SOUTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LIMITED

COST DATA FOR THE YEAR 2024-25

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

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

Memo No.CGM(P)/SE(P)/DE(RE)/D.No.72 /2024, Dt: 20- 04 - 2024.

Sub: Projects – Approved Cost Data for the FY 2024-25- Communication - Reg.

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The Cost Data for FY 2024-25 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 2024-25 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 2024-25 is herewith enclosed. The soft copy is placed in 202/cgm-proj/Cost-data FY24-25. The cost data for FY2024-25 is also available on the TSSPDCL website i.e., **www.tssouthernpower.com.**

This is issued with the concurrence of Chairman & Managing Director/TSSPDCL, vide Dt:19.04.2024.

Encl: As above.

20/4

Chief General Manager / Projects

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

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

Copy submitted to
The Director (Projects & IT)/ TSSPDCL, Corporate Office, Mint Compound, Hyderabad.
The Director (Operation & P&MM)/TSSPDCL, Corporate Office, Mint Compound, Hyderabad.
The Director (Comml & IPC&RAC)/TSSPDCL, Corporate Office, Mint Compound, Hyderabad.
The Director (Finance & HR&IR)/TSSPDCL, Corporate Office, Mint Compound, Hyderabad.

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

Sl. No	Name of the Material	P.O. No.		Unit	Rupees	EX-Works	F&I	Basic Price	GST	% GST	SAP Code No.
1	2	3		4	5	6	7	8	9	10	11
SUBHEAD - I : SUPPORTS AND FIXTURES, IRON, STEEL AND CEMENT											
1 (a)	RS Joists 175 x 85 mm.	D.No.9525/23-24, Dt: 11-03-2024 - SAIL	4100015917	MT	71685.00	59500.00	1250.00	60750.00	10935.00	18	MST00032
(b)	RS Joists 150 x 150 mm.	D.No.5386/23-24, Dt: 13-09-2023 - SAIL	4100015307	MT	71685.00	59500.00	1250.00	60750.00	10935.00	18	MST00029
2	MS Channel 100 x 50mm.	D.No.8107/23-24, Dt: 23-01-2024 - RINL	4100015767	MT	64605.00	53500.00	1250.00	54750.00	9855.00	18	MST00012
3	MS Channel 75 x 40 mm	D.No.8107/23-24, Dt: 23-01-2024 - RINL	4100015767	MT	65785.00	54500.00	1250.00	55750.00	10035.00	18	MST00013
4	MS Angle 65 x 65 x 6 mm.	D.No.7797/23-24, Dt: 05-01-2024	4100015672	MT	68145.00	56500.00	1250.00	57750.00	10395.00	18	MST00003
5	MS Angle 50 x 50 x 6 mm	D.No.8959/23-24, Dt: 19-02-2024 - RINL	4100015844	MT	66611.00	55200.00	1250.00	56450.00	10161.00	18	MST00002
6	MS Flat 75x 8 mm	PM-4074/23-24, Dt: 06-02-2024	5100005653	MT	70300.00	57076.27	2500.00	59576.27	10723.73	18	MST00015
7	MS Flat 50 x 6 mm	PM-4075/23-24, Dt: 06-02-2024	5100005645	MT	70300.00	59576.27	-	59576.27	10723.73	18	MST00014
8	MS Rod 20 mm.	D.No.8959/23-24, Dt: 19-02-2024	4100005844	MT	64959.00	53800.00	1250.00	55050.00	9909.00	18	MST00019
9	MS Rod 16 mm.	PM-4085/23-24, Dt: 13-02-2024	5100005647	MT	65502.98	52011.00	3500.00	55511.00	9991.98	18	MST00018
10	GI Stay wire 7/3.15 mm.	PM-3990/23-24, Dt: 19-10-2023	5100005581	MT	88000.00	73776.27	800.00	74576.27	13423.73	18	WRS00006
11	GI Stay wire 7/2.5 mm	PM-3859/23-24, Dt: 14-07-2023	5100005455	MT	89999.99	75471.18	800.00	76271.18	13728.81	18	WRS00007
12	GI wire 4 mm	PM-4006/23-24, Dt: 07-11-2023	5100005606	MT	86140.00	72200.00	800.00	73000.00	13140.00	18	WRS00005
13	PSCC Poles (11 M) 365 Kgs	PM-4126/23-24, Dt: 13-03-2024	5100005671	Nos.	6370.82	5000.00	399.00	5399.00	971.82	18	PLS00013
14	PSCC Pole (9.1 M) - 280 Kg WL	Extn PM-3973/23-24, Dt: 09-10-2023	5100005521	Nos.	3056.20	2390.00	200.00	2590.00	466.20	18	PLS00004
15	PSCC Pole (8.0 M) - 140 Kg WL	PM-3995/23-24, Dt: 25-10-2023	5100005528	Nos.	1650.82	1300.00	99.00	1399.00	251.82	18	PLS00001
16	15 M / 500 kgs Spun Poles	PM-3198/21-22, Dt: 31-03-2022	5100004775	Nos.	50000.00	42372.88	-	42372.88	7627.12	18	PLS00016
17	12.5 M / 350 kgs Spun Poles	Extn PM-3948/23-24, Dt: 19-09-2023	5100005523	Nos.	19000.36	16102.00	-	16102.00	2898.36	18	PLS00015
SUBHEAD - II : INSULATORS AND HARDWARE											
1	33KV Polymer Pin Insulators With GI Pins	PM-3994/23-24, Dt: 15-09-2023	5100005492	Nos.	809.48	661.00	25.00	686.00	123.48	18	INS30008
2	33 KV Post Insulators	Rpt PM-1074/16, Dt: 27-03-2017	5100002612	Sets	898.13	761.13	-	761.13	137.00	18	INS30004
3	33 KV Hard Ware Fittings (B&S)	PM-3892/23-24, Dt: 08-08-2023	5100005429	Sets	244.76	202.34	5.08	207.42	37.34	18	HWR00004
4	33 KV Polymer String Insulator (B&S)	PM-4048/23-24, Dt: 20-12-2023	5100005589	Nos.	461.38	391.00	-	391.00	70.38	18	INS30007
5	11KV Polymer Pin Insulators With GI Pins	PM-3724/23-24, Dt: 11-04-2023	5100005275	Nos.	170.39	144.40	-	144.40	25.99	18	INS10009
6	11 KV Post Insulator.	PM-3736/23-24, Dt: 18-04-2023	5100005267	Nos.	288.00	244.07	-	244.07	43.93	18	INS10008
7	11 KV String Hardware Fitting (C&T)	Ext PM-3963/23-24, Dt: 03-10-2023	5100005505	Sets	122.13	99.00	4.50	103.50	18.63	18	HWR00002
8	11 KV Polymer String insulator (C&T)	PM-3866/23-24, Dt: 24-07-2023	5100005394	Nos.	195.88	166.00	-	166.00	29.88	18	INS10003
9	11 KV Solid Core Insulators	PM-4003/23-24, Dt: 03-11-2023	5100005536	Nos.	450.00	381.36	-	381.36	68.64	18	INS10006
10	11 KV Solid Core Insulators for HG Fuses	PM-3604/22-23, Dt: 08-02-2023	5100005154	Nos.	265.50	225.00	-	225.00	40.50	18	INS10007
11	LT Pin Insulators	PM-4004/23-24, Dt: 03-11-2023	5100005538	Nos.	40.45	34.28	-	34.28	6.17	18	INS00001
12	LT GI Pins	PM-3894/23-24, Dt: 08-08-2023	5100005421	Nos.	42.99	34.43	2.00	36.43	6.56	18	HWR00015
13	LT Shackle Insulators	PM-4111/23-24, Dt: 22-02-2024	5100005658	Nos.	38.70	32.80	-	32.80	5.90	18	INS00002
14	LT Shackle Hardware (LT Metal Parts)	PM-3898/23-24, Dt: 08-08-2023	5100005425	Nos.	47.97	38.78	1.87	40.65	7.32	18	HWR00016
15	HT Guy Insulators	Rpt PM-3476/22-23, Dt: 17-11-2022	5100005013	Nos.	60.00	46.00	4.85	50.85	9.15	18	INS10005
16	LT Guy Insulators	PM-3431/22-23, Dt: 22-10-2022	5100004981	Nos.	35.05	24.30	5.40	29.70	5.35	18	INS00003
SUBHEAD - III CONDUCTOR AND CABLES											
1	ACSR Panther Conductor (200 sq mm).	PM-3960/23-24, Dt: 29-09-2023	5100005544	KM	204728.82	171499.00	2000.00	173499.00	31229.82	18	CDR00010
2	100 Sqmm AAA Conductor or 7/4.26 AAAC.	Extn PM-4041/23-24, Dt: 15-12-2023	510005614	KM	75435.22	62928.15	1000.00	63928.15	11507.07	18	CDR00004
3	55 Sqmm AAA Conductor or 7/3.15 AAAC/RABBIT	Extn.PM-4062/23-24, Dt: 09-01-2024	510005657	KM	42579.12	35800.00	284.00	36084.00	6495.12	18	CDR00003

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
4	34 Sqmm AAA Conductor or 7/2.50 AAAC/Weasel	PM-3782/23-24, Dt: 10-05-2023	5100005349	KM	28082.82	23499.00	300.00	23799.00	4283.82	18	CDR00002
SUBHEAD - III (A) LT AERIAL BUNCHED CABLE											
1	2 x 16+25 Sqmm Cable	Rpt PM-832/15 Dt: 27-07-2016	5100002388	KM	28,919.37	23,907.94	600.00	24,507.94	4,411.43	18	CBA00005
2	3 x 16+25 Sqmm Cable	PM-3698/22-23, Dt: 31-03-2023	5100005322	KM	62480.01	52199.16	750.00	52949.16	9,530.85	18	CBA00006
3	3 x 70 + 1x16 +1x50 Sqmm XLPE AB, Cable	Extn PM-4082/23-24, Dt: 13-02-2024	5100005665	KM	222625.01	186665.26	2000.00	188665.26	33,959.75	18	CBA00004
SUBHEAD - III (B) 33 & 11 KV XLPE POWER CABLE											
1	33KV 1C x 400 Sq.mm Copper XLPE UG Cable	LOI issued on 20-03-2024		KM	4317000.50	3658475.00	-	3658475.00	658525.50	18	CBX30003
2	33KV 1C x 630 Sq.mm Al. XLPE UG Cable	PM-2397/20-21, Dt: 21-08-2020	5100003955	KM	799999.88	665980.00	11,986.00	677966.00	122033.88	18	CBX30004
3	33 KV 3CX400 Sq.mm Tree Retardant XLPE UG Cable	PM-4090/23-24, Dt: 16-02-2024	5100005664	KM	3019133.84	2558588.00	-	2558588.00	460545.84	18	CBX30006
4	11 KV 3x300 sq.mm Tree Retardant XLPE UG Cable	PM-3974/23-24, Dt: 10-10-2023	5100005600	KM	1425322.00	1207900.00	-	1207900.00	217422.00	18	CBX10009
5	11 KV 3x185 sq.mm Tree Retardant XLPE UG Cable	PM-3802/22-23, Dt: 26-05-2023	5100005391	KM	1071263.00	907850.00	-	907850.00	163413.00	18	CBX10010
SUBHEAD - III (C)11 KV AB Cable (Aluminum)											
1	3x185+70 Sqmm.	Extn PM-4036/23-24, Dt: 07-12-2023	5100005642	KM	968092.67	788863.00	31554.52	820417.52	147675.15	18	CBA10006
SUBHEAD - III (D) LT XLPE POWER CABLE											
1	LT 3 ½ Cx240 sq.mm.	PM-3994/23-24, Dt: 25-10-2023	5100005558	KM	870769.20	737940.00	-	737940.00	132829.20	18	CBX00019
2	3 ½ Cx185 sq.mm.	LOI issued on 05-03-2024		KM	645460.00	547000.00	-	547000.00	98460.00	18	CBX00015
3	3 ½ Cx95 sq.mm	PM-3166/21-22, Dt: 10-03-2022	5100004718	KM	349575.00	294250.00	2,000.00	296250.00	53325.00	18	CBX00013
4	3 ½ Cx70 sq.mm	PM-3204/21-22, Dt: 31-03-2022	5100004773	KM	309573.00	262350.00	-	262350.00	47223.00	18	CBX00012
5	3 ½ Cx35 sq.mm	PM-1246/17, Dt: 20-07-2017.	5100002824	KM	103756.46	86951.00	978.20	87929.20	15827.26	18	CBX00020
6	1C x 185 Sq.mm	PM-4127/23-24 Dt: 14-03-2024	5100005666	KM	169000.00	141220.34	2000.00	143220.34	25779.66	18	CBX00022
7	1C x 150 Sq.mm	PM-3727/23-24 Dt: 11-04-2023	5100005384	KM	126451.40	106062.20	1100.00	107162.20	19289.20	18	CBX00021
8	1C x 120 sq mm	PM-3906/23-24, Dt: 16-08-2023	5100005501	KM	98864.11	82853.14	930.00	83783.14	15080.97	18	CBX00004
SUBHEAD - III (E) L.T.P.CONTROL CABLE											
1	2x2.5 sq.mm Copper	LOI issued on 05-03-2024		KM	59590.00	50500.00	-	50500.00	9090.00	18	CBP00001
2	4x2.5 sq.mm Copper.	LOI issued on 05-03-2024		KM	104430.00	88500.00	-	88500.00	15930.00	18	CBP00002
3	10x2.5 sq.mm Copper.	PM-4120/23-24, Dt: 26-02-2024	5100005667	KM	246030.00	208500.00	-	208500.00	37530.00	18	CBP00006
SUBHEAD - IV : POWER TRANSFORMERS & TRANSFORMER OIL											
1	5 MVA PTR	PM-3688/22-23, Dt: 23-03-2023	5100005336	Nos.	6606820.00	5599000.00	-	5599000.00	1007820.00	18	PTR00006
2	8 MVA PTR	PM-4077/23-24, Dt: 13-02-2024	5100005668	Nos.	8300000.01	7033898.31	-	7033898.31	1266101.70	18	PTR00008
3	12.5 MVA PTR	PM-4079/23-24, Dt: 13-02-2024	5100005669	Nos.	10883959.50	9223694.49	-	9223694.49	1660265.01	18	PTR00020
4	Transformer Oil (New)	LOI issued on 11-03-2024		KL	106790.00	90500.00	-	90500.00	16290.00	18	OFO10006
SUBHEAD - IV (A) : DISTRIBUTION TRANSFORMERS											
1	3-Phase 63 KVA (CSP) (Al) BIS EE LEVEL 2 (Star-2)	Extn PM-4087/23-24, Dt: 14-02-2024	5100005509	Each	119988.32	100185.02	1500.00	101685.02	18303.30	18	DTC30128
2	3-Phase 100 KVA (CSP) (Al) BIS EE LEVEL 2 (Star-2)	PM-4031/23, Dt: 05-12-2023	5100005574	Each	161256.44	134908.00	1750.00	136658.00	24598.44	18	DTC30137
3	3-Phase 160 KVA (CSP) (Al) BIS EE LEVEL 2 (Star-2)	PM- 4099/23, Dt: 16-02-2024	5100005635	Each	388100.01	323199.00	5699.31	328898.31	59201.70	18	DTC30135
4	3-ph 315 KVA DTR Copper BIS EE Level-2 (Star-2)	Extn PM-4017/23-24, Dt: 05-12-2023		Each	1089000.76	919882.00	3000.00	922882.00	166118.76	18	DTC30127
5	3-ph 25 KVA DTR Al BIS EE Level-2 (Star-2)	PM-4065/22, Dt: 19-01-2024	5100005602	Each	75498.44	63481.73	500.00	63981.73	11516.71	18	DTC30140
6	3-ph 500 KVA DTR Copper BIS EE Level-2 (Star-2)	PM-3794/23, Dt: 18-05-2023	5100005312	Each	1571800.00	1328533.90	3500.00	1332033.90	239766.10	18	DTC30136
7	1-Phase 25 KVA (CSP) (Aluminium) Level-1	PM-4093/23-24, Dt: 16-02-2024	5100005629	Each	95700.01	80701.70	400.00	81101.70	14598.31	18	DTC10009
SUBHEAD - V : SWITCH CONTROL AND PROTECTIVE GEAR											
1	33KV, 220V DC Feeder VCBs with CRPs & CTs of ratio 400-200-100/1-1A (with IEDs)	PM-2515/20, Dt: 31-12-2020	5100004079	Nos.	486500.01	403288.14	9000.00	412288.14	74211.87	18	BRK30037

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
2	33 KV 220V DC 1600A feeder VCB without CRPs & CTs of ratio 400-200-100/1-1-1A	PM-2512/20, Dt: 29-12-2020	5100004064	Nos.	342000.00	280830.51	9000.00	289830.51	52169.49	18	BRK30032
3	33 KV 24V DC HV VCB with CRPs & CTs 400-200-100/1-1-1A	PM-1948/19, Dt: 02-05-2019	5100003525	Nos.	395604.44	325700.00	9558.00	335258.00	60346.44	18	BRK30031
4	33 KV 24V DC VCB with CRPs & CTs ratio 400-200-100/1-1A	PM-3675/22 Dt: 16-03-2023	5100005217	Nos.	493500.00	408950.34	9270.00	418220.34	75279.66	18	BRK30019
5	11KV, 220V DC LV VCBs with CRPs & CTs of ratio 600-300/1-1A (with Trans. Prot. IED relays)	PM-3145/21 Dt: 25-02-2022	5100004684	Nos.	477310.00	395000.00	9500.00	404500.00	72810.00	18	BRK10020
6	11KV, 220V DC Feeder VCBs with CRPs & CTs of ratio 400-200-100/1-1A (with Feeder Protection IED relays)	PM-3532/22 Dt: 29-12-2022	5100005089	Nos.	407699.99	338308.47	7200.00	345508.47	62191.52	18	BRK10019
7	11KV 220V feeder VCB with CTs w/o CRP & IED	PM-3832/23-24, Dt: 24-06-2023	5100005396	Nos.	249550.01	204283.06	7200.00	211483.06	38066.95	18	BRK10028
8	11KV, 24V DC LV VCB with diff. prot. with CRPs & CTs of Ratio 600-300/1-1-0.577A	PM-1909/19, Dt: 10-04-2019	5100003480	Nos.	313448.12	258200.00	7434.00	265634.00	47814.12	18	BRK10009
9	11KV 24V LV VCBs with CTs & Panel (600-300/1-1A)	PM-3657/22 Dt: 06-03-2023	5100005216	Nos.	344000.00	284325.42	7200.00	291525.42	52474.58	18	BRK10014
10	11KV, 24V DC feeder VCBs with CRPs & CTs of Ratio 400-200-100/1-1A	PM-4013/23, Dt: 21-11-2023	5100005556	Nos.	367963.01	301033.06	10800.00	311833.06	56129.95	18	BRK10015
11	33 KV PT (Single Phase) 10VA Burden 0.2 Class	PM-3612/23 Dt: 16-02-2023	5100005170	Nos.	24038.96	19100.00	1272.00	20372.00	3666.96	18	ITR30061
12	33 KV PT (Single Phase) 100VA Burden 0.2 Class	PM-1651/18, Dt: 13-06-2018	5100003267	Nos.	21712.00	17900.00	500.00	18400.00	3312.00	18	ITR30058
13	11 KV 3 Ph PTs with 50VA Burden 0.2 Class accuracy	PM-3831/23-24, Dt: 24-06-2023	5100005415	Nos.	28320.00	22100.00	1900.00	24000.00	4320.00	18	ITR10065
14	33 KV 800A (Conv.) DB AB Switches with solid core insulators	PM-3834/23-24, Dt: 30-06-2023	5100005477	Nos.	52515.90	44505.00	-	44505.00	8010.90	18	ABS30004
15	11 KV 800 Amps (Conventional) AB Switch with post type insulators	PM-3857/23-24, Dt: 12-07-2023	5100005478	Nos.	32496.02	27539.00	-	27539.00	4957.02	18	ABS10015
16	11KV 400 Amps (Conventional) DB AB Switch with Post type insulators	PM-3982/23-24, Dt: 17-10-2023	5100005585	Nos.	23125.00	19597.46	-	19597.46	3527.54	18	ABS10009
17	11 KV 400 Amps (Conventional) SB AB Switch with post type porcelain insulators	Extn PM-4059/23-24, Dt: 28-12-2023	5100005625	Nos.	14113.98	11853.00	108.00	11961.00	2152.98	18	ABS10008
18	11 KV 200A (TT) AB Switches with porcelain type solid core insulators	PM-3785/23-24, Dt: 16-05-2023	5100005345	Nos.	10609.38	8470.00	521.00	8991.00	1618.38	18	ABS10002
19	30 KV 10 KA Metal Oxide Lightning Arresters (station type)	PM-3925/23, Dt: 26-08-2023	5100005473	Nos.	4185.00	3396.61	150.00	3546.61	638.39	18	LAS00004
20	30 KV 10 KA Lightning Arresters (line type)	PM-2649/20, Dt: 10-03-2021	5100004202	Nos.	2205.42	1869.00	-	1869.00	336.42	18	LAS00003
21	9 KV 10 KA Metal Single Phase Lightning Arrester (station type)	PM-2648/20 Dt: 10-03-2021	5100004198	Nos.	1527.51	1294.50	-	1294.50	233.01	18	LAS00002
22	9KV 10KA LAS (Line type) Porcelain	PM-3105/21, Dt: 08-02-2022	5100004614	Nos.	619.50	525.00	-	525.00	94.50	18	LAS00001
23	11 KV HG Fuse set with insulators	PM-4115/23-24, Dt: 22-02-2024	5100005662	Nos.	2329.32	1974.00	-	1974.00	355.32	18	HGF10002
24	24 V, 40 AH Batteries with Chargers (Conventional)	PM-3210/21 Dt: 31-03-2022	5100004739	Nos.	28565.76	22317.00	-	22317.00	6248.76	28	BAT00074
25	24 V, 40 AH Chargers (Conventional)	PM-3581/22 Dt: 12-01-2023	5100005130	Nos.	15100.46	12797.00	-	12797.00	2303.46	18	BAT00075
26	12 V 42 AH SMF VRLA Batteries	PM-3850/23-24, Dt: 10-07-2023	5100005414	Nos.	4480.00	3500.00	-	3500.00	980.00	28	BAT00056
27	220V 80 AH Battery charger & DCDB	PM-3743/23, Dt: 28-04-2023	5100005306	Nos.	620800.00	485000.00	-	485000.00	135800.00	28	BAT00072
28	220 V, 80 AH SMF Batteries	PM-3696/22-23 Dt: 31-03-2023	5100005304	Nos.	289600.00	226250.00	-	226250.00	63350.00	28	BAT00023
29	11 KV 2 MVAR Capacitor banks with associated equipment	PM-1382/17 Dt: 10-11-2017		Nos.	724070.00	613618.64	-	613618.64	110451.36	18	CPT10009
(a)	Type A (along with installation)	PM-1382/17 Dt: 10-11-2017	5100003203	Nos.	799000.00	677118.64	-	677118.64	121881.36	18	CPT10009
(b)	Type B with 40 Mtrs HT UG cable	PM-2672 Dt: 15-12-2008		Nos.	895869.07	-	-	-	-	-	
(c)	Type C Indoor Type with HT UG cable	PM-3518, Dt: 29-02-2012		Nos.	1295000.00	-	-	-	-	-	CPT10014
30	11KV 1 MVAR Capacitor Banks	PM-1382/17 Dt: 10-11-2017		Nos.	699000.00	592372.88	-	592372.88	106627.12	18	CPT10016
31	Sectionalizers	PM-671 Dt: 04-03-2016		Nos.	487782.24	Procured specially for SCADA DMS project					SBR00599
32	Auto - Reclosures	PM-671 Dt: 04-03-2016		Nos.	855193.83	Procured specially for SCADA DMS project					
33	11KV 3 Way RMU with FRTU	PM- 2799/21, Dt:28-06-2021	5100004381	Nos.	583982.00	488400.00	6,500.00	494900.00	89082.00	18	BRK10022
34	11KV 5 Way RMU with FRTU	PM- 2799/21, Dt:28-06-2021	5100004381	Nos.	925990.84	775238.00	9,500.00	784738.00	141252.84	18	BRK10023
35	33 KV Indoor twin feeder control panel	PM-579/15, Dt: 30-11-2015	5100002118	Nos.	385643.32	324299.00	2517.37	326816.37	58826.95	18	BRK30014
36	33/11 KV Indoor switch gear (8 feeders)	PM-3263/22-23 Dt: 11-05-2022	5100004804	Nos.	21100500.00	17373179.66	508600.00	17881779.66	3218720.34	18	BRK30020
37	11KV 5 Way RMU (Conventional)	PM-3447/22, Dt: 26-10-2022	5100005093	Nos.	957334.00	797800.00	13500.00	811300.00	146034.00	18	BRK00002
38	11 KV 3 Way RMU (Conventional)	PM-3447/22 Dt: 26-10-2022	5100005150	Nos.	573716.00	476700.00	9500.00	486200.00	87516.00	18	BRK00001
39	11KV Non-Motorized 3Way RMU	PM-3967/23, Dt: 05-10-2023	5100005551	Nos.	337126.00	267700.00	18000.00	285700.00	51426.00	18	BRK00004

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
40	11KV Non-Motorized 5Way RMU	PM-3967/23, Dt: 05-10-2023	5100005551	Nos.	535248.00	433600.00	20000.00	453600.00	81648.00	18	BRK00005
41	33KV CTs 25/1 0.2s class for HT meters	PM-3658/22, Dt: 06-03-2023	5100005223	Nos.	27671.00	22800.00	650.00	23450.00	4221.00	18	ITR30055
42	33 KV CTs of ratio 600-300/1-1A 0.2S Class of Accuracy	PM-3047/21, Dt: 13-01-2022	5100004583	Nos.	33040.00	28000.00	-	28000.00	5040.00	18	ITR30068
43	33 KV CTs 50/1 for HT Metering (0.2s class)	PM-3291/22 Dt:03-06-2022	5100004846	Nos.	27066.84	22938.00	-	22938.00	4128.84	18	ITR30057
44	33 KV CTs 400-200-100/1-1A for HT Metering (0.2s class)	PM-3713/22, Dt: 31-03-2023	5100005262	Nos.	30090.00	25500.00	-	25500.00	4590.00	18	ITR30067
45	11KV CTs 900-450/1-1-0.577A	PM-3304/22-23, Dt: 17-06-2022	5100004930	Nos.	25700.40	21780.00	-	21780.00	3920.40	18	ITR10077
46	11KV CTs of ratio 600-300/1-1A, 0.2S class	PM-2765, Dt: 17-05-2021	5100004319	Nos.	20121.95	17052.50	-	17052.50	3069.45	18	ITR10071
47	11KV CTs of ratio 400-200/1-1A, 0.2S class	PM-3598/23-24, Dt: 25-01-2023	5100005159	Nos.	23954.00	19700.00	600.00	20300.00	3654.00	18	ITR10072
48	11KV CTs of ratio 600-300/1-1-0.577A, 0.2S class	PM-2771/20, Dt: 28-05-2021	5100004327	Nos.	25514.55	21622.50	-	21622.50	3892.05	18	ITR10075
SUBHEAD - VI : METERS AND METERING EQUIPMENT											
I	**HT Metering**										
1	HT Trivector Meter of class 0.2S	Rpt. PM-4073/23-24 Dt: 31-01-2024	5100005622	Nos.	7350.00	6228.81	-	6228.81	1121.19	18	
II	**11 KV Metering (11 KV CT PT Sets)**										
1	10/5 (0.2S class)	Ext PM-4056/23, Dt: 27-12-2023	5100005612	Nos.	61171.20	49356.00	2484.00	51840.00	9331.20	18	ITR10049
2	20/5 (0.2S class)	Extn PM-3769/23-24, Dt: 06-05-2023	5100005290	Nos.	59500.32	49500.00	924.00	50424.00	9076.32	18	ITR10048
3	40/5 (0.2S class)	Rpt PM-3998/22-23, Dt: 31-10-2023	5100005531	Nos.	58410.00	45500.00	4000.00	49500.00	8910.00	18	ITR10047
4	5/5A (0.2s class)	PM-2321/21 Dt: 23-05-2020		Nos.	41860.50	34780.00	695.00	35475.00	6385.50	18	ITR10076
5	60/5A (0.2s class)	PM-3232/22 Dt: 18-04-2022	5100004753	Nos.	45559.80	36000.00	2610.00	38610.00	6949.80	18	ITR10046
III	**LT Meters**										
1	LT TVR Meters Cl. 0.5S (Including Box & 3 CTs) 50/5A for AGL DTRs	PM-1691/18, Dt: 21-07-2018		Nos.	5758.40	4880.00	-	4880.00	878.40	18	MTE30023
2	LT TVR Meters Cl. 0.5S (Including Box & 3 CTs) 100/5A (for AGL DTRs)	PM-1691/18, Dt: 21-07-2018		Nos.	5758.40	4880.00	-	4880.00	878.40	18	MTE30024
3	LT TVR Meters (4 CTs-0.5S)-DLMS protocol	PM-1288/17, Dt: 06-09-2017		Nos.	5923.60	4900.00	120.00	5020.00	903.60	18	MTE30026
4	LTCT Mts (4CTs-0.5S) 400/5A DLMS Protocol	PM-4211/13, Dt: 31-12-2013		Nos.	6706.90	5454.00	229.81	5683.81	1023.09	18	MTE30036
5	LT TVR 100/5A PP 0.5S (CAT-C) DLMS&IRDA	Extn PM-4001/23-24, Dt: 01-11-2023	5100005533	Nos.	7800.00	6390.17	220.00	6610.17	1189.83	18	MTE30040
6	LT TVR 50/5A 0.5S Cat-C meter w/o box	PM-862/16, Dt: 01-09-2016		Nos.	2057.38	1725.30	18.24	1743.54	313.84	18	MTE30041
7	LT Trivector meter (without CTs & Meter box) 100/5A (with DLMS) - Cat- C with IRDA port	Extn PM-4002/23-24 Dt: 01-11-2023	5100005534	Nos.	1791.00	1485.80	32.00	1517.80	273.20	18	MTE30042
8	LT TVR 200/5A 4CTs0.5s DLMS (w/o CTs & box)	PM-3676/22-23, Dt: 17-03-2023	5100005214	Nos.	1791.00	1485.80	32.00	1517.80	273.20	18	MTE30043
9	LT TVR 200/5A 3CT 0.5S DLMS (w/o CTs & box) (for AGL DTRs)	PM-3676/22-23, Dt: 17-03-2023	5100005214	Nos.	1791.00	1485.80	32.00	1517.80	273.20	18	MTE30044
10	LT TVR 100/5A 3CT 0.5S DLMS (w/o CTs & box) (for AGL DTRs)	PM-3680/22-23, Dt: 17-03-2023	5100005213	Nos.	1791.00	1485.80	32.00	1517.80	273.20	18	MTE30045
11	LT TVR 50/5A 3CT 0.5S DLMS (w/o CTs & box) (for AGL DTRs)	PM-1691/18, Dt: 21-07-2018		Nos.	1791.00	1485.80	32.00	1517.80	273.20	18	MTE30046
12	LT TVR Meters Cl. 0.5 (Including Box & 4 CTs) 200/5A for DTR Metering (for AGL DTRs)	Rpt PM-4107/23-24, Dt: 17-02-2024	5100005643	Nos.	7679.59	6508.13	-	6508.13	1171.46	18	MTE30048
IV	**Single phase electronic meter**										
1	1Ph 10-60A Ele meter with PP box	PM-299/14, Dt: 13-02-2015		Nos.	1025.77	846.96	22.34	869.30	156.47	18	MTE10007
2	Single Phase 5-30A Meters With PP box & IRDA port	Rpt PM-3939/23-24 Dt: 13-09-2023	5100005485	Nos.	904.51	748.53	18.00	766.53	137.98	18	MTE10023
3	Single Phase 5-30A Meters Without PP box & IRDA port	Rpt PM-3939/23-24 Dt: 13-09-2023	5100005485	Nos.	665.10	550.64	13.00	563.64	101.46	18	MTE10024
V	**Three phase Electronic meters**										
1	Three Phase 10-40A Meters with IRDA Port with PP Box	PM-3930/23-24, Dt: 06-09-2023	5100005482	Nos.	1880.00	1558.22	35.00	1593.22	286.78	18	MTE30038
2	Three Phase 10-40A Meters with IRDA Port without PP Box	PM-3930/23-24, Dt: 06-09-2023	5100005482	Nos.	1502.00	1257.88	15.00	1272.88	229.12	18	MTE30047
VI	**Testing equipments & others**										
1	LT ERS Field Testing Kit (Along with accessories)	PM-3754/23-24, Dt: 03-05-2023	5100005309	Each	191455.00	161400.00	850.00	162250.00	29205.00	18	TEQ10016
2	Fully Automatic Master Test benches	PM-2484/20, Dt: 25-11-2020		Nos.	11659860.00	9822000.00	59237.29	9881237.29	1778622.71	18	TEQ10030

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
3	Transformer winding resistance kit	PM-2729, Dt: 23-04-2009		Nos.	121540.00	100000.00	3000.00	103000.00	18540.00	18	TEQ10033
4	Transformer Turns Ratio Test Kit	PM-2729, Dt: 23-04-2009		Nos.	133340.00	110000.00	3000.00	113000.00	20340.00	18	TEQ10034
5	Tan Delta and Capacitance Test Kit	PM-2729, Dt: 23-04-2009		Nos.	572300.00	480000.00	5000.00	485000.00	87300.00	18	TEQ10035
6	Transformer Oil Resistivity Test kit	PM-2729, Dt: 23-04-2009		Nos.	357540.00	300000.00	3000.00	303000.00	54540.00	18	TEQ10036
7	Three phase portable analyzers	PM-2833, Dt: 10-11-2009		Nos.	404740.00	340000.00	3000.00	343000.00	61740.00	18	TEQ10067
8	Circuit Breaker Time interval Meter with PC download software	PM-2834, Dt: 10-11-2009		Nos.	88500.00	75000.00	-	75000.00	13500.00	18	TEQ10068
9	Dissolved Gas Analyzer(DGA) with water PPM Kit (Model-Transport-X)	PM-2835, Dt: 10-11-2009		Nos.	3148240.00	2668000.00	-	2668000.00	480240.00	18	TEQ10069
10	Digital Earth Clamp Testers	PM-3180, Dt: 06-10-2010		Nos.	63592.56	53892.00	-	53892.00	9700.56	18	TEQ10073
11	High Voltage Detectors	PM-3180, Dt: 06-10-2010		Nos.	17211.07	14585.65	-	14585.65	2625.42	18	TEQ10074
12	Single phase Variacs	PM-3286, Dt: 06-04-2011		Nos.	15723.50	13000.00	325.00	13325.00	2398.50	18	TEQ10075
13	Electronic Insulated Testers/Meggers	PM-3286, Dt: 06-04-2011		Nos.	79461.20	65690.00	1650.00	67340.00	12121.20	18	TEQ10076
14	Portable Relay Test Kits	PM-3288, Dt: 06-04-2011		Nos.	531000.00	450000.00	-	450000.00	81000.00	18	TEQ10077
15	Time interval Meter	PM-3289, Dt: 06-04-2011		Nos.	20650.00	17500.00	-	17500.00	3150.00	18	TEQ10078
16	Ratio Test Kits	PM-3287, Dt: 06-04-2011		Nos.	105374.00	87300.00	2000.00	89300.00	16074.00	18	TEQ10079
17	Capacitance Meters	PM-3287, Dt: 06-04-2011		Nos.	30975.00	24250.00	2000.00	26250.00	4725.00	18	TEQ10080
18	Primary Injection Kit	PM-3291, Dt: 06-04-2011		Nos.	90034.00	75300.00	1000.00	76300.00	13734.00	18	TEQ10081
19	ERS Testing kits of accuracy 0.02 Class	Rpt PM-3131/21, Dt: 16-02-2022		Nos.	1300000.10	1096713.00	4982.00	1101695.00	198305.10	18	TEQ10082
20	ERS Testing kits 0.05 accuracy	PM-2289/19 Dt: 30-01-2020		Nos.	1300000.10	1096713.00	4982.00	1101695.00	198305.10	18	TEQ10087
21	CMRI	PM-2052/19 Dt: 30-07-2019	5100003613	Nos.	22355.10	18945.00	-	18945.00	3,410.10	18	OMT10014
22	Hand held computers	PM-2802 Dt: 09-10-2009		Each	5273.83	-	-		-	-	OMT10026
23	Digital Clamp Meters	PM-3286, Dt: 06-04-2011		Nos.	2745.57	2270.00	56.75	2326.75	418.82	18	OMT10050
24	Earth Tester (0-20-200-2000Ω)	PM-3290, Dt: 06-04-2011		Nos.	4743.60	3920.00	100.00	4020.00	723.60	18	OMT10074
25	Integrated Spot Billing Machines	PM-2985/21-22, Dt: 01-12-2021	5100004534	Nos.	10500.01	8,898.31	-	8898.31	1,601.70	18	OMT10083
26	Integrated Spot Billing Machines With GSM/GPRS Modems	PM-2722/21-22, Dt: 27-04-2021	5100004316	Nos.	16150.00	13686.44	-	13686.44	2463.56	18	OMT10094
27	Android Spot Billing Machines	PM-4015/23-24, Dt: 24-11-2023	5100005593	Nos.	23000.01	19,491.53	-	19491.53	3,508.48	18	OMT10095
SUBHEAD - VII : VCB & PTR SPARES											
1	IDMT (3 O/L+E/L) Numerical Relay 24V DC	PM-4010/23-24 Dt: 07-11-2023	5100005555	Nos.	15340.00	13000.00	-	13000.00	2340.00	18	SBR00177
2	IDMT Static Relay (3 O/L+1 E/L) 220 V DC Relays	PM-3931/23-24, Dt: 11-09-2023	5100005476	Nos.	32155.00	27250.00	-	27250.00	4905.00	18	SBR00216
SUBHEAD - VIII : COMPUTERS/LAPTOPS											
1	Laser Jet Printer	PM-3322/22, Dt: 05-07-2022	5100004867	Nos.	10794.64	9148.00	-	9148.00	1646.64	18	CAH00004
2	Desktop Computers(HP Pro 400G9)	PM-4058/23-24, Dt: 27-12-2023	5100005650	Nos.	68000.00	57627.12	-	57627.12	10372.88	18	CAH00011
3	Desktop Computers(Make HP)	PM-3413/22, Dt: 07-10-2022	5100004970	Nos.	59488.52	50414.00	-	50414.00	9074.52	18	CAH00011
4	Printers Dot Matrix Printers: (80 Column)	PM-1882/18, Dt: 13-03-2019		Nos.	8206.90	6955.00	-	6955.00	1251.90	18	CAH00016
5	Dot Matrix Printers: (132 Column)	PM-1882/18, Dt: 13-03-2019		Nos.	11398.80	9660.00	-	9660.00	1738.80	18	CAH00288
ADDITIONAL ITEMS											
1	RGGVY SMC Meter Boxes along with accessories	PM-3227, Dt: 07-01-2011		Nos.	345.60	280.00	12.88	292.88	52.72	18	BXS00048
2	LT distribution box (SMC)	PM-4038/23-24, Dt: 15-12-2023	5100005624	Nos.	9652.40	8180.00	-	8180.00	1,472.40	18	BXS00047
3	RGGVY Polycorbonate Meter Boxes along with accessories	PM-3076, Dt: 06-09-2010		Nos.	282.02	239.00	-	239.00	43.02	18	BXS00049
4	33KV, 3CX400 Sq.mm XLPE UG Cable Straight through heat shrinkable jointing kits	PM-3268/22-23, Dt: 16-05-2022		Nos.	28498.18	23673.00	478.00	24151.00	4347.18	18	SCB10113

COST - DATA ABSTRACT

Sl. No	Particulars of items	Wind. Pr. In Kg /m2	W.Load in Kg.	Type of pole being used	Span in Mtrs.	No. of poles/ KM	Size of conductor	Total Cost in Rs.
1	33 KV Line	75	365	11 M RS Joist	50	21	100 sqmm AAAC	1538422
2	33 KV DC Line	75	365	12 M RS Joist	50	21	100 sqmm AAAC	2042882
3	33 KV Line	75	365	11 M PSCC	60	17	100 sqmm AAAC	873364
4	33 KV DC Line	75	365	11 M PSCC	40	26	100 sqmm AAAC	1554549
5	33 KV Line	75	280	9.1 Mtr.PSCC	80	14	100 sqmm AAAC	680476
6	33 KV Line	75	280	9.1 Mtr.PSCC	65	16	100 sqmm AAAC	697288
7	11 KV line	75	140	9.1 Mtr.PSCC	60	18	55 sqmm AAAC	533185
8	11 KV line	75	140	9.1 Mtr.PSCC	60	18	34 sqmm AAAC	469692
9	11 KV line	75	140	8 Mtr.PSCC	60	18	55 sqmm AAAC	475879
10	11 KV line	75	140	8 Mtr.PSCC	60	18	34 sqmm AAAC	412344
11	11 KV line	75	140	RSJoist Poles	50	21	55 sqmm AAAC	831837
12	6.3 KV line	75	140	8 Mtr.PSCC	90	11	34 sqmm AAAC	176253
13	LT 3 Ph.5 Wire line (Horizontal)	75	140	8 Mtr.PSCC	65	16	3x55+2x34sqmmAAA	443848
14	LT 3 Ph.5 Wire line (Horizontal)	75	140	8 Mtr.PSCC	45	23	3x55+2x34sqmmAAA	502252
15	LT 3 Ph.5 Wire line (Horizontal)	75	140	8 Mtr.PSCC	65	16	5x34sqmm AAA	391613
16	LT 3 Ph.4 Wire line (Horizontal)	75	140	8 Mtr.PSCC	65	16	3x55+1x34sqmmAAA	401893
17	LT 3 Ph.4 Wire line (Horizontal)	75	140	8 Mtr.PSCC	65	16	4x34sqmm AAA	350436
18	LT 1 Ph. 3 Wire line (Horizontal)	75	140	8 Mtr.PSCC	65	16	3x34 sqmm AAA	288616
19	LT 1 Ph. 2 Wire line (Horizontal)	75	140	8 Mtr.PSCC	65	16	2x34 sqmm AAA	244742
20	L.T.AB Cable	75	140	8 Mtr.PSCC	65	16	3x16+25sqmm	250919
21	L.T.AB Cable	75	140	8 Mtr.PSCC	65	16	2x16+25sqmm	210315
22	Conversion of 1Ph 2 W/L to 3 Ph 4 W/L	75	140	8 Mtr.PSCC	65	16	2x55xqmm	139966
23	Erection of 100 KVA CSP CRGO Distribution Transformer							311491
24	Erection of 63 KVA CSP Distribution Transformer							263620
25	Erection of 63 KVA CSP CRGO core Distribution Transformer on plinth							236742
26	Erection of 63 KVA CSP CRGO core Distribution Transformer on structure							228553
27	Erection of 100 KVA CSP CRGO core Distribution Transformer on column plinth							299031
28	Erection of 25 KVA, 3- Phase CRGO core Distribution Transformer							128815
29	Erection of 25 KVA, 3-Phase, 11 KV/433 V /250 V CRGO Conventional Transformer							140384
30	Erection of 25 KVA, Single Phase, 6.3 KV/0-240 V C.S.P. CRGO Transformer							129751
31	Erection of 15 KVA Single Phase 6.3 KV/0-240 V CSP CRGO Distribution Transformer							48634
32	Release of poly phase Agl. Service erected on support							5523
33	Release of 1 ph Domestic & non-domestic service (Electronic meter)							2485

Sl. No	Particulars of items	Wind. Pr. In Kg /m2	W.Load in Kg.	Type of pole being used	Span in Mtrs.	No. of poles/ KM	Size of conductor	Total Cost in Rs.
34	Release of 3 ph. Domestic & non-domestic service (Electronic meter)							4811
35	Release of poly phase Indl.service below 20 HP (Electronic meter)							5473
36	Release of Industrial service above 20H.P upto 50 HP with LT Trivector meter							9855
37	Release of Industrial service above 50 HP and upto 75 HP (HT metering)							271807
38	Release of Street light service (1 -ph electronic meter)							2980
39	Erection of L.T. C.T. Operated Electronic trajectory meter on LV side of DTR							10407
40	Erection of 33/11 KV Sub-station with2 x8 MVA power transformer & 6 Nos. 11 KV feeders (without 11 KV 2 MVAR capacitor Bank)							37015802
41	Erection of 33/11 KV Sub-station with2 x8 MVA power transformer & 6 Nos. 11 KV feeders (with 11 KV 2 MVAR capacitor Bank)							38719358
42	Erection of 33/11 KV Sub-station(Indoor substation) with2x8 MVA power transformer & 6 Nos. 11 KV feeders (without 11 KV 2 MVAR capacitor Bank)							60446935
43	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)							27895353
44	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)							28815255
45	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)							18959405
46	11 KV Bay extension in existing 33/11 KV Sub-stations with girder poles							130013
47	11 KV Bay extension in existing 33/11 KV Sub-stations with PSCC poles							89273
48	33KV Bay Extension at 33/11 kV Sub-station							190233
49	33KV Bay Extension at 132/33KV SS							994242
50	Erection of 11 KV VCB at 33/11 kV Sub-station							505325
51	Erection of 33KV VCB at 132/33KV SS							1476631
52	Erection of 2MVAR Capacitor Bank							1068721
53	Enhancement of PTR Capacity							5916623
54	Laying of 11 KV, 3 core 300 Sq.mm UG Cable							3066284
55	Laying of 33 KV, 3 core 400 Sq.mm UG Cable							4399112
56	Erection of M+3 tower							205250
57	Erection of L+3 tower							148933
58	Erection of K+3 tower							112547
59	Extension of 3Mtrs for K+3 Towers as per ASCI Standard							16683
60	Extension of 3Mtrs for L+3 Towers as per ASCI Standard							26735
61	Extension of 3Mtrs for M+3 Towers as per ASCI Standard							33690
62	Erection of additional 5 MVA PTR in existing 33/11 KV Sub-station							7964024
63	Erection of 11KV 70 Sq mm Covered Conductor							1973895
64	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 type11mtrs Pole with 175x85mm of 450Kgs	21	32,258	Each	677,418
2	1.53 M Channel / '**V**' Cross Arm (100x50mm)	21	1,603	Each	33,653
3	Top Clamp with cleat(75x8mm)	20	479	Each	9,581
4	Back Clamp	20	205	Each	4,092
5	Stay Set complete	12	1,388	Each	16,660
6	Bracing Set with double cross arm	1	10,601	Set	10,601
7	100 Sq.mm AAA Conductor	3.06	75,435	K.M.	230,831
8	33KV Polymer Pin Insulators With GI Pins	63	809	Each	50,997
9	Strain Insulators set (3x 11 KV B&S Insulator with 33 KV Hard ware fitting))	12	461	Set	5,537
10	Concreting of Pole, Stay sets & Base concreting	L.S		L.S	117,773
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc	L.S		L.S	21,189
	Total Cost of Material				**1,178,332**

	3% storage & handling charges on items (1) to (9)		31,181
	3% Contingencies on Materials		35,350
	Labour & Transport		148,921
	GST at 18 % on L&T		26,806
	10% Estt. & Genl. Charges on Materials		117,833
		Total	**1,538,422**

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

Sl. No.	Particulars	Qty.	Rate in Rs.	Per Unit	Amount in Rs.
1	RS Joist box type12mtrs Pole with 150 x 150 mm of 500Kgs	21	35,843	Each	752,693
2	1.53 M Channel / '**V**' Cross Arm	60	1,603	Each	96,152
3	Back Clamp	60	205	Each	12,275
4	Stay Set complete	12	1,388	Each	16,660
5	Double Bracing Set with double cross arm	1	14,985	Set	14,985
6	100 Sq.mm AAA Conductor	6.12	75,435	K.M.	461,662
7	33KV Polymer Pin Insulators With GI Pins	108	809	Each	87,424
8	Strain Insulators set (3x 11 KV B&S Insulator with 33 KV Hard ware fitting)	24	461	Set	11,073
9	Concreting of Pole, Stay sets & Base concreting	L.S		L.S	117,773
10	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc	L.S		L.S	21,189
	Total Cost of Material				**1,591,886**

3% storage & handling charges on items (1) to (8)		43,588
3% Contingencies on Materials		47,757
Labour & Transport		169,883
GST at 18 % on L&T		30,579
10% Estt. & Genl. Charges on Materials		159,189
	Total	**2,042,882**

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	6371	Each	108,307
2	1.53 M Channel / '**V**' Cross Arm	17	1603	Each	27,243
3	Top Clamp with cleat	16	479	Each	7,665
4	Back Clamp	17	205	Each	3,478
5	Stay Set complete	12	1388	Each	16,660
6	Bracing Set with double cross arm	1	10601	Set	10,601
7	100 Sq.mm AAA Conductor	3.06	75435	K.M.	230,831
8	33KV Polymer Pin Insulators With GI Pins	48	809	Each	38,855
9	Strain Insulators set (3x 11 KV B&S Insulator with 33 KV Hard ware fitting)	12	461	Set	5,537
10	Concreting of Pole, Stay sets & Base concreting	L.S		L.S	135,005
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc	L.S		L.S	6,050
	Total Cost of Material				**590,232**

3% storage & handling charges on items (1) to (9)		13,475
3% Contingencies on Materials		17,707
Labour & Transport		163,498
GST at 18 % on L&T		29,430
10% Estt. & Genl. Charges on Materials		59,023
	Total	**873,364**

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	6,371	Each	165,646
2	1.53 M Channel / '**V**' Cross Arm	72	1,603	Each	115,382
3	Back Clamp	75	205	Each	15,344
4	Stay Set complete	12	1,388	Each	16,660
5	Double Bracing Set with double cross arm	1	14,985	Set	14,985
6	100 Sq.mm AAA Conductor	6.12	75,435	K.M.	461,662
7	33KV Polymer Pin Insulators With GI Pins	156	809	Each	126,279
8	Strain Insulators set (3x 11 KV B&S Insulator with 33 KV Hard ware fitting)	24	461	Set	11,073
9	Concreting of Pole, Stay sets & Base concreting	L.S		L.S	162,301
10	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc	L.S		L.S	6,655
	Total Cost of Material				**1,095,987**

3% storage & handling charges on items (1) to (8)		27,811
3% Contingencies on Materials		32,880
Labour & Transport		244,299
GST at 18 % on L&T		43,974
10% Estt. & Genl. Charges on Materials		109,599
	Total	**1,554,549**

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	3,056	Each	42,787
2	1.53 M Channel / '**V**' Cross Arm	14	1,603	Each	22,435
3	Top Clamp with cleat	12	479	Each	5,749
4	Back Clamp	13	205	Each	2,660
5	Stay Set complete	12	1,388	Each	16,660
6	Bracing Set with double cross arm	1	10,601	Set	10,601
7	100 Sq.mm AAA Conductor	3.06	75,435	K.M.	230,831
8	33KV Polymer Pin Insulators With GI Pins	39	809	Each	31,570
9	Strain Insulators set (3x 11 KV B&S Insulator with 33 KV Hard ware fitting)	12	461	Set	5,537
10	Concreting of Pole, Stay sets & Base concreting	L.S		L.S	100,350
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc	L.S		L.S	5,500
	Total Cost of Material				**474,680**

3% storage & handling charges on items (1) to (9)		11,065
3% Contingencies on Materials		14,240
Labour & Transport		112,732
GST at 18 % on L&T		20,292
10% Estt. & Genl. Charges on Materials		47,468
	Total	**680,476**

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	3,056	Each	48,899
2	1.53 M Channel / '**V**' Cross Arm	16	1,603	Each	25,640
3	Top Clamp with cleat	15	479	Each	7,186
4	Back Clamp	15	205	Each	3,069
5	Stay Set complete	10	1,388	Each	13,883
6	Bracing Set with double cross arm	1	10,601	Set	10,601
7	100 Sq.mm AAA Conductor	3.06	75,435	K.M.	230,831
8	33KV Polymer Pin Insulators With GI Pins	45	809	Each	36,427
9	Strain Insulators set (3x 11 KV B&S Insulator with 33 KV Hard ware fitting)	12	461	Set	5,537
10	Concreting of Pole, Stay sets & Base concreting	L.S		L.S	94,273
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc	L.S		L.S	5,500
	Total Cost of Material				**481,846**

3% storage & handling charges on items (1) to (9)		11,462
3% Contingencies on Materials		14,455
Labour & Transport		119,780
GST at 18 % on L&T		21,560
10% Estt. & Genl. Charges on Materials		48,185
	Total	**697,288**

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. SCC 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	3,056	Each	55,012
2	1.07 M Channel / '**V**' Cross Arm	18	885	Each	15,924
3	Top Clamp with cleat	16	354	Each	5,664
4	Back Clamp	17	98	Each	1,659
5	Stay Set complete	10	1,396	Each	13,959
6	Bracing Set with double cross arm	1	8,026	Set	8,026
7	55 Sq.mm AAA Conductor	3.06	42,579	K.M.	130,292
8	11 KV Pin Insulator with Pin	54	170	Each	9,201
9	Strain Insulator with metal parts	12	196	Each	2,351
10	Concreting of Pole, Stay sets & Base concreting			L.S	88,465
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc			L.S	4,000
	Total Cost of Material				**334,553**

3% storage & handling charges on items (1) to (9)	7,263
3% Contingencies on Materials	10,037
Labour & Transport	125,319
GST at 18 % on L&T	22,557
10% Estt. & Genl. Charges on Materials	33,455
Total	**533,185**

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	3,056	Each	55,012
2	1.07 M Channel / '**V**' Cross Arm	18	885	Each	15,924
3	Top Clamp with cleat	16	354	Each	5,664
4	Back Clamp	17	98	Each	1,659
5	Stay Set complete	10	1,396	Each	13,959
6	Bracing Set with double cross arm	1	8,026	Set	8,026
7	34 Sq.mm AAA Conductor	3.06	28,083	K.M.	85,934
8	11 KV Pin Insulator with Pin	54	170	Each	9,201
9	Strain Insulator with metal parts	12	196	Each	2,351
10	Concreting of Pole, Stay sets & Base concreting			L.S	88,465
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc			L.S	4,000
	Total Cost of Material				**290,195**
	3% storage & handling charges on items (1) to (9)				5,932
	3% Contingencies on Materials				8,706
	Labour & Transport				115,118
	GST at 18 % on L&T				20,721
	10% Estt. & Genl. Charges on Materials				29,020
			Total		**469,692**

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	1,651	Each	29,715
2	1.07 M Channel / '**V**' Cross Arm	18	885	Each	15,924
3	Top Clamp with cleat	16	354	Each	5,664
4	Back Clamp	17	98	Each	1,659
5	Stay Set complete	10	1,396	Each	13,959
6	Bracing Set with double cross arm	1	8,026	Set	8,026
7	55 Sq.mm AAA Conductor	3.06	42,579	K.M.	130,292
8	11 KV Pin Insulator with Pin	54	170	Each	9,201
9	Strain Insulator with metal parts	12	196	Each	2,351
10	Concreting of Pole, Stay sets & Base concreting			L.S	88,465
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc			L.S	4,000
	Total Cost of Material				**309,256**

3% storage & handling charges on items (1) to (9)	6,504
3% Contingencies on Materials	9,278
Labour & Transport	101,623
GST at 18 % on L&T	18,292
10% Estt. & Genl. Charges on Materials	30,926
Total	**475,879**

REC Construction Standard No. A-34/1993
Cost data per Km of 11 KV Line with 34 Sq.mm AAA Conductor over 8 Mts. PSCC Poles at 60 Mts. Span, 75 Kg/sq.Mt wind pressure, working load 140 Kgs.

Sl. No.	Particulars	Qty.	Rate in Rs.	Per Unit	Amount in Rs.
1	8 M PSCC Pole	18	1,651	Each	29,715
2	1.07 M Channel / '**V**' Cross Arm	18	885	Each	15,924
3	Top Clamp with cleat	16	354	Each	5,664
4	Back Clamp	17	98	Each	1,659
5	Stay Set complete	10	1,396	Each	13,959
6	Bracing Set with double cross arm	1	8,026	Set	8,026
7	34 Sq.mm AAA Conductor	3.06	28,083	K.M.	85,934
8	11 KV Pin Insulator with Pin	54	170	Each	9,201
9	Strain Insulator with metal parts	12	196	Each	2,351
10	Concreting of Pole, Stay sets & Base concreting			L.S	88,465
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc			L.S	4,000
	Total Cost of Material				**264,898**

3% storage & handling charges on items (1) to (9)	5,173
3% Contingencies on Materials	7,947
Labour & Transport	91,387
GST at 18 % on L&T	16,450
10% Estt. & Genl. Charges on Materials	26,490
Total	**412,344**

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	14,337	Each	301,077
2	1.07 M Channel / '**V**' Cross Arm	21	885	Each	18,577
3	Top Clamp with cleat	20	354	Each	7,080
4	Back Clamp	21	98	Each	2,049
5	Stay Set complete	10	1,396	Each	13,959
6	Bracing Set with double cross arm	1	8,026	Set	8,026
7	55 Sq.mm AAA Conductor	3.06	42,579	K.M.	130,292
8	11 KV Pin Insulator with Pin	54	170	Each	9,201
9	Strain Insulator with metal parts	12	196	Each	2,351
10	Concreting of Pole, Stay sets & Base concreting			L.S	100,080
11	Misc. Items like coil earthing, pipe eathing, danger, bolts & nuts, etc			L.S	4,000
	Total Cost of Material				**596,692**

3% storage & handling charges on items (1) to (9)	14,778
3% Contingencies on Materials	17,901
Labour & Transport	121,014
GST at 18 % on L&T	21,783
10% Estt. & Genl. Charges on Materials	59,669
Total	**831,837**

REC Construction Standard No. A-17/1987

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

Sl. No.	Particulars	Qty.	Rate in Rs.	Per Unit	Amount in Rs.
1	8 M PSCC Pole	11	1,651	Each	18,159
2	Top Clamp with cleat	11	354	Each	3,894
3	Back Clamp	10	98	Each	976
4	Stay Set complete	4	1,396	Each	5,584
5	34 Sq.mm AAA Conductor	1.02	28,083	K.M.	28,644
6	11 KV Pin Insulator with Pin	10	170	Each	1,704
7	Strain Insulator with metal parts	4	196	Each	784
8	Concreting of Pole, Stay sets & Base concreting			L.S	35,386
9	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	2,100
	Total Cost of Material				**97,231**

3% storage & handling charges on items (1) to (7)	1,792
3% Contingencies on Materials	2,917
Labour & Transport	54,737
GST at 18 % on L&T	9,853
10% Estt. & Genl. Charges on Materials	9,723
Total	**176,253**

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	1,651	Each	26,413
2	LT 3 Phase cross arms	18	425	Each	7,659
3	LT top fitting	18	186	Each	3,357
4	Back Clamp	18	80	Each	1,443
5	Stay Set complete	6	1,396	Each	8,376
6	55 Sq.mm AAA Conductor	3.06	42,579	KM	130,292
7	34 Sq.mm AAA Conductor	2.04	28,083	KM	57,289
8	Shackle Insulator with metal parts	16	87	Each	1,392
9	LT pin insulator with pin	56	83	Each	4,648
10	C.I. Knob	16	10	Each	160
11	Concreting of Pole, Stay sets & Base concreting			L.S	53,079
12	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	4,000
	Total Cost of Material				**298,108**

3% storage & handling charges on items (1) to (10)	7,231
3% Contingencies on Materials	8,943
Labour & Transport	84,538
GST at 18 % on L&T	15,217
10% Estt. & Genl. Charges on Materials	29,811
Total	**443,848**

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	1,651	Each	37,969
2	LT 3 Phase cross arms	24	425	Each	10,212
3	LT top fitting	24	186	Each	4,476
4	Back Clamp	24	80	Each	1,924
5	Stay Set complete	6	1,396	Each	8,376
6	55 Sq.mm AAA Conductor	3.06	42,579	KM	130,292
7	34 Sq.mm AAA Conductor	2.04	28,083	KM	57,289
8	Shackle Insulator with metal parts	16	87	Each	1,392
9	LT pin insulator with pin	84	83	Each	6,972
10	C.I. Knob	23	10	Each	230
11	Concreting of Pole, Stay sets & Base concreting			L.S	64,694
12	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	4,000
	Total Cost of Material				**327,826**

3% storage & handling charges on items (1) to (10)		7,774
3% Contingencies on Materials		9,835
Labour & Transport		105,114
GST at 18 % on L&T		18,920
10% Estt. & Genl. Charges on Materials		32,783
	Total	**502,252**

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	1,651	Each	26,413
2	LT 3 Phase cross arms	18	425	Each	7,659
3	LT top fitting	18	186	Each	3,357
4	Back Clamp	18	80	Each	1,443
5	Stay Set complete	6	1,396	Each	8,376
6	34 Sq.mm AAA Conductor	5.1	28,083	KM	143,223
7	Shackle Insulator with metal parts	16	87	K.M.	1,392
8	LT pin insulator with pin	56	83	Each	4,648
9	C.I. Knob	16	10	Each	160
10	Concreting of Pole, Stay sets & Base concreting			L.S	53,079
11	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	4,000
	Total Cost of Material				**253,750**

3% storage & handling charges on items (1) to (9)	5,900
3% Contingencies on Materials	7,612
Labour & Transport	83,878
GST at 18 % on L&T	15,098
10% Estt. & Genl. Charges on Materials	25,375
Total	**391,613**

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	1,651	Each	26,413
2	LT 3 Phase cross arms	18	425	Each	7,659
3	Back Clamp	18	80	Each	1,443
4	Stay Set complete	6	1,396	Each	8,376
5	55 Sq.mm AAA Conductor	3.06	42,579	K.M.	130,292
6	34 Sq.mm AAA Conductor	1.02	28,083	K.M.	28,645
7	Shackle Insulator with metal parts	12	87	Each	1,044
8	LT pin insulator with pin	42	83	Each	3,486
9	C.I. Knob	16	10	Each	160
10	Concreting of Pole, Stay sets & Base concreting			L.S	53,079
11	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	4,000
	Total Cost of Material				**264,597**

3% storage & handling charges on items (1) to (9)	6,226
3% Contingencies on Materials	7,938
Labour & Transport	81,926
GST at 18 % on L&T	14,747
10% Estt. & Genl. Charges on Materials	26,460
Total	**401,893**

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	1,651	Each	26,413
2	LT 3 Phase cross arms	18	425	Each	7,659
3	Back Clamp	18	80	Each	1,443
4	Stay Set complete	6	1,396	Each	8,376
5	34 Sq.mm AAA Conductor	4.08	28,083	K.M.	114,578
6	Shackle Insulator with metal parts	12	87	Each	1,044
7	LT pin insulator with pin	42	83	Each	3,486
8	C.I. Knob	16	10	Each	160
9	Concreting of Pole, Stay sets & Base concreting			L.S	53,079
10	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	4,000
	Total Cost of Material				**220,238**

3% storage & handling charges on items (1) to (8)	4,895
3% Contingencies on Materials	6,607
Labour & Transport	81,926
GST at 18 % on L&T	14,747
10% Estt. & Genl. Charges on Materials	22,024
Total	**350,436**

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	1,651	Each	26,413
2	LT 1 Phase cross arms	18	219	Each	3,936
3	LT top fitting	18	186	Each	3,357
4	Back Clamp	18	80	Each	1,443
5	Stay Set complete	4	1,396	Each	5,584
6	34 Sq.mm AAA Conductor	3.06	28,083	K.M.	85,934
7	Shackle Insulator with metal parts	8	87	Each	696
8	LT pin insulator with pin	28	83	Each	2,324
9	C.I. Knob	16	10	Each	160
10	Concreting of Pole, Stay sets & Base concreting			L.S	41,194
11	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	4,000
	Total Cost of Material				**175,041**

3% storage & handling charges on items (1) to (9)	3,895
3% Contingencies on Materials	5,251
Labour & Transport	73,666
GST at 18 % on L&T	13,260
10% Estt. & Genl. Charges on Materials	17,504
Total	**288,616**

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	1,651	Each	26,413
2	LT 1 Phase cross arms	18	219	Each	3,936
3	Back Clamp	18	80	Each	1,443
4	Stay Set complete	4	1,396	Each	5,584
5	34 Sq.mm AAA Conductor	2.04	28,083	K.M.	57,289
6	Shackle Insulator with metal parts	4	87	Each	348
7	LT pin insulator with pin	14	83	Each	1,162
8	C.I. Knob	16	10	Each	160
9	Concreting of Pole, Stay sets & Base concreting			L.S	41,194
10	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	2,900
	Total Cost of Material				**140,429**

3% storage & handling charges on items (1) to (8)	2,890
3% Contingencies on Materials	4,213
Labour & Transport	70,481
GST at 18 % on L&T	12,687
10% Estt. & Genl. Charges on Materials	14,043
Total	**244,742**

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	1,651	Each	26,413
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	1,396	Set	5,584
5	L.T. A.B. Cable 3 x 16 + 25 Sq.mm	1.02	62,480	K.M.	63,730
6	Insulated Connectors with covers	56	105	Each	5,880
7	Concreting of Pole, Stay sets & Base concreting			L.S	41,194
8	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	3,000
	Total Cost of Material				**147,201**

3% storage & handling charges on items (1) to (6)	3,090
3% Contingencies on Materials	4,416
Labour & Transport	69,061
GST at 18 % on L&T	12,431
10% Estt. & Genl. Charges on Materials	14,720
Total	**250,919**

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	1,651	Each	26,413
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	1,396	Set	5,584
5	L.T. A.B. Cable 2 x 16 + 25 Sq.mm	1.02	28,919	K.M.	29,497
6	Insulated Connectors with covers	56	105	Each	5,880
7	Concreting of Pole, Stay sets & Base concreting			L.S	41,194
8	Misc. Items like coil earthing, danger board, bolts & nuts, etc			L.S	3,000
	Total Cost of Material				**112,968**

3% storage & handling charges on items (1) to (6)	2,063
3% Contingencies on Materials	3,389
Labour & Transport	68,303
GST at 18 % on L&T	12,295
10% Estt. & Genl. Charges on Materials	11,297
Total	**210,315**

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	42,579	KM	86,861
2	LT 3 phase X arms	17	425	Each	7,233
3	Back Clamps	17	80	Each	1,363
4	Shackle Insulators with metal parts	12	87	Each	1,040
5	Pin Insulators with pins	45	83	Each	3,755
6	Stay sets complete	6	1,396	Each	8,376
	Total Cost of Material				**108,628**
	3% storage & handling charges on items (1) to (6)				3,259
	3% Contingencies on Materials				3,259
	Labour & Transport				14,300
	Distmantling Charges				1,000
	GST at 18 % on L&T				2,574
	10% Estt. & Genl. Charges on Materials				10,863
			Total		**143,883**
	Less Credits				
1	Single Phase cross arms (scrap)	51	11	Kg	561
2	Original Erection charges				2200
3	Dismantling charges				1100
4	Orginal Estt & Genl Charges				56
			Total		**3917**
			Or Say		**3917**
	Net Cost		Gross - Less		**139,966**

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

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

S. No.	Particulars	Cost of Material (Rs.)	Labour & Transport (Rs.)
1	11 KV/433 V 100 KVA CSP TRANSFORMER (Aluminium)	161,256	8,932
2	Erection of 11 KV AB Switch (200A)	10,609	2,264
3	D.P. Structure	18,672	18,173
4	Erection of 11 K.V. H.G. Fuse set	2,329	903
5	Installation of L.T.H.G. Fuse sets including connections	1,241	383
6	L.T. Metering arrangement with CTs including cable connections and cleat arrangement	21,487	1,008
7	Installation of HT Lightening Arresters	1,859	1,515
8	C.I. Pipe earthing (3 Nos.)	12,804	4,442
	Total Cost of Material	**230,258**	**37,620**

3% Storage & handling charges	6,908
3% Contingencies on Materials	6,908
Labour & Transport	37,620
GST at 18 % on L&T	6,772
10% Estt. & General charges on Materials	23,026
Total Cost in Rs.	**311,491**

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

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

S. No.	Particulars	Cost of Material (Rs.)	Labour & Transport (Rs.)
1	11 KV/433 V 63 KVA CSP Distribution Transformer (Aluminium)	119,988	8,932
2	Erection of 11 KV AB Switch (200A)	10,609	2,264
3	D.P. Structure	18,672	18,173
4	Erection of 11 K.V. H.G. Fuse set	2,329	903
5	Installation of L.T.H.G. Fuse sets including connections	1,241	383
6	Metering arrangement with CTs including cable connections and cleat arrangement	21,487	1,008
7	Installation of HT Lightening Arresters	1,859	1,515
8	C.I. Pipe earthing (3 Nos.)	12,804	4,442
	Total Cost of Material	**188,990**	**37,620**

3% Storage & handling charges	5,670
3% Contingencies on Materials	5,670
Labour & Transport	37,620
GST at 18 % on L&T	6,772
10% Estt. & General charges on Materials	18,899
Total Cost in Rs.	**263,620**

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

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

S. No.	Particulars	Cost of Material (Rs.)	Labour & Transport (Rs.)
1	11 KV/433 V 63 KVA Distribution Transformer (Aluminium)	119,988	8,932
2	Erection of 11 KV AB Switch (200A)	10,609	2,264
3	Plinth for distribution transformer (5'x4'x8')		13,750
4	Erection of 11 K.V. H.G. Fuse set	2,329	903
5	Installation of L.T.H.G. Fuse sets including connections	1,241	383
6	L.T. Metering arrangement with CTs including cable connections and cleat arrangement	21,487	1,008
7	Installation of HT Lightening Arresters	1,859	1,515
8	C.I. Pipe earthing (3 Nos.)	12,804	4,442
	Total Cost of Material	**170,318**	**33,197**

3% Storage & handling charges	5,110
3% Contingencies on Materials	5,110
Labour & Transport	33,197
GST at 18 % on L&T	5,975
10% Estt. & General charges on Materials	17,032
Total Cost in Rs.	**236,742**

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

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

S. No.	Particulars	Cost of Material (Rs.)	Labour & Transport (Rs.)
1	11 KV/433 V 63 KVA CSP Distribution Transformer (Aluminium)	119,988	8,932
2	Erection of 11 KV AB Switch (200A)	10,609	2,264
3	Erection of structure for mounting of transformer	6,050	863
4	Erection of 11 K.V. H.G. Fuse set	2,329	903
5	Installation of L.T.H.G. Fuse sets including connections	1,241	383
6	L.T. Metering arrangement with CTs including cable connections and cleat arrangement	21,487	1,008
7	Installation of HT Lightening Arresters	1,859	1,515
8	C.I. Pipe earthing (3 Nos.)	12,804	4,442
	Total Cost of Material	**176,368**	**20,310**

3% Storage & handling charges	5,291
3% Contingencies on Materials	5,291
Labour & Transport	20,310
GST at 18 % on L&T	3,656
10% Estt. & General charges on Materials	17,637
Total Cost in Rs.	**228,553**

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)	161,256	8,932
2	Erection of 11 KV AB Switch (200A)	10,609	2,264
3	Construction of RCC Column type DTR Plinth of size 1'X1'X10',topslab 4'x4'x6" & beam size 4'X8'X8"		25,968
4	Erection of 11 K.V. H.G. Fuse set	2,329	903
5	Installation of L.T.H.G. Fuse sets including connections	1,241	383
6	L.T. Metering arrangement with CTs including cable connections and cleat arrangement	21,487	1,008
7	Installation of HT Lightening Arresters with earth connection	1,859	1,515
8	C.I. Pipe earthing (3 Nos.)	12,804	4,442
	Total Cost of Material	**211,586**	**45,415**

3% Storage & handling charges	6,348
3% Contingencies on Materials	6,348
Labour & Transport	45,415
GST at 18 % on L&T	8,175
10% Estt. & General charges on Materials	21,159
Total Cost in Rs.	**299,031**

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

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

S. No.	Particulars	Cost of Material (Rs.)	Labour & Transport (Rs.)
1	11 KV/433V/250 V 25 KVA 3-Ph Distribution Transformer (Copper)	65,524	8,932
2	Erection of 11 KV AB Switch (200A)	10,609	2,264
3	Erection of 11 KV HG Fuse set	2,329	903
4	Mounting arrangements for Transformer	6,050	550
5	Installation of L.T.H.G. Fuse sets including connecti	1,241	383
6	C.I. Pipe earthing (2 Nos.)	8,536	2,962
7	Misc. items (like bolts & nuts, washers etc.)	500	
	Total Cost of Material	**94,790**	**15,994**

3% Storage & handling charges	2,829
3% Contingencies on Materials	2,844
Labour & Transport	15,994
GST at 18 % on L&T	2,879
10% Estt. & General charges on Materials	9,479
Total Cost in Rs.	**128,815**

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

S. No.	Particulars	Cost of Material (Rs.)	Labour & Transport (Rs.)
1	11 KV/433V/250 V 25 KVA 3-Ph Conventional Distribution Transformer (Aluminium)	75,498	8,932
2	Erection of 11 KV AB Switch (200A)	10,609	2,264
3	Erection of 11 KV HG Fuse set	2,329	903
4	Mounting arrangements for Transformer	6,050	550
5	Installation of L.T.H.G. Fuse sets including connecti	1,241	383
6	C.I. Pipe earthing (2 Nos.)	8,536	2,962
7	Misc. items (like bolts & nuts, washers etc.)	500	
	Total Cost of Material	**104,764**	**15,994**

3% Storage & handling charges	3,128
3% Contingencies on Materials	3,143
Labour & Transport	15,994
GST at 18 % on L&T	2,879
10% Estt. & General charges on Materials	10,476
Total Cost in Rs.	**140,384**

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

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

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

S. No.	Particulars	Qty.	Rate in Rs.	Per Unit	Amount in Rs.
1	25 KVA Oil Immersed Single Phase 6.3 KV/0-240 V CSP CRGO core Transformer (Copper)	1	95,700	Each	95,700
2	Mounting arrangements for Transformer	1	3,106	Set	3,106
3	C.I. Pipe earthing	2	4,268	Each	8,536
4	LT Distribution Box (1-Phase) with XLPE 70 sq mm cable and 100 A fuse unit completely	1	1,000	Each	1,000
5	Misc. items (like bolts & nuts, washers etc.)	L.S.	500	L.S.	500
	Total Cost of Material				**108,842**

3% Storage & handling charges on items 1 to 3	3,220
3% Contingencies on Materials	3,265
Labour & Transport	3,000
GST at 18 % on L&T	540
10% Estt. & General charges on Materials	10,884
Total Cost in Rs.	**129,751**

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

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

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

S. No.	Particulars	Qty.	Rate in Rs.	Per Unit	Amount in Rs.
1	15 KVA Oil Immersed Single Phase 6.3 KV/0-240 V CRGO Core Transformer (Copper)	1	25,869	Each	25,869
2	Mounting arrangements for Transfomer	1	3,106	Set	3,106
3	C.I. Pipe earthing	2	4,268	Each	8,536
4	LT Distribution Box (1-Phase) with XLPE 70 sq mm cable and 100 A fuses complete.	1	1,000	Each	1,000
5	Misc. Items	L.S.	400		400
	Total Cost of Material				**38,911**

3% Storage & handling charges on items 1 to 3	1,125
3% Contingencies on Materials	1,167
Labour & Transport	3,000
GST at 18 % on L&T	540
10% Estt. & General charges on Materials	3,891
Total Cost in Rs.	**48,634**

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	1,880	Each	1,880
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
	Total Cost of Material				**4,122**

3% Contingencies on Materials	124
Labour & Transport	733
GST at 18 % on L&T	132
10% Estt. & General charges on Materials	412
Total Cost in Rs.	**5,523**

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	905	Each	1	905			905
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
	Total Cost of Material				**1,156**		**520**	**1,676**
	3% Contingencies on Materials				35		16	50
	Labour & Transport				160		340	500
	GST at 18 % on L&T				29		61	90
	10% Estt. & General charges on Materials				116		52	168
	Total Cost in Rs.				**1,495**		**989**	**2,485**

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	1,880	Each	1	1,880			1,880
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
	Total Cost of Material				**2,550**		**914**	**3,464**
	3% Contingencies on Materials				77		27	104
	Labour & Transport				320		440	760
	GST at 18 % on L&T				58		79	137
	10% Estt. & General charges on Materials				255		91	346
	Total Cost in Rs.				**3,260**		**1,551**	**4,811**

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	1,880	Each	1	1,880			1,880
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
	Total Cost of Material				**2,650**		**1,399**	**4,049**
	3% Contingencies on Materials				80		42	121
	Labour & Transport				320		440	760
	GST at 18 % on L&T				58		79	137
	10% Estt. & General charges on Materials				265		140	405
	Total Cost in Rs.				**3,373**		**2,100**	**5,473**

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)	5,758	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
	Total Cost of Material				**6,528**		**1,399**	**7,927**
	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
	Total Cost in Rs.				**7,755**		**2,100**	**9,855**

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	18,672	Each	2	37,344	2	36,345
2	11 KV 400 Amps conventional type AB switch	14,114	Each	2	28,228	2	6,400
3	11 KV HG Fuse set	2,329	Each	2	4,659	2	1,806
4	3x35 sq.mm 11 KV XLPE cable	318	Mts.	30	9,540	30	13,020
5	End termination suitable for 35 sq.mm XLPE (Cable outdoor type)	1,375	Each	4	5,500	4	6,912
6	G.I. earthing (3 Nos. GI Pipe)	4,531	Nos.	1	4,531	1	4,442
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)	7,350	Each	1	7,350	1	1,000
9	Special type box for Trivector meter	5,500	Each	1	5,500	1	200
10	Transport of material						1,650
11	Misc. items viz. link clips, wooden box, bolts & nuts etc.	L.S.	L.S.				550
	Total Cost of Material				**163,823**		**73,464**

3% Contingencies on Materials	4,915
Labour & Transport	73,464
GST at 18 % on L&T	13,223
10% Estt. & General charges on Materials	16,382
Total Cost in Rs.	**271,807**

COST DATA FOR STREET LIGHT SERVICE CONNECTION (SINGLE PHASE)

S. No.	Particulars	Qyt.	Rate in Rs.	Per Unit	Amount in Rs.
1	1 Phase (5-20A) Electronic Meter housed in a PP box	1	905	Each	905
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				**2,106**

3% Contingencies on Materials	63
Labour & Transport	600
GST at 18 % on L&T	108
10% Estt. & General charges on Materials	211
Total Cost in Rs.	**2,980**

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

Sl. No.	Particulars	Qty.	Unit	Rate per (in Rs.)	Amount (in Rs.)
1	LT 3-Phase class 0.5S Accuracy CT Operated Energy Meter Housed in a box with 3 Nos. CTs	1	Each	5,758	5,758
2	3.5 Core 95 LT XLPE Cable (for 10 meters) to LT side of DTR with cleat wiring.	LS			1,974
	Total				**7,732**
	3% Contingencies				232
	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.				1,415
	GST at 18 % on L&T				255
	10% Estt. & Genl. Charges				773
	Total Cost in Rs.				**10,407**

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)

Sl. No	Particulars	Qty.	Rate (Rs. in lakhs)	Unit	Amount (Rs. in lakhs)
1 a)	Lands and Rights	LS	As per local conditions		
b)	Plantation of Trees	LS		LS	0.15
2	Control Room and Consumer service centre (including furniture)	LS		LS	13.65
3	**Station Auxillaries**				
a)	Peripheral, Security Fencing, Approach road, retaing wall around switchward with gravel filling, gate and bore well	LS		LS	51.25
b)	Yard lighting	8	0.072	Each	0.58
c)	Fire fighting Equipment	2	0.646	Each	1.29
d)	P&T Phone and wireless set	LS		LS	0.05
4 a)	Foundations for structures, PTRs & breakers plinth	LS		LS	3.40
b)	Foundations for 33KV and 11KV VCB plinth and structure poles	LS		LS	6.95
5	Bus bars, Jumpers, Connectors claps etc.	LS		LS	1.32
6	Control Cables	LS		LS	1.19
7	Structural Steel	13	0.717	MT	9.32
8	**Transformers**				
a)	33/11kv **8 MVA** Power Transformer	2	83.000	Each	166.00
b)	11kv / 433 v **25 kva** 3-ph Stn. Transformer (CSP copper)	1	0.755	Each	0.75
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	3.680	Each	22.08
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	0.420	Each	0.42
b)	Alaram Panel	1	0.425	Each	0.43
11	**Instrument Transformers**				
a)	33KV PT (single unit)	3	0.217	Each	0.65
b)	11kv P.T (3 Phase)	1	0.283	Each	0.28
12	**Lightning Arrestors**				
a)	33KV 10KA	6	0.042	Each	0.25
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	0.525	Each	1.58
b)	11KV 800A AB Switch (Double Breaker)	3	0.325	Each	0.97
c)	11KV 400A AB Switch (Double Breaker)	12	0.141	Each	1.69
d)	11KV 200A AB Switch	1	0.106	Each	0.11
e)	11KV HG fuse Switch	3	0.023	Each	0.07
f)	33KV Horn Gap Fuse Set (1XNT)	2	0.064	Each	0.13
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	6.208	Each	6.21
16	3ph LT CT operated meter 100/5A for energy audit	1	0.078	Nos	0.08
17	LT 3 1/2 x185 sq.mm XLPE Cable	80	0.006	M	0.52
18	LT 1C 120sq.mm cable	40	0.001	M	0.04
19	Distribution box	1	0.097	Each	0.10
20	Earthing of Power Transformer VCBs,AB Swicthes,Strucutres with 75x8mm GI Flat			LS	1.98
	Sub Total				**304.52**

3% Contingencies on items 7 to 19	6.68
1% T&P Charges on items No. 7 to 19	2.23
10% Erection and transport and commissioning charges on items 7 to 19	22.27
GST at 18% on L&T	4.01
10% Establishment and General Charges	30.45
Grand Total	**370.16**

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)

Sl. No	Particulars	Qty.	Rate (Rs. in lakhs)	Unit	Amount (Rs. in lakhs)
1 a)	Lands and Rights	LS	As per local conditions		
b)	Plantation of Trees	LS		LS	0.15
2	Control Room and Consumer service centre (including furniture)	LS		LS	13.65
3	**Station Auxillaries**				
a)	Peripheral, Security Fencing, Approach road, retaing wall around switchward with gravel filling, gate and bore well	LS		LS	51.25
b)	Yard lighting	8	0.072	Each	0.58
4 a)	Foundations for structures, PTRs & breakers plinth	LS		LS	3.40
b)	Foundations for 33KV and 11KV VCB plinth and structure poles	LS		LS	6.95
c)	Fire fighting Equipment	2	0.646	Each	1.29
d)	P&T Phone and wireless set	LS		LS	0.05
5	Bus bars, Jumpers, Connectors claps etc.	LS		LS	1.32
6	Control Cables	LS		LS	1.19
7	Structural Steel	20	0.717	MT	14.34
8	**Transformers**				
a)	33/11kv 8 MVA Power Transformer	2	83.000	Each	166.00
b)	11kv / 433 v 25 kva 3-ph Stn. Transformer	1	0.755	Each	0.75
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	3.680	Each	22.08
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	0.420	Each	0.42
b)	Alaram Panel	1	0.425	Each	0.43
11	**Instrument Transformers**				
a)	33KV PT (single unit)	3	0.217	Each	0.65
b)	11kv P.T (3 Phase)	1	0.283	Each	0.28
12	**Lightning Arrestors**				
a)	33KV 10KA	6	0.042	Each	0.25
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	0.525	Each	1.58
b)	11KV 800A AB Switch (Double Breaker)	3	0.325	Each	0.97
c)	11KV 400A AB Switch (Double Breaker)	12	0.141	Each	1.69
d)	11KV 200A AB Switch	1	0.106	Each	0.11
e)	11KV HG fuse Switch	3	0.023	Each	0.07
f)	33KV Horn Gap Fuse Set (1XNT)	2	0.064	Each	0.13
14	Data Acquisition equipment (SIM, modem, cabling etc)			LS	0.45
15	2MVAR 11KV Capacitor Bank along with Associated Equipment (Type A)	1	8.524	Each	8.52
16	220 Volts 80 AH Battery Set including Battery Charger and DC DB	1	6.208	Each	6.21
17	3ph LT CT operated meter 100/5A for energy audit	1	0.078	Nos	0.08
18	LT 3 1/2 x185 sq.mm XLPE Cable	80	0.006	M	0.52
19	LT 1C 120sq.mm cable	40	0.001	M	0.04
20	Distribution box	1	0.097	Each	0.10
21	Earthing of Power Transformer VCBs,AB Swicthes,Strucutres with 75x8mm GI Flat			LS	1.98
	Sub Total				**318.06**

3% Contingencies on items 7 to 20	7.09
1% T&P Charges on items No. 7 to 20	2.36
10% Erection and transport and commissioning charges on items 7 to 20	23.63
GST at 18% on L&T	4.25
10% Establishment and General Charges	31.81
Grand Total	**387.19**

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

Sl. No.	PARTICULARS	Qty.	Rate (Rs. in lakhs)	Unit	Amount (Rs. in lakhs)
1 a)	Lands and rights	LS	As per local conditions		
b)	Plantation of Trees	LS	0.150	LS	0.15
2	**Civil Works**				
a)	Construction of Control room	LS	69.240	LS	69.24
b)	Compound wall, Gate,levelling of site and Borewell	LS	13.350	LS	13.35
c)	special foundations				
d)	Laying of Cable Trench	LS	7.100	LS	7.10
e)	Electrification and sanitation arrangements	LS	2.450	LS	2.45
f)	Construction of Transformer plinth	LS	3.550	LS	3.55
3	**Station Auxillaries**				
a)	Yard lighting	6	0.072	E	0.43
b)	Spreading of Metal	LS	0.310	LS	0.31
c)	Telephone (P &T) and wireless set	LS	1.375	LS	1.38
d)	Miscellenous items like Rubber Mats, Earth rods, Helmets, Gloves, Furniture, T&P etc	LS	1.100	LS	1.10
e)	Fire fighting Equipment,				
i	High Pressure Carbon Water Mist&CAFS 9L	1	3.813	Each	3.81
ii	Composite Fire Extinguisher-HDPE 9L Foam	1	0.646	Each	0.65
4	Foundations for breakers etc.	LS	0.660	LS	0.66
5	Bus bar arrangements	LS	2.750	LS	2.75
6	Control cables	LS	1.100	LS	1.10
7	**Power and Distribution Transformers**				
a)	33/11 KV, 8 MVA Power Transformers	2	83.000	Each	166.00
b)	25KVA 11/04KV Station Transformer	1	0.755	Each	0.75
8	**Indoor switch gear & Control panels**				
a)	33 KV, 25 KVA, 1250 A, 8 Panels SF-6, GIS Switch gear consisting of the following				
i	1250 A Transformers control cubicals 2 Nos.				
ii	1250 - A Incoming feeder cubicals - 3 Nos.				
iii	1250 - A Bus coupler - 1 No.				
b)	11 KV, 20 KVA, 1250 A ,14 panels SF6 GIS switch gear consisting the following equipments	1	211.005	Each	211.00
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	Alaram and Annunciation Panel	1	0.425	Each	0.43
10	AC Panel	1	0.420	Each	0.42
11	220 Volts, 200 AH, Battery with trickle charger	1	6.208	Each	6.21
12	Data Acquisition equipment (SIM, modem, cabling etc)			LS	0.45
13	**Earthing Arrangements**				
a)	MS Flat75x8 mm for providing earthing matting complete	2	0.703	MT	0.58
b)	MS Flat 50x6 mm for earthing the equipment	2	0.703	MT	0.58
c)	Earthing electrodes & GI pipes	LS	0.902	LS	0.90
14	3ph LT CT operated meter 100/5A for energy audit	1	0.078	Nos	0.08
15	LT 3 1/2 x185 sq.mm XLPE Cable	80	0.006	M	0.52
16	LT 1C 120sq.mm cable	40	0.001	M	0.04
17	Distribution box	1	0.097	Each	0.10
18	RS Joist 175x85/150x150(Girder poles) for base of switch gear	1.5	0.717	MT	1.08
	Sub Total				**497.16**

3% Contingencies on Items 7 To 18	11.67
10% Transport, Erection and Commissioning charges on items 7 To 18	38.91
GST at 18% on L&T	7.00
10% Establishment and General Charges	49.72
Grand Total	**604.47**

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)

Sl. No	Particulars	Qty.	Rate (Rs. in lakhs)	Unit	Amount (Rs. in lakhs)
1 a)	Lands and Rights	LS	As per local conditions		
b)	Plantation of Trees	LS		LS	0.15
2	Control Room and Consumer service centre (including furniture)	LS		LS	12.00
3	**Station Auxillaries**				
a)	Peripheral, Security Fencing, Approach road, retaing wall around switchward with gravel filling, gate and bore well	LS		LS	28.15
b)	Yard lighting	8	0.072	Each	0.58
c)	Fire fighting Equipment	2	0.646	Each	1.29
d)	P&T Phone and wireless set	LS		LS	0.05
4 a)	Foundations for structures, PTRs & breakers plinth	LS		LS	3.10
b)	Foundations for 33KV and 11KV VCB plinth and structure poles	LS		LS	6.95
5	Bus bars, Jumpers, Connectors claps etc.	LS		LS	1.32
6	Control Cables	LS		LS	1.19
7	Structural Steel	4.5	0.717	MT	3.23
8	9.1 meters PSCC poles	30	0.031	Each	0.92
9	**Transformers**				
a)	33/11kv 5 MVA Power Transformer	2	66.068	Each	132.14
b)	3-Phase 25 KVA (CSP) (Al)	1	0.755	Each	0.75
10	**Circuit Breakers (including trivector meters)**				
a)	20 KA 11 kv feeder VCB including Control panel and CTs (NF=5)	5	3.680	Each	18.40
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	0.420	Each	0.42
b)	Alaram Panel	1	0.425	Each	0.43
12	**Instrument Transformers**				
a)	11kv P.T (3 Phase)	1	0.283	Each	0.28
13	**Lightning Arrestors**				
a)	33KV 10KA	6	0.042	Each	0.25
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	0.525	Each	1.58
b)	11KV 800A AB Switch (NT X 1+1) (Double Break)	3	0.325	Each	0.97
c)	11KV 400A AB Switch (NF X 2+2) (Double Break)	12	0.141	Each	1.69
d)	33KV Horn Gap Fuse Set (1XNT)	2	0.064	Each	0.13
15	Data Acquisition equipment (SIM, modem, cabling etc)			LS	0.40
16	24 Volts 40 AH Battery Set including Battery Charger	7	0.286	Each	2.00
17	2MVAR 11KV Capacitor Bank along with Associated Equipment	1	8.524	Each	8.52
18	3ph LT CT operated meter 100/5A for energy audit	1	0.078	Nos	0.08
19	LT 3 1/2 x185 sq.mm XLPE Cable	80	0.006	M	0.52
20	LT 1C 120sq.mm cable	40	0.001	M	0.04
21	Distribution box	1	0.097	Each	0.10
22	Earthing of Power Transformer VCBs,AB Swicthes,Strucutres with 75x8mm GI Flat			LS	1.98
	Sub Total				**236.18**

3% Contingencies on items 7 to 21	5.38
1% T&P Charges on items No. 7 to 21	1.79
Erection and transport and commissioning charges on items 7 to 21 at 10%	17.94
GST at 18% on L&T	3.230
10% Establishment and General Charges	23.62
Grand Total	**288.15**

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)

Sl. No	Particulars	Qty.	Rate (Rs. in lakhs)	Unit	Amount (Rs. in lakhs)
1 a)	Lands and Rights	LS	As per local conditions		
b)	Plantation of Trees	LS		LS	0.15
2	Control Room and Consumer service centre (including furniture)	LS		LS	12.00
3	**Station Auxillaries**				
a)	Peripheral, Security Fencing, Approach road, retaing wall around switchward with gravel filling, gate and bore well	LS		LS	28.15
b)	Yard lighting	8	0.072	Each	0.58
c)	Fire fighting Equipment	LS		LS	0.70
d)	P&T Phone and wireless set	LS		LS	0.00
4 a)	Foundations for structures, PTRs & breakers plinth	LS		LS	3.10
b)	Foundations for 33KV and 11KV VCB plinth and structure poles	LS		LS	6.95
5	Bus bars, Jumpers, Connectors claps etc.	LS		LS	1.32
6	Control Cables	LS		LS	1.19
7	Structural Steel	6	0.717	MT	4.30
8	9.1 meters PSCC poles	38	0.031	Each	1.16
9	**Transformers**				
a)	33/11kv 5 MVA Power Transformer	2	66.068	Each	132.14
b)	3-Phase 25 KVA (CSP) (Al)	1	0.755	Each	0.75
10	**Circuit Breakers (including trivector meters)**				
a)	20 KA 11 kv feeder VCB including Control panel and CTs (NF=5)	5	3.680	Each	18.40
b)	20 KA 11 kv LV VCB including Control panel and CTs	2	3.440	Each	6.88
11	**Control Circuit Panels**				
a)	AC Supply Panel	1	0.420	Each	0.42
b)	Alaram Panel	1	0.425	Each	0.43
12	**Instrument Transformers**				
a)	11kv P.T (3 Phase)	1	0.283	Each	0.28
13	**Lightning Arrestors**				
a)	33KV 10KA	6	0.042	Each	0.25
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	0.525	Each	1.58
b)	11KV 800A AB Switch (NT X 1+1) (Double Breaker)	3	0.325	Each	0.97
c)	11KV 400A AB Switch (NF X 2+2) (Double Breaker)	12	0.141	Each	1.69
d)	33KV Horn Gap Fuse Set (1XNT)	2	0.064	Each	0.13
15	Data Acquisition equipment (SIM, modem, cabling etc)			LS	0.40
16	24 Volts 40 AH Battery Set including Battery Charger	7	0.286	Each	2.00
17	3ph LT CT operated meter 100/5A for energy audit	1	0.078	Nos	0.08
18	LT 3 1/2 x185 sq.mm XLPE Cable	80	0.006	M	0.52
19	LT 1C 120sq.mm cable	40	0.001	M	0.04
20	Distribution box	1	0.097	Each	0.10
21	Earthing of Power Transformer VCBs,AB Swicthes,Strucutres with 75x8mm GI Flat			LS	1.80
	Sub Total				**228.77**

3% Contingencies on items 7 to 20	5.19
1% T&P Charges on items No. 7 to 20	1.73
Erection and transport and commissioning charges on items 7 to 20 at 10%	17.28
GST at 18% on L&T	3.11
10% Establishment and General Charges	22.88
Grand Total	**278.95**

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

Sl. No	Particulars	Qty.	Rate (Rs. in lakhs)	Unit	Amount (Rs. in lakhs)
1 a)	Lands and Rights	LS			
b)	Plantation of Trees	LS		LS	0.15
2	Control Room and Consumer service centre (including furniture)	LS		LS	12.00
3	**Station Auxillaries**				
a)	Peripheral, Security Fencing, Approach road, retaing wall around switchward with gravel filling, gate and bore well	LS		LS	28.15
b)	Yard lighting	8	0.072	Each	0.58
c)	Fire fighting Equipment	LS		LS	0.70
d)	P&T Phone and wireless set	LS		LS	0.05
4 a)	Foundations for structures, PTRs & breakers plinth	LS		LS	3.10
b)	Foundations for 33KV and 11KV VCB plinth and structure poles	LS		LS	6.95
5	Bus bars, Jumpers, Connectors claps etc.	LS		LS	1.32
6	Control Cables	LS		LS	1.19
7	Structural Steel	5.5	0.717	MT	3.94
8	9.1 meters PSCC poles	23	0.031	Each	0.70
9	8 meters PSCC poles	8	0.017	Each	0.13
10	**Transformers**				
a)	33/11kv 5 MVA Power Transformer	1	66.068	Each	66.07
b)	3-Phase 25 KVA (CSP) (Al)	1	0.755	Each	0.75
11	**Circuit Breakers (including trivector meters)**				
a)	20 KA 11 kv feeder VCB including Control panel and CTs (NF=3)	3	3.680	Each	11.04
b)	20 KA 11 kv LV VCB including Control panel and CTs	1	3.440	Each	3.44
12	**Control Circuit Panels**				
a)	AC Supply Panel	1	0.420	Each	0.42
b)	Alaram Panel	1	0.425	Each	0.43
13	**Instrument Transformers**				
a)	11kv P.T (3 Phase)	1	0.283	Each	0.28
14	**Lightning Arrestors**				
a)	33KV 10KA	6	0.042	Each	0.25
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	0.525	Each	1.58
b)	11KV 800A AB Switch (NT X 1+1)	2	0.325	Each	0.65
c)	11KV 400A AB Switch (NF X 2+2)	8	0.141	Each	1.13
d)	33KV Horn Gap Fuse Set (1XNT)	1	0.064	Each	0.06
16	Data Acquisition equipment (SIM, modem, cabling etc)			LS	0.30
17	24 Volts 40 AH Battery Set including Battery Charger	4	0.286	Each	1.14
18	2MVAR 11KV Capacitor Bank along with Associated Equipment	1	8.524	Each	8.52
19	3ph LT CT operated meter 100/5A for energy audit	1	0.078	Nos	0.08
20	LT 3 1/2 x185 sq.mm XLPE Cable	80	0.006	M	0.52
21	LT 1C 120sq.mm cable	40	0.001	M	0.04
22	Distribution box	1	0.097	Each	0.10
23	Earthing of Power Transformer VCBs,AB Swicthes,Strucutres with 75x8mm GI Flat			LS	1.80
	Sub Total				**157.74**

3% Contingencies on items 7 to 22	3.05
1% T&P Charges on items No. 7 to 22	1.02
10% Erection and transport and commissioning charges on items 7 to 22	10.18
GST at 18% on L&T	1.83
10% Establishment and General Charges	15.77
Grand Total	**189.59**

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

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

S. No.	Particulars	Qty.	Rate in Rs.	Per Unit	Amount in Rs.
1	150X150 mm H type beam of 8.5 mts length (2 Nos. RS Joist)	0.588	71,685	MT	42,165
2	100x50 mm Channel	0.201	64,605	MT	12,970
3	MS flat 75x8 mm	0.05	70,300	MT	3,515
4	AB switch 400 Amps conventional type	1	14,114	Each	14,114
5	200 sqmm ACSR Conductor (Panther-conductor)	0.02	204,729	KM	4,095
6	11 KV Polymer String insulator (C&T)	18	196	Each	3,526
7	Earthing arrangement (20 mts length with 75x8 MS flat (20x4.7=94)	94	70	KG	6,608
8	Pad clamps, bolts & nuts & Miscellaneous items	LS			1,650
	Sub-Total				**88,643**

3% Contingencies	2,659
Labour & Transport	25,293
GST at 18% on L&T	4,553
10% Establishment & General charges	8,864
Grand Total	**130,013**

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

S. No.	Particulars	Qty.	Rate in Rs.	Per Unit	Amount in Rs.
1	9.1 mts. PSCC poles	2	3,056	Each	6,112
2	100x50 mm Channel	0.201	64,605	MT	12,970
3	MS flat 75x8 mm	0.05	70,300	MT	3,515
4	AB switch 400 Amps conventional type	1	14,114	Each	14,114
5	200 sqmm ACSR Conductor (Panther conductor)	0.02	204,729	KM	4,095
6	11 KV Polymer String insulator (C&T)	18	196	Each	3,526
7	Earthing arrangement (20 mts length with 75x8 MS flat (20x4.7=94)	94	70	KG	6,608
8	Pad clamps, bolts & nuts & Miscellaneous items	LS			1,650
	Sub-Total				**52,590**

3% Contingencies	**1,578**
Labour & Transport	**25,293**
GST at 18% on L&T	**4,553**
10% Establishment & General charges	**5,259**
Grand Total	**89,273**

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

Sl.No	Description of Material	Qty	Unit	Rate	Amount in Rs.
1	150 x 150 RSJ pole (8m)	0.6	MT	71,685	43,011
2	100 x 50 mm MS channel	0.27	MT	64,605	17,443
3	75 x 8mm flat for clamps & earthing	0.2	MT	70,300	14,060
4	200 sqmm Panther conductor	0.02	KM	204,729	4,095
5	Strain Insulator set with metal parts (each set consists 3 Nos 11 KV strain insulators)	6	Set	588	3,526
6	Erection of 33 KV AB switch (800 Amps, Conventional)	1	Each	52,516	52,516
7	Miscelleneous items like fabrication of channels & pad clamps etc.		LS		2,750
	Sub-Total				**137,401**
	3% Contingencies				4,122
	3% S&H charges				4,122
	Labour & Transport				26,143
	GST at 18 % on L&T				4,706
	10% Estt & General charges on material				13,740
			Total		**190,233**

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

Sl. No.	Description	Qty	Rate	Per	Amount in Rs.
1	Galvanised steel such as M.S.angles, flats, channels for TC & TD towers. (GHMC SSR Towers sheet)	5	76,174	MT	380,871
2	Spacer clamps for 33KV bus	9	508	Each	4,572
3	Spacer clamp with T off zebra for one feeder	3	153	Each	459
4	33 KV Polymer String Insulator (B&S)	8	461	Each	3,691
5	Tension hardware for twin zebra	6	2,512	Each	15,072
6	Zebra condutor	0.150	299,369	KM	44,905
7	33KV AB Switch 800 A	1	52,516	Each	52,516
8	Twin Zebra connector	12	600	Each	7,200
9	T Clamps	12	500	Each	6,000
10	MS.Flat 100x16	0.63	46,904	MT	29,550
11	MS.Flat 50X8	0.62	51,817	MT	32,127
12	GI Flat 100X16	0.151	63,235	MT	9,548
13	GI Flat 50X8	0.155	63,478	MT	9,839
14	Civil works for erection of towers in sub-station yard and other miscellaneous items.			LS	100,000
	Sub-Total				**696,350**
	3% S&H charges on Material				17,890
	3% Contingencies on Material				17,890
	Labour & Transport				163,116
	GST at 18 % on L&T				29,361
	10% Estt. & Gen. Chargtes				69,635
				Gross Total	**994,242**

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

Sl.No	Description of work	Qty	Unit	Rate	Amount in Rs.
1	11 KV VCB along with all Accessories Including CTs	1	Each	367,963	367,963
2	4x2.5 sqmm Control cable	0.05	KM	104,430	5,222
3	Earthing arrangements (20 mts length with 50x6 MS flat (20x2.4=48)	48	KG	70.3	3,374
4	Miscellenous items like conductor and clamps etc	LS			1,650
	Sub-Total				**378,209**
	3% Contingencies				11,346
	3% S&H charges				11,346
	Labour & Transport				56,443
	GST at 18 % on L&T				10,160
	10% Estt & General charges				37,821
				Total	**505,325**

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	493,500	Each	493,500
2	LT PVC Copper Control Cable 10 C x2.5 Sq.mm	0.75	246,030	KM	184,523
3	LT PVC Copper Control Cable 4 C x2.5 Sq.mm	0.75	104,430	KM	78,323
4	33KV LAS line type	3	2,205	Each	6,616
5	33 KV Twin feeder control panel	1	385,643	No	385,643
6	Miscellenous items			LS	1,100
	Sub-Total				**1,149,705**
	3% S&H charges				34,491
	3% Contingencies on material				34,491
	Labour & Transport				121,164
	GST 18 % on L&T				21,809
	10% Estt. & General Charges				114,970
				Gross Total	**1,476,631**

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	724,070	Each	724,070
2	24 volts 40AH Battery Set including Battery Charger	1	28,566	Each	28,566
3	M.S.Flat 50x6mm	0.36	70,300	MT	25,308
4	Panther Conductor	0.05	204,729	KM	10,236
5	4 Core 2.5 Sqmm PVC Copper Control Cable	0.05	104,430	KM	5,222
6	10 Core 2.5 Sqmm PVC Copper Control Cable	0.1	246,030	KM	24,603
7	2 Core 2.5 Sqmm PVC Copper Control Cable	0.06	59,590	KM	3,575
8	11KV Post type insulators	3	288	Each	864
9	Cost of CI pipe of 100 mm dia, 8 mm thick and 2.75 Mts long	2	3,486	Each	6,972
10	11KV H.G. Fuse Set with Insulators	1	2,329	Each	2,329
11	11KV LA's Station type	3	1,528	Each	4,583
12	M.S. Channel 100x50mm	0.24	64,605	MT	15,505
13	Miscellaneous items	LS			550
	Sub-Total				**852,383**

3% Contingencies		25,571
Labour ,Transport & Commsioning charges		89,430
GST at 18 % on L&T		16,097
10% Establishment & General charges		85,238
	Grand Total	**1,068,721**

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

Sl. No.	Particulars	Qty	Rate in Rs.	Unit	Amount in Rs.
1	33/11 KV 8 MVA Power Transformer	1	8,300,000	Each	8,300,000
2	Erection of 33 KV VCB with directional relay	1	395,604	Each	395,604
3	Miscellneous Items			LS	50,000
	Sub-Total				**8,745,604**
	3 % Storage & Handling charges				262,368
	3% Contingencies on material				262,368
	Labour & Transport				120,000
	GST at 18% on L&T				21,600
	10% Estt & General charges on material				874,560
	Add: Dismantling charges				50,000
			Grand Total		**10,336,500**
	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	6,606,820	Each	6,606,820
	Depreciation 40% (Variable as per life served)		2,642,728		2,642,728
				Net	3,964,092
	Original erection charges (SWR21275 MP)				39,584
	Original dismantling charges				19,792
	10% Estt. & General charges				396,409
			Total		4,419,877
	Net Amount = Grand total - Less credit		**10,336,500**	**4,419,877**	**5,916,623**

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

Sl. No	Description of the material	Qty	Rate	Unit	Amount in Rs.
1	Laying 11 KV 3 core 300Sq.mm UG Cable at depth of 1.20mtrs along CC road	1	1,425,322	KM	1,425,322
2	Erection of 3 way RMU (SF6) outdoor type	1	583,982	Each	583,982
3	Straight through joints for 3 core 11KV 300Sq.mm UG Cable	1	3,725	Each	3,725
4	End termination suitable for 3 core 300 Sq.mm UG cable	4	2,371	Each	9,484
5	Earthing of Cable with GI pipe of 2mt length	3	733	Nos	2,199
	Sub-Total				**2,024,712**

3 % storage & handling charges		42,760
3 % contingencies		42,760
Labour and Transport		638,628
GST at 18 % on L&T		114,953
10 % Estt & General charges		202,471
	Grand Total	**3,066,284**

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

Sl. No	Description of the material	Qty	Rate	Unit	Amount in Rs.
1	Laying 33 KV 3 core 400Sq.mm UG Cable at depth of 1.20mtrs along CC road	1	3,019,134	KM	3,019,134
2	Straight through joints and end terminators suitable for 3 core 33KV 400Sq.mm UG Cable and Hume pipes and GI pipe (15% of cost cable)	1	5,701	Each	5,701
3	End termination suitable for 400 Sq.mm (outdoor type)	2	2,765	Nos	5,530
4	Earthing of Cable with GI pipe of 2mt length	2	698	Nos	1,396
	Sub-Total				**3,031,761**

3 % Storage & handling charges		90,574
3 % Contingencies		90,574
Labour and Transport		748,328
GST at 18 % on L&T		134,699
10 % Estt & General charges		303,176
	Grand Total	**4,399,112**

DATA-VII

Erection of Galvanised M+3 Tower as per ASCI Standard without excavation

S. No.	Particulars	Qty.	Per Unit	Rate	Amount in Rs.
	Material				
1	Supply of Galvanised M+3 type tower as per Specification.	1.468	MT	83913.06	123,184
2	Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers.	158	KG	110.69	17,490
				Total:	**140,674**
	Labour				
1	Fabrication of tower Parts as per Specification	1.468	MT	6479.70	9,512
2**	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 1.2x1.2x3.3 mtr i.e.4.752 cum	4.752	CUM		
3	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	7310.18	34,738
4	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	7657.83	11,242
5	Tack welding of total tower nuts and bolts	1	Job	1767.19	1,767
6	Pipe earthing of towers with 40mm dia GI pipe, including cost of pipe, bentonite powder and running of GI flat etc.,	2	Each	1743.04	3,486
7	Transport of Material to site including loading and unloading	1.626	MT	2356.26	3,831
				Total:	**64,576**

(**) Note:-(1) Earth work excavation of Hard Rock 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	1.290	MT
2	Weight of 1 No. extension of 3 Mts	0.335	MT
3	Weight of M+3 tower	1.626	MT
4	Weight of M+6 tower	1.962	MT
5	Weight of M+9	2.294	MT
6	Weight of **SIX** arms	0.091	MT

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

DATA-VI

Erection of Galvanised L+3 Tower as per ASCI Standard without excavation

S. No.	Particulars	Qty.	Per Unit	Rate	Amount
	Material				
1	Supply of L+3 type tower as per Specification.	1.05	MT	83913.63	88,109
2	Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers.	168	KG	110.69	18,597
				Total:	**106,706**
	Labour				
1	Fabrication of tower Parts as per Specification	1.05	MT	6479.70	6,804
2**	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	3.000	CUM		
3	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	7025.18	22,129
4	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	7657.83	8,041
5	Tack welding of total tower nuts and bolts	1.00	Job	1767.19	1,767
6	Pipe earthing of towers with 40mm dia GI pipe, including cost of pipe, bentonite powder and running of GI flat etc.,	2.00	Each	1743.04	3,486
				Total:	**42,227**

(**) Note:-(1) Earth work excavation of Hard Rock 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	0.957 MT
2	Weight of 1 No. extension of 3 Mts	0.263 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-V

Erection of Galvanised K+3 Tower as per ASCI Standard without excavation

S. No.	Particulars	Qty	Per Unit	Rate	Amount
	Material				
1	Supply of Galvanised K+3 type tower as per Specification.	0.75	MT	83914.66	62,936
2	Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers.	118.27	KG	110.69	13,092
				Total:	**76,028**
	Labour				
1	Fabrication of tower Parts as per Specification	0.75	MT	6479.70	4,860
2**	Excavation of pit including dewatering, planking, showring and shuttering(where ever necessary) and leveling a) in all types of soils such as BC, red earth, hard gravel etc., b) in hard rock sites (where blasting is prohibited) with size 1.0x1.0x2.5 mtr i.e.2.5 cum	2.500	CUM		
2	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	7025.18	18,617
3	Erection of tower parts completely as per specification including erection of insulators with all accessories, jumpering and bolts and nuts etc.,	0.75	MT	7657.83	5,743
4	Tack welding of total tower nuts and bolts	1.00	Job	1767.19	1,767
5	Pipe earthing of towers with 40mm dia GI pipe, including cost of pipe, bentonite powder and running of GI flat etc.,	2.00	Each	1743.04	3,486
6	Transport of Material to site including loading and unloading	0.868	MT	2356.26	2,046
			Total		**36,519**

(**) Note:-(1) Earth work excavation of Hard Rock 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

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

DATA-VIII

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

S. No	Description	Qty	Per Unit	Rate	Amount
	Material				
1	Supply of Galvanised K+3 type tower as per Specification.	0.14	MT	83918.46	11,584
2	Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers.	24.96	KG	110.70	2,764
				Total:	**14,347**
	Labour				
1	Fabrication of tower Parts as per Specification	0.14	MT	6480.29	895
2	Erection of tower parts completely as per specification including erection of insulators with all accessories, jumpering and bolts and nuts etc.,	0.14	MT	7658.53	1,057
3	Transport of Material to site including loading and unloading	0.16	MT	2356.47	384
				Total:	**2,336**

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	1.030
5	Weight of K+9	1.193
6	Weight of each arm	0.103 MT

stubs

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

DATA-IX

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

S. No	Description	Qty.	Per Unit	Rate	Amount
	Material				
1	Supply of L+3 type tower as per Specification.	0.24	MT	83916.32	20,094
2	Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers.	23.81	KG	110.70	2,635
				Total:	**22,729**
	Labour				
1	Fabrication of tower Parts as per Specification	0.24	MT	6480.29	1,552
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	7658.53	1,834
3	Transport of Material to site including loading and unloading	0.26	MT	2356.47	620
				Total:	**4,006**

Tower details

1	Weight of L type tower including nuts&bolts	0.957 MT
2	Weight of 1 No. extension of 3 Mts	0.263 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 Galvanized M+3 Tower as per ASCI Standard

S. No	Description	Qty.	Per Unit	Rate	Amount
	Material				
1	Supply of Galvanised M+3 type tower as per Specification.	0.30	MT	83916.41	25,175
2	Supply of Suitable Hot dip Galvanised, Zinc coated Nuts and bolts with suitable plain and spring washers.	30.23	KG	110.70	3,346
				Total:	**28,521**
	Labour				
1	Fabrication of tower Parts as per Specification	0.30	MT	6672.88	2,002
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	7886.13	2,366
3	Transport of Material to site including loading and unloading	0.33	MT	2426.50	801
				Total:	**5,169**

+3 Extension

100x100x10=3mtrs

Note:- The material has to be certified before dispatch of materials to the site by field Engineer not below the rank of Divisional Engineer.

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

Sl. No	Description of Material	Qty	Unit	Rate	Amount in Rs.
1	150 x 150 RSJ pole (8m)	0.6	MT	71,685	43,011
2	100 x 50 mm MS channel	0.27	MT	64,605	17,443
3	75 x 8mm flat for clamps & earthing	0.4	MT	70,300	28,120
4	200 sqmm Panther conductor	0.02	KM	204,729	4,095
5	Strain Insulator set with metal parts (each set consists 3 Nos 11 KV strain insulators)	6	Set	588	3,526
5	Erection of 33 KV AB switch	1	Each	52,516	52,516
6	5 MVA Power Transformer	1	Each	6,606,820	6,606,820
7	Foundation of Power Transformer	1	LS	50,000	50,000
8	Miscelleneous items like fabrication of channels & pad clamps etc.		LS		5,000
	Sub-Total				**6,810,531**
	3% Contingencies				204,316
	3% S&H charges				204,316
	Labour & Transport				54,075
	GST at 18 % on L&T				9,733
	10% Estt & General charges on material				681,053
			Total		**7,964,024**

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

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

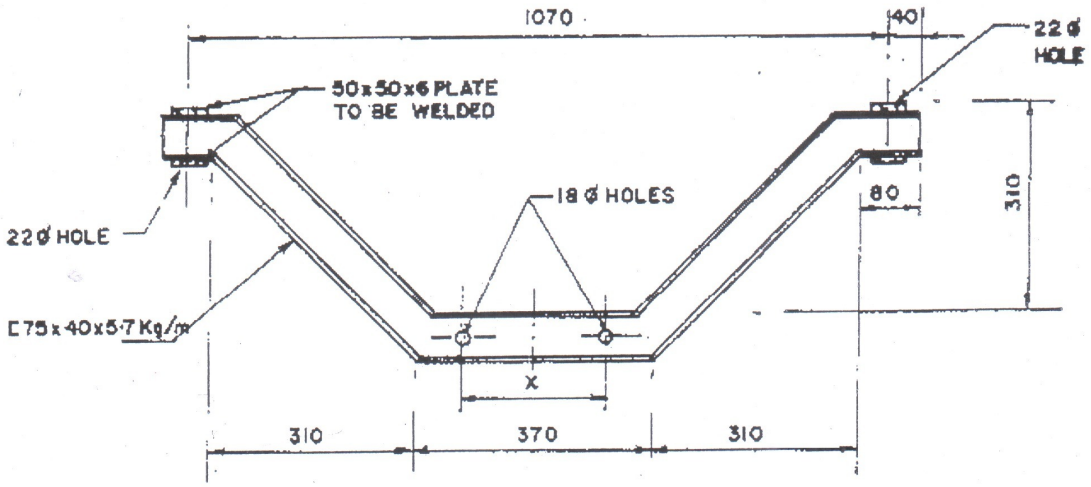
REC- CONSTRUCTION STANDARD NOS. OTHER THAN THE ITEMS INCLUDED IN THE 33 KV 11 KV & LT LINES ERECTION AND CENTRALISED MATERIAL

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

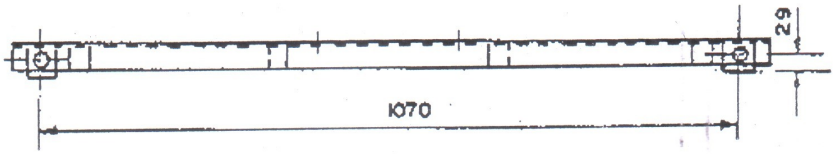
REC

CONSTRUCTION STANDARD

A-6



ELEVATION



PLAN

X :- -TO SUIT THE POLE

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

ALL DIMENSIONS ARE IN mm.

११ के.वी. लाईन

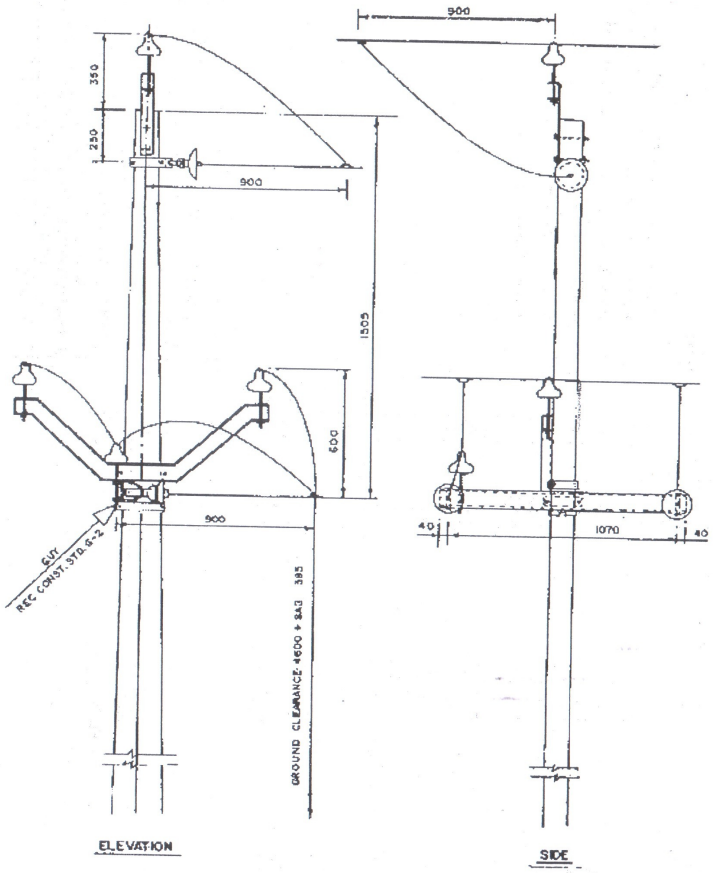
V-केची भुजा

11 KV LINES

V - CROSS ARM

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

REC
CONSTRUCTION STANDARD
A-II



BILL OF MATERIAL

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

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

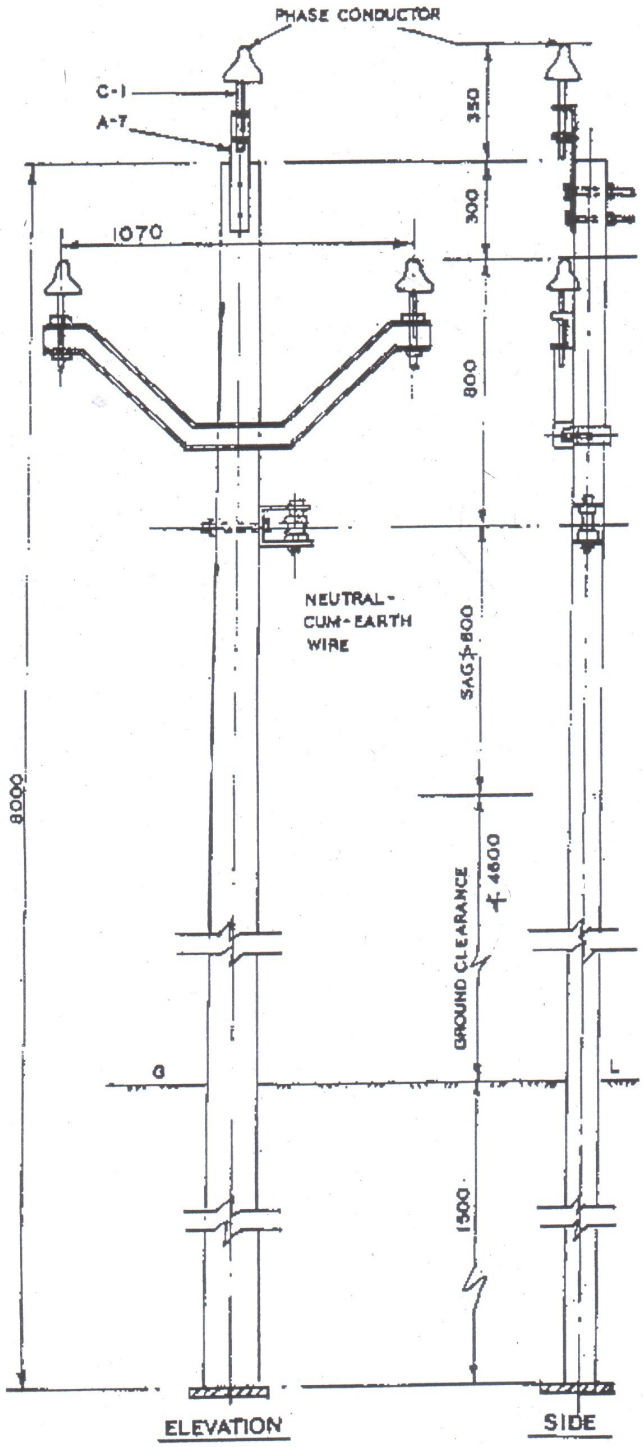
ALL DIMENSIONS ARE IN mm.

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

11 KV LINE
TAPPING ARRANGEMENT
SINGLE POLE TAPPING

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

REC
CONSTRUCTION STANDARD
A-16



BILL OF MATERIAL

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

NOTES :-

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

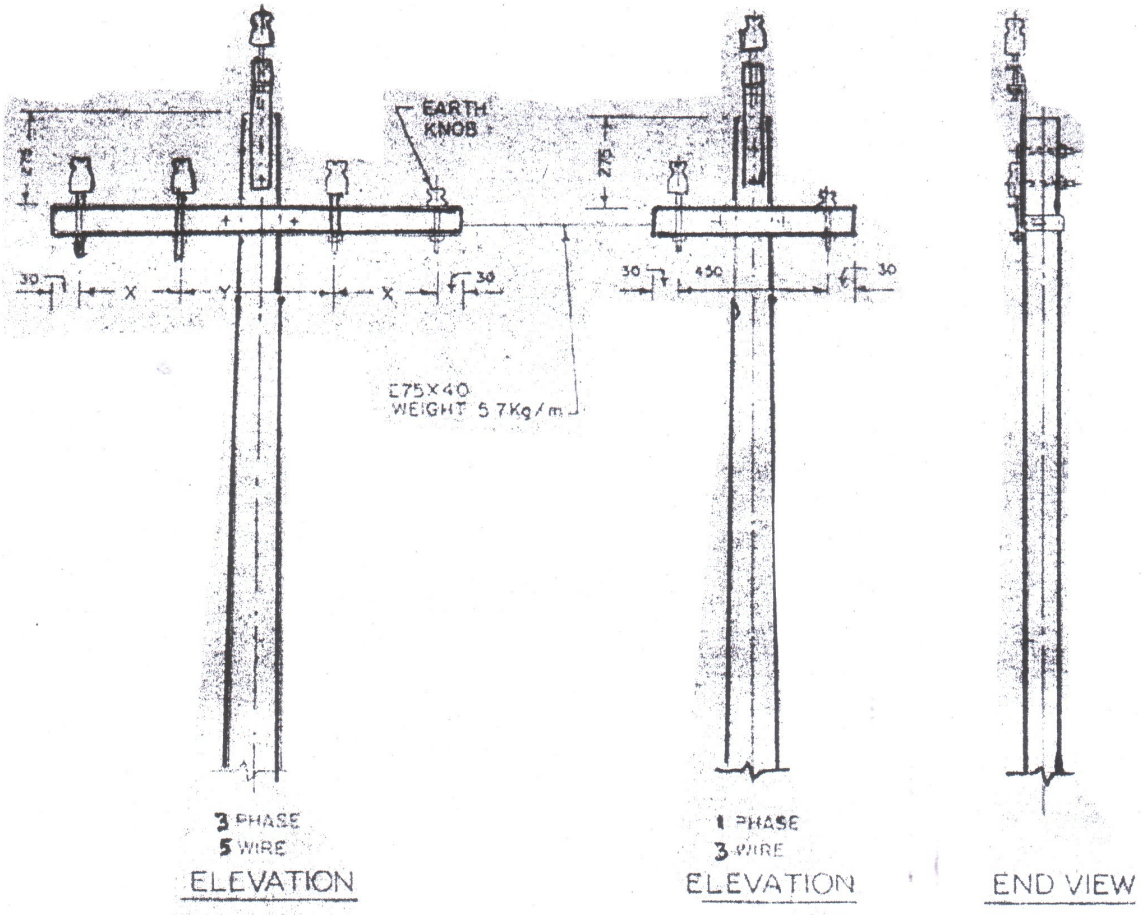
११ के.वी. ३-फेज लाईन व कन्डक्टर फारमेशन और क्लीयेरेन्स-३फेज/सिंगल फेज कम्पोजिट सिस्टम फेज से न्यूट्रल

11 KV LINES

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

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

REC
CONSTRUCTION STANDARD
B-3.



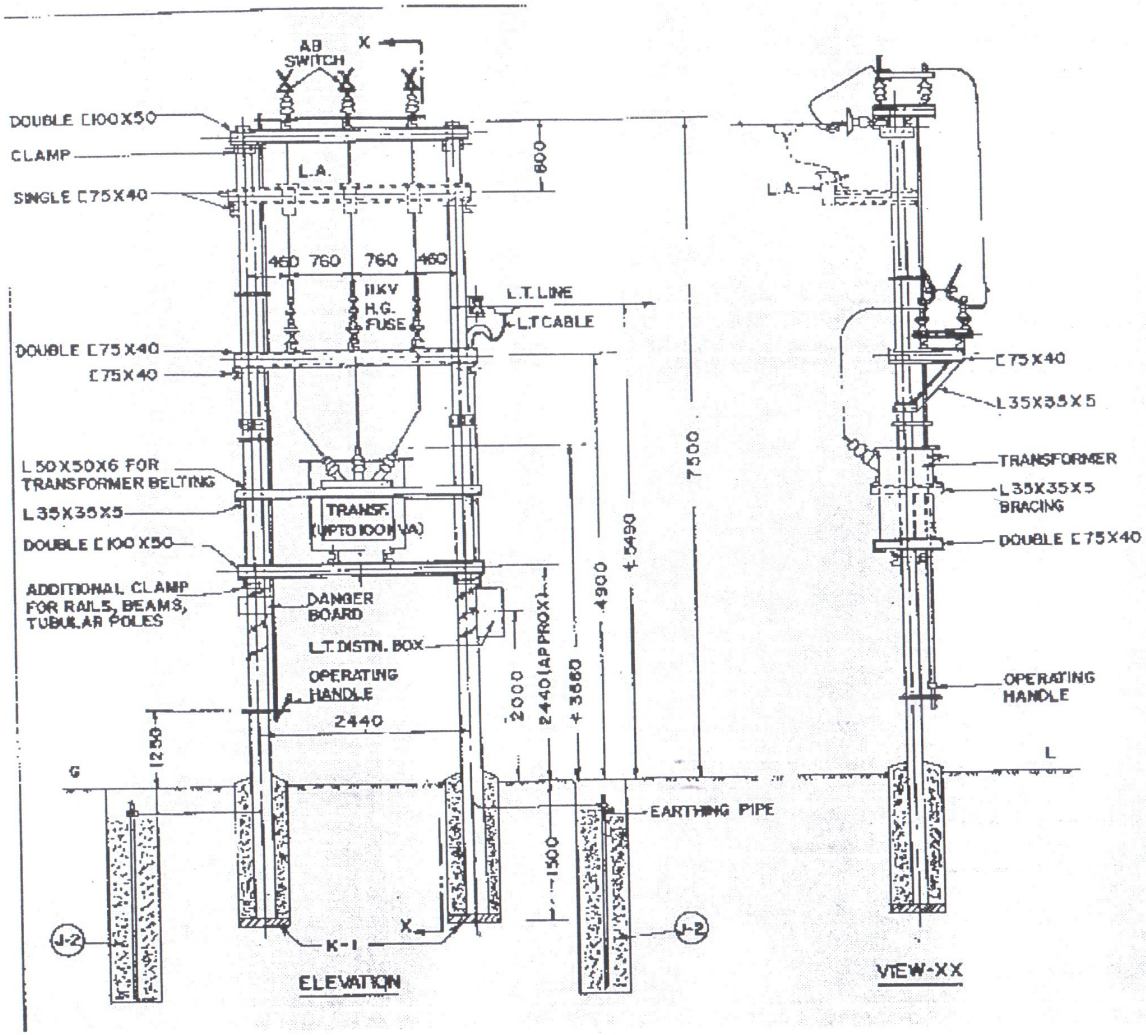
TANGENT LOCATION
MAXIMUM SPAN – 67 METRES

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

ALL DIMENSIONS ARE IN mm

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

SCALE :-N.T.S | SEPT. – 1972



REC
CONSTRUCTION STANDARD
F-2

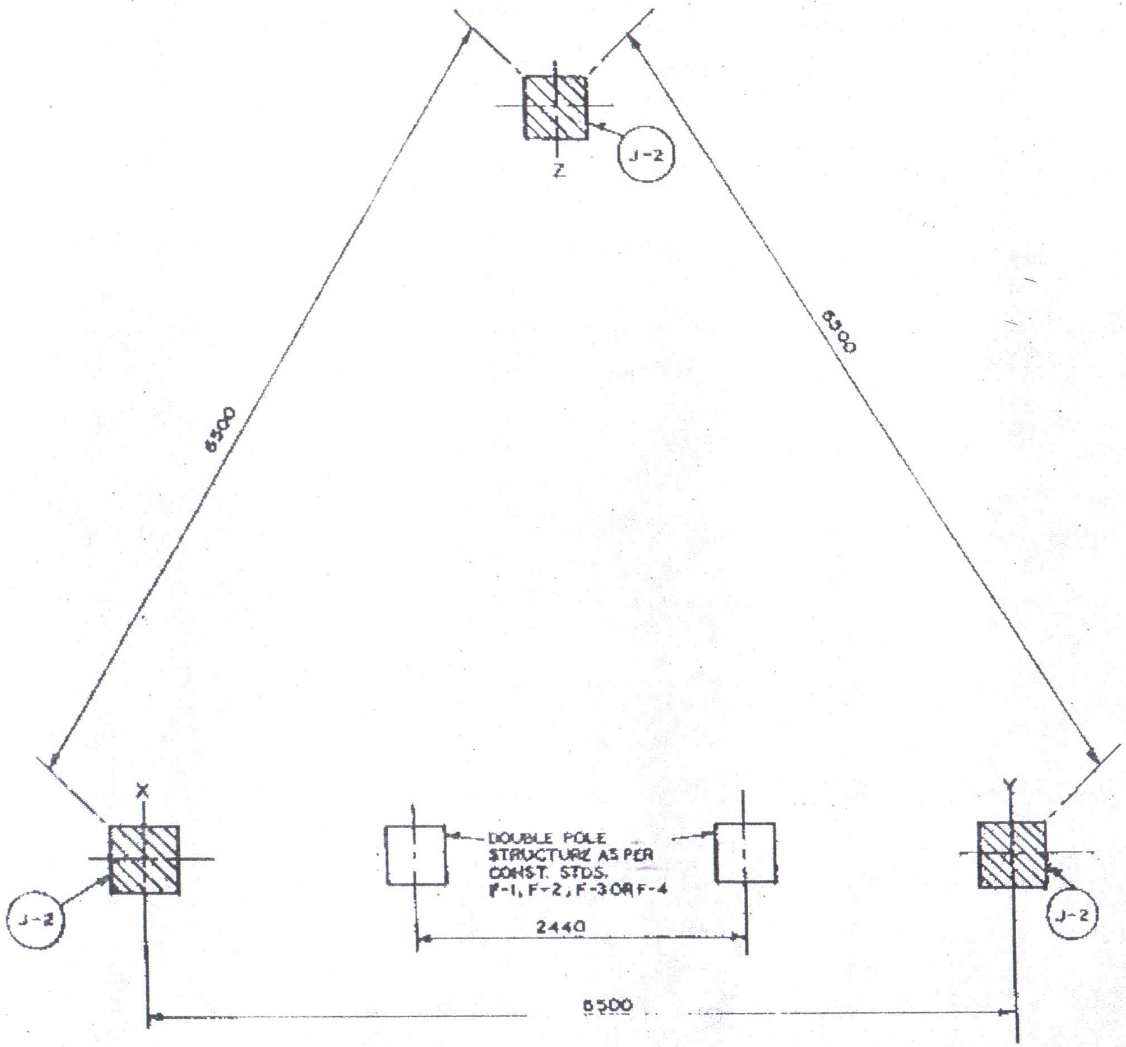
BILL OF MATERIAL

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

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

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

REC
CONSTRUCTION STANDARD
F-5



PLAN

NOTES :-

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

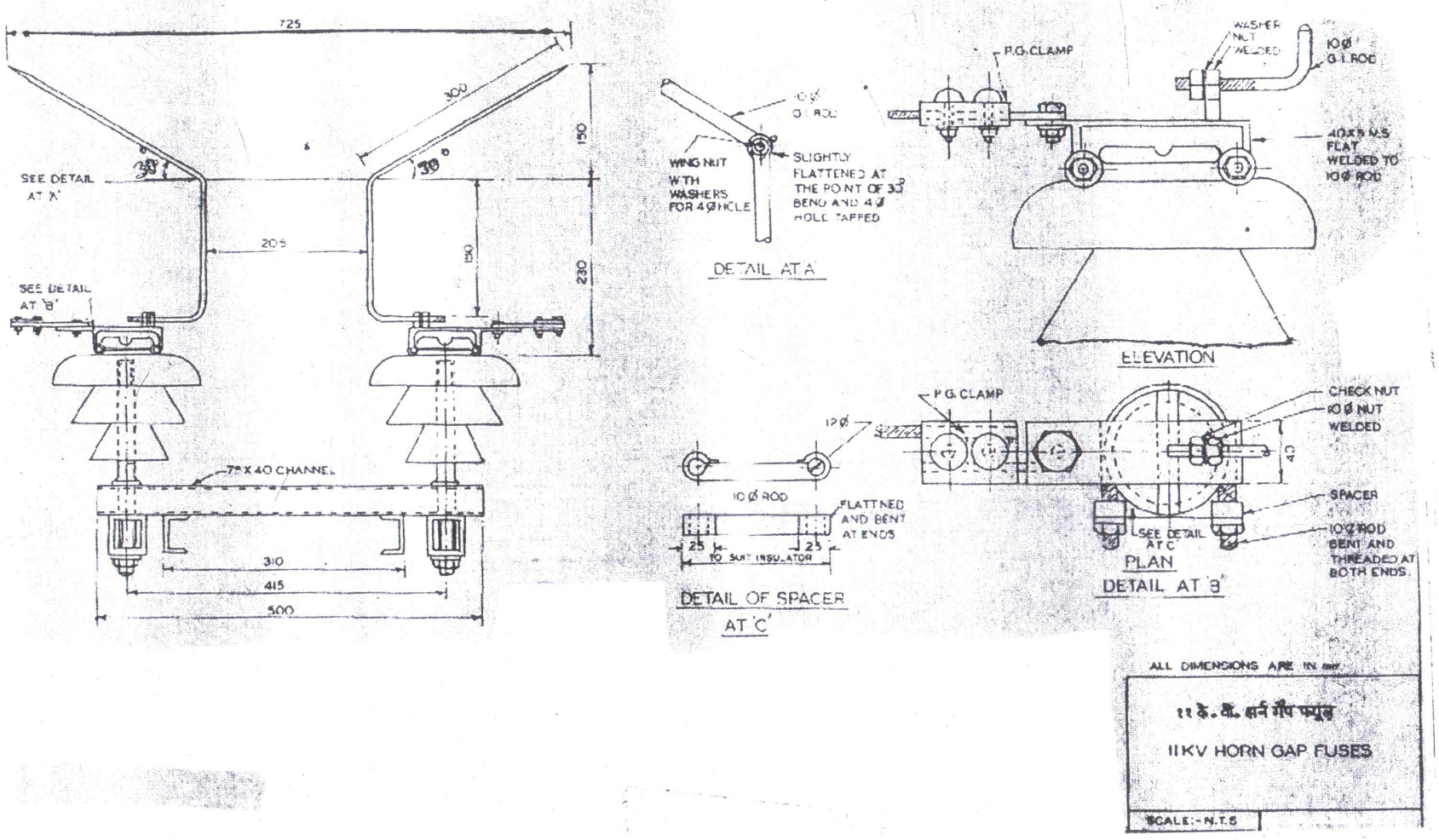
ALL DIMENSIONS ARE IN mm.

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

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

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

REC
CONSTRUCTION STANDARD
F-6



ALL DIMENSIONS ARE IN mm

११ के. वी. हार्न गैप फ्यूज़

11KV HORN GAP FUSES

SCALE:- N.T.S

REC
CONSTRUCTION STANDARD
F-8
(REVISED-1987)

RECOMMENDED TYPE AND SIZES OF MULTICORE CABLES

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

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

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

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

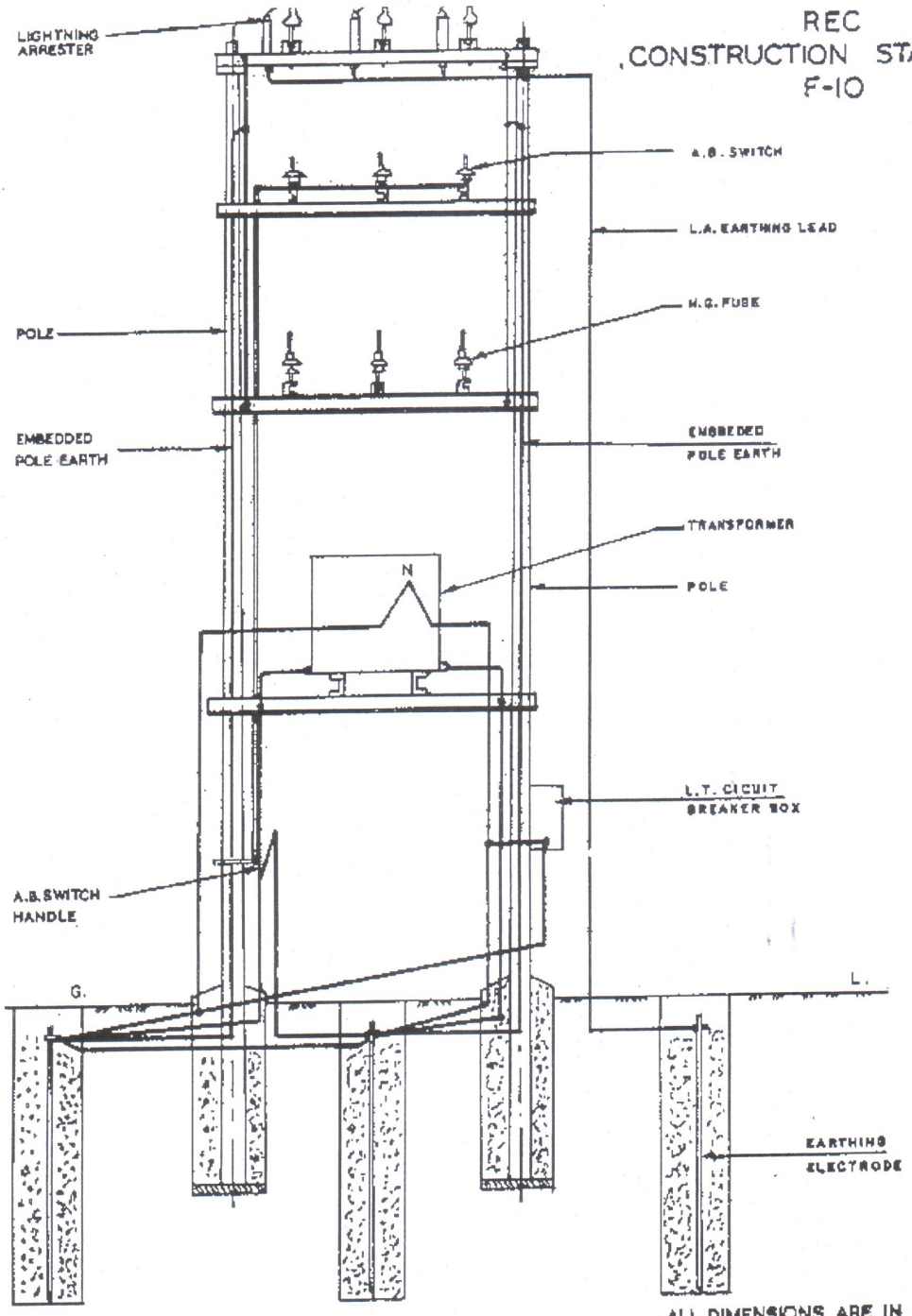
4. Type and size of single core cables which can be used for the same purpose are given in REC Construction Standard F-18.

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

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

FEBRUARY - 1979

REC
CONSTRUCTION STANDARD
F-10



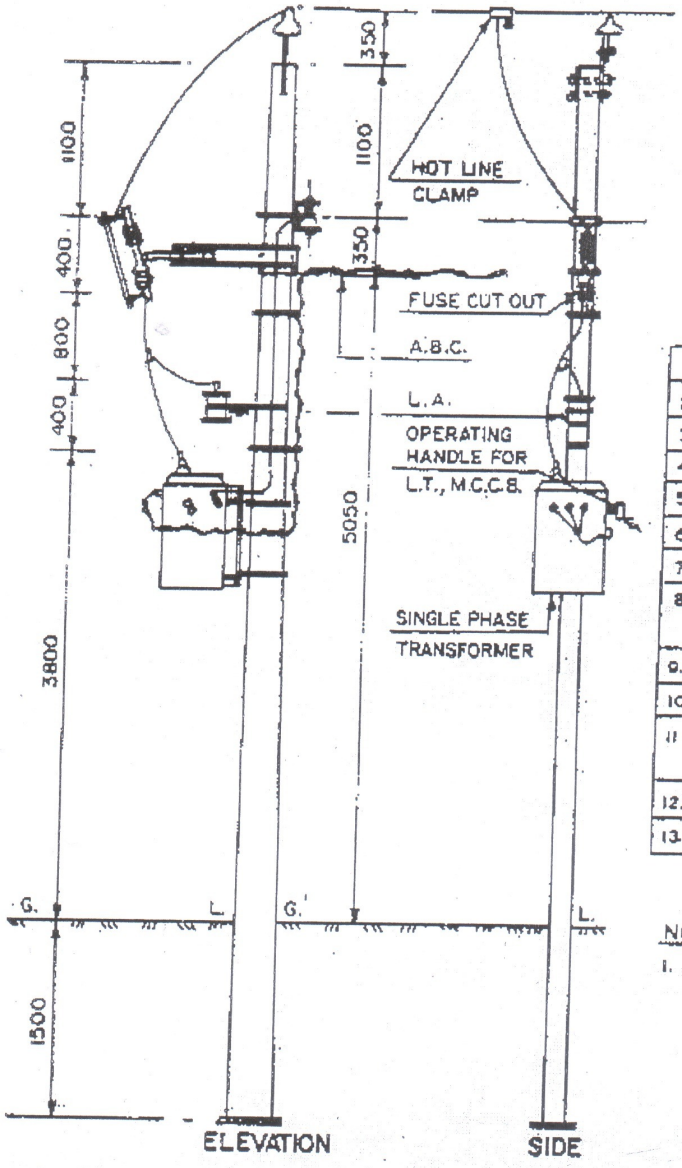
ALL DIMENSIONS ARE IN mm.

वितरण सब-स्टेशन के लिए
अर्थिंग व्यवस्था

EARTHING ARRANGEMENT FOR
DISTRIBUTION SUB-STATION

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

REC
CONSTRUCTION STANDARD
F-13



BILL OF MATERIAL

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

NOTE:-

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

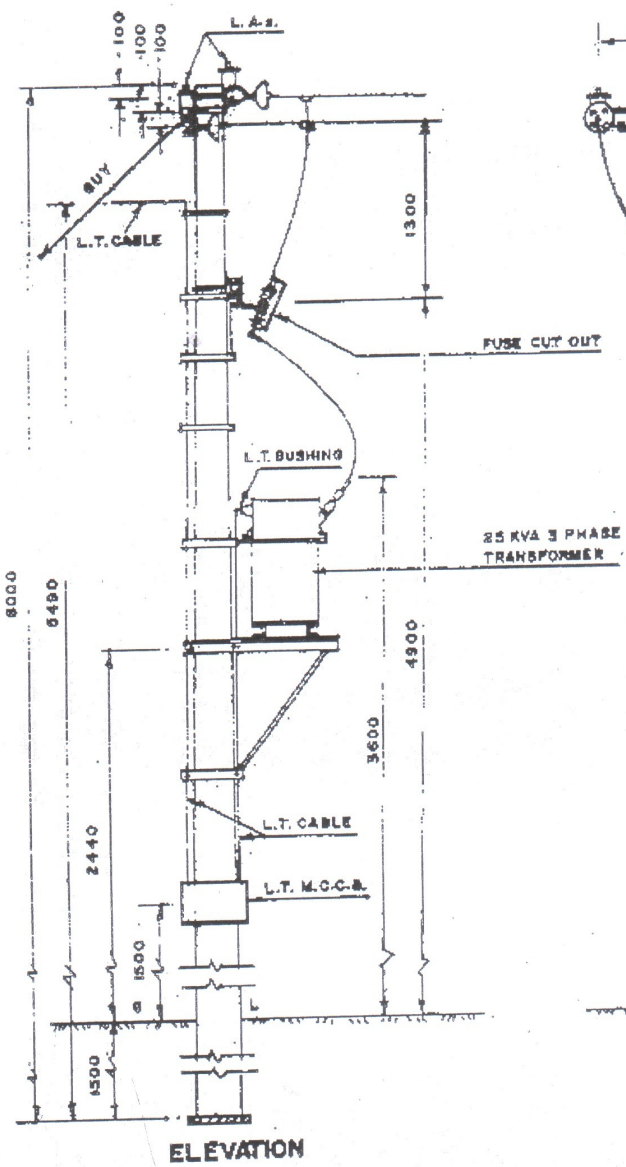
ALL DIMENSIONS ARE IN mm.

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

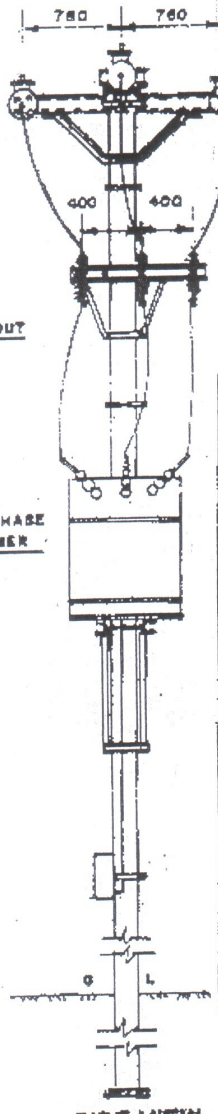
SINGLE PHASE (PHASE — TO — NEUTRAL) DISTRIBUTION SUB - STATION ARRANGEMENT

SCALE:- N.T.S	JULY, 1987

REC
CONSTRUCTION STANDARD
F-20



ELEVATION



SIDE VIEW

BILL OF MATERIALS

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

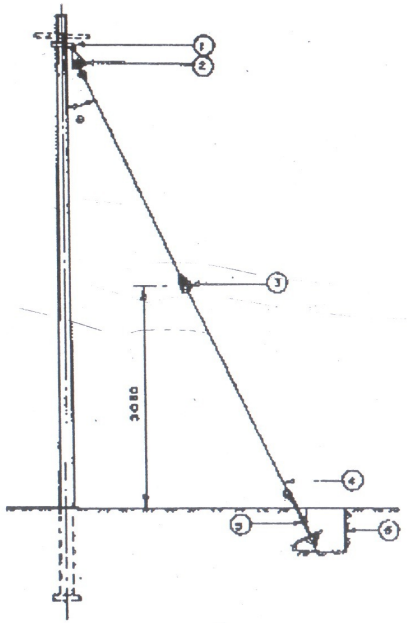
ALL DIMENSIONS ARE IN mm.

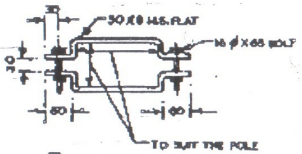
वितरण सब-स्टेशन
माउंटिंग व्यवस्था
सिंगल पोल पर २५ के.वी.ए. ट्रांसफार्मर की

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

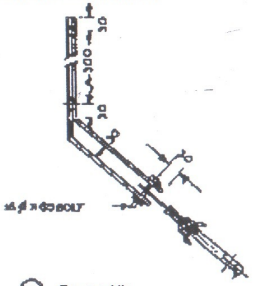
SCALE : N.T.S. OCT., 1987

REC
CONSTRUCTION STANDARD
G-1

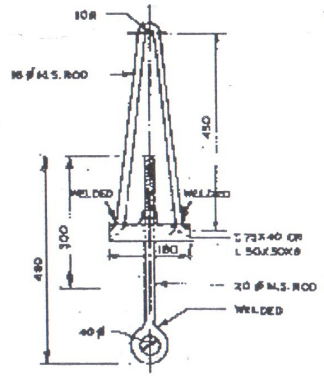




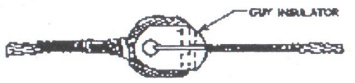
① CLAMP
(11 KV LINES & L.T. LINES
HORIZONTAL FORMATION)



① CLAMP
(L.T. LINES VERTICAL FORMATION)

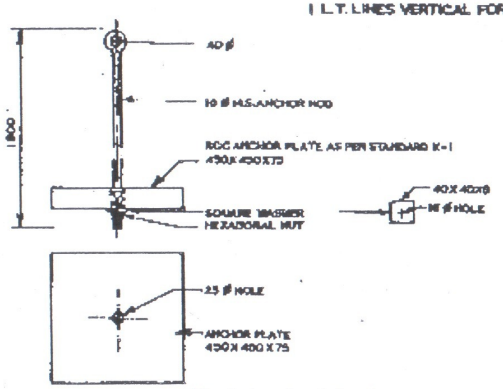


② TURN BUCKLE

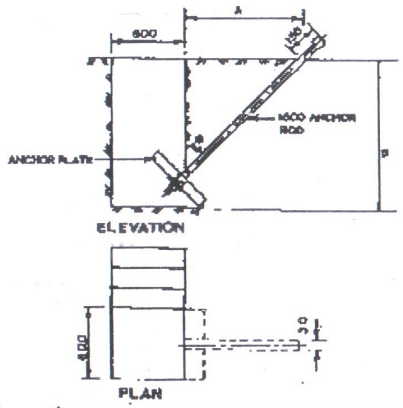


③ STAY INSULATOR MAKE-OFF

④ END MAKING OF GUY WIRE



⑤ ANCHOR ROD & PLATE



⑥ STAY PIT-ANCHOR ASSEMBLY

Φ	30°	45°
A	750	1100
B	1500	1300

NOTES:-

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

ALL DIMENSIONS ARE IN mm.

तीन रस्सी अवलम्बोचन
(मध्य अवलम्ब)

GUY ASSEMBLY

(CONVENTIONAL ARRANGEMENT)

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

REC

CONSTRUCTION STANDARD

G-3

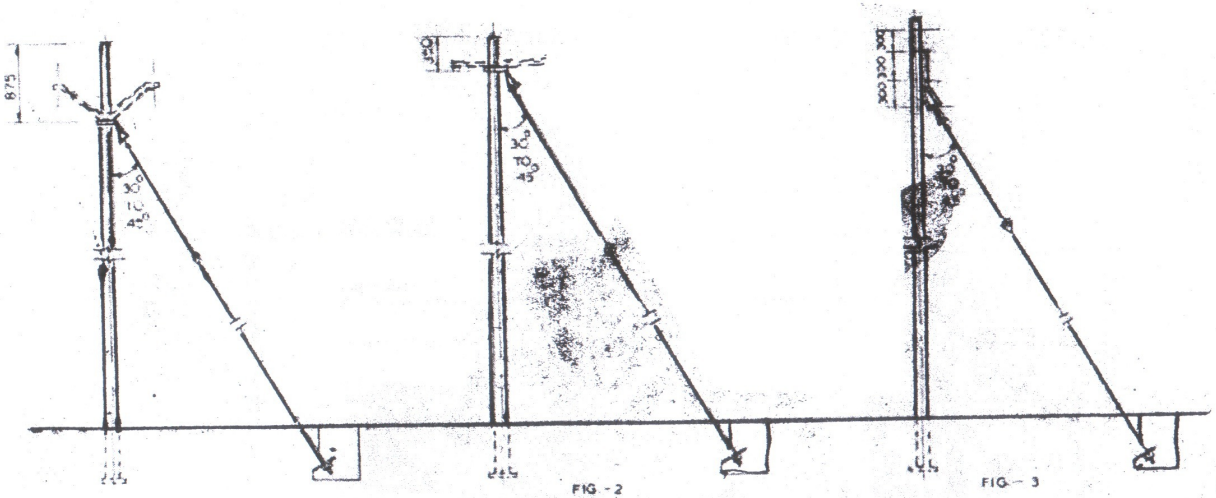
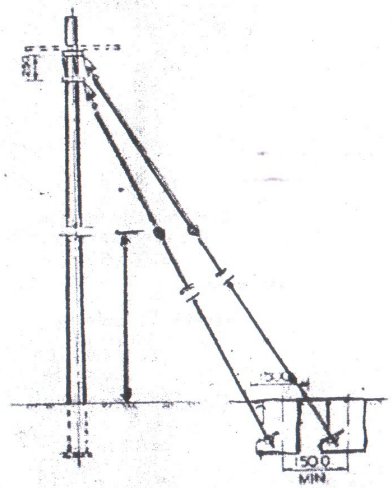


FIG - 2

SINGLE GUY

FIG - 3



DOUBLE GUY

NOTES :

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

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

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

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

ALL DIMENSIONS ARE IN mm

तन रम्भी व्यवस्था

एकल व द्वि तान रम्भी

GUYING ARRANGEMENTS

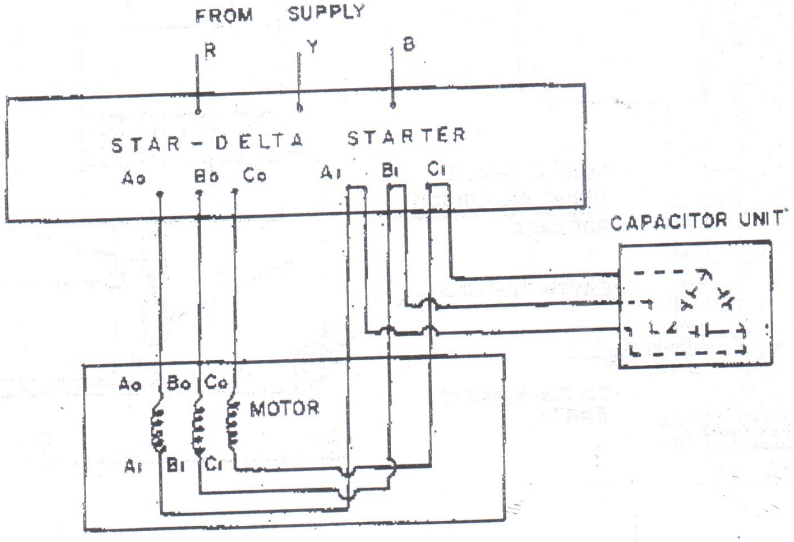
SINGLE & DOUBLE GUY

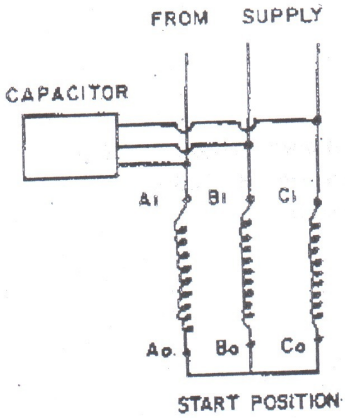
REC
CONSTRUCTION STANDARD
H-9

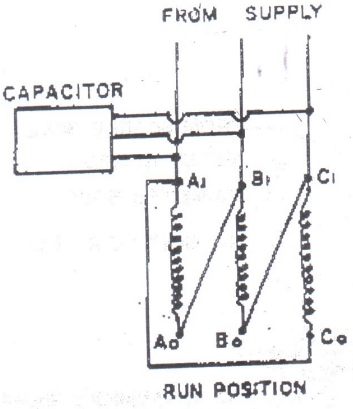
RECOMMENDED CAPACITOR RATINGS

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

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





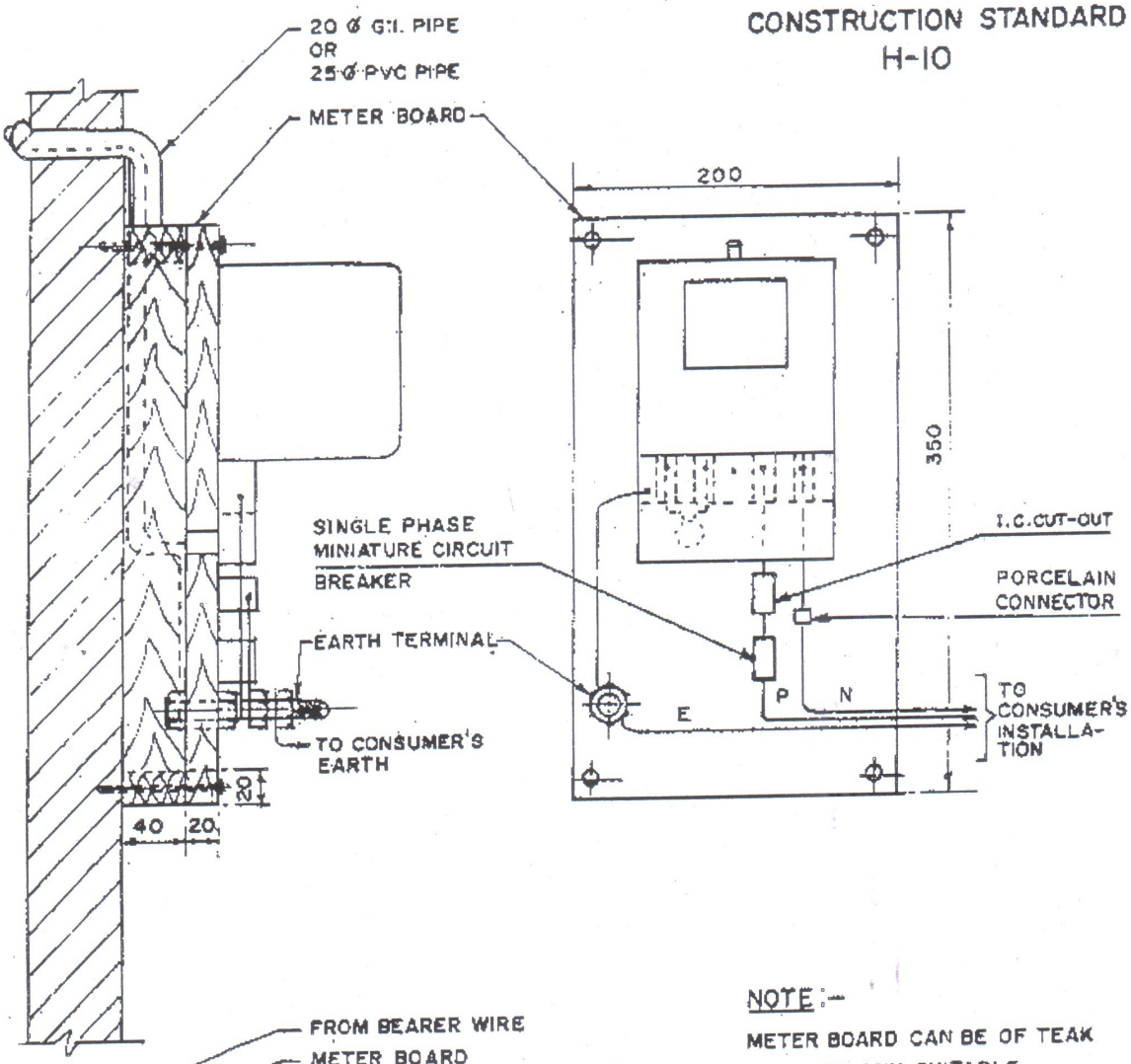


एल॰ टी॰ कैपेसिटर
कनेक्शनों की संस्तुत रेटिंग एवं पद्धति

L.T. CAPACITORS
RECOMMENDED RATINGS
AND MODE OF CONNECTIONS

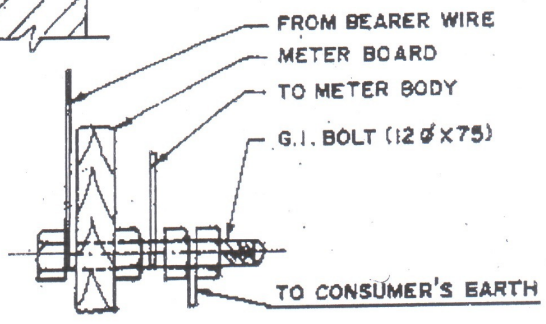
MARCH - 1974.

REC
CONSTRUCTION STANDARD
H-10



NOTE :-

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



EARTH TERMINAL DETAILS

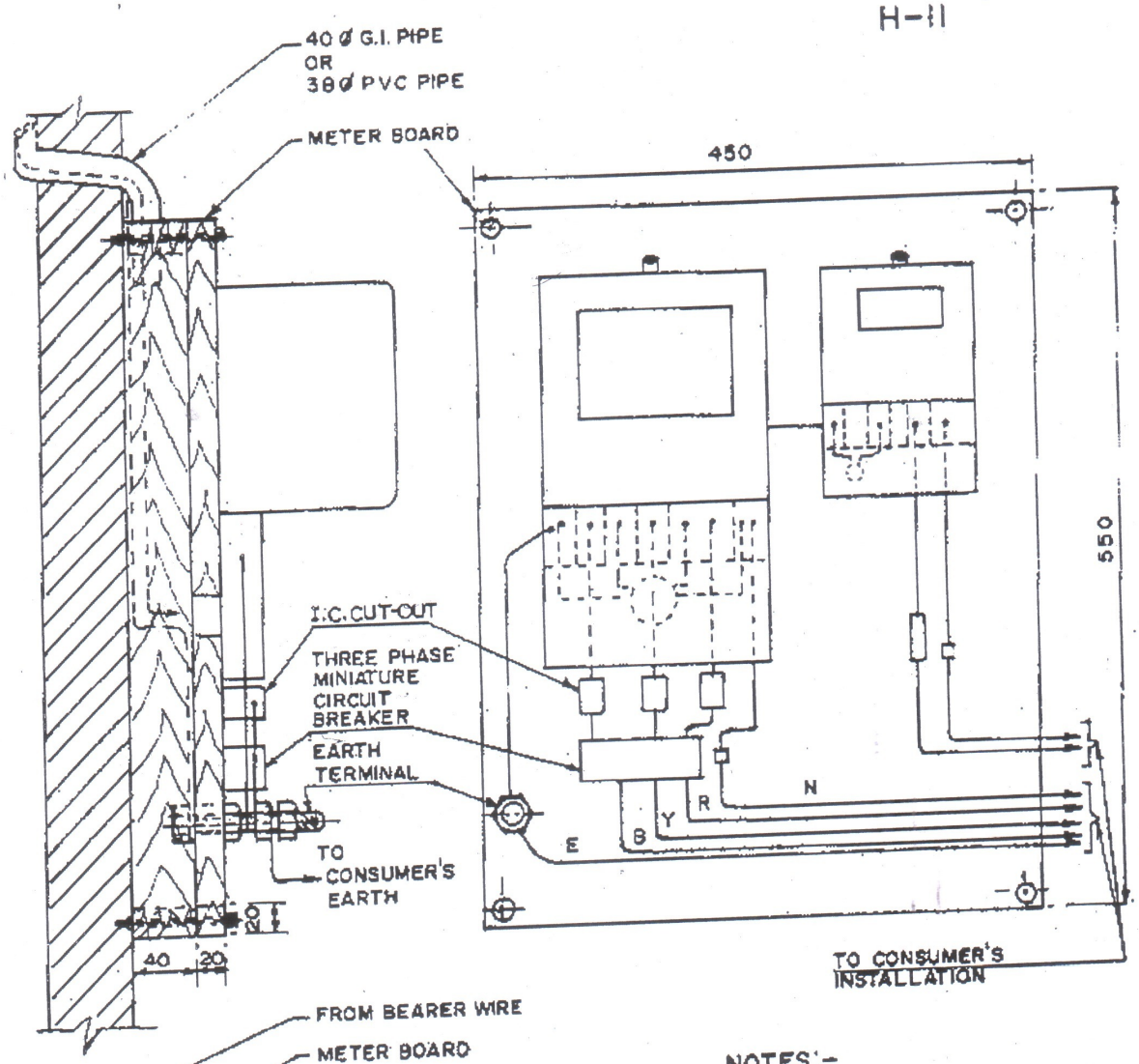
ALL DIMENSIONS ARE IN mm.

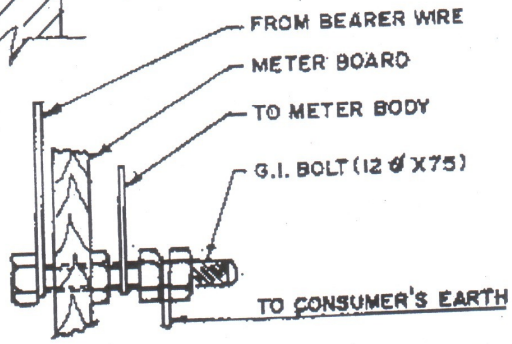
एम०सी०बी० कन्ट्रोल के साथ मार्पिंग
कनेक्शन सिंगल फेज़ मीटर
(अलग न्यूट्रल और अर्थ सहित)

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

SCALE: N.T.S.	MAY, 1993

REC
CONSTRUCTION STANDARD
H-II





EARTH TERMINAL DETAILS

NOTES:-

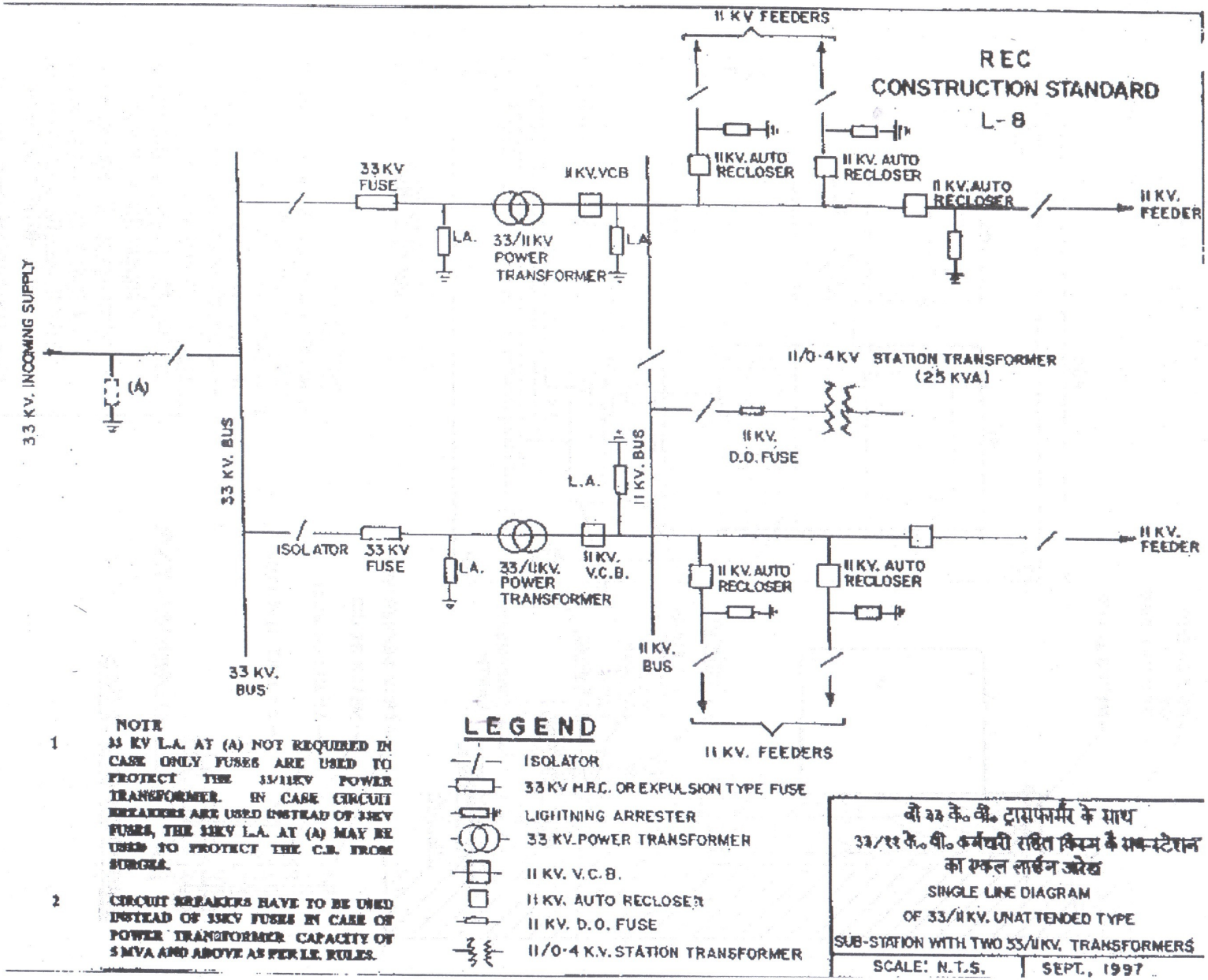
1. METER BOARD CAN BE OF TEAK WOOD OR ANY SUITABLE HARD WOOD.
2. WHERE ONLY A THREE PHASE METER IS TO BE USED, THE DIMENSIONS OF THE METER BOARD MAY BE 550X350

ALL DIMENSIONS ARE IN mm.

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

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

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



NOTE

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

LEGEND

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

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

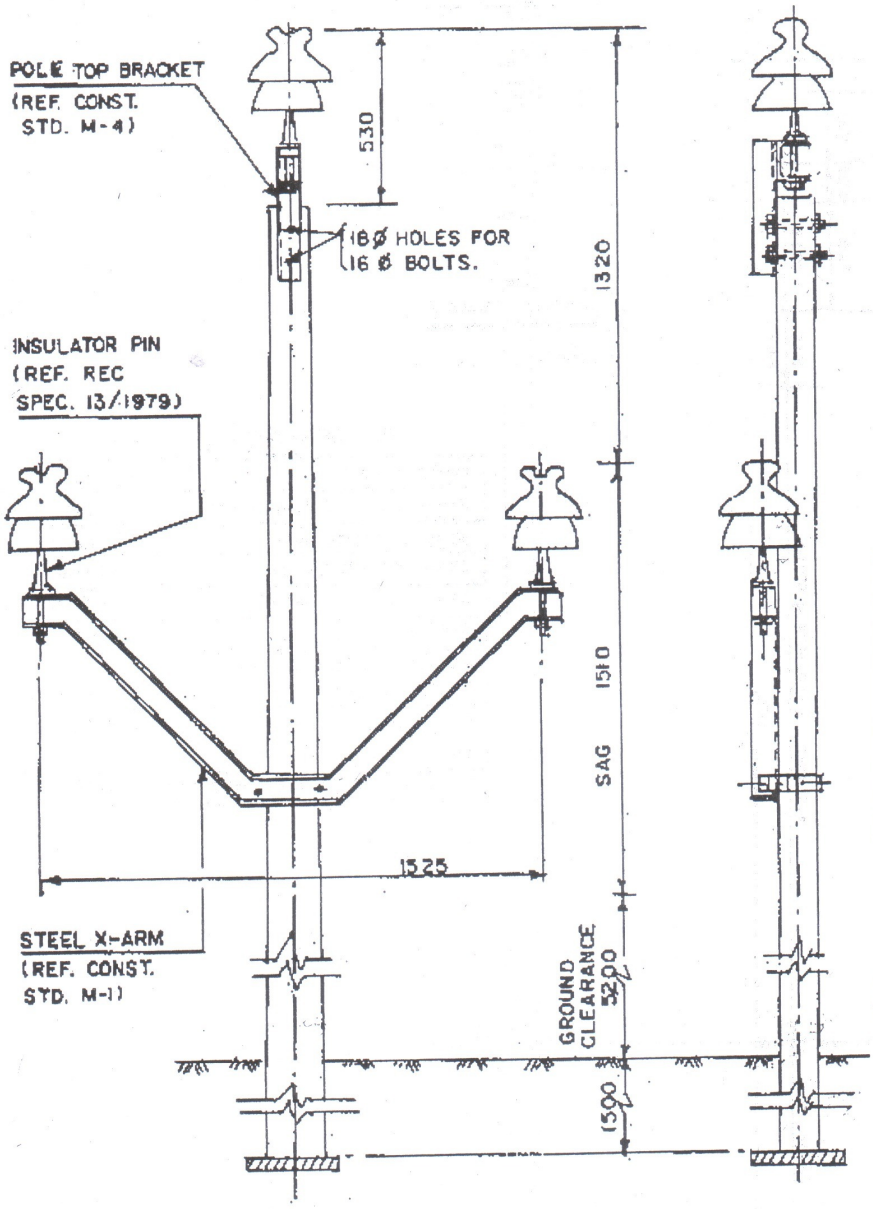
SINGLE LINE DIAGRAM
OF 33/11 KV. UNATTENDED TYPE
SUB-STATION WITH TWO 33/11 KV. TRANSFORMERS

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

R E C

CONSTRUCTION STANDARD

M - 3



BILL OF MATERIAL

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

TANGENT LOCATION

MAX. SPAN 125 M

(CROSS COUNTRY)

ALL DIMENSIONS ARE IN mm.

३३ कि॰ वी॰ लाईन

कन्डक्टर रचना एवं अन्तराल

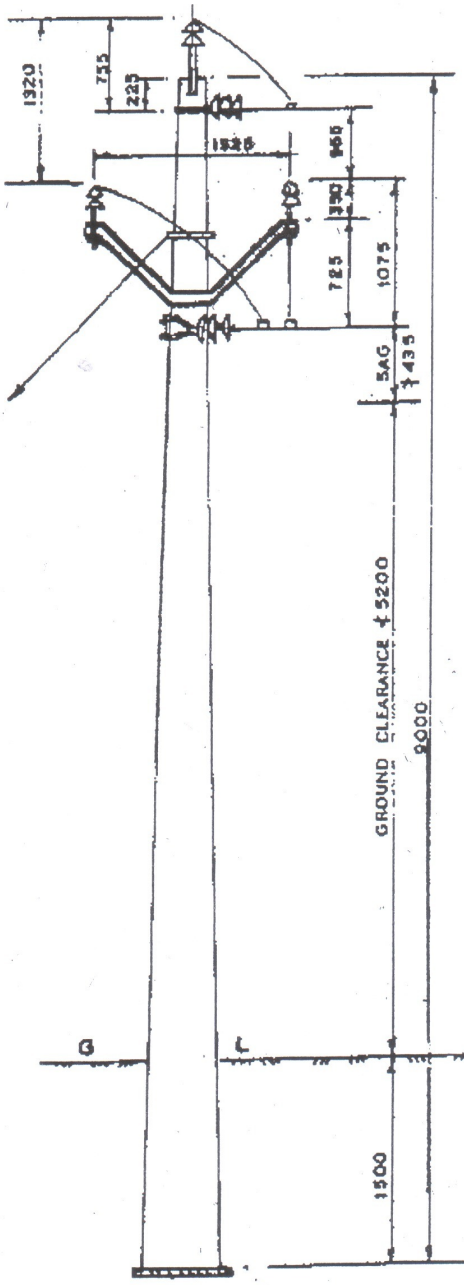
33KV LINE

CONDUCTOR FORMATION

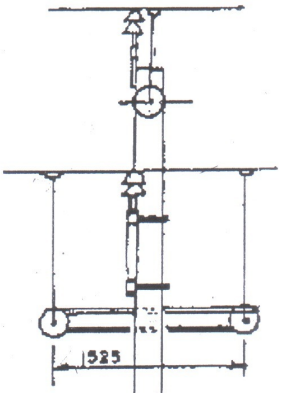
AND CLEARANCES

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

REC
CONSTRUCTION STANDARD
M-10



ELEVATION



SIDE VIEW

BILL OF MATERIAL

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

ALL DIMENSIONS ARE IN mm.

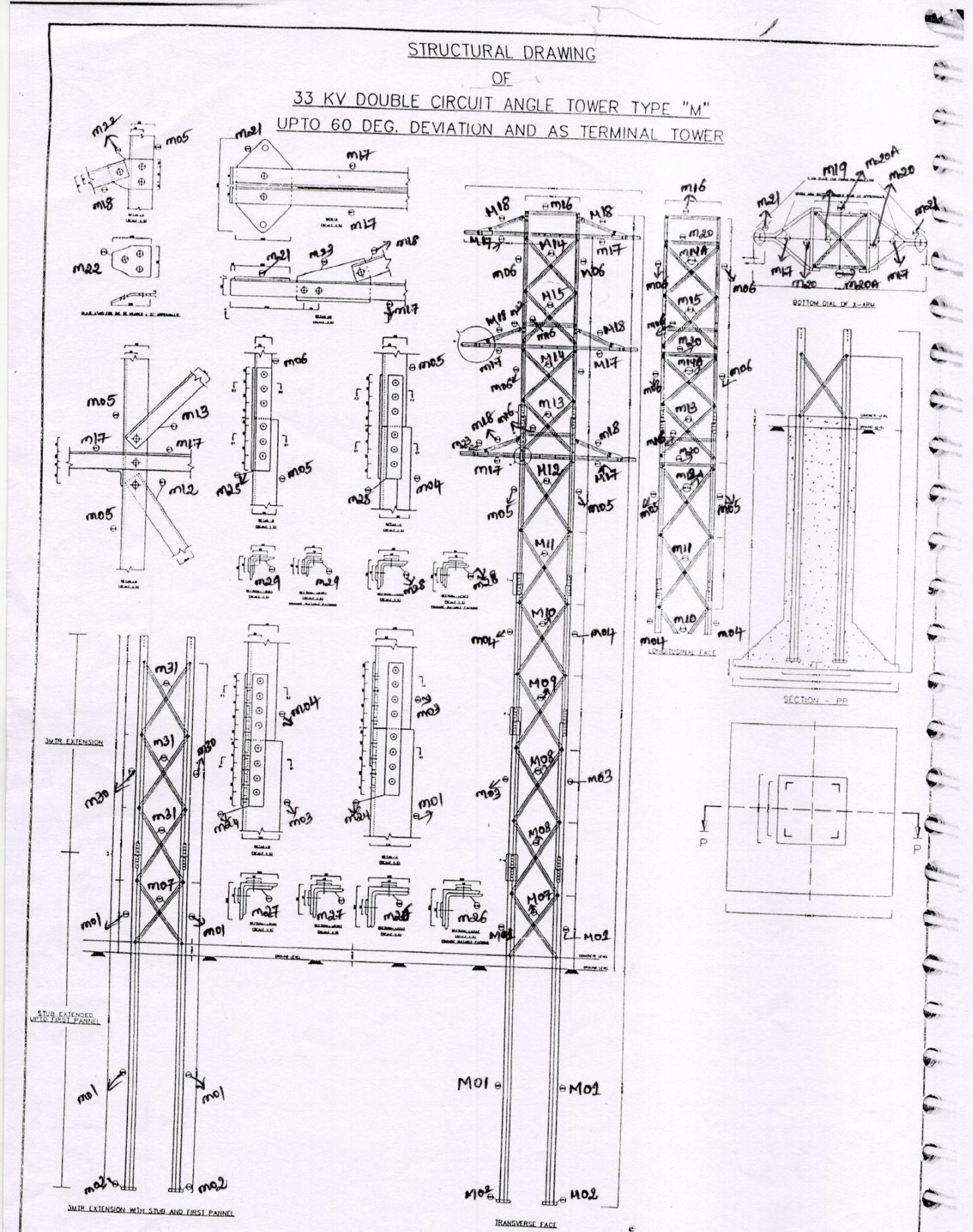
NOTE :- MAXIMUM SPAN BETWEEN THE TAPPING POLE AND ADJACENT POLE OF THE BRANCH LINE – 50 MTS.

33 के.वी. लाईन
टेपिंग व्यवस्था
सिंगल पोल टेपिंग

33 KV LINES
TAPPING ARRANGEMENT ON
SINGLE POLE

SCALE: N.T.S	OCT., 1987

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

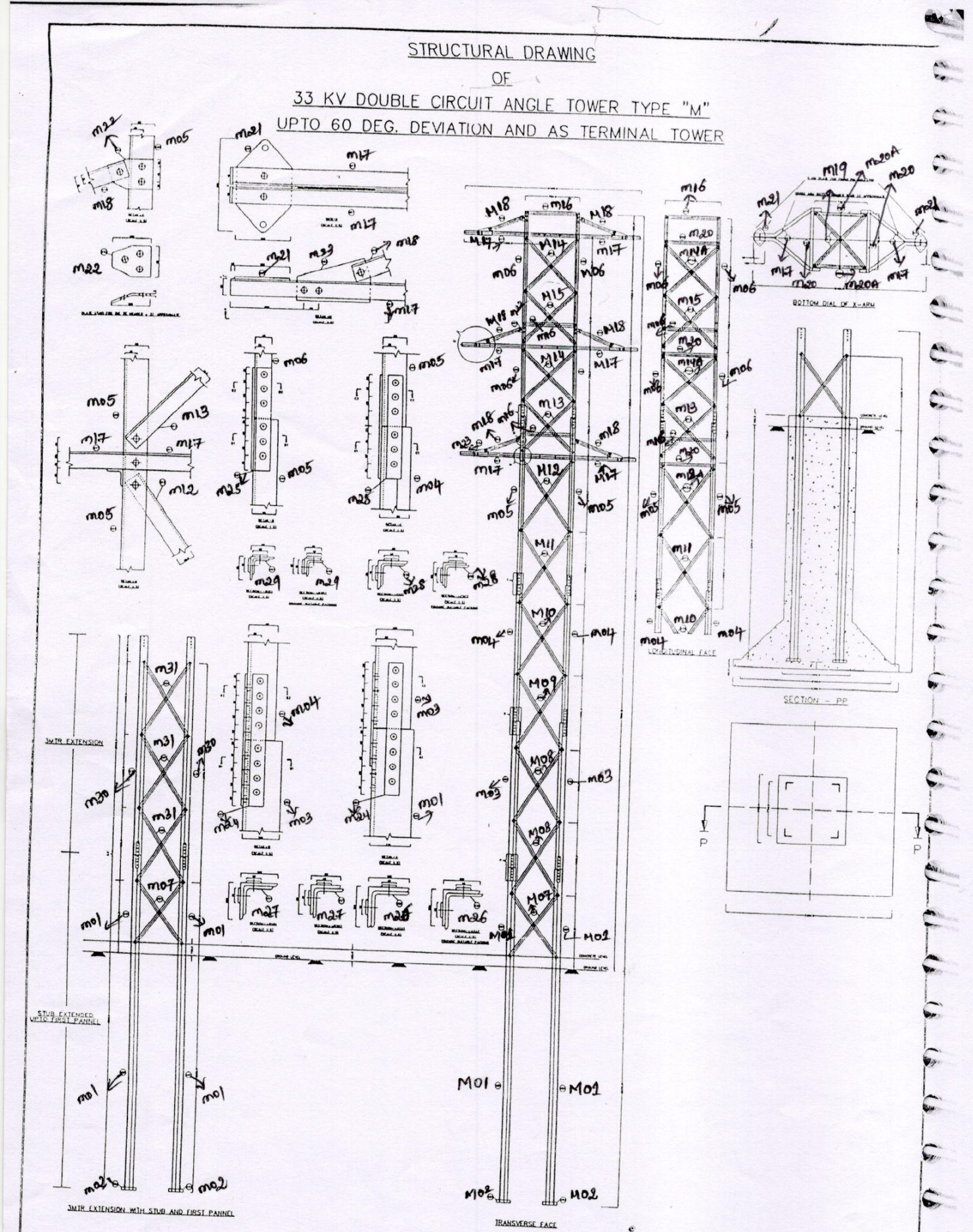


CENTRAL POWER DISTRIBUTION COMPANY OF ANDHRA PRADESH LTD, MINT COMPOUND, HYDERABAD.

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

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

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



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

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

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

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

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

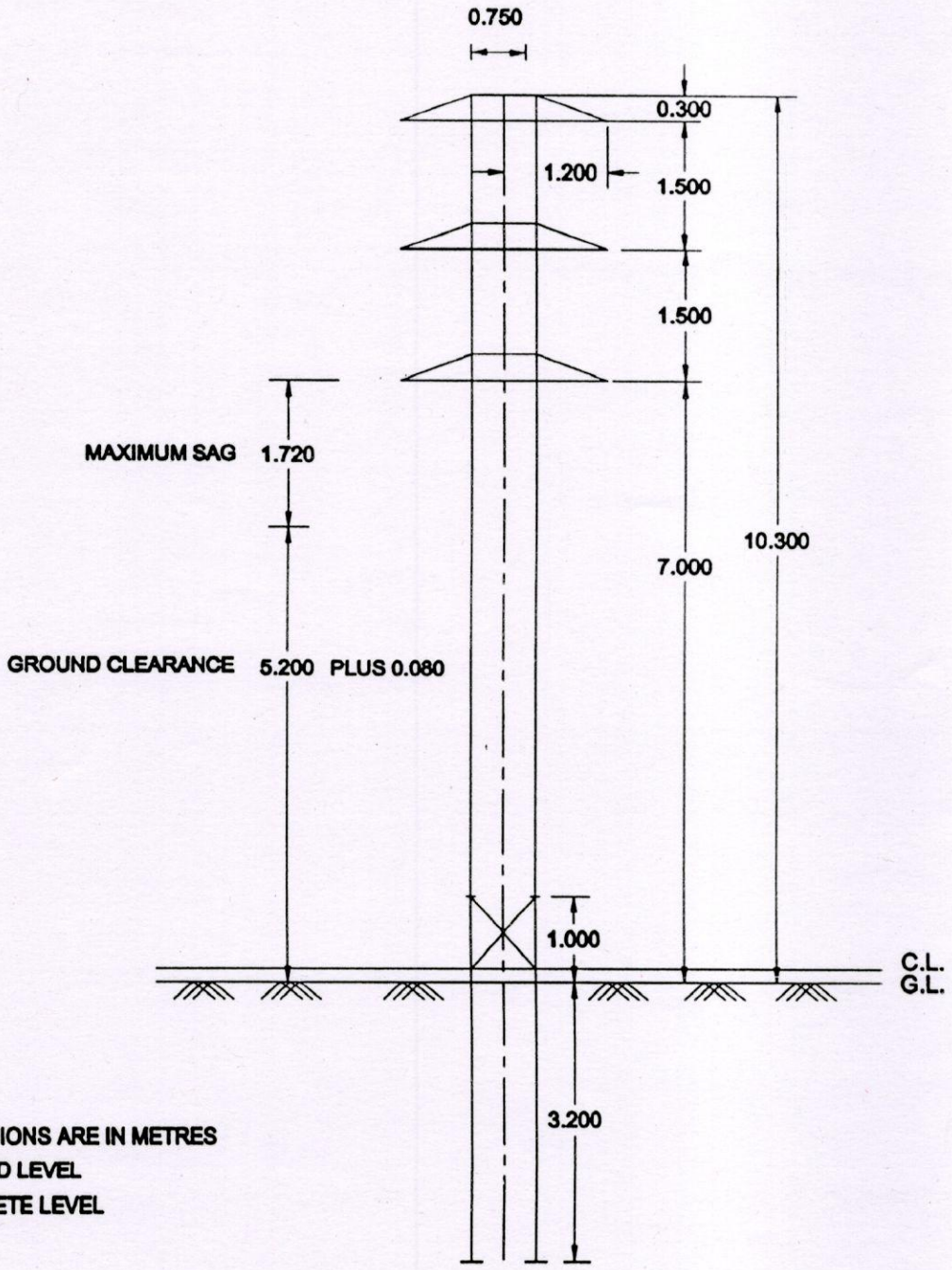
weight of normal tower type "M" :1133.692kgs

BILL OF MATERIAL FOR 3 M EXTENSION OF M TYPE TOWER

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

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

OUTLINE DIAGRAM OF 'M' TYPE TOWER

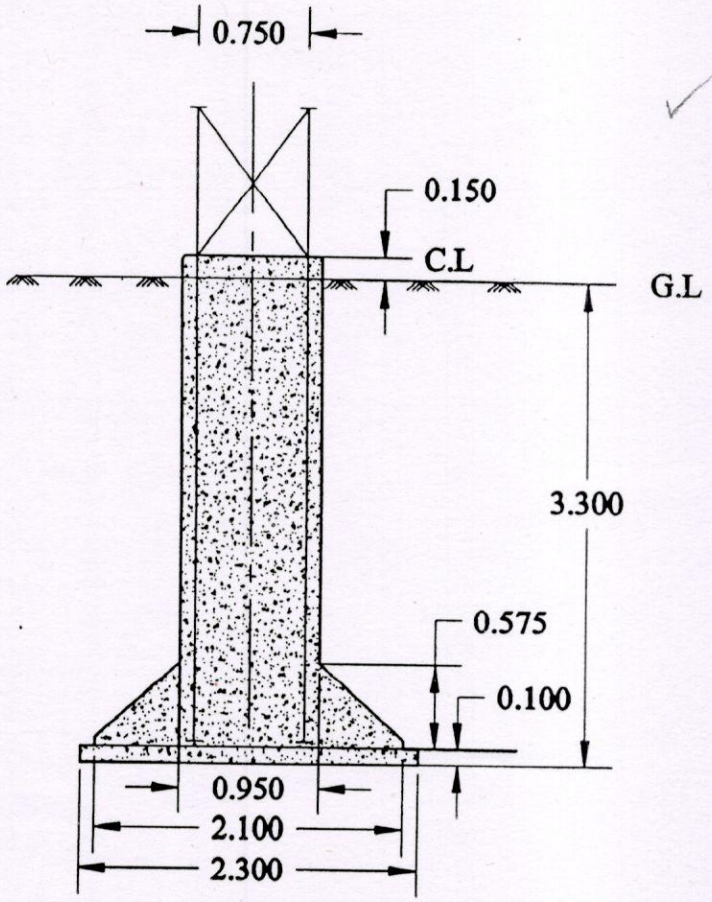


ALL DIMENSIONS ARE IN METRES
G.L. GROUND LEVEL
C.L. CONCRETE LEVEL

FIG - 11

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

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



ALL DIMENSIONS ARE IN METRES.

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

STUBS EXTENDED UPTO FIRST PANEL.

SECTION : 110 X 110 X 10 MM.

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

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

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

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

VOLUME OF CONCRETE = 4.434 CU.M

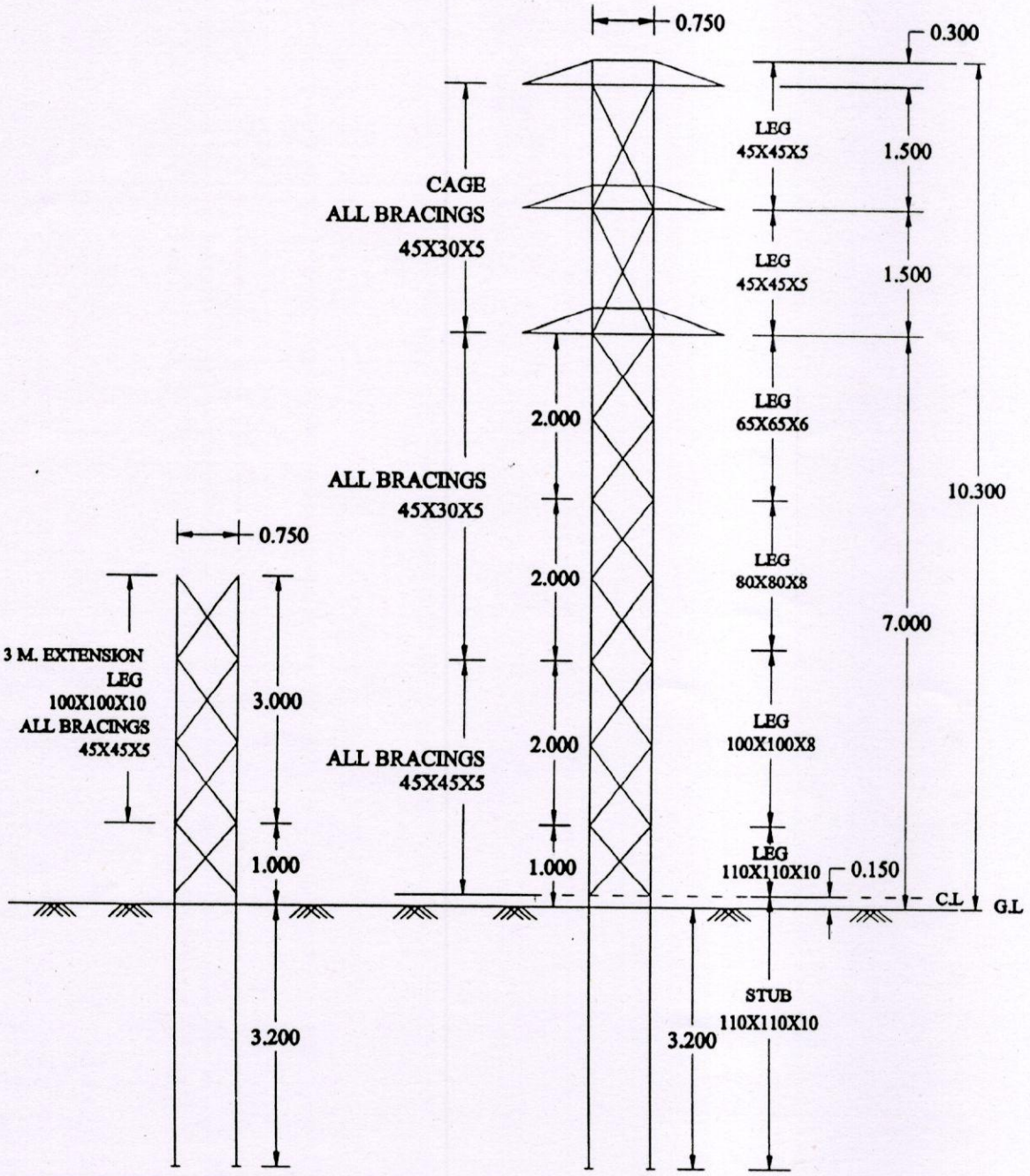
THE FOUNDATION IS SUITABLE FOR NORMAL TOWER, PLUS 3M AND PLUS 6M EXTENSIONS.

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

FIG - 14

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

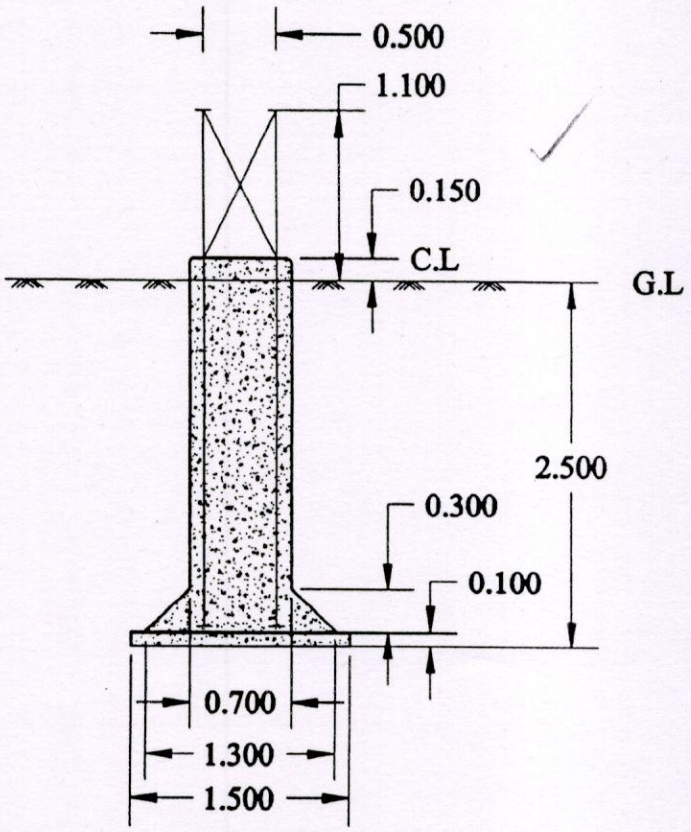
33KV DOUBLE CIRCUIT ANGLE TOWER TYPE 'M'
UPTO 60 DEGREES DEVIATION AND AS TERMINAL TOWER



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

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

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



ALL DIMENSIONS ARE IN METRES

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

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

VOLUME OF CONCRETE : 1.636 CU M

STUBS EXTENDED UPTO FIRST PANEL

SECTION : 75 X 75 X 6 MM

CLEATS : 45 X 30 X 5, 200MM LONG

TWO FOR EACH STUB

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

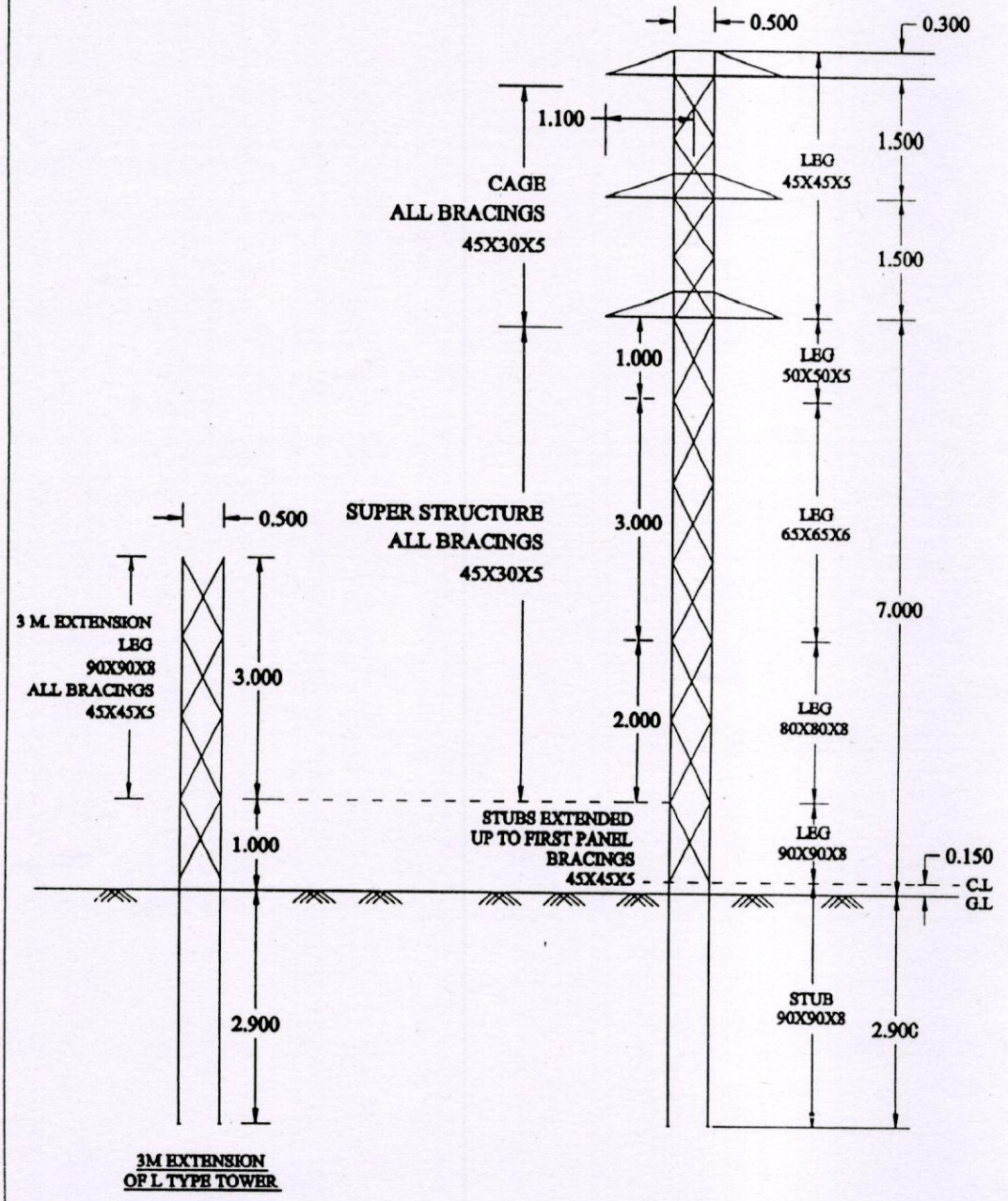
THE FOUNDATION IS SUITABLE FOR NORMAL TOWER, PLUS 3M AND PLUS 6M EXTENSIONS.

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

FIG - 04

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

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



3M EXTENSION
OF L TYPE TOWER

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

FIG - 08

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