



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

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

**Memo No.CGM(P)/SE(P)/DE(R-APDRP)/D.No. 555/2018, Dt: 01-06-2018.**

**Sub:** Projects – Approved Cost Data for the FY 2018-19- Communication - Reg.

**Ref:** 1. Lr.No.CGM(P)/SE(P)/DE(RE)/F.SSR/D.No.2505/2017, Dt:04-01-2018  
2. Memo No.CGM(P)/SE(P)/DE(R-APDRP)/D.No.175/2018,Dt:23-04-2018  
3. U.O.No.CGM/P&MM(T)/F.Cost Data/D.No.911/18, dt:05.05.2018  
4. Lr.No.CGM/Op/RR Zone/DE(T)/ADE-II/D.No.290/18-19, Dt:24.05.2018

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In the reference 2<sup>nd</sup> cited, instructions were issued for extension of applicable period of Cost Data for FY 2017-18 till Cost Data issued for FY 2018-19.

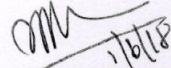
Cost Data for FY 2018-19 is prepared by taking inputs from CGM/P&MM and CGM/Op/RRZone i.e. latest material purchase order rates received from P&MM wing vide ref 3<sup>rd</sup> cited and applicable SSR labour rates of GHMC and Non GHMC area for FY 2018-19 received from Operation/RR Zone vide ref 4<sup>th</sup> cited.

In the preparation 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 2018-19 is herewith enclosed and is effective from 01.06.2018. The soft copy is placed in 202/cgm-proj/DE RAPDRP/Cost-data FY18-19. The cost data for FY2018-19 is also available on the TSSPDCL website i.e., [www.tssouthernpower.com](http://www.tssouthernpower.com).

This is issued with the concurrence of Chairman & Managing Director/TSSPDCL, vide regd.No.2661,Dt:31.05.2018.

**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.

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**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	% GST	SAP Code No.
1	2	3	4	5	6	7	8	9	10	11
<b>SUBHEAD - I : SUPPORTS AND FIXTURES, IRON, STEEL AND CEMENT</b>										
1 (a)	RS Joists 175 x 85 mm.	PM-946/16, dt. 03-01-2017	MT	50,150.00	42,500.00	-	42,500.00	7,650.00	18	MST00032
(b)	RS Joists 150 x 150 mm.	PM-946/16, dt. 03-01-2017	MT	47,200.00	40,000.00	-	40,000.00	7,200.00	18	MST00029
(c)	Spun Pole 9.5 m.	PM-3919, Dt:19-02-2013	-	12,799.99						
2	MS Channel 100 x 50.	PM-946/16, dt. 03-01-2017	MT	44,899.00	38,050.00	-	38,050.00	6,849.00	18	MST00012
3	MS Channel 75 x 40 mm	PM-946/16, dt. 03-01-2017	MT	44,781.00	37,950.00	-	37,950.00	6,831.00	18	MST00013
4	MS Angle 65 x 65 x 6 mm.	PM-946/16, dt. 03-01-2017	MT	43,601.00	36,950.00	-	36,950.00	6,651.00	18	MST00003
5	MS Angle 50 x 50 x 6 mm	PM-946/16, dt. 03-01-2017	MT	44,781.00	37,950.00	-	37,950.00	6,831.00	18	MST00002
6	MS Flat 75x 8	PM-946/16, dt. 03-01-2017	MT	43,247.00	36,650.00	-	36,650.00	6,597.00	18	MST00015
7	MS Flat 50 x 6 mm	PM-946/16, dt. 03-01-2017	MT	43,247.00	36,650.00	-	36,650.00	6,597.00	18	MST00014
8	MS Rod 20 mm.	PM-946/16, dt. 03-01-2017	MT	45,430.00	38,500.00	-	38,500.00	6,930.00	18	MST00019
9	MS Rod 16 mm.	PM-946/16, dt. 03-01-2017	MT	45,430.00	38,500.00	-	38,500.00	6,930.00	18	MST00018
10	GI Stay wire 7/3.15 mm.	PM-1046/16, dt. 15-12-2017	MT	53,583.87	44,260.06	1,150.00	45,410.06	8,173.81	18	WRS00006
11	GI Stay wire 7/2.5 mm	PM-1046/16, dt. 15-12-2017	MT	57,021.05	47,172.92	1,150.00	48,322.92	8,698.13	18	WRS00007
12	GI wire 4 mm	PM-1401/17 Dt: 30-11-2017	MT	53,140.12	43,915.00	1,119.00	45,034.00	8,106.12	18	WRS00005
13	PSCC Pole (9.1 M) - 280 Kg WL	PM-1466/17 Dt: 05-02-2018	Nos.	3,186.00	2,300.00	400.00	2,700.00	486.00	18	PLS00004
14	PSCC Pole (8.0 M) - 140 Kg WL	PM-1323/17 Dt: 23-12-2017	Nos.	1,593.00	1,350.00	-	1,350.00	243.00	18	PLS00001
15	PSCC Poles (11 Mtrs) 365 Kgs	PM-1461/17 Dt: 02-02-2018	Nos.	5,428.00	4,000.00	600.00	4,600.00	828.00	18	PLS00013
<b>SUBHEAD - II : INSULATORS AND HARDWARE</b>										
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-1251/17, Dt: 31-07-2017.	Nos.	179.36	152.00	-	152.00	27.36	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-1335/17, Dt:16-10-2017	Sets	84.30	68.00	3.44	71.44	12.86	18	HWR00002
8	11 KV Polymer String insulator (C&T)	PM-1258/17, Dt: 05-08-2017.	Nos.	138.15	117.08	-	117.08	21.07	18	INS10003
9	11 KV Solid Core Insulators	PM-508/17-10-2015	Nos.	197.00						INS10006
10	LT Pin Insulators	PM-1208/17, Dt: 17-06-2017.	Nos.	22.25	18.86	-	18.86	3.39	18	INS00001
11	LT GI Pins	PM-1233/17, Dt: 03-07-2017.	Nos.	32.26	25.50	1.84	27.34	4.92	18	HWR00015
12	LT Shackle Insulators	PM-1210/17, Dt: 17-06-2017.	Nos.	19.01	16.11	-	16.11	2.90	18	INS00002
13	LT Shackle Hardware (LT Metal Parts)	PM-1239/17, Dt: 03-07-2017.	Nos.	35.79	28.50	1.83	30.33	5.46	18	HWR00016
14	HT Guy Insulators	PM-1491/17, Dt: 27-02-2018.	Nos.	53.10	39.00	6.00	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
<b>SUBHEAD - III CONDUCTOR AND CABLES</b>										
1	ACSR Zebra Conductor	C.O.O.Ms. No.137/29-5-09		235,223.00						CDR00011
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.	Rpt.PM-1420/17, Dt:08-12-2017.	KM	50,489.25	41,700.00	1,087.50	42,787.50	7,701.75	18	CDR00004
4	55 Sqmm AAA Conductor or 7/3.15 AAAC/RABBIT	Rpt.PM-1402/17, Dt:01-12-2017.	KM	27,576.60	22,850.00	520.00	23,370.00	4,206.60	18	CDR00003
5	34 Sqmm AAA Conductor or 7/2.50 AAAC/Weasel	PM-1411/17, Dt:07-12-2017.	KM	18,516.56	15,542.00	150.00	15,692.00	2,824.56	18	CDR00002
<b>SUBHEAD - III (A) LT AERIAL BUNCHED CABLE</b>										
1	2 x 16+25 Sqmm Cable	PM-691/15, Dt.26-03-2016	KM	28,998.69	23,970.16	605.00	24,575.16	4,423.53	18	CBA00002
2	3 x 16+25 Sqmm Cable	PM-1424/17, Dt.08-12-2017.	KM	46,080.84	38,099.09	952.47	39,051.56	7,029.28	18	CBA00003
3	3 x 70 + 1x16 +1x50 Sqmm XLPE AB, Cable	PM-1427/17, Dt.08-12-2017.	KM	161,714.39	134,358.91	2,687.18	137,046.09	24,668.30	18	CBA00004



Sl. No	Name of the Material	P.O. No.	Unit	Rupees	EX-Works	F&I	Basic Price	GST	% GST	SAP Code No.	
1	2	3	4	5	6	7	8	9	10	11	
<b>SUBHEAD - III (B) 33 &amp; 11 KV XLPE POWER CABLE</b>											
1	33 KV 400 Sq.mm.	Rpt. & Extn. PM-1501/17,	KM	2,163,682.15	1,711,912.00	121,716.94	1,833,628.94	330,053.21	18	CBX30001	
2	11 KV 3x300 sq.mm	PM-1127/17, Dt.21-04-2017	KM	1,007,055.66	811,937.00	41,500.00	853,437.00	153,618.66	18	CBX10008	
3	11 KV 3x185 sq.mm.	PM-1144/17, DT.11-05-2017	KM	735,661.56	592,512.00	30,930.00	623,442.00	112,219.56	18	CBA10007	
4	11 KV 3x95 sq.mm	PM-285/11-02-2015		521,049.85						CBX10005	
5	11 KV 3x35 sq.mm	PM-4327/22-04-2015		317,665.84						CBX10002	
<b>SUBHEAD - III (C) 11 KV AB Cable (Aluminum)</b>											
1	3x35+35 Sqmm.	PM-3326/16-05-2011	KM	214,895.25						CBX10004	
2	3x70+70 Sqmm.	PM-3326/16-05-2011	Km	299,076.25						CBX10005	
3	3x120+70 Sqmm.	PM-2532/31-5-08	KM	4,76,000-00						CBX10007	
4	3x185+70 Sqmm.	PM-1434 /17, Dt.29-12-2017.	KM	761,926.33	623,865.00	21,835.28	645,700.28	116,226.05	18	CBX10006	
<b>SUBHEAD - III (D) LT XLPE POWER CABLE</b>											
1	LT 3 ½ Cx300 sq.mm.				Not procured recently						CBX00016
2	3 ½ Cx185 sq.mm.	PM-1139/17, DT.08-05-2017	KM	443,478.98	371,648.00	4,181.64	375,829.64	67,649.34	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	PM-1416/17, Dt.07-12-2017.	KM	74,664.50	62,003.92	1,271.08	63,275.00	11,389.50	18	CBX00004	
<b>SUBHEAD - III (E) L.T.P.CONTROL CABLE</b>											
1	2x2.5 sq.mm Copper	PM-1445/17, Dt.11-01-2018.	KM	41,626.27	35,101.00	175.50	35,276.50	6,349.77	18	CBP00001	
2	4x2.5 sq.mm Copper.	PM-1445/17, Dt.11-01-2018.	KM	72,341.08	61,001.00	305.00	61,306.00	11,035.08	18	CBP00002	
3	10x2.5 sq.mm Copper.	PM-1226/17, DT.30-06-2017	KM	143,439.76	121001	558.12	121,559.12	21,880.64	18	CBP00006	
<b>SUBHEAD - IV : POWER TRANSFORMERS &amp; TRANSFORMER OIL</b>											
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	Rpt.PM-1430/17, Dt.15-12-2017.	Nos.	6,450,154.94	5,428,233.00	38000	5,466,233.00	983,921.94	18	PTR00020	
4	Transformer Oil (New)	PM-1440/17, Dt.30-12-2017.	L	64.31	54.50	0.00	54.50	9.81	18	OF010006	
<b>SUBHEAD - IV (A) : Distribution Transformers</b>											
1	3-Phase 63 KVA (CSP) (Al)	PM-1405/17, Dt.05-12-2017.	Each	103,048.68	86,499.00	830.39	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	171,387.00	-	171,387.00	30,849.66	18	DTC30125	
4	3-Ph 315 KVA DTR with BIS EE Level-2 and Level-3	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	
5	3-Ph 500 KVA Conv. DTR with BIS Level-1 and Level-2	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	
6	3-Phase 25 KVA (CSP) (Al)	PM-1469/17, Dt.14-02-2018	Each	57,539.16	48,192.00	570.00	48,762.00	8,777.16	18	DTC30126	
7	3-Ph 25 KVA DTR with BIS EE Level-2	PM-1469/17, Dt.14-02-2018	Each	57,539.16	48,192.00	570.00	48,762.00	8,777.16	18	DTC30126	
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	
<b>SUBHEAD - V : SWITCH CONTROL AND PROTECTIVE GEAR</b>											
1	33 KV 24V DC VCB with diff. prot. with CRPs & CTs ratio 400-200-100/1-1A	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,	Nos.	385,014.58	318,753.00	7,530.54	326,283.54	58,731.04	18	BRK30019	
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,	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	

Sl. No	Name of the Material	P.O. No.	Unit	Rupees	EX-Works	F&I	Basic Price	GST	% GST	SAP Code No.
1	2	3	4	5	6	7	8	9	10	11
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-1304/17, Dt.25-11-2017.	Nos.	29,484.66	24,987.00	-	24,987.00	4,497.66	18	ABS30004
10	11 KV 800 Amps (Conventional) AB Switch	Rpt PM-1318/17,	Nos.	16,184.04	13,715.29	-	13,715.29	2,468.75	18	ABS10015
11	11 KV 400 Amps (Conventional) SB AB Switch with post type porcelain insulators	PM-1451/17, Dt. 11-01-2018	Nos.	7,799.80	6,610.00	-	6,610.00	1,189.80	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
19	12 V, 80 AH SMF Batteries cells	PM-2875, Dt.31-12-2009	Nos.	4,500.00						SBA10051
20	220V 80 AH Battery charger & DCDB	PM-1137/17, Dt.28-04-2017.	Nos.	303,382.72	254,020.00	3,084.00	257,104.00	46,278.72	28	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						SGE10050
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
<b>SUBHEAD - VI : METERS AND METERING EQUIPMENT</b>										
I	<b>HT Metering</b>									
1	<b>HT Trivector Meter of class 0.2S</b>	PM-604/ Dt: 05-01-2016	Nos.	8,271.80	6,960	50	7,010.00	1,261.80	18	As per annexure
II	<b>11 KV Metering (11 KV CT PT Sets)</b>									
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
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
4	40/5A,60/5,100/5A(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, ITR10046

Sl. No	Name of the Material	P.O. No.	Unit	Rupees	EX-Works	F&I	Basic Price	GST	% GST	SAP Code No.
1	2	3	4	5	6	7	8	9	10	11
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	60/5A (0.2s class)	PM-843/16, Dt.06-08-2016	EA	38,908.46	32,600.00	373.27	32,973.27	5,935	18	ITR10046
7	20/5A & 10/5A (0.2s class)	PM-843/16, Dt.06-08-2016	EA	37,611.51	31,500.00	374.16	31,874.16	5,737	18	ITR10048 ITR10049
<b>III LT Meters</b>										
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-4291/ 14-03-2014	Nos.	6,272.75	5,216.25	99.64	5,315.89	957	18	MTE30025
3	LT TVR Meters Cl. 0.5S (Including Box & 3 CTs) 50/5A for AGL DTRs	PM-4291/ 14-03-2014	Nos.	6,676.44	5,558.08	99.92	5,658.00	1,018	18	MTE30023
4	LT TVR Meters Cl. 0.5S (Including Box & 3 CTs) 100/5A (for AGL DTRs)	PM-4291/ 14-03-2014	Nos.	6,492.07	5,401.61	100.14	5,501.75	990	18	MTE30024
<b>IV Single phase electronic meter</b>										
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
<b>V Three phase Electronic meters</b>										
3	10-40A With PP box & IRDA port	PM-1354/17, Dt:26-10-2017	Nos.	1,847.88	1,525.50	40.50	1,566.00	281.88	18	MTE30038
4	10-40 A without PP Box with trivector features	Rpt.PM-4060, Dt.02-07-2013	Nos.	1,655.17	1,389.15	13.54	1,402.69	252.48	18	MTE30028
5	LT pole mounted meter box (Type-A)	PM-4313/13, Dt.27-03-2014	Nos.	10,432.00	7,800.00	350.00	8,150.00	2,282.00	18	BX300051
6	LT pole mounted meter box (Type-B)	Rpt.PM-3567, Dt.08-05-2012	Nos.	6,437.72	4,802.00	227.47	5,029.47	1,408.25	18	BX300047
<b>VI Testing equipments &amp; others</b>										
1	LT ERS Field Testing Kit (Along with accessories)	PM-2359/29-05-07	Each	137930.16						
2	ERS Testing kits of accuracy 0.02 Class	Extn. PM-3357,	Nos.	1,467,694.62	1,242,809.00	1,000.00	1,243,809.00	223,886	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	
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,	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,	Nos.	8,537.60	6,460.00	210	6,670.00	1,867.60	18	BX500047
<b>SUBHEAD - VII : VCB &amp; PTR spares</b>										
1	IDMT (3 O/L+E/L) Numerical Relay 24V DC 	PM-931/16, Dt: 16-12-2016	Nos.	8,841.09	6,800.00	107.10	6,907.10	1,933.99	18	SBR00177
2	IDMT Static Relay (3 O/L+1E/L) 220 V DC Relays	PM-931/16, Dt: 16-12-2016	Nos.	8,841.09	6,800.00	107.10	6,907.10	1,933.99	18	SBR00216
Rates are as per prevailing market rates										
<b>VIII COMPUTERS/LAPTOPS</b>										
1	Desktop Computers(Make HP)	PM-923/16, Dt.08-12-2016	Nos.	43,022.80	36460	0	36,460.00	6,563	18	CAH00011
2	Desktop Computers(Make DELL)	Rpt PM-1429/17,	Nos.	37,978.30	32,185.00	0	32,185.00	5,793	18	CAH00011
3	Desktop Computers(Make ACER)	Rpt PM-1428/17,	Nos.	37,978.30	32,185.00	0	32,185.00	5,793	18	CAH00011
4	Printers Dot Matrix Printers: Epson LQ - 300 (80 Column)	PM-3485, Dt: 29-12-2011	Nos.	11,392.00	8900	0	8,900.00	2,492	18	CAH00016
5	Dot Matrix Printers: Epson LQ - 1150-II Pin:24, Column 136, cpi:300:(136 Column)	PM-2737, Dt: 29-04-2009	Nos.	12,339.69	9640.38	0	9,640.38	2,699	18	CAH00003
6	Laser Jet Printer	PM-1397/17, Dt. 22-11-2017	Nos.	8,027.12	6,271.19	0	6,271.19	1,755.93	18	CAH00004
7	i. 1.0 KVA UPS with 2 Hrs. online Backup	PM-2731, Dt: 23-04-2009	Nos.	40,495.71	31637.27	0	31,637.27	8,858	18	CAH00052
8	ii. 2.0 KVA UPS with 2 Hrs. online Backup	PM-2731, Dt: 23-04-2009	Nos.	70,059.64	54734.09	0	54,734.09	15,326	18	CAH00053
9	iii. 3.0 KVA UPS with 2 Hrs. online Backup	PM-2731, Dt: 23-04-2009	Nos.	90,526.98	70724.2	0	70,724.20	19,803	18	CAH00054

Sl. No	Name of the Material	P.O. No.	Unit	Rupees	EX-Works	F&I	Basic Price	GST	% GST	SAP Code No.	
1	2	3	4	5	6	7	8	9	10	11	
10	Fax Machine Model: Samsung SCX 451 F/XIP digital copier multifunction printer with Fax (DGS&D rate contract)	PM-3217, Dt: 21-12-2010	Nos.	16,156.16	12622	0	12,622.00	3,534	18	OEE10016	
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	
15	Supply & fixing of Mini Water Cooler Dispenser	-	-	Not Procured recently							
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	<b>11KV LV VCBs with CTs and panel (CTs ratio 600-300/1-1A)</b>										
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	
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	RGVY SMC Meter Boxes along with accessories	PM-3227, Dt: 07-01-2011	Nos.	374.89	280.00	12.88	292.88	82.01	28	BXS00048	
24	RGVY Polycarbonate Meter Boxes along with accessories	PM-3076, Dt: 06-09-2010	Nos.	305.92	239.00	-	239.00	66.92	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	1,602	18	OMT10083	
37	9KV 10KA LAS (Line type) Polymer	PM-3032, Dt:03-05-2012	Nos.	1154.94						LAS00009	
	<b>Additional Items</b>										
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	ABS510009	
2	11KV three phase HG Fuse Sets with Solid Core Insulators	PM-1457/17 Dt: 12-01-2018	Nos.	1,711.00	1,450.00	-	1,450.00	261.00	18	HGF10002	
3	33 KV Solid Core Insulators	PM-3482/11, Dt:28-12-2011	Nos.	1112.62						INS30002	
4	11 KV Solid Core Insulators for HG Fuses	PM-1339/17 Dt: 16-10-2017	Nos.	178.69	151.43	-	151.43	27.26	18	INS10007	
5	LT Capacitor 1x10KVAR	PM-1837/20-5-05		2614.44 5061.00						CPT00025 CPT00026	
6	LT Shunt Capacitor 1x9 KVAR	PM-2159/23-10-06		2,548.00 878.00						CPT00027 CPT00028	
7	33KV / 11KV indoor switch gear (8 feeders)	Rpt.PM-3821.07.12.12	Nos.	15,075,193.90						BRK30020	
8	33KV Metering CTs 50/1A 0.2S Class	Rpt. PM-1505/17,	Nos.	15,420.83	12,711.00	357.50	13,068.50	2,352.33	18	ITR30057	
9	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	
10	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	
11	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	
12	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	
13	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	
14	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	
15	LT TVR 200/5A 3CT 0.5S DLMS(w/o CTs&box) (for AGL DTRs)	PM- 1334/17, Dt:09-10-2017	Nos.	2,105.00	1,756.19	27.71	1,783.90	321.10	18	MTE30044	
16	LT TVR 100/5A 3CT 0.5S DLMS(w/o CTs&box) (for AGL DTRs)	PM- 1334/17, Dt:09-10-2017	Nos.	2,105.00	1,756.19	27.71	1,783.90	321.10	18	MTE30045	
17	LT TVR 50/5A 3CT 0.5S DLMS(w/o CTs&box) (for AGL DTRs)	PM- 1334/17, Dt:09-10-2017	Nos.	2,105.00	1,756.19	27.71	1,783.90	321.10	18	MTE30046	



**FABRICATION MATERIAL**

Amount in Rs.

Sl.No.	Name of the Material	Total Cost	Basic Price	% GST	GST
1	33KV Back Clamp	178.18	151.00	18.00	27.18
2	33KV Top Clamp	326.86	277.00	18.00	49.86
3	33KV Stay sets	1102.12	934.00	18.00	168.12
4	33KV Stay	667.13	565.36	18.00	101.76
5	33KV Xarm	1298.00	1100.00	18.00	198.00
6	11KV DP structure Bracing set	6457.92	5472.82	18.00	985.11
7	33KV DP structure Bracing set	8009.88	6788.03	18.00	1221.85
8	33KV DP structure Double Bracing set	10964.56	9292.00	18.00	1672.56
9	11KV top cleat with clamp	342.20	290.00	18.00	52.20
10	11KV Back Clamp	134.52	114.00	18.00	20.52
11	LT Top clamp	189.98	161.00	18.00	28.98
12	11KV-LT Stay sets	922.76	782.00	18.00	140.76
13	sph mounting arrangements	2145.94	1818.59	18.00	327.35
14	1-phase X arm	180.54	153.00	18.00	27.54
15	11KV 'V' cross arm	568.76	482.00	18.00	86.76
16	LT 3-Ph cross arm	339.84	288.00	18.00	51.84
17	LT Back Clamp	73.16	62.00	18.00	11.16
18	Stay clamp	110.79	93.89	18.00	16.90
19	1-Ph arm	180.71	153.14	18.00	27.57

**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	1109412
2	33 KV DC Line	75	365	12 M RS Joist	50	21	100 sqmm AAAC	1451204
3	33 KV Line	75	365	11 M PSCC	60	17	100 sqmm AAAC	744510
4	33 KV DC Line	75	365	11 M PSCC	40	26	100 sqmm AAAC	1256236
5	33 KV Line	75	280	9.1 Mtr.PSCC	80	14	100 sqmm AAAC	532400
6	33 KV Line	75	280	9.1 Mtr.PSCC	65	16	100 sqmm AAAC	545800
7	11 KV line	75	140	9.1 Mtr.PSCC	60	18	55 sqmm AAAC	431728
8	11 KV line	75	140	9.1 Mtr.PSCC	60	18	34 sqmm AAAC	393212
9	11 KV line	75	140	8 Mtr.PSCC	60	18	55 sqmm AAAC	383730
10	11 KV line	75	140	8 Mtr.PSCC	60	18	34 sqmm AAAC	346714
11	11 KV line	75	140	RSJoist Poles	50	21	55 sqmm AAAC	623098
12	6.3 KV line	75	140	8 Mtr.PSCC	90	11	34 sqmm AAAC	157665
13	LT 3 Ph.5 Wire line (Horizontal)	75	140	8 Mtr.PSCC	65	16	3x55+2x34sqmmAAA	350456
14	LT 3 Ph.5 Wire line (Horizontal)	75	140	8 Mtr.PSCC	45	23	3x55+2x34sqmmAAA	392881
15	LT 3 Ph.5 Wire line (Horizontal)	75	140	8 Mtr.PSCC	65	16	5x34sqmm AAA	318093
16	LT 3 Ph.4 Wire line (Horizontal)	75	140	8 Mtr.PSCC	65	16	3x55+1x34sqmmAAA	319104
17	LT 3 Ph.4 Wire line (Horizontal)	75	140	8 Mtr.PSCC	65	16	4x34sqmm AAA	286945
18	LT 1 Ph. 3 Wire line (Horizontal)	75	140	8 Mtr.PSCC	65	16	3x34 sqmm AAA	244107
19	LT 1 Ph. 2 Wire line (Horizontal)	75	140	8 Mtr.PSCC	65	16	2x34 sqmm AAA	211703
20	L.T.AB Cable	75	140	8 Mtr.PSCC	65	16	3x16+25sqmm	222374
21	L.T.AB Cable	75	140	8 Mtr.PSCC	65	16	2x16+25sqmm	199237
22	Conversion of 1Ph 2 W/L to 3 Ph 4 W/L	75	140	8 Mtr.PSCC	65	16	2x55sqmm	99801
22	Erection of 100 KVA CSP CRGO Distribution Transformer							241273
23	Erection of 63 KVA CSP Distribution Transformer							223152
24	Erection of 63 KVA CSP CRGO core Distribution Transformer on plinth							189622
25	Erection of 63 KVA CSP CRGO core Distribution Transformer on structure							189856
26	Erection of 100 KVA CSP CRGO core Distribution Transformer on column plinth							230726
27	Erection of 25 KVA, 3- Phase CRGO core Distribution Transformer							124820
28	Erection of 25 KVA, 3-Phase, 11 KV/433 V /250 V CRGO Conventional Transformer							115557
29	Erection of 25 KVA, Single Phase, 6.3 KV/0-240 V C.S.P. CRGO Transformer							71800
30	Erection of 15 KVA Single Phase 6.3 KV/0-240 V CSP CRGO Distribution Transformer							45893
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	11867
36	Release of Industrial service above 50 HP and upto 75 HP (HT metering)	202425
37	Release of Street light service (1 -ph electronic meter)	2679
38	Erection of L.T. C.T. Operated Electronic trivector meter on LV side of DTR	12291
39	Erection of 33/11 KV Sub-station with 2 x 8 MVA power transformer & 6 Nos. 11 KV feeders ( without 11 KV 2 MVAR capacitor Bank)	26200000
40	Erection of 33/11 KV Sub-station with 2 x 8 MVA power transformer & 6 Nos. 11 KV feeders ( with 11 KV 2 MVAR capacitor Bank)	27600000
41	Erection of 33/11 KV Sub-station (Indoor substation) with 2x8 MVA power transformer & 6 Nos. 11 KV feeders ( without 11 KV 2 MVAR capacitor Bank)	46162264
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)	16002000
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 extension in existing 33/11 KV Sub-stations with girder poles	83557
46	11 KV Bay extension in existing 33/11 KV Sub-stations with PSCC poles	58842
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	97494
57	Erection of L+3 tower	112838
58	Erection of additional 5 MVA PTR in existing 33/11 KV Sub-station	3787100
59	Extension of 3Mtrs for K+3 Towers as per ASCI Standard	14756
60	Extension of 3Mtrs for L+3 Towers as per ASCI Standard	21928
61	Extension of 3Mtrs for M+3 Towers as per ASCI Standard	26549
62	REC construction standard Drawings (19 Nos.)	

## **COST DATA FOR HILLY AND TRIBAL AREAS AS ADOPTED BY IRRIGATION DEPARTMENT IN THE STATE**

For hilly and tribal areas, the following extra rates are allowed over and above approved cost data of labour.

a.40% extra allowed for the works located within the interior Agency/Tribal limits, i.e., for the works located beyond 16Km from any all weather route inside Agency/Tribal.

b.25% extra allowed for the works located within the interior Agency/Tribal limits, i.e., for the works located within & upto 16KM from any all weather routes inside Agency/Tribal.



**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 type 11mtrs Pole with 175x85mm of 450Kgs	21	22,568	Each	473,928
2	1.53 M Channel / 'V' Cross Arm (100x50mm)	21	1,298	Each	27,258
3	Top Clamp with cleat(75x8mm)	20	327	Each	6,537
4	Back Clamp	20	178	Each	3,564
5	Stay Set complete	12	1,102	Each	13,225
6	Bracing Set with double cross arm	1	8,010	Set	8,010
7	100 Sq.mm AAA Conductor	3.06	50,489	K.M.	154,496
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	103,320
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc	L.S		L.S	9036
<b>Total Cost of Material</b>					<b>836,675</b>

3% storage & handling charges on items (1) to (9)	21,730
3% Contingencies on Materials	25,100
Labour & Transport	120,541
GST at 18 % on L&T	21,697
10% Estt. & Genl. Charges on Materials	83,668
<b>Total</b>	<b>1109411.68</b>
<b>Or Say</b>	<b>1,109,412</b>

**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 type 12mtrs Pole with 150 x 150 mm of 500Kgs	21	23,600	Each	495,600
2	1.53 M Channel / 'V' Cross Arm	60	1,298	Each	77,880
3	Back Clamp	60	178	Each	10,691
4	Stay Set complete	12	1,102	Each	13,225
5	Double Bracing Set with double cross arm	1	10,965	Set	10,965
6	100 Sq.mm AAA Conductor	6.12	50,489	K.M.	308,993
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	104,376
10	Misc. Items like coil earthing, pipe earthing, danger, bolts & nuts, etc	L.S		L.S	9,036
<b>Total Cost of Material</b>					<b>1,095,680</b>

3% storage & handling charges on items (1) to (8)	29,468
3% Contingencies on Materials	32,870
Labour & Transport	155,609
GST at 18 % on L&T	28,010
10% Estt. & Genl. Charges on Materials	109,568
<b>Total</b>	<b>1,451,204</b>
<b>Or Say</b>	<b>1,451,204</b>

**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	1298	Each	22,066
3	Top Clamp with cleat	16	327	Each	5,230
4	Back Clamp	17	178	Each	3,029
5	Stay Set complete	12	1102	Each	13,225
6	Bracing Set with double cross arm	1	8010	Set	8,010
7	100 Sq.mm AAA Conductor	3.06	50489	K.M.	154,496
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	119631
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc	L.S		L.S	6050
<b>Total Cost of the Material</b>					<b>453,240</b>

3% storage & handling charges on items (1) to (9)	9,827
3% Contingencies on Materials	13,597
Labour & Transport	188578
GST at 18 % on L&T	33,944
10% Estt. & Genl. Charges on Materials	45,324
<b>Total</b>	<b>744,510</b>
<b>Stays Pits (0.76x0.76x1.5) Excavation</b>	<b>Or Say 744,510</b>

**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	1298	Each	93,456
3	Back Clamp	75	178	Each	13,364
4	Stay Set complete	12	1102	Each	13,225
5	Double Bracing Set with double cross arm	1	10965	Set	10,965
6	100 Sq.mm AAA Conductor	6.12	50489	K.M.	308,993
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	143865
10	Misc. Items like coil earthing, pipe earthing, danger, bolts & nuts, etc	L.S		L.S	6655
<b>Total Cost of the Material</b>					<b>822,403</b>

3% storage & handling charges on items (1) to (8)	20,156
3% Contingencies on Materials	24,672
Labour & Transport	259970
GST at 18 % on L&T	46,795
10% Estt. & Genl. Charges on Materials	82,240
<b>Total</b>	<b>1,256,236</b>
<b>Or Say</b>	<b>1,256,236</b>



**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	1,298	Each	18,172
3	Top Clamp with cleat	12	327	Each	3,922
4	Back Clamp	13	178	Each	2,316
5	Stay Set complete	12	1,102	Each	13,225
6	Bracing Set with double cross arm	1	8,010	Set	8,010
7	100 Sq.mm AAA Conductor	3.06	50,489	K.M.	154,496
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	88,891
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc	L.S		L.S	5500
<b>Total Cost of Material</b>					<b>363,518</b>

3% storage & handling charges on items (1) to (9)	8,074
3% Contingencies on Materials	10,906
Labour & Transport	96255
GST at 18 % on L&T	17,326
10% Estt. & Genl. Charges on Materials	36,352
<b>Total</b>	<b>532,431</b>
<b>Or Say</b>	<b>532,400</b>

**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	1,298	Each	20,768
3	Top Clamp with cleat	15	327	Each	4,903
4	Back Clamp	15	178	Each	2,673
5	Stay Set complete	10	1,102	Each	11,021
6	Bracing Set with double cross arm	1	8,010	Set	8,010
7	100 Sq.mm AAA Conductor	3.06	50,489	K.M.	154,496
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	83,539
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc	L.S		L.S	5500
<b>Total Cost of Material</b>					<b>369,498</b>

3% storage & handling charges on items (1) to (9)	8,414
3% Contingencies on Materials	11,085
Labour & Transport	101571
GST at 18 % on L&T	18,283
10% Estt. & Genl. Charges on Materials	36,950
<b>Total</b>	<b>545,801</b>
<b>Or Say</b>	<b>545,800</b>

**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	569	Each	10,238
3	Top Clamp with cleat	16	342	Each	5,475
4	Back Clamp	17	135	Each	2,287
5	Stay Set complete	10	923	Each	9,228
6	Bracing Set with double cross arm	1	6,458	Set	6,458
7	55 Sq.mm AAA Conductor	3.06	27,577	K.M.	84,386
8	11 KV Pin Insulator with Pin	54	179	Each	9,685
9	Strain Insulator with metal parts	12	138	Each	1,658
10	Concreting of Pole, Stay sets & Base concreting			L.S	78,378
11	Misc. Items like coil earthing, pipe earthing, danger, bolts & nuts, etc			L.S	4000
	<b>Total Cost of Material</b>				<b>269,141</b>

3% storage & handling charges on items (1) to (9) 5,603

3% Contingencies on Materials 8,074

Labour & Transport 103386

GST at 18 % on L&T 18,610

10% Estt. & Genl. Charges on Materials 26,914

**Total 431,728**

**Or Say 431,728**

**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	569	Each	10,238
3	Top Clamp with cleat	16	342	Each	5,475
4	Back Clamp	17	135	Each	2,287
5	Stay Set complete	10	923	Each	9,228
6	Bracing Set with double cross arm	1	6,458	Set	6,458
7	34 Sq.mm AAA Conductor	3.06	18,517	K.M.	56,662
8	11 KV Pin Insulator with Pin	54	179	Each	9,685
9	Strain Insulator with metal parts	12	138	Each	1,658
10	Concreting of Pole, Stay sets & Base concreting			L.S	78378
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc			L.S	4000
<b>Total Cost of Material</b>					<b>241,417</b>

3% storage & handling charges on items (1) to (9) 4,771

3% Contingencies on Materials 7,243

Labour & Transport 97999

GST at 18 % on L&T 17,640

10% Estt. & Genl. Charges on Materials 24,142

**Total 393,212**

**Or Say 393,212**

**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	1,593	Each	28,674
2	1.07 M Channel / 'V' Cross Arm	18	569	Each	10,238
3	Top Clamp with cleat	16	342	Each	5,475
4	Back Clamp	17	135	Each	2,287
5	Stay Set complete	10	923	Each	9,228
6	Bracing Set with double cross arm	1	6,458	Set	6,458
7	55 Sq.mm AAA Conductor	3.06	27,577	K.M.	84,386
8	11 KV Pin Insulator with Pin	54	179	Each	9,685
9	Strain Insulator with metal parts	12	138	Each	1,658
10	Concreting of Pole, Stay sets & Base concreting			L.S	78,378
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc			L.S	4000
<b>Total Cost of Material</b>					<b>240,467</b>

3% storage & handling charges on items (1) to (9) 4,743

3% Contingencies on Materials 7,214

Labour & Transport 90897

GST at 18 % on L&T 16,362

10% Estt. & Genl. Charges on Materials 24,047

**Total 383,730**

**Or Say 383,730**

**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	1,593	Each	28,674
2	1.07 M Channel / 'V' Cross Arm	18	569	Each	10,238
3	Top Clamp with cleat	16	342	Each	5,475
4	Back Clamp	17	135	Each	2,287
5	Stay Set complete	10	923	Each	9,228
6	Bracing Set with double cross arm	1	6,458	Set	6,458
7	34 Sq.mm AAA Conductor	3.06	18,517	K.M.	56,662
8	11 KV Pin Insulator with Pin	54	179	Each	9,685
9	Strain Insulator with metal parts	12	138	Each	1,658
10	Concreting of Pole, Stay sets & Base concreting			L.S	78,378
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc			L.S	4000
<b>Total Cost of Material</b>					<b>212,743</b>

3% storage & handling charges on items (1) to (9) 3,911

3% Contingencies on Materials 6,382

Labour & Transport 86783

GST at 18 % on L&T 15,621

10% Estt. & Genl. Charges on Materials 21,274

**Total 346,714**

**Or Say 346,714**

**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	10,030	Each	210,630
2	1.07 M Channel / 'V' Cross Arm	21	569	Each	11,944
3	Top Clamp with cleat	20	342	Each	6,844
4	Back Clamp	21	135	Each	2,825
5	Stay Set complete	10	923	Each	9,228
6	Bracing Set with double cross arm	1	6,458	Set	6,458
7	55 Sq.mm AAA Conductor	3.06	27,577	K.M.	84,384
8	11 KV Pin Insulator with Pin	54	179	Each	9,685
9	Strain Insulator with metal parts	12	138	Each	1,658
10	Concreting of Pole, Stay sets & Base concreting			L.S	88,701
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc			L.S	4000
<b>Total Cost of Material</b>					<b>436,357</b>

3% storage & handling charges on items (1) to (9) 10,310

3% Contingencies on Materials 13,091

Labour & Transport 101444

GST at 18 % on L&T 18,260

10% Estt. & Genl. Charges on Materials 43,636

**Total 623,098**

**Or Say 623,098**

**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	1,593	Each	17,523
2	Top Clamp with cleat	11	342	Each	3,764
3	Back Clamp	10	135	Each	1,345
4	Stay Set complete	4	923	Each	3,691
5	34 Sq.mm AAA Conductor	1.02	18,517	K.M.	18,887
6	11 KV Pin Insulator with Pin	10	179	Each	1,794
7	Strain Insulator with metal parts	4	138	Each	553
8	Concreting of Pole, Stay sets & Base concreting			L.S	31351
9	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	2100
<b>Total Cost of Material</b>					<b>81,008</b>

3% storage & handling charges on items (1) to (7) 1,427

3% Contingencies on Materials 2,430

Labour & Transport 54829

GST at 18 % on L&T 9,869

10% Estt. & Genl. Charges on Materials 8,101

**Total 157,665**

**Or Say 157,665**



**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	1,593	Each	25,488
2	LT 3 Phase cross arms	18	340	Each	6,117
3	LT top fitting	18	190	Each	3,420
4	Back Clamp	18	73	Each	1,317
5	Stay Set complete	6	923	Each	5,537
6	55 Sq.mm AAA Conductor	3.06	27,577	KM	84,386
7	34 Sq.mm AAA Conductor	2.04	18,517	KM	37,775
8	Shackle Insulator with metal parts	16	55	Each	880
9	LT pin insulator with pin	56	101	Each	5,656
10	C.I. Knob	16	10	Each	160
11	Concreting of Pole, Stay sets & Base concreting			L.S	47027
12	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	4000
<b>Total Cost of Material</b>					<b>221,763</b>

3% storage & handling charges on items (1) to (10) 5,122

3% Contingencies on Materials 6,653

Labour & Transport 80290

GST at 18 % on L&T 14,452

10% Estt. & Genl. Charges on Materials 22,176

**Total 350,456**

**Or Say 350,456**

**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	1,593	Each	36,639
2	LT 3 Phase cross arms	24	340	Each	8,156
3	LT top fitting	24	190	Each	4,560
4	Back Clamp	24	73	Each	1,756
5	Stay Set complete	6	923	Each	5,537
6	55 Sq.mm AAA Conductor	3.06	27,577	KM	84,386
7	34 Sq.mm AAA Conductor	2.04	18,517	KM	37,775
8	Shackle Insulator with metal parts	16	55	Each	880
9	LT pin insulator with pin	84	101	Each	8,484
10	C.I. Knob	23	10	Each	230
11	Concreting of Pole, Stay sets & Base concreting			L.S	57350
12	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	4000
<b>Total Cost of Material</b>					<b>249,753</b>

3% storage & handling charges on items (1) to (10) 5,652

3% Contingencies on Materials 7,493

Labour & Transport 88,990

GST at 18 % on L&T 16,018

10% Estt. & Genl. Charges on Materials 24,975

**Total 392,881**

**Or Say 392,881**

**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	1,593	Each	25,488
2	LT 3 Phase cross arms	18	340	Each	6,117
3	LT top fitting	18	190	Each	3,420
4	Back Clamp	18	73	Each	1,317
5	Stay Set complete	6	923	Each	5,537
6	34 Sq.mm AAA Conductor	5.1	18,517	KM	94,437
7	Shackle Insulator with metal parts	16	55	K.M.	880
8	LT pin insulator with pin	56	101	Each	5,656
9	C.I. Knob	16	10	Each	160
10	Concreting of Pole, Stay sets & Base concreting			L.S	47027
11	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	4000
<b>Total Cost of Material</b>					<b>194,039</b>

3% storage & handling charges on items (1) to (9) 4,290

3% Contingencies on Materials 5,821

Labour & Transport 80118

GST at 18 % on L&T 14,421

10% Estt. & Genl. Charges on Materials 19,404

**Total 318,093**

**Or Say 318,093**

**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	1,593	Each	25,488
2	LT 3 Phase cross arms	18	340	Each	6,117
3	Back Clamp	18	73	Each	1,317
4	Stay Set complete	6	923	Each	5,537
5	55 Sq.mm AAA Conductor	3.06	27,577	K.M.	84,384
6	34 Sq.mm AAA Conductor	1.02	18,517	K.M.	18,887
7	Shackle Insulator with metal parts	12	55	Each	660
8	LT pin insulator with pin	42	101	Each	4,242
9	C.I. Knob	16	10	Each	160
10	Concreting of Pole, Stay sets & Base concreting			L.S	47027
11	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	4000
<b>Total Cost of Material</b>					<b>197,819</b>

3% storage & handling charges on items (1) to (9) 4,404

3% Contingencies on Materials 5,935

Labour & Transport 77258

GST at 18 % on L&T 13,906

10% Estt. & Genl. Charges on Materials 19,782

**Total 319,104**

**Or Say 319,104**

**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	1,593	Each	25,488
2	LT 3 Phase cross arms	18	340	Each	6,117
3	Back Clamp	18	73	Each	1,317
4	Stay Set complete	6	923	Each	5,537
5	34 Sq.mm AAA Conductor	4.08	18516.56	K.M.	75,548
6	Shackle Insulator with metal parts	12	55	Each	660
7	LT pin insulator with pin	42	101	Each	4,242
8	C.I. Knob	16	10	Each	160
9	Concreting of Pole, Stay sets & Base concreting			L.S	47027
10	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	4000
<b>Total Cost of Material</b>					<b>170,096</b>

3% storage & handling charges on items (1) to (8) 3,572

3% Contingencies on Materials 5,103

Labour & Transport 77,258

GST at 18 % on L&T 13,906

10% Estt. & Genl. Charges on Materials 17,010

**Total 286,945**

**Or Say 286,945**

**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 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	1,593	Each	25,488
2	LT 1 Phase cross arms	18	181	Each	3,250
3	LT top fitting	18	190	Each	3,420
4	Back Clamp	18	73	Each	1,317
5	Stay Set complete	4	923	Each	3,691
6	34 Sq.mm AAA Conductor	3.06	18,517	K.M.	56,662
7	Shackle Insulator with metal parts	8	55	Each	440
8	LT pin insulator with pin	28	101	Each	2,828
9	C.I. Knob	16	10	Each	160
10	Concreting of Pole, Stay sets & Base concreting			L.S	36513
11	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	4000
	<b>Total Cost of Material</b>				<b>137,769</b>

3% storage & handling charges on items (1) to (9) 2,918

3% Contingencies on Materials 4,133

Labour & Transport 72,466

GST at 18 % on L&T 13,044

10% Estt. & Genl. Charges on Materials 13,777

**Total 244,107**

**Or Say 244,107**

**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	1,593	Each	25,488
2	LT 1 Phase cross arms	18	181	Each	3,250
3	Back Clamp	18	73	Each	1,317
4	Stay Set complete	4	923	Each	3,691
5	34 Sq.mm AAA Conductor	2.04	18,517	K.M.	37,775
6	Shackle Insulator with metal parts	4	55	Each	220
7	LT pin insulator with pin	14	101	Each	1,414
8	C.I. Knob	16	10	Each	160
9	Concreting of Pole, Stay sets & Base concreting			L.S	36513
10	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	2900
	<b>Total Cost of Material</b>				<b>112,728</b>

3% storage & handling charges on items (1) to (8) 2,199

3% Contingencies on Materials 3,382

Labour & Transport 69,594

GST at 18 % on L&T 12,527

10% Estt. & Genl. Charges on Materials 11,273

**Total 211,703**

**Or Say 211,703**

**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	1,593	Each	25,488
2	Suspension clamp assembly with eye hook	14	65	Each	910
3	Dead end clamp assembly with eye hook	4	80	Each	320
4	Stay Set complete	4	923	Set	3,691
5	L.T. A.B. Cable 3 x 16 + 25 Sq.mm	1.02	46,081	K.M.	47,003
6	Insulated Connectors with covers	56	80	Each	4,480
7	Concreting of Pole, Stay sets & Base concreting			L.S	36513
8	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	3000
<b>Total Cost of Material</b>					<b>121,405</b>

3% storage & handling charges on items (1) to (6) 2,457

3% Contingencies on Materials 3,642

Labour & Transport 70,110

GST at 18 % on L&T 12,620

10% Estt. & Genl. Charges on Materials 12,141

**Total 222,374**

**Or Say 222,374**



**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	1,593	Each	25,488
2	Suspension clamp assembly with eye hook	14	65	Each	910
3	Dead end clamp assembly with eye hook	4	80	Each	320
4	Stay Set complete	4	923	Set	3,691
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	80	Each	4,480
7	Concreting of Pole, Stay sets & Base concreting			L.S	36513
8	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	3000
<b>Total Cost of Material</b>					<b>103,981</b>

3% storage & handling charges on items (1) to (6) 1,934

3% Contingencies on Materials 3,119

Labour & Transport 67,632

GST at 18 % on L&T 12,174

10% Estt. & Genl. Charges on Materials 10,398

**Total 199,237**

**Or Say 199,237**

**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	27577	KM	56256
2	LT 3 phase X arms	17	340	Each	5777.28
3	Back Clamps	17	73	Each	1243.72
4	Shackle Insulators with metal parts	12	55	Each	657.5904
5	Pin Insulators with pins	45	101	Each	4532.22
6	Stay sets complete	6	923	Each	5536.56
	<b>Total Cost of Material</b>				<b>74,004</b>

3% storage & handling charges on items (1) to (6) 2,220

3% Contingencies on Materials 2,220

Labour & Transport 14,300

Dismantling Charges 1,000

GST at 18 % on L&T 2,574

10% Estt. & Genl. Charges on Materials 7,400

**Total 103,718**

**Or Say 103,718**

**Less Credits**

1 Single Phase cross arms (scrap) 51 11 Kg 561

2 Original Erection charges 2200

3 Dismantling charges 1100

4 Original Estt & Genl Charges 56

**Total 3917**

**Or Say 3917**

Net Cost Gross - Less **99,801**

**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)	118670.00	10,530
2	Erection of 11 KV AB Switch (200A)	6,474	2,620
3	D.P. Structure	14,921	18,571
4	Erection of 11 K.V. H.G. Fuse set	1,843	930
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	9,559	875
7	Installation of HT Lightening Arresters	1,116	780
8	C.I. Pipe earthing (3 Nos.)	11,283	7,639
<b>Total Cost of Material</b>		<b>164,834</b>	<b>42,429</b>

3% Storage & handling charges	4,945
3% Contingencies on Materials	4,945
Labour & Transport	42,429
GST at 18 % on L&T	7,637
10% Estt. & General charges on Materials	16,483

**Total Cost in Rs. 241,273**

**Or Say 241,273**

**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)	103,048.68	10,530
2	Erection of 11 KV AB Switch (200A)	6,474	2,620
3	D.P. Structure	14,921	18,571
4	Erection of 11 K.V. H.G. Fuse set	1,843	930
5	Installation of L.T.H.G. Fuse sets including connections	968	484
6	Metering arrangement with CTs including cable connections and cleat arrangement	9,559	875
7	Installation of HT Lightening Arresters	1,116	780
8	C.I. Pipe earthing (3 Nos.)	11,283	7,639
	<b>Total Cost of Material</b>	<b>149,212</b>	<b>42,429</b>

3% Storage & handling charges 4,476

3% Contingencies on Materials 4,476

Labour & Transport 42,429

GST at 18 % on L&T 7,637

10% Estt. & General charges on Materials 14,921

**Total Cost in Rs. 223,152**

**Or say 223,152**

**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	10,530
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	930
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	9,559	875
7	Installation of HT Lightning Arresters	1,116	780
8	C.I. Pipe earthing (3 Nos.)	11,283	7,639
<b>Total Cost of Material</b>		<b>134,291</b>	<b>28,681</b>

3% Storage & handling charges 4,029

3% Contingencies on Materials 4,029

Labour & Transport 28,681

GST at 18 % on L&T 5,163

10% Estt. & General charges on Materials 13,429

**Total Cost in Rs. 189,622**

**Or say 189,622**

**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	10,530
2	Erection of 11 KV AB Switch (200A)	6,474	2,620
3	Erection of structure for mounting of transformer	4,230	863
4	Erection of 11 K.V. H.G. Fuse set	1,843	930
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	9,559	875
7	Installation of HT Lightning Arresters	1,116	780
8	C.I. Pipe earthing (3 Nos.)	11,283	7,639
	<b>Total Cost of Material</b>	<b>138,521</b>	<b>24,721</b>

3% Storage & handling charges 4,156

3% Contingencies on Materials 4,156

Labour & Transport 24,721

GST at 18 % on L&T 4,450

10% Estt. & General charges on Materials 13,852

**Total Cost in Rs. 189,856**  
**Or say 189,856**

**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	10,530
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	930
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	9,559	875
7	Installation of HT Lightning Arresters with earth connection	1,116	780
8	C.I. Pipe earthing (3 Nos.)	11,283	7,639
	<b>Total Cost of Material</b>	<b>149,913</b>	<b>48,159</b>

3% Storage & handling charges 4,497

3% Contingencies on Materials 4,497

Labour & Transport 48,159

GST at 18 % on L&T 8,669

10% Estt. & General charges on Materials 14,991

**Total Cost in Rs. 230,726**

**Or say 230,726**

**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	10,530
2	Erection of 11 KV AB Switch (200A)	6,474	2,620
3	Erection of 11 KV HG Fuse set	1,843	930
4	Mounting arrangements for Transformer	4,230	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	
<b>Total Cost of Material</b>		<b>87,061</b>	<b>20,207</b>

3% Storage & handling charges	2,597
3% Contingencies on Materials	2,612
Labour & Transport	20,207
GST at 18 % on L&T	3,637
10% Estt. & General charges on Materials	8,706

**Total Cost in Rs. 124,820**

**Or Say 124,820**



**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)	57,539	10,530
2	Erection of 11 KV AB Switch (200A)	6,474	2,620
3	Erection of 11 KV HG Fuse set	1,843	930
4	Mounting arrangements for Transformer	4,230	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	
<b>Total Cost of Material</b>		<b>79,076</b>	<b>20,207</b>

3% Storage & handling charges 2,357

3% Contingencies on Materials 2,372

Labour & Transport 20,207

GST at 18 % on L&T 3,637

10% Estt. & General charges on Materials 7,908

**Total Cost in Rs. 115,557**

**Or Say 115,557**

**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	2,146	Set	2,146
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
<b>Total Cost of Material</b>					<b>58,900</b>

3% Storage & handling charges on items 1 to 3 1,722

3% Contingencies on Materials 1,767

Labour & Transport 3,000

GST at 18 % on L&T 540

10% Estt. & General charges on Materials 5,890

**Total Cost in Rs. 71,819**

**Or Say 71,800**

**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 Transformer	1	2,146	Set	2,146
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		
<b>Total Cost of Material</b>					<b>36,537</b>

3% Storage & handling charges on items 1 to 3	1,066
3% Contingencies on Materials	1,096
Labour & Transport	3,000
GST at 18 % on L&T	540
10% Estt. & General charges on Materials	3,654
<b>Total Cost in Rs.</b>	<b>45,893</b>
<b>Or Say</b>	<b>45,893</b>

**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	1477
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
<b>Total Cost of Material</b>					<b>4,897</b>

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**

**Or say 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
<b>Total Cost of Material</b>					<b>890</b>		<b>521</b>	<b>1,410</b>

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
<b>Total Cost in Rs.</b>	<b>1,194</b>	<b>990</b>	<b>2,184</b>
<b>Or Say</b>			<b>2,184</b>

**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
<b>Total Cost of Material</b>					<b>3,325</b>		<b>919</b>	<b>4,244</b>

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
<b>Total Cost in Rs.</b>	<b>4,136</b>	<b>1,559</b>	<b>5,695</b>
<b>Or Say</b>			<b>5,695</b>

**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
<b>Total Cost of Material</b>					<b>3,425</b>		<b>1,399</b>	<b>4,824</b>

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
<b>Total Cost in Rs.</b>	<b>4,249</b>	<b>2,101</b>	<b>6,349</b>
<b>Or Say</b>			<b>6,349</b>

**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)	6492	Each	1	6,492			6,492
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
<b>Total Cost of Material</b>					<b>8,069</b>		<b>1,639</b>	<b>9,708</b>

3% Contingencies on Materials	242	49	291
Labour & Transport	320	440	760
GST at 18 % on L&T	58	79	137
10% Estt. & General charges on Materials	807	164	971
<b>Total Cost in Rs.</b>	<b>9,496</b>	<b>2,372</b>	<b>11,867</b>
<b>Or Say</b>			<b>11,867</b>



**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	14921	Each	2	29,842	2	18,571	
2	11 KV 400 Amps conventional type AB switch	7,800	Each	2	15,600	2	2,984	
3	11 KV HG Fuse set	1,843	Each	2	3,686	2	1,860	
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)	8,272	Each	1	8,272	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	
<b>Total Cost of Material</b>					<b>121,204</b>		<b>55,479</b>	<b>-</b>

3% Contingencies on Materials 3,636

Labour & Transport 55,479

GST at 18 % on L&T 9,986

10% Estt. & General charges on Materials 12,120

**Total Cost in Rs. 202,425**

**Or Say Rs. 202,425.00**

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

S. No.	Particulars	Qty.	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
<b>Total Cost of Material</b>					<b>1,840</b>

3% Contingencies on Materials	55
Labour & Transport	600
GST at 18 % on L&T	108
10% Estt. & General charges on Materials	184
<b>Total Cost in Rs.</b>	<b>2,679</b>
<b>Or Say</b>	<b>2,679</b>

**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	6,676.44	6,676.44
2	3.5 Core 95 LT XLPE Cable (for 10 meters) to LT side of DTR with cleat wiring.	LS			3,286.58
	<b>Total</b>				<b>9,963.02</b>

3% Contingencies 298.89

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. 875.00

GST at 18 % on L&T 158

10% Estt. & Genl. Charges 996.30

**Total Cost in Rs. 12,290.71**

**Or Say 12,291.00**

**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, retaining wall around switchward with gravel filling, gate and bore well	LS		LS	16.50
b)	Yard lighting	LS		LS	0.80
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	0.472	MT	6.14
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	0.575	Each	0.58
9	Circuit Breakers (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 Circuit 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	0.295	Each	0.88
b)	11KV 800A AB Switch (Double Breaker)	3	0.162	Each	0.49
c)	11KV 400A AB Switch (Double Breaker)	12	0.078	Each	0.94
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	3.03	Each	3.03
16	Earthing of Power Transformer VCBs, AB Swiches, Strucutres with 75x8mm GI Flat			LS	1.98
	<b>Sub Total</b>				<b>219.20</b>

3% Contingencies on items 7 to 15	3.94
1% T&P Charges on items No. 7 to 15	1.31
10% Erection and transport and commissioning charges on items 7 to 15	13.12
GST at 18% on L&T	2.36
10% Establishment and General Charges	21.92
<b>Grand Total</b>	<b>261.85</b>
Or Say	<b>262.00</b>

**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, retaining wall around switchward with gravel filling, gate and bore well	LS		LS	16.50
b)	Yard lighting	LS		LS	0.80
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	0.472	MT	9.44
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	0.575	Each	0.58
9	Circuit Breakers (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 Circuit Panels				
a)	AC Supply Panel	1	0.330	Each	0.33
b)	Alarm Panel	1	0.330	Each	0.33
11	Instrument 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	0.295	Each	0.88
b)	11KV 800A AB Switch (Double Breaker)	3	0.162	Each	0.49
c)	11KV 400A AB Switch (Double Breaker)	12	0.078	Each	0.94
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	3.034	Each	3.03
16	Earthing of Power Transformer VCBs, AB Switches, Structures with 75x8mm GI Flat			LS	1.98
<b>Sub Total</b>					<b>230.04</b>

3% Contingencies on items 7 to 15	4.26
1% T&P Charges on items No. 7 to 15	1.42
10% Erection and transport and commissioning charges on items 7 to 15	14.21
GST at 18% on L&T	2.56
10% Establishment and General Charges	23.00

**Grand Total** **275.49**

Or Say **275.00**

**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
<b>2</b>	<b>Civil Works</b>				
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
<b>3</b>	<b>Station Auxillaries</b>				0.00
a)	Yard lighting	Ls	0.55	LS	0.55
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
<b>4</b>	Foundations for breakers etc.	Ls	0.66	LS	0.66
<b>5</b>	Bus bar arrangements	Ls	2.75	LS	2.75
<b>6</b>	Control cables	Ls	1.10	LS	1.10
<b>7</b>	<b>Power and Distribution Transformers</b>				
a)	33/11 KV, 8 MVA Power Transformers	2	45.596	E	91.19
b)	25KVA 11/04KV Station Transformer	1	0.575	E	0.58
<b>8</b>	<b>Indoor switch gear &amp; Control panels</b>				
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.				
<b>9</b>	<b>Alaram and Annunciation Panel</b>	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	3.03	E	3.03
12	Data Acquisition equipment (SIM, modem, cabling etc)			LS	0.45
<b>13</b>	<b>Earthing Arrangements</b>				
a)	MS Flat75x8 mm for providing earthing matting complete	2	0.432	MT	0.58
b)	MS Flat 50x6 mm for earthing the equipment	2	0.432	MT	0.58
c)	Earthing electrodes & GI pipes	LS	0.90	LS	0.90
<b>14</b>	RS Joist 175x85/150x150(Girder poles) for base of switch gear	1.5	0.5015	MT	0.75
<b>Total</b>					<b>380.56</b>

3% Contingencies on Items 7 To 14

8.72

10% Transport, Erection and Commissioning charges on items 7 To 14

29.06

GST at 18% on L&T

5.23

10% Establishment and General Charges

38.06

**Grand Total**

**461.62**

**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 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, retaining wall around switchward with gravel filling, gate and bore well	LS		LS	11.00
b)	Yard lighting	LS		LS	0.80
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	0.472	MT	2.12
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) (AI)	1	0.575	Each	0.58
10	Circuit Breakers (including trivector meters)				
a)	20 KA 11 kv feeder VCB including Control panel and CTs (NF=5)	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 Circuit Panels				
a)	AC Supply Panel	1	0.303	Each	0.30
b)	Alarm Panel	1	0.303	Each	0.30
12	Instrument 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	0.295	Each	0.88
b)	11KV 800A AB Switch (NT X 1+1) (Double Break)	3	0.162	Each	0.49
c)	11KV 400A AB Switch (NF X 2+2) (Double Break)	12	0.078	Each	0.94
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 Switches, Structures with 75x8mm GI Flat			LS	1.98
	<b>Sub Total</b>				<b>141.60</b>

3% Contingencies on items 7 to 17	2.94
1% T&P Charges on items No. 7 to 17	0.98
Erection and transport and commissioning charges on items 7 to 17 at 10%	9.81
GST at 18% on L&T	1.766
10% Establishment and General Charges	14.16
<b>Total</b>	<b>171.26</b>

Or say **171.00**

**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 lakhs)
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, retaining wall around switchward with gravel filling, gate and bore well	LS		LS	11.00
b)	Yard lighting	LS		LS	0.80
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	0.472	MT	2.83
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) (AI)	1	0.575	Each	0.58
10	Circuit Breakers (including trivector meters)				
a)	20 KA 11 kv feeder VCB including Control panel and CTs (NF=5)	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 Circuit Panels				
a)	AC Supply Panel	1	0.303	Each	0.30
b)	Alarm Panel	1	0.303	Each	0.30
12	Instrument 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	0.295	Each	0.88
b)	11KV 800A AB Switch (NT X 1+1) (Double Breaker)	3	0.162	Each	0.49
c)	11KV 400A AB Switch (NF X 2+2) (Double Breaker)	12	0.078	Each	0.94
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 Switches, Structures with 75x8mm GI Flat			LS	1.80
	<b>Sub Total</b>				<b>132.64</b>

3% Contingencies on items 7 to 16

2.68

1% T&P Charges on items No. 7 to 16

0.89

Erection and transport and commissioning charges on items 7 to 16 at

8.94

10%

GST at 18% on L&T

1.609

10% Establishment and General Charges

13.26

**Total**

**160.02**

Or say

**160.02**

**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, retaining wall around switchward with gravel filling, gate and bore well	LS		LS	11.00
b)	Yard lighting				0.80
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	0.472	MT	2.60
8	9.1 meters PSCC poles	23	0.032	Each	0.73
9	8 meters PSCC poles	8	0.016	Each	0.13
10	Transformers				
a)	33/11kv 5 MVA Power Transformer	1	30.79	Each	30.79
b)	3-Phase 25 KVA (CSP) (AI)	1	0.575	Each	0.58
11	Circuit Breakers (including trivector meters)				
a)	20 KA 11 kv feeder VCB including Control panel and CTs (NF=3)	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 Circuit 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	0.295	Each	0.88
b)	11KV 800A AB Switch (NT X 1+1)	2	0.162	Each	0.32
c)	11KV 400A AB Switch (NF X 2+2)	8	0.078	Each	0.62
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 Swiches, Strucutres with 75x8mm GI Flat			LS	1.80
	<b>Sub Total</b>				<b>100.38</b>

3% Contingencies on items 7 to 17	1.71
1% T&P Charges on items No. 7 to 17	0.57
10% Erection and transport and commissioning charges on items 7 to 17	5.71
GST at 18% on L&T	1.027
10% Establishment and General Charges	10.04
<b>Total</b>	<b>119.43</b>

Or say **119.40**

**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)	0.5984	47,200.00	MT	28244.00
2	100x50 mm Channel	0.1659	44,899.00	MT	7449.00
3	MS flat 75x8 mm	0.05	43,247.00	MT	2162.00
4	AB switch 400 Amps conventional type	1	7,799.80	Each	7800.00
5	200 sqmm ACSR Conductor (Panther-conductor)	0.02	147,854.00	KM	2957.00
6	11 KV Polymer String insulator (C&T)	18	138	Each	2487.00
7	Earthing arrangement (20 mts length with 75x8 MS flat (20x4.7=94)	94	43.25	KG	4065.00
8	Pad clamps, bolts & nuts & Miscellaneous items	LS			1650.00
	<b>Sub-Total</b>				<b>56814.00</b>

3% Contingencies	1704.42
Labour & Transport	16404.30
GST at 18% on L&T	2952.774
10% Establishment & General charges	5681.400
<b>Grand Total</b>	<b>83556.89</b>

**or say 83557.00**

**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	3,186	Each	6372.00
2	100x50 mm Channel	0.1659	44,899.00	MT	7449.00
3	MS flat 75x8 mm	0.05	43,247.00	MT	2162.00
4	AB switch 400 Amps conventional type	1	7,799.80	Each	7800.00
5	200 sqmm ACSR Conductor (Panther conductor)	0.02	147,854.00	KM	2957.00
6	11 KV Polymer String insulator (C&T)	18	138	Each	2487.00
7	Earthing arrangement (20 mts length with 75x8 MS flat (20x4.7=94)	94	43.25	KG	4065.00
8	Pad clamps, bolts & nuts & Miscellaneous items	LS			1650.00
<b>Sub-Total</b>					<b>34942.00</b>

3% Contingencies 1048.26

Labour & Transport 16404.30

GST at 18% on L&T 2952.774

10% Establishment & General charges 3494.200

**Grand Total 58841.53**

**or say 58842.00**

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

Sl.No	Description of Material	Qty	Unit	Rate	Amount in Rs.
1	150 x 150 RSJ pole (8m)	0.6	MT	47,200.00	28320
2	100 x 50 mm MS channel	0.27	MT	44,899.00	12123
3	75 x 8mm flat for clamps & earthing	0.2	MT	43,247.00	8649.4
4	200 sqmm Panther conductor	0.02	KM	147,854.00	2957.08
5	Strain Insulator set with metal parts (each set consists 3 Nos 11 KV strain insulators)	6	Set	414	2487
6	Erection of 33 KV AB switch (800 Amps, Conventional)	1	Each	29,484.66	29484.66
7	Miscellaneous items like fabrication of channels & pad clamps etc.		LS		2750
	<b>Sub-Total</b>				<b>86771</b>

3% Contingencies 2603.12

3% S&H charges 2603.12

Labour & Transport 16771.70

GST at 18 % on L&T 3018.91

10% Estt & General charges on material 8677.06

**Total 120444.56**

**Or Say 120400.00**

**Rs**

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

Sl.No.	Description	Qty	Rate	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	380870
2	Spacer clamps for 33KV bus	9	533	Each	4797
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	2259
5	Tension hardware for twin zebra	6	2,638	Each	15828
6	Zebra condutor	0.150	299369	KM	44905
7	33KV AB Switch 800 A	1	29485	Each	29485
8	Twin Zebra connector	12	600	Each	7200
9	T Clamps	12	500	Each	6000
10	MS.Flat 100x16	0.63	46904	MT	29550
11	MS.Flat 50X8	0.62	51817	MT	32127
12	GI Flat 100X16	0.151	63235	MT	9548
13	GI Flat 50X8	0.155	63478	MT	9839
14	Civil works for erection of towers in sub-station yard and other miscellaneous items.			LS	100000
<b>Sub-Total</b>					<b>672891</b>

3% S&H charges on Material	17187
3% Contingencies on Material	17187
Labour & Transport	112121
GST at 18 % on L&T	20181.78
10% Estt. & Gen. Chargtes	67289
<b>Gross Total</b>	<b>906856</b>
<b>Or Say in Rs.</b>	<b>906856</b>

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

SI.No	Description of work	Qty	Unit	Rate	Amount in Rs.
1	11 KV VCB along with all Accessories Including CTs	1	Each	245849	245848.73
2	4x2.5 sqmm Control cable	0.05	KM	72341	3617
3	Earthing arrangements	LS			1650
4	Miscellaneous items like conductor and clamps etc	LS			1650
<b>Sub-Total</b>					<b>252766</b>

3% Contingencies	7583
3% S&H charges	7583
Labour & Transport	34477
GST at 18 % on L&T	6205.87
10% Estt & General charges	25277
<b>Total</b>	<b>333891</b>
<b>Or Say Rs</b>	<b>333891</b>

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

S.No.	Description of work	Qty	Rate	Per	Amount in Rs.
1	33 KV VCB with relay& CTs (400-200-100/1-1-1A)	1	397,610.44	Each	397610
2	LT PVC Copper Control Cable 10 C x2.5 Sq.mm	0.75	143,439.76	KM	107580
3	LT PVC Copper Control Cable 4 C x2.5 Sq.mm	0.75	72,341.08	KM	54256
4	33KV LAS line type	3	3,321.37	Each	9964
5	33 KV Twin feeder control panel	1	418,324.95	No	418324.95
6	Miscellenous items			LS	1100
	<b>Sub-Total</b>				<b>988835</b>

3% S&H charges 29665

3% Contingencies on material 29665

Labour & Transport 95767

GST 18 % on L&T 17238.12

10% Estt. & General Charges 98884

**Gross Total 1260054**

**Or Say Rs. 1260054**

### 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	799,000.00	Each	799000
2	24 volts 40AH Battery Set including Battery Charger	1	28,000.00	Each	28000
3	M.S.Flat 50x6mm	0.36	43,247.00	MT	15569
4	Panther Conductor	0.05	147,854.00	KM	7393
5	4 Core 2.5 Sqmm PVC Copper Control Cable	0.05	72,341.08	KM	3617
6	10 Core 2.5 Sqmm PVC Copper Control Cable	0.1	143,439.76	KM	14344
7	2 Core 2.5 Sqmm PVC Copper Control Cable	0.06	41,626.27	KM	2498
8	11KV Post type insulators	3	300.00	Each	900
9	Cost of CI pipe of 100 mm dia, 8 mm thick and 2.75 Mts long	2	3486	Each	6972
10	11KV H.G. Fuse Set with Insulators	1	1,843.04	Each	1843
11	11KV LA's Station type	3	1,652.00	Each	4956
12	M.S. Channel 100x50mm	0.24	44,899.00	MT	10776
13	Miscellaneous items	LS			550.00
<b>Sub-Total</b>					<b>896418.00</b>

3% Contingencies 26892.54

Labour ,Transport & Commsioning charges 72986.94

GST at 18 % on L&T 13137.648

10% Establishment & General charges 89641.8

**Grand Total 1099076.92**

**or say 1099077**



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

Sl.No	Particulars	Qty	Rate in Rs.	Unit	Amount in Rs.
1	33/11 KV 8 MVA Power Transformer	1	4559641.66	Each	4559642
2	Erection of 33 KV VCB with directional relay	1	397,610.44	Each	397610
3	Miscellaneous Items			LS	50000
		<b>Sub-Total</b>			5007252

3 % Storage & Handling charges	150218
3% Contingencies on material	150218
Labour & Transport	120000
GST at 18% on L&T	21600.00
10% Estt & General charges on material	500725
Add: Dismantling charges	50000

**Grand Total** 6000013

Or say 6000013

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	3078550.84	Each	3078551
	Depreciation 40% (Variable as per life served)		1231420.00		1231420
				Net	1847131
	Original erection charges (SWR 21275 MP)				32000
	Original dismantling charges				16000
	10% Estt. & General charges				184713
			Total		2079844
			Or Say	Rs.	2079844
	Net Amount = Grand total - Less credit		6000013	2079844	3920169

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

Sl. No.	Description of the material	Qty	Rate	Unit	Amount in Rs.
1	Laying 11 KV 3 core 300Sq.mm UG Cable at depth of 1.20mtrs along CC road	1	1007055.66	KM	1007055.66
2	Erection of 3 way RMU (SF6) outdoor type	1	480787.46	Each	480,787.46
3	Straight through joints for 3 core 11KV 300Sq.mm UG Cable	1	3176	Each	3176.00
4	End termination suitable for 3 core 300 Sq.mm UG cable	4	2021	Each	8084.00
5	Earthing of Cable with GI pipe of 2mt length	3	667.00	Nos	2001.00
<b>Sub-Total</b>					<b>1501104.12</b>

3 % storage & handling charges 30211.67

3 % contingencies 30211.67

Labour and Transport 514646.00

GST at 18 % on L&T 92636.280

10 % Estt & General charges 150110.41

**Grand Total 2318920.15**

**Or Say Rs 2318920**

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

Sl. No.	Description of the material	Qty	Rate	Unit	Amount in Rs.
1	Laying 33 KV 3 core 400Sq.mm UG Cable at depth of 1.20mtrs along CC road	1	2163682.15	KM	2163682.15
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	4764	Each	4764.00
3	End termination suitable for 400 Sq.mm (outdoor type)	2	2310	Nos	4620.00
4	Earthing of Cable with GI pipe of 2mt length	2	733.00	Nos	1466.00
<b>Sub-Total</b>					<b>2174532.15</b>

3 % Storage & handling charges	64910.46
3 % Contingencies	64910.46
Labour and Transport	599802.50
GST at 18 % on L&T	107964.450
10 % Estt & General charges	217453.21

**Grand Total                    3229573.24**

**Or Say                    Rs                    3229573**

**Erection of Non Galvanised "M" Tower as per ASCI Standard for span length 100m for angle deviation 20degrees to 60degrees/Cut point/Deadend**

S. No.	Particulars	Qty.	Per Unit	Rate	Amount in Rs.
1	Supply of Non Galvanised M type tower including 6arms as per Specification. (GHMC SSR)	1.133	MT	54174.12	61379.28
2	Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers. (MP SSR)	158	KG	100.00	15800.00
3	Fabrication of tower Parts as per Specification	1.133	MT	6352.50	7197.38
4**	Excavation of pit including dewatering, planking, showing and shuttering( where ever necessary) and leveling a) in all types of soils such as BC, red earth, hard gravel etc., b) in hard rock sites (where blasting is prohibited) with size 1.2x1.2x3.3 mtr i.e.4.752 cum GHMC SSR	4.752	CUM		0.00
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, form boxes and cement and curing for 14 days (40 mm HBG metal for pyramid portion and 20 mm HBG metal for chimney portion) i.e 4.434 cu.mts including coping	5.752	CUM	7166.78	41223.32
6	Erection of tower parts completely as per specifications including erection of insulators with all accessories, jumpering,transport of material and bolts and nuts etc.,	1.133	MT	7507.50	8506.00
7	Tack welding of total tower nuts and bolts	1	Job	1732.50	1732.50
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	1708.82	3417.64
9	Transport of Material to site including loading and unloading	1.133	MT	2310.00	2617.23

S. No.	Particulars	Qty.	Per Unit	Rate	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.	1.133	MT	2175.80	2465.18
b	Labour charges for painting including scratching and cleaning of tower	1.133	MT	847.77	960.52
c	Material for Second coat of 1st Grade Aluminium Paint, brushes, etc.,	1.133	MT	1289.20	1460.66
d	Labour charges for painting including scratching and cleaning of tower	1.133	MT	480.48	544.38
				<b>Total:</b>	<b>147304.10</b>

(\*) Note:-The requirement of 2nd coat is to be justified by the concerned Divisional Engineer /Executive Engineer before execution of this work

(\*\*) Note:-(1) Earth work excavation of Hard Roack removal (where blasting is prohibited) rate to be calculated as per code SWR10856 -- 985/- Per Cum. The quantity of earth work excavation with Hard Rock removal may vary based on the site condition.

**Tower details**

1	Weight of M type tower	1.133 MT	
2	Weight of 1 No. extension of 3 Mts	0.313 MT	(313.59Kgs)
3	Weight of M+3 tower	1.446	
4	Weight of M+6 tower	1.759	
5	Weight of M+9	2.072	
6	Weight of each arm	0.015 MT	(15.17Kgs)

**stub** 110X110X8 = 4.56 mts

100X100X8=1.998 mts

80X80X8 =1.898 mtrs

65X65X6 = 2.274 mts

45X45X5=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 Tower as per ASCI Standard for span length 100mts for angle deviation between 2degrees to 20degrees**

S. No.	Particulars	Qty.	Per Unit	Rate	Amount
1	Supply of Non-Galvanized L type tower including six arms as per Specification. (GHMC SSR)	0.827	MT	54174.12	44802.00
2	Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers.	168	KG	100.49	16882.32
3	Fabrication of tower Parts as per Specification	0.827	MT	6352.50	5253.52
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., b) in hard rock sites (where blasting is prohibited) with size 1.0x1.0x3.0 mtr i.e.3.0cum	3	CUM		0.00
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, form boxes and cement and curing for 14 days (40 mm HBG metal for pyramid portion and 20 mm HBG metal for chimney portion) i.e 4 cu.mts including coping	4	CUM	7166.78	28667.12
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.,	0.827	MT	7507.50	6208.70
7	Tack welding of total tower nuts and bolts	1	Job	1732.50	1732.50
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	1708.82	3417.64
9	Transport of Material to site including loading and unloading	0.827	MT	2310.00	1910.37

S. No.	Particulars	Qty.	Per Unit	Rate	Amount
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.	0.827	MT	2175.80	1799.39
b	Labour charges for painting including scratching and cleaning of tower	0.827	MT	847.77	701.11
c	Material for Second coat of 1st Grade Aluminium Paint, brushes, etc.,	0.827	MT	1289.20	1066.17
d	Labour charges for painting including scratching and cleaning of tower	0.827	MT	480.48	397.36
				<b>Total:</b>	<b>112838.18</b>

(\*) Note:-The requirement of 2nd coat is to be justified by the concerned Divisional Engineer /Executive Engineer before execution of this work

#### Tower details

1	Weight of L type tower including nuts&bolts	0.827 MT	
2	Weight of 1 No. extension of 3 Mts	0.26325 MT	
3	Weight of L+3 tower	1.09025	
4	Weight of L+6 tower	1.3535	
5	Weight of L+9	1.61675	
6	Weight of each arm	0.0097 MT	(9.7Kgs)
<b>stubs</b>	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 : 2.9 mts		
	Height of tower above ground level : 10.25mts.		

**Erection of Non-Galvanised K Tower as per ASCI Standard for span length 100mts for angle deviation not exceeding 2degrees**

S. No.	Particulars	Qty	Per Unit	Rate	Amount
1	Supply of Non-Galvanised K type tower including six arms as per Specification. (MP SSR)	0.75	MT	54174.12	40630.59
2	Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers.(MP SSR)	118.27	KG	100.49	11884.95
3	Fabrication of tower Parts as per Specification	0.75	MT	6352.50	4764.38
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., b) in hard rock sites (where blasting is prohibited) with size 1.0x1.0x2.5 mtr i.e.2.5 cum (GHMC SSR)	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 (40 mm HBG metal for pyramid portion and 20 mm HBG metal for chimney portion) i.e 3.5 cu.mts including coping (GHMC SSR)	3.5	CUM	6887.27	24105.45
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	7507.50	5630.63
7	Tack welding of total tower nuts and bolts	1	Job	1732.50	1732.50
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	1708.82	3417.64
9	Transport of Material to site including loading and unloading	0.75	MT	2310.00	1732.50



S. No.	Particulars	Qty	Per Unit	Rate	Amount
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	2175.80	1631.85
b	Labour charges for painting including scratching and cleaning of tower	0.75	MT	847.77	635.83
c	Material for Second coat of 1st Grade Aluminium Paint, brushes, etc.,	0.75	MT	1289.20	966.90
d	Labour charges for painting including scratching and cleaning of tower	0.75	MT	480.48	360.36
<b>Total:</b>					<b>97493.56</b>

(\*) Note:-The requirement of 2nd coat is to be justified by the concerned Divisional Engineer /Executive Engineer before execution of this work

**Tower details**

1	Weight of K type tower including nuts&bolts	0.75 MT	
2	Weight of 1 No. extension of 3 Mts	0.163 MT	
3	Weight of K+3 tower	0.913	
4	Weight of K+6 tower	1.076	
5	Weight of K+9	1.239	
6	Weight of each arm	0.0097 MT	(9.7Kgs)
<b>stubs</b>	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-VIII**

**Extension of 3mtrs for Non-Galvanized K Tower as per ASCI Standard for span length 100mts for angle deviation not exceeding 2degrees**

S. No	Description	Qty	Per Unit	Rate	Amount
<b>Material</b>					
1	Supply of Non-Galvanised K+3 type tower as per Specification. (GHMC SSR)	0.163	MT	54174.12	8830.38
2	Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers. (MP SSR)	24.96	KG	100.49	2508.67
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.	0.163	MT	2175.80	354.66
b	Material for Second coat of 1st Grade Aluminium Paint, brushes, etc.,	0.163	MT	1289.20	210.14
<b>Total:</b>					<b>11903.85</b>
<b>Labour</b>					
1	Fabrication of tower Parts as per Specification	0.163	MT	6352.50	1035.46
2	Erection of tower parts completely as per specification including erection of insulators with all accessories, jumpering and bolts and nuts etc.,	0.163	MT	7507.50	1223.72
3	Transport of Material to site including loading and unloading	0.16	MT	2310.00	376.53

S. No	Description	Qty	Per Unit	Rate	Amount
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	0.163	MT	847.77	138.19
b	Labour charges for painting including scratching and cleaning of tower	0.163	MT	480.48	78.32
				<b>Total:</b>	<b>2852.21</b>

(\*) Note:-The requirement of 2nd coat is to be justified by the concerned Divisional Engineer /Executive Engineer before execution of this work

**Tower details**

1	Weight of K type tower including nuts&bolts	0.75 MT	
2	Weight of 1 No. extension of 3 Mts	0.163 MT	
3	Weight of K+3 tower	0.913	
4	Weight of K+6 tower	1.076	
5	Weight of K+9	1.239	
6	Weight of each arm	0.0097 MT	(9.7Kgs)
<b>stubs</b>	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 Tower as per ASCI Standard for span length 100mts  
for angle deviation between 2degrees to 20degrees**

S. No	Description	Qty.	Per Unit	Rate	Amount
<b>Material</b>					
1	Supply of Non-Galvanized L+3 type tower as per Specification.(GHMC SSR)	0.26	MT	54174.12	14085.27
2	Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers. (MP SSR)	23.81	KG	100.49	2392.37
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.	0.26	MT	2175.80	565.71
b	Material for Second coat of 1st Grade Aluminium Paint, brushes, etc.,.	0.26	MT	1289.20	335.19
				<b>Total:</b>	<b>17378.54</b>
<b>Labour</b>					
1	Fabrication of tower Parts as per Specification	0.26	MT	6352.50	1651.65
2	Erection of tower parts completely as per specifications including erection of insulators with all accessories, jumpering,transport of material and bolts and nuts etc.,	0.26	MT	7507.50	1951.95
3	Transport of Material to site including loading and unloading	0.26	MT	2310.00	600.60

S. No	Description	Qty.	Per Unit	Rate	Amount
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	0.26	MT	847.77	220.42
b	Labour charges for painting including scratching and cleaning of tower	0.26	MT	480.48	124.92
				<b>Total:</b>	<b>4549.55</b>

(\*) Note:-The requirement of 2nd coat is to be justified by the concerned Divisional Engineer /Executive Engineer before execution of this work

#### Tower details

1	Weight of L type tower including nuts&bolts	0.827 MT	
2	Weight of 1 No. extension of 3 Mts	0.26325 MT	
3	Weight of L+3 tower	1.09025	
4	Weight of L+6 tower	1.3535	
5	Weight of L+9	1.61675	
6	Weight of each arm	0.0097 MT	(9.7Kgs)
<b>stubs</b>	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 : 2.9 mts		
	Height of tower above ground level : 10.25mts.		

**DATA-X**

**Extension of 3mtrs for Non-Galvanized "M" Tower as per ASCI Standard for span length 100m for angle deviation 20degrees to 60degrees/Cut point/Deadend**

S. No	Description	Qty.	Per Unit	Rate	Amount
<b>Material</b>					
1	Supply of Non-Galvanised M+3 type tower as per Specification. (GHMC SSR)	0.31	MT	54174.12	16956.50
2	Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers.	30.23	KG	100.49	3037.51
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.	0.31	MT	2175.80	681.03
b	Material for Second coat of 1st Grade Aluminium Paint, brushes, etc.,	0.31	MT	1289.20	403.52
<b>Total:</b>					<b>21078.56</b>
<b>Labour</b>					
1	Fabrication of tower Parts as per Specification	0.31	MT	6352.50	1988.33
2	Erection of tower parts completely as per specifications including erection of insulators with all accessories, jumpering, transport of material and bolts and nuts etc.,	0.31	MT	7507.50	2349.85
3	Transport of Material to site including loading and unloading	0.31	MT	2310.00	716.10

S. No	Description	Qty.	Per Unit	Rate	Amount
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	0.31	MT	847.77	265.35
b	Labour charges for painting including scratching and cleaning of tower	0.31	MT	480.48	150.39
				<b>Total:</b>	<b>5470.02</b>

(\*) Note:-The requirement of 2nd coat is to be justified by the concerned Divisional Engineer /Executive Engineer before execution of this work

**Tower details**

1	Weight of M type tower	1.133 MT	
2	Weight of 1 No. extension of 3 Mts	0.313 MT	
3	Weight of M+3 tower	1.446	
4	Weight of M+6 tower	1.759	
5	Weight of M+9	2.072	
6	Weight of each arm	0.01517 MT	(15.17KGs)
<b>stubs</b>	110X110X8 = 4.56 mts		
	100X100X8=1.998 mts		
	80X80X8 =1.898 mtrs		
	65X65X6 = 2.274 mts		
	45X45X5=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**

<b>Sl.No</b>	<b>Description of Material</b>	<b>Qty</b>	<b>Unit</b>	<b>Rate</b>	<b>Amount in Rs.</b>
1	150 x 150 RSJ pole (8m)	0.6	MT	47,200.00	28320.00
2	100 x 50 mm MS channel	0.27	MT	44,899.00	12123
3	75 x 8mm flat for clamps & earthing	0.4	MT	43,247.00	17298.8
4	200 sqmm Panther conductor	0.02	KM	147,854.00	2957.08
5	Strain Insulator set with metal parts (each set consists 3 Nos 11 KV strain insulators)	6	Set	414	2487
5	Erection of 33 KV AB switchch	1	Each	29,484.66	29484.66
6	5 MVA Power Transformer	1	Each	3078551	3078550.84
7	Foundation of Power Transformer	1	LS	50000	50000
8	Miscellaneous items like fabrication of channels & pad clamps etc.		LS		5000
<b>Sub-Total</b>					<b>3226220.889</b>

3% Contingencies 96786.63

3% S&H charges 96786.63

Labour & Transport 46154.90

GST at 18 % on L&T 8307.882

10% Estt & General charges on material 322622.09

**Total 3796879.01**

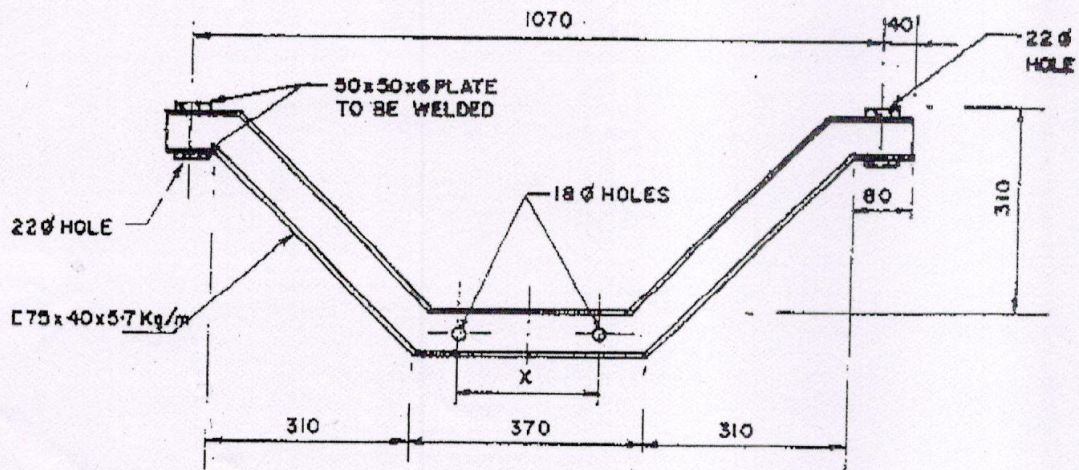
**Or Say Rs 3796900.00**



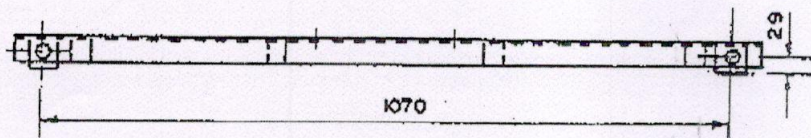
**REC- CONSTRUCTION STANDARD NOS. OTHER THAN THE ITEMS INCLUDED IN  
THE 33 KV 11 KV & LT LINES ERECTION AND CENTRALISED MATERIAL**

<b>S. No</b>	<b>Particulars</b>	<b>REC Construction Standard No./ Specification No.</b>	<b>Remarks/ Notes</b>
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 tying	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 tying	Sp. No. 25/1983	All lines
22	Fibre Reinforced Plastic Cross Arms	40/1987	

REC  
CONSTRUCTION STANDARD  
A-6



ELEVATION



PLAN

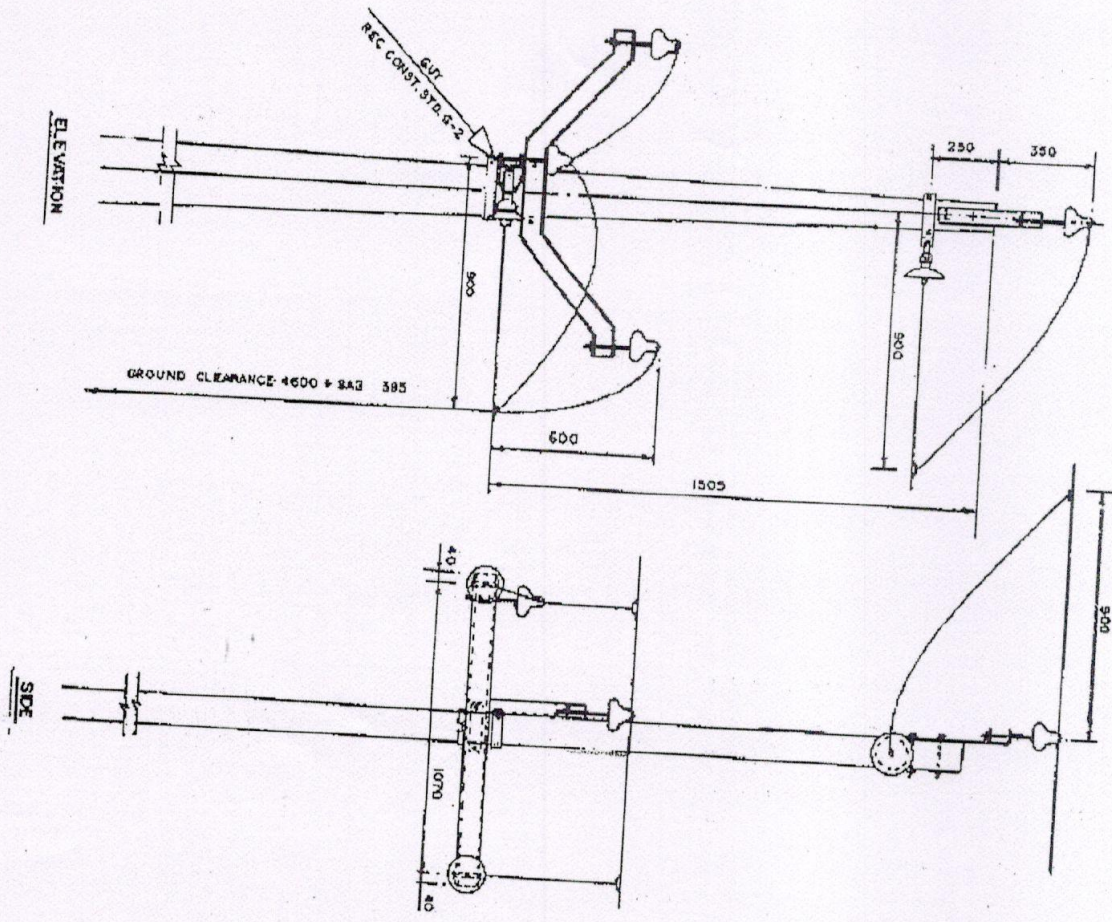
X :- -TO SUIT THE POLE  
NOTE :-AS AN ALTERNATIVE, M.S.ANGLE CROSS-ARM  
(A-13) MAY BE USED IF CHANNEL SECTION  
AS PER THIS STANDARD IS NOT AVAILABLE

ALL DIMENSIONS ARE IN mm.

११ के.वी. लाईन V-कैची भुजा 11 KV LINES V - CROSS ARM	
SCALE :- N.T.S	SEPT. - 1972



REC  
CONSTRUCTION STANDARD  
A-11



BILL OF MATERIAL

P.C.C. SUPPORT	8M LONG	INC.	AS REQUIRED
CHANNEL I FOR V - CROSS ARM 1	REFER REC CONST STD. A-6	1NB	
CHANNEL FOR HORIZONTAL CROSS ARM 1	75X40 - 1150 (APPROX. 1)	1NC	
11KV STRAIN INSULATORS WITH HARDWARE		3 Pcs.	
11KV PIN INSULATORS WITH PINS		4 Pcs.	
POLE TOP BRACKET	REFER REC. CONST. STD. A-7	1NC	
GUN SET	REFER REC. CONST. STD. G-2	1NB	
BASE PLATE	REFER REC. CONST. STD. K-1	1NC	
PIPE / ROD EARTHING	REFER REC. CONST. STD. J-2	1NB	
BACK CLAMP (FOR V-CROSS ARM 1)	REFER REC. CONST. STD. K-2	1NB	
EARTHING MATERIAL, NUTS, BOLTS, CLAMPS ETC.			

NOTE - MATERIAL SHALL BE FITTED TO THE TAPPING POLE AND ADJUSTED TO FULL OF THE BRACKET LINE - 90 METRES

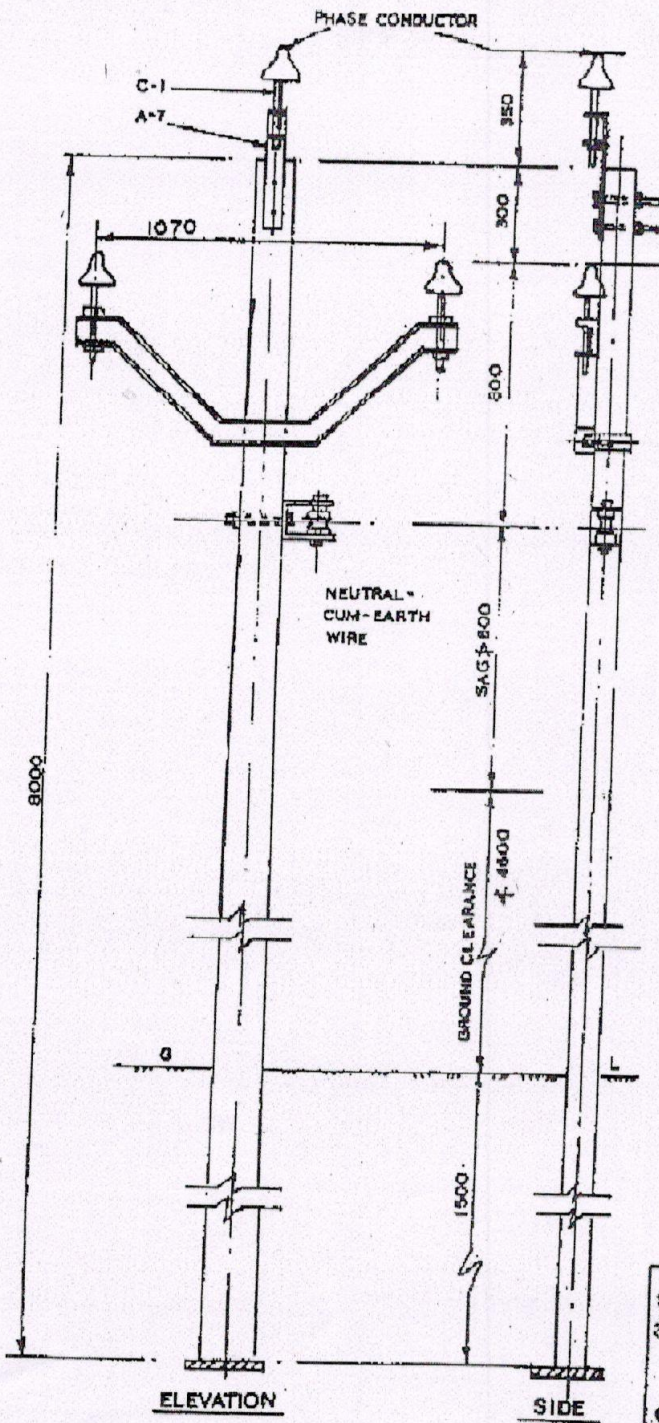
ALL DIMENSIONS ARE IN MM.

11KV LINE  
TAPPING ARRANGEMENT  
SINGLE POLE TAPPING

SCALE: 1:100 FEB - 1070



REC  
CONSTRUCTION STANDARD  
A-16



BILL OF MATERIAL

P.C.C SUPPORT BM	1
POLE TOP BRACKET	1
V-CROSS ARM	1
11KV PTM INSULATOR WITH PINS	3
SHACKLE INSULATOR	1
W CLAMP WITH BOLT	1
EARTHING MATERIAL	1
BOLTS-NUTS, CLAMPS ETC.	AS REQD.
BOLTS 16 #	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

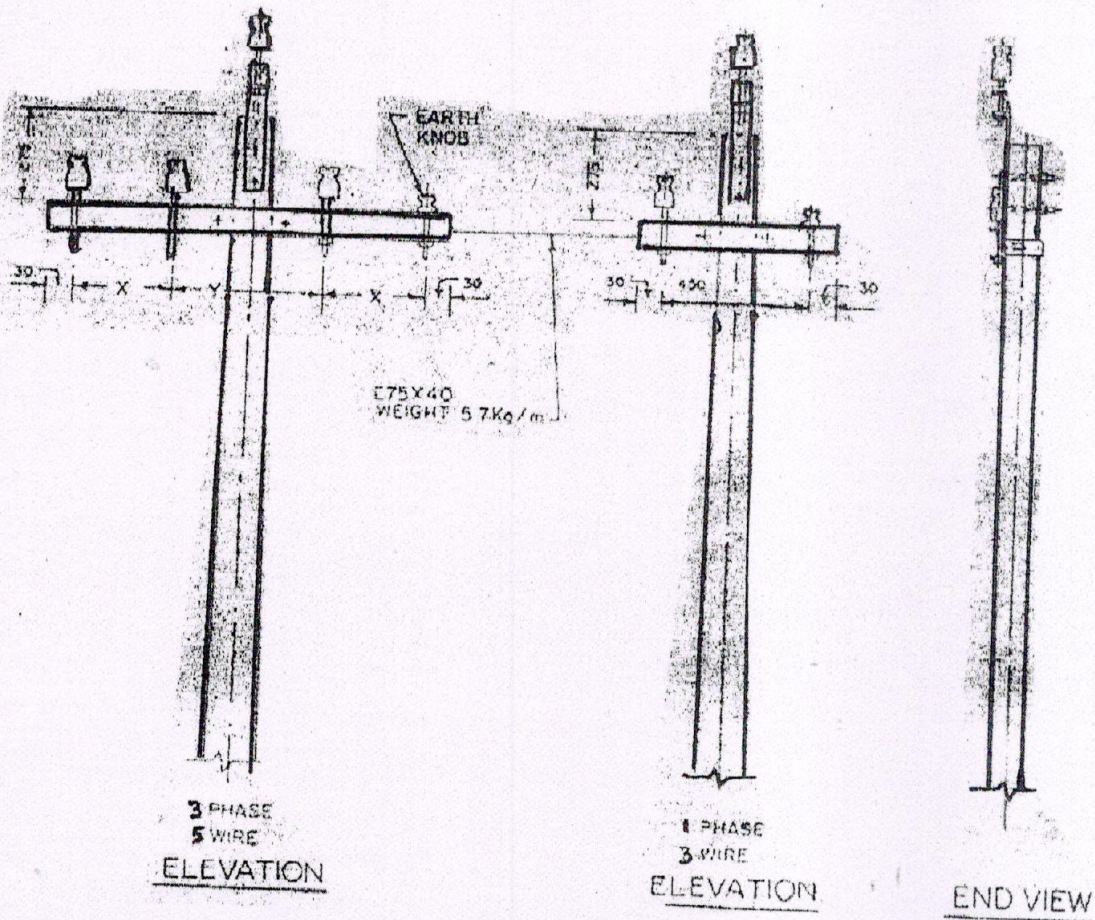
११ के.वी. ३-फेज लाइन व कंडक्टर फोरमेशन  
और क्लोयर्स-३ फेज/सिंगल फेज कम्पोजिट सिस्टम  
फेज से-न्यूट्रल  
11 KV LINES

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 - 07 METRES

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

ALL DIMENSIONS ARE IN mm

४१५/२४० वी. लाईन  
कन्डक्टर रचना व अंतराल  
संगणक रचना  
415/240V LINES  
CONDUCTOR FORMATION AND  
CLEARANCES  
HORIZONTAL FORMATION

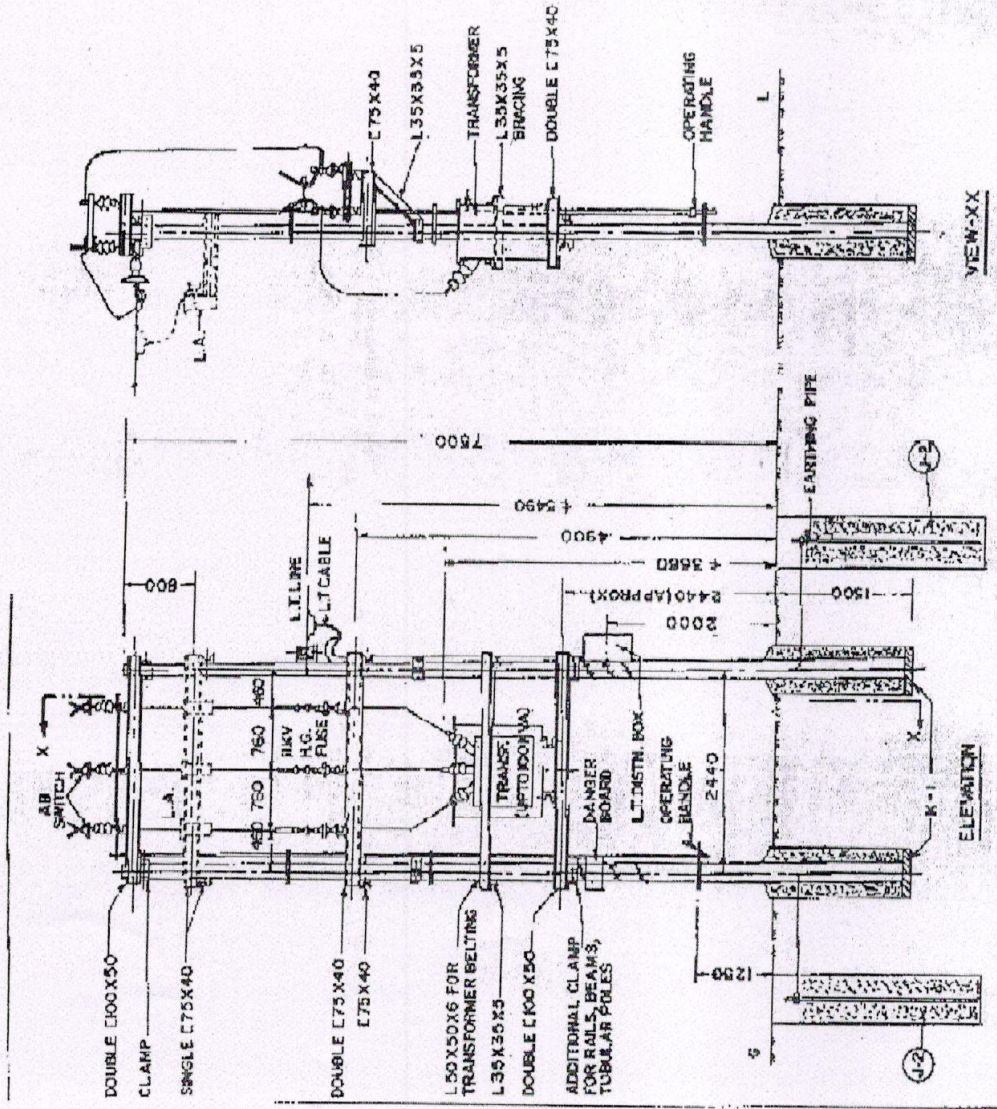
SCALE - N.T.S

SEPT - 1972



REC  
CONSTRUCTION STANDARD  
F-2

BILL OF MATERIAL		
SUPPORTS	- 9 m	2
CHANNELS	100X50	- 2800 (APPROX.) 4
CHANNELS	75 X 40	- 2800 (APPROX.) 24
CHANNELS	75 X 40	- X-ARM FOR SUPPORTING H.G. FUSE & L.A. 242
ANGLES	50 X 50 X 6	- 2800 (APPROX.) 2
ANGLES	35 X 35 X 5	- 480 (APPROX.) 2
ANGLES	35 X 35 X 5	- BRACING FOR SUPPORTING H.G. FUSE FOR SUPPORTING DISTRIBUTION BOX 2
DISTRIBUTION TRANSFORMER		1
AIR BREAK SWITCH (HORIZONTAL TYPE)		1
H.G. FUSE UNIT-3 PHASE		3
# 00. LIGHTNING ARRESTERS		1
DISTRIBUTION BOX		1
EARTHING SET		AS REQD.
DAANGER BOARD		1
CLAMPS, NUTS, BOLTS, BARBED WIRE ETC. AS REQD.		AS REQD.
L.T. CABLE		AS REQD.



स. सं. ७५१३-२५० धरे  
के. के. प्रेम सिंह जी के. प्रेम सिंह  
अमेक एल. एल. एल.  
11KV/433-250V  
DISTRIBUTION SUB-STATION  
WITH A.B. SWITCH &  
HORN GAP FUSES

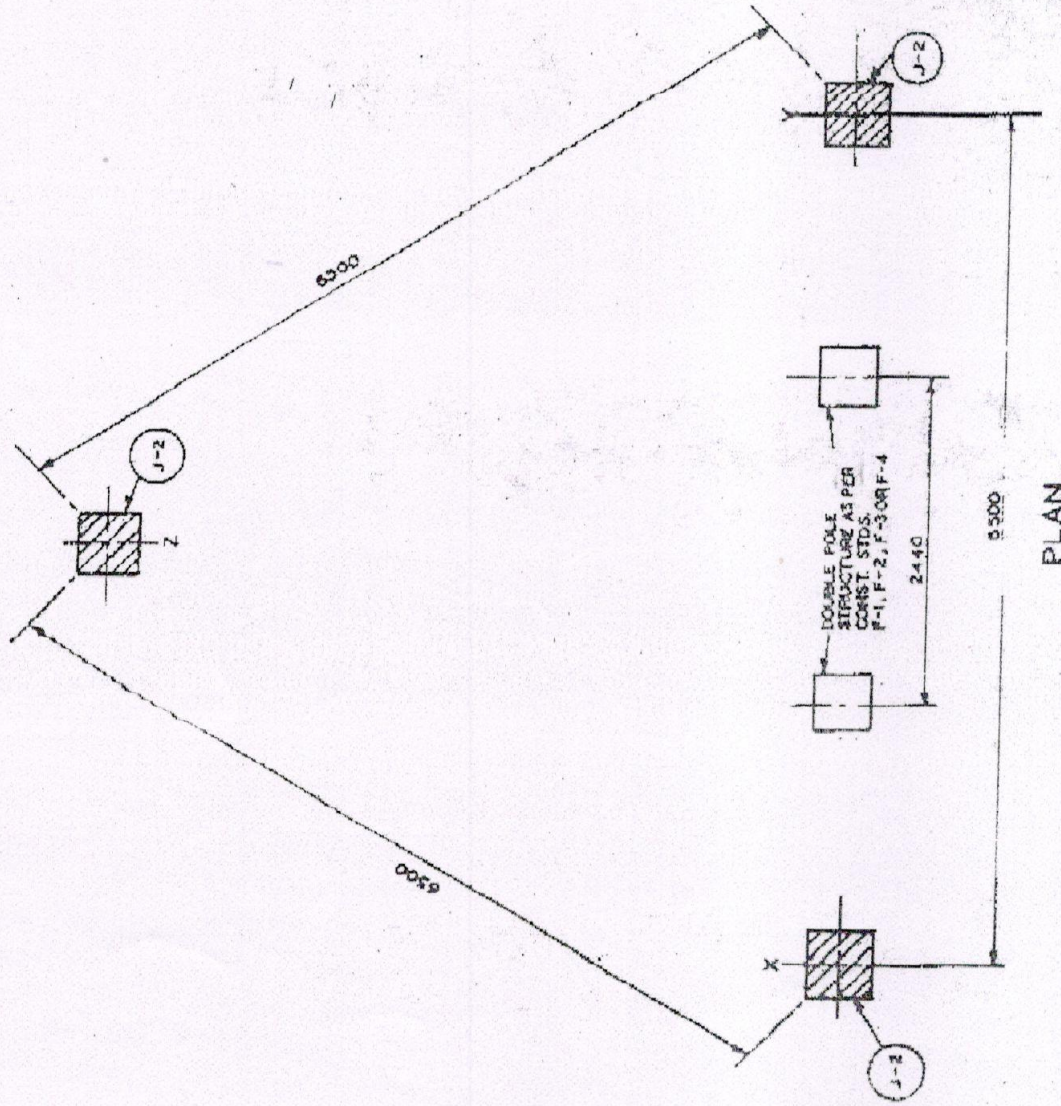
SCALE - N.T.S. 1972 J.M.H. - I.B.



REC  
CONSTRUCTION STANDARD  
F-5

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 11KV LIGHTNING ARRESTERS.
  - (ii) ANOTHER DIRECT CONNECTION FROM THE L.T. LIGHTNING ARRESTERS, IF PROVIDED.
  - (b) TO EACH OF THE REMAINING TWO EARTH - ELECTRODES.
  - (ii) ONE SEPARATE CONNECTION FROM THE NEUTRAL (ON THE MEDIUM VOLTAGE SIDE) OF THE TRANSFORMER
  - (iii) ONE SEPARATE CONNECTION FROM THE TRANSFORMER BODY AND THE HANDLE OF THE 11 KV. AB SWITCH.
  - (iii) ONE SEPARATE CONNECTION FROM THE GROUNDING TERMINAL OF THE POLES
2. 4 mm (B.S.M.G.) GI WIRE SHOULD BE USED FOR EARTH LEADS



ALL DIMENSIONS ARE IN MM.

11 KV / 132 - 250 KV  
DISTRIBUTION SUB-STATION  
LOCATION OF EARTH PITS  
AND CONNECTIONS

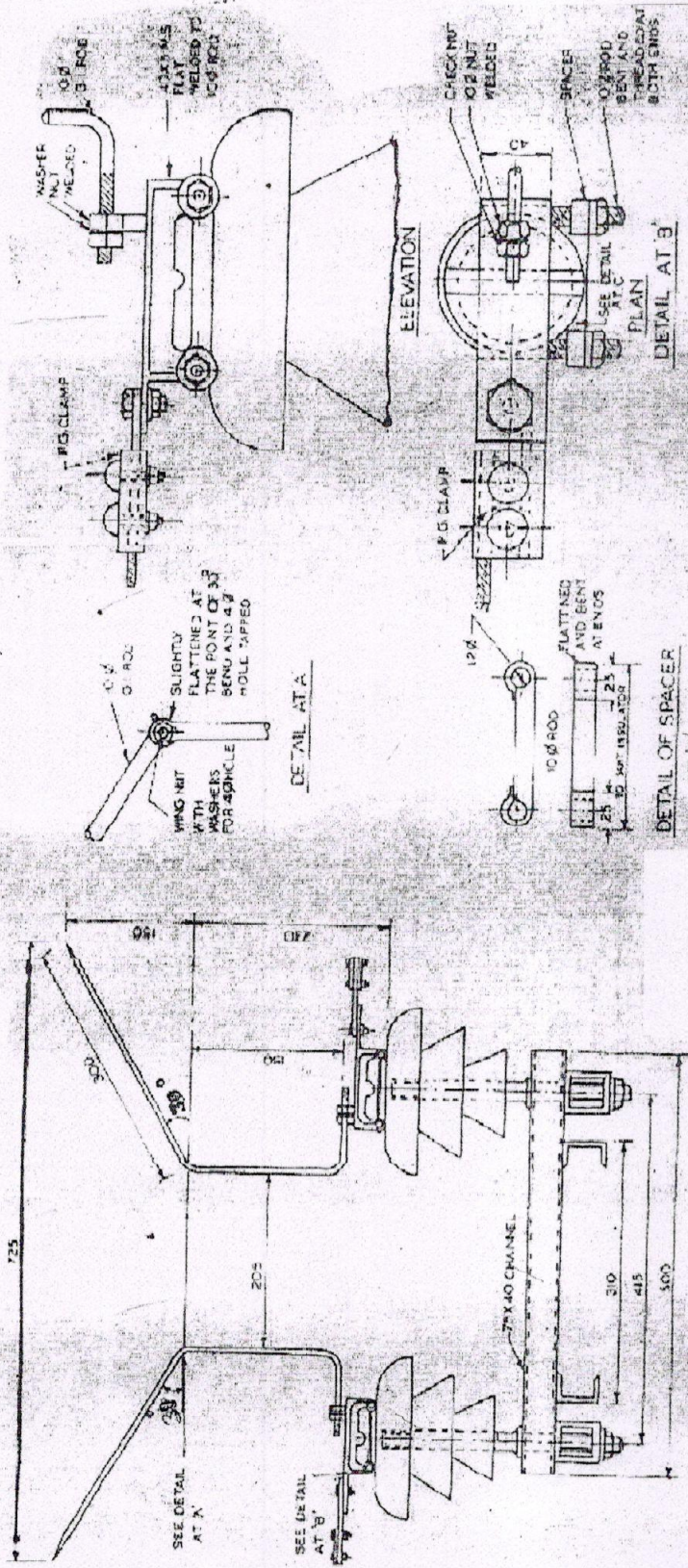
11 KV/132-250V

DISTRIBUTION SUB-STATION  
LOCATION OF EARTH PITS  
AND CONNECTIONS

R-2 SCALE : N. R.S. 1995 / JAN. , 1993



REC  
CONSTRUCTION STANDARD  
F-6



ALL DIMENSIONS ARE IN INCHES  
 11KV HORN GAP FUSES  
 SCALE: 1/4" = 1"



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 <sup>2</sup>
63	PVC insulated and sheathed un-armoured four-core aluminium cable with reduced neutral conductor.	70 mm <sup>2</sup>
	OR	
	PVC insulated and sheathed aluminium armoured three-core solid aluminium conductored cable.	70 mm <sup>2</sup>
100	PVC insulated and sheathed un-armoured four-core aluminium cable with reduced neutral conductor.	120 mm <sup>2</sup>
	OR	
	PVC insulated and sheathed aluminium armoured three-core solid aluminium conductored cable.	120 mm <sup>2</sup>

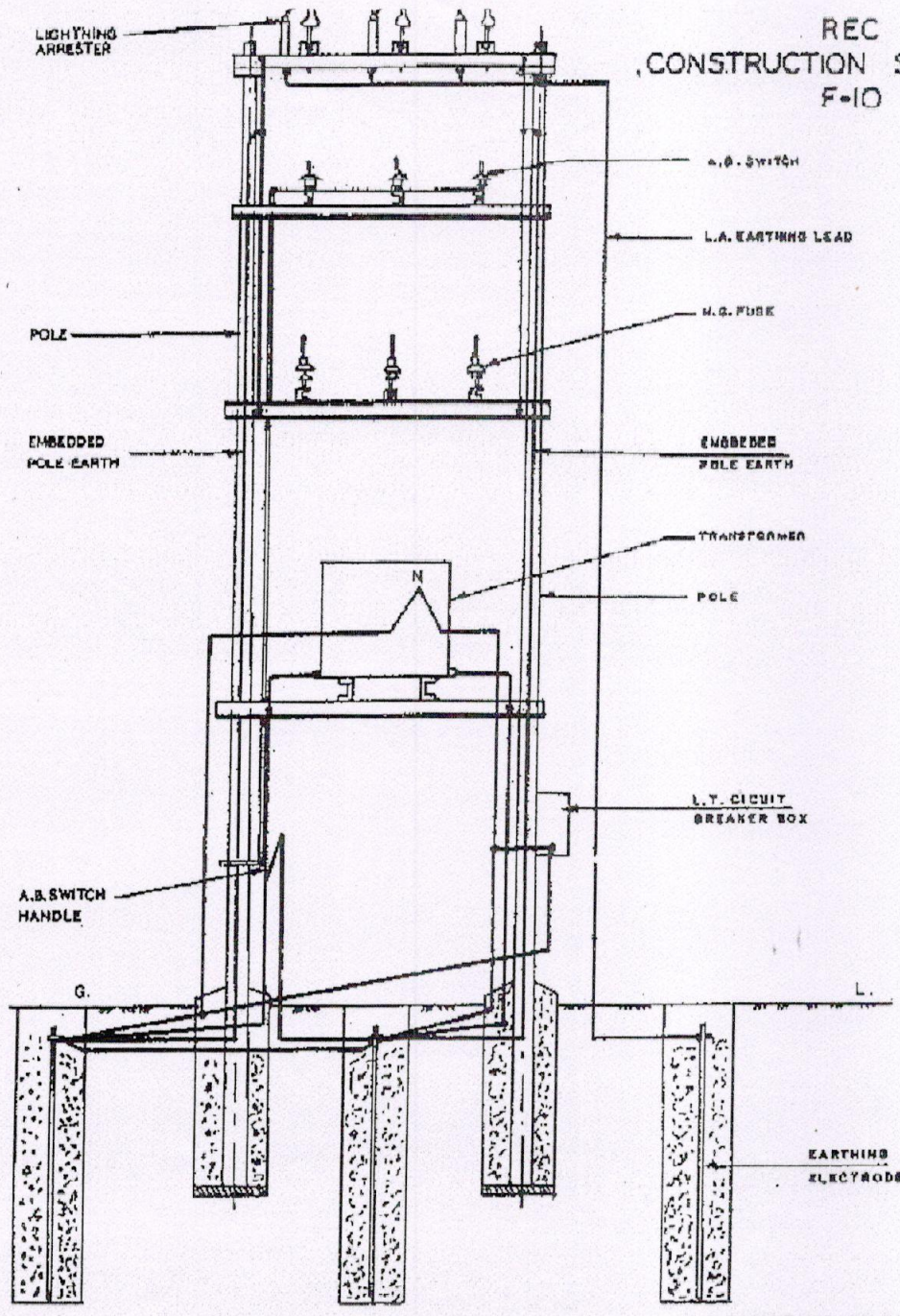
- NOTE:
1. The cables would be laid in air.
  2. In case of PVC armoured cables, aluminium armour shall serve as neutral for 63 and 100 KVA distribution transformer centres.
  3. Size of reduced neutral conductor shall comply with the main-neutral conductor combination as per IS: 1554 (Part-I)-1976.
  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 (एल्यूमीनियम)  
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  
अर्थन व्यवस्था

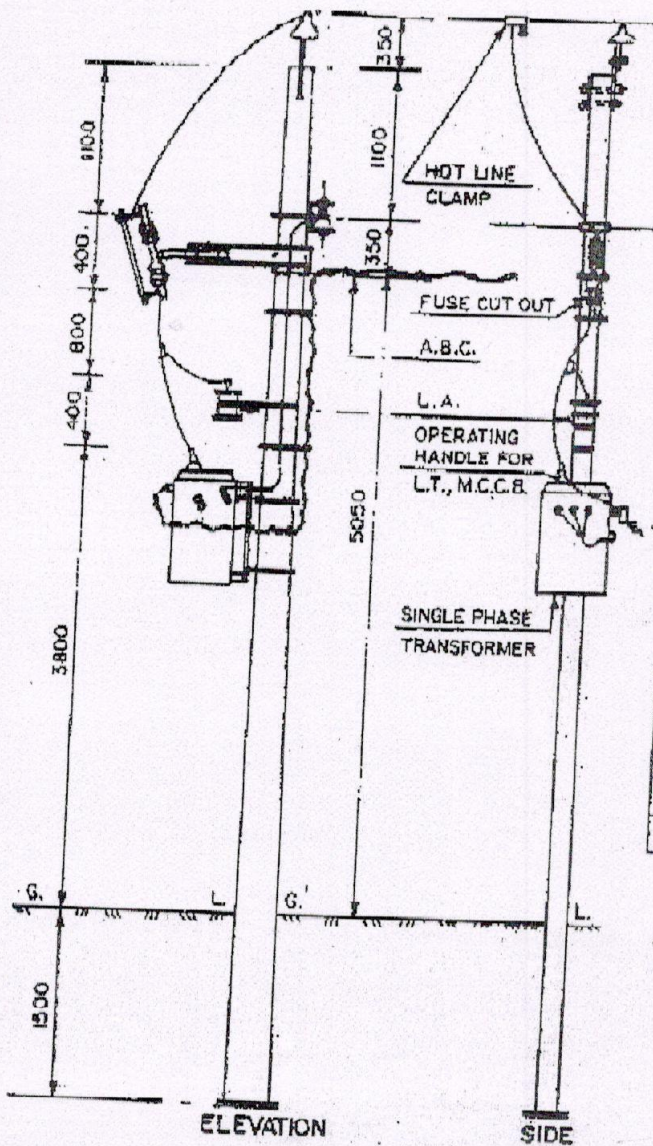
EARTHING ARRANGEMENT FOR  
DISTRIBUTION SUB-STATION

SCALE:- N.T.S

APRIL - 1983



REC  
CONSTRUCTION STANDARD  
F-13



BILL OF MATERIAL

1.	P.C.C. SUPPORT BM	
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 LT MCCB AND FIXTURES	1
9.	A.B.C.	AS RECD.
10.	POLE CLAMPS	4
11.	EARTHING MATERIAL, NUTS, BOLTS, CLAMPS ETC.	AS RECD.
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-मे-न्यूट्रल) वितरण  
सब-स्टेशन की व्यवस्था

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

SCALE: N.T.S

JULY, 1987



REC  
CONSTRUCTION STANDARD  
G-1



③ STAY INSULATOR MAKE-OFF



④ END MAKING OF GUY WIRE

NOTES:-

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

ALL DIMENSIONS ARE IN MM

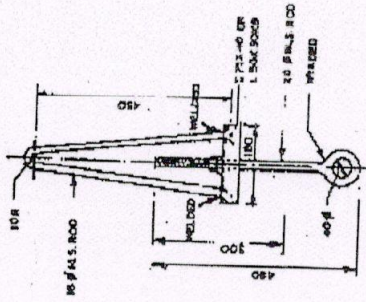
गिरि तंतु असेम्बली  
(संग असेम्बली)

GUY ASSEMBLY

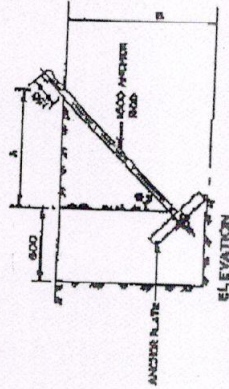
(CONVENTIONAL ARRANGEMENT)

SCALE: NTS

SEPT - 1972



② TURN BUCKLE

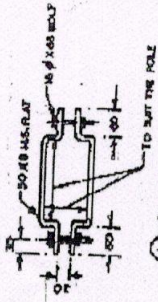


ELEVATION

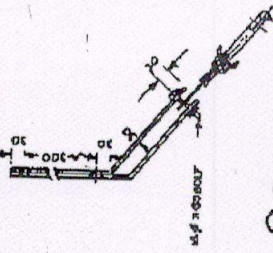
②	30°	45°
A	700	1100
B	800	1300

PLAN

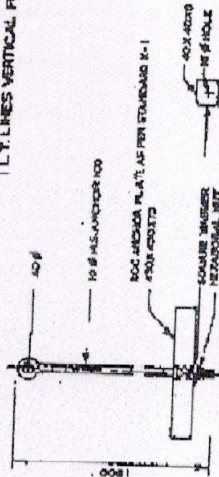
⑥ STAY PIT-ANCHOR ASSEMBLY



① CLAMP  
(STAY LINES & L.T. LINES  
HORIZONTAL FORMATION)

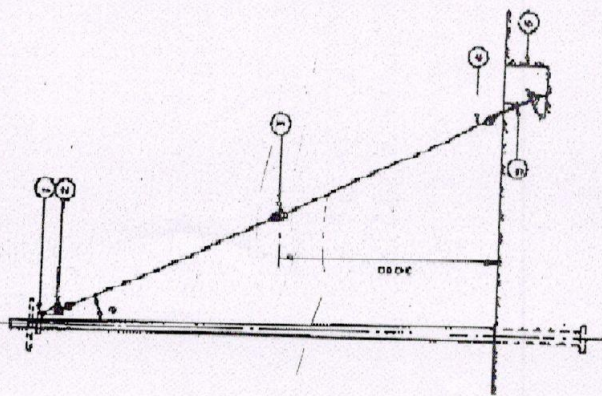


① CLAMP  
(L.T. LINES VERTICAL FORMATION)



⑤ ANCHOR ROD & PLATE

PLAN





REC  
CONSTRUCTION STANDARD  
G-3

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	MAXIMUM TENSION ON THE GUY
10.50 / 100 QUALITY	810 KG
7.75 / 90 MM	1450 KG

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 DOING THE FOUNDATION FOR THE OTHER STAY.

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

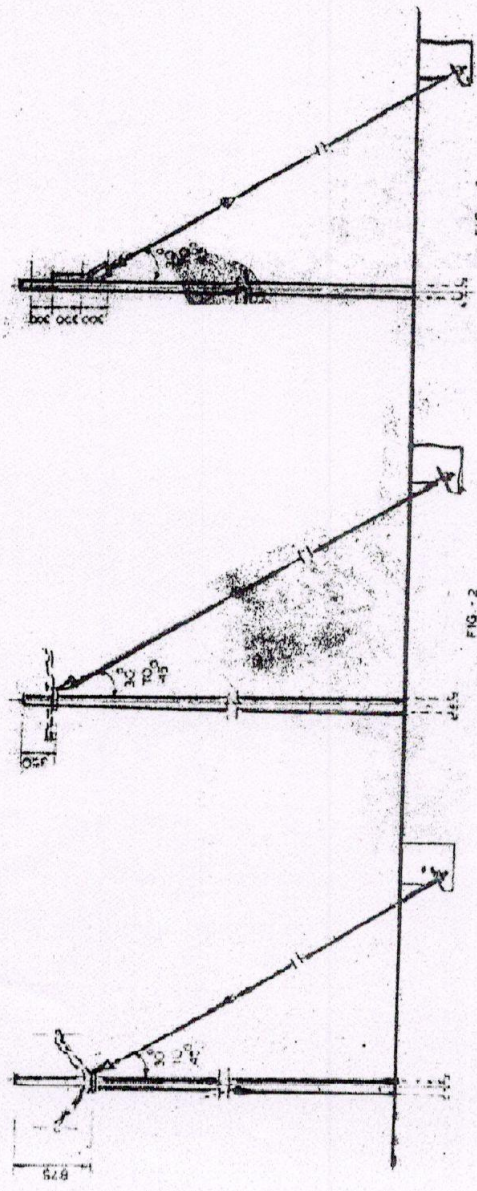
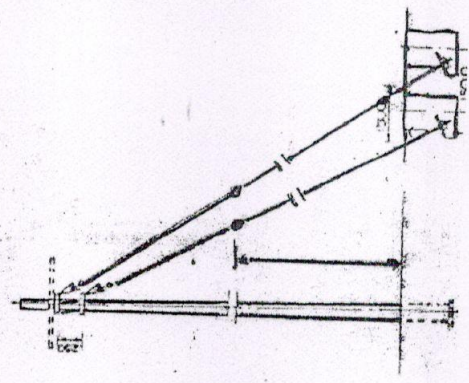


FIG-1

FIG-2

FIG-3

SINGLE GUY



A.L. DIMENSIONS ARE IN MM  
 नॉल रलड संखडल  
 रलड व रलड नॉल रलड

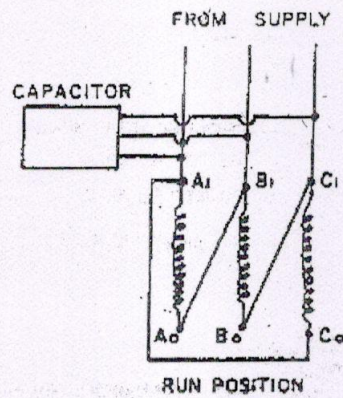
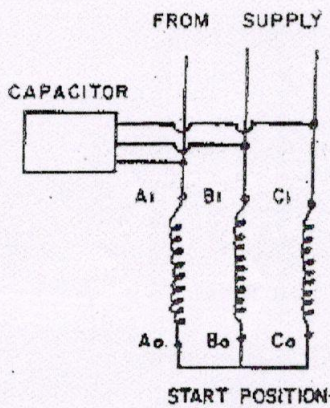
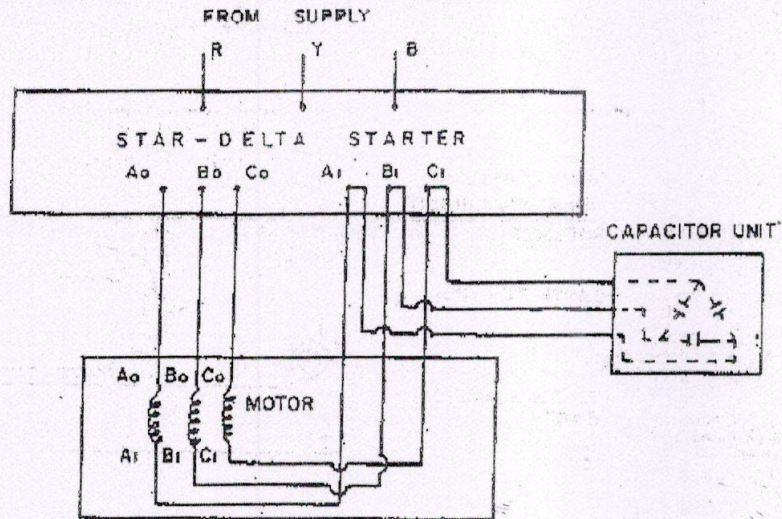


REC  
CONSTRUCTION STANDARD  
H-9

RECOMMENDED CAPACITOR RATINGS

MOTOR RATING	22KW(3H.R)	37KW (5H.R)	5.5KW(7.5H.R)	75KW(10H.R)
CAPACITOR RATING IN KVAR	1	2	3	4

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

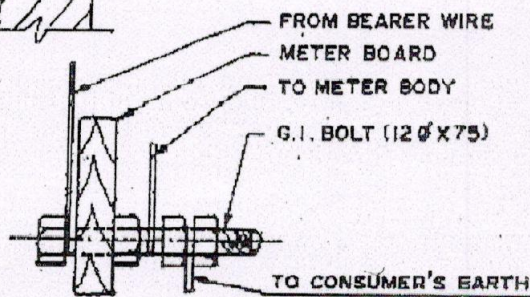
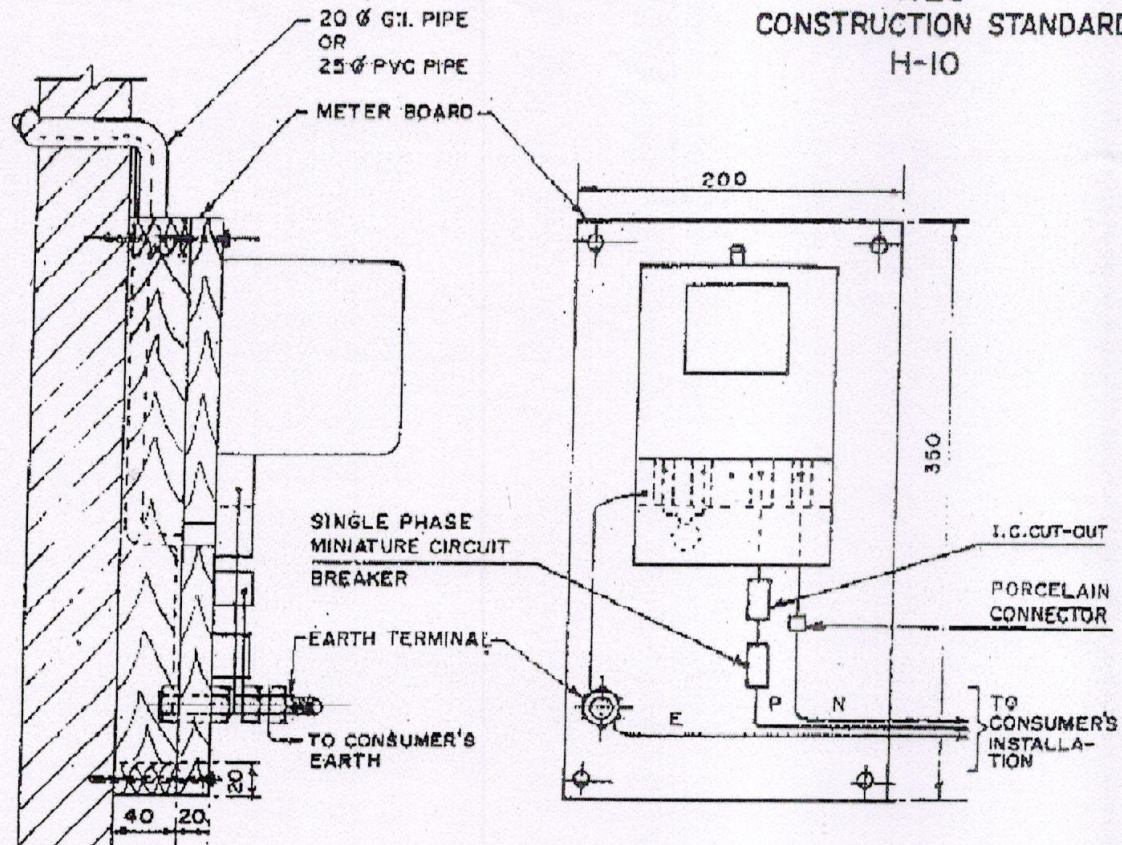


एल. टी. कैपेसिटर  
कनेक्शनों की संस्तुत रेटिंग एवं पत्रलि  
L.T. CAPACITORS  
RECOMMENDED RATINGS  
AND MODE OF CONNECTIONS

MARCH - 1974.



REC  
CONSTRUCTION STANDARD  
H-10



EARTH TERMINAL DETAILS

NOTE :-

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

ALL DIMENSIONS ARE IN mm.

रम. सी. बी. कन्ट्रोल के साथ सर्विस कनेक्शन सिंगल फेज मीटर (अलग न्यूट्रल और अर्थ सहित)  
SERVICE CONNECTIONS  
SINGLE PHASE METER BOARD WITH MCB CONTROL  
(WITH SEPARATE NEUTRAL AND EARTH)

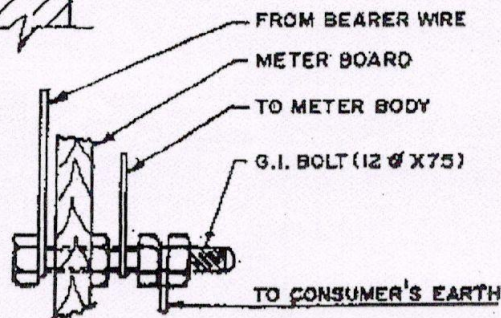
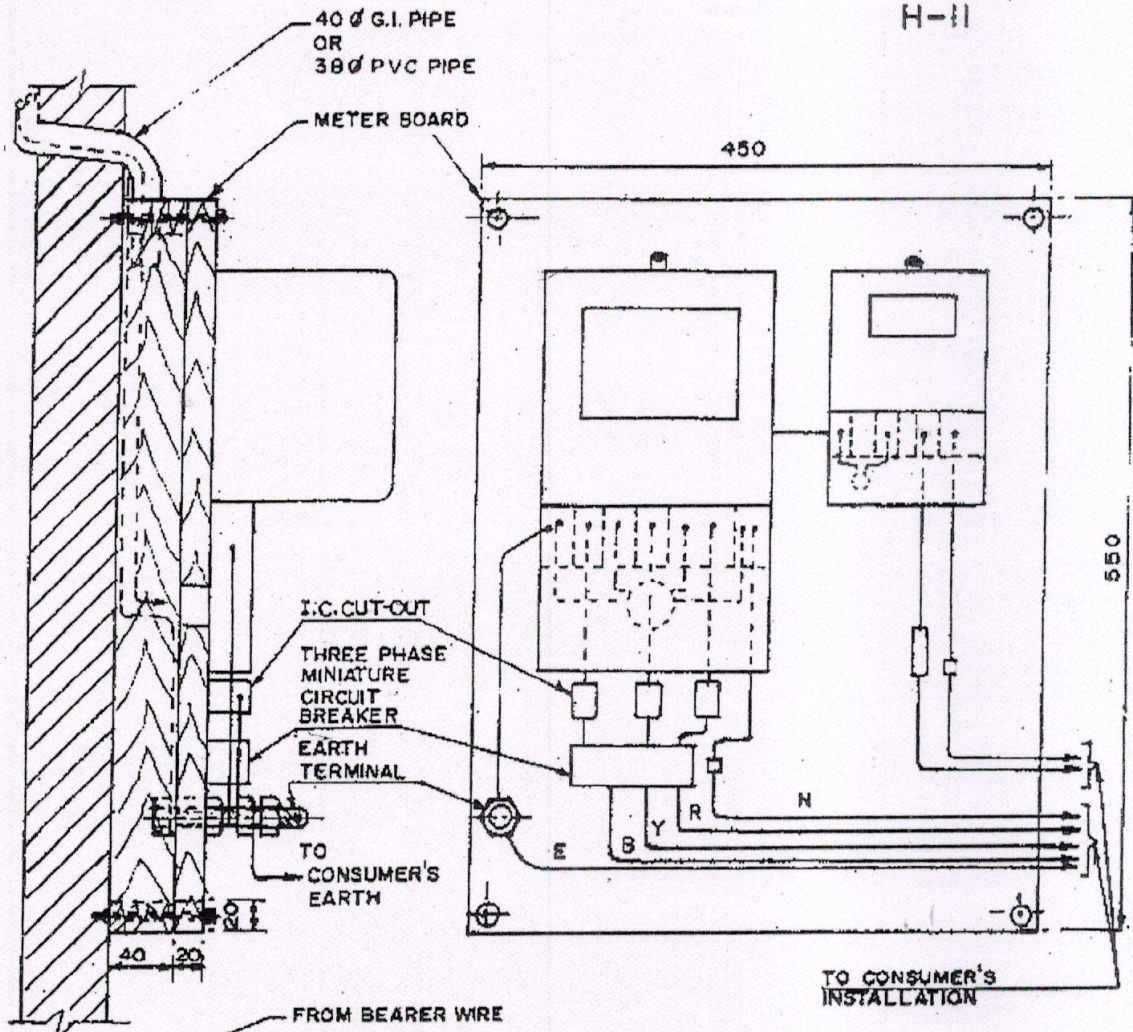
SCALE: N.T.S.

MAY, 1993



REC  
CONSTRUCTION STANDARD

H-11



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.

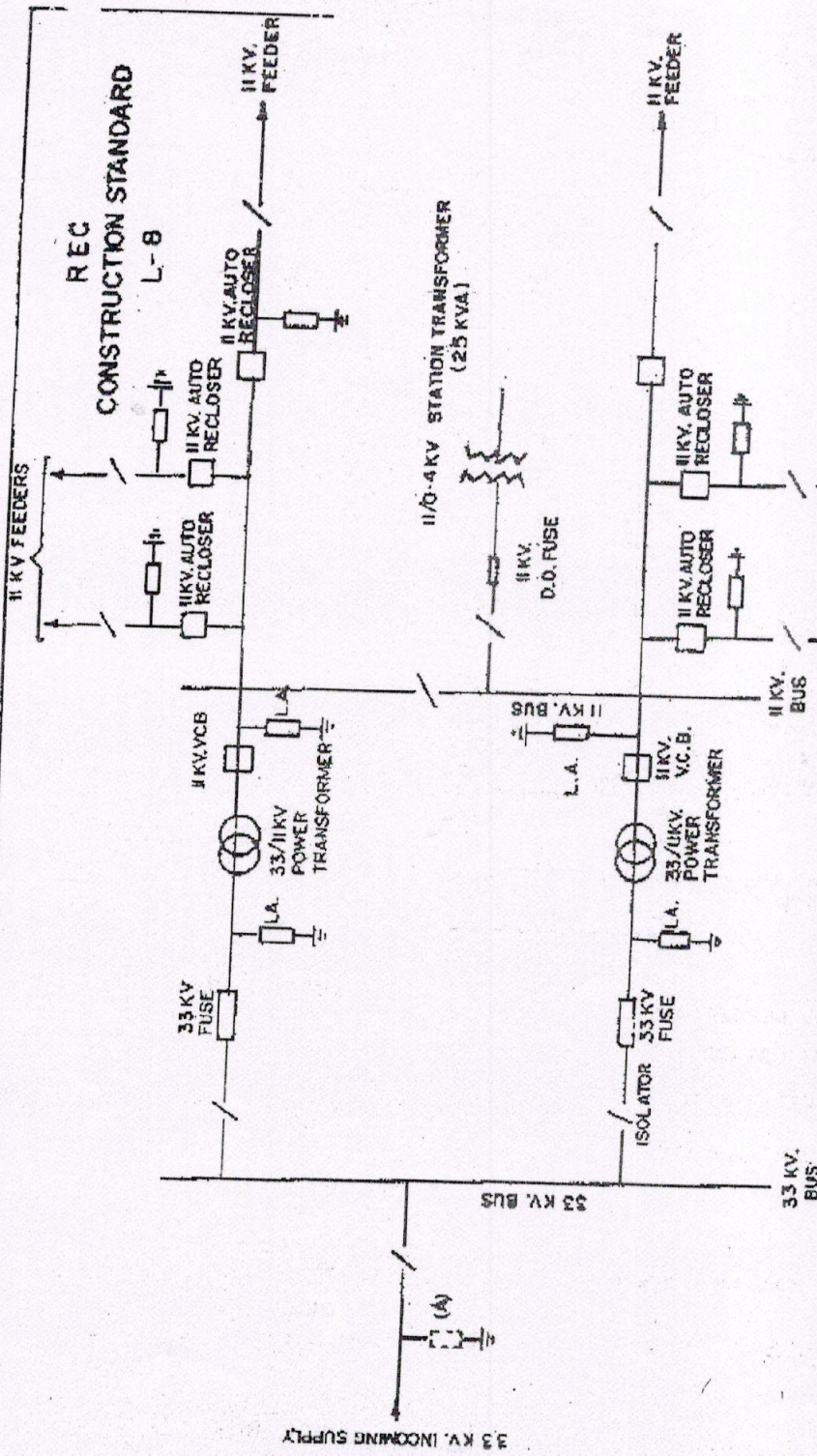
सम.सी.बी. कन्ट्रोल के साथ सर्विस  
कनेक्शन तीन फेज मीटर  
(अलग न्यूट्रल और अर्थ सहित)  
SERVICE CONNECTIONS  
THREE PHASE METER BOARD  
WITH MCB CONTROL

(WITH SEPARATE NEUTRAL AND EARTH)

SCALE: N.T.S.

MAY, 1993.





**LEGEND**

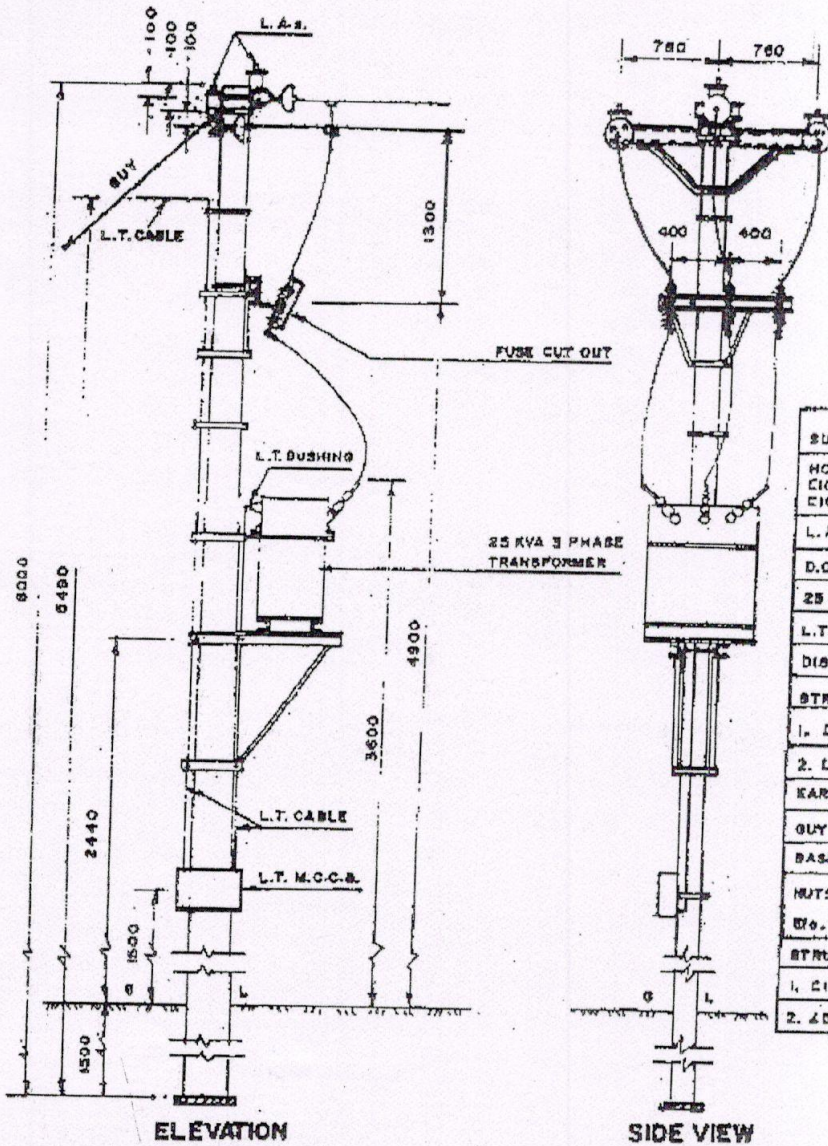
- ISOLATOR
- 33KV H.R.C. OR EXPULSION TYPE FUSE
- LIGHTNING ARRESTER
- 33 KV. POWER TRANSFORMER
- 11 KV. V.C.B.
- 11 KV. AUTO RECLOSER
- 11 KV. D.O. FUSE

**NOTE**  
 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 11KV FUSES, THE 11KV L.A. AT (A) MAY BE USED TO PROTECT THE C.B. FROM SURGE.  
 CIRCUIT BREAKERS HAVE TO BE USED INSTEAD OF 11KV FUSES IN CASE OF POWER TRANSFORMER CAPACITY OF

33/11 के. वी. ट्रांसफार्मर के साथ  
 को रकल लाईन जोड़ने  
 SINGLE LINE DIAGRAM  
 OF 33/11KV. UNATTENDED TYPE  
 SUB-STATION WITH TWO 11KV/11KV TRANSFORMERS



REC  
CONSTRUCTION STANDARD  
F-20



BILL OF MATERIALS

SUPPORT (SM/200Kg)	(No.
HORIZONTAL CROSS ARM C100X50X5-150	1No.
C100X50X5-1800	1No.
L.A. WITH FITTINGS	5Nos.
D.O. FUSE WITH FITTINGS	5Nos.
25 KVA TRANSFORMER	1No.
L.T. M.C.C.B.	1No.
DISC INSULATOR WITH FITTINGS	5Nos.
STRUCTURE FOR TRANS MOUNTING:-	
1. C100X50X5-1000	2Nos.
2. C50X50X5-500	2Nos.
EARTHING MATERIAL	1No.
GUY SET	1SET
BASE PLATE	1No.
NUTS, BOLTS, POLE TOP CLAMPS AS D/o.	ASREQD.
STRUCTURE FOR D.O. FUSE MOUNTING:-	
1. C100X50X5-500	1No.
2. L50X50X5-400	2Nos.

ALL DIMENSIONS ARE IN mm.

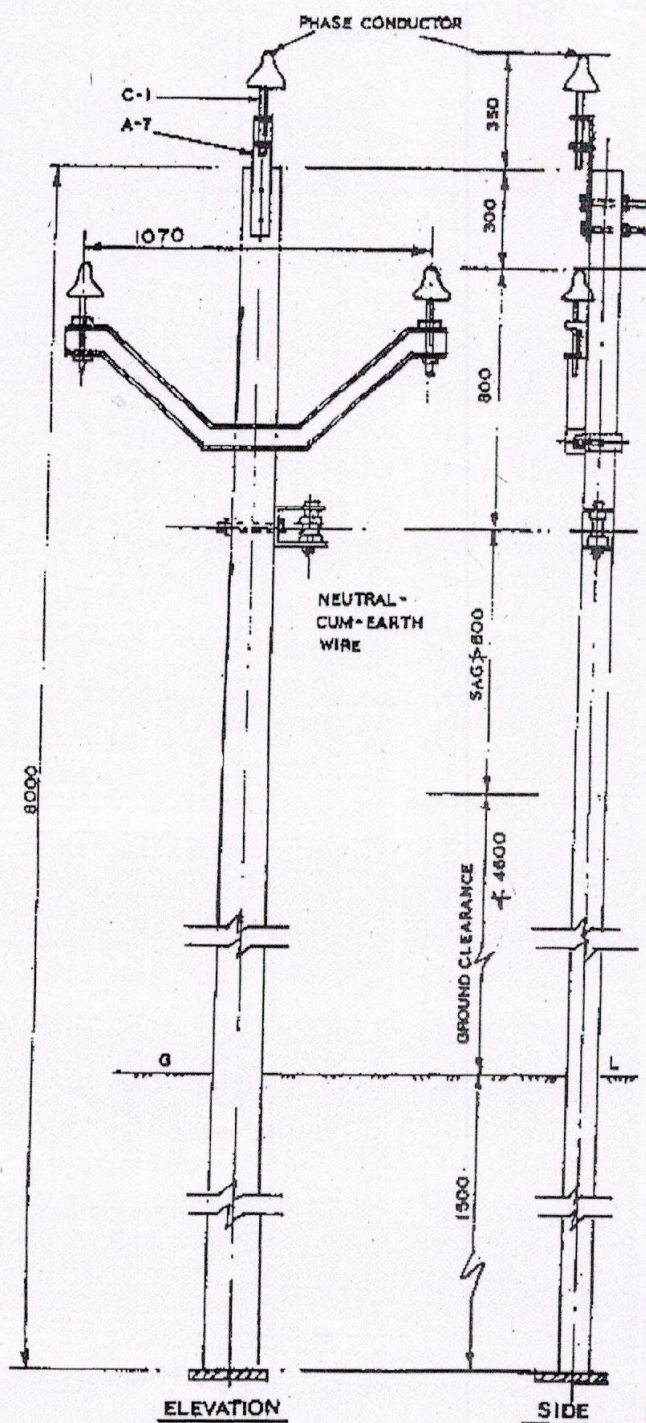
वितरण सब-स्टेशन  
माउंटिंग व्यवस्था  
सिंगल पोल पर 25 के.वी. ट्रांसफार्मर की  
DISTRIBUTION SUB-STATION  
MOUNTING ARRANGEMENT OF 25 KVA  
TRANSFORMER ON SINGLE POLE

SCALE: N.T.S.

OCT., 1987



**REC  
CONSTRUCTION STANDARD  
A-16**



**BILL OF MATERIAL**

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

**NOTES :-**

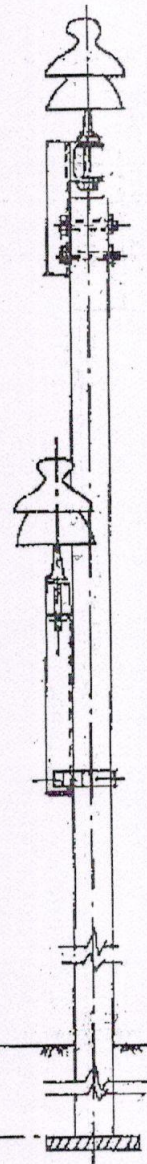
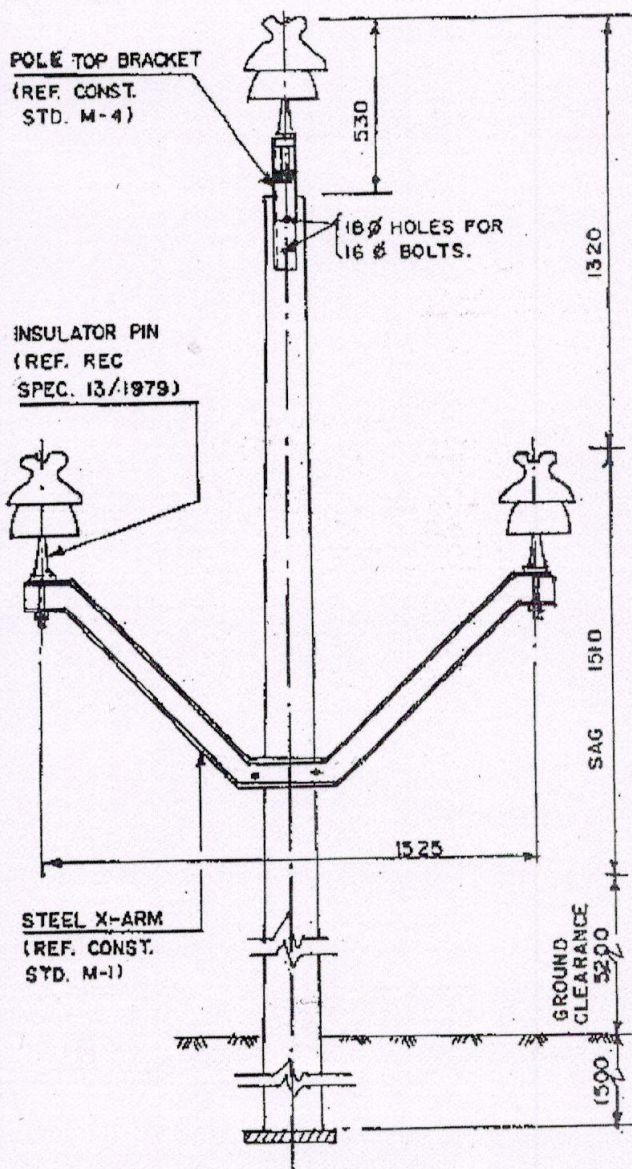
1. IF THROUGH BOLT ARRANGEMENT FOR FIXING THE SHACKLE INSULATOR TO THE POLE IS NOT POSSIBLE; SUITABLE POLE CLAMP MAY BE USED.
2. THE EARTH-CUM-NEUTRAL WIRE SHALL BE RUN ON LT SHACKLE INSULATORS

११ के.वी. ३-फेज लाइन व कन्डक्टर फारमेशन  
और क्लियरेंस- ३ फेज/सिंगल फेज कम्पोजिट सिस्टम  
फेज से-न्यूट्रल  
11KV 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



R E C  
CONSTRUCTION STANDARD  
M - 3



BILL OF MATERIAL

9-0M SUPPORT	1
POLE TOP BRACKET	1
Y- CROSS ARM (M.S.CHANNEL-100X80X6-4)	1
BACK CLAMP	1
BOLTS 16 $\phi$	4
33 KV PIN INSULATOR	3
33 KV PINS	3
EARTHING COMPLETE	1

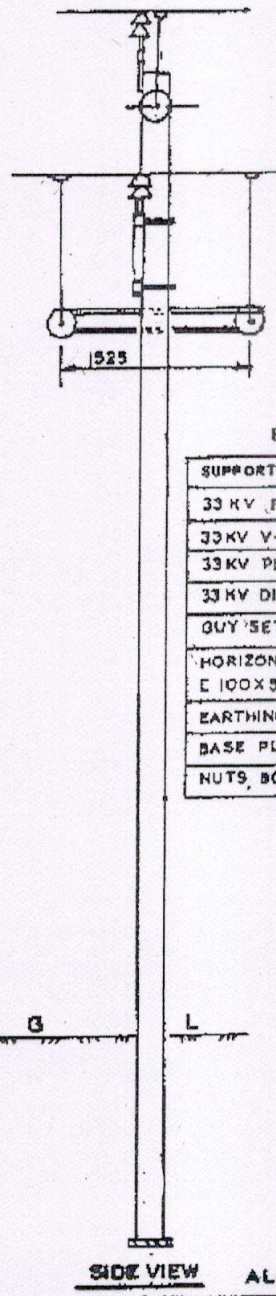
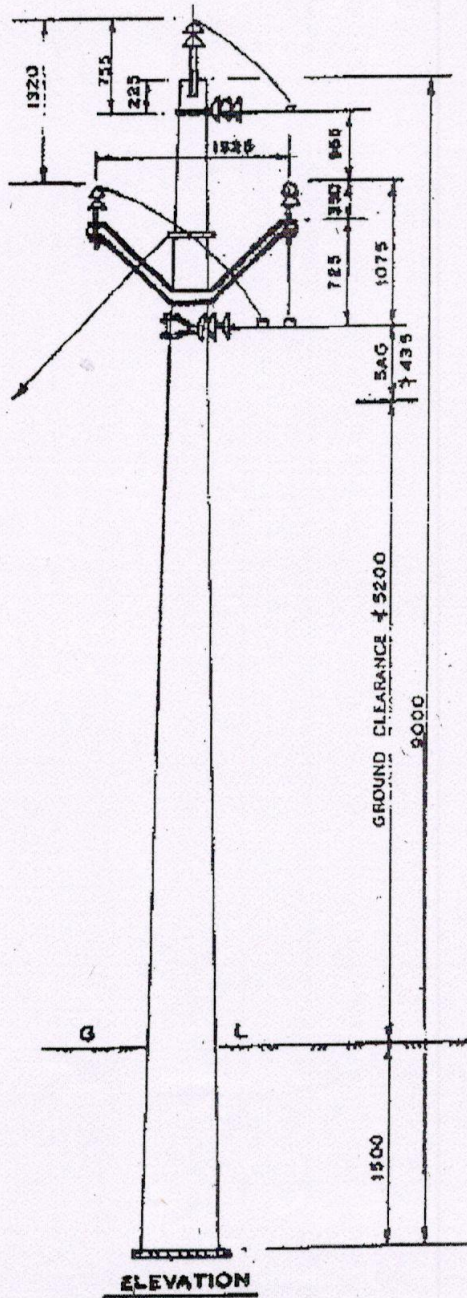
TANGENT LOCATION  
MAX. SPAN 125M  
(CROSS COUNTRY)

ALL DIMENSIONS ARE IN mm.

33 कि० वी० लाईन  
कन्डक्टर रचना एवं अन्तराल  
33KV LINE  
CONDUCTOR FORMATION  
AND CLEARANCES  
SCALE: - N.T.S | APRIL - 1981.



REC  
CONSTRUCTION STANDARD  
M-10



BILL OF MATERIAL

SUPPORT - B.O.M	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 E 100 X 50 X 6.4	1 NO.
EARTHING MATERIAL	AS REQD.
BASE PLATE	1 NO.
NUTS, BOLTS, POLE CLAMPS ETC AS REQD.	

ELEVATION

SIDE VIEW

ALL DIMENSIONS ARE IN mm.

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

३३ के. वी. लाईन  
टैपिंग व्यवस्था  
सिंगल पोल टैपिंग

33 KV LINES  
TAPPING ARRANGEMENT ON  
SINGLE POLE

SCALE: N.T.S | OCT. 1967







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

Sl. No.	PART DESCRIPTION	PART NO.	DIMENSION S OF SECTION/P LATE B and	LENGTH/AREA (m/m)	QUANTITY (No's)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)
<b>stub and cleats</b>							
1	stub	M01	110x110x8	4.560m	4	13.4	244.416
2	cleats for stub	M02	45x45x5	0.200m	8	3.4	5.44
						<b>sub total</b>	<b>249.856</b>
<b>super structure of L type tower</b>							
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-longitudinal 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 <sup>2</sup>	6	47.1	10.598
25	plate(b/w tie member & leg)	M22	6 mm thick	0.013m <sup>2</sup>	12	47.1	7.235
26	plate(b/w tie member & main member)	M23	6 mm thick	0.020m <sup>2</sup>	6	47.1	5.652
27	cover plate for leg joint	M24	6 mm thick	0.01448m <sup>2</sup>	16	47.1	10.912
28	cover plate for leg joint	M25	6 mm thick	0.01128m <sup>2</sup>	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
						<b>sub total</b>	<b>883.838</b>
						<b>grand total</b>	<b>1133.692</b>

weight of normal tower type "M" :1133.692kgs



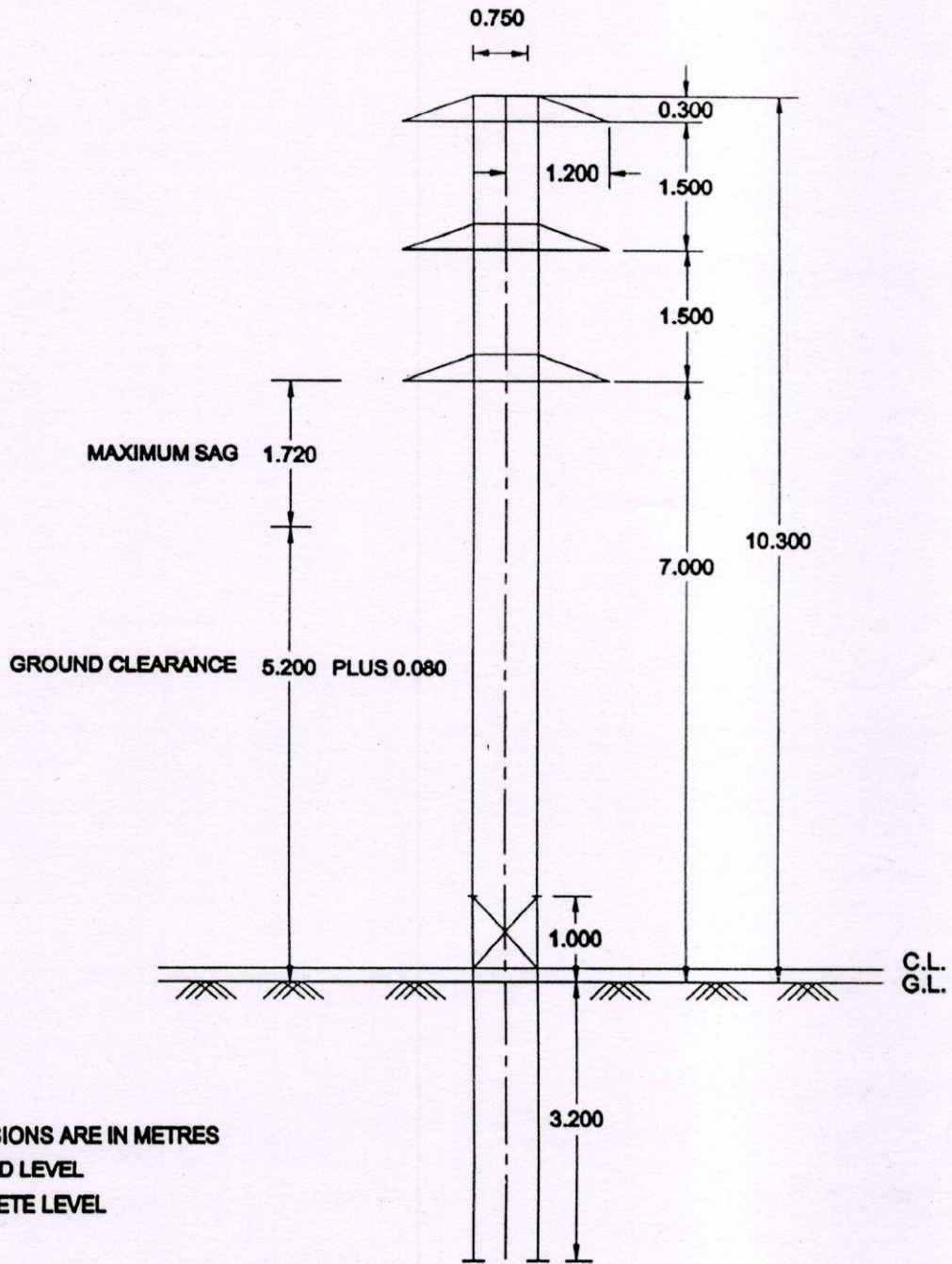
## BILL OF MATERIAL FOR 3 M EXTENSION OF M TYPE TOWER

Sl. No.	PART DESCRIPTION	PART NO.	DIMENSIONS OF SECTION/PLATE B and N (mm)	LENGTH/AREA (m/m <sup>2</sup> )	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



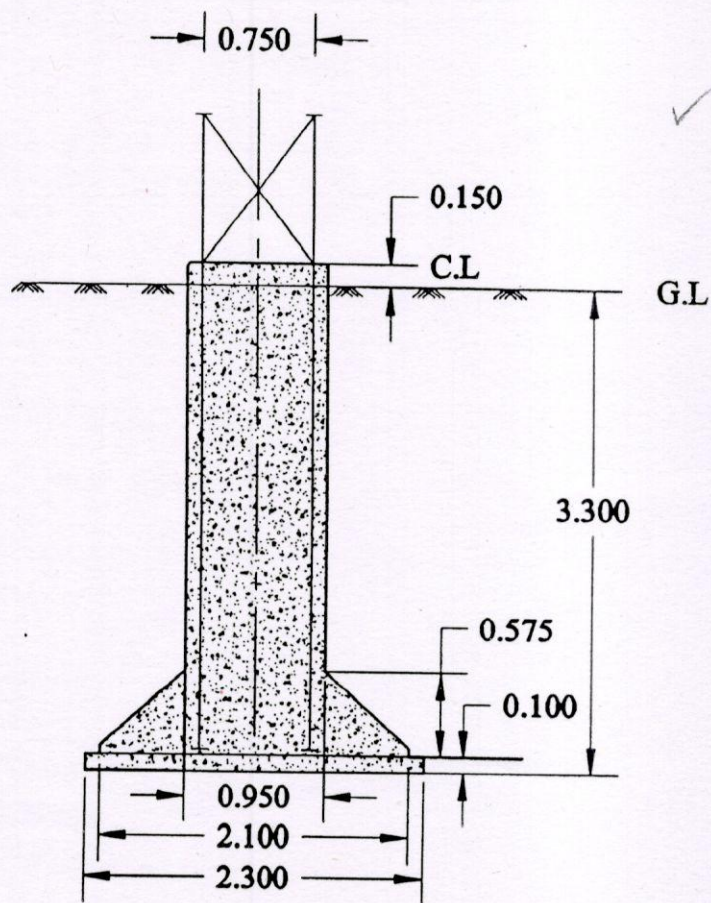
ALL DIMENSIONS ARE IN METRES  
G.L. GROUND LEVEL  
C.L. CONCRETE LEVEL

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.

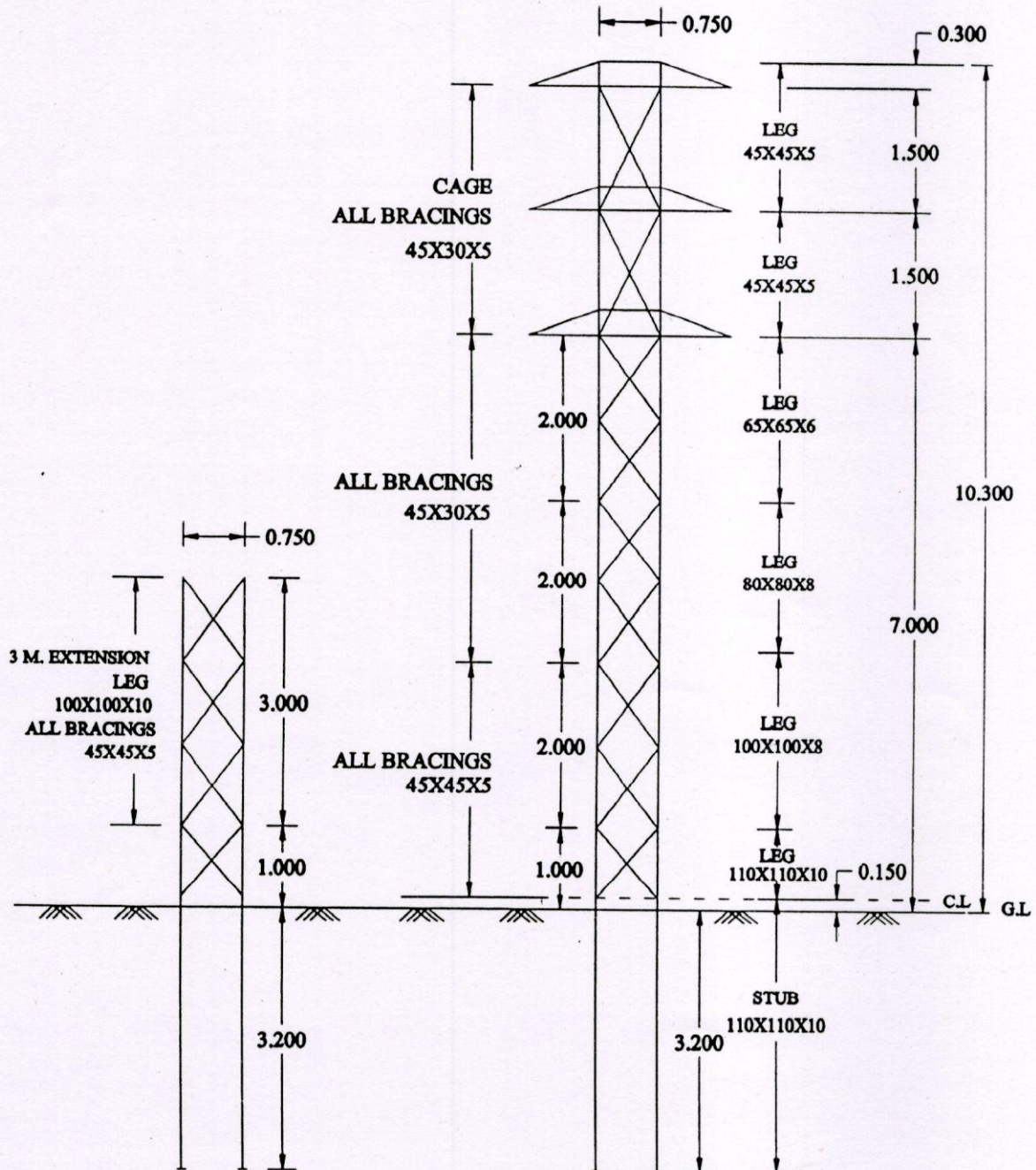
THE FOUNDATION CAN BE ADOPTED FOR PLUS 9M AND PLUS 12M EXTENSIONS ERECTING THE TOWER AS A STRAIGHT LINE CUT POINT AND LIMITING THE SPAN TO 80M.

**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.

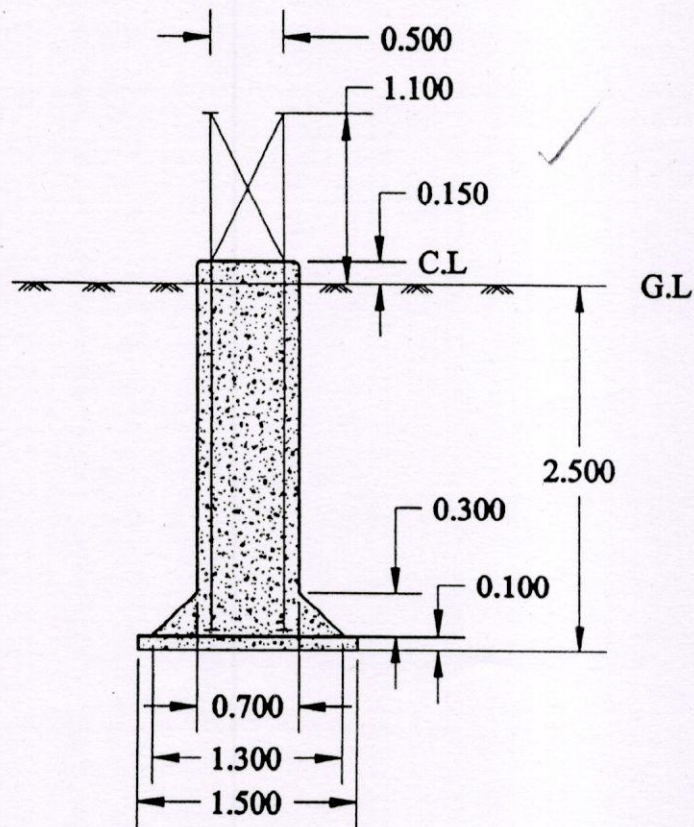
ALL LEG MEMBERS ARE BUTT-JOINTED.

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.

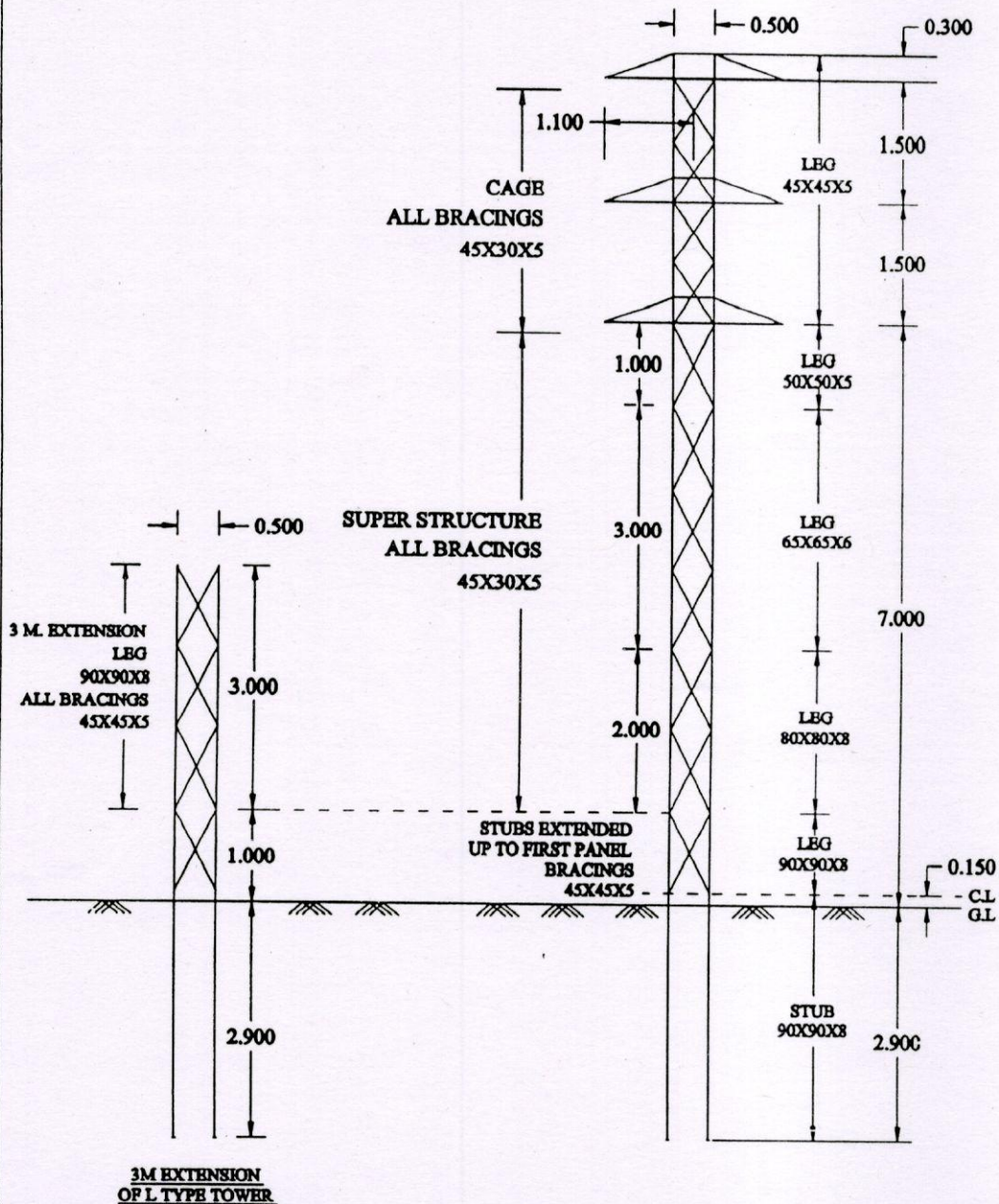
THE FOUNDATION CAN BE ADOPTED FOR PLUS 9M AND PLUS 12M EXTENSIONS LIMITING THE SPAN TO 80M.

**FIG - 04**

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



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



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 16MM 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