PHILIPPINE BIDDING DOCUMENTS

Procurement of GOODS

Government of the Republic of the Philippines

Sixth Edition
July 2020

Preface

These Philippine Bidding Documents (PBDs) for the procurement of Goods through Competitive Bidding have been prepared by the Government of the Philippines for use by any branch, constitutional commission or office, agency, department, bureau, office, or instrumentality of the Government of the Philippines, National Government Agencies, including Government-Owned and/or Controlled Corporations, Government Financing Institutions, State Universities and Colleges, and Local Government Unit. The procedures and practices presented in this document have been developed through broad experience, and are for mandatory use in projects that are financed in whole or in part by the Government of the Philippines or any foreign government/foreign or international financing institution in accordance with the provisions of the 2016 revised Implementing Rules and Regulations of Republic Act No. 9184.

The Bidding Documents shall clearly and adequately define, among others: (i) the objectives, scope, and expected outputs and/or results of the proposed contract or Framework Agreement, as the case may be; (ii) the eligibility requirements of Bidders; (iii) the expected contract or Framework Agreement duration, the estimated quantity in the case of procurement of goods, delivery schedule and/or time frame; and (iv) the obligations, duties, and/or functions of the winning bidder.

Care should be taken to check the relevance of the provisions of the PBDs against the requirements of the specific Goods to be procured. If duplication of a subject is inevitable in other sections of the document prepared by the Procuring Entity, care must be exercised to avoid contradictions between clauses dealing with the same matter.

Moreover, each section is prepared with notes intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They shall not be included in the final documents. The following general directions should be observed when using the documents:

a. All the documents listed in the Table of Contents are normally required for the procurement of Goods. However, they should be adapted as necessary to the circumstances of the particular Procurement Project.

b. Specific details, such as the "*name of the Procuring Entity*" and "*address for bid submission*," should be furnished in the Instructions to Bidders, Bid Data Sheet, and Special Conditions of Contract. The final documents should contain neither blank spaces nor options.

c. This Preface and the footnotes or notes in italics included in the Invitation to Bid, Bid Data Sheet, General Conditions of Contract, Special Conditions of Contract, Schedule of Requirements, and Specifications are not part of the text of the final document, although they contain instructions that the Procuring Entity should strictly follow.

d. The cover should be modified as required to identify the Bidding Documents as to the Procurement Project, Project Identification Number, and Procuring Entity, in addition to the date of issue.

e. Modifications for specific Procurement Project details should be provided in the Special Conditions of Contract as amendments to the Conditions of Contract. For easy completion, whenever reference has to be made to specific clauses in the Bid Data Sheet or Special Conditions of Contract, these terms shall be printed in bold typeface on Sections I (Instructions to Bidders) and III (General Conditions of Contract), respectively.

f. For guidelines on the use of Bidding Forms and the procurement of Foreign-Assisted Projects, these will be covered by a separate issuance of the Government Procurement Policy Board.

Table of Contents

Glossary of Acronyms, Terms, and Abbreviations

ABC – Approved Budget for the Contract.

BAC – Bids and Awards Committee.

Bid – A signed offer or proposal to undertake a contract submitted by a bidder in response to and in consonance with the requirements of the bidding documents. Also referred to as *Proposal* and *Tender.* (2016 revised IRR, Section 5[c])

Bidder – Refers to a contractor, manufacturer, supplier, distributor and/or consultant who submits a bid in response to the requirements of the Bidding Documents. (2016 revised IRR, Section 5[d])

Bidding Documents – The documents issued by the Procuring Entity as the bases for bids, furnishing all information necessary for a prospective bidder to prepare a bid for the Goods, Infrastructure Projects, and/or Consulting Services required by the Procuring Entity. (2016 revised IRR, Section 5[e])

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

Consulting Services – Refer to services for Infrastructure Projects and other types of projects or activities of the GOP requiring adequate external technical and professional expertise that are beyond the capability and/or capacity of the GOP to undertake such as, but not limited to: (i) advisory and review services; (ii) pre-investment or feasibility studies; (iii) design; (iv) construction supervision; (v) management and related services; and (vi) other technical services or special studies. (2016 revised IRR, Section 5[i])

CDA - Cooperative Development Authority.

Contract – Refers to the agreement entered into between the Procuring Entity and the Supplier or Manufacturer or Distributor or Service Provider for procurement of Goods and Services; Contractor for Procurement of Infrastructure Projects; or Consultant or Consulting Firm for Procurement of Consulting Services; as the case may be, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

CIF – Cost Insurance and Freight.

CIP – Carriage and Insurance Paid.

CPI – Consumer Price Index.

DDP – Refers to the quoted price of the Goods, which means "delivered duty paid."

DTI – Department of Trade and Industry.

EXW – Ex works.

FCA – "Free Carrier" shipping point.

FOB – "Free on Board" shipping point.

Foreign-funded Procurement or Foreign-Assisted Project– Refers to procurement whose funding source is from a foreign government, foreign or international financing institution as specified in the Treaty or International or Executive Agreement. (2016 revised IRR, Section 5[b]).

Framework Agreement – Refers to a written agreement between a procuring entity and a supplier or service provider that identifies the terms and conditions, under which specific purchases, otherwise known as "Call-Offs," are made for the duration of the agreement. It is in the nature of an option contract between the procuring entity and the bidder(s) granting the procuring entity the option to either place an order for any of the goods or services identified in the Framework Agreement List or not buy at all, within a minimum period of one (1) year to a maximum period of three (3) years. (GPPB Resolution No. 27-2019)

GFI – Government Financial Institution.

GOCC – Government-owned and/or –controlled corporation.

Goods – Refer to all items, supplies, materials and general support services, except Consulting Services and Infrastructure Projects, which may be needed in the transaction of public businesses or in the pursuit of any government undertaking, project or activity, whether in the nature of equipment, furniture, stationery, materials for construction, or personal property of any kind, including non-personal or contractual services such as the repair and maintenance of equipment and furniture, as well as trucking, hauling, janitorial, security, and related or analogous services, as well as procurement of materials and supplies provided by the Procuring Entity for such services. The term "related" or "analogous services" shall include, but is not limited to, lease or purchase of office space, media advertisements, health maintenance services, and other services essential to the operation of the Procuring Entity. (2016 revised IRR, Section 5[r])

GOP – Government of the Philippines.

GPPB – Government Procurement Policy Board.

INCOTERMS – International Commercial Terms.

Infrastructure Projects – Include the construction, improvement, rehabilitation, demolition, repair, restoration or maintenance of roads and bridges, railways, airports, seaports, communication facilities, civil works components of information technology projects, irrigation, flood control and drainage, water supply, sanitation, sewerage and solid waste management systems, shore protection, energy/power and electrification facilities, national

buildings, school buildings, hospital buildings, and other related construction projects of the government. Also referred to as *civil works or works*. (2016 revised IRR, Section 5[u])

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PhilGEPS - Philippine Government Electronic Procurement System.

Procurement Project – refers to a specific or identified procurement covering goods, infrastructure project or consulting services. A Procurement Project shall be described, detailed, and scheduled in the Project Procurement Management Plan prepared by the agency which shall be consolidated in the procuring entity's Annual Procurement Plan. (GPPB Circular No. 06-2019 dated 17 July 2019)

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

Supplier – refers to a citizen, or any corporate body or commercial company duly organized and registered under the laws where it is established, habitually established in business and engaged in the manufacture or sale of the merchandise or performance of the general services covered by his bid. (Item 3.8 of GPPB Resolution No. 13-2019, dated 23 May 2019). Supplier as used in these Bidding Documents may likewise refer to a distributor, manufacturer, contractor, or consultant.

UN – United Nations.

Section I. Invitation to Bid

Notes on the Invitation to Bid

The Invitation to Bid (IB) provides information that enables potential Bidders to decide whether to participate in the procurement at hand. The IB shall be posted in accordance with Section 21.2 of the 2016 revised IRR of RA No. 9184.

Apart from the essential items listed in the Bidding Documents, the IB should also indicate the following:

a. The date of availability of the Bidding Documents, which shall be from the time the IB is first advertised/posted until the deadline for the submission and receipt of bids;

b. The place where the Bidding Documents may be acquired or the website where it may be downloaded;

c. The deadline for the submission and receipt of bids; and

d. Any important bid evaluation criteria (*e.g.*, the application of a margin of preference in bid evaluation).

The IB should be incorporated in the Bidding Documents. The information contained in the IB must conform to the Bidding Documents and in particular to the relevant information in the Bid Data Sheet.

Bantayan Island Electric Cooperative, Inc. (BANELCO)
Balintawak, Bantigue, Bantayan, Cebu
Tel/Fax No.: (032) 460-9281; (032) 460-9112
Email address: ***banelcoonline@yaho o.com***
Website:www.banelcobantayan.com

Invitation to Bid No. 2024-002

BANTAYAN ISLAND ELECTRIC COOPERATIVE, INC. through its Bids and Awards Committee (BAC), hereby invites all accredited suppliers and contractors to submit their respective bids for Supply and Delivery of Materials and Labor for Improvement/Construction of Distribution Line Extension for Kabiayan ni Man Liling (Bantayan Site 2), Kangkaibe, Bantayan to be Funded by NHA Yolanda Permanent Resettlement Site Subsidy.

Lot Number	**Particulars**	**ABC (Php) inclusive of VAT**	**Funding Source**	**Price of Bid Documents** (non-refundable)	**Project Duration**
Lot 1	Line Hardwares	PhP 1,032,887.00	NHA Yolanda Permanent Resettlement Site Subsidy	Php 5,000.00	30 Calendar Days upon issuance of NTP
Lot 2	Conductor Wires	PhP 2,328,288.00	NHA Yolanda Permanent Resettlement Site Subsidy	Php 5,000.00	30 Calendar Days upon issuance of NTP
Lot 3	Steel Pole & Cross Arm	Php 2,107,150.00	NHA Yolanda Permanent Resettlement	Php 5,000.00	30 Calendar Days upon issuance of NTP
Lot 4	Labor, Distribution Line Construction	Php 1,640,497.50	NHA Yolanda Permanent Resettlement	Php 5,000.00	60 Calendar Days upon issuance of NTP

ACTIVITIES	**SCHEDULE**
Advertisement/Posting of Invitation to Bid	August 9, 2024
Issuance and Availability of Bid Documents	August 10, 2024
Pre-Bid Conference	August 16, 2024 (1:30 PM)
Deadline of Queries	August 19, 2024
Final Issuance of Supplemental Bid Bulletin	August 30, 2023
Deadline of Submission and Opening of Bids	September 6, 2024 (1:30 PM)

Bidding will be conducted through open competitive bidding procedures using a non-discretionary "pass/fail" criterion as specified in the 2016 Revised Implementing Rules and Regulations (IRR) of Republic Act (RA) 9184 otherwise known as the "Government Procurement Reform Act".

All Bids shall be opened and read in the presence of Bidders or their duly authorized representatives. Bidders shall be required to put up a Bid Security in the amount equivalent to 2% of the ABC. The Bid Security shall be in the form of cash or manager's check and submitted together with their Bids. Interested bidders may attend and participate the pre-bid conference raise or submit written queries or clarifications without purchasing first the bidding documents. The presence of bidders during the pre-bid conference is **NOT MANDATORY**.

Only those bidders who have bought the bidding documents shall be allowed to participate the Submission and Opening of Bids.

The Pre-Bid Conference, Submission and Opening of Bids will be held via face-to-face at BANELCO Office, Bantigue, Bantayan, Cebu.

Interested bidders may download the bid documents from BANELCO website or maybe acquired further information from BANELCO Office at Cell Numbers 09311176126/ 09437012696, Landline 032-4609112, 032-4609281 or call 09232641889 and look for Ms. Maria Ruby Capundag or email at banelco.bac@gmail.com during office hours.

BANELCO reserves the right to accept or reject any bid, to annul the bidding process, and to reject all bids at any time prior to the awarding of contract, thereby without incurring any liability to the affected bidder or bidders.

(SGD) ENGR. RONALD D. ALOYAN

Chairman, BAC

Noted by:

(SGD) ENGR. LEE D. RIVERA

General Manager

Section II. Instructions to Bidders

Notes on the Instructions to Bidders

This Section on the Instruction to Bidders (ITB) provides the information necessary for bidders to prepare responsive bids, in accordance with the requirements of the Procuring Entity. It also provides information on bid submission, eligibility check, opening and evaluation of bids, post-qualification, and on the award of contract.

1. Scope of Bid

The Procuring Entity, *BANELCO* wishes to receive Bids for the Supply and Delivery of Line Hardware for Improvement/Construction of Distribution Line Extension for Kabiayan ni Man Liling (Bantayan Site 2)

2. Funding Information

The fund for this engagement shall be sourced NHA Yolanda Permanent Resettlement Site Subsidy.

3. Bidding Requirements

The Bidding for the Project shall be governed by all the provisions of RA No. 9184 and its 2016 revised IRR, including its Generic Procurement Manuals and associated policies, rules and regulations as the primary source thereof, while the herein clauses shall serve as the secondary source thereof.

Any amendments made to the IRR and other GPPB issuances shall be applicable only to the ongoing posting, advertisement, or **IB** by the BAC through the issuance of a supplemental or bid bulletin.

The Bidder, by the act of submitting its Bid, shall be deemed to have verified and accepted the general requirements of this Project, including other factors that may affect the cost, duration and execution or implementation of the contract, project, or work and examine all instructions, forms, terms, and project requirements in the Bidding Documents.

4. Corrupt, Fraudulent, Collusive, and Coercive Practices

The Procuring Entity, as well as the Bidders and Suppliers, shall observe the highest standard of ethics during the procurement and execution of the contract. They or through an agent shall not engage in corrupt, fraudulent, collusive, coercive, and obstructive practices defined under Annex "I" of the 2016 revised IRR of RA No. 9184 or other integrity violations in competing for the Project.

5. Eligible Bidders

5.1. Only bids of bidders found to be legally, technically, and financially capable will be evaluated.

5.2. Only bidders which meet the eligibility criteria provided below shall be eligible to participate in this bidding.

5.3 Only Filipino Citizens/Sole Proprietorships; Partnerships or Corporations with at least Sixty Percent (60%) of the interest or outstanding capital stock belonging to citizens of the Philippines; Cooperatives duly registered with the Cooperative Development Authority (CDA); or Joint Ventures with at least

sixty percent (60%) Filipino interest/ownership shall be eligible to participate in this Bidding.

5.4 The bidder must have completed a Single Largest Completed Contract (SLCC) that is similar to the Project. The SLCC: (a) must be equivalent to Fifty Percent (50%) of the Total ABC.

5.5 For the purpose of this bidding a similar contract or project shall mean contracts for Supply and Delivery of Materials for Line Hardware.

5.6 The bidder's Net Financial Contracting Capacity (NFCC) should be equal or more than the Total ABC.

5.7 Foreign ownership exceeding those allowed under the rules may participate pursuant to:

a) When a Treaty or International or Executive Agreement as provided in Section 4 of the RA No. 9184 and its 2016 revised IRR allow foreign bidders to participate;

b) Citizens, corporations, or associations of a country, included in the list issued by the GPPB, the laws or regulations of which grant reciprocal rights or privileges to citizens, corporations, or associations of the Philippines;

c) When the Goods sought to be procured are not available from local suppliers; or

d) When there is a need to prevent situations that defeat competition or restrain trade.

5.8 The Bidders shall comply with the eligibility criteria under Section 23.4.1 of the 2016 IRR of RA No. 9184.

6. Origin of Goods

There is no restriction on the origin of goods other than those prohibited by a decision of the UN Security Council taken under Chapter VII of the Charter of the UN, subject to Domestic Preference requirements under **ITB** Clause 18.

7. Subcontracts

7.1. The supplier or bidder shall not be allowed to sub contract the EMs subject of this Bidding

8. Pre-Bid Conference

8.1 Pre-bid conference shall be conducted via face-to-face on ***August 16, 2024, 1:30 p.m.*** at *BANELCO office, Balintawak Bantigue, Bantayan Cebu.*

8.2 The pre-bid conference shall: (a) discuss, among others, the eligibility requirements and the technical and financial components of the contract to be bid as stipulated in the Bidding Documents; and (b) clarify any provisions, requirements, and/or terms and conditions of the Bidding Documents and/or any other matter that the prospective bidders may raise.

8.3 Attendance of the bidders to the pre-bid conference is optional, except when otherwise stated in the Invitation to Bid.

9. Clarification and Amendment of Bidding Documents

Prospective bidders may request for clarification on and/or interpretation of any part of the Bidding Documents. Such requests must be in writing and received by the Procuring Entity, either at its given address or through electronic mail indicated in the **IB**, at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.

10. Documents comprising the Bid: Eligibility and Technical Components

10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section VIII (Checklist of Technical and Financial Documents)**.

10.2. The Bidder's SLCC as indicated in **ITB** Clause 5.4 should have been completed prior to the deadline for the submission and receipt of bids.

10.3. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. Similar to the required authentication above, for Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.

11. Documents comprising the Bid: Financial Component

11.1. The second bid envelope shall contain the financial documents for the Bid as specified in **Section VIII (Checklist of Technical and Financial Documents)**.

11.2. If the Bidder claims preference as a Domestic Bidder or Domestic Entity, a certification issued by DTI shall be provided by the Bidder in accordance with Section 43.1.3 of the 2016 revised IRR of RA No. 9184.

11.3. Any bid exceeding the ABC indicated in the **IB** shall not be accepted.

12. Bid Prices

12.1. Prices indicated on the Price Schedule shall be entered separately in the following manner:

a. For Goods offered from within the Procuring Entity's country:

i. The price of the Goods quoted EXW (ex-works, ex-factory, ex-warehouse, ex-showroom, or off-the-shelf, as applicable);

ii. The cost of all customs duties and sales and other taxes already paid or payable;

iii. The cost of transportation, insurance, and other costs incidental to delivery of the Goods to their final destination; and

iv. The price of other (incidental) services, if any, listed in the **BDS.**

b. For Goods offered from abroad:

i. Unless otherwise stated in the **BDS**, the price of the Goods shall be quoted delivered duty paid (DDP) with the place of destination in the Philippines as specified in the **BDS**. In quoting the price, the Bidder shall be free to use transportation through carriers registered in any eligible country. Similarly, the Bidder may obtain insurance services from any eligible source country.

ii. The price of other (incidental) services, if any, as listed in the **BDS.**

13. Bid and Payment Currencies

13.1. For Goods that the Bidder will supply from outside the Philippines, the bid prices may be quoted in the local currency or tradeable currency accepted by the BSP at the discretion of the Bidder. However, for purposes of bid evaluation, Bids denominated in foreign currencies, shall be converted to Philippine currency based on the exchange rate as published in the BSP reference rate bulletin on the day of the bid opening.

13.2. Payment of the contract price shall be made in Philippine Pesos.

14. Bid Security

14.1 The Bidder shall submit a Bid Securing Declaration[1] or any form of Bid Security in the amount indicated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the schedule in the **BDS**.

14.2 Bids and Bid Securities shall be valid for a period of one hundred twenty (120) calendar days from the date of the opening of bids.

15. Sealing and Marking of Bids

Each Bidder shall submit one copy of the first and second components of its Bid.

The Procuring Entity may request additional hard copies and/or electronic copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.

If the Procuring Entity allows the submission of bids through online submission or any other electronic means, the Bidder shall submit an electronic copy of its Bid, which must be digitally signed. An electronic copy that cannot be opened or is corrupted shall be considered non-responsive and, thus, automatically disqualified.

16. Deadline for Submission of Bids

16.1. The bidders shall submit their bids on the specified date, time, and address as indicated in the ITB.

16.2. Unsealed or unmarked bid envelopes shall be rejected.

16.3. Bids, including the eligibility requirements, submitted after the deadline shall not be accepted by the BANELCO BAC.

17. Opening and Preliminary Examination of Bids

17.1. The BAC shall open the Bids in public at the time, on the date, and at the place specified in the **ITB**. The Bidders' representatives who are present shall sign a register evidencing their attendance.

In case the Bids cannot be opened as scheduled due to justifiable reasons, the rescheduling requirements under Section 29 of the 2016 revised IRR of RA No. 9184 shall prevail.

17.2. The preliminary examination of bids shall be governed by Section 30 of the 2016 revised IRR of RA No. 9184.

17.3. The eligibility requirements and bid proposals shall be evaluated using a non discretionary "pass/fail" criteria.

[1] In the case of Framework Agreement, the undertaking shall refer to entering into contract with the Procuring Entity and furnishing of the performance security or the performance securing declaration within ten (10) calendar days from receipt of Notice to Execute Framework Agreement.

17.4. In the opening of bids, the Two Envelope System shall be adopted.

17.5. Envelope 1, containing the Eligibility Requirements (Class A and B documents) and the Bid Security, shall be opened in the following order:

Folder 1	Legal Documents
Folder 2	Technical Documents
Folder 3	Financial Documents
Folder 4	Class "B" Documents
Folder 5	Bid Securities in the prescribed form, amount and validity period

17.6. The submitted documents of each bidder shall be examined and checked to ascertain that they are all present using a nondiscretionary "pass/fail" criteria. If a bidder submits the required document, it shall be rated "passed" for that particular requirement. Hence, bids that fail to include any requirement or are incomplete or patently insufficient shall be considered "failed". Otherwise, the BANELCO BAC shall rate the first envelope (Envelope 1) as "passed."

17.7. The second envelope (Envelope 2) containing the Bid Proposal of bidders that were rated failed or ineligible shall no longer be opened and should be returned to the bidder.

17.8. After determining compliance with the requirements in the first envelope, the second envelope (Envelope 2) of each remaining eligible bidder whose first envelope was rated "passed" shall be opened in the following order:

Folder 1	Technical Proposal
Folder 2	Financial Proposal

17.9. The bidder whose Technical Proposal passed the technical requirements and specifications shall be rated as "passed", after which Folder 2 of the second envelope containing the financial proposal shall be opened.

17.10. Financial Proposals (Folder 2) higher than the ABC shall be outrightly disqualified.

17.11. In case any of the requirements in the second envelope is missing, incomplete or patently insufficient, and/or if the submitted total bid price exceeds the ABC, the BANELCO BAC shall rate the bid concerned as "failed."

18. Domestic Preference

18.1. The Procuring Entity will grant a margin of preference for the purpose of comparison of Bids in accordance with Section 43.1.2 of the 2016 revised IRR of RA No. 9184.

19. Detailed Evaluation and Comparison of Bids

19.1. The Procuring Entity's BAC shall immediately conduct a detailed evaluation of all Bids rated "*passed*," using non-discretionary pass/fail criteria. The BAC shall consider the conditions in the evaluation of Bids under Section 32.2 of the 2016 revised IRR of RA No. 9184.

19.2. The BANELCO BAC shall conduct a detailed evaluation of all bids using a non-discretionary criteria considering the following:

a. Completeness of the Bid – Partial bids shall not be allowed. Bids not addressing or providing all of the required items in the Bidding Documents including, where applicable, bill of quantities, shall be considered non-responsive and, thus, automatically disqualified. In this regard, where a required item is provided, but no price is indicated, the same shall be considered as non-responsive, but specifying a zero (0) or a dash (-) for the said item would mean that it is being offered for free.

b. Arithmetical Corrections - Consider computational errors and omissions to enable proper comparison of all eligible bids. It may also consider bid modifications if expressly allowed in the Bidding Documents. Any adjustment shall be calculated in monetary terms to determine the calculated prices.

19.3. The BANELCO BAC shall evaluate all bids on an equal footing to ensure fair and competitive bid comparison. For this purpose, all bidders shall be required to include the cost of all taxes such as but not limited to Value Added Tax (VAT), income tax, local taxes, and other fiscal levies and duties, which shall be itemized in the bid form and reflected in the detailed estimates. Such bids, including taxes, shall be the bases for bid evaluation, comparison, and for determining th e Lowest Calculated Bid (LCB).

19.4. In case of discrepancies between:

Figures against words	- Words shall prevail
Total price per item against unit price for the item multiplied by the quantity of that item	- Price per item multiplied by the quantity shall prevail
Stated total price against the actual sum of prices of component items	- Actual sum of prices of component items shall prevail
Unit cost in the detailed estimate against unit cost in the bill of quantities	- Unit cost in its bill of quantities shall prevail

19.5. Bids shall then be ranked in the ascending order of their total calculated bid prices, as evaluated and corrected for computational errors, and other bid modifications to identify the LCB. Total calculated bid prices, as evaluated and corrected for computational errors, and other bid modifications, which exceed the ABC shall be disqualified.

19.6. The Contract(s) shall be awarded on a per item basis.

19.7. The bid which is determined to be the LCB for a particular item shall be subjected to post-qualification.

19.8. The descriptions of the lots or items shall be indicated in **Section VII (Technical Specifications)**, although the ABCs of these lots or items are indicated in the **BDS** for purposes of the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184. The NFCC must be sufficient for the total of the ABCs for all the lots or items participated in by the prospective Bidder.

20. Post-Qualification

20.1. The BANELCO BAC shall notify the Bidder which has the LCB for that item(s) that it shall undergo post-qualification. Whenever required and within the period stated in the notice, the bidder shall submit to the BANELCO BAC its latest income and business tax returns, and other appropriate licenses and permits required by law and as stated in the Checklist of Eligibility Requirements.

20.2. The objectives of the post-qualification include but shall not be limited to:

20.7.1. To verify, validate, and ascertain all statements made and documents submitted by the bidder with the LCB, as stated in the bidding documents;

20.7.2. To determine whether the Bidder with the LCB complies with and is responsive to all the requirements and conditions as specified in the Bidding Documents; and

20.7.3. To declare the Lowest Calculated Responsive Bid (LCRB) for a particular item or items (as the case may be) and recommend to the HOPE the award of consignment agreement/contract for that item(s) to the said bidder at its submitted bid price or its calculated bid price, whichever is lower.

20.3. If the bidder with the LCB fails the criteria for post-qualification, the BANELCO BAC shall notify the said bidder in writing of its post-disqualification and the grounds for it.

20.4. Immediately after the BANELCO BAC has notified the first bidder of its post disqualification, and notwithstanding any pending request for reconsideration thereof, the BANELCO BAC shall initiate and complete the same post-qualification process on the bidder with the second LCB for the same item(s). If the second bidder passes the post-qualification, and provided that the request for reconsideration of the first bidder has been denied, the second bidder shall be post-qualified as the bidder with the LCRB.

20.5. If the second bidder, however, fails the post-qualification, the procedure for post- qualification shall be repeated for the bidder with the next LCB for the same item(s), and so on until the LCRB for that item(s) is determined for award.

21. Notice of Award

21.1. Within three (3) calendar days from the issuance of the BANELCO BAC resolution recommending award of the contract for a particular item or item(s), the BANELCO BAC shall notify all other Bidders in writing, whether through physical or electronic means, of its recommendation.

21.2. Within a period not exceeding fifteen (15) calendar days from the determination by the BANELCO BAC of the bidder with LCRB or Single Calculated Responsive Bid (SCRB) and the recommendation to award the contract for a particular item or item(s), the HOPE or its duly authorized representative shall approve or disapprove such recommendation.

21.3. In case of approval, the HOPE or its duly authorized representative, shall immediately issue the Notice of Award to the bidder with the LCRB and SCRB and require the posting of Performance Securities.

21.4. In the event of disapproval, which shall be based on valid, reasonable, and justifiable grounds as provided for under Section 41 of the IRR of RA 9184, the HoPE shall notify the BAC and the Bidder in writing of such decision and the grounds for it. When applicable, the BAC shall conduct a post-qualification of the Bidder with the next Lowest Calculated Bid. A request for reconsideration may be filed by the bidder with the HoPE in accordance with Section 37.1.3 of the IRR of RA 9184.

21.5. A request for reconsideration may be filed by the bidder with the HOPE within three (3) calendar days from receipt of the Notice of Disapproval. The HOPE shall resolve with finality the request for reconsideration within seven (7) calendar days from the filing thereof and furnish the bidder a copy of the resolution immediately from its promulgation.

21.6. In no case shall a request for reconsideration stay or delay the bidding process. However, the request for reconsideration must first be resolved before any award is made.

21.7. Within fifteen (15) calendar days from receipt of by the winning bidder of the Notice of Award, the following conditions should be complied with:

21.7.1. Submission of the valid Joint Venture Agreement (JVA), if applicable;
21.7.2. Posting of performance securities in accordance with Section 4.3 of the GCC.

22. Signing of the Contract

22.1. The documents required in Section 37.2 of the 2016 revised IRR of RA No. 9184 shall form part of the Contract. Additional Contract documents are indicated in the **BDS**.

22.2. The Procuring Entity shall enter into a Framework Agreement with the successful Bidder within the same ten (10) calendar day period provided that all the documentary requirements are complied with.

Section III. Bid Data Sheet

Notes on the Bid Data Sheet

The Bid Data Sheet (BDS) consists of provisions that supplement, amend, or specify in detail, information, or requirements included in the ITB found in Section II, which are specific to each procurement.

This Section is intended to assist the Procuring Entity in providing the specific information in relation to corresponding clauses in the ITB and has to be prepared for each specific procurement.

The Procuring Entity should specify in the BDS information and requirements specific to the circumstances of the Procuring Entity, the processing of the procurement, and the bid evaluation criteria that will apply to the Bids. In preparing the BDS, the following aspects should be checked:

a. Information that specifies and complements provisions of the ITB must be incorporated.

b. Amendments and/or supplements, if any, to provisions of the ITB as necessitated by the circumstances of the specific procurement, must also be incorporated.

Bid Data Sheet

ITB Clause	
1	The Procuring Entity is *[***Bantayan Island Electric Cooperative, Inc. (BANELCO)***]*. The name of the Contract is **Supply and Delivery of Line Hardware**
2	The Funding Source is: NHA Yolanda Permanent Resettlement Site Subsidy in the amount of ***PhP 1*,032,887.00** Improvement/Construction of Distribution Line Extension for Kabiayan ni Man Liling (Bantayan Site 2)
5.7	Foreign bidders may participate in this Project in view of the following circumstance*(s)*: When the Goods sought to be procured are not available from local suppliers.
14.1	The bid security shall be in the following amount: 1. The amount of ***Php 20,657.74*** *[2% of ABC],* if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; 2. The amount of ***Php 51,644.35*** *[5% of ABC]* if bid security is in Surety Bond; or
14.2	Bids will be valid until *[120 CD]*.
16.1	The deadline for submission of bids **September 6, 2024, 1:30 p.m.**
17.5	The following income and business tax returns shall be required: 1. 2023 Income Tax Return and proof of payment; **2.** Value Added Tax Returns (Forms 2550M and 2550Q) or Percentage Tax Returns (Form 2551M) and proof of payments thereof covering the months of **January to June 2024.** The income tax and business tax returns stated above should have been filed through the Electronic Filing and Payments System (EFPS).

	Proofs of payment are as follows: EFPS Confirmation receipt; or Bank issued payment confirmation receipt; or BIR payment statusBIR payment status
17.1	The place of bid opening is BANELCO Office Bantigue, Bantayan, Cebu The date and time of bid opening is **September 6, 2024, 1:30 p.m.**
17.11	The ABC is *[PhP 1,032,887.00]*. Any bid with a financial component exceeding this amount shall not be accepted.

Section IV. General Conditions of Contract

Notes on the General Conditions of Contract

The General Conditions of Contract (GCC) in this Section, read in conjunction with the Special Conditions of Contract in Section V and other documents listed therein, should be a complete document expressing all the rights and obligations of the parties.

Matters governing performance of the Supplier, payments under the contract, or matters affecting the risks, rights, and obligations of the parties under the contract are included in the GCC and Special Conditions of Contract.

Any complementary information, which may be needed, shall be introduced only through the Special Conditions of Contract.

1. Scope of Contract

This Contract shall include all such items, although not specifically mentioned, that can be reasonably inferred as being required for its completion as if such items were expressly mentioned herein. All the provisions of RA No. 9184 and its 2016 revised IRR, including the Generic Procurement Manual, and associated issuances, constitute the primary source for the terms and conditions of the Contract, and thus, applicable in contract implementation. Herein clauses shall serve as the secondary source for the terms and conditions of the Contract.

This is without prejudice to Sections 74.1 and 74.2 of the 2016 revised IRR of RA No. 9184 allowing the GPPB to amend the IRR, which shall be applied to all procurement activities, the advertisement, posting, or invitation of which were issued after the effectivity of the said amendment.

Additional requirements for the completion of this Contract shall be provided in the **Special Conditions of Contract** (**SCC).**

2. Advance Payment and Terms of Payment

2.1. Advance payment of the contract amount is provided under Annex "D" of the revised 2016 IRR of RA No. 9184.

2.2. The Procuring Entity is allowed to determine the terms of payment on the partial or staggered delivery of the Goods procured, provided such partial payment shall correspond to the value of the goods delivered and accepted in accordance with prevailing accounting and auditing rules and regulations. The terms of payment are indicated in the **SCC**.

3. Performance Security

3.1. Within ten (10) calendar days from receipt of the Notice of Award by the Bidder from the Procuring Entity but in no case later than the signing of the Contract by both parties, the successful Bidder shall furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR of RA No. 9184.

3.2. The Performance Security shall be denominated in Philippine Pesos and posted in favor of the Procuring Entity in an amount not less than the percentage of the total contract price in accordance with the following schedule:

Form of Performance Security	Amount of Performance Security (Not less than the Percentage of the Total Contract Price)
(a.) Cash or cashier's/manager's check issued by a Universal or Commercial Bank.	Five percent (5%)

For biddings conducted by the LGUs, the Cashier's/Manager's Check may be issued by other banks certified by the BSP as authorized to issue such financial instrument.	
(b.) Bank draft/guarantee or irrevocable letter of credit issued by a Universal or Commercial Bank: Provided, however, that it shall be confirmed or authenticated by a Universal or Commercial Bank, if issued by a foreign bank. *For biddings conducted by the LGUs, the Bank Draft/ Guarantee or Irrevocable Letter of Credit may be issued by other banks certified by the BSP as authorized to issue such financial instrument.*	
(c.) Surety bond callable upon demand issued by a surety or insurance company duly certified by the Insurance Commission as authorized to issue such security.	Thirty percent (30%)

4. Inspection and Tests

The Procuring Entity or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Project or Framework Agreement*}* specifications at no extra cost to the Procuring Entity in accordance with the Generic Procurement Manual. In addition to tests in the **SCC**, **Section VI (Technical Specifications)** shall specify what inspections and/or tests the Procuring Entity requires, and where they are to be conducted. The Procuring Entity shall notify the Supplier in writing, in a timely manner, of the identity of any representatives retained for these purposes.

All reasonable facilities and assistance for the inspection and testing of Goods, including access to drawings and production data, shall be provided by the Supplier to the authorized inspectors at no charge to the Procuring Entity.

5. Warranty

5.1 In order to assure that manufacturing defects shall be corrected by the Supplier, a warranty shall be required from the Supplier as provided under Section 62.1 of the 2016 revised IRR of RA No. 9184.

5.2 The Procuring Entity shall promptly notify the Supplier in writing of any claims arising under this warranty. Upon receipt of such notice, the Supplier shall, repair or replace the defective Goods or parts thereof without cost to the Procuring Entity, pursuant to the Generic Procurement Manual.

6. Liability of the Supplier

The Supplier's liability under this Contract shall be as provided by the laws of the Republic of the Philippines.

If the Supplier is a joint venture, all partners to the joint venture shall be jointly and severally liable to the Procuring Entity.

Section V. Special Conditions of Contract

Notes on the Special Conditions of Contract

Similar to the BDS, the clauses in this Section are intended to assist the Procuring Entity in providing contract-specific information in relation to corresponding clauses in the GCC found in Section IV.

The Special Conditions of Contract (SCC) complement the GCC, specifying contractual requirements linked to the special circumstances of the Procuring Entity, the Procuring Entity's country, the sector, and the Goods purchased. In preparing this Section, the following aspects should be checked:

a. Information that complements provisions of the GCC must be incorporated.

b. Amendments and/or supplements to provisions of the GCC as necessitated by the circumstances of the specific purchase, must also be incorporated.

However, no special condition which defeats or negates the general intent and purpose of the provisions of the GCC should be incorporated herein.

Special Conditions of Contract

GCC Clause	
1	*[List here any additional requirements for the completion of this Contract. The following requirements and the corresponding provisions may be deleted, amended, or retained depending on its applicability to this Contract:]* **Delivery and Documents –** For purposes of the Contract, "EXW," "FOB," "FCA," "CIF," "CIP," "DDP" and other trade terms used to describe the obligations of the parties shall have the meanings assigned to them by the current edition of INCOTERMS published by the International Chamber of Commerce, Paris. The Delivery terms of this Contract shall be as follows: *[For Goods supplied from abroad, state:]* "The delivery terms applicable to the Contract are DDP delivered [*indicate place of destination*]. In accordance with INCOTERMS." *[For Goods supplied from within the Philippines, state:*] "The delivery terms applicable to this Contract are delivered *[indicate place of destination]*. Risk and title will pass from the Supplier to the Procuring Entity upon receipt and final acceptance of the Goods at their final destination." Delivery of the Goods shall be made by the Supplier in accordance with the terms specified in Section VI (Schedule of Requirements). For purposes of this Clause the Procuring Entity's Representative at the Project Site is *[indicate name(s)]*. **Incidental Services –** The Supplier is required to provide all of the following services, including additional services, if any, specified in Section VI. Schedule of Requirements: *Select appropriate requirements and delete the rest.* a. performance or supervision of on-site assembly and/or start-up of the supplied Goods; b. furnishing of tools required for assembly and/or maintenance of the supplied Goods; c. furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods; d. performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and

	e. training of the Procuring Entity's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods. f. *[Specify additional incidental service requirements, as needed.]* The Contract price for the Goods shall include the prices charged by the Supplier for incidental services and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services. **Spare Parts –** The Supplier is required to provide all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier: *Select appropriate requirements and delete the rest.* 1. such spare parts as the Procuring Entity may elect to purchase from the Supplier, provided that this election shall not relieve the Supplier of any warranty obligations under this Contract; and 2. in the event of termination of production of the spare parts: i. advance notification to the Procuring Entity of the pending termination, in sufficient time to permit the Procuring Entity to procure needed requirements; and ii. following such termination, furnishing at no cost to the Procuring Entity, the blueprints, drawings, and specifications of the spare parts, if requested. The spare parts and other components required are listed in **Section VI (Schedule of Requirements)** and the costs thereof are included in the contract price. The Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spare parts or components for the Goods for a period of [*indicate here the time period specified. If not used indicate a time period of three times the warranty period*]. Spare parts or components shall be supplied as promptly as possible, but in any case, within [*insert appropriate time period*] months of placing the order.

	Packaging – The Supplier shall provide such packaging of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in this Contract. The packaging shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packaging case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit. The packaging, 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 below, and in any subsequent instructions ordered by the Procuring Entity. The outer packaging must be clearly marked on at least four (4) sides as follows: Name of the Procuring Entity Name of the Supplier Contract Description Final Destination Gross weight Any special lifting instructions Any special handling instructions Any relevant HAZCHEM classifications
	A packaging list identifying the contents and quantities of the package is to be placed on an accessible point of the outer packaging if practical. If not practical the packaging list is to be placed inside the outer packaging but outside the secondary packaging. **Transportation –** Where the Supplier is required under Contract to deliver the Goods CIF, CIP, or DDP, transport of the Goods to the port of destination or such other named place of destination in the Philippines, as shall be specified in this Contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price. Where the Supplier is required under this Contract to transport the Goods to a specified place of destination within the Philippines, defined as the Project Site, transport to such place of destination in the Philippines, including insurance and storage, as shall be specified in this Contract, shall be arranged by the Supplier, and related costs shall be included in the contract price.

	Where the Supplier is required under Contract to deliver the Goods CIF, CIP or DDP, Goods are to be transported on carriers of Philippine registry. In the event that no carrier of Philippine registry is available, Goods may be shipped by a carrier which is not of Philippine registry provided that the Supplier obtains and presents to the Procuring Entity certification to this effect from the nearest Philippine consulate to the port of dispatch. In the event that carriers of Philippine registry are available but their schedule delays the Supplier in its performance of this Contract the period from when the Goods were first ready for shipment and the actual date of shipment the period of delay will be considered force majeure. The Procuring Entity accepts no liability for the damage of Goods during transit other than those prescribed by INCOTERMS for DDP deliveries. In the case of Goods supplied from within the Philippines or supplied by domestic Suppliers risk and title will not be deemed to have passed to the Procuring Entity until their receipt and final acceptance at the final destination. **Intellectual Property Rights –** The Supplier shall indemnify the Procuring Entity against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof.
	Regular and Recurring Services – [*In case of contracts for regular and recurring services*, state:] "The contract for regular and recurring services shall be subject to a renewal whereby the performance evaluation of the service provider shall be conducted in accordance with Section VII. Technical specifications."
3.2	The performance security shall be in the following amount: 1. The amount of ***Php 51,644.35*** *[Insert 5% of ABC],* if performance security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; 2. The amount of ***Php 309,866.10*** *[Insert 30% of ABC]* if performance security is in Surety Bond; or Any combination of the foregoing proportionate to the share of form with respect to total amount of security.
5.1	One (1) year after acceptance by the Procuring Entity of the delivered Goods.
6	*Supplier is a joint venture, "*All partners to the joint venture shall be jointly and severally liable to the Procuring Entity."

Section VI. Technical Specifications

Notes for Preparing the Technical Specifications

A set of precise and clear specifications is a prerequisite for Bidders to respond realistically and competitively to the requirements of the Procuring Entity without qualifying their Bids. In the context of Competitive Bidding, the specifications (*e.g.* production/delivery schedule, manpower requirements, and after-sales service/parts, descriptions of the lots or items) must be prepared to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of transparency, equity, efficiency, fairness, and economy in procurement be realized, responsiveness of bids be ensured, and the subsequent task of bid evaluation and post-qualification facilitated. The specifications should require that all items, materials and accessories to be included or incorporated in the goods be new, unused, and of the most recent or current models, and that they include or incorporate all recent improvements in design and materials unless otherwise provided in the Contract.

Samples of specifications from previous similar procurements are useful in this respect. The use of metric units is encouraged. Depending on the complexity of the goods and the repetitiveness of the type of procurement, it may be advantageous to standardize the General Technical Specifications and incorporate them in a separate subsection. The General Technical Specifications should cover all classes of workmanship, materials, and equipment commonly involved in manufacturing similar goods. Deletions or addenda should then adapt the General Technical Specifications to the particular procurement.

Care must be taken in drafting specifications to ensure that they are not restrictive. In the specification of standards for equipment, materials, and workmanship, recognized Philippine and international standards should be used as much as possible. Where other particular standards are used, whether national standards or other standards, the specifications should state that equipment, materials, and workmanship that meet other authoritative standards, and which ensure at least a substantially equal quality than the standards mentioned, will also be acceptable. The following clause may be inserted in the Special Conditions of Contract or the Technical Specifications.

Sample Clause: Equivalency of Standards and Codes

Wherever reference is made in the Technical Specifications to specific standards and codes to be met by the goods and materials to be furnished or tested, the provisions of the latest edition or revision of the relevant standards and codes shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national or relate to a particular country or region, other authoritative standards that ensure substantial equivalence to the standards and codes specified will be acceptable.

Reference to brand name and catalogue number should be avoided as far as possible; where unavoidable they should always be followed by the words "*or at least equivalent*." References to brand names cannot be used when the funding source is the GOP.

Where appropriate, drawings, including site plans as required, may be furnished by the Procuring Entity with the Bidding Documents. Similarly, the Supplier may be requested to provide drawings or samples either with its Bid or for prior review by the Procuring Entity during contract execution.

Bidders are also required, as part of the technical specifications, to complete their statement of compliance demonstrating how the items comply with the specification.

In case of Renewal of Regular and Recurring Services, the Procuring Entity must indicate here the technical requirements for the service provider, which must include the set criteria in the conduct of its performance evaluation.

Technical Specifications for Line Hardwares

Technical Specifications

All Technical Specifications will strictly follow the NEA Standards for Construction of Distribution Lines.

CARRIAGE BOLTS

MATERIAL:

Drop forged carriage bolts and compatible square nuts must be fabricated from materials that comply with the requirements of ANSI Standards C135.1-1979, [1], ASTM A663-81, [2] and ASTM A675-82, [3].

FINISH:

The carriage bolts and square nut described in this standard shall be hot-dip galvanized in accordance with ANSIIASTMA153-82, [4].

Each carriage bolt head shall bear a permanent symbol or identification mark of the manufacturer in a place which will-not adversely affect either its integrity or utilization. Carriage bolts shall have surfaces free from irregularities, blemishes, seams, laps or other imperfection that can affect serviceability.

DIMENSIONS:

Carriage bolt dimensions are shown in Fig. I, using symbols, defined as follows:

L1 = Length from underside of head to the end of the bolt

L2 = Length from top thread to last thread' at the end of the bolt

D = Diameter of shank

Bolt dimensions with applicable tolerances shall conform to the requirements of ANSI C135.1-1979, [I] and carriage bolt heads shall conform to the requirements of ANSI BI85-1978, [5].

Dimensions of compatible nuts before galvanizing, shall be in accordance with ANSI BI8.2.2-1972, [6] and conform to ANSI C135.1-1979, [I].

THREADS:

1. The threaded portion of carriage bolts shall be provided with machine rolled threads and before galvanizing, must comply with Class 2 of the ANSI standard for unified screw threads, ANSI Bl.l-1982, [7] and conform to ANSI C135.1-1979, [I].

2. After galvanizing, the bolt thread shall permit compatible nuts to be run the entire length of the thread without the aid of tools.

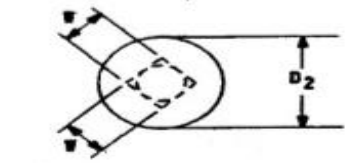
3. Nuts shall be tapped in accordance with ANSI CI35.1-1979, Table 8, [I]

STRENGTH:

1. Carriage bolt with nuts installed shall meet the minimum tensile strength requirements listed in Table 10 of ANSI C135.1-1979, [I] and stated in Figure I of this standard. Above of the specified minimum tensile loads, the carriage bolt shall fail only in the shank or threaded section and not at the junction of head and shank. Threads shall not strip below the specified minimum tensile loads.

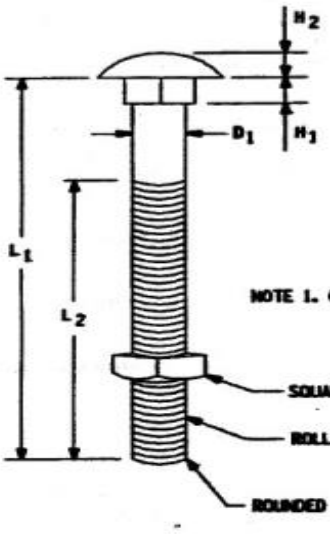
A cold bend test shall be conducted in accordance with Section 6.7 of ANSI C135.1-1979, [I].

Carriage Bolts (Cont.)



DIMENSION SYMBOL	NOMINAL	DIMENSION BEFORE GALVANIZING	
		MAXIMUM	MINIMUM
D_1	3/8	0.388	0.360
D_2	5/8	0.844	0.782
L_1	4-1/2	4.56	4.40
L_2	3	3.25	3.00
H_1	13/64	0.219	0.188
H_2	13/64	0.208	0.188
W	3/8	0.388	0.368

MINIMUM TENSILE STRENGTH 4250 POUNDS



NOTE 1. OTHER DIMENSION, TOLERANCE AND PERFORMANCE REQUIREMENTS AND THREAD DESIGN REQUIREMENTS FOR BOLTS AND NUTS ARE STATED IN ANSI STANDARDS C135.1-1979, BI.I-1982, B18.2.1-1981 B18.2.2-1972 OR CURRENT EDITIONS OF THESE STANDARDS.

DOUBLE ARMING BOLTS

MATERIAL:

Double-arming bolts and compatible square nuts must be fabricated from materials that comply with the requirements of ANSI Standard C135.1-1979, [1].

FINISH:

The double-arming bolts and square nuts described in this standard shall be hot-dip galvanized in accordance with ANSI/ASTM AI53-80, [2].

Double-arming bolts shall have surfaces free from irregularities, blemishes, seams, laps or other imperfections that can affect serviceability. .

DIMENSIONS:

Dimensional characteristics of NEA double-arming bolts are listed in Table 11 of ANSI Standard C135.1-1979 [1]. A typical NEA double-arming bolt is shown in Figure 1.

The dimensions of compatible nuts before galvanizing shall be in accordance with ANSI B18.2.2-1972,[3]and shall conform with ANSIC135.1-1979,[1].

Double-arming bolts with diameters 5/8 inch or.3/4 inch and minimum length 8 inches shall be provided with semi-cone points at each end. Double-arming bolts used by NEA are listed in Table A.

THREADS:

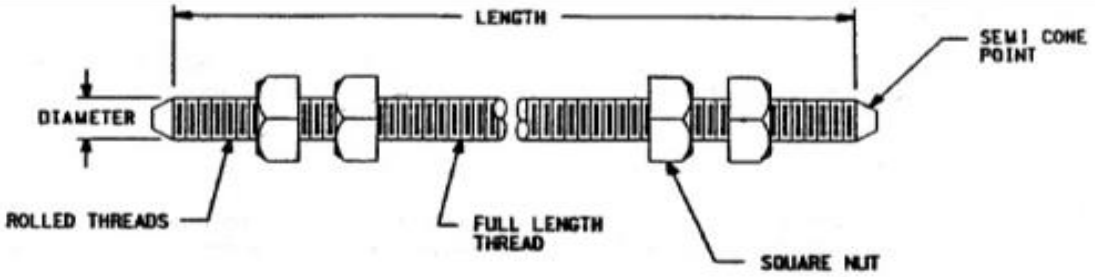
The threads shall be machine rolled and before galvanizing must comply with Class 2 of the ANSI standard for unified screw threads, ANSI BI.I-1982; [4]. After galvanizing, the bolt thread shall permit compatible nuts to be run the entire bolt length without the aid of tools. The threads shall conform to the requirements of ANSI C135.1-1979, [I].

The nuts shall be tapped in accordance with ANSrC135.1-1979, Table 8, [I].

STRENGTH:

1. Double-arming bolts with nuts shall meet the tensile strength requirements listed in Table 10 of ANSI Standard C135.1-1979, [I]. Threads shall not strip below the minimum specified tensile loads.

2. With all threads removed from the bolt, a cold bend test shall be performed in accordance with Section6.2 of ANSIC135.1-1979,[I].



THIS IS A CONCEPTUAL DRAWING. THE MANUFACTURER IS RESPONSIBLE FOR THE PREPARATION OF DRAWINGS AND THEIR DESIGN WHICH MEETS THE DIMENSIONAL, STRENGTH, AND OTHER PERFORMANCE REQUIREMENTS OF THIS STANDARD.

FIGURE 1
DOUBLE-ARMING BOLT AND SQUARE NUTS

TABLE A

DIMENSIONS (INCHES)			ULTIMATE TENSILE STRENGTH (LBS)	THREADS PER INCH
NEA CODE NO.	LENGTH	DIAMETER		
0633 05 16	16	⅝	12,400	11
0633 05 18	18	⅝	12,400	11
0633 05 20	20	⅝	12,400	11
0633 05 22	22	⅝	12,400	11
0633 05 24	24	5/8	12,400	11
0633 05 26	26	5/8	12,400	11

OTHER DIMENSION, TOLERANCE AND PERFORMANCE REQUIREMENTS AND THREAD DESIGN REQUIREMENTS ARE STATED IN ANSI STANDARDS C135.1-1979, B1.1-1982 AND B18.2.2-1972 OR CURRENT EDITION OF THESE STANDARDS

DOUBLE UPSET BOLT

MATERIAL:

NEA drop forged upset bolt assemblies shall be fabricated from materials that comply either with the requirements of Section 3 of ANSI Standard C135.31-1980, [1], or NEMA PH31-l977, [2].

FINISH:

A NEA upset bolt and its accessories shall each be hot-dip galvanized in accordance with ANSI/ASTM AI53-82, [3]. Each upset bolt shall bear a permanent symbol or identification mark of the manufacturer in a place and manner which will not adversely affect its integrity or utilization. NEA upset bolts shall have smooth surfaces, free from blemishes and imperfections.

DIMENSIONS:

NEA upset bolt dimensions with applicable tolerances shall meet the requirements of ANSI CI35.31-1980 (1) and are shown in Figure 1 and Table Aof this document.

Dimensions of the compatible nuts before galvanizing, shall be in accordance with ANSI B18.2.-1972 [4] and conform to ANSI C135.l-l979, [5]. The washer shall conform to NEMA Pub. No. PHlO-1977, [6]. Dimensions of compatible locknuts shall conform to REB Publication 116-1988 [7].

THREADS:

The threaded portions of single and double upset bolts shall before galvanizing, comply with class 2 of the ANSI standard for unified screw threads, ANSI Bl.l-1982, [8] and shall conform to ANSI C135.1-1979, [5].The nuts shall be tapped in accordance with ANSrC135.1-1979, Table 8, [I].

Nuts shall be tapped in accordance with ANSI C135.1-1979, Table 8 [5].

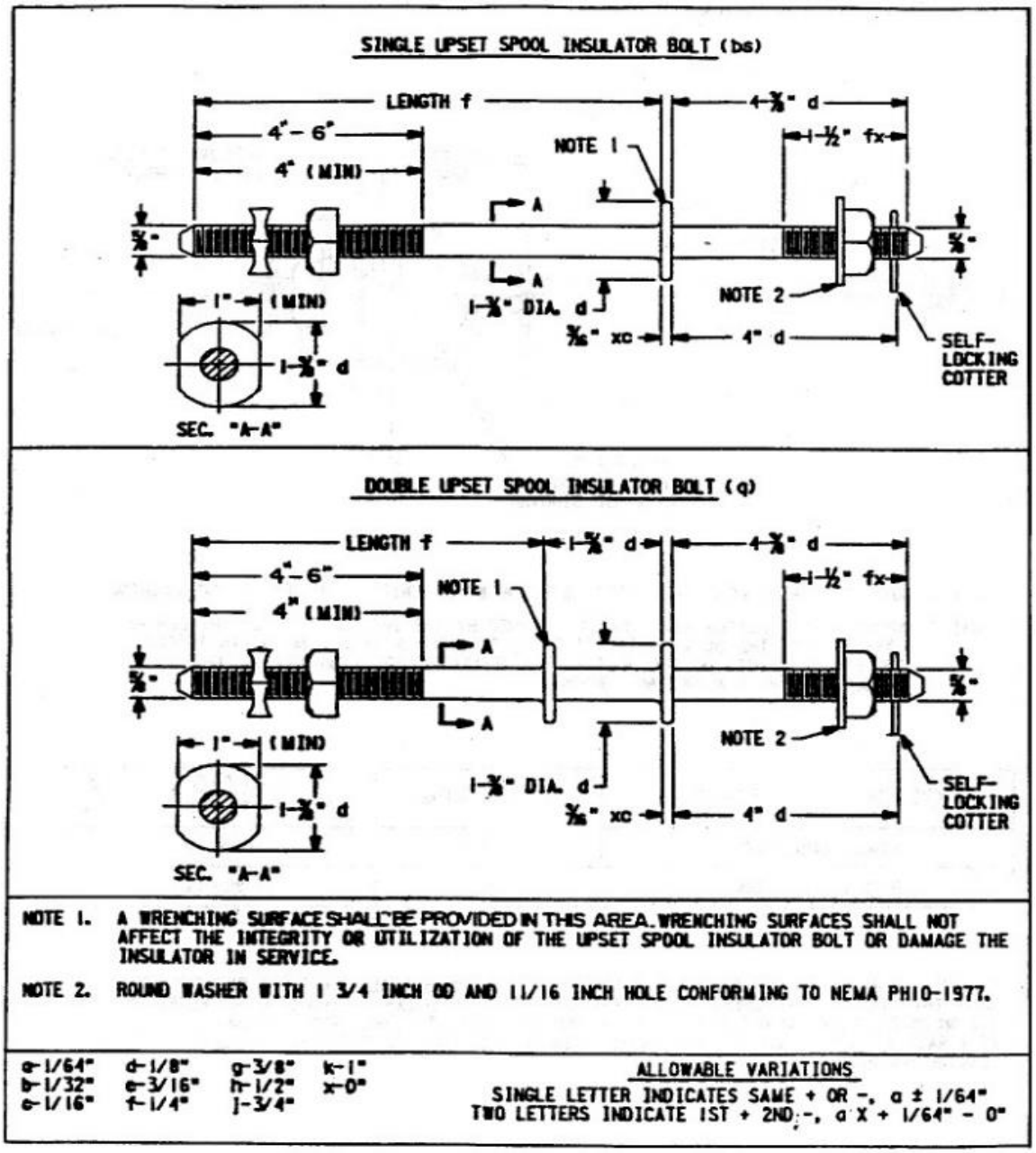
Locknut thread shall conform to the requirements of NEA specification No. 116.

STRENGTH:

Based on a minimum of any 6 consecutive test samples the upset spool bolt shall develop an average strength of 2000 pounds for single upset type and 900 pounds for the double upset. type without deflecting more than 10 degrees when tested by test procedures described herein and in Section 7 of ANSI C135.31-1980 [1].

Individually a single upset spool bolt shall develop a minimum of 1900 pounds and a double upset spool bolt shall develop a minimum of 800pounds without deflecting more than 10 degrees when tested by procedures described herein in section 7 of ANSI .C135.3l-1980 [1] and demonstrated in Figure 2 of this document.

Single and double upset spool bolts described here in with nuts installed shall meet the minimum tensile load or 12,400pounds. Above the specified minimum tensile loads an upset spool bolt shall fail only in the shank or threaded sections and not at the junction of the upset and shank. Threads shall not strip below the specified minimum tensile load.



OVAL-EYE BOLT

MATERIAL:

Oval-eye bolts and compatible square nuts,0shallbe fabricated' from material that complies with the requirements of ANSI C135.4-1979, [I].

FINISH:

Oval-eye bolt and square nut described in this standard shall be hot-dip galvanized in accordance with ANSI/ASTM AI53-82, [2].

Each oval-eye bolt shall bear a permanent symbol or identification mark of the manufacturer in a place and manner which will not adversely affect either integrity or utilization of the bolt. Oval-eye bolts and nuts shall have smooth surfaces, free from blemishes and imperfections. The eyes of the bolts shall be well shaped, with no

irregularities, malformations or cracks and the inner surface shall be free from projections or other sharp edges.

DIMENSIONS:

Oval-eye bolt dimensions are shown in figure I and presented in Table A below using symbols defined as follows:

D = Diameter

L1 = Length from below the eye to the last thread

L2 = Thread length

L3 = Length of eye

W = Width of eye

Oval-eye bolt dimensions with applicable tolerances shall conform to requirements of ANSI C135.4-1979, [I].

The dimensions of the compatible nuts before galvanizing shall be in accordance with ANSI BI8.2.2-1972, [3] and conform with ANSIC135.1-1979, [4].

THREADS:

Rolled threads must be provided on the threaded portion of the oval-eye bolt. Before galvanizing, the threads must comply with class2 of ANSI B1.1-1982,[5] and conform to ANSI C135.1-1979, [4].

After galvanizing, the threads shall permit compatible square nuts to be run the entire length of the thread without the aid of tools.

Square nuts shall be tapped in accordance with ANSICI35.1-1979, Table 8, [4].

STRENGTH:

Oval-eye bolts with nuts installed shall meet the tensile strength requirements listed in Section 6 of ANSI C135.4-1979, [I]. Above the specified minimum tensile loads, the oval-eye bolt shall fail only in the shank or threaded section and not at the junction of head and shank. Threads shall not strip below the specified minimum tensile load.

A cold bend test shall be conducted in accordance with Section 6.2 of ANSI CI35.4-1979, [I].

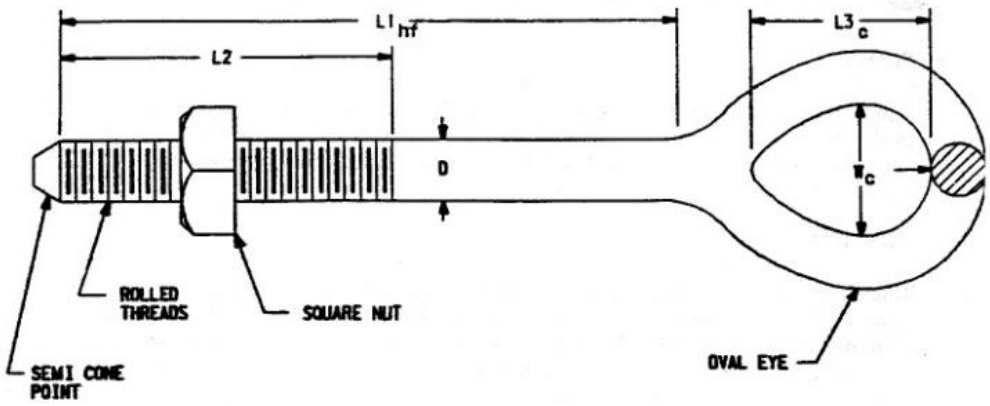


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FIGURE 1
OVAL EYE BOLT AND SQUARE NUT ASSEMBLY

TABLE A

DIA. 5/8 = 0.625
SHANK DIA. BEFORE GALVANIZING
MAX. = 0.642
MIN. = 0.605

CODE NO.	DIMENSIONS (INCHES) D	L1	L2	L3	W	ULTIMATE TENSILE STRENGTH (LBS)	THREADS PER INCH
0636 15 08	5/8	8	4	2	1-1/2	12,400	11
0636 15 10	5/8	10	4	2	1-1/2	12,400	11
0636 15 12	5/8	12	6	2	1-1/2	12,400	11
0636 15 14	5/8	14	6	2	1-1/2	12,400	11
0636 15 18	5/8	18	6	2	1-1/2	12,400	11

OTHER DIMENSION, TOLERANCE AND PERFORMANCE REQUIREMENTS AND THREAD DESIGN REQUIREMENTS ARE STATED IN ANSI STANDARDS C135.1-1979, C135.4-1979, B1.1-1982 AND B18.2.2-1972 OR CURRENT EDITION OF THESE STANDARDS

a-1/64" d-1/8" g-3/8" k-1"
b-1/32" e-3/16" h-1/2" x-0"
c-1/16" f-1/4" j-3/4"

BOLT MACHINE

MATERIAL:

Drop forged machine bolts and compatible square nuts must be fabricated from steel that complies with the requirements of ANSI Standard C135.1-1979, [I].

FINISH:

The machine bolt and square nut described in this specification shall be hot-dip galvanized in accordance with ANSI/ASTM AI53-82, [2]. Each bolt shall bear a permanent symbol or identification mark of the manufacturer in a place and manner which will not adversely affect the integrity or utilization of the bolt. The bolt and nut shall have smooth surfaces free from blemishes and imperfections after galvanization.

DIMENSIONS:

NEA machine bolt dimensions listed in TableA and identified.inFigure 1are defined as .follows:

L1 = Length from underside of head to last thread at end of bolt on semi-cone pointed bolts and at bolt on other bolts.

L2 = Length from top thread to last thread at end of bolt.

D = Diameter of shank.

Bolt dimensions with applicable tolerances shall conform to the requirements of ANSI. C135.H979, [1] and bolt head shall conform to the requirements of ANSIBI8.2.1- . 1981,13]. 861tswith diameter.112inch, 5/8 inch and 3/4 inch and 8 inches or longer,. . shall be fitted with a semi-cone point as stated and tabulated in ANSICI35.1-1919, [1].

Dimensions of compatible square nuts before galvanizing shall be in accordance with ANSIBI8.2.2-1972, [4]and conformCI35.1-1979, [1]. .

THREADS:

1. The threaded portion of machine bolts shall be provided with machine rolled threads and before galvanizing, must comply with class 2 of the ANSI standard for unified screw threads, ANSIB1.1-1982, [5] and conform to ANSI CI35.1-1979, (1).

2. After galvanizing the bolt thread shall permit compatible nuts to be run the entire length of the thread without the aid of tools.

3. Nuts shall be tapped in accordance with ANSI CI35.1-1979, TAble 8, (1).

STRENGTH:

1. Tensile Strength

   Machine bolts with nuts installed shall meet the tensile strength requirements listed in Table 10 of ANSI C135.1-1979, [1]. Above the specified minimum tensile loads, the machine bolt shall fail only in the shank or threaded section and not at the junction of head and shank. Threads shall not strip below the specified minimum tensile loads.

2. Bending Strength

   A cold bend test shall be conducted in accordance with Section6.2 of ANSI CI35.11979, [1].

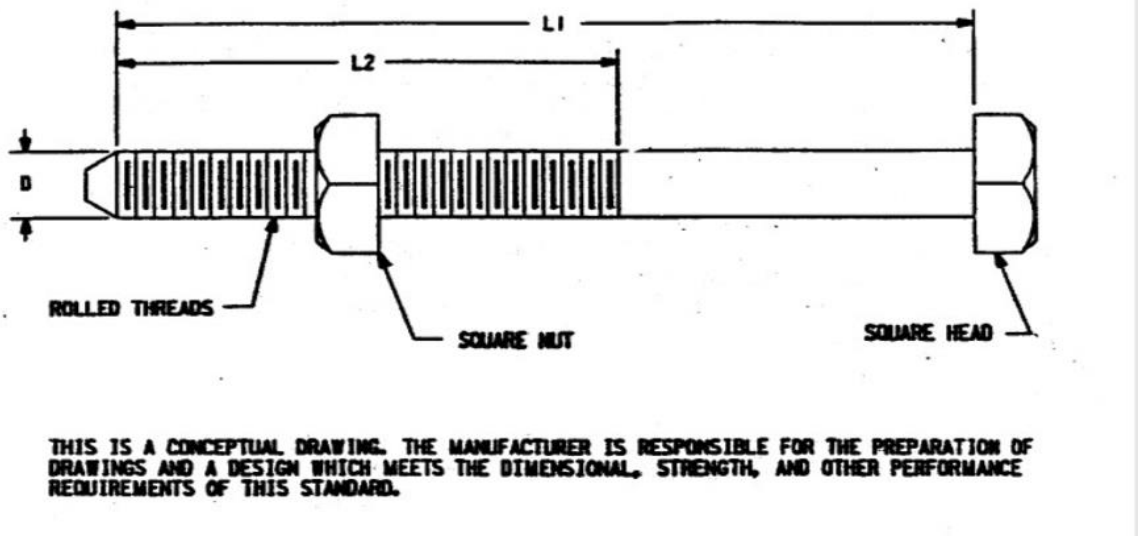
TABLE A						
In Inch Units						
Code No.	D	L1	L2	Ultimate Tensile Strength in Pounds	Number of Threads Per Inch	Quantity per Package
0638 04 06	1/2	6	3	7,800	13	200
0638 04 10	1/2	10	4	7,800	13	100
0638 04 12	1/2	12	6	7,800	13	100
0638 05 05	5/8	5	3	12,400	11	100
0638 05 08	5/8	8	4	12,400	11	100
0638 05 09	5/8	9	4	12,400	11	100
0638 05 10	5/8	10	4	12,400	11	50
0638 05 12	5/8	12	6	12,400	11	50
0638 05 14	5/8	14	6	12,400	11	50
0638 05 16	5/8	16	6	12,400	11	50
0638 05 18	5/8	18	6	12,400	11	50
0638 05 20	5/8	20	6	12,400	11	50

Tolerances Before Galvanization			
Dimension Symbol	Diameter Nominal	Diameter Maximum	Diameter Minimum
D	1/2 - 0.500	0.515	0.482
D	5/8 - 0.625	0.642	0.605
D	3/4 - 0.750	0.768	0.729

Machine Bolts (Cont.)

Dimension Symbol	Length	Diameter	Tolerance Positive	Tolerance Negative
L1	1-1/2	1/2	0.04	0.06
L1	1-1/2	5/8	0.06	0.08
L1	6 thru 8	1/2	0.12	0.18
L1	6 thru 20	5/8	0.14	0.18
L1	8 thru 16	3/4	0.14	0.18
L2	1 thru 1-1/2	1/2 thru 3/4	1/16	1/32
L2	3 thru 6	1/2 thru 3/4	1/8	1/16

Other dimension, tolerance and performance requirements and thread design requirements for bolts and nuts are stated in ANSI Standards C135.1-1979, (1), B1.1-1982. (5), B18.2.1-1981, (3), B18.2.2-1972, (4) or current editions of these standards.



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BOLT, SINGLE UPSET

MATERIAL:

NEA drop forged upset bolt assemblies shall be fabricated from materials that comply either with the requirements of Section 3 of ANSI Standard C135.31-1980, [1], or NEMA PH31-l977, [2].

FINISH:

A NEA upset bolt and its accessories shall each be hot-dip galvanized in accordance with ANSI/ASTM AI53-82, [3]. Each upset bolt shall bear a permanent symbol or identification mark of the manufacturer in a place and manner which will not adversely affect its integrity or utilization. NEA upset bolts shall have smooth surfaces, free from blemishes and imperfections.

DIMENSIONS:

NEA upset bolt dimensions with applicable tolerances shall meet the requirements of ANSI CI35.31-1980 (1) and are shown in Figure 1 and Table A of this document. The specified bolt length shall not include the semi-cone points. Dimensions of the compatible nuts before galvanizing, shall be in accordance with ANSI B18.2.-1972 [4] and conform to ANSI C135.l-l979, [5]. The washer shall conform to NEMA Pub. No. PHlO-1977, [6]. Dimensions of compatible locknuts shall conform to REB Publication 116-1988 [7].

THREADS:

The threaded portions of single upset bolts shall before galvanizing, comply with class 2 of the ANSI standard for unified screw threads, ANSI Bl.l-1982, [8] and shall conform to ANSI C135.1-1979, [5].

Nuts shall be tapped in accordance with ANSI C135.1-1979, Table 8 [5].

Locknut thread shall conform to the requirements of NEA specification No. 116.

STRENGTH:

Based on a minimum of any 6 consecutive test samples the upset spool bolt shall develop an average strength of 2000 pounds for single upset type and 900 pounds for the double upset type without deflecting more than 10 degrees when tested by test procedures described herein and in Section 7 of ANSI C135.31-1980 [1].

Individually a single upset spool bolt shall develop a minimum of 1900poundsand a double upset spool bolt shall develop a minimum of 800poundswithoutdeflectingmore

than 10 degrees when tested by procedures described herein in section 7 of ANSI C135.3l-1980 [1] and demonstrated in Figure2 of this document.

Single upset spool bolts described herein with nuts installed shall meet the minimum tensile load or 12,400pounds. Above the specified minimum tensile loads an upset spool bolt shall fail only in the shank or threaded sections and not at the junction of the upset and shank. Threads shall not strip below the specified minimum tensile load.

OTHER STANDARDS:

The dimensional and performance requirements of NEA upset bolts, based on other internationally recognized standards are acceptable only if the requirements of such standard are equivalent to or exceed the requirements quoted in this document and are identical in thread design.

BIBLIOGRAPHY OF REFERENCE STANDARDS:

ANSI C135.31-1980: American National Standard for Galvanized Ferrous Single and Double Upset Spool Insulator Bolts for Overhead Line Construction.

NEMA PH31-1977: NEMA Standard for Galvanized Ferrous Single and Double Upset Spool Insulator Bolts.

ANSI/ASTM AI53-82:

ANSI BI8.2.2-1972: Square and Hex Nuts.

ANSI C135.l-1979: American National Standard for Steel Bolts and Nuts for Overhead Line Construction.

NEMA Pub. No. PHIO-1977 : Washers
NEMA Standards for Galvanized Ferrous

NEA specification 116 : NEA spec. for Square Locknuts.

ANSI B1.l-1982: Unified Inch Screw Threads (UN and UNR Thread Form)

NEA specification 186: Spec. for Coarse Screw Threads.

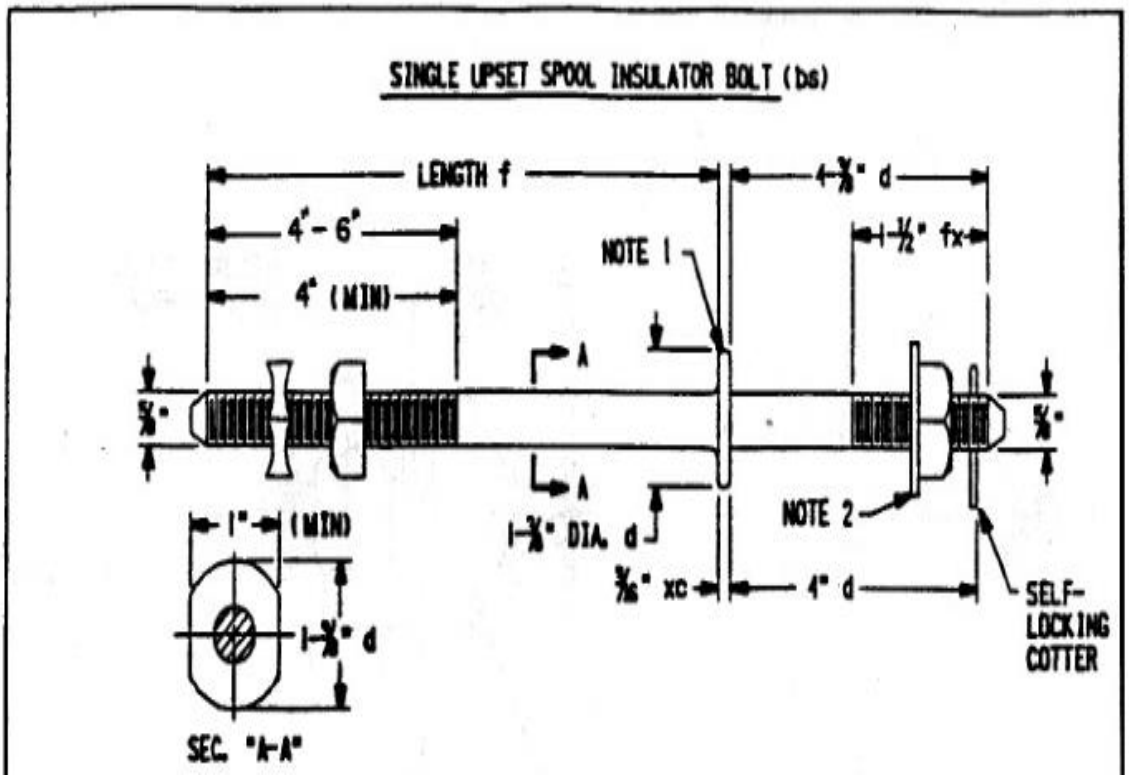
TABLE A

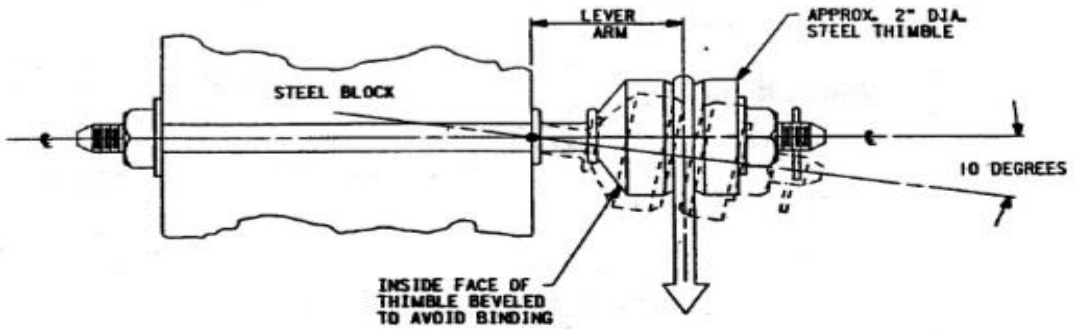
NEA Upset Spool Insulator Bolt Data

NEA Code No.	Length (Inches)	Type	Number of Threads Per Inch	Length of Threads (Inches)	Minimum Tensile Strength (Pounds)
0639 05 09	9	Single	11	4	12400
0639 05 10	10	Single	11	4	12400
0639 05 12	12	Single	11	6	12400
0639 05 14	14	Single	11	6	12400
0635 05 10	10	Double	11	4	12400
0635 05 12	12	Double	11	6	12400
0635 05 14	14	Double	11	6	12400

Diameter of shank before galv. NOM.5/8=0.625, Max. 0.642, Min 0.605.

Other dimension, tolerance and performance requirements and thread design requirements are stated in ANSI Standard C135.31-1980, B1.1-1982, B18.2.2-1972, C135.1-1979 and NEMA PH 31-1977 or current edition of these standards.





NOTE 1 APPLICATION OF LOAD TEST MUST COINCIDE WITH CENTER LINE OF TESTING MACHINE.

NOTE 2 ANGLE OF DEFLECTION SHALL BE DETERMINED BY THE INTERSECTION OF THE CENTER LINE AXIS OF THE BOLT IN IT'S INITIAL POSTION, WITH A LINE DRAWN THROUGH THE CENTER POINTS OF THE BOLT AT THE DEFLECTED POSITION AND THE UPSET SHOULDER NEAREST MOUNTING SUPPORT.

TYPE OF INSULATOR BOLT	LEVER ARM	MIN. LOAD AT TEN DEGREES DEFLECTION
SINGLE UPSET BOLT	1-⅜"	1900 LBS.
DOUBLE UPSET BOLT	3"	800 LBS

SINGLE AND DOUBLE UPSET SPOOL INSULATOR BOLTS AND NUTS SHALL, WITHOUT DEFLECTING MORE THAN TEN DEGREES UNDER LOAD, DEVELOP STRENGTHS SHOWN IN ABOVE WHEN TESTED BY THE METHOD SHOWN AND DESCRIBED HEREIN AND ANSI C135.31-1980. THE LOAD SHALL BE APPLIED AT A RATE OF APPROXIMATELY 0.4 IN PER MINUTE FREE RUNNING CROSSHEAD SPEED OF THE TESTING MACHINE.

FIGURE 2
TEST PROCEDURE FOR UPSET BOLTS

BOLT, THIMBLE EYE

MATERIAL:

Thimble-eye bolts described in this standard are called strand type eye bolt in ANSI C135.4-1979, (1). Thimble-eye bolts furnished to NEA specifications shall conform in all respects to the specific dimensional and performance requirements stated in this standard. The text, figures and references to other standards supplement each other and shall be considered part of this standard.

FINISH:

The thimble-eye bolt and square nut described in this standard shall be hot-dip galvanized in accordance with ANSI/ASTM A153-82, (2).

Each thimble-eye bolt shall bear a permanent symbol or identification mark of the manufacturer in a place and manner which will not adversely affect either integrity or utilization of the bolt. Thimble-eye bolts shall have smooth surfaces, free from blemishes and imperfections. The eyes of the bolts shall be well shaped, with no irregularities, malfunctions or cracks and the inner surface shall be free from projections or other sharp edges.

DIMENSIONS:

The thimble-eyebolt dimensions are shown in figure I and presented in Table A using information and symbols defined as follows:

L1 =Length from below eye to Last thread at end of bolt.
L2 = Length from top thread to Last thread at end of bolt.
D = Diameter of shank
L3 =Length of eye.
RI =Radius of lower portion of eye.
R2 =Radius of upper portion of eye.

The thimble-eye bolt dimensions with applicable tolerances shall conform to the requirements of ANSI CI35.4-1979, [1].

The dimensions of the compatible nuts before galvanizing, shall be in accordance with ANSI BIS.2.2-1972 [3] and conform with ANSI C135.1-1979, [4].

STRENGTH:

1. Thimble-eye bolts with nuts installed shall meet the tensile strength requirements listed in Section 6 of ANSI C135.4-1979, [1]. Above the specified minimum tensile loads, the thimble-eye bolt shall fail only in the shank or threaded Section and not at the junction of head and shank. Threads shall not strip below the specified minimum tensile loads.
2. A cold bend test shall be conducted in accordance with Section 6.2 of ANSI C135.4-1979, [1]

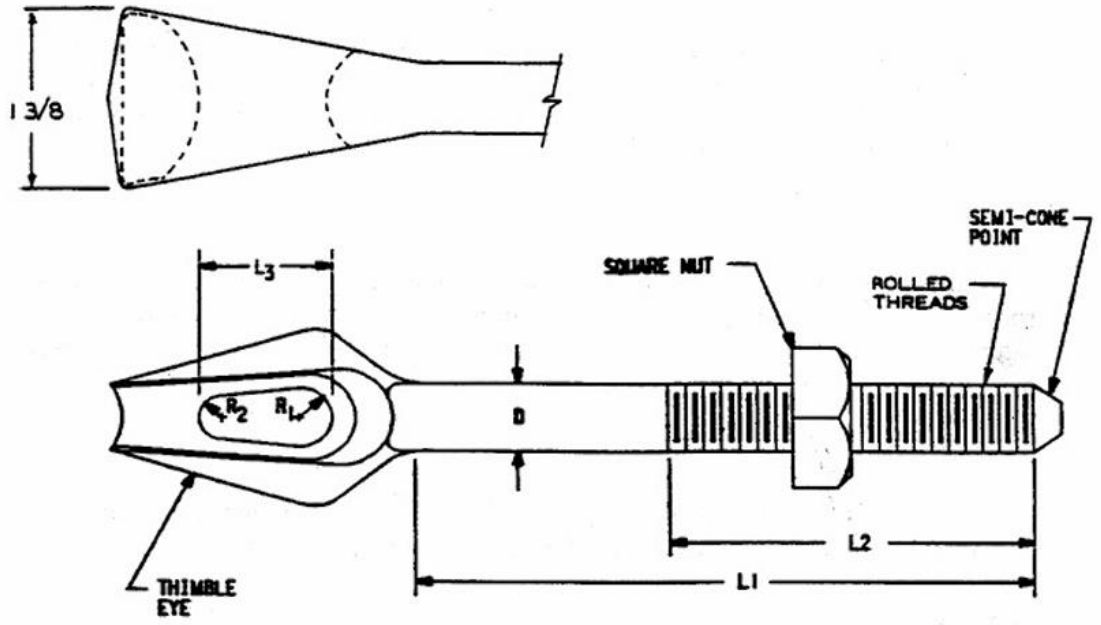


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FIGURE 1
THIMBLE EYE BOLT AND SQUARE NUT ASSEMBLY

TABLE A

DIA. 5/8 = 0.625 SHANK DIA. BEFORE GALVANIZING MAX. = 0.642 MIN. = 0.605	DIMENSIONS (INCHES)							ULTIMATE TENSILE STRENGTH (LBS)	THREADS PER INCH	TYPE
	NEA CODE NO.	D	L1	L2	L3	R1	R2			
	0636 55 08	5/8	8	4	3/16	7/32	1/4	12, 400	11	STRAIGHT
	0636 55 10	5/8	10	4	3/16	7/32	1/4	12, 400	11	STRAIGHT
	0636 55 12	5/8	12	6	3/16	7/32	1/4	12, 400	11	STRAIGHT

OTHER DIMENSION, TOLERANCE AND PERFORMANCE REQUIREMENTS AND THREAD DESIGN REQUIREMENTS ARE STATED IN ANSI STANDARDS C135.4-1979, C135.1-1979, B1.1-1974 AND B18.2.2-1972 OR CURRENT EDITION OF THESE STANDARDS

BRACKET, ANGLE, 5/8", WITHOUT SPOOL

Secondary clevis brackets furnished to NEA specifications shall conform in all respects to the dimensional and performance requirements of this standard. These brackets shall be designed To use 3-inch high spool type insulators, ANSI Classes 53-2 and 53-4. Each bracket shall be provided with a mounting hole for a 5/8 inch machine bolt and two offset holes for 1/2 inch lag screws. The text, figures and reference to other standards supplement each other and are considered part of this standard.

MATERIAL:

Secondary clevis brackets shall be fabricated from hot-rolled open-hearth steel strip that conforms to ASTM A570-79, [1]. The clevis pin shall be fabricated from hot-rolled steel that conforms to ASTM'A675-82, [2]. These materials shall have a grade and quality that meets the strength requirements of this specification. The self-locking cotter key shall be made from a non-ferrous metal.

FINISH:

The clevis bracket and clevis pin shall be hot-dip galvanized in accordance with ANSI/ASTM AI53-82, [5]. All surfaces shall have a smooth finish and be free from blemishes or projections. The manufacturer's symbol or identification mark shall be placed on the clevis and the head of the pin.

DIMENSIONS:

Dimensions and tolerances of the clevis bracket and pin shall be in accordance with NEMA Pub. No. PH20-1979,[3] and as shown in Figures 1 and 2 of this document.

Clevis bracket dimensions are defined as follows:

A = Width of clevis bracket opening
B = Depth of clevis bracket throat
C = Width of back of bracket
T = Thickness of clevis bracket
E = Separation between clevis bracket ends and centers of clevis pin holes
Rl = Radius of clevis pin holes
R2 = Radius of clevis bracket ends
R3= Radius of back of bracket
HI = Mounting hole dimensions

Dimensions of clevis pins shown in Figure 2 are defined as follows:

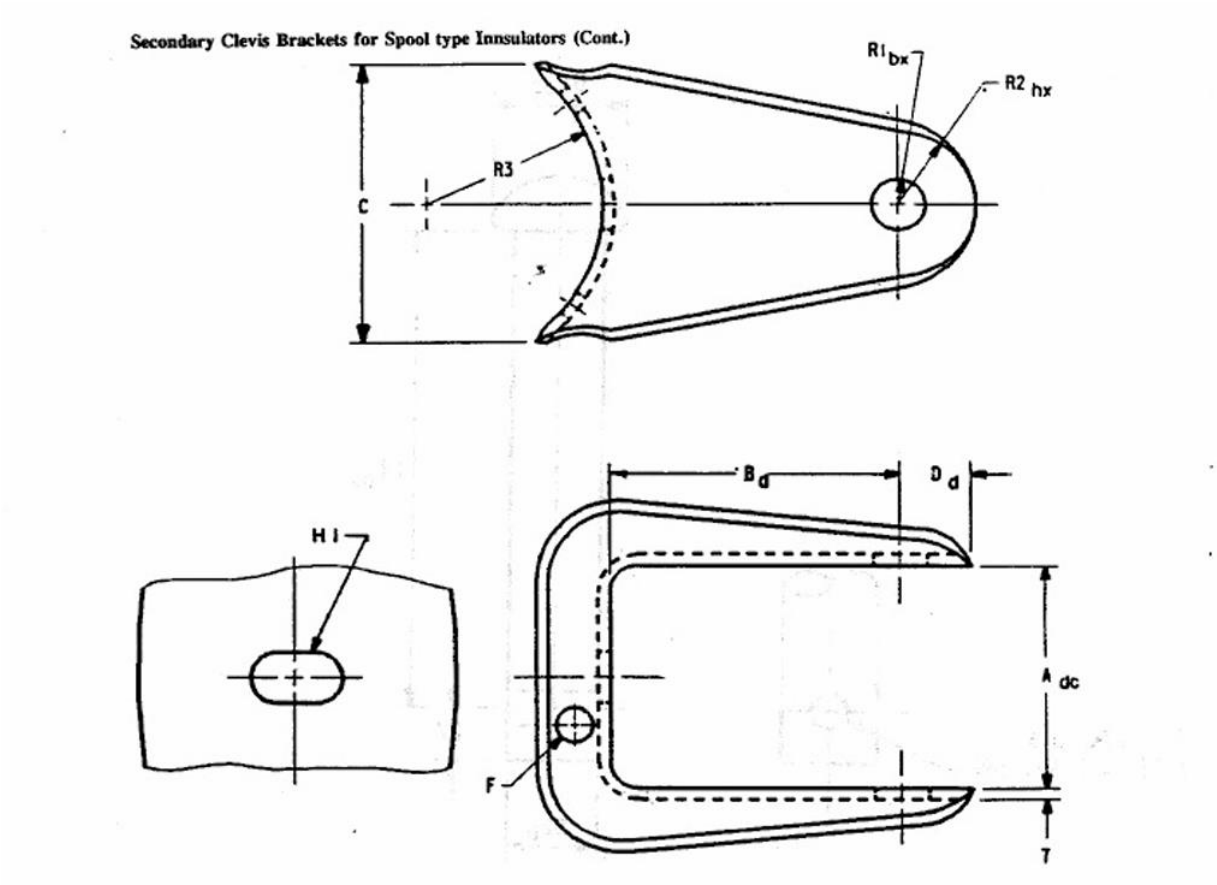
D1 = Diameter of clevis pin head
D2 = Diameter of clevis pin shank
L1 = Overall length of clevis pin shank
L2 = Distance between end of clevis pin and center of cotter key hole

STRENGTH:

A NEA secondary clevis bracket must be capable of withstanding a side load of 1000 pounds at 90 degrees to the axes of the clevis bolt and mounting bolt without exceeding a test deflection of 3/8 inch and a permanent deflection of 1/4 inch measured at the center of the pin.

The ultimate strength of NEA secondary clevis bracket shall be equal to the load rating of the spool insulators as follows:

Insulator Class	Size(inches)	Load rating(lbs)
53-4	3	4500



NEA CODE NO.	SPOOL INSULATOR CLASS	STRENGTH		NOMINAL DIMENSION (INCHES)									
		ULT.	SIDE	A	B	C	D	T	R1	R2	R3	F	H1
0780 45 00	ANSI 53-4	4500	1000	3-¼	4	3-½	⅞	12GA	11/32	1	2-¾	5/16	1 1/16 x ¾

a = 1/64 d = 1/8 g = ⅜
b = 1/32 e = 5/16 h = ½
c = 1/16 f = ¼ x = 0

ALLOWABLE VARIATION (INCHES)
SINGLE LETTER INDICATES ± VARIATION. EXAMPLE: c = ± 1/16 INCH
TWO LETTERS INDICATE +FIRST VARIATION, - SECOND VARIATION.
EXAMPLE: cx = +1/16 -0 = +1/16

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FIGURE 1
SECONDARY CLEVIS BRACKET

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BRACE, CROSS-ARM AND SIDE ARM

MATERIAL:

The cross-arm braces shall be fabricated from structural quality hot-rolled steel which conforms to ASTM A570-79, [1] and NEMA Pub. No. PH6-1970 [2].

FINISH:

The cross-arm braces shall be hot-dip galvanized in accordance with ANSI/ASTMA15382, [3]. Each brace shall bear a permanent symbol or identification mark of the manufacturer in a place and manner which will not adversely affect the integrity or utilization of the brace. The finish shall be smooth, free from blemishes and other imperfections which are inconsistent with commercial practice.

DIMENSIONS:

Figures 1, 2, 3 and 4 depict the flat brace, double-span brace, sidearm brace and vertical sidearm brace respectively. Indicated dimensions are defined as follows:

a. Figure 1- Flat Brace:

All dimensions are depicted on drawing.

b. Figure 2 - Double-Span Cross-arm .Brace:

L1 = Over all span of brace
L2 =Separation of cross-arm mounting holes from center of pole
HI = Drop of brace
Dl =Diameter of pole mounting hole 02
D2 = Diameter of cross-arm mounting holes
T = Thickness of angle steel
WI = Height of cross section
W2 = Width of cross section
A =Length of horizontal portions of brace
B = Separation of mounting holes from flange

c. Figure 3 - Side-Arm Brace

Ll = Length of brace
L2 = Distance from cross-arm mounting hole to upper end of riveted step

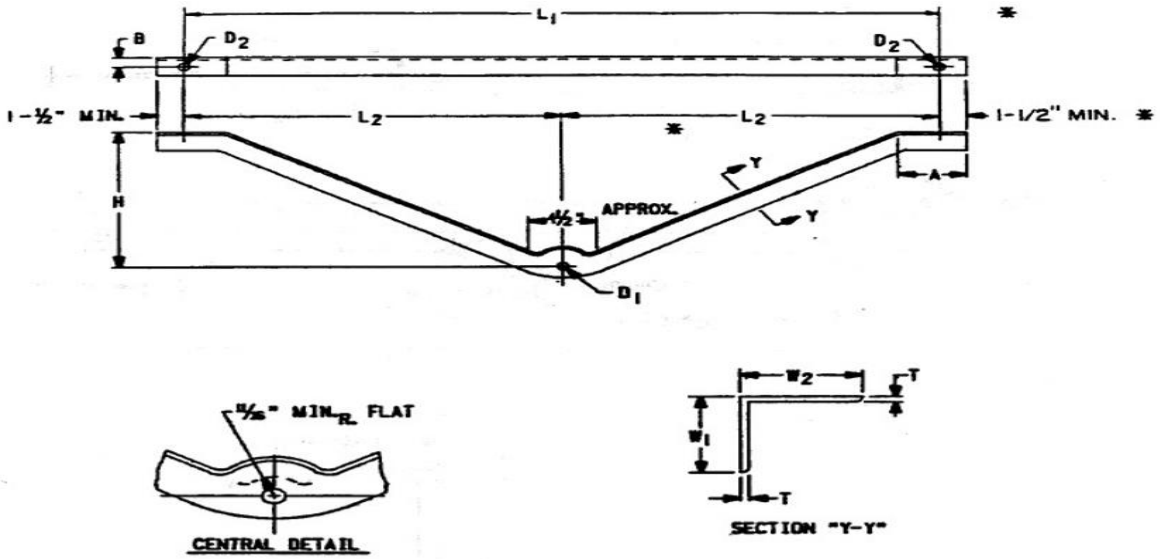
d. Figure 4 – Vertical Side Arm Brace Dimensions Depicted on Drawing

The braces shall conform to the dimension and tolerance requirements of Figure I, 2, 3 and 4 NEMA PH6-l970, [2] or current edition thereof.

STRENGTH:

Flat braces shall have a minimum tensile strength of 7,000 pounds at the bolt holes. They shall be capable of being bent 10 degrees at bolt holes and 140 degrees at any point between holes without cracking of the base metal on the outside of the bent portion. A 9/16" diameter mandrel shall be used for bending. The brace shall be clamped so that radius of bend will be the same as the mandrel.

The steps on sidearm braces shall be capable of supporting250 pounds without buckling. There should be no permanent deformation after the 250 pound load is removed.



DIMENSION SYMBOL	DIMENSION (INCHES)	TOLERANCE (INCHES)	
		POSITIVE	NEGATIVE
L_1	60	1/4	1/4
L_2	30 *	1/8	1/8
H	18	0	0
D_1	11/16	1/32	1/32
D_2	7/16	1/32	1/32
W_1	1-1/2	1/16	0
W_2	1-1/2	1/16	0
T	3/16	1/32	0
A	4	1/2	1/2
B	7/8	1/16	0

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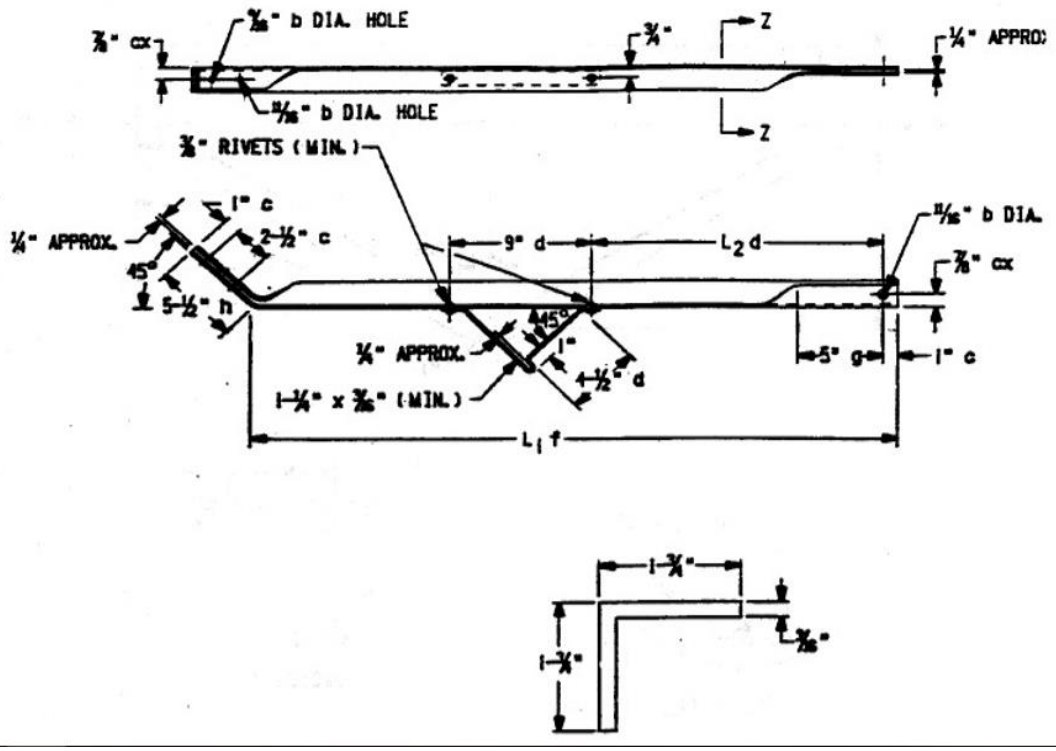
FIGURE 2

NEA STEEL ANGLE BRACE



DIMENSION SYMBOL	DIMENSION (INCHES)
L1	84
L2	30

ALLOWABLE TOLERANCE (INCHES)

a-1/64"	d-1/8"	g-3/8"
b-1/32"	e-3/16"	h-1/2"
c-1/16"	f-1/4"	x-0"

ALLOWABLE VARIATIONS

SINGLE LETTER TOLERANCE = ± VARIATION, d = ± 1/8"

TWO LETTER TOLERANCE = + FIRST VARIATION - SECOND VARIATION.

gb = + 3/8" - 1/32" = 11/32"

FIGURE 3

NEA SIDEARM BRACE

MOUNTING BRACKET FOR CUT-OUT AND ARRESTER

The transformer pole band, furnished to NEA specification shall conform in all respects to the physical and performance requirements of this standard. The text, figures and reference to other standards supplement each other and or considered part of this standard.

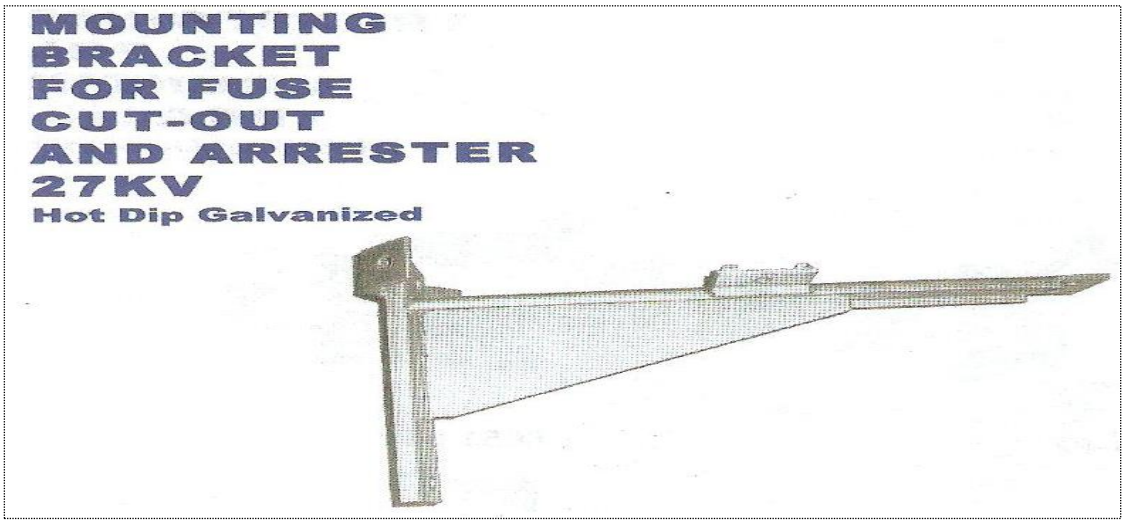
SPECIFICATIONS:

The universal pole band bracket, to be used when hanging transformers on non-wood poles, that do not have bolt holes in the desired places, shall have three component parts namely: a transformer mounting bracket, cluster mount segment and a vertical adapter plate, and the necessary bolts.

To be shaped for hanging.one, two, or three transformers on a pole with 6 1/2 to 11-inch diameter. To have adequate strength for safely hanging up to three 167kVA transformers on a top and bottom band.

Each transformer mounting bracket and each vertical adapter plate to be complete with two 5/8 x I 3/4"-inch machine bolts for attaching the transformers to the plate and the plate to the bracket.

A 5/8"x6" machine bolt shall also be provided for each transformer mounting bracket and each cluster mount segment



HOT LINE CLAMP

Hot line clamps furnished to NEA specification shall conform in all respects to the physical and dimensional requirements stated in this standard. A hot line clamp shall not adversely affect the electrical and mechanical characteristics of the conductors it connects. The text, figures and references to other standards supplement each other and are considered parts of this standard.

MATERIAL:

Hot line clamps described in this specification shall be considered a general purpose clamp and be capable of joining aluminum or copper conductors without experiencing contact deterioration resulting from galvanic corrosion or exposure to the weather. Clamp shall have a cast aluminum alloy body conforming to ASTM B868-82, [1].

PHYSICAL REQUIREMENTS:

Hot line clamps shall be designed for a long service life, free from corrosion, electrical and mechanical failure and shall be provided with the following features:

A. The eye-screw threads shall be enclosed in a threaded chamber and protected by a corrosion inhibiting compound effective over a wide temperature range. Eye screw threads shall also be isolated from the arc zone caused by charging currents when the clamp is applied or removed.

B. Clamp jaw shall be designed to provide maximum conductor contact and shall have the following outdoor current rating base on 75 degrees C:

460 amper6Swith 266.8 MCM ACSR

670 amperes with 300 MCM STR. CU.

C. Clamp shall be designed to minimize conductor damage resulting from vibration and to avoid "working off" the conductor during tightening.

D. Hot line clamp eye-screw and terminal shall have a recommended torque of 250 inch pounds based on clean, dry and unlubricated threads.

DIMENSIONS:

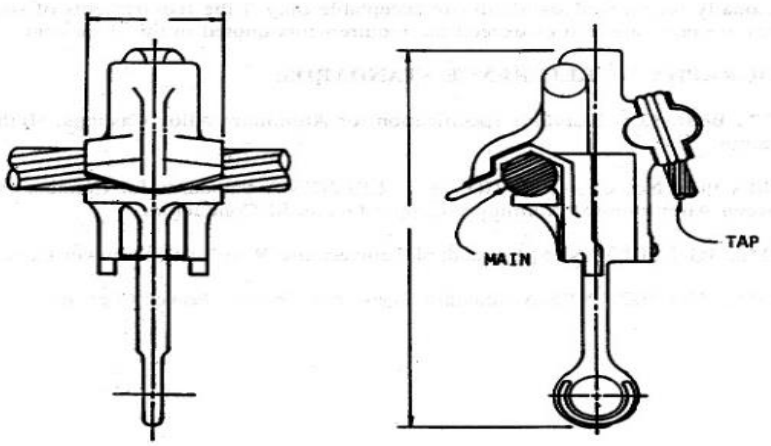
Hot line clamps shall be similar to Figure 1 and designed to accept the following conductor sizes:

A. Main line range shall be 266.8 MCM ACSR with armor rod to #4 ACSR with armor rod.

B. Tap line range shall be 266.8 MCM ACSR to #6 ACSR or 300 MCM Str. Cu. to # 4 Sol. Cu.

TESTS:

REB hot line clamps shall meet the current cycling requirements for CLass A duty, connector per NEMA CC3-1973 (R1978), [2]. Conductor temperature shall be 125 degrees C, temperature rise and resistance test shall conform to NEMA SO-1,501 [3] and NEMA SO-1.502 [4] respectively.



NEA CODE NO.		CONDUCTOR RANGE				APPROX. DIMENSION	
		MAIN		TAP			
1141 19 10	TYPE	CU-AL	ACSR*	CU-AL	ACSR	H	L
	MIN.	---	#4	#4-SOL	#6	1-3/4"	6-1/2"
	MAX.	---	266.8	300 STR.	266.8	(44.5mm)	(165cm)

* OVER ARMOR ROD

CLAMP, ANCHOR ROD BONDING:

MATERIAL:

Bonding clamps shall be fabricated in with NEMA PH-23 [1].

DIMENSIONS:

Nominal dimensions of a typical bonding clamps are shown in Figure 1. for 5/8" single eye rod.

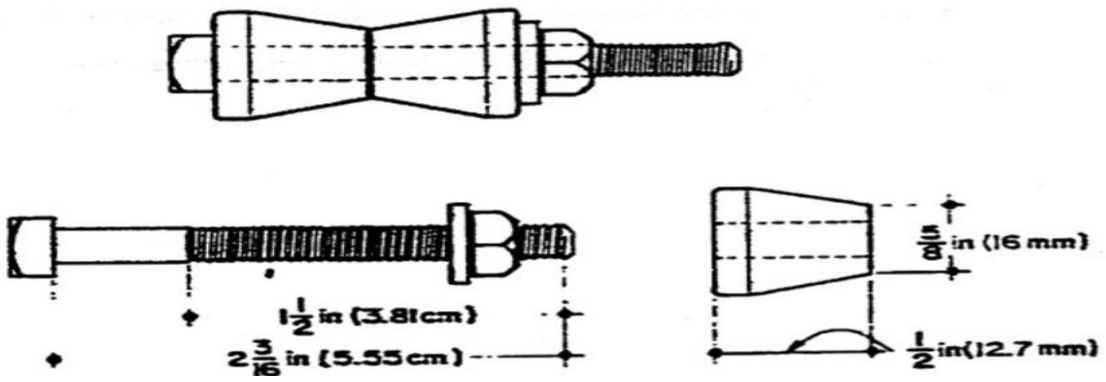
GALVANIZING:

After fabrication clamps shall be hot-dip galvanized in accordance with ANSI/ASTM A153-82[2], as needed.

FINISH:

Clamps shall be free of rough or uneven surfaces and edges so as to ensure safety in handling and installation.

CLAMP, ANCHOR ROD, BONDING



CLAMP, LOOP DEAD END:

Loop deadend clamps shall conform in all respects to the dimensional and performance requirements of this document. The text, figures and references to other standards supplement each other and are considered part of this specification.

MATERIAL:

A loop deadend clamp shall have a body made of three parts using U-bolts and nuts as clamping hardware.

The top and bottom pressure pads shall be castings of high strength aluminum alloy 356 in accordance with ASTM B686-82 [1] and heat treated to T6 temper in accordance with ASTM B597-83 [2]. The top pressure pad shall be attached to the U-bolt.

The spacer shall be made of highly conductive aluminum, be designed to interlock with the U-bolts and be provided with guide fingers to ensure alignment of the conductors'. The spacer shall be designed so that it cannot be removed without removing the nuts and lower pressure pad.

The clamp shall also provide optimum contact areas for conductor contact, with flared ends to reduce conductor stresses.

The U-bolts shall be made of steel which conforms to the physical requirements of ASTM specifications A663-82 [3] or A675-82 [4]. The steel hex nuts shall meet the requirements of ANSI B18.2.2-l972 [5].

Lock washers shall comply with the requirements of ANSI B18.21.l-l983 [7].

DIMENSIONS:

Loop deadend clamp dimensions shown in Figure I are specified on the basis of the size of the conductor with which it is to be used.

FINISH:

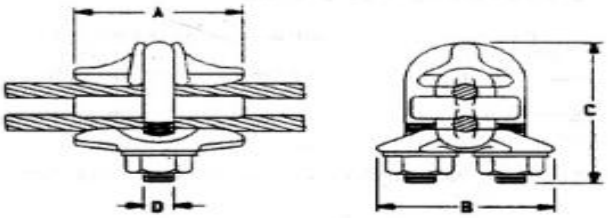
The steel U-bolts and nuts shall be hot-dip galvanized in accordance with ASTM A153-82 [6]. The surfaces of the clamp shall be smooth and free from blemishes, irregularities and other imperfections which are inconsistent normal commercial practice. The manufacturer's identification mark or symbol shall be located on each part of the clamp body and on each U-bolt, in a manner and location which does not impair the function of the clamp. .

STRENGTH:

Two loop deadend clamps must be used if the holding value of the connection is to develop 95% or more of the conductor's rated strength. Connections using one loop deadend clamp will develop holding values equivalent to:

a. 80% of rated strength of ACSR .

b. 90% of rated strength of stranded all aluminum conductor.



NEA CODE NO.	ACSR CONDUCTOR SIZE	DIMENSION (INCHES)			
		A	B	C	D
1172 10 25	#6 - #2/0	2	2	2-⅞	⅜

THIS IS A CONCEPTUAL DRAWING. THE MANUFACTURER IS RESPONSIBLE FOR THE PREPARATION OF DRAWINGS AND A DESIGN WHICH MEETS THE DIMENSIONAL, STRENGTH, AND OTHER PERFORMANCE REQUIREMENTS OF THIS STANDARD.

CLAMP, DEADEND STRAIN

MATERIAL:

The clamp body shall be fabricated from high-strength aluminum alloy in accordance with ASTM B686-82.

FINISH:

The clamp shall have smooth surfaces without blemishes, malformations or other defects. The clamp body shall bear the manufacturer's symbol or identification mark and catalog number.

DIMENSIONS:

Dimensions of conductor deadend clamps shall be based on the minimum and maximum conductor size with which use is intended. A typical conductor deadend clamp is shown below.

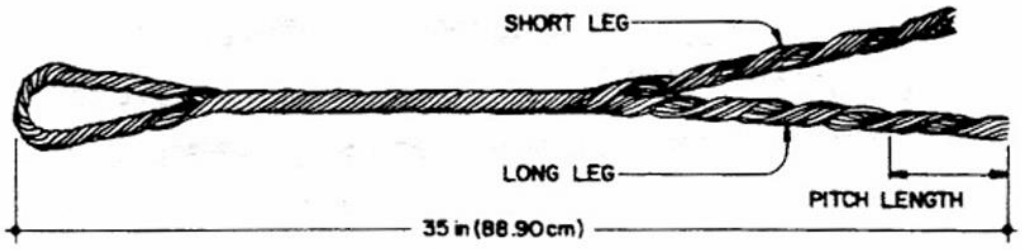
GUY, DEADEND GRIP

MATERIAL:

Galvanized steel or Aluminum clad steel.

FINISH:

1. When the type of stay wire had been confirmed the proper helical dead-ends for stay wire could provide a gripping strength no less than 95% rated broken strength.
2. Galvanized steel and aluminum clad steel material are usually used to make on stream. This ensures that there is no any stranding damage occurred caused by electrolytic or galvanic corrosion.
3. Stress is distributed equally, without any stress focus on the stay wire. It would protect the stay wire very well.
4. Can be set up without any additional tools.



REFERENCE DATA

CONSTRUCTION W	7
MEAN DIAMETER in (mm)	.360 (9.14)
SIMILAR OR EQUAL	P-GDE-1107
N.E.A. CODE NO.	1177 20 85

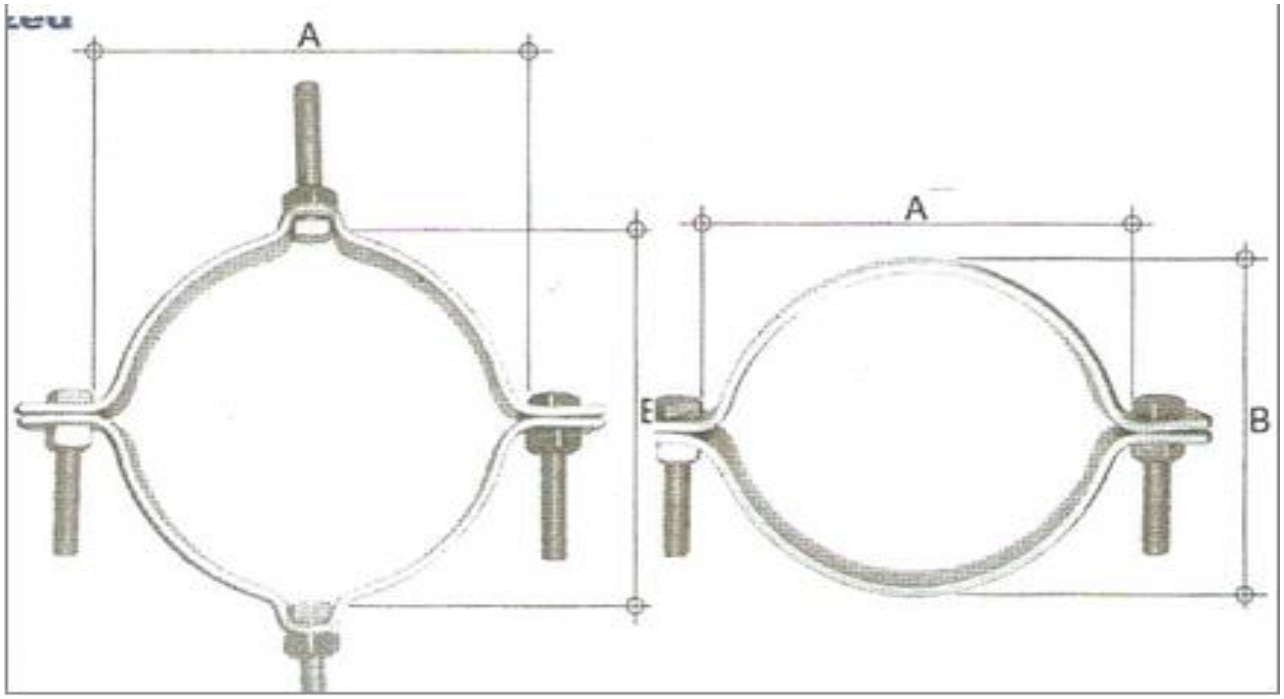
POLE CLAMP

MATERIAL:

Carbon steel, not steel sheet

FINISH:

Hot dip galvanized.



SWINGING CLEVIS WITHOUT SPOOL

Service swinging clevises furnished to NEA specifications shall conform in all respects to the dimensional and performance requirements of this specification. These clevises shall be designed to use 2-118 inch spool insulators, ANSI Class 53-1 and ANSI C29.3-1986 [2]. The text, figures and references to other standards supplement each other and are considered part of this specification.

MATERIAL:

NEA service swinging clevises and clevis pins shall be fabricated from open hearth steel strip that conforms to ASTM A570-79, [3]. The clevis pin shall be made from steel that has a grade and quality that meet the strength requirements of ASTM A675-82, [4]. The self-locking cotter key shall be made of a non-ferrous metal such as hard-drawn copper, aluminum, brass or bronze.

DIMENSIONS:

The dimensions and permitted tolerances of service swinging clevis brackets and clevis pins shall be in accordance with NEMA Pub. No. PH20~1979, [5], and as shown in Figures 1 and 2 are defined as follows:

A = Width of clevis opening
B = Depth of clevis throat
C = Width of clevis body
D = Thickness of clevis bod
R1 = Radius of clevis pin holes
R2 = Radius of clevis body at opening
E = Minimum dimension for NEA spool insulator ANSIClass53-1

Dimensions of clevis pins shown in Figure 2 are defined as follows:

D1 = Diameter of clevis pin head
D2 = Diameter of clevis pin shank
L1 = Overall length of clevis pin shank
L2 = distance between end of clevis pin and center of cotter key hole

FINISH:

Service swinging clevis brackets and clevis pins shall be hot-dip galvanized in accordance with ANSI/ASTM Al53-82, [1]. Each clevis bracket shall bear the manufacturer's symbol or identification mark. All surfaces must be smooth and free from blemishes or other irregularities not consistent with good commercial practice. .

STRENGTH:

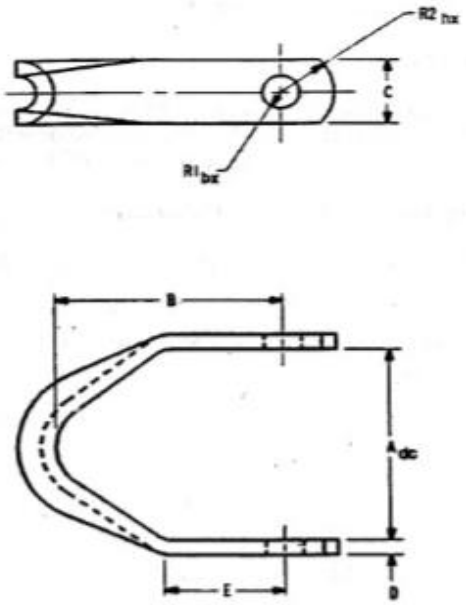
Service swinging clevis bracket must be capable of meeting ultimate deadend load requirements of Section 10.1 of NEMA Pub. No. PH20-1979, which for 2 1/8 inch Class 53-1 insulator is 2,000 lbs.

TESTS:

During tests, the bracket shall be fitted with a wet process insulator that complies with ANSI C29.3-1986, [2]. Test procedures described in Section 6 of NEMA Pub. No. PH20-1979, [5], include:

a. Loads shall be applied by means of a loop of flexible stranded cable of a diameter which shall not exceed the radius of the wire groove of the spool insulator. Failure of the spool insulator shall be regarded as a clevis failure.

b. During testing the clevis shall be attached to a steel block.



NEA CODE NO.	SPOOL INSULATOR CLASS	NOMINAL DIMENSION (INCHES)						
		A	B	C	D	R1	R2	E (MIN)
1230 14 01	ANSI 53-1	2-¼	2-¼	¾	⅜	7/32	½	1-¼

ALLOWABLE VARIATION (INCHES)

a - ⅛ f - ¼
b - 1/32 g - ⅜
c - 1/16 h - ½
d - ⅛ x - 0
e - 3/16

SINGLE LETTER INDICATES ± VARIATION. EXAMPLE: c = ±1/16 INCH
TWO LETTERS INDICATE +FIRST VARIATION, - SECOND VARIATION.
EXAMPLE: cx = +1/16 -0 = +1/16

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FIGURE 1
SERVICE SWINGING CLEVIS

Page 4 of 5
TS 136

SHACKLE, ANCHOR

Anchor shackles furnished to NEA specifications shall conform in all respects to the dimensional and performance requirements stated in this standard. The text, figures and

references to other standards supplement each other and shall be considered parts of this standard.

MATERIAL:

An anchor shackle furnished to NEA specifications shall be fabricated from materials that comply with the requirements of ASTM A668-83, [1]. The cotter bolt shall be in accordance with ANSI C135.1-1979, [2]. The self-locking cotter key shall be made from good commercial grade brass, stainless steel, bronze, hard drawn aluminum or hard drawn copper.

FINISH:

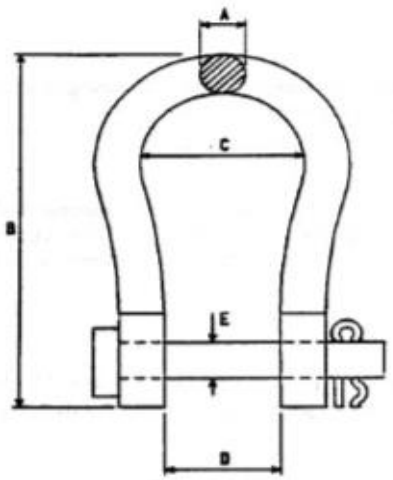
The anchor shackle shall be hot-dip galvanized in accordance with ANSI/ASTM A15382, [3]. All anchor shackles shall bear the manufacturer's symbol or identification mark in a location which will not impair its function.

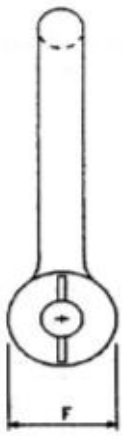
All surfaces shall be smooth, free from blemishes and other imperfections not consistent with commercial practice.

DIMENSIONS:

NEA anchor shackles shall have dimensions shown in drawing, as follows:

A = Diameter of cross section 1
B = Minimum Height of shackle
C = Maximum width of eye
D = Minimum width of opening
E = Bolt diameter
F = Minimum diameter of shackle base





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NEA CODE NO.	DIMENSIONS (INCHES)						PACKAGING	
	A	B	C	D	E	F	QUANTITY	WGT(lbs)
1230 28 00	½	3-½	1-½	¾	⅝	1-⅜	100	93

CONNECTOR, AMPACT WEDGE TYPE

A locking tab prevents wedge from loosening once it has been driven into position. Every connection may be visually inspected by checking wedge movement and locking tab.

No damage to the conductors when installing or removing tap

Wedge are factory coated with an inhibitor containing abrasive particles to help clean the contact surfaces during installation

AMPACT SELECTION GUIDE

Wire Combinations
336.4-6
336.4-4
336.4-2
336.4-1/0
336.4-2/0
336.4-3/0
336.4-4/0
336.4-266.8
336.4-336.4
477.0-2, 3
477.0-4, 5

CONNECTOR, COMPRESSION

Compression connectors furnished shall conform in all respects to the design and performance requirements established in this document. The connectors shall accommodate ACSR, aluminum and copper conductors in various conductor size and type combinations for taps, splices and deadend terminals.

MATERIAL:

Compression connectors, of a type shown in Figure 1, for hand operated mechanical compression tools shall be made from an alloy and shall.be easily deformed to provide the pressure necessary for retention of the clamped conductors with the connector body. The connectors shall have strength and conductivity for their application.

Connectors joining aluminum and copper conductors shall be provided with one of the following accommodations for the copper conductor:

1. A copper insert cast integrally with the aluminum connector body or swaged permanently in place or soldered, provided all corrosive fluxes are removed from the bond area.
2. A bimetallic strip of aluminum and copper bonded together. This strip shall be firmly attached to the aluminum clamp body.

Connector materials are chosen by application as follows:

3. Aluminum conductor to aluminum conductor; the connector body shall be made of aluminum alloy and contact surfaces shall be coated with an oxide inhibiting compound.
2. Aluminum conductor to copper conductor; same as 1, with accommodations for copper conductors.
3. Copper conductor to copper conductor; connector made of copper.

DESIGN REQUIREMENTS:

Connectors used on NEA distribution circuits shall meet the following design considerations:

1. Conductor-grooves shall be designed so that the conductor shall not be damaged when the connector is compressed.
2. Connectors used with stranded conductors shall be designed so that all strands in the outer layer shall be in good contact with the connector.
3. Moisture must not be allowed to collect at the junction between copper and aluminum components of connectors used to join copper and aluminum conductors.
4. Each connector shall provide a good fit for a limited range of conductor sizes. The contact length shall not be less than five times the diameter of the largest conductor or which the connector is designed.

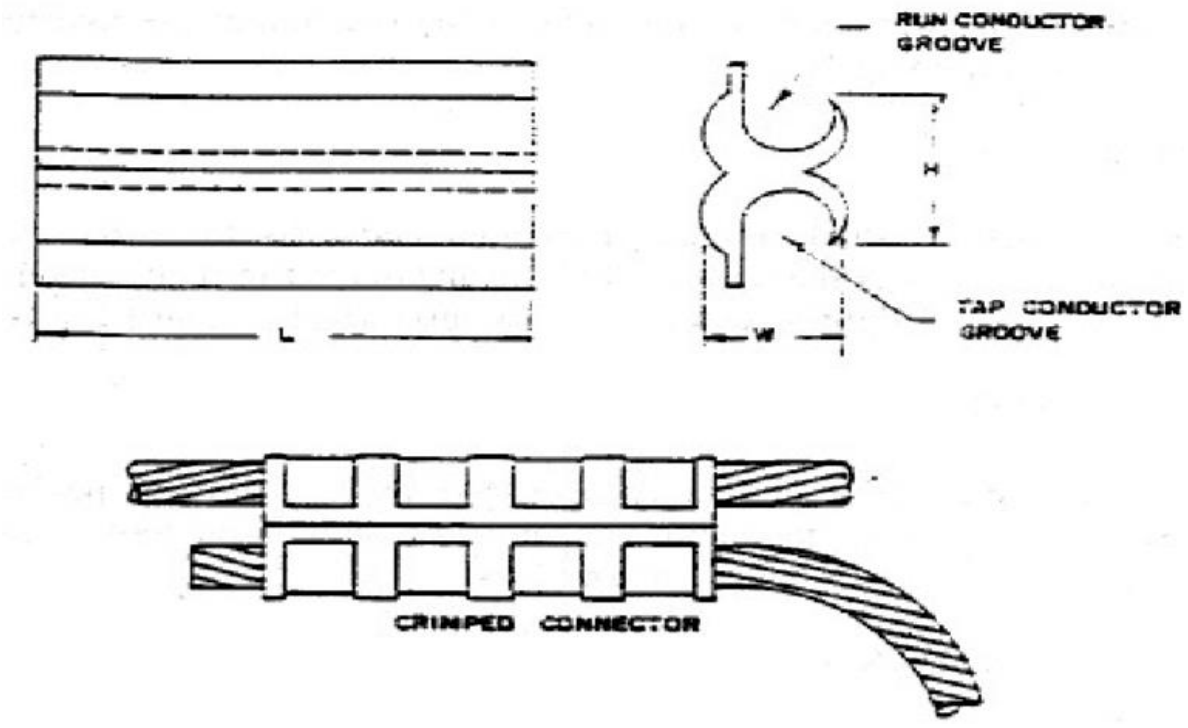
TESTS:

The performance of compression connectors shall be determined by the following tests (as described in NEMA Pub. No. CC-3[1].

1. Heat cycle tests.
2. Electrical tests - resistance and conductivity.
3. Mechanical tests -tension.

F1NISH:

Compression connectors described in this document shall have smooth surfaces free from blemishes and other imperfections. The connectors shall also bear the Manufacturer's identification mark or symbol, connector catalog No. and the index number of the compatible die for the compression tool. This information shall be presented in a location and manner which will not impair the function of the connector and will remain visible after crimping.

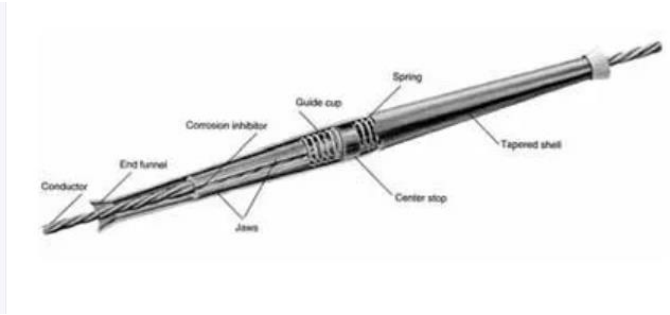


CONNECTORS APPLIED WITH MECHANICAL COMPRESSION TOOL

	CONDUCTOR RANGES	
NEA Code No.	RUN	TAP
1701 16 02	#6 to #4 A1 - ACSR	#I4 to #8 A1 - Cu
1701 16 35	#6 to #4 A1 - ACSR	#6 to #4 A1 - ACSR
1701 16 39	#2 to #4/0 A1 - ACSR	#6 to #2 A1 - ACSR
1701 16 51	#1/0 to #2/0 A1 - ACSR	#1/0 to #2/0 A1 - ACSR
1701 16	#2/0 to #4/0 A1 - ACSR	#2/0 TO #4/0 A1 - ACSR

CONNECTOR, OVERHEAD SPLICE AUTOMATIC

Full tension (95% of conductor rated breaking strength unless noted otherwise)
Designed SPECIFICALLY for high corrosive/problem environments.



CONDUCTOR SIZE			APPROXIMATE CONDUCTOR O.D.			DIMENSIONS INCHES (MM)	
ACSR ASTM-B232	AAAC ASTM-B399	AAC ASTM-B231	MIN/MAX. INCHES	MIN./MAX. MM	COLOR CODE	A	B
4 - 2	4 - 2	4 - 2	.220-.320	5.59-8.13	Red-Orange	12 (305)	1.0 (25)
1/0 - 2/0	1/0 - 2/0	1/0 - 2/0	.355-.470	9.02-11.94	Yellow-Gray	18 (460)	1.4 (36)
3/0 - 4/0	3/0 - 4/0	3/0 - 4/0	.450-.595	11.43-15.11	Pink-Black	22 (560)	1.7 (43)
#2	#2	#2	.225 - .250	5.72 - 6.35	Orange	10	0.09
1/0	1/0	1/0	.355 - .400	9.03 - 10.18	Yellow	13	1.1
266.8 (18/1)	312.8	*336.4	.603-.666	15.32-16.92	Brown	19 (480)	1.7 (43)
336.4 (18/1)	394.5	*397.5, **336.4	.659-.724	16.74-18.42	Green	20 (510)	1.8 (46)
397.5 (18/1)	465.4	*477	.720-.795	18.34-20.19	Blue	22 (560)	2.0 (51)
477 (18/1)	559.5	*556.5, 500	.780-.858	19.81-21.79	White	24 (610)	2.1 (54)
556.5 (18/1) - 795 (36/1)	652.4, 740.8	600 (37 str), 795 (61 str)	.879 - 1.041	22.33 - 26.44	26.76	2.5	Natural

CONNECTOR, PIGTAIL STEM:

The connector features a tin-plated aluminum bareel for installation on either copper or aluminum cable conductors. It is rated up to 35 kV voltage applications.

Typical Properties	
Barrel Style	Standard Barrel
Brands	3M™
Case Quantity	10
Compatible Conductor Size (Metric)	70 mm² (Stranded)
For Use With	Aluminum or Copper Conductors
Indoor/Outdoor	Both
Lug Base Metal	Aluminum
Lug Type	Compression Lugs
Maximum Operating Voltage	35 Kilovolt
Number of Holes	0 none
Product Series	SC
Product Type	Stem Connector
Stem Diameter (Metric)	6.35 mm
Stem Length (Metric)	152.4 mm
Units per Case	10

GROUND ROD CLAMP:

MATERIAL:

Drop forged ground rod clamp bodies shall be made of malleable steel compatible with ASTM A663-82, [1] or ASTM A675-82, [2]. The retaining screw shall also be made of steel that complies with ANSI Standard CI35.1-1979, [3] and shall have a square or hexagonal head. Each material shall have a quality and grade that satisfies the requirements of this standard.

FINISH:

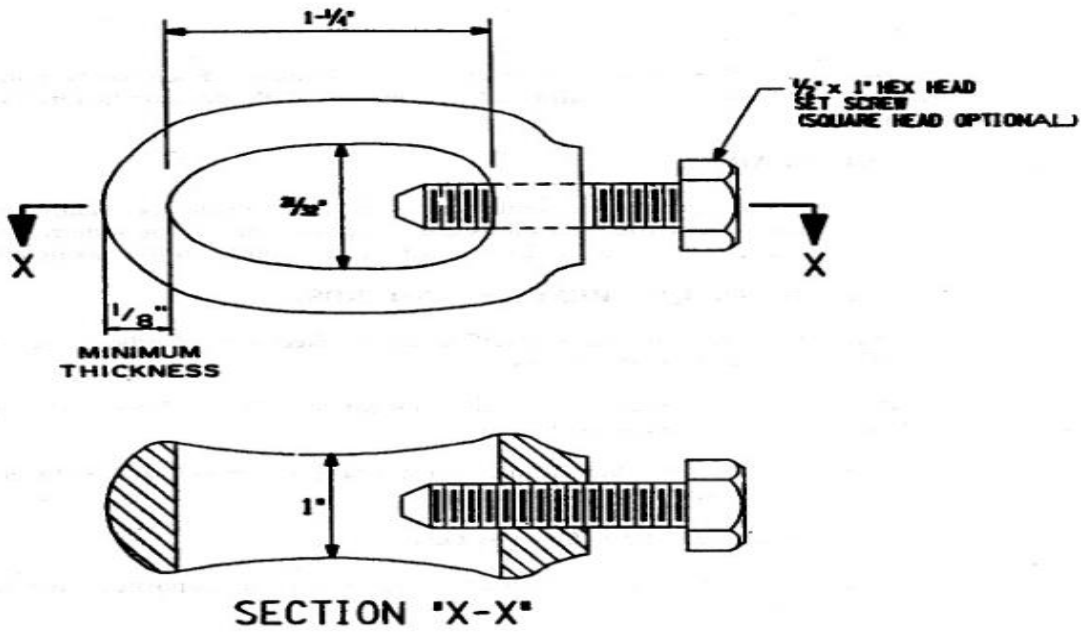
A ground clamp body shall be hot-dip galvanized in accordance with ANSI/ASTM A15382, [4]. The retaining screw shall be cadmium plated in accordance with ASTM A16580, [5]. The surfaces of the clamp body and screw should be smooth and free from blemishes.

DIMENSIONS:

Dimensions of ground rod clamps shall be specified on the basis of ground rod diameter and NEA ground wire diameters (0.460 inch and 0.128 inch)

The manufacturer is responsible for the design of the clamps in order to meet the requirements of this standard. .

Approximate dimensions of a typical NEA ground rod clamp are shown in Figure I.



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FUSE CUT OUT ASSEMBLY, 100 AMPS with LIGHTNING ARRESTER

- **Technical Specification:**
  - **CUT OUT -** All Cut Out must be a Type "C" or "C" shape frames that support the fuse holder and a porcelain insulator that electrically isolates the conductive portions of the assembly from the support to which the insulator is fastened. All products must be AB Chance.

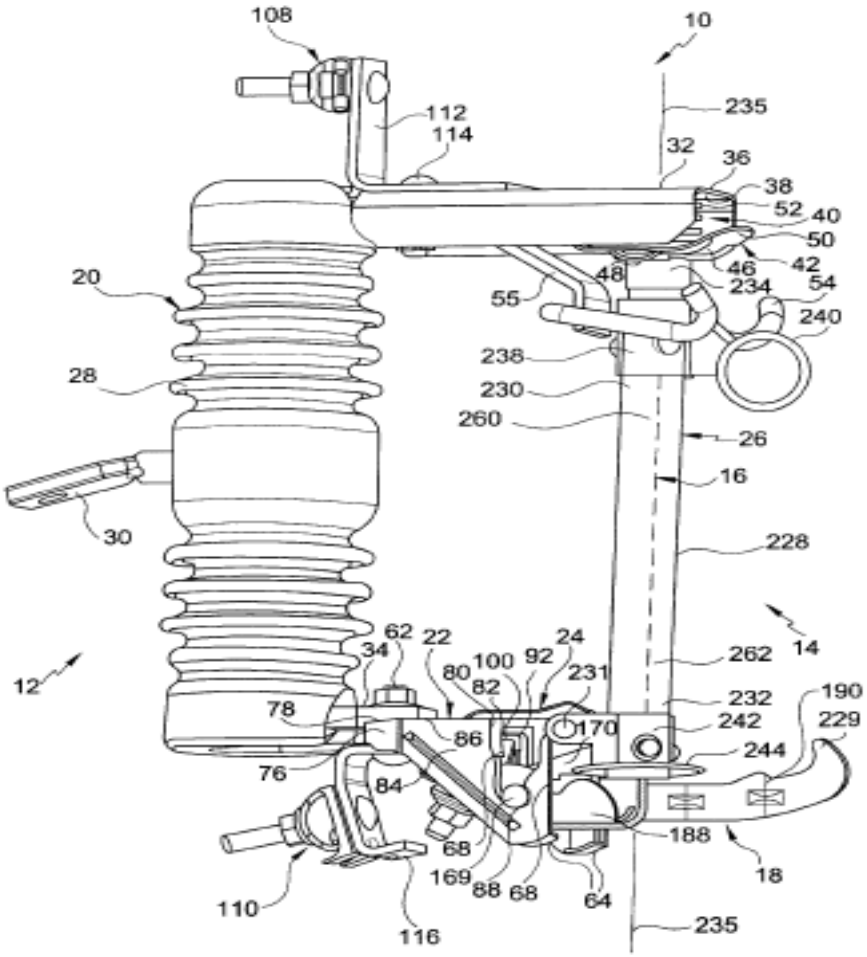
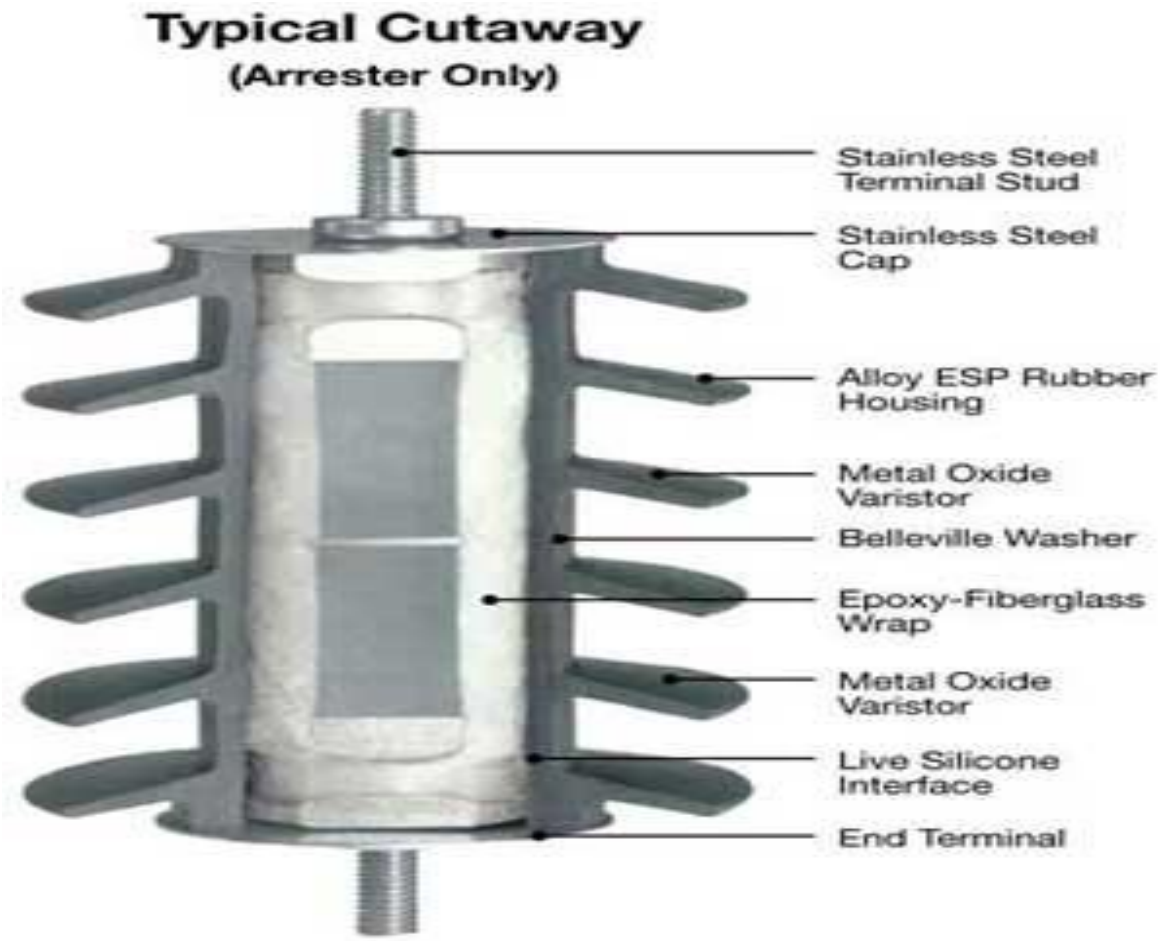


FIG.1

- **LIGTHNING ARRESTER, 10 KV, Polymer**

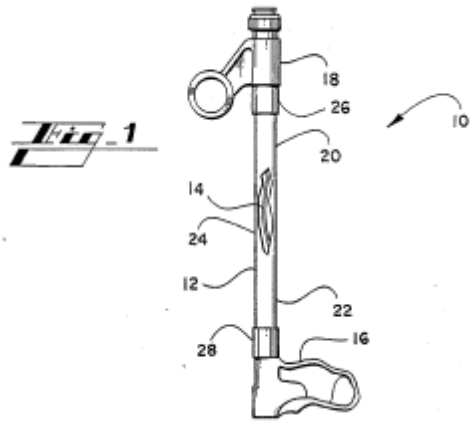
- A polymer surge arrester has internal elements including a plurality of disc-shaped nonlinear resistors disposed in a stacked manner, electrodes disposed at both ends of the nonlinear resistors, and a plurality of insulating rods coupling the electrodes; an insulating outer skin formed outside.
- **Technical Specification:**
  - All lightning arrester must be polymer, 10 kV and AB Chance product.



B. FUSE HOLDER, 100 Amps, and 10 kV

- The **fuse holder** often called the "fuse tube" or "door", which contains the interchangeable fuse element and also acts as a simple knife switch. When the contained fuse operates or blows, the fuse holder will drop open, disengaging the knife switch, and hang from a hinge assembly. This hanging fuse holder provides a visible indication that the fuse has operated and assurance that the down-stream circuit is electrically isolated.

- **TECHNICAL SPECIFICATION:**
  - All fuse holders must be 100 Amps, 10 kV and AB Chance product.



INSULATOR, SPOOL AND PIN TYPE

Porcelain insulator types furnished to NEA specifications shall each conform in all respects to ANSI specifications as follows (non-porcelain to conform in-so-far as applicable):

NEA Code No.	Type	Class	ANSI Specification
3428 10 11	Clevis Suspension	52-1	C29.2-1983, [1
3426 10 11	Spool	53-1	C29.3-1986, [2]
3426 20 11	Spool	53-2	"
3426 40 11	Spool	53-4	"
3422 31 10	Medium Voltage pin	55-3	C29.5-1984, [3]
3422	Medium Voltage pin	55-5	"

MATERIALS:

All porcelain insulators covered by this specification shall be fabricated from good Commercial wet-process porcelain. All other insulators shall be of a material that has demonstrated suitability and long life in service, or through aging tests, for use as insulators. Ferrous parts of clevis type suspension insulators, other than stainless steel or aluminum, shall be hot-dip galvanized in accordance with ANSIIASTM AI53-82, [5].

MARKING:

Each insulator shall bear the manufacturer's symbol and year of manufacture.

FINISH:

Each insulator shall have a smooth glazed surface, free from imperfections or blemishes which can impair service life and performance;

TESTS:

Each insulator type shall be tested using methods described in ANSI C29.1-1982, [6], or IEC 383:1983, [7]. Tests required for specific insulator types are described in their' associated ANSI specifications listed in Section 2. These tests are as follows:

1. Electrical tests including:
    a. Low-frequency dry flashover voltage
    b. Low-frequency wet flash overvoltage

c. Low-frequency dry with stand voltage
d. Low-frequency wet with stand voltage
e. Impulse with stand voltage
f. Radio-influence voltage
g. Visual corona
h. Puncture

2. Mechanical tests selected from:
   a. Tensile strength
   b. Cantilever strength if applicable
   c. Compression strength if applicable
   d. Torsional strength if applicable
   e. Transverse strength if applicable
   f. Mechanical impact strength if applicable
3. Combined mechanical and electrical strength test for suspension insulators only.
4. Time-load-withstand-strength test.
5. Porosity test.
6. Thermal test.
7. Pinhole gauging test.
8. Galvanizing test in accordance with ANSI/ASTM B499-75 (1980), [7].
9. Routine electrical tests including:
   a. High-frequency tests
   b. Low-frequency tests
10. Routine mechanical tests for suspension insulators.

PERFORMANCE REQUIREMENTS:

Insulators shall meet the following minimum performance ratings:

A. Suspension Insulators (ANSI C29.2-1983.rm.

Item	ANSI Class 52-1	Refer to ANSI C29.1-1982 Section
1. Electrical:		
a. Low-frequency dry flashover (Kv)	60	4.2
b. Low-frequency wet flashover (Kv)	30	4.3
c. Critical impulse flashover, positive (Kv)	100	4.7
d. Critical impulse flashover, negative (Kv)	100	4.7
e. Low-frequency puncture (Kv)	80	4.11
2. Radio-influence voltages (RIV):		
a. Low-frequency test voltage (rms-ground) Kv	7.5	4.9
b. Maximum RIV @ 1.0 Mhz micro-volts	50	4.9

Item	ANSI Class 52-1	Refer to ANSI C29.1-1982 Section
3. Mechanical:		
a. Combined mechanical and electrical strength (lbs)	10,000	5.2
b. Mechanical impact Strength (inch-lbs)	45	5.1.2.2
c. Tension proof (lb)	5,000	7.2.1
d. Time load (lb)	6,000	5.3
4. Dimensions:		
a. Leakage distance (inches)	7	2.5.2

B. Spool Insulators (ANSI C29.3-1986, [2]).

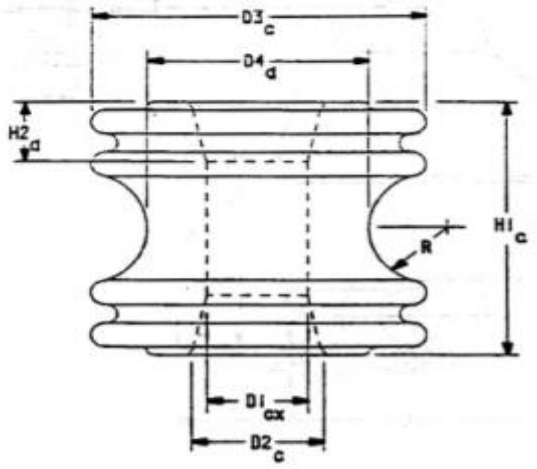
	ANSI Class 53-1	53-2	53-4	Refer to ANSI C29.1982 Section
1. Electrical:				
a. Low frequency dry flashover (Kv)	20	25	25	4.2
b. Low frequency wet flashover (Kv)				
1. Vertical	8	12	12	4.3
2. Horizontal	10	15	15	4.3
2. Mechanical:				
a. Transverse Strength (lbs)	2,000	3,000	4,500	5.1.6

C. Pin Insulators (ANSI C29.5-1984, [3].

Item	ANSI Class 55-3	Refer to ANSI C29.1-1982 Section
1. Electrical:		
a. Low-frequency dry flashover (Kv)	65	4.2
b. Low-frequency wet flashover (Kv)	35	4.3
c. Critical impulse flashover, positive (Kv)	100	4.7
d. Critical impulse flashover, negative (Kv)	130	4.7
e. Low-frequency puncture (Kv)	95	4.11
2. Radio-influence voltages (RIV):		
a. Low-frequency test voltage (rms-ground) Kv	10	4.9
b. Maximum RIV @ 1.0 Mhz micro-volts	50	4.9
3. Mechanical:		
a. Cantilever strength(lb)	2,500	5.1.3
4. Dimensions:		
a. Leakage distance (inches)	7	2.5.2
b. Dry arcing distance(inches)	4.5	2.5.3
c. Minimum pin height(inches)	5	

8. DIMENSIONS AND PERMITTED TOLERANCES:

Principal dimensions and permitted tolerances, after galvanizing, are presented in Figures 1 to 6, and are measured in inches. These dimensions (and tolerances) are defined as follows:

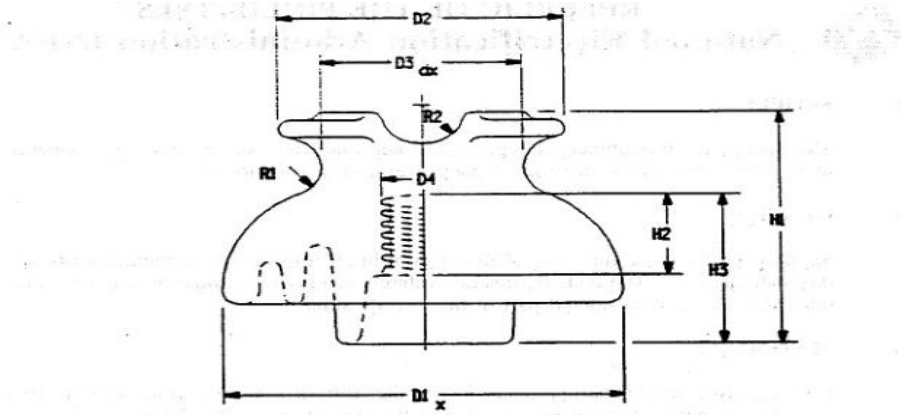


NEA CODE NO.	NOMINAL DIMENSION (INCHES)						
	D1	D2	D3	D4	H1	H2	R
3426 10 11	15/16	7/8	2-1/4	1-1/2	2-1/8	1/2	7/16

a = 1/64
b = 1/32
c = 1/16
d = 1/8
x = 0

ALLOWABLE VARIATION (INCHES)
SINGLE LETTER INDICATES ± VARIATION. EXAMPLE: d = ±1/16 INCH
TWO LETTERS INDICATE +FIRST VARIATION, - SECOND VARIATION.
EXAMPLE: cx = +1/16 -0 = +1/16

THIS IS A CONCEPTUAL DRAWING. THE MANUFACTURER IS RESPONSIBLE FOR THE PREPARATION OF DRAWINGS AND A DESIGN WHICH MEETS THE DIMENSIONAL, STRENGTH, AND OTHER PERFORMANCE REQUIREMENTS OF THIS STANDARD.



NEA CODE NO.	NOMINAL DIMENSION (INCHES)								
	D1	D2	D3	D4	H1	H2	H3	R1	R2
3422 31 10	4-3/4	3-1/2 (MAX)	2-1/4	1	4	1-7/8 (MIN)	2-1/2	5/8	13/16

a = 1/64
b = 1/32
c = 1/16
d = 1/8
x = 0

ALLOWABLE VARIATION (INCHES)
SINGLE LETTER INDICATES VARIATION. EXAMPLE: d = ± 1/8 INCH
TWO LETTERS INDICATE +FIRST VARIATION, - SECOND VARIATION.
EXAMPLE: cx = +1/16 -0 = +1/16

STEEL PIN

Insulator pins furnished to NEA specifications shall conform in all respects to the dimensional and performance requirements stated in this standard. The text, figures, and references to other standards supplement each other, and shall be considered parts of this standard.

MATERIAL:

Drop forged insulator pins shall be fabricated from steel that conforms with either ASTM A575-81, (1) or ASTM A576-81, (2).

Compatible square nuts shall be fabricated from materials that comply with requirements of ANSI C135.1-1979, (3).

All one inch (1") and one and three-eighths inch (1-3/8") insulator threads shall be made of a lead alloy which meets the strength requirements of this standard.

Square washers shall be fabricated from materials that comply with the requirements of NEMA PHlO-1977, Part 3.1.1, (4).

Lock washers shall be fabricated from materials that comply with the requirements of ANSI B18.21.1-1983 and NEA Tech. Standard 116 (5).

Compatible square locknuts shall be fabricated from material that complies with requirements of NEA and ANSI C135.1-1979, (3), Specification 116, (5).

FINISH:

The pin and its accessories shall be hot-dip galvanized in accordance with ANSIIASTM AI53-82, (6). The surfaces shall be smooth and free from blemishes and sharp projections. Each insulator pin shall bear the manufacturer's symbol or identification mark in a place and manner which will not adversely affect the integrity or utilization of the pin.

DIMENSIONS:

Insulator pin assembly dimensions shown in Figures 1 and 2 are listed in Table A using the information and symbols defined as follows:

A = Height above cross-arm
B = Length of shank
C = Diameter of shank
D = Diameter of base

E = Diameter of shaft
F = Thread length
G = Wrenching square size
H = Insulator lead thread diameter

The insulator pins shall comply with dimensions and tolerance of applicable pins of ANSI C135.l7-l979, (7).

Dimensions of compatible square nuts before galvanizing shall be in accordance with ANSI B18.2.2-l972, (8) and conform to ANSI C135.l-1979, (3).

Dimensions of square washers shall comply with NEMA PHlO-1977, (4). Dimensions of compatible square locknuts shall comply with NEA specification 116, (5).

THREADS:

The threaded portion of the insulator pin shank shall be provided with machine rolled threads and before galvanizing, must comply with class 2 of the ANSI standard for unified screw threads, ANSI Bl.l-l982, (10) and conform to ANSI C135.l-l979, (3). After galvanizing, the thread shall permit compatible nuts to be run its entire length without the aid of tools.

Nuts shall be tapped in accordance with ANSI C135.1-1979, Table 8, (3).

The lead thread shall conform to the dimensions and tolerances of Figure 3.

STRENGTH:

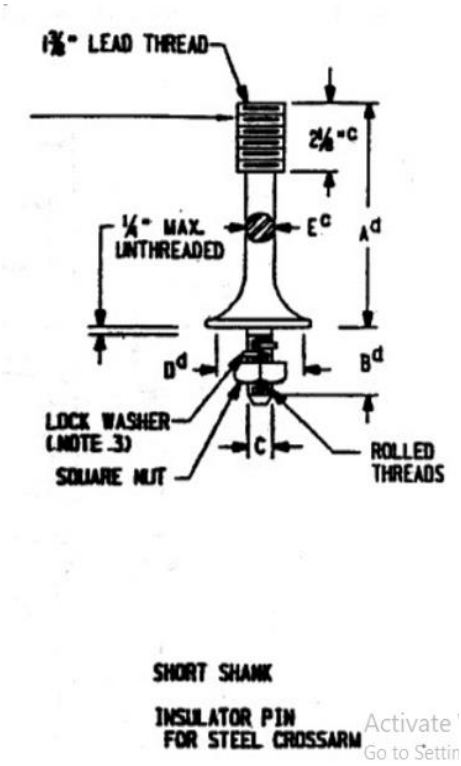
Cantilever test on long and short shank pins shall be conducted using the methods demonstrated in Figure 4 and shall develop the minimum strengths shown in Table B, Figure 4 and listed in ANSI C135.17-1979, (7). Pins shall be fixed on a rigid block and must develop the minimum strengths in any direction without experiencing a deflection greater than 10 degrees.

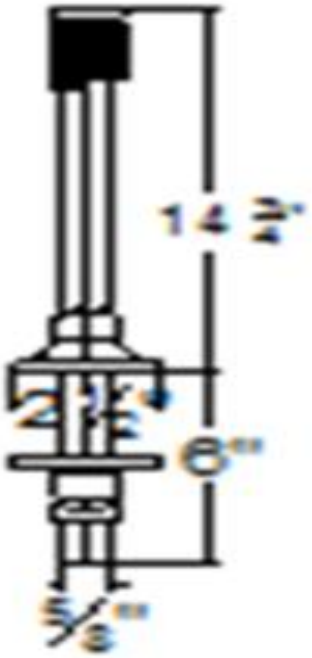
Torsion and tension tests shall be performed using the following procedure:

1. Torsion tests: After applying 150 inch-pounds of torque to the steel thimble, it should be rotated an additional 180 degrees without stripping the lead thread or breaking the bond between the pin body and the leap thread.

2. Tensile tests: After applying 150 inch-pounds of torque to the steel thimble it should be capable of withstanding a minimum tensile load of 3000 pounds without slipping or pulling off the pin.

The locknuts shall meet the test and strength requirements of NEA specification 116.



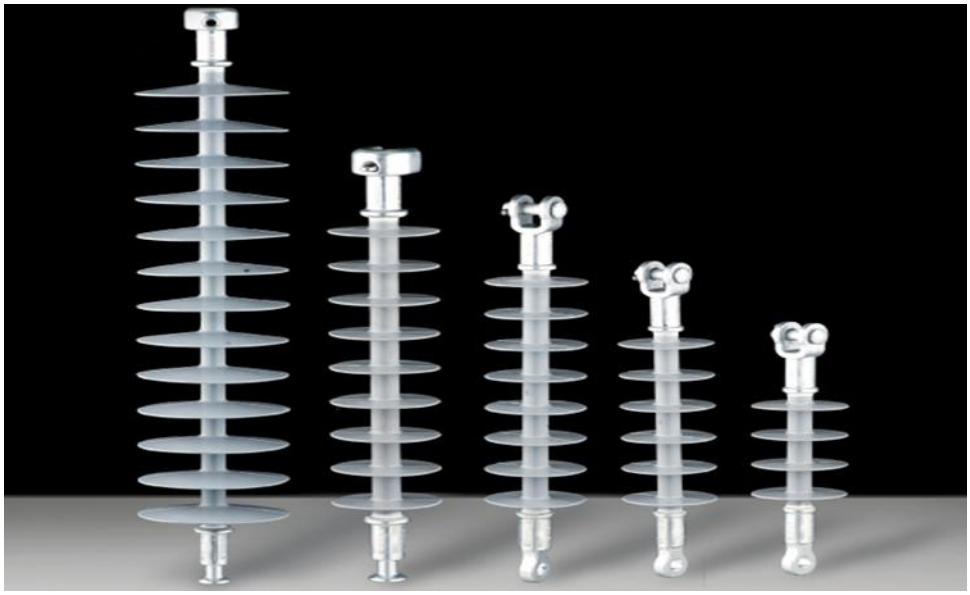


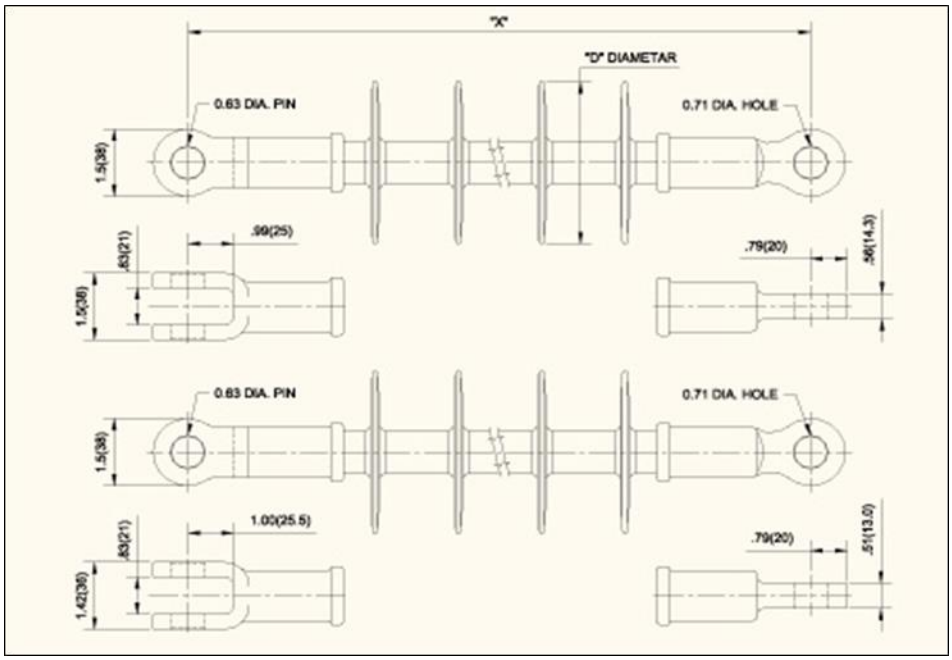
INSULATOR, SUSPENSION (POLYMER)

All polymer insulators must be 15 KV and 25KV rating with 100 % silicone rubber, EPDM material made insulator not acceptable.

(Note: China made Manufactured not accepted products).

1. Basic Insulation Level (BIL) conform of each insulator must conform to International Standards
2. They are of polymer material and conform to the ANSI Standard.
3. Shall bear the manufacturer symbol and year manufactured.
4. Shall have smooth glazed surface, and free from imperfection and without any observable cracks and creaks.
5. Bidder's must submit the following for evaluation;
   5.1. Manufacturer's product technical specification.
   5.2. Test Result Electrical.
   5.3 Test Result Mechanical





FUSE LINK, BOTTOM HEAD, TYPE K

Fuse links shall conform in all respects to the requirements of this document. The fuse links covered in this specification are intended for use in open-type distribution fuse cutouts. The fuse links shall be of the button head-type to be used in the overcurrent protection of distribution transformers and circuits and are intended to coordinate with oil-circuit reclosers. The fuse links shall meet the electrical and mechanical interchangeability requirements for fuse links used in open-type cutouts as described in Section 3.2 of ANSI C37.42 [1].

RATINGS:

Voltage and current ratings of the fuse links shall be based on the service conditions defined in ANSIC37.40and as specified in ANSIC37.42.

1. Service Conditions:

a. Temperature - up to 400C

b. Altitude - up to 1500meters.

2. Rated maximum voltage which is determined by the highest voltage rated cutout with which the fuse link is designed to be used and yet conform to the interchangeability requirement of Section 3.2.1 of ANSI C37.42.
3. Rated continuous current based on the temperature rise tests described in ANSI C37.41 [3]. Continuous current ratings of NEA Type K fuse links are listed in Table 1. .

TESTS:

1. Fuse links shall be tested in accordance with ANSI C37.41, Sections 11 and 12.
2. Temperature rise tests shall be conducted in accordance with ANSI C37.4l, Section 3.3. 1.
3. Time-current tests shall be conducted in accordance with ANSI C37.4l, Section 12. Standard time-current curves, based upon tests made in accordance with this standard, shall be furnished with each proposal to furnish fuse links to NEA. The curves shall be presented for both minimum melting and total clearing time current characteristics in accordance with ANSI C37.4l, Section 12.3.

MECHANICAL INTERCHANGE ABILITY:

The diameter of the button head, the size and shape of the fuse links, and minimum overall length and thickness of bending sections shall be in accordance with the requirements of Section3.2.2 of'ANSI37.42.,

MARKINGS:

Each fuse link shall bear the manufacturer's identification mark or symbol and rated continuous current followed by the fuse type identifier.

OTHER STANDARDS:

The requirements for NEA button head fuse links, base on other internationally recognized standards are acceptable only if the requirements of such standards are equivalent to or exceed the requirements quoted in this document. The time-current characteristics of this document shall strictly adhered to.

TABLE I

NEA Fuse Links (Button - Head)

NEA Code No.	Rated Continuous Current	Speed Type
3612 00 03	3 Amps.	K
3612 00 06	6 Amps.	K
3612 00 12	12 Amps.	K
3612 00 25	25 Amps.	K
3612 00 40	40 Amps.	K

FIGURE 1
FUSE LINKS BUTTON HEAD

EYE NUT

Oval-eye nuts furnished to NEA specifications shall conform in all respects to the dimensional and performance requirements stated in this standard. The text, figures and

references to other standards supplement each other and shall be considered parts of this standard.

MATERIAL:

Oval-eye nuts shall be fabricated from materials that comply with ASTM A663-82(1). The materials shall be of a grade and quality which can meet the requirements of ANSI C135.5-1979, (2).

FINISH:

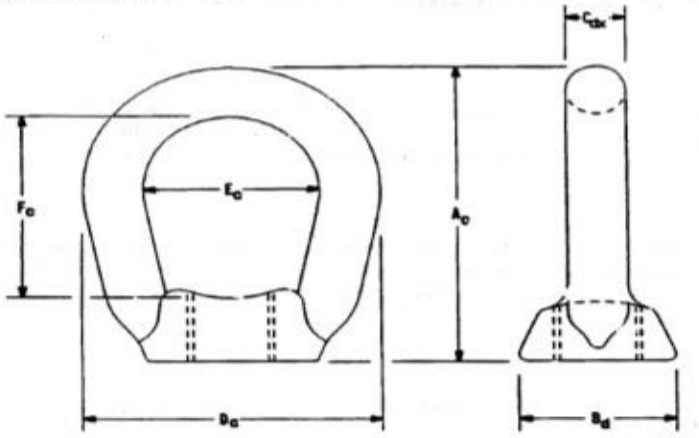
Oval-eye nuts shall be hot-dip galvanized in accordance with ANSI/ASTM AI53-82, (3). All surfaces shall be smooth and free from irregularities. All oval-eye nuts shall bear the manufacturer's symbol or identification mark in a location that will not impair its function.

DIMENSIONS:

Oval-eye nuts shall conform to the dimensions shown in Figure 1 and defined as follows:

A = Height of oval-eye nut
B = Base diameter
C = Width of crown
D = Width of oval-eye nut
E = Maximum width of eye
F = Height of eye

After galvanizing, the oval-eye shall be tapped oversize for compatibility with 3/4 inch or 5/8 inch butts as specified. The oval-eye nut shall be provided with unified coarse threads, class 2, in accordance with ANSI Bl.l-1982, (4).



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NEA CODE NO.	BOLT SIZE	DIMENSIONS (INCHES)						ULTIMATE STRENGTH (lbs)	PACKAGING	
		A	B	C	D	E	F		QUANTITY	WGT(lbs)
4290 10 63	⅝	3.0	1-⅜	½	2-½	1-½	1-¾	12,400	100	55

a-1/64"	d-1/8"	m-3"	ALLOWABLE VARIATIONS
b-1/32"	e-3/16"	x-0"	SINGLE LETTER INDICATES ± VARIATION. EXAMPLE: c = ½ ± INCH
c-1/16"	f-1/4"		TWO LETTERS INDICATE +FIRST VARIATION, - SECOND VARIATION. EXAMPLE: cx = +1/16 -0 = +1/16

FIGURE 1
OVAL-EYE NUTS

LOCK NUT

Square galvanized steel nuts shall conform in all respects to the dimensional and performance requirements stated in this document. The text, figures and references to other standards supplement each other and shall be considered parts of this document.

MATERIAL:

Nuts shall be made from hot-rolled steel which has been produced by the open hearth, basic-oxygen or electric' furnace process in accordance with the requirements of ANSI Standard C135.1-1979 [1].

FINISH:

The nut described in this standard shall be hot-dip galvanized in accordance with ANSI/ASTM A153-73 [2]. Each nut shall bear a permanent symbol or identification mark of the manufacturer in a place and manner which will not adversely affect the integrity or utilization of the nut. The nut shall have smooth surfaces free from blemishes and imperfections after galvanization.

DIMENSIONS:

NEA galvanized square nut dimensions shall conform to Table A and B of this document and as illustrated in ANSIStandardC135.1-1979[1]and ASME/ANSIB18.2.2-1978[3].

THREADS:

4. The internally threaded parts shall be tapped in accordance with ANSIC135.1-1979, Table 8 [1].
5. Threads shall be Unified Standard, Class2B, of the series specified in the notes on respective dimensional tables in accordance with Unified Inch Screw Threads (UN and UNR Thread form), ANSI Bl.l-1982 [4].

STRENGTH:

Threads of the nut shall not strip below the specified minimum tensile strength of the bolts on which the nuts are to be threaded as listed in Table 10 of ANSI C135.1-1979 [1].

Table A

Dimensions of Square Nuts in Inches *

Nominal Bolt Size	With Across Flats			Width Across Corners		Thickness Of Nuts		
	Basic	Maximum	Minimum	Maximum	Minimum	Basic	Maximum	Minimum
3/8	5/8	.625	0.606	0.551	0.832	21/64	0.246	0.310
1/2	13/16	.812	0.788	1.149	1.082	7/16	0.458	0.418
5/8	1	1.00	0.969	1.414	1.330	35/64	0.569	0.525
3/4	1-1/8	1.125	1.088	1.591	1.494	21/32	0.680	0.632

Table B							
Dimensions for Nuts and Tapered Parts in Inches							
Nominal Bolt Size	Per Inch	Internal Threads					
		Pitch Diameter		Minor Diameter		Major Diameter Minimum	Nominal Tap Size OD
3/8	16	0.350	0.356	0.323	0.377	0.039	0.390-16
1/2	13	0.470	0.476	0.437	0.454	0.520	0.520-13
5/8	11	0.587	0.594	0.548	0.567	0.646	0.646-11
3/4	10	0.706	0.714	0.663	0.684	0.771	0.771-10

NOTE:

[1] The maximum width across flats applies at all points. No transverse section through the nuts between 25% and 75% of the nut thickness as measured from the bearing face shall be less than the minimum width across flats.

[2] The tops of the nuts shall be flat and chamfered or washer crowned. The diameter of the chamfer circle shall be equal to the maximum across flats within a tolerance of -15%.

[3] The bearing surface shall be at right angles to the axis of the threaded hole within a tolerance of three (3) degrees for size one (1) inch nuts or smaller and two (2) degrees for nuts larger than one (1) inch.

[4] The axis of the tapped hole shall be concentric with the axis of the nut body within a tolerance qual to 5% (10% FIR) of the maximum width across flats.

[5] Threads shall be unified coarse thread series (UNC Series) class 28.

PIN, POLE TOP

MATERIAL:

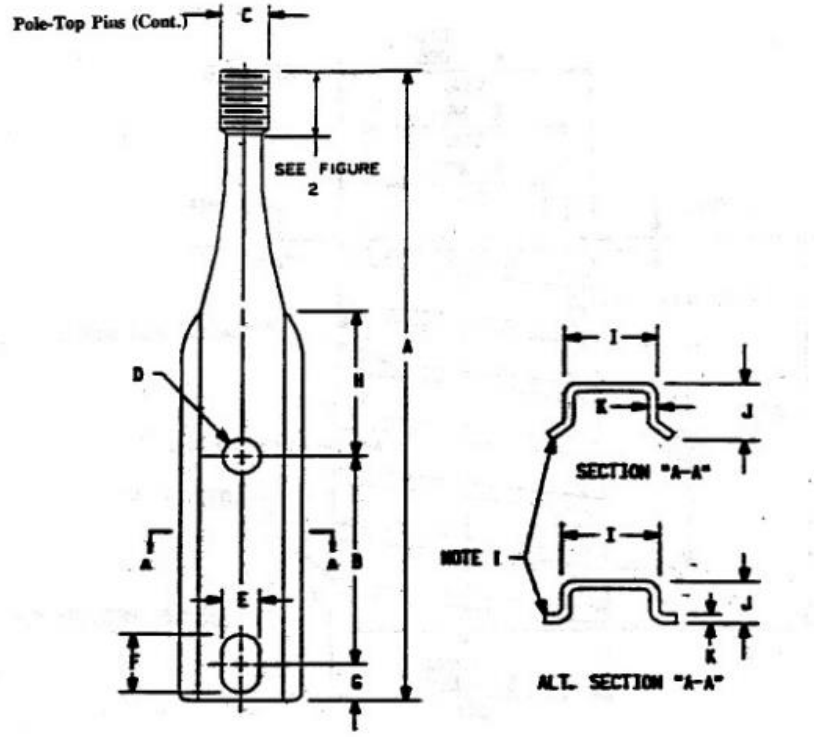
1. Pins Pole-top pins shall be made from either iron or steel of a grade and quality to meet the strength and performance requirements of this standard.

2. Lead Threads Lead threads shall be made of a lead alloy of a grade and quality suitable to meet the strength and performance requirements specified in this standard.

STRENGTH:

Tests described in ANSI C135.22-1979 (1) shall determine the performance criteria of NEA pole-top pins. These tests include:

4. Cantilever Tests
   These tests, illustrated in Figure 3, determine the minimum transverse and longitudinal loads that the pin can carry to obtain a 10 degree deflection. The pin shall recover to its original state when the loads are removed. The minimum necessary loading is presented in Table 1 below.
5. Lead Thread Test
   Lead alloy threads shall develop the strength specified in the torsion and tensile tests specified below.
   a. Torsion Test: After an initial application of 150 inch-pounds of torque to the steel thimble, the lead threads shall withstand an additional 180 degrees of tightening rotation without damage to the thread by stripping or breaking of the bond between the pin body and the thread: b. Tensile Test: After installing the steel thimble on the lead thread with a torque of 150 inch-pounds, the lead thread shall withstand a minimum load of 3,000 pounds in tension without stripping or pulling off the pin. The load shall be applied to the thimble while the pin is restrained by the shank.



NEA CODE NO.	DIM. UNIT	DIMENSIONS OF POLE TOP PIN (INCHES)										
		A	B	C	D	E	F	G	H	I	J	K
4561 21 20	IN.	20	8	1	1 1/16	1 1/16	1-1/4	1	NOTE 3	1-7/8	NOTE 2	NOTE 2
	IN.	20	8	1-3/8	1 1/16	1 1/16	1-1/4	1	NOTE 3	1-7/8	NOTE 2	NOTE 2
TOLERANCE (INCHES)	±	1/4 1/8	1/16 1/16	SEE FIG. 2	1/32 0	1/32 0	1/16 1/16	—	—	1/16 1/16	—	—

NOTE 1 CHANNEL LEGS MAY BE FLANGED OR OTHERWISE FORMED TO MEET STRENGTH REQUIREMENTS.

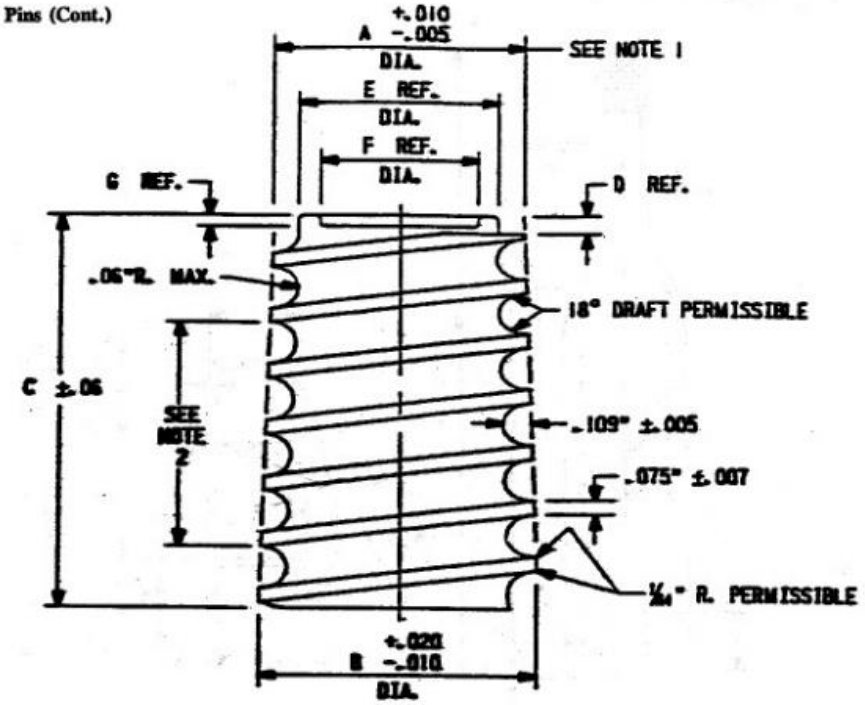
NOTE 2 THIS DIMENSION MAY BE VARIED TO PROVIDE REQUIRED STRENGTH.

NOTE 3 THIS DIMENSION SHALL NOT BE LESS THAN 4 INCHES.

NOTE 4 THIS IS A CONCEPTUAL DRAWING. THE MANUFACTURER IS RESPONSIBLE FOR THE PREPARATION OF DRAWINGS AND A DESIGN WHICH MEETS THE DIMENSIONAL, STRENGTH, AND OTHER PERFORMANCE REQUIREMENTS OF THIS STANDARD.

FIGURE 1

DIMENSIONS OF POLE TOP PINS WITH 1 INCH AND 1-3/8 INCH DIAMETER LEAD THREADS

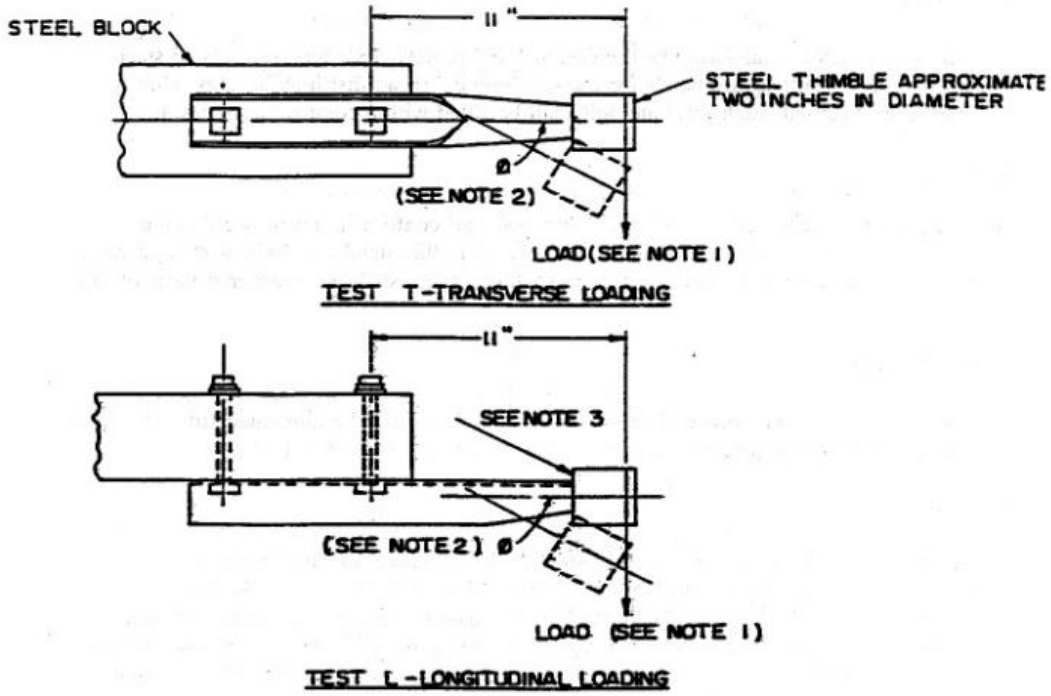


NOTE 1. THIS IS THE DIAMETER MEASURED BETWEEN THE TAPERED LINES PROJECTED ALONG THE OUTSIDE SURFACE OF THE THREADS AT THE TOP EXTREMITY OF THE LEAD HEAD. TAPER EQUALS 1/16 INCH IN DIAMETER PER INCH IN LENGTH.

NOTE 2. FOUR (4) THREADS PER INCH

	NEA CODE NO.	DIMENSION OF LEAD THREADS IN INCHES							
		LEAD HEAD	A	B	C	D	E	F	G
4561	21 20	1	1.010	1.119	1.750	5/64	15/128	5/8	3/64
		1-3/8	1.385	1.518	2.130	5/64	1-1/8	3/4	7/64

FIGURE 2
DIMENSIONS FOR 1-INCH AND 1-3/8 INCH LEAD THREADS



NOTE 1. APPLICATION OF LOAD MUST COINCIDE WITH CENTERLINE OF TESTING MACHINE

NOTE 2. THE ANGLE OF DEFLECTION (ANGLE Ø) SHALL BE DETERMINED BY THE INTERSECTION OF THE CENTERLINE AXIS OF THE STEEL THIMBLE IN IT'S INITIAL POSITION WITH THE CENTERLINE AXIS OF THIS THIMBLE OBTAINED AT ANY DEFLCTED POSITION OF THE PIN.

NOTE 3. THIS END OF THE STEEL THIMBLE SHOULD NOT EXTEND BEYOND LEAD THREAD.

TABLE I

TEST NO.	SIZE OF PIN	LEVER ARM	MIN. REQUIRED LOAD BASED IN A MAX. DEFLECTION OF 10°
T	20"	11"	1500 LBS.
L	20"	11"	1200 LBS.

FIGURE 3
POLE TOP PINS WITH 1 INCH DIAMETER LEAD THREADS

ANCHOR ROD

Anchor rods and heavy square nuts furnished to specifications shall conform in all respects to the dimensional and performance requirements stated in this standard. The text, tables, figures and references to other standards supplement each other and shall be considered parts of this standard.

MATERIAL:

Anchor rods and heavy square nuts shall be made of hot-rolled steel that complies with ASTMA663-§2dUor ASTM A675-82, [2]. The material shall be of a grade and quality which is suitable to meet the requirements of tills standard.

DIMENSIONS:

Dimensions and tolerances of anchor rods and heavy square nuts shall be in accordance with ANSI CI35.2-1979, [3] and as listed in Figure 1.

FINISH:

Anchor rods and heavy nuts shall be hot-dip galvanized in accordance with ANSI/ASTM A153-82, [4]. The finish must be smooth and free from blemishes.. Each anchor

rod and nut shall be provided with the manufacturer's mark or identification symbol and the rod length in feet. These marks should be permanent and located near the eye.

THREADS:

Thread details of eye anchor rods and compatible nuts shall be in accordance with ANSI C135.2-1979. [3] As listed in Tables 1 and 2.

The anchor rod threads shall be concentric with the rod axis and shall be machine rolled to dimensions listed in Table 1.

After galvanizing, the nuts shall be tapped oversize to dimensions listed in Table2.

The threaded portion of the anchor rods shall permit the nuts to be turned by hand over the entire threaded length without the aid of tools.

STRENGTH:

Tensile Tests:

Anchor rods shall be capable of withstanding tensile stresses specified in ANSI C135.21979, [3]. The rods shall fail only in the threaded portion or in the shank. Threads shall not fail at stress levels below the listed aluminum.

Rod Size (Inches)	Minimum Load (Pounds)
5/8	16,000
3/4	25,000

Bending Tests:

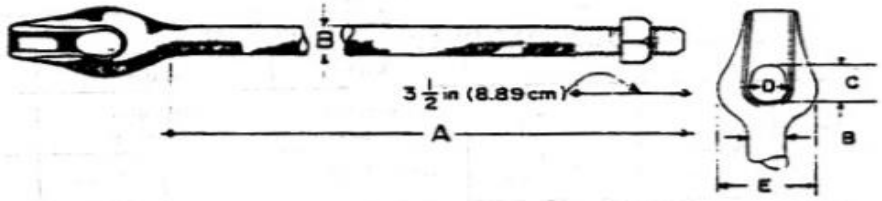
All cold bend test at room temperature shall permit the unthreaded portion of the rod to be bent through a 90 degree angle on a radius equal to the rod diameter without breaking the rod.

TABLE 1
ANCHOR ROD THREAD DIMENSIONS
ROLLED THREADS

Code No.	Nominal Rod Size (Inches)	Threads Per Inch	Pitch Diameter (Inches)		Minor Diameter (Inches)		Major Diameter (Inches)	
			Min.	Max.	Min.	Max.	Min.	Max.
5361 85 07	5/8	11	0.6354	0.6426	0.5964	0.6154	0.6944	0.695-11
5361 43 08	3/4	10	0.7613	0.7690	0.7183	0.7393	.082363	0.826-10

TABLE 2
HEAVY NUT THREAD DIMENSIONS

Nominal Rod Size (Inches)	Thread Type	Thread Series and Class	Rod Diameter (Inches)		Major Diameter (Inches)		Pitch Diameter (Inches)	
			Min.	Max.	Min.	Max.	Min.	Max.
5/8	Rolled	11-UNS-2A	0.602	0.616	0.6536	0.6718	0.6058	0.6113
3/4	Rolled	10-UNS-2A	0.726	0.741	0.7841	0.8034	0.7305	0.7364



DIMENSION IN INCHES			
B	C	D	E
5/8	11/16	9/16	1-1/2
3/4	13/16	11/16	1-5/8

REFERENCE DATA

DIMENSION A ft (m)	7 (2.134)	8 (2.438)
DIMENSION B in (mm)	5/8 (16)	3/4 (19)
ULTIMATE STRENGTH lbs (kg)	16,000 (7272)	23,000 (10,454)
SIMILAR OR EQUAL	J-7417	J-7428
N.E.A. CODE NO.	5361 85 07	5361 43 08

PREFORMED RODS

Preformed rods shall conform to the dimensional and performance requirements of this document. The text, figure and references to other standards supplement each other, and are considered parts of this standard.

MATERIAL:

Armor rods and line guards shall be made of an aluminum alloy which conforms to the requirements of ASTMB211Heat Treated Alloy 6061, [1], or equivalent.

DIMENSIONS:

Rods and guards shall be bundled into specific numbers of rods (sets) and each set shall be provided with a tag indicating the size of conductor with which the rods are to be used. Rods shall have the following characteristics.

Armor and Line Guard, Preformed (Cont.)

ARMOR RODS							LINE GUARDS				
Nominal Conductor Size		Length (in)		Rods per Set	Sets per CTN	Rod & Guard Color Code	Length (in)		Rod Per Set	Set Per CTN	Color Code
AWG	MCM	Single	Double				Single	Double			
6	6/1	40	52	7	100	Blue	17	29	7	100	
4	6/1	40	52	8	100	Brown	19	31	8	100	
2	6/1	44	56	8	50	Red	21	33	9	100	
1/0	6/1	52	64	9	50	Yellow	25	37	11	100	
2/0	6/1	54	66	10	50	Blue	27	39	13	50	
3/0	6/1	56	68	11	25	Orange	29	41	14	50	
4/0	6/1	60	72	11	25	Red	31	43	15	50	
336.4	26/7	72	84	12	18	Green	Use Armor Rods				

FINISH:

Preformed armor rods and line guards shall have smooth surfaces and rounded ends, and shall fit the conductor snugly. At the center starting cross-over mark, of each size set of rods, there shall be a color code applied as indicated in the Table under Dimensions of this document.

STRENGTH:

Preformed armor rods and line guards shall exhibit strength characteristics equivalent to those of the conductor to which they are applied.

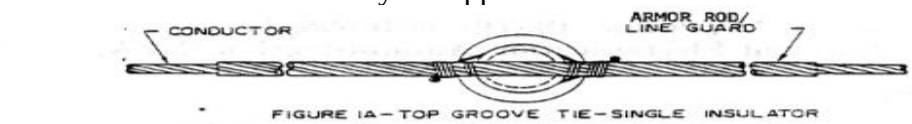


FIGURE IA – TOP GROOVE TIE – SINGLE INSULATOR

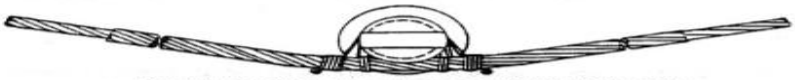


FIGURE IB – SIDE GROOVE TIE – SINGLE INSULATOR

FIGURE IC – TOP GROOVE DOUBLE TIE

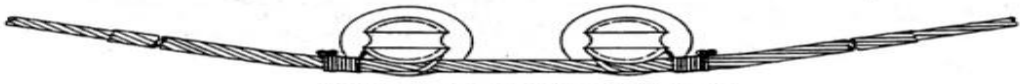


FIGURE ID – SIDE GROOVE DOUBLE TIE

THIS IS A CONCEPTUAL DRAWING. THE MANUFACTURER IS RESPONSIBLE FOR THE PREPARATION OF DRAWINGS AND A DESIGN WHICH MEETS THE DIMENSIONAL, STRENGTH, AND OTHER PERFORMANCE REQUIRMENTS OF THIS STANDARD

GROUND ROD

Ferrous ground rods furnished to NEA specifications shall conform in all respects to the dimensional and performance requirements of this specification. These ground rods shall be used with the clamp described in NEA Specification 140 [1].

MATERIAL:

1. Ferrous ground rods shall be fabricated from one of the materials listed below.

The material shall have a quality and grade which satisfies the performance requirements of this specification.

a. Hot rolled high carbon steel produced by the open-hearth, basic oxygen or electric-furnace process in accordance with ASTMA663-82[2] or ASTMA67582 [3].

b. Malleable iron castings in conformity with ASTM A47-77 [4].

FINISH:

NEA ground rods shall be hot-dip galvanized in accordance with ANSI/ASTM AI53-82, [5]. The ground rods shall have smooth surfaces free from blemishes, sharp projections and other irregularities which can be hazardous to personnel and are inconsistent with normal commercial practice. The manufacturer's identification mark or symbol and rod length (in feet) shall be located on each ground rod.

If ferrous castings are specified, embrittlement of the zinc coating must be avoided by either selecting a suitable material composition or by cooling the castings from the annealing process.

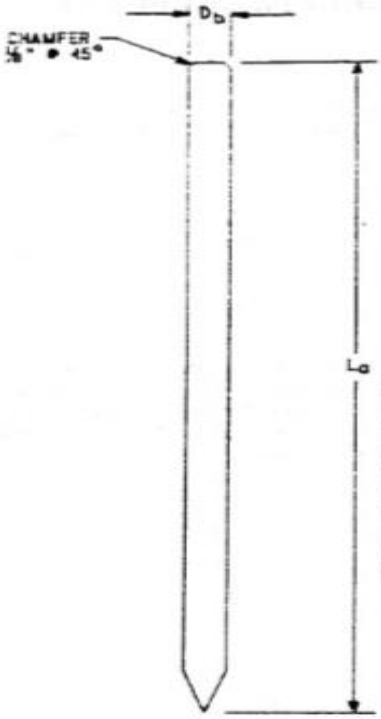
Ground rod dimensions shown in Figure 1 are defined as follows:

L = Length of rod

D = Diameter of rod

STRENGTH:

The ground rod shall be of sufficient strength and rigidity to resist bending and excessive mushrooming of the top.



NEA CODE NO.	DIMENSIONS		PACKAGING	
	ROD SIZE (INCHES)	ROD LENGTH (FT)	QUANTITY	WEIGHT (lbs)
–	⅝	6	10	60
–	⅝	8	5	40
5386 85 10	⅝	10	5	47.5

ALLOWABLE VARIATION
a = ±3.0 INCHES
b = ±1/32 INCH

THIS IS A CONCEPTUAL DRAWING. THE MANUFACTURER IS RESPONSIBLE FOR THE PREPARATION OF DRAWINGS AND A DESIGN WHICH MEETS THE DIMENSIONAL, STRENGTH, AND OTHER PERFORMANCE REQUIREMENTS OF THIS STANDARD.

WASHERS

Washers furnished to NEA specifications shall conform in all respects to the specific dimensional and material requirements stated in this standard. The text, figures and references to other standards supplement each other and shall be considered as parts of this standard.

MATERIAL:

Washers shall be made from one of the following materials:

1. Hot or cold rolled steel produced in accordance with either ASTM A569-72 (R-1979), [1], ASTM A570-79, [2], ASTM A575-81, [3], or ASTM A635-81, [4].
2. Malleable type washers shall be made from malleable iron specified .in ASTM A19779, [5].
3. Ductile type washers shall be made from a grade specified in ASTM A536-80, [6].

DIMENSIONS:

Dimensions of washers specified by NEA shall conform to NEMA Pub. No. PH10-1977, [7]. Typical washers used by NEA are shown in Figure 1 with dimensions before galvanizing defined as follows:

1. Round ferrous washer:
   - A = Diameter of central hole
   - B = Outside diameter of washer
   - T = Thickness of washer
2. Flat square ferrous washer:
   - A = Diameter of central hole
   - B = Length of side

T = Thickness of washer

3. Curved square ferrous washer:

A = Diameter of central hole

B = Length of side

T = Thickness of washer

R = Radius of curvature

NEA washers shall be defined by the above dimensions and the bolt size.

FINISH:

Washers shall be hot-dip galvanized after fabrication in accordance with ANSI/ASTM A153-82, [8]. All surfaces and edges shall be smooth and free from blemishes and irregularities not consistent with good commercial practice.

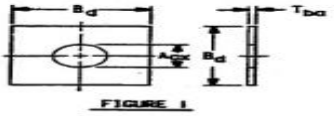


FIGURE 1

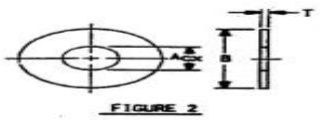


FIGURE 2

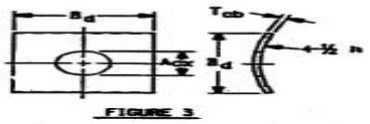


FIGURE 3

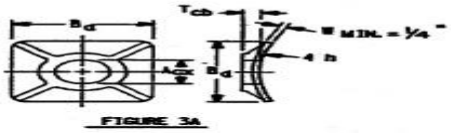


FIGURE 3A

NEA CODE NO.	FIG. NO.	TYPE	BOLT SIZE	A	B	T
7103.59 31	2	ROUND	1/2	9/16 cx	1 3/8 bx	12 ga.
7102 04 51	1	SQUARE (FLAT)	5/8	11/16 cx	2 1/4 d	3/16
7102 28 51	1	SQUARE (FLAT)	3/4	13/16 cx	4 d	3/16
7102 35 81	1	SQUARE (FLAT)	3/4	13/16 cx	4 d	1/2
7101 30 71	3	SQUARE (CURVED)	7/8	15/16 cx	4 d	1/4
7107 17 41	3	SQUARE (CURVED)	5/8	11/16 cx	3 d	1/4

a-1/64" b-1/32" c-1/16" d-1/8" e-3/16" f-1/4" g-3/8" h-1/2" x-0"

ALLOWABLE VARIATIONS
SINGLE LETTER INDICATES SAME + OR -, a ± 1/64"
TWO LETTERS INDICATE 1ST + 2ND -, a X = 1/64" - 0"

FIGURE 1

TIE WIRE

This specification establishes the physical requirements of bare solid annealed aluminum wire used as the wires to secure conductors and hardware on Coop electric distribution lines.

MATERIAL:

The aluminum shall be fabricated from an alloy rod which complies chemically, physically and electrically with the requirements of ASTM Specification B233 [1].

STRENGTH:

Tensile requirements of the aluminum shall be in accordance with Section 6 and Table I of ASTM B609 [2].

RESISTIVITY:

The electrical resistivity shall be determined by methods and procedures specified in ASTM B193 [3] and ASTM B609 [2].

DENSITY:

In order to calculate weights and cross section, the density of the aluminum alloy shall be 2.705 gm/cm3 (0.0975 Ib/in.3) at 20°C (68°F). "

WIRE DATA:

Wire diameter and allowable tolerances shall comply with ASTM B609 [2]. Wire sizes are summarized below:

Wire Size (AWG)	Strand Diameter (inch)	Number of Strands	Breaking Strength (lbs)	Weight Lbs/1000ft	Resistance at 25°C ohms/1000ft
4	0.2043	1	369	38.4	0.4073

TAPE ARMOR

Armor tape shall consist of a flat aluminum alloy ribbon approximately 0.5 inches wide by 0.03 inches thick. Armor tape will be used to wrap aluminum and ACSR conductors to provide mechanical protection to the conductor from various attachments and connectors.

MATERIAL:

Armor tape shall be an aluminum alloy suitable for the use as described in 2. above.

FINISH:

Armor tape shall be free of rough or uneven surfaces and edges so as to ensure safety in handling and installation.

GUY WIRE

ITEM NO.	DESCRIPTION	SPECIFICATION
1	• Type	Extra High Strength Steel Grade
2	• Material	Galvanized steel Wire
3	• Strand Construction	7 X 3.05 mm
4	• Diameter Tolerance	3.05 + - 0.10 mm
5	• Min. Breaking Strength of Strand	15,400 Lbf
6	• Min. Elongation of Strand	4 %
7	• Max. Lay Ratio	16
8	• Max. Lay Length	146 mm
9	• Direction of Lay	Left Hand Lay
10	• Class of Galvanizing	Class AA
11	• Min. Weight of Zinc Coating	259 Gram / Mts.^2
12	• Approx. Over all Diameter	9.15 mm
	PACKAGING :	
13	• Cutting Length	3770 ft. / reel
14	• Packing Material	Wooden Reel

BLOCK, ANCHOR CONCRETE

Composition of 1 sack cement, 2 sacks gravel and 3 sacks sand.

TERMS AND SPECIFICATIONS

LOT # 1: SUPPLY AND DELIVERY OF CONSTRUCTION LINE HARDWARES

Description	**Quantity**	**Unit**
Bolt, Carriage 3/8" x 4-1/2"	38	pieces
Bolt, Double Arming, 5/8" x 16"	42	pieces
Bolt, Double Arming, 5/8" x 26"	3	pieces
Bolt, Double Upset, 5/8" x 10"	16	pieces
Bolt, Oval Eye, 5/8" x 8"	15	pieces
Bolt, Oval Eye, 5/8" x 10"	53	pieces
Bolt, Oval Eye, 5/8" x 18"	26	pieces
Bolt, Machine, 1/2" x 6"	4	pieces
Bolt, Machine, 1/2" x 8"	12	pieces
Bolt, Machine, 5/8" x 6"	56	pieces
Bolt, Machine, 5/8" x 8"	38	pieces
Bolt, Machine, 5/8" x 10"	56	pieces
Bolt, Machine, 5/8" x 12"	67	pieces
Bolt, Single Upset, 5/8" x 8"	16	pieces
Bolt, Thimble Eye, 5/8" x 8", Straight Type	1	piece
Bolt, Thimble Eye, 5/8" x 10", Straight Type	2	pieces
Bolt, Thimble Eye, 5/8" x 8", Angle Type	62	pieces
Bolt, Thimble Eye, 5/8" x 10", Angle Type	12	pieces
Brace, Crossarm, Flat 28", Steel, Hot Dip Galvanized	38	each
Brace, Crossarm, 60", Angular, Steel, Hot Dip Galvanized	2	pieces
Brace, Sidearm, Diagonal, 7 Feet	56	pieces
Bracket, Angle, 5/8", without Spool	42	pieces
Bracket, Mounting for Cutout and Arrester	3	pieces
Clamp, Hot Line, #2 - #2/0 ACSR Main to #2 - #2/0	21	pieces
Clamp, Anchor Rod Bonding, Single Eye	50	pieces
Clamp, Anchor Bonding, 3/4", Twin Eye Rod	30	pieces
Clamp, Loop Deadend, #2/0 ACSR	58	pieces
Clamp, Deadend Strain, #2/0 ACSR	42	pieces
Guy, Dead-end Grip, 3/8"	150	pieces
Clamp, Pole, 5" - 6", Type CA	35	sets
Clevis, Secondary Swinging without Spool	29	pieces
Shackle, Anchor, Forged Steel, Galvanized	42	pieces
Connector, Ampact, Wedge Type, #2/0 - #2/0 ACSR	18	pieces
Connector, Compression, YHO 150, #3 - #1/0 ACSR Run To #6 - #2	147	pieces
Connector, Compression, YHD 300, #1/0 - #2/0 ACSR Run To #1/0 - #2/0	45	pieces
Connector, Overhead Splice Automatic, #2/0 ACSR	24	pieces

Connector, Pigtail Stem, #2/0	24	pieces
Connector, Ground Rod (Clamp) for 5/8" Steel Rod	7	pieces
Cutout and Arrester Combination, Porcelain, 15kV, Class 100	6	sets
Insulator, Pin Type, HDPE, Class 55-4, 15kv	206	pieces
Insulator, Spool, 1-3/4", ANSI, Class 53 - 2	17	pieces
Insulator, Spool, 3", ANSI, Class 53 - 4	79	pieces
Pin, Crossarm, Steel, 5/8" x 14-3/4", 15kv	146	pieces
Insulator, Suspension, 4 Shed, Polymer, 15KV	42	pieces
Link, Fuse, Universal, Bottom Head, Type K, 10 Amperes	3	pieces
Link, Fuse, Universal, Bottom Head, Type K, 30 Amperes	3	pieces
Nut, Eye, 5/8", Conventional	30	pieces
Nut, Lock, Mf Type, 3/8"	8	pieces
Nut, Lock, Mf Type, 1/2"	145	pieces
Nut, Lock, Mf Type, 5/8"	383	pieces
Pin, Pole Top, Channel, 1" Thread, 25" Long	4	pieces
Rod, Anchor, Threaded, Double Eye, 3/4" x 8'	30	pieces
Rod, Anchor, Threaded, Single Eye, 5/8" x 7'	14	pieces
Rod, Armor, Preformed, #2/0 ACSR, Single Support	49	sets
Rod, Ground Steel, Galvanized, 5/8" x 10'	7	pieces
Washer, Square, Flat, 2-1/4" x 2-1/4" x 3/16", 13/16" Diameter Hole	408	pieces
Washer, Square, Flat, 4" x 4" x 1/2" with 7/8" Diameter Hole	44	pieces
Washer, Round, 1-3/8" Diameter with 9/16" Diameter Hole	130	pieces
Washer, Square, Curved, 3" x 3" x 5/16" with 11/16" Diameter Hole	36	pieces
Wire, Tie, Aluminum Alloy, Soft, #4 AWG	296	feet
Wire, Tie, Insulated, Soft, #4 AWG	681	meters
Wire, Tape, Armor, Aluminum Alloy, 0.5 " x 0.3"	86	feet
Wire, Guy, Steel, 3/8", 7 Strand	3,770	feet
Block, Anchor, Concrete	44	pieces

Section VII. Bidding Forms

Form#1: Confirming Statement on Delivery Schedule

(Letterhead of the Bidder)

Date: _____, 2024

The BAC Chairman
BANELCO
Bantigue, Bantayan, Cebu

Attention: Engr. Ronald D. Aloyan
BANELCO BAC Chairman

Subject: Confirming Statement on Delivery Schedule

[Name of Bidder] hereby unconditionally declares that:

1. It shall deliver the Equipment and Materials and perform its obligations for the Consignment Supply and Delivery of Line Hardware (Lot No. 1) in accordance with the Biddings Documents;

2. It shall perform the Contract in accordance with the Bidding Documents.

3. The Schedule of Requirements (Section IV of the Bidding Documents) as signed and accomplished by the [Name of Bidder's] authorized representative is attached as Annex "A" hereof;

4. Line Hardware to be consigned, supplied and delivered under the Contract are brand new and a proof origin shall be provided to the BANELCO BAC.

5. It understands and shall abide by the provisions of Liquidated Damages in the Bidding Documents in cases wherein it has breach the Contract.

[Name of Bidder]
By: [Signature]

[Name of Authorized Representative]
[Position/Designation]

Form#2: Confirming Statement on Warranty

(Letterhead of the Bidder)

Date: _____, 2024

The BAC Chairman
BANELCO
Bantigue, Bantayan, Cebu

Attention: Engr. Ronald D. Aloyan
BANELCO BAC Chairman

Subject: Confirming Statement on Warranty

[Name of Bidder] hereby unconditionally declares that:

1. It shall deliver the Equipment and Materials (EMs) and perform its obligations for the Consignment Supply and Delivery of Line Hardware (Lot No. 1) in accordance with the Biddings Documents;

2. It shall cover the warranty for the Line Hardware under Lot No. 1, for a minimum of One (1) Year counted from the time that the Line Hardware purchased and accepted by BANELCO are installed.

3. The warranty in favor of BANELCO shall survive even after the expiration of the Contract.

4. It understands and shall abide by the Warranty provisions as provided in the Bidding Documents.

(Name of Bidder)

By:

[Signature]
[Name of Authorized Representative]
[Position/Designation]

`

Form#3: Details of Technical Specification

Item	Specification	Statement of Compliance
		[Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.]
1	Bolt, Carriage 3/8" x 4-1/2"	
2	Bolt, Double Arming, 5/8" x 16"	
3	Bolt, Double Arming, 5/8" x 26"	
4	Bolt, Double Upset, 5/8" x 10"	
5	Bolt, Oval Eye, 5/8" x 8"	
6	Bolt, Oval Eye, 5/8" x 10"	
7	Bolt, Oval Eye, 5/8" x 18"	
8	Bolt, Machine, 1/2" x 6"	
9	Bolt, Machine, 1/2" x 8"	
10	Bolt, Machine, 5/8" x 6"	
11	Bolt, Machine, 5/8" x 8"	
12	Bolt, Machine, 5/8" x 10"	
13	Bolt, Machine, 5/8" x 12"	
14	Bolt, Single Upset, 5/8" x 8"	

15	Bolt, Thimble Eye, 5/8" x 8", Straight Type	
16	Bolt, Thimble Eye, 5/8" x 10", Straight Type	
17	Bolt, Thimble Eye, 5/8" x 8", Angle Type	
18	Bolt, Thimble Eye, 5/8" x 10", Angle Type	
19	Brace, Crossarm, Flat 28", Steel, Hot Dip Galvanized	
20	Brace, Crossarm, 60", Angular, Steel, Hot Dip Galvanized	
21	Brace, Sidearm, Diagonal, 7 Feet	
22	Bracket, Angle, 5/8", without Spool	
23	Bracket, Mounting for Cutout and Arrester	
24	Clamp, Hot Line, #2 - #2/0 ACSR Main to #2 - #2/0	
25	Clamp, Anchor Rod Bonding, Single Eye	
26	Clamp, Anchor Bonding, 3/4", Twin Eye Rod	
27	Clamp, Loop Deadend, #2/0 ACSR	
28	Clamp, Deadend Strain, #2/0 ACSR	
29	Guy, Dead-end Grip, 3/8"	
30	Clamp, Pole, 5" - 6", Type CA	
31	Clevis, Secondary Swinging without Spool	
32	Shackle, Anchor, Forged Steel, Galvanized	
33	Connector, Ampact, Wedge Type, #2/0 - #2/0 ACSR	
34	Connector, Compression, YHO 150, #3 - #1/0 ACSR Run To #6 - #2	
35	Connector, Compression, YHD 300, #1/0 - #2/0 ACSR Run To #1/0 - #2/0	
36	Connector, Overhead Splice Automatic, #2/0 ACSR	
37	Connector, Pigtail Stem, #2/0	
38	Connector, Ground Rod (Clamp) for 5/8" Steel Rod	
39	Cutout and Arrester Combination, Porcelain, 15kV, Class 100	
40	Insulator, Pin Type, HDPE, Class 55-4, 15kv	
41	Insulator, Spool, 1-3/4", ANSI, Class 53 - 2	
42	Insulator, Spool, 3", ANSI, Class 53 - 4	
43	Pin, Crossarm, Steel, 5/8" x 14-3/4", 15kv	

44	Insulator, Suspension, 4 Shed, Polymer, 15KV	
45	Link, Fuse, Universal, Bottom Head, Type K, 10 Amperes	
46	Link, Fuse, Universal, Bottom Head, Type K, 30 Amperes	
47	Nut, Eye, 5/8", Conventional	
48	Nut, Lock, Mf Type, 3/8"	
49	Nut, Lock, Mf Type, 1/2"	
50	Nut, Lock, Mf Type, 5/8"	
51	Pin, Pole Top, Channel, 1" Thread, 25" Long	
52	Rod, Anchor, Threaded, Double Eye, 3/4" x 8'	
53	Rod, Anchor, Threaded, Single Eye, 5/8" x 7'	
54	Rod, Armor, Preformed, #2/0 ACSR, Single Support	
55	Rod, Ground Steel, Galvanized, 5/8" x 10'	
56	Washer, Square, Flat, 2-1/4" x 2-1/4" x 3/16", 13/16" Diameter Hole	
57	Washer, Square, Flat, 4" x 4" x 1/2" with 7/8" Diameter Hole	
58	Washer, Round, 1-3/8" Diameter with 9/16" Diameter Hole	
59	Washer, Square, Curved, 3" x 3" x 5/16" with 11/16" Diameter Hole	
60	Wire, Tie, Aluminum Alloy, Soft, #4 AWG	
61	Wire, Tie, Insulated, Soft, #4 AWG	
62	Wire, Tape, Armor, Aluminum Alloy, 0.5 " x 0.3"	
63	Wire, Guy, Steel, 3/8", 7 Strand	
64	Block, Anchor, Concrete	

Conforms to the following specifications

I hereby certify that the statement of compliance to the foregoing technical specifications are true and correct, otherwise, if found false either during bid evaluation or post-qualification, the same shall give rise to automatic disqualification of our bid.

Name of Company / Bidder	Signature Over Printed Name of Authorized Representative	Date

Form#4: Bid Prices in Bill of Quantities

Bid Form

Date: _____

Public Bidding No.: 2024-002

The BAC Chairman
BANELCO
Bantigue, Bantayan, Cebu

Gentlemen and Ladies:

Having examined the Bidding Documents including Bid Bulletin Number *[____]*, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to Supply and Deliver at BANELCO Warehouse of Line Hardware Supply of Materials for for Improvement/Construction of Distribution Line Extension for Kabiayan ni Man Liling (Bantayan Site 2)in conformity with the said Bidding Documents for the sums stated hereunder:

No.	*Description*	Quantity	Unit	Amoount
1	Bolt, Carriage 3/8" x 4-1/2"	38	pieces	
2	Bolt, Double Arming, 5/8" x 16"	42	pieces	
3	Bolt, Double Arming, 5/8" x 26"	3	pieces	
4	Bolt, Double Upset, 5/8" x 10"	16	pieces	
5	Bolt, Oval Eye, 5/8" x 8"	15	pieces	
6	Bolt, Oval Eye, 5/8" x 10"	53	pieces	
7	Bolt, Oval Eye, 5/8" x 18"	26	pieces	
8	Bolt, Machine, 1/2" x 6"	4	pieces	
9	Bolt, Machine, 1/2" x 8"	12	pieces	
10	Bolt, Machine, 5/8" x 6"	56	pieces	
11	Bolt, Machine, 5/8" x 8"	38	pieces	
12	Bolt, Machine, 5/8" x 10"	56	pieces	
13	Bolt, Machine, 5/8" x 12"	67	pieces	
14	Bolt, Single Upset, 5/8" x 8"	16	pieces	
15	Bolt, Thimble Eye, 5/8" x 8", Straight Type	1	piece	
16	Bolt, Thimble Eye, 5/8" x 10", Straight Type	2	pieces	
17	Bolt, Thimble Eye, 5/8" x 8", Angle Type	62	pieces	
18	Bolt, Thimble Eye, 5/8" x 10", Angle Type	12	pieces	
19	Brace, Crossarm, Flat 28", Steel, Hot Dip Galvanized	38	each	
20	Brace, Crossarm, 60", Angular, Steel, Hot Dip Galvanized	2	pieces	
21	Brace, Sidearm, Diagonal, 7 Feet	56	pieces	

22	Bracket, Angle, 5/8", without Spool	42	pieces	
23	Bracket, Mounting for Cutout and Arrester	3	pieces	
24	Clamp, Hot Line, #2 - #2/0 ACSR Main to #2 - #2/0	21	pieces	
25	Clamp, Anchor Rod Bonding, Single Eye	50	pieces	
26	Clamp, Anchor Bonding, 3/4", Twin Eye Rod	30	pieces	
27	Clamp, Loop Deadend, #2/0 ACSR	58	pieces	
28	Clamp, Deadend Strain, #2/0 ACSR	42	pieces	
29	Guy, Dead-end Grip, 3/8"	150	pieces	
30	Clamp, Pole, 5" - 6", Type CA	35	sets	
31	Clevis, Secondary Swinging without Spool	29	pieces	
32	Shackle, Anchor, Forged Steel, Galvanized	42	pieces	
33	Connector, Ampact, Wedge Type, #2/0 - #2/0 ACSR	18	pieces	
34	Connector, Compression, YHO 150, #3 - #1/0 ACSR Run To #6 - #2	147	pieces	
35	Connector, Compression, YHD 300, #1/0 - #2/0 ACSR Run To #1/0 - #2/0	45	pieces	
36	Connector, Overhead Splice Automatic, #2/0 ACSR	24	pieces	
37	Connector, Pigtail Stem, #2/0	24	pieces	
38	Connector, Ground Rod (Clamp) for 5/8" Steel Rod	7	pieces	
39	Cutout and Arrester Combination, Porcelain, 15kV, Class 100	6	sets	
40	Insulator, Pin Type, HDPE, Class 55-4, 15kv	206	pieces	
41	Insulator, Spool, 1-3/4", ANSI, Class 53 - 2	17	pieces	
42	Insulator, Spool, 3", ANSI, Class 53 - 4	79	pieces	
43	Pin, Crossarm, Steel, 5/8" x 14-3/4", 15kv	146	pieces	
44	Insulator, Suspension, 4 Shed, Polymer, 15KV	42	pieces	
45	Link, Fuse, Universal, Bottom Head, Type K, 10 Amperes	3	pieces	
46	Link, Fuse, Universal, Bottom Head, Type K, 30 Amperes	3	pieces	
47	Nut, Eye, 5/8", Conventional	30	pieces	
48	Nut, Lock, Mf Type, 3/8"	8	pieces	
49	Nut, Lock, Mf Type, 1/2"	145	pieces	
50	Nut, Lock, Mf Type, 5/8"	383	pieces	
51	Pin, Pole Top, Channel, 1" Thread, 25" Long	4	pieces	
52	Rod, Anchor, Threaded, Double Eye, 3/4" x 8'	30	pieces	
53	Rod, Anchor, Threaded, Single Eye, 5/8" x 7'	14	pieces	
54	Rod, Armor, Preformed, #2/0 ACSR, Single Support	49	sets	
55	Rod, Ground Steel, Galvanized, 5/8" x 10'	7	pieces	
56	Washer, Square, Flat, 2-1/4" x 2-1/4" x 3/16", 13/16" Diameter Hole	408	pieces	
57	Washer, Square, Flat, 4" x 4" x 1/2" with 7/8" Diameter Hole	44	pieces	
58	Washer, Round, 1-3/8" Diameter with 9/16" Diameter Hole	130	pieces	
59	Washer, Square, Curved, 3" x 3" x 5/16" with 11/16" Diameter Hole	36	pieces	
60	Wire, Tie, Aluminum Alloy, Soft, #4 AWG	296	feet	
61	Wire, Tie, Insulated, Soft, #4 AWG	681	meters	
62	Wire, Tape, Armor, Aluminum Alloy, 0.5 " x 0.3"	86	feet	

63	Wire, Guy, Steel, 3/8", 7 Strand	3,770	feet	
64	Block, Anchor, Concrete	44	pieces	

UNIT IN WORDS: _____

TOTAL BID PRICE IN WORDS: _____

We undertake, if our Bid is accepted, to deliver the goods in accordance with the delivery schedule specified in the Schedule of Requirements.

If our Bid is accepted, we undertake to provide a performance security in the form, amounts, and within the times specified in the Bidding Documents.

We agree to abide by this Bid for the Bid Validity Period specified in **BDS** provision for **ITB** Clause 14.2 and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof and your Notice of Award, shall be binding upon us.

We understand that you are not bound to accept the lowest or any Bid you may receive.

We certify/confirm that we comply with the eligibility requirements as per **ITB** Clause 5 of the Bidding Documents.

Dated this _____ day of _____ 20_____.

_____ _____

[signature] *[in the capacity of]*

Duly authorized to sign Bid for and on behalf of _____

Form#5: Sworn Statement

Omnibus Sworn Statement

REPUBLIC OF THE PHILIPPINES)
CITY/MUNICIPALITY OF _____) S.S.

A F F I D A V I T

I, *[Name of Affiant]*, of legal age, *[Civil Status]*, *[Nationality]*, and residing at *[Address of Affiant]*, after having been duly sworn in accordance with law, do hereby depose and state that:

1. ***Select one, delete the other:***

   If a sole proprietorship: I am the sole proprietor or authorized representative of *[Name of Bidder]* with office address at *[address of Bidder]*;

   If a partnership, corporation, cooperative, or joint venture: I am the duly authorized and designated representative of *[Name of Bidder]* with office address at *[address of Bidder]*;

2. ***Select one, delete the other:***

   If a sole proprietorship: As the owner and sole proprietor, or authorized representative of *[Name of Bidder]*, I have full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for *[Name of the Project]* of the *[Name of the Procuring Entity], as shown in the attached duly notarized Special Power of Attorney*;

   If a partnership, corporation, cooperative, or joint venture: I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for *[Name of the Project]* of the *[Name of the Procuring Entity]*, as shown in the attached *[state title of attached document showing proof of authorization (e.g., duly notarized Secretary's Certificate, Board/Partnership Resolution, or Special Power of Attorney, whichever is applicable;)]*;

3. *[Name of Bidder]* is not "blacklisted" or barred from bidding by the Government of the Philippines or any of its agencies, offices, corporations, or Local Government Units, foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the Government Procurement Policy Board;

4. Each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and all statements and information provided therein are true and correct;

5. *[Name of Bidder]* is authorizing the Head of the Procuring Entity or its duly authorized representative(s) to verify all the documents submitted;

6. ***Select one, delete the rest:***

   If a sole proprietorship: The owner or sole proprietor is not related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

   If a partnership or cooperative: None of the officers and members of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

   If a corporation or joint venture: None of the officers, directors, and controlling stockholders of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

7. *[Name of Bidder]* complies with existing labor laws and standards; and

8. *[Name of Bidder]* is aware of and has undertaken the following responsibilities as a Bidder:

   a) Carefully examine all of the Bidding Documents;

   b) Acknowledge all conditions, local or otherwise, affecting the implementation of the Contract;

   c) Made an estimate of the facilities available and needed for the contract to be bid, if any; and

   d) Inquire or secure Supplemental/Bid Bulletin(s) issued for the *[Name of the Project]*.

9. *[Name of Bidder]* did not give or pay directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity.

IN WITNESS WHEREOF, I have hereunto set my hand this __ day of ___, 20__ at _____, Philippines.

_____
Bidder's Representative/Authorized Signatory

SUBSCRIBED AND SWORN to before me this ___ day of *[month] [year]* at *[place of execution]*, Philippines. Affiant/s is/are personally known to me and was/were identified by me through competent evidence of identity as defined in the 2004 Rules on Notarial Practice (A.M. No. 02-8-13-SC). Affiant/s exhibited to me his/her [insert type of government identification card used], with his/her photograph and signature appearing thereon, with no. _____ and his/her Community Tax Certificate No. _____ issued on ____ at _____.

Witness my hand and seal this ___ day of *[month] [year]*.

NAME OF NOTARY PUBLIC
Serial No. of Commission _____
Notary Public for _____ until _____
Roll of Attorneys No. _____
PTR No. _____ *[date issued], [place issued]*
IBP No. _____ *[date issued], [place issued]*

Doc. No. _____
Page No. _____
Book No. _____
Series of _____

* This form will not apply for WB funded project

Section VIII. Checklist of Technical and Financial Documents

Notes on the Checklist of Technical and Financial Documents

The prescribed documents in the checklist are mandatory to be submitted in the Bid, but shall be subject to the following:

a. GPPB Resolution No. 09-2020 on the efficient procurement measures during a State of Calamity or other similar issuances that shall allow the use of alternate documents in lieu of the mandated requirements; or

b. Any subsequent GPPB issuances adjusting the documentary requirements after the effectivity of the adoption of the PBDs.

The BAC shall be checking the submitted documents of each Bidder against this checklist to ascertain if they are all present, using a non-discretionary "pass/fail" criterion pursuant to Section 30 of the 2016 revised IRR of RA No. 9184.

Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE

Class "A" Documents

Folder 1 Legal Documents

(a) Registration Certificate issued by the Securities and Exchange Commission (SEC) for Partnerships and Corporations; by the Department of Trade and Industry (DTI) for sole proprietorships; or by the Cooperative Development Authority (CDA) for cooperatives;

(b) Valid and current Mayor's/Business permit issued by the city or municipality where the principal place of business of the prospective bidder is located or equivalent document;

A recently expired Mayor's/Business permit together with the official receipt as proof that the prospective bidder has applied for renewal within the period prescribed by the concerned local government unit, shall be accepted. However, the valid and current Mayor's/Business permit must be provided during the post qualification stage.

(c) Tax Clearance from the Bureau of Internal Revenue (BIR) to prove bidder's full and timely payment of taxes to the Government;

(d) BIR Value Added Tax Registration;

(e) Proofs of VAT payment for the last six (6) months preceding the bid opening date;

(f) A certification under oath from the bidder's responsible officers that the bidder is free and clear of all liabilities from the government;

(g) Omnibus Sworn Statement-Affidavit with attached proof of authority;

Folder 2 Technical Documents

(h) Statement in matrix form of all on-going and completed government and private contracts (service contracts, maintenance contracts, purchase orders, job orders, etc.) within the relevant period (where applicable), including contracts awarded but not yet started (if any), whether similar or not similar in nature and complexity the contract subject of the bidding. The statement shall include the following information for each contract:

(1) d Whether the contract is on-going, completed, or awarded but not yet started; within the relevant period, where applicable
(2) The name of the contract;
(3) D ate of contract;
(4) kind of goods sold;
(5) Amount of contract and value of outstanding contracts;

(i) Statement identifying the bidder's SLCC similar to the contract to be bid within the relevant period and with a value as provided in ITB Clause 5.4.

Folder 3 Financial Documents

(j) Complete set of audited financial statements, stamped "received" by the BIR or its duly accredited and authorized institutions, for the preceding calendar year, which should not be earlier than two (2) years from the date of bid submission;

Complete set of financial statement includes the following:

i. Balance Sheet;
ii. Income Statement;
iii. Statement of Changes in Equity;
iv. Cash Flow Statement;
v. Notes to Financial Statement; and
vi. Statement of Management Responsibility for Financial Statement.

(k) The Bidder must submit a computation of its Net Financial Contracting Capacity (NFCC), which must be at least equal to the ABC to be bid, calculated as follows:

NFCC = [(Current assets minus current liabilities) (15)] minus the value of all outstanding or uncompleted portions of the projects under ongoing contracts, including awarded contracts yet to be started coinciding with the contract for this Project.

The values of the domestic bidder's current assets and current liabilities shall be based on the latest Audited Financial Statements (AFS) submitted to the BIR.

For purposes of computing the foreign bidders' NFCC, the value of the current assets and current liabilities shall be based on their audited financial statements prepared in accordance with international financial reporting standards.

Folder 4 Class "B" Documents

In case of a Joint venture:

(l) Valid Joint Venture Agreement (JVA), in case the Joint Venture is in existence. The JVA should contain provisions which clearly reflect the following matters: (a) the respective contributions of the JV Partners; (b) the respective responsibilities/roles of the JV Partners; and (c) the valuation of each of the JV Partners' respective contributions; or

(m) In the absence of a JVA, duly notarized statements from all the potential joint venture partners which shall include statements that: (a) they will enter into and abide by the provisions of the JVA in the event that the bid is successful; and (b) failure to enter into a JVA in the event of a contract award shall be a ground for bid disqualification and subsequent forfeiture of the bid security.

Each partner of the joint venture shall submit their respective legal eligibility

Form of Bid Security	Amount of Bid Security (Equal to Percentage of the ABC)
(a) Cash or cashier's/manager's check issued by a Universal or Commercial Bank.	Two percent (2%)
(b) Bank draft/guarantee or irrevocable letter of credit issued by a Universal or Commercial Bank: Provided, however, that it shall be confirmed or authenticated by a Universal or Commercial Bank, if issued by a foreign bank.	
(c) Surety bond callable upon demand issued by a surety or insurance company duly certified by the Insurance Commission as authorized to issue such security.	Five percent (5%)

requirements. The submission of the technical and financial eligibility requirement by any of the joint venture partners constitutes compliance. Provided, that the partner responsible to submit the NFCC shall likewise submit the Statement of all of its ongoing contracts and Audited Financial Statements

Folder 5 Bid Securities in the prescribed form, amount and validity period

(n) Bid securities (valid for 120 calendar days from the date of the opening of bids) payable to BANELCO in the following forms and amounts:

II. FINANCIAL COMPONENT ENVELOPE

Folder 1 Technical Proposal

(o) Confirming Statement on Delivery Schedule;

(p) Confirming Statement on warranty being offered; and

(q) Details of Technical Specification.

Folder 2 Financial Proposal

(r) Bid Prices in Bill of Quantities in the prescribed bid form


Republic of the Philippines
gppb
Government Procurement Policy Board