

400 KV KALWA SUBSTATION RE-ORIENTATION

TOWER SCHEDULE								
Location No.	Tower type	Span	Section Length	Ground Clearance	Ht Line	EHV line Xing clearance	ANGLE	Remark
Ext. LOC-199	15°+0(D/C R.B.))						0°01'40" LT	Ext. LOC-199 of 400kV DC Kharghar-Kalwa Tr. Line
		202		19.7				Slum Area(10.5m clearance above slum)
Ext. LOC-200	60°+0(D/C R.B.)		202				65°20'23" LT	Ext. LOC-200 of 400kV DC Kharghar-Kalwa Tr. Line
		75		22.1	13.3			Ht Line, Drain Compound wall, Fencing, road
GANTRY	GANTRY		75					Conductos of Kharghar -Kalwa Ckt will be terminated at Gantry at 400kV AIS Sub Station Kalwa (For Kharghar).
PROP. LOC-1134	60°+0(DC Lattice tower)						1°35'47" LT	Prop. LOC-1134 of 400 kV DC Padghe-Kalwa Tr .Line SC-II
		291		22.7		14.9 m.		400 kV Padghe-Kalwa Tr. Line SC-II LHS (Clearnce-14.9 m)Ext. LOC-1134 & 1135 to be dismental, Slum Area, clearance need to maintained near building.
1	60°+36(MC Monopole)		291				8°22'15" LT	Monopole-1, Auxiliary Cross Arm to be use For Bottom CKT
		34		21.5				Drain needs to be Divert
GANTRY	GANTRY		34					One Conductor of Kalwa-Padghe SC-II (LHS Ckt) will be terminated on GANTRY using top cross arm at 400 kV AIS Sub Station Kalwa.
1	60°+36(MC Monopole)						85°37'59" LT	Monopole-1, Auxiliary Cross Arm to use For Bottom CKT
		27		45.9				
10	60°+15(DC Monopole)		27				100°47'51" RT	Monopole-10, 1st & 2nd Cross Arm & Auxiliary Cross Arm to be used.
		34		21.5				Drain to be Divert
GANTRY	GANTRY		34					1st & 2nd Cross Arm & Auxiliary Cross Arm to be used for teminating balance two Conductor of Kalwa-Padghe SC-II (LHS Ckt) on GANTRY using cross arms of monopole 10 at 400 kV AIS Sub Station Kalwa.
PROP. LOC-1148	60°+0 (DC Lattice tower)						7°38'02" RT	PROP. LOC-1148 of 400 kV DC Padghe-Kalwa Tr .Line SC-I
		210		22.7				400 kV Interconnection Tr. Line Clearnce-10.3m,
8	60°+0(MC Monopole)		210				1°11'35" LT	Monopole-8, Auxiliary Cross Arm to be use for bottom CKT
		68		21.5		11.7 m.		400 kV Vikhroli-Kalwa Tr. Line Clearnce-11.7m, Ext. LOC-1149 to be dismental, Drain to be Divert
GANTRY	GANTRY		68					Conductors of Kalwa-Padghe SC-I (LHS Ckt) will be terminated on GANTRY using top cross arm of monopole 8 at 400 kV AIS Sub Station Kalwa.
Ext. LOC-200	60°+0(DC RB)						18°09'08" LT	Ext. LOC-200 of 400kV DC Vikhroli-Kalwa Tr. Line
		55		22.1				crossing Drain, Compound wall, Fencing, road etc.
1	60°+36(MC Monopole)		55				49°26'20" RT	Monopole-1, Auxiliary Cross Arm to be use

TOWER SHEDULE								
Location No.	Tower type	Span	Section Length	Ground Clearnce	Ht Line	EHV line Xing clearance	ANGLE	Remark
		116		56.8		17.5m, 11.7 m		400 kV Inter Connection Tr. Line Clearnce-17.5m, Earth Wire to be Remove & 400 kV Kalwa-Padghe-I (LHS) Tr. Line Clearnce-11.7m, Earth Wire to be Remove, crossing Drain, Fencing, Road etc.
2	60°+36(MC Monopole)		116				6°13'25" RT	Monopole-2
		116		22.7	21.8			Crossing Drain,Fencing, road etc.
3	60°+0(MC Monopole)		116				45°36'56" LT	Monopole-3 Drain to be divert.
		39		21.8				Crossing Drain,Fencing, road etc.
4	60°+0(MC Monopole)		39				13°02'30" RT	Monopole-4 Drain to be divert.
		42		22.7	13.6			Crossing Drain,Fencing, road etc.
5	60°+0(MC Monopole)		42				42°34'06" LT	Monopole-5, Auxiliary Cross Arm to be use for Top & Bottom CKT Drain to be divert.
		30		22.7				
GANTRY	GANTRY		30					400 KV Kalwa Vikhroli Ckt will be terminated on Gantry at 400 kV GIS Sub Station Kalwa
5	60°+0(MC Monopole)						47°29'16" RT	Monopole-5, Auxiliary Cross Arm to be use for Top & Bottom CKT. Drain to be divert.
		24		22.7				Compound wall
6	60°+0(MC Monopole)		24				104°51'41" LT	Monopole-6, Auxiliary Cross Arm to be use for Top & Bottom CKT Both Side (Star type X-arms)
		31		27.0				
GANTRY	GANTRY		31					Conductors of Kalwa-Padghe SC-II (RHS Ckt) will be terminated on GANTRY using top cross arm of monopole 6 at 400 kV GIS Sub Station Kalwa.
GANTRY	GANTRY							Conductors of Inter Connection will be terminated on GANTRY using top cross arm of monopole 9 at 400 kV AIS Sub Station Kalwa.
		21		21.5				Drain to be Divert
9	60°+0(DC Monopole)		21				23°20'54" LT	Monopole-9, Auxiliary Cross Arm to be use
		72		22.7	21.9			400kV VIKHROLI-Kalwa Tr. Line Clearnce-17.5m, Ht Line to be Divert, Earth Wire to be Remove. crossing Drain, Compound wall, Fencing, road etc. Crosss arm & conductor passes outside MSETCL premises.
8	60°+0(MC Monopole)		72				78°07'40" LT	Monopole-8, Auxiliary Cross Arm to be use for bottom CKT
		62		22.7				Crosss arm & conductor passes outside MSETCL premises.
2	60°+36(MC Monopole)		62				28°52'47" RT	Monopole-2 (RHS Ckt)
		116		22.7	21.8			Ht Line to be Divert, Drain, Fencing, Cabin etc. to be divert
3	60°+0(MC Monopole)		116				45°36'56" LT	Monopole-3, Auxiliary Cross Arm to be use for Top & Bottom CKT (RHS Ckt)
		39		22.7	13.6			Ht Line to be Divert,. Drain to be divert.
4	60°+0(MC Monopole)		39				13°02'30" RT	Monopole-4

TOWER SCHEDULE								
Location No.	Tower type	Span	Section Length	Ground Clearance	Ht Line	EHV line Xing clearance	ANGLE	Remark
		42		22.7				Drain,Compound wall to be divert.
5	60°+0(MC Monopole)		42				42°34'06" LT	Monopole-5, Auxiliary Cross Arm to be use for Top & Bottom CKT
		24		22.7				
6	60°+0(MC Monopole)		24				12°53'26" LT	Monopole-6, Auxiliary Cross Arm to be use for Top & Bottom CKT Both Side. Crosss arm & conductor passes outside MSETCL premises.
		31		22.2	13.2			Ht Line to be Divert
7	60°+0(DC Monopole)		31				90°37'42" LT	Monopole-7, Auxiliary Cross Arm to be use
		32		22.0				
GANTRY	GANTRY		36					Conductors of Inter Connection will be terminated on GANTRY using monopole 7 at 400 kV GIS Sub Station Kalwa.
PROP. LOC-1148	60°+0(DC Monopole)						7°38'02" RT	PROP. LOC-1148 of 400 kV DC Padghe-Kalwa Tr .Line SC-I
		210		22.7				Road, Compound wall
8	60°+0(MC Monopole)		210				59°17'21" RT	Monopole-8, Auxiliary Cross Arm to be use for bottom CKT
		62		22.7				
2	60°+36(MC Monopole)		62				28°52'47" RT	Monopole-2 (RHS ckt)
		116		22.7	21.8			Ht Line to be Divert, Drain, Fencing, Cabin etc. to be divert
3	60°+0(MC Monopole)		116				45°36'56" LT	Monopole-3, Auxiliary Cross Arm to be use for Top & Bottom CKT (RHS Ckt)
		39		22.7	13.6			Ht Line to be Divert. Drain to be divert.
4	60°+0(MC Monopole)		39				13°02'30" RT	Monopole-4
		42		22.7				Drain,Compound wall to be divert.
5	60°+0(MC Monopole)		42				42°34'06" LT	Monopole-5, Auxiliary Cross Arm to be use for Top & Bottom CKT
		24		22.7				
6	60°+0(MC Monopole)		24				8°44'52" LT	Monopole-6, Auxiliary Cross Arm to be use for Top & Bottom CKT Both Side
		31		22.2	13.2			Ht Line to be Divert
7	60°+0(DC Monopole)		31				90°37'42" LT	Monopole-7, Auxiliary Cross Arm to be use
		36		22.0				
GANTRY	GANTRY		36					Conductors of 400 KV Kalwa- Padghe SC-I (RHS Ckt) will be terminated on GANTRY using monopole 7 at 400 kV GIS Sub Station Kalwa.

Total Length=2.397 Km (2397 m)

SUMMARY OF TOWERS							
TOWER TYPE	Description						
	Normal	3Mtr Extn	6Mtr Extn	9Mtr Extn	15Mtr Extn	36Mtr Extn	TOTAL
60°(M/C Monopole)	5	0	0	0	0	2	7

TOWER SHEDULE								
Location No.	Tower type	Span	Section Length	Ground Clearnce	Ht Line	EHV line Xing clearance	ANGLE	Remark
	60°(D/C Monopole)	2	0	0	0	1	0	3
	60°(D/C Lattice NARROW BASE TOWER)	2	0	0	0	0	0	2
	TOTAL :-	9	0	0	0	1	2	12

Note:-Prop. LOC-1,3,5,7,8,9,10 Auxiliary Cross arm to be use

Prop. Loc. 6 Both Side Auxiliary Cross arm to be use (Star Type Cross arm)

Note:- 1) Ht Line, Drainage line, Compound wall, Fencing, road etc need to divert for execution of foundation , erection of monopole /towers & stringing of conductors.

2) It is necessary to submit this plan & profile to TCE for verification & checking of possibility for shifting of proposed Gantry by minimum 12 m. inside for fixing of Monopole in MSETCL premises & raising of Gantry height or design of special gantry for avoiding slanting of conductors position.

3) The profiles are prepared considering a circuit-to-circuit clearance (i.e. between cross arms No. 3 and 4) of 13 meters, to ensure adequate maintenance access. Therefore, a minimum clearance of 13 meters or more should be incorporated into the monopole design.

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