

**SOUTHERN POWER DISTRIBUTION  
COMPANY OF TELANGANA LIMITED**



**COST DATA FOR THE  
YEAR 2022-23**



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

O/o Chief General Manager Projects,  
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Mint Compound, Hyderabad -500 004.

**Memo No.CGM(P)/SE(P)/DE(RE)/D.No. 171/2022, Dt:12-05-2022.**

**Sub:** Projects – Approved Cost Data for the FY 2022-23- Communication - Reg.

\*\_\*\_\*

The Cost Data for FY 2022-23 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 and applicable SSR labour rates of GHMC and Non GHMC area for FY 2022-23 are received from Operation/RR Zone.

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 2022-23 is herewith enclosed. The soft copy is placed in 202/cgm-proj/Cost-data FY22-23. The cost data for FY2022-23 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 Dt:09.05.2022.

**Encl:** As above.

  
Chief General Manager / Projects

**To:**

All Superintending Engineers/ Operation/  
The Superintending Engineers/ Master Plan/  
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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-2994/21, Dt: 10-12-2021	MT	75,520.00	64,000.00	-	64,000.00	11,520.00	18	MST00032
(b)	RS Joists 150 x 150 mm.	PM-2994/21, Dt: 10-12-2021	MT	71,838.40	60,880.00	-	60,880.00	10,958.40	18	MST00029
2	MS Channel 100 x 50.	PM-2946/21, Dt: 05-11-2021	MT	74,340.00	63,000.00	-	63,000.00	11,340.00	18	MST00012
3	MS Channel 75 x 40 mm	PM-2946/21, Dt: 05-11-2021	MT	75,520.00	64,000.00	-	64,000.00	11,520.00	18	MST00013
4	MS Angle 65 x 65 x 6 mm.	PM-3004/21, Dt: 14-12-2021	MT	74,340.00	63,000.00	-	63,000.00	11,340.00	18	MST00003
5	MS Angle 50 x 50 x 6 mm	PM-2870/21, Dt: 15-09-2021	MT	74,340.00	63,000.00	-	63,000.00	11,340.00	18	MST00002
6	MS Flat 75x 8	PM-2987/21, Dt: 08-12-2021	MT	73,160.00	62,000.00	-	62,000.00	11,160.00	18	MST00015
7	MS Flat 50 x 6 mm	PM-2854/21, Dt: 07-09-2021	MT	75,520.00	64,000.00	-	64,000.00	11,520.00	18	MST00014
8	MS Rod 20 mm.	PM-2849/21, Dt: 08-12-2021	MT	73,584.80	62,360.00	-	62,360.00	11,224.80	18	MST00019
9	MS Rod 16 mm.	Rpt PM-3043/21 Dt: 11-01-2022	MT	62,681.60	53,120.00	-	53,120.00	9,561.60	18	MST00018
10	GI Stay wire 7/3.15 mm.	Rpt PM-3015/21 Dt: 24-12-2021	MT	73,750.00	59,000.00	3,500.00	62,500.00	11,250.00	18	WRS00006
11	GI Stay wire 7/2.5 mm	PM-2864/21, dt. 14-09-2021	MT	74,340.00	59,500.00	3,500.00	63,000.00	11,340.00	18	WRS00007
12	GI wire 4 mm	Extn PM-2977/21, dt. 20-11-2021	MT	70,420.04	59,000.00	678.00	59,678.00	10,742.04	18	WRS00005
13	PSCC Pole (9.1 M) - 280 Kg WL	PM-3087/21, dt. 04-02-2022	Nos.	3,658.00	2,500.00	600.00	3,100.00	558.00	18	PLS00004
14	PSCC Pole (8.0 M) - 140 Kg WL	PM-3037/21, dt. 06-01-2022	Nos.	1,593.00	1,200.00	150.00	1,350.00	243.00	18	PLS00001
15	PSCC Poles (11 Mtrs) 365 Kgs	LOI issued on Dt: 28-02-2022	Nos.	6,313.00	4,500.00	850.00	5,350.00	963.00	18	PLS00013
<b>SUBHEAD - II : INSULATORS AND HARDWARE</b>										
1	33KV Polymer Pin Insulators With GI Pins	PM- 2995/21-22, Dt: 13-12-2021.	Nos.	536.31	454.50	-	454.50	81.81	18	INS30008
2	33 KV Post Insulators	Rpt 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-3061/21-22, Dt: 27-01-2022.	Sets	256.00	208.95	8.00	216.95	39.05	18	HWR00004
4	33 KV Polymer String Insulator (B&S)	PM-2983/21-22, Dt: 30-11-2021.	Nos.	450.00	381.36	-	381.36	68.64	18	INS30007
5	11KV Polymer Pin Insulators With GI Pins	PM-2887/21-22, Dt: 21-09-2021.	Nos.	152.22	129.00	-	129.00	23.22	18	INS10009
6	11 KV Post Insulator.	PM-3112/21-22, Dt: 10-02-2022.	Nos.	243.00	190.00	15.93	205.93	37.07	18	INS10008
7	11 KV String Hardware Fitting (C&T)	Extn PM-3064/21-22, Dt. 27-01-2022.	Sets	104.30	84.93	3.46	88.39	15.91	18	HWR00002
8	11 KV Polymer String insulator (C&T)	Rpt & Extn PM-3067/21-22,	Nos.	195.42	159.00	6.61	165.61	29.81	18	INS10003
9	11 KV Solid Core Insulators	LOI issued on Dt: 04-03-2022	Nos.	342.00	289.83	-	289.83	52.17	18	INS10006
10	LT Pin Insulators	PM-2971/21-22, Dt: 20-11-2021.	Nos.	26.50	22.46	-	22.46	4.04	18	INS00001
11	LT GI Pins	PM-3077/21-22, Dt: 03-02-2022.	Nos.	37.90	30.12	2.00	32.12	5.78	18	HWR00015
12	LT Shackle Insulators	PM-2974/21-22, Dt: 20-11-2021.	Nos.	26.50	22.46	-	22.46	4.04	18	INS00002
13	LT Shackle Hardware (LT Metal Parts)	PM-3055/21-22, Dt: 27-01-2022.	Nos.	42.04	32.83	2.80	35.63	6.41	18	HWR00016
14	HT Guy Insulators	PM-3151/21-22, Dt: 25-02-2022.	Nos.	60.00	46.00	4.85	50.85	9.15	18	INS10005
15	LT Guy Insulators	Rpt PM-2894/21- 22,	Nos.	21.00	17.80	-	17.80	3.20	18	INS00003
<b>SUBHEAD - III CONDUCTOR AND CABLES</b>										
1	ACSR Panther Conductor (200 sq mm).	PM-2470/20, Dt.29-10-2020	KM	244,301.06	205,034.80	2,000.00	207,034.80	37,266.26	18	CDR00010
2	100 Sqmm AAA Conductor or 7/4.26 AAAC.	PM-2938/21-22, Dt:01-11-2021	KM	89,841.85	75,237.16	900.00	76,137.16	13,704.69	18	CDR00004
3	55 Sqmm AAA Conductor or 7/3.15 AAAC/RABBIT	PM-3073/21-22, Dt:01-02-2022	KM	49,710.16	41,352.25	775.00	42,127.25	7,582.91	18	CDR00003
4	34 Sqmm AAA Conductor or 7/2.50 AAAC/Weasel	PM-2929/21-22, Dt:18-10-2021	KM	32,282.44	27,358.00	-	27,358.00	4,924.44	18	CDR00002
<b>SUBHEAD - III (A) LT AERIAL BUNCHED CABLE</b>										
1	2 x 16+25 Sqmm Cable	Rpt PM-832/15 Dt: 27-07-2016	KM	28,998.69	23,970.16	605.00	24,575.16	4,423.53	18	CBA00005
2	3 x 16+25 Sqmm Cable	PM-2837/21-22, Dt.12-08-2021	KM	66,445.44	55,559.69	750.00	56,309.69	10,135.74	18	CBA00006
3	3 x 70 + 1x16 +1x50 Sqmm XLPE AB, Cable	PM-2999/21-22, Dt. 13-12-2021	KM	255,350.15	212,183.91	4,214.52	216,398.43	38,951.72	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 3CX400 Sq.mm.	PM-2908/21-22, Dt.01-10-2021	KM	3,399,332.12	2,830,189.93	50,600.00	2,880,789.93	518,542.19	18	CBX30001
2	11 KV 3x300 sq.mm	PM-3048/21-22, Dt.13-01-2022	KM	1,634,568.86	1,345,636.85	39,591.00	1,385,227.85	249,341.01	18	CBX10008
3	11 KV 3x185 sq.mm.	PM-2926/21-22, Dt.13-10-2021	KM	1,200,326.84	983,470.55	33,755.59	1,017,226.14	183,100.70	18	CBX10007
4	11 KV 3x35 sq.mm	PM-4327/22-04-2015	KM	317,665.84						CBX10002
<b>SUBHEAD - III (C)11 KV AB Cable (Aluminum)</b>										
1	3x185+70 Sqmm.	PM-2925/21-22, Dt.13-10-2021	KM	1,065,431.02	871,507.65	31,400.00	902,907.65	162,523.38	18	CBA10006
<b>SUBHEAD - III (D) LT XLPE POWER CABLE</b>										
1	3 ½ Cx185 sq.mm.	LOI issued on 09-03-2022	KM	647,820.00	549,000.00	-	549,000.00	98,820.00	18	CBX00015
2	3 ½ Cx95 sq.mm	LOI issued on 03-03-2022	KM	349,575.00	296,250.00	-	296,250.00	53,325.00	18	CBX00013
3	3 ½ Cx70 sq.mm	PM-1285/17, 04-09-2017	KM	303,448.00	255,418.37	1,740.95	257,159.32	46,288.68	18	CBX00012
4	3 ½ Cx35 sq.mm	PM-1246/17, Dt.20-07-2017.	KM	112,549.38	86,951.00	978.20	87,929.20	24,620.18	28	CBX00020
5	1x120 sq mm	LOI issued on 04-03-2022	KM	105,020.00	89,000.00	-	89,000.00	16,020.00	18	CBX00004
<b>SUBHEAD - III (E) L.T.P.CONTROL CABLE</b>										
1	2x2.5 sq.mm Copper	PM-1755/18, Dt.12-09-2018	KM	66,744.87	56,263.45	300.00	56,563.45	10,181.42	18	CBP00001
2	4x2.5 sq.mm Copper.	PM-1976/19, Dt.21-05-2019	KM	117,250.91	98,619.18	746.00	99,365.18	17,885.73	18	CBP00002
3	10x2.5 sq.mm Copper.	PM-2661/20, Dt.12-03-2021	KM	259,570.87	219975.31	-	219,975.31	39,595.56	18	CBP00006
<b>SUBHEAD - IV : POWER TRANSFORMERS &amp; TRANSFORMER OIL</b>										
1	5 MVA PTR	PM-2944/21-22, Dt.03-11-2021	Nos.	5,169,476.25	4,359,912.08	21,000.00	4,380,912.08	788,564.17	18	PTR00006
2	8 MVA PTR	PM-2952/21-22, Dt.11-11-2021	Nos.	7,404,190.72	6,274,737.90	-	6,274,737.90	1,129,452.82	18	PTR00008
3	12.5 MVA PTR	PM-2949/21-22, Dt.10-11-2021	Nos.	10,463,378.68	8,648,219.22	219,050.85	8,867,270.07	1,596,108.61	18	PTR00020
4	Transformer Oil (New)	PM-2945/21-22, Dt.03-11-2021	KL	92,639.91	78508.40	-	78,508.40	14,131.51	18	OFO10006
<b>SUBHEAD - IV (A) : Distribution Transformers</b>										
1	3-Phase 63 KVA (CSP) (Al) BIS EE LEVEL 3	PM-2786/21, Dt. 19-06-2021	Each	145,679.09	122,936.53	520.33	123,456.86	22,222	18	DTC30128
2	3-Phase 100 KVA (CSP) (Al) BIS EE LEVEL 3	PM-2790/21, Dt.22-06-2021.	Each	186,505.60	157,755.60	300	158,055.60	28,450	18	DTC30137
3	3-Phase 160 KVA (CSP) (Al) BIS EE LEVEL 3	PM-2525/20, Dt.02-01-	Each	313,533.55	263,606.40	2,100.00	265,706.40	47,827	18	DTC30135
4	3-ph 315 KVA DTR Al BIS EE Level-3	PM-2692/20, Dt.22-03-2021.	Each	860,277.68	726,048.88	3,000.00	729,048.88	131,229	18	DTC30127
5	3-ph 25 KVA DTR Al BIS EE Level-2	PM-2450/20, Dt.30-09-2020	Each	79,829.70	67,292.29	360.00	67,652.29	12,177	18	DTC30126
6	3-ph 500 KVA DTR Al BIS EE Level-3	PM-2713/21, Dt.08-04-2021.	Each	1,318,345.73	1,113,702.14	3,540.00	1,117,242.14	201,104	18	DTC30136
7	1-Phase 25 KVA (CSP) (Aluminium)	PM-2775/21, Dt.04-06-2021.	Each	76,870.90	64,744.83	400.00	65,144.83	11,726	18	DTC10009
<b>SUBHEAD - V : SWITCH CONTROL AND PROTECTIVE GEAR</b>										
1	33 KV 24V DC HV VCB with CRPs & CTs 400-200-100/1-1-1A	PM-1948/19, Dt.02-05-2019	Nos.	395,604.44	325,700.00	9,558.00	335,258.00	60,346.44	18	BRK30031
2	33 KV 24V DC VCB with CRPs & CTs ratio 400-200-100/1-1A	PM-1949/19, Dt.02-05-2019	Nos.	386,046.44	317,600.00	9,558.00	327,158.00	58,888.44	18	BRK30019
3	11KV, 24V DC LV VCB with diff. prot. with CRPs & CTs of Ratio 600-300/1-1-0.577A	Rpt.PM-2264/19, Dt.25-01-2020	Nos.	313,448.12	258,200.00	7,434.00	265,634.00	47,814.12	18	BRK10009
4	11KV 24V LV VCBs with CTs & Panel (600-300/1-1A)	PM-3017/21, Dt.28-12-2021	Nos.	311,000.00	256,359.32	7,200.00	263,559.32	47,440.68	18	BRK10014
5	11KV, 24V DC feeder VCBs with CRPs & CTs of Ratio 400-200-100/1-1A	Rpt. PM-3054/21, Dt.19-01-2022	Nos.	306,000.00	251,672.03	7,650.00	259,322.03	46,677.97	18	BRK10015
6	33 KV PT (Single Phase) 10VA Burden 0.2 Class	PM-3071/21, Dt.31-01-2022	Nos.	23,236.91	17,451.30	2,241.00	19,692.30	3,544.61	18	ITR30061
7	33 KV PT (Single Phase) 100VA Burden 0.2 Class	PM-1651/18, Dt.13-06-2018	Nos.	21,712.00	17,900.00	500.00	18,400.00	3,312.00	18	ITR30058
8	11 KV 3 Ph PTs with 50VA Burden 0.2 Class accuracy	PM-2212/19, Dt.20-12-2019	Nos.	19,849.96	15,852.00	970.00	16,822.00	3,027.96	18	ITR10065
9	33 KV 800 Amps AB Switch	Extn PM-3034/21 Dt: 06-01-2022	Nos.	37,170.00	31,300.00	200.00	31,500.00	5,670.00	18	ABS30004
10	11 KV 800 Amps (Conventional) AB Switch	PM-1614/18, Dt. 17-05-2018	Nos.	23,499.70	19,915.00	-	19,915.00	3,584.70	18	ABS10015

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
11	11 KV 400 Amps (Conventional) SB AB Switch with post type porcelain insulators	R&E PM-2104/19, Dt: 16-09-2019	Nos.	8,248.20	6,990.00	-	6,990.00	1,258.20	18	ABS10008
12	11 KV 200 Amps AB Switch (Tilting) round pipe	Extin PM-3016/21 Dt: 24-12-2021	Nos.	7,344.32	4,910.00	1,314.00	6,224.00	1,120.32	18	ABS10002
13	30 KV 10 KA Metal Oxide Lightning Arresters (station type)	PM-2651/20, Dt:10-03-2021	Nos.	3,191.90	2,705.00	-	2,705.00	486.90	18	LAS00004
14	9 KV 10 KA Metal Single Phase Lightning Arrester (station type)	PM-2647/20, Dt:10-03-2021	Nos.	1,527.51	1,294.50	-	1,294.50	233.01	18	LAS00002
15	11 KV HG Fuse set with insulators	PM-3142/21 Dt: 23-02-2022	Nos.	2,169.01	1,800.00	38.14	1,838.14	330.87	18	HGF10002
16	24 V, 40 AH Batteries with Chargers (Conventional)	PM-2542/20, Dt. 15-01-2021	Nos.	24,318.72	18,999.00	-	18,999.00	5,319.72	28	BAT00074
17	24 V, 40 AH Chargers (Conventional)	PM-2749/21, Dt.04-05-2021	Nos.	13,062.60	11,070.00	-	11,070.00	1,992.60	18	BAT00075
18	12 V 42 AH SMF VRLA Batteries	PM-2751/21, Dt.04-05-2021	Nos.	4,029.44	3,148.00	-	3,148.00	881.44	28	BAT00056
20	220V 80 AH Battery charger & DCDB	PM - 1711/18, Dt. 10-08-2018.	Nos.	310,003.70	259,857.00	2,858.00	262,715.00	47,288.70	18	BAT00072
21	220 V, 80 AH SMF Batteries	PM-2752/21, Dt.06-05-2021	Nos.	221,760.00	173,250.00	-	173,250.00	48,510.00	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	Procured specially for SCADA DMS project					SBR00599
24	Auto - Reclosures	PM-671/04-03-2016	Nos.	855,193.83	Procured specially for SCADA DMS project					
26	11KV 3 Way RMU with FRTU	Ext.PM- 3124/21, Dt.10-02-2022	Nos.	583,982.00	494,900.00	-	494,900.00	89,082.00	18	BRK10022
27	11KV 5 Way RMU with FRTU	Ext.PM- 3124/21, Dt.10-02-2022	Nos.	925,990.84	784,738.00	-	784,738.00	141,252.84	18	BRK10023
28	33 KV Indoor twin feeder control panel	PM-579/15, Dt: 30-11-2015	Nos.	385,643.32	324,299.00	2,517.37	326,816.37	58,826.95	18	BRK30014
29	33/11 KV Indoor switch gear (8 feeders)	Rpt. & Ext. PM-2439/20, Dt.28-09-2020	Nos.	18,000,000.84	14,836,000.00	418,238.00	15,254,238.00	2,745,762.84	18	BRK30020
30	33 KV CTs of ratio 600-300/1-1A 0.2S Class of Accuracy	PM-3047/21, Dt.13-01-2022	Nos.	33,040.00	28,000.00	-	28,000.00	5,040.00	18	ITR30068
<b>SUBHEAD - VI : METERS AND METERING EQUIPMENT</b>					-		-			
<b>I</b>	<b>HT Metering</b>			-			-			
1	HT Trivector Meter of class 0.2S	PM-2317/19 Dt: 20-03-2020	Nos.	7,949.66	6,737.00	0.00	6,737.00	1,212.66	18	
<b>II</b>	<b>11 KV Metering (11 KV CT PT Sets)</b>						-			
1	10/5 (0.2S class)	PM-3114/21, Dt. 10-02-2022	Nos.	61,171.20	49,356.00	2,484.00	51,840.00	9,331.20	20	ITR10049
2	20/5 (0.2S class)	PM-3063/21, Dt. 27-01-2022	Nos.	62,347.66	52,117.00	720.00	52,837.00	9,510.66	20	ITR10047
3	40/5 (0.2S class)	PM-2319/19 Dt. 20-03-2020	Nos.	35,565.20	28,152.00	1,988.00	30,140.00	5,425.20	18	ITR10047 ITR10048
4	5/5A (0.2s class)	PM-2321/21 Dt: 23-05-2020	Nos.	41,860.50	34,780.00	695.00	35,475.00	6,385.50	18	ITR10076
5	60/5A (0.2s class)	PM-2319/21 Dt: 20-03-2021	Nos.	35,990.00	28,502.00	1,998.00	30,500.00	5,490.00	18	ITR10046
6	75/5A (0.2s class)	Rpt PM-843/16, Dt.06-08-2016	Nos.	45,253.00	37,750.00	600.00	38,350.00	6,903.00	18	ITR10063
7	100/5A(0.2S CLASS)	PM-843/16, Dt.06-08-2016	Nos.	45,253.00	37,750.00	600.00	38,350.00	6,903.00	18	ITR10045
<b>III</b>	<b>LT Meters</b>									
1	LT Trivector meter (without CTs & Meter box) 100/5A (with DLMS) - Cat- C with IRDA port	PM-2254/19 Dt: 17-01-2020	Nos.	2,340.00	1,983.05	0.00	1,983.05	357	18	MTE30042
2	LT TVR Meters Cl. 0.5 (Including Box & 3 CTs) 200/5A for DTR Metering (for AGL DTRs)	PM-1691/18, Dt: 21-07-2018	Nos.	5,758.40	4,880.00	-	4,880.00	878	18	MTE30025
3	LT TVR Meters Cl. 0.5S (Including Box & 3 CTs) 50/5A for AGL DTRs	PM-1691/18, Dt: 21-07-2018	Nos.	5,758.40	4,880.00	-	4,880.00	878	18	MTE30023
4	LT TVR Meters Cl. 0.5S (Including Box & 3 CTs) 100/5A (for AGL DTRs)	PM-1691/18, Dt: 21-07-2018	Nos.	5,758.40	4,880.00	-	4,880.00	878	18	MTE30024

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>IV</b>	<b>Single phase electronic meter</b>									
1	Single Phase 5-30A Meters With PP box & IR port	Ext.PM-2357/20 Dt: 09-06-2020	Nos.	790.00	669.49	0.00	669.49	120.51	18	MTE10023
2	Single Phase 5-30A Meters Without PP box & IR port	PM-1995/19 Dt: 20-06-2019	Nos.	660.00	559.32	0.00	559.32	100.68	18	MTE10024
<b>V</b>	<b>Three phase Electronic meters</b>									
1	Three Phase 10-40A Meters with IRDA Port with PP Box	PM-3132/21, Dt:18-02-2022	Nos.	1,674.00	1,385.64	33.00	1,418.64	255.36	18	MTE30038
2	Three Phase 10-40A Meters with IRDA Port without PP Box	PM-3132/21, Dt:18-02-2022	Nos.	1,350.00	1,132.07	12.00	1,144.07	205.93	18	MTE30047
<b>VI</b>	<b>Testing equipments &amp; others</b>									
1	LT ERS Field Testing Kit (Along with accessories)	PM-1865/18, Dt: 07-01-2019	Each	174,067.11	147,000.00	514.50	147,514.50	26,553	18	TEQ10016
2	ERS Testing kits of accuracy 0.02 Class	Rpt PM-3131/21, Dt. 16-02-2022	Nos.	1,300,000.10	1,096,713.00	4,982.00	1,101,695.00	198,305.10	18	TEQ10082
3	Fully Automatic Master Test benches	PM-2484/20, Dt.25-11-2020	Nos.	11,659,860.00	9,822,000.00	59,237.29	9,881,237.29	1,778,623	18	TEQ10030
4	Hand held computers	PM-2802/9.10.09	Each	5273.83						OMT10026
5	Integrated Spot Billing Machines	PM-2985/21-22, Dt.01-12-2021	Nos.	10,500.01	8,898.31	-	8,898.31	1,602	18	OMT10083
6	CMRI	PM-2052/19 Dt: 30-07-2019	Nos.	22,355.10	18,945.00	0.00	18,945.00	3,410.10	18	OMT10014
7	LT distribution box (SMC)	PM-2782/21-22, Dt.09-06-2021	Nos.	9,204.00	7,800.00	0	7,800.00	1,404.00	18	BXS00047
<b>SUBHEAD - VII : VCB &amp; PTR spares</b>										
1	IDMT (3 O/L+E/L) Numerical Relay 24V DC	Rpt.PM-3009/21, Dt. 22-12-2021	Nos.	7,126.02	6,039.00	-	6,039.00	1,087.02	18	SBR00177
2	IDMT Static Relay (3 O/L+1E/L) 220 V DC Relays	Rpt PM-2981/21, Dt: 24-11-2021	Nos.	26,727.00	22,650.00	-	22,650.00	4,077.00	18	SBR00216
<b>VIII</b>	<b>COMPUTERS/LAPTOPS</b>									
1	Desktop Computers(Make HP)	PM-2485/20, Dt.28-11-2020	Nos.	42,362.00	35,900.00	-	35,900.00	6,462	18	CAH00011
2	Desktop Computers(Make DELL)	Rpt PM-1429/17, Dt. 11-12-2017	Nos.	37,978.30	32,185.00	-	32,185.00	5,793	18	CAH00011
3	Desktop Computers(Make ACER)	Rpt PM-1428/17, Dt. 11-12-2017	Nos.	37,978.30	32,185.00	-	32,185.00	5,793	18	CAH00011
4	Printers Dot Matrix Printers: (80 Column)	PM-1882/18, Dt: 13-03-2019	Nos.	8,206.90	6955	-	6,955.00	1,252	18	CAH00016
5	Dot Matrix Printers: (132 Column)	PM-1882/18, Dt: 13-03-2019	Nos.	11,398.80	9660	-	9,660.00	1,739	18	CAH00288
6	Laser Jet Printer	PM-2482/20, Dt.19-11-2020	Nos.	10,897.30	9,235.00	-	9,235.00	1,662.30	18	CAH00004
11	Transformer winding resistance kit	PM-2729, Dt: 23-04-2009	Nos.	121,540.00	100000	3000	103,000.00	18,540	18	TEQ10033
12	Transformer Turns Ratio Test Kit	PM-2729, Dt: 23-04-2009	Nos.	133,340.00	110000	3000	113,000.00	20,340	18	TEQ10034
13	Tan Delta and Capacitance Test Kit	PM-2729, Dt: 23-04-2009	Nos.	572,300.00	480000	5000	485,000.00	87,300	18	TEQ10035
14	Transformer Oil Resistivity Test kit	PM-2729, Dt: 23-04-2009	Nos.	357,540.00	300000	3000	303,000.00	54,540	18	TEQ10036
16	Digital Earth Clamp Testers	PM-3180, Dt:06-10-2010	Nos.	63,592.56	53,892.00	-	53,892.00	9,701	18	TEQ10073
17	High Voltage Detectors	PM-3180, Dt:06-10-2010	Nos.	17,211.07	14,585.65	-	14,585.65	2,625	18	TEQ10074
18	11KV LV VCBs with CTs and panel (CTs ratio 600-300/1-1A)	PM-3017/21, Dt:28-12-2021	Nos.	311,000.00	256,359.32	7,200.00	263,559.32	47,440.68	18	BRK10014
19	9KV 10KA LAS (Line type) Porcelain	PM-3105/21, Dt. 08-02-2022	Nos.	619.50	525.00	-	525.00	94.50	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.	345.60	280.00	12.88	292.88	52.72	28	BXS00048
24	RGVY Polycarbonate Meter Boxes along with accessories	PM-3076, Dt: 06-09-2010	Nos.	282.02	239.00	-	239.00	43.02	28	BXS00049
25	Digital Clamp Meters	PM-3286, Dt: 06-04-2011	Nos.	2,745.57	2,270.00	56.75	2,326.75	418.82	18	OMT10050
26	Single phase Variacs	PM-3286, Dt: 06-04-2011	Nos.	15,723.50	13,000.00	325.00	13,325.00	2,398.50	18	TEQ10075
27	Electronic Insulated Testers/Meggers	PM-3286, Dt: 06-04-2011	Nos.	79,461.20	65,690.00	1,650.00	67,340.00	12,121.20	18	TEQ10076
28	Ratio Test Kits	PM-3287, Dt: 06-04-2011	Nos.	105,374.00	87,300.00	2,000.00	89,300.00	16,074.00	18	TEQ10079
29	Capacitance Meters	PM-3287, Dt: 06-04-2011	Nos.	30,975.00	24,250.00	2,000.00	26,250.00	4,725.00	18	TEQ10080
30	Portable Relay Test Kits	PM-3288, Dt: 06-04-2011	Nos.	531,000.00	450,000.00	-	450,000.00	81,000.00	18	TEQ10077
31	Time interval Meter	PM-3289, Dt: 06-04-2011	Nos.	20,650.00	17,500.00	-	17,500.00	3,150.00	18	TEQ10078



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
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-2368/20, Dt.25-06-2020	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-2511/20, Dt. 22-12-2020	Nos.	9,650.04	8,178.00	-	8,178.00	1,472.04	18	OMT10083
	<b>Additional Items</b>						-			
1	11KV 400 Amps (Conventional) DB AB Switch with Porcelain type insulators	PM-3127/21 Dt: 15-02-2022	Nos.	18,428.01	15,616.96	-	15,616.96	2,811.05	18	ABS10009
2	11 KV 200 Amps AB Switch (Tilting) Square pipe (a) Polymer Type	PM-1728/18, Dt. 27-08-2018	Nos.	6,632.78	5,621.00	-	5,621.00	1,011.78	18	ABS10002
3	11KV, 220V DC Feeder VCBs with CRPs & CTs of ratio 400-200-100/1-1A (with Feeder Protection IED relays)	PM-2778/21, Dt. 05-06-2021	Nos.	372,054.00	308,100.00	7,200.00	315,300.00	56,754.00	18	BRK10019
4	11KV, 220V DC LV VCBs with CRPs & CTs of ratio 600-300/1-1A (with Trans. Prot. IED relays)	LOI Dno. 1976, Dt: 14-02-2022	Nos.	477,310.00	395,000.00	9,500.00	404,500.00	72,810.00	18	BRK10020
5	33KV, 220V DC Feeder VCBs with CRPs & CTs of ratio 400-200-100/1-1A (with IEDs)	PM-2514/20, Dt.31-12-2020	Nos.	486,499.84	401,242.00	11,046.00	412,288.00	74,211.84	18	BRK30037
6	11KV three phase HG Fuse Sets with Solid Core Insulators	PM-2241/19 Dt: 13-01-2020	Nos.	1,749.00	1,482.20	-	1,482.20	266.80	18	HGF10002
7	11 KV Solid Core Insulators for HG Fuses	PM-3133/21-22, Dt: 19-02-2022.	Nos.	210.00	177.97	-	177.97	32.03	18	INS10007
9	33 KV CTs 50/1 for HT Metering (0.2s class)	PM-2532/20, Dt.11 -01-2021	Nos.	18,290.00	15,250.00	250.00	15,500.00	2,790.00	18	ITR30057
10	33 KV CTs 400-200-100/1-1A for HT Metering (0.2s class)	Rpt.PM-1606/18, Dt. 17-05-2018	Nos.	21,234.10	17,520.00	475.00	17,995.00	3,239.10	18	ITR30067
11	11KV CTs of ratio 600-300/1-1A, 0.2S class	PM-2765, Dt.17-05-2021	Nos.	20,121.95	17,052.50	-	17,052.50	3,069.45	18	ITR10071
12	11KV CTs of ratio 400-200/1-1A, 0.2S class	PM-2634/20, Dt: 05-03-2021	Nos.	18,786.78	14,922.00	999.00	15,921.00	2,865.78	18	ITR10072
13	11KV CTs of ratio 600-300/1-1-0.577A, 0.2S class	PM-2771/20, Dt: 28-05-2021	Nos.	25,514.55	21,622.50	-	21,622.50	3,892.05	18	ITR10075
14	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
15	Three phase 10-40 A Meters without PP Box with IRDA port	PM-1939/19 Dt: 01-05-2019	Nos.	1,850.00	1,552.80	15.00	1,567.80	282.20	18	MTE30047
16	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
17	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
18	LT TVR 100/5A PP 0.5S (CAT-C) DLMS&IRDA	Rpt PM-1249/17, Dt. 22-07-2017	Nos.	10,354.50	8,775.00	-	8,775.00	1,579.50	18	MTE30040
19	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
20	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
21	LT TVR 200/5A 3CT 0.5S DLMS(w/o CTs&box) (for AGL DTRs)	PM-1691/18, Dt: 21-07-2018	Nos.	1,774.72	1,504.00	-	1,504.00	270.72	18	MTE30044
22	LT TVR 100/5A 3CT 0.5S DLMS(w/o CTs&box) (for AGL DTRs)	PM-1691/18, Dt: 21-07-2018	Nos.	1,774.72	1,504.00	-	1,504.00	270.72	18	MTE30045
23	LT TVR 50/5A 3CT 0.5S DLMS(w/o CTs&box) (for AGL DTRs)	PM-1691/18, Dt: 21-07-2018	Nos.	1,774.72	1,504.00	-	1,504.00	270.72	18	MTE30046
24	11KV 1 MVAR Capacitor Banks	PM-1382/17 Dt: 10-11-2017	Nos.	699,000.00	592,372.88	-	592,372.88	106,627.12	18	CPT10016
25	ERS Testing kits 0.05 accuracy	PM-2289/19 Dt: 30-01-2020	Nos.	1,300,000.10	1,096,713.00	4,982.00	1,101,695.00	198,305.10	18	TEQ10087
26	LT XLPE cable 1C x 150 Sq.mm	PM-3159/21-22 Dt: 03-03-2022	KM	15,104.00	10,800.00	2,000.00	12,800.00	2,304.00	18	CBX00021
27	LT XLPE cable 1C x 185 Sq.mm	PM-3161/21-22 Dt: 03-03-2022	KM	173,106.00	145,200.00	1,500.00	146,700.00	26,406.00	18	CBX00022
28	LT 3 ½ Cx240 sq.mm.	PM-1277/17, Dt.28-08-2017	KM	626,490.89	484,001.00	5,445.01	489,446.01	137,044.88	28	CBX00019
29	33KV CTs600-300/1-1-1, 0.2S Class	PM-3047, Dt.13-01-2022	Nos.	33,040.00	28,000.00	-	28,000.00	5,040.00	18	

**COST - DATA ABSTRACT**

Sl. No	Particulars of items	Wind. Pr. In Kg /m2	W.Lo ad in Kg.	Type of pole being used	Span in Mtrs.	No. of pole s/ KM	Size of conductor	Total Cost in Rs.
1	33 KV Line	75	365	11 M RS Joist	50	21	100 sqmm AAAC	1551310
2	33 KV DC Line	75	365	12 M RS Joist	50	21	100 sqmm AAAC	2088735
3	33 KV Line	75	365	11 M PSCC	60	17	100 sqmm AAAC	876386
4	33 KV DC Line	75	365	11 M PSCC	40	26	100 sqmm AAAC	1608305
5	33 KV Line	75	280	9.1 Mtr.PSCC	80	14	100 sqmm AAAC	696900
6	33 KV Line	75	280	9.1 Mtr.PSCC	65	16	100 sqmm AAAC	712100
7	11 KV line	75	140	9.1 Mtr.PSCC	60	18	55 sqmm AAAC	529026
8	11 KV line	75	140	9.1 Mtr.PSCC	60	18	34 sqmm AAAC	456013
9	11 KV line	75	140	8 Mtr.PSCC	60	18	55 sqmm AAAC	477370
10	11 KV line	75	140	8 Mtr.PSCC	60	18	34 sqmm AAAC	405858
11	11 KV line	75	140	RSJoist Poles	50	21	55 sqmm AAAC	842398
12	6.3 KV line	75	140	8 Mtr.PSCC	90	11	34 sqmm AAAC	174561
13	LT 3 Ph.5 Wire line (Horizontal)	75	140	8 Mtr.PSCC	65	16	3x55+2x34sqmmAAA	465508
14	LT 3 Ph.5 Wire line (Horizontal)	75	140	8 Mtr.PSCC	45	23	3x55+2x34sqmmAAA	504587
15	LT 3 Ph.5 Wire line (Horizontal)	75	140	8 Mtr.PSCC	65	16	5x34sqmm AAA	403381
16	LT 3 Ph.4 Wire line (Horizontal)	75	140	8 Mtr.PSCC	65	16	3x55+1x34sqmmAAA	416946
17	LT 3 Ph.4 Wire line (Horizontal)	75	140	8 Mtr.PSCC	65	16	4x34sqmm AAA	355084
18	LT 1 Ph. 3 Wire line (Horizontal)	75	140	8 Mtr.PSCC	65	16	3x34 sqmm AAA	296056
19	LT 1 Ph. 2 Wire line (Horizontal)	75	140	8 Mtr.PSCC	65	16	2x34 sqmm AAA	245834
20	L.T.AB Cable	75	140	8 Mtr.PSCC	65	16	3x16+25sqmm	245284
21	L.T.AB Cable	75	140	8 Mtr.PSCC	65	16	2x16+25sqmm	200621
22	Conversion of 1Ph 2 W/L to 3 Ph 4 W/L	75	140	8 Mtr.PSCC	65	16	2x55xqmm	158729
22	Erection of 100 KVA CSP CRGO Distribution Transformer							320624
23	Erection of 63 KVA CSP Distribution Transformer							273264
24	Erection of 63 KVA CSP CRGO core Distribution Transformer on plinth							241667
25	Erection of 63 KVA CSP CRGO core Distribution Transformer on structure							239102
26	Erection of 100 KVA CSP CRGO core Distribution Transformer on column plinth							305235
27	Erection of 25 KVA, 3- Phase CRGO core Distribution Transformer							124378
28	Erection of 25 KVA, 3-Phase, 11 KV/433 V /250 V CRGO Conventional Transformer							140973
29	Erection of 25 KVA, Single Phase, 6.3 KV/0-240 V C.S.P. CRGO Transformer							105700
30	Erection of 15 KVA Single Phase 6.3 KV/0-240 V CSP CRGO Distribution Transformer							46425
31	Release of poly phase Agl. Service erected on support							5290
32	Release of 1 ph Domestic & non-domestic service (Electronic meter)							2354

33	Release of 3 ph. Domestic & non-domestic service (Electronic meter)	4577
34	Release of poly phase Indl.service below 20 HP (Electronic meter)	5239
35	Release of Industrial service above 20H.P upto 50 HP with LT Trivector meter	9855
36	Release of Industrial service above 50 HP and upto 75 HP (HT metering)	230593
37	Release of Street light service (1 -ph electronic meter)	2850
38	Erection of L.T. C.T. Operated Electonic trivector meter on LV side of DTR	12655
39	Erection of 33/11 KV Sub-station with 2 x8 MVA power transformer & 6 Nos. 11 KV feeders ( without 11 KV 2 MVAR capacitor Bank)	34231902
40	Erection of 33/11 KV Sub-station with 2 x8 MVA power transformer & 6 Nos. 11 KV feeders ( with 11 KV 2 MVAR capacitor Bank)	35813043
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)	51850086
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)	22048367
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)	22912595
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)	15103772
45	11 KV Bay extension in existing 33/11 KV Sub-stations with girder poles	117636
46	11 KV Bay extension in existing 33/11 KV Sub-stations with PSCC poles	77326
47	33KV Bay Extension at 33/11 kV Sub-station	169800
48	33KV Bay Extension at 132/33KV SS	916161
49	Erection of 11 KV VCB at 33/11 kV Sub-station	395201
50	Erection of 33KV VCB at 132/33KV SS	1342303
51	Erection of 2MVAR Capacitor Bank	1134274
52	Enhancement of PTR Capacity	5832588
53	Laying of 11 KV, 3 core 300 Sq.mm UG Cable	3169298
54	Laying of 33 KV, 3 core 400 Sq.mm UG Cable	4674970
55	Erection of M+3 tower	169066
56	Erection of K+3 tower	93750
57	Erection of L+3 tower	125470
58	Erection of additional 5 MVA PTR in existing 33/11 KV Sub-station	6272700
59	Extention of 3Mtrs for K+3 Towers as per ASCI Standard	13227
60	Extention of 3Mtrs for L+3 Towers as per ASCI Standard	20881
61	Extention of 3Mtrs for M+3 Towers as per ASCI Standard	26161
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	33,984	Each	713,664
2	1.53 M Channel / 'V' Cross Arm (100x50mm)	21	2,011	Each	42,231
3	Top Clamp with cleat(75x8mm)	20	517	Each	10,340
4	Back Clamp	20	277	Each	5,540
5	Stay Set complete	12	1,751	Each	21,012
6	Bracing Set with double cross arm	1	12,070	Set	12,070
7	100 Sq.mm AAA Conductor	3.06	89,842	K.M.	274,917
8	33KV Polymer Pin Insulators With GI Pins	63	536	Each	33,788
9	Strain Insulators set ( 3x 11 KV B&S Insulator with 33 KV Hard ware fitting))	12	450	Set	5,400
10	Concreting of Pole, Stay sets & Base concreting	L.S		L.S	92,557
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc	L.S		L.S	9036
<b>Total Cost of Material</b>					<b>1,220,555</b>

3% storage & handling charges on items (1) to (9)	33,569
3% Contingencies on Materials	36,617
Labour & Transport	117,384
GST at 18 % on L&T	21,129
10% Estt. & Genl. Charges on Materials	122,056
<b>Total</b>	<b>1551310.4</b>
<b>Or Say</b>	<b>1,551,310</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	35,919	Each	754,303
2	1.53 M Channel / 'V' Cross Arm	60	2,011	Each	120,660
3	Back Clamp	60	277	Each	16,620
4	Stay Set complete	12	1,751	Each	21,012
5	Double Bracing Set with double cross arm	1	17,019	Set	17,019
6	100 Sq.mm AAA Conductor	6.12	89,842	K.M.	549,833
7	33KV Polymer Pin Insulators With GI Pins	108	536	Each	57,921
8	Strain Insulators set ( 3x 11 KV B&S Insulator with 33 KV Hardware fitting)	24	450	Set	10,800
9	Concreting of Pole, Stay sets & Base concreting	L.S		L.S	93,559
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>1,650,763</b>

3% storage & handling charges on items (1) to (8) 46,445

3% Contingencies on Materials 49,523

Labour & Transport 149,939

GST at 18 % on L&T 26,989

10% Estt. & Genl. Charges on Materials 165,076

**Total 2,088,735**

**Or Say 2,088,735**

**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	6313	Each	107,321
2	1.53 M Channel / 'V' Cross Arm	17	2011	Each	34,187
3	Top Clamp with cleat	16	517	Each	8,272
4	Back Clamp	17	277	Each	4,709
5	Stay Set complete	12	1751	Each	21,012
6	Bracing Set with double cross arm	1	12070	Set	12,070
7	100 Sq.mm AAA Conductor	3.06	89842	K.M.	274,917
8	33KV Polymer Pin Insulators With GI Pins	48	536	Each	25,743
9	Strain Insulators set ( 3x 11 KV B&S Insulator with 33 KV Hardware fitting)	12	450	Set	5,400
10	Concreting of Pole, Stay sets & Base concreting	L.S		L.S	107245
11	Misc. Items like coil earthing, pipe earthing, danger, bolts & nuts, etc	L.S		L.S	6050
<b>Total Cost of the Material</b>					<b>606,926</b>

3% storage & handling charges on items (1) to (9)	14,809
3% Contingencies on Materials	18,208
Labour & Transport	148941
GST at 18 % on L&T	26,809
10% Estt. & Genl. Charges on Materials	60,693
<b>Total</b>	<b>876,386</b>
<b>Stays Pits (0.76x0.76x1.5) Excavation</b>	
<b>Or Say</b>	<b>876,386</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	6313	Each	164,138
2	1.53 M Channel / 'V' Cross Arm	72	2011	Each	144,792
3	Back Clamp	75	277	Each	20,775
4	Stay Set complete	12	1751	Each	21,012
5	Double Bracing Set with double cross arm	1	17019	Set	17,019
6	100 Sq.mm AAA Conductor	6.12	89842	K.M.	549,833
7	33KV Polymer Pin Insulators With GI Pins	156	536	Each	83,664
8	Strain Insulators set ( 3x 11 KV B&S Insulator with 33 KV Hard ware fitting)	24	450	Set	10,800
9	Concreting of Pole, Stay sets & Base concreting	L.S		L.S	129051
10	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc	L.S		L.S	6655
<b>Total Cost of the Material</b>					<b>1,147,739</b>

3% storage & handling charges on items (1) to (8)	30,361
3% Contingencies on Materials	34,432
Labour & Transport	238135
GST at 18 % on L&T	42,864
10% Estt. & Genl. Charges on Materials	114,774
<b>Total</b>	<b>1,608,305</b>
<b>Or Say</b>	<b>1,608,305</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	3,658	Each	51,212
2	1.53 M Channel / 'V' Cross Arm	14	2,011	Each	28,154
3	Top Clamp with cleat	12	517	Each	6,204
4	Back Clamp	13	277	Each	3,601
5	Stay Set complete	12	1,751	Each	21,012
6	Bracing Set with double cross arm	1	12,070	Set	12,070
7	100 Sq.mm AAA Conductor	3.06	89,842	K.M.	274,917
8	33KV Polymer Pin Insulators With GI Pins	39	536	Each	20,916
9	Strain Insulators set ( 3x 11 KV B&S Insulator with 33 KV Hard ware fitting)	12	450	Set	5,400
10	Concreting of Pole, Stay sets & Base concreting	L.S		L.S	79,611
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc	L.S		L.S	5500
	<b>Total Cost of Material</b>				<b>508,597</b>

3% storage & handling charges on items (1) to (9)	12,705
3% Contingencies on Materials	15,258
Labour & Transport	92767
GST at 18 % on L&T	16,698
10% Estt. & Genl. Charges on Materials	50,860
<b>Total</b>	<b>696,885</b>
<b>Or Say</b>	<b>696,900</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	3,658	Each	58,528
2	1.53 M Channel / 'V' Cross Arm	16	2,011	Each	32,176
3	Top Clamp with cleat	15	517	Each	7,755
4	Back Clamp	15	277	Each	4,155
5	Stay Set complete	10	1,751	Each	17,510
6	Bracing Set with double cross arm	1	12,070	Set	12,070
7	100 Sq.mm AAA Conductor	3.06	89,842	K.M.	274,917
8	33KV Polymer Pin Insulators With GI Pins	45	536	Each	24,134
9	Strain Insulators set ( 3x 11 KV B&S Insulator with 33 KV Hard ware fitting)	12	450	Set	5,400
10	Concreting of Pole, Stay sets & Base concreting	L.S		L.S	74,866
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc	L.S		L.S	5500
<b>Total Cost of Material</b>					<b>517,011</b>

3% storage & handling charges on items (1) to (9)	13,099
3% Contingencies on Materials	15,510
Labour & Transport	97259
GST at 18 % on L&T	17,507
10% Estt. & Genl. Charges on Materials	51,701
<b>Total</b>	<b>712,087</b>
<b>Or Say</b>	<b>712,100</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	3,658	Each	65,844
2	1.07 M Channel / 'V' Cross Arm	18	909	Each	16,362
3	Top Clamp with cleat	16	537	Each	8,592
4	Back Clamp	17	197	Each	3,349
5	Stay Set complete	10	1,446	Each	14,460
6	Bracing Set with double cross arm	1	9,402	Set	9,402
7	55 Sq.mm AAA Conductor	3.06	49,710	K.M.	152,113
8	11 KV Pin Insulator with Pin	54	152	Each	8,220
9	Strain Insulator with metal parts	12	195	Each	2,345
10	Concreting of Pole, Stay sets & Base concreting			L.S	70,217
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc			L.S	4000
<b>Total Cost of Material</b>					<b>354,904</b>

3% storage & handling charges on items (1) to (9) 8,421

3% Contingencies on Materials 10,647

Labour & Transport 101325

GST at 18 % on L&T 18,239

10% Estt. & Genl. Charges on Materials 35,490

**Total 529,026**

**Or Say 529,026**

**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	3,658	Each	65,844
2	1.07 M Channel / 'V' Cross Arm	18	909	Each	16,362
3	Top Clamp with cleat	16	537	Each	8,592
4	Back Clamp	17	197	Each	3,349
5	Stay Set complete	10	1,446	Each	14,460
6	Bracing Set with double cross arm	1	9,402	Set	9,402
7	34 Sq.mm AAA Conductor	3.06	32,282	K.M.	98,783
8	11 KV Pin Insulator with Pin	54	152	Each	8,220
9	Strain Insulator with metal parts	12	195	Each	2,345
10	Concreting of Pole, Stay sets & Base concreting			L.S	70217
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc			L.S	4000
<b>Total Cost of Material</b>					<b>301,574</b>

3% storage & handling charges on items (1) to (9)	6,821
3% Contingencies on Materials	9,047
Labour & Transport	91876
GST at 18 % on L&T	16,538
10% Estt. & Genl. Charges on Materials	30,157
<b>Total</b>	<b>456,013</b>
<b>Or Say</b>	<b>456,013</b>

**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	909	Each	16,362
3	Top Clamp with cleat	16	537	Each	8,592
4	Back Clamp	17	197	Each	3,349
5	Stay Set complete	10	1,446	Each	14,460
6	Bracing Set with double cross arm	1	9,402	Set	9,402
7	55 Sq.mm AAA Conductor	3.06	49,710	K.M.	152,113
8	11 KV Pin Insulator with Pin	54	152	Each	8,220
9	Strain Insulator with metal parts	12	195	Each	2,345
10	Concreting of Pole, Stay sets & Base concreting			L.S	70,217
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc			L.S	4000
<b>Total Cost of Material</b>					<b>317,734</b>

3% storage & handling charges on items (1) to (9) 7,306

3% Contingencies on Materials 9,532

Labour & Transport 94089

GST at 18 % on L&T 16,936

10% Estt. & Genl. Charges on Materials 31,773

**Total 477,370**

**Or Say 477,370**

**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.**

<b>Sl. No.</b>	<b>Particulars</b>	<b>Qty.</b>	<b>Rate in Rs.</b>	<b>Per Unit</b>	<b>Amount in Rs.</b>
1	8 M PSCC Pole	18	1,593	Each	28,674
2	1.07 M Channel / 'V' Cross Arm	18	909	Each	16,362
3	Top Clamp with cleat	16	537	Each	8,592
4	Back Clamp	17	197	Each	3,349
5	Stay Set complete	10	1,446	Each	14,460
6	Bracing Set with double cross arm	1	9,402	Set	9,402
7	34 Sq.mm AAA Conductor	3.06	32,282	K.M.	98,783
8	11 KV Pin Insulator with Pin	54	152	Each	8,220
9	Strain Insulator with metal parts	12	195	Each	2,345
10	Concreting of Pole, Stay sets & Base concreting			L.S	70,217
11	Misc. Items like coil earthing, pipe earthing, danger, bolts & nuts, etc			L.S	4000
<b>Total Cost of Material</b>					<b>264,404</b>

3% storage & handling charges on items (1) to (9) 5,706

3% Contingencies on Materials 7,932

Labour & Transport 85912

GST at 18 % on L&T 15,464

10% Estt. & Genl. Charges on Materials 26,440

**Total 405,858**

**Or Say 405,858**

**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	15,104	Each	317,184
2	1.07 M Channel / 'V' Cross Arm	21	909	Each	19,089
3	Top Clamp with cleat	20	537	Each	10,740
4	Back Clamp	21	197	Each	4,137
5	Stay Set complete	10	1,446	Each	14,460
6	Bracing Set with double cross arm	1	9,402	Set	9,402
7	55 Sq.mm AAA Conductor	3.06	49,710	K.M.	152,113
8	11 KV Pin Insulator with Pin	54	152	Each	8,220
9	Strain Insulator with metal parts	12	195	Each	2,345
10	Concreting of Pole, Stay sets & Base concreting			L.S	79,515
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc			L.S	4000
<b>Total Cost of Material</b>					<b>621,205</b>

3% storage & handling charges on items (1) to (9) 16,131

3% Contingencies on Materials 18,636

Labour & Transport 105343

GST at 18 % on L&T 18,962

10% Estt. & Genl. Charges on Materials 62,121

**Total 842,398**

**Or Say 842,398**

**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.**

<b>Sl. No.</b>	<b>Particulars</b>	<b>Qty.</b>	<b>Rate in Rs.</b>	<b>Per Unit</b>	<b>Amount in Rs.</b>
1	8 M PSCC Pole	11	1,593	Each	17,523
2	Top Clamp with cleat	11	537	Each	5,907
3	Back Clamp	10	197	Each	1,970
4	Stay Set complete	4	1,446	Each	5,784
5	34 Sq.mm AAA Conductor	1.02	32,282	K.M.	32,928
6	11 KV Pin Insulator with Pin	10	152	Each	1,522
7	Strain Insulator with metal parts	4	195	Each	782
8	Concreting of Pole, Stay sets & Base concreting			L.S	28087
9	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	2100
<b>Total Cost of Material</b>					<b>96,603</b>

3% storage & handling charges on items (1) to (7) 1,992

3% Contingencies on Materials 2,898

Labour & Transport 53736

GST at 18 % on L&T 9,672

10% Estt. & Genl. Charges on Materials 9,660

**Total 174,561**

**Or Say 174,561**



**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	538	Each	9,684
3	LT top fitting	18	295	Each	5,310
4	Back Clamp	18	109	Each	1,962
5	Stay Set complete	6	1,446	Each	8,676
6	55 Sq.mm AAA Conductor	3.06	49,710	KM	152,113
7	34 Sq.mm AAA Conductor	2.04	32,282	KM	65,855
8	Shackle Insulator with metal parts	16	69	Each	1,104
9	LT pin insulator with pin	56	64	Each	3,584
10	C.I. Knob	16	10	Each	160
11	Concreting of Pole, Stay sets & Base concreting			L.S	42130
12	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	4000
<b>Total Cost of Material</b>					<b>320,066</b>

3% storage & handling charges on items (1) to (10) 8,218

3% Contingencies on Materials 9,602

Labour & Transport 81030

GST at 18 % on L&T 14,585

10% Estt. & Genl. Charges on Materials 32,007

**Total 465,508**

**Or Say 465,508**

**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	538	Each	12,912
3	LT top fitting	24	295	Each	7,080
4	Back Clamp	24	109	Each	2,616
5	Stay Set complete	6	1,446	Each	8,676
6	55 Sq.mm AAA Conductor	3.06	49,710	KM	152,113
7	34 Sq.mm AAA Conductor	2.04	32,282	KM	65,855
8	Shackle Insulator with metal parts	16	69	Each	1,104
9	LT pin insulator with pin	84	64	Each	5,376
10	C.I. Knob	23	10	Each	230
11	Concreting of Pole, Stay sets & Base concreting			L.S	51429
12	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	4000
<b>Total Cost of Material</b>					<b>348,030</b>

3% storage & handling charges on items (1) to (10) 8,778

3% Contingencies on Materials 10,441

Labour & Transport 86,894

GST at 18 % on L&T 15,641

10% Estt. & Genl. Charges on Materials 34,803

**Total 504,587**

**Or Say 504,587**

**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	538	Each	9,684
3	LT top fitting	18	295	Each	5,310
4	Back Clamp	18	109	Each	1,962
5	Stay Set complete	6	1,446	Each	8,676
6	34 Sq.mm AAA Conductor	5.1	32,282	KM	164,638
7	Shackle Insulator with metal parts	16	69	K.M.	1,104
8	LT pin insulator with pin	56	64	Each	3,584
9	C.I. Knob	16	10	Each	160
10	Concreting of Pole, Stay sets & Base concreting			L.S	42130
11	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	4000
<b>Total Cost of Material</b>					<b>266,736</b>

3% storage & handling charges on items (1) to (9) 6,618

3% Contingencies on Materials 8,002

Labour & Transport 80806

GST at 18 % on L&T 14,545

10% Estt. & Genl. Charges on Materials 26,674

**Total 403,381**

**Or Say 403,381**

**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	538	Each	9,684
3	Back Clamp	18	109	Each	1,962
4	Stay Set complete	6	1,446	Each	8,676
5	55 Sq.mm AAA Conductor	3.06	49,710	K.M.	152,113
6	34 Sq.mm AAA Conductor	1.02	32,282	K.M.	32,928
7	Shackle Insulator with metal parts	12	69	Each	828
8	LT pin insulator with pin	42	64	Each	2,688
9	C.I. Knob	16	10	Each	160
10	Concreting of Pole, Stay sets & Base concreting			L.S	42130
11	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	4000
<b>Total Cost of Material</b>					<b>280,657</b>

3% storage & handling charges on items (1) to (9) 7,036

3% Contingencies on Materials 8,420

Labour & Transport 78616

GST at 18 % on L&T 14,151

10% Estt. & Genl. Charges on Materials 28,066

**Total 416,946**

**Or Say 416,946**

**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	538	Each	9,684
3	Back Clamp	18	109	Each	1,962
4	Stay Set complete	6	1,446	Each	8,676
5	34 Sq.mm AAA Conductor	4.08	32282.44	K.M.	131,712
6	Shackle Insulator with metal parts	12	69	Each	828
7	LT pin insulator with pin	42	64	Each	2,688
8	C.I. Knob	16	10	Each	160
9	Concreting of Pole, Stay sets & Base concreting			L.S	42130
10	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	4000
<b>Total Cost of Material</b>					<b>227,328</b>

3% storage & handling charges on items (1) to (8) 5,436

3% Contingencies on Materials 6,820

Labour & Transport 78,616

GST at 18 % on L&T 14,151

10% Estt. & Genl. Charges on Materials 22,733

**Total 355,084**

**Or Say 355,084**

**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	280	Each	5,040
3	LT top fitting	18	295	Each	5,310
4	Back Clamp	18	109	Each	1,962
5	Stay Set complete	4	1,446	Each	5,784
6	34 Sq.mm AAA Conductor	3.06	32,282	K.M.	98,783
7	Shackle Insulator with metal parts	8	69	Each	552
8	LT pin insulator with pin	28	64	Each	1,792
9	C.I. Knob	16	10	Each	160
10	Concreting of Pole, Stay sets & Base concreting			L.S	32736
11	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	4000
	<b>Total Cost of Material</b>				<b>181,607</b>

3% storage & handling charges on items (1) to (9)	4,346
3% Contingencies on Materials	5,448
Labour & Transport	73,300
GST at 18 % on L&T	13,194
10% Estt. & Genl. Charges on Materials	18,161
<b>Total</b>	<b>296,056</b>
<b>Or Say</b>	<b>296,056</b>

**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	280	Each	5,040
3	Back Clamp	18	109	Each	1,962
4	Stay Set complete	4	1,446	Each	5,784
5	34 Sq.mm AAA Conductor	2.04	32,282	K.M.	65,855
6	Shackle Insulator with metal parts	4	69	Each	276
7	LT pin insulator with pin	14	64	Each	896
8	C.I. Knob	16	10	Each	160
9	Concreting of Pole, Stay sets & Base concreting			L.S	32736
10	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	2900
<b>Total Cost of Material</b>					<b>141,097</b>

3% storage & handling charges on items (1) to (8) 3,164

3% Contingencies on Materials 4,233

Labour & Transport 70,534

GST at 18 % on L&T 12,696

10% Estt. & Genl. Charges on Materials 14,110

**Total 245,834**

**Or Say 245,834**

**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	70	Each	980
3	Dead end clamp assembly with eye hook	4	105	Each	420
4	Stay Set complete	4	1,446	Set	5,784
5	L.T. A.B. Cable 3 x 16 + 25 Sq.mm	1.02	66,445	K.M.	67,774
6	Insulated Connectors with covers	56	105	Each	5,880
7	Concreting of Pole, Stay sets & Base concreting			L.S	32736
8	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	3000
<b>Total Cost of Material</b>					<b>142,062</b>

3% storage & handling charges on items (1) to (6) 3,190

3% Contingencies on Materials 4,262

Labour & Transport 69,122

GST at 18 % on L&T 12,442

10% Estt. & Genl. Charges on Materials 14,206

**Total 245,284**

**Or Say 245,284**



**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	70	Each	980
3	Dead end clamp assembly with eye hook	4	105	Each	420
4	Stay Set complete	4	1,446	Set	5,784
5	L.T. A.B. Cable 2 x 16 + 25 Sq.mm	1.02	28,999	K.M.	29,579
6	Insulated Connectors with covers	56	105	Each	5,880
7	Concreting of Pole, Stay sets & Base concreting			L.S	32736
8	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	3000
<b>Total Cost of Material</b>					<b>103,867</b>

3% storage & handling charges on items (1) to (6) 2,044

3% Contingencies on Materials 3,116

Labour & Transport 68,819

GST at 18 % on L&T 12,387

10% Estt. & Genl. Charges on Materials 10,387

**Total 200,621**

**Or Say 200,621**

**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	49710	KM	101409
2	LT 3 phase X arms	17	538	Each	9146
3	Back Clamps	17	109	Each	1853
4	Shackle Insulators with metal parts	12	69	Each	822.5544
5	Pin Insulators with pins	45	64	Each	2898.198
6	Stay sets complete	6	1446	Each	8676
	<b>Total Cost of Material</b>				<b>124,804</b>

3% storage & handling charges on items (1) to (6)	3,744
3% Contingencies on Materials	3,744
Labour & Transport	14,300
Dismantling Charges	1,000
GST at 18 % on L&T	2,574
10% Estt. & Genl. Charges on Materials	12,480
<b>Total</b>	<b>162,646</b>
<b>Or Say</b>	<b>162,646</b>

**Less Credits**

1	Single Phase cross arms (scrap)	51	11	Kg	561
2	Original Erection charges				2200
3	Dismantling charges				1100
4	Orginal Estt & Genl Charges				56
	<b>Total</b>				<b>3917</b>
	<b>Or Say</b>				<b>3917</b>
	Net Cost			Gross - Less	<b>158,729</b>

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

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

<b>S. No.</b>	<b>Particulars</b>	<b>Cost of Material (Rs.)</b>	<b>Labour &amp; Transport (Rs.)</b>
1	11 KV/433 V 100 KVA CSP TRANSFORMER (Aluminium)	186505.60	8,801
2	Erection of 11 KV AB Switch (200A)	7,344	3,083
3	D.P. Structure	19,991	16,533
4	Erection of 11 K.V. H.G. Fuse set	2,169	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	10,259	900
7	Installation of HT Lightening Arresters	1,116	1,515
8	C.I. Pipe earthing (3 Nos.)	11,217	3,960
<b>Total Cost of Material</b>		<b>239,570</b>	<b>36,206</b>

3% Storage & handling charges 7,187

3% Contingencies on Materials 7,187

Labour & Transport 36,206

GST at 18 % on L&T 6,517

10% Estt. & General charges on Materials 23,957

**Total Cost in Rs. 320,624**

**Or Say 320,624**

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

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

<b>S. No.</b>	<b>Particulars</b>	<b>Cost of Material (Rs.)</b>	<b>Labour &amp; Transport (Rs.)</b>
1	11 KV/433 V 63 KVA CSP Distribution Transformer (Aluminium)	145,679.09	8,801
2	Erection of 11 KV AB Switch (200A)	7,344	3,083
3	D.P. Structure	19,991	16,533
4	Erection of 11 K.V. H.G. Fuse set	2,169	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	10,259	900
7	Installation of HT Lightning Arresters	1,116	1,515
8	C.I. Pipe earthing (3 Nos.)	11,217	3,960
	<b>Total Cost of Material</b>	<b>198,743</b>	<b>36,206</b>

3% Storage & handling charges	5,962
3% Contingencies on Materials	5,962
Labour & Transport	36,206
GST at 18 % on L&T	6,517
10% Estt. & General charges on Materials	19,874
<b>Total Cost in Rs.</b>	<b>273,264</b>
<b>Or say</b>	<b>273,264</b>

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

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

<b>S. No.</b>	<b>Particulars</b>	<b>Cost of Material (Rs.)</b>	<b>Labour &amp; Transport (Rs.)</b>
1	11 KV/433 V 63 KVA Distribution Transformer (Aluminium)	145,679	8,801
2	Erection of 11 KV AB Switch (200A)	7,344	3,083
3	Plinth for distribution transformer (5'x4'x8')	0	9,406
4	Erection of 11 K.V. H.G. Fuse set	2,169	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	10,259	900
7	Installation of HT Lightning Arresters	1,116	1,515
8	C.I. Pipe earthing (3 Nos.)	11,217	3,960
	<b>Total Cost of Material</b>	<b>178,752</b>	<b>29,079</b>

3% Storage & handling charges 5,363

3% Contingencies on Materials 5,363

Labour & Transport 29,079

GST at 18 % on L&T 5,234

10% Estt. & General charges on Materials 17,875

**Total Cost in Rs. 241,667**

**Or say 241,667**

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

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

<b>S. No.</b>	<b>Particulars</b>	<b>Cost of Material (Rs.)</b>	<b>Labour &amp; Transport (Rs.)</b>
1	11 KV/433 V 63 KVA CSP Distribution Transformer (Aluminium)	145,679	8,801
2	Erection of 11 KV AB Switch (200A)	7,344	3,083
3	Erection of structure for mounting of transformer	6,480	863
4	Erection of 11 K.V. H.G. Fuse set	2,169	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	10,259	900
7	Installation of HT Lightning Arresters	1,116	1,515
8	C.I. Pipe earthing (3 Nos.)	11,217	3,960
	<b>Total Cost of Material</b>	<b>185,232</b>	<b>20,536</b>

3% Storage & handling charges 5,557

3% Contingencies on Materials 5,557

Labour & Transport 20,536

GST at 18 % on L&T 3,696

10% Estt. & General charges on Materials 18,523

**Total Cost in Rs. 239,102**  
**Or say 239,102**

**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)	186,506	8,801
2	Erection of 11 KV AB Switch (200A)	7,344	3,083
3	Construction of RCC Column type DTR Plinth of size 1'X1'X10',topslab 4'x4'x6" & beam size 4'X8'X8"	0	23,144
4	Erection of 11 K.V. H.G. Fuse set	2,169	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	10,259	900
7	Installation of HT Lightning Arresters with earth connection	1,116	1,515
8	C.I. Pipe earthing (3 Nos.)	11,217	3,960
<b>Total Cost of Material</b>		<b>219,579</b>	<b>42,817</b>

3% Storage & handling charges 6,587

3% Contingencies on Materials 6,587

Labour & Transport 42,817

GST at 18 % on L&T 7,707

10% Estt. & General charges on Materials 21,958

**Total Cost in Rs. 305,235**

**Or say 305,235**

**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)**

<b>S. No.</b>	<b>Particulars</b>	<b>Cost of Material (Rs.)</b>	<b>Labour &amp; Transport (Rs.)</b>
1	11 KV/433V/250 V 25 KVA 3-Ph Distribution Transformer (Copper)	65,524	8,801
2	Erection of 11 KV AB Switch (200A)	7,344	3,083
3	Erection of 11 KV HG Fuse set	2,169	930
4	Mounting arrangements for Transformer	6,480	550
5	Installation of L.T.H.G. Fuse sets including connecti	968	484
6	C.I. Pipe earthing (2 Nos.)	7,478	2,640
7	Misc. items (like bolts & nuts, washers etc.)	500	
	<b>Total Cost of Material</b>	<b>90,463</b>	<b>16,488</b>

3% Storage & handling charges	2,699
3% Contingencies on Materials	2,714
Labour & Transport	16,488
GST at 18 % on L&T	2,968
10% Estt. & General charges on Materials	9,046
<b>Total Cost in Rs.</b>	<b>124,378</b>
<b>Or Say</b>	<b>124,378</b>



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

<b>S. No.</b>	<b>Particulars</b>	<b>Cost of Material (Rs.)</b>	<b>Labour &amp; Transport (Rs.)</b>
1	11 KV/433V/250 V 25 KVA 3-Ph Conventional Distribution Transformer (Aluminium)	79,830	8,801
2	Erection of 11 KV AB Switch (200A)	7,344	3,083
3	Erection of 11 KV HG Fuse set	2,169	930
4	Mounting arrangements for Transformer	6,480	550
5	Installation of L.T.H.G. Fuse sets including connecti	968	484
6	C.I. Pipe earthing (2 Nos.)	7,478	2,640
7	Misc. items (like bolts & nuts, washers etc.)	500	
<b>Total Cost of Material</b>		<b>104,769</b>	<b>16,488</b>

3% Storage & handling charges 3,128

3% Contingencies on Materials 3,143

Labour & Transport 16,488

GST at 18 % on L&T 2,968

10% Estt. & General charges on Materials 10,477

**Total Cost in Rs. 140,973**

**Or Say 140,973**

**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**

<b>S. No.</b>	<b>Particulars</b>	<b>Qty.</b>	<b>Rate in Rs.</b>	<b>Per Unit</b>	<b>Amount in Rs.</b>
1	25 KVA Oil Immersed Single Phase 6.3 KV/0-240 V CSP CRGO core Transformer (Copper)	1	76,871	Each	76,871
2	Mounting arrangements for Transformer	1	2,259	Set	2,259
3	C.I. Pipe earthing	2	3,739	Each	7,478
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>88,108</b>

3% Storage & handling charges on items 1 to 3 2,598

3% Contingencies on Materials 2,643

Labour & Transport 3,000

GST at 18 % on L&T 540

10% Estt. & General charges on Materials 8,811

**Total Cost in Rs. 105,700**

**Or Say 105,700**

**REC - CONSTRUCTION STANDARD SPECIFICATION No. F-13/1987**  
**COST DATA FOR ERECTION OF 15 KVA SINGLE PHASE 6.3 KV/0-240 V**  
**CRGO CORE C.S.P. TRANSFORMER ON EXISTING 8 M PSCC SUPPORT**

S. No.	Particulars	Qty.	Rate in Rs.	Per Unit	Amount in Rs.
1	15 KVA Oil Immersed Single Phase 6.3 KV/0-240 V CRGO Core Transformer (Copper)	1	25,869	Each	25,869
2	Mounting arrangements for Transformer	1	2,259	Set	2,259
3	C.I. Pipe earthing	2	3,739	Each	7,478
4	LT Distribution Box (1-Phase) with XLPE 70 sq mm cable and 100 A fuses complete.	1	1,000	Each	1,000
5	Misc. Items	L.S.	400		400
<b>Total Cost of Material</b>					<b>37,006</b>

3% Storage & handling charges on items 1 to 3	1,068
3% Contingencies on Materials	1,110
Labour & Transport	3,000
GST at 18 % on L&T	540
10% Estt. & General charges on Materials	3,701
<b>Total Cost in Rs.</b>	<b>46,425</b>
<b>Or Say</b>	<b>46,425</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	Three Phase 10-40A Meters with IRDA Port with PP Box	1	1,674	Each	1,674
2	3 Phase 63 A M.C.B.	1	670	Each	670
3	P.V.C. Cable 6 Sq.mm Single Core	90	9	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>3,916</b>

3% Contingencies on Materials 117

Labour & Transport 733

GST at 18 % on L&T 132

10% Estt. & General charges on Materials 392

**Total Cost in Rs. 5,290**

**Or say 5,290**

**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	790	Each	1	790			790
2	M.C.B. 16 A	201	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	Mts.			2	60	60
6	P.V.C. Bends 25 mm	6	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>1,041</b>		<b>520</b>	<b>1,561</b>

3% Contingencies on Materials	31	16	47
Labour & Transport	160	340	500
GST at 18 % on L&T	29	61	90
10% Estt. & General charges on Materials	104	52	156
<b>Total Cost in Rs.</b>	<b>1,365</b>	<b>989</b>	<b>2,354</b>
<b>Or Say</b>			<b>2,354</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	1674	Each	1	1,674			1,674
2	3 Phase 63 A M.C.B.	670	Each	1	670			670
3	P.V.C. Cable Single Core 2.5 Sq.mm	5	Mts.			120	600	600
4	G.I. Wire No. 8	48	Kg			1	48	48
5	P.V.C. Pipe 40 mm	78	Mts.			2	155	155
6	P.V.C. Bends 40 mm	18	Each			2	36	36
7	Misc.	L.S.	L.S.				75	75
<b>Total Cost of Material</b>					<b>2,344</b>		<b>914</b>	<b>3,258</b>

3% Contingencies on Materials	70	27	98
Labour & Transport	320	440	760
GST at 18 % on L&T	58	79	137
10% Estt. & General charges on Materials	234	91	326
<b>Total Cost in Rs.</b>	<b>3,026</b>	<b>1,551</b>	<b>4,577</b>
<b>Or Say</b>			<b>4,577</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	1674	Each	1	1,674			1,674
2	3 Phase 63 A M.C.B.	670	Each	1	670			670
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	78	Mts.			2	155	155
6	P.V.C. Bends 40 mm	18	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>2,444</b>		<b>1,399</b>	<b>3,843</b>

3% Contingencies on Materials	73	42	115
Labour & Transport	320	440	760
GST at 18 % on L&T	58	79	137
10% Estt. & General charges on Materials	244	140	384
<b>Total Cost in Rs.</b>	<b>3,139</b>	<b>2,100</b>	<b>5,239</b>
<b>Or Say</b>			<b>5,239</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)	5758	Each	1	5,758			5,758
2	3 Phase 63 A M.C.B.	670	Each	1	670			670
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	78	Mts.			2	155	155
6	P.V.C. Bends 40 mm	18	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>6,528</b>		<b>1,399</b>	<b>7,927</b>

3% Contingencies on Materials	196	42	238
Labour & Transport	320	440	760
GST at 18 % on L&T	58	79	137
10% Estt. & General charges on Materials	653	140	793
<b>Total Cost in Rs.</b>	<b>7,755</b>	<b>2,100</b>	<b>9,855</b>
<b>Or Say</b>			<b>9,855</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	19991	Each	2	39,983	2	16,533	
2	11 KV 400 Amps conventional type AB switch	8,248	Each	2	16,496	2	4,156	
3	11 KV HG Fuse set	2,169	Each	2	4,338	2	1,860	
4	3x35 sq.mm 11 KV XLPE cable	317.67	Mts.	30	9,530	30	10,380	
5	End termination suitable for 35 sq.mm XLPE (Cable outdoor type)	1375	Each	4	5,500	4	5,892	
6	G.I. earthing (3 Nos. GI Pipe)	4184.4	Nos.	1	4,184	1	3,960	
7	11 KV CT PT 10-20/5	61,171	Each	1	61,171	1	1,138	
8	HT Trivector Meter (Clause 0.2 S)	7,950	Each	1	7,950	1	1,000	
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>154,652</b>		<b>47,319</b>	<b>-</b>

3% Contingencies on Materials	4,640
Labour & Transport	47,319
GST at 18 % on L&T	8,517
10% Estt. & General charges on Materials	15,465
<b>Total Cost in Rs.</b>	<b>230,593</b>
<b>Or Say</b>	<b>Rs. 230,593.00</b>

**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	790	Each	790
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	Each	12
7	Moulded Distribution Box	1	250	Each	250
8	Wooden, Plugs, clamps, bolts, nuts, link clips etc.	L.S.		L.S.	150
Total Cost of Material					1,991

3% Contingencies on Materials	60
Labour & Transport	600
GST at 18 % on L&T	108
10% Estt. & General charges on Materials	199
<b>Total Cost in Rs.</b>	<b>2,850</b>
<b>Or Say</b>	<b>2,850</b>

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

<b>Sl. No.</b>	<b>Particulars</b>	<b>Qty.</b>	<b>Unit</b>	<b>Rate per (in Rs.)</b>	<b>Amount (in Rs.)</b>
1	LT 3-Phase class 0.5S Accuracy CT Operated Energy Meter Housed in a box with 3 Nos. CTs	1	Each	5,758.40	5,758.40
2	3.5 Core 95 LT XLPE Cable (for 10 meters) to LT side of DTR with cleat wiring.	LS			4,500.80
	<b>Total</b>				<b>10,259.20</b>

3% Contingencies	307.78
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.	900.00
GST at 18 % on L&T	162
10% Estt. & Genl. Charges	1,025.92
<b>Total Cost in Rs.</b>	<b>12,654.90</b>
<b>Or Say</b>	<b>12,655.00</b>

**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	8	0.07	Each	0.58
c)	Fire fighting Equipment	LS		LS	0.70
d)	P&T Phone and wireless set	LS		LS	0.05
4	Foundations for structures, PTRs & breakers	LS		LS	3.30
5	Bus bars, Jumpers, Connectors claps etc.	LS		LS	1.32
6	Control Cables	LS		LS	1.19
7	Structural Steel	13	0.718	MT	9.34
8	Transformers				
a)	33/11kv <b>8 MVA</b> Power Transformer	2	74.042	Each	148.08
b)	11kv / 433 v <b>25 kva</b> 3-ph Stn. Transformer (CSP copper)	1	0.798	Each	0.80
9	Circiut Breakres (including trivector meters)				
a)	33 KV Group control VCB with CTs and panel	1	3.956	Each	3.96
b)	20 KA 11 kv feeder VCB including Control panel and CTs (NF=6)	6	3.060	Each	18.36
c)	20 KA 11 kv LV VCB including Control panel and CTs	2	3.134	Each	6.27
10	Control Circiut Panels				
a)	AC Supply Panel	1	0.330	Each	0.33
b)	Alaram Panel	1	0.330	Each	0.33
11	Instrumnet Transformers				
a)	33KV PT (single unit)	3	0.217	Each	0.65
b)	11kv P.T (3 Phase)	1	0.198	Each	0.20
12	Lightning Arrestors				
a)	33KV 10KA	6	0.032	Each	0.19
b)	11KV Line Type (NF=6)	18	0.015	Each	0.27
c)	11KV Station Type 10 KA	6	0.015	Each	0.09
13	Isolating Switches				
a)	33KV 800A AB Switch (Double Breaker)	3	0.372	Each	1.12
b)	11KV 800A AB Switch (Double Breaker)	3	0.235	Each	0.70
c)	11KV 400A AB Switch (Double Breaker)	12	0.082	Each	0.99
d)	11KV 200A AB Switch	1	0.073	Each	0.07
e)	11KV HG fuse Switch	3	0.022	Each	0.07
f)	33KV Horn Gap Fuse Set (1XNT)	2	0.000	Each	0.00
14	Data Acquisition equipment (SIM, modem, cabling etc)			LS	0.45
15	220 Volts 80 AH SMF Battery Set including Battery Charger and DC DB	1	3.10	Each	3.10
16	Earthing of Power Transformer VCBs,AB Swiches,Strucutres with 75x8mm GI Flat			LS	1.98
<b>Sub Total</b>					<b>283.14</b>

3% Contingencies on items 7 to 15	5.86
1% T&P Charges on items No. 7 to 15	1.95
10% Erection and transport and commissioning charges on	19.54
GST at 18% on L&T	3.52
10% Establishment and General Charges	28.31
<b>Grand Total</b>	<b>342.32</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 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	8	0.07	Each	0.58
c)	Fire fighting Equipment	LS		LS	0.70
d)	P&T Phone and wireless set	LS		LS	0.05
4	Foundations for structures, PTRs & breakers	LS		LS	3.30
5	Bus bars, Jumpers, Connectors claps etc.	LS		LS	1.32
6	Control Cables	LS		LS	1.19
7	Structural Steel	20	0.718	MT	14.37
8	Transformers				
a)	33/11kv 8 MVA Power Transformer	2	74.042	Each	148.08
b)	11kv / 433 v 25 kva 3-ph Stn. Transformer	1	0.798	Each	0.80
9	Circuit Breakers (including trivector meters)				
a)	33 KV Group control VCB with CTs and panel	1	3.956	Each	3.96
b)	20 KA 11 kv feeder VCB including Control panel and CTs (NF=6)	6	3.060	Each	18.36
c)	20 KA 11 kv LV VCB including Control panel and CTs	2	3.134	Each	6.27
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	0.217	Each	0.65
b)	11kv P.T (3 Phase)	1	0.198	Each	0.20
12	Lightning Arrestors				
a)	33KV 10KA	6	0.032	Each	0.19
b)	11KV Line Type (NF=6)	18	0.015	Each	0.27
c)	11KV Station Type 10 KA	6	0.015	Each	0.09
13	Isolating Switches (Double Breaker)				
a)	33KV 800A AB Switch (Double Breaker)	3	0.372	Each	1.12
b)	11KV 800A AB Switch (Double Breaker)	3	0.235	Each	0.70
c)	11KV 400A AB Switch (Double Breaker)	12	0.082	Each	0.99
d)	11KV 200A AB Switch	1	0.073	Each	0.07
e)	11KV HG fuse Switch	3	0.022	Each	0.07
f)	33KV Horn Gap Fuse Set (1XNT)	2	0.000	Each	0.00
14	2MVAR 11KV Capacitor Bank along with Associated Equipment (Type A)	1	7.990	Each	7.99
15	220 Volts 80 AH Battery Set including Battery Charger and DC DB	1	3.100	Each	3.10
16	Earthing of Power Transformer VCBs, AB Switches, Structures with 75x8mm GI Flat			LS	1.98
	<b>Sub Total</b>				<b>295.71</b>
	3% Contingencies on items 7 to 15				6.24
	1% T&P Charges on items No. 7 to 15				2.08
	10% Erection and transport and commissioning charges on items 7 to 15				20.79
	GST at 18% on L&T				3.74
	10% Establishment and General Charges				29.57
	<b>Grand Total</b>				<b>358.13</b>

**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	Lands and rights	Ls	As per local		50.00
b)	Plantation of Trees	Ls	0.15	LS	0.15
2	<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
3	<b>Station Auxillaries</b>				0.00
a)	Yard lighting	6	0.07	E	0.43
b)	Spreading of Metal	Ls	0.11	LS	0.11
c)	Telephone (P &T) and wireless set	Ls	1.38	LS	1.38
d)	Fire fighting Equipment, Miscellenous items like Rubber Mats, Earth rods, Helmets, Gloves, Furniture, T&P etc	Ls	1.10	LS	1.10
e)	Water supply arrangements	Ls	0.55	LS	0.55
4	Foundations for breakers etc.	Ls	0.66	LS	0.66
5	Bus bar arrangements	Ls	2.75	LS	2.75
6	Control cables	Ls	1.10	LS	1.10
7	<b>Power and Distribution Transformers</b>				
a)	33/11 KV, 8 MVA Power Transformers	2	74.042	E	148.08
b)	25KVA 11/04KV Station Transformer	1	0.798	E	0.80
8	<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	180.00	E	180.00
i	1250 A Transformers control cubicals 2 Nos.				
ii	1250 - A feeder cubicals - 6 Nos.				
iii	1250 - A Bus coupler - 1 No.				
iv	Bus transformers panel - 1 No.				
v	Adopter for station transformer - 1 No.				
9	<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	3.10	E	3.10
12	Data Acquisition equipment (SIM, modem, cabling etc)			LS	0.45
13	<b>Earthing Arrangements</b>				
a)	MS Flat75x8 mm for providing earthing matting complete	2	0.732	MT	0.58
b)	MS Flat 50x6 mm for earthing the equipment	2	0.755	MT	0.58
c)	Earthing electrodes & GI pipes	LS	0.90	LS	0.90
14	RS Joist 175x85/150x150(Girder poles) for base of switch gear	1.5	0.7552	MT	1.13
<b>Total</b>					<b>426.12</b>
3% Contingencies on Items 7 To 14					10.09
10% Transport, Erection and Commissioning charges on items 7 To 14					33.63
GST at 18% on L&T					6.05
10% Establishment and General Charges					42.61
<b>Grand Total</b>					<b>518.50</b>

**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	8	0.07	Each	0.58
c)	Fire fighting Equipment	LS		LS	0.70
d)	P&T Phone and wireless set	LS		LS	0.05
4	Foundations for structures, PTRs & breakers	LS		LS	3.30
5	Bus bars, Jumpers, Connectors claps etc.	LS		LS	1.32
6	Control Cables	LS		LS	1.19
7	Structural Steel	4.5	0.718	MT	3.23
8	9.1 meters PSCC poles	30	0.04	Each	1.10
9	Transformers				
a)	33/11kv 5 MVA Power Transformer	2	51.69	Each	103.39
b)	3-Phase 25 KVA (CSP) (AI)	1	0.798	Each	0.80
10	Circuit Breakers (including trivector meters)				
a)	20 KA 11 kv feeder VCB including Control panel and CTs (NF=5)	5	3.060	Each	15.30
b)	20 KA 11 kv LV VCB including Control panel and CTs	2	3.134	Each	6.27
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	0.198	Each	0.20
13	Lightning Arrestors				
a)	33KV 10KA	6	0.032	Each	0.19
b)	11KV Line Type (NF=5)	15	0.015	Each	0.23
c)	11KV Station Type 10 KA	6	0.015	Each	0.09
14	Isolating Switches				
a)	33KV 800A AB Switch (Double Break)	3	0.372	Each	1.12
b)	11KV 800A AB Switch (NT X 1+1) (Double Break)	3	0.235	Each	0.70
c)	11KV 400A AB Switch (NF X 2+2) (Double Break)	12	0.082	Each	0.99
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	0.243	Each	1.70
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>187.57</b>

3% Contingencies on items 7 to 17	4.33
1% T&P Charges on items No. 7 to 17	1.44
Erection and transport and commissioning charges on items 7 to 17 at 10%	14.43
GST at 18% on L&T	2.597
10% Establishment and General Charges	18.76
<b>Total</b>	<b>229.13</b>

**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	8	0.07	Each	0.58
c)	Fire fighting Equipment	LS		LS	0.70
d)	P&T Phone and wireless set	LS		LS	0.00
4	Foundations for structures, PTRs & breakers	LS		LS	3.30
5	Bus bars, Jumpers, Connectors claps etc.	LS		LS	1.32
6	Control Cables	LS		LS	1.19
7	Structural Steel	6	0.718	MT	4.31
8	9.1 meters PSCC poles	38	0.037	Each	1.39
9	Transformers				
a)	33/11kv 5 MVA Power Transformer	2	51.69	Each	103.39
b)	3-Phase 25 KVA (CSP) (AI)	1	0.798	Each	0.80
10	Circuit Breakers (including trivector meters)				
a)	20 KA 11 kv feeder VCB including Control panel and CTs	5	3.060	Each	15.30
b)	20 KA 11 kv LV VCB including Control panel and CTs	2	3.110	Each	6.22
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	0.198	Each	0.20
13	Lightning Arrestors				
a)	33KV 10KA	6	0.032	Each	0.19
b)	11KV Line Type (NF=5)	15	0.015	Each	0.23
c)	11KV Station Type 10 KA	6	0.015	Each	0.09
14	Isolating Switches				
a)	33KV 800A AB Switch (Double Breaker)	3	0.372	Each	1.12
b)	11KV 800A AB Switch (NT X 1+1) (Double Breaker)	3	0.235	Each	0.70
c)	11KV 400A AB Switch (NF X 2+2) (Double Breaker)	12	0.082	Each	0.99
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	0.243	Each	1.70
17	Earthing of Power Transformer VCBs, AB Swiches, Structures with 75x8mm GI Flat			LS	1.80
	<b>Sub Total</b>				<b>180.67</b>

3% Contingencies on items 7 to 16	4.13
1% T&P Charges on items No. 7 to 16	1.38
Erection and transport and commissioning charges on items 7 to 16 at 10%	13.76
GST at 18% on L&T	2.477
10% Establishment and General Charges	18.07
<b>Total</b>	<b>220.48</b>

**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	8	0.07	Each	0.58
c)	Fire fighting Equipment	LS		LS	0.70
d)	P&T Phone and wireless set	LS		LS	0.05
4	Foundations for structures, PTRs & breakers	LS		LS	3.30
5	Bus bars, Jumpers, Connectors claps etc.	LS		LS	1.32
6	Control Cables	LS		LS	1.19
7	Structural Steel	5.5	0.718	MT	3.95
8	9.1 meters PSCC poles	23	0.037	Each	0.84
9	8 meters PSCC poles	8	0.016	Each	0.13
10	Transformers				
a)	33/11kv 5 MVA Power Transformer	1	51.69	Each	51.69
b)	3-Phase 25 KVA (CSP) (AI)	1	0.798	Each	0.80
11	Circuit Breakers (including trivector meters)				
a)	20 KA 11 kv feeder VCB including Control panel and CTs (NF=3)	3	3.060	Each	9.18
b)	20 KA 11 kv LV VCB including Control panel and CTs	1	3.110	Each	3.11
12	Control Circuit Panels				
a)	AC Supply Panel	1	0.303	Each	0.30
b)	Alarm Panel	1	0.303	Each	0.30
13	Instrument Transformers				
a)	11kv P.T (3 Phase)	1	0.198	Each	0.20
14	Lightning Arrestors				
a)	33KV 10KA	6	0.032	Each	0.19
b)	11KV Line Type (NF=3)	9	0.015	Each	0.14
c)	11KV Station Type 10 KA	3	0.015	Each	0.05
15	Isolating Switches				
a)	33KV 800A AB Switch	3	0.372	Each	1.12
b)	11KV 800A AB Switch (NT X 1+1)	2	0.235	Each	0.47
c)	11KV 400A AB Switch (NF X 2+2)	8	0.082	Each	0.66
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	0.243	Each	0.97
18	2MVAR 11KV Capacitor Bank along with Associated Equipment	1	7.990	Each	7.99
19	Earthing of Power Transformer VCBs, AB Switches, Structures with 75x8mm GI Flat			LS	1.80
	<b>Sub Total</b>				<b>125.47</b>

3% Contingencies on items 7 to 17

2.47

1% T&P Charges on items No. 7 to 17

0.82

10% Erection and transport and commissioning charges on items 7 to 17

8.24

GST at 18% on L&T

1.483

10% Establishment and General Charges

12.55

**Total**

**151.04**

**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)**

<b>S. No.</b>	<b>Particulars</b>	<b>Qty.</b>	<b>Rate in Rs.</b>	<b>Per Unit</b>	<b>Amount in Rs.</b>
1	150X150 mm H type beam of 8.5 mts length (2 Nos. RS Joist)	0.598	71,838.40	MT	42988.00
2	100x50 mm Channel	0.166	74,340.00	MT	12333.00
3	MS flat 75x8 mm	0.05	73,160.00	MT	3658.00
4	AB switch 400 Amps conventional type	1	8,248.20	Each	8248.00
5	200 sqmm ACSR Conductor (Panther-conductor)	0.02	244,301.06	KM	4886.00
6	11 KV Polymer String insulator (C&T)	18	195	Each	3518.00
7	Earthing arrangement (20 mts length with 75x8 MS flat (20x4.7=94)	94	73.16	KG	6877.00
8	Pad clamps, bolts & nuts & Miscellaneous items	LS			1650.00
<b>Sub-Total</b>					<b>84158.00</b>

3% Contingencies	2524.74
Labour & Transport	19099.30
GST at 18% on L&T	3437.874
10% Establishment & General charges	8415.800
<b>Grand Total</b>	<b>117635.71</b>

**or say 117636.00**

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

<b>S. No.</b>	<b>Particulars</b>	<b>Qty.</b>	<b>Rate in Rs.</b>	<b>Per Unit</b>	<b>Amount in Rs.</b>
1	9.1 mts. PSCC poles	2	3,658	Each	7316.00
2	100x50 mm Channel	0.166	74,340.00	MT	12333.00
3	MS flat 75x8 mm	0.05	73,160.00	MT	3658.00
4	AB switch 400 Amps conventional type	1	8,248.20	Each	8248.00
5	200 sqmm ACSR Conductor (Panther conductor)	0.02	244,301.06	KM	4886.00
6	11 KV Polymer String insulator (C&T)	18	195	Each	3518.00
7	Earthing arrangement (20 mts length with 75x8 MS flat (20x4.7=94))	94	73.16	KG	6877.00
8	Pad clamps, bolts & nuts & Miscellaneous items	LS			1650.00
<b>Sub-Total</b>					<b>48486.00</b>

3% Contingencies	1454.58
Labour & Transport	19099.30
GST at 18% on L&T	3437.874
10% Establishment & General charges	4848.600
<b>Grand Total</b>	<b>77326.35</b>

**or say 77326.00**

**Cost Data for 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	71,838.40	43103.04
2	100 x 50 mm MS channel	0.27	MT	74,340.00	20072
3	75 x 8mm flat for clamps & earthing	0.2	MT	73,160.00	14632
4	200 sqmm Panther conductor	0.02	KM	244,301.06	4886.0213
5	Strain Insulator set with metal parts (each set consists 3 Nos 11 KV strain insulators)	6	Set	586	3518
6	Erection of 33 KV AB switch (800 Amps, Conventional)	1	Each	37,170.00	37170
7	Miscellaneous items like fabrication of channels & pad clamps etc.		LS		2750
	<b>Sub-Total</b>				<b>126130</b>

3% Contingencies	3783.91
3% S&H charges	3783.91
Labour & Transport	19945.20
GST at 18 % on L&T	3590.14
10% Estt & General charges on material	12613.04
<b>Total</b>	<b>169846.62</b>
<b>Or Say Rs</b>	<b>169800.00</b>

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

<b>Sl.No.</b>	<b>Description</b>	<b>Qty</b>	<b>Rate</b>	<b>Per</b>	<b>Amount in Rs.</b>
1	Galvanised steel such as M.S.angles, flats, channels for TC & TD towers. (GHMC SSR Towers sheet)	5.00	76174	MT	380871
2	Spacer clamps for 33KV bus	9	508	Each	4572
3	Spacer clamp with T off zebra for one feeder	3	153	Each	459
4	33 KV Polymer String Insulator (B&S)	8	450	Each	3600
5	Tension hardware for twin zebra	6	2,512	Each	15072
6	Zebra condutor	0.150	299369	KM	44905
7	33KV AB Switch 800 A	1	37170	Each	37170
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>680913</b>

3% S&H charges on Material

17427

3% Contingencies on Material

17427

Labour & Transport

112121

GST at 18 % on L&T

20181.78

10% Estt. & Gen. Chargtes

68091

**Gross Total 916161**  
**Or Say in Rs. 916161**

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

<b>Sl. No</b>	<b>Description of work</b>	<b>Qty</b>	<b>Unit</b>	<b>Rate</b>	<b>Amount in Rs.</b>
1	11 KV VCB along with all Accessories Including CTs	1	Each	306000	306000.00
2	4x2.5 sqmm Control cable	0.05	KM	117251	5863
3	Earthing arrangements	LS			1650
4	Miscellaneous items like conductor and clamps etc	LS			1650
<b>Sub-Total</b>					<b>315163</b>

3% Contingencies	9455
3% S&H charges	9455
Labour & Transport	25095
GST at 18 % on L&T	4517.12
10% Estt & General charges	31516
<b>Total</b>	<b>395201</b>
<b>Or Say Rs</b>	<b>395201</b>

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

S.No.	Description of work	Qty	Rate	Per	Amount in Rs.
1	33 KV VCB with relay& CTs (400-200-100/1-1-1A)	1	395,604.44	Each	395604
2	LT PVC Copper Control Cable 10 C x2.5 Sq.mm	0.75	259,570.87	KM	194678
3	LT PVC Copper Control Cable 4 C x2.5 Sq.mm	0.75	117,250.91	KM	87938
4	33KV LAS line type	3	3,191.90	Each	9576
5	33 KV Twin feeder control panel	1	385,643.32	No	385643.32
6	Miscellenous items			LS	1100
	<b>Sub-Total</b>				<b>1074540</b>

3% S&H charges 32236

3% Contingencies on material 32236

Labour & Transport 81218

GST 18 % on L&T 14619.20

10% Estt. & General Charges 107454

**Gross Total 1342303**

**Or Say Rs. 1342303**

**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	24,318.72	Each	24319
3	M.S.Flat 50x6mm	0.36	75,520.00	MT	27187
4	Panther Conductor	0.05	244,301.06	KM	12215
5	4 Core 2.5 Sqmm PVC Copper Control Cable	0.05	117,250.91	KM	5863
6	10 Core 2.5 Sqmm PVC Copper Control Cable	0.1	259,570.87	KM	25957
7	2 Core 2.5 Sqmm PVC Copper Control Cable	0.06	66,744.87	KM	4005
8	11KV Post type insulators	3	243.00	Each	729
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	2,169.01	Each	2169
11	11KV LA's Station type	3	1,527.51	Each	4583
12	M.S. Channel 100x50mm	0.24	74,340.00	MT	17842
13	Miscellaneous items	LS			550.00
	<b>Sub-Total</b>				<b>931391.00</b>

3% Contingencies	27941.73
Labour ,Transport & Commsioning charges	69323.58
GST at 18 % on L&T	12478.245
10% Establishment & General charges	93139.1

**Grand Total 1134273.66**

**or say 1134274.00**



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

SI.No.	Particulars	Qty	Rate in Rs.	Unit	Amount in Rs.
1	33/11 KV 8 MVA Power Transformer	1	7404190.72	Each	7404191
2	Erection of 33 KV VCB with directional relay	1	395,604.44	Each	395604
3	Miscellaneous Items			LS	50000
			<b>Sub-Total</b>		7849795

3 % Storage & Handling charges	235494
3% Contingencies on material	235494
Labour & Transport	120000
GST at 18% on L&T	21600.00
10% Estt & General charges on material	784980
Add: Dismantling charges	50000

**Grand Total** 9297363

Or say 9297363

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	5169476.25	Each	5169476
	Depreciation 40% (Variable as per life served)		2067790.00		2067790
				Net	3101686
	Original erection charges (SWR 21275 MP)				35280
	Original dismantling charges				17640
	10% Estt. & General charges				310169
			Total		3464775
			Or Say	Rs.	3464775
	Net Amount = Grand total - Less credit		9297363	<b>3464775</b>	5832588

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

<b>Sl. No</b>	<b>Description of the material</b>	<b>Qty</b>	<b>Rate</b>	<b>Unit</b>	<b>Amount in Rs.</b>
1	Laying 11 KV 3 core 300Sq.mm UG Cable at depth of 1.20mtrs along CC road	1	1634568.86	KM	1634568.86
2	Erection of 3 way RMU (SF6) outdoor type	1	583982.00	Each	583,982.00
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	733.00	Nos	2199.00
	<b>Sub-Total</b>				<b>2232009.86</b>

3 % storage & handling charges	49037.07
3 % contingencies	49037.07
Labour and Transport	522044.60
GST at 18 % on L&T	93968.028
10 % Estt & General charges	223200.99

**Grand Total      3169297.61**

**Or Say      Rs      3169298**

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

<b>Sl. No</b>	<b>Description of the material</b>	<b>Qty</b>	<b>Rate</b>	<b>Unit</b>	<b>Amount in Rs.</b>
1	Laying 33 KV 3 core 400Sq.mm UG Cable at depth of 1.20mtrs along CC road	1	3399332.12	KM	3399332.12
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	4860	Each	4860.00
3	End termination suitable for 400 Sq.mm (outdoor type)	2	2357	Nos	4714.00
4	Earthing of Cable with GI pipe of 2mt length	2	698.00	Nos	1396.00
<b>Sub-Total</b>					<b>3410302.12</b>

3 % Storage & handling charges 101979.96

3 % Contingencies 101979.96

Labour and Transport 609896.10

GST at 18 % on L&T 109781.298

10 % Estt & General charges 341030.21

**Grand Total 4674969.65**

**Or Say Rs 4674970**

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

S. No.	Particulars	Qty.	Per Unit	Rate	Amount in Rs.
1	Supply of Non Galvanised M+3 type tower as per Specification.	1.468	MT	55257.60	81118.16
2	Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers.	158	KG	102.4998	16194.97
3	Fabrication of tower Parts as per Specification	1.468	MT	6479.55	9511.98
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	4.752	CUM		
5	Setting of stubs in position for laying of foundation of towers with 1:2:4 cc mix using 40 mm HBG metal including cost of all concreting materials and cement, form boxes and curing for 14 days	4.752	CUM	7310.112	34737.65
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.,	1.468	MT	7657.65	11241.43
7	Tack welding of total tower nuts and bolts	1	Job	1767.15	1767.15
8	Pipe earthing of towers with 40mm dia GI pipe, including cost of pipe, bentonite powder and running of GI flat etc.,	2	Each	1743.00	3486.00
9	Transport of Material to site including loading and unloading	1.626	MT	2356.20	3831.18

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.	1.468	MT	2219.32	3257.96
b	Labour charges for painting including scratching and cleaning of tower	1.468	MT	864.73	1269.42
c	Material for Second coat of 1st Grade Aluminium Paint, brushes, etc.,	1.468	MT	1314.983	1930.40
d	Labour charges for painting including scratching and cleaning of tower	1.468	MT	490.09	719.45
				<b>Total:</b>	<b>169065.75</b>

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

This quantity is to be certified by he field Engineer and the same has to be deducted from the quantity of excavation of pit with hard gravel at the time of billing.

(2) The material has to be certified before dispatch of materials to the site by field Engineer not below the rank of Divisional Engineer.

(\*) Note: -(3) the steel used for the fabrication of towers should be of Tata steel, sail steel, vizag steel or zindal steel to be certified by the field Engineer not below the rank of Divisional Engineer.

#### **Tower details**

1	Weight of M type tower	1.29 MT
2	Weight of 1 No. extension of 3 Mts	0.335 MT
3	Weight of M+3 tower	1.626 MT
4	Weight of M+6 tower	1.962 MT
5	Weight of M+9	2.294 MT
6	Weight of <b>SIX</b> arms	0.091 MT

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

100X100X8=1.998 mts

80X80X8 =1.898 mtrs

65X65X6 = 2.274 mts

50X50X6=2.761 mtrs

Total height 13.5 mts

Depth of tower below ground level : 3.2 mts

Height of tower above ground level : 10.3 mts.

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

S. No.	Particulars	Qty.	Per Unit	Rate	Amount
1	Supply of Non-Galvanized L+3 type tower as per Specification.	1.05	MT	55257.60	58020.48
2	Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers.	168	KG	102.50	17219.97
3	Fabrication of tower Parts as per Specification	1.05	MT	6479.55	6803.53
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		
5	Setting of stubs in position for laying of foundation of towers with 1:2:4 cc mix using 40 mm HBG metal including cost of all concreting materials and cement, form boxes and curing for 14 days i.e 3.15 cum	3.15	CUM	7025.01	22128.78
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.,	1.05	MT	7657.65	8040.53
7	Tack welding of total tower nuts and bolts	1	Job	1767.15	1767.15
8	Pipe earthing of towers with 40mm dia GI pipe, including cost of pipe, bentonite powder and running of GI flat etc.,	2	Each	1743.00	3486.00
9	Transport of Material to site including loading and unloading	1.22	MT	2356.20	2869.85
10	Painting of sub-station structures with two coats of Aluminium paint using Aluminium paint 1st grade containing 3.6 kg of Aluminium paste for 18 litres of thinner 1st coat is to be applied before erection of tower and 2nd coat after stringing and half round welding including cost of paint, cost of brushes, labour charges etc., complete.				

S. No.	Particulars	Qty.	Per Unit	Rate	Amount
a	Material for First coat of 1st Grade Aluminium Paint, paint, brushes etc.	1.05	MT	2219.32	2330.29
b	Labour charges for painting including scratching and cleaning of tower	1.05	MT	864.73	907.97
c	Material for Second coat of 1st Grade Aluminium Paint, brushes, etc.,	1.05	MT	1314.98	1380.73
d	Labour charges for painting including scratching and cleaning of tower	1.05	MT	490.09	514.59
				<b>Total:</b>	<b>125469.87</b>

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

This quantity is to be certified by he field Engineer and the same has to be deducted from the quantity of excavation of pit with hard gravel at the time of billing.

(2) The material has to be certified before dispatch of materials to the site by field Engineer not below the rank of Divisional Engineer.

(\*) Note: -(3) the steel used for the fabrication of towers should be of Tata steel, sail steel, vizag steel or zindal steel to be certified by the field Engineer not below the rank of Divisional Engineer.

#### **Tower details**

1	Weight of L type tower including nuts&bolts	0.9565 MT
2	Weight of 1 No. extension of 3 Mts	0.26325 MT
3	Weight of L+3 tower	1.219
4	Weight of L+6 tower	1.483
5	Weight of L+9	1.746
6	Weight of each arm	0.084 MT
<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 : 3.0 mts	
	Height of tower above ground level : 10.15mts.	

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

S. No.	Particulars	Qty	Per Unit	Rate	Amount
1	Supply of Non Galvanised K+3 type tower as per Specification.	0.75	MT	55257.60	41443.20
2	Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers.(MP SSR)	118.27	KG	102.50	12122.65
3	Fabrication of tower Parts as per Specification	0.75	MT	6479.55	4859.66
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 1.0x1.0x2.5 mtr i.e.2.5 cum	2.5	CUM		
5	Setting of stubs in position for laying of foundation of towers with 1:2:4 cc mix using 40 mm HBG metal including cost of all concreting materials and cement, form boxes and curing for 14 days i.e 2.65 cum	2.65	CUM	7025.01	18616.28
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	7657.65	5743.24
7	Tack welding of total tower nuts and bolts	1	Job	1767.15	1767.15
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	1743.00	3486.00
9	Transport of Material to site including loading and unloading	0.87	MT	2356.20	2045.18



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	2219.32	1664.49
b	Labour charges for painting including scratching and cleaning of tower	0.75	MT	864.73	648.55
c	Material for Second coat of 1st Grade Aluminium Paint, brushes, etc.,.	0.75	MT	1314.98	986.24
d	Labour charges for painting including scratching and cleaning of tower	0.75	MT	490.09	367.57
<b>Total:</b>					<b>93750.20</b>

**GST will be extra as per Govt. orders**

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

This quantity is to be certified by he field Engineer and the same has to be deducted from the quantity of excavation of pit with hard gravel at the time of billing.

(2) The material has to be certified before dispatch of materials to the site by field Engineer not below the rank of Divisional Engineer.

(\*) Note: -(3) the steel used for the fabrication of towers should be of Tata steel, sail steel, vizag steel or zindal steel to be certified by the field Engineer not below the rank of Divisional Engineer.

**Tower details**

1	Weight of K type tower including nuts&bolts	0.705 MT
2	Weight of 1 No. extension of 3 Mts	0.163 MT
3	Weight of K+3 tower	0.867
4	Weight of K+6 tower	1.03
5	Weight of K+9	1.193
6	Weight of each arm	0.103 MT
<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 : 2.5 mts	
	Height of tower above ground level : 12.1 mts.	

**DATA-VIII**

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

<b>S. No</b>	<b>Description</b>	<b>Qty</b>	<b>Per Unit</b>	<b>Rate</b>	<b>Amount</b>
<b>Material</b>					
1	Supply of Non-Galvanised K+3 type tower as per Specification.	0.14	MT	55257.60	7627.44
2	Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers.	24.96	KG	102.50	2558.85
3	Painting of sub-station structures with two coats of Aluminium paint using Aluminium paint 1st grade containing 3.6 kg of Aluminium paste for 18 litres of thinner 1st coat is to be applied before erection of tower and 2nd coat after stringing and half round welding including cost of paint, cost of brushes, labour charges etc., complete.				
a	Material for First coat of 1st Grade Aluminium Paint, paint, brushes etc.	0.14	MT	2219.32	306.34
b	Material for Second coat of 1st Grade Aluminium Paint, brushes, etc.,	0.14	MT	1314.98	181.51
			<b>Total:</b>		<b>10674.15</b>
<b>Labour</b>					
1	Fabrication of tower Parts as per Specification	0.140	MT	6479.55	907.14
2	Erection of tower parts completely as per specification including erection of insulators with all accessories, jumpering and bolts and nuts etc.,	0.140	MT	7657.65	1072.07
3	Transport of Material to site including loading and unloading	0.16	MT	2356.20	384.06

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	0.140	MT	864.73	121.06
b	Labour charges for painting including scratching and cleaning of tower	0.140	MT	490.09	68.61
				<b>Total:</b>	<b>2552.94</b>

**Tower details**

1	Weight of K type tower including nuts&bolts	0.705 MT
2	Weight of 1 No. extension of 3 Mts	0.163 MT
3	Weight of K+3 tower	0.867
4	Weight of K+6 tower	1.03
5	Weight of K+9	1.193
6	Weight of each arm	0.103 MT
<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+3 Tower as per ASCI Standard**

<b>S. No</b>	<b>Description</b>	<b>Qty.</b>	<b>Per Unit</b>	<b>Rate</b>	<b>Amount</b>
<b>Material</b>					
1	Supply of Non-Galvanized L+3 type tower as per Specification	0.24	MT	55257.60	13261.82
2	Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers. (MP SSR)	23.81	KG	102.50	2440.21
3	Painting of sub-station structures with two coats of Aluminium paint using Aluminium paint 1st grade containing 3.6 kg of Aluminium paste for 18 litres of thinner 1st coat is to be applied before erection of tower and 2nd coat after stringing and half round welding including cost of paint, cost of brushes, labour charges etc., complete.				
a	Material for First coat of 1st Grade Aluminium Paint, paint, brushes etc.	0.24	MT	2219.32	532.64
b	Material for Second coat of 1st Grade Aluminium Paint, brushes, etc.,	0.24	MT	1314.98	315.60
				<b>Total:</b>	<b>16550.27</b>
<b>Labour</b>					
1	Fabrication of tower Parts as per Specification	0.24	MT	6479.55	1555.09
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.,	0.24	MT	7657.65	1837.84
3	Transport of Material to site including loading and unloading	0.26	MT	2356.20	612.61

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	0.24	MT	864.73	207.54
b	Labour charges for painting including scratching and cleaning of tower	0.24	MT	490.09	117.62
				<b>Total:</b>	<b>4330.70</b>

#### Tower details

1	Weight of L type tower including nuts&bolts	0.9565 MT
2	Weight of 1 No. extension of 3 Mts	0.2633 MT
3	Weight of L+3 tower	1.219
4	Weight of L+6 tower	1.483
5	Weight of L+9	1.746
6	Weight of each arm	0.084 MT

**stubs** 90X90X8 = 4.256 mts

80X80X8=1.998 mts

65X65X6 =2.898 mtrs

50X50X5 = 1.274 mts

45X45X5=2.726 mtrs

Total height 13.15 mts

Depth of tower below ground level : 3.0 mts

Height of tower above ground level : 10.15mts.

**DATA-X**

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

<b>S. No</b>	<b>Description</b>	<b>Qty.</b>	<b>Per Unit</b>	<b>Rate</b>	<b>Amount</b>
<b>Material</b>					
1	Supply of Non-Galvanised M+3 type tower as per Specification.	0.30	MT	55257.60	16577.28
2	Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers.	30.23	KG	102.50	3,098
3	Painting of sub-station structures with two coats of Aluminium paint using Aluminium paint 1st grade containing 3.6 kg of Aluminium paste for 18 litres of thinner 1st coat is to be applied before erection of tower and 2nd coat after stringing and half round welding including cost of paint, cost of brushes, labour charges etc., complete.				
a	Material for First coat of 1st Grade Aluminium Paint, paint, brushes etc.	0.30	MT	2219.32	666
b	Material for Second coat of 1st Grade Aluminium Paint, brushes, etc.,	0.30	MT	1314.98	394
<b>Total:</b>					<b>20735.83</b>
<b>Labour</b>					
1	Fabrication of tower Parts as per Specification	0.30	MT	6479.55	1943.87
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.,	0.30	MT	7657.65	2297.30
3	Transport of Material to site including loading and unloading	0.33	MT	2356.20	777.55

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	0.30	MT	864.73	259.42
b	Labour charges for painting including scratching and cleaning of tower	0.30	MT	490.09	147.03
				<b>Total:</b>	<b>5425.15</b>

**Tower details**

1	Weight of M type tower	1.29	MT
2	Weight of 1 No. extension of 3 Mts	0.335	MT
3	Weight of M+3 tower	1.626	MT
4	Weight of M+6 tower	1.962	MT
5	Weight of M+9	2.294	MT
6	Weight of <b>SIX</b> arms	0.091	MT
<b>stubs</b>	(110X110X8) <b>110X110X10</b> = 4.56 mts		
	100X100X8=1.998 mts		
	80X80X8 =1.898 mtrs		
	65X65X6 = 2.274 mts		
	50X50X6=2.761 mtrs		
	Total height 13.5 mts		
	Depth of tower below ground level : 3.2 mts		
	Height of tower above ground level : 10.3 mts.		

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

<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	71,838.40	43103.04
2	100 x 50 mm MS channel	0.27	MT	74,340.00	20072
3	75 x 8mm flat for clamps & earthing	0.4	MT	73,160.00	29264
4	200 sqmm Panther conductor	0.02	KM	244,301.06	4886.02
5	Strain Insulator set with metal parts (each set consists 3 Nos 11 KV strain insulators)	6	Set	586	3518
5	Erection of 33 KV AB switch	1	Each	37,170.00	37170
6	5 MVA Power Transformer	1	Each	5169476	5169476.25
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>5362488.67</b>

3% Contingencies 160874.66

3% S&H charges 160874.66

Labour & Transport 44246.40

GST at 18 % on L&T 7964.352

10% Estt & General charges on material 536248.87

**Total 6272697.61**

**Or Say Rs 6272700.00**



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

<b>Sl. No</b>	<b>Description of Material</b>	<b>Qty</b>	<b>Unit</b>	<b>Rate in Rs.</b>	<b>Amount in Rs.</b>
1	11KV X 70 Sqmm Covered Conductor	1	CKM	1,357,731	1,357,731
2	IPC	50	Nos.	1,176	58,811
3	Ties	100	Nos.	477	47,716
4	11KV Mid Span Jointing Kit	1	Sets	5,044	5,044
5	11KV Termination Kit	5	Sets	2,565	12,823
5	11KV tension insulator Hardware	50	Nos.	378	18,910
<b>Material value (in Rs.)</b>					<b>1,501,033</b>

3% Contingencies 45,031

3% S&H charges 45,031

Labour & Transport 197,200

GST at 18 % on L&T 35,496

10% Estt & General charges on material 150,103

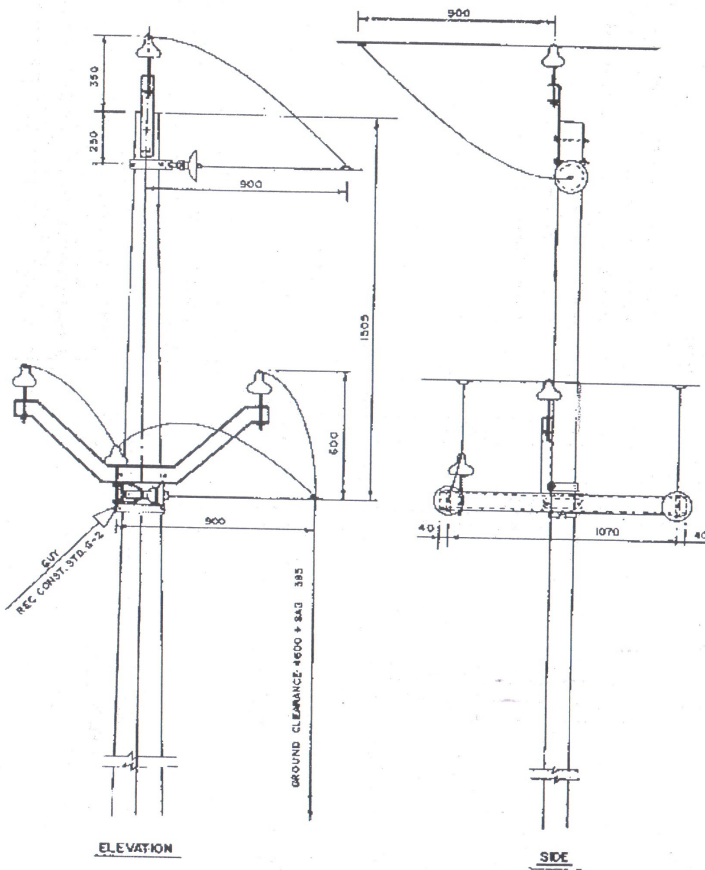
**Total 1,973,895**

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

<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 tieing	D-6/1984	L.T. lines
19	D.P. Structure for distribution substation	F-1/1981 (R-1993)	L.T. lines
20	HT and LT conductor dead end fittings	Sp. No. 25/1983	All lines
21	Side tie for pin insulator tieing	Sp. No. 25/1983	All lines
22	Fibre Reinforced Plastic Cross Arms	40/1987	



REC  
CONSTRUCTION STANDARD  
A-II



BILL OF MATERIAL

P.C.C SUPPORT	8M LONG	1No.
CHANNEL I FOR V-CROSS ARM I	REFER REC CONST. STD. A-6	1No.
CHANNEL FOR HORIZONTAL CROSS ARM I	75X40-1150 (APPROX.)	1No.
11KV STRAIN INSULATORS WITH HARDWARE	---	3 Nos.
11KV PIN INSULATORS WITH PINS	---	4 Nos.
POLE TOP BRACKET	REFER REC. CONST. STD. A-7	1No.
GUY SET	REFER REC CONST. STD. G-2	1No.
BASE PLATE	REFER REC CONST. STD. K-1	1No.
PIPE / ROD EARTHING	REFER REC CONST. STD. J-2	1No.
BACK CLAMP (FOR V-CROSS ARM I)	REFER REC CONST. STD. K-2	1No.
EARTHING MATERIAL, NUTS, BOLTS, CLAMPS ETC.	---	AS REQUIRED

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

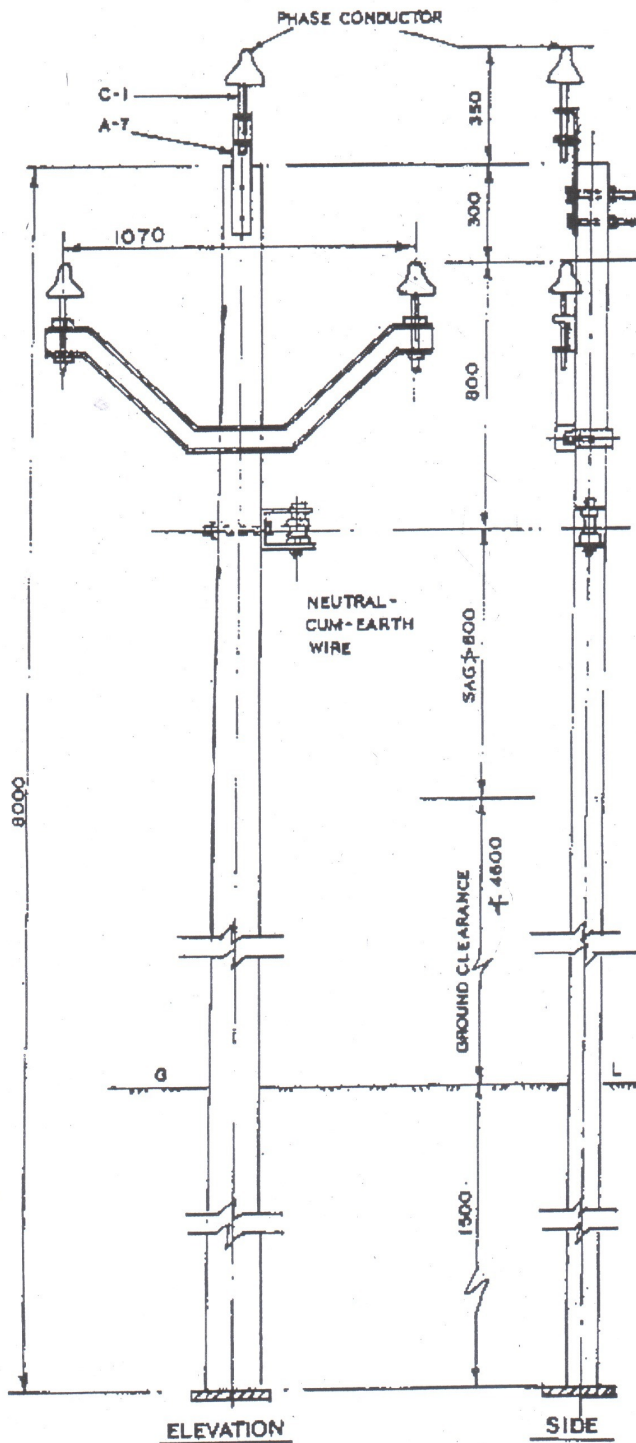
ALL DIMENSIONS ARE IN MM.

११ के वी लाईन  
निकासी व्यवस्था एक खम्भे से निकाला

11KV LINE  
TAPPING ARRANGEMENT  
SINGLE POLE TAPPING

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

REC  
CONSTRUCTION STANDARD  
A-16



BILL OF MATERIAL

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

NOTES:-

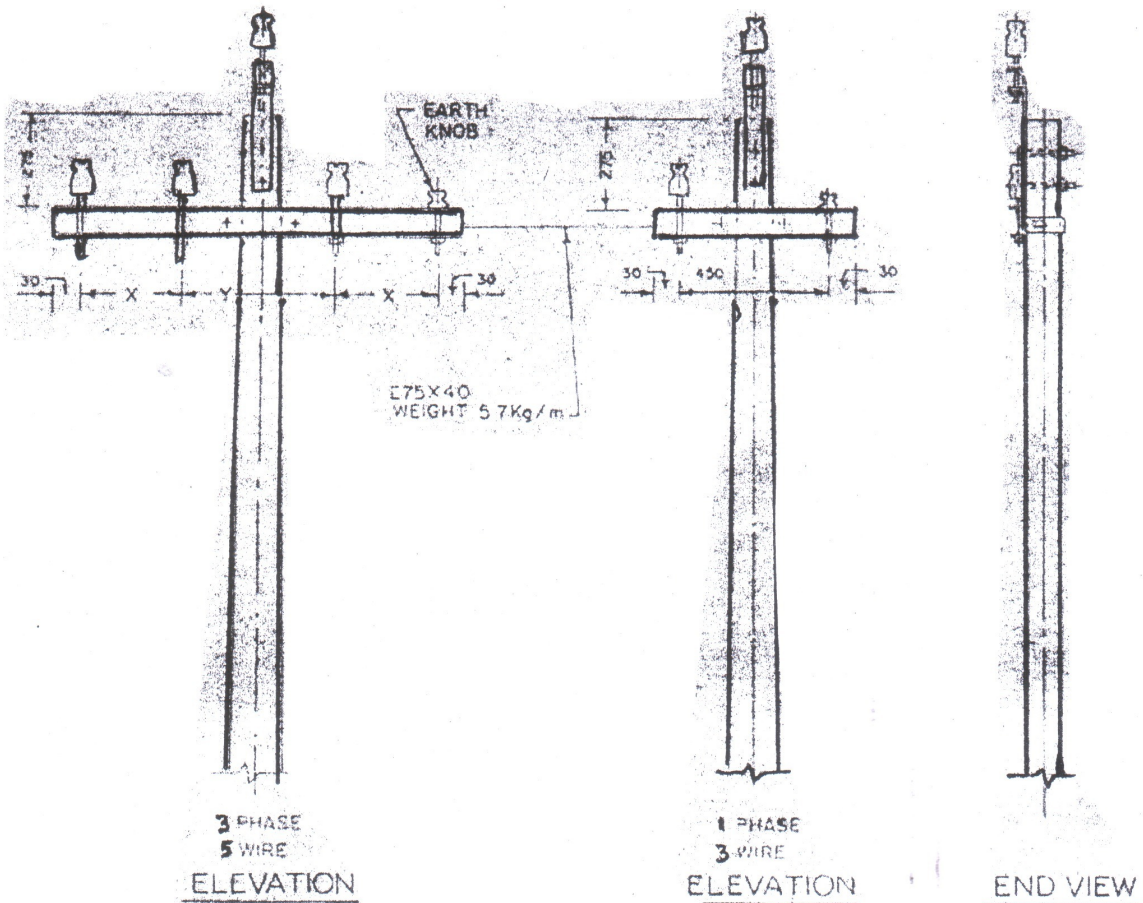
1. IF THROUGH BOLT ARRANGEMENT FOR FIXING THE SHACKLE INSULATOR TO THE POLE IS NOT POSSIBLE, SUITABLE POLE CLAMP MAY BE USED.
2. THE EARTH-CUM-NEUTRAL WIRE SHALL BE RUN ON LT SHACKLE INSULATORS

११ के.वी. ३-फेज लाइन व कन्डक्टर फारमेशन  
और क्लोयोरम-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 - 67 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  
समाप्त रचना  
415/240V LINES  
CONDUCTOR FORMATION AND  
CLEARANCES  
HORIZONTAL FORMATION

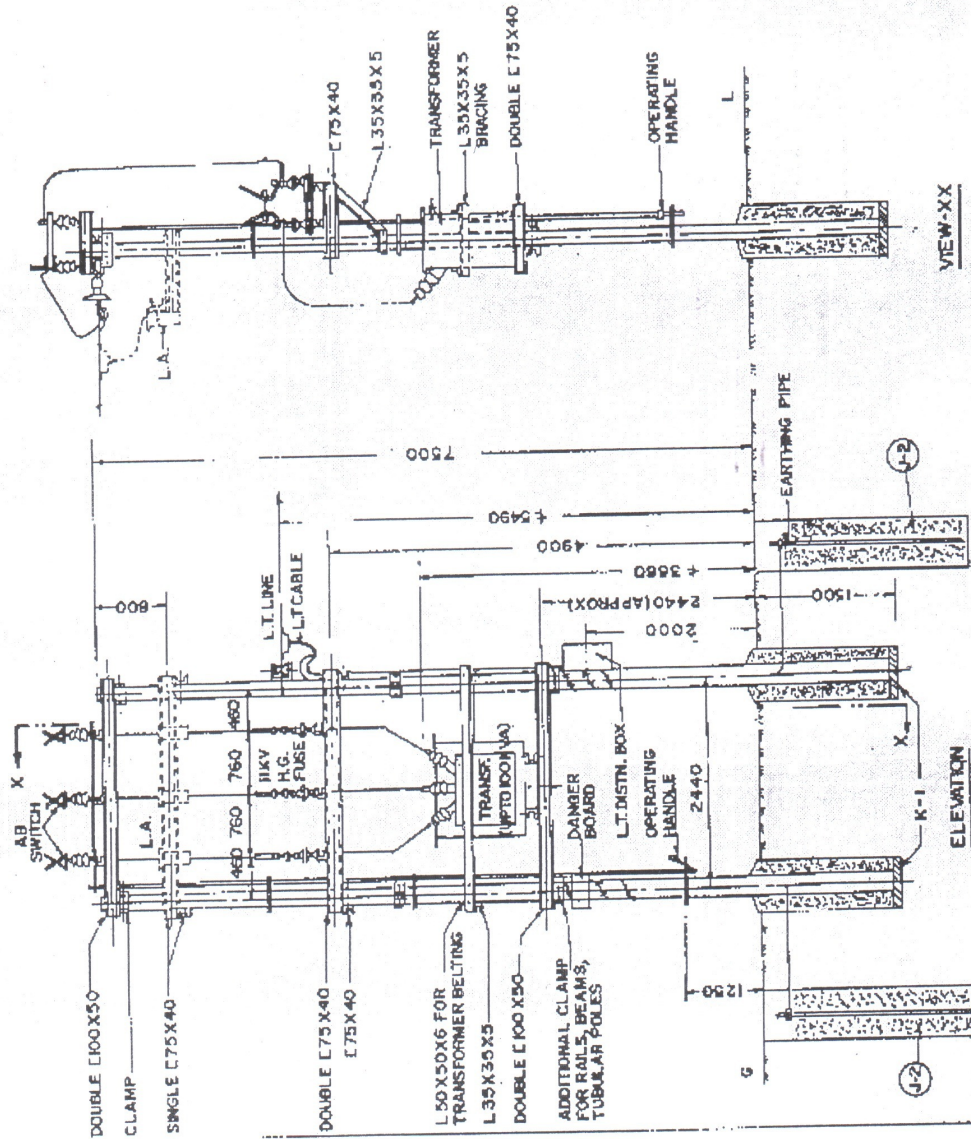
SCALE - N.T.S

SEPT. - 1972

REC  
CONSTRUCTION STANDARD  
F-2

BILL OF MATERIAL

SUPPORTS - 9 m.	2
CHANNELS 100X50 - 2600 (APPROX.)	4
CHANNELS 75 X 40 - 2600 (APPROX.)	2+1
CHANNELS 75 X 40 - X-ARM FOR SUPPORTING H.G. FUSE & L.A.	2+2
ANGLES 50 X50X6 - 2600 (APPROX.)	2
ANGLES 35X35X5 - 460 (APPROX.)	2
ANGLES 35X35X5 - 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	1 SE
11 KV. LIGHTNING ARRESTERS	3
DISTRIBUTION BOX	1
EARTHING SET	AS REQD.
DANGER BOARD	1
CLAMPS, NUTS, BOLTS, BARBED WIRE ETC. AS REQD.	AS REQD.
L.T. CABLE	AS REQD.

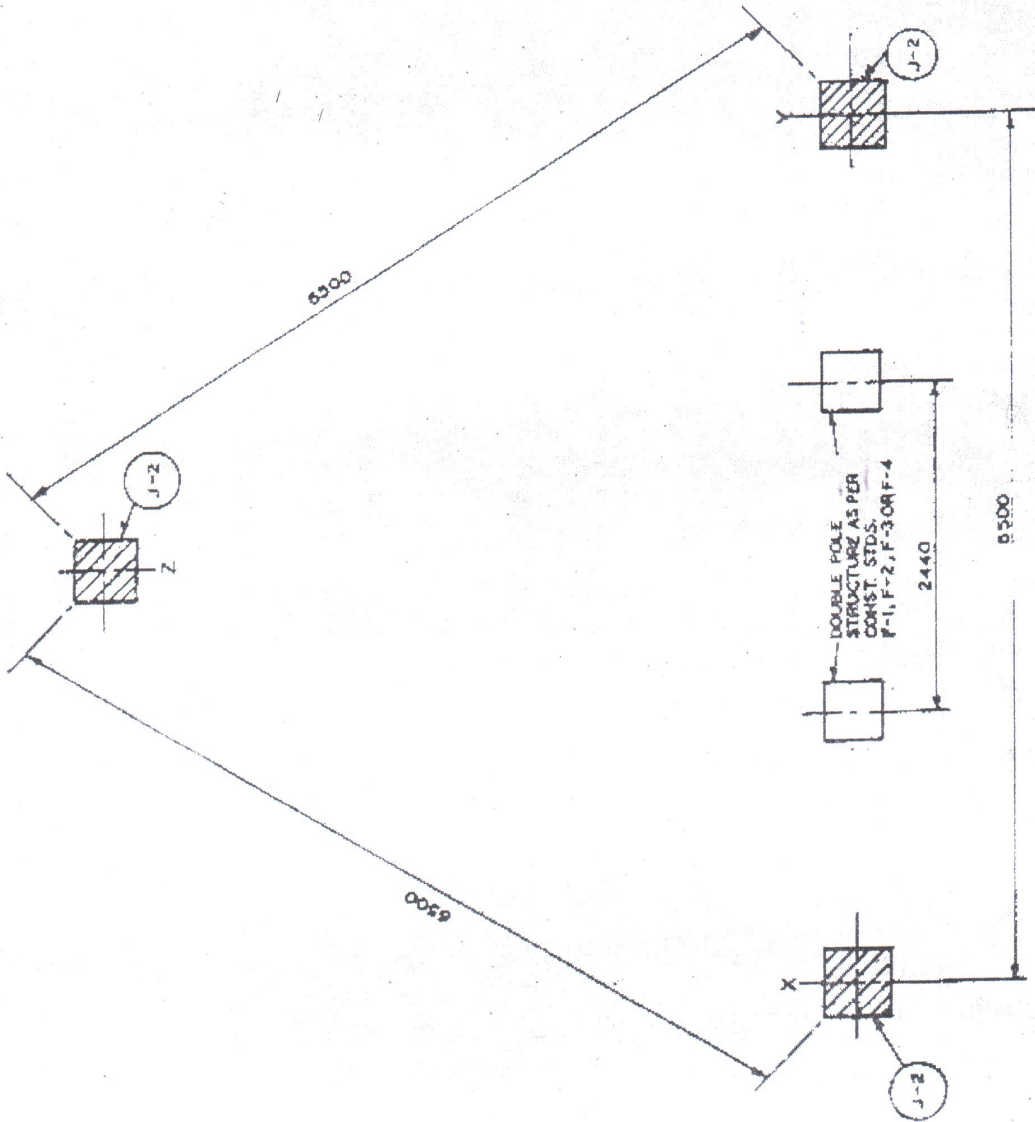


सं. १०/५३३-२५० वीट  
११.०.१९७२  
11KV/433-250 V  
DISTRIBUTION SUB-STATION  
WITH A.B. SWITCH &  
HORN GAP FUSES  
SCALE: N.T.S. 1972/JAN.-19

REC  
CONSTRUCTION STANDARD  
F-5

NOTES:

- I. 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 LT 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 11KV AB SWITCH.
- IV. ONE SEPARATE CONNECTION FROM THE EARTHING TERMINAL OF THE POLES.
- V. 4mm<sup>2</sup> (B.S.M.G) G.I. WIRE SHOULD BE USED FOR EARTH LEADS.



ALL DIMENSIONS ARE IN MM.

॥ क्व/४३३-२५० स्टेशन  
विद्युत धारक-द्विधारी  
संरचना के अर्थ में  
संरचना के अर्थ में

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

PLAN

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





REC  
CONSTRUCTION STANDARD  
F-8  
(REVISED-1967)

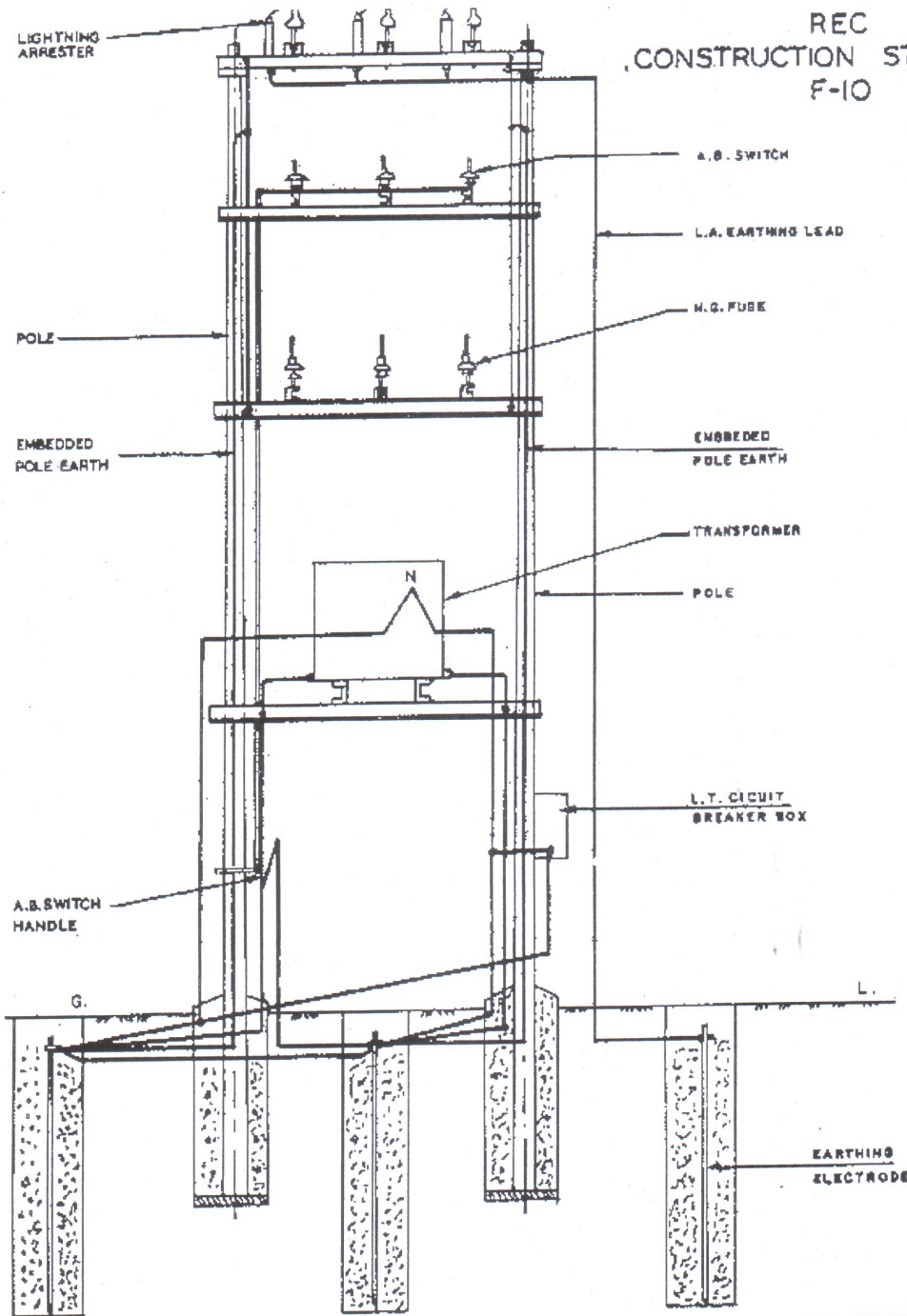
RECOMMENDED TYPE AND SIZES OF MULTICORE CABLES

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  
मल. टी. बहुकोर केबिल (एल्यूमीनम)  
संस्तुत प्रकार एवं आकार  
L.T MULTICORE CABLES (ALUM.)  
FOR DISTRIBUTION SUB-STATIONS  
RECOMMENDED TYPE AND SIZES.

FEBRUARY - 1970



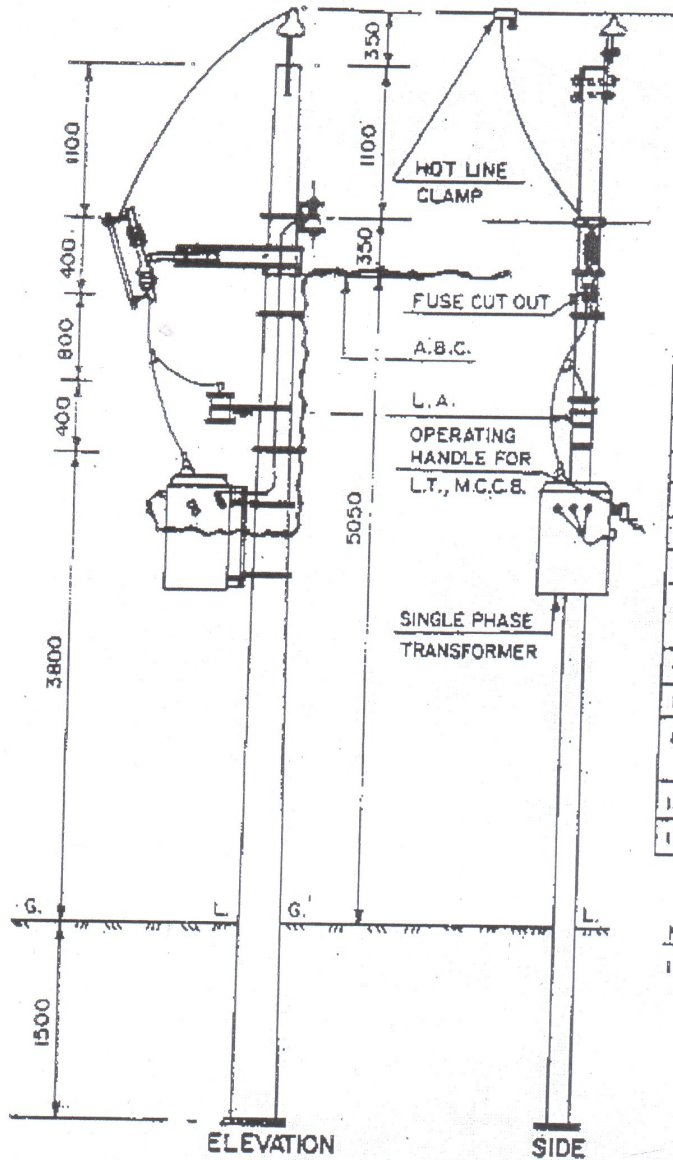
ALL DIMENSIONS ARE IN mm.

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	
3.	11KV PH 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 REQD.
10.	POLE CLAMPS	4
11.	EARTHING MATERIAL, NUTS, BOLTS, CLAMPS ETC.	AS REQD.
12.	HOTLINE CLAMP	1
13.	BASE PLATE	1

NOTE:-

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

ALL DIMENSIONS ARE IN mm.

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

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

SCALE:- N.T.S

JULY, 1987





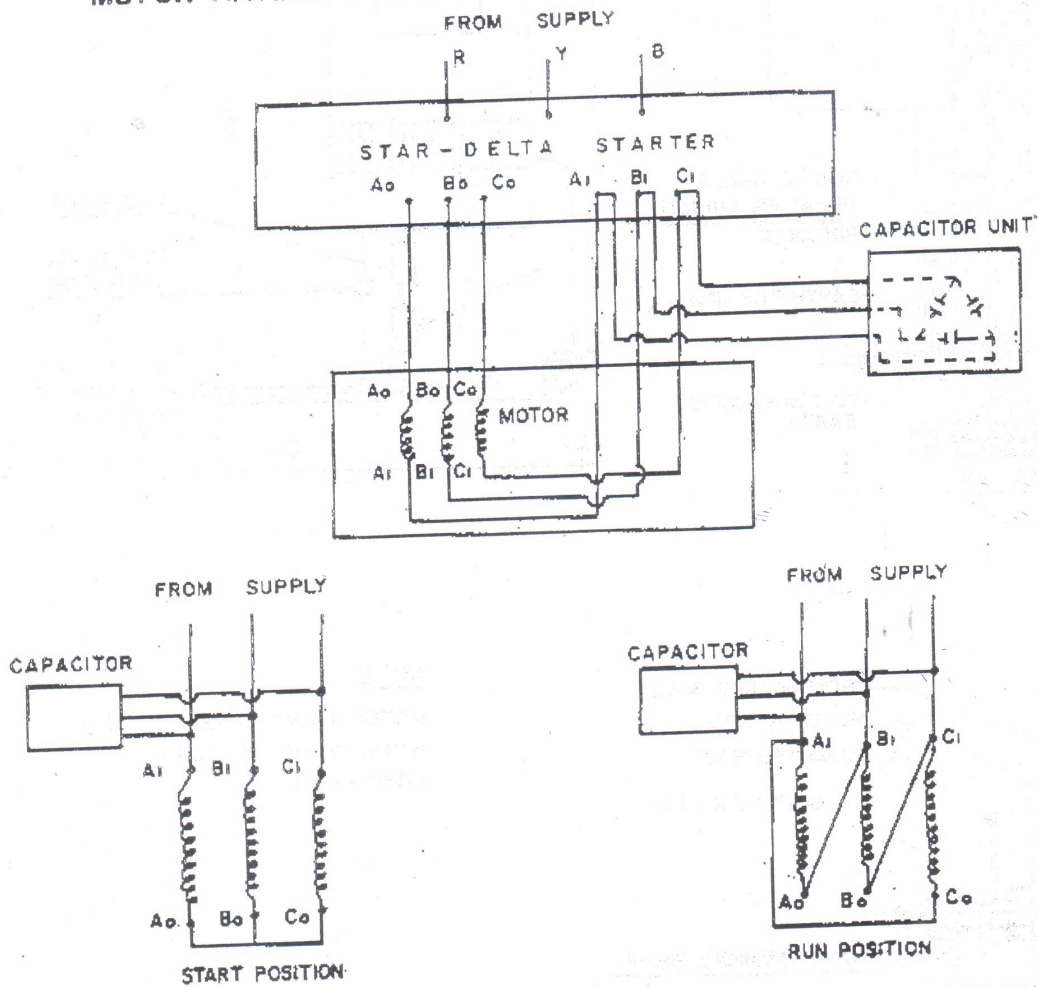


REC  
CONSTRUCTION STANDARD  
H-9

RECOMMENDED CAPACITOR RATINGS

MOTOR RATING	22KW(3H.P.)	37KW(5H.P.)	55KW(75H.P.)	75KW(10H.P.)
CAPACITOR RATING IN KVAR	1	2	3	4

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

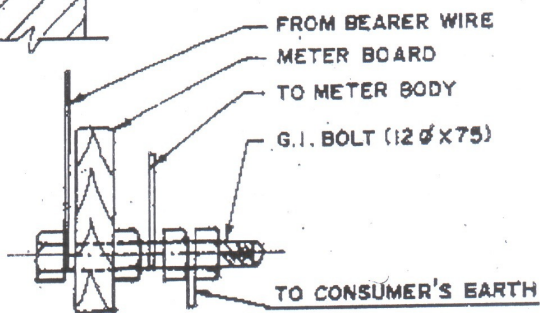
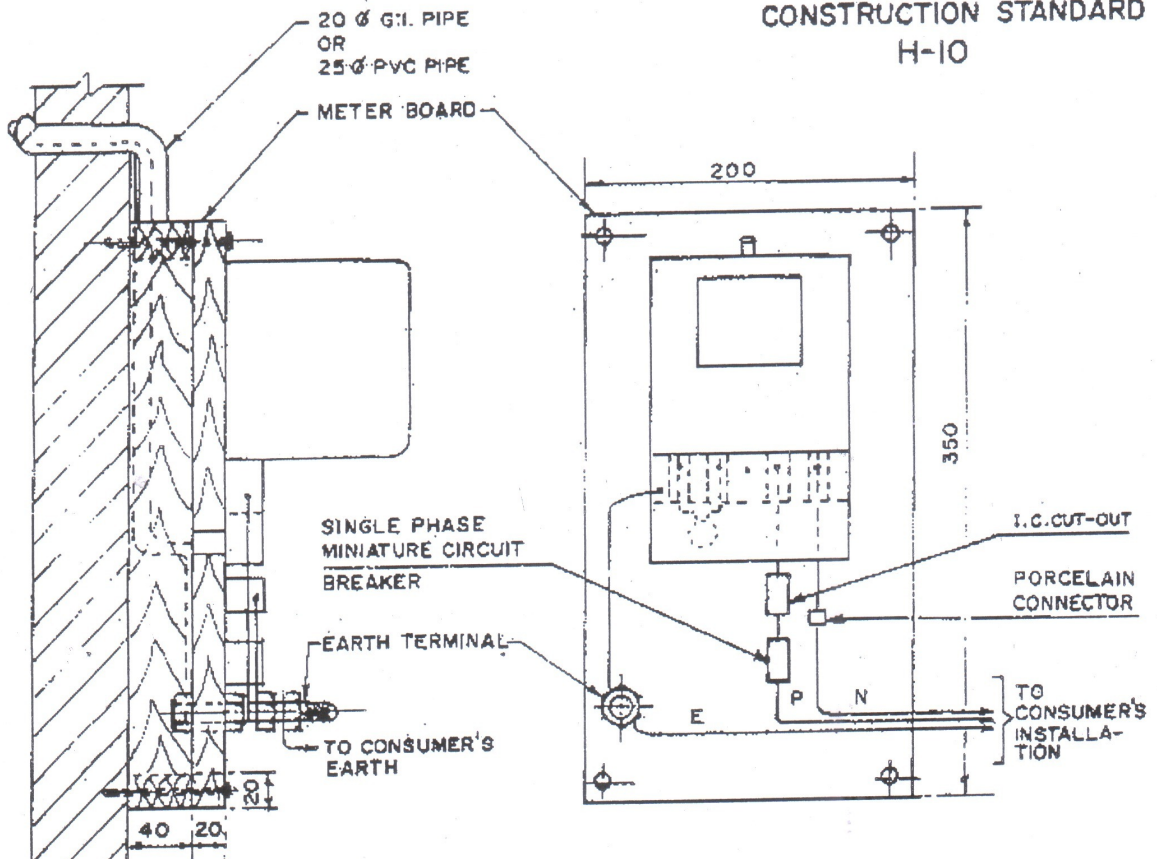


एल. टी. कैपेसिटर  
कनेक्शनों की संस्तुत रेटिंग एवं पद्धति  
L.T. CAPACITORS  
RECOMMENDED RATINGS  
AND MODE OF CONNECTIONS

MARCH-1974.



REC  
CONSTRUCTION STANDARD  
H-10



EARTH TERMINAL DETAILS

NOTE :-

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

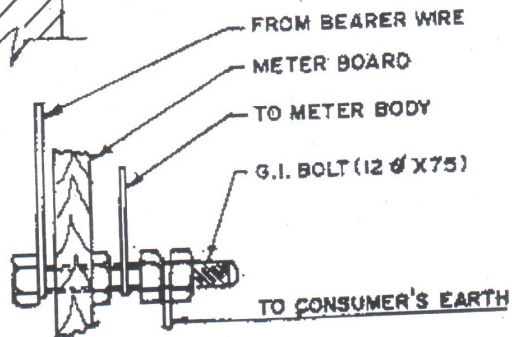
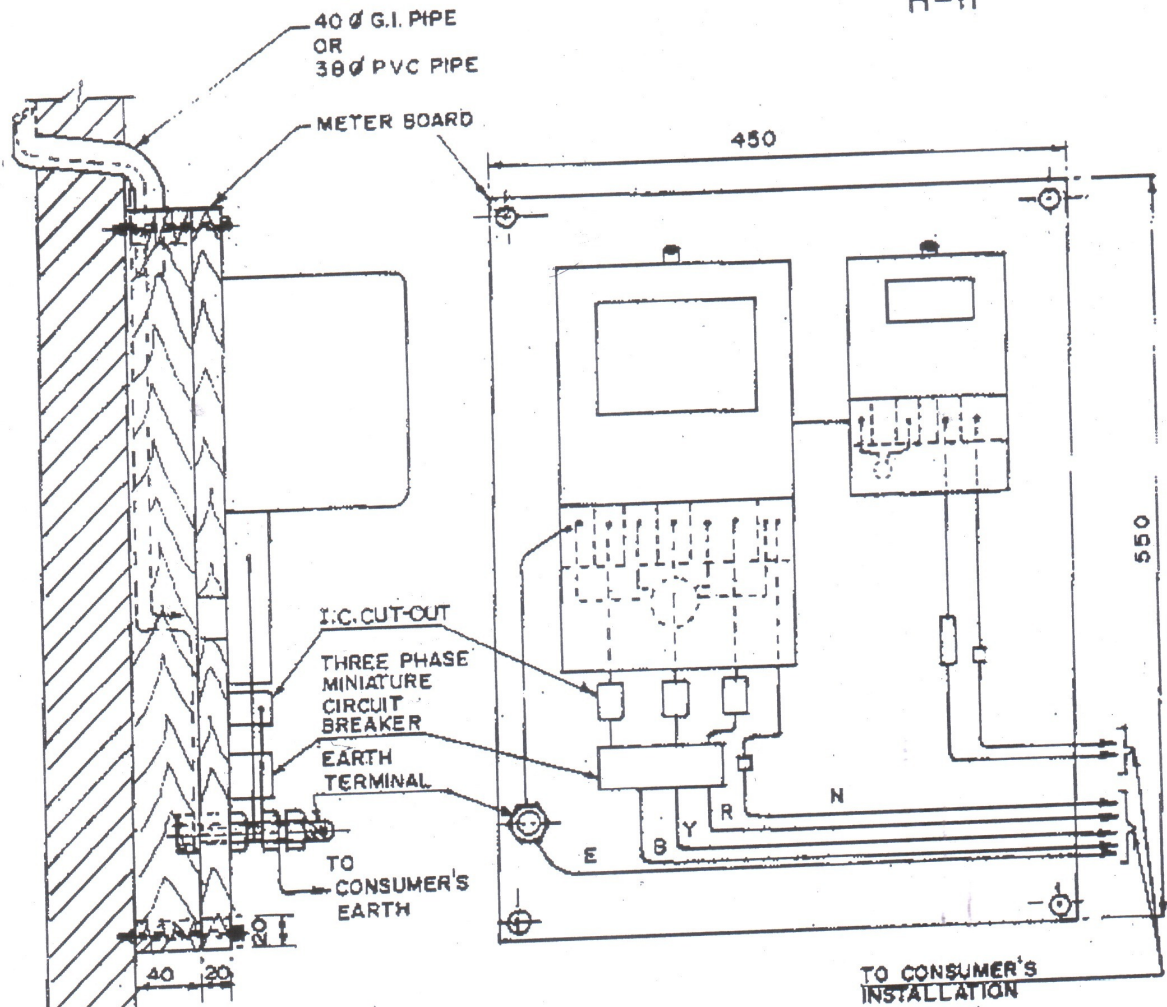
ALL DIMENSIONS ARE IN MM.

एम. 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-II



**EARTH TERMINAL DETAILS**

**NOTES:-**

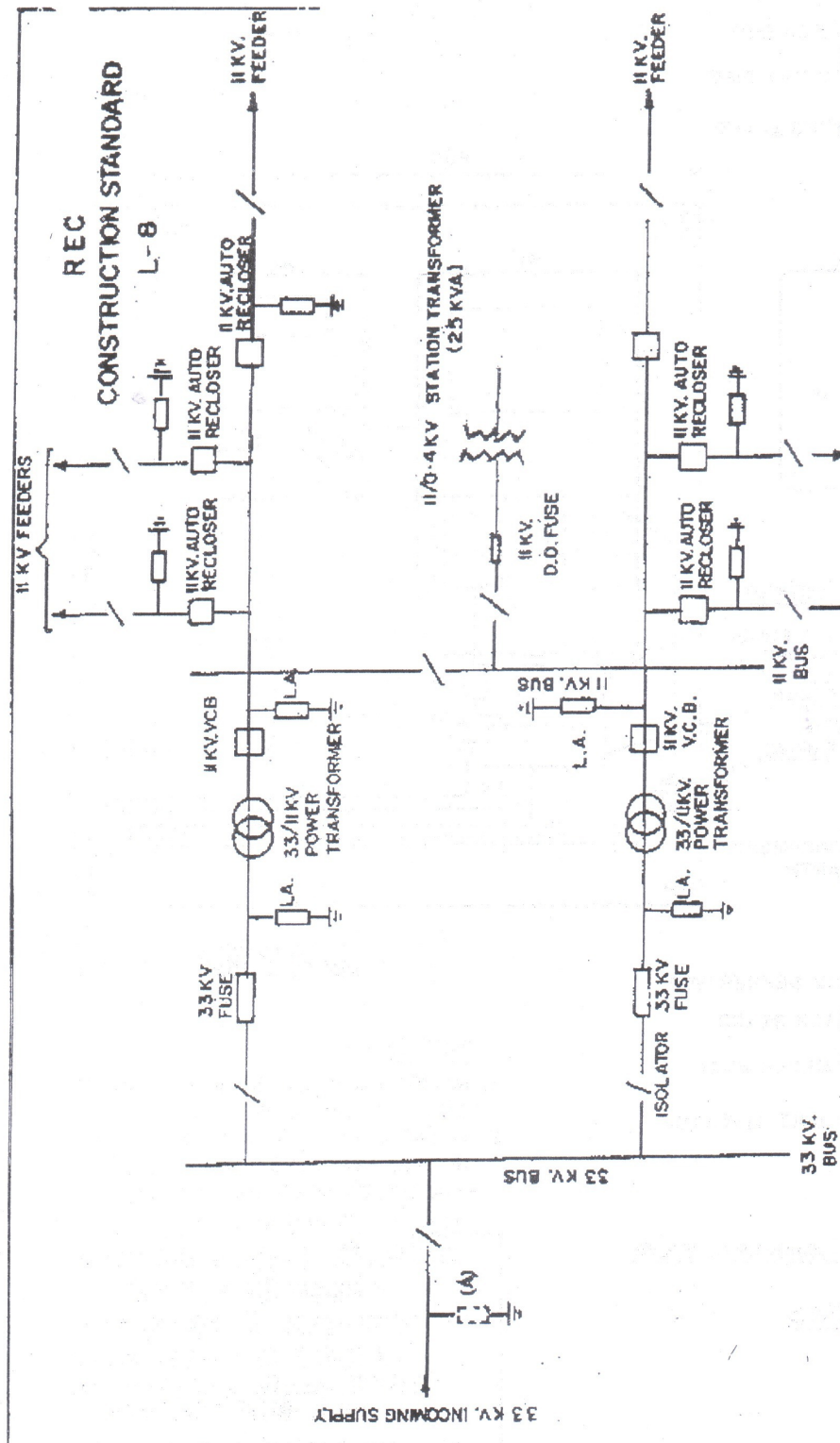
1. METER BOARD CAN BE OF TEAK WOOD OR ANY SUITABLE HARD WOOD.
  2. WHERE ONLY A THREE PHASE METER IS TO BE USED, THE DIMENSIONS OF THE METER BOARD MAY BE 550X350
- ALL DIMENSIONS ARE IN mm.

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

(WITH SEPARATE NEUTRAL AND EARTH)

SCALE: N.T.S.

MAY, 1993.



REC  
CONSTRUCTION STANDARD  
L-8

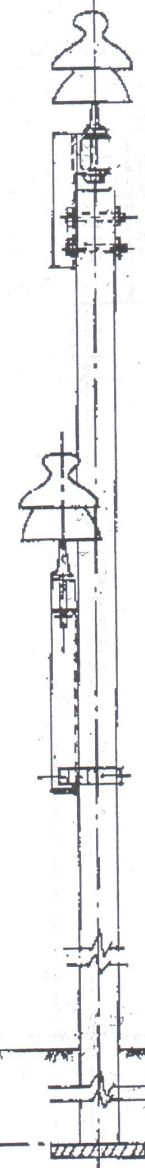
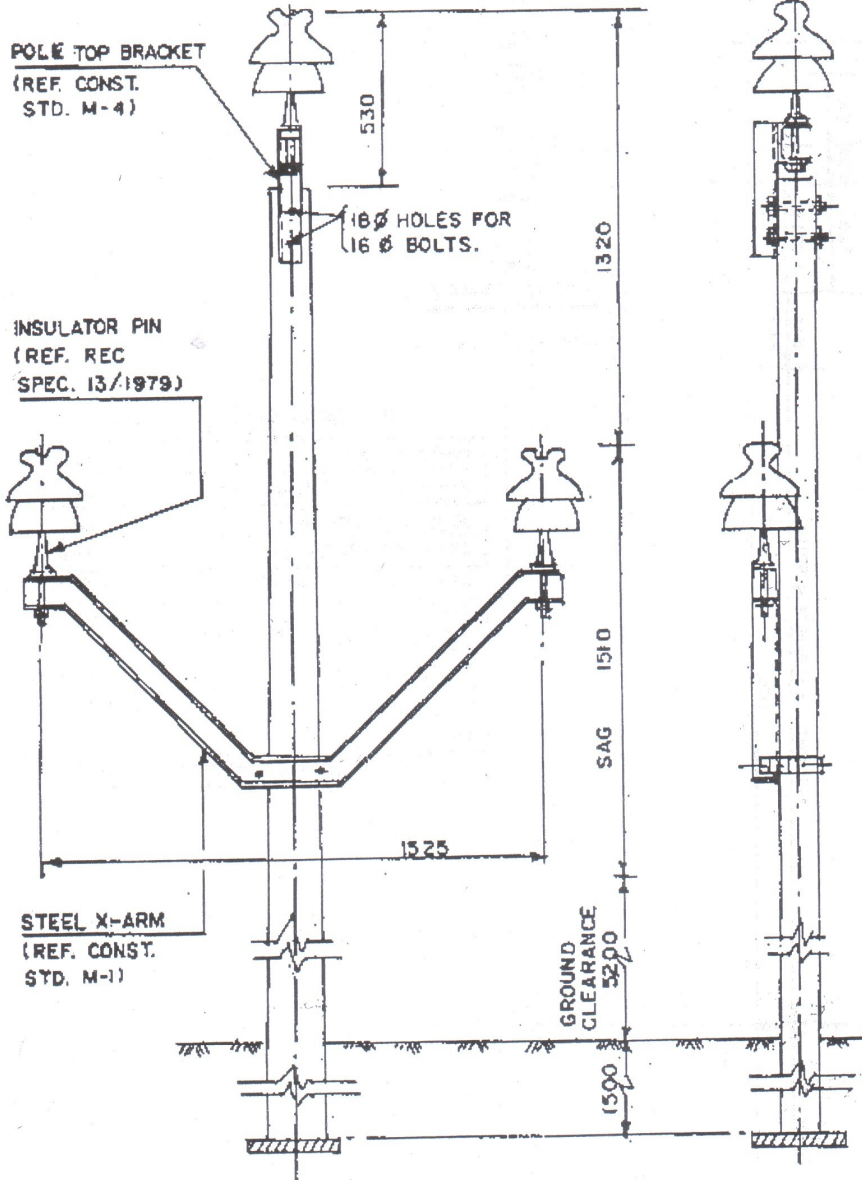
**LEGEND**

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

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

डॉ. आर. के. वी. ट्रांसफार्मर के साथ  
 33/11 के. वी. कनेक्सी रजिस्टर सिस्टम के सब-स्टेशन  
 का एकल लाईन डायग्राम  
 SINGLE LINE DIAGRAM  
 OF 33/11KV. UNATTENDED TYPE  
 SUB-STATION WITH TWO 33/11KV. TRANSFORMERS  
 SCALE: N.T.S. | SEPT., 1997

R E C  
CONSTRUCTION STANDARD  
M - 3



BILL OF MATERIAL

9-DM SUPPORT	1
POLE TOP BRACKET	1
V- CROSS ARM (M.S.CHANNEL-100X50X6-4)	1
BACK CLAMP	1
BOLTS 16 $\phi$	4
33 KV PIN INSULATOR	3
33 KV PINS	3
EARTHING COMPLETE	1

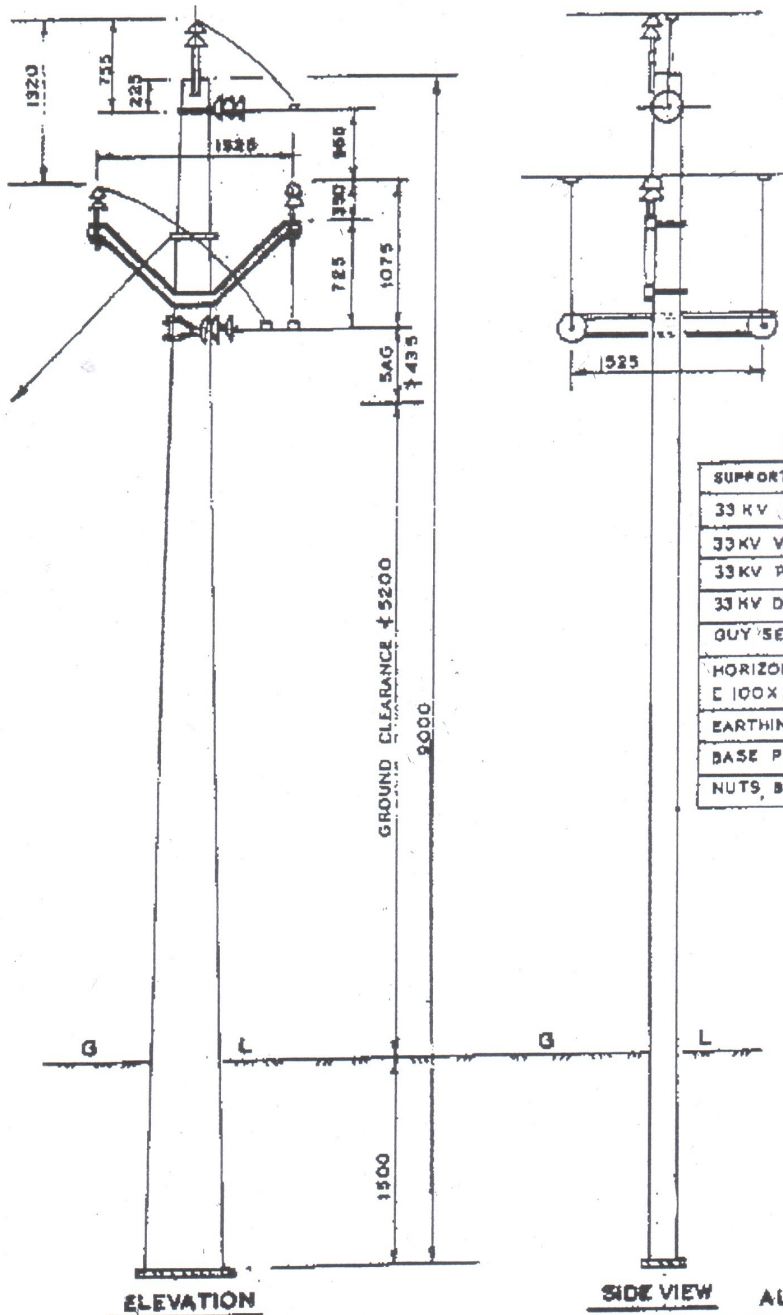
TANGENT LOCATION  
MAX. SPAN 125 M  
(CROSS COUNTRY)

ALL DIMENSIONS ARE IN mm.

३३ 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 - P.O.M	END.
33 KV POLE TOP BRACKET	1NO.
33KV V-CROSS ARM	1NO.
33KV PIN INSULATOR	3NOS.
33KV DISC INSULATORS	3SETS
GUY SET	1NO.
HORIZONTAL CROSS ARM E 100X50X6.4	1NO.
EARTHING MATERIAL	AS REQD.
BASE PLATE	1NO.
NUTS, BOLTS, POLE CLAMPS ETC AS REQD.	

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

SIDE VIEW ALL DIMENSIONS ARE IN mm.

३३ के. वी. लाईन  
टैपिंग व्यवस्था  
सिंगल पोल टैपिंग

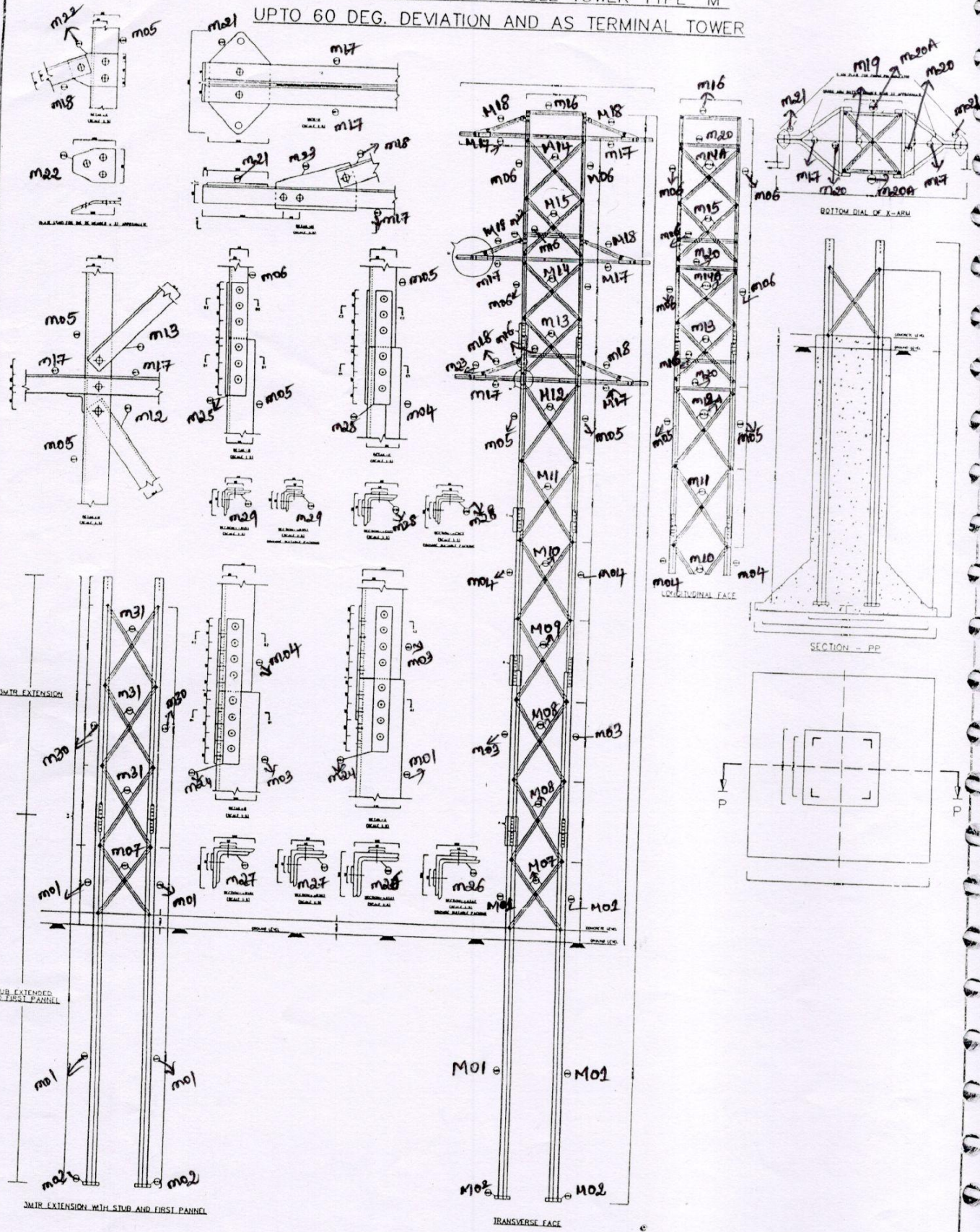
33 KV LINES  
TAPPING ARRANGEMENT ON  
SINGLE POLE

SCALE: N.T.S. OCT., 1967

STRUCTURAL DRAWING

OF

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



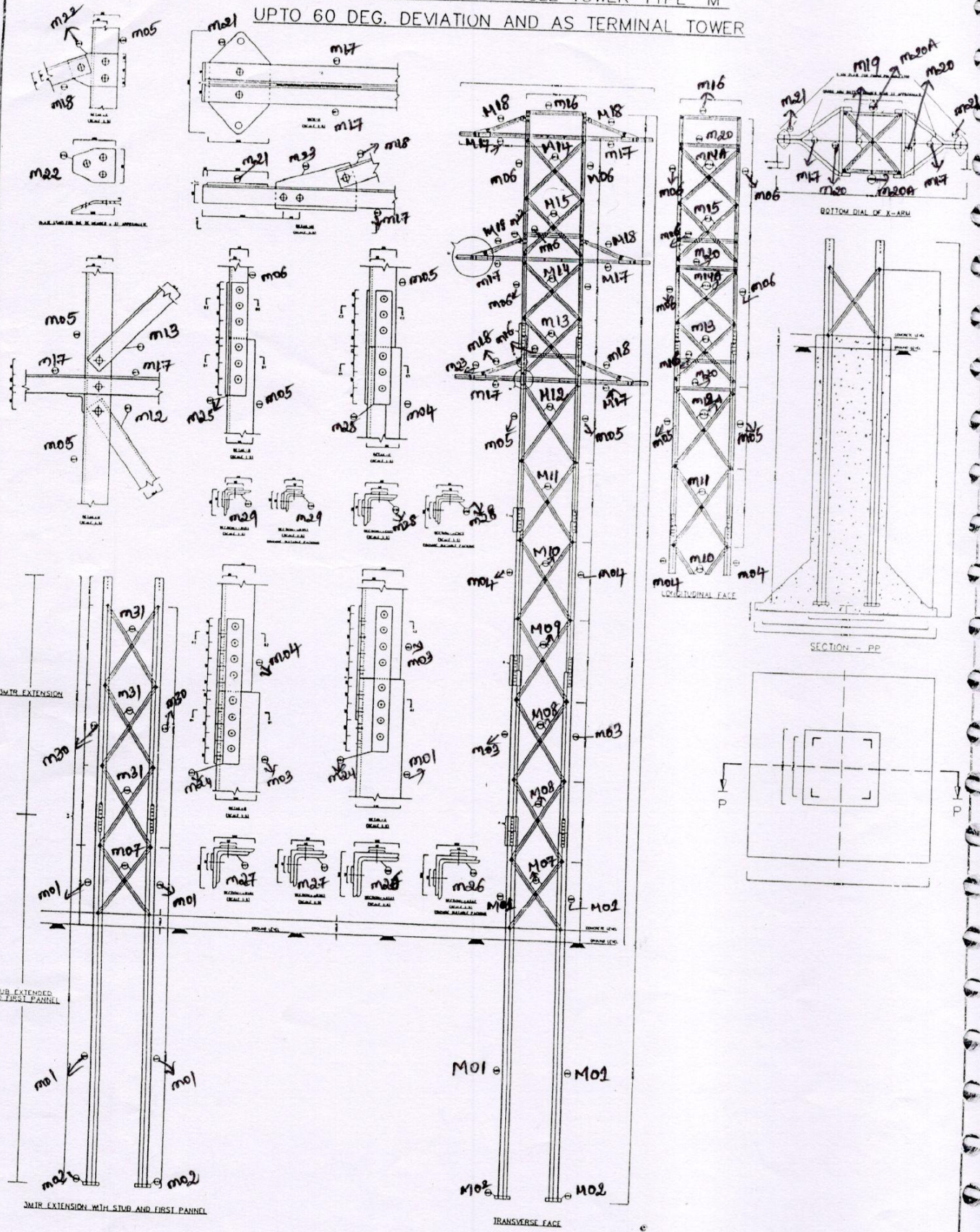
CENTRAL POWER DISTRIBUTION COMPANY OF  
ANDHRA PRADESH LTD, MENT COMPOUND, HYDERABAD  
33 K.V. DOUBLE CIRCUIT  
ANGLE TOWER TYPE "M"  
UPTO 60 DEG. DEVIATION AND AS  
TERMINAL TOWER

For clarity of drawing, may refer the Cost data 18-19 pdf file placed on <sup>ISSP del</sup> website.

STRUCTURAL DRAWING

OF

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



CENTRAL POWER DISTRIBUTION COMPANY OF  
 ANDHRA PRADESH LTD, MENT COMPOUND, HYDERABAD  
 33 K.V. DOUBLE CIRCUIT  
 ANGLE TOWER TYPE "M"  
 UPTO 60 DEG. DEVIATION AND AS  
 TERMINAL TOWER

For clarity of drawing, may refer the Cost data 18-19 pdf file placed on <sup>ISSP del</sup> website.

## 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

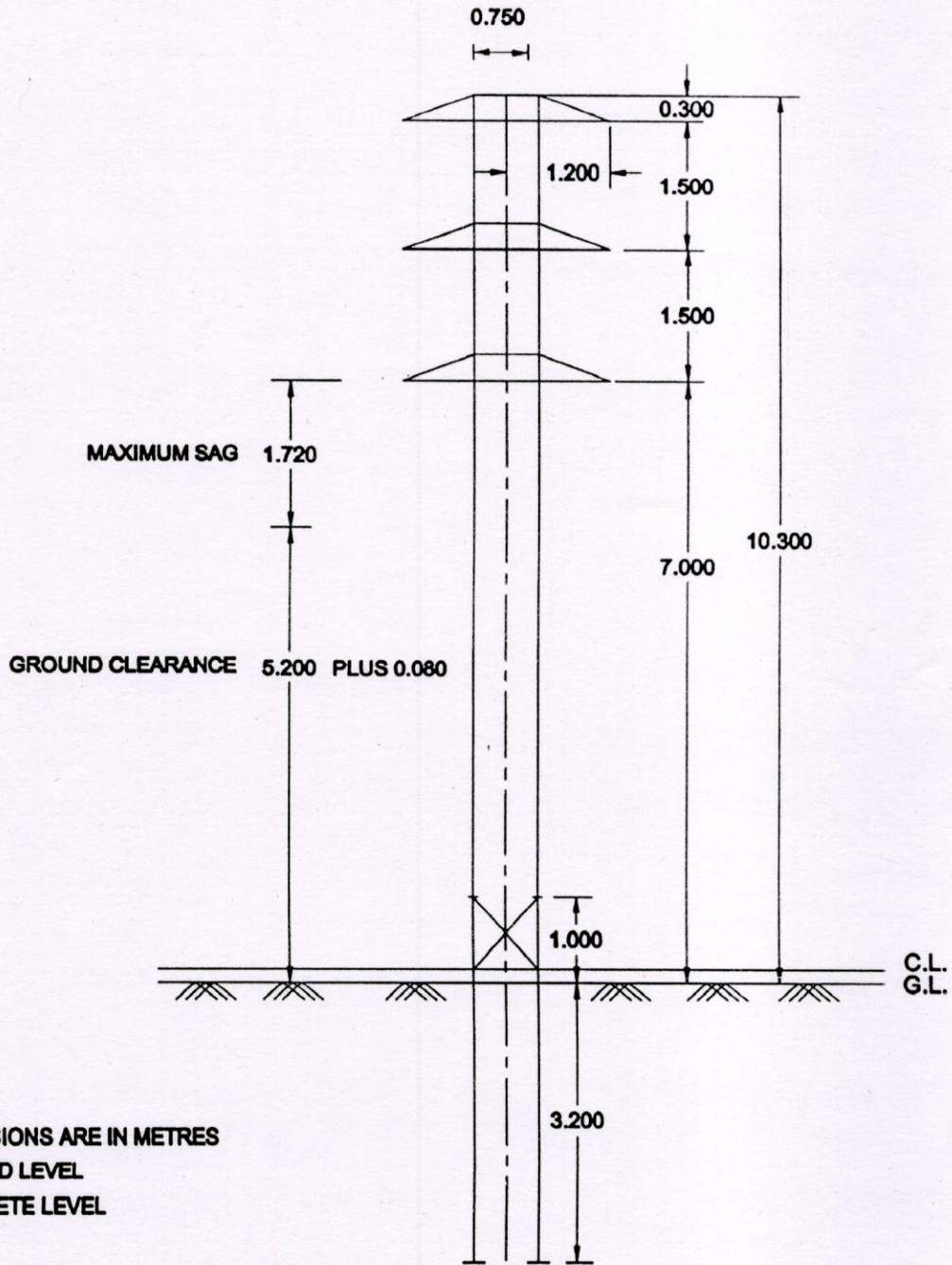
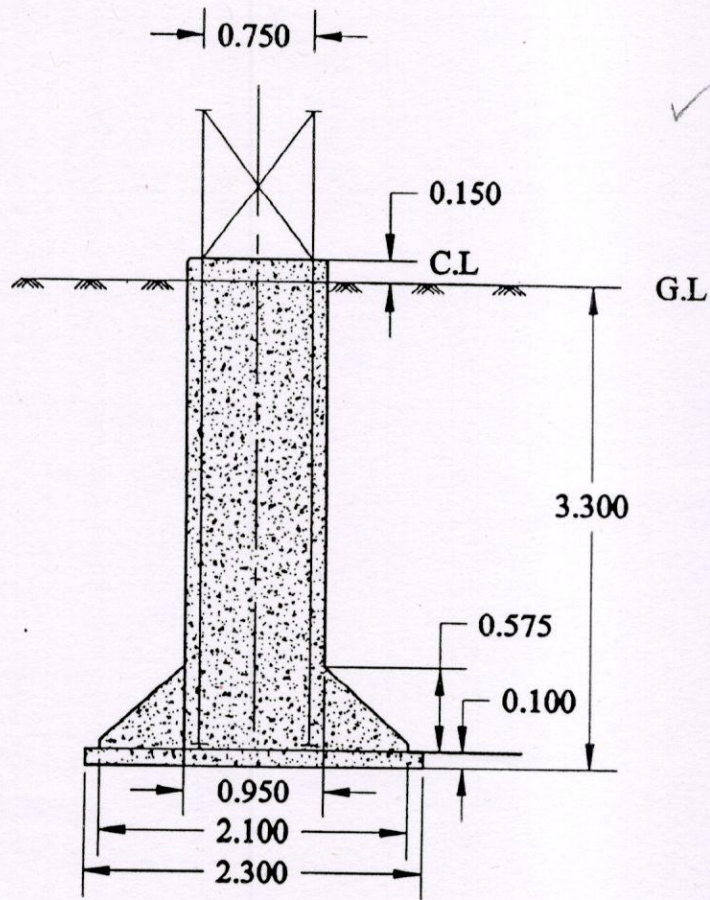


FIG - 11

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

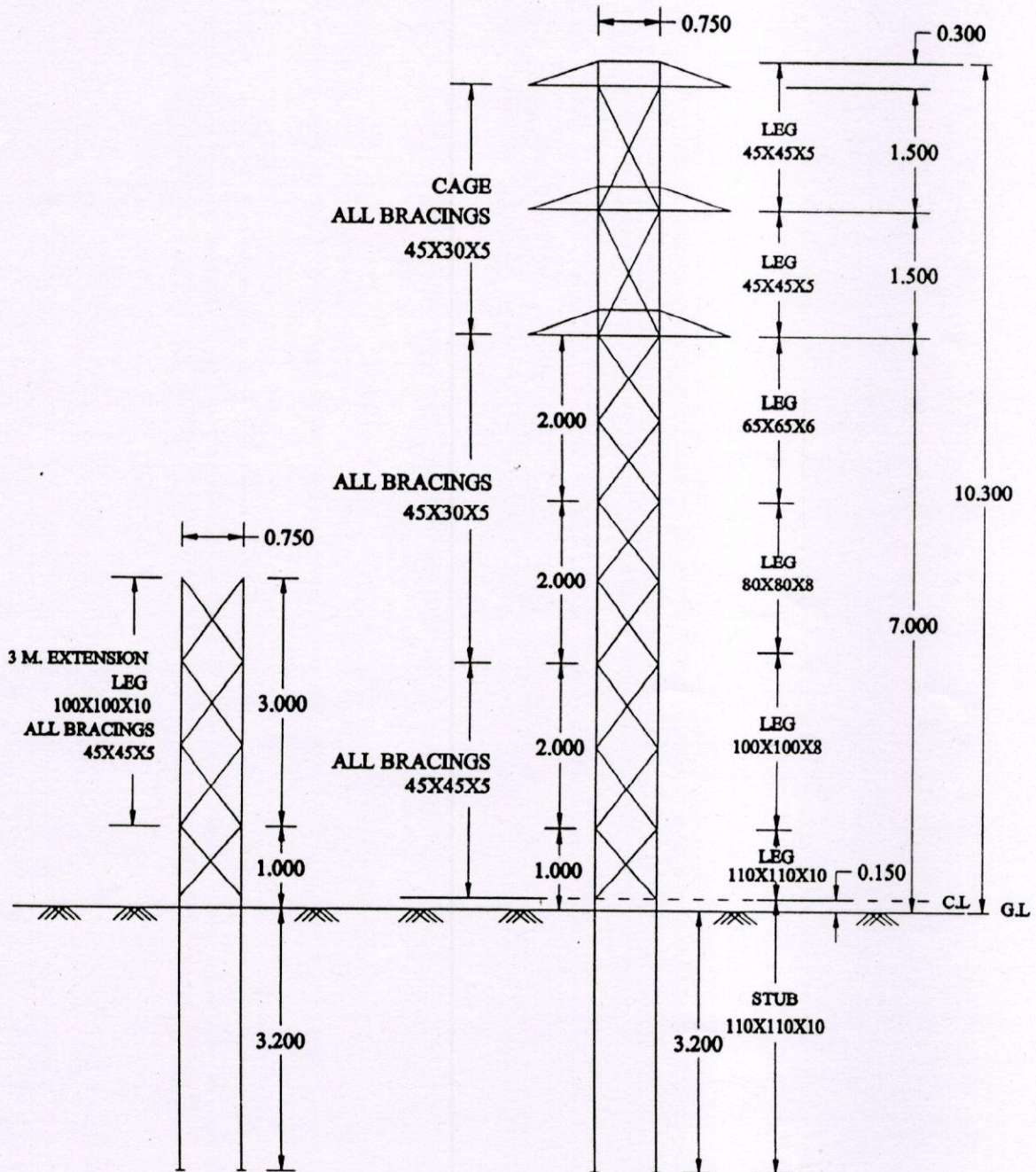
THE FOUNDATION IS SUITABLE FOR NORMAL TOWER, PLUS 3M AND PLUS 6M EXTENSIONS.

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.

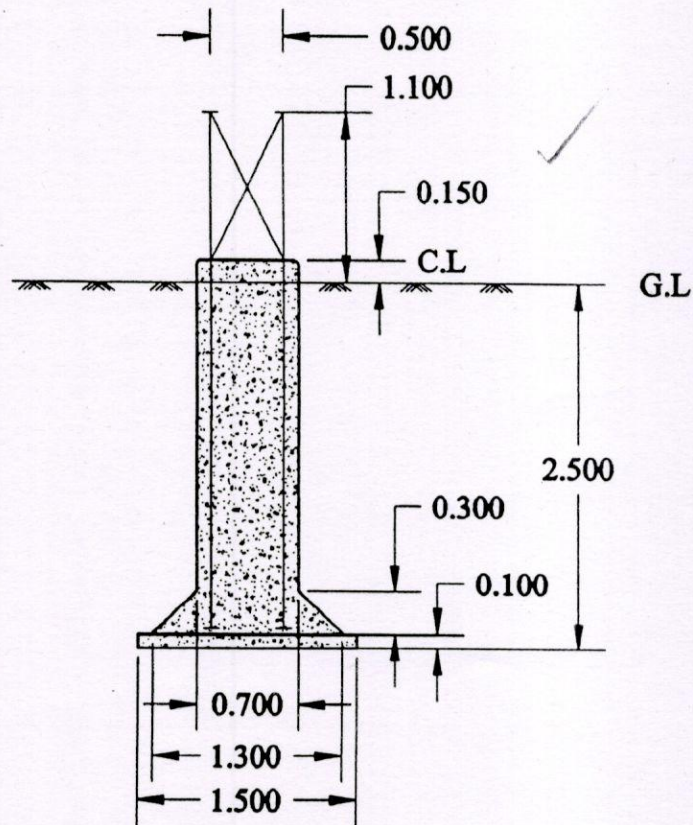
ALL DIAGONALS SHALL HAVE SINGLE BOLT CONNECTIONS.

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.

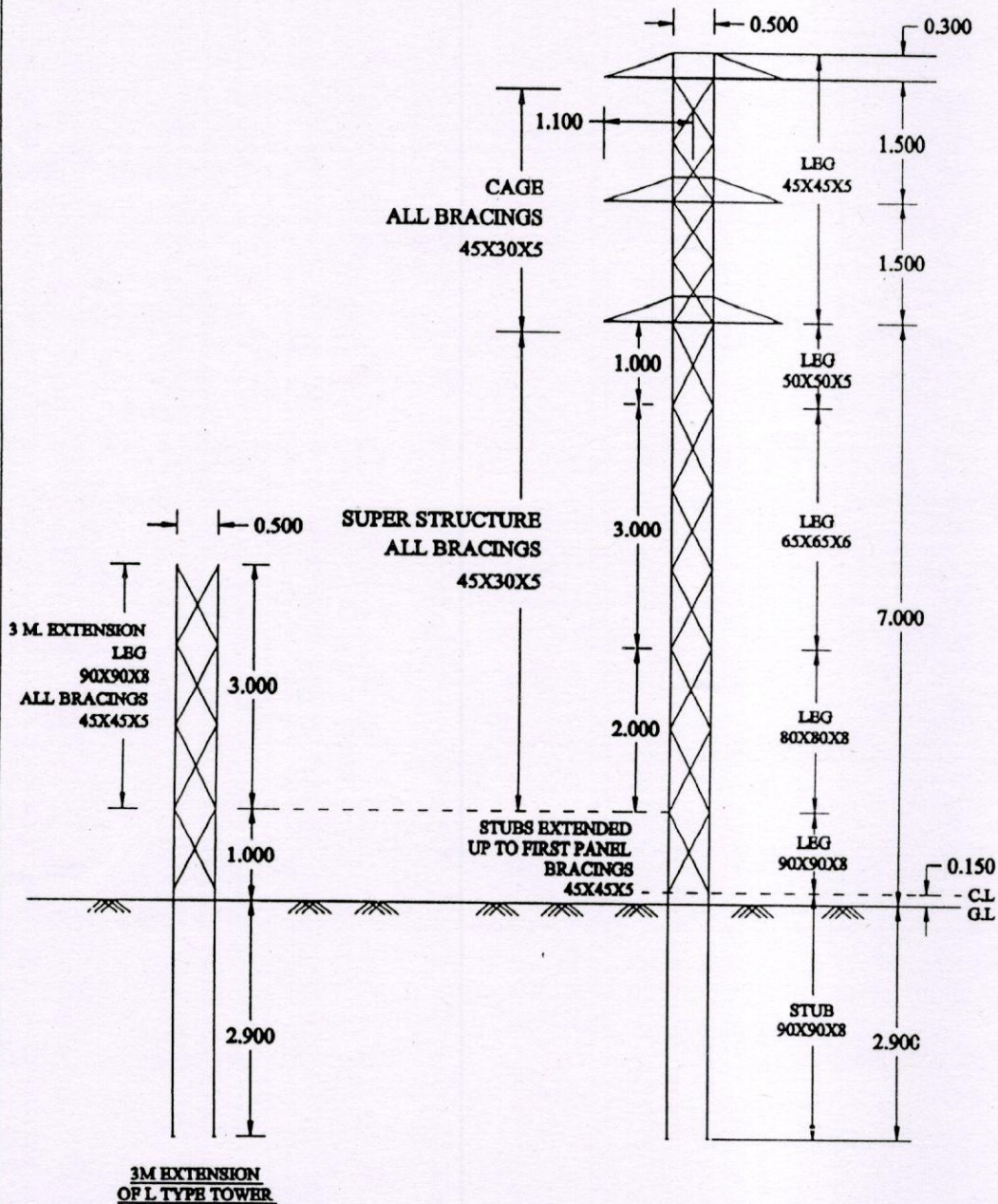
THE FOUNDATION IS SUITABLE FOR NORMAL TOWER, PLUS 3M AND PLUS 6M EXTENSIONS.

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