

Office of the Executive Engineer,  
Elect, Dept., Div-VII (O & M)  
Curchorem-Goa 403 706

“BY SPEED POST/HAND DELIVERY”

No.EE/Div.-VII/Tech-2/Quot- 16(18-19)/ 2625 /2018-19

Date: 27/08/2018

Sub: - Quotation for Supply, erection, testing and commissioning for the work of arranging power supply to the 06nos. of LT consumers of various categories under the jurisdiction of Elect. Sub Division- III, Sanguem.

On Behalf of the Governor of Goa, quotation for the below mentioned work as per the Terms and Conditions depicted in Annexure-I, II & III is invited.

QUOTATION

Sl. no.	Description of work	Qty.
1.	Supply, erection, testing and commissioning for the work of arranging power supply to the 06nos. of LT consumers of various categories under the jurisdiction of Elect. Sub Division- III, Sanguem.	As per bidding schedule enclosed
E.M.D:Rs. 7, 052/- (Rupees Seven Thousand Fifty Two only)		
Time allowed for completion of work : 30days		
Last date & time of receipt of quotation: 04/09/2018 upto 10.00hrs.		
Date & time of opening of quotation: 04/09/2018 at 10.30hrs.		
All other Rules & Regulations in force shall be applicable For more details please visit either Goa Govt. State portal or this office on any working day between 14:30 to 17:00hrs		

Sealed quotation alongwith attached Terms and Conditions duly signed & super scribed on the top of envelop as “Quotation for Supply, erection, testing and commissioning for the work of arranging power supply to the 06nos. of LT consumers of various categories under the jurisdiction of Elect. Sub Division- III, Sanguem” should be inserted in the quotation box on or before 04/09/2018 upto 10.00hrs

Name:

Signature:

Stamp of the Contractor:

Encl: as above.

Sd/-  
EXECUTIVE ENGINEER-VII

To,

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\_\_\_\_\_

Copy to:-

- 1) The Superintending Engineer, Elect. Dept., Circle-I/II, Margao/Panaji.... For information.
- 2) The Executive Engineer, Elect. Dept, Div. Nos: I/II/III/IV/V/VI/VIII/IX/X/XI/XII/XIII/XIV/XV/XVI/ XVII /XVIII Panaji/Margao/Ponda/Bicholim/Mapusa/Tivim/Vasco/Xeldem/Corlim/Verna/Patto Plaza Panaji.....For information.
- 3) The Divisional Accountant, Accounts Section, Elect. Div-VII, Curchorem....He is requested to be present on the day of opening.
- 4) The Sub Divisional Engineer, Elect. Sub-Div-III, Sanguem.
- 5) The Director of Information Technology, IT HUB, 2<sup>nd</sup> Floor, Altinho, Panaji-Goa.... With a request to publish the quotation called by this office on Goa Govt. State portal by 29/08/2018. (E-mail sent to [stateportal.goa@nic.in](mailto:stateportal.goa@nic.in))

Inventory of Materials required for arranging power supply to 06Nos. of LT consumers of various categories under the jurisdiction of Elect. Sub-Division-III, Sanguem.

Sr. No	Name of work	Erection of 7.5m RCC Pole.	Supply and Erection of 7.5m RCC Pole.	Supply & Fixing of HDGI 4-Pin Cross Arms with HDGI clamp for 7.5mtr RCC Pole.	Supply & Fixing of HDGI 2-Pin Cross Arms with HDGI clamp for 7.5mtr RCC Pole.	Supply & Fixing of Insulator - (LT) Shackle with Metal Part.	Supply & Fixing of Insulator - (LT) Pin with HDGI Pin	Supply & Fixing of Nut & Bolt	Supply & Erection of LT Stay Set complete for 7.5m RCC Pole.	Supply & Stringing of ANT Conductor of size 7/3.10 mm	Supply & Stringing of GNAT Conductor of size 7/2.21 mm
		Nos	Nos	Sets	Sets	Sets	Sets	Kgs	Sets	Kms	Kms
1	Estimate for releasing 1Ph LTD Service connection to Shri. Shrikant A. Gaonkar , Sy. No.: 76/4 Bomdimol Vilian Bhati Sanguem for a total connected load of 520Watts.	3	0	3	1	6	6	4	1	0.0490	0.1140
2	Estimate for releasing 3Ph LTD Service connection to Shri. Francisco Martins, H.No: 237/1 Devlamol Uguem Sanguem for a total connected load of 6440Watts.	3	0	1	2	14	0	5	1	0.2380	0.1180
3	Estimate for releasing 1Ph LTD Service connection to Shri. Devanand Velip Sy.No: 37/1 Vilian Bhati, Sanguem, for a total connected load of 2660Watts.	0	5	6	0	12	6	5	3	0.1680	0.3980
4	Estimate for releasing 3Ph LTAG Service connection to Shri. Rayesh Raikar Sy.No: 8/7-A, Kumari Bhati Sanguem, for a total connected load of 5H.P.	0	1	19	1	30	18	10	1	1.3200	0.0980
5	Estimate for releasing 3Ph LTD Service connection to Shri. Piedade Martins H.No: 215/1E, Devlamol Uguem Sanguem, for a total connected load of 5660Watts.	0	1	2	2	10	0	3.5	2	0.1240	0.0920
6	Estimate for releasing 1Ph LTD Service connection to Shri. Suresh Gaonkar Sy.No: 13/1 Tuduo Bhati Sanguem, for a total connected load of 2420Watts.	0	2	3	0	6	3	3	3	0.0830	0.1810
	Total	6	9	34	6	78	33	30.5	11	1.982	1.001

EXECUTIVE ENGINEER-VII

**BIDDING SCHEDULE**

FOR SUPPLY, ERECTION, TESTING AND COMMISSIONING FOR THE WORK OF ARRANGING POWER SUPPLY TO THE 06NOS. OF LT CONSUMERS OF VARIOUS CATEGORIES UNDER THE JURISDICTION OF ELECT. SUB DIVISION- III, SANGUEM

SUPPLY OF MATERIALS CONFORMING TO THE DETAILED TECHNICAL SPECIFICATIONS  
1) ALL RATES OF SUPPLY & ERECTION OF MATERIALS QUOTED SHALL INCLUDE GST & ALL OTHER TAXES APPLICABLE, DUTIES, TRANSPORTATION TO SITE, OTHER CHARGES ETC., AS SPECIFIED IN TERMS & CONDITIONS ENCLOSED WITH THE QUOTATION.

2) TEST CERTIFICATE FROM THE MANUFACTURE & ORIGINAL DELIVERY CHALLAN TO BE FURNISHED AS SPECIFIED IN QUOTATION

Sr. No	Description of materials/works	Qty	Unit	Cost of Material		Cost of Erection	
				Rate in figures & words including tax.	Amount in figures only	Rate in figures & words including tax.	Amount in figures only
1	Erection of R.C.C. poles 7.5mts. long by transportation to pit points, digging Pole pit of size 0.60mtsX0.60mts X1.25mts. deep in all types of soil laterite/hard rock, including re-filling of soil, ramming, leveling & disposing of extra soil. (Erection as per specification mentioned)	6	Nos.	Will be supplied by department			
2	Supply and erection of R.C.C. poles 7.5mts. long by transportation to pit points, digging Pole pit of size 0.60mtsX0.60mts X1.25mts. deep in all types of soil laterite/hard rock, including re-filling of soil, ramming, leveling & disposing of extra soil. (Supply and erection as per specification mentioned)	9	Nos.				
3	Supply & fixing of HDGI 4Pin X arm of made of channel ISMC 75X40X6mm with suitable Clamps and nut bolts for 7.5mtr. Long RCC pole. Supply & fixing as per specification mentioned.	34	sets				
4	Supply & fixing of HDGI 2Pin X arm of made of channel ISMC 75X40X6mm with suitable Clamps and nut bolts for 7.5mtr. Long RCC pole. Supply & fixing as per specification mentioned.	6	sets				
5	Supply & fixing of LT shackle insulator with HDGI metal parts, HDGI nut bolts etc. at cut points & end points. Supply and fixing as per the Specifications mentioned.	78	Sets				
6	Supply and fixing of LT pin insulators with HDGI Pin at pin points .Supply and fixing as per the Specifications mentioned.	33	Sets				
7	Supply and fixing of HDGI nuts & bolts G.I. Hexagonal head and hexagonal nuts conforming to IS 1363 part 1 to 3 1992 as amended upto date. The bolts and nuts shall be hot dip galvanized as per IS: 2629-1985 as amended upto date.	30.5	Kgs.				
8	Supply and erection of HDGI stay set complete comprising of HDGI stay rod with plate, HDGI turn buckle with eye bolt, Break insulator of 8KV, suitable HDGI stay Clamps, HDGI Stay wire of size 7/10swg and HDGI nut bolts for 7.5mtr long RCC pole. Supply and fixing as per the Specifications mentioned.	11	Sets				
9	Supply & stringing of AA ANT conductor 7/3.10mm nominal size aluminium 50sq.mm with maximum current carrying capacity 190Amps at 40°C.for phase & binding on pin points & cut points. Supply and stringing as per the Specifications mentioned.	1.982	Kms.				
10	Supply & stringing of AA GNAT conductor 7/2.21mm nominal size aluminium 25sq.mm with maximum current carrying capacity 80Amps at 40°C.for phase & binding on pin points & cut points & for providing Jumpering and lacings. Supply and stringing as per the Specifications mentioned.	1.001	Kms.				
	Total in Rs.						
	Add cost of erection						
	Grand Total Rs.						
	Say Rs.						
	(Rupees						)

1. I have understood that the whole contract is governed by all relevant clauses of CPWD Manual 2014. All the said terms & conditions mentioned therein shall be binding on me once the offer is accepted.

2. Submission of my offer shall be deemed to imply that I have made myself acquainted with the actual site conditions, etc. where the proposed works are to be carried out. The materials will be supplied as per the technical specifications indicated in Annexure-III.

Name of Contractor:-							
Signature:-					EXECUTIVE ENGINEER-VII CURCHOREM-GOIA.		
Address:-							

ANNEXURE-I  
ADDITIONAL TERMS & CONDITIONS

1. RATES:- The Rates quoted should be firm.
2. TAXES & DUTIES: - The rates quoted shall be inclusive of GST & all other applicable taxes.
3. VALIDITY:- The Rates quoted should be valid for a period of 30 days from the date of opening of the quotation.
4. TIME ALLOWED FOR COMPLETION OF WORK: 30 days from the date of firm order.
5. EARNEST MONEY DEPOSIT:- An amount of Rs 7, 052/- towards EMD shall be furnished in a separate envelope, sealed and superscribed as “EMD FOR QUOTATION“(ENVELOPE-A). (Quotation No, & detail of Quotation to be specified) EMD shall be in the form of Demand Draft drawn in the name of The Executive Engineer, Elect, Division VII, Curchorem, on any schedule Bank guaranteed by Reserve Bank of India and made payable at par on any Branches in Goa. EMD payment by cash, cheque, fixed & short term deposit shall not be entertained. Quotation unaccompanied by EMD as above will be summarily rejected. The quotations for the work shall remain open for a period of 30 days from the opening of quotations. The Government shall without prejudice to any other right or remedy, be at liberty to forfeit 50 % of the earnest money if any bidder withdraws his quotation before that date or makes any modifications in terms & conditions which are not acceptable to the Department, and to forfeit the whole of the earnest money if the bidder, whose quotation is accepted, fails to commence the work specified in NIQ (Along with changes in scope) in the prescribed time or abandons the work before its completion. The 2nd envelope superscribed as “Financial bid” (Quotation No, & detail of Quotation to be specified) shall contain Price bid / Bidding schedule, duly signed by the tenderer on each page over their official rubber stamp, on all pages alongwith the financial bid and other documents (ENVELOPE-B). The 3rd cover (ENVELOPE-C) pertaining to the tender shall be superscribed as detailed in quotation shall contain the other two envelopes (Envelope-A & Envelope-B) superscribed “EMD for quotation” and “Financial bid”. Name of the tenderer shall be written on the left hand side corner of the envelopes.
6. PERFORMANCE SECURITY: - In case of acceptance of the offer the performance security of 5% of the order value shall be deposited with this office within 15 days of acceptance letter and the same shall be refundable on completion of the work and recording of the work completion certificate.
7. SECURITY DEPOSIT: - Security deposit amounting to 2.5% of the ordered value will have to be paid or the same will be deducted from the bills adjusting the EMD paid. The security deposit will be retained in this office till expiry of guarantee period and thereafter the same will be refunded against an application in Form-28, subject to the condition that no defects are noticed and the service is to the entire satisfaction to the Engineer-in-charge and on recovery of any amount due to the Govt.
8. PAYMENT:-Payment will be only after completion of entire work. The contractor shall indicate Income Tax PAN No. & GSTIN registered with the Income Tax Department & Central Board of Excise & Customs in the invoices/receipts without which payment will not be released.
9. CONTRACT CONDITON: Orders will be governed by the conditions of P.W.D. agreement Form No.10.
10. THE RIGHT TO REJECT:-The right to reject any or all the quotations, without assigning any reasons, shall rest with the undersigned.
11. DATE OF RECEIPT & OPENING OF QUOTATION:-The quotation will be received up to 10:00 hours on 04/09/2018 & it will be opened at 10.30 hours on the same day.

EXECUTIVE ENGINEER,  
DIVISION-VII, CURCHOREM

ANNEXURE - II  
GENERAL TERMS & CONDITIONS

1. In case the contractor comes across any incorrect/missed out punctuations, typographical errors in spelling, leading incorrect impression or no meaning to the text, then they are advised to get the same clarified from the department. The interpretation of the Engineer-in-charge, in such cases shall be final.
2. The contractor shall furnish the attested copy of electrical contractor's license issued by the licensing board, Govt. Of Goa, to enable them to execute the work in the state of Goa.
3. The rates quoted by the contractor shall be firm, whether he has actually inspected the site or not. Any claim on the veracities of the site conditions at a later stage shall not be entertained.
4. The offer shall be valid for a minimum period of 30 days from the date of opening of the quotation.
5. It is not intend to specify completely herein all details of design and construction. However the work should conform in all respect to quotation of Engineering design and workmanship as per relevant applicable I.S. and shall be able to perform in continues commercial operation in a manner acceptable to the Engineer-in-charge, who will interpret the meaning of drawings and specifications and shall have the power to reject any work, which in his judgment, is not in accordance therewith.
6. The whole contract shall be governed by the agreement under CPWD form 10 for the contract for works. The contractor shall be responsible for arranging all tools and plants, instruments etc. required for erection, testing and commissioning of all the equipments and materials covered under this contract.  
The work shall be supervised by the Engineer In-charge or by his authorized representatives. The work shall be carried out as per the tender terms and conditions, specifications, besides site directives if any.

7. **CONTRACTOR IS REQUESTED TO PAY DUE ATTENTION TO THIS ASPECT**

(a) QUANTITIES:

The quantities given under bidding schedule of this contract are tentative. The department reserves the right to finalize quantities for which the unit rates quoted in the bidding schedule by the contractor, shall be valid and binding irrespective of the quantities finalized by the Department

(b) COMPLETENESS OF THE CONTRACT:

Any fittings or accessories which may not have been specifically mentioned in the specifications but which are usual or necessary in the case of similar works or for efficient working of the same shall be deemed to be included in the contract and shall be provided by the contractor without extra charges. All works activities shall be completed in all details whether such details are mentioned in the specifications or not, within completion period.

(c) BIDDING:

The rates quoted against activities/ work in the bidding schedules shall be for the activity/work including GST as per the technical specifications in the bidding schedule and shall be complete in all respects.

8. STANDARD:

Unless otherwise specified all the work shall comply in all respects with the requirements of the specifications attached with this bidding schedule amended up to date and any revisions thereof that may be issued during the currency of the contract.

9. COMPLIANCE WITH THE REGULATIONS:

All the works shall be carried out in accordance with I.E. Act 2003 & I.E. Rules 1956 as amended up to date and all revision thereof that may be issued during the currency of the contract. The work shall also conform to Electricity Department rules/procedures within the said Acts & Rules.

10. PAYMENTS:

No advance payment shall be made along with the order. Payment will be made for the activities completed in all respects; payment will be made activity wise. No payment will be made unless the items in a particular activity are completed. No payment will be made for the purpose of storing of the materials, transportation, freight and insurance charges, taxes and duty, etc. all of which are deemed to have been included in the

quoted rates whether expressly specified or not. Final payment will be done only after completion of the entire work by the Contractor and submission of detailed reports in triplicate as stated in Technical specification.

Deductions: - The GST and income tax shall be deducted at source from the eligible payments to the contractor as applicable from the bill. Department shall issue necessary TDS certificate to the contractor.

**11. AGREEMENT AND GOVERNMENTING CONDITIONS:**

The contractor whose offer is accepted will have to enter in to an agreement in the C.P.W.D. Form-10

**12. METHOD OF WORK**

Before commencement of work, the line/apparatus should be made non live by taking proper Shutdown in the presence of departmental Engineer-in-charge. Necessary earthing should also be got done to the line at the transformer center from the departmental Engineer-in-charge. All the Precautions should be taken in advance to avoid electrical & mechanical accidents.

**13. CONDITION:**

The proposed work should be executed in the presence of authorized departmental Electrical Engineer-in-charge only.

**14. COMPARISON OF BIDDING:**

The tenderer shall offer biddings in the prescribed bidding schedule attached with this quotation for all the activities mentioned therein.

**15. INTERCHANGEABILITY:** All the parts shall be made accurately to standard gauge wherever possible so as to facilitate replacement and requirement including the spare parts shall be interchangeable.

**16. DEVIATIONS:** Any deviation to these specifications if found necessary by the tenderer shall clearly be set forth in the separate schedule annexed to this quotation giving valid basis for such deviations. The advantage claimed if any to such deviation shall be clearly indicated.

**17. GUARANTEE:-**

17.1 The contractor shall warrant that the materials/equipments will be new and in accordance with the specification and that the equipment structures etc. will be free from defects in materials & workmanship. The contractor shall furnish performance guarantee for a period of 12 calendar months (Guarantee period) from the date of commissioning for the entire contracted work. Any defects in failure observed during the period of guarantee will be the duty of the contractor to attend and rectify it on priority basis when informed or noticed at his own cost.

17.2 Completion period: The time allowed for completion of all the activities covered under this contract shall be of 30 days.

17.3 Compensation for failure to complete the work within stipulated time period. The time allowed for carrying out the works as entered in the agreement shall be strictly observed by the contractor and shall be deemed to be of essence of the contractor on the part of the contractor date on which order to commence the work is issued to the contractor. Delay in the execution of the work as per clause 2 & 3 of CPWD 8 shall attract the compensation/penalty @1% of the value of work order per day for every day the work remains uncompleted or unfurnished after the stipulated completion date put to subject to total compensation not exceeding 10% on total cost of work as per work order.

NAME OF THE CONTRACTOR

CURCHOREM.

ADDRESS/SEAL OF THE CONTRACTOR

SIGNATURE

EXECUTIVE ENGINEER  
DIVISION VII,

ANNEXURE - III  
TECHNICAL SPECIFICATION

SCOPE OF WORK: -

“Supply, erection, testing and commissioning for the work of arranging power supply to the 06nos. of LT consumers of various categories under the jurisdiction of Elect. Sub Division- III, Sanguem”.

1]. RCC POLES 7.5MTRS LONG

7.5meters long R.C.C. Pole as per drawing approved by CEE and conforming to IS standards as amended upto date. The Component used for pole shall conform to following IS amended upto date.

Ordinary Port land cement 53 grade	IS 12269
Aggregate	IS 383-1970
Torsteel	IS 1786-7985
MS bar	IS 432 P 1&2-1982

The minimum ultimate transverse load of pole shall be 500kg and factor of safety shall be 2.5. The pole shall be marked as per IS.

The poles shall be tested as per IS 785 & 2905-1989 as amended upto date at the manufactures works in the presence of the departmental representative and test reports shall be furnished for acceptance. The poles will be accepted subject to passing of tests and verification of reinforcement and concrete after breaking one pole from each lot at cost of the manufacturer.

ERECTION OF POLES: -

The erection of pole includes excavation of the pole pit of size 60cm X 60cm X depth, where depth is equal to the 1/6<sup>th</sup> of the height of the respective pole in all types soil laterite/hard rock. The pole is to be transported to pit points; erected in alignment with utmost care and the excavated earth should be back filled properly by ramming.

2]. HDGI L.T. FOUR PIN / TWO PIN CROSS ARM/SIDE CROSS ARM

The cross arms shall be made of M.S. channel of ISMC-75 vide table 2 of IS: 8081 1964 with amendment no. 1 to 4 & shall conform to the drawing enclosed. The cross arms shall be without any joints. The cross arms shall be hot dipped galvanized generally conforming to IS - 2633/72. The length of the 4pin cross arm shall be 1110mm with 4 holes of 22 dia each on each flange section. In addition 2 holes of size 18mm x 40mm slotted holes shall be provided on the cross arm for clamping arrangement to the pole. The length of the 4pin side cross arm shall be 1410mm with 4 holes of 22 dia each on each flange section. In addition 2 holes of size 18mm x 40mm slotted holes shall be provided on the cross arm 40 mm from the left edge of the X-arm for clamping arrangement to the pole & two holes of size 17mm dia at 355mm & 660mm from the slotted hole for arrangement to fix angle support. The angle support shall be of ISA 50x50x6mm G.I. with 17 mm dia holes at the two ends. The other end of the angle shall be clamps utilizing suitable G. I. stay clamps of length 312mm end to end. The 2pin cross arm shall be of 510mm length & provided with a total of 4 holes of 22mm dia on each flange section. In addition two slotted holes of size 18 x 40 mm shall be provided on the cross arm for clamping arrangement to the pole.

The 2pin side cross arm shall be of 800mm length & provided with a total of 4 holes of 22mm dia on each flange section. In addition two slotted holes of size 18 x 40mm shall be provided on the left end of the cross arm for clamping arrangement to the pole.

ERECTION OF CROSS ARMS:: The cross arms shall be fitted vertically onto the top end of the poles, at a height conforming to the relevant I.E. rules & utilizing suitable size of HDGI clamps & HDGI washers, HDGI nut bolts.

3]. HDGI CLAMPS OF VARIOUS SIZES:-

All clamps & suitable nut bolts shall be hot dipped galvanized generally conforming to IS - 2633/72 & shall be conforming to the enclosed drawings.

4].L.T. SHACKLE INSULATORS WITH HDGI METAL PARTS:-

The L.T. Shackle insulators (as per drawing) shall be of brown glazed of size 100x115 mm generally conforming to type 2 figures 4 of IS/445/1966 with amendment no. 1 and as amended upto date & also with IS: 1445/1977 or as amended upto date. The fittings shall be conforming to

IS: 7935-1975 or the latest version thereof. The same shall be suitable of a normal system voltage of 440volts with tolerance limits of +-5%. The shackle insulator shall be suitable for the minimum failing load of 16.0 KN. The insulator shall comply to the tests as per IS: 1445. All ferrous fittings & parts other than that of stainless steel shall be hot dipped galvanized.

The Strip type fittings shall consists of a pair of M.S. straps, 2 nos. M.S. Bolts with hexagonal head & nuts, 2 nos. spring washers, & helically formed conductor dead-end fittings made of aluminum alloy or aluminum-clad steel conforming to the relevant IS specifications (as per enclosed CEE's drawing No.CEE/E/SK-341).

**ERECTION OF PIN & SHACKLE INSULATORS:-**

The insulators shall be fitted on the cross arms in the slots provided, utilizing the associated metal parts or G.I. pin. The insulators shall be fitted conforming to the relevant I. E. rules with regard to line to ground clearance, etc. The insulators shall be fitted vertically & firmly on the cross arms utilizing washers & suitable G.I. nut bolts.

**5].L.T. PIN INSULATORS WITH HDGI PIN :-**

The pin insulators shall be of sound, free from defects, thoroughly vitrified & smoothly glazed of brown color except for the screw threads & the parts on which the porcelain is supported. The insulator shall be in one piece. The pin insulator shall have a top groove & shall be threaded to take mild steel pins & shall conform to IS: 1445-1977. The pin shall be suitable for the minimum failing load of 3.5KN. The insulator shall comply to the tests as per IS: 1445. The fittings shall be conf to IS: 7935-1975 or the latest version thereof & as per enclosed drawing.

The ferrous pin, nuts & washers except those made of stainless steel shall be hot dipped galvanized. The threads of nuts shall be cut after galvanizing & shall be well oiled & greased. The pin shall have a stalk length of 135mm, shank length of 125mm & minimum failing load of 2.0 KN, as per enclosed drawing EE-11-10/2003.

**6].HDGI NUT BOLTS**

G.I. Hexagonal head bolts and hexagonal nuts conforming to IS 1363 part 1 to 3 1992 as amended upto date of following sizes.

Size of Bolts	Nominal Length	Threading Portion
M 12	50 mm	Full
M 12	65 mm	Full
M 16	40 mm	Full
M 16	50 mm	Full
M 16	65 mm	Full
M 16	75 mm	Full
M 16	100 mm	Full
M 16	150 mm	75 mm from end
M 16	175 mm	75 mm from end
M 16	200 mm	75 mm from end
M 16	260 mm	75 mm from end

The bolts and nuts shall be hot dip galvanized as per IS: 2629-1985 as amended upto date. Bolts and nuts shall be supplied in bags of 25 kgs each. The testing of galvanization of bolts and nuts shall be carried out by the manufacturer and test reports shall be furnished before supply of materials. Department reserves the right to witness above testing.

**7].HDGI L.T. STAY SETS (ERECTION OF STAY SET): -**

Comprises of stay rod, stay plate conforming to drawing enclosed. The stay wire of size 7/10swg alongwith the break insulator of 8KV respectively to be used alongwith suitable HDGI stay clamps, HDGI nut bolts, and HDGI turn buckle conforming to drawing enclosed, clamps conforming to drawing enclosed. The Stay wire shall comply with the specific requirements of IS: 2141-1979, IS: 4826-1979 & IS: 6594-1974 or the latest versions thereof. The wires shall be of tensile grade 4 & having minimum tensile strength of 700 N/mm2 conforming to IS: 2141. GI stay rod of 1800mm long and 16mm dia with an eye band of internal dia 40mm at one end and threaded up to length of 200mm at the other end galvanized. GI stay plate of 450x450x8mm size with a hole drilled at the centre to suit 16mm dia GI rod galvanized. GI stay wire standard of size 7/3.15mm (7/10SWG) wire should conform to ISS-2141/68 grade I and hot dipped galvanized as per IS 4826/1968 with up to date amendments. Two nos of GI square washer of size 40x40x6mm to suit the 16mm dia GI rod. Two nos of GI hexagonal nut and bolt suitable for threaded portion of the stay rod mentioned above and conforming to IS-1365/67 with amendment No-1. All the GI materials



shall conform to IS-226/75 with amendment No- 1 to 3 tested quality. The breaking load shall be 63KN min proof load (40% of breaking load shall be performed on all the stay sets. These figures have been taken from IS-16/74 with amendment No. Conforming to Drawing enclosed. Turn buckle with eye bolts for 11KV line & conforming to the following. One no of turn buckle made out of 16mm dia GI rod and 50x50x6mm M.S. angle galvanized. One eye bolt made out of 20mm dia GI rod with 40mm inner dia eye at one end threaded up to 300mm length from the other side. Two no's GI nuts suitable for the threaded portion of eye bolt material specification IS-226/77 (tested quality) The breaking load and proof load shall be as per BS16/64 with amendment No-1. GI wire with tensile strength 32Kg/mm to 55Kg/mm soft quality 4.00mm dia 8SWG wire should conform to ISS-280/1972 and galvanized to heavy type as per ISS-4826/1968 with up to date amendments. The strain insulators (enclosed drawing) shall be sound, free from defects, thoroughly vitrified & smoothly glazed & shall comply with the IS: 5300-1969 or the latest version thereof. The L.T. strain insulator shall have a minimum failing load of 44KN.

**ERECTION OF STAY SET: -**

Includes excavation of pit size 0.60x0.6x2mtr. in all kinds of soil laterite/hard rock and providing of stay set by using 7/10SWG HDGI stay wire, 8 KV break insulator, Turn buckle, I hook and fixing the same to pole with set of stay clamps with HDGI Bolts/nuts and embedding stay plate and rod by excavated soil with ramming.

The stay rod with plate shall be as per drawing enclosed and hot dipped galvanized. The entire stay rod leaving the top 10cm. with plate should be embedded in a the pit with an angle between 30 to 45 degrees of stay wire with the pole. The G.I. stay wire of size 7/10 SWG should be used with a break insulator of 8KV at a height of 5mtr above ground level with G.I. turn buckle. All the Nut bolts shall be hot dipped galvanized and of appropriate size with full thread.

**8].AAC ANT CONDUCTOR: --**

Hard drawn stranded aluminum conductor & conforming to IS: 398(Pt-I/76) with amendment no. 1,2 & 3 & of size 7/3.10mm aluminum, (nominal aluminum area 50mm<sup>2</sup>) "ANT". Regarding packing of the drum should be conforming as per IS: 1778/80 with amendment no. 1. The conductor shall be wound with protective wrapping (Cl. 5.1) & also protective lagging (Cl. 5.2 of ISS). The wires shall be smooth & free from all imperfections, such as spills & splits. No joints shall be permitted in any wire.

**9].AAC GNAT CONDUCTOR: --**

Hard drawn stranded aluminum conductor & conforming to IS:398(Pt-I/76) with amendment no. 1,2 & 3 & of size 7/2.21mm aluminum, (nominal aluminum area 25mm<sup>2</sup>) "GNAT". Regarding packing of the drum should be conforming as per IS: 1778/80 with amendment no. 1. The conductor shall be wound with protective wrapping (Cl. 5.1) & also protective lagging (Cl. 5.2 of ISS). The wires shall be smooth & free from all imperfections, such as spills & splits. No joints shall be permitted in any wire.

**STRINGING OF CONDUCTOR: -**

Includes spreading of AAC Conductors without any damage and stringing with proper tension without any kinks/damage including binding of conductor at pin points, jumpering at cut points, gaurd loops.. etc. The ground & line clearances at road crossings, along roads, L.T. crossings & other crossings shall be as the relevant I.E. rules. Tree cutting wherever required is to be carried out before stringing of the Conductor with prior permission of the Engineer in charge.

The rates for Stringing of conductor in Schedule shall include cost of tree cutting as well. AAC Ant conductor for phases, & GNAT conductor for double neutral, & guard loops.

**MATERIALS:-**

All materials such as clamps, bolts & Nuts, cross arms, stay sets, top insulator fitting, metal parts for insulators, earthing sets etc. required for this work should be hot dip galvanized as per relevant I.S.S.

**NOTE:**

All the materials to be supplied by the contractor should be confirming to relevant I.S. standards as amended up-to-date & as per the approved designs of the department. Where such standard does not exist one should strictly confirmed to the drawings, specification & general standards mentioned/enclosed.

**LIST OF MAJOR ITEMS APPROVED BY THE DEPARTMENT**

SR. NO	DESCRIPTION OF MATERIALS	REPUTED MAKES SUCH AS:
1.	CONDUCTORS	TRACO/GUPTA/MAHAVIR/BHARAT/APAR/TUMKUR

2.	LT INSULATORS (PIN, SHACKLE, BREAK)	GEO INDUSTRIES/ HINDUSTAN CHEMICALS / BHEL / ADITYA BIRLA INSULATORS (JAYSHREE)/ HIGH VOLTAGE ELECTRICAL
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SIGNATURE OF THE CONTRACT

EXECUTIVE ENGINEER (DIV.VII)

WITH STAMP AND ADDRESS