____

¹ If none has been paid or is to be paid, indicate "None."

Supply, Delivery, Construction, Installation, Testing and Commissioning of 11 kV Transmission line and 400V/220V single and three phase line System of Khatyad Khola Birabagar Sera Mini Hydro Subproject, Sukhadik, Mugu District, Nepal including all accessories as per Schedule-A, Schedule-B & Technical Specifications

**SCHEDULE-A: PRICE SCHEDULE FOR GOODS TO BE OFFERED FROM
WITHIN THE PURCHASERS COUNTRY**

Procurement of Supply, Delivery, Construction, Installation, Testing and Commissioning of 11 kV Transmission line and 400V/220V single and three phase line System of Khatyad Khola Birabagar Sera Khola Mini Hydro Subproject, Sukhadik, Mugu District, Nepal including all accessories as per Schedule-A, Schedule-B & Technical Specifications

SCHEDULE-A: PRICE SCHEDULE FOR GOODS TO BE OFFERED FROM WITHIN THE PURCHASERS COUNTRY

Name of Bidder _____ IFB Number _____ Page ____ of ____

Item No.	Item Description	Country of Origin	Quantity	Unit	Unit Price NRs, EXW	Unit Price EXW (In Words)	Total Price NRs, EXW
101	Distribution Transformer						
101.1	15 kVA,0.4/11 kV,50 Hz,Oil Immersed, Type of cooling: ONAN,Bare Bushings on both HV and LV side, Vector Group Reference:Dyn11 or Dyn1, Approximate Weight 200 kg , oil quantity 60 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, Lightening Arrestors, Baseframe and H-Poles, Earthing all in Place		4	Set			
101.2	25 kVA,0.4/11 kV,50 Hz,Oil Immersed, Type of cooling: ONAN,Bare Bushings on both HV and LV side,Vector Group Reference:Dyn11 or Dyn1,Approximate Weight 320 kg , oil quantity 90 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, Lightening Arrestors, Baseframe and H-Poles, Earthing all in Place		4	Set			
101.3	35 kVA,0.4/11 kV,50 Hz,Oil Immersed, Type of cooling: ONAN,Bare Bushings on both HV and LV side,Vector Group Reference:Dyn11 or Dyn1,Approximate Weight 375 kg , oil quantity 105 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, Lightening Arrestors, Baseframe and H-Poles, Earthing all in Place		2	Set			
						Sub Total for this Page	

SCHEDULE-A: PRICE SCHEDULE FOR GOODS TO BE OFFERED FROM WITHIN THE PURCHASERS COUNTRY

Name of Bidder _____ IFB Number _____ Page ____ of ____

Item No.	Item Description	Country of Origin	Quantity	Unit	Unit Price NRs, EXW	Unit Price EXW (In Words)	Total Price NRs, EXW
101.4	50 kVA,0.4/11kV,50 Hz,Oil Immersed,Type of cooling: ONAN,Bare Bushings on both HV and LV side,Vector Group Reference:Dyn11 or Dyn1,Approximate Weight 480 kg , oil quantity 120 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, Lightning Arrestors, Baseframe and H-Poles, Earthing all in Place		9	Set			
1401.5	75 kVA,0.4/11kV,50 Hz,Oil Immersed, Type of cooling: ONAN,Bare Bushings on both HV and LV side,Vector Group Reference:Dyn11 or Dyn1,Approximate Weight 480 kg, oil quantity 120 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, Lightning Arrestors, Baseframe and H-Poles, Earthing all in Place		1	Set			
102	Steel Tubular Poles Including fittings of hardware, insulators and channels all complete						
102.1	8 m Pole of Bottom Section (4.5 m Long, Outer Dia. 139.7 mm, Thickness 4.5 mm), Mid Section (1.75 m Long, Outer Dia. 114.3 mm, Thickness 3.65 mm) and Top Section (1.75 m Long, Outer Dia. 88.9 mm, Thickness 3.25 mm), Ground Clearance 5.5 m, Minimum weight 90 kg (For LT Single phase 0.22kV Distribution)		396	set			
						Sub Total for this Page	

SCHEDULE-A: PRICE SCHEDULE FOR GOODS TO BE OFFERED FROM WITHIN THE PURCHASERS COUNTRY

Name of Bidder _____ IFB Number _____ Page ____ of ____

Item No.	Item Description	Country of Origin	Quantity	Unit	Unit Price NRs, EXW	Unit Price EXW (In Words)	Total Price NRs, EXW
102.2	9 m Pole of Bottom Section (5 m Long, Outer Dia. 165.1 mm, Thickness 4.5 mm), Mid Section (2 m Long, Outer Dia. 139.7 mm, Thickness 4.5 mm) and Top Section (2 m Long, Outer Dia. 114.3 mm, Thickness 3.65 mm), Ground Clearance 6.1 m, Minimum weight 120 kg (For 3 Phase, LT(0.4kV Distribution Line)		470	set			
102.3	10 m Pole of Bottom Section (5.2 m Long, Outer Dia. 165.1 mm, Thickness 4.5 mm), Mid Section (2.4 m Long, Outer Dia. 139.7 mm, Thickness 4.5 mm) and Top Section (2.4 m Long, Outer Dia. 114.3 mm, Thickness 3.65 mm), Ground Clearance 6.1 m, Minimum weight 150 kg (For 11kV HT and Composite Lines, Double Pole)		1184	set			
102.4	11 m Pole of Bottom Section (5.6 m Long, Outer Dia. 165.1 mm, Thickness 4.5 mm), Mid Section (2.7 m Long, Outer Dia. 139.7 mm, Thickness 4.5 mm) and Top Section (2.7 m Long, Outer Dia. 114.3 mm, Thickness 3.65 mm), Ground Clearance 6.1 m, Approximate weight 176 kg (For Pole Mounted Transformers and River Crossings)		70	set			
						Sub Total for this Page	

SCHEDULE-A: PRICE SCHEDULE FOR GOODS TO BE OFFERED FROM WITHIN THE PURCHASERS COUNTRY

Name of Bidder _____ IFB Number _____ Page ____ of ____

Item No.	Item Description	Country of Origin	Quantity	Unit	Unit Price NRs, EXW	Unit Price EXW (In Words)	Total Price NRs, EXW
103	Channels						
103.1	1.5m long Channel angle bracngs with 100x50x6.4x5x1500 mm Channel, 40x40x5x1200 mm angle bracng, nuts and bolts (For 11kV 3phase, 11kV 3 Phase with Composite Line)		1034	Set			
103.2	2m long Channel angle bracings of 100x50x6.4x5x2000 mm Channel, 40x40x5x1200 mm angle bracng, nuts and bolts (Rivercrossing and Double Pole)		257	Set			
103.3	Transformer mounting set with necessary channels, bracings, nuts and bolts, all complete		20	Set			
104	Conductors and Cables						
104.1	Squirrel cables of 13 Sqmm Cross Section ACSR, Minimum Weight (80 kg/kM), 76 A Current Rating, Resistance 1.374 Ohm/kM and conductor packed in 40 kg bundle for easy transportation		296	km			
104.2	Rabbit cables of 50 Sqmm Cross Section ACSR, Minimum Weight (214 kg/kM), 178 A Current Rating, Resistance 0.5426 Ohm/kM and conductor packed in 40 kg bundle for easy transportation		30	km			
104.3	1.1 kV Copper XLPE power cable, 4 Core all termination and jointing kit to complete the scope of work for connecting Transformer and MCCB.(Please check as per above transformer Ratings) @ 20 mt/Transformer		400	m			
						Sub Total for this Page	
105	Insulators and Fittings						

SCHEDULE-A: PRICE SCHEDULE FOR GOODS TO BE OFFERED FROM WITHIN THE PURCHASERS COUNTRY

Name of Bidder _____ IFB Number _____ Page ____ of ____

Item No.	Item Description	Country of Origin	Quantity	Unit	Unit Price NRs, EXW	Unit Price EXW (In Words)	Total Price NRs, EXW
105.1	Small Size : Dimension (55 mm x 55 mm); Weight 200 gm; uto be used in single phase distribution with squirrel ACSR, associated D-Iron fittings. (For single phase)		828	Set			
105.2	Medium Size : Dimension (75 mm x 90 mm); Weight 600 gm; applicable in Gopher, Weasel and Rabbit Conductors, associated D-Iron fittings. (For 3 Phase Distribution Line)		4895	Set			
105.3	Pin Insulators (Pc) : 11 kV porcealin pin insulator, cantilever strength 5 kN, pin fittings, all complete. (For 11kV HT line and Composite Lines)		3418	Set			
105.4	Disc Insulators (Pc) : 11 kV porcealin disc insulator, diameter 255 mm, mechanical strength 45 kN, tension set all complete (For 11kV HT line and Composite Lines)		2146	Set			
						Sub Total for this Page	

SCHEDULE-A: PRICE SCHEDULE FOR GOODS TO BE OFFERED FROM WITHIN THE PURCHASERS COUNTRY

Name of Bidder _____ IFB Number _____ Page ____ of ____

Item No.	Item Description	Country of Origin	Quantity	Unit	Unit Price NRs, EXW	Unit Price EXW (In Words)	Total Price NRs, EXW
106	Stay Sets						
106.1	LT Stay Set : Length of Stay Rod (1.8 m), dia. (16 mm), Ultimate Tensile Strength (4200 kg/Sq.mm.), Minimum Breaking Load (7272 kg),Length of Threaded Portion (300 mm), Thimble Shape (Suitable for 7/22 SWG Stay Wire), Minimum Thimble Section (18 SWG), Stay Plate Section (600 mm x 600 mm x 3 mm MS Plate), Eyebolt Length mm/1 (300 mm), Stay Wire (7/12 SWG Steel Wire, 700 Grade, 45 ton Steel Quality, 2.64 mm dia.,Minimum Wt. /km (300 kg) For single phase and 3 phase		198	Sets			
106.2	HT Stay Set : Length of Stay Rod (2.44 m), dia. (19 mm), Ultimate Tensile Strength (4200 kg/Sq.mm.), Minimum Breaking Load (10454 Kg), Length of Threaded Portion (300 mm), Thimble Shape (Suitable for 7/22 SWG Stay Wire), Minimum Thimble Section (18 SWG), Stay Plate Section (600 mm x 600 mm x 3 mm MS Plate), Eyebolt Length mm/1 (300 mm), Stay Wire (7/8 SWG Steel Wire, 700 Grade, 45 ton Steel Quality, 4.06 mm dia.,Minimum Wt. /km (720 kg) (For 11kV, 11kV with Composite, Double Pole, Transformer and River Crossings)		374	Sets			
						Sub Total for this Page	

SCHEDULE-A: PRICE SCHEDULE FOR GOODS TO BE OFFERED FROM WITHIN THE PURCHASERS COUNTRY

Name of Bidder _____ IFB Number _____ Page ____ of ____

Item No.	Item Description	Country of Origin	Quantity	Unit	Unit Price NRs, EXW	Unit Price EXW (In Words)	Total Price NRs, EXW
107	Switchgear and Protection						
107.1	25 A MCCB : 600 V rated voltage, 50 Hz rated frequency, 3 pole, 25 A rated current, 25 kA breaking current, thermal magnetic or static trip.		4	set			
107.2	40 A MCCB : 600 V rated voltage, 50 Hz rated frequency, 3 pole, 40 A rated current, 25 kA breaking current, thermal magnetic or static trip.		4	Set			
107.3	50 A MCCB : 600 V rated voltage, 50 Hz rated frequency, 3 pole, 50 A rated current, 25 kA breaking current, thermal magnetic or static trip.		2	Set			
107.4	80 A MCCB : 600 V rated voltage, 50 Hz rated frequency, 3 pole, 80 A rated current, 25 kA breaking current, thermal magnetic or static trip.		9	Set			
107.5	100 A MCCB : 600 V rated voltage, 50 Hz rated frequency, 3 pole, 360 A rated current, 35 kA breaking current, Thermal –adjustable magnetic or static trip.		1	Set			
						Sub Total for this Page	

SCHEDULE-A: PRICE SCHEDULE FOR GOODS TO BE OFFERED FROM WITHIN THE PURCHASERS COUNTRY

Name of Bidder _____ IFB Number _____ Page ____ of ____

Item No.	Item Description	Country of Origin	Quantity	Unit	Unit Price NRs, EXW	Unit Price EXW (In Words)	Total Price NRs, EXW
107.6	Copper Plate Earthings : 8 SWG Copper earth wire with 600 mm x 600 mm x 3 mm copper plate (9.65 kg) as earth electrode with necessary coal, lime, salt, nut, bolts, washer, 160 mm polythene pipe etc. all complete		243	Set			
107.7	Lightning arrester ,0.5 kV : Three Phase, 0.5 kV, Three Phase, 50 Hz with ISO 9001 Certified Manufacturer for (3 phase and Single Phase LT-0.44/0.22 kV)		79	Set			
107.8	9-kV intermediate Lightning Arrester : Three Phase, wye Connected, ungrounded, 9 kV, 50 Hz, temperature ranging -5 degree to 45 degree Centigrade, Housing Polymer type, Surge Arrester shall be of gapless metal-oxide type, Steel channel (100x50x50x6 mm), ISO 9001 Certified Manufacturer (For 11kV HT, 11kV HT with Composite, Double Pole and Transformer Mounting Poles)		184	Set			
107.9	DO Fuse Set : DO Fuse Sets of ratings indicated as in report, with enough spare of fuse wire. (For 21 Transformers and DO/2.5km for 11kV and composite with gang switch)		40	Set			
107.10	Gang Switch-GS (Isolator) with ES, 3 Phase, 11kV, 100 amp		15	Set			
						Sub Total for this Page	
						TOTAL OF BILLS THIS BILL (A)	

Supply, Delivery, Construction, Installation, Testing and Commissioning of 11 kV Transmission line and 400V/220V single and three phase line System of Khatyad Khola Birabagar Sera Mini Hydro Subproject, Sukhadik, Mugu District, Nepal including all accessories as per Schedule-A, Schedule-B & Technical Specifications

SCHEDULE – B: PRICE SCHEDULE FOR SERVICES TO BE OFFERED

Procurement of Supply, Delivery, Construction, Installation, Testing and Commissioning of 11 kV Transmission line and 400V/220V single and three phase line System of Khatyad Khola Birabagar Sera Khola Mini Hydro Subproject, Sukhadik, Mugu District, Nepal including all accessories as per Schedule-A, Schedule-B & Technical Specifications

SCHEDULE – B: PRICE SCHEDULE FOR SERVICES TO BE OFFERED

Name of Bidder _____ IFB Number _____ Page ____ of ____

Item No.	Item Description	Country of Origin	Quantity	Unit of Measurement	Unit Rate NRs (in Figure)	Unit Price (in Words)	Total Price (NRs)
201	Installation of Distribution Transformer with necessary fittings, hardware, insulators, MCCB and Channels etc. all complete and Commissioning						
201.1	15 kVA,0.4/11 kV,50 Hz,Oil Immersed, Type of cooling: ONAN,Bare Bushings on both HV and LV side, Vector Group Reference:Dyn11 or Dyn1, Approximate Weight 200 kg , oil quantity 60 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, Lightning Arrestors, Baseframe and H-Poles, Earthing all in Place		4	Set			
201.2	25 kVA,0.4/11 kV,50 Hz,Oil Immersed, Type of cooling: ONAN,Bare Bushings on both HV and LV side,Vector Group Reference:Dyn11 or Dyn1,Approximate Weight 320 kg , oil quantity 90 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, Lightning Arrestors, Baseframe and H-Poles, Earthing all in Place		4	Set			
201.3	35 kVA,0.4/11 kV,50 Hz,Oil Immersed, Type of cooling: ONAN,Bare Bushings on both HV and LV side,Vector Group Reference:Dyn11 or Dyn1,Approximate Weight 375 kg , oil quantity 105 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, Lightning Arrestors, Baseframe and H-Poles, Earthing all in Place		2	Set			
						Sub Total for this Page	

SCHEDULE – B: PRICE SCHEDULE FOR SERVICES TO BE OFFERED

Name of Bidder _____ IFB Number _____ Page ____ of ____

Item No.	Item Description	Country of Origin	Quantity	Unit of Measurement	Unit Rate NRs (in Figure)	Unit Price (in Words)	Total Price (NRs)
201.4	50 kVA,0.4/11kV,50 Hz,Oil Immersed,Type of cooling: ONAN,Bare Bushings on both HV and LV side,Vector Group Reference:Dyn11 or Dyn1,Approximate Weight 480 kg , oil quantity 120 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, Lightening Arrestors, Baseframe and H-Poles, Earthing all in Place		9	Set			
201.5	75 kVA,0.4/11kV,50 Hz,Oil Immersed, Type of cooling: ONAN,Bare Bushings on both HV and LV side,Vector Group Reference:Dyn11 or Dyn1,Approximate Weight 480 kg, oil quantity 120 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, Lightening Arrestors, Baseframe and H-Poles, Earthing all in Place		1	Set			
202	Erection of Steel Tubular Poles with necessary accessories (Fittings, Insulators and channels etc.) all complete and Commissioning						
						Sub Total for this Page	

SCHEDULE – B: PRICE SCHEDULE FOR SERVICES TO BE OFFERED

Name of Bidder _____ IFB Number _____ Page ____ of ____

Item No.	Item Description	Country of Origin	Quantity	Unit of Measurement	Unit Rate NRs (in Figure)	Unit Price (in Words)	Total Price (NRs)
202.1	8 m Pole of Bottom Section (4.5 m Long, Outer Dia. 139.7 mm, Thickness 4.5 mm), Mid Section (1.75 m Long, Outer Dia. 114.3 mm, Thickness 3.65 mm) and Top Section (1.75 m Long, Outer Dia. 88.9 mm, Thickness 3.25 mm), Ground Clearance 5.5 m, Minimum weight 90 kg (For LT Single phase 0.22kV Distribution)		396	set			
202.2	9 m Pole of Bottom Section (5 m Long, Outer Dia. 165.1 mm, Thickness 4.5 mm), Mid Section (2 m Long, Outer Dia. 139.7 mm, Thickness 4.5 mm) and Top Section (2 m Long, Outer Dia. 114.3 mm, Thickness 3.65 mm), Ground Clearance 6.1 m, Minimum weight 120 kg (For 3 Phase, LT(0.4kV Distribution Line)		470	set			
202.3	10 m Pole of Bottom Section (5.2 m Long, Outer Dia. 165.1 mm, Thickness 4.5 mm), Mid Section (2.4 m Long, Outer Dia. 139.7 mm, Thickness 4.5 mm) and Top Section (2.4 m Long, Outer Dia. 114.3 mm, Thickness 3.65 mm), Ground Clearance 6.1 m, Minimum weight 150 kg (For 11kV HT and Composite Lines, Double Pole)		1184	set			
						Sub Total for this Page	

SCHEDULE – B: PRICE SCHEDULE FOR SERVICES TO BE OFFERED

Name of Bidder _____ IFB Number _____ Page ____ of ____

Item No.	Item Description	Country of Origin	Quantity	Unit of Measurement	Unit Rate NRs (in Figure)	Unit Price (in Words)	Total Price (NRs)
202.4	11 m Pole of Bottom Section (5.6 m Long, Outer Dia. 165.1 mm, Thickness 4.5 mm), Mid Section (2.7 m Long, Outer Dia. 139.7 mm, Thickness 4.5 mm) and Top Section (2.7 m Long, Outer Dia. 114.3 mm, Thickness 3.65 mm), Ground Clearance 6.1 m, Approximate weight 176 kg (For Pole Mounted Transformers and River Crossings)		70	set			
203	Stringing of Conductors and Cables including transportation to site, laying of conductor, necessary fitting of hardware, insulators, channel and tensioning complete and Commissioning						
203.1	Stringing of 13 Sqmm, Squirrel ACSR, 3 Wire (11kV)		30.1	km			
203.2	Stringing of 13 Sqmm, Squirrel ACSR, 4 Wire (0.4kV, 3 Phase, LT Line)		14.15	km			
203.3	Stringing of 50 Sqmm, Rabbit ACSR, 4 Wire (0.4 kV, LT Line)		7.12	km			
203.4	Stringing of 13 Sqmm, Squirrel ACSR, 2 Wire (0.22kV, 1 Phase, LT)		17.62	km			
203.5	Stringing of 50 Sqmm, Rabbit ACSR, 2 Wire (0.22kV, 1 Phase, LT)		0.34	km			
203.6	Stringing of 50 Sqmm, Squirrel ACSR Composite Line (11kV, 3 Phase, 3 Wire) and (0.4kV, 3 Phase, 4 Wire)		14.47	km			
						Sub Total for this Page	

SCHEDULE – B: PRICE SCHEDULE FOR SERVICES TO BE OFFERED

Name of Bidder _____ IFB Number _____ Page ____ of ____

Item No.	Item Description	Country of Origin	Quantity	Unit of Measurement	Unit Rate NRs (in Figure)	Unit Price (in Words)	Total Price (NRs)
203.7	Stringing of 50 Sqmm,Squirrel ACSR Composite Line (11kV,3 Phase, 3 Wire) and (0.4kV, 1 Phase, 2 Wire)		2.38	km			
204	Installation and Fitting of Stay Sets including transportation to site, necessary fitting of hardware, inulators and channels						
204.1	LT Stay Set : Length of Stay Rod (1.8 m), dia. (16 mm), Ultimate Tensile Strength (4200 kg/Sq.mm.), Minimum Breaking Load (7272 kg),Length of Threaded Portion (300 mm), Thimble Shape (Suitable for 7/22 SWG Stay Wire), Minimum Thimble Section (18 SWG), Stay Plate Section (600 mm x 600 mm x 3 mm MS Plate), Eyebolt Length mm/1 (300 mm), Stay Wire (7/12 SWG Steel Wire, 700 Grade, 45 ton Steel Quality, 2.64 mm dia.,Minimum Wt. /km (300 kg) For single phase and 3 phase		198	Sets			
						Sub Total for this Page	

SCHEDULE – B: PRICE SCHEDULE FOR SERVICES TO BE OFFERED

Name of Bidder _____ IFB Number _____ Page ____ of ____

Item No.	Item Description	Country of Origin	Quantity	Unit of Measurement	Unit Rate NRs (in Figure)	Unit Price (in Words)	Total Price (NRs)
204.2	HT Stay Set : Length of Stay Rod (2.44 m), dia. (19 mm), Ultimate Tensile Strength (4200 kg/Sq.mm.), Minimum Breaking Load (10454 Kg), Length of Threaded Portion (300 mm), Thimble Shape (Suitable for 7/22 SWG Stay Wire), Minimum Thimble Section (18 SWG), Stay Plate Section (600 mm x 600 mm x 3 mm MS Plate), Eyebolt Length mm/1 (300 mm), Stay Wire (7/8 SWG Steel Wire, 700 Grade, 45 ton Steel Quality, 4.06 mm dia., Minimum Wt. /km (720 kg) (For 11kV, 11kV with Composite, Double Pole, Transformer and River Crossings)		374	Sets			
205	Installation and Fitting of Switchgear and Protection including transportation to site, necessary fitting of hardware, insulators and other accessories all complete and Commissioning						
205.1	Copper Plate Earthings : 8 SWG Copper earth wire with 600 mm x 600 mm x 3 mm copper plate (9.65 kg) as earth electrode with necessary coal, lime, salt, nut, bolts, washer, 160 mm polythene pipe etc. all complete		243	Set			
						Sub Total for this Page	

SCHEDULE – B: PRICE SCHEDULE FOR SERVICES TO BE OFFERED

Name of Bidder _____ IFB Number _____ Page ____ of ____

Item No.	Item Description	Country of Origin	Quantity	Unit of Measurement	Unit Rate NRs (in Figure)	Unit Price (in Words)	Total Price (NRs)
205.2	Lightning arrestor ,0.5 kV : Three Phase, 0.5 kV, Three Phase, 50 Hz with ISO 9001 Certified Manufacturer for (3 phase and Single Phase LT-0.44/0.22 kV)		79	Set			
205.3	9-kV intermediate Lightening Arrestor : Three Phase, wye Connected, ungrounded, 9 kV, 50 Hz, temperature ranging -5 degree to 45 degree Centigrade, Housing Polymer type, Surge Arrestor shall be of gapless metal-oxide type, Steel channel (100x50x50x6 mm), ISO 9001 Certified Manufacturer (For 11kV HT, 11kV HT with Composite, Double Pole and Transformer Mounting Poles)		184	Set			
205.4	DO Fuse Set : DO Fuse Sets of ratings indicated as in report, with enough spare of fuse wire. (For 21 Transformers and DO/2.5km for 11kV and composite with gang switch)		40	Set			
205.50	Gang Switch-GS (Isolator) with ES, 3 Phase, 11kV, 100 amp		15	Set			
206	Providing and Laying PCC Concrete M15 at Pole Cladding with 0.30x.30x0.30 size for 11kV HT,Composite and Transformer Poles for total 1254 Poles.		1254	Nos.			
207	Transportation of all goods from Supplier's warehouse to Subproject site		1	Lump Sum			
208	Envirommental Mitigation and Monitoring (Provisional Sum)		1	Provisional Sum	165,150.00	One Hundred Sixty Five Thousand One Hundred Fifty Rupees and No Paisa	165,150.00
						Sub Total for this Page	
TOTAL OF BILLS THIS BILL (B)							

Supply, Delivery, Construction, Installation, Testing and Commissioning of 11 kV Transmission line and 400V/220V single and three phase line System of Khatyad Khola Birabagar Sera Mini Hydro Subproject, Sukhadik, Mugu District, Nepal including all accessories as per Schedule-A, Schedule-B & Technical Specifications

Summary of the Schedules, Goods and Services

Procurement of Supply, Delivery, Construction, Installation, Testing and Commissioning of 11 kV Transmission line and 400V/220V single and three phase line System of Khatyad Khola Birabagar Sera Khola Mini Hydro Subproject, Sukhadik, Mugu District, Nepal including all accessories as per Schedule-A, Schedule-B & Technical Specifications

Summary of the Schedules, Goods and Services

Name of Bidder _____ IFB Number _____ Page ____ of ____

Schedule No.	Title	Total Price in NRs in Figure	Total Price in NRs in Words
A	Price Schedule for the Transmission and Distribution Line System Goods to be offered		
B	Price Schedule for the Transmission and Distribution Line System Services to be offered		
C	Contingency	3,208,000	Three Million Two Hundred Eight Thousand Rupees and No Paisa
D	Total (A+B+C)		
E	Value Added Tax (VAT) Amount (13% of D)		
F	Grand Total in NRs (D+E)		

Name

In the capacity of

Signed

Duly authorized to sign the Bid for and on behalf of

Date

Bid Security Bank Guarantee

*[insert bank's name, and address of issuing branch or office]*¹

Beneficiary: *[insert name and address of the purchaser]*

Date: *[insert date (as day, month, and year)]*

Bid Security No.: *[insert number]*

We have been informed that *[insert name of the bidder]* (hereinafter called "the Bidder") has submitted to you its bid dated *[insert date (as day, month, and year)]* (hereinafter called "the Bid") for the execution of *[insert name of contract]* under Invitation for Bids No. *[insert IFB number]* ("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 *[insert name of bank]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *[insert amount in words]**[insert amount in figures]* 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 its Bid during the period of bid validity specified by the Bidder in the Technical Bid Submission Sheet and Price Bid Submission Sheet; 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 Purchaser 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.

This guarantee will expire: (a) if the Bidder is the successful Bidder, upon our receipt of copies of the Contract Agreement signed by the Bidder and the Performance Security issued to you upon the instruction of the Bidder; or (b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy of your notification to the Bidder of the name of the successful Bidder, or (ii) 28 days after the expiration of the Bidder's bid.

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.²

. *Authorized signature(s) and bank's seal (where appropriate)*

-- Note --

In case of a joint venture, the bid security must be in the name of all partners to the joint venture that submits the bid.

¹ All italicized text is for use in preparing this form and shall be deleted from the final document.

² Or 758 as applicable.

Manufacturer's Authorization

Date: *[insert date (as day, month, and year) of bid submission]*

NCB No.: *[insert number of bidding process]*

To: *[insert complete name of the purchaser]*

WHEREAS

We *[insert complete name of the manufacturer]*, who are official manufacturers of *[insert type of goods manufactured]*, having factories at *[insert full address of manufacturer's factories]*, do hereby authorize *[insert complete name of the bidder]* to submit a bid the purpose of which is to provide the following goods, manufactured by us *[insert name and/or brief description of the goods]*, and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 28 of the General Conditions, with respect to the goods offered by the above firm.

Signed: *[insert signature(s) of authorized representative(s) of the manufacturer]*

Name: *[insert complete name(s) of authorized representative(s) of the manufacturer]*

Title: *[insert title]*

Duly authorized to sign this Authorization on behalf of *[insert complete name of the manufacturer]*

Dated on _____ day of _____, _____ *[insert date of signing]*

-- Note --

*All italicized text is for use in preparing this form and shall be deleted from the final document.
The bidder shall require the manufacturer to fill out this form in accordance with the instructions indicated. This letter of authorization should be signed by a person with the proper authority to sign documents that are binding on the manufacturer. The bidder shall include it in its bid, if so indicated in the Bid Data Sheet (BDS).*

Bidder's Qualification

To establish its qualifications to perform the contract in accordance with Section 3 (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 a Joint Venture, 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 number(s), fax number(s) and e-mail address)	
Attached are copies of the following documents: <ul style="list-style-type: none"> <input type="checkbox"/> 1. In case of a single entity, articles of incorporation or constitution of the legal entity named above, in accordance with ITB 4.1 and ITB 4.2 <input type="checkbox"/> 2. Authorization to represent the firm or Joint Venture named above, in accordance with ITB 22.2 <input type="checkbox"/> 3. In case of a Joint Venture, a letter of intent to form a Joint Venture or Joint Venture agreement, in accordance with ITB 4.1 <input type="checkbox"/> 4. In case of a government-owned enterprise, any additional documents not covered under 1 above required to comply with ITB 4.5 	

Form ELI - 2: Joint Venture Information Sheet

Each member of the Joint Venture must fill out this form separately.

Joint Venture Information	
Bidder's legal name	
Joint Venture Partner's legal name	
Joint Venture Partner's country of constitution	
Joint Venture Partner's year of constitution	
Joint Venture Partner's legal address in country of constitution	
Joint Venture Partner's authorized representative information (name, address, telephone number(s), fax number(s) and e-mail address)	
Attached are copies of the following documents: <ul style="list-style-type: none"> <input type="checkbox"/> 1. Articles of incorporation or constitution of the legal entity named above, in accordance with ITB 4.1 and ITB 4.2 <input type="checkbox"/> 2. Authorization to represent the firm named above, in accordance with ITB 22.2 <input type="checkbox"/> 3. In the case of a government-owned enterprise, documents establishing legal and financial autonomy and compliance with commercial law, in accordance with ITB 4.5 	

Form EXP - 1: Contractual Experience

Fill out one (1) form per contract.

Contractual Experience		
Contract No of	Contract Identification	
Award Date		Completion Date
Role in Contract	<input type="checkbox"/> Manufacturer <input type="checkbox"/> Supplier <input type="checkbox"/> Subcontractor	
Total Contract Amount		
	\$	
If partner in a joint venture or subcontractor, specify participation of total contract amount	Percent of Total	Amount
Purchaser's name Address Telephone/Fax Number E-mail		
Description of the Similarity in Accordance with Criterion 2.2.1 of Section 3 (Evaluation and Qualification Criteria)		
At least one contract with equal or greater than 28km of 11kV or greater and 400V or 11 KV Transmission & Distribution line of micro/mini/ small hydropower project or Electrical Distribution system successfully completed as main supplier/contractor within the last Five (5) years.		

- Note -

This form shall only be included if Criterion 2.2.1 of Section 3 (Evaluation and Qualification Criteria) is applicable.

Form EXP - 2: Technical Experience

Fill out one (1) form per contract.

Technical Experience	
Name of Product	
Manufacturer:	Address and Nationality:
Requirements in Accordance with Criterion 2.2.2 of Section 3 (Evaluation and Qualification Criteria)	
(i) Product has been in production for at least three (3) years.	
(ii) Product (or equipment) has been sold a minimum of three (3) units of similar type and specification over the last three (3) years.	
(iii) Product has been in operation for a minimum of two (2) years.	

- Note -

This form shall only be included if Criterion 2.2.2 of Section 3 (Evaluation and Qualification Criteria) is applicable. Add pages as necessary. The Purchaser reserves the right to verify authenticity of Bidder submissions.

Form EXP - 3: Production Capacity

Fill out one (1) form per product and manufacturer.

Production Capacity	
Name of Product	
Manufacturer:	Address and Nationality:
Requirements in Accordance with Criterion 2.2.3 of Section 3 (Evaluation and Qualification Criteria)	
Production facility 1 (include location): The Bidder or Manufacturer should have supplied at least one equal or greater than 28km of 11kV and 400V or 11 KV Transmission & Distribution line of micro/ mini/ small hydropower project or Electrical Distribution system within the last Five (5) years.	
Production facility 2 (include location):	
Production facility 3 (include location):	

- Note -

This form shall only be included if Criterion 2.2.3 of Section 3 (Evaluation and Qualification Criteria) is applicable. The Purchaser reserves the right to verify authenticity of Bidder submissions.

Form FIN - 1: Historical Financial Performance

Each Bidder must fill out this form.

In case of a Joint Venture, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner's name below:

Joint Venture Partner: _____

Financial Data for Previous Three (3) Years [NRs Equivalent]		
Year 1:	Year 2:	Year 3:

Information from Balance Sheet

Total Assets (TA)			
Total Liabilities (TL)			
Net Worth = TA-TL			
Current Assets (CA)			
Current Liabilities (CL)			
Working Capital = CA - CL			

Most Recent Working Capital		To be obtained for most recent year and carried forward to FIN - 3 Line 1; in case of joint ventures, to the corresponding Joint Venture Partner's FIN - 3.
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Information from Income Statement

Total Revenues			
Profits Before Taxes			
Profits After Taxes			

- ☐ Attached are copies of financial statements (balance sheets including all related notes, and income statements) for **the last three (3) years**, as indicated above, complying with the following conditions:
- Unless otherwise required by Section 3 of the Bidding Documents, all such documents reflect the financial situation of the legal entity or entities comprising the Bidder and not the Bidder's parent companies, subsidiaries, or affiliates.
 - Historical financial statements must be audited by a certified accountant.
 - Historical financial statements must be complete, including all notes to the financial statements.
 - Historical financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

- Note -

This form shall only be included if Criterion 2.3.1 of Section 3 (Evaluation and Qualification Criteria) is applicable.

Form FIN - 2: Size of Operation (Average Annual Turnover)

Each Bidder must fill out this form.

The information supplied should be the Annual Turnover of the Bidder or each member of a Joint Venture in terms of the amounts billed to clients for each year for work in progress or completed, converted to US dollars at the rate of exchange at the end of the period reported.

In case of a Joint Venture, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner's name below:

Joint Venture Partner: _____

Annual Turnover Data for the Last Three (3) Years			
Year	Amount Currency	Exchange Rate	Equivalent (Nepalese Rupees)
Average Annual Turnover			

- Note -

This form shall only be included if Criterion 2.3.2 of Section 3 (Evaluation and Qualification Criteria) is applicable.

Section 5 - Eligible Countries

“No nationality restrictions apply, other than any restrictions arising from ITB 4.7”

Section 6 - Schedule of Supply

Contents

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1. List of Goods and Related Services

Procurement of Supply, Delivery, Construction, Installation, Testing and Commissioning of 11 kV Transmission line and 400V/220V single and three phase line System of **Khatyad Khola Birabagar Sera Khola Mini Hydro Subproject, Sukhadik, Mugu District, Nepal** including all accessories as per Schedule-A, Schedule-B & Technical Specifications

Schedule-A:

Item No.	Item Description	Quantity	Unit of Measurement
101	Distribution Transformer		
101.1	15 kVA,0.4/11 kV,50 Hz,Oil Immersed, Type of cooling: ONAN,Bare Bushings on both HV and LV side, Vector Group Reference:Dyn11 or Dyn1, Approximate Weight 200 kg , oil quantity 60 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, Lightening Arrestors, Baseframe and H-Poles, Earthing all in Place	4	Set
101.2	25 kVA,0.4/11 kV,50 Hz,Oil Immersed, Type of cooling: ONAN,Bare Bushings on both HV and LV side,Vector Group Reference:Dyn11 or Dyn1,Approximate Weight 320 kg , oil quantity 90 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, Lightening Arrestors, Baseframe and H-Poles, Earthing all in Place	4	Set
101.3	35 kVA,0.4/11 kV,50 Hz,Oil Immersed, Type of cooling: ONAN,Bare Bushings on both HV and LV side,Vector Group Reference:Dyn11 or Dyn1,Approximate Weight 375 kg , oil quantity 105 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, Lightening Arrestors, Baseframe and H-Poles, Earthing all in Place	2	Set
101.4	50 kVA,0.4/11kV,50 Hz,Oil Immersed,Type of cooling: ONAN,Bare Bushings on both HV and LV side,Vector GroupReference:Dyn11 or Dyn1,Approximate Weight 480 kg ,oil quantity 120 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, LighteningArrestors, Baseframe and H-Poles, Earthing all in Place	9	Set
101.5	75 kVA,0.4/11kV,50 Hz,Oil Immersed, Type of cooling: ONAN,Bare Bushings on both HV and LV side,Vector Group Reference:Dyn11 or Dyn1,Approximate Weight 480 kg, oil quantity 120 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, Lightening Arrestors, Baseframe and H-Poles, Earthing all in Place	1	Set

Item No.	Item Description	Quantity	Unit of Measurement
102	Steel Tubular Poles Including fittings of hardware, insulators and channels all complete		
102.1	8 m Pole of Bottom Section (4.5 m Long, Outer Dia. 139.7 mm, Thickness 4.5 mm), Mid Section (1.75 m Long, Outer Dia. 114.3 mm, Thickness 3.65 mm) and Top Section (1.75 m Long, Outer Dia. 88.9 mm, Thickness 3.25 mm), Ground Clearance 5.5 m, Minimum weight 90 kg (For LT Single phase 0.22kV Distribution)	396	set
102.2	9 m Pole of Bottom Section (5 m Long, Outer Dia. 165.1 mm, Thickness 4.5 mm), Mid Section (2 m Long, Outer Dia. 139.7 mm, Thickness 4.5 mm) and Top Section (2 m Long, Outer Dia. 114.3 mm, Thickness 3.65 mm), Ground Clearance 6.1 m, Minimum weight 120 kg (For 3 Phase, LT(0.4kV Distribution Line)	332	set
102.3	10 m Pole of Bottom Section (5.2 m Long, Outer Dia. 165.1 mm, Thickness 4.5 mm), Mid Section (2.4 m Long, Outer Dia. 139.7 mm, Thickness 4.5 mm) and Top Section (2.4 m Long, Outer Dia. 114.3 mm, Thickness 3.65 mm), Ground Clearance 6.1 m, Minimum weight 150 kg (For 11kV HT and Composite Lines, Double Pole)	1184	set
102.4	11 m Pole of Bottom Section (5.6 m Long, Outer Dia. 165.1 mm, Thickness 4.5 mm), Mid Section (2.7 m Long, Outer Dia. 139.7 mm, Thickness 4.5 mm) and Top Section (2.7 m Long, Outer Dia. 114.3 mm, Thickness 3.65 mm), Ground Clearance 6.1 m, Approximate weight 176 kg (For Pole Mounted Transformers and River Crossings)	70	set
103	Channels		
103.1	1.5m long Channel angle bracngs with 100x50x6.4x5x1500 mm Channel, 40x40x5x1200 mm angle bracng, nuts and bolts (For 11kV 3phase, 11kV 3 Phase with Composite Line)	1034	Set
103.2	2m long Channel angle bracings of 100x50x6.4x5x2000 mm Channel, 40x40x5x1200 mm angle bracng, nuts and bolts (Rivercrossing and Double Pole)	257	Set
103.3	Transformer mounting set with necessary channels, bracings, nuts and bolts, all complete	20	Set
104	Conductors and Cables		
104,1	Squirrel cables of 13 Sqmm Cross Section ACSR, Minimum Weight (80 kg/kM), 76 A Current Rating, Resistance 1.374 Ohm/kM and conductor packed in 40 kg bundle for easy transportation	296	km
104.2	Rabbit cables of 50 Sqmm Cross Section ACSR, Minimum Weight (214 kg/kM), 178 A Current Rating, Resistance 0.5426 Ohm/kM and conductor packed in 40 kg bundle for easy transportation	30	km
104,3	1.1 kV Copper XLPE power cable, 4 Core all termination and	400	m

Item No.	Item Description	Quantity	Unit of Measurement
	jointing kit to complete the scope of work for connecting Transformer and MCCB.(Please check as per above transformer Ratings) @ 20 mt/Transformer		
105	Insulators and Fittings		
105.1	Small Size : Dimension (55 mm x 55 mm); Weight 200 gm; uto be used in single phase distribution with squirrel ACSR, associated D-Iron fittings. (For single phase)	828	Set
105.2	Medium Size : Dimension (75 mm x 90 mm);Weight 600 gm; applicable inGopher, Weasel and Rabbit Conductors, associated D-Iron fittings.(For 3 Phase Distribution Line)	4895	Set
105.3	Pin Insulators (Pc) : 11 kV porcealin pin insulator, cantilever strength 5 kN, pin fittings, all complete. (For 11kV HT line and Composite Lines)	3418	Set
105.4	Disc Insulators (Pc) : 11 kV porcealin disc insulator, diameter 255 mm, mechanical strength 45 kN, tension set all complete (For 11kV HT line and Composite Lines)	2146	Set
106	Stay Sets		
106.1	LT Stay Set : Length of Stay Rod (1.8 m), dia. (16 mm), Ultimate Tensile Strength (4200 kg/Sq.mm.), Minimum Breaking Load (7272 kg),Length of Threaded Portion (300 mm), Thimble Shape (Suitable for 7/22 SWG Stay Wire), Minimum Thimble Section (18 SWG), Stay Plate Section (600 mm x 600 mm x 3 mm MS Plate), Eyebolt Length mm/1 (300 mm), Stay Wire (7/12 SWG Steel Wire, 700 Grade, 45 ton Steel Quality, 2.64 mm dia.,Minimum Wt. /km (300 kg) For single phase and 3 phase	198	Sets
106.2	HT Stay Set : Length of Stay Rod (2.44 m), dia.(19 mm), Ultimate Tensile Strength(4200 kg/Sq.mm.), MinimumBreaking Load (10454 Kg), Length of Threaded Portion (300 mm), Thimble Shape (Suitable for 7/22SWG Stay Wire), MinimumThimble Section (18 SWG), StayPlate Section (600 mm x 600 mm x 3 mm MS Plate), Eyebolt Lengthmm/1 (300 mm), Stay Wire (7/8SWG Steel Wire, 700 Grade, 45 tonSteel Quality, 4.06 mm dia.,Minimum Wt. /km (720 kg)(For 11kV, 11kV with Composite, Double Pole, Transformer and River Crossings)	374	Sets
107	Switchgear and Protection		
107.1	25 A MCCB : 600 V rated voltage, 50 Hz rated frequency, 3 pole, 25 A rated current, 25 kA breaking current, thermal magnetic or static trip.	4	set
107.2	40 A MCCB : 600 V rated voltage, 50 Hz rated frequency, 3 pole, 40 A rated current, 25 kA breaking current, thermal magnetic or static trip.	4	Set
107.3	50 A MCCB : 600 V rated voltage, 50 Hz rated frequency, 3 pole, 50 A rated current, 25 kA breaking current, thermal magnetic or static trip.	2	Set
107.4	80 A MCCB : 600 V rated voltage, 50 Hz ratedfrequency, 3	9	Set

Item No.	Item Description	Quantity	Unit of Measurement
	pole, 80 A rated current, 25 kA breaking current, thermal magnetic or static trip.		
107.5	100 A MCCB : 600 V rated voltage, 50 Hz rated frequency, 3 pole, 360 A rated current, 35 kA breaking current, Thermal –adjustable magnetic or static trip.	1	Set
107.6	Copper Plate Earthings : 8 SWG Copper earth wire with 600 mm x 600 mm x 3 mm copper plate (9.65 kg) as earth electrode with necessary coal, lime, salt, nut, bolts, washer, 160 mm polythene pipe etc. all complete	243	Set
107.7	Lightning arrestor ,0.5 kV : Three Phase, 0.5 kV, Three Phase, 50 Hz with ISO 9001 Certified Manufacturer for (3 phase and Single Phase LT-0.44/0.22 kV)	79	Set
107.8	9-kV intermediate Lightning Arrestor : Three Phase, wye Connected, unigrounded, 9 kV, 50 Hz, temperature ranging - 5 degree to 45 degree Centigrade, Housing Polymer type, Surge Arrestor shall be of gapless metal-oxide type, Steel channel (100x50x50x6 mm), ISO 9001 Certified Manufacturer (For 11kV HT, 11kV HT with Composite, Double Pole and Transformer Mounting Poles)	184	Set
107.9	DO Fuse Set : DO Fuse Sets of ratings indicated asin report, with enough spare of fuse wire. (For 21 Transformers and DO/2.5km for 11kV and composite with gang switch)	40	Set
107.10	Gang Switch-GS (Isolator) with ES, 3 Phase, 11kV, 100 amp	15	Set

Schedule-B:

Item No.	Item Description	Quantity	Unit of Measurement
201	Installation of Distribution Transformer with necessary fittings, hardwares, insulators, MCCB and Channels etc. all complete and Commissioning		
201.1	15 kVA, 0.4/11 kV, 50 Hz, Oil Immersed, Type of cooling: ONAN, Bare Bushings on both HV and LV side, Vector Group Reference: Dyn11 or Dyn1, Approximate Weight 200 kg, oil quantity 60 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, Lightning Arrestors, Baseframe and H-Poles, Earthing all in Place	4	Set
201.2	25 kVA, 0.4/11 kV, 50 Hz, Oil Immersed, Type of cooling: ONAN, Bare Bushings on both HV and LV side, Vector Group Reference: Dyn11 or Dyn1, Approximate Weight 320 kg, oil quantity 90 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, Lightning Arrestors, Baseframe and H-Poles, Earthing all in Place	4	Set
201.3	35 kVA, 0.4/11 kV, 50 Hz, Oil Immersed, Type of cooling: ONAN, Bare Bushings on both HV and LV side, Vector Group Reference: Dyn11 or Dyn1, Approximate Weight 375 kg, oil quantity 105 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, Lightning Arrestors, Baseframe and H-Poles, Earthing all in Place	2	Set
201.4	50 kVA, 0.4/11 kV, 50 Hz, Oil Immersed, Type of cooling: ONAN, Bare Bushings on both HV and LV side, Vector Group Reference: Dyn11 or Dyn1, Approximate Weight 480 kg, oil quantity 120 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, Lightning Arrestors, Baseframe and H-Poles, Earthing all in Place	9	Set
201.5	75 kVA, 0.4/11 kV, 50 Hz, Oil Immersed, Type of cooling: ONAN, Bare Bushings on both HV and LV side, Vector Group Reference: Dyn11 or Dyn1, Approximate Weight 480 kg, oil quantity 120 Litre, Brand name to be mentioned with all connecting accessories, DO Fuse, Lightning Arrestors, Baseframe and H-Poles, Earthing all in Place	1	Set
202	Erection of Steel Tubular Poles with necessary accessories (Fittings, Insulators and channels etc.) all complete and Commissioning		
202.1	8 m Pole of Bottom Section (4.5 m Long, Outer Dia. 139.7 mm, Thickness 4.5 mm), Mid Section (1.75 m Long, Outer Dia. 114.3 mm, Thickness 3.65 mm) and Top Section (1.75 m Long, Outer Dia. 88.9 mm, Thickness 3.25 mm), Ground Clearance 5.5 m, Minimum weight 90 kg (For LT Single phase 0.22kV Distribution)	396	set
202.2	9 m Pole of Bottom Section (5 m Long, Outer Dia. 165.1 mm, Thickness 4.5 mm), Mid Section (2 m Long,	470	set

Item No.	Item Description	Quantity	Unit of Measurement
	Outer Dia. 139.7 mm, Thickness 4.5 mm) and Top Section (2 m Long, Outer Dia. 114.3 mm, Thickness 3.65 mm), Ground Clearance 6.1 m, Minimum weight 120 kg (For 3 Phase, LT(0.4kV Distribution Line)		
202.3	10 m Pole of Bottom Section (5.2 m Long, Outer Dia. 165.1 mm, Thickness 4.5 mm), Mid Section (2.4 m Long, Outer Dia. 139.7 mm, Thickness 4.5 mm) and Top Section (2.4 m Long, Outer Dia. 114.3 mm, Thickness 3.65 mm), Ground Clearance 6.1 m, Minimum weight 150 kg (For 11kV HT and Composite Lines, Double Pole)	1184	set
202.4	11 m Pole of Bottom Section (5.6 m Long, Outer Dia. 165.1 mm, Thickness 4.5 mm), Mid Section (2.7 m Long, Outer Dia. 139.7 mm, Thickness 4.5 mm) and Top Section (2.7 m Long, Outer Dia. 114.3 mm, Thickness 3.65 mm), Ground Clearance 6.1 m, Approximate weight 176 kg (For Pole Mounted Transformers and River Crossings)	70	set
203	Stringing of Conductors and Cables including transportation to site, laying of conductor, necessary fitting of hardware, insulators, channel and tensioning complete and Commissioning		
203.1	Stringing of 13 Sqmm, Squirrel ACSR, 3 Wire (11kV)	30.1	km
203.2	Stringing of 13 Sqmm, Squirrel ACSR, 4 Wire (0.4kV, 3 Phase, LT Line)	14.15	km
203.3	Stringing of 50 Sqmm, Rabbit ACSR, 4 Wire (0.4 kV, LT Line)	7.12	km
203.4	Stringing of 13 Sqmm, Squirrel ACSR, 2 Wire (0.22kV, 1 Phase, LT)	17.62	km
203.5	Stringing of 50 Sqmm, Rabbit ACSR, 2 Wire (0.22kV, 1 Phase, LT)	0.34	km
203.6	Stringing of 50 Sqmm, Squirrel ACSR Composite Line (11kV, 3 Phase, 3 Wire) and (0.4kV, 3 Phase, 4 Wire)	14.47	km
203.7	Stringing of 50 Sqmm, Squirrel ACSR Composite Line (11kV, 3 Phase, 3 Wire) and (0.4kV, 1 Phase, 2 Wire)	2.38	km
204	Installation and Fitting of Stay Sets including transportation to site, necessary fitting of hardware, insulators and channels		
204.1	LT Stay Set : Length of Stay Rod (1.8 m), dia. (16 mm), Ultimate Tensile Strength (4200 kg/Sq.mm.), Minimum Breaking Load (7272 kg), Length of Threaded Portion (300 mm), Thimble Shape (Suitable for 7/22 SWG Stay Wire), Minimum Thimble Section (18 SWG), Stay Plate Section (600 mm x 600 mm x 3 mm MS	198	Sets

Item No.	Item Description	Quantity	Unit of Measurement
	Plate), Eyebolt Length mm/1 (300 mm), Stay Wire (7/12 SWG Steel Wire, 700 Grade, 45 ton Steel Quality, 2.64 mm dia., Minimum Wt. /km (300 kg) For single phase and 3 phase		
204.2	HT Stay Set : Length of Stay Rod (2.44 m), dia. (19 mm), Ultimate Tensile Strength (4200 kg/Sq.mm.), Minimum Breaking Load (10454 Kg), Length of Threaded Portion (300 mm), Thimble Shape (Suitable for 7/22 SWG Stay Wire), Minimum Thimble Section (18 SWG), Stay Plate Section (600 mm x 600 mm x 3 mm MS Plate), Eyebolt Length mm/1 (300 mm), Stay Wire (7/8 SWG Steel Wire, 700 Grade, 45 ton Steel Quality, 4.06 mm dia., Minimum Wt. /km (720 kg) (For 11kV, 11kV with Composite, Double Pole, Transformer and River Crossings)	374	Sets
205	Installation and Fitting of Switchgear and Protection including transportation to site, necessary fitting of hardwares, inulators and other accessories all complete and Commissioning		
205.1	Copper Plate Earthings : 8 SWG Copper earth wire with 600 mm x 600 mm x 3 mm copper plate (9.65 kg) as earth electrode with necessary coal, lime, salt, nut, bolts, washer, 160 mm polythene pipe etc. all complete	243	Set
205.2	Lightning arrestor ,0.5 kV : Three Phase, 0.5 kV, Three Phase, 50 Hz with ISO 9001 Certified Manufacturer for (3 phase and Single Phase LT- 0.44/0.22 kV)	79	Set
205.3	9-kV intermediate Lightening Arrestor : Three Phase, weye Connected, ungrounded, 9 kV, 50 Hz, temperature ranging -5 degree to 45 degree Centigrade, Housing Polymer type, Surge Arrestor shall be of gapless metal- oxide type, Steel channel (100x50x50x6 mm), ISO 9001 Certified Manufacturer (For 11kV HT, 11kV HT with Composite, Double Pole and Transformer Mounting Poles)	184	Set
205.4	DO Fuse Set : DO Fuse Sets of ratings indicated as in report, with enough spare of fuse wire. (For 21 Transformers and DO/2.5km for 11kV and composite with gang switch)	40	Set
205.50	Gang Switch-GS (Isolator) with ES, 3 Phase, 11kV, 100 amp	15	Set
206	Providing and Laying PCC Concrete M15 at Pole Cladding with 0.30x.30x0.30 size for 11kV HT, Composite and Transformer Poles for total 1254 Poles.	1254	Nos.
207	Transportation of all goods from Supplier's warehouse to Subproject site	1	Lump Sum

Item No.	Item Description	Quantity	Unit of Measurement
208	Envirommental Mitigation and Monitoring (Provisional Sum)	1	Provisional Sum

2. Delivery and Completion Schedule

The delivery period shall start as of the date of Signing the Contract Agreement.

Item No.	Description of Goods or Related Services	Delivery Schedule (Duration)	Location		Required Arrival Date of Goods or Completion Date for Related Services
1	Delivery of all goods as per List of Goods and Related Services	150 days after signing of Contract Agreement	Khaytyad Municipality, District, Nepal	Rural Mugu	Supply, Delivery, Installation, Testing and Commissioning should be completed within 365 days from of Signing the Contract Agreement.
2	Installation of Transmission and Distribution line	Completion 170 within days after delivery of equipment at site	Khaytyad Municipality, District, Nepal	Rural Mugu	
6	Testing and commissioning	45 days after completion of Item No. 1 & 2	Khaytyad Municipality, District, Nepal	Rural Mugu	

3. Technical Specifications

The purpose of the Technical Specifications (TS) is to define the technical characteristics of the Goods and Related Services required by the Contractor. The TS, as a part of the schedule of Requirements (SR), constitute a Contract document and are, therefore, a part of the Contract.

The Bidder shall furnish a clause-by-clause commentary on specification, specifying compliance and deviations, if any. This must be furnished; otherwise, the Bid may be rejected.

3.1 General

Evacuation of power from the 500 KW mini-hydro generation facilities at Khatyad Gaunpalika (1-10) (Former VDCs- Hyanglu (1-9), Sukadik (1-9), Kotdanda (1-9), Shreekot (1-9), Seri (1-9)), Mugu is proposed to electrify total of 2927HH by medium voltage line and to connect the various load centers. The two generating units are synchronized and connected to a single bus, which is then connected to an outdoor type single step up transformer to transform the whole generated power from 400 volts to 11 KV.

Looking at past installations, there appeared no uniform standard as to what should be the distribution / medium voltage levels. There are cases of 11KV lines followed some implementing agencies, so the transmission and distribution line are designed accordingly.

The scope of works for transmission/distribution line and consumer connection under the feasibility survey includes reconnaissance route survey and based on this designing the system, specifying major components, estimating bills of quantities and costs. The detail survey and designing could be packaged into supply, delivery, construction and testing/commissioning of Transmission and Distribution Line component.

1. A single circuit 3 phase 3 wire 11 kV overhead transmission line is proposed to connect the powerhouse step up substation switchyard to various distribution substations. The distribution substations will connect consumers' premises through 230/400V 3 phase 4 wire overhead lines, to transmit and distributed power consumers. This constitutes one step up substation at the powerhouse and 20 step-down substations at various load centers.

Length of 11KV line only:	30.1 km
2. Length of 11KV/400V composite lines only:	14.47 km
3. Length of 11KV/230V composite lines only:	2.38 km
4. Length of 400Vover head line only:	21.3 km
5. Length of 230Vover head line only:	18 km
6. Total One way Length	86.25km

3.2 TUBULAR STEEL POLE

A. Scope

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

B. General

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

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.

C. Description

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.
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. 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.
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.
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.
6. The bottom section of the poles shall be galvanized with minimum coating of weight not less than 460-gm/-sq. m internally and externally. The length of the bottom section including the base plate to be galvanized shall be as follows:

11 m pole	5.6 m
10 m pole	5.2 m

9 m pole	5 m
8 m pole	4.5 m

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

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.
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.
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.
10. Each pole shall be marked with the appropriate length a shown in table 1.the length of designation followed by the appropriate drilling pattern letter, shall be black stencil painted with numerical and letters approximately five(5) centimeters in height e.g- 11-c the marking shall be located on the surface f the pole at distance of 1.5 meters above the deign ground line. The size of the base plate shall be as per governing standard.

D. Tolerance

The following tolerances shall be maintained:

- a) Tolerance of diameter: $\pm 1\%$
- b) Tolerance on weight: $\pm 7.5\%$ on each pole.
 $\pm 5\%$ on a bulk load.
- c) Tolerance on thickness: $\pm 10\%$ on each sheet.
- e) Straightness: The finished poles shall not be out of straightness by more than $1/600$ of the height.

E. Tests

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

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

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

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.

F. 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.

G. 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.

H. 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.

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.

I. 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.

J. Bid Documentations

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.
2. The Bidder shall provide a description and certified dimensional drawings of each type of pole otherwise the bid offer shall be rejected.
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.
4. A clause-by-clause commentary of specification, specifying compliance and deviations, if any.
5. All data, drawings, catalogues and other technical documents shall be bound separately from the Bid documents.

Table 1
Poles specifications

IS Designation	410SP- 52	410 SP-43	410 SP-31	410 SP-13
Overall Length	11 m	10 m	9 m	8 m
Planting depth.m	1.8	1.8	1.5	1.5

Sections:

Length, m

Top (h1)	2.7	2.4	2	1.75
Middle (h2)	2.7	2.4	2	1.75
Bottom (h3)	5.6	5.2	5	4.50

Outside Diameter, mm

Top (h1)	114.3	114.3	114.3	88.9
Middle (h2)	139.7	139.7	139.7	114.3
Bottom (h3)	165.1	165.1	165.1	139.7

Thickness, mm

Top (h1)	3.65	3.65	3.65	3.25
Middle (h2)	4.5	4.5	4.5	3.65
Bottom (h3)	4.5	4.5	4.5	4.5

Approximate weight, Kg	130	120	100	82
Crippling load, kgf	307	348	367	301

Application of load from

top of pole, m	0.6	0.6	0.3	
Load for Permanent				190Kgf
Set test				
Load for Temporary				83Kgf
Deflection test				
Breaking load				390Kgf

3.3 STAY SET**Scope**

This Specification covers the fabrication and supply of adjustable threaded, galvanized steel stay sets for use in overhead line construction.

Material

1. The stay set shall consist of mild steel, galvanized stay rod, stay tightened (turn buckle) or adjustable head, eyebolt for pre-stressed concrete pole thimbles complete with stay plate as shown in the conceptual drawings.
2. The manufacturer of the Stay Set must have been accredited with ISO 9001:2008 with design and manufacturing quality certification.
3. The stay rod and stay tightened shall be made of mild steel of minimum ultimate tensile strength of 4200-kg/sq. cm.
4. The stay plate shall be square type mild steel plate.

5. The thimbles shall be made of 1.219mm (18 SWG) GI sheet.

Description

1. The stay set shall conform to the conceptual drawings of stay set and its associate hardware given in drawing and shall have the technical features and dimensions included in Table 1.
2. The stay rod is either thimble-eye type or twin-eye type. The stay rod and suitable nut shall be fabricated to the shape and dimensions shown in drawing. The thimble-eye or twin-eye of the stay rod shall be made by drop-forged processing. The thread form at the threaded end of the rod, and that of the accompanying nut, shall be optional with the supplier. However, it shall be the responsibility of the Supplier to supply the stay rod with a thread form that shall sustain the rated loads specified in Table 1 without creep or stripping over the full life of the rod material at specified diameter.
3. The stay tightened shall be fabricated in accordance with the conceptual drawing.
4. The eyebolt shall be oval-eye type. The eyebolt shall be made by drop-forged processing. The eyebolt shall be supplied with suitable nut and washer.
5. The Stay plate shall be square and the plate shall have a matching hole at the center to fit the end of the stay rod.
6. The thimble shall be suitable for terminating steel stay wire with a preformed grip.
7. After galvanizing, the nut and rod threading shall be such that the nut may be run the full length of the thread without the use of tools.

Galvanizing

All ferrous parts of the stay set shall be galvanized after fabrication in accordance with IS: 2629-1985 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.

Bid documentation

The Bidder shall furnish with the Bid a complete description of the stay sets proposed to be supplied including, but not limited to, steel classification of base metal, detailed drawings showing shape, dimensions, and threading certified type test results the identity of the proposed manufacturer, and manufacturers catalogue number, plus catalogue cuts. The technical data furnished shall be bound separately from the Bid Document.

RATINGS AND FEATURES

Length of stay rod, m.	1.8
Diameter of stay rod, mm.	16
Ultimate tensile strength of stay rod and tightner (min.), kg/sq. mm	4200
Minimum breaking load, kg.	6433
Length of threaded portion, mm.	300
Thimble shape	Suitable for preformed for 7/12 SWG stay wire
Thimble section Min.), SWG	18
Stay plate section, mm.	300x300x6
Eyebolt length, mm./1	300
Galvanization	IS:2629 1985
Stay plate section	300*300*6 mm

STAY FEATURES

Particulars	HT Stay Set	LT Stay Set
Length of stay rod	2.44 m	1.8 m
Diameter of stay rod	19 mm	16 mm
Ultimate tensile strength of stay rod and turn-buckle	4200 Kg/sq.cm	4200 kg/sq.cm
Minimum breaking load	10,454 kg	7272 kg
Length of threaded portion	300 mm	300 mm
Thimble shape	Suitable for	Suitable for
	7/22 SWG stay wire	7/22 SWG stay wire

Thimble section	18 SWG (min.)	18 SWG (min.)
Stay plate section	600x600x3mm	600x600x3mm
Eyebolt length	300 mm	300mm

3.4 STRANDED STAY WIRE

Scope

This Specification covers the fabrication and supply of galvanized stranded steel wire for use in overhead power line as stay wire ropes for line supports.

Description

1. The steel strand shall be fabricated in accordance with B.S. 183 1972/ (1983) or any revision thereof or other equivalent national or international standard provided that the resulting steel stock is of equal quality and strength. The minimum tensile strength of the steel shall be 4200 kg/cm². The wires shall be 45-ton quality.
2. The steel wire strand shall have a left-hand lay. The steel wires shall have no joint throughout the whole length. Strands shall be uniform and shall have no defects such as cracks, dust encapsulation or crevices. Further details are given in Table 1 herein.
3. The manufacturer of the Stranded Stay Wire must have been accredited with ISO 9001:2008 with design and manufacturing quality certification.

Galvanizing

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.

RATING AND FEATURES

Steel Wire Size (No. of wire/SWG)	7/12
Grade	700
Steel quality	45 ton
Diameter of Wires, mm.	2.64
Minimum Weight, kg/km	300
Applicable Standard	B.S. 183 1972/(1983)
Galvanization	IS: 2629-1985

3.5 GALVANISED STEEL BOLTS, NUTS AND MISCELLANEOUS FASTENING COMPONENTS

Scope

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

Material

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.

General

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.**
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. The manufacturer must have been accredited with ISO 9001:2008 with design and manufacturing quality certification.

Machine Bolt and Nut

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

i. Double-Arming Bolt and Nut

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

ii. Galvanizing

6.1 The stranded stay wire 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.

3.6 PREFORMED WIRE PRODUCTS

Scope

This Specification covers the fabrication and supply of pin insulator ties and wire strand grips for stay set commonly used in overhead power line construction.

Description

1. The design of the preformed wire products specified herein shall be appropriate for the optimum combination of conductor strand diameter, inside diameter, rod diameter, pitch diameter, number of pitch lengths, direction of lay, and raw materials of the specific application.
2. The manufacturer of the Preformed Wire Products must have been accredited with ISO 9001:2008 with design and manufacturing quality certification.

3. The preformed wire product shall be so designed to grip the designated surface evenly, with evenly-spaced gaps, and shall not bridge the gripped surface due to excessive Number of strands in the grip or tie.

Stay Wire	HT Stay Set	LT Stay Set
Steel Wire Size (No. of wire/SWG)	7/12	7/12
Grade	700	700
Steel quality	45 ton	45 ton
Diameter of Wires	4.06 mm	2.64 mm
Minimum Weight	720 kg/km	300 kg/km

Steel Wire Strand Grip for Stay Set

1. The steel wire strand grip shall be designed for use with thimble eye or double eye stay rod and tightener fabricated in accordance SPECIFICATION: SP 1.1, stay wire fabricated in accordance with SPECIFICATION: SP 1.2 (B.S. 183 1972/(1983)) and stay insulator fabricated in accordance with IS:5300-1969.
2. The steel wire strand grip shall be furnished for strand size and grade in accordance with Table 1.
3. The steel wire strand grip shall be manufactured of a galvanized steel wire in cabled loop form with long and short legs. The grip shall have a left-hand lay. Galvanizing shall be equivalent to Class C zinc coating per ASTM A-475.
4. The steel wire strand grip shall be color-coded for strand size and length and shall have one (1) or two (2) crossover marks for different diameter fittings. An identification tag shall be attached showing the manufacturer's catalogue number and applicable strand size.

STEEL WIRE STRANDED GRIPS

Tie Application for Strand Size	Identification Tag and Color Code	
7/8 SWG	GS-1	Red
7/12 SWG	GS-2	Blue

3.7 GROUND RODS AND CLAMPS

Scope

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

Description

Ground Rod

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. The ground rod shall be 19mm in diameter and 8 feet mm in overall length.
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.
4. The manufacturing process shall assure that ground rod does not bend when driven into hard soils.

Ground Rod Clamp

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.
6. The clamp shall suitably accommodate and clamp a 19 mm. ground rod and a stranded grounding conductor of 7/12 SWG size (SPECIFICATION: SP 1.6).

Galvanizing

The galvanization of ground rod and clamp shall be 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.

3.8 GROUNDING CONDUCTOR

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.

Description

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.
2. The manufacturer of ground Conductor must have been accredited with ISO 9001:2000 with design and manufacturing quality certification.

Galvanizing

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.

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
Resistivity	15 Micro-Ohm-cm

3.9 CROSSARMS AND BRACING ANGLES

Scope

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

Material

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

Description

1. The steel cross-arms and bracing angles shall be of sizes shown in the Table 1: Cross arms and bracing angles, contained herein.
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. 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.
4. The steel cross-arm and bracing angles shall be furnished reasonably smooth on all Surfaces and free of burrs or sharp projections.

Galvanizing

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..

STEEL CROSSARM CHANNELS AND ANGLE BRACES

S.NO.	Description	Type	Dimension in mm.
1	Triangular configuration 11,kV Single Pole		
	1.1 Pole Top	Channel	100x50x6.4x5x300
	1.2 Standard	Channel	100x50x6.4x5x1200 100x50x6.4x5x1800
2	H - Pole Structure 11 kV:		
	2.1 Standard	Channel	100x50x6.4x5x2800
	2.2 Bracing Member 2.3 Bracing Member	Angle	100x50x6.4x5x3000 40x40x5x2400

		Angle	40x40x5x1935
3	Lightening Arrester and Cutout Support (at transformer Platform)	Channel	100x50x6.4x5x2800

3.10 TRANSFORMER PLATFORMS

Scope

This specification covers the fabrication and supply of transformer platforms used in overhead power line construction.

Material

1. The transformer platform shall be fabricated from hot rolled channels, angles and steel members.
2. The steel channels and angles for transformer platform shall be fabricated 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.

Description

1. The platform shall be fabricated out of galvanized steel members, field assembled by bolting.
2. The platform will support the transformer above the ground and will be supported by two-pole structures of tubular steel poles or pre-stressed concrete (PSC) poles. Transformers will be bolted to the platform at four (4) points. Provision should be made for the mounting of transformers of different physical dimensions and ratings up to 500 kVA.
3. The platform shall be designed by the supplier and fabricated, in general, in accordance with the conceptual configuration shown in drawing. The design shall provide support for a transformer of a minimum of 1500 kg in weight with a minimum safety factor of 2.0. The Platform shall be stiff and shall be capable of withstanding horizontal forces and an overturning moment due to seismic effects on a transformer with centre of gravity 0.5 meter above its base and seismic horizontal acceleration of 0.4g. The platform shall be stiff and shall not visibly deflect under static loading.
4. The platform shall be supplied disassembled, complete with all required members and fastenings. Packing may be made by banding structural members. Fastenings shall be separately packed. Structural members shall be clearly identified for ease of assembly in accordance with the assembly drawing furnished by the supplier.
5. The platform shall be suitable for fixing to support tubular poles of 150 to 250 mm diameter in the case of tubular poles, and to PSC poles of rectangular section with 250 to 350 mm in width and 140 to 180 mm depth.

Galvanizing

All ferrous parts of transformer platform 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.

DISTRIBUTION TRANSFORMER

Twenty distribution transformer (75KVA-1Nos, 50KVA-9Nos, 35KVA-2Nos, 25KVA-4Nos, 15KVA-4Nos) 11/0.4 kV Yyn0 Dyn11 50 Hz three phase oil immersed off load tap changer on HV side ($\pm 5\%$ $\pm 2 \times 2.5\%$), ON/AN cooling suitable for outdoor installed are proposed for the local distribution.

To step down the transmission voltage to the distribution voltage, transformers of following specifications should be used:

i) Step down Transformer

Type	3-phase, oil immersed, copper owned AVR with parallel operation
Installation	Outdoor
Rated capacity	75 kVA
Rated H.V. winding voltage	11 kV
Rated L.V. winding voltage	0.4 kV
Cooling	ONAN
LV winding connection	Delta
HV winding connection	Star
Vector Group Reference	Yyn0 Dyn11
No Load tap changer (on HV side)	
Voltage regulation range	$\pm 2 \times 2.5\%$
Efficiency	98%
Grounding	
LV winding	- ungrounded
HV winding	- solid

List of Distribution Transformer with rating.

Size	Nos.
75KVA	1
50KVA	9
35kVA	2
25KVA	4
15KVA	4

3.11 POLE CLAMPS

Scope

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

Material

1. The pole clamp shall be fabricated out of hot-rolled steel flat.
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/cm².

Description

1. Outline details of pole clamps are shown in the drawings. Dimensions may be changed to comply with the final pole sizes selected. Therefore, the dimensions must be confirmed with the Project prior to manufacture.
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. The fittings shall be free of burrs, splinters, splits, sharp points and edges, which may damage conductors or show evidence of poor workmanship.
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.
5. The pole clamps shall have a minimum tensile strength of 3182 kg at the bolt-hole and bolt slot.

Galvanizing

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.

3.12 PORCELAIN INSULATORS

SCOPE

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

GENERAL

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. 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.

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.
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.
5. The insulators should be manufactured in automatic temperature-controlled kilns to obtain uniform baking and better electrical and mechanical properties.
6. The manufacturer of the Insulator must have been accredited with ISO 9001 (including design in the scope of registration) quality certification.

SHACKLE INSULATOR

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.
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

MARKING

1. Each insulator shall be legibly and indelibly marked to show the following:
 - a) Name or trademark of manufacturer.
 - b) Year of manufacture.
 - c) Name of the Purchaser as follows: "Khatyad Khola Mini Hydropower User's Committee/ Co-operative"
 - d) Minimum failing load in Newtons (for pin and disc insulators only)

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

TESTS

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

1. TYPE TEST

- 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. Mechanical failing load test
- h. 24-hour mechanical strength test for strain insulators
- i. Puncture test
- j. Porosity test and
- k. Galvanizing test

2. ROUTINE TEST

- Visual examination
- Mechanical routine test
- Electrical routine test

3. BID DOCUMENTATION

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.
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.
3. The Bidder shall furnish two (2) sets of dimensional drawings of all types of porcelain insulators.
4. The Bidder shall provide complete description, catalogue (in original) dimensional drawings of all types of insulators.
5. All data, drawings, catalogues and other technical documents shall be bound separately from the Bid documents.

3.13 SHACKLE INSULATOR FITTINGS

SCOPE

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.

GENERAL REQUIREMENTS

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.

OTHER REQUIREMENTS

- D-Iron type shackle fittings shall consists of the following main components:
 - Mild Steel D-Iron,
 - No. Mild Steel Bolt and Nut,
 - No. Spring Washer.

TESTS

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,
- Galvanising.

2. *Acceptance Tests:*

- Verification of Dimensions,
- Galvanising Tests.

3. *Routine Test:*

- Visual Examination Test.

Features of Shackle Insulator

Highest system voltage	12 kV
Rated voltage	11 kV
Creepage distance (min)	41 mm
Minimum failing load	44 KN
Dry Power frequency withstands voltage, 1 minute:	18 kV
Dry Power frequency withstands voltage, 1 minute:	8 kV

3.14 PIN INSULATOR

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
Rated voltage	11 kV
Creepage distance (min)	230 mm
Wet power frequency withstand voltage	35 kV
Impulse withstand voltage	75 kV
Puncture power frequency voltage (min)	105 kV
Visible discharge voltage	9 kV

(Effective)	
Cantilever strength	5 KN
G I pin head Small Large	
Reference	IS Ref.165P

3.15 DISC INSULATOR

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.

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
Rated 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	

3.16 STAY INSULATOR

A. The stay insulator shall be manufactured and tested in accordance with IS: 5300-1969 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 stay insulator shall have following ratings and features.

Highest system voltage	12 kV
Rated voltage	11 kV
Creepage distance (min)	41 mm
Minimum failing load	44 KN
Power frequency withstands voltage, 1 minute	Dry 18 kV

IS designation

Wet 8 kV
A

B. MARKING

1. Each insulator shall be legibly and indelibly marked to show the following:
 - a) Name or trademark of manufacturer.
 - b) Year of manufacture.
 - c) Name of the Purchaser as follows:
 - d) Minimum failing load in Newton's (for pin and disc insulators only)
2. Markings on porcelain shall be printed and shall be applied before firing.

C. TESTS

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

D. TYPE TEST

- 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. Mechanical failing load test
- h. 24-hour mechanical strength test for strain insulators
- i. Puncture test
- j. Porosity test and
- k. Galvanizing test

E. ROUTINE TEST

- Visual examination
- Mechanical routine test
- Electrical routine test

3.17 ACSR CONDUCTOR

Scope

This Specification covers the fabrication and supply of aluminum conductors, steel reinforced (ACSR) commonly used on overhead power line construction.

Description

1. The manufacturer of the ACSR conductor must have been accredited with ISO 9001 (including design) quality certification.
2. The ACSR conductor shall be a concentrically stranded right-hand lay conductor.
3. The ACSR conductor shall be fabricated in accordance with BS: 215 (Part 2)-1970, or latest revision thereof, or any other national or international standards that ensures a substantially equal quality to the standard mentioned above, will also be acceptable.
4. The conductor types and its specification shall be as follows

<i>Code Name</i>	<i>Nominal</i>	<i>Stranding</i>	<i>Breaking</i>	<i>Mass</i>	<i>Resistance</i>
	<i>Area</i>		<i>Strength</i>		<i>At 20° C</i>
	<i>(Sq. mm)</i>	<i>(Al/Steel)</i>	<i>(kN)</i>	<i>(kg/km)</i>	
<i>(Ohm/km)</i>					
Rabbit	50	6/1	18.35	214	0.540
Squirrel	20	6/1	7.61	85	1.394

Packaging

- The packaging of goods shall be in accordance with B.S. 1559:1949 Reels and wooden drums for bare wire, stranded conductors and trolley wire. All conductors shall be furnished on non-returnable treated seasoned wooden reels. All timber shall be treated to provide protection against rot and insects. Protective external lagging of sufficient thickness shall be provided and fitted closely on the reels. Binder consisting of steel straps shall be provided over the external laggings. The reel shall be new and sufficiently sturdy in construction to withstand ocean shipping, road transport, several loading and unloading, storage in tropics, hauling and field erection of conductor without distortion or disintegration.
- Each reel of the conductors furnished shall contain only one (1) length of conductor.
- All reels shall be legibly marked in paint with the following information:
 - Size of conductor
 - Type of conductor
 - Length in meters
 - Net weight of conductor
 - Direction of rolling
- The standard length of the completed conductor in each reel shall be as per the table below:

Conductor Size (sq. mm):	30
Normal Length of the Conductor (m):	1000

Tests

- The manufactured conductor shall be tested in full compliance with the governing standard including following routine tests:

Aluminum wire

- Tensile test
- Wrapping test
- Resistivity test

Steel wire

- Determination of stress at 1% elongation
- Tensile test
- Torsion test or elongation test as appropriate
- Wrapping test
- Galvanization test
- Ductility test

3.18 LIGHTENING ARRESTOR SET

Scope

The specification covers the manufacture testing and supply of distribution type polymer-housed surge arresters commonly installed on overhead lines.

Description

1. The surge arresters shall be suitable for use on a three phase, way-connected, ungrounded (solid grounding), 11kV, 50Hz distribution circuit at an altitude up to 2000 meters, and ambient temperature ranging from -5 deg C to 45 deg C.
2. The surge arrester housing shall be of polymer type, manufactured using industry recognized polymeric material having superior insulation properties necessary for outdoor installations. The housing shall display in an indelible manner arrester type voltage rating and year of manufacture.
3. The surge arrester shall be of gapless metal oxide type
4. The surge arrester shall have line terminals and ground lead terminals accommodating copper or aluminum conductor sizes from 13.3 mm sq.(6 SWG) through 53.49mm sq.(1/2AWG) Each arrester shall be provided with nut and wire clamp as the line terminal and ground terminal accessory hardware.
5. The surge arresters shall be furnished with necessary mounting bracket and accessories necessary for steel channel (100x50x50x2200) cross-arm mounting.
6. The surge arresters must be manufactured by a company approved to quality standard ISO9001.
7. The surge arresters shall have the following characteristics

		0.4 kV	11kV
a	Type	Outdoor	Outdoor,
b	Voltage rating (Ur) Vrms	0.5	9
c	Nominal System Voltage, KVrms	0.4	11
d	Maximum System Voltage, Kvrms	0.5	12
e	System frequency, Hz	50	50
f	Nominal discharge current, kA	5-20	10

8. The surge arresters shall be manufactured and tested in accordance with IEC99-4(latest revision)

3.19 DISCONNECT SWITCH

Scope

This Specification covers the manufacture, testing and supply of single-pole, pole mounted disconnect switch suitable for double cross arm mounting commonly used in overhead electric power lines.

Description

1. The manufacturer of Disconnect Switches must have been accredited with ISO 9001 including design quality certification.
2. The switch assembly shall be fabricated and tested in accordance with IEC: 265-1 (1988), IEC: 529 (1989) and IEC: 60-1 (1989), latest revision thereof or any other national or international standards that ensures at least a substantially equal quality to the standard mentioned above, will also be acceptable.
3. The switch base shall be rugged and formed steel channel with holes and slots to adapt the switch to various mounting configurations. The switch shall be furnished with straps and hardware for steel cross arm mounting.
4. The switch shall have a silver-plated copper switch-blade. The switchblade shall incorporate a positive locking latch and a large pulling eye and pry-out mechanism.
5. The switch shall include tin-plated connector clamps that accommodate conductors from 25 sq. mm. to 100 sq. mm.

The electrical characteristics of the switch shall be as follows:

	11kV
Rated maximum voltage	12 kV
Nominal voltage	11 kV
Rated frequency	50 Hz
Rated normal current	400 A
Momentary current	40 kA
Rated short circuit making current	25 kA
Impulse withstand voltage	95 kV
Min. power frequency withstand voltage	
Dry	35 kV
Wet	30 kV

Tests

The switch shall be tested in accordance with the relevant provisions of the governing standard.

3.20 CONSTRUCTION STANDARD FOR CONSTRUCTION WORKS

General

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 Project Officer/ Engineer.

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

Route of Circuits

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. 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 Project Officer/ Engineer.

Surveys and Staking

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.
2. All structures shall be so located as to reduce, to the greatest extent practicable, obstacles to pedestrian and vehicular traffic.
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.
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.
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 Project Officer/Engineer.
6. All measuring and staking activity shall be accomplished by personnel with experience in survey procedures; and standard survey equipment acceptable to the Project Officer/Engineer, 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 Project Officer/Engineer at the time of submission of final PCS report. The format of proposed survey notes shall be submitted to the Project Officer/Engineer for approval.
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 Project Officer/Engineer.

Technical Documentation

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 Project Officer/Engineer prior to acceptance by the Project Officer/Engineer of such documentation. All technical documentation shall be prepared in the English language.
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 Project Officer/Engineer. 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.
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 Project Officer/Engineer, and shall be submitted to Project Officer/Engineer for approval prior to any construction of the facilities shown in SDS. Submission of SDS for approval shall be in A4 size paper. Project Officer/Engineer 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 Project Officer/Engineer representative shall perform Field checking of the SDS jointly. The SDS and As Built Plan are intended as permanent records for Project Officer/Engineer. Any construction performed prior to the Contractor's receipt of approved SDS from Project Officer/Engineer shall be completely at the Contractor's risk, and Project Officer/Engineer shall have the right to require any correction due to the un-approved construction activities.
As-Built Drawings shall be prepared by the Contractor in the general format provided by the Project Officer/Engineer. Drawing size shall be approximately 841 x 594 mm overall and the scale shall be 1:5000. The Project Officer/Engineer shall provide any available environmental background data for inclusion on the various drawings and the Contractor shall record (in ink) all facilities As Built.
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 Project Officer/ Engineer.
4. The Contractor shall prepare and furnish Transformer Record documents, in the format specified by the Project Officer/ Engineer, for each transformer installed.

Material Storage

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.
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 Project Officer/ Engineer, at the Contractor's cost.
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 Project sub-stations premises subject to approval of concern Project Substation Authorities.

3.21 Poles and Cross Arms

1. Pole Numbering

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

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 Project Officer/ Engineer shall remove large amounts of excess backfill from the site. If so directed by Project Officer/ Engineer, 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.

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.

Stays

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.

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.

3. Stay Insulators

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

Conductor

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

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.

2. **Sag Charts**

Unless otherwise noted, all sag charts are calculated on the basis of 35 kg/m² 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 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.

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 is 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.

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.

5. Sag Error

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

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.

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. 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.

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.

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.

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.

12. Line Construction

Arrangement of Conductor

The standard position of 33, 11 kV phase conductors on the cross-arm in the normal triangular 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

Bolt holes 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.

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.

Installation Criteria

- 13.1. 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

- 13.2. 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 Project Officer/ Engineer 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.
- 13.3. 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 Project Officer/ Engineer for the approval of the same.
- 13.4. 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.
- 13.5. Safety rules of the Project Officer/ Engineer shall be strictly observed at all times by the Project Officer/ Engineer 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.
- 13.6. 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.
- 13.7. 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 Project Officer/ Engineer in writing and the decision thus made shall be valid for further work.
- 13.8. 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.

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.

Installation of Stays

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
2. Stay may not be installed in the following conditions
HV Line (33, 11 kV) with 11 m Pole
 - a) - Conductor 3x100 mm²
Span 75 m (max)
Break angle: 4 deg.
 - b) - Conductor 3x50 mm²
Span 75 m (max)
Break angle: 5.5 deg.
 - c) - Conductor 3x30 mm²
Span 75 m (max)
Break angle: 6.5 deg.

Composite (HV +LV) line with 11 m pole

- a) - Conductor 3x100 mm² HV; 3x50 mm²+30 mm² LV
Span 40 m (max)
Break angle: 2 deg.
- b) - Conductor 3x50 mm² HV; 3x30 mm²+1x30 mm² 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 Project Officer/ Engineer prior to installation.

Safety

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.
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.
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. 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.
- 4. 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.
- 5. The Contractor shall apply all accidental insurance policies to his work force for an accident occurring during the working period of the construction.

Tests

- 6. 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 Project Officer/ Engineer.
- 7. The Contractor shall megger 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.
- 8. 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 nondestructively testing the cable at approximately 300% of cable voltage rating.
- 9. 16.4 The Contractor shall megger all transformers with a motor-driven megger prior to connection to the LV network.
- 10. All tests specified shall be conducted during suitable atmospheric conditions under the supervision and witness of the Project Officer/ Engineer. All test results shall be documented and signed by both parties.

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 Project Officer/ Engineer and the Contractor shall deliver all salvaged materials to the Project Officer/ Engineer warehouse, or as specifically directed by the Branch Chief in writing.

Clean-up

- 1. The Contractor shall ensure that all worksites shall be free of all manner of debris resulting from the construction activity.
- 2. 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.

3. 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.

Tree Cutting and Trimming

1. Any tree cutting or tree trimming shall be accomplished by the Contractor in coordination with CBO.
2. All cutting shall be removed by the Contractor with disposition of cutting as specified by Project Officer/ Engineer.

Interruptions to Existing Service

1. The Contractor shall arrange for interruptions of service to existing lines with Project Officer/ Engineer. Every effort shall be made to limit such interruptions to the minimum.
2. If it is possible to maintain service to a section of line by constructing temporary facilities approved by Project Officer/ Engineer, the Contractor shall detail man hours and classification of personnel required to construct such facilities and submit to Project Officer/ Engineer for approval prior to any work being

3.22 TECHNICAL DATA SHEET

(To be completed by the bidder)

** Note: The bidder shall mention clause by clause comment of the required specification. The bidder shall state the following at the indicated field.*

- a. **"FULLY COMPLIANT"** if the item offered fully meet the requirement.
- b. **"PARTIALLY COMPLIANT"** if the item offered meet the requirement partially. The bidder shall state the reason why the offer is partially compliant. In such cases, the bidder shall clearly mention the extent to which other specifications are offered.
- c. **"NON COMPLIANT"** if the item cannot meet the requirements. The bidder shall also state reasons for it.

ACSR Conductor**Description****Queries**

1. Manufacturer
2. Copies of fabrication standards attached? Yes/No
3. If standards are other than BS: 215 / IEC: 209 (Part II)
Then conductor specifications are same as
BS: 215 / IEC: 209 requirements in respect of the following?

Diameter	Yes/No
Strand size	Yes/No
Direction of lay	Yes/No
Lay ratio	Yes/No
Materials	Yes/No

4. Technical data:

Code Name	Nominal Area(sqmm)	Stranding (Al/Steel)	Breaking Strength (KN)	Mass (kg/m)	Resistance at 20degreeC/ohm/km
Rabbit					
Squirrel					

Bidders Remarks*(Please see 3.15 above)

Signature:.....

As representative for.....

Address

Date

Steel Tubular Pole**Description****Queries****Overall Length****11m 10m 9m 8m****SECTION****1. (I) TOP**

Length

Outside Diameter

Thickness

(II) MIDDLE

Length

Outside Diameter

Thickness

(III) BOTTOM

Length

Outside Diameter

Thickness

2. Application of Load from top

3. Approximate weight

4. Crippling Load

5. Load for Permanent set test

6 Load for temporary deflection test

7. Breaking Load

Bidders Remarks*(Please see 3.15 above).....

Signature.....

As representative for.....

Address.....

Date.....

Porcelain Insulators

Pin Insulators

Description

Queries

1. Manufacturer

2. Catalog

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 standard attached?

Yes/No

8. Ratings:

Highest system voltage

kV

Rated voltage

kV

Creepage distance (min)

mm

Wet frequency puncture withstand voltage

kV

Impulse withstand voltage

kV

Puncture power frequency voltage (min)

kV

Visible discharge voltage

kV

Cantilever strength

kN

G I pin head

Bidders Remarks*(Please see 3.15 above).....

Signature.....

As representative for.....

Address.....

Date.....

Disc Insulators**Description****Queries**

1. Manufacturer	
2. Catalog No.	
3. Model number	
4. Applicable standard	
5. Copies of standards attached?	Yes/No
6. If not IS standards are standards used equivalent?	Yes/No
7. Copies of alternate standard attached?	
Yes/No	
8. Ratings:	
Highest system voltage	kV
Rate voltage	kV
Porcelain diameter (min)	mm
Spacing	mm
Creepage distance (min)	mm
Power frequency puncture	
Withstand voltage	kV
Wet frequency puncture	
Withstand voltage	kV
Impulses withstand voltage	kV
Puncture power frequency voltage (min)	kV
Visible discharge voltage	kV
Mechanical strength	kN
Ball and socket size	mm
Bidders Remarks*(Please see 3.15 above).....	

Signature.....

As representative for.....

Address.....

Date.....

Stay Insulator**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	

Bidders Remarks*(Please see 3.15 above).....

Signature.....

As representative for.....

Address.....

Date.....

Insulator Pins***Description*****Queries**

1. Manufacturer
2. Type of steel used
3. Dimensional drawings attached?
4. Copies of type test attached?
5. Ratings and features

Yes/No

Yes/No

For 11 kV

Head type

Total length

mm

Stalk length

mm

Shank length

mm

Minimum failing load

k N

Applicable standard

Catalog number

Bidders Remarks*(Please see 3.15 above).....

Signature.....

As representative for.....

Address.....

Date.....

Disc Insulator Fittings

Description	Queries
1. Manufacturer/Catalogue No.	
2. Preliminary drawings furnished?	Yes/No
3. Steel Classification	
4. Malleable tension clamp?	Yes/No
5. Cotter pin and U-bolts are galvanized?	Yes/No
6. Cotter pins are stainless steel?	Yes/No
7. Galvanizing conforms to IS: 2629 – 1985?	Yes/No
8. Ultimate strength of clamps	
9. Applicable standard(s)	

Bidders Remarks*(Please see 3.15 above).....

Signature.....

As representative for.....

Address.....

Date.....

Cross Arms and Bracing Angles

Description

Queries

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

Yes/No

Yes/No

Bidders Remarks*(Please see 3.15 above).....

Signature.....

As representative for.....

Address.....

Date.....

Flat Cross Arm Brace**Description****Queries**

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

Yes/No

Yes/No

Bidders Remarks*(Please see 3.15 above).....

Signature.....

As representative for.....

Address.....

Date.....

Pole Clamps**Description****Queries**

1. Manufacturer
2. Steel classification
3. Referenced galvanizing specification
4. Drawings of pole clamp furnished?

Bidders Remarks*(Please see 3.15 above).....

Signature.....

As representative for.....

Address.....

Date.....

Galvanized Steel Nuts and Bolts**Description****Queries**

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

Bidders Remarks*(Please see 3.15 above).....

Signature.....

As representative for.....

Address.....

Date.....

Ground (Earth) Rods and Clamps**Description****Queries**

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/ 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

Bidders Remarks*(Please see 3.15 above).....

Signature.....

As representative for.....

Address.....

Date.....

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

Bidders Remarks*(Please see 3.15 above).....

Signature.....

As representative for.....

Address.....

Date.....

Stay Rod**Description****Queries**

- | | |
|---|--------|
| 1. Manufacturer | |
| 2. Catalogue Numbers | |
| 3. Steel Classification | |
| 4. Load rating kg | |
| 5. Type tests-tensile load data attached? | Yes/No |
| 6. Type test-bend test data attached? | Yes/No |
| 7. Drawing attached? | Yes/No |

Bidders Remarks*(Please see 3.15 above).....

Signature.....

As representative for.....

Address.....

Date.....

Stranded Stay Wire

Description	Queries
1. Manufacturer	
2. Strand diameter (overall)	mm
3. No. of Strands	
4. Minimum Breaking load	kg
5. Nominal diameter of coated	
6. Left hand lay	Yes/No
7. Fabrication Specification	
B.S. 183 1972 (1983)	mm
8. If not what standard?	Yes/No
9. Standard copies (2) attached	Yes/No
10. If not B.S. 183 is strand offered equivalent in all respects?	Yes/No
11. Class of zinc coating?	

Bidders Remarks*(Please see 3.15 above).....

Signature.....

As representative for.....

Address.....

Date.....

Disconnect Switch**Description****Queries**

1. Manufacturer

2. Catalog number

3. Copy of test data per

IEC Standard 265 attached?

Yes/No

4. Rating:

Design Voltage

kV

Continuous Current

Amps

Momentary rating (r.m.s)

Amps

Impulse Withstand (BIL)

kV

Min Power Frequency

Withstand:

1 minute dry

kV

10 seconds wet

kV

Insulator creepage distance

mm

Insulator dry arc distance

mm

Open gap dry arc distance

mm

5. Dimensioned drawing attached?

Yes/No

Bidders Remarks*(Please see 3.15 above).....

Signature.....

As representative for.....

Address.....

Date.....

Item	Shackle Insulators
Manufacturer	
Catalog	Yes/No
Applicable Standards	
Copies of Standards Attached:	Yes/No
If not IS Standards, are standards used equivalent?	
	Yes/No
Copies of alternate standards attached?	Yes/No
Ratings:	
Highest System Voltage, kV	1
Rated Voltage, kV	500 V
Power Frequency Withstand Voltage, 1minute:, kV	
Dry	23
Wet	v 10
Power Frequency Puncture Withstand Voltage, 1 minute:, kV	
	1.3 x actual dry flasover V
Leakage distance	63
Mechanical Strength	11.5
IS Type	1

Bidders Remarks*(Please see 3.15 above).....

Signature.....

As representative for.....

Address.....

Date.....

3.23 INSPECTION, TESTING AND COMMISSIONING

Inspection and Test

A. Line Materials

1. The whole of the Works supplied under the Contract shall be subject to inspection and tests by the Employer or its representatives during manufacture, erection and after completion. The inspections and tests shall include, but not limited to, the requirements of this section of the technical specifications. Each of the material and equipment to be manufactured, supplied and erected specified in the Price Schedule with Technical Preamble shall be inspected, tested and commissioned as specified in the Technical Specification under the contract. Project Officer/ Engineer shall notify the CONTRACTOR in writing of the identity of any representatives retained for these purposes.
2. The inspections and tests shall be conducted on the premises of the Manufacturers/Contractor or its subcontractor(s) and at the item of materials & equipment's final destination in Nepal if required. If the inspection and test of the items of materials & equipment are to be conducted on the premises of the Manufacturers/Contractor or its subcontractor(s), all reasonable facilities and assistance within the premises of the manufacturer, including access to drawings and production data, shall be furnished to the inspectors at no charge to Project Officer/ Engineer. Items which are not physically tested in the manufacturer's premises the sample of such items shall be provided for the approval from the department. The costs associated with inspection/tests including the Local transportation and accommodation, for goods to be supplied from third countries or to be supplied from/ within Nepal for inspector/s shall be seven days and Inspectors' expenses shall be borne by the Manufacturers/Contractor. Travelling and Daily allowances of inspector shall be borne by the Employer.
3. Should any inspected or tested items of materials and equipment fail to conform to the specifications, the inspectors can reject them, and the CONTRACTOR shall either replace the rejected items of materials and equipment or make all alterations necessary to meet the requirements of the specifications as directed by Project Officer/ Engineer, free of cost to Project Officer/ Engineer.
4. Project Officer/ Engineer's right to inspect, test and, where necessary, reject the items of materials and equipment after their arrival in Nepal shall in no way be limited or waived by reasons of the items of materials and equipment having previously been inspected, tested and passed by Project Officer/ Engineer or its representatives prior to the shipment from the country of origin.
5. Nothing in this Clause 1.4 shall in anyway release the contractor from any Warranty or other obligations regarding specifications, quality and general terms and conditions under the Contract.
6. The Employer may waive the inspection and test of some of the items of material & equipment. But the test report of such items (which are not physically tested in the manufacturer's premises in presence of Employer's Inspectors) must be sent to the Employer for approval.

B. Construction Works

- 1.1. The Contractor shall, by means of continuing inspection/supervision by his staff, ensure that all works constructed and installed comply with the Technical Specifications, Price Schedule with Technical Preambles, Construction Standards, and any amending instructions thereto issued by the Authorized Personnel of Employer.
- 1.2. The Authorized Personnel shall, by means of continuing inspection by his staff, ensure that all works completed by the Contractor conforms to the requirements of the Contract Documents and that high standards of Workmanship are maintained by the Contractor. Such inspections shall be fully documented in accordance with the procedures determined by the Authorized Personnel of Project Officer/ Engineer.
- 1.3. The Contractor shall perform all tests required by the General Specifications, under the supervision of the Authorized Personnel. Such tests shall be fully documented by the Contractor in a form provided by the Authorized Personnel. The Contractor shall provide copies of test documentation to the Authorized Personnel.
- 1.4. The Contractor shall provide all personnel, test equipment, and other materials or equipment required to conduct the tests in accordance with the Technical Specification, Price Schedule with Technical Preambles, Construction Standard etc.

C. Quality Assurance

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. ii. Documentation control system.
- c. Qualification data for bidder's key personnel.
- d. The procedure for purchases of materials, parts, components, and selection of subcontractors' 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. viii. Inspection and test procedure for manufacture.
- h. System for indication and appraisal of inspection status.
- i. System for quality audits.
- j. System for authorizing release of manufactured products to the Employer.
- k. System for maintenance of records.
- l. System for handling storage and delivery.

- m. 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.

D. Quality Assurance Documents

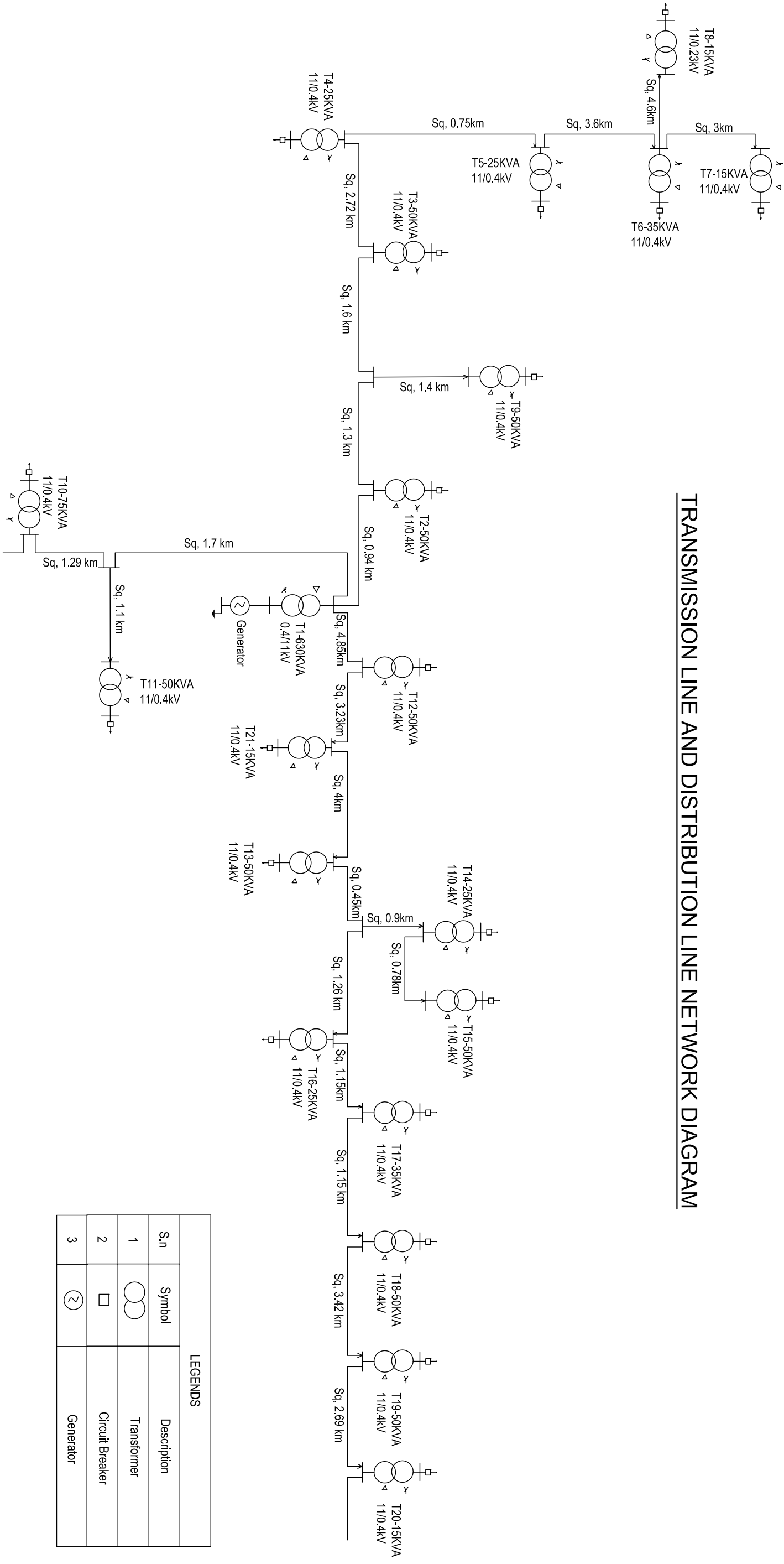
The Contractor shall be required to submit all the Quality Assurance Documents as stipulated in the Quality Plan at the time of Employer's inspection of material/equipment.

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.

4. Drawings

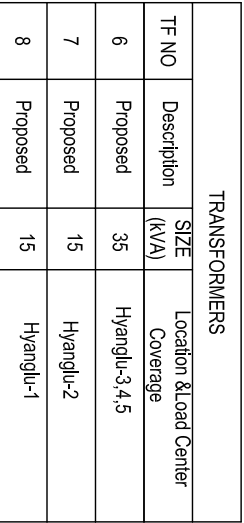
The purpose of drawings is to specify locations, dimensions, materials to be used, stages of manufacturing, and other characteristics of the Goods and Related Services. The Purchaser should prepare such drawings, as needed, and include them in the Procurement Document. Such drawings, as part of the SR,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

TRANSMISSION LINE AND DISTRIBUTION LINE NETWORK DIAGRAM

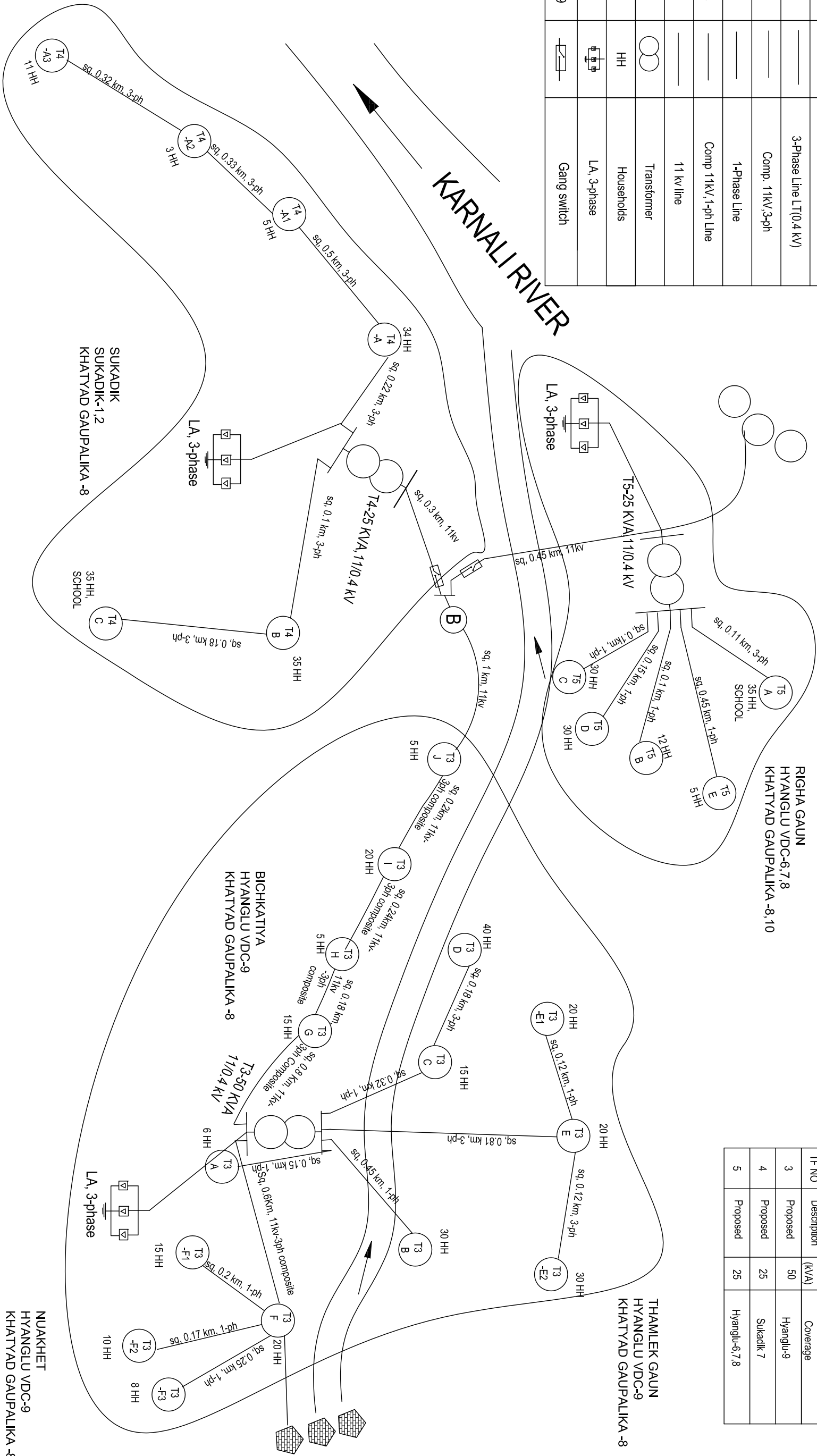


LEGENDS		
S.n	Symbol	Description
1		Transformer
2		Circuit Breaker
3		Generator

Rev.	Amendment	By	Ckd.	Rec.	App.
SRUANSHEEL AGRICULTURE COOPERATIVE LTD.		Name			
KHATYAD KHOLA MINI HYDROPOWER PROJECT		Designed:		S. Pokhrel	
		Drawn		S. Pokhrel	
		Checked:		S. Pokhrel	
		Recommended:		K. Neupane	
		Approved:			
		Date:		Nov 2017	
		Scale		AS SHOWN	
		Drawing No.		KKMHP/DED-42E-01	
		Revision			

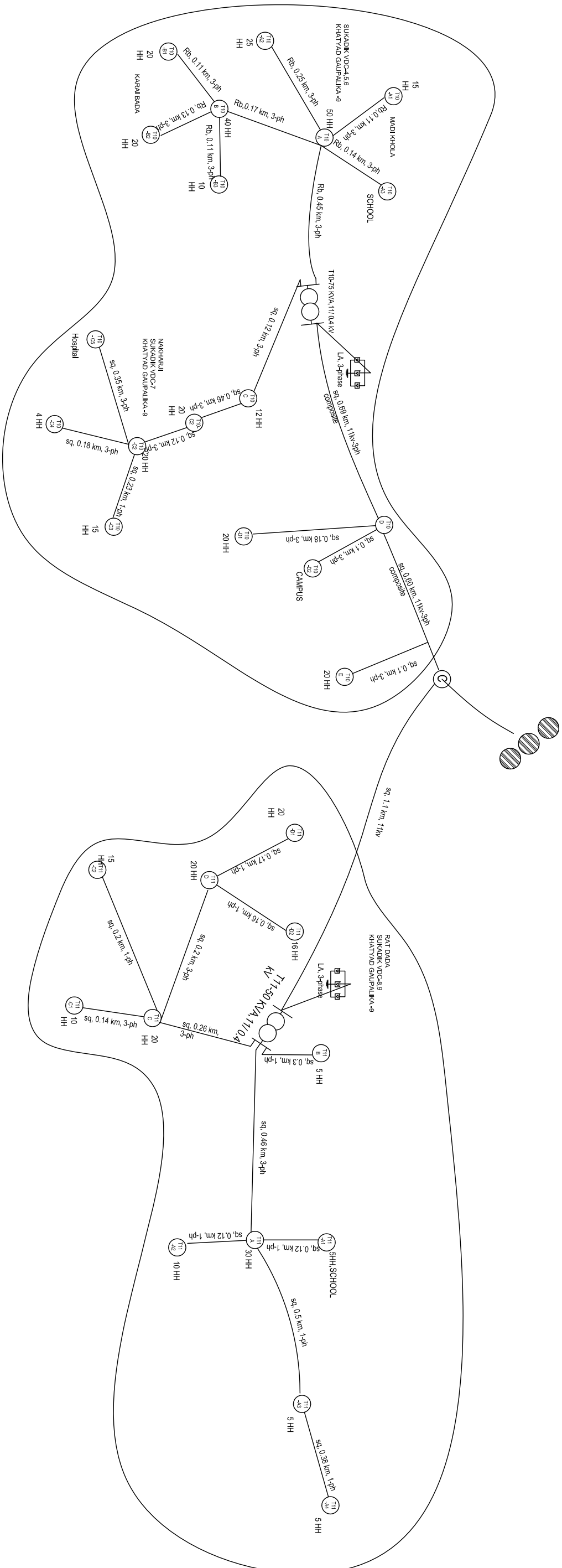
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

LEGENDS		
S.n	Symbol	Description
1	—	3-Phase Line LT(0.4 kV)
2	—	Comp. 11kV,3-ph
3	—	1-Phase Line
4	—	Comp 11kV,1-ph Line
5	—	11 kv line
6	⊗	Transformer
7	HH	Households
8	⏏	LA, 3-phase
9	—	Gang switch



TRANSMISSION AND DISTRIBUTION LINE
SECTION B

Rev.	Amendment	By	Ckd. Rec. App.
SRUANSHEEL AGRICULTURE COOPERATIVE LTD.		Name	Initials Date
KHATYAD KHOLA MINI HYDROPOWER PROJECT		Designed:	S. Pokhrel
TRANSMISSION AND DISTRIBUTION LINE TLDL SECTION B		Drawn	S. Pokhrel
		Checked:	S. Pokhrel
		Recommended:	K. Neupane
Alternative Energy Promotion Centre (AEPc)		Approved:	
South Asia Sub-regional Economic Cooperation – Power Expansion Project (SASEC/ADB)		Date:	Nov 2017
Thamli, Lumbini, Nepal		Scale	AS SHOWN
Tel. +9771-5539390, 5539391		Drawing No.	KKMHP/DED-42E-04
Email: saasec@epc.gov.np		Revision	



LEGENDS		
S.n	Symbol	Description
1		3-Phase Line LT(0.4 kV)
2		Comp. 11kV,3-ph
3		1-Phase Line
4		Comp 11kV, 1-ph Line
5		11 kv line
6		Transformer
7	HH	Households
8		LA, 3-phase
9		Gang switch

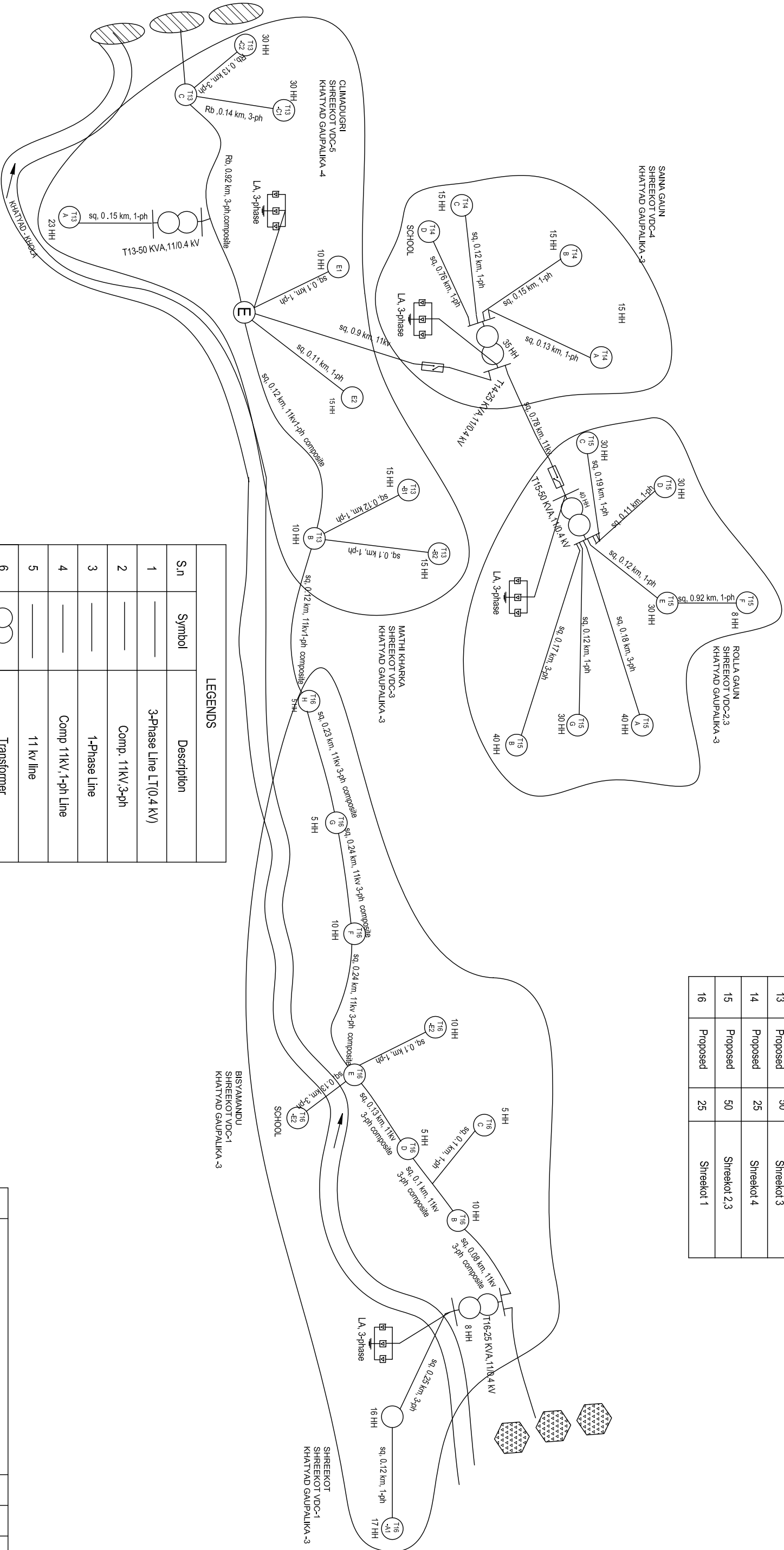
TRANSFORMERS			
TF NO	Description	SIZE (kVA)	Location & Load Center Coverage
10	Proposed	75	Sukadik 7
11	Proposed	50	Sukadik 8,9

TRANSMISSION AND DISTRIBUTION LINE

SECTION E

Rev.	Amendment									
SRUANSHEEL AGRICULTURE COOPERATIVE LTD. KHATYAD KHOLA MINI HYDROPOWER PROJECT						Name	Initials	Date		
						Designed:	S. Pokhrel			
						Drawn	S. Pokhrel			
						Checked:	S. Pokhrel			
						Recommended:	K. Neupane			
						Approved:				
TRANSMISSION AND DISTRIBUTION LINE TLDL SECTION E										
Alternative Energy Promotion Centre (AEP/C) South Asia Sub-regional Economic Cooperation – Power Expansion Project (SASEC/ADB) Khumlun, Lalitpur, Nepal Tel: +9771-5539390, 5539391 Email: sasec@epc.gov.np						Date: Nov 2017	Scale			
						Drawing No.	AS SHOWN	Revision		
						KKMHP /DED - 42E - 07				

TRANSFORMERS		
TF NO	Description	Location & Load Center
	SIZE (KVA)	Coverage
13	Proposed	50 Shreekot 3
14	Proposed	25 Shreekot 4
15	Proposed	50 Shreekot 2,3
16	Proposed	25 Shreekot 1

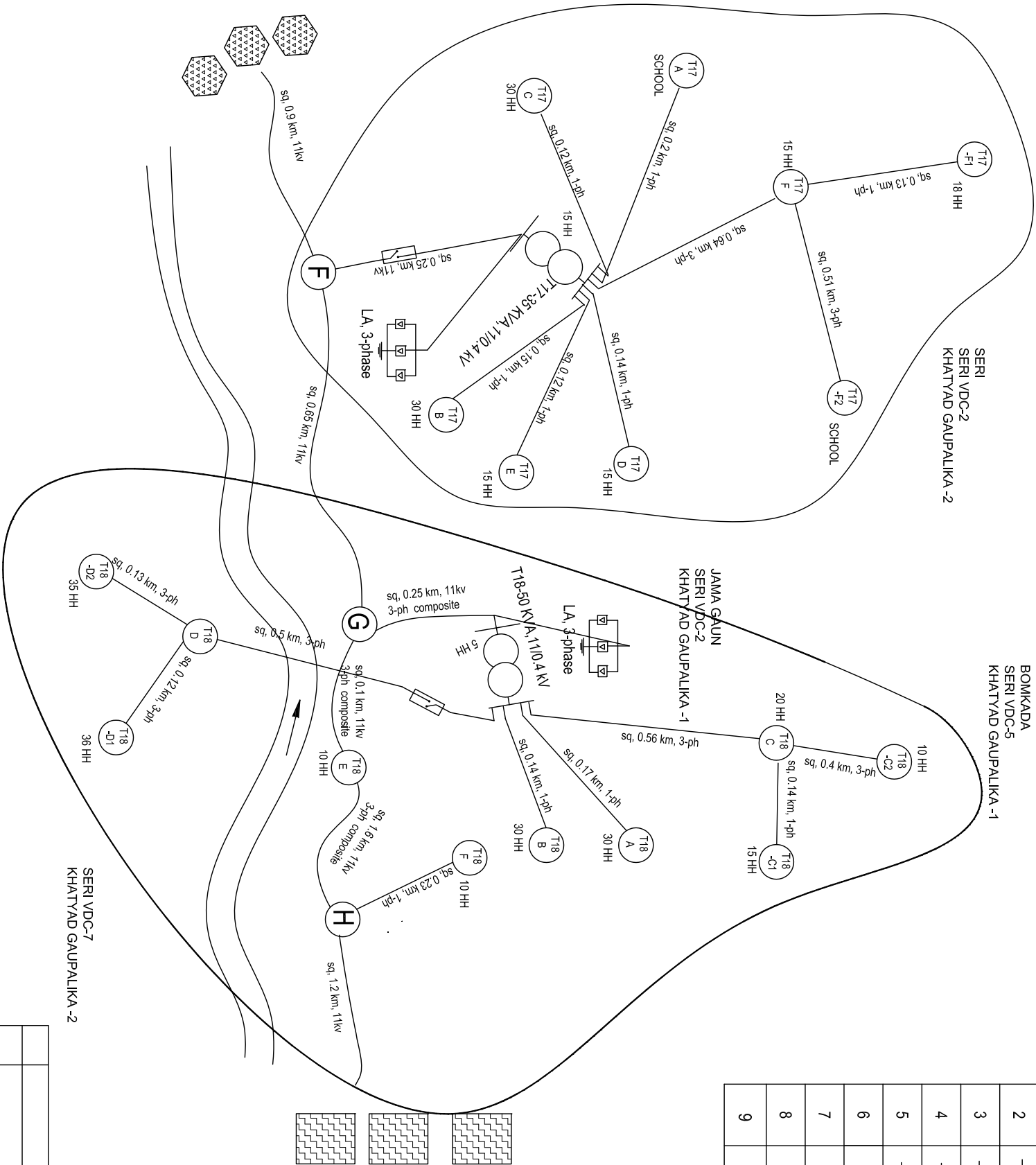


LEGENDS		
S.n	Symbol	Description
1	—	3-Phase Line LT(0.4 kV)
2	—	Comp. 11kV,3-ph
3	—	1-Phase Line
4	—	Comp 11kV,1-ph Line
5	—	11 kv line
6	—	Transformer
7	—	Households
8	—	LA, 3-phase
9	—	Gang switch

TRANSMISSION AND DISTRIBUTION LINE

SECTION F

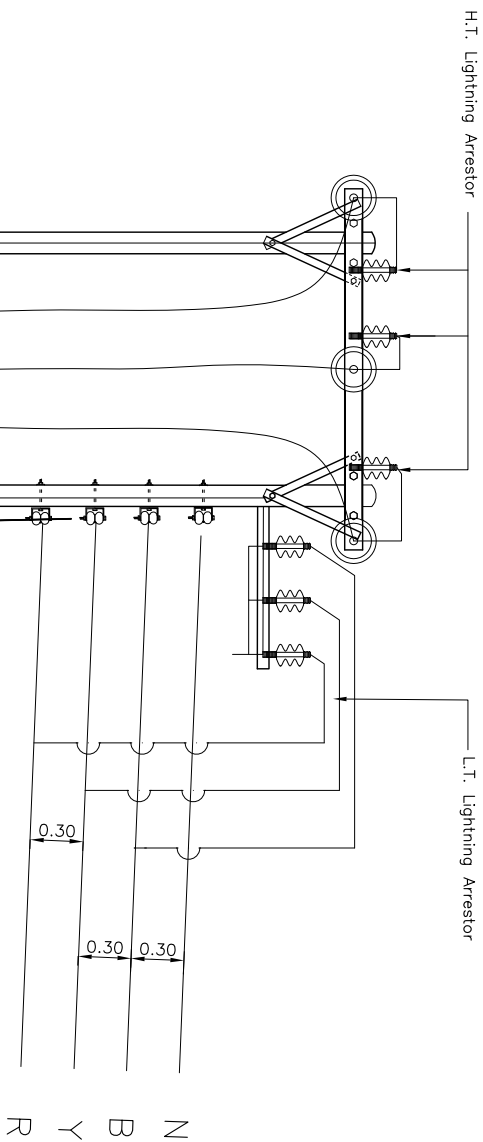
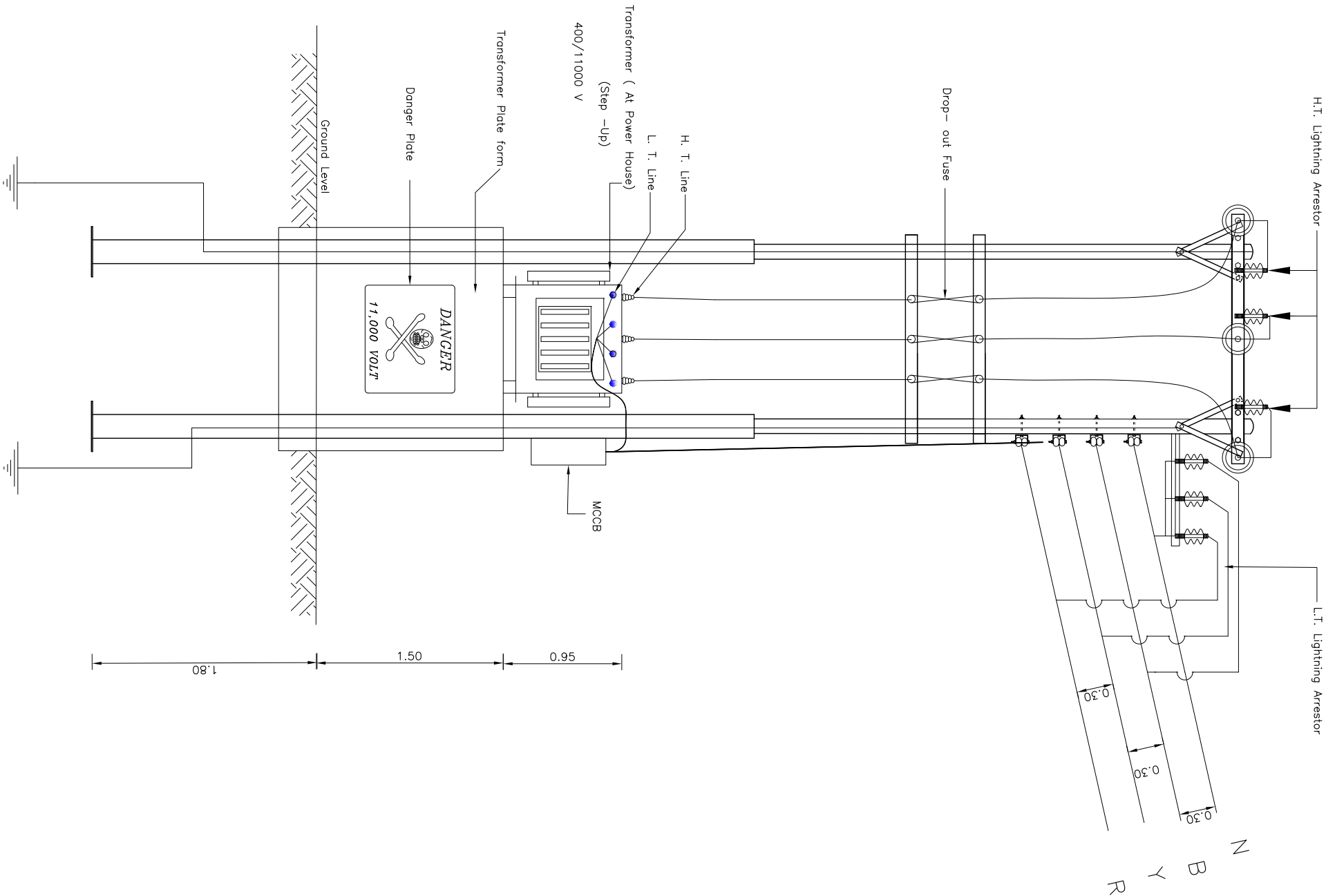
LEGENDS		
S.n	Symbol	Description
1	————	3-Phase Line LT(0.4 kV)
2	————	Comp. 11kV,3-ph
3	————	1-Phase Line
4	————	Comp 11kV, 1-ph Line
5	————	11 kv line
6	⊗ ⊙	Transformer
7	HH	Households
8		LA, 3-phase
9		Gang switch



TRANSFORMERS		
TF NO	SIZE (kVA)	Location &Load Center Coverage
17	Proposed 35	Seit 2
18	Proposed 50	Seit 2,5,7

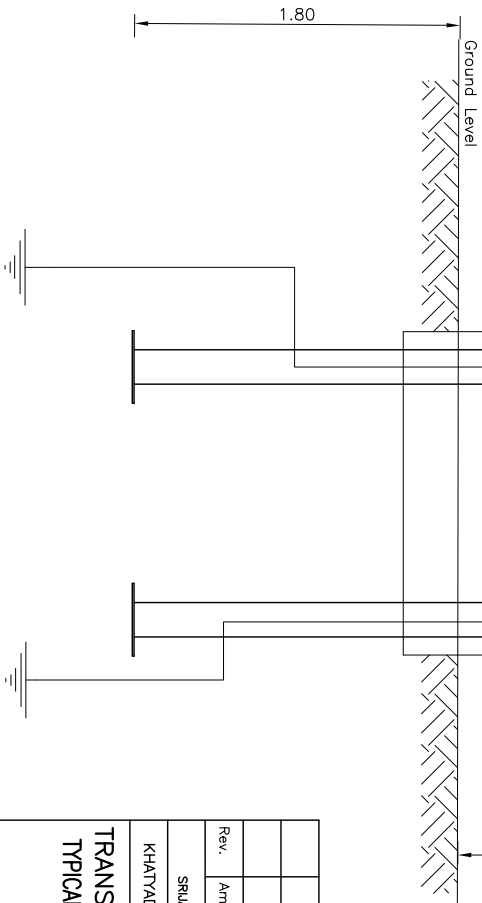
TRANSMISSION AND DISTRIBUTION LINE
SECTION G

Rev.	Amendment	By	Ckd.	Rec.	App.	Date
SRUANSHEEL AGRICULTURE COOPERATIVE LTD.						
KHAITYAD KHOLA MINI HYDROPOWER PROJECT		Designed:	S. Pokhrel	Initiois		Date
		Drawn	S. Pokhrel			
		Checked:	S. Pokhrel			
		Recommended:	K. Neupane			
		Approved:				
TRANSMISSION AND DISTRIBUTION LINE TLDL SECTION G						
Alternative Energy Promotion Centre (AEPc)						
South Asia Sub-regional Economic Cooperation – Power Expansion Project (SASEC/ADB)						
Thumbari, Lumbini, Nepal						
Tel: +9771-5539390, 5539391						
Email: saasec@epc.gov.np						
Date:			Scale		AS SHOWN	
Nov 2017						
Drawing No.			KKMHP/DED-42E-09		Revision	



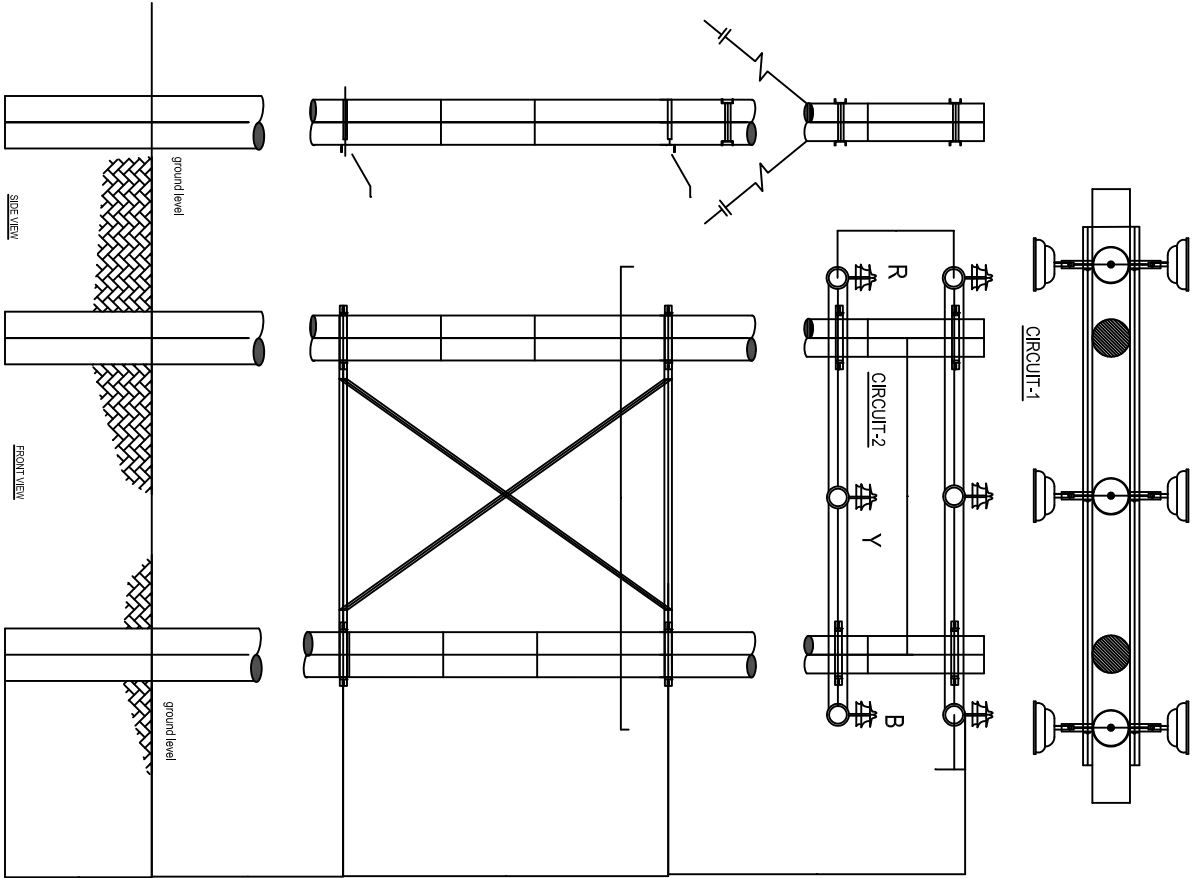
NOTES:

1. Pole mounted transformer configuration is shown in the drawing
2. The Pole should be backfilled as directed by Site Engineer

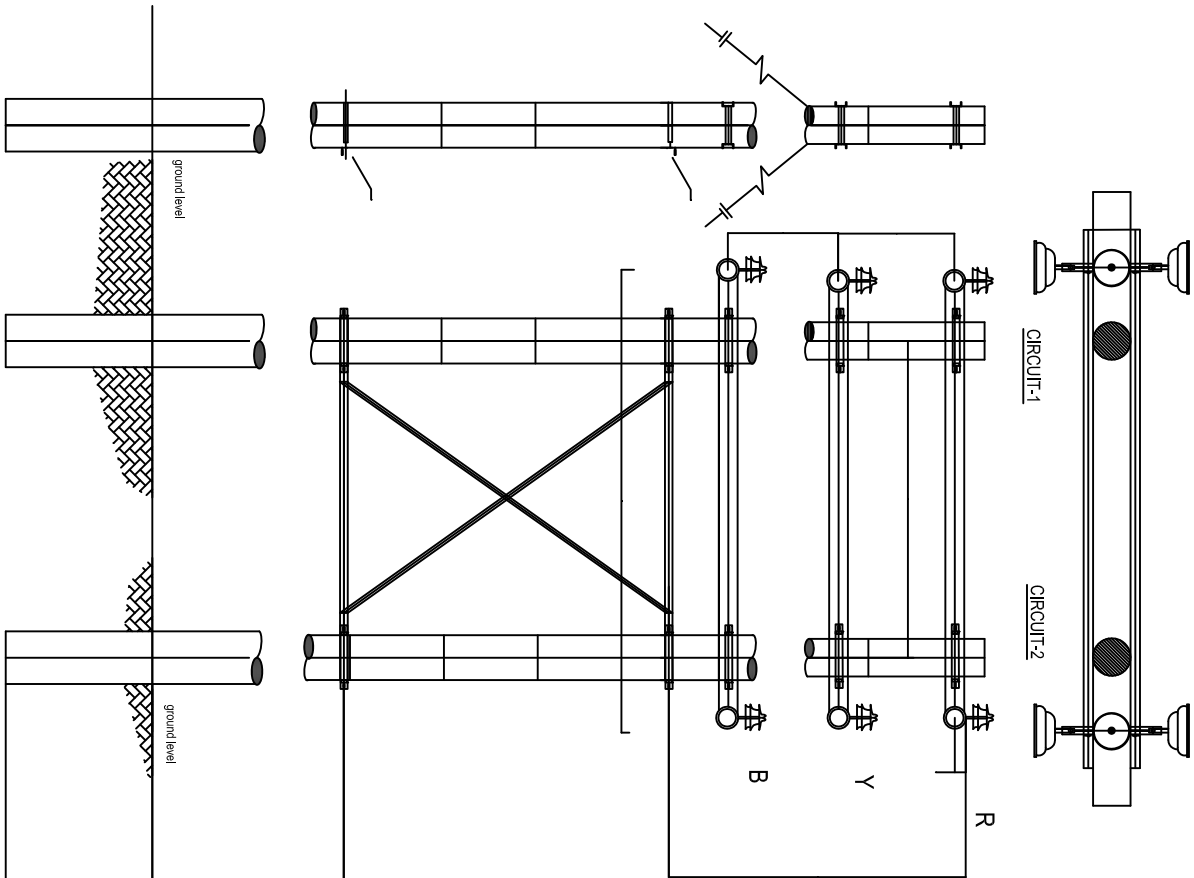


Rev.	Amendment				
SRIJANSHHEEL AGRICULTURE COOPERATIVE LTD.					
KHATYAD KHOLA MINI HYDROPOWER PROJECT		Design:	S. Pokhrel		
TRANSMISSION & DISTRIBUTION TYPICAL POLE MOUNTED TRANSFORMER CONFIGURATION		Drawn:	S. Pokhrel		
		Checked:	S. Pokhrel		
		Recommended:	K. Neupane		
		Approved:			
Alternative Energy Promotion Centre (AEPc) South Asia Sub-regional Economic Cooperation – Power Expansion Project (SASEC/ADB) Khumliar, Lalpur, Nepal Tel: +9771-5539380, 5539391 Email: saepc@aec.gov.np		Date:	Scale	AS SHOWN	
Drawing No.		KKMHP/DED-42E-11		Revision	

TYPICAL POLE MOUNTED TRANSFORMER CONFIGURATION

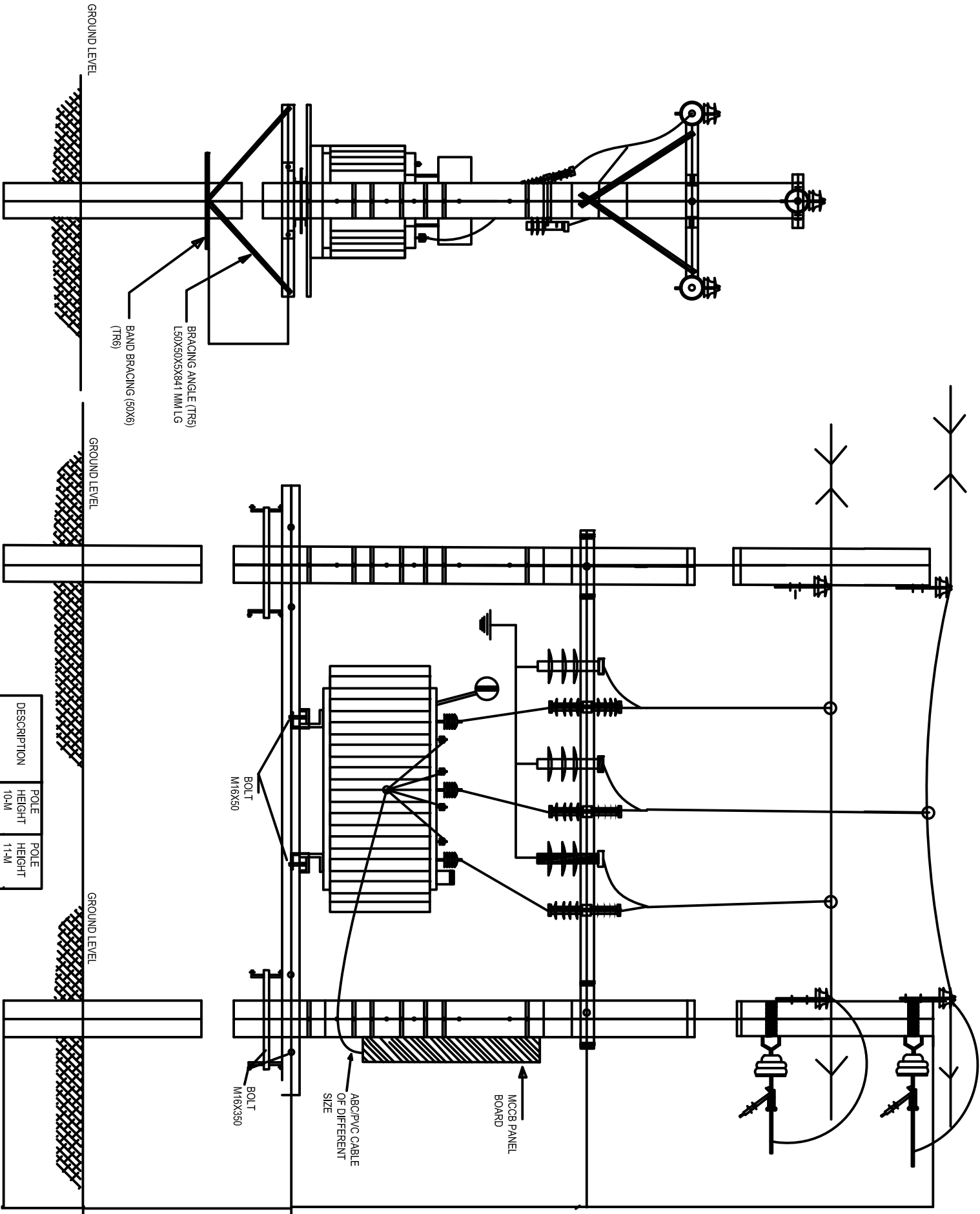


11 KV 11M DOUBLE POLE CIRCUIT (HORIZONTAL)



11 KV 11M DOUBLE POLE CIRCUIT(VERTICAL)

<div>Ministry of Environment and Population</div> <div>Alternative Energy Promotion Center(AEPC)</div> <div>Khumaltar, Lalipur.</div>			<div>South Asian Sub-Regional Economic Co-operation (SASEC).</div> <div>Off Grid Power System Component, Nepal.</div>			<div>Designed by: S Pokhrel</div> <div>Drawn By: S Pokhrel</div> <div>Checked By: K Neupane</div> <div>Approved by:</div>		<div>Title:</div> <div>Transmission and Distribution Network Diagram</div>		<div>Dwg.No:</div> <div>SD -12</div>
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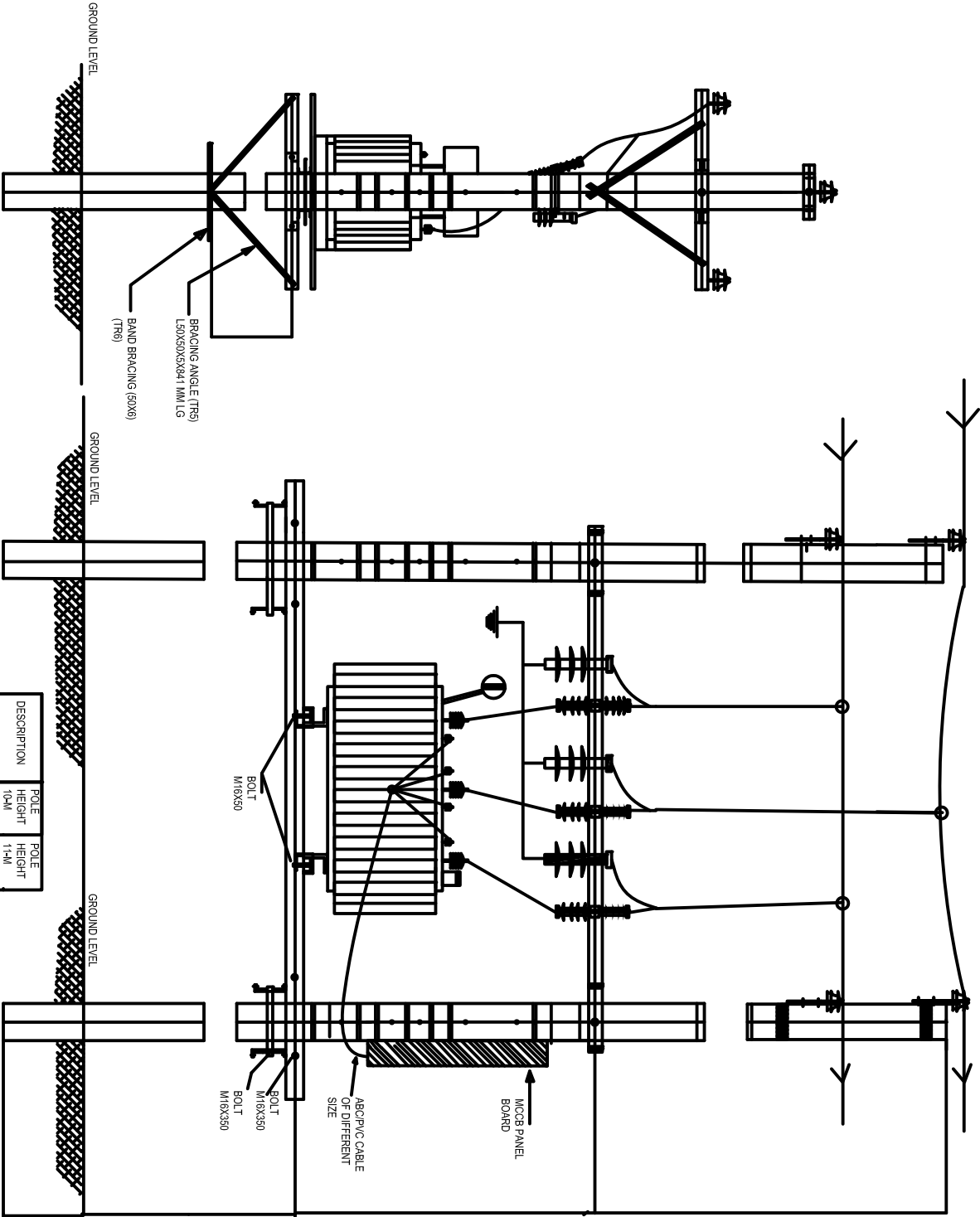


DESCRIPTION	POLE HEIGHT 10-M	POLE HEIGHT 11-M
H1-mm	1700	1800
H2-mm	4400	3500
H3-mm	2400	2400
H4-mm	2400	2400

SIDE VIEW

10/11 m psc Pole
11/0.4 kv Dead End
Transformer Structure

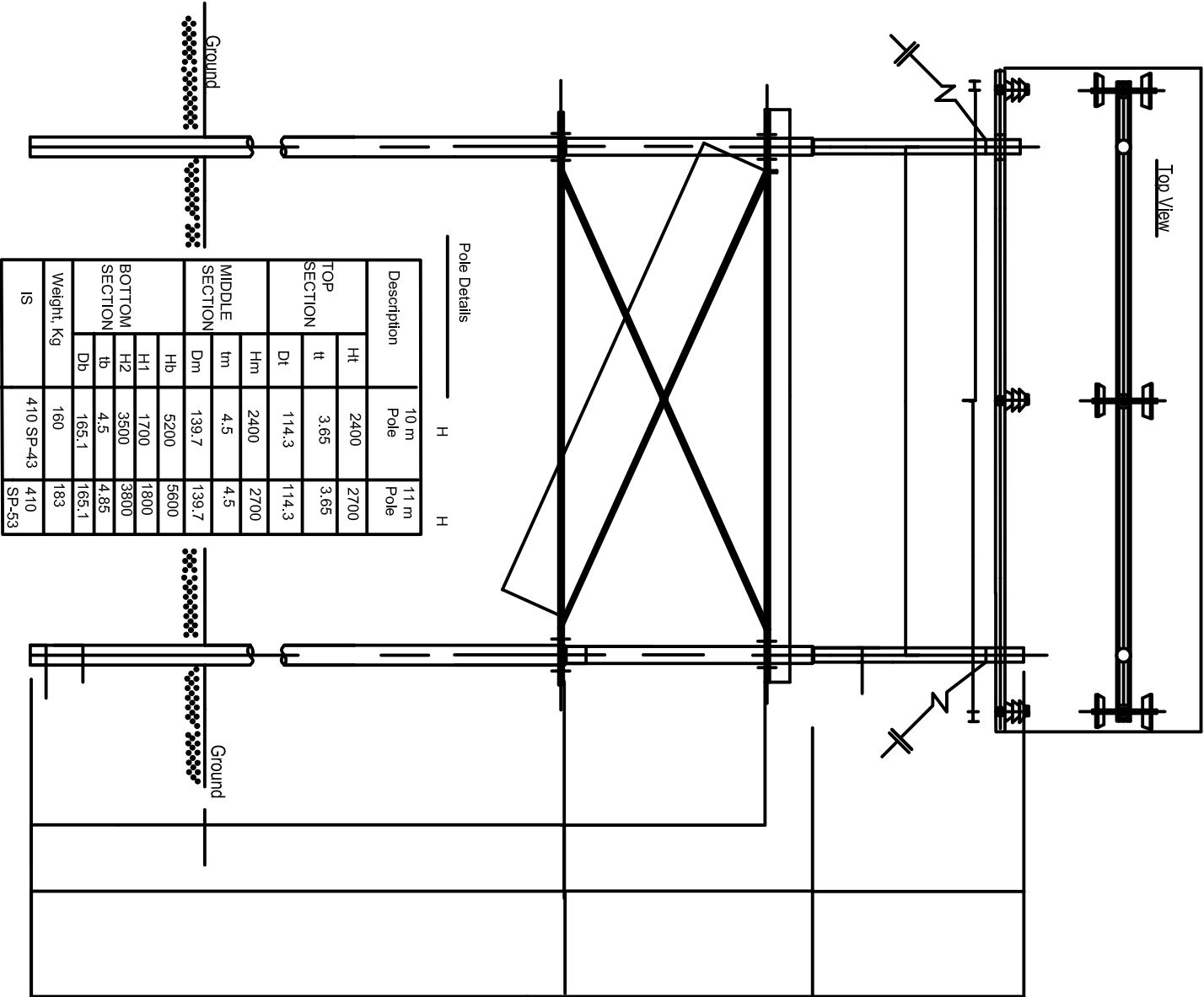
FRONT VIEW



DESCRIPTION	POLE HEIGHT 10M	POLE HEIGHT 11M
H1-mm	1700	1800
H2-mm	4400	3500
H3-mm	2400	2400
H4-mm	2400	2400

10/11 m psc Pole
11/0.4 kv Intermediate
Transformer Structure

Designed by: Omkar Rijal



Description	10 m Pole		11 m Pole	
	Ht	2400	2700	3.65
TOP SECTION	tt	3.65	3.65	
	Dt	114.3	114.3	
MIDDLE SECTION	Hm	2400	2700	
	tm	4.5	4.5	
	Dm	139.7	139.7	
BOTTOM SECTION	H1	5200	5600	
	H2	1700	1800	
	H3	3500	3800	
	tb	4.5	4.85	
	Db	165.1	165.1	
Weight, Kg		160	183	
IS		410 SP-43	410 SP-53	

11kV, 10/11 m ST Pole
High Angle (above 30 deg)

Title:

Transmission and Distribution Network Diagram

Scale: Not on Scale

Date: August 2017

Dwg.No:

SD -15

Ministry of Environment and Population

Alternative Energy Promotion Center(AEPC)

Khumaltar, Lalitpur.

Khatyad Khola Mini Hydropower Project, Mugu

South Asian Sub-Regional Economic Co-operation (SASEC).

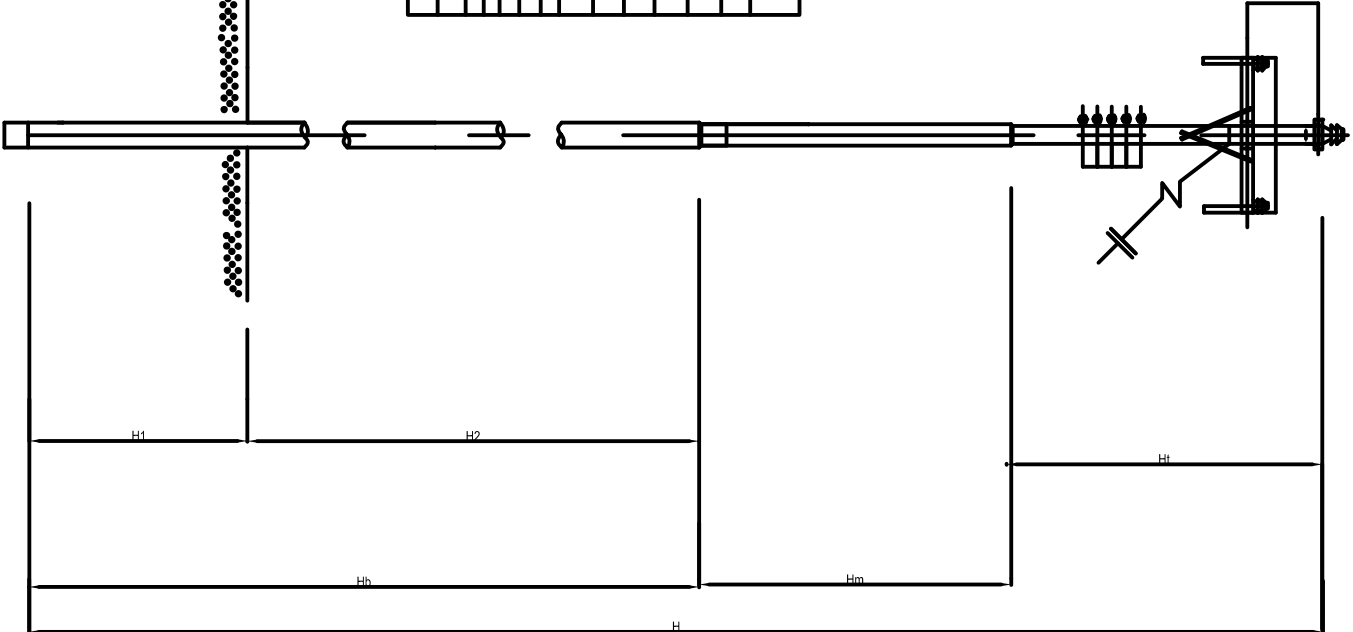
Off Grid Power System Component, Nepal.

Designed by: S Pokhrel

Drawn By: S Pokhrel

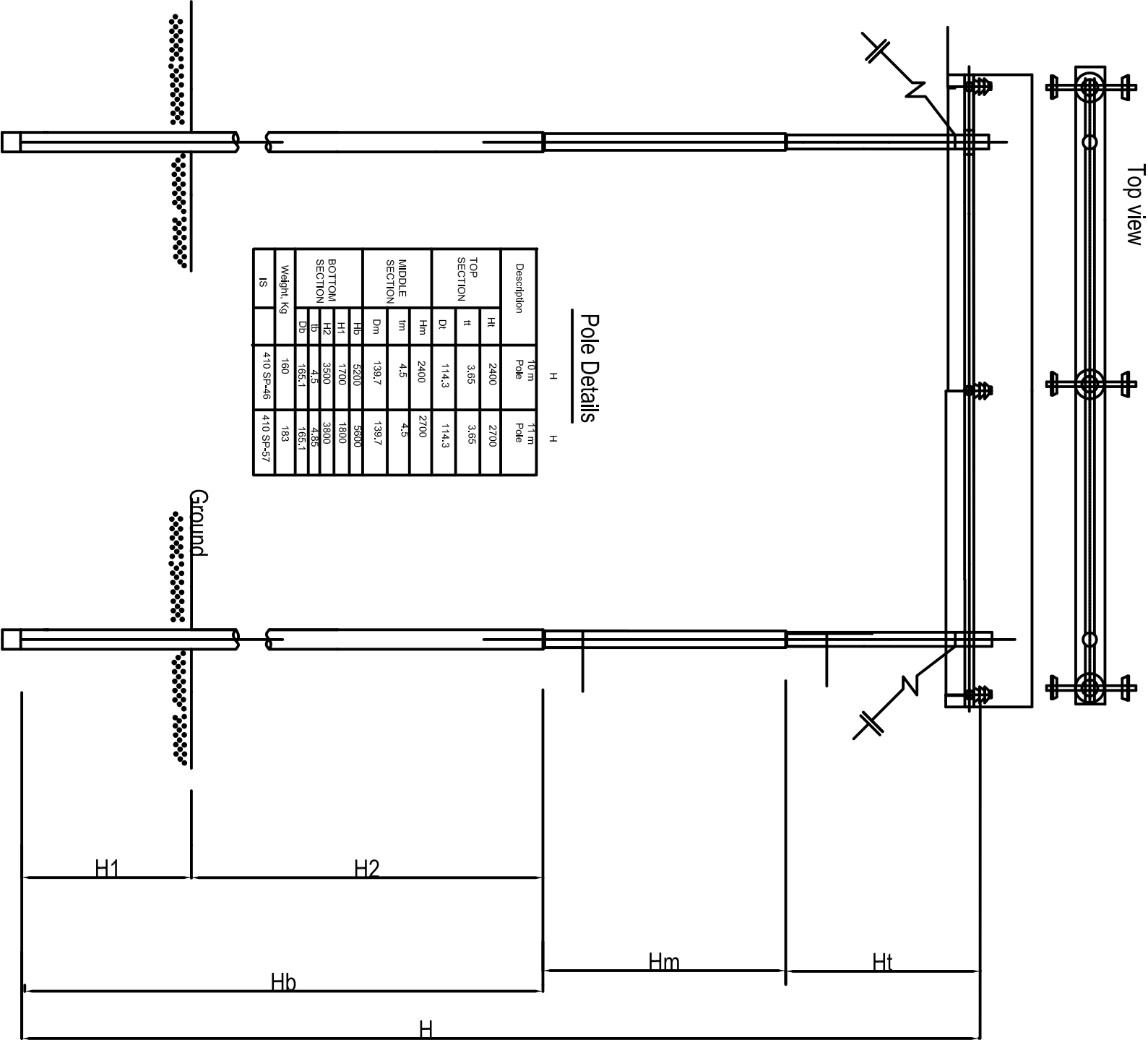
Checked By: K Neupane

Approved by:



Description	10 m Pole	11 m Pole
	Ht	Ht
TOP SECTION	2400	2700
	Ht	Ht
MIDDLE SECTION	139.7	139.7
	Hm	Hm
BOTTOM SECTION	2400	2700
	Hb	Hb
Weight, Kg	208.0	256.0
	IS	IS

South Asian Sub-Regional Economic Co-operation (SASEC).
Off Grid Power System Component, Nepal.



Description	10 m Pole	11 m Pole
	Ht	Ht
TOP SECTION	2400	2700
	Ht	Ht
MIDDLE SECTION	139.7	139.7
	Hm	Hm
BOTTOM SECTION	2400	2700
	Hb	Hb
Weight, Kg	160	183
	IS	IS

11KV, 10/11 m ST Pole
Medium Angle (16-30 deg)

All Dimentions are in MM

Ministry of Environment and Population

Alternative Energy Promotion Center(AEPC)

Khumaltar, Lalitpur.

South Asian Sub-Regional Economic Co-operation (SASEC).

Off Grid Power System Component, Nepal.

Designed by: S Pokhrel

Drawn By: S Pokhrel

Checked By: K Neupane

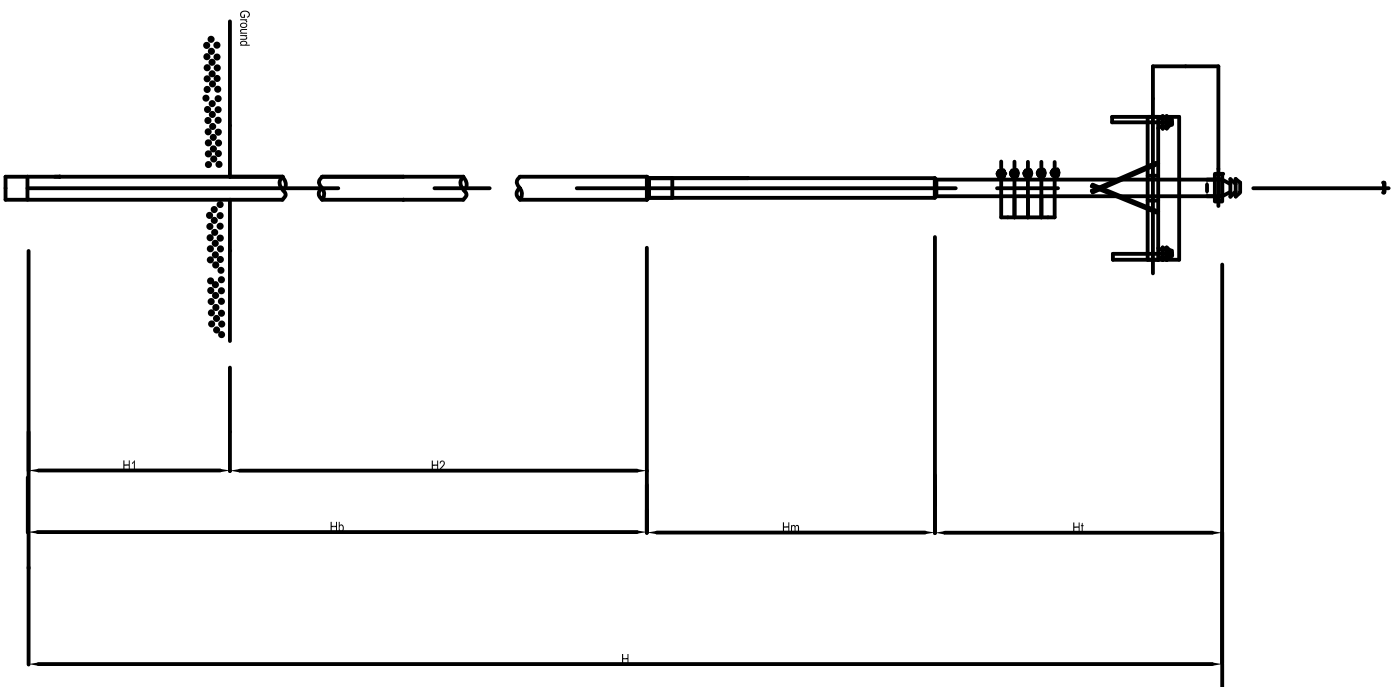
Approved by:

Title:

Transmission and Distribution Network Diagram

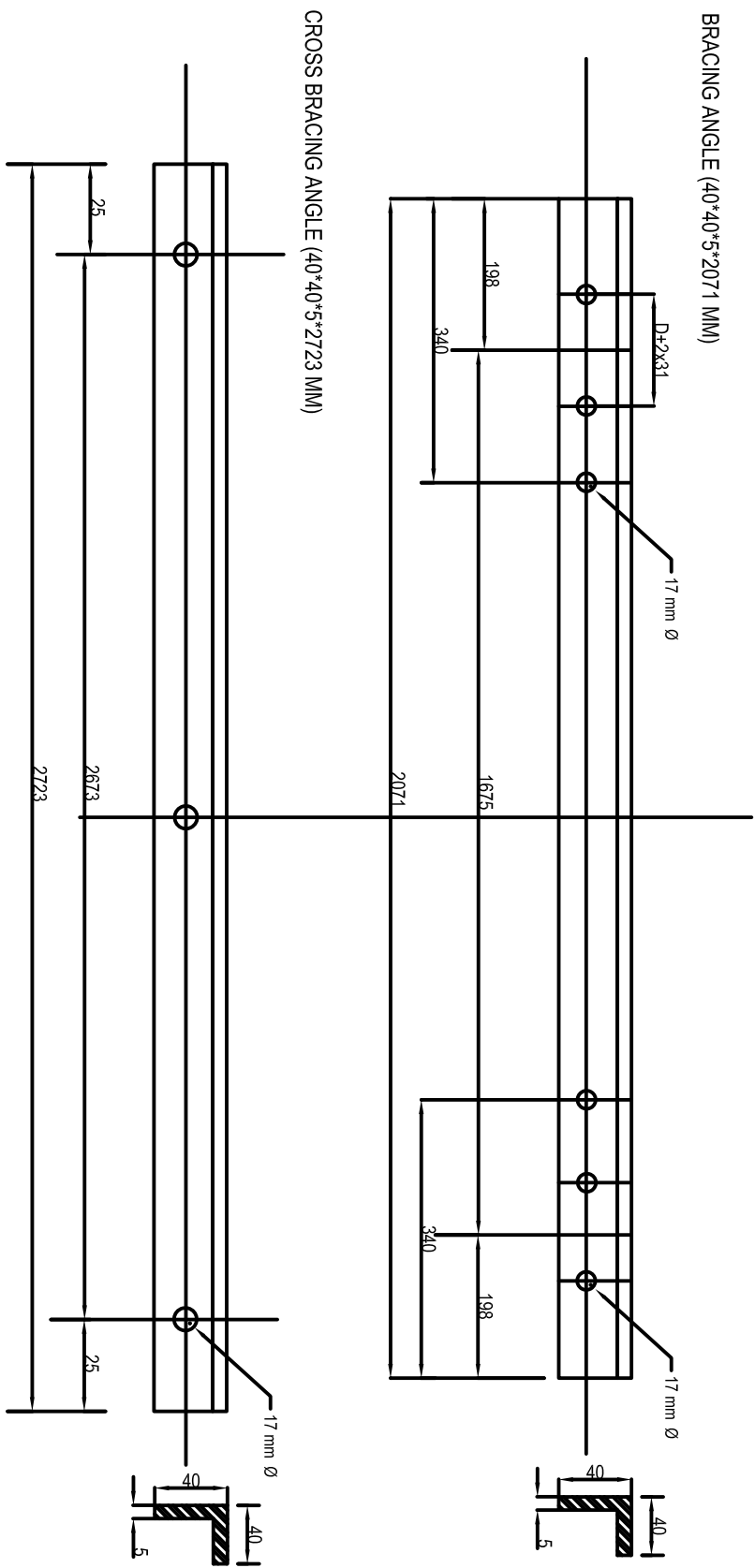
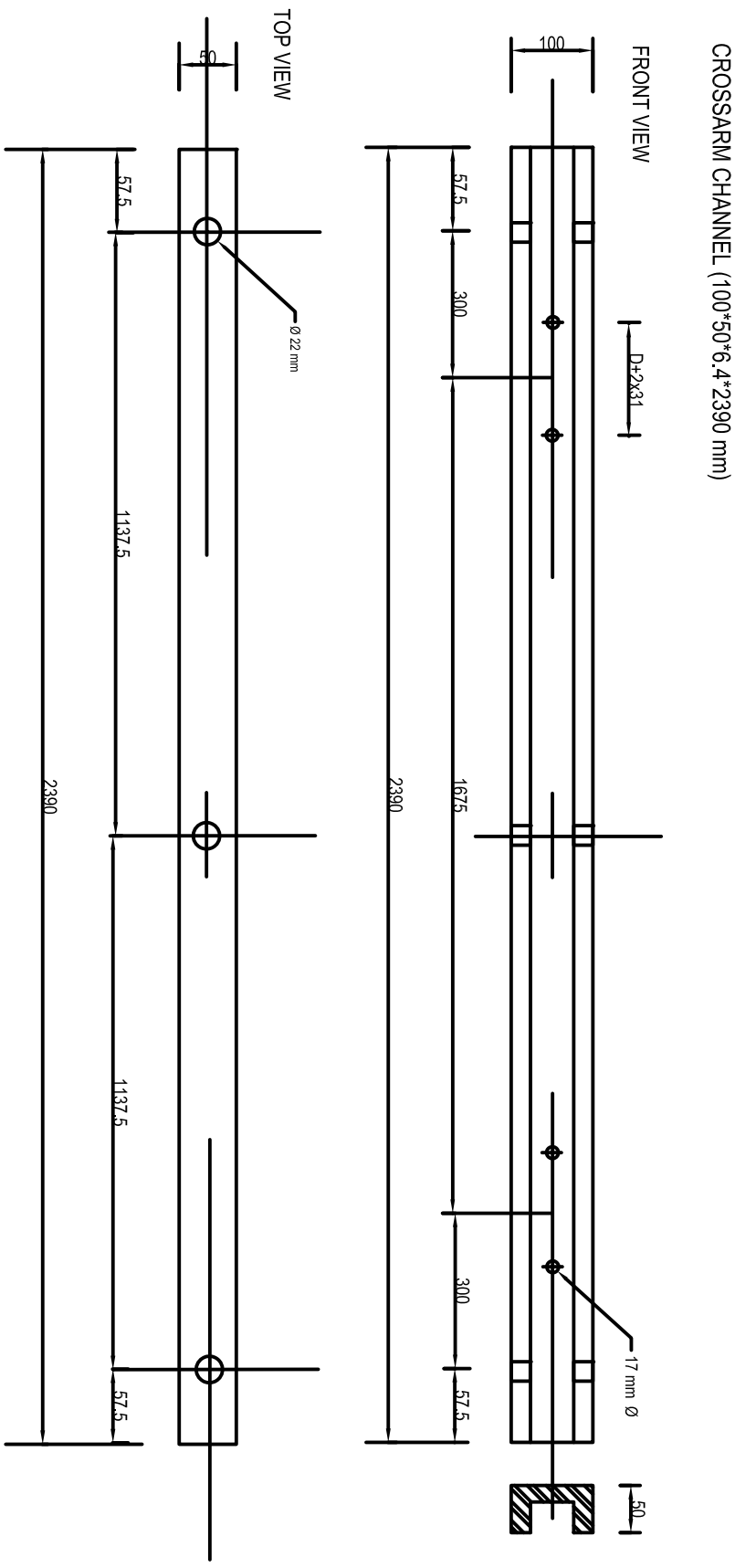
Dwg.No:

SD -16



Description		H	
		10 m Pole	11 m Pole
TOP SECTION	Ht	2400	2700
	It	4.5	4.5
MIDDLE SECTION	Dt	139.7	139.7
	Hm	2400	2700
BOTTOM SECTION	tm	4.5	4.5
	Dm	165.1	165.1
Weight, Kg	Hb	5200	5800
	H1	1700	1800
	H2	3500	3800
	H3	485	5.9
	Db	193.7	193.7
IS		206.0	256.0
		410 SP-46	410 SP-57

Pole Details



11kV, 10/11 m ST Pole
No Deviation (0-7 deg)

LOCATION OF HOLES TO BE CONFIRMED PRIOR TO MANUFACTURE

Crossarm & Bracing for

D= DIAMETER OF THE POLE

11 kV Double Pole (H-Structure)

ALL DIMENTION ARE IN MM

Ministry of Environment and Population

Alternative Energy Promotion Center(AEPC)

Khumaltar, Lalitpur.

Khatyad Khola Mini Hydropower Project, Mugu

Dwg.No:

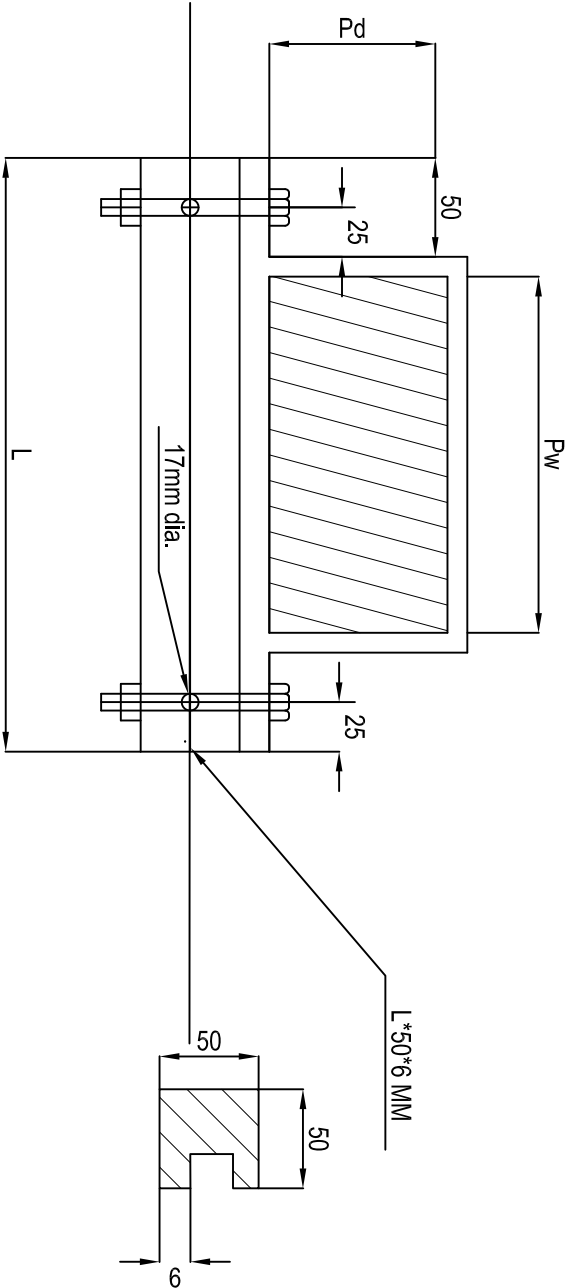
Transmission and Distribution Network Diagram

Approved by:

Scale: Not on Scale

Date: August 2017

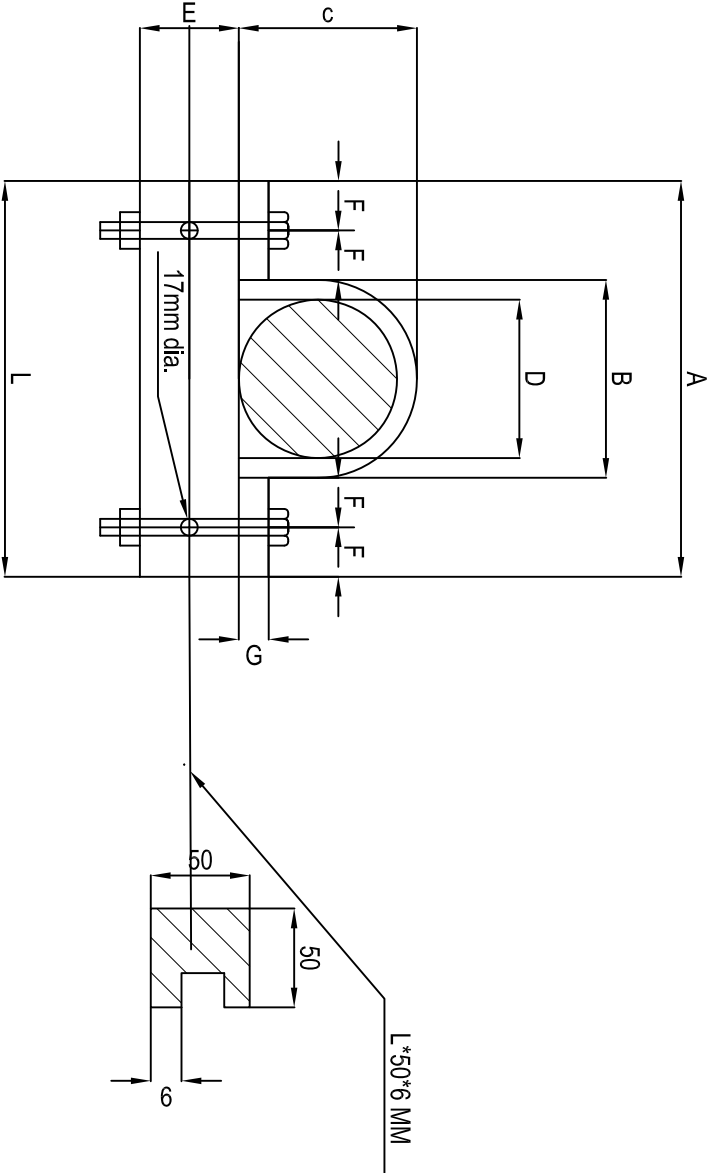
SD-17



Pw: width of the concrete pole

Pw: width of the concrete pole

pole clamps

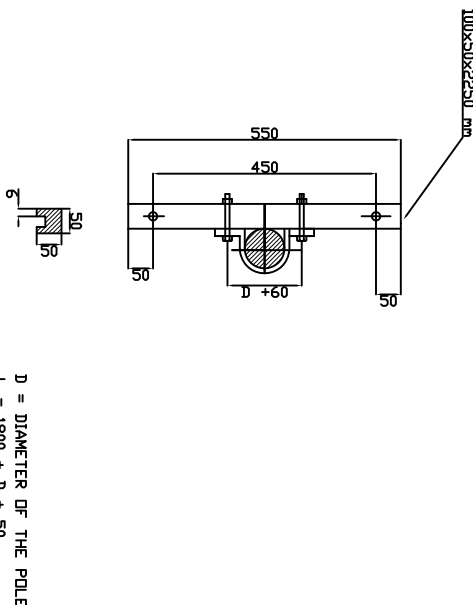
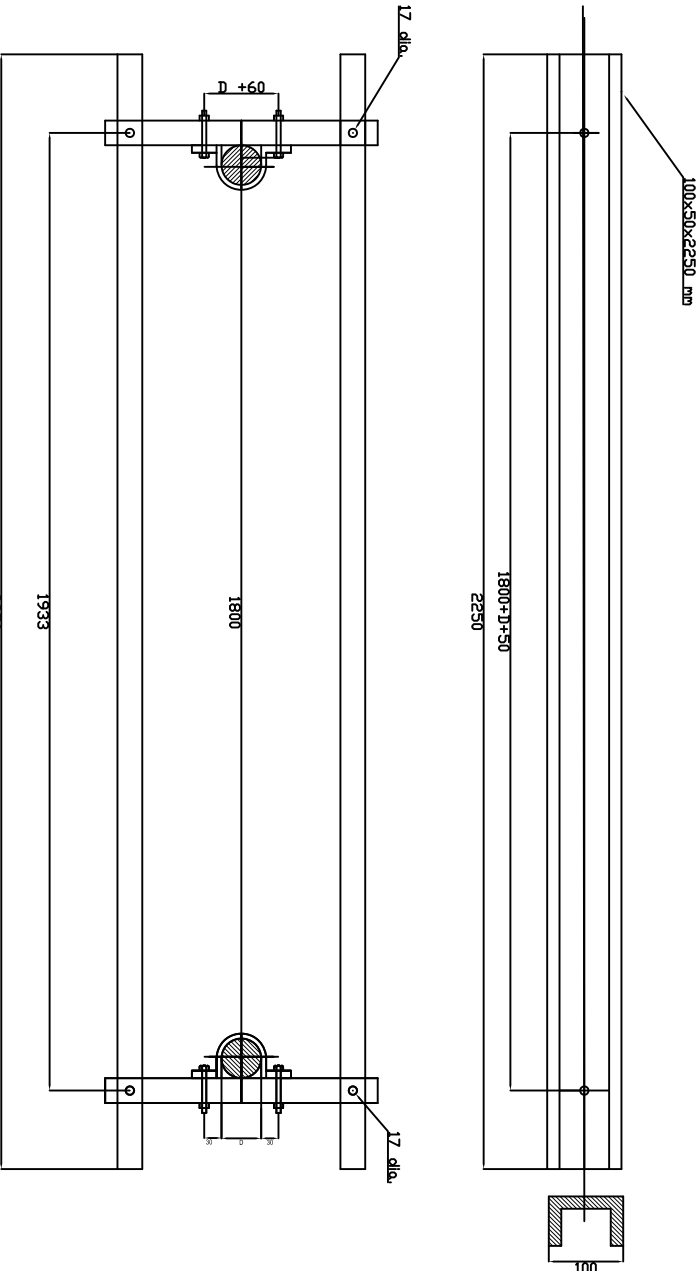


D (pole dia)	A	B	C	E	F	G			
88.9	200.9	100.9	94.9	50	25	6			
114.3	226.3	126.3	120.3	50	25	6			
139.7	251.7	151.7	145.7	50	25	6			
165.1	277.1	177.1	177.1	50	25	6			

ALL DIMENSION IN MM

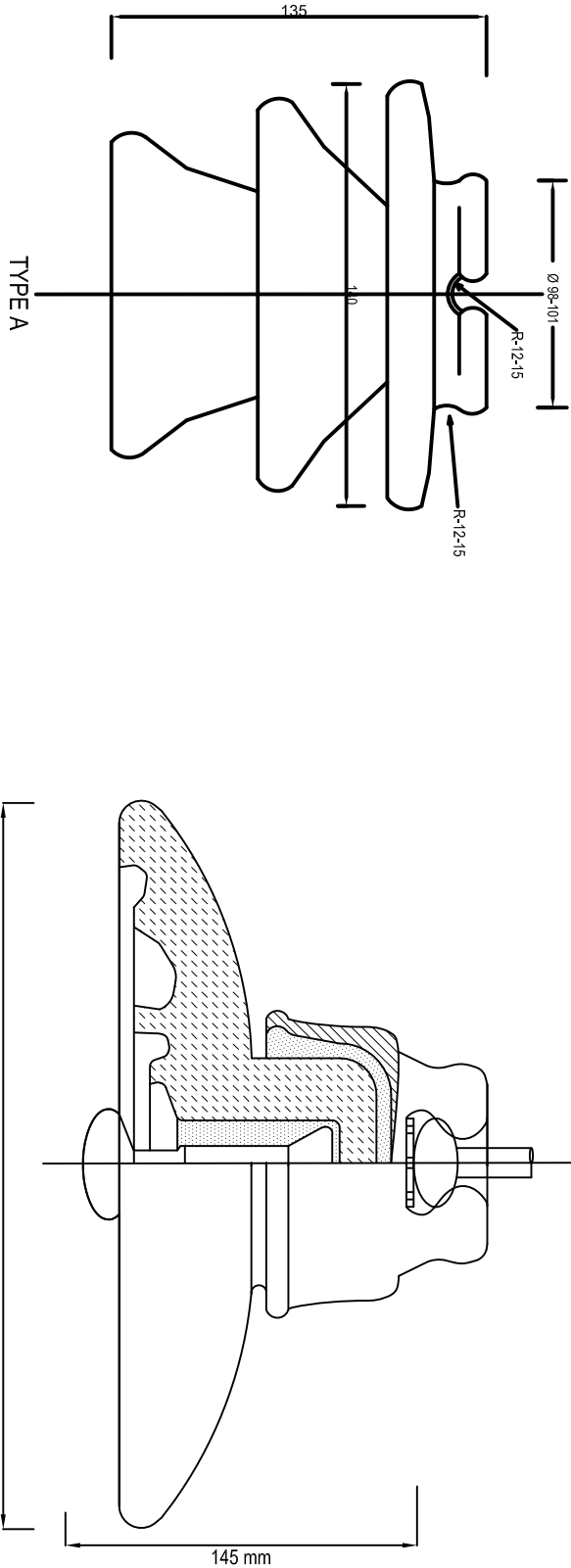
pole clamps (TUBULAR POLE)

Ministry of Environment and Population Alternative Energy Promotion Center(AEPC) Khumaltar, Lalitpur.	South Asian Sub-Regional Economic Co-operation (SASEC). Off Grid Power System Component, Nepal.			Designed by: S Pokhrel	Title: Transmission and Distribution Network Diagram	Dwg.No: SD -18
				Drawn By: S Pokhrel		
				Checked By: K Neupane		
Khatyad Khola Mini Hydropower Project, Mugu				Approved by:	Scale: Not on Scale	Date: August 2017

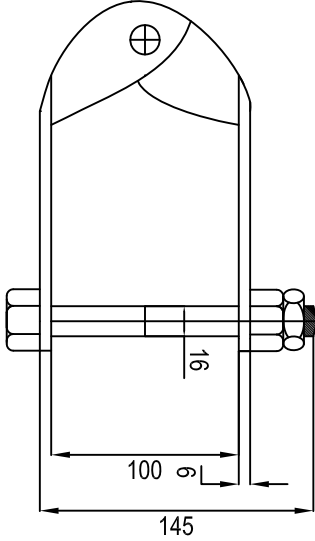
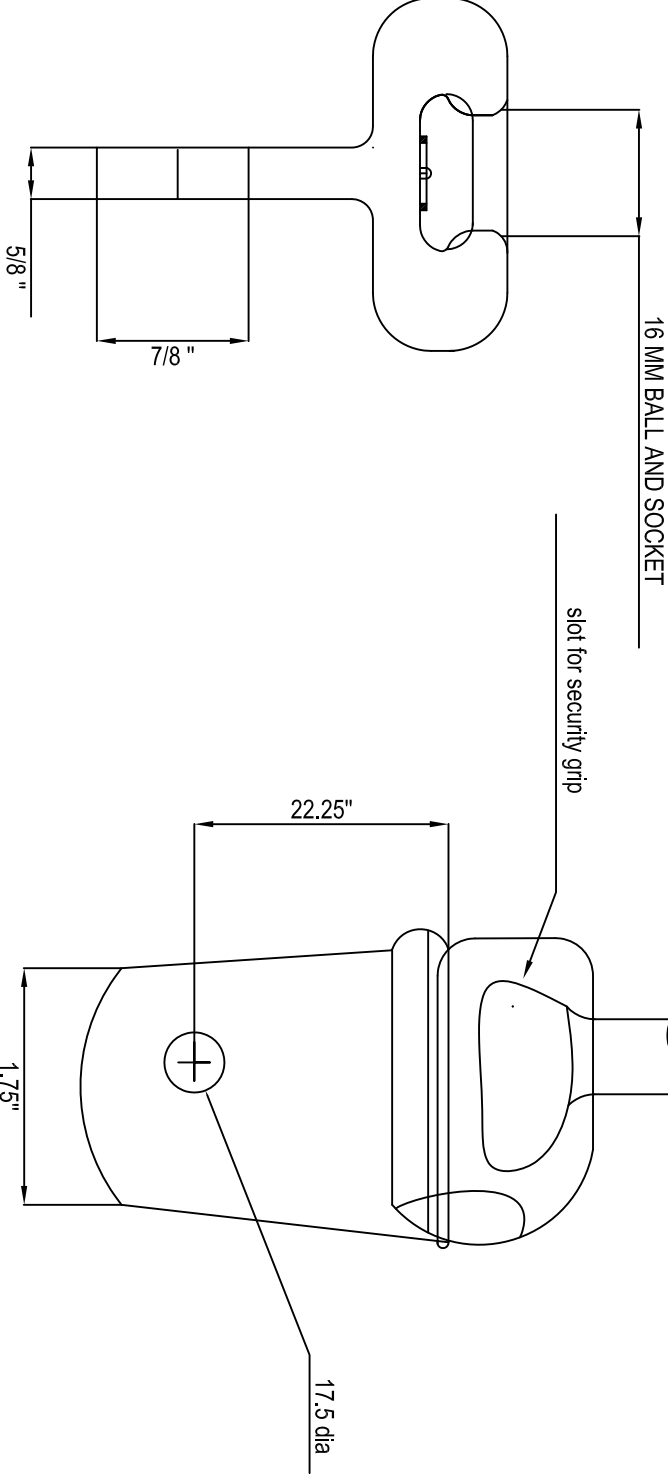


TRANSFORMER PLATFORM

Ministry of Environment and Population Alternative Energy Promotion Center(AEPC) Khumaltar, Lalitpur.		South Asian Sub-Regional Economic Co-operation (SASEC). Off Grid Power System Component, Nepal.		Designed by: S Pokhrel		Title:		Dwg.No:	
Khatyad Khola Mini Hydropower Project, Mugu				Drawn By: S Pokhrel		Transmission and Distribution Network Diagram			
		Checked By: K Neupane							
		Approved by:		Scale: Not on Scale		Date: August 2017		SD -19	



Applicable Standard IS : 731
11 kV Pin Insulator



HARDWARE SET FOR TENSION

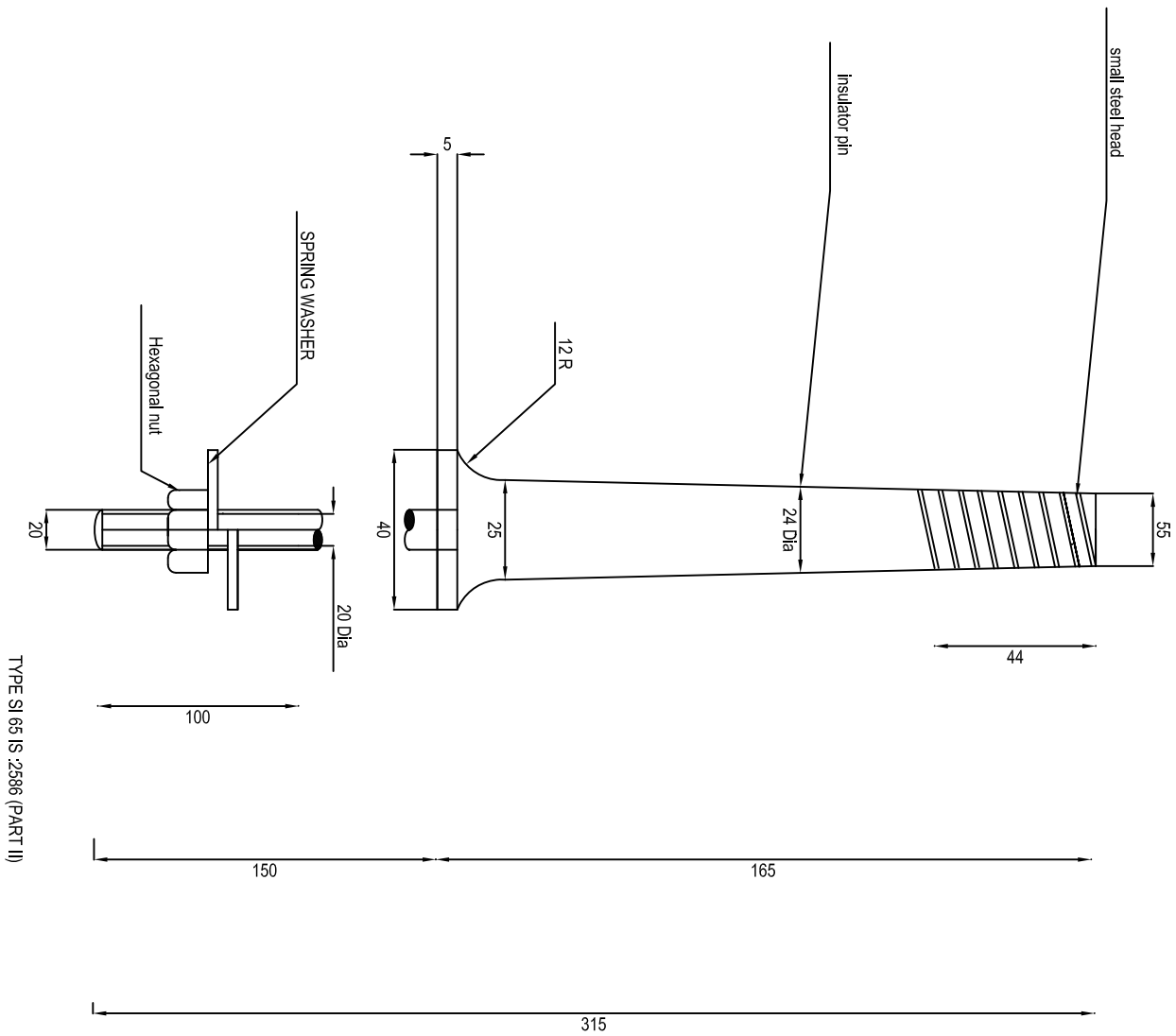
Section 50X6.0 mm

BACK STRAP

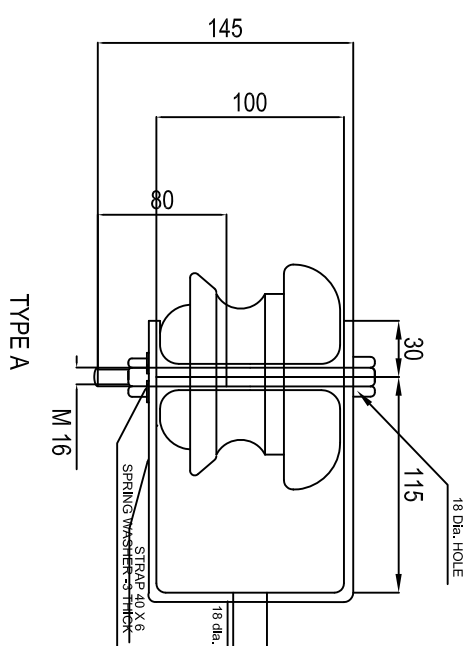
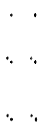
SOCKET EYES

HARDWARE SET FOR TENSION

Ministry of Environment and Population Alternative Energy Promotion Center(AEPC) Khumaltar, Lalitpur.	South Asian Sub-Regional Economic Co-operation (SASEC), Off Grid Power System Component, Nepal.	Designed by: S Pokhrel	Title: Transmission and Distribution Network Diagram	Dwg.No:
		Drawn By: S Pokhrel		
		Checked By: K Neupane		
		Approved by:	Scale: Not on Scale	Date: August 2017
Khatyad Khola Mini Hydropower Project, Mugu				

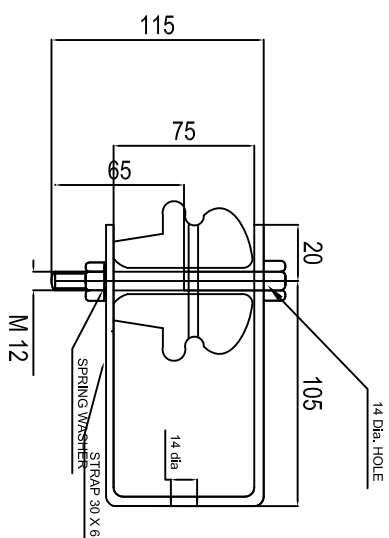


INSULATOR PIN



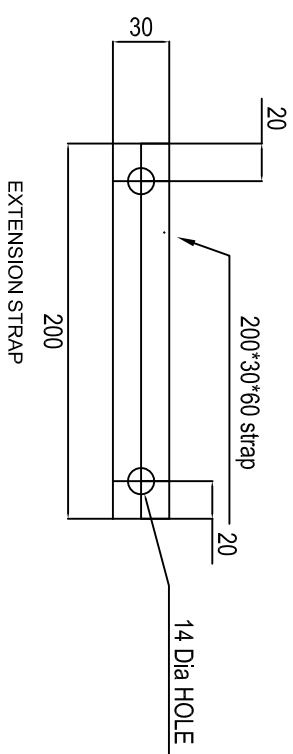
1	STRAP -40 X6	1
2	BOLT - 160 X 145	1
3	SPRING WASHER - 3 THICK	1
4	HEXAGONAL NUT	1

NOTES:
1. ALL FITTINGS HOT DIP GALVANIZED
2. FITTING AS PER IS 7935 -1975



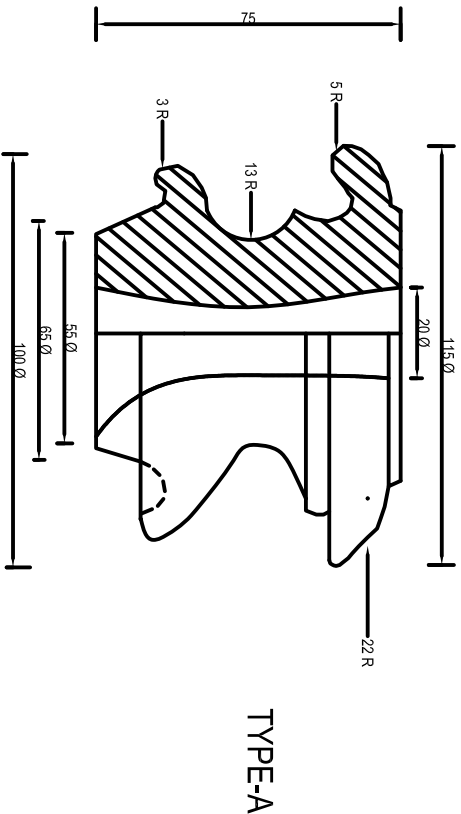
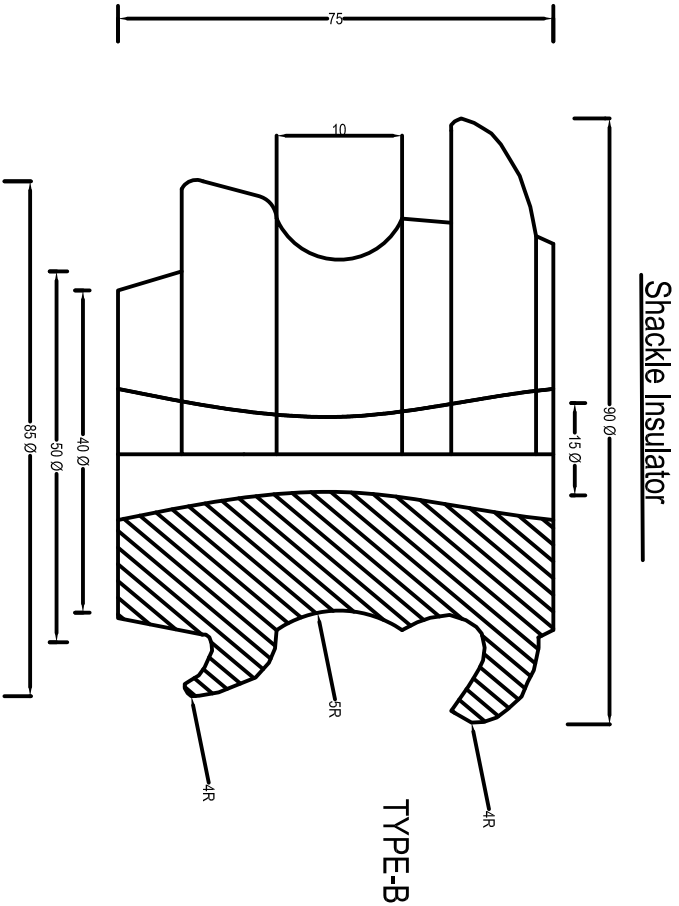
1	STRAP - 30 X6	1
2	BOLT - 120 X 115	1
3	SPRING WASHER - 3 THICK	1
4	HEXAGONAL NUT	1

NOTES:
1. ALL FITTINGS HOT DIP GALVANIZED
2. FITTING AS PER IS 7935 -1975

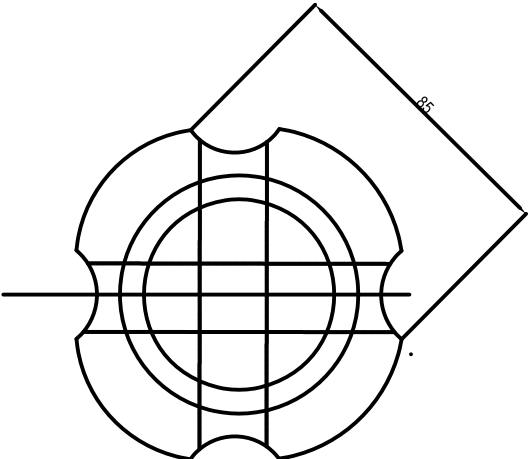
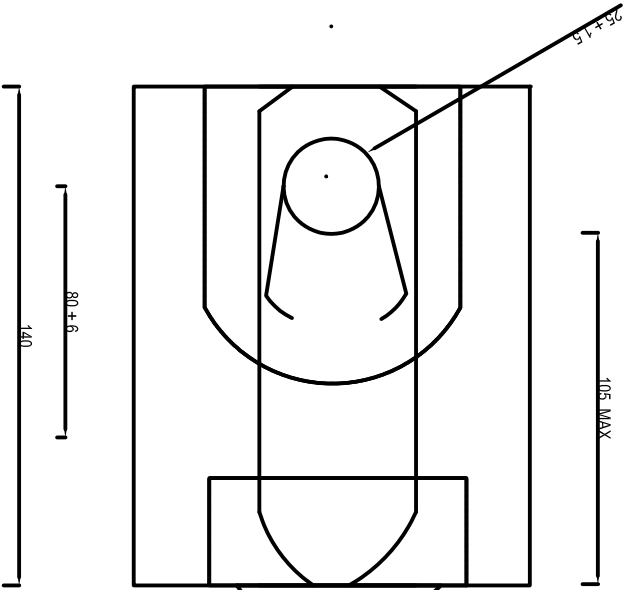
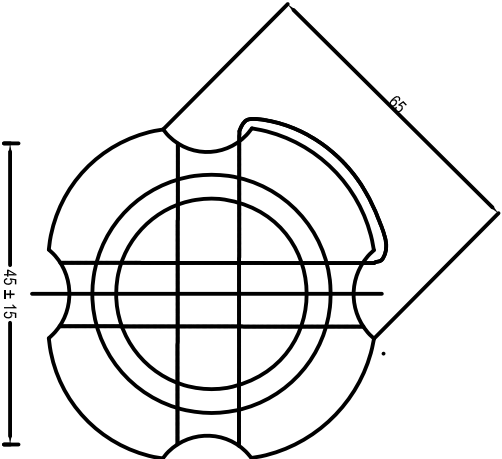
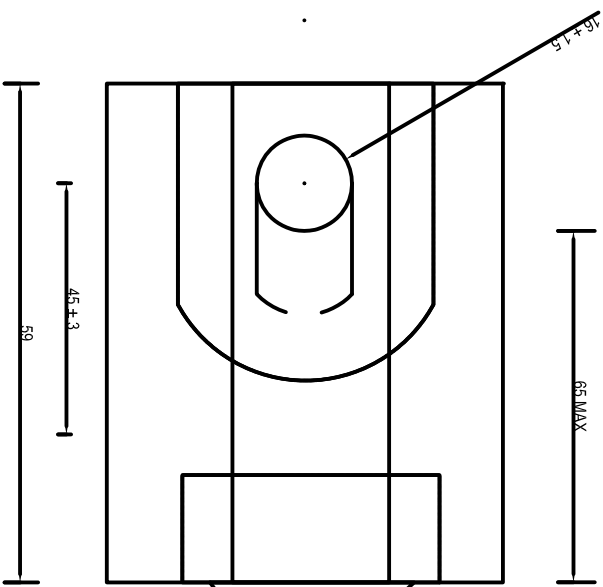


SHACKLE INSULATOR FITTING (D-IRON)

Ministry of Environment and Population Alternative Energy Promotion Center(AEPC) Khumaltar, Lalitpur.		South Asian Sub-Regional Economic Co-operation (SASEC). Off Grid Power System Component, Nepal.		Designed by: S Pokhrel		Title: Transmission and Distribution Network Diagram	Dwg.No:
Khatyad Khola Mini Hydropower Project, Mugu				Drawn By: S Pokhrel			SD -21
				Checked By: K Neupane			
		Approved by:		Scale: Not on Scale	Date: August 2017		



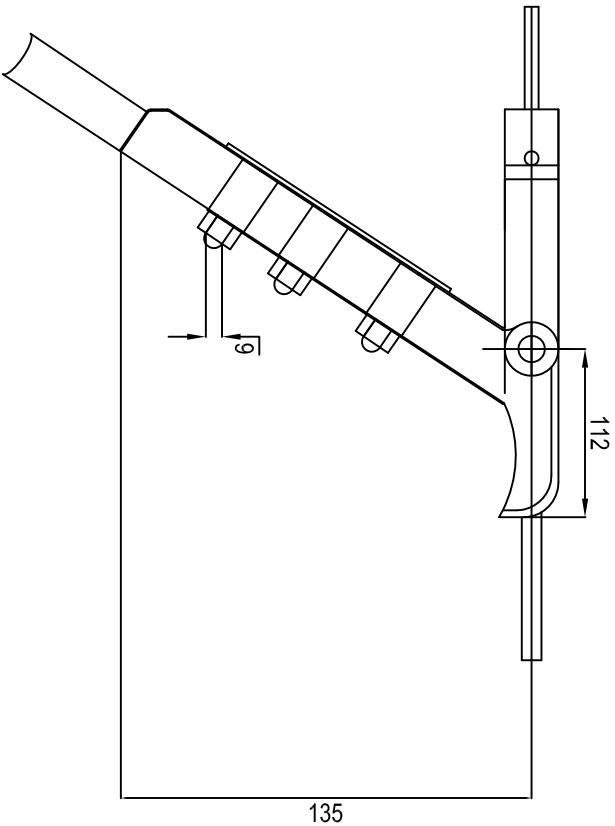
Shackle Insulator



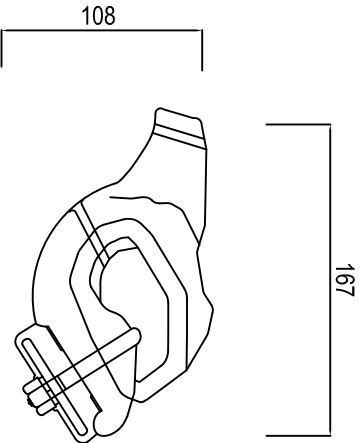
Applicable Standard IS : 5300

Stay Insulator

Ministry of Environment and Population Alternative Energy Promotion Center(AEPC) Khumaltar, Lalitpur.			South Asian Sub-Regional Economic Co-operation (SASEC), Off Grid Power System Component, Nepal.		Designed by: S Pokhrel		Title: Transmission and Distribution Network Diagram	Dwg.No:
					Drawn By: S Pokhrel			
					Checked By: K Neupane			
Khatyad Khola Mini Hydropower Project, Mugu			Approved by:		Scale: Not on Scale		Date: August 2017	SD -22



TYPE A (STRAIGHT TYPE)

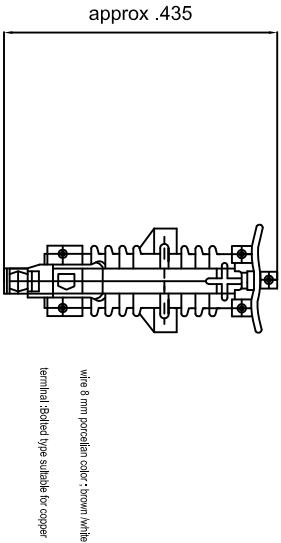
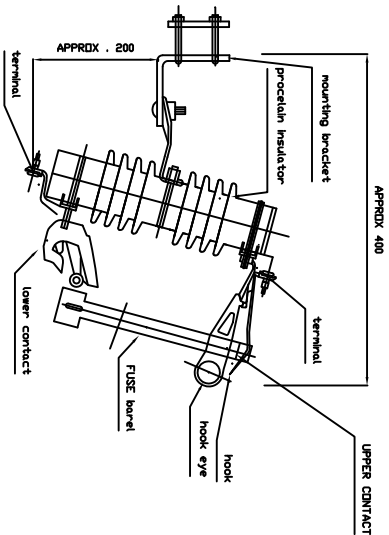


TYPE B (SNAIL TYPE)

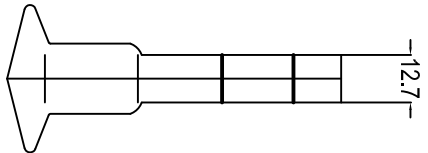
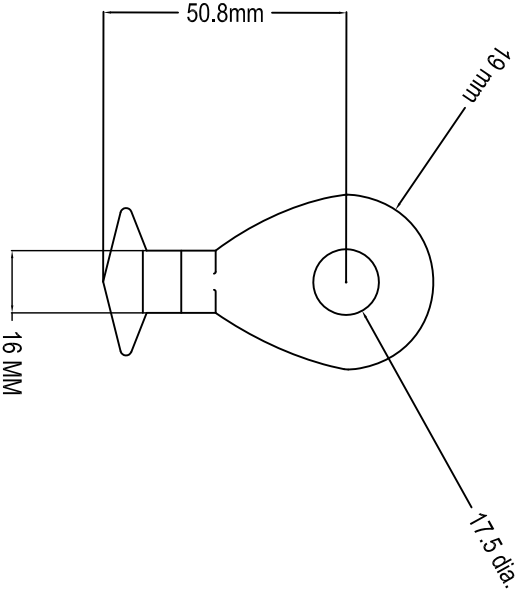
"U" BOLT

TENSION CLAMP

Ministry of Environment and Population Alternative Energy Promotion Center(AEPC) Khumaltar, Lalitpur.		South Asian Sub-Regional Economic Co-operation (SASEC). Off Grid Power System Component, Nepal.		Title: Transmission and Distribution Network Diagram		Dwg.No:
		Designed by: S Pokhrel				
		Drawn By: S Pokhrel				
		Checked By: K Neupane				
		Approved by:		Scale: Not on Scale	Date: August 2017	SD -23
Khatyad Khola Mini Hydropower Project, Mugu						

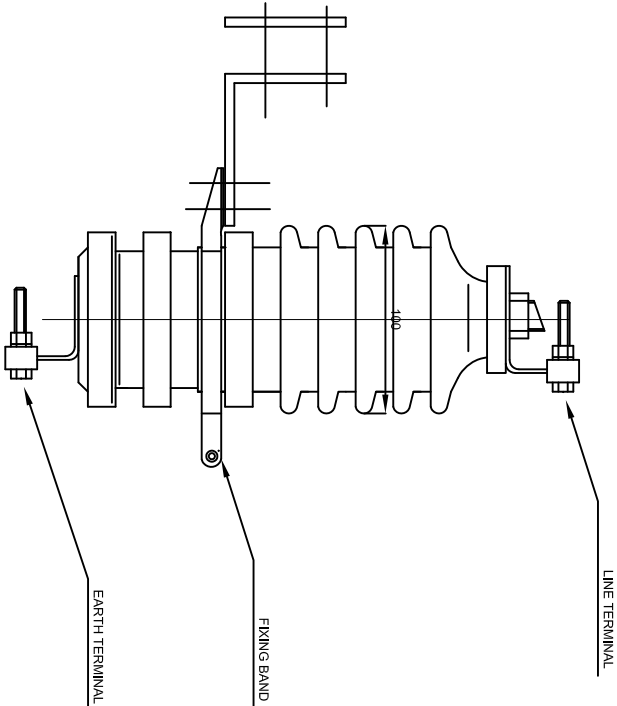
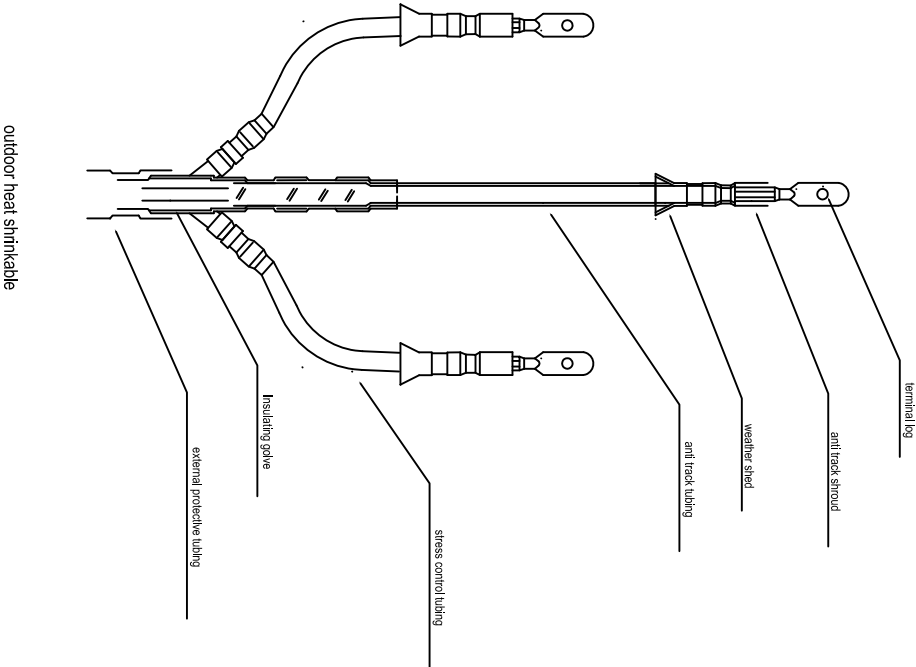


CUT OUT SWITCH



BALL EYES

Hardwares for Tension



Lightning Arrester

<div>Ministry of Environment and Population</div> <div>Alternative Energy Promotion Center(AEPC)</div> <div>Khumaltar, Lalitpur.</div>			<div>South Asian Sub-Regional Economic Co-operation (SASEC),</div> <div>Off Grid Power System Component, Nepal.</div>			<div>Designed by: S Pokhrel</div> <div>Drawn By: S Pokhrel</div> <div>Checked By: K Neupane</div> <div>Approved by:</div>		<div>Title:</div> <div>Transmission and Distribution Network Diagram</div>		<div>Dwg.No:</div> <div>SD -11</div>
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Section 7 - General Conditions of Contract

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1. Definitions

1.1 The following words and expressions shall have the meanings hereby assigned to them:

- (a) "Contract" means the Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendixes, and all documents incorporated by reference therein.
- (b) "Contract Documents" means the documents listed in the Agreement, including any amendments thereto.
- (c) "Contract Price" means the price payable to the Supplier as specified in the Agreement, subject to such additions and adjustments thereto or deductions therefrom, as may be made pursuant to the Contract.
- (d) "Day" means calendar day.
- (e) "Delivery" means the transfer of the Goods from the Supplier to the Purchaser in accordance with the terms and conditions set forth in the Contract.
- (f) "Completion" means the fulfillment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Contract.
- (g) "Eligible Countries" means the countries and territories eligible as listed in Section 5.
- (h) "GCC" means the General Conditions of Contract.
- (i) "Goods" means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract.
- (j) "Purchaser's Country" is the country specified in the Special Conditions of Contract (SCC).
- (k) "Purchaser" means the entity purchasing the Goods and Related Services, as specified in the SCC.
- (l) "Related Services" means the services incidental to the supply of the goods, such as insurance, installation, training and initial maintenance and other similar obligations of the Supplier under the Contract.
- (m) "SCC" means the Special Conditions of Contract.
- (n) "Subcontractor" means any natural person, private or government entity, or a combination of the above, including its legal successors or permitted assigns, to whom any part of the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier.
- (o) "Supplier" means the natural person, private or government entity, or a combination of the above, whose bid to perform the

Contract has been accepted by the Purchaser and is named as such in the Agreement, and includes the legal successors or permitted assigns of the Supplier.

(p) "ADB" is the Asian Development Bank.

(q) "The Site," where applicable, means the place named in the SCC.

2. Contract Documents

2.1 Subject to the order of precedence set forth in the Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory.

3. Fraud and Corruption

3.1 ADB's Anticorruption Policy requires Borrowers (including beneficiaries of ADB-financed activity), as well as Bidders, Suppliers, and Contractors under ADB-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, ADB

(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;
- (v) "obstructive practice" means (a) deliberately destroying, falsifying, altering, or concealing of evidence material to an ADB investigation; (b) making false statements to investigators in order to materially impede an ADB investigation; (c) failing to comply with requests to provide information, documents, or records in connection with an Office of Anticorruption and Integrity (OAI) investigation; (d) 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 (e) materially impeding ADB's contractual rights of audit or access to information; and
- (vi) "integrity violation" is any act which violates ADB's Anticorruption Policy, including (i) to (v) above and the following: abuse, conflict of interest, violations of ADB sanctions, retaliation against whistleblowers or witnesses, and other violations of ADB's Anticorruption Policy,

including failure to adhere to the highest ethical standard.

- (b) will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations in competing for the Contract;
- (c) will cancel the portion of the financing allocated to a contract if it determines at any time that representatives of the borrower or of a beneficiary of ADB-financing engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations during the procurement or the execution of that contract, without the borrower having taken timely and appropriate action satisfactory to ADB to remedy the situation; and
- (d) will impose remedial actions on a firm or an individual, at any time, in accordance with ADB's Anticorruption Policy and Integrity Principles and Guidelines (both as amended from time to time), including declaring ineligible, either indefinitely or for a stated period of time, to participate¹ in ADB-financed, -administered, or -supported activities or to benefit from an ADB-financed, -administered, or -supported contract, financially or otherwise, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations.

- 3.2 The Supplier shall permit ADB to inspect the Supplier's accounts and records relating to the performance of the Supplier and to have them audited by auditors appointed by ADB, if so required by ADB.

4. Interpretation

- 4.1 If the context so requires it, singular means plural and vice versa.

4.2 Incoterms

- (a) The meaning of any trade term and the rights and obligations of parties thereunder shall be as prescribed by Incoterms.
- (b) EXW, CIF, CIP, and other similar terms, shall be governed by the rules prescribed in the current edition of Incoterms, published by the International Chamber of Commerce at the date of the Invitation for Bids or as specified in the SCC.

4.3 Entire Agreement

The Contract constitutes the entire agreement between the Purchaser and the Supplier and supersedes all communications, negotiations, and agreements (whether written or oral) of parties with respect thereto made prior to the date of Contract.

¹ Whether as a Contractor, Subcontractor, Consultant, Manufacturer or Supplier, or Service Provider; or in any other capacity (different names are used depending on the particular Bidding Document).

4.4 Amendment

No amendment or other variation of the Contract shall be valid unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party thereto.

4.5 Nonwaiver

- (a) Subject to GCC Subclause 4.5(b) below, no relaxation, forbearance, delay, or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect, or restrict the rights of that party under the Contract, neither shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.
- (b) Any waiver of a party's rights, powers, or remedies under the Contract must be in writing, dated, and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.

4.6 Severability

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

5. Language

- 5.1 The Contract as well as all correspondence and documents relating to the Contract exchanged by the Supplier and the Purchaser, shall be written in the language specified in the SCC. Supporting documents and printed literature that are part of the Contract may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified in the SCC, in which case, for purposes of interpretation of the Contract, this translation shall govern.
- 5.2 The Supplier shall bear all costs of translation to the governing language and all risks of the accuracy of such translation.

6. Joint Venture

- 6.1 If the Supplier is a Joint Venture all of the parties shall be jointly and severally liable to the Purchaser for the fulfillment of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the Joint Venture. The composition or the constitution of the Joint Venture shall not be altered without the prior consent of the Purchaser.

7. Eligibility

- 7.1 The Supplier and its Subcontractors shall have the nationality of an eligible country. A Supplier or Subcontractor shall be deemed to have the nationality of a country if it is a citizen or constituted, incorporated, or registered, and operates in conformity with the provisions of the laws of that country.

- 7.2 All Goods and Related Services to be supplied under the Contract and financed by ADB shall have their origin in Eligible Countries. For the purpose of this clause, "country of origin" means the country where the goods have been grown, mined, cultivated, produced, manufactured, or processed; or through manufacture, processing, or assembly, another commercially recognized article results that differs substantially in its basic characteristics from its imported components.
- 8. Notices**
- 8.1 Any Notice given by one party to the other pursuant to the Contract shall be in writing to the address specified in the SCC. The term "in writing" means communicated in written form with proof of receipt.
- 8.2 A Notice shall be effective when delivered or on the Notice's effective date, whichever is later.
- 9. Governing Law**
- 9.1 The Contract shall be governed by and interpreted in accordance with the laws of the Purchaser's country, unless otherwise specified in the SCC.
- 10. Settlement of Disputes**
- 10.1 The Purchaser and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.
- 10.2 If the parties fail to resolve such a dispute or difference by mutual consultation within 28 days from the commencement of such consultation, either party may require that the dispute be referred for resolution to the formal mechanisms specified in the SCC.
- 11. Scope of Supply**
- 11.1 Subject to the SCC, the Goods and Related Services to be supplied shall be as specified in Section 6 (Schedule of Supply).
- 11.2 Unless otherwise stipulated in the Contract, the Scope of Supply shall include all such items not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for attaining Delivery and Completion of the Goods and Related Services as if such items were expressly mentioned in the Contract.
- 12. Delivery**
- 12.1 Subject to GCC Subclause 33.1, the Delivery of the Goods and Completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in the Section 6 (Schedule of Supply). The details of shipping and other documents to be furnished by the Supplier are specified in the SCC.
- 13. Supplier's Responsibilities**
- 13.1 The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with GCC Clause 11, and the Delivery and Completion Schedule, as per GCC Clause 12.
- 14. Purchaser's Responsibilities**
- 14.1 Whenever the supply of Goods and Related Services requires that the Supplier obtain permits, approvals, and import and other licenses from local public authorities, the Purchaser shall, if so required by the Supplier, make its best effort to assist the Supplier in complying with such requirements in a timely and expeditious manner.

- 14.2 The Purchaser shall pay all costs involved in the performance of its responsibilities, in accordance with GCC Subclause 14.1.
- 15. Contract Price**
- 15.1 The Contract Price shall be as specified in the Agreement subject to any additions and adjustments thereto, or deductions therefrom, as may be made pursuant to the Contract.
- 15.2 Prices charged by the Supplier for the Goods delivered and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid, with the exception of any price adjustments authorized in the SCC.
- 16. Terms of Payment**
- 16.1 The Contract Price shall be paid as specified in the SCC.
- 16.2 The Supplier's request for payment shall be made to the Purchaser in writing, accompanied by invoices describing, as appropriate, the Goods delivered and Related Services performed, and by the documents submitted pursuant to GCC Clause 12 and upon fulfillment of all the obligations stipulated in the Contract.
- 16.3 Payments shall be made promptly by the Purchaser, no later than 60 days after submission of an invoice or request for payment by the Supplier, and the Purchaser has accepted it.
- 16.4 The currency or currencies in which payments shall be made to the Supplier under this Contract shall be specified in the SCC.
- 17. Taxes and Duties**
- 17.1 For goods supplied from outside the Purchaser's country, the Supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the Purchaser's country.
- 17.2 For goods supplied from within the Purchaser's country, the Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser.
- 17.3 If any tax exemptions, reductions, allowances or privileges may be available to the Supplier in the Purchaser's Country, the Purchaser shall use its best efforts to enable the Supplier to benefit from any such tax savings to the maximum allowable extent.
- 18. Performance Security**
- 18.1 The Supplier shall, within 28 days of the notification of Contract award, provide a Performance Security for the due performance of the Contract in the amounts and currencies specified in the SCC.
- 18.2 The proceeds of the Performance Security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.
- 18.3 The Performance Security shall be denominated in the currencies of the Contract, or in a freely convertible currency acceptable to the Purchaser, and shall be in one of the forms stipulated by the Purchaser in the SCC, or in another form acceptable to the Purchaser.

- 18.4 The Performance Security shall be discharged by the Purchaser and returned to the Supplier not later than 28 days following the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations, unless specified otherwise in the SCC.
- 19. Copyright**
- 19.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.
- 20. Confidential Information**
- 20.1 The Purchaser and the Supplier shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data, or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following completion or termination of the Contract. Notwithstanding the above, the Supplier may furnish to its Subcontractor such documents, data, and other information it receives from the Purchaser to the extent required for the Subcontractor to perform its work under the Contract, in which event the Supplier shall obtain from such Subcontractor an undertaking of confidentiality similar to that imposed on the Supplier under GCC Clause 20.
- 20.2 The Purchaser shall not use such documents, data, and other information received from the Supplier for any purposes unrelated to the Contract. Similarly, the Supplier shall not use such documents, data, and other information received from the Purchaser for any purpose other than the design, procurement, or other work and services required for the performance of the Contract.
- 20.3 The obligation of a party under GCC Subclauses 20.1 and 20.2 above, however, shall not apply to information that
- (a) the Purchaser or Supplier needs to share with ADB or other institutions participating in the financing of the Contract;
 - (b) now or hereafter enters the public domain through no fault of that party;
 - (c) can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party; or
 - (d) otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.
- 20.4 The above provisions of GCC Clause 20 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of the Supply or any part thereof.

- 20.5 The provisions of GCC Clause 20 shall survive completion or termination, for whatever reason, of the Contract.
- 21. Subcontracting**
- 21.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under the Contract if not already specified in the Bid. Subcontracting shall in no event relieve the Supplier from any of its obligations, duties, responsibilities, or liability under the Contract.
- 21.2 Subcontracts shall comply with the provisions of GCC Clauses 3 and 7.
- 22. Specifications and Standards**
- 22.1 Technical Specifications and Drawings
- (a) The Supplier shall ensure that the Goods and Related Services comply with the technical specifications and other provisions of the Contract.
 - (b) The Supplier shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof provided or designed by or on behalf of the Purchaser, by giving a notice of such disclaimer to the Purchaser.
 - (c) The Goods and Related Services supplied under this Contract shall conform to the standards mentioned in Section 6 (Schedule of Supply) and, when no applicable standard is mentioned, the standard shall be equivalent or superior to the official standards whose application is appropriate to the country of origin of the Goods.
- 22.2 Wherever references are made in the Contract to codes and standards in accordance with which it shall be executed, the edition or the revised version of such codes and standards shall be those specified in the Section 6 (Schedule of Supply). During Contract execution, any changes in any such codes and standards shall be applied only after approval by the Purchaser and shall be treated in accordance with GCC Clause 33.
- 23. Packing and Documents**
- 23.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. During transit, the packing shall be sufficient to withstand, without limitation, rough handling and exposure to extreme temperatures, salt and precipitation, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the final destination of the Goods and the absence of heavy handling facilities at all points in transit.
- 23.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified in the SCC, and in any other instructions ordered by the Purchaser.

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|----------------------------------|---|
| 24. Insurance | 24.1 Unless otherwise specified in the SCC, the Goods supplied under the Contract shall be fully insured, in a freely convertible currency from an eligible country, against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery, in accordance with the applicable Incoterms or in the manner specified in the SCC. |
| 25. Transportation | 25.1 Unless otherwise specified in the SCC, obligations for transportation of the Goods shall be in accordance with the Incoterms specified in Section 6 (Schedule of Supply). |
| 26. Inspections and Tests | <p>26.1 The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified in Section 6 (Schedule of Supply).</p> <p>26.2 The inspections and tests may be conducted on the premises of the Supplier or its Subcontractor, at point of delivery, and/or at the final destination of the Goods, or in another place in the Purchaser's country as specified in the SCC. Subject to GCC Subclause 26.3, if conducted on the premises of the Supplier or its Subcontractor, all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser.</p> <p>26.3 The Purchaser or its designated representative shall be entitled to attend the tests and/or inspections referred to in GCC Subclause 26.2, provided that the Purchaser bear all of its own costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.</p> <p>26.4 Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.</p> <p>26.5 The Purchaser may require the Supplier to carry out any test and/or inspection not required by the Contract but deemed necessary to verify that the characteristics and performance of the Goods comply with the technical specifications, codes, and standards under the Contract, provided that the Supplier's reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impedes the progress of manufacturing and/or the Supplier's performance of its other obligations under the Contract, due allowance will be made in respect of the Delivery Dates and Completion Dates and the other obligations so affected.</p> <p>26.6 The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.</p> <p>26.7 The Purchaser may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Supplier shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Purchaser, and shall repeat</p> |

the test and/or inspection, at no cost to the Purchaser, upon giving a notice pursuant to GCC Subclause 26.4.

- 26.8 The Supplier agrees that neither the execution of a test and/or inspection of the Goods or any part thereof, nor the attendance by the Purchaser or its representative, nor the issue of any report pursuant to GCC Subclause 26.6, shall release the Supplier from any warranties or other obligations under the Contract.

27. Liquidated Damages

- 27.1 Except as provided under GCC Clause 32, if the Supplier fails to deliver any or all of the Goods or perform the Related Services within the period specified in the Contract, the Purchaser may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in the SCC of the Contract Price for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage specified in the SCC. Once the maximum is reached, the Purchaser may terminate the Contract pursuant to GCC Clause 35.

28. Warranty

- 28.1 The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.
- 28.2 Subject to GCC Subclause 22.1, the Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of final destination.
- 28.3 Unless otherwise specified in the SCC, the warranty shall remain valid for 12 months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the SCC, or for 18 months after the date of shipment or loading in the country of origin, whichever period concludes earlier.
- 28.4 The Purchaser shall give Notice to the Supplier, stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.
- 28.5 Upon receipt of such Notice, the Supplier shall, within the period specified in the SCC, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.
- 28.6 If having been notified, the Supplier fails to remedy the defect within the period specified in the SCC, the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

29. Patent Indemnity

29.1 The Supplier shall, subject to the Purchaser's compliance with GCC Subclause 29.2, indemnify and hold harmless the Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of

- (a) the installation of the Goods by the Supplier or the use of the Goods in the country where the Site is located; and
- (b) the sale in any country of the products produced by the Goods.

Such indemnity shall not cover any use of the Goods or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, neither any infringement resulting from the use of the Goods or any part thereof, or any products produced thereby in association or combination with any other equipment, plant, or materials not supplied by the Supplier, pursuant to the Contract.

29.2 If any proceedings are brought or any claim is made against the Purchaser arising out of the matters referred to in GCC Subclause 29.1, the Purchaser shall promptly give the Supplier a notice thereof, and the Supplier may at its own expense and in the Purchaser's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

29.3 If the Supplier fails to notify the Purchaser within 28 days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Purchaser shall be free to conduct the same on its own behalf.

29.4 The Purchaser shall, at the Supplier's request, afford all available assistance to the Supplier in conducting such proceedings or claim, and shall be reimbursed by the Supplier for all reasonable expenses incurred in so doing.

29.5 The Purchaser shall indemnify and hold harmless the Supplier and its employees, officers, and Subcontractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Supplier may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Purchaser.

- 30. Limitation of Liability**
- 30.1 Except in cases of gross negligence or willful misconduct,
- (a) neither party shall be liable to the other party for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the Purchaser; and
 - (b) the aggregate liability of the Supplier to the Purchaser, whether under the Contract, in tort, or otherwise, shall not exceed the amount specified in the SCC, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the Supplier to indemnify the Purchaser with respect to patent infringement.
- 31. Change in Laws and Regulations**
- 31.1 Unless otherwise specified in the Contract, if after the date of the Invitation for Bids, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in the place of the Purchaser's country where the Site is located (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the Delivery Date and/or the Contract Price, then such Delivery Date and/or Contract Price shall be correspondingly increased or decreased, to the extent that the Supplier has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with GCC Clause 15.
- 32. Force Majeure**
- 32.1 The Supplier shall not be liable for forfeiture of its Performance Security, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
- 32.2 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 Supplier. 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.
- 32.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.
- 33. Change Orders and Contract Amendments**
- 33.1 The Purchaser may at any time order the Supplier through Notice in accordance GCC Clause 8, to make changes within the general scope of the Contract in any one or more of the following:

- (a) drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;
- (b) the method of shipment or packing;
- (c) the place of delivery; and
- (d) the Related Services to be provided by the Supplier.

33.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or in the Delivery and Completion Schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this Clause must be asserted within 28 days from the date of the Supplier's receipt of the Purchaser's change order.

33.3 Prices to be charged by the Supplier for any Related Services that might be needed but which were not included in the Contract shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

34. Extensions of Time

34.1 If at any time during performance of the Contract, the Supplier or its Subcontractors should encounter conditions impeding timely delivery of the Goods or completion of Related Services pursuant to GCC Clause 12, the Supplier shall promptly notify the Purchaser in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may at its discretion extend the Supplier's time for performance, in which case the extension shall be ratified by the parties by amendment of the Contract.

34.2 Except in case of Force Majeure, as provided under GCC Clause 32, a delay by the Supplier in the performance of its Delivery and Completion obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 27, unless an extension of time is agreed upon, pursuant to GCC Subclause 34.1.

35. Termination

35.1 Termination for Default

- (a) The Purchaser, without prejudice to any other remedy for breach of Contract, by Notice of default sent to the Supplier, may terminate the Contract in whole or in part,
 - (i) if the Supplier fails to deliver any or all of the Goods within the period specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause 34; or
 - (ii) if the Supplier fails to perform any other obligation under the Contract.

- (iii) if the Supplier, in the judgment of the Purchaser has engaged in fraud and corruption, as defined in GCC Clause 3, in competing for or in executing the Contract.
- (b) In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 35.1(a), the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Related Services similar to those undelivered or not performed, and the Supplier shall be liable to the Purchaser for any additional costs for such similar Goods or Related Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.

35.2 Termination for Insolvency

The Purchaser may at any time terminate the Contract by giving Notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In such event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the Purchaser.

35.3 Termination for Convenience

- (a) The Purchaser, by Notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The Notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.
- (b) The Goods that are complete and ready for shipment within 28 days after the Supplier's receipt of the Notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect
 - (i) to have any portion completed and delivered at the Contract terms and prices; and/or
 - (ii) to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Related Services and for materials and parts previously procured by the Supplier.

36. Assignment

- 36.1 Neither the Purchaser nor the Supplier shall assign, in whole or in part, their obligations under this Contract, except with prior written consent of the other party.

Section 8 - Special Conditions of Contract

The following Special Conditions of Contract (SCC) shall supplement the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

GCC 1.1(j)	The Purchaser's country is: <u>Nepal</u>
GCC 1.1(k)	The Purchaser is: <u>Alternative Energy Promotion Centre (AEPC)</u>
GCC 1.1 (q)	The Site is: <u>Khatyad Rural Municipality, Mugu District, Nepal</u>
GCC 4.2 (b)	The version of Incoterms shall be: <u>Incoterms 2010</u>
GCC 5.1	The language shall be: <u>English</u> Language for translation of supporting documents and printed literature is: <u>English</u>
GCC 8.1	For <u>notices</u> , the Purchaser's address shall be: Attention: <u>Dr. Narayan Prasad Adhikari, Project Manager, AEPC/SASEC</u> Street address: <u>Khumaltar Height, Lalitpur, Nepal</u> Floor/ Room number: <u>2nd Floor</u> City: <u>Lalitpur</u> Country: <u>Nepal</u> Telephone: <u>5539390, 5539391</u> Fax: <u>5542397, 5539392</u> E-mail address: narayan.adhikari@aepec.gov.np
GCC 9.1	The governing law shall be: <u>Laws of Nepal</u>
GCC 10.2	The formal mechanism for the resolution of disputes shall be: <u>Nepal Council of Arbitration Rules</u> Place of arbitration: <u>NEPCA Head office, Lalitpur City</u>
GCC 11.1	The Scope of Supply shall be defined in detail in Section-6 Schedule of Supply. At the time of awarding the Contract, the Purchaser shall specify any change in the Scope of Supply with respect to Section-6 Schedule of Supply included in the Bidding Document. Such changes may be due, for instance, if the quantities of Goods and Related Services are increased or decreased at the time of award.

GCC 12.1	<p>Details of shipping and documents to be furnished by the Supplier shall be:</p> <p>For Goods from within the Purchaser's country as per Incoterm EXW:</p> <p>Upon delivery of the Goods to the transporter, the Supplier shall notify the Purchaser and send the following documents to the Purchaser:</p> <ul style="list-style-type: none"> (a) Two copies of the Supplier's invoice showing the description of the Goods, quantity, unit price, and total amount; (b) Delivery note, railway receipt, or truck receipt; (c) Manufacturer's or Supplier's warranty certificate; (d) Inspection certificate issued by the nominated inspection agency, and the Supplier's factory inspection report; and (e) Certificate of origin. <p>The Purchaser, shall receive the above documents before the arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses</p>
GCC 15.2	The price adjustment shall be: <u>Not Applicable</u>
GCC 16.1	<p>Payment of the Contract Price shall be made in the following manner: _____</p> <p><u>(i) Delivery of Goods:</u></p> <p><u>(a) Advance Payment:</u> Twenty (20) percent of the Contract Price of the Goods and Services within twenty-eight (28) days of signing of the Contract. Payment shall be made, provided the Supplier presents a request for payment accompanied by an Advance Payment Security in the form of a bank guarantee (Reputable Bank) for an amount equal to the amount of the payment, and that shall be valid until the Goods and Services are delivered. The security shall be in the form as specified in Section-9, Contract Forms.</p> <p><u>(b) On Delivery:</u> The Purchaser shall pay the Supplier sixty (60) percent of the Contract Price of the Goods delivered.</p> <p><u>(c) After Installation and Commissioning:</u> Fifteen (15) percent of the Contract Price of Goods received and 75% of Services shall be paid within twenty-eighty (28) days of receipt of the Goods upon submission of a claim supported by the acceptance certificate issued by the Purchaser.</p> <p><u>(d) Retention Money:</u> Five (5) percent of the Contract Price of Goods and Services shall be paid within twenty-eighty (28) days of completion of warranty period.</p>
GCC 16.4	The currencies for payments shall be: <u>Nepalese Rupees</u>
GCC 18.1	The Supplier shall provide a Performance Security of 10 percent of the Contract Price in Nepalese Rupees.

GCC 18.3	<p>The forms of acceptable Performance Security are:</p> <p>The types of acceptable Performance Securities are: A bank guarantee issued by a reputable bank located in the Purchaser's country or abroad, acceptable to Purchaser's in the format included in Section 9, Contract Forms, or a cashier's or certified check, or cash.</p>
GCC 18.4	<p>Discharge of the Performance Security shall take place:</p> <p>Pursuant to GCC Sub-Clause 18.4, after delivery and acceptance of the Goods and services, the performance security shall be reduced to 5% of the Contract to cover the Supplier's warranty obligations in accordance with GCC Clause 28.3.</p>
GCC 23.2	<p>The packing, marking, and documentation within and outside the packages shall be:</p> <p>Khatyad Khola Birabagar Sera Mini Hydro Subproject, Khatyad Rural Municipality, Sukhadik, Mugu District, Nepal. (Package 2- Transmission & Distribution) AEPC/ADB/SASEC/NCB/MHP/06</p>
GCC 24.1	<p>The insurance coverage shall be in accordance with</p> <p>"Pursuant to GCC, Sub-Clause 24.1, the Supplier must insure the Goods in an amount equal to 110 percent of the EXW price of the Goods from "Warehouse" to "Warehouse" on "All Risks" basis, including War Risks and Strikes."</p>
GCC 25.1	<p>Obligations for transportation of the Goods shall be in accordance with: Incoterms 2010</p>
GCC 26.2	<p>Tests and Inspections specified in Section 6 (Schedule of Supply), shall be carried out at the following times or milestones, and places : _____</p> <p>Goods: <u>Distribution Transformer, Steel Tubular Poles,</u></p> <p>Type of Test: As mentioned in technical specifications</p> <p>Time or Milestone: As mentioned in technical specifications</p> <p>Place: As mentioned in technical specifications</p>
GCC 27.1	<p>The applicable rate for liquidated damages for delay shall be: 0.5 % per week or part thereof.</p>
GCC 27.1	<p>The maximum amount of liquidated damages shall be: 10% of the Contract price.</p>
GCC 28.3	<p>The period of validity of the Warranty shall be: <u>Two (2) Years</u></p> <p>The place of final destination shall be: <u>Khatyad Khola Birabagar Sera Mini Hydro Subproject, Khatyad Rural Municipality, Mugu District, Nepal</u></p>

GCC 28.5	The Supplier shall correct any defects covered by the Warranty within <u>30 days</u> of being notified by the Purchaser of the occurrence of such defects.
GCC 30.1 (b)	The amount of aggregate liability shall be: 100% of the Contract price.

Section 9 - Contract Forms

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Notification of Award

---- on letterhead of the purchaser ----

Letter of Acceptance

..... date.

To: name and address of the supplier

Subject: Notification of Award Contract No.

This is to notify you that your Bid dated date for execution of the name of the contract and identification number, as given in the Bid Data Sheet for the Accepted Contract Amount of the equivalent of amount in words and figures and name of currency, as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by our Agency.

You are requested to furnish the Performance Security within 28 days in accordance with the Conditions of Contract, using for that purpose the Performance Security Form included in Section 9 (Contract Forms) of the Bidding Document.

Authorized Signature:

Name and Title of Signatory:

Name of Agency:

Attachment: Contract Agreement

Contract Agreement

THIS AGREEMENT made on the *[insert date]* day of *[insert month]*, *[insert year]*, between *[insert complete name of the Purchaser]* of *[insert complete address of the purchaser]* (hereinafter “the Purchaser”), of the one part, and *[insert complete name of the supplier]* of *[insert complete address of the supplier]* (hereinafter “the Supplier”), of the other part:

WHEREAS the Purchaser invited Bids for certain Goods and Related Services, viz., *[insert brief description of the goods and related services]* and has accepted a Bid by the Supplier for the supply of those Goods and Related Services in the sum of *[insert currency or currencies and amount of contract price in words and figures]* (hereinafter “the Contract Price”).

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Contract referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:
 - (a) the Letter of Acceptance;
 - (b) the Price Bid Submission Sheet and the Price Schedules submitted by the Supplier;
 - (c) the Technical Bid Submission Sheet submitted by the Supplier;
 - (d) the Special Conditions of Contract;
 - (e) the List of Eligible Countries that was specified in Section 5 of the Bidding Document;
 - (f) the General Conditions of Contract;
 - (g) the Schedule of Supply; and
 - (h) any other documents shall be added here.¹

This Contract shall prevail over all other Contract documents. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.

3. In consideration of the payments to be made by the Purchaser to the Supplier as indicated in this Agreement, the Supplier hereby covenants with the Purchaser to provide the Goods and Related Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Related Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of *[indicated name of country]* on the day, month and year indicated above.

Signed by *[insert authorized signature for the purchaser]* (for the Purchaser)

Signed by *[insert authorized signature for the supplier]* (for the Supplier)

¹ Tables of Adjustment Data may be added if the contract provides for price adjustment (see GCC 15).

Performance Security

*Bank's name, and address of issuing branch or office*¹

Beneficiary: *insert name and address of the purchaser*

Date: *insert date (as day, month, and year)*

Performance Guarantee No.:

We have been informed that *name of the supplier* (hereinafter called "the Supplier") has entered into Contract No. *reference number of the contract* dated with you, for the execution of *name of contract and brief description of goods and related services* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Supplier, 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 words*² (*amount in figures*) such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of your first demand in writing accompanied by a written statement stating that the Supplier 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 ,³ and any demand for payment under it must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458 , except that subparagraph (ii) of Sub-article 20(a) is hereby excluded.⁴

.....
Signature(s) and seal of bank (where appropriate)

-- Note to Bidder --

If the institution issuing the performance security is located outside the country of the purchaser, it shall have a correspondent financial institution located in the country of the purchaser to make it enforceable.

- ¹ All italicized text is for guidance on how to prepare this demand guarantee and shall be deleted from the final document.
- ² The guarantor shall insert an amount representing the percentage of the contract price specified in the contract and denominated either in the currency (ies) of the contract or a freely convertible currency acceptable to the purchaser.
- ³ Insert the date 28 days after the expected completion date. The purchaser should note that in the event of an extension of the time for completion of the contract, the purchaser would need to request an extension of this guarantee from the guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the purchaser might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Purchaser's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."
- ⁴ Or the same or similar to this clause specified in the Uniform Rules for Demand Guarantees, ICC Publication No. 758 where applicable.

Advance Payment Security

[insert complete name and number of contract]

To: [insert complete name of the purchaser]

In accordance with the payment provision included in the Contract, in relation to advance payments, [insert complete name of the supplier] (hereinafter called "the Supplier") shall deposit with the Purchaser a security consisting of [indicate type of security], to guarantee its proper and faithful performance of the obligations imposed by said Clause of the Contract, in the amount of [insert currency and amount of guarantee in words and figures].

We, the undersigned [insert complete name of the guarantor], legally domiciled in [insert full address of the guarantor] (hereinafter "the Guarantor"), as instructed by the Supplier, agree unconditionally and irrevocably to guarantee as primary obligor and not as surety merely, the payment to the Purchaser on its first demand without whatsoever right of objection on our part and without its first claim to the Supplier, in the amount not exceeding [insert currency and amount of guarantee in words and figures].

This security shall remain valid and in full effect from the date of the advance payment being received by the Supplier under the Contract until [insert date (as day, month, and year)].

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458 [or ICC Publication No. 758 as applicable].

Name: [insert complete name of person signing the Security]

In the capacity of [insert legal capacity of person signing the Security]

Signed: [insert signature of person whose name and capacity are shown above]

Duly authorized to sign the security for and on behalf of [insert seal (where appropriate) and complete name of the guarantor]

Date: [insert date of signing]

-- Note to Bidder --

If the institution issuing the advance payment security is located outside the country of the purchaser, it shall have a correspondent financial institution located in the country of the purchaser to make it enforceable.