# SOUTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LIMITED

# COST DATA FOR THE YEAR 2019-20

**SOUTHERN POWER DISTRIBUTION COMPANY OF TELANGANA. LIMITED**
**6-1-50, Corporate Office, Mint Compound, Hyderabad - 63**

**O/o Chief General Manager Projects,**
4th Floor, Corporate Office, TSSPDCL,
Mint Compound, Hyderabad -500 004.

**Memo No.CGM(P)/SE(P)/DE(RE)/D.No.227 /2019, Dt:01-05-2019.**

**Sub:** Projects – Approved Cost Data for the FY 2019-20- Communication - Reg.

**Ref:** 1. U.O.No.CGM/P&MM(T)/F.Cost Data/D.No.8617/18, dt:27.03.2019
2. Lr.No.CGM/Op/RR Zone/DE(T)/ADE-T/D.No.27/19-20, Dt:10.04.2019

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Cost Data for FY 2019-20 is prepared by taking inputs from CGM/P&MM and CGM/Op/RRZone i.e. latest material purchase order rates received from P&MM wing vide ref 1st cited and applicable SSR labour rates of GHMC and Non GHMC area for FY 2019-20 received from Operation/RR Zone vide ref 2nd cited.

In the prepration of Cost Data, maximum of GHMC and Non GHMC SSR rates are considered for labour rates and Material rates are inclusive of applicable GST taxes.

The approved cost-data for the FY 2019-20 is herewith enclosed. The soft copy is placed in 202/cgm-proj/ Cost-data FY19-20. The cost data for FY2019-20 is also available on the TSSPDCL website i.e., **www.tssouthernpower.com.**

This is issued with the concurrence of Chairman & Managing Director/TSSPDCL, vide regd.No.3180, Dt:30.04.2019.

**Encls:** As above.

**Chief General Manager / Projects**

**To:**
All Superintending Engineers/ Operation/
The Superintending Engineers/ Master Plan/
The Superintending Engineer/SCADA

**Copy communicated to:**
The Chief General Manager/Operation/
The Chief General Manager/Master Plan/
All the Chief General Managers / Corporate office / TSSPDCL

**Copy submitted to**
The Director (Projects & IT)/ TSSPDCL, Corporate Office, Mint Compound, Hyderabad.
The Director (Finance)/TSSPDCL, Corporate Office, Mint Compound, Hyderabad.

# INDEX

## COST DATA OF CENTRALISED MATERIALS FOR R.E. AND DISTRIBUTION WORKS

| Sl. No | Name of the Material | P.O. No. | Unit | Rupees | EX-Works | F&I | Basic Price | GST | % GS | SAP Code No. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| **SUBHEAD - I : SUPPORTS AND FIXTURES, IRON, STEEL AND CEMENT** | | | | | | | - | | | |
| 1 (a) | RS Joists 175 x 85 mm. | PM-946/16, dt. 03-01-2017 | MT | 54,870.00 | 46,500.00 | - | 46,500.00 | 8,370.00 | 18 | MST00032 |
| (b) | RS Joists 150 x 150 mm. | PM-946/16, dt. 03-01-2017 | MT | 54,870.00 | 46,500.00 | - | 46,500.00 | 8,370.00 | 18 | MST00029 |
| 2 | MS Channel 100 x 50. | PM-946/16, dt. 03-01-2017 | MT | 55,755.00 | 47,250.00 | - | 47,250.00 | 8,505.00 | 18 | MST00012 |
| 3 | MS Channel 75 x 40 mm | PM-946/16, dt. 03-01-2017 | MT | 54,457.00 | 46,150.00 | - | 46,150.00 | 8,307.00 | 18 | MST00013 |
| 4 | MS Angle 65 x 65 x 6 mm. | PM-946/16, dt. 03-01-2017 | MT | 53,277.00 | 45,150.00 | - | 45,150.00 | 8,127.00 | 18 | MST00003 |
| 5 | MS Angle 50 x 50 x 6 mm | PM-946/16, dt. 03-01-2017 | MT | 54,457.00 | 46,150.00 | - | 46,150.00 | 8,307.00 | 18 | MST00002 |
| 6 | MS Flat 75x 8 | PM-946/16, dt. 03-01-2017 | MT | 54,280.00 | 46,000.00 | - | 46,000.00 | 8,280.00 | 18 | MST00015 |
| 7 | MS Flat 50 x 6 mm | PM-946/16, dt. 03-01-2017 | MT | 54,280.00 | 46,000.00 | - | 46,000.00 | 8,280.00 | 18 | MST00014 |
| 8 | MS Rod 20 mm. | PM-946/16, dt. 03-01-2017 | MT | 54,870.00 | 46,500.00 | - | 46,500.00 | 8,370.00 | 18 | MST00019 |
| 9 | MS Rod 16 mm. | PM-946/16, dt. 03-01-2017 | MT | 54,870.00 | 46,500.00 | - | 46,500.00 | 8,370.00 | 18 | MST00018 |
| 10 | GI Stay wire 7/3.15 mm. | PM-1662/18, dt. 29-06-2018 | MT | 70,500.00 | 58,745.76 | 1,000.00 | 59,745.76 | 10,754.24 | 18 | WRS00006 |
| 11 | GI Stay wire 7/2.5 mm | PM-1662/18, dt. 29-06-2018 | MT | 70,800.00 | 59,000.00 | 1,000.00 | 60,000.00 | 10,800.00 | 18 | WRS00007 |
| 12 | GI wire 4 mm | PM-1717/18 Dt: 20-08-2018 | MT | 68,652.40 | 57,000.00 | 1,180.00 | 58,180.00 | 10,472.40 | 18 | WRS00005 |
| 13 | PSCC Pole (9.1 M) - 280 Kg WL | PM-1742/18 Dt: 31-08-2018 | Nos. | 3,186.00 | 2,400.00 | 300.00 | 2,700.00 | 486.00 | 18 | PLS00004 |
| 14 | PSCC Pole (8.0 M) - 140 Kg WL | PM-1768/18 Dt: 24-09-2018 | Nos. | 1,486.80 | 1,125.00 | 135.00 | 1,260.00 | 226.80 | 18 | PLS00001 |
| 15 | PSCC Poles (11 Mtrs) 365 Kgs | PM-1576/18 Dt: 18-04-2018 | Nos. | 5,428.00 | 4,000.00 | 600.00 | 4,600.00 | 828.00 | 18 | PLS00013 |
| **SUBHEAD - II : INSULATORS AND HARDWARE** | | | | | | | - | | | |
| 1 | 33KV Polymer Pin Insulators With GI Pins | PM-1310/17, Dt. 18-09-2017. | Nos. | 538.29 | 456.18 | - | 456.18 | 82.11 | 18 | INS30008 |
| 2 | 33 KV Post Insulators | PM-1074/16, Dt. 27-03-2017 | Sets | 898.13 | 761.13 | - | 761.13 | 137.00 | 18 | INS30004 |
| 3 | 33 KV Hard Ware Fittings (B&S) | PM-1298/17, Dt. 13-09-2017. | Sets | 185.25 | 150.00 | 6.99 | 156.99 | 28.26 | 18 | HWR00004 |
| 4 | 33 KV Polymer String Insulator (B&S) | PM-1312/17, Dt. 18-09-2017. | Nos. | 282.40 | 239.32 | - | 239.32 | 43.08 | 18 | INS30007 |
| 5 | 11KV Polymer Pin Insulators With GI Pins | PM-1871/18, Dt: 29-01-2019. | Nos. | 174.60 | 145.80 | 2.17 | 147.97 | 26.63 | 18 | INS10009 |
| 6 | 11 KV Post Insulator. | PM-1342/17 Dt: 16-10-2017 | Nos. | 300.00 | 254.24 | - | 254.24 | 45.76 | 18 | INS10008 |
| 7 | 11 KV String Hardware Fitting (C&T) | PM-1875/18, Dt:31-01-2019 | Sets | 104.01 | 85.14 | 3.00 | 88.14 | 15.87 | 18 | HWR00002 |
| 8 | 11 KV Polymer String insulator (C&T) | PM-1801/18, Dt: 01-11-2018. | Nos. | 138.15 | 117.08 | - | 117.08 | 21.07 | 18 | INS10003 |
| 9 | 11 KV Solid Core Insulators | PM-1878/18 Dt: 11-03-2019 | Nos. | 264.00 | 223.73 | | 223.73 | 40.27 | 18 | INS10006 |
| 10 | LT Pin Insulators | PM-1788/18, Dt: 25-10-2018. | Nos. | 22.25 | 18.86 | - | 18.86 | 3.39 | 18 | INS00001 |
| 11 | LT GI Pins | PM-1771/18, Dt: 26-09-2018. | Nos. | 32.23 | 25.31 | 2.00 | 27.31 | 4.92 | 18 | HWR00015 |
| 12 | LT Shackle Insulators | PM-1880/18, Dt: 12-03-2019. | Nos. | 24.74 | 20.97 | - | 20.97 | 3.77 | 18 | INS00002 |
| 13 | LT Shackle Hardware (LT Metal Parts) | PM-1845/18, Dt: 26-11-2018. | Nos. | 39.53 | 32.00 | 1.50 | 33.50 | 6.03 | 18 | HWR00016 |
| 14 | HT Guy Insulators | PM-1759/18, Dt: 17-09-2018. | Nos. | 53.10 | 45.00 | - | 45.00 | 8.10 | 18 | INS10005 |
| 15 | LT Guy Insulators | PM-1494/17, Dt: 27-02-2018. | Nos. | 23.60 | 20.00 | - | 20.00 | 3.60 | 18 | INS00003 |
| **SUBHEAD - III CONDUCTOR AND CABLES** | | | | | | | - | | | |
| 2 | ACSR Panther Conductor (200 sq mm). | PM-1508/17, Dt.09-03-2018. | KM | 147,854.00 | 124,400.00 | 900.00 | 125,300.00 | 22,554.00 | 18 | CDR00010 |
| 3 | 100 Sqmm AAA Conductor or 7/4.26 AAAC. | PM-1740/18, Dt:31-08-2018 | KM | 58,351.00 | 48,495.00 | 955.00 | 49,450.00 | 8,901.00 | 18 | CDR00004 |
| 4 | 55 Sqmm AAA Conductor or 7/3.15 AAAC/RABBIT | Rpt. PM-1854/18 Dt: 13-12-2018 | KM | 32,475.96 | 27,000.00 | 522.00 | 27,522.00 | 4,953.96 | 18 | CDR00003 |
| 5 | 34 Sqmm AAA Conductor or 7/2.50 AAAC/Weasel | PM-1676/18, Dt:11-07-2018 | KM | 20,769.11 | 17,208.00 | 392.94 | 17,600.94 | 3,168.17 | 18 | CDR00002 |
| **SUBHEAD - III (A) LT AERIAL BUNCHED CABLE** | | | | - | | | - | | | |
| 1 | 2 x 16+25 Sqmm Cable | Rpt PM-832/15 Dt: 27-07-2016 | KM | 28,998.69 | 23,970.16 | 605.00 | 24,575.16 | 4,423.53 | 18 | CBA00005 |

| Sl. No | Name of the Material | P.O. No. | Unit | Rupees | EX-Works | F&I | Basic Price | GST | % GS | SAP Code No. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 2 | 3 x 16+25 Sqmm Cable | PM-1701/18, Dt.04-08-2018 | KM | 54,929.00 | 45,800.00 | 750.00 | 46,550.00 | 8,379.00 | 18 | CBA00006 |
| 3 | 3 x 70 + 1x16 +1x50 Sqmm XLPE AB, Cable | PM-1714/18, Dt.10-08-2018 | KM | 211,928.00 | 179,600.00 | - | 179,600.00 | 32,328.00 | 18 | CBA00004 |
| **SUBHEAD - III (B) 33 & 11 KV XLPE POWER CABLE** | | | | - | | | - | | | |
| 1 | 33 KV 400 Sq.mm. | Rpt.&Extn.PM-1838/18, | KM | 2,761,240.00 | 2,255,033.90 | 85,000.00 | 2,340,033.90 | 421,206.10 | 18 | CBX30001 |
| 2 | 11 KV 3x300 sq.mm | Rpt.PM-1874/18, Dt.29-01-2019 | KM | 1,386,500.00 | 1,175,000.00 | - | 1,175,000.00 | 211,500.00 | 18 | CBX10008 |
| 3 | 11 KV 3x185 sq.mm. | Rpt.PM-1870/18, Dt.16-01-2019 | KM | 1,031,979.62 | 874,559.00 | - | 874,559.00 | 157,420.62 | 18 | CBX10007 |
| 4 | 11 KV 3x95 sq.mm | PM-285/11-02-2015 | KM | 521,049.85 | | | | | | CBX10005 |
| 5 | 11 KV 3x35 sq.mm | PM-4327/22-04-2015 | KM | 317,665.84 | | | | | | CBX10002 |
| **SUBHEAD - III (C)11 KV AB Cable (Aluminum)** | | | | | | | | | | |
| 1 | 3x35+35 Sqmm. | PM-3326/16-05-2011 | KM | 214,895.25 | | | | | | CBA10004 |
| 2 | 3x70+70 Sqmm. | PM-3326/16-05-2011 | Km | 299,076.25 | | | | | | CBA10005 |
| 3 | 3x120+70 Sqmm. | PM-2532/31-5-08 | KM | 4,76,000-00 | | | | | | CBA10007 |
| 4 | 3x185+70 Sqmm. | Extn.PM-1648/18, Dt.04-06-2018 | KM | 761,926.33 | 623,865.00 | 21,835.28 | 645,700.28 | 116,226.05 | 18 | CBA10006 |
| **SUBHEAD - III (D) LT XLPE POWER CABLE** | | | | | | | | | | |
| 2 | 3 ½ Cx185 sq.mm. | PM-1413/17, Dt.07-12-2017 | KM | 469,382.76 | 387,000.00 | 10,782.00 | 397,782.00 | 71,600.76 | 18 | CBX00015 |
| 3 | 3 ½ Cx95 sq.mm | PM-1142/17, Dt.11-05-2017. | KM | 227,400.60 | 191,634.42 | 1,077.95 | 192,712.37 | 34,688.23 | 18 | CBX00013 |
| 4 | 3 ½ Cx70 sq.mm | PM-1285/17, 04-09-2017 | KM | 184,660.50 | 154,751.00 | 1,740.95 | 156,491.95 | 28,168.55 | 18 | CBX00012 |
| 5 | 3 ½ Cx25 sq.mm | PM-2028/27.05.2006 | KM | 83323.82 | | | | | | CBX00010 |
| 6 | 1x120 sq mm | Extn.PM-1561/18, Dt.12-04-2018 | KM | 74,664.50 | 62,789.37 | 485.63 | 63,275.00 | 11,389.50 | 18 | CBX00004 |
| **SUBHEAD - III (E) L.T.P.CONTROL CABLE** | | | | | | | - | | | |
| 1 | 2x2.5 sq.mm Copper | PM-1755/18, Dt.12-09-2018 | KM | 44,604.00 | 37,500.00 | 300.00 | 37,800.00 | 6,804.00 | 18 | CBP00001 |
| 2 | 4x2.5 sq.mm Copper. | PM-1695/18, Dt.02-08-2018 | KM | 83,544.00 | 68,000.00 | 2,800.00 | 70,800.00 | 12,744.00 | 18 | CBP00002 |
| 3 | 10x2.5 sq.mm Copper. | PM-1713/18, Dt.10-08-2018 | KM | 180,110.48 | 145136 | 7,500.00 | 152,636.00 | 27,474.48 | 18 | CBP00006 |
| **SUBHEAD - IV : POWER TRANSFORMERS & TRANSFORMER OIL** | | | | | | | | | | |
| 1 | 5 MVA PTR | PM-1170/17, DT.06-06-2017 | Nos. | 3,078,550.84 | 2,590,002.00 | 18,939.39 | 2,608,941.39 | 469,609.45 | 18 | PTR00006 |
| 2 | 8 MVA PTR | PM-1124/17, DT.21-04-2017 | Nos. | 4,559,641.66 | 3,845,070.00 | 19,033.10 | 3,864,103.10 | 695,538.56 | 18 | PTR00008 |
| 3 | 12.5 MVA PTR | PM-1587/18, Dt.08-05-2018 | Nos. | 6,688,240.00 | 5,630,000.00 | 38,000.00 | 5,668,000.00 | 1,020,240.00 | 18 | PTR00020 |
| 4 | Transformer Oil (New) | Rpt.PM-1758/18, Dt. 17-09-2018 | KL | 65,999.76 | 52982.00 | 2950.00 | 55,932.00 | 10,067.76 | 18 | OFO10006 |
| **SUBHEAD - IV (A) : Distribution Transformers** | | | | | | | | | | |
| 1 | 3-Phase 63 KVA (CSP) (Al) | PM-1406/17, Dt.05-12-2017. | Each | 103,048.68 | 87,329.39 | - | 87,329.39 | 15,719.29 | 18 | DTC30128 |
| 2 | 3-Phase 100 KVA (CSP) (Al) | Ext.PM-1394 /17, Dt.22-11-2017. | Each | 118,670.00 | 99,449.00 | 1,118.80 | 100,567.80 | 18,102.20 | 18 | DTC30122 |
| 3 | 3-Phase 160 KVA (CSP) (Al) | PM-1519/17 Dt: 19-03-2018 | Each | 202,236.66 | 169,387.00 | 2,000.00 | 171,387.00 | 30,849.66 | 18 | DTC30125 |
| 4 | 3-ph 315 KVA DTR Al BIS EE Level-3 | PM-1615/18 Dt: 22-05-2018 | Each | 589,484.34 | 498,063.00 | 1,500.00 | 467.54 | 84.16 | 18 | DTC30127 |
| 5 | 3-ph 315 KVA DTR Al BIS EE Level-2 | PM-1520/17 Dt: 19-03-2018 | Each | 545,615.40 | 457,818.92 | 4,567.01 | 467.54 | 84.16 | 18 | DTC30123 |
| 6 | 3-ph 25 KVA DTR Al BIS EE Level-2 | PM-1726/18, Dt. 24-08-2018 | Each | 62,801.96 | 52,797.00 | 425.00 | 53,222.00 | 9,579.96 | 18 | DTC30126 |
| 7 | 3-ph 500 KVA DTR Al BIS EE Level-2 | PM-1015/16 Dt: 22-05-2018 | Each | 809,395.37 | 684,002.28 | 1,926.00 | 467.54 | 84.16 | 18 | DTC30124 |
| 8 | 1-Phase 25 KVA (CSP) (Aluminium) | Rpt. PM-1442/17, Dt.09-01-2018. | Each | 47,731.79 | 40,190.67 | 260.00 | 40,450.67 | 7,281.12 | 18 | DTC10009 |
| 9 | 3-Phase 315 KVA (CSP) Copper | PM-1270/17 Dt: 16-08-2017 | Each | 620,143.37 | 519,745.23 | 5,800.00 | 525,545.23 | 94,598.14 | 18 | DTC30123 DTC30127 |
| 10 | 3-Phase 500 KVA Copper (Conventional) | PM-1243/17 Dt; 13-07-2017 | Each | 809,267.60 | 681,054.00 | 4,766.00 | 685,820.00 | 123,447.60 | 18 | DTC30120 DTC30124 |
| **SUBHEAD - V : SWITCH CONTROL AND PROTECTIVE GEAR** | | | | | | | | | | |
| 1 | 33 KV 24V DC VCB with diff. prot. with CRPs & CTs ratio 400-200-100/1-1-1A | PM-578/15, Dt: 30-11-2015 | Nos. | 397,610.44 | 333,958.00 | 3,000.00 | 336,958.00 | 60,652.44 | 18 | BRK30031 |
| 2 | 33 KV 24V DC VCB with CRPs & CTs ratio 400-200-100/1-1A | Extn. PM-1448/17, Dt.11-01-2018. | Nos. | 385,014.58 | 318,753.00 | 7,530.54 | 326,283.54 | 58,731.04 | 18 | BRK30019 |

| Sl. No | Name of the Material | P.O. No. | Unit | Rupees | EX-Works | F&I | Basic Price | GST | % GS | SAP Code No. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 3 | 11KV, 24V DC LV VCB with diff. prot. with CRPs & CTs of Ratio 600-300/01-01-0.577A | PM-596/15, Dt: 28-12-2015 | Nos. | 330,166.75 | 275,776.00 | 4,026.33 | 279,802.33 | 50,364.42 | 18 | BRK10009 |
| 4 | 11KV 24V LV VCBs with CTs & Panel (600-300/1-1A) | PM-1504/17, Dt.07-03-2018. | Nos. | 244,999.98 | 201,627.10 | 6,000.00 | 207,627.10 | 37,372.88 | 18 | BRK10014 |
| 5 | 11KV, 24V DC feeder VCBs with CRPs & CTs of Ratio 400-200-100/1-1A | Extn. PM-1438/17, Dt.30-12-2017. | Nos. | 245,848.73 | 202,050.00 | 6,296.38 | 208,346.38 | 37,502.35 | 18 | BRK10015 |
| 6 | 33 KV PT (Single Phase) 0.5 Class | PM-1497/17, Dt.27-02-2018 | Nos. | 20,390.00 | 16,091.66 | 1,188.00 | 17,279.66 | 3,110.34 | 18 | ITR30061 |
| 7 | 33 KV PT (Single Phase) 0.2 Class | PM-661/16, Dt.20-02-2016 | Nos. | 21,004.00 | 17,400.00 | 400.00 | 17,800.00 | 3,204.00 | 18 | ITR30058 |
| 8 | 11 KV PT 3 Phase 0.2 Class | PM-1192/17, Dt.15-06-2017 | Nos. | 18,167.48 | 14,975.00 | 421.17 | 15,396.17 | 2,771.31 | 18 | ITR10065 |
| 9 | 33 KV 800 Amps AB Switch | PM-1671/18, Dt. 11-07-2018 | Nos. | 36,348.59 | 30,803.89 | - | 30,803.89 | 5,544.70 | 18 | ABS30004 |
| 10 | 11 KV 800 Amps (Conventional) AB Switch | PM-1614/18, Dt. 17-05-2018 | Nos. | 23,499.70 | 19,915.00 | - | 19,915.00 | 3,584.70 | 18 | ABS10015 |
| 11 | 11 KV 400 Amps (Conventional) SB AB Switch with post type porcelain insulators | PM-1861/18, Dt. 07-01-2019 | Nos. | 8,602.20 | 7,290.00 | - | 7,290.00 | 1,312.20 | 18 | ABS10008 |
| 12 | 11 KV 200 Amps AB Switch (Tilting) Square pipe (a) Polymer Type | PM-1184/17, Dt. 26-08-2017 | Nos. | 6,473.80 | 5,486.27 | - | 5,486.27 | 987.53 | 18 | ABS10002 |
| 13 | 30 KV 10 KA Metal Oxide Lightning Arresters (station type) | PM-1227/17, Dt: 30-06-2017 | Nos. | 3,321.37 | 2,769.72 | 45.00 | 2,814.72 | 506.65 | 18 | LAS00004 |
| 14 | 9 KV 10 KA Metal Single Phase Lightning Arrester (station type) | PM-1378/17, Dt.09-11-2017. | Nos. | 1,652.00 | 1,400.00 | - | 1,400.00 | 252.00 | 18 | LAS00002 |
| 15 | 11 KV HG Fuse set with insulators | PM-871/16, Dt.14-09-2016 | Nos. | 1,843.04 | 1,561.90 | - | 1,561.90 | 281.14 | 18 | HGF10002 |
| 16 | 24 V, 40 AH Batteries with Chargers (Conventional) | PM-1506/17, Dt.07-03-2018. | Nos. | 28,000.00 | 21,875.00 | - | 21,875.00 | 6,125.00 | 28 | BAT00074 |
| 17 | 24 V, 40 AH Chargers (Conventional) | PM-1510/17 Dt: 09-03-2018 | Nos. | 14,750.00 | 12,500.00 | - | 12,500.00 | 2,250.00 | 18 | BAT00075 |
| 18 | 12 V 42 AH SMF VRLA Batteries | PM-1511/17, Dt.09-03-2018. | Nos. | 3,712.00 | 2,900.00 | - | 2,900.00 | 812.00 | 28 | BAT00056 |
| 20 | 220V 80 AH Battery charger & DCDB | PM-1711/18, Dt.10-08-2018. | Nos. | 310,003.70 | 259,857.00 | 2,858.00 | 262,715.00 | 47,288.70 | 18 | BAT00072 |
| 21 | 220 V, 80 AH SMF Batteries | PM-1473/17, Dt.15-02-2018. | Nos. | 216,317.44 | 166,994.00 | 2,004.00 | 168,998.00 | 47,319.44 | 28 | BAT00023 |
| 22 | 11 KV 2 MVAR Capacitor banks with associated equipment | | | - | | | - | | | |
| (a) | Type A | PM-1382/17, Dt. 10-11-2017 | Nos. | 799,000.00 | 677,118.64 | - | 677,118.64 | 121,881.36 | 18 | CPT10009 |
| (b) | Type B with 40 Mtrs HT UG cable | PM-2672/15.12.08 | Nos. | 895869.07 | | | | | | |
| ( c ) | Type C (Indoor Type with HT UG cable | PM-3518, Dt.29-02-2012 | Nos. | 1,295,000.00 | | | | | | CPT10014 |
| 23 | Sectionalizers | PM-671/04-03-2016 | Nos. | 487,782.24 | | | | | | SBR00599 |
| 24 | Auto - Reclosures | PM-671/04-03-2016 | Nos. | 855,193.83 | | | | | | |
| 25 | 11 KV 3 Way RMU (Conventional) | PM-2106, Dt.27-10-2006 | Nos. | 1,71,658.33 | | | | | | |
| 26 | 11 KV 3 Way RMU (SF6) | PM-1178/17, Dt: 07-06-2017 | Nos. | 480,787.46 | 371,115.20 | 4,500.00 | 375,615.20 | 105,172.26 | 28 | BRK00001 |
| 27 | 11 KV SF6 5 Way RMU | PM-1179/17, Dt: 07-06-2017 | Nos. | 808,876.66 | 625,926.00 | 6,008.89 | 631,934.89 | 176,941.77 | 28 | BRK00002 |
| 28 | 33 KV Indoor twin feeder control panel | PM-579/15, Dt: 30-11-2015 | Nos. | 418,324.95 | 324,299.00 | 2,517.37 | 326,816.37 | 91,508.58 | 28 | BRK30014 |
| 29 | 33/11 KV Indoor switch gear (8 feeders) | PM-774/16, Dt: 26-05-2016 | Nos. | 19,188,115.44 | 14,990,715.19 | - | 14,990,715.19 | 4,197,400.25 | 28 | BRK30020 |
| 30 | 33 KV CTs of ratio 600-300/1-1A 0.2S Class of Accuracy | PM-1116/17, Dt: 17-04-2017 | Nos. | 22,566.91 | 18,400.00 | 724.50 | 19,124.50 | 3,442.41 | 18 | ITR30068 |
| 31 | 33KV 3-way RMU with VCB | PM-151/14, Dt: 09-09-2014 | Nos. | 3,349,433.79 | 2,589,062.00 | 27,683.15 | 2,616,745.15 | 732,688.64 | 28 | BRK30024 |
| **SUBHEAD - VI : METERS AND METERING EQUIPMENT** | | | | - | | | - | | | |
| **I** | **HT Metering** | | | - | | | - | | | |
| 1 | **HT Trivector Meter of class 0.2S** | PM-1294/17 Dt: 08-09-2017 | Nos. | 5,575.50 | 4,705.00 | 20.00 | 4,725.00 | 850.50 | 18 | As per annexure |
| **II** | **11 KV Metering (11 KV CT PT Sets)** | | | | | | - | | | |
| 1 | 10/5, 20/5, 40/5 (0.2S class) | PM-843/16, Dt.06-08-2016 | Nos. | 38,908.46 | 32,600.00 | 373.27 | 32,973.27 | 5,935 | 18 | ITR10047 ITR10048 ITR10049 |
| 2 | 5/5A (0.5S class) | PM-3267/10,14.02.11 | EA | 30,185.49 | | | | | | ITR10057 |
| 3 | 60/5 & 100/5 (0.2S class) | PM-843/16, Dt.06-08-2016 | Nos. | 38,908.46 | 32,600.00 | 373.27 | 32,973.27 | 5,935 | 18 | ITR10046 ITR10047 |

| Sl. No | Name of the Material | P.O. No. | Unit | Rupees | EX-Works | F&I | Basic Price | GST | % GS | SAP Code No. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 4 | 40/5A,60/5,100/5A(0.2S CLASS) | PM-843/16, Dt.06-08-2016 | Nos. | 45,253.00 | 37,750.00 | 600.00 | 38,350.00 | 6,903 | 18 | ITR10047, ITR10046 ITR10045 |
| **5** | **100/5A & 40/5A (0.2s class)** | PM-843/16, Dt.06-08-2016 | Nos. | 38,908.46 | 32,600.00 | 373.27 | 32,973.27 | 5,935 | 18 | ITR10047 |
| 6 | 10/5A (0.2s class) | PM-1666/18, Dt. 03-07-2018 | EA | 34,574.00 | 27,302.00 | 1,998.00 | 29,300.00 | 5,274 | 18 | ITR10049 |
| 7 | 20/5A (0.2s class) | PM-1748/18, Dt. 05-09-2018 | EA | 34,043.00 | 26,852.00 | 1,998.00 | 28,850.00 | 5,193 | 18 | ITR10048 |
| **III** | **LT Meters** | | | | | | | | | |
| 1 | LT Trivector meter (without CTs & Meter box) 100/5A (with DLMS) - Cat- C with IRDA port | PM-862/16, Dt.01-09-2016 | Nos. | 2,057.38 | 1,725.30 | 18.24 | 1,743.54 | 314 | 18 | MTE30042 |
| 2 | LT TVR Meters Cl. 0.5 (Including Box & 3 CTs) 200/5A for DTR Metering (for AGL DTRs) | PM-1691/18, Dt: 21-07-2018 | Nos. | 5,758.40 | 4,880.00 | | 4,880.00 | 878 | 18 | MTE30025 |
| 3 | LT TVR Meters Cl. 0.5S (Including Box & 3 CTs) 50/5A for AGL DTRs | PM-1691/18, Dt: 21-07-2018 | Nos. | 5,758.40 | 4,880.00 | | 4,880.00 | 878 | 18 | MTE30023 |
| 4 | LT TVR Meters Cl. 0.5S (Including Box & 3 CTs) 100/5A (for AGL DTRs) | PM-1691/18, Dt: 21-07-2018 | Nos. | 5,758.40 | 4,880.00 | | 4,880.00 | 878 | 18 | MTE30024 |
| **IV** | **Single phase electronic meter** | | | | | | | | | |
| 1 | 5-30A With PP box & IRDA port | PM-1371/17, Dt:07-11-2017 | Nos. | 639.01 | 528.27 | 13.26 | 541.53 | 97.48 | 18 | MTE10023 |
| 2 | 5-30A Without PP Box & IRDA port | PM- 1409/17, Dt:06-12-2017 | Nos. | 551.70 | 455.00 | 12.54 | 467.54 | 84.16 | 18 | MTE10024 |
| **V** | **Three phase Electronic meters** | | | | | | | | | |
| 3 | 10-40A With PP box & IRDA port | PM-1720/18 Dt: 20-08-2018 | Nos. | 1,847.88 | 1,525.50 | 40.50 | 1,566.00 | 281.88 | 18 | MTE30038 |
| **VI** | **Testing equipments & others** | | | - | | | - | | | |
| 1 | LT ERS Field Testing Kit (Along with accessories) | PM-1865/18, Dt: 07-01-2019 | Each | 174,067.11 | 147,000.00 | 514.50 | 147,514.50 | 26,553 | 18 | TEQ10016 |
| 2 | ERS Testing kits of accuracy 0.02 Class | PM-1656/18, Dt.18-06-2018 | Nos. | 1,216,519.22 | 1,026,330.00 | 4,618.49 | 1,030,948.49 | 185,571 | 18 | TEQ10029 |
| 3 | Semi Automatic Master Test benches of class 0.1 accuracy | PM-2627, Dt.03-10-2008 | Nos. | 2,320,506.58 | 1,959,881.00 | 6,650.00 | 1,966,531.00 | 353,976 | 18 | TEQ10030 |
| 4 | Hand held computers | PM-2802/9.10.09 | Each | 5273.83 | | | | | | OMT10026 |
| 5 | Integrated Spot Billing Machines | PM-1475/17, Dt. 21-02-2018. | Nos. | 10,500.01 | 8,898.31 | - | 8,898.31 | 1,602 | 18 | OMT10083 |
| 6 | CMRI | Rpt PM-1255/17, Dt.31-07-2017 | Nos. | 26,137.00 | 22,150.00 | 0.00 | 22,150.00 | 3,987.00 | 18 | OMT10015 |
| 7 | LT distribution box (SMC) | Ext PM-1432/17, Dt:19-12-2017 | Nos. | 7,870.60 | 6,460.00 | 210 | 6,670.00 | 1,200.60 | 18 | BXS00047 |
| **SUBHEAD - VII : VCB & PTR spares** | | | | | | | - | | | |
| 1 | IDMT (3 O/L+E/L) Numerical Relay 24V DC | PM-931/16, Dt: 16-12-2016 | Nos. | 8,150.38 | 6,800.00 | 107.10 | 6,907.10 | 1,243.28 | 18 | SBR00177 |
| 2 | IDMT Static Relay (3 O/L+1E/L) 220 V DC Relays | PM-931/16, Dt: 16-12-2016 | Nos. | 8,150.38 | 6,800.00 | 107.10 | 6,907.10 | 1,243.28 | 18 | SBR00216 |
| Rates are as per prevailing market rates | | | | | | | - | | | |
| **VIII** | **COMPUTERS/LAPTOPS** | | | | | | - | | | |
| 1 | Desktop Computers(Make HP) | PM-1855/18, Dt.24-12-2018 | Nos. | 42,900.08 | 36356 | 0 | 36,356.00 | 6,544 | 18 | CAH00011 |
| 2 | Desktop Computers(Make DELL) | Rpt PM-1429/17, Dt. 11-12-2017 | Nos. | 37,978.30 | 32,185.00 | 0 | 32,185.00 | 5,793 | 18 | CAH00011 |
| 3 | Desktop Computers(Make ACER) | Rpt PM-1428/17, Dt. 11-12-2017 | Nos. | 37,978.30 | 32,185.00 | 0 | 32,185.00 | 5,793 | 18 | CAH00011 |
| 4 | Printers Dot Matrix Printers: (80 Column) | PM-1882/18, Dt: 13-03-2019 | Nos. | 8,206.90 | 6955 | 0 | 6,955.00 | 1,252 | 18 | CAH00016 |
| 5 | Dot Matrix Printers: (132 Column) | PM-1882/18, Dt: 13-03-2019 | Nos. | 11,398.80 | 9660 | 0 | 9,660.00 | 1,739 | 18 | CAH00288 |
| 6 | Laser Jet Printer | PM-1855/18, Dt. 24-12-2018 | Nos. | 9,589.86 | 8,127.00 | 0 | 8,127.00 | 1,462.86 | 18 | CAH00004 |
| 11 | Transformer winding resistance kit | PM-2729, Dt: 23-04-2009 | Nos. | 121,540.00 | 100000 | 3000 | 103,000.00 | 18,540 | 18 | TEQ10033 |
| 12 | Transformer Turns Ratio Test Kit | PM-2729, Dt: 23-04-2009 | Nos. | 133,340.00 | 110000 | 3000 | 113,000.00 | 20,340 | 18 | TEQ10034 |
| 13 | Tan Delta and Capacitance Test Kit | PM-2729, Dt: 23-04-2009 | Nos. | 572,300.00 | 480000 | 5000 | 485,000.00 | 87,300 | 18 | TEQ10035 |
| 14 | Transformer Oil Resistivity Test kit | PM-2729, Dt: 23-04-2009 | Nos. | 357,540.00 | 300000 | 3000 | 303,000.00 | 54,540 | 18 | TEQ10036 |
| 16 | Digital Earth Clamp Testers | PM-3180, Dt:06-10-2010 | Nos. | 63,592.56 | 53,892.00 | - | 53,892.00 | 9,701 | 18 | TEQ10073 |
| 17 | High Voltage Detectors | PM-3180, Dt:06-10-2010 | Nos. | 17,211.07 | 14,585.65 | - | 14,585.65 | 2,625 | 18 | TEQ10074 |
| 18 | **11KV LV VCBs with CTs and panel (CTs ratio 600-300/1-1A)** | | | | | | - | | | |
| 19 | 9KV 10KA LAS (Line type) Porcelain | PM-1380/17, Dt.09-11-2017. | Nos. | 625.40 | 530.00 | - | 530.00 | 95.40 | 18 | LAS00001 |

| Sl. No | Name of the Material | P.O. No. | Unit | Rupees | EX-Works | F&I | Basic Price | GST | % GS | SAP Code No. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 20 | Three phase portable analyzers | PM-2833, Dt: 10-11-2009 | Nos. | 404,740.00 | 340,000.00 | 3,000.00 | 343,000.00 | 61,740.00 | 18 | TEQ10067 |
| 21 | Circuit Breaker Time interval Meter with PC download software | PM-2834, Dt: 10-11-2009 | Nos. | 88,500.00 | 75,000.00 | - | 75,000.00 | 13,500.00 | 18 | TEQ10068 |
| 22 | Dissolved Gas Analyzer(DGA) with water PPM Kit(Model-Transport-X) | PM-2835, Dt; 10-11-2009 | Nos. | 3,148,240.00 | 2,668,000.00 | - | 2,668,000.00 | 480,240.00 | 18 | TEQ10069 |
| 23 | RGGVY SMC Meter Boxes along with accessories | PM-3227, Dt: 07-01-2011 | Nos. | 345.60 | 280.00 | 12.88 | 292.88 | 52.72 | 28 | BXS00048 |
| 24 | RGGVY Polycorbonate Meter Boxes along with accessories | PM-3076, Dt: 06-09-2010 | Nos. | 282.02 | 239.00 | - | 239.00 | 43.02 | 28 | BXS00049 |
| 25 | Digital Clamp Meters | PM-3286, Dt: 06-04-2011 | Nos. | 2,745.57 | 2,270.00 | 56.75 | 2,326.75 | 418.82 | 18 | OMT10050 |
| 26 | Single phase Variacs | PM-3286, Dt: 06-04-2011 | Nos. | 15,723.50 | 13,000.00 | 325.00 | 13,325.00 | 2,398.50 | 18 | TEQ10075 |
| 27 | Electronic Insulated Testers/Meggers | PM-3286, Dt: 06-04-2011 | Nos. | 79,461.20 | 65,690.00 | 1,650.00 | 67,340.00 | 12,121.20 | 18 | TEQ10076 |
| 28 | Ratio Test Kits | PM-3287, Dt: 06-04-2011 | Nos. | 105,374.00 | 87,300.00 | 2,000.00 | 89,300.00 | 16,074.00 | 18 | TEQ10079 |
| 29 | Capacitance Meters | PM-3287, Dt: 06-04-2011 | Nos. | 30,975.00 | 24,250.00 | 2,000.00 | 26,250.00 | 4,725.00 | 18 | TEQ10080 |
| 30 | Portable Relay Test Kits | PM-3288, Dt: 06-04-2011 | Nos. | 531,000.00 | 450,000.00 | - | 450,000.00 | 81,000.00 | 18 | TEQ10077 |
| 31 | Time interval Meter | PM-3289, Dt: 06-04-2011 | Nos. | 20,650.00 | 17,500.00 | - | 17,500.00 | 3,150.00 | 18 | TEQ10078 |
| 32 | Earth Tester (0-20-200-2000Ω) | PM-3290, Dt: 06-04-2011 | Nos. | 4,743.60 | 3,920.00 | 100.00 | 4,020.00 | 723.60 | 18 | OMT10074 |
| 33 | Primary Injection Kit | PM-3291, Dt: 06-04-2011 | Nos. | 90,034.00 | 75,300.00 | 1,000.00 | 76,300.00 | 13,734.00 | 18 | TEQ10081 |
| 35 | 33KV, 3CX400 Sq.mm XLPE UG Cable Straight through heat shrinkable jointing kits | PM-1500/17, Dt.28-02-2018 | Nos. | 26,035.60 | 21,738.00 | 326.07 | 22,064.07 | 3,971.53 | 18 | SCB10113 |
| 36 | Integrated Spot Billing Machines Without GSM/GPRS Modems | PM-1475/17, Dt. 21-02-2018. | Nos. | 10,500.01 | 8,898.31 | - | 8,898.31 | 1,601.70 | 18 | OMT10083 |
| 37 | 9KV 10KA LAS (Line type) Polymer | PM-3032, Dt:03-05-2012 | Nos. | 1154.94 | | | - | | | LAS00009 |
| | **Additional Items** | | | | | | - | | | |
| 1 | 11KV 400 Amps (Conventional) DB AB Switch with Porcelain type insulators | PM-1452/17, Dt. 11-01-2018 | Nos. | 16,520.00 | 14,000.00 | - | 14,000.00 | 2,520.00 | 18 | ABS10009 |
| 2 | 11 KV 200 Amps AB Switch (Tilting) Square pipe (a) Polymer Type | PM-1728/18, Dt. 27-08-2018 | Nos. | 6,632.78 | 5,621.00 | - | 5,621.00 | 1,011.78 | 18 | ABS10002 |
| 3 | 11KV three phase HG Fuse Sets with Solid Core Insulators | PM-1812/18 Dt: 05-11-2018 | Nos. | 1,865.58 | 1,581.00 | - | 1,581.00 | 284.58 | 18 | HGF10002 |
| 4 | 33 KV Solid Core Insulators | PM-3482/11, Dt:28-12-2011 | Nos. | 1112.62 | | | | | | INS30002 |
| 5 | 11 KV Solid Core Insulators for HG Fuses | PM-1879/18 Dt: 11-03-2019 | Nos. | 184.81 | 156.62 | - | 156.62 | 28.19 | 18 | INS10007 |
| 8 | 33KV / 11KV indoor switch gear (8 feeders) | PM-187, 24.11.14 | Nos. | 16,869,455.87 | | | - | | | BRK30020 |
| 9 | 33KV Metering CT's 50/1A 0.2S Class | Rpt. PM-1505/17, Dt.07-03-2018. | Nos. | 15,420.83 | 12,711.00 | 357.50 | 13,068.50 | 2,352.33 | 18 | ITR30057 |
| 10 | 1Ph 10-60A Ele meter with PP box | PM-299/14, Dt.13-02-2015. | Nos. | 1,025.77 | 846.96 | 22.34 | 869.30 | 156.47 | 18 | MTE10007 |
| 11 | LT TVR Meters (4 CTs-0.5S)-DLMS protocol | PM-1288/17, Dt.06-09-2017 | Nos. | 5,923.60 | 4,900.00 | 120.00 | 5,020.00 | 903.60 | 18 | MTE30026 |
| 12 | LTCT Mts(4CTs-0.5S)400/5A DLMS Protocol | PM-4211/13, Dt:31-12-2013 | Nos. | 6,706.90 | 5,454.00 | 229.81 | 5,683.81 | 1,023.09 | 18 | MTE30036 |
| 13 | LT TVR 100/5A PP 0.5S (CAT-C) DLMS&IRDA | Rpt PM-1249/17, Dt. 22-07-2017 | Nos. | 9,654.42 | 7,992.00 | 189.71 | 8,181.71 | 1,472.71 | 18 | MTE30040 |
| 14 | LT TVR 50/5A 0.5S Cat-C meter w/o box | PM-862/16, Dt.01-09-2016 | Nos. | 2,057.38 | 1,725.30 | 18.24 | 1,743.54 | 313.84 | 18 | MTE30041 |
| 15 | LT TVR 200/5A 4CTs0.5S DLMS(w/oCTs&box) | PM-1288/17, Dt.06-09-2017 | Nos. | 1,905.70 | 1,600.00 | 15.00 | 1,615.00 | 290.70 | 18 | MTE30043 |
| 16 | LT TVR 200/5A 3CT 0.5S DLMS(w/o CTs&box) (for AGL DTRs) | PM-1691/18, Dt: 21-07-2018 | Nos. | 1,774.72 | 1,504.00 | | 1,504.00 | 270.72 | 18 | MTE30044 |
| 17 | LT TVR 100/5A 3CT 0.5S DLMS(w/o CTs&box) (for AGL DTRs) | PM-1691/18, Dt: 21-07-2018 | Nos. | 1,774.72 | 1,504.00 | | 1,504.00 | 270.72 | 18 | MTE30045 |
| 18 | LT TVR 50/5A 3CT 0.5S DLMS(w/o CTs&box) (for AGL DTRs) | PM-1691/18, Dt: 21-07-2018 | Nos. | 1,774.72 | 1,504.00 | | 1,504.00 | 270.72 | 18 | MTE30046 |

**FABRICATION MATERIAL**

| Name of the Material | Total Cost including GST (Rs.) |
|---|---|
| 33KV Back Clamp | 210 |
| 33KV Top Clamp | 398 |
| 33KV Stay sets | 1367 |
| 33KV Stay | 810 |
| 33KV Xarm | 1564 |
| 11KV DP structure Bracing set | 7450 |
| 33KV DP structure Bracing set | 9333 |
| 33KV DP structure Double Bracing set | 13154 |
| 11KV top cleat with clamp | 414 |
| 11KV Back Clamp | 156 |
| LT Top clamp | 221 |
| 11KV-LT Stay sets | 1119 |
| sph mounting arrangements | 2056 |
| 1-phase X arm | 209 |
| 11KV 'V' cross arm | 674 |
| LT 3-Ph cross arm | 396 |
| LT Back Clamp | 83 |
| Stay clamp | 113 |
| 1-Ph arm | 209 |

**COST - DATA ABSTRACT**

| Sl. No | Particulars of items | Wind. Pr. In Kg /m2 | W.Load in Kg. | Type of pole being used | Span in Mtrs. | No. of poles/ KM | Size of conductor | Total Cost in Rs. |
|---|---|---|---|---|---|---|---|---|
| 1 | 33 KV Line | 75 | 365 | 11 M RS Joist | 50 | 21 | 100 sqmm AAAC | 1208638 |
| 2 | 33 KV DC Line | 75 | 365 | 12 M RS Joist | 50 | 21 | 100 sqmm AAAC | 1632935 |
| 3 | 33 KV Line | 75 | 365 | 11 M PSCC | 60 | 17 | 100 sqmm AAAC | 780105 |
| 4 | 33 KV DC Line | 75 | 365 | 11 M PSCC | 40 | 26 | 100 sqmm AAAC | 1338135 |
| 5 | 33 KV Line | 75 | 280 | 9.1 Mtr.PSCC | 80 | 14 | 100 sqmm AAAC | 570500 |
| 6 | 33 KV Line | 75 | 280 | 9.1 Mtr.PSCC | 65 | 16 | 100 sqmm AAAC | 584200 |
| 7 | 11 KV line | 75 | 140 | 9.1 Mtr.PSCC | 60 | 18 | 55 sqmm AAAC | 455051 |
| 8 | 11 KV line | 75 | 140 | 9.1 Mtr.PSCC | 60 | 18 | 34 sqmm AAAC | 407139 |
| 9 | 11 KV line | 75 | 140 | 8 Mtr.PSCC | 60 | 18 | 55 sqmm AAAC | 407074 |
| 10 | 11 KV line | 75 | 140 | 8 Mtr.PSCC | 60 | 18 | 34 sqmm AAAC | 360663 |
| 11 | 11 KV line | 75 | 140 | RSJoist Poles | 50 | 21 | 55 sqmm AAAC | 672777 |
| 12 | 6.3 KV line | 75 | 140 | 8 Mtr.PSCC | 90 | 11 | 34 sqmm AAAC | 161660 |
| 13 | LT 3 Ph.5 Wire line (Horizontal) | 75 | 140 | 8 Mtr.PSCC | 65 | 16 | 3x55+2x34sqmmAAA | 372677 |
| 14 | LT 3 Ph.5 Wire line (Horizontal) | 75 | 140 | 8 Mtr.PSCC | 45 | 23 | 3x55+2x34sqmmAAA | 413690 |
| 15 | LT 3 Ph.5 Wire line (Horizontal) | 75 | 140 | 8 Mtr.PSCC | 65 | 16 | 5x34sqmm AAA | 330918 |
| 16 | LT 3 Ph.4 Wire line (Horizontal) | 75 | 140 | 8 Mtr.PSCC | 65 | 16 | 3x55+1x34sqmmAAA | 338734 |
| 17 | LT 3 Ph.4 Wire line (Horizontal) | 75 | 140 | 8 Mtr.PSCC | 65 | 16 | 4x34sqmm AAA | 297182 |
| 18 | LT 1 Ph. 3 Wire line (Horizontal) | 75 | 140 | 8 Mtr.PSCC | 65 | 16 | 3x34 sqmm AAA | 252011 |
| 19 | LT 1 Ph. 2 Wire line (Horizontal) | 75 | 140 | 8 Mtr.PSCC | 65 | 16 | 2x34 sqmm AAA | 217017 |
| 20 | L.T.AB Cable | 75 | 140 | 8 Mtr.PSCC | 65 | 16 | 3x16+25sqmm | 234571 |
| 21 | L.T.AB Cable | 75 | 140 | 8 Mtr.PSCC | 65 | 16 | 2x16+25sqmm | 200966 |
| 22 | Convertion of 1Ph 2 W/L to 3 Ph 4 W/L | 75 | 140 | 8 Mtr.PSCC | 65 | 16 | 2x55xqmm | 111781 |
| 22 | Erection of 100 KVA CSP CRGO Distribution Transformer | | | | | | | 242414 |
| 23 | Erection of 63 KVA CSP Distribution Transformer | | | | | | | 224295 |
| 24 | Erection of 63 KVA CSP CRGO core Distribution Transformer on plinth | | | | | | | 189117 |
| 25 | Erection of 63 KVA CSP CRGO core Distribution Transformer on structure | | | | | | | 190222 |
| 26 | Erection of 100 KVA CSP CRGO core Distribution Transformer on column plinth | | | | | | | 230222 |
| 27 | Erection of 25 KVA, 3- Phase CRGO core Distribution Transformer | | | | | | | 125775 |
| 28 | Erection of 25 KVA, 3-Phase, 11 KV/433 V /250 V CRGO Conventional Transformer | | | | | | | 122619 |
| 29 | Erection of 25 KVA, Single Phase, 6.3 KV/0-240 V C.S.P. CRGO Transformer | | | | | | | 71700 |
| 30 | Erection of 15 KVA Single Phase 6.3 KV/0-240 V CSP CRGO Distribution Transformer | | | | | | | 46240 |
| 31 | Release of poly phase Agl. Service erected on support | | | | | | | 6399 |
| 32 | Release of 1 ph Domestic & non-domestic service (Electronic meter) | | | | | | | 2184 |
| 33 | Release of 3 ph. Domestic & non-domestic service (Electronic meter) | | | | | | | 5695 |

| | | |
|---|---|---|
| 34 | Release of poly phase Indl.service below 20 HP (Electronic meter) | 6349 |
| 35 | Release of Industrial service above 20H.P upto 50 HP with LT Trivector meter | 11039 |
| 36 | Release of Industrial service above 50 HP and upto 75 HP (HT metering) | 204408 |
| 37 | Release of Street light service (1 -ph electonic meter) | 2679 |
| 38 | Erection of L.T. C.T. Operated Electonic trivector meter on LV side of DTR | 11259 |
| 39 | Erection of 33/11 KV Sub-station with2 x8 MVA power transformer & 6 Nos. 11 KV feeders ( without 11 KV 2 MVAR capacitor Bank) | 26400000 |
| 40 | Erection of 33/11 KV Sub-station with2 x8 MVA power transformer & 6 Nos. 11 KV feeders ( with 11 KV 2 MVAR capacitor Bank) | 27800000 |
| 41 | Erection of 33/11 KV Sub-station(Indoor substation) with2x8 MVA power transformer & 6 Nos. 11 KV feeders ( without 11 KV 2 MVAR capacitor Bank) | 46172951 |
| 42 | Erection of 33/11 KV Sub-station with 9.1 mts PSCC Poles and 2x5 MVA power transformer & 5 Nos. 11 KV feeders ( without 11 KV 2 MVAR capacitor Bank) | 16108000 |
| 43 | Erection of 33/11 KV Sub-station with 9.1 mts PSCC Poles and 2x5 MVA power transformer & 5 Nos. 11 KV feeders ( with 11 KV 2 MVAR capacitor Bank) | 17200000 |
| 44 | Erection of 33/11 KV Sub-station with 9.1 mts PSCC Poles and 1 No.power transformer & 3 Nos. 11 KV feeders (with 11 KV 2 MVAR capacitor Bank) | 12030000 |
| 45 | 11 KV Bay extention in existing 33/11 KV Sub-stations with girder poles | 93528 |
| 46 | 11 KV Bay extention in existing 33/11 KV Sub-stations with PSCC poles | 63626 |
| 47 | 33KV Bay Extension at 33/11 kV Sub-station | 118000 |
| 48 | 33KV Bay Extension at 132/33KV SS | 839747 |
| 49 | Erection of 11 KV VCB at 33/11 kV Sub-station | 332280 |
| 50 | Erection of 33KV VCB at 132/33KV SS | 1260786 |
| 51 | Erection of 2MVAR Capacitor Bank | 1173062 |
| 52 | Enhancement of PTR Capacity | 3920169 |
| 53 | Laying of 11 KV, 3 core 300 Sq.mm UG Cable | 2400571 |
| 54 | Laying of 33 KV, 3 core 400 Sq.mm UG Cable | 3459025 |
| 55 | Erection of M+3 tower | 150494 |
| 56 | Erection of K+3 tower | 91912 |
| 57 | Erection of L+3 tower | 123010 |
| 58 | Erection of additional 5 MVA PTR in existing 33/11 KV Sub-station | 3787100 |
| 59 | Extention of 3Mtrs for K+3 Towers as per ASCI Standard | 12968 |
| 60 | Extention of 3Mtrs for L+3 Towers as per ASCI Standard | 20472 |
| 61 | Extention of 3Mtrs for M+3 Towers as per ASCI Standard | 25648 |
| 62 | REC construction standard Drawings (19 Nos.) | |

**Cost data per Km of 33 KV Line with 100 Sq.mm AAA Conductor over 11 Mts.**
**RS Joist box type at 50 Mts. Span, 100 Kg/sq.Mt wind pressure, working load 365 Kgs.**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | RS Joist box type11mtrs Pole with 175x85mm of 450Kgs | 21 | 24,692 | Each | 518,532 |
| 2 | 1.53 M Channel / '**V**' Cross Arm (100x50mm) | 21 | 1,564 | Each | 32,844 |
| 3 | Top Clamp with cleat(75x8mm) | 20 | 398 | Each | 7,960 |
| 4 | Back Clamp | 20 | 210 | Each | 4,200 |
| 5 | Stay Set complete | 12 | 1,367 | Each | 16,404 |
| 6 | Bracing Set with double cross arm | 1 | 9,333 | Set | 9,333 |
| 7 | 100 Sq.mm AAA Conductor | 3.06 | 58,351 | K.M. | 178,554 |
| 8 | 33KV Polymer Pin Insulators With GI Pins | 63 | 538 | Each | 33,912 |
| 9 | Strain Insulators set ( 3x 11 KV B&S Insulator with 33 KV Hard ware fitting)) | 12 | 282 | Set | 3,389 |
| 10 | Concreting of Pole, Stay sets & Base concreting | L.S | | L.S | 103,327 |
| 11 | Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc | L.S | | L.S | 9036 |
| | **Total Cost of Material** | | | | **917,491** |

| | | |
|---|---|---|
| 3% storage & handling charges on items (1) to (9) | | 24,154 |
| 3% Contingencies on Materials | | 27,525 |
| Labour & Transport | | 125,185 |
| GST at 18 % on L&T | | 22,533 |
| 10% Estt. & Genl. Charges on Materials | | 91,749 |
| | **Total** | 1,208,638 |

**Cost data per Km of 33 KV DC Line with 100 Sq.mm AAA Conductor over 12 Mts.**
**RS Joist box type at 50 Mts. Span, 100 Kg/sq.Mt wind pressure, working load 365 Kgs.**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | RS Joist box type12mtrs Pole with 150 x 150 mm of 500Kgs | 21 | 27,435 | Each | 576,135 |
| 2 | 1.53 M Channel / '**V**' Cross Arm | 60 | 1,564 | Each | 93,840 |
| 3 | Back Clamp | 60 | 210 | Each | 12,600 |
| 4 | Stay Set complete | 12 | 1,367 | Each | 16,404 |
| 5 | Double Bracing Set with double cross arm | 1 | 13,154 | Set | 13,154 |
| 6 | 100 Sq.mm AAA Conductor | 6.12 | 58,351 | K.M. | 357,108 |
| 7 | 33KV Polymer Pin Insulators With GI Pins | 108 | 538 | Each | 58,136 |
| 8 | Strain Insulators set ( 3x 11 KV B&S Insulator with 33 KV Hard ware fitting) | 24 | 282 | Set | 6,778 |
| 9 | Concreting of Pole, Stay sets & Base concreting | L.S | | L.S | 104,383 |
| 10 | Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc | L.S | | L.S | 9,036 |
| | **Total Cost of Material** | | | | **1,247,574** |

| | | |
|---|---|---|
| 3% storage & handling charges on items (1) to (8) | | 34,025 |
| 3% Contingencies on Materials | | 37,427 |
| Labour & Transport | | 160,298 |
| GST at 18 % on L&T | | 28,854 |
| 10% Estt. & Genl. Charges on Materials | | 124,757 |
| | **Total** | **1,632,935** |

**REC Construction Standard No.M2/1979 (R-1989)**

**Cost data per Km of 33 KV Line (SC) with 100 Sq.mm AAA Conductor over 11 Mts. PSCC Poles at 60 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 365 Kgs.**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 11 M PSCC Pole | 17 | 5428 | Each | 92,276 |
| 2 | 1.53 M Channel / '**V**' Cross Arm | 17 | 1564 | Each | 26,588 |
| 3 | Top Clamp with cleat | 16 | 398 | Each | 6,368 |
| 4 | Back Clamp | 17 | 210 | Each | 3,570 |
| 5 | Stay Set complete | 12 | 1367 | Each | 16,404 |
| 6 | Bracing Set with double cross arm | 1 | 9333 | Set | 9,333 |
| 7 | 100 Sq.mm AAA Conductor | 3.06 | 58351 | K.M. | 178,554 |
| 8 | 33KV Polymer Pin Insulators With GI Pins | 48 | 538 | Each | 25,838 |
| 9 | Strain Insulators set ( 3x 11 KV B&S Insulator with 33 KV Hard ware fitting) | 12 | 282 | Set | 3,389 |
| 10 | Concreting of Pole, Stay sets & Base concreting | L.S | | L.S | 119638 |
| 11 | Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc | L.S | | L.S | 6050 |
| | **Total Cost of the Material** | | | | **488,008** |

| | | |
|---|---|---|
| 3% storage & handling charges on items (1) to (9) | | 10,870 |
| 3% Contingencies on Materials | | 14,640 |
| Labour & Transport | | 184,564 |
| GST at 18 % on L&T | | 33,222 |
| 10% Estt. & Genl. Charges on Materials | | 48,801 |
| | **Total** | **780,105** |
| **Stays Pits (0.76x0.76x1.5) Excavation** | | |
| | **Or Say** | **780,105** |

**REC Construction Standard No.M2/1979 (R-1989)**

**Cost data per Km of 33 KV Line (DC) with 100 Sq.mm AAA Conductor over 11 Mts. PSCC Poles at 40 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 365 Kgs.**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 11 M PSCC Pole | 26 | 5428 | Each | 141,128 |
| 2 | 1.53 M Channel / '**V**' Cross Arm | 72 | 1564 | Each | 112,608 |
| 3 | Back Clamp | 75 | 210 | Each | 15,750 |
| 4 | Stay Set complete | 12 | 1367 | Each | 16,404 |
| 5 | Double Bracing Set with double cross arm | 1 | 13154 | Set | 13,154 |
| 6 | 100 Sq.mm AAA Conductor | 6.12 | 58351 | K.M. | 357,108 |
| 7 | 33KV Polymer Pin Insulators With GI Pins | 156 | 538 | Each | 83,974 |
| 8 | Strain Insulators set ( 3x 11 KV B&S Insulator with 33 KV Hard ware fitting) | 24 | 282 | Set | 6,778 |
| 9 | Concreting of Pole, Stay sets & Base concreting | L.S | | L.S | 143,875 |
| 10 | Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc | L.S | | L.S | 6,655 |
| | **Total Cost of the Material** | | | | **897,434** |

| | | |
|---|---|---|
| 3% storage & handling charges on items (1) to (8) | | 22,407 |
| 3% Contingencies on Materials | | 26,923 |
| Labour & Transport | | 255,617 |
| GST at 18 % on L&T | | 46,011 |
| 10% Estt. & Genl. Charges on Materials | | 89,743 |
| | **Total** | **1,338,135** |

**REC Construction Standard No.M-2/1979 (R-1989)**

**Cost data per Km of 33 KV Line with 100 Sq.mm AAA Conductor over 9.1 Mts. PSCC Poles at 80 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 280 Kgs.**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 9.1 M PSCC Pole | 14 | 3,186 | Each | 44,604 |
| 2 | 1.53 M Channel / '**V**' Cross Arm | 14 | 1,564 | Each | 21,896 |
| 3 | Top Clamp with cleat | 12 | 398 | Each | 4,776 |
| 4 | Back Clamp | 13 | 210 | Each | 2,730 |
| 5 | Stay Set complete | 12 | 1,367 | Each | 16,404 |
| 6 | Bracing Set with double cross arm | 1 | 9,333 | Set | 9,333 |
| 7 | 100 Sq.mm AAA Conductor | 3.06 | 58,351 | K.M. | 178,554 |
| 8 | 33KV Polymer Pin Insulators With GI Pins | 39 | 538 | Each | 20,993 |
| 9 | Strain Insulators set ( 3x 11 KV B&S Insulator with 33 KV Hard ware fitting) | 12 | 282 | Set | 3,389 |
| 10 | Concreting of Pole, Stay sets & Base concreting | L.S | | L.S | 88,897 |
| 11 | Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc | L.S | | L.S | 5,500 |
| | **Total Cost of Material** | | | | **397,076** |

| | | |
|---|---|---|
| 3% storage & handling charges on items (1) to (9) | | 9,080 |
| 3% Contingencies on Materials | | 11,912 |
| Labour & Transport | | 95,539 |
| GST at 18 % on L&T | | 17,197 |
| 10% Estt. & Genl. Charges on Materials | | 39,708 |
| | **Total** | **570,512** |
| | **Or Say** | **570,500** |

**REC Construction Standard No.M-2/1979 (R-1989)**

**Cost data per Km of 33 KV Line with 100 Sq.mm AAA Conductor over 9.1 Mts. PSCC Poles at 65 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 280 Kgs.**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 9.1 M PSCC Pole | 16 | 3,186 | Each | 50,976 |
| 2 | 1.53 M Channel / '**V**' Cross Arm | 16 | 1,564 | Each | 25,024 |
| 3 | Top Clamp with cleat | 15 | 398 | Each | 5,970 |
| 4 | Back Clamp | 15 | 210 | Each | 3,150 |
| 5 | Stay Set complete | 10 | 1,367 | Each | 13,670 |
| 6 | Bracing Set with double cross arm | 1 | 9,333 | Set | 9,333 |
| 7 | 100 Sq.mm AAA Conductor | 3.06 | 58,351 | K.M. | 178,554 |
| 8 | 33KV Polymer Pin Insulators With GI Pins | 45 | 538 | Each | 24,223 |
| 9 | Strain Insulators set ( 3x 11 KV B&S Insulator with 33 KV Hard ware fitting) | 12 | 282 | Set | 3,389 |
| 10 | Concreting of Pole, Stay sets & Base concreting | L.S | | L.S | 83,545 |
| 11 | Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc | L.S | | L.S | 5,500 |
| | **Total Cost of Material** | | | | **403,334** |

| | |
|---|---|
| 3% storage & handling charges on items (1) to (9) | 9,429 |
| 3% Contingencies on Materials | 12,100 |
| Labour & Transport | 100,849 |
| GST at 18 % on L&T | 18,153 |
| 10% Estt. & Genl. Charges on Materials | 40,333 |
| **Total** | **584,198** |

**REC Construction Standard No. A-34/1993**

**Cost data per Km of 11 KV Line with 55 Sq.mm AAA Conductor over 9.1 Mts. PSCC Poles at 60 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 140 Kgs**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 9.1 M PSCC Pole | 18 | 3,186 | Each | 57,348 |
| 2 | 1.07 M Channel / '**V**' Cross Arm | 18 | 674 | Each | 12,132 |
| 3 | Top Clamp with cleat | 16 | 414 | Each | 6,624 |
| 4 | Back Clamp | 17 | 156 | Each | 2,652 |
| 5 | Stay Set complete | 10 | 1,119 | Each | 11,190 |
| 6 | Bracing Set with double cross arm | 1 | 7,450 | Set | 7,450 |
| 7 | 55 Sq.mm AAA Conductor | 3.06 | 32,476 | K.M. | 99,377 |
| 8 | 11 KV Pin Insulator with Pin | 54 | 175 | Each | 9,429 |
| 9 | Strain Insulator with metal parts | 12 | 138 | Each | 1,658 |
| 10 | Concreting of Pole, Stay sets & Base concreting | | | L.S | 78,383 |
| 11 | Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc | | | L.S | 4,000 |
| | **Total Cost of Material** | | | | **290,243** |

| | |
|---|---|
| 3% storage & handling charges on items (1) to (9) | 6,236 |
| 3% Contingencies on Materials | 8,707 |
| Labour & Transport | 102,408 |
| GST at 18 % on L&T | 18,433 |
| 10% Estt. & Genl. Charges on Materials | 29,024 |
| **Total** | **455,051** |

**Cost data per Km of 11 KV Line with 34 Sq.mm AAA Conductor over 9.1 Mts. PSCC Poles at 60 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 140 Kgs.**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 9.1 M PSCC Pole | 18 | 3,186 | Each | 57,348 |
| 2 | 1.07 M Channel / '**V**' Cross Arm | 18 | 674 | Each | 12,132 |
| 3 | Top Clamp with cleat | 16 | 414 | Each | 6,624 |
| 4 | Back Clamp | 17 | 156 | Each | 2,652 |
| 5 | Stay Set complete | 10 | 1,119 | Each | 11,190 |
| 6 | Bracing Set with double cross arm | 1 | 7,450 | Set | 7,450 |
| 7 | 34 Sq.mm AAA Conductor | 3.06 | 20,769 | K.M. | 63,553 |
| 8 | 11 KV Pin Insulator with Pin | 54 | 175 | Each | 9,429 |
| 9 | Strain Insulator with metal parts | 12 | 138 | Each | 1,658 |
| 10 | Concreting of Pole, Stay sets & Base concreting | | | L.S | 78,383 |
| 11 | Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc | | | L.S | 4,000 |
| | **Total Cost of Material** | | | | **254,419** |

| | |
|---|---|
| 3% storage & handling charges on items (1) to (9) | 5,161 |
| 3% Contingencies on Materials | 7,633 |
| Labour & Transport | 97,020 |
| GST at 18 % on L&T | 17,464 |
| 10% Estt. & Genl. Charges on Materials | 25,442 |
| **Total** | **407,139** |

**REC Construction Standard No. A-34/1993**

**Cost data per Km of 11 KV Line with 55 Sq.mm AAA Conductor over 8 Mts.**

**PSCC Poles at 60 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 140 Kgs.**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 8 M PSCC Pole | 18 | 1,487 | Each | 26,762 |
| 2 | 1.07 M Channel / '**V**' Cross Arm | 18 | 674 | Each | 12,132 |
| 3 | Top Clamp with cleat | 16 | 414 | Each | 6,624 |
| 4 | Back Clamp | 17 | 156 | Each | 2,652 |
| 5 | Stay Set complete | 10 | 1,119 | Each | 11,190 |
| 6 | Bracing Set with double cross arm | 1 | 7,450 | Set | 7,450 |
| 7 | 55 Sq.mm AAA Conductor | 3.06 | 32,476 | K.M. | 99,377 |
| 8 | 11 KV Pin Insulator with Pin | 54 | 175 | Each | 9,429 |
| 9 | Strain Insulator with metal parts | 12 | 138 | Each | 1,658 |
| 10 | Concreting of Pole, Stay sets & Base concreting | | | L.S | 78,383 |
| 11 | Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc | | | L.S | 4,000 |
| | **Total Cost of Material** | | | | **259,657** |

| | |
|---|---|
| 3% storage & handling charges on items (1) to (9) | 5,318 |
| 3% Contingencies on Materials | 7,790 |
| Labour & Transport | 91,816 |
| GST at 18 % on L&T | 16,527 |
| 10% Estt. & Genl. Charges on Materials | 25,966 |
| **Total** | **407,074** |

**REC Construction Standard No. A-34/1993**

**Cost data per Km of 11 KV Line with 34 Sq.mm AAA Conductor over 8 Mts. PSCC Poles at 60 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 140 Kgs.**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 8 M PSCC Pole | 18 | 1,487 | Each | 26,762 |
| 2 | 1.07 M Channel / '**V**' Cross Arm | 18 | 674 | Each | 12,132 |
| 3 | Top Clamp with cleat | 16 | 414 | Each | 6,624 |
| 4 | Back Clamp | 17 | 156 | Each | 2,652 |
| 5 | Stay Set complete | 10 | 1,119 | Each | 11,190 |
| 6 | Bracing Set with double cross arm | 1 | 7,450 | Set | 7,450 |
| 7 | 34 Sq.mm AAA Conductor | 3.06 | 20,769 | K.M. | 63,553 |
| 8 | 11 KV Pin Insulator with Pin | 54 | 175 | Each | 9,429 |
| 9 | Strain Insulator with metal parts | 12 | 138 | Each | 1,658 |
| 10 | Concreting of Pole, Stay sets & Base concreting | | | L.S | 78,383 |
| 11 | Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc | | | L.S | 4,000 |
| | **Total Cost of Material** | | | | **223,833** |

| | |
|---|---|
| 3% storage & handling charges on items (1) to (9) | 4,244 |
| 3% Contingencies on Materials | 6,715 |
| Labour & Transport | 87,702 |
| GST at 18 % on L&T | 15,786 |
| 10% Estt. & Genl. Charges on Materials | 22,383 |
| **Total** | **360,663** |

**REC Construction Standard No. A-34/1993**

**Cost data per Km of 11 KV Line with 55 Sq.mm AAA Conductor over RS Joist Poles at 50 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 140 Kgs.**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | RSJoist Poles (175x85mm) | 21 | 10,974 | Each | 230,454 |
| 2 | 1.07 M Channel / '**V**' Cross Arm | 21 | 674 | Each | 14,154 |
| 3 | Top Clamp with cleat | 20 | 414 | Each | 8,280 |
| 4 | Back Clamp | 21 | 156 | Each | 3,276 |
| 5 | Stay Set complete | 10 | 1,119 | Each | 11,190 |
| 6 | Bracing Set with double cross arm | 1 | 7,450 | Set | 7,450 |
| 7 | 55 Sq.mm AAA Conductor | 3.06 | 32,476 | K.M. | 99,376 |
| 8 | 11 KV Pin Insulator with Pin | 54 | 175 | Each | 9,429 |
| 9 | Strain Insulator with metal parts | 12 | 138 | Each | 1,658 |
| 10 | Concreting of Pole, Stay sets & Base concreting | | | L.S | 88,707 |
| 11 | Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc | | | L.S | 4,000 |
| | **Total Cost of Material** | | | | **477,974** |

| | |
|---|---|
| 3% storage & handling charges on items (1) to (9) | 11,558 |
| 3% Contingencies on Materials | 14,339 |
| Labour & Transport | 102,634 |
| GST at 18 % on L&T | 18,474 |
| 10% Estt. & Genl. Charges on Materials | 47,797 |
| **Total** | **672,777** |

**REC Construction Standard No. A-17/1987**

**Cost data per Km of 6.3 KV Sph Line with 34 Sq.mm AAA Conductor over 8 Mts. PSCC Poles at 90 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 140 Kgs.**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 8 M PSCC Pole | 11 | 1,487 | Each | 16,355 |
| 2 | Top Clamp with cleat | 11 | 414 | Each | 4,554 |
| 3 | Back Clamp | 10 | 156 | Each | 1,560 |
| 4 | Stay Set complete | 4 | 1,119 | Each | 4,476 |
| 5 | 34 Sq.mm AAA Conductor | 1.02 | 20,769 | K.M. | 21,184 |
| 6 | 11 KV Pin Insulator with Pin | 10 | 175 | Each | 1,746 |
| 7 | Strain Insulator with metal parts | 4 | 138 | Each | 553 |
| 8 | Concreting of Pole, Stay sets & Base concreting | | | L.S | 31,353 |
| 9 | Misc. Items like coil earthing, danger board, bolts & nuts, etc | | | L.S | 2,100 |
| | **Total Cost of Material** | | | | **83,881** |

| | |
|---|---|
| 3% storage & handling charges on items (1) to (7) | 1,513 |
| 3% Contingencies on Materials | 2,516 |
| Labour & Transport | 55,391 |
| GST at 18 % on L&T | 9,970 |
| 10% Estt. & Genl. Charges on Materials | 8,388 |
| **Total** | **161,660** |

**REC Construction Standard No. B-8/1984**
**Cost data per Km of LT 3 Ph 5 Wire line (Horizontal formation) with**
**3 x 55 Sq. mm + 2 x 34 Sq. mm AAAC over 8 Mts.**
**PSCC Poles at 65 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 140 Kgs.**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 8 M PSCC Pole | 16 | 1,487 | Each | 23,789 |
| 2 | LT 3 Phase cross arms | 18 | 396 | Each | 7,128 |
| 3 | LT top fitting | 18 | 221 | Each | 3,978 |
| 4 | Back Clamp | 18 | 83 | Each | 1,494 |
| 5 | Stay Set complete | 6 | 1,119 | Each | 6,714 |
| 6 | 55 Sq.mm AAA Conductor | 3.06 | 32,476 | KM | 99,377 |
| 7 | 34 Sq.mm AAA Conductor | 2.04 | 20,769 | KM | 42,369 |
| 8 | Shackle Insulator with metal parts | 16 | 64 | Each | 1,024 |
| 9 | LT pin insulator with pin | 56 | 54 | Each | 3,024 |
| 10 | C.I. Knob | 16 | 10 | Each | 160 |
| 11 | Concreting of Pole, Stay sets & Base concreting | | | L.S | 47,030 |
| 12 | Misc. Items like coil earthing, danger board, bolts & nuts, etc | | | L.S | 4000 |
| | **Total Cost of Material** | | | | **240,087** |

| | |
|---|---|
| 3% storage & handling charges on items (1) to (10) | 5,672 |
| 3% Contingencies on Materials | 7,203 |
| Labour & Transport | 81,107 |
| GST at 18 % on L&T | 14,599 |
| 10% Estt. & Genl. Charges on Materials | 24,009 |
| **Total** | **372,677** |

**REC Construction Standard No. B-8/1984**

**Cost data per Km of LT 3 Ph 5 Wire line (Horizontal formation) with**

**3 x 55 Sq. mm + 2 x 34 Sq. mm AAAC over 8 Mts.**

**PSCC Poles at 45 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 140 Kgs.**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 8 M PSCC Pole | 23 | 1,487 | Each | 34,196 |
| 2 | LT 3 Phase cross arms | 24 | 396 | Each | 9,504 |
| 3 | LT top fitting | 24 | 221 | Each | 5,304 |
| 4 | Back Clamp | 24 | 83 | Each | 1,992 |
| 5 | Stay Set complete | 6 | 1,119 | Each | 6,714 |
| 6 | 55 Sq.mm AAA Conductor | 3.06 | 32,476 | KM | 99,377 |
| 7 | 34 Sq.mm AAA Conductor | 2.04 | 20,769 | KM | 42,369 |
| 8 | Shackle Insulator with metal parts | 16 | 64 | Each | 1,024 |
| 9 | LT pin insulator with pin | 84 | 54 | Each | 4,536 |
| 10 | C.I. Knob | 23 | 10 | Each | 230 |
| 11 | Concreting of Pole, Stay sets & Base concreting | | | L.S | 57,354 |
| 12 | Misc. Items like coil earthing, danger board, bolts & nuts, etc | | | L.S | 4,000 |
| | **Total Cost of Material** | | | | **266,600** |

| | |
|---|---|
| 3% storage & handling charges on items (1) to (10) | 6,157 |
| 3% Contingencies on Materials | 7,998 |
| Labour & Transport | 90,064 |
| GST at 18 % on L&T | 16,212 |
| 10% Estt. & Genl. Charges on Materials | 26,660 |
| **Total** | **413,690** |

**REC Construction Standard No. B-8/1984**

**Cost data per Km of LT 3 Ph 5 Wire line (Horizontal formation) with**

**5 x 34 Sqmm AAAC over 8 Mts.**

**PSCC Poles at 65 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 140 Kgs**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 8 M PSCC Pole | 16 | 1,487 | Each | 23,789 |
| 2 | LT 3 Phase cross arms | 18 | 396 | Each | 7,128 |
| 3 | LT top fitting | 18 | 221 | Each | 3,978 |
| 4 | Back Clamp | 18 | 83 | Each | 1,494 |
| 5 | Stay Set complete | 6 | 1,119 | Each | 6,714 |
| 6 | 34 Sq.mm AAA Conductor | 5.1 | 20,769 | KM | 105,922 |
| 7 | Shackle Insulator with metal parts | 16 | 64 | K.M. | 1,024 |
| 8 | LT pin insulator with pin | 56 | 54 | Each | 3,024 |
| 9 | C.I. Knob | 16 | 10 | Each | 160 |
| 10 | Concreting of Pole, Stay sets & Base concreting | | | L.S | 47,030 |
| 11 | Misc. Items like coil earthing, danger board, bolts & nuts, etc | | | L.S | 4,000 |
| | **Total Cost of Material** | | | | **204,263** |

| | |
|---|---|
| 3% storage & handling charges on items (1) to (9) | 4,597 |
| 3% Contingencies on Materials | 6,128 |
| Labour & Transport | 80,936 |
| GST at 18 % on L&T | 14,568 |
| 10% Estt. & Genl. Charges on Materials | 20,426 |
| **Total** | **330,918** |

**REC Construction Standard No. B-8/1984**
**Cost data per Km of LT 3 Ph 4 Wire line (Horizontal formation) with**
**3 x 55 Sqmm + 1 x 34 mm AAAC over 8 Mts.**
**PSCC Poles at 65 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 140 Kgs.**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 8 M PSCC Pole | 16 | 1,487 | Each | 23,789 |
| 2 | LT 3 Phase cross arms | 18 | 396 | Each | 7,128 |
| 3 | Back Clamp | 18 | 83 | Each | 1,494 |
| 4 | Stay Set complete | 6 | 1,119 | Each | 6,714 |
| 5 | 55 Sq.mm AAA Conductor | 3.06 | 32,476 | K.M. | 99,376 |
| 6 | 34 Sq.mm AAA Conductor | 1.02 | 20,769 | K.M. | 21,184 |
| 7 | Shackle Insulator with metal parts | 12 | 64 | Each | 768 |
| 8 | LT pin insulator with pin | 42 | 54 | Each | 2,268 |
| 9 | C.I. Knob | 16 | 10 | Each | 160 |
| 10 | Concreting of Pole, Stay sets & Base concreting | | | L.S | 47,030 |
| 11 | Misc. Items like coil earthing, danger board, bolts & nuts, etc | | | L.S | 4,000 |
| | **Total Cost of Material** | | | | **213,911** |

| | |
|---|---|
| 3% storage & handling charges on items (1) to (9) | 4,886 |
| 3% Contingencies on Materials | 6,417 |
| Labour & Transport | 78,076 |
| GST at 18 % on L&T | 14,054 |
| 10% Estt. & Genl. Charges on Materials | 21,391 |
| **Total** | **338,734** |

**REC Construction Standard No. B-8/1984**

**Cost data per Km of LT 3 Ph 4 Wire line (Horizontal formation) with 4 x 34 Sqmm AAAC over 8 Mts.**

**PSCC Poles at 65 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 140 Kgs.**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 8 M PSCC Pole | 16 | 1,487 | Each | 23,789 |
| 2 | LT 3 Phase cross arms | 18 | 396 | Each | 7,128 |
| 3 | Back Clamp | 18 | 83 | Each | 1,494 |
| 4 | Stay Set complete | 6 | 1,119 | Each | 6,714 |
| 5 | 34 Sq.mm AAA Conductor | 4.08 | 20769.11 | K.M. | 84,738 |
| 6 | Shackle Insulator with metal parts | 12 | 64 | Each | 768 |
| 7 | LT pin insulator with pin | 42 | 54 | Each | 2,268 |
| 8 | C.I. Knob | 16 | 10 | Each | 160 |
| 9 | Concreting of Pole, Stay sets & Base concreting | | | L.S | 47,030 |
| 10 | Misc. Items like coil earthing, danger board, bolts & nuts, etc | | | L.S | 4,000 |
| | **Total Cost of Material** | | | | **178,089** |

| | |
|---|---|
| 3% storage & handling charges on items (1) to (8) | 3,812 |
| 3% Contingencies on Materials | 5,343 |
| Labour & Transport | 78,076 |
| GST at 18 % on L&T | 14,054 |
| 10% Estt. & Genl. Charges on Materials | 17,809 |
| **Total** | **297,182** |

**REC Construction Standard No. B-11/1984**
**Cost data per Km of LT Single Phase 3 Wire line (Horizontal formation)**
**with 34 Sqmm AAAC over 8 Mts.PSCC Polesat 65 Mts. Span,**
**75 Kg/sq.Mt wind pressure, working load 140 Kgs.**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 8 M PSCC Pole | 16 | 1,487 | Each | 23,789 |
| 2 | LT 1 Phase cross arms | 18 | 209 | Each | 3,762 |
| 3 | LT top fitting | 18 | 221 | Each | 3,978 |
| 4 | Back Clamp | 18 | 83 | Each | 1,494 |
| 5 | Stay Set complete | 4 | 1,119 | Each | 4,476 |
| 6 | 34 Sq.mm AAA Conductor | 3.06 | 20,769 | K.M. | 63,553 |
| 7 | Shackle Insulator with metal parts | 8 | 64 | Each | 512 |
| 8 | LT pin insulator with pin | 28 | 54 | Each | 1,512 |
| 9 | C.I. Knob | 16 | 10 | Each | 160 |
| 10 | Concreting of Pole, Stay sets & Base concreting | | | L.S | 36,515 |
| 11 | Misc. Items like coil earthing, danger board, bolts & nuts, etc | | | L.S | 4,000 |
| | **Total Cost of Material** | | | | **143,751** |

| | |
|---|---|
| 3% storage & handling charges on items (1) to (9) | 3,097 |
| 3% Contingencies on Materials | 4,313 |
| Labour & Transport | 73,284 |
| GST at 18 % on L&T | 13,191 |
| 10% Estt. & Genl. Charges on Materials | 14,375 |
| **Total** | **252,011** |

**REC Construction Standard No. B-11/1984**
**Cost data per Km of LT Single Phase 2 Wire line (Horizontal formation)**
**with 2 x 34 Sqmm AAAC over 8 Mts.PSCC Poles at**
**65 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 140 Kgs.**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 8 M PSCC Pole | 16 | 1,487 | Each | 23,789 |
| 2 | LT 1 Phase cross arms | 18 | 209 | Each | 3,762 |
| 3 | Back Clamp | 18 | 83 | Each | 1,494 |
| 4 | Stay Set complete | 4 | 1,119 | Each | 4,476 |
| 5 | 34 Sq.mm AAA Conductor | 2.04 | 20,769 | K.M. | 42,369 |
| 6 | Shackle Insulator with metal parts | 4 | 64 | Each | 256 |
| 7 | LT pin insulator with pin | 14 | 54 | Each | 756 |
| 8 | C.I. Knob | 16 | 10 | Each | 160 |
| 9 | Concreting of Pole, Stay sets & Base concreting | | | L.S | 36,515 |
| 10 | Misc. Items like coil earthing, danger board, bolts & nuts, etc | | | L.S | 2,900 |
| | **Total Cost of Material** | | | | **116,477** |

| | |
|---|---|
| 3% storage & handling charges on items (1) to (8) | 2,312 |
| 3% Contingencies on Materials | 3,494 |
| Labour & Transport | 70,411 |
| GST at 18 % on L&T | 12,674 |
| 10% Estt. & Genl. Charges on Materials | 11,648 |
| **Total** | **217,017** |

**REC Construction Standard No. B-32/1984**

**Cost data per Km of LT Line with 3 x 16 + 25 Sqmm AB Cable over 8 Mts. PSCC Poles at 65 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 140 Kgs**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 8 M PSCC Pole | 16 | 1,487 | Each | 23,789 |
| 2 | Suspension clamp assembly with eye hook | 14 | 70 | Each | 980 |
| 3 | Dead end clamp assembly with eye hook | 4 | 105 | Each | 420 |
| 4 | Stay Set complete | 4 | 1,119 | Set | 4,476 |
| 5 | L.T. A.B. Cable 3 x 16 + 25 Sq.mm | 1.02 | 54,929 | K.M. | 56,028 |
| 6 | Insulated Connectors with covers | 56 | 105 | Each | 5,880 |
| 7 | Concreting of Pole, Stay sets & Base concreting | | | L.S | 36,515 |
| 8 | Misc. Items like coil earthing, danger board, bolts & nuts, etc | | | L.S | 3,000 |
| | **Total Cost of Material** | | | | **131,088** |

| | |
|---|---|
| 3% storage & handling charges on items (1) to (6) | 2,747 |
| 3% Contingencies on Materials | 3,933 |
| Labour & Transport | 70,927 |
| GST at 18 % on L&T | 12,767 |
| 10% Estt. & Genl. Charges on Materials | 13,109 |
| **Total** | **234,571** |

**REC Construction Standard No. B-32/1984**

**Cost data per Km of LT Line with 2 x 16 + 25 Sqmm AB Cable over 8 Mts.**

**PSCC Poles at 65 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 140 Kgs.**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 8 M PSCC Pole | 16 | 1,487 | Each | 23,789 |
| 2 | Suspension clamp assembly with eye hook | 14 | 70 | Each | 980 |
| 3 | Dead end clamp assembly with eye hook | 4 | 105 | Each | 420 |
| 4 | Stay Set complete | 4 | 1,119 | Set | 4,476 |
| 5 | L.T. A.B. Cable 2 x 16 + 25 Sq.mm | 1.02 | 28,999 | K.M. | 29,579 |
| 6 | Insulated Connectors with covers | 56 | 105 | Each | 5,880 |
| 7 | Concreting of Pole, Stay sets & Base concreting | | | L.S | 36,515 |
| 8 | Misc. Items like coil earthing, danger board, bolts & nuts, etc | | | L.S | 3,000 |
| | **Total Cost of Material** | | | | **104,639** |

| | |
|---|---|
| 3% storage & handling charges on items (1) to (6) | 1,954 |
| 3% Contingencies on Materials | 3,139 |
| Labour & Transport | 68,449 |
| GST at 18 % on L&T | 12,321 |
| 10% Estt. & Genl. Charges on Materials | 10,464 |
| **Total** | **200,966** |

**Cost Data for Conversion of Single Phase 2 wire line to Three Phase 4 wire line over existing 8 M PSCC poles at 65 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 140 Kgs.**

| Sl. No. | Particulars | Qty. | Rate in Rs. | Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 55 Sq.mm AAA conductor | 2.04 | 32476 | KM | 66,251 |
| 2 | LT 3 phase X arms | 17 | 396 | Each | 6,732 |
| 3 | Back Clamps | 17 | 83 | Each | 1,411 |
| 4 | Shackle Insulators with metal parts | 12 | 64 | Each | 771.2952 |
| 5 | Pin Insulators with pins | 45 | 54 | Each | 2451.627 |
| 6 | Stay sets complete | 6 | 1119 | Each | 6,714 |
| | **Total Cost of Material** | | | | **84,331** |
| | 3% storage & handling charges on items (1) to (6) | | | | 2,530 |
| | 3% Contingencies on Materials | | | | 2,530 |
| | Labour & Transport | | | | 14,300 |
| | Distmantling Charges | | | | 1,000 |
| | GST at 18 % on L&T | | | | 2,574 |
| | 10% Estt. & Genl. Charges on Materials | | | | 8,433 |
| | | | **Total** | | **115,698** |
| | **Less Credits** | | | | |
| 1 | Single Phase cross arms (scrap) | 51 | 11 | Kg | 561 |
| 2 | Original Erection charges | | | | 2200 |
| 3 | Dismantling charges | | | | 1100 |
| 4 | Orginal Estt & Genl Charges | | | | 56 |
| | | | **Total** | | **3917** |
| | Net Cost | | Gross - Less | | **111,781** |

**REC - CONSTRUCTION STANDARD SPECIFICATION No. F3 & F4/1993**

**COST DATA FOR ERECTION OF 100 KVA - 11 KV/433 V CSP TRANSFORMER**

| S. No. | Particulars | Cost of Material (Rs.) | Labour & Transport (Rs.) |
|---|---|---|---|
| 1 | 11 KV/433 V 100 KVA CSP TRANSFORMER (Aluminium) | 118,670 | 10,599 |
| 2 | Erection of 11 KV AB Switch (200A) | 6,474 | 2,620 |
| 3 | D.P. Structure | 16,340 | 18,570 |
| 4 | Erection of 11 K.V. H.G. Fuse set | 1,843 | 934 |
| 5 | Installation of L.T.H.G. Fuse sets including connections | 968 | 484 |
| 6 | L.T. Metering arrangement with CTs including cable connections and cleat arrangement | 9,045 | 880 |
| 7 | Installation of HT Lightening Arresters | 1,116 | 780 |
| 8 | C.I. Pipe earthing (3 Nos.) | 11,283 | 7,639 |
| | **Total Cost of Material** | **165,739** | **42,506** |

| | |
|---|---|
| 3% Storage & handling charges | 4,972 |
| 3% Contingencies on Materials | 4,972 |
| Labour & Transport | 42,506 |
| GST at 18 % on L&T | 7,651 |
| 10% Estt. & General charges on Materials | 16,574 |
| **Total Cost in Rs.** | **242,414** |

**REC - CONSTRUCTION STANDARD SPECIFICATION No. F3 & F4/1981**

**COST DATA FOR ERECTION OF 63 KVA - 11 KV/433 V CSP TRANSFORMER**

| S. No. | Particulars | Cost of Material (Rs.) | Labour & Transport (Rs.) |
|---|---|---|---|
| 1 | 11 KV/433 V 63 KVA CSP Distribution Transformer (Aluminium) | 103,049 | 10,599 |
| 2 | Erection of 11 KV AB Switch (200A) | 6,474 | 2,620 |
| 3 | D.P. Structure | 16,340 | 18,570 |
| 4 | Erection of 11 K.V. H.G. Fuse set | 1,843 | 934 |
| 5 | Installation of L.T.H.G. Fuse sets including connections | 968 | 484 |
| 6 | Metering arrangement with CTs including cable connections and cleat arrangement | 9,045 | 880 |
| 7 | Installation of HT Lightening Arresters | 1,116 | 780 |
| 8 | C.I. Pipe earthing (3 Nos.) | 11,283 | 7,639 |
| | **Total Cost of Material** | **150,117** | **42,506** |

| | |
|---|---|
| 3% Storage & handling charges | 4,504 |
| 3% Contingencies on Materials | 4,504 |
| Labour & Transport | 42,506 |
| GST at 18 % on L&T | 7,651 |
| 10% Estt. & General charges on Materials | 15,012 |
| **Total Cost in Rs.** | **224,295** |

**REC - CONSTRUCTION STANDARD SPECIFICATION No. F3 & F4/1981**

**COST DATA FOR ERECTION OF 63 KVA - 11 KV/433 V TRANSFORMER**

| S. No. | Particulars | Cost of Material (Rs.) | Labour & Transport (Rs.) |
|---|---|---|---|
| 1 | 11 KV/433 V 63 KVA Distribution Transformer (Aluminium) | 103,049 | 10,599 |
| 2 | Erection of 11 KV AB Switch (200A) | 6,474 | 2,620 |
| 3 | Plinth for distribution transformer (5'x4'x8') | 0 | 4,823 |
| 4 | Erection of 11 K.V. H.G. Fuse set | 1,843 | 934 |
| 5 | Installation of L.T.H.G. Fuse sets including connections | 968 | 484 |
| 6 | L.T. Metering arrangement with CTs including cable connections and cleat arrangement | 9,045 | 880 |
| 7 | Installation of HT Lightening Arresters | 1,116 | 780 |
| 8 | C.I. Pipe earthing (3 Nos.) | 11,283 | 7,639 |
| | **Total Cost of Material** | **133,777** | **28,759** |

| | |
|---|---|
| 3% Storage & handling charges | 4,013 |
| 3% Contingencies on Materials | 4,013 |
| Labour & Transport | 28,759 |
| GST at 18 % on L&T | 5,177 |
| 10% Estt. & General charges on Materials | 13,378 |
| **Total Cost in Rs.** | **189,117** |

**REC - CONSTRUCTION STANDARD SPECIFICATION No. F3 & F4/1981**

**COST DATA FOR ERECTION OF 63 KVA - 11 KV/433 V TRANSFORMER**

| S. No. | Particulars | Cost of Material (Rs.) | Labour & Transport (Rs.) |
|---|---|---|---|
| 1 | 11 KV/433 V 63 KVA CSP Distribution Transformer (Aluminium) | 103,049 | 10,599 |
| 2 | Erection of 11 KV AB Switch (200A) | 6,474 | 2,620 |
| 3 | Erection of structure for mounting of transformer | 4,980 | 863 |
| 4 | Erection of 11 K.V. H.G. Fuse set | 1,843 | 934 |
| 5 | Installation of L.T.H.G. Fuse sets including connections | 968 | 484 |
| 6 | L.T. Metering arrangement with CTs including cable connections and cleat arrangement | 9,045 | 880 |
| 7 | Installation of HT Lightening Arresters | 1,116 | 780 |
| 8 | C.I. Pipe earthing (3 Nos.) | 11,283 | 7,639 |
| | **Total Cost of Material** | **138,757** | **24,799** |

| | |
|---|---|
| 3% Storage & handling charges | 4,163 |
| 3% Contingencies on Materials | 4,163 |
| Labour & Transport | 24,799 |
| GST at 18 % on L&T | 4,464 |
| 10% Estt. & General charges on Materials | 13,876 |
| **Total Cost in Rs.** | **190,222** |

**REC - CONSTRUCTION STANDARD SPECIFICATION No. F3 & F4/1981**

**COST DATA FOR ERECTION OF 100 KVA - 11 KV/433 V**

**CSP TRANSFORMER**

| S. No. | Particulars | Cost of Material (Rs.) | Labour & Transport (Rs.) |
|---|---|---|---|
| 1 | 11 KV/433 V 100 KVA CSP Distribution Transformer (Aluminium) | 118,670 | 10,599 |
| 2 | Erection of 11 KV AB Switch (200A) | 6,474 | 2,620 |
| 3 | Construction of RCC Column type DTR Plinth of size 1'X1'X10',topslab 4'x4'x6" & beam size 4'X8'X8" | 0 | 24,301 |
| 4 | Erection of 11 K.V. H.G. Fuse set | 1,843 | 934 |
| 5 | Installation of L.T.H.G. Fuse sets including connections | 968 | 484 |
| 6 | L.T. Metering arrangement with CTs including cable connections and cleat arrangement | 9,045 | 880 |
| 7 | Installation of HT Lightening Arresters with earth connection | 1,116 | 780 |
| 8 | C.I. Pipe earthing (3 Nos.) | 11,283 | 7,639 |
| | **Total Cost of Material** | **149,399** | **48,237** |

| | |
|---|---|
| 3% Storage & handling charges | 4,482 |
| 3% Contingencies on Materials | 4,482 |
| Labour & Transport | 48,237 |
| GST at 18 % on L&T | 8,683 |
| 10% Estt. & General charges on Materials | 14,940 |
| **Total Cost in Rs.** | **230,222** |

**REC - CONSTRUCTION STANDARD SPECIFICATION No. F3 & F4/1981**

**COST DATA FOR ERECTION OF 25 KVA, 3-Ph, 11 KV/433 V/250 V DISTRIBUTION TRANSFORMER (COPPER)**

| S. No. | Particulars | Cost of Material (Rs.) | Labour & Transport (Rs.) |
|---|---|---|---|
| 1 | 11 KV/433V/250 V 25 KVA 3-Ph Distribution Transformer (Copper) | 65,524 | 10,599 |
| 2 | Erection of 11 KV AB Switch (200A) | 6,474 | 2,620 |
| 3 | Erection of 11 KV HG Fuse set | 1,843 | 934 |
| 4 | Mounting arrangements for Transformer | 4,980 | 550 |
| 5 | Installation of L.T.H.G. Fuse sets including connections | 968 | 484 |
| 6 | C.I. Pipe earthing (2 Nos.) | 7,522 | 5,093 |
| 7 | Misc. items (like bolts & nuts, washers etc.) | 500 | |
| | **Total Cost of Material** | **87,811** | **20,280** |

| | |
|---|---|
| 3% Storage & handling charges | 2,619 |
| 3% Contingencies on Materials | 2,634 |
| Labour & Transport | 20,280 |
| GST at 18 % on L&T | 3,650 |
| 10% Estt. & General charges on Materials | 8,781 |
| **Total Cost in Rs.** | **125,775** |

**COST DATA FOR ERECTION OF 25 KVA, 3-Ph, 11 KV/433 V /250 V CONVENTIONAL TRANSFORMER (Alluminium)**

| S. No. | Particulars | Cost of Material (Rs.) | Labour & Transport (Rs.) |
|---|---|---|---|
| 1 | 11 KV/433V/250 V 25 KVA 3-Ph Conventional Distribution Transformer (Aluminium) | 62,802 | 10,599 |
| 2 | Erection of 11 KV AB Switch (200A) | 6,474 | 2,620 |
| 3 | Erection of 11 KV HG Fuse set | 1,843 | 934 |
| 4 | Mounting arrangements for Transformer | 4,980 | 550 |
| 5 | Installation of L.T.H.G. Fuse sets including connections | 968 | 484 |
| 6 | C.I. Pipe earthing (2 Nos.) | 7,522 | 5,093 |
| 7 | Misc. items (like bolts & nuts, washers etc.) | 500 | |
| | **Total Cost of Material** | **85,089** | **20,280** |

| | |
|---|---|
| 3% Storage & handling charges | 2,538 |
| 3% Contingencies on Materials | 2,553 |
| Labour & Transport | 20,280 |
| GST at 18 % on L&T | 3,650 |
| 10% Estt. & General charges on Materials | 8,509 |
| **Total Cost in Rs.** | **122,619** |

**REC - CONSTRUCTION STANDARD SPECIFICATION No. F-13/1987**

**COST DATA FOR ERECTION OF 25 KVA SINGLE PHASE 6.3 KV/0-240 V**

**C.S.P. TRANSFORMER ON EXISTING 8 M PSCC SUPPORT**

| S. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 25 KVA Oil Immersed Single Phase 6.3 KV/0-240 V CSP CRGO core Transformer (Copper) | 1 | 47,732 | Each | 47,732 |
| 2 | Mounting arrangements for Transformer | 1 | 2,056 | Set | 2,056 |
| 3 | C.I. Pipe earthing | 2 | 3,761 | Each | 7,522 |
| 4 | LT Distribution Box (1-Phase) with XLPE 70 sq mm cable and 100 A fuse unit completely | 1 | 1,000 | Each | 1,000 |
| 5 | Misc. items (like bolts & nuts, washers etc.) | L.S. | 500 | L.S. | 500 |
| | **Total Cost of Material** | | | | **58,810** |

| | |
|---|---|
| 3% Storage & handling charges on items 1 to 3 | 1,719 |
| 3% Contingencies on Materials | 1,764 |
| Labour & Transport | 3,000 |
| GST at 18 % on L&T | 540 |
| 10% Estt. & General charges on Materials | 5,881 |
| **Total Cost in Rs.** | **71,714** |
| **Or Say** | **71,700** |

**REC - CONSTRUCTION STANDARD SPECIFICATION No. F-13/1987**

**COST DATA FOR ERECTION OF 15 KVA SINGLE PHASE 6.3 KV/0-240 V**

**CRGO CORE C.S.P. TRANSFORMER ON EXISTING 8 M PSCC SUPPORT**

| S. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 15 KVA Oil Immersed Single Phase 6.3 KV/0-240 V CRGO Core Transformer (Copper) | 1 | 25,869 | Each | 25,869 |
| 2 | Mounting arrangements for Transfomer | 1 | 2,056 | Set | 2,056 |
| 3 | C.I. Pipe earthing | 2 | 3,761 | Each | 7,522 |
| 4 | LT Distribution Box (1-Phase) with XLPE 70 sq mm cable and 100 A fuses complete. | 1 | 1,000 | Each | 1,000 |
| 5 | Misc. Items | L.S. | 400 | | 400 |
| | **Total Cost of Material** | | | | **36,847** |

| | |
|---|---|
| 3% Storage & handling charges on items 1 to 3 | 1,063 |
| 3% Contingencies on Materials | 1,105 |
| Labour & Transport | 3,000 |
| GST at 18 % on L&T | 540 |
| 10% Estt. & General charges on Materials | 3,685 |
| **Total Cost in Rs.** | **46,240** |

**REC - CONSTRUCTION STANDARD SPECIFICATION No. H6 & H8/1981**

**COST DATA FOR RELEASE OF POLY PHASE AGRICULTURAL SERVICE ERECTED ON SUPPORT**

| S. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 10-40A With PP box & IRDA port | 1 | 1,848 | Each | 1,848 |
| 2 | 3 Phase 63 A M.C.B. | 1 | 1477 | Each | 1,477 |
| 3 | P.V.C. Cable 6 Sq.mm Single Core | 90 | 8.91 | Each | 802 |
| 4 | Installation of 2 KVAR Capacitor | 1 | 550 | Each | 550 |
| 5 | Misc. items such as Bolts, Nuts & Board etc. | L.S. | 220 | L.S. | 220 |
| | **Total Cost of Material** | | | | **4,897** |

| | |
|---|---|
| 3% Contingencies on Materials | 147 |
| Labour & Transport | 733 |
| GST at 18 % on L&T | 132 |
| 10% Estt. & General charges on Materials | 490 |
| **Total Cost in Rs.** | **6,399** |

**REC - CONSTRUCTION STANDARD SPECIFICATION No. H-1 TO H3/1981**
**COST DATA FOR DOMESTIC AND NON-DOMESTIC SERVICE CONNECTION (SINGLE PHASE) WITH ELECTRONIC METER**

| S. No. | Particulars | Rate | | Chargeable to DISCOM | | Chargeable to Consumers | | Amount in Rs. |
|---|---|---|---|---|---|---|---|---|
| | | | | Qty. | Amount | Qty. | Amount | |
| 1 | Single Phase Electronic meter (5 A to 30 A) housed in a PP box | 639 | Each | 1 | 639 | | | 639 |
| 2 | M.C.B. 16 A | 200.6 | Each | 1 | 201 | | | 201 |
| 3 | P.V.C. Cable Single Core 2.5 Sq.mm | 5 | Mts. | | | 60 | 300 | 300 |
| 4 | G.I. Wire No. 6 | 48 | Kg | | | 1 | 48 | 48 |
| 5 | P.V.C. Pipe 25 mm | 30.3 | Mts. | | | 2 | 61 | 61 |
| 6 | P.V.C. Bends 25 mm | 6.1 | Each | | | 2 | 12 | 12 |
| 7 | Misc.items (meter board & bolts & nuts etc.) | L.S. | L.S. | | 50 | | 100 | 150 |
| | **Total Cost of Material** | | | | **890** | | **521** | **1,410** |
| | 3% Contingencies on Materials | | | | 27 | | 16 | 42 |
| | Labour & Transport | | | | 160 | | 340 | 500 |
| | GST at 18 % on L&T | | | | 29 | | 61 | 90 |
| | 10% Estt. & General charges on Materials | | | | 89 | | 52 | 141 |
| | **Total Cost in Rs.** | | | | **1,194** | | **990** | **2,184** |

**REC - CONSTRUCTION STANDARD SPECIFICATION No. H1 TO H3/1981**
**COST DATA FOR DOMESTIC AND NON-DOMESTIC SERVICE CONNECTION**
**(THREE PHASE) (Electronic)**

| S. No. | Particulars | Rate | | Chargeable to DISCOM | | Chargeable to Consumers | | Amount in Rs. |
|---|---|---|---|---|---|---|---|---|
| | | | | Qty. | Amount | Qty. | Amount | |
| 1 | 3 Phase Electronic Energy Meter (10 A - 40 A) with PP Box | 1848 | Each | 1 | 1,848 | | | 1,848 |
| 2 | 3 Phase 63 A M.C.B. | 1477 | Each | 1 | 1,477 | | | 1,477 |
| 3 | P.V.C. Cable Single Core 2.5 Sq.mm | 5 | Mts. | | | 120 | 600 | 600 |
| 4 | G.I. Wire No. 8 | 53 | Kg | | | 1 | 53 | 53 |
| 5 | P.V.C. Pipe 40 mm | 77.5 | Mts. | | | 2 | 155 | 155 |
| 6 | P.V.C. Bends 40 mm | 18.2 | Each | | | 2 | 36 | 36 |
| 7 | Misc. | L.S. | L.S. | | | | 75 | 75 |
| | **Total Cost of Material** | | | | **3,325** | | **919** | **4,244** |
| | 3% Contingencies on Materials | | | | 100 | | 28 | 127 |
| | Labour & Transport | | | | 320 | | 440 | 760 |
| | GST at 18 % on L&T | | | | 58 | | 79 | 137 |
| | 10% Estt. & General charges on Materials | | | | 333 | | 92 | 424 |
| | **Total Cost in Rs.** | | | | **4,136** | | **1,559** | **5,695** |

**Note:** Item Nos. 3 to 7 are to be borne & arranged by the consumer as per latest APTRANSCO rules.

**REC - CONSTRUCTION STANDARD SPECIFICATION No. H-5/1981**
**POLY PHASE SERVICE CONNECTION CHARGES FOR ERECTION OF**
**1 NO. INDUSTRIAL SERVICE (BELOW 20 H.P.) (ELECTRONIC METER)**

| S. No. | Particulars | Rate | | Chargeable to DISCOM | | Chargeable to Consumers | | Amount in Rs. |
|---|---|---|---|---|---|---|---|---|
| | | | | Qty. | Amount | Qty. | Amount | |
| 1 | 3-Phase (10 - 40 A) Electronic meter housed in a PP box | 1848 | Each | 1 | 1,848 | | | 1,848 |
| 2 | 3 Phase 63 A M.C.B. | 1477 | Each | 1 | 1,477 | | | 1,477 |
| 3 | P.V.C. Cable Single Core 10 Sq.mm | 12 | Mts. | | | 80 | 960 | 960 |
| 4 | G.I. Wire 8 mm | 48 | Kg | | | 1 | 48 | 48 |
| 5 | P.V.C. Pipe 40 mm | 77.5 | Mts. | | | 2 | 155 | 155 |
| 6 | P.V.C. Bends 40 mm | 18.2 | Each | | | 2 | 36 | 36 |
| 7 | Misc. items viz. link clips, wooden box, bolts & nuts etc. | L.S. | L.S. | | 100 | | 200 | 300 |
| | **Total Cost of Material** | | | | **3,425** | | **1,399** | **4,824** |
| | 3% Contingencies on Materials | | | | 103 | | 42 | 145 |
| | Labour & Transport | | | | 320 | | 440 | 760 |
| | GST at 18 % on L&T | | | | 58 | | 79 | 137 |
| | 10% Estt. & General charges on Materials | | | | 343 | | 140 | 482 |
| | **Total Cost in Rs.** | | | | **4,249** | | **2,101** | **6,349** |

**REC - CONSTRUCTION STANDARD SPECIFICATION No. H-5/1981**
**POLY PHASE SERVICE CONNECTION CHARGES FOR ERECTION OF**
**1 NO. INDUSTRIAL SERVICE (20 HP & ABOVE) (LT TRIVECTOR METER)**

| S. No. | Particulars | Rate | | Chargeable to DISCOM | | Chargeable to Consumers | | Amount in Rs. |
|---|---|---|---|---|---|---|---|---|
| | | | | Qty. | Amount | Qty. | Amount | |
| 1 | LT TVR Meters Cl. 0.5S (Including Box & 4 CTs) | 5758 | Each | 1 | 5,758 | | | 5,758 |
| 2 | 3 Phase 63 A M.C.B. | 1477 | Each | 1 | 1,477 | | | 1,477 |
| 3 | P.V.C. Cable Single Core 10 Sq.mm | 15 | Mts. | | | 80 | 1,200 | 1,200 |
| 4 | G.I. Wire 8 mm | 48 | Kg | | | 1 | 48 | 48 |
| 5 | P.V.C. Pipe 40 mm | 77.5 | Mts. | | | 2 | 155 | 155 |
| 6 | P.V.C. Bends 40 mm | 18.2 | Each | | | 2 | 36 | 36 |
| 7 | Misc. items viz. link clips, wooden box, bolts & nuts etc. | L.S. | L.S. | | 100 | | 200 | 300 |
| | **Total Cost of Material** | | | | **7,335** | | **1,639** | **8,975** |
| | 3% Contingencies on Materials | | | | 220 | | 49 | 269 |
| | Labour & Transport | | | | 320 | | 440 | 760 |
| | GST at 18 % on L&T | | | | 58 | | 79 | 137 |
| | 10% Estt. & General charges on Materials | | | | 734 | | 164 | 897 |
| | **Total Cost in Rs.** | | | | **8,667** | | **2,372** | **11,039** |

**REC - CONSTRUCTION STANDARD SPECIFICATION No. H-5/1981**
**POLY PHASE SERVICE CONNECTION CHARGES FOR ERECTION OF**
**1 NO. INDUSTRIAL SERVICE (50 HP & UPTO 75 HP) (HT METERING)**

Amount in Rs.

| S. No. | Particulars | Rate | | Material | | Labour | |
|---|---|---|---|---|---|---|---|
| | | | | Qty. | Amount | Qty. | Amount |
| 1 | DP Structure with 9.1 mts. PSCC poles | 16340 | Each | 2 | 32,680 | 2 | 18,570 |
| 2 | 11 KV 400 Amps conventional type AB | 8,602 | Each | 2 | 17,204 | 2 | 2,984 |
| 3 | 11 KV HG Fuse set | 1,843 | Each | 2 | 3,686 | 2 | 1,868 |
| 4 | 3x35 sq.mm 11 KV XLPE cable | 317.67 | Mts. | 30 | 9,530 | 30 | 14,460 |
| 5 | End termination suitable for 35 sq.mm XLPE (Cable outdoor type) | 1375 | Each | 4 | 5,500 | 4 | 6,544 |
| 6 | G.I. earthing (3 Nos. GI Pipe) | 4365.9 | Nos. | 1 | 4,366 | 1 | 3,960 |
| 7 | 11 KV CT PT 10-20/5 | 38,908 | Each | 1 | 38,908 | 1 | 870 |
| 8 | HT Trivector Meter (Clause 0.2 S) | 5,576 | Each | 1 | 5,576 | 1 | 3,830 |
| 9 | Special type box for Trivector meter | 5500 | Each | 1 | 5,500 | 1 | 200 |
| 10 | Transport of material | | | | | | 1,650 |
| 11 | Misc. items viz. link clips, wooden box, bolts & nuts etc. | L.S. | L.S. | | | | 550 |
| | **Total Cost of Material** | | | | **122,951** | | **55,486** |

**-**

| | |
|---|---|
| 3% Contingencies on Materials | 3,689 |
| Labour & Transport | 55,486 |
| GST at 18 % on L&T | 9,988 |
| 10% Estt. & General charges on Materials | 12,295 |
| **Total Cost in Rs.** | **204,408** |

## COST DATA FOR STREET LIGHT SERVICE CONNECTION (SINGLE PHASE)

| S. No. | Particulars | Qyt. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 1 Phase (5-20A) Electronic Meter housed in a PP box | 1 | 639 | Each | 639 |
| 2 | 1 Phase 20 A M.C.B. | 1 | 179 | Each | 179 |
| 3 | Light sensitive switch | 1 | 400 | Each | 400 |
| 4 | P.V.C. Cable 4 Sq.mm Single Core | 15 | 10 | Mts. | 150 |
| 5 | P.V.C. Pipe 25 mm | 2 | 30 | Mts. | 61 |
| 6 | P.V.C. Bends 25 mm | 2 | 6.10 | Each | 12 |
| 7 | Moulded Distribution Box | 1 | 250 | Each | 250 |
| 8 | Wooden, Plugs, clamps, bolts, nuts, link clips etc. | L.S. | | L.S. | 150 |
| | Total Cost of Material | | | | 1,840 |

| | |
|---|---|
| 3% Contingencies on Materials | 55 |
| Labour & Transport | 600 |
| GST at 18 % on L&T | 108 |
| 10% Estt. & General charges on Materials | 184 |
| **Total Cost in Rs.** | 2,679 |

## COST ESTIMATE FOR ERECTION OF 1 NO. LT ELECTRONIC TRIVECTOR METERS ON LV SIDE OF DTR

| Sl. No. | Particulars | Qty. | Unit | Rate per (in Rs.) | Amount (in Rs.) |
|---|---|---|---|---|---|
| 1 | LT 3-Phase class 0.5S Accuracy CT Operated Energy Meter Housed in a box with 3 Nos. CTs | 1 | Each | 5,758 | 5,758 |
| 2 | 3.5 Core 95 LT XLPE Cable (for 10 meters) to LT side of DTR with cleat wiring. | LS | | | 3,287 |
| | **Total** | | | | **9,045** |
| | 3% Contingencies | | | | 271 |
| | Fixing of CT operated meter on LV side of Distribution transformers with box including cost of lugs, clamps, GI wire and transport from district store to site. | | | | 880 |
| | GST at 18 % on L&T | | | | 158 |
| | 10% Estt. & Genl. Charges | | | | 904 |
| | **Total Cost in Rs.** | | | | **11,259** |

**COST DATA FOR ERECTION OF 33/11 KV SUBSTATION WITH 2X8MVA POWER TRANSFORMERS AND NF = 6 NO. 11 KV FEEDERS (WITH OUT 11 KV 2 MVAR CAPACITORS BANK)**

Rs. in Lakhs

| Sl. No | | Qty. | Rate (Rs. in lakhs) | Unit | Amount (Rs. in lakhs) |
|---|---|---|---|---|---|
| 1 (a) | Lands and Rights | LS | As per local conditions | | 50.00 |
| (b) | Plantation of Trees | LS | | LS | 0.15 |
| 2 | Control Room and Consumer service centre (including furniture) | LS | | LS | 12.00 |
| 3 | Station Auxillaries | | | | |
| a) | Peripheral, Security Fencing, Approach road, retaing wall around switchward with gravel filling, gate and bore well | LS | | LS | 16.50 |
| b) | Yard lighting | 8 | 0.07 | Each | 0.58 |
| c) | Fire fighting Equipment | LS | | LS | 0.70 |
| d) | P&T Phone and wireless set | LS | | LS | 0.05 |
| 4 | Foundations for structures, PTRs & breakers | LS | | LS | 3.30 |
| 5 | Bus bars, Jumpers, Connectors claps etc. | LS | | LS | 1.32 |
| 6 | Control Cables | LS | | LS | 1.19 |
| 7 | Structural Steel | 13 | 0.549 | MT | 7.13 |
| 8 | Transformers | | | | |
| a) | 33/11kv **8 MVA** Power Transformer | 2 | 45.596 | Each | 91.19 |
| b) | 11kv / 433 v **25 kva** 3-ph Stn. Transformer (CSP copper) | 1 | 0.628 | Each | 0.63 |
| 9 | Circiut Breakres (including trivector meters) | | | | |
| a) | 33 KV Group control VCB with CTs and panel | 1 | 3.976 | Each | 3.98 |
| b) | 20 KA 11 kv feeder VCB including Control panel and CTs (NF=6) | 6 | 2.458 | Each | 14.75 |
| c) | 20 KA 11 kv LV VCB including Control panel and CTs | 2 | 3.302 | Each | 6.60 |
| 10 | Control Circiut Panels | | | | |
| a) | AC Supply Panel | 1 | 0.330 | Each | 0.33 |
| b) | Alaram Panel | 1 | 0.330 | Each | 0.33 |
| 11 | Instrumnet Transformers | | | | |
| a) | 33KV PT (single unit) | 3 | 0.210 | Each | 0.63 |
| b) | 11kv P.T (3 Phase) | 1 | 0.182 | Each | 0.18 |
| 12 | Lightning Arrestors | | | | |
| a) | 33KV 10KA | 6 | 0.033 | Each | 0.20 |
| b) | 11KV Line Type (NF=6) | 18 | 0.017 | Each | 0.30 |
| c) | 11KV Station Type 10 KA | 6 | 0.017 | Each | 0.10 |
| 13 | Isolating Switches | | | | |
| a) | 33KV 800A AB Switch (Double Breaker) | 3 | 0.363 | Each | 1.09 |
| b) | 11KV 800A AB Switch (Double Breaker) | 3 | 0.235 | Each | 0.70 |
| c) | 11KV 400A AB Switch (Double Breaker) | 12 | 0.086 | Each | 1.03 |
| d) | 11KV 200A AB Switch | 1 | 0.065 | Each | 0.06 |
| e) | 11KV HG fuse Switch | 3 | 0.018 | Each | 0.06 |
| f) | 33KV Horn Gap Fuse Set (1XNT) | 2 | 0.000 | Each | 0.00 |
| 14 | Data Acquisition equipment (SIM, modem, cabling etc) | | | LS | 0.45 |
| 15 | 220 Volts 80 AH SMF Battery Set including Battery Charger and DC DB | 1 | 3.10 | Each | 3.10 |
| 16 | Earthing of Power Transformer VCBs,AB Swicthes,Strucutres with 75x8mm GI Flat | | | LS | 1.98 |
| | **Sub Total** | | | | **220.61** |
| | 3% Contingencies on items 7 to 15 | | | | 3.99 |
| | 1% T&P Charges on items No. 7 to 15 | | | | 1.33 |
| | 10% Erection and transport and commissioning charges on items 7 to 15 | | | | 13.28 |
| | GST at 18% on L&T | | | | 2.39 |
| | 10% Establishment and General Charges | | | | 22.06 |
| | **Grand Total** | | | | **263.67** |
| | | | Or Say | | **264.00** |

**COST DATA FOR ERECTION OF 33/11 KV SUBSTATION WITH 2X8MVA POWER TRANSFORMERS AND NF = 6 NO. 11 KV FEEDERS (WITH 11 KV 2 MVAR CAPACITORS BANK)**

Rs. in Lakhs

| Sl. No | Particulars | Qty. | Rate (Rs. in | Unit | Amount (Rs. in |
|---|---|---|---|---|---|
| 1 (a) | Lands and Rights | LS | As per local conditions | | 50.00 |
| (b) | Plantation of Trees | LS | | LS | 0.15 |
| 2 | Control Room and Consumer service centre (including furniture) | LS | | LS | 12.00 |
| 3 | Station Auxillaries | | | | |
| a) | Peripheral, Security Fencing, Approach road, retaing wall around switchward with gravel filling, gate and bore well | LS | | LS | 16.50 |
| b) | Yard lighting | 8 | 0.07 | Each | 0.58 |
| c) | Fire fighting Equipment | LS | | LS | 0.70 |
| d) | P&T Phone and wireless set | LS | | LS | 0.05 |
| 4 | Foundations for structures, PTRs & breakers | LS | | LS | 3.30 |
| 5 | Bus bars, Jumpers, Connectors claps etc. | LS | | LS | 1.32 |
| 6 | Control Cables | LS | | LS | 1.19 |
| 7 | Structural Steel | 20 | 0.549 | MT | 10.97 |
| 8 | Transformers | | | | |
| a) | 33/11kv 8 MVA Power Transformer | 2 | 45.596 | Each | 91.19 |
| b) | 11kv / 433 v 25 kva 3-ph Stn. Transformer | 1 | 0.628 | Each | 0.63 |
| 9 | Circiut Breakres (including trivector meters) | | | | |
| a) | 33 KV Group control VCB with CTs and panel | 1 | 3.976 | Each | 3.98 |
| b) | 20 KA 11 kv feeder VCB including Control panel and CTs (NF=6) | 6 | 2.458 | Each | 14.75 |
| c) | 20 KA 11 kv LV VCB including Control panel and CTs | 2 | 3.302 | Each | 6.60 |
| 10 | Control Circiut Panels | | | | |
| a) | AC Supply Panel | 1 | 0.330 | Each | 0.33 |
| b) | Alaram Panel | 1 | 0.330 | Each | 0.33 |
| 11 | Instrumnet Transformers | | | | |
| a) | 33KV PT (single unit) | 3 | 0.210 | Each | 0.63 |
| b) | 11kv P.T (3 Phase) | 1 | 0.182 | Each | 0.18 |
| 12 | Lightning Arrestors | | | | |
| a) | 33KV 10KA | 6 | 0.033 | Each | 0.20 |
| b) | 11KV Line Type (NF=6) | 18 | 0.017 | Each | 0.30 |
| c) | 11KV Station Type 10 KA | 6 | 0.017 | Each | 0.10 |
| 13 | Isolating Switches (Double Breaker) | | | | |
| a) | 33KV 800A AB Switch (Double Breaker) | 3 | 0.363 | Each | 1.09 |
| b) | 11KV 800A AB Switch (Double Breaker) | 3 | 0.235 | Each | 0.70 |
| c) | 11KV 400A AB Switch (Double Breaker) | 12 | 0.086 | Each | 1.03 |
| d) | 11KV 200A AB Switch | 1 | 0.065 | Each | 0.06 |
| e) | 11KV HG fuse Switch | 3 | 0.018 | Each | 0.06 |
| f) | 33KV Horn Gap Fuse Set (1XNT) | 2 | 0.000 | Each | 0.00 |
| 14 | 2MVAR 11KV Capacitor Bank along with Associated Equipment (Type A) | 1 | 7.990 | Each | 7.99 |
| 15 | 220 Volts 80 AH Battery Set including Battery Charger and DC DB | 1 | 3.100 | Each | 3.10 |
| 16 | Earthing of Power Transformer VCBs,AB Swicthes,Strucutres with 75x8mm GI Flat | | | LS | 1.98 |
| | **Sub Total** | | | | **231.99** |

| | | | |
|---|---|---|---|
| | 3% Contingencies on items 7 to 15 | | 4.33 |
| | 1% T&P Charges on items No. 7 to 15 | | 1.44 |
| | 10% Erection and transport and commissioning charges on items 7 to 15 | | 14.42 |
| | GST at 18% on L&T | | 2.60 |
| | 10% Establishment and General Charges | | 23.20 |
| | **Grand Total** | | **277.98** |
| | | Or Say | **278.00** |

**COST DATA FOR ERECTION OF 33/11KV INDOOR SUBSTATION WITH 2 Nos. 8MVA POWER TRANSFORMERS & 6 Nos. 11KV FEEDERS**

| Sl. No. | PARTICULARS | QTY | RATE | UNIT | AMOUNT Rs in Lakhs |
|---|---|---|---|---|---|
| **1 a)** | Lands and rights | Ls | As per local conditions | | 50.00 |
| **b)** | Plantation of Trees | Ls | 0.15 | LS | 0.15 |
| **2** | **Civil Works** | | | | |
| i | Construction of Control room | LS | 22.00 | LS | 22.00 |
| ii | Compound wall, Gate,levelling of site and Borewell | LS | 4.95 | LS | 4.95 |
| iii | special foundations | | | | |
| iv | Laying of Cable Trench | LS | 3.03 | LS | 3.03 |
| v | Electrification and sanitation arrangements | LS | 0.83 | LS | 0.83 |
| vi | Construction of Transformer plinth | LS | 0.83 | LS | 0.83 |
| **3** | **Station Auxillaries** | | | | 0.00 |
| a) | Yard lighting | 6 | 0.07 | E | 0.43 |
| b) | Spreading of Metal | Ls | 0.11 | LS | 0.11 |
| c) | Telephone (P &T) and wireless set | Ls | 1.38 | LS | 1.38 |
| d) | Fire fighting Equipment, Miscellenous items like Rubber Mats, Earth rods, Helmets, Gloves, Furniture, T&P etc | Ls | 1.10 | LS | 1.10 |
| e) | Water supply arrangements | Ls | 0.55 | LS | 0.55 |
| **4** | Foundations for breakers etc. | Ls | 0.66 | LS | 0.66 |
| **5** | Bus bar arrangements | Ls | 2.75 | LS | 2.75 |
| **6** | Control cables | Ls | 1.10 | LS | 1.10 |
| **7** | **Power and Distribution Transformers** | | | | |
| a) | 33/11 KV, 8 MVA Power Transformers | 2 | 45.596 | E | 91.19 |
| b) | 25KVA 11/04KV Station Transformer | 1 | 0.628 | E | 0.63 |
| **8** | **Indoor switch gear & Control panels** | | | | |
| a) | 33 KV, 25 KVA, 1250 A, 8 Panels SF-6, GIS Switch gear consisting of the following | | | | |
| i | 1250 A Transformers control cubicals 2 Nos. | | | | |
| ii | 1250 - A Incoming feeder cubicals - 3 Nos. | | | | |
| iii | 1250 - A Bus coupler - 1 No. | | | | |
| b) | 11 KV, 20 KVA, 1250 A ,14 panels SF6 GIS switch gear consisting the following equipments | 1 | 191.88 | E | 191.88 |
| i | 1250 A Transformers control cubicals 2 Nos. | | | | |
| ii | 1250 - A feeder cubicals - 6 Nos. | | | | |
| iii | 1250 - A Bus coupler - 1 No. | | | | |
| iv | Bus transformers panel - 1 No. | | | | |
| v | Adopter for station transformer - 1 No. | | | | |
| **9** | **Alaram and Annunciation Panel** | 1 | 0.31 | E | 0.31 |
| 10 | AC Panel | 1 | 0.33 | E | 0.33 |
| 11 | 220 Volts, 200 AH, Battery with trickle charger | 1 | 3.10 | E | 3.10 |
| 12 | Data Acquisition equipment (SIM, modem, cabling etc) | | | LS | 0.45 |
| 13 | **Earthing Arrangements** | | | | |
| a) | MS Flat75x8 mm for providing earthing matting | 2 | 0.543 | MT | 0.58 |
| b) | MS Flat 50x6 mm for earthing the equipment | 2 | 0.543 | MT | 0.58 |
| c) | Earthing electrodes & GI pipes | LS | 0.90 | LS | 0.90 |
| **14** | RS Joist 175x85/150x150(Girder poles) for base of | 1.5 | 0.5487 | MT | 0.82 |
| | | | **Total** | | **380.63** |
| | 3% Contingencies on Items 7 To 14 | | | | 8.72 |
| | 10% Transport, Erection and Commissioning charges on items 7 To | | | | 29.08 |
| | GST at 18% on L&T | | | | 5.23 |
| | 10% Establishment and General Charges | | | | 38.06 |
| | **Grand Total** | | | | **461.73** |

**COST DATA FOR ERECTION OF 33/11 KV SUBSTATION WITH 9.1 Mtrs PSCC POLES, 2 X 5 MVA POWER TRANSFORMERS AND 5 NO. 11 KV FEEDERS (WITH 11 KV 2 MVAR CAPACITORS BANK)**

Rs. in Lakhs

| Sl. No | Particulars | Qty. | Rate (Rs. in lakhs) | Unit | Amount (Rs. in lakhs) |
|---|---|---|---|---|---|
| 1 (a) | Lands and Rights | LS | As per local | | 11.00 |
| (b) | Plantation of Trees | LS | | LS | 0.15 |
| 2 | Control Room and Consumer service centre (including furniture) | LS | | LS | 12.00 |
| 3 | Station Auxillaries | | | | |
| a) | Peripheral, Security Fencing, Approach road, retaing wall around switchward with gravel filling, gate and bore well | LS | | LS | 11.00 |
| b) | Yard lighting | 8 | 0.07 | Each | 0.58 |
| c) | Fire fighting Equipment | LS | | LS | 0.70 |
| d) | P&T Phone and wireless set | LS | | LS | 0.05 |
| 4 | Foundations for structures, PTRs & breakers | LS | | LS | 3.30 |
| 5 | Bus bars, Jumpers, Connectors claps etc. | LS | | LS | 1.32 |
| 6 | Control Cables | LS | | LS | 1.19 |
| 7 | Structural Steel | 4.5 | 0.549 | MT | 2.47 |
| 8 | 9.1 meters PSCC poles | 30 | 0.03 | Each | 0.96 |
| 9 | Transformers | | | | |
| a) | 33/11kv 5 MVA Power Transformer | 2 | 30.79 | Each | 61.57 |
| b) | 3-Phase 25 KVA (CSP) (Al) | 1 | 0.628 | Each | 0.63 |
| 10 | Circiut Breakres (including trivector meters) | | | | |
| a) | 20 KA 11 kv feeder VCB including Control panel and CTs (NF | 5 | 2.458 | Each | 12.29 |
| b) | 20 KA 11 kv LV VCB including Control panel and CTs | 2 | 3.302 | Each | 6.60 |
| 11 | Control Circiut Panels | | | | |
| a) | AC Supply Panel | 1 | 0.303 | Each | 0.30 |
| b) | Alaram Panel | 1 | 0.303 | Each | 0.30 |
| 12 | Instrumnet Transformers | | | | |
| a) | 11kv P.T (3 Phase) | 1 | 0.182 | Each | 0.18 |
| 13 | Lightning Arrestors | | | | |
| a) | 33KV 10KA | 6 | 0.033 | Each | 0.20 |
| b) | 11KV Line Type (NF=5) | 15 | 0.017 | Each | 0.25 |
| c) | 11KV Station Type 10 KA | 6 | 0.017 | Each | 0.10 |
| 14 | Isolating Switches | | | | |
| a) | 33KV 800A AB Switch (Double Break) | 3 | 0.363 | Each | 1.09 |
| b) | 11KV 800A AB Switch (NT X 1+1) (Double Break) | 3 | 0.235 | Each | 0.70 |
| c) | 11KV 400A AB Switch (NF X 2+2) (Double Break) | 12 | 0.086 | Each | 1.03 |
| d) | 33KV Horn Gap Fuse Set (1XNT) | 2 | 0.000 | Each | 0.00 |
| 15 | Data Acquisition equipment (SIM, modem, cabling etc) | | | LS | 0.40 |
| 16 | 24 Volts 40 AH Battery Set including Battery Charger | 7 | 0.280 | Each | 1.96 |
| 17 | 2MVAR 11KV Capacitor Bank along with Associated Equipment | 1 | 7.990 | Each | 7.99 |
| 18 | Earthing of Power Transformer VCBs,AB Swicthes,Strucutres with 75x8mm GI Flat | | | LS | 1.98 |
| | **Sub Total** | | | | **142.29** |
| | 3% Contingencies on items 7 to 17 | | | | 2.97 |
| | 1% T&P Charges on items No. 7 to 17 | | | | 0.99 |
| | Erection and transport and commissioning charges on items 7 to 17 at 10% | | | | 9.90 |
| | GST at 18% on L&T | | | | 1.783 |
| | 10% Establishment and General Charges | | | | 14.23 |
| | **Total** | | | | **172.17** |
| | | | Or say | | **172.00** |

**Note** NF = No. of 11 KV Feeders, The number of outgoing feeders at substation limited to the demand in MVA i.e. if substation demand is 5 MVA, the number of feeders should not exceed five.
In GHMC area include 33 KV group control VCB

**COST DATA FOR ERECTION OF 33/11 KV SUBSTATION WITH 9.1 Mtrs PSCC POLES, 2 X 5 MVA POWER TRANSFORMERS AND 5 NO. 11 KV FEEDERS**
**(WITH OUT 11 KV 2 MVAR CAPACITORS BANK)**

Rs. in Lakhs

| Sl. No | Particulars | Qty. | Rate (Rs. in lakhs) | Unit | Amount (Rs. in |
|---|---|---|---|---|---|
| 1 (a) | Lands and Rights | LS | As per local conditions | | 11.00 |
| (b) | Plantation of Trees | LS | | LS | 0.15 |
| 2 | Control Room and Consumer service centre (including furniture) | LS | | LS | 12.00 |
| 3 | Station Auxillaries | | | | |
| a) | Peripheral, Security Fencing, Approach road, retaing wall around switchward with gravel filling, gate and bore well | LS | | LS | 11.00 |
| b) | Yard lighting | 8 | 0.07 | Each | 0.58 |
| c) | Fire fighting Equipment | LS | | LS | 0.70 |
| d) | P&T Phone and wireless set | LS | | LS | 0.00 |
| 4 | Foundations for structures, PTRs & breakers | LS | | LS | 3.30 |
| 5 | Bus bars, Jumpers, Connectors claps etc. | LS | | LS | 1.32 |
| 6 | Control Cables | LS | | LS | 1.19 |
| 7 | Structural Steel | 6 | 0.549 | MT | 3.29 |
| 8 | 9.1 meters PSCC poles | 38 | 0.032 | Each | 1.21 |
| 9 | Transformers | | | | |
| a) | 33/11kv 5 MVA Power Transformer | 2 | 30.79 | Each | 61.57 |
| b) | 3-Phase 25 KVA (CSP) (Al) | 1 | 0.628 | Each | 0.63 |
| 10 | Circiut Breakres (including trivector meters) | | | | |
| a) | 20 KA 11 kv feeder VCB including Control panel and CTs (NF= | 5 | 2.458 | Each | 12.29 |
| b) | 20 KA 11 kv LV VCB including Control panel and CTs | 2 | 2.450 | Each | 4.90 |
| 11 | Control Circiut Panels | | | | |
| a) | AC Supply Panel | 1 | 0.303 | Each | 0.30 |
| b) | Alaram Panel | 1 | 0.303 | Each | 0.30 |
| 12 | Instrumnet Transformers | | | | |
| a) | 11kv P.T (3 Phase) | 1 | 0.182 | Each | 0.18 |
| 13 | Lightning Arrestors | | | | |
| a) | 33KV 10KA | 6 | 0.033 | Each | 0.20 |
| b) | 11KV Line Type (NF=5) | 15 | 0.017 | Each | 0.25 |
| c) | 11KV Station Type 10 KA | 6 | 0.017 | Each | 0.10 |
| 14 | Isolating Switches | | | | |
| a) | 33KV 800A AB Switch (Double Breaker) | 3 | 0.363 | Each | 1.09 |
| b) | 11KV 800A AB Switch (NT X 1+1) (Double Breaker) | 3 | 0.235 | Each | 0.70 |
| c) | 11KV 400A AB Switch (NF X 2+2) (Double Breaker) | 12 | 0.086 | Each | 1.03 |
| d) | 33KV Horn Gap Fuse Set (1XNT) | 2 | 0.000 | Each | 0.00 |
| 15 | Data Acquisition equipment (SIM, modem, cabling etc) | | | LS | 0.40 |
| 16 | 24 Volts 40 AH Battery Set including Battery Charger | 7 | 0.280 | Each | 1.96 |
| 17 | Earthing of Power Transformer VCBs,AB Swicthes,Strucutres with 75x8mm GI Flat | | | LS | 1.80 |
| | **Sub Total** | | | | **133.45** |
| | 3% Contingencies on items 7 to 16 | | | | 2.71 |
| | 1% T&P Charges on items No. 7 to 16 | | | | 0.90 |
| | Erection and transport and commissioning charges on items 7 to 16 at 10% | | | | 9.04 |
| | GST at 18% on L&T | | | | 1.627 |
| | 10% Establishment and General Charges | | | | 13.34 |
| | **Total** | | | | **161.08** |
| | | | Or say | | **161.08** |

**Note :** NF = No. of 11 KV Feeders, The number of outgoing feeders at substation limited to the demand in MVA i.e. if substation demand is 5 MVA, the number of feeders should not exceed five.

**COST DATA FOR ERECTION OF 33/11 KV SUBSTATION WITH PSCC POLES, 1 X 5 MVA POWER TRANSFORMERS and 3 NO. 11 KV FEEDERS WITH 11 KV 2 MVAR CAPACITORS BANK**

Rs. in Lakhs

| Sl. No | Particulars | Qty. | Rate (Rs. in lakhs) | Unit | Amount (Rs. in lakhs) |
|---|---|---|---|---|---|
| 1 (a) | Lands and Rights | LS | 11.00 | | 11.00 |
| (b) | Plantation of Trees | LS | | LS | 0.15 |
| 2 | Control Room and Consumer service centre (including furniture) | LS | | LS | 12.00 |
| 3 | Station Auxillaries | | | | |
| a) | Peripheral, Security Fencing, Approach road, retaing wall around switchward with gravel filling, gate and bore well | LS | | LS | 11.00 |
| b) | Yard lighting | 8 | 0.07 | Each | 0.58 |
| c) | Fire fighting Equipment | LS | | LS | 0.70 |
| d) | P&T Phone and wireless set | LS | | LS | 0.05 |
| 4 | Foundations for structures, PTRs & breakers | LS | | LS | 3.30 |
| 5 | Bus bars, Jumpers, Connectors claps etc. | LS | | LS | 1.32 |
| 6 | Control Cables | LS | | LS | 1.19 |
| 7 | Structural Steel | 5.5 | 0.549 | MT | 3.02 |
| 8 | 9.1 meters PSCC poles | 23 | 0.032 | Each | 0.73 |
| 9 | 8 meters PSCC poles | 8 | 0.015 | Each | 0.12 |
| 10 | Transformers | | | | |
| a) | 33/11kv 5 MVA Power Transformer | 1 | 30.79 | Each | 30.79 |
| b) | 3-Phase 25 KVA (CSP) (Al) | 1 | 0.628 | Each | 0.63 |
| 11 | Circiut Breakres (including trivector meters) | | | | |
| a) | 20 KA 11 kv feeder VCB including Control panel and CTs (NF= | 3 | 2.458 | Each | 7.38 |
| b) | 20 KA 11 kv LV VCB including Control panel and CTs | 1 | 2.450 | Each | 2.45 |
| 12 | Control Circiut Panels | | | | |
| a) | AC Supply Panel | 1 | 0.303 | Each | 0.30 |
| b) | Alaram Panel | 1 | 0.303 | Each | 0.30 |
| 13 | Instrumnet Transformers | | | | |
| a) | 11kv P.T (3 Phase) | 1 | 0.182 | Each | 0.18 |
| 14 | Lightning Arrestors | | | | |
| a) | 33KV 10KA | 6 | 0.033 | Each | 0.20 |
| b) | 11KV Line Type (NF=3) | 9 | 0.017 | Each | 0.15 |
| c) | 11KV Station Type 10 KA | 3 | 0.017 | Each | 0.05 |
| 15 | Isolating Switches | | | | |
| a) | 33KV 800A AB Switch | 3 | 0.363 | Each | 1.09 |
| b) | 11KV 800A AB Switch (NT X 1+1) | 2 | 0.235 | Each | 0.47 |
| c) | 11KV 400A AB Switch (NF X 2+2) | 8 | 0.086 | Each | 0.69 |
| d) | 33KV Horn Gap Fuse Set (1XNT) | 1 | 0.000 | Each | 0.00 |
| 16 | Data Acquisition equipment (SIM, modem, cabling etc) | | | LS | 0.30 |
| 17 | 24 Volts 40 AH Battery Set including Battery Charger | 4 | 0.280 | Each | 1.12 |
| 18 | 2MVAR 11KV Capacitor Bank along with Associated Equipment | 1 | 7.990 | Each | 7.99 |
| 19 | Earthing of Power Transformer VCBs,AB Swicthes,Strucutres with 75x8mm GI Flat | | | LS | 1.80 |
| | **Sub Total** | | | | **101.04** |
| | 3% Contingencies on items 7 to 17 | | | | 1.74 |
| | 1% T&P Charges on items No. 7 to 17 | | | | 0.58 |
| | 10% Erection and transport and commissioning charges on items 7 to 17 | | | | 5.80 |
| | GST at 18% on L&T | | | | 1.043 |
| | 10% Establishment and General Charges | | | | 10.10 |
| | **Total** | | | | **120.30** |
| | | | | Or say | **120.30** |

**Note :** NF = No. of 11 KV Feeders, The number of outgoing feeders at substation limited to the demand in MVA i.e. if substation demand is 5 MVA, the number of feeders should not exceed five.

**Cost data for erection of 11 KV Bay Extension in existing 33/11 KV sub-station (with RS Joist)**

| S. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 150X150 mm H type beam of 8.5 mts length (2 Nos. RS Joist) | 0.598 | 54,870 | MT | 32,834 |
| 2 | 100x50 mm Channel | 0.166 | 55,755 | MT | 9,250 |
| 3 | MS flat 75x8 mm | 0.05 | 54,280 | MT | 2,714 |
| 4 | AB switch 400 Amps conventional type | 1 | 8,602 | Each | 8,602 |
| 5 | 200 sqmm ACSR Conductor (Panther-conductor) | 0.02 | 147,854 | KM | 2,957 |
| 6 | 11 KV Polymer String insulator (C&T) | 18 | 138 | Each | 2,487 |
| 7 | Earthing arrangement (20 mts length with 75x8 MS flat (20x4.7=94) | 94 | 54 | KG | 5,102 |
| 8 | Pad clamps, bolts & nuts & Miscellaneous items | LS | | | 1,650 |
| | **Sub-Total** | | | | **65,596** |

| | |
|---|---|
| 3% Contingencies | 1,968 |
| Labour & Transport | 16,445 |
| GST at 18% on L&T | 2,960 |
| 10% Establishment & General charges | 6,560 |
| **Grand Total** | **93,528** |

**Cost data for erection of 11 KV Bay Extension in existing 33/11 KV sub-station (with 9.1 mts PSCC poles)**

| S. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 9.1 mts. PSCC poles | 2 | 3186 | Each | 6,372 |
| 2 | 100x50 mm Channel | 0.166 | 55755 | MT | 9,250 |
| 3 | MS flat 75x8 mm | 0.05 | 54280 | MT | 2,714 |
| 4 | AB switch 400 Amps conventional type | 1 | 8602 | Each | 8,602 |
| 5 | 200 sqmm ACSR Conductor (Panther conductor) | 0.02 | 147854 | KM | 2,957 |
| 6 | 11 KV Polymer String insulator (C&T) | 18 | 138 | Each | 2,487 |
| 7 | Earthing arrangement (20 mts length with 75x8 MS flat (20x4.7=94) | 94 | 54 | KG | 5,102 |
| 8 | Pad clamps, bolts & nuts & Miscellaneous items | LS | | | 1,650 |
| | **Sub-Total** | | | | **39,134** |

| | |
|---|---|
| 3% Contingencies | 1,174 |
| Labour & Transport | 16,445 |
| GST at 18% on L&T | 2,960 |
| 10% Establishment & General charges | 3,913 |
| **Grand Total** | **63,626** |

**Cost Data for 33 KV Bay Extension in 33/11 KV substation**

| Sl. No | Description of Material | Qty | Unit | Rate in Rs. | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 150 x 150 RSJ pole (8m) | 0.6 | MT | 54,870 | 32,922 |
| 2 | 100 x 50 mm MS channel | 0.3 | MT | 55,755 | 15,054 |
| 3 | 75 x 8mm flat for clamps & earthing | 0.2 | MT | 54,280 | 10,856 |
| 4 | 200 sqmm Panther conductor | 0 | KM | 147,854 | 2,957 |
| 5 | Strain Insulator set with metal parts (each set consists 3 Nos 11 KV strain insulators) | 6 | Set | 414 | 2,487 |
| 6 | Erection of 33 KV AB switch (800 Amps, Conventional) | 1 | Each | 36,349 | 36,349 |
| 7 | Miscelleneous items like fabrication of channels & pad clamps etc. | | LS | | 2,750 |
| | **Sub-Total** | | | | **103,374** |
| | 3% Contingencies | | | | 3,101 |
| | 3% S&H charges | | | | 3,101 |
| | Labour & Transport | | | | 16,772 |
| | GST at 18 % on L&T | | | | 3,019 |
| | 10% Estt & General charges on material | | | | 10,337 |
| | | | **Total** | | **139,705** |

**Cost-Data for Extention of 33KV Bay at 132/33KV Sub-station**

| Sl. No. | Description | Qty | Rate in Rs. | Per | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | Galvanised steel such as M.S.angles, flats, channels for TC & TD towers. (GHMC SSR Towers sheet) | 5.00 | 76174 | MT | 380,871 |
| 2 | Spacer clamps for 33KV bus | 9 | 533 | Each | 4,797 |
| 3 | Spacer clamp with T off zebra for one feeder | 3 | 161 | Each | 483 |
| 4 | 33 KV Polymer String Insulator (B&S) | 8 | 282 | Each | 2,259 |
| 5 | Tension hardware for twin zebra | 6 | 2,638 | Each | 15,828 |
| 6 | Zebra condutor | 0.150 | 299369 | KM | 44,905 |
| 7 | 33KV AB Switch 800 A | 1 | 36349 | Each | 36,349 |
| 8 | Twin Zebra connector | 12 | 600 | Each | 7,200 |
| 9 | T Clamps | 12 | 500 | Each | 6,000 |
| 10 | MS.Flat 100x16 | 0.63 | 46904 | MT | 29,550 |
| 11 | MS.Flat 50X8 | 0.62 | 51817 | MT | 32,127 |
| 12 | GI Flat 100X16 | 0.151 | 63235 | MT | 9,548 |
| 13 | GI Flat 50X8 | 0.155 | 63478 | MT | 9,839 |
| 14 | Civil works for erection of towers in sub-station yard and other miscellaneous items. | | | LS | 100,000 |
| | **Sub-Total** | | | | **679,755** |
| | 3% S&H charges on Material | | | | 17,393 |
| | 3% Contingencies on Material | | | | 17,393 |
| | Labour & Transport | | | | 112,121 |
| | GST at 18 % on L&T | | | | 20,182 |
| | 10% Estt. & Gen. Chargtes | | | | 67,976 |
| | | | | **Gross Total** | **914,819** |

**Cost Data for erection of 11 KV breaker in sub-station**

| Sl.No | Description of work | Qty | Unit | Rate in Rs. | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 11 KV VCB along with all Accessories Including CTs | 1 | Each | 245849 | 245,849 |
| 2 | 4x2.5 sqmm Control cable | 0.05 | KM | 83544 | 4,177 |
| 3 | Earthing arrangements | LS | | | 1,650 |
| 4 | Miscellenous items like conductor and clamps etc | LS | | | 1,650 |
| | **Sub-Total** | | | | **253,326** |
| | 3% Contingencies | | | | 7,600 |
| | 3% S&H charges | | | | 7,600 |
| | Labour & Transport | | | | 34,477 |
| | GST at 18 % on L&T | | | | 6,206 |
| | 10% Estt & General charges | | | | 25,333 |
| | | | **Total** | | **334,541** |

**Cost-Data for erection of 33 KV VCB and Twin feeder Control Pannel at 132/33KV Sub-stations**

| S. No | Description of work | Qty | Rate in Rs. | Per | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 33 KV VCB with relay& CTs (400-200-100/1-1-1A) | 1 | 397,610 | Each | 397,610 |
| 2 | LT PVC Copper Control Cable 10 C x2.5 Sq.mm | 0.75 | 180,110 | KM | 135,083 |
| 3 | LT PVC Copper Control Cable 4 C x2.5 Sq.mm | 0.75 | 83,544 | KM | 62,658 |
| 4 | 33KV LAS line type | 3 | 3,321 | Each | 9,964 |
| 5 | 33 KV Twin feeder control panel | 1 | 418,325 | No | 418,325 |
| 6 | Miscellenous items | | | LS | 1,100 |
| | **Sub-Total** | | | | **1,024,740** |

| | |
|---|---|
| 3% S&H charges | 30,742 |
| 3% Contingencies on material | 30,742 |
| Labour & Transport | 93,635 |
| GST 18 % on L&T | 16,854 |
| 10% Estt. & General Charges | 102,474 |
| **Gross Total** | **1,299,188** |

**Cost data for erection of 2 MVAR Capacitor Bank**

| S. No. | Particulars | Qty. | Rate in Rs. | Per Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 2 MVAR 11KV Capacitor Bank along with associated Equipment (Capactors, Structure and VCB ) (Type A) | 1 | 799,000 | Each | 799,000 |
| 2 | 24 volts 40AH Battery Set including Battery Charger | 1 | 28,000 | Each | 28,000 |
| 3 | M.S.Flat 50x6mm | 0.36 | 54,280 | MT | 19,541 |
| 4 | Panther Conductor | 0.05 | 147,854 | KM | 7,393 |
| 5 | 4 Core 2.5 Sqmm PVC Copper Control Cable | 0.05 | 83,544 | KM | 4,177 |
| 6 | 10 Core 2.5 Sqmm PVC Copper Control Cable | 0.1 | 180,110 | KM | 18,011 |
| 7 | 2 Core 2.5 Sqmm PVC Copper Control Cable | 0.06 | 44,604 | KM | 2,676 |
| 8 | 11KV Post type insulators | 3 | 300 | Each | 900 |
| 9 | Cost of CI pipe of 100 mm dia, 8 mm thick and 2.75 Mts long | 2 | 3,486 | Each | 6,972 |
| 10 | 11KV H.G. Fuse Set with Insulators | 1 | 1,843 | Each | 1,843 |
| 11 | 11KV LA's Station type | 3 | 1,652 | Each | 4,956 |
| 12 | M.S. Channel 100x50mm | 0.24 | 55,755 | MT | 13,381 |
| 13 | Miscellaneous items | LS | | | 550 |
| | **Sub-Total** | | | | **907,400** |

| | | |
|---|---|---|
| 3% Contingencies | | 27,222 |
| Labour ,Transport & Commsioning charges | | 72,845 |
| GST at 18 % on L&T | | 13,112 |
| 10% Establishment & General charges | | 90,740 |
| | **Grand Total** | **1,111,319** |

## Cost Data for Enhancement of capacity of existing Power Transformer from 5 MVA to 8 MVA.

| Sl.N | Particulars | Qty | Rate in Rs. | Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 33/11 KV 8 MVA Power Transformer | 1 | 4559642 | Each | 4,559,642 |
| 2 | Erection of 33 KV VCB with directional relay | 1 | 397610 | Each | 397,610 |
| 3 | Miscellneous Items | | | LS | 50,000 |
| | | **Sub-Total** | | | 5,007,252 |
| | 3 % Storage & Handling charges | | | | 150,218 |
| | 3% Contingencies on material | | | | 150,218 |
| | Labour & Transport | | | | 120,000 |
| | GST at 18% on L&T | | | | 21,600 |
| | 10% Estt & General charges on material | | | | 500,725 |
| | Add: Dismantling charges | | | | 50,000 |
| | | | **Grand Total** | | 6,000,013 |

Less Credit

Less Credit has to be valued as per the respective PTR book value in SAP, if data is not available in SAP, the following value may be considered.

| | | | | | |
|---|---|---|---|---|---|
| 1 | 33/11KV 5 MVA Power Transformer | 1 | 3078551 | Each | 3,078,551 |
| | Depreciation 40% (Variable as per life served) | | 1231420 | | 1,231,420 |
| | | | | Net | 1,847,131 |
| | Original erection charges (SWR 21275 MP) | | | | 35,280 |
| | Original dismantling charges | | | | 17,640 |
| | 10% Estt. & General charges | | | | 184,713 |
| | | | Total | | 2,084,764 |
| | | | Or Say | Rs. | 2,084,764 |
| | Net Amount = Grand total - Less credit | | 6000013 | 2084764 | 3,915,249 |

**Cost data for laying of 3 core 300 Sq.mm 11 KV UG Cable**

| Sl. No. | Description of the material | Qty | Rate in Rs. | Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | Laying 11 KV 3 core 300Sq.mm UG Cable at depth of 1.20mtrs along CC road | 1 | 1,386,500 | KM | 1,386,500 |
| 2 | Erection of 3 way RMU (SF6) outdoor type | 1 | 480,787 | Each | 480,787 |
| 3 | Straight through joints for 3 core 11KV 300Sq.mm UG Cable | 1 | 3,176 | Each | 3,176 |
| 4 | End termination suitable for 3 core 300 Sq.mm UG cable | 4 | 2,021 | Each | 8,084 |
| 5 | Earthing of Cable with GI pipe of 2mt length | 3 | 733 | Nos | 2,199 |
| | **Sub-Total** | | | | **1,880,746** |
| | 3 % storage & handling charges | | | | 41,595 |
| | 3 % contingencies | | | | 41,595 |
| | Labour and Transport | | | | 515,075 |
| | GST at 18 % on L&T | | | | 92,714 |
| | 10 % Estt & General charges | | | | 188,075 |
| | | | **Grand Total** | | **2,759,800** |

## Cost data for laying of 3 core 400Sq.mm 33KV UG Cable

| Sl. No. | Description of the material | Qty | Rate in Rs. | Unit | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | Laying 33 KV 3 core 400Sq.mm UG Cable at depth of 1.20mtrs along CC road | 1 | 2,761,240 | KM | 2,761,240 |
| 2 | Straight through joints and end terminators suitable for 3 core 33KV 400Sq.mm UG Cable and Hume pipes and GI pipe (15% of cost cable) | 1 | 5,000 | Each | 5,000 |
| 3 | End termination suitable for 400 Sq.mm (outdoor type) | 2 | 2,310 | Nos | 4,620 |
| 4 | Earthing of Cable with GI pipe of 2mt length | 2 | 733 | Nos | 1,466 |
| | **Sub-Total** | | | | **2772326** |

| | | |
|---|---|---|
| 3 % Storage & handling charges | | 82,837 |
| 3 % Contingencies | | 82,837 |
| Labour and Transport | | 600,491 |
| GST at 18 % on L&T | | 108,088 |
| 10 % Estt & General charges | | 277,233 |
| | **Grand Total** | **3,923,813** |

**Erection of Non Galvanised M+3 Tower as per ASCI Standard without excavation (for span length 100m for angle deviation 20degrees to 60degrees/Cut point/Deadend)**

| S. No. | Particulars | Qty. | Per Unit | Rate in Rs. | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | Supply of Non Galvanised M+3 type tower as per Specification. | 1.468 | MT | 54,174 | 79,528 |
| 2 | Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers. | 158 | KG | 100 | 15,877 |
| 3 | Fabrication of tower Parts as per Specification | 1.468 | MT | 6,353 | 9,325 |
| 4** | Excavation of pit including dewatering, planking, showring and shuttering( where ever necessary) and leveling a) in all types of soils such as BC, red earth, hard gravel etc.,<br>b) in hard rock sites (where blasting is prohibited) with size 1.2x1.2x3.3 mtr i.e.4.752 cum | 4.752 | CUM | | |
| 5 | Setting of stubs in position for laying of foundation of towers with 1:2:4 cc mix using 40 mm HBG metal including cost of all concreting materials and cement, form boxes and curing for 14 days | 4.752 | CUM | 7,167 | 34,057 |
| 6 | Erection of tower parts completely as per specifications including erection of insulators with all accessories, jumpering,transport of meterial and bolts and nuts etc., | 1.468 | MT | 7,508 | 11,021 |
| 7 | Tack welding of total tower nuts and bolts | 1 | Job | 1,733 | 1,733 |
| 8 | Pipe earthing of towers with 40mm dia GI pipe, including cost of pipe, bentonite powder and running of GI flat etc., | 2 | Each | 1,709 | 3,418 |
| 9 | Transport of Material to site including loading and unloading | 1.626 | MT | 2,310 | 3,756 |
| 10 | Painting of sub-station structures with two coats of Aluminium paint using Aluminium paint 1st grade containing 3.6 kg of Aluminium paste for 18 litres of thinner 1st coat is to be applied before erection of tower and 2nd coat after stringing and half round welding including cost of paint, cost of brushes, labour charges etc., complete. | | | | |

| S. No. | Particulars | Qty. | Per Unit | Rate in Rs. | Amount in Rs. |
|---|---|---|---|---|---|
| a | Material for First coat of 1st Grade Aluminium Paint, paint, brushes etc. | 1.468 | MT | 2,176 | 3,194 |
| b | Labour charges for painting including scratching and cleaning of tower | 1.468 | MT | 848 | 1,245 |
| c | Material for Second coat of 1st Grade Aluminium Paint, brushes, etc,. | 1.468 | MT | 1,289 | 1,893 |
| d | Labour charges for painting including scratching and cleaning of tower | 1.468 | MT | 480 | 705 |
| | | | | **Total:** | **165,751** |

GST will be extra

(**) Note:-(1) Earth work excavation of Hard Rock removal (where blasting is prohibited) rate to be calculated as per code SWR10856 -- 985/- Per Cum.

**Tower details**

| | | |
|---|---|---|
| 1 | Weight of M type tower | 1.29 MT |
| 2 | Weight of 1 No. extension of 3 Mts | 0.335 MT |
| 3 | Weight of M+3 tower | 1.626 MT |
| 4 | Weight of M+6 tower | 1.962 MT |
| 5 | Weight of M+9 | 2.294 MT |
| 6 | Weight of **SIX** arms | 0.091 MT |

**stub** (110X110X8) **110X110X10**= 4.56 mts
100X100X8=1.998 mts
80X80X8 =1.898 mtrs
65X65X6 = 2.274 mts
50X50X6=2.761 mtrs
Total height 13.5 mts
Depth of tower below ground level : 3.2 mts
Height of tower above ground level : 10.3 mts.

**Erection of Non-Galvanised L+3 Tower as per ASCI Standard without excavation ( for span length 100mts for angle deviation between 2degrees to 20degrees)**

| S. No. | Particulars | Qty. | Per Unit | Rate in Rs. | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | Supply of Non-Galvanized L+3 type tower as per Specification. | 1.05 | MT | 54,174 | 56,883 |
| 2 | Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers. | 168 | KG | 100 | 16,882 |
| 3 | Fabrication of tower Parts as per Specification | 1.05 | MT | 6,353 | 6,670 |
| 4 | Excavation of pit including dewatering, planking, showring and shuttering( where ever necessary) and leveling a) in all types of soils such as BC, red earth, hard gravel etc.,<br>b) in hard rock sites (where blasting is prohibited) with size 1.0x1.0x3.0 mtr i.e.3.0cum | 3 | CUM | | |
| 5 | Setting of stubs in position for laying of foundation of towers with 1:2:4 cc mix using 40 mm HBG metal including cost of all concreting materials and cement, form boxes and curing for 14 days i.e 3.15 cum | 3.15 | CUM | 6,887 | 21,695 |
| 6 | Erection of tower parts completely as per specifications including erection of insulators with all accessories, jumpering,transport of meterial and bolts and nuts etc., | 1.05 | MT | 7,508 | 7,883 |
| 7 | Tack welding of total tower nuts and bolts | 1 | Job | 1,733 | 1,733 |
| 8 | Pipe earthing of towers with 40mm dia GI pipe, including cost of pipe, bentonite powder and running of GI flat etc., | 2 | Each | 1,709 | 3,418 |
| 9 | Transport of Material to site including loading and unloading | 1.22 | MT | 2,310 | 2,814 |

| S. No. | Particulars | Qty. | Per Unit | Rate in Rs. | Amount in Rs. |
|---|---|---|---|---|---|
| 10 | Painting of sub-station structures with two coats of Aluminium paint using Aluminium paint 1st grade containing 3.6 kg of Aluminium paste for 18 litres of thinner 1st coat is to be applied before erection of tower and 2nd coat after stringing and half round welding including cost of paint, cost of brushes, labour charges etc., complete. | | | | |
| a | Material for First coat of 1st Grade Aluminium Paint, paint, brushes etc. | 1.05 | MT | 2,176 | 2,285 |
| b | Labour charges for painting including scratching and cleaning of tower | 1.05 | MT | 848 | 890 |
| c | Material for Second coat of 1st Grade Aluminium Paint, brushes, etc,. | 1.05 | MT | 1,289 | 1,354 |
| d | Labour charges for painting including scratching and cleaning of tower | 1.05 | MT | 480 | 505 |
| | | | | **Total:** | **123,010** |

GST will be extra

(**) Note:-(1) Earth work excavation of Hard Rock removal (where blasting is prohibited) rate to be calculated as per code SWR10856 -- 985/- Per Cum.

**Tower details**

| | | | |
|---|---|---|---|
| 1 | Weight of L type tower including nuts&bolts | 0.9565 | MT |
| 2 | Weight of 1 No. extension of 3 Mts | 0.26325 | MT |
| 3 | Weight of L+3 tower | 1.219 | |
| 4 | Weight of L+6 tower | 1.483 | |
| 5 | Weight of L+9 | 1.746 | |
| 6 | Weight of each arm | 0.084 | MT |

**stubs** 90X90X8 = 4.256 mts

80X80X8=1.998 mts

65X65X6 =2.898 mtrs

50X50X5 = 1.274 mts

45X45X5=2.726 mtrs

Total height 13.15 mts

Depth of tower below ground level : 3.0 mts

Height of tower above ground level : 10.15mts.

**Erection of Non-Galvanised K+3 Tower as per ASCI Standard without excavation ( for span length 100mts for angle deviation not exceeding 2degrees)**

| S. No. | Particulars | Qty | Per Unit | Rate in Rs. | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | Supply of Non Galvanised K+3 type tower as per Specification. | 0.75 | MT | 54,174 | 40,631 |
| 2 | Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers.(MP SSR) | 118.27 | KG | 100 | 11,885 |
| 3 | Fabrication of tower Parts as per Specification | 0.75 | MT | 6,353 | 4,764 |
| 4** | Excavation of pit including dewatering, planking, showring and shuttering( where ever necessary) and leveling a) in all types of soils such as BC, red earth, hard gravel etc.,<br>b) in hard rock sites (where blasting is prohibited) with size 1.0x1.0x2.5 mtr i.e.2.5 cum | 2.5 | CUM | | |
| 5 | Setting of stubs in position for laying of foundation of towers with 1:2:4 cc mix using 40 mm HBG metal including cost of all concreting materials and cement, form boxes and curing for 14 days i.e 2.65 cum | 2.65 | CUM | 6,887 | 18,251 |
| 6 | Erection of tower parts completely as per specification including erection of insulators with all accessories, jumpering and bolts and nuts etc., | 0.75 | MT | 7,508 | 5,631 |
| 7 | Tack welding of total tower nuts and bolts | 1 | Job | 1,733 | 1,733 |
| 8 | Pipe earthing of towers with 40mm dia GI pipe, including cost of pipe, bentonite powder and running of GI flat etc., (MP SSR) | 2 | Each | 1,709 | 3,418 |
| 9 | Transport of Material to site including loading and unloading | 0.87 | MT | 2,310 | 2,005 |

| S. No. | Particulars | Qty | Per Unit | Rate in Rs. | Amount in Rs. |
|---|---|---|---|---|---|
| 10 | Painting of sub-station structures with two coats of Aluminium paint using Aluminium paint 1st grade containing 3.6 kg of Aluminium paste for 18 litres of thinner 1st coat is to be applied before erection of tower and 2nd coat after stringing and half round welding including cost of paint, cost of brushes, labour charges etc., complete. | | | | |
| a | Material for First coat of 1st Grade Aluminium Paint, paint, brushes etc. | 0.75 | MT | 2,176 | 1,632 |
| b | Labour charges for painting including scratching and cleaning of tower | 0.75 | MT | 848 | 636 |
| c | Material for Second coat of 1st Grade Aluminium Paint, brushes, etc,. | 0.75 | MT | 1,289 | 967 |
| d | Labour charges for painting including scratching and cleaning of tower | 0.75 | MT | 480 | 360 |
| | **Total:** | | | | **91,912** |

GST will be extra

(**) Note:-(1) Earth work excavation of Hard Rock removal (where blasting is prohibited) rate to be calculated as per code SWR10856 -- 985/- Per Cum.

**Tower details**

| | | |
|---|---|---|
| 1 | Weight of K type tower including nuts&bolts | 0.705 MT |
| 2 | Weight of 1 No. extension of 3 Mts | 0.163 MT |
| 3 | Weight of K+3 tower | 0.867 |
| 4 | Weight of K+6 tower | 1.03 |
| 5 | Weight of K+9 | 1.193 |
| 6 | Weight of each arm | 0.103 MT |

**stub** 75X75X6 = 3.76 mts
65X65X6=1.054 mts
50X50X5 =1.103 mtrs
45X45X5 = 3.883 mts
45X45X5=4.817 mtrs
Total height 14.6 mts
Depth of tower below ground level : 2.5 mts
Height of tower above ground level : 12.1 mts.

**DATA-VIII**

**Extension of 3mtrs for Non-Galvanized K+3 Tower as per ASCI Standard**

| S. No | Description | Qty | Per Unit | Rate in Rs. | Amount in Rs. |
|---|---|---|---|---|---|
| | **Material** | | | | |
| 1 | Supply of Non-Galvanised K+3 type tower as per Specification. | 0.14 | MT | 54,174 | 7,478 |
| 2 | Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers. | 24.96 | KG | 100 | 2,509 |
| 3 | Painting of sub-station structures with two coats of Aluminium paint using Aluminium paint 1st grade containing 3.6 kg of Aluminium paste for 18 litres of thinner 1st coat is to be applied before erection of tower and 2nd coat after stringing and half round welding including cost of paint, cost of brushes, labour charges etc., complete. | | | | |
| a | Material for First coat of 1st Grade Aluminium Paint, paint, brushes etc. | 0.14 | MT | 2,176 | 300 |
| b | Material for Second coat of 1st Grade Aluminium Paint, brushes, etc,. | 0.14 | MT | 1,289 | 178 |
| | | | | **Total:** | **10,465** |
| | **Labour** | | | | |
| 1 | Fabrication of tower Parts as per Specification | 0.140 | MT | 6,353 | 889 |
| 2 | Erection of tower parts completely as per specification including erection of insulators with all accessories, jumpering and bolts and nuts etc., | 0.140 | MT | 7,508 | 1,051 |
| 3 | Transport of Material to site including loading and unloading | 0.16 | MT | 2,310 | 377 |

| S. No | Description | Qty | Per Unit | Rate in Rs. | Amount in Rs. |
|---|---|---|---|---|---|
| 4 | Painting of sub-station structures with two coats of Aluminium paint using Aluminium paint 1st grade containing 3.6 kg of Aluminium paste for 18 litres of thinner 1st coat is to be applied before erection of tower and 2nd coat after stringing and half round welding including cost of paint, cost of brushes, labour charges etc., complete. | | | | |
| a | Labour charges for painting including scratching and cleaning of tower | 0.140 | MT | 848 | 119 |
| b | Labour charges for painting including scratching and cleaning of tower | 0.140 | MT | 480 | 67 |
| | | | | **Total:** | **2,503** |
| | | GST will be extra | | | |

**Tower details**

| | | |
|---|---|---|
| 1 | Weight of K type tower including nuts&bolts | 0.705 MT |
| 2 | Weight of 1 No. extension of 3 Mts | 0.163 MT |
| 3 | Weight of K+3 tower | 0.867 |
| 4 | Weight of K+6 tower | 1.03 |
| 5 | Weight of K+9 | 1.193 |
| 6 | Weight of each arm | 0.103 MT |

**stubs** 75X75X6 = 3.76 mts

65X65X6=1.054 mts

50X50X5 =1.103 mtrs

45X45X5 = 3.883 mts

45X45X5=4.817 mtrs

Total height 14.6 mts

Depth of tower below ground level : 2.4 mts

Height of tower above ground level : 12.2 mts.

**DATA-IX**

**Extension of 3mtrs for Non-Galvanized L+3 Tower as per ASCI Standard**

| S. No | Description | Qty. | Per Unit | Rate in Rs. | Amount in Rs. |
|---|---|---|---|---|---|
| | **Material** | | | | |
| 1 | Supply of Non-Galvanized L+3 type tower as per Specification | 0.24 | MT | 54,174 | 13,002 |
| 2 | Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers. (MP SSR) | 23.81 | KG | 100 | 2,392 |
| 3 | Painting of sub-station structures with two coats of Aluminium paint using Aluminium paint 1st grade containing 3.6 kg of Aluminium paste for 18 litres of thinner 1st coat is to be applied before erection of tower and 2nd coat after stringing and half round welding including cost of paint, cost of brushes, labour charges etc., complete. | | | | |
| a | Material for First coat of 1st Grade Aluminium Paint, paint, brushes etc. | 0.24 | MT | 2,176 | 522 |
| b | Material for Second coat of 1st Grade Aluminium Paint, brushes, etc,. | 0.24 | MT | 1,289 | 309 |
| | | | | **Total:** | **16,226** |
| | **Labour** | | | | |
| 1 | Fabrication of tower Parts as per Specification | 0.24 | MT | 6,353 | 1,525 |
| 2 | Erection of tower parts completely as per specifications including erection of insulators with all accessories, jumpering,transport of meterial and bolts and nuts etc., | 0.24 | MT | 7,508 | 1,802 |
| 3 | Transport of Material to site including loading and unloading | 0.26 | MT | 2,310 | 601 |

| S. No | Description | Qty. | Per Unit | Rate in Rs. | Amount in Rs. |
|---|---|---|---|---|---|
| 4 | Painting of sub-station structures with two coats of Aluminium paint using Aluminium paint 1st grade containing 3.6 kg of Aluminium paste for 18 litres of thinner 1st coat is to be applied before erection of tower and 2nd coat after stringing and half round welding including cost of paint, cost of brushes, labour charges etc., complete. | | | | |
| a | Labour charges for painting including scratching and cleaning of tower | 0.24 | MT | 848 | 203 |
| b | Labour charges for painting including scratching and cleaning of tower | 0.24 | MT | 480 | 115 |
| | | | | **Total:** | **4,246** |
| | | GST will be extra | | | |

**Tower details**

| | | | |
|---|---|---|---|
| 1 | Weight of L type tower including nuts&bolts | 0.9565 | MT |
| 2 | Weight of 1 No. extension of 3 Mts | 0.26325 | MT |
| 3 | Weight of L+3 tower | 1.219 | |
| 4 | Weight of L+6 tower | 1.483 | |
| 5 | Weight of L+9 | 1.746 | |
| 6 | Weight of each arm | 0.084 | MT |

**stubs** 90X90X8 = 4.256 mts

80X80X8=1.998 mts

65X65X6 =2.898 mtrs

50X50X5 = 1.274 mts

45X45X5=2.726 mtrs

Total height 13.15 mts

Depth of tower below ground level : 3.0 mts

Height of tower above ground level : 10.15mts.

**DATA-X**

**Extension of 3mtrs for Non-Galvanized M+3 Tower as per ASCI Standard**

| S. No | Description | Qty. | Per Unit | Rate in Rs. | Amount in Rs. |
|---|---|---|---|---|---|
| | **Material** | | | | |
| 1 | Supply of Non-Galvanised M+3 type tower as per Specification. | 0.30 | MT | 54,174 | 16,312 |
| 2 | Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers. | 30.23 | KG | 100 | 3,038 |
| 3 | Painting of sub-station structures with two coats of Aluminium paint using Aluminium paint 1st grade containing 3.6 kg of Aluminium paste for 18 litres of thinner 1st coat is to be applied before erection of tower and 2nd coat after stringing and half round welding including cost of paint, cost of brushes, labour charges etc., complete. | | | | |
| a | Material for First coat of 1st Grade Aluminium Paint, paint, brushes etc. | 0.30 | MT | 2,176 | 655 |
| b | Material for Second coat of 1st Grade Aluminium Paint, brushes, etc,. | 0.30 | MT | 1,289 | 388 |
| | | | | **Total:** | **20,393** |
| | **Labour** | | | | |
| 1 | Fabrication of tower Parts as per Specification | 0.30 | MT | 6,353 | 1,913 |
| 2 | Erection of tower parts completely as per specifications including erection of insulators with all accessories, jumpering,transport of meterial and bolts and nuts etc., | 0.30 | MT | 7,508 | 2,261 |
| 3 | Transport of Material to site including loading and unloading | 0.33 | MT | 2,310 | 765 |

| S. No | Description | Qty. | Per Unit | Rate in Rs. | Amount in Rs. |
|---|---|---|---|---|---|
| 4 | Painting of sub-station structures with two coats of Aluminium paint using Aluminium paint 1st grade containing 3.6 kg of Aluminium paste for 18 litres of thinner 1st coat is to be applied before erection of tower and 2nd coat after stringing and half round welding including cost of paint, cost of brushes, labour charges etc., complete. | | | | |
| a | Labour charges for painting including scratching and cleaning of tower | 0.30 | MT | 848 | 255 |
| b | Labour charges for painting including scratching and cleaning of tower | 0.30 | MT | 480 | 145 |
| | | | | **Total:** | **5,339** |
| | | GST will be extra | | | |

**Tower details**

| | | | |
|---|---|---|---|
| 1 | Weight of M type tower | 1.29 | MT |
| 2 | Weight of 1 No. extension of 3 Mts | 0.335 | MT |
| 3 | Weight of M+3 tower | 1.626 | MT |
| 4 | Weight of M+6 tower | 1.962 | MT |
| 5 | Weight of M+9 | 2.294 | MT |
| 6 | Weight of **SIX** arms | 0.091 | MT |

**stubs** (110X110X8) **110X110X10**= 4.56 mts

100X100X8=1.998 mts

80X80X8 =1.898 mtrs

65X65X6 = 2.274 mts

50X50X6=2.761 mtrs

Total height 13.5 mts

Depth of tower below ground level : 3.2 mts

Height of tower above ground level : 10.3 mts.

**Cost Data for Erection of 5MVA Additional Power Transformer with 33 KV Bay Extension in 33/11 KV substation**

| Sl. No | Description of Material | Qty | Unit | Rate in Rs. | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 150 x 150 RSJ pole (8m) | 0.6 | MT | 54,870 | 32,922 |
| 2 | 100 x 50 mm MS channel | 0.27 | MT | 55,755 | 15,054 |
| 3 | 75 x 8mm flat for clamps & earthing | 0.4 | MT | 54,280 | 21,712 |
| 4 | 200 sqmm Panther conductor | 0.02 | KM | 147,854 | 2,957 |
| 5 | Strain Insulator set with metal parts (each set consists 3 Nos 11 KV strain insulators) | 6 | Set | 414 | 2,487 |
| 5 | Erection of 33 KV AB swithch | 1 | Each | 36,349 | 36,349 |
| 6 | 5 MVA Power Transformer | 1 | Each | 3,078,551 | 3,078,551 |
| 7 | Foundation of Power Transformer | 1 | LS | 50,000 | 50,000 |
| 8 | Miscelleneous items like fabrication of channels & pad clamps etc. | | LS | | 5,000 |
| | **Sub-Total** | | | | **3,245,031** |
| | 3% Contingencies | | | | 97,351 |
| | 3% S&H charges | | | | 97,351 |
| | Labour & Transport | | | | 46,841 |
| | GST at 18 % on L&T | | | | 8,431 |
| | 10% Estt & General charges on material | | | | 324,503 |
| | | | **Total** | | **3,819,509** |

## COST ESTIMATE FOR ERECTION OF 11KV, 70 SQ MM COVERED CONDUCTOR

| Sl. No | Description of Material | Qty | Unit | Rate in Rs. | Amount in Rs. |
|---|---|---|---|---|---|
| 1 | 11KV X 70 Sqmm Covered Conductor | 1 | CKM | 1,357,731 | 1,357,731 |
| 2 | IPC | 50 | Nos. | 1,176 | 58,811 |
| 3 | Ties | 100 | Nos. | 477 | 47,716 |
| 4 | 11KV Mid Span Jointing Kit | 1 | Sets | 5,044 | 5,044 |
| 5 | 11KV Termination Kit | 5 | Sets | 2,565 | 12,823 |
| 5 | 11KV tension insulator Hardware | 50 | Nos. | 378 | 18,910 |
| | **Material value (in Rs.)** | | | | **1,501,033** |
| | 3% Contingencies | | | | 45,031 |
| | 3% S&H charges | | | | 45,031 |
| | Labour & Transport | | | | 197,200 |
| | GST at 18 % on L&T | | | | 35,496 |
| | 10% Estt & General charges on material | | | | 150,103 |
| | | | **Total** | | **1,973,895** |

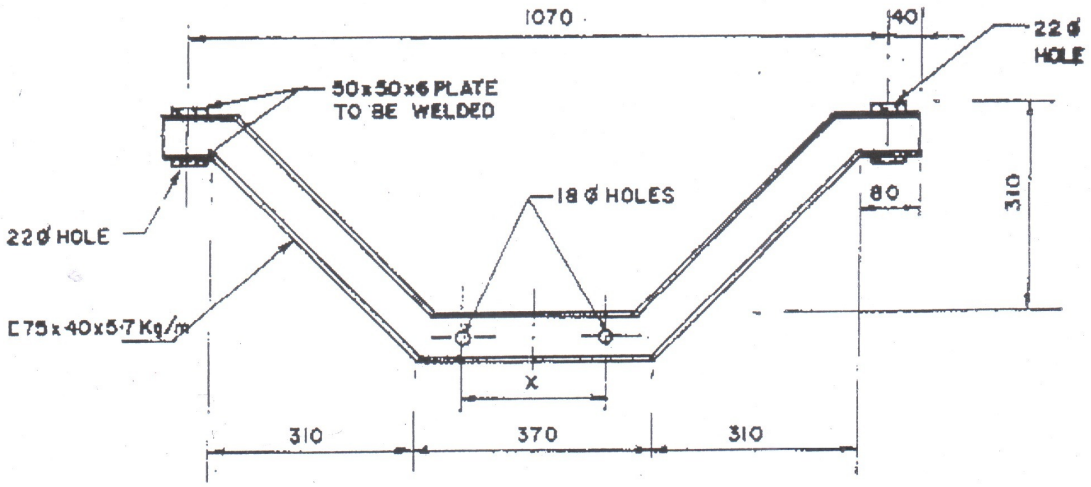
**REC- CONSTRUCTION STANDARD NOS. OTHER THAN THE ITEMS INCLUDED IN THE 33 KV 11 KV & LT LINES ERECTION AND CENTRALISED MATERIAL**

| S. No. | Particulars | REC Construction Standard No./ Specification No. | Remarks/ Notes |
|---|---|---|---|
| 1 | 1.53 Mts. Cross arm (Channel) | M-1/1981 | 33 KV line |
| 2 | Top clamp with cleat | M-4/1984 | 33 KV line |
| 3 | Back clamp | K-1/1972 | 33 KV line & 11 KV line |
| 4 | Base concreting | K-2/1972 (R-1987) | 33 KV line & 11 KV line |
| 5 | Stay sets complete with concreting | G-1/1972 | 33 KV line & 11 KV line |
| 6 | Coil earthing | J-1/1972 | 33 KV line & 11 KV line |
| 7 | Pipe earthing | J-2/1972 | 33 KV line & 11 KV line |
| 8 | Concreting of poles | K-1/1972 | All lines |
| 9 | 8 M PSCC poles | 15/1979 | 11 KV line |
| 10 | 1.07 M Cross arm (Channel) | A-6/1972 | 11 KV line |
| 11 | Top clamp with cleat | A-7/1972 | 11 KV line |
| 12 | Bracing set with double cross arm | A-12/1972 | H.T. line |
| 13 | Guy grip dead end | G-1/1972 & SP.No.25/1983 | H.T. line |
| 14 | C.I. Knob | 31/1983 | L.T. lines |
| 15 | L.T. conductor dead end | G-2/1984 | L.T. lines |
| 16 | Guy grip dead end | G-2/1984 | L.T. lines |
| 17 | L.T. Spares | 29/1983 (R-1987) | L.T. lines |
| 18 | Spool for shackle insulator tieing | D-6/1984 | L.T. lines |
| 19 | D.P. Structure for distribution substation | F-1/1981 (R-1993) | L.T. lines |
| 20 | HT and LT conductor dead end fittings | Sp. No. 25/1983 | All lines |
| 21 | Side tie for pin insulator tieing | Sp. No. 25/1983 | All lines |
| 22 | Fibre Reinforced Plastic Cross Arms | 40/1987 | |

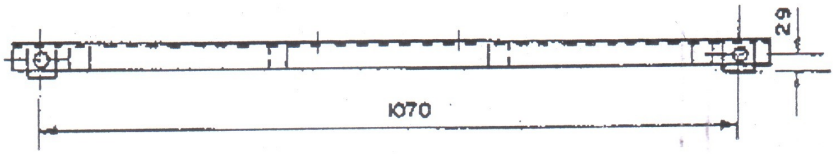
REC

CONSTRUCTION STANDARD

A-6




ELEVATION




PLAN

X :- -TO SUIT THE POLE

NOTE:-AS AN ALTERNATIVE, M.S.ANGLE CROSS-ARM (A-13) MAY BE USED IF CHANNEL SECTION AS PER THIS STANDARD IS NOT AVAILABLE

ALL DIMENSIONS ARE IN mm.

११ के.वी. लाईन

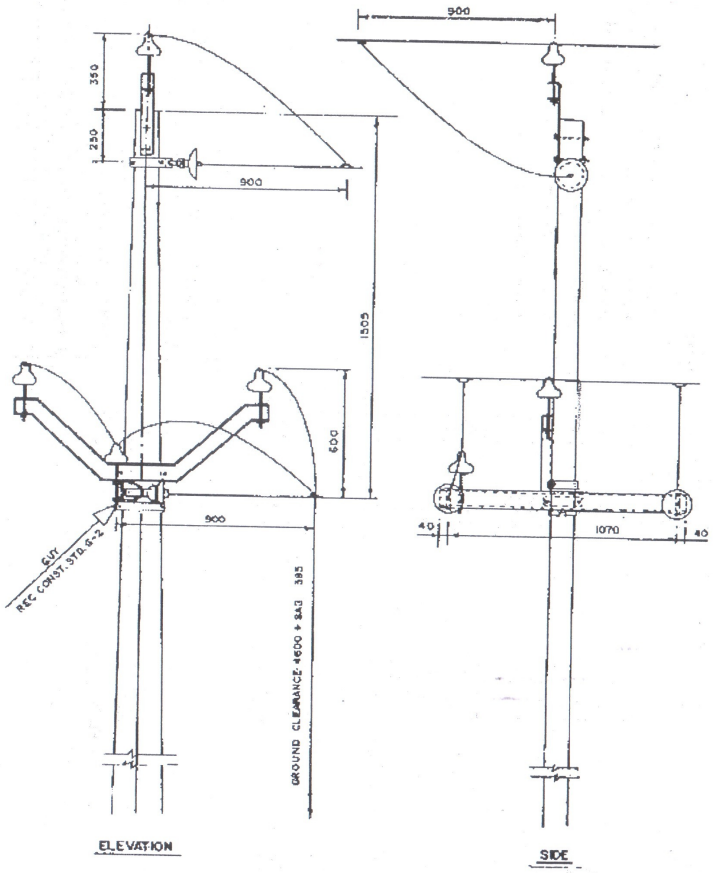
V-केची भुजा

11 KV LINES

V - CROSS ARM

| SCALE :- N.T.S | SEPT. - 1972 |
|---|---|

REC
CONSTRUCTION STANDARD
A-II




BILL OF MATERIAL

| | | |
|---|---|---|
| P.C.C SUPPORT | 8 M. LONG | 1 No. |
| CHANNEL ( FOR V-CROSS ARM ) | REFER-REC. CONST. STD. A-6 | 1 No. |
| CHANNEL(FOR HORIZONTAL CROSS ARM ) | 75 x 40 - 1150 (APPROX.) | 1 No. |
| 11 KV STRAIN INSULATORS WITH HARDWARE | — | 3 Nos. |
| 11 KV PIN INSULATORS WITH PINS | — | 4 Nos. |
| POLE TOP BRACKET | REFER REC. CONST. STD. A-7 | 1 No. |
| GUY SET | REFER REC. CONST. STD. G-2 | 1 No. |
| BASE PLATE | REFER REC. CONST. STD. K-1 | 1 No. |
| PIPE / ROD EARTHING | REFER REC. CONST. STD. J-2 | 1 No. |
| BACK CLAMP ( FOR V-CROSS ARM ) | REFER REC. CONST. STD. K-2 | 1 No. |
| EARTHING MATERIAL, NUTS, BOLTS, CLAMPS ETC. | — | AS REQUIRED |

NOTE:- MAXIMUM SPAN BETWEEN THE TAPPING POLE AND ADJACENT POLE OF THE BRANCH LINE = 50 METRES

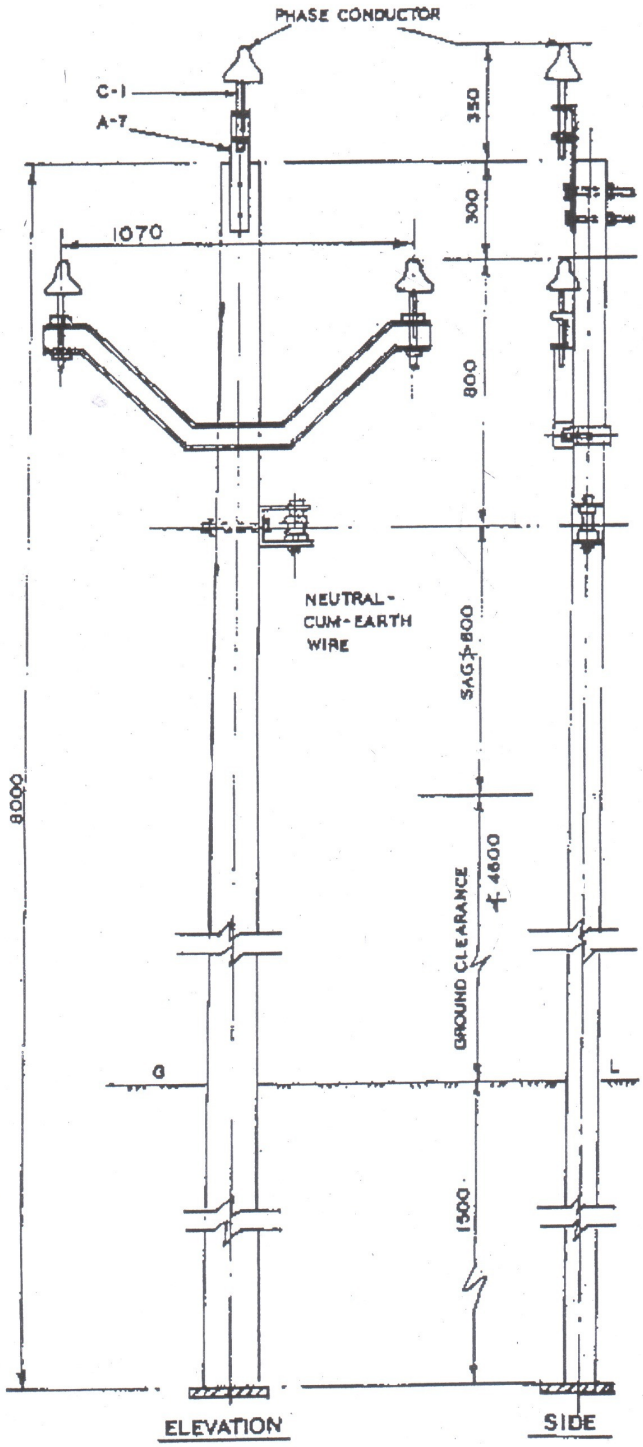
ALL DIMENSIONS ARE IN mm.

११ के. वी. लाईन
निकासी व्यवस्था एक खम्भे से निकास

11 KV LINE
TAPPING ARRANGEMENT
SINGLE POLE TAPPING

SCALE:- N.T.S | FEB. - 1979

# REC
# CONSTRUCTION STANDARD
# A-16




## BILL OF MATERIAL

| | |
|---|---|
| P.C.C SUPPORT 8 M | 1 |
| POLE TOP BRACKET | 1 |
| V-CROSS ARM | 1 |
| 11 KV PIN INSULATOR WITH PINS | 3 |
| SHACKLE INSULATOR | 1 |
| U-CLAMP WITH BOLT | 1 |
| EARTHING MATERIAL | 1 |
| BOLTS, NUTS, CLAMPS ETC. | AS REQD. |
| BOLTS 16 ø | 4 |
| BASE PLATE | 1 |

NOTES :-

1. IF THROUGH BOLT ARRANGEMENT FOR FIXING THE SHACKLE INSULATOR TO THE POLE IS NOT POSSIBLE ; SUITABLE POLE CLAMP MAY BE USED.
2. THE EARTH-CUM-NEUTRAL WIRE SHALL BE RUN ON LT SHACKLE INSULATORS

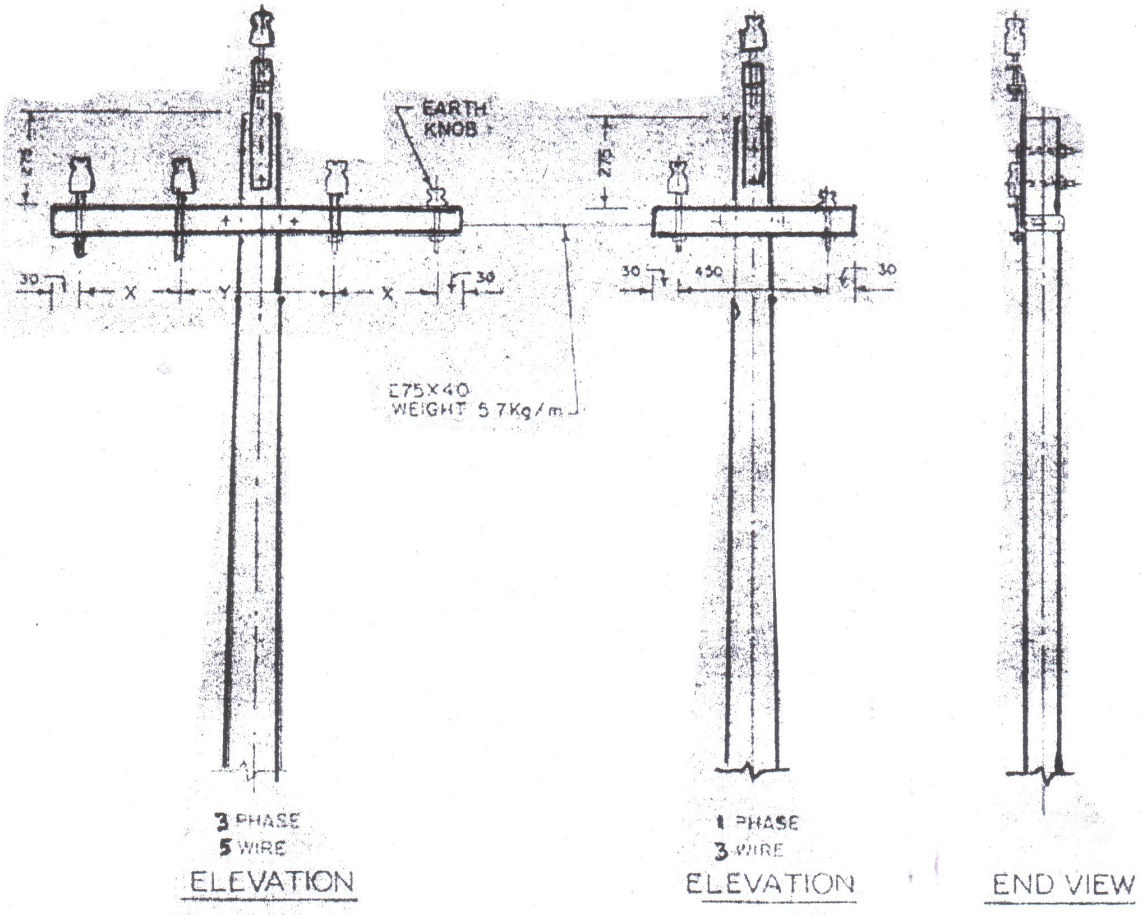
११ के.वी. ३-फेज लाईन व कन्डक्टर फारमेशन और क्लीयेरेन्स-३फेज/सिंगल फेज कम्पोजिट सिस्टम फेज से न्यूट्रल

11 KV LINES

CONDUCTOR FORMATION AND CLEARANCES OF 11KV 3-PHASE LINE IN 3-PHASE/SINGLE PHASE COMPOSITE SYSTEM (PHASE - TO - NEUTRAL)

SCALE :- N.T.S | JULY, 1987

REC
CONSTRUCTION STANDARD
B-3.



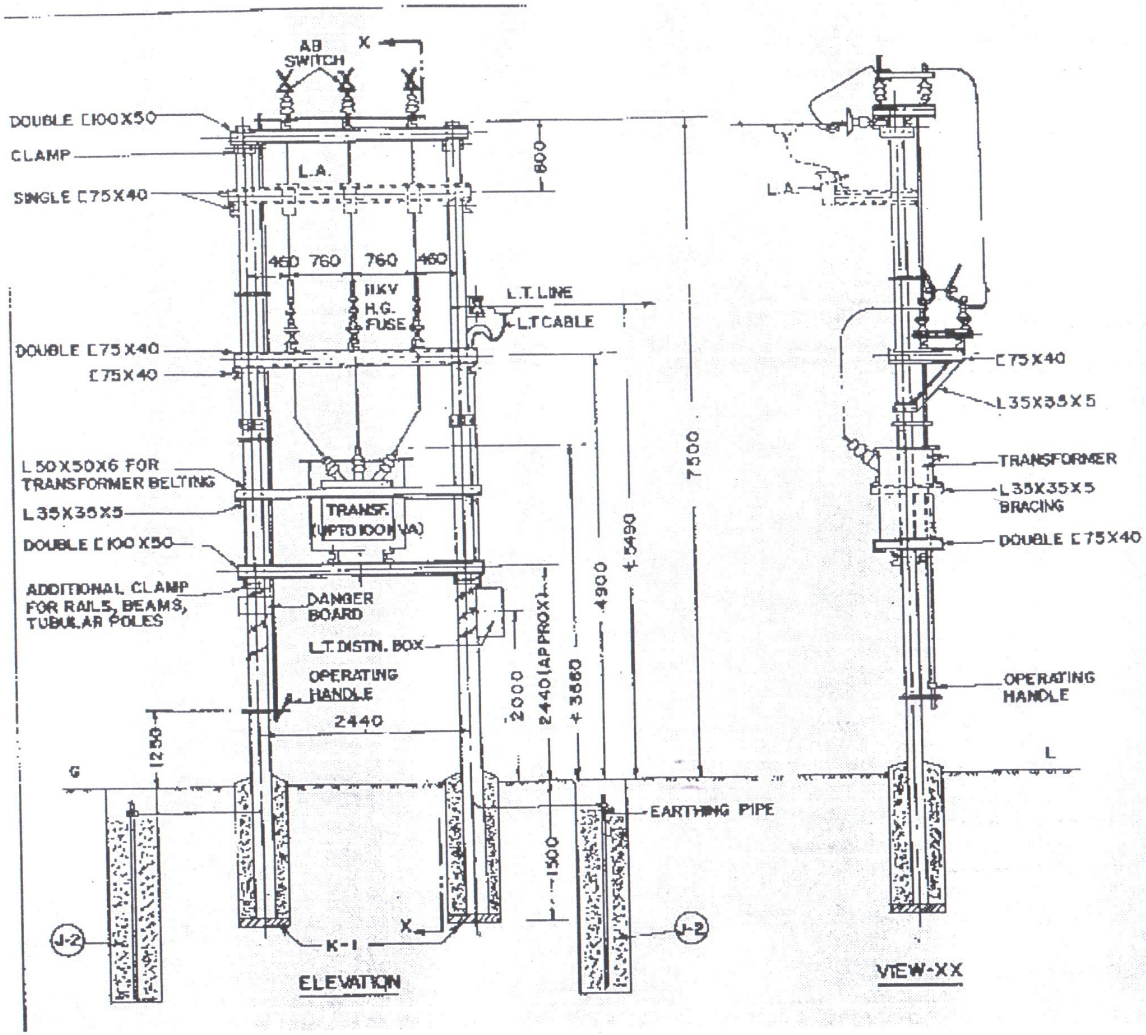

TANGENT LOCATION
MAXIMUM SPAN – 67 METRES

| SAGS | HORIZONTAL SPACING | |
|---|---|---|
| | X | Y |
| UP TO 750 | 300 | 450 |
| 750 TO 1200 | 450 | 450 |

ALL DIMENSIONS ARE IN mm

४१५/२४० वो० लाईन
कन्डक्टर रचना व अंतराल
समतल रचना
415/240V LINES
CONDUCTOR FORMATION AND
CLEARANCES
HORIZONTAL FORMATION

SCALE :-N.T.S | SEPT. – 1972




REC
CONSTRUCTION STANDARD
F-2

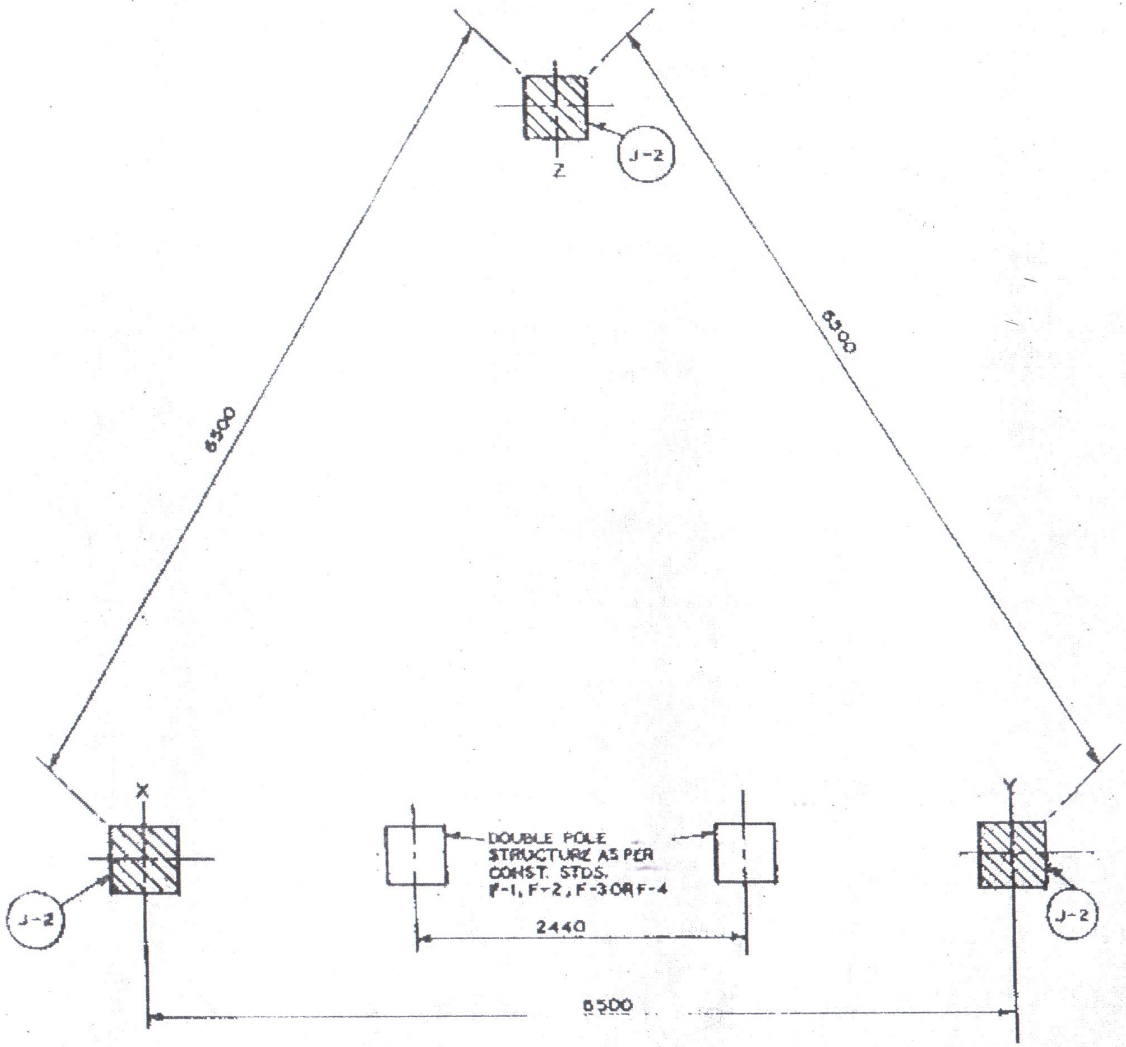
BILL OF MATERIAL

| | | | |
|---|---|---|---|
| SUPPORTS | - 9m. | | 2 |
| CHANNELS | 100X50 | - 2800 (APPROX.) | 4 |
| CHANNELS | 75 X 40 | - 2800 (APPROX.) | 2+1 |
| CHANNELS | 75X40 | - X-ARM FOR SUPPORTING H.G. FUSE & L.A. | 2+2 |
| ANGLES | 50X50X6 | - 2800 (APPROX) | 2 |
| ANGLES | 35X35X5 | - 460 (APPROX) | 2 |
| ANGLES | 35X35X5 | - BRACING FOR SUPPORTING H.G. FUSE | 2 |
| | | FOR SUPPORTING DISTRIBUTION BOX | 1 |
| DISTRIBUTION TRANSFORMER | | | 1 |
| AIR BREAK SWITCH (HORIZONAL TYPE) | | | 1 |
| H.G. FUSE UNIT-3 PHASE | | | 1 SE |
| 11 KV. LIGHTNING ARRESTERS | | | 3 |
| DISTRIBUTION BOX | | | 1 |
| EARTHING SET | | | AS REQD. |
| DANGER BOARD | | | 1 |
| CLAMPS, NUTS, BOLTS, BARBED WIRE ETC. | | | AS REQD. |
| L.T. CABLE | | | AS REQD. |

११ के. वी./४३३-२५० वोल्ट
ए. बी. स्विच और हार्न गैप फ्यूज सहित
वितरण सब स्टेशन
11KV/433-250 V
DISTRIBUTION SUB-STATION
WITH A.B. SWITCH &
HORN GAP FUSES

SCALE:- N.T.S | 1972 / JAN. - 195

# REC
# CONSTRUCTION STANDARD
# F-5




PLAN

NOTES :-

1. THE CONNECTIONS TO THE THREE - EARTH ELECTRODES SHOULD BE AS FOLLOWS :-
   - (a) TO ONE OF THE EARTH ELECTRODES ON EITHER SIDE OF DOUBLE POLE STRUCTURE ( X OR Y ).
     - (i) ONE DIRECT CONNECTION FROM THREE 11 KV LIGHTNING ARRESTERS.
     - (ii) ANOTHER DIRECT CONNECTION FROM THE L.T. LIGHTNING ARRESTERS, IF PROVIDED.
   - (b) TO EACH OF THE REMAINING TWO EARTH-ELECTRODES.
     - (i) ONE SEPARATE CONNECTION FROM THE NEUTRAL (ON THE MEDIUM VOLTAGE SIDE) OF THE TRANSFORMER
     - (ii) ONE SEPARATE CONNECTION FROM THE TRANSFORMER BODY AND THE HANDLE OF THE 11 KV. AB SWITCH.
     - (iii) ONE SEPARATE CONNECTION FROM THE EARTHING TERMINAL OF THE POLES
2. 4 mm ( 8 S.W.G ) G.I. WIRE SHOULD BE USED FOR EARTH LEADS.

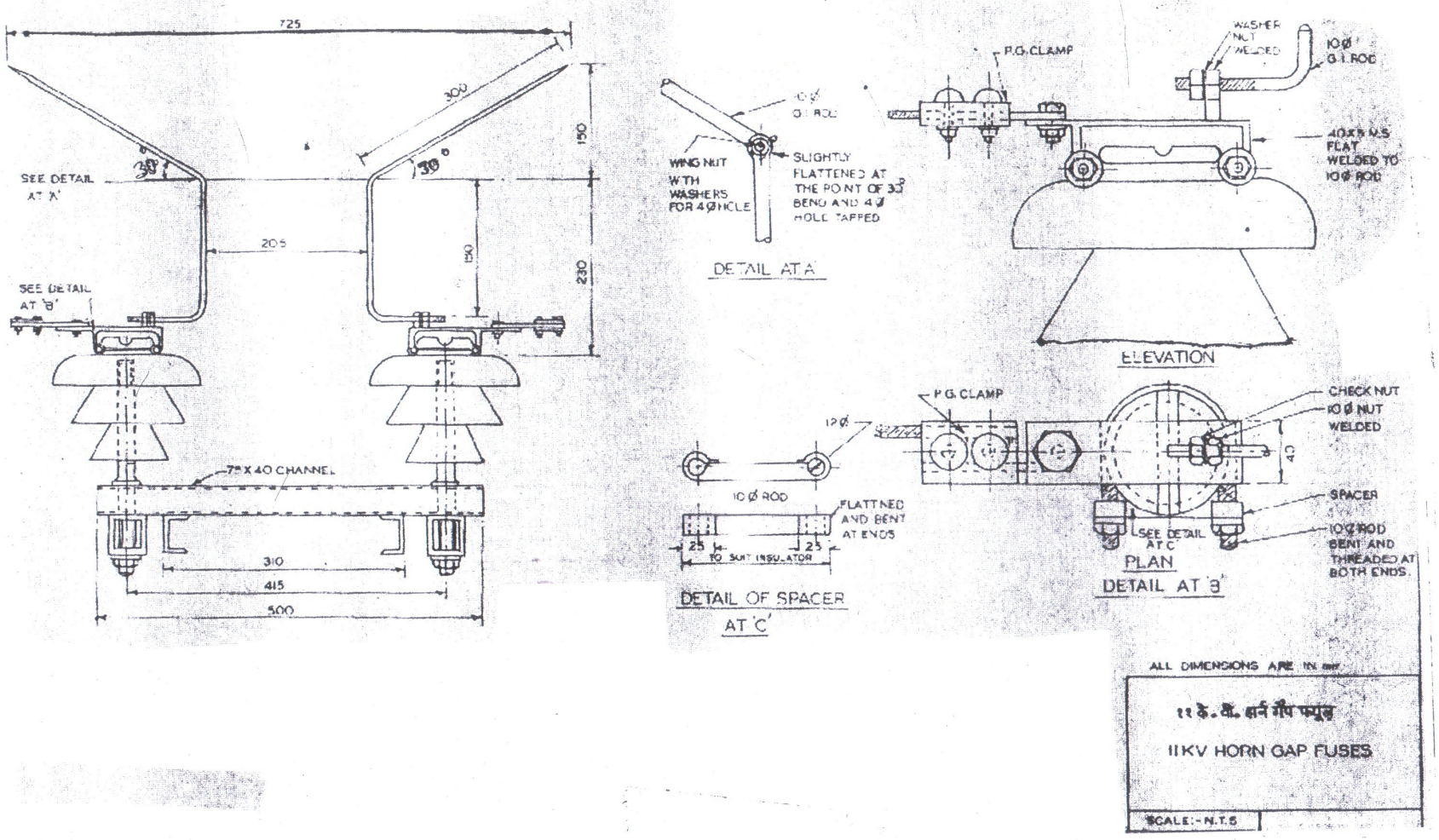
ALL DIMENSIONS ARE IN mm.

११ के.वी./४३३-२५० वोल्ट
वितरण उप-स्टेशन
अर्थिंग के बढ़ढे और
कनेक्शन के प्रबन्ध

11 KV/433-250V
DISTRIBUTION SUB-STATION
LOCATION OF EARTH PITS
AND CONNECTIONS

| R-2 | SCALE : N.T.S. | 1993 / JAN., - 1993 |
|---|---|---|

REC
CONSTRUCTION STANDARD
F-6




ALL DIMENSIONS ARE IN mm

११ के. वी. हार्न गैप फ्यूज़

11KV HORN GAP FUSES

SCALE:- N.T.S

REC
CONSTRUCTION STANDARD
F-8
(REVISED-1987)

## RECOMMENDED TYPE AND SIZES OF MULTICORE CABLES

| Distribution Transformer Centre Capacity in KVA | TYPE | Size (Nominal area of cross section) |
|---|---|---|
| 25 | PVC insulated and sheathed un-armoured four-core aluminium cable. | 16 $mm^2$ |
| 63 | PVC insulated and sheathed un-armoured four-core aluminium cable with reduced neutral conductor. | 70 $mm^2$ |
| | OR | |
| | PVC insulated and sheathed aluminium armoured three-core solid aluminium conductored cable. | 70 $mm^2$ |
| 100 | PVC insulated and sheathed un-armoured four-core aluminium cable with reduced neutral conductor. | 120 $mm^2$ |
| | OR | |
| | PVC insulated and sheathed aluminium armoured three-core solid aluminium conductored cable. | 120 $mm^2$ |

NOTE: 1. The cables would be laid in air.

2. In case of PVC armoured cables, aluminium armour shall serve as neutral for 63 and 100 KVA distribution transformer centres.

3. Size of reduced neutral conductor shall comply with the main-neutral conductor combination as per IS: 1554 (Part-I)-1976.

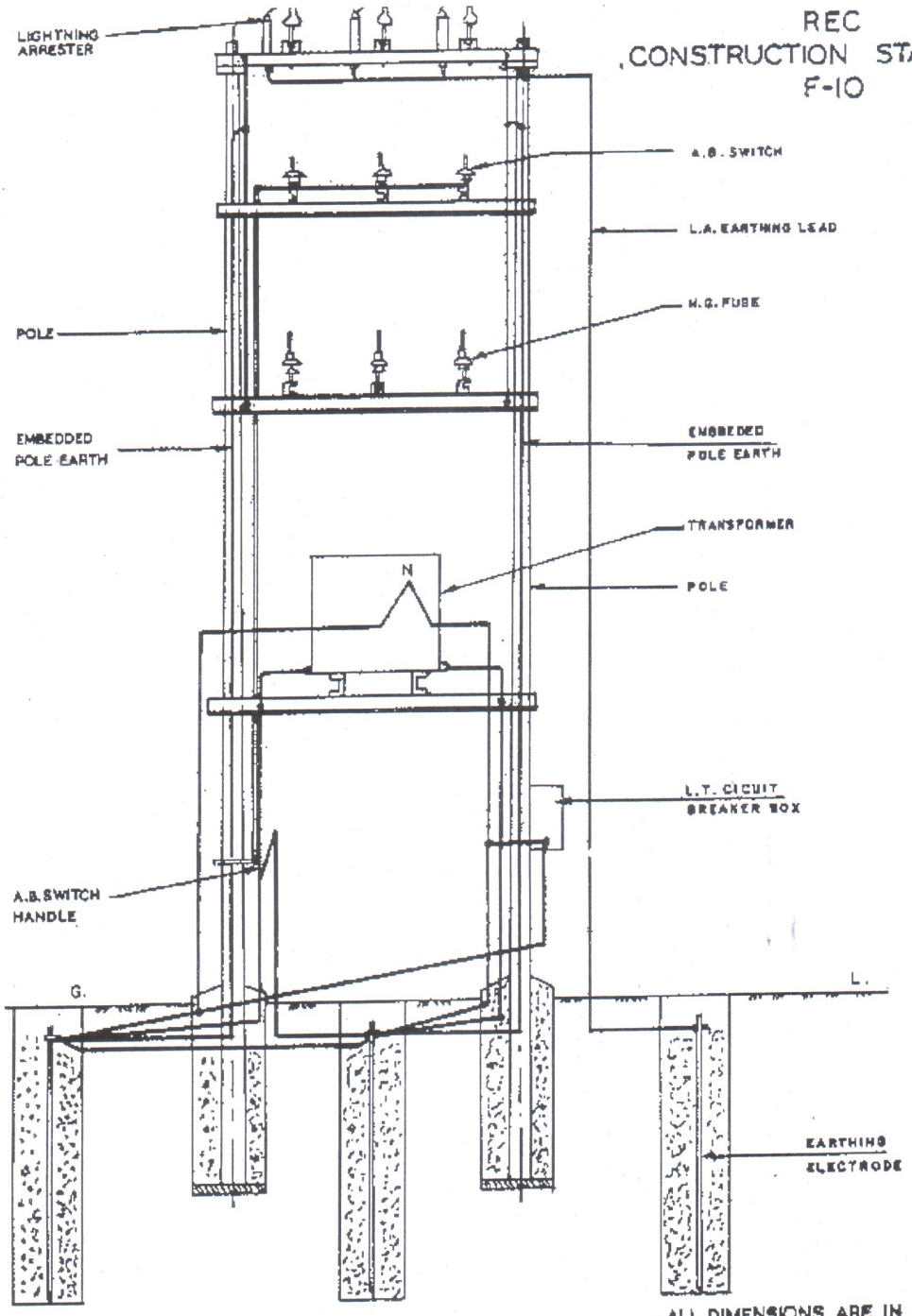
4. Type and size of single core cables which can be used for the same purpose are given in REC Construction Standard F-18.

वितरण उप-केन्द्र के लिए
एल॰ टी॰ बहुकोर केबिल (एल्यु॰)
संस्तुत प्रकार एवं आकार

L.T MULTICORE CABLES (ALUM.)
FOR DISTRIBUTION SUB-STATIONS
RECOMMENDED TYPE AND SIZES.

FEBRUARY - 1979

REC
CONSTRUCTION STANDARD
F-10



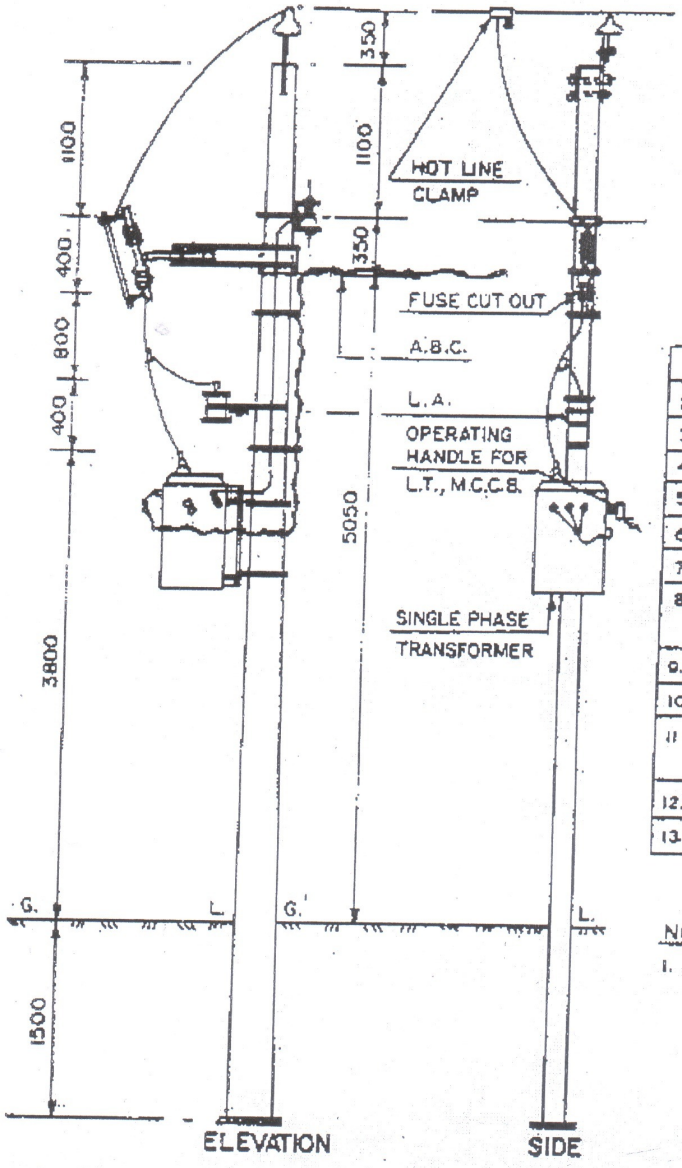

ALL DIMENSIONS ARE IN mm.

वितरण सब-स्टेशन के लिए
अर्थिंग व्यवस्था

EARTHING ARRANGEMENT FOR
DISTRIBUTION SUB-STATION

SCALE:- N.T.S | APRIL - 1983

# REC
# CONSTRUCTION STANDARD
# F-13




BILL OF MATERIAL

| | | |
|---|---|---|
| 1. | P.C.C. SUPPORT 8m | 1 |
| 2. | POLE TOP BRACKET | 1 |
| 3. | 11KV PIN INSULATOR WITH PIN | 1 |
| 4. | SHACKLE INSULATOR | 1 |
| 5. | U-CLAMP WITH BOLT | 1 |
| 6. | L.A WITH FIXTURES | 1 |
| 7. | FUSE CUT-OUT WITH FIXTURES | 1 |
| 8 | SINGLE PHASE TRANSFORMER WITH L.T MCCB AND FIXTURES | 1 |
| 9. | A.B.C | AS REQD. |
| 10. | POLE CLAMPS | 4 |
| 11 | EARTHING MATERIAL, NUTS, BOLTS, CLAMPS ETC. | AS REQD. |
| 12. | HOTLINE CLAMP | 1 |
| 13. | BASE PLATE | 1 |

NOTE:-

1. THE TRANSFORMER MOUNTING DETAILS ARE GIVEN IN R.E.C CONSTRUCTION STANDARD 'F-14'

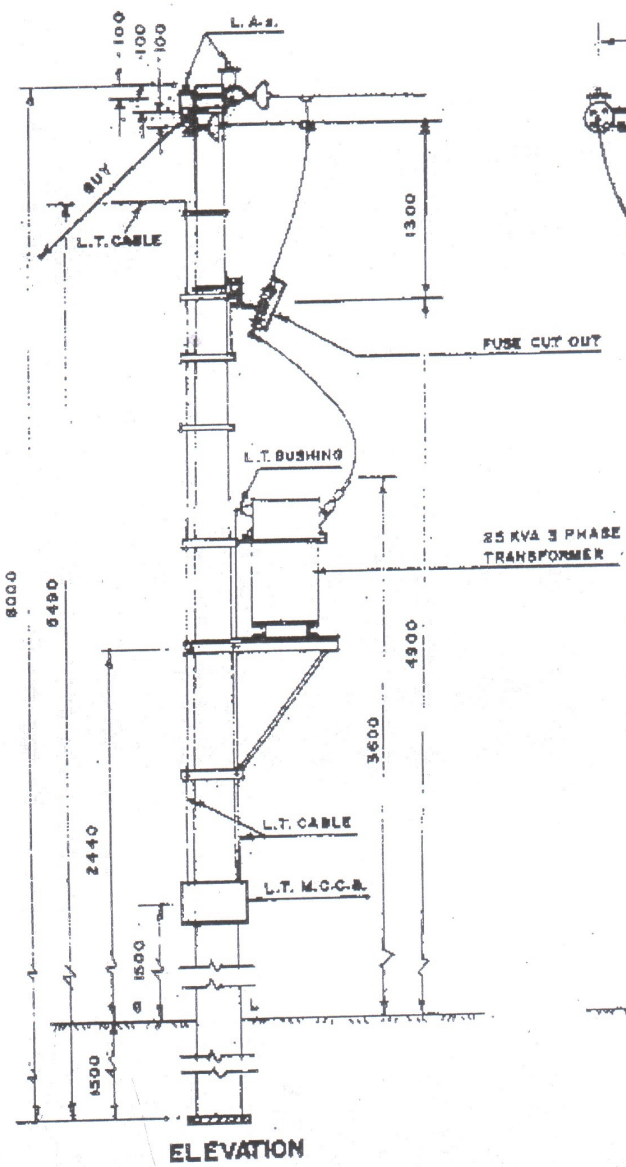
ALL DIMENSIONS ARE IN mm.

सिंगल फेज (फेज-टू-न्यूट्रल) वितरण सब-स्टेशन की व्यवस्था

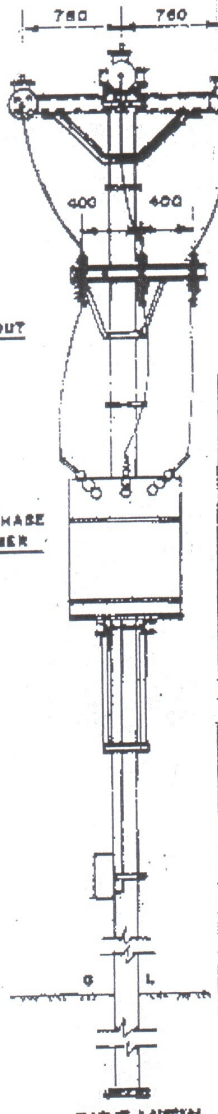
SINGLE PHASE (PHASE — TO — NEUTRAL) DISTRIBUTION SUB - STATION ARRANGEMENT

| SCALE:- N.T.S | JULY, 1987 |
|---|---|

REC
CONSTRUCTION STANDARD
F-20




ELEVATION




SIDE VIEW

## BILL OF MATERIALS

| | |
|---|---|
| SUPPORT (8 M/200 Kg) | 1 No. |
| HORIZONTAL CROSS ARM<br>C100 X 50 X 6 - 150<br>C100 X 50 X 6 - 1800 | 1 No.<br>1 No. |
| L.A. WITH FITTINGS | 3 Nos. |
| D.O. FUSE WITH FITTINGS | 3 Nos. |
| 25 KVA TRANSFORMER | 1 No. |
| L.T. M.C.C.B. | 1 No |
| DISC INSULATOR WITH FITTINGS | 3 Nos. |
| STRUCTURE FOR TRANS MOUNTING :- | |
| 1. C100 X 50 X 6 - 1000 | 2 Nos. |
| 2. L 50 X 50 X 6 - 600 | 2 Nos. |
| EARTHING MATERIAL | 1 No. |
| GUY SET | 1 SET |
| BASE PLATE | 1 No. |
| NUTS, BOLTS, POLE TOP CLAMPS Etc. | AS REQD. |
| STRUCTURE FOR D.O. FUSE MOUNTING :- | |
| 1. C100 X 50 X 6 - 900 | 1 No. |
| 2. L 50 X 50 X 6 - 400 | 2 Nos. |

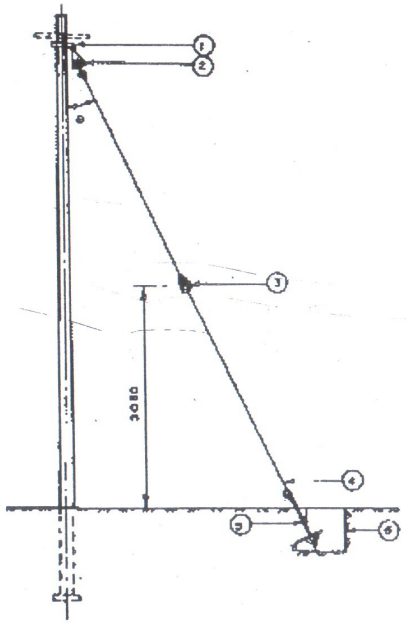
ALL DIMENSIONS ARE IN mm.

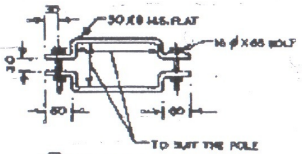
वितरण सब-स्टेशन
माउंटिंग व्यवस्था
सिंगल पोल पर २५ के.वी.ए. ट्रांसफार्मर की

DISTRIBUTION SUB-STATION
MOUNTING ARRANGEMENT OF 25 KVA
TRANSFORMER ON SINGLE POLE

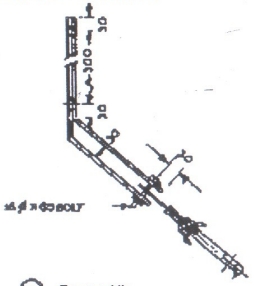
SCALE : N.T.S. OCT., 1987

REC
CONSTRUCTION STANDARD
G-1

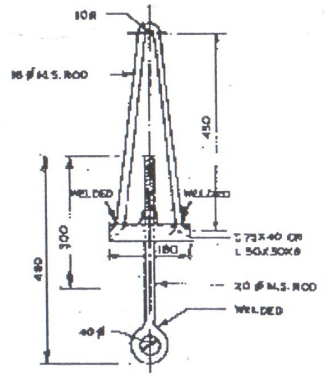


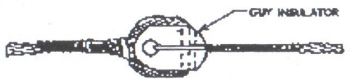

① CLAMP
( 11 KV LINES & L.T. LINES
HORIZONTAL FORMATION )




① CLAMP
( L.T. LINES VERTICAL FORMATION )

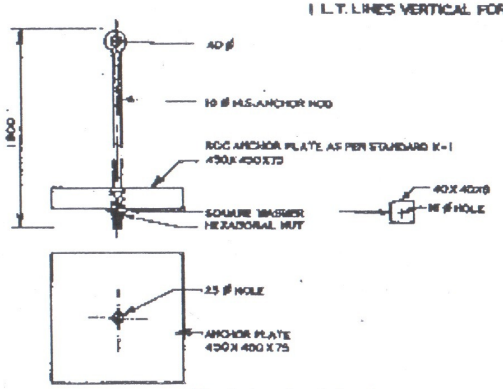



② TURN BUCKLE

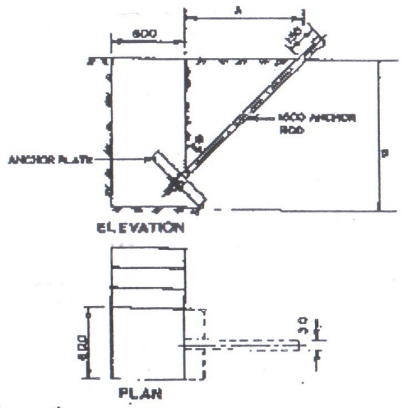



③ STAY INSULATOR MAKE-OFF

④ END MAKING OF GUY WIRE




⑤ ANCHOR ROD & PLATE




⑥ STAY PIT-ANCHOR ASSEMBLY

| Φ | 30° | 45° |
|---|---|---|
| A | 750 | 1100 |
| B | 1500 | 1300 |

NOTES:-

1. ANCHOR ROD WITH WASHER & NUT SHOULD BE PREFERABLY GALVANISED.
2. WHEN CONTINUOUS EARTH WIRE IS USED, GUY INSULATOR MAY NOT BE USED. ( REFER - IE - RULE 90 )

ALL DIMENSIONS ARE IN mm.

तीन रस्सी अवलम्बोचन
(मध्य अवलम्ब)

GUY ASSEMBLY

( CONVENTIONAL ARRANGEMENT )

SCALE :- N.T.S | SEPT. - 1972

REC

CONSTRUCTION STANDARD

G-3

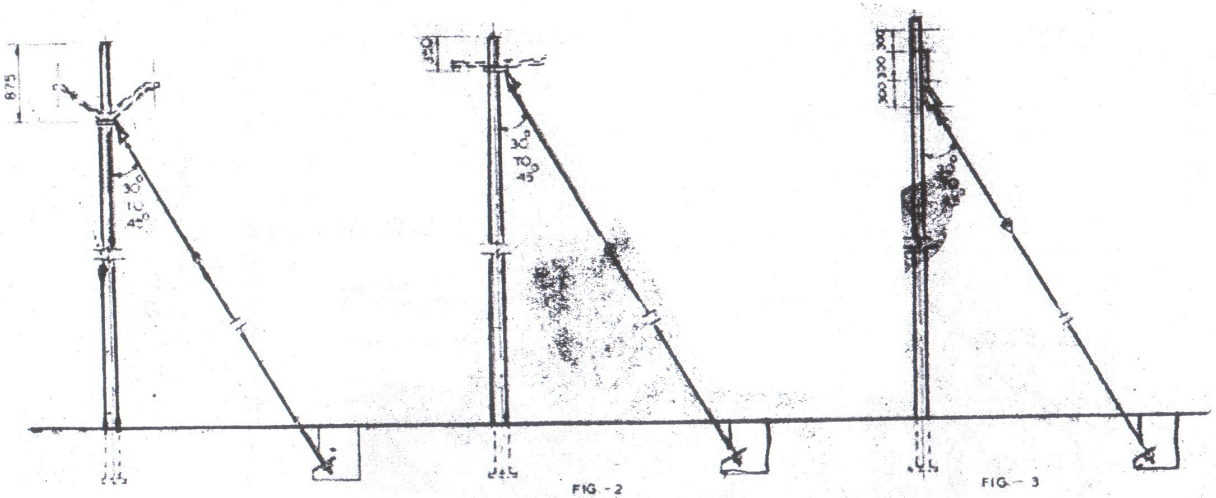
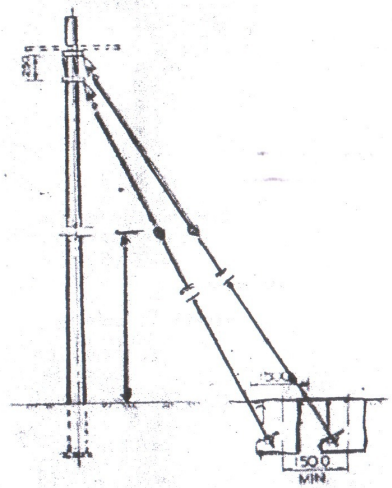



FIG - 2

SINGLE GUY

FIG - 3




DOUBLE GUY

NOTES :

1. SINGLE GUY ARRANGEMENT AS PER FIGURE 1, 2 & 3 CAN BE USED WHEN TOTAL TENSION TO BE TAKEN ON THE GUY DOES NOT EXCEED THE FOLLOWING LIMITS.

| SIZE OF GUY WIRE for $kgf/mm^2$ QUALITY | MAXIMUM TENSION ON THE GUY |
|---|---|
| 7/2.50 mm | 920 KGS |
| 7/3.15 mm | 1450 KGS |

2. IN THE DOUBLE GUY ARRANGEMENT THE FOUNDATION OF THE GUYS SHOULD BE SO PLACED THAT ONE DOES NOT REDUCE THE STRENGTH OF THE OTHER. IN OTHER WORDS, THE SOIL WHICH RESISTS THE UP-LIFT SHOULD NOT BE DISTURBED WHILE DIGGING THE FOUNDATION FOR THE OTHER STAY.

3. FOR DETAILS OF COMPONENTS OF GUY ASSEMBLY, REFER G-1

ALL DIMENSIONS ARE IN mm

तन रम्भी व्यवस्था

एकल व द्वि तान रम्भी

GUYING ARRANGEMENTS

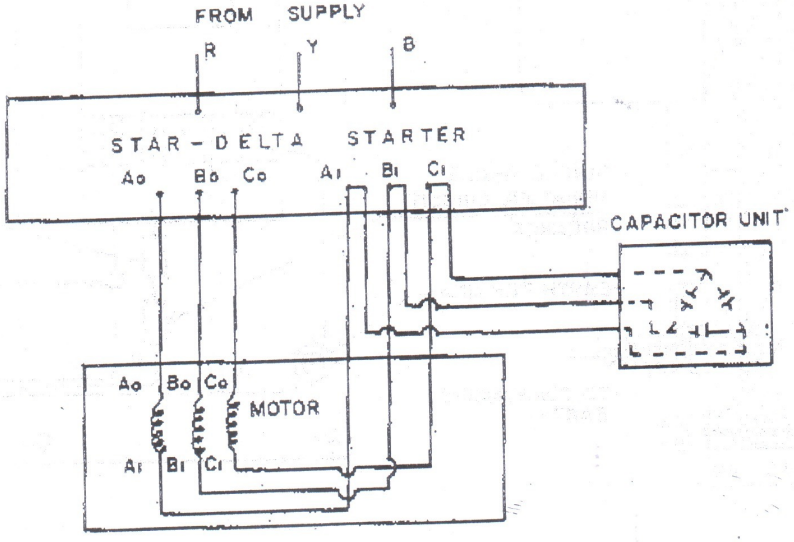
SINGLE & DOUBLE GUY

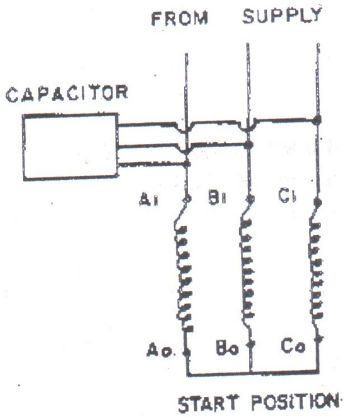
REC
CONSTRUCTION STANDARD
H-9

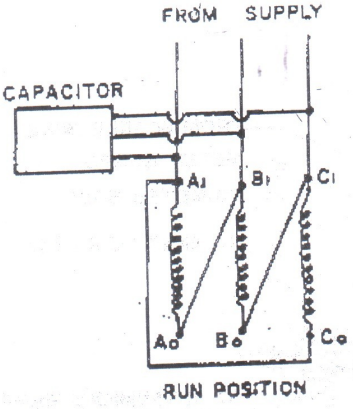
## RECOMMENDED CAPACITOR RATINGS

| MOTOR RATING | 2·2KW(3H.P.) | 3·7KW (5H.P.) | 5·5KW(7·5H.P.) | 7·5KW(10H.P.) |
|---|---|---|---|---|
| CAPACITOR RATING IN KVAR | 1 | 2 | 3 | 4 |

## CONNECTIONS OF A 3-TERMINAL CAPACITOR UNIT TO A MOTOR HAVING A START DELTA STARTER



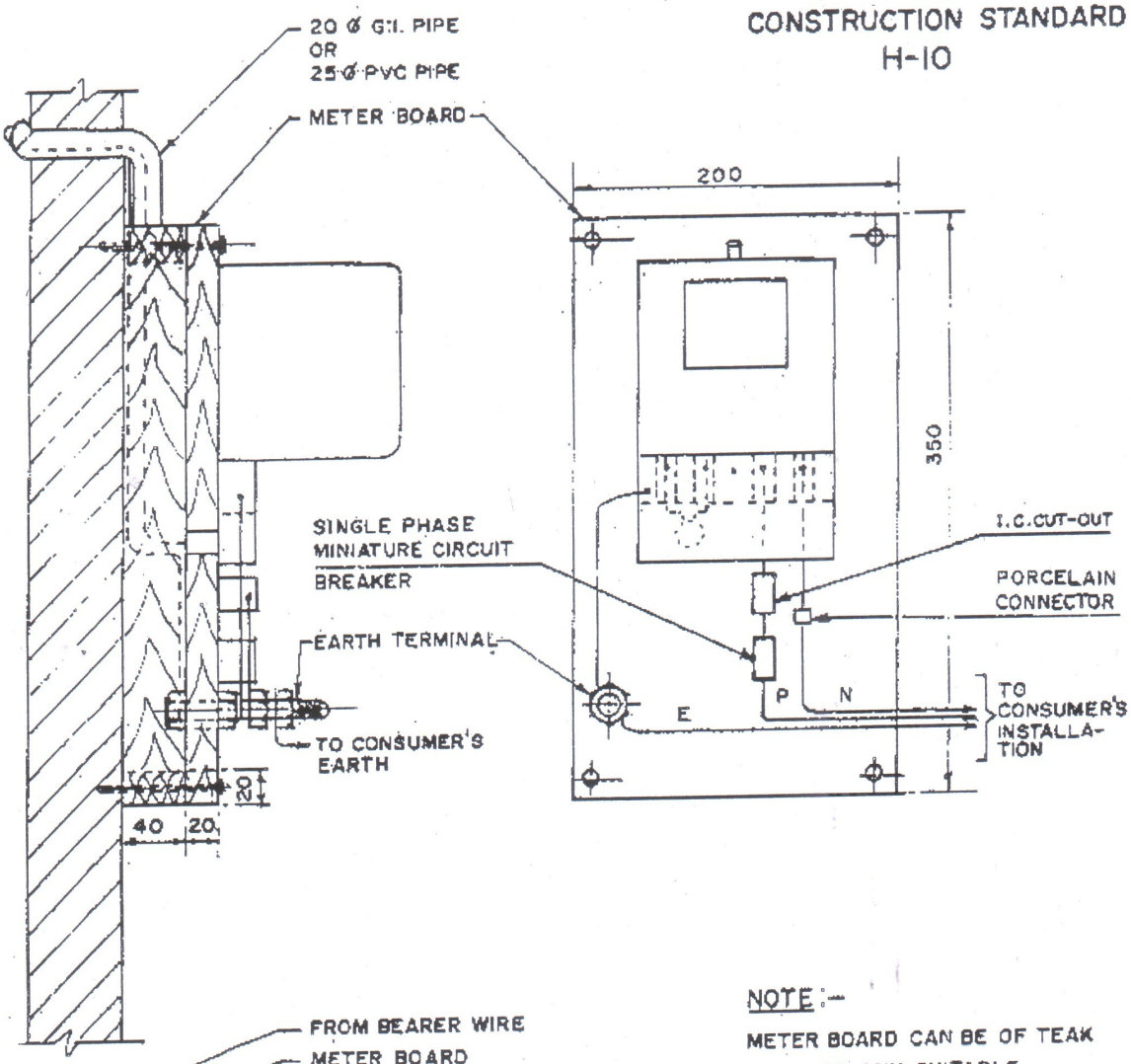




एल॰ टी॰ कैपेसिटर
कनेक्शनों की संस्तुत रेटिंग एवं पद्धति

L.T. CAPACITORS
RECOMMENDED RATINGS
AND MODE OF CONNECTIONS

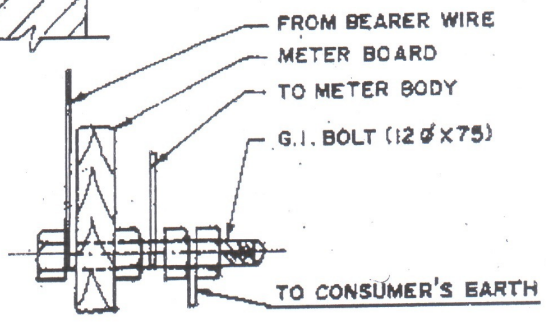
MARCH - 1974.

REC
CONSTRUCTION STANDARD
H-10




NOTE :-

METER BOARD CAN BE OF TEAK WOOD OR ANY SUITABLE HARD WOOD.




EARTH TERMINAL DETAILS

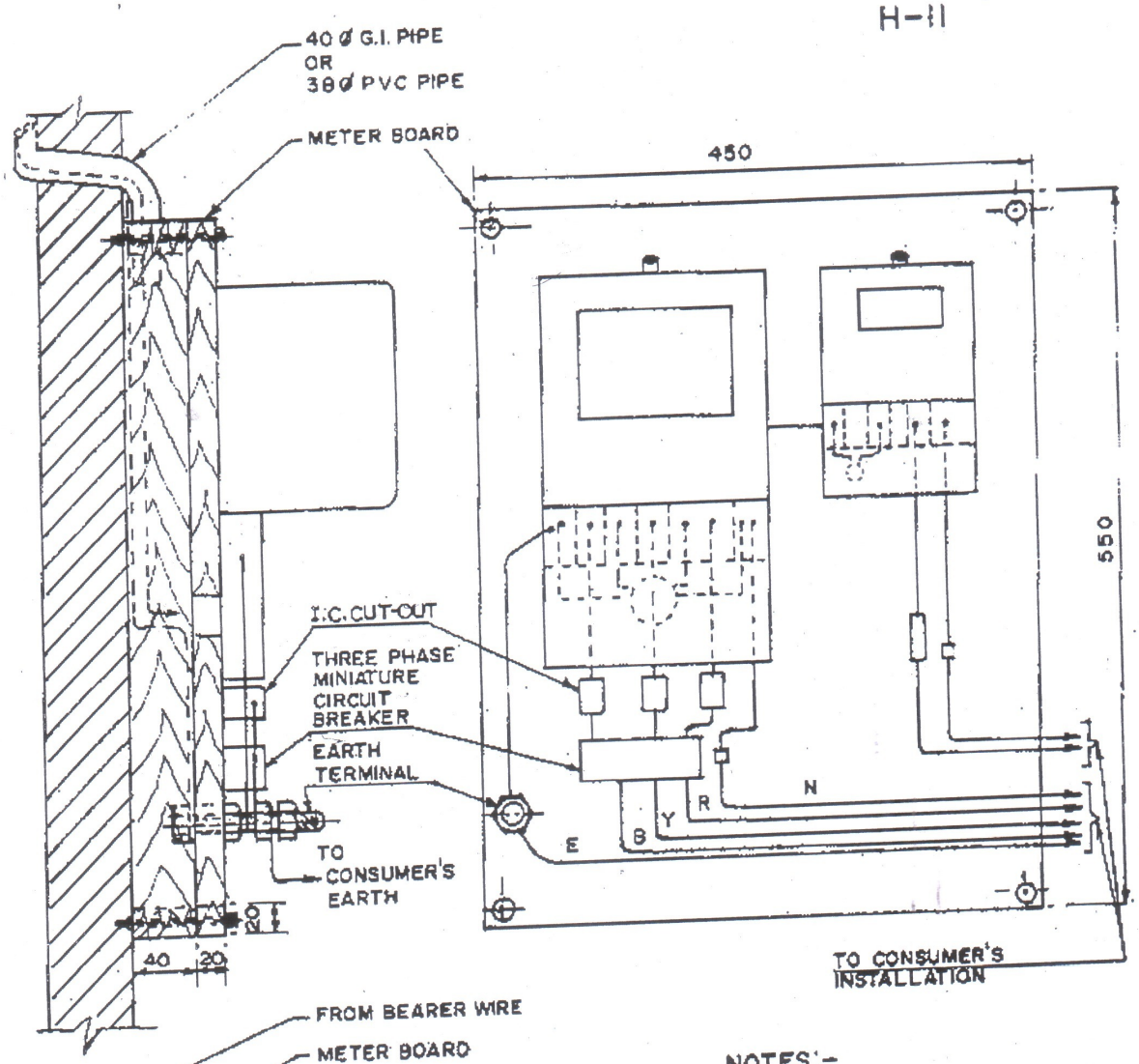
ALL DIMENSIONS ARE IN mm.

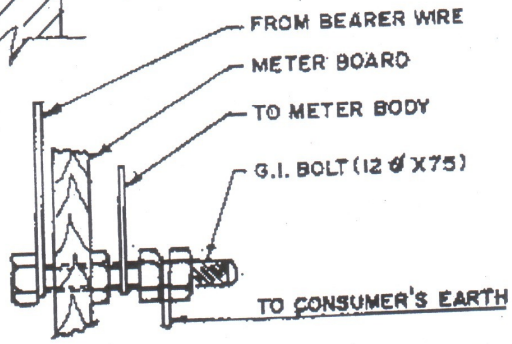
एम०सी०बी० कन्ट्रोल के साथ मार्पिंग
कनेक्शन सिंगल फेज़ मीटर
(अलग न्यूट्रल और अर्थ सहित)

SERVICE CONNECTIONS
SINGLE PHASE METER BOARD
WITH MCB CONTROL
(WITH SEPARATE NEUTRAL AND EARTH)

| SCALE: N.T.S. | MAY, 1993 |
|---|---|

REC
CONSTRUCTION STANDARD
H-II




EARTH TERMINAL DETAILS

NOTES:-

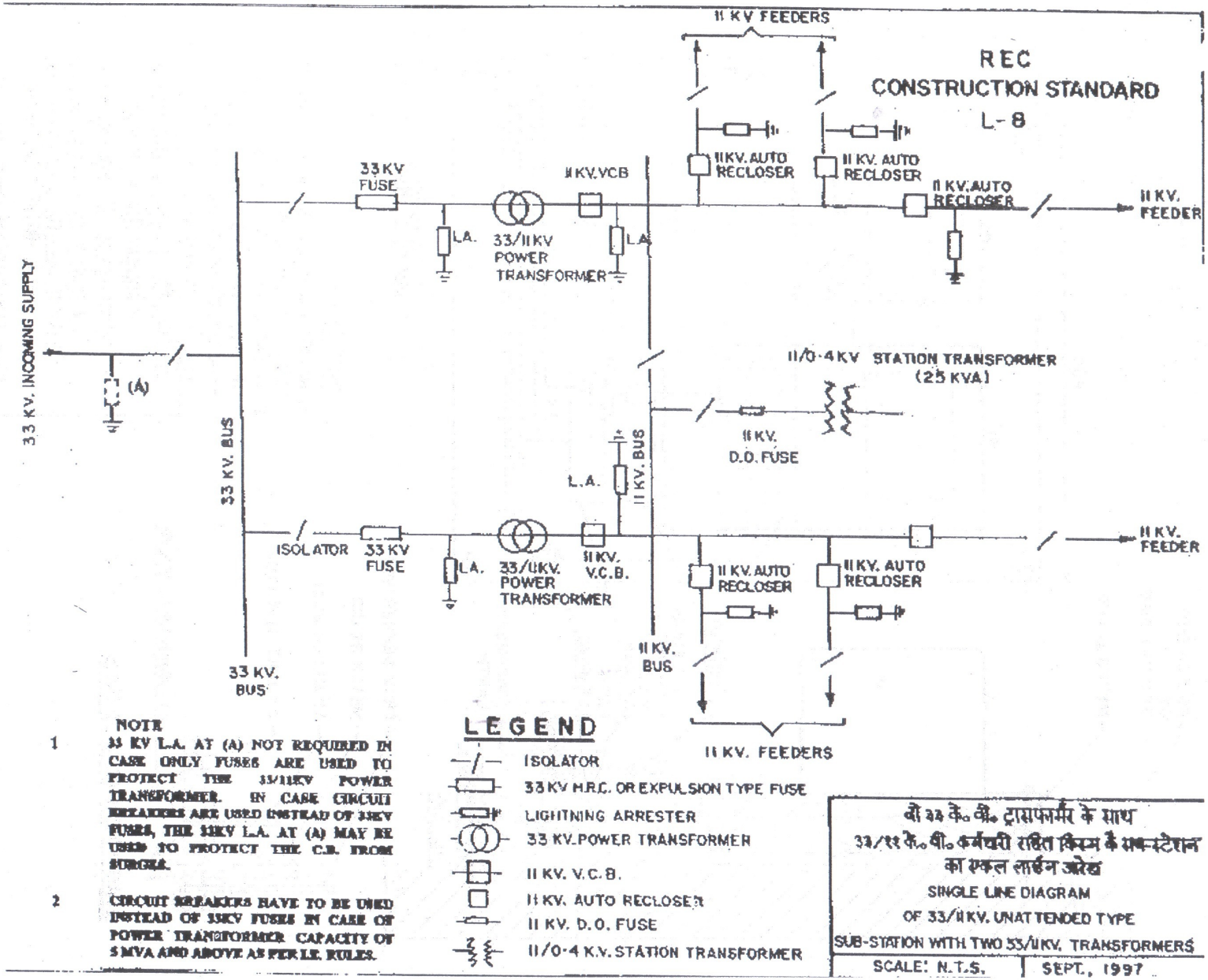
1. METER BOARD CAN BE OF TEAK WOOD OR ANY SUITABLE HARD WOOD.
2. WHERE ONLY A THREE PHASE METER IS TO BE USED, THE DIMENSIONS OF THE METER BOARD MAY BE 550X350

ALL DIMENSIONS ARE IN mm.

एम.सी.बी. कन्ट्रोल के साथ सर्विस
कनेक्शन तीन फेज मीटर
(अलग न्यूट्रल और अर्थ सहित)

SERVICE CONNECTIONS
THREE PHASE METER BOARD
WITH MCB CONTROL
(WITH SEPARATE NEUTRAL AND EARTH)

| SCALE: N.T.S. | MAY, 1993. |
|---|---|




**NOTE**

1. 33 KV L.A. AT (A) NOT REQUIRED IN CASE ONLY FUSES ARE USED TO PROTECT THE 33/11KV POWER TRANSFORMER. IN CASE CIRCUIT BREAKERS ARE USED INSTEAD OF 33KV FUSES, THE 33KV L.A. AT (A) MAY BE USED TO PROTECT THE C.B. FROM SURGES.
2. CIRCUIT BREAKERS HAVE TO BE USED INSTEAD OF 33KV FUSES IN CASE OF POWER TRANSFORMER CAPACITY OF 5 MVA AND ABOVE AS PER I.E. RULES.

**LEGEND**

- ISOLATOR
- 33 KV H.R.C. OR EXPULSION TYPE FUSE
- LIGHTNING ARRESTER
- 33 KV. POWER TRANSFORMER
- 11 KV. V.C.B.
- 11 KV. AUTO RECLOSER
- 11 KV. D.O. FUSE
- 11/0·4 K.V. STATION TRANSFORMER

दो 33 के॰ वी॰ ट्रांसफार्मर के साथ
33/11 के॰ वी॰ कर्मचारी रहित किस्म के सब-स्टेशन
का एक्सल लाईन आरेख

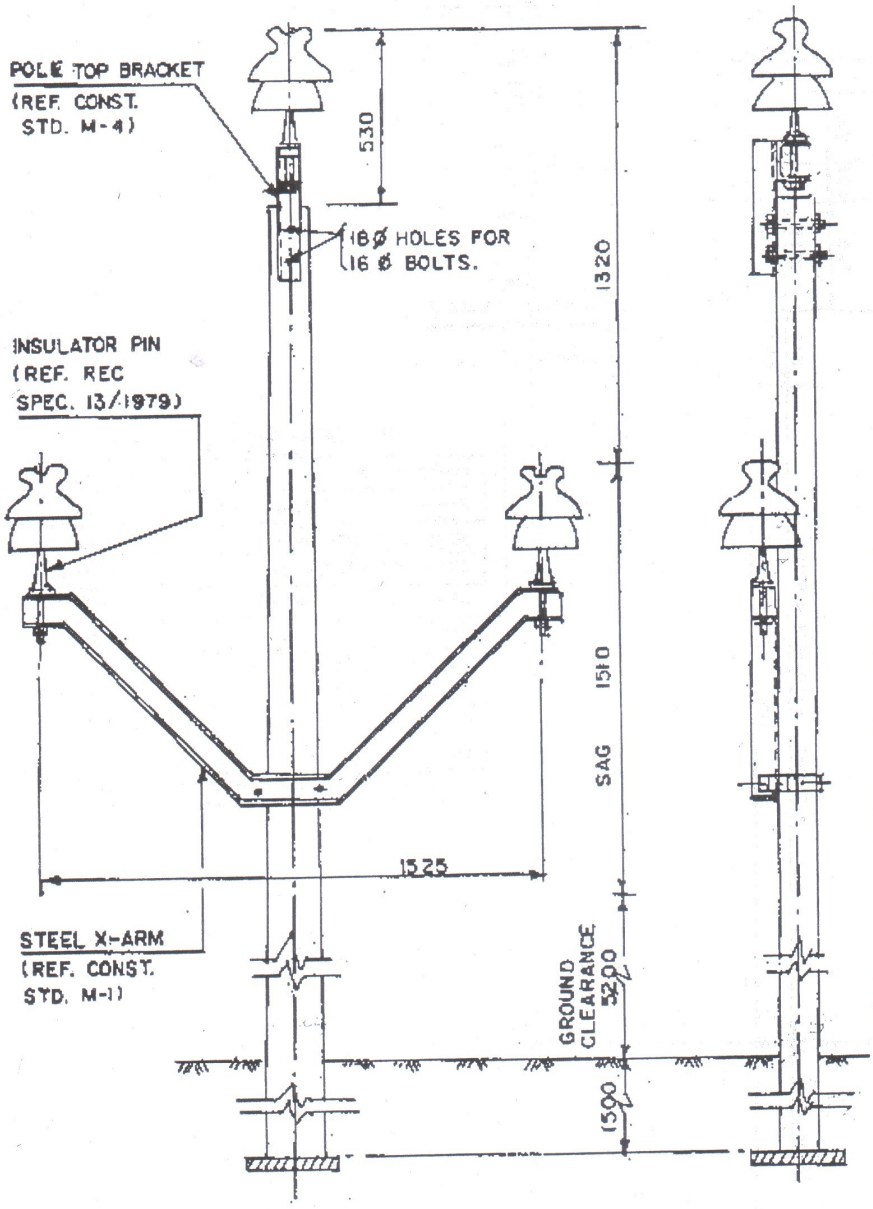
SINGLE LINE DIAGRAM
OF 33/11 KV. UNATTENDED TYPE
SUB-STATION WITH TWO 33/11 KV. TRANSFORMERS

SCALE: N.T.S. | SEPT., 1997

R E C

CONSTRUCTION STANDARD

M - 3




BILL OF MATERIAL

| | |
|---|---|
| 9·0M SUPPORT | 1 |
| POLE TOP BRACKET | 1 |
| V- CROSS ARM (M.S.CHANNEL-100X50X6·4) | 1 |
| BACK CLAMP | 1 |
| BOLTS 16 Ø | 4 |
| 33 KV PIN INSULATOR | 3 |
| 33 KV PINS | 3 |
| EARTHING COMPLETE | 1 |

TANGENT LOCATION

MAX. SPAN 125 M

(CROSS COUNTRY)

ALL DIMENSIONS ARE IN mm.

३३ कि॰ वी॰ लाईन

कन्डक्टर रचना एवं अन्तराल

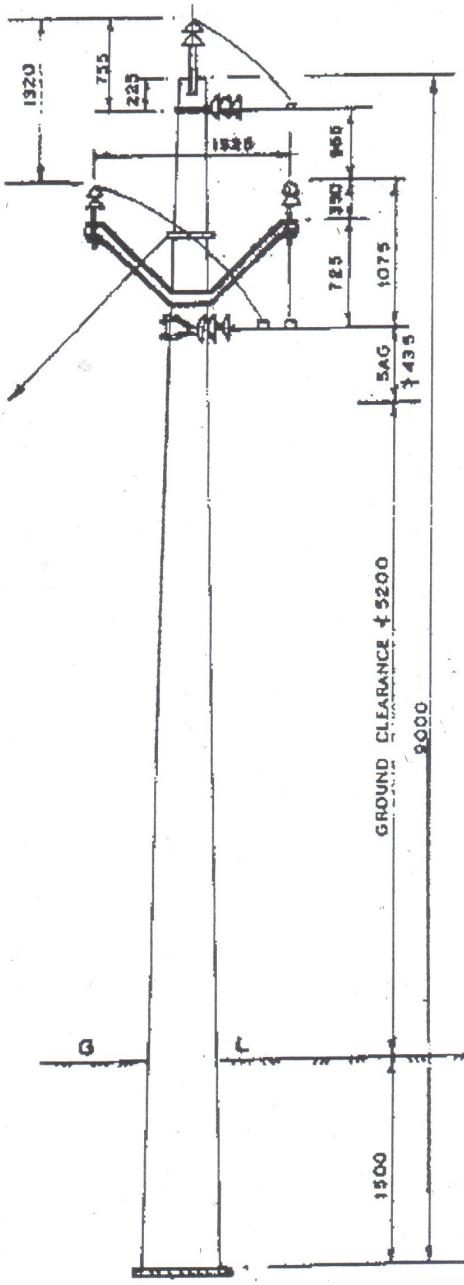
33KV LINE

CONDUCTOR FORMATION

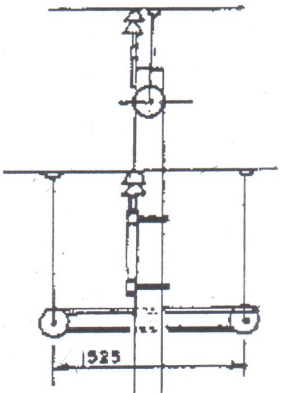
AND CLEARANCES

SCALE:-N.T.S | APRIL - 1981.

REC
CONSTRUCTION STANDARD
M-10




ELEVATION




SIDE VIEW

BILL OF MATERIAL

| | |
|---|---|
| SUPPORT – 9·0M | 1 NO. |
| 33 KV POLE TOP BRACKET | 1 NO. |
| 33 KV V-CROSS ARM | 1 NO. |
| 33 KV PIN INSULATOR | 3 NOS. |
| 33 KV DISC INSULATORS | 3 SETS |
| GUY SET | 1 NO. |
| HORIZONTAL CROSS ARM ISA 100 X 50 X 6.4 | 1 NO. |
| EARTHING MATERIAL | AS REQD. |
| BASE PLATE | 1 NO |
| NUTS, BOLTS, POLE CLAMPS ETC. | AS REQD. |

ALL DIMENSIONS ARE IN mm.

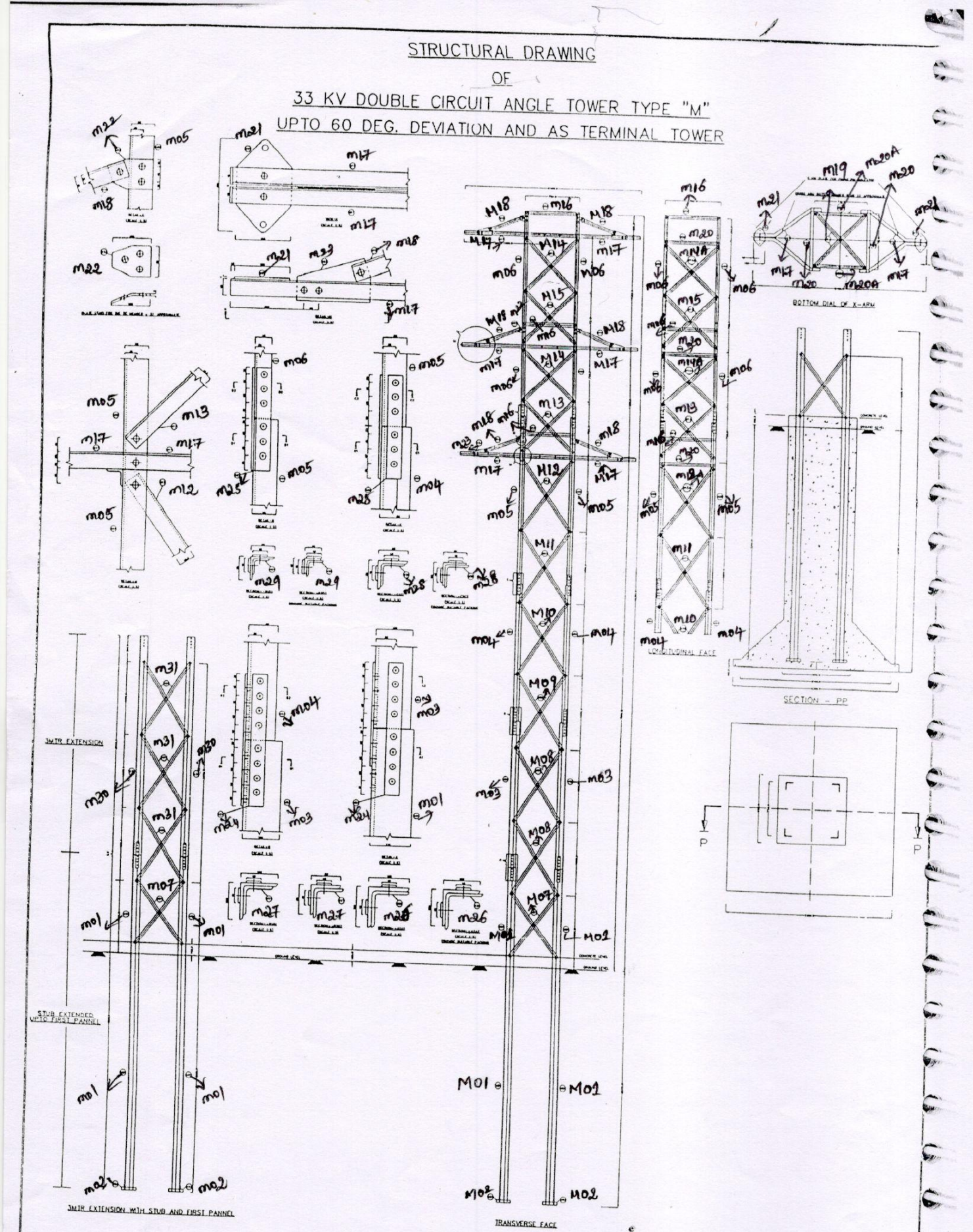
NOTE :- MAXIMUM SPAN BETWEEN THE TAPPING POLE AND ADJACENT POLE OF THE BRANCH LINE – 50 MTS.

33 के.वी. लाईन
टेपिंग व्यवस्था
सिंगल पोल टेपिंग

33 KV LINES
TAPPING ARRANGEMENT ON
SINGLE POLE

| SCALE: N.T.S | OCT., 1987 |
|---|---|

# STRUCTURAL DRAWING
## OF
## 33 KV DOUBLE CIRCUIT ANGLE TOWER TYPE "M"
## UPTO 60 DEG. DEVIATION AND AS TERMINAL TOWER




CENTRAL POWER DISTRIBUTION COMPANY OF ANDHRA PRADESH LTD, MINT COMPOUND, HYDERABAD.

33 K.V. DOUBLE CIRCUIT ANGLE TOWER TYPE "M" UPTO 60 DEG. DEVIATION AND AS TERMINAL TOWER

For clarity of drawing, may refer the Cost Data 18-19 pdf file placed on tssptcl website.

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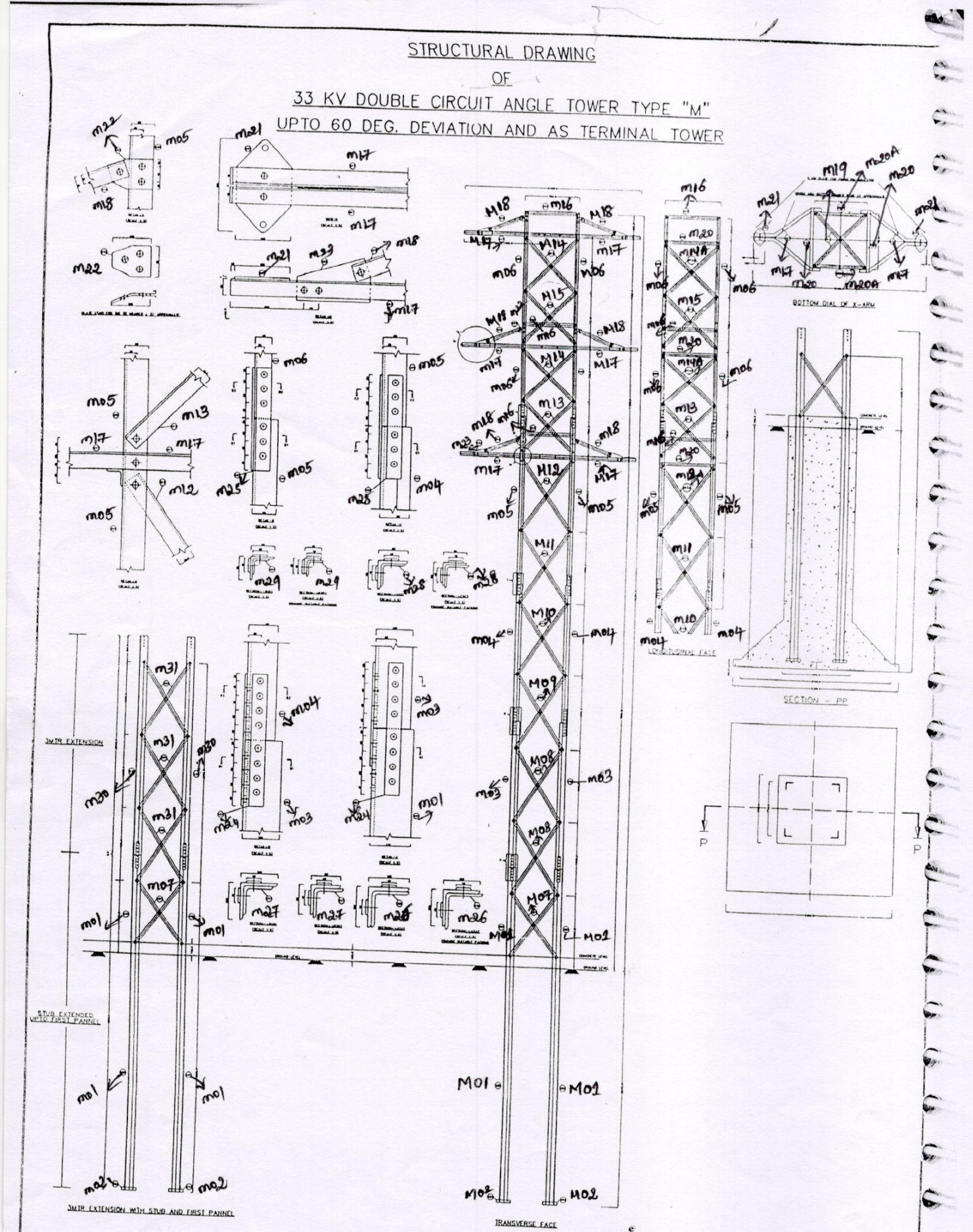


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# BILL OF MATERIAL FOR 33 KV DOUBLE CIRCUIT TOWER TYPE ' M '

| Sl. No. | PART DESCRIPTION | PART NO. | DIMENSIONS OF SECTION/PLATE B and | LENGTH/AREA (m/m) | QUANTITY (No's) | UNIT WEIGHT (kg) | TOTAL WEIGHT (kg) |
|---|---|---|---|---|---|---|---|
| | **stub and cleats** | | | | | | |
| 1 | stub | M01 | 110x110x8 | 4.560m | 4 | 13.4 | 244.416 |
| 2 | cleats for stub | M02 | 45x45x5 | 0.200m | 8 | 3.4 | 5.44 |
| | | | | | | **sub total** | **249.856** |
| | **super structure of L type tower** | | | | | | |
| 3 | leg | M03 | 100x100x8 | 1.998m | 4 | 12.1 | 96.703 |
| 4 | leg | M04 | 80x80x8 | 1.898m | 4 | 9.6 | 72.883 |
| 5 | leg | M05 | 66x65x6 | 2.274m | 4 | 5.8 | 52.575 |
| 6 | leg | M06 | 45x45x5 | 2.761m | 4 | 3.4 | 37.55 |
| 7 | bracing | M07 | 45x45x5 | 1.098m | 8 | 3.4 | 29.866 |
| 8 | bracing | M08 | 45x30x5 | 1.222m | 16 | 2.8 | 54.746 |
| 9 | bracing | M09 | 45X30X5 | 1.230m | 8 | 2.8 | 27.552 |
| 10 | bracing | M10 | 45x30x5 | 1.238m | 8 | 2.8 | 27.731 |
| 11 | bracing | M11 | 45x30x5 | 1.224m | 8 | 2.8 | 27.418 |
| 12 | bracing | M12 | 45x30x5 | 1.200m | 4 | 2.8 | 13.44 |
| 13 | bracing | M12A | 45x30x5 | 1.172m | 4 | 2.8 | 13.126 |
| 14 | bracing | M13 | 45x30x5 | 1.012m | 8 | 2.8 | 22.669 |
| 15 | bracing | M14 | 45x30x5 | 1.013m | 8 | 2.8 | 22.691 |
| 16 | bracing | M14A | 45x30x5 | 0.999m | 8 | 2.8 | 22.378 |
| 17 | bracing | M15 | 45x30x5 | 1.019m | 8 | 2.8 | 22.826 |
| 18 | horizontal bracing | M16 | 45x30x5 | 0.750m | 12 | 3.4 | 25.2 |
| 19 | cross arms main member | M17 | 45x45x5 | 1.048m | 12 | 2.8 | 42.758 |
| 20 | cross arm tie member | M18 | 45x30x5 | 0.520m | 12 | 2.8 | 17.472 |
| 21 | cross arm plan member | M19 | 45x30x5 | 1.016m | 6 | 2.8 | 17.069 |
| 22 | belt member-langitudinal face | M20 | 45x30x5 | 0.750m | 6 | 2.8 | 12.6 |
| 23 | belt member-transverse face | M20A | 45x30x5 | 0.740m | 6 | 2.8 | 12.432 |
| 24 | strain plate | M21 | 6 mm thick | 0.038m'2 | 6 | 47.1 | 10.598 |
| 25 | plate(b/w tie mumber &leg) | M22 | 6 mm thick | 0.013m'2 | 12 | 47.1 | 7.235 |
| 26 | plate(b/w tie mumber & main member) | M23 | 6 mm thick | 0.020m'2 | 6 | 47.1 | 5.652 |
| 27 | cover plate for leg joint | M24 | 6 mm thick | 0.01448m'2 | 16 | 47.1 | 10.912 |
| 28 | cover plate for leg joint | M25 | 6 mm thick | 0.01128m'2 | 16 | 47.1 | 8.501 |
| 29 | cleat | M26 | 100x100x8 | 0.362m | 4 | 12.1 | 17.521 |
| 30 | cleat | M27 | 80x80x8 | 0.362m | 4 | 9.6 | 13.901 |
| 31 | cleat | M28 | 65x65x6 | 0.282m | 4 | 5.8 | 6.542 |
| 32 | cleat | M29 | 45x45x5 | 0.282m | 4 | 3.4 | 3.835 |
| 33 | bolts and nuts for leg joints | NA | 16 mm DIA | 65mm | 128 | 0.288 | 36.8 |
| 34 | bolts and nuts for leg joints | NA | 16 mm DIA | 50mm | 96 | 0.2997 | 25.603 |
| 35 | bolts and nuts for other joints | NA | 16 mm DIA | 40mm | 243 | 0.2467 | 59.948 |
| 36 | spring washers | NA | 3.5 mm thick | suitable for 16mm bolts bolts and nuts | 467 | 0.009 | 4.203 |
| 37 | flat washers for packing | NA | 2 mm thick | suitable for 16mm bolts bolts and nuts | 48 | 0.01 | 0.48 |
| 38 | flat washers for packing | NA | 1 mm thick | suitable for 16mm bolts bolts and nuts | 48 | 0.005 | 0.24 |
| | | | | | | **sub total** | **883.838** |
| | | | | | | **grand total** | **1133.692** |

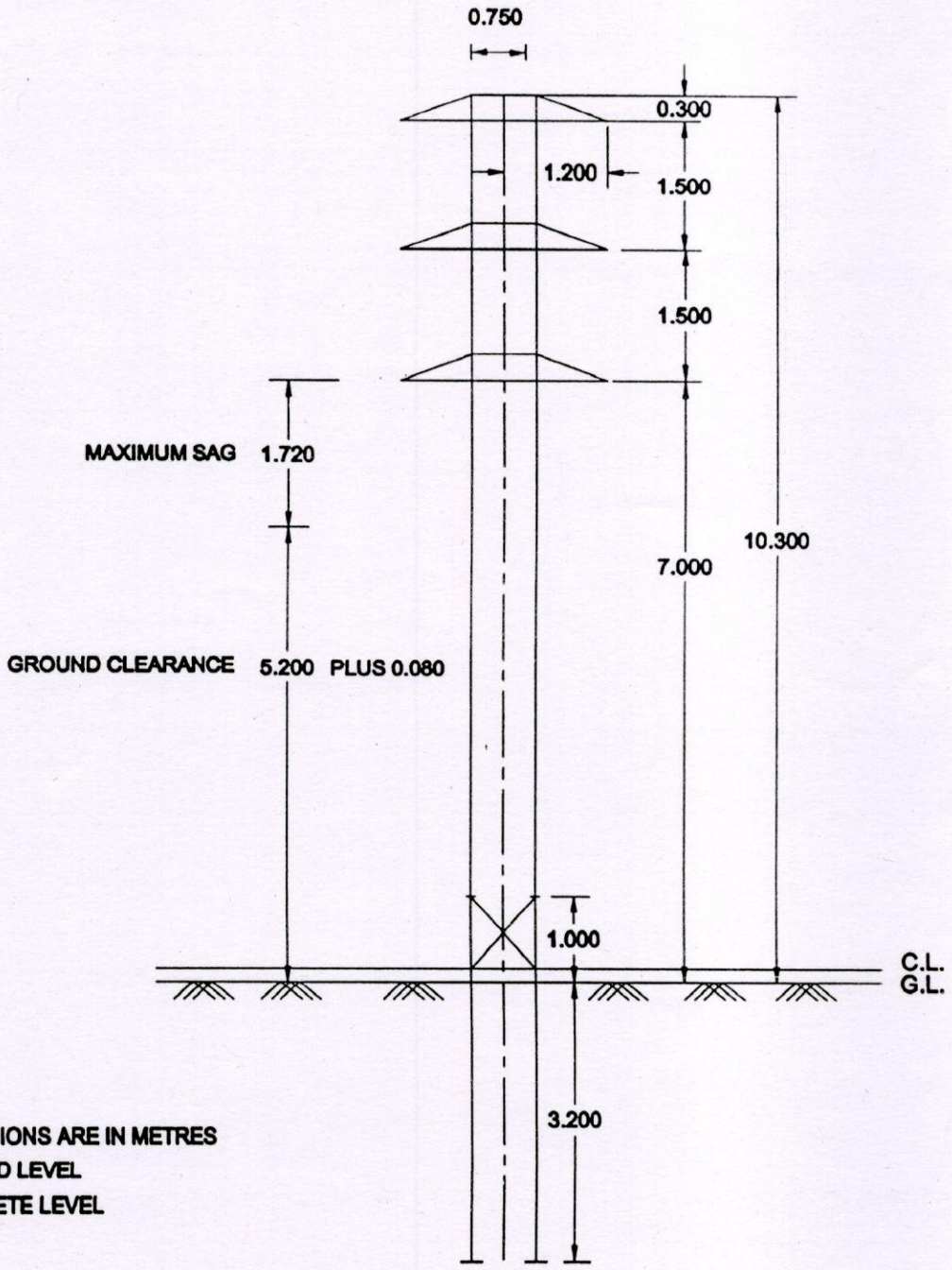
**weight of normal tower type "M" :1133.692kgs**

# BILL OF MATERIAL FOR 3 M EXTENSION OF M TYPE TOWER

| Sl. No. | PART DESCRIPTION | PART NO. | DIMENSIONS OF SECTION/PLATE B and N (mm) | LENGTH/AREA (m/m'2) | QUANTITY (No's) | UNIT WEIGHT (kg) | TOTAL WEIGHT (kg) |
|---|---|---|---|---|---|---|---|
| 1 | leg | M30 | 110x110x8 | 2.998m | 4 | 13.4 | 160.693 |
| 2 | bracing | M31 | 45x45x5 | 1.222m | 24 | 3.4 | 99.715 |
| 3 | cover plate | M24 | 6 mm thick | 0.01448m | 8 | 47.1 | 5.456 |
| 4 | cleat | M26 | 100x100x8 | 0.362m | 4 | 47.1 | 68.2 |
| 5 | bolts and nuts | NA | 16mm dia | 65m | 64 | 0.2875 | 18.4 |
| 6 | bolts and nuts | NA | 18 mm dia | 40m | 44 | 0.2467 | 10.855 |
| 7 | spring washers | NA | 3.5mm dia | suitable for 16 mm dia bolts and nuts | 108 | 0.009 | 0.972 |
| | Total | | | | | | 384.292 |

**weight of 3M extension of "M" type tower::364.292**

# OUTLINE DIAGRAM OF 'M' TYPE TOWER

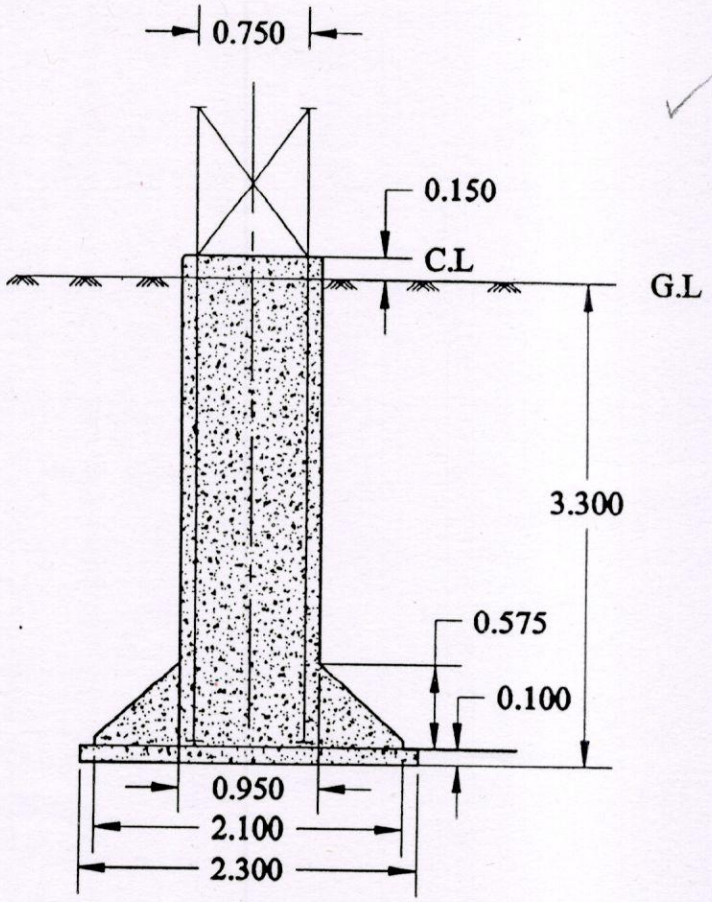



ALL DIMENSIONS ARE IN METRES
G.L. GROUND LEVEL
C.L. CONCRETE LEVEL

FIG - 11

Drawing No: APCPDCL-C.M-TOWERS-11

# FOUNDATION DRAWING OF 33Kv D.C. TOWER TYPE 'M'




ALL DIMENSIONS ARE IN METRES.

FOUNDATION IS DESIGNED FOR NORMAL TOWER, PLUS 3M AND 6M EXTENSIONS.

STUBS EXTENDED UPTO FIRST PANEL.

SECTION : 110 X 110 X 10 MM.

DIAGONAL BRACINGS OF FIRST PANEL : 45 X 45 X 5 MM.

CLEATS WELDED TO STUBS AT BOTTOM : 45 X 30 X 5 MM, 200MM LONG TWO FOR EACH STUB.

ONE OF THE FOUR LEGS IS TO BE CONNECTED TO PIPE EARTHING PROVIDED SEPARATELY AT TOWER LOCATION.

VOLUME OF EXCAVATION = 22.308 CU.M(WORKING SPACE OF 150 MM ALL AROUND THE BOTTOM PAD)

VOLUME OF CONCRETE = 4.434 CU.M

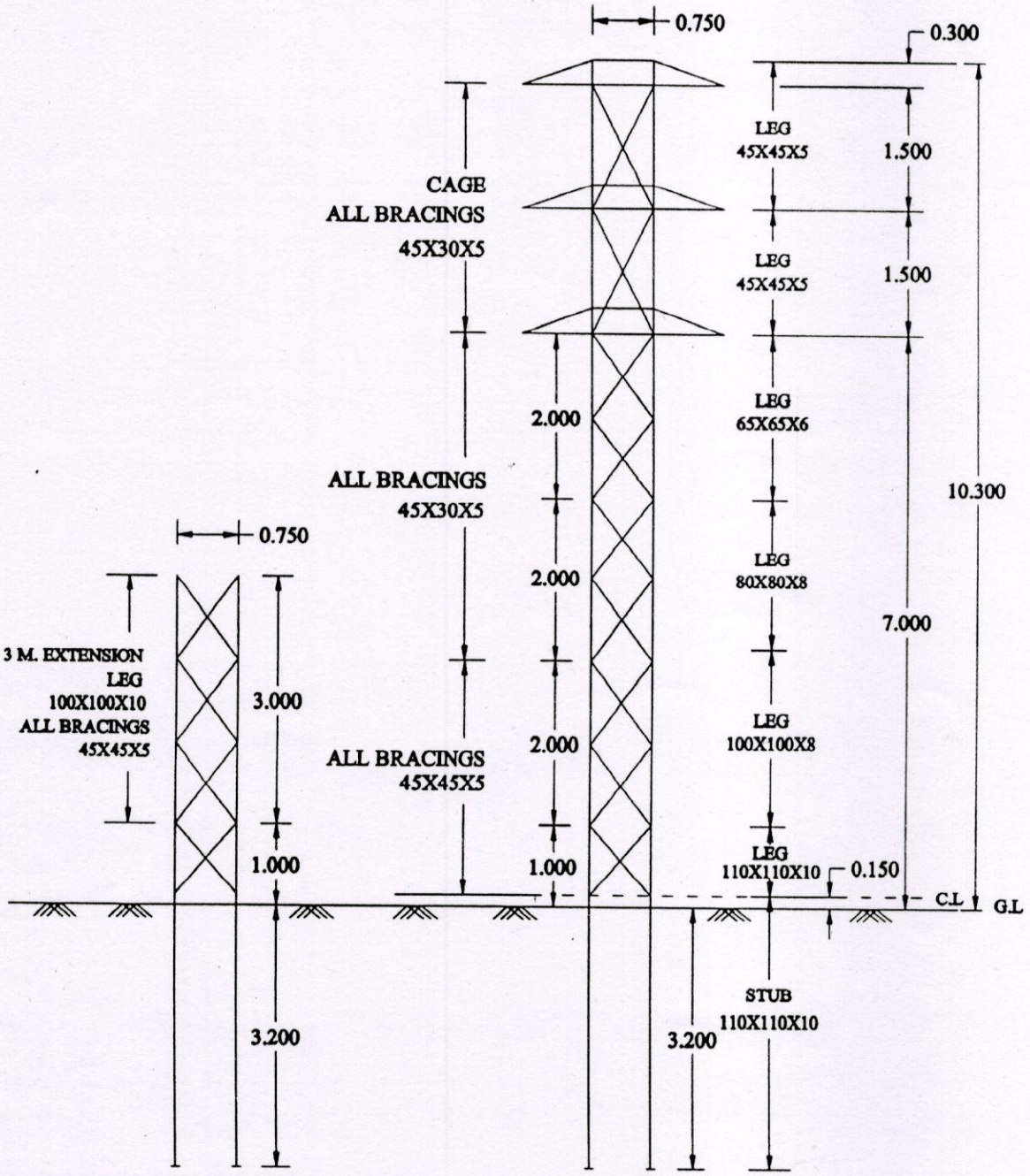
THE FOUNDATION IS SUITABLE FOR NORMAL TOWER, PLUS 3M AND PLUS 6M EXTENSIONS.

THE FOUNDATION CAN BE ADOPTED FOR PLUS 9M AND PLUS 12M EXTENSIONS ERECTING THE TOWER AS A STRAIGHT LINE CUT POINT AND LIMITING THE SPAN TO 80M.

FIG - 14

Drawing No: APCPDCL-C.M-TOWERS-09

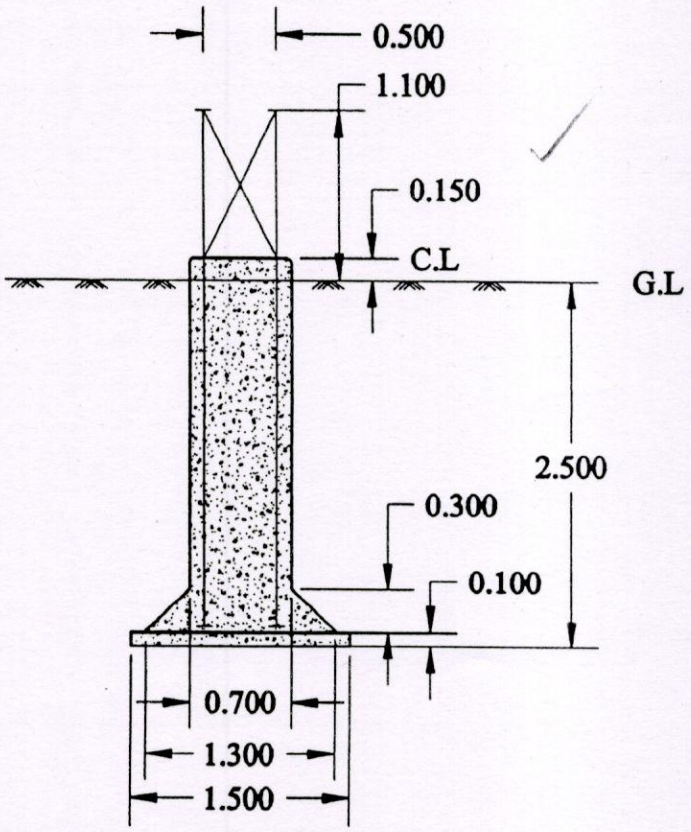
## 33KV DOUBLE CIRCUIT ANGLE TOWER TYPE 'M'
## UPTO 60 DEGREES DEVIATION AND AS TERMINAL TOWER




ALL DIMENSIONS ARE IN METRES.
STEEL SECTIONS FOR LEG MEMBERS AND BRACINGS ARE INDICATED IN THE DRAWING.
CROSS-ARM MAIN MEMBERS AND BELT MEMBERS ARE 45 X 45 X 5 MM. OTHER MEMBERS OF CROSS-ARMS ARE 45 X 30 X 5 MM.
ALL SECTIONS ARE IN MM.
8NO.S 16 MM Ø BOLTS AND NUTS DOUBLE SHEAR FOR FIRST PANEL, 3M AND 6M EXTENSIONS.
8NO.S 16 MM Ø BOLTS AND NUTS DOUBLE SHEAR FOR SECOND AND THIRD PANELS.
6NO.S 16 MM Ø BOLTS AND NUTS DOUBLE SHEAR FOR FOURTH TO SEVENTH PANELS.
4NO.S 16 MM Ø BOLTS AND NUTS DOUBLE SHEAR FOR CAGE.
ALL DIAGONALS SHALL HAVE SINGLE BOLT CONNECTIONS.
ALL LEG MEMBERS ARE BUTT-JOINTED.

FIG - 13 Drawing No: APCPDCL-C.M-TOWERS-13

# FOUNDATION DRAWING OF 33 Kv D.C. TOWER TYPE 'K'




ALL DIMENSIONS ARE IN METRES

FOUNDATION IS DESIGNED FOR NORMAL TOWER WITH 3M AND 6M EXTENSIONS

VOLUME OF EXCAVATION : 8.100 CU M(WORKING SPACE OF 150 MM ALL AROUND THE BOTTOM PAD)

VOLUME OF CONCRETE : 1.636 CU M

STUBS EXTENDED UPTO FIRST PANEL

SECTION : 75 X 75 X 6 MM

CLEATS : 45 X 30 X 5, 200MM LONG

TWO FOR EACH STUB

ONE OF THE FOUR LEGS IS TO BE CONNECTED TO PIPE EARTHING PROVIDED SEPARATELY.

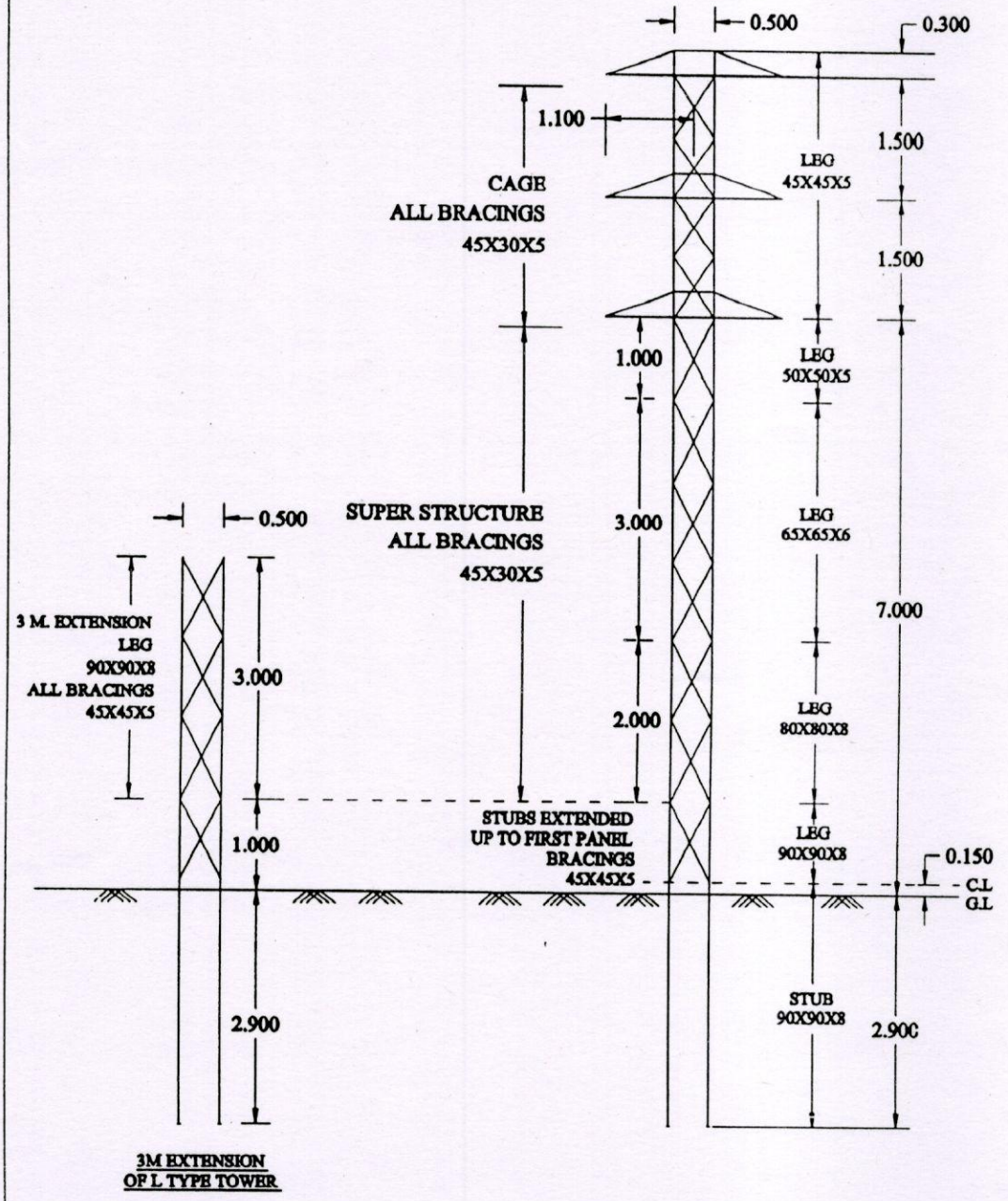
**THE FOUNDATION IS SUITABLE FOR NORMAL TOWER, PLUS 3M AND PLUS 6M EXTENSIONS.**

**THE FOUNDATION CAN BE ADOPTED FOR PLUS 9M AND PLUS 12M EXTENSIONS LIMITING THE SPAN TO 80M.**

FIG - 04

**Drawing No: APCPDCL-C.M-TOWERS-04**

## SINGLE LINE DIAGRAM OF 33Kv DOUBLE CIRCUIT ANGLE TOWER TYPE 'L' ANGLE OF DEVIATION : 20DEG




3M EXTENSION
OF L TYPE TOWER

ALL DIMENSIONS ARE IN METERS.
ALL SECTIONS ARE IN MM.
CROSS ARM MAIN MEMBERS AND DIAGONAL BRACINGS.
OF FIRST PANEL AND EXTENSIONS SHALL BE 45X45X5MM.
ALL OTHER MEMBERS OF CROSSARMS AND DIAGONAL BRACINGS OF TOWER SHALL BE 45X30X5 MM.
8NO.S 16MM Ø BOLTS AND NUTS DOUBLE SHEAR FOR 3M. AND 6M. EXTENSIONS, FIRST, SECOND AND THIRD PANELS.
6NO.S 16 MM Ø BOLTS AND NUTS DOUBLE SHEAR FOR FOURTH TO SEVENTH PANELS.
4NO.S FOR CAGE.
ALL DIAGONALS SHALL HAVE SINGLE BOLT CONNECTIONS.
LEG MEMBERS SHALL BE BUTT-JOINTED

FIG - 08

Drawing No: APCPDCL-C.M-TOWERS-08