Summary -Annexure -A

Sr. No.	Name of circle	Name of line	Total Line length in km
1	Bharuch	220kV Kosamba - Kim Line 1	23.466
2	Bharuch	220kV Kosamba - Kim Line 2	25.555
3	Bharuch	220kV Kosamba - Kim Line 3	35.780
Total of Bharuch circle (A)			**84.801**

220KV Kim - Kosamba line : 1

Sr No	Location	S/C or D/C	Tower Type	Span Between Tower No.	Span Length	Section Span length	Total SRI Required	220KV-90 kN	220KV-120 kN	Single Suspension H/W for HTLS Zebra	Double Suspension H/W for HTLS Zebra	Single Tension H/W for HTLS Zebra	Double Tension H/W for HTLS Zebra	Vibration damper fro HTLS Zebra	PA Armour rod for HTLS Zebra	Midspan joint for HTLS Zebra	Repair sleeve for HTLS Zebra	T-connector with Pad	Jumper terminal without hole with suitable N&B	REMARKS
1	Kosamba S/S	GANTRY	TC				6	3	3	3	0	3	0	3	3	0	0	6	9	
2	1	D/C	T	Gantry - 1	219	219	6	0	6	0	0	6	0	6	0	0	0	0	0	
3	2	D/C	T	1 - 2	220	220	6	0	6	0	0	6	0	6	0	0	0	0	0	
4	3	D/C	S	2 - 3	333		3	3	0	3	0	0	0	6	3	0	0	0	0	
5	4	D/C	S	3 - 4	305		3	3	0	3	0	0	0	6	3	0	0	0	0	
6	5	D/C	S	4 - 5	326		3	3	0	3	0	0	0	6	3	0	0	0	0	
7	6	D/C	S	5 - 6	329		6	6	0	0	3	0	0	6	3	0	0	0	0	Khadi
8	7	D/C	S	6 - 7	302	3242	6	6	0	0	3	0	0	6	3	0	0	0	0	
9	8	D/C	S	7 - 8	337		3	3	0	3	0	0	0	6	3	0	0	0	0	
10	9	D/C	S	8 - 9	342		3	3	0	3	0	0	0	6	3	0	0	0	0	
11	10	D/C	S	9 - 10	350		3	3	0	3	0	0	0	6	3	0	0	0	0	
12	11	D/C	S	10 - 11	305		6	6	0	0	3	0	0	6	3	0	0	0	0	Canal
13	12	D/C	T	11 - 12	313		9	0	9	0	0	3	3	6	0	0	0	0	0	
14	13	D/C	TC	12 - 13	356	356	9	3	6	3	0	6	0	6	3	0	0	0	0	Tar Road
15	14	D/C	T	13 - 14	143	143	6	0	6	0	0	6	0	6	0	0	0	0	0	
16	15B	S/C	T	14 - 15B	228	228	6	0	6	0	0	6	0	6	0	0	0	0	0	Tar Road
17	74	D/C	S	15B - 74	320		6	6	0	0	3	0	0	6	3	0	0	0	0	
18	75	D/C	S	74 - 75	292		6	6	0	0	3	0	0	6	3	0	0	0	0	Canal
19	76	D/C	S	75 - 76	320		6	6	0	0	3	0	0	6	3	0	0	0	0	
20	77	D/C	S	76 - 77	324		6	6	0	0	3	0	0	6	3	0	0	0	0	Tar Road
21	78	D/C	S	77 - 78	315		6	6	0	0	3	0	0	6	3	0	0	0	0	Canal
22	79	D/C	S	78 - 79	307		6	6	0	0	3	0	0	6	3	0	0	0	0	
23	80	D/C	S	79 - 80	308	3122	3	3	0	3	0	0	0	6	3	0	0	0	0	
24	81	D/C	S	80 - 81	305		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
25	82	D/C	S	81 - 82	312		3	3	0	3	0	0	0	6	3	0	0	0	0	
26	83	D/C	TB	82 - 83	319		9	0	9	0	0	3	3	6	0	0	0	0	0	SH 166 Kosamba mangrol and Kosamba Umarpada Railway track
27	84	D/C	TB	83 - 84	180	180	9	0	9	0	0	3	3	6	0	0	0	0	0	
28	85	D/C	S	84 - 85	319		3	3	0	3	0	0	0	6	3	0	0	0	0	
29	86	D/C	S	85 - 86	308		3	3	0	3	0	0	0	6	3	0	0	0	0	
30	87	D/C	S	86 - 87	295		6	6	0	0	3	0	0	6	3	0	0	0	0	River
31	88	D/C	S	87 - 88	313		6	6	0	0	3	0	0	6	3	0	0	0	0	
32	89	D/C	S	88 - 89	315		3	3	0	3	0	0	0	6	3	0	0	0	0	
33	90	D/C	S	89 - 90	296		3	3	0	3	0	0	0	6	3	0	0	0	0	
34	91	D/C	S	90 - 91	310	3721	3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
35	92	D/C	S	91 - 92	304		3	3	0	3	0	0	0	6	3	0	0	0	0	
36	93	D/C	S	92 - 93	285		3	3	0	3	0	0	0	6	3	0	0	0	0	
37	94	D/C	S	93 - 94	323		3	3	0	3	0	0	0	6	3	0	0	0	0	
38	95	D/C	S	94 - 95	349		3	3	0	3	0	0	0	6	3	0	0	0	0	
39	96	D/C	T	95 - 96	304		6	0	6	0	0	6	0	6	0	3	3	0	0	

220KV Kim - Kosamba line : 1

Sr No	Location	S/C or D/C	Tower Type	Span Between Tower No.	Span Length	Section Span length	Total SRI Required	220KV-90 kN	220KV-120 kN	Single Suspension H/W for HTLS Zebra	Double Suspension H/W for HTLS Zebra	Single Tension H/W for HTLS Zebra	Double Tension H/W for HTLS Zebra	Vibration damper fro HTLS Zebra	PA Armour rod for HTLS Zebra	Midspan joint for HTLS Zebra	Repair sleeve for HTLS Zebra	T-connector with Pad	Jumper terminal without hole with suitable N&B	REMARKS
40	97	D/C	S	96 - 97	313		3	3	0	3	0	0	0	6	3	0	0	0	0	
41	98	D/C	S	97 - 98	310		3	3	0	3	0	0	0	6	3	0	0	0	0	
42	99	D/C	S	98 - 99	307		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
43	100	D/C	S	99 - 100	304		3	3	0	3	0	0	0	6	3	0	0	0	0	
44	101	D/C	S	100 - 101	246		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
45	102	D/C	S	101 - 102	368	3720	3	3	0	3	0	0	0	6	3	0	0	0	0	
46	103	D/C	S	102 - 103	306		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
47	104	D/C	S	103 - 104	297		3	3	0	3	0	0	0	6	3	0	0	0	0	
48	105	D/C	S	104 - 105	290		3	3	0	3	0	0	0	6	3	0	0	0	0	
49	106	D/C	S	105 - 106	332		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
50	107	D/C	S	106 - 107	327		3	3	0	3	0	0	0	6	3	0	0	0	0	
51	108	D/C	T	107 - 108	320		6	0	6	0	0	6	0	6	0	0	0	0	0	Tar Road
52	109	D/C	S	108 - 109	309		3	3	0	3	0	0	0	6	3	0	0	0	0	
53	110	D/C	S	109 - 110	311		3	3	0	3	0	0	0	6	3	0	0	0	0	
54	111	D/C	S	110 - 111	315		3	3	0	3	0	0	0	6	3	0	0	0	0	
55	112	D/C	S	111 - 112	295		3	3	0	3	0	0	0	6	3	0	0	0	0	
56	113	D/C	S	112 - 113	262		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
57	114	D/C	S	113 - 114	317		3	3	0	3	0	0	0	6	3	0	0	0	0	
58	115	D/C	S	114 - 115	294	3359	3	3	0	3	0	0	0	6	3	0	0	0	0	
59	116	D/C	S	115 - 116	325		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
60	117	D/C	S	116 - 117	310		3	3	0	3	0	0	0	6	3	0	0	0	0	
61	118	D/C	S	117 - 118	310		3	3	0	3	0	0	0	6	3	0	0	0	0	
62	119	D/C	T	118 - 119	311		9	0	9	0	0	3	3	6	0	0	0	0	0	SH Kim Mandvi Road
63	119A	D/C	TB	119 - 119A	70	70	12	0	12	0	0	0	6	6	0	0	0	0	0	
64	119B	D/C	TB	119A - 119B	92	92	12	0	12	0	0	0	6	6	0	0	0	0	0	NE 4 Vadodara Mumbai
65	120	D/C	T	119B - 120	175	175	9	0	9	0	0	3	3	6	0	0	0	0	0	Tar Road
66	121	D/C	S	120 - 121	266	266	3	3	0	3	0	0	0	6	3	0	0	0	0	
67	122	D/C	S	121 - 122	273		3	3	0	3	0	0	0	6	3	0	0	0	0	
68	123	D/C	S	122 - 123	330		3	3	0	3	0	0	0	6	3	0	0	0	0	
69	124	D/C	S	123 - 124	310		3	3	0	3	0	0	0	6	3	0	0	0	0	
70	125	D/C	S	124 - 125	246	1676	3	3	0	3	0	0	0	6	3	0	0	0	0	
71	126	D/C	S	125 - 126	244		6	6	0	0	3	0	0	6	3	0	0	0	0	Canal and Tar Road
72	127	D/C	T	126 - 127	273		9	0	9	0	0	3	3	6	0	0	0	0	0	
73	128	D/C	T	127 - 128	53	53	6	0	6	0	0	6	0	6	0	0	0	0	0	
74	129	D/C	T	128 - 129	45	45	6	0	6	0	0	6	0	6	0	0	0	0	0	
75	130	D/C	TB	129 - 130	222	222	9	0	9	0	0	3	3	6	0	0	0	0	0	Canal and Tar Road
76	131	D/C	DTB	130 - 131	342	342	12	0	12	0	0	0	6	6	0	3	3	0	0	

220KV Kim - Kosamba line : 1

Sr No	Location	S/C or D/C	Tower Type	Span Between Tower No.	Span Length	Section Span length	Total SRI Required	220KV-90 kN	220KV-120 kN	Single Suspension H/W for HTLS Zebra	Double Suspension H/W for HTLS Zebra	Single Tension H/W for HTLS Zebra	Double Tension H/W for HTLS Zebra	Vibration damper fro HTLS Zebra	PA Armour rod for HTLS Zebra	Midspan joint for HTLS Zebra	Repair sleeve for HTLS Zebra	T-connector with Pad	Jumper terminal without hole with suitable N&B	REMARKS
77	132	D/C	DS	131 - 132	354	1036	6	6	0	0	3	0	0	6	3	0	0	0	0	
78	133	D/C	S	132 - 133	334		3	3	0	3	0	0	0	6	3	0	0	0	0	
79	134	D/C	T	133 - 134	348		6	0	6	0	0	6	0	6	0	0	0	0	0	
80	135	D/C	S	134 - 135	276	641	3	3	0	3	0	0	0	6	3	0	0	0	0	
81	136	D/C	T	135 - 136	365		6	0	6	0	0	6	0	6	0	0	0	0	0	
82	137	D/C	T	136 - 137	253	253	6	0	6	0	0	6	0	6	0	0	0	0	0	
83	Kim Gantry	GANTRY	TC	137 - Kim Gantry	85	85	6	3	3	3	0	3	0	3	3	12	12	6	9	
	Total				23466	23466	402	225	177	147	39	99	39	492	186	18	18	12	18	
						Additional Quantity	24	12	12	6	3	6	3	6	3	0	0	0	0	
						Final Quantity	426	237	189	153	42	105	42	498	189	18	18	12	18	
		Line Length			23.466	KM														
		Total HTLS zebra Conductor required			70.397	KM														
		Add Sag 0.5%			0.352	KM														
		Total HTLS Zebra			70.749	KM														

220KV Kim - Kosamba line : 2

Sr No	Location	S/C or D/C	Tower Type	Span Between Tower No.	Span Length	Section Span length	Total SRI Required	220KV-90 kN Suspension SRI	220KV-120 kN Tension SRI	Single Suspension H/W for HTLS Zebra	Double Suspension H/W for HTLS Zebra	Single Tension H/W for HTLS Zebra	Double Tension H/W for HTLS Zebra	Vibration damper fro HTLS Zebra	PA Armour rod for HTLS Zebra	Midspan joint for HTLS Zebra	Repair sleeve for HTLS Zebra	T-connector with Pad	Jumper terminal without hole with suitable N&B	REMARKS
1	Kosamba S/S	GANTRY	TC				6	3	3	3	0	3	0	3	3	0	0	6	9	
2	1	D/C	T	Gantry - 1	219	219	6	0	6	0	0	6	0	6	0	0	0	0	0	
3	2	D/C	T	1 - 2	220	220	6	0	6	0	0	6	0	6	0	0	0	0	0	
4	3	D/C	S	2 - 3	333	3242	3	3	0	3	0	0	0	6	3	0	0	0	0	
5	4	D/C	S	3 - 4	305		3	3	0	3	0	0	0	6	3	0	0	0	0	
6	5	D/C	S	4 - 5	326		3	3	0	3	0	0	0	6	3	0	0	0	0	
7	6	D/C	S	5 - 6	329		6	6	0	0	3	0	0	6	3	0	0	0	0	Khadi
8	7	D/C	S	6 - 7	302		6	6	0	0	3	0	0	6	3	0	0	0	0	
9	8	D/C	S	7 - 8	337		3	3	0	3	0	0	0	6	3	0	0	0	0	
10	9	D/C	S	8 - 9	342		3	3	0	3	0	0	0	6	3	0	0	0	0	
11	10	D/C	S	9 - 10	350		3	3	0	3	0	0	0	6	3	0	0	0	0	
12	11	D/C	S	10 - 11	305		6	6	0	0	3	0	0	6	3	0	0	0	0	Canal
13	12	D/C	T	11 - 12	313		9	0	9	0	0	3	3	6	0	0	0	0	0	
14	13	D/C	T	12 - 13	356	356	6	0	6	0	0	6	0	6	0	0	0	0	0	Tar Road
15	14	D/C	T	13 - 14	143	143	6	0	6	0	0	6	0	6	0	0	0	0	0	
16	15A	D/C	TC	14 - 15A	76	76	9	3	6	3	0	6	0	6	3	0	0	0	0	
17	72	D/C	S	15A-72	75	1013	3	3	0	3	0	0	0	6	3	0	0	0	0	
18	71	D/C	S	72-71	310		3	3	0	3	0	0	0	6	3	0	0	0	0	
19	70	D/C	S	71-70	310		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
20	69	D/C	T	70-69	318		6	0	6	0	0	6	0	6	0	0	0	0	0	
21	70	D/C	S	69-70	318	4351	3	3	0	3	0	0	0	6	3	0	0	0	0	
22	71	D/C	S	70-71	310		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
23	72	D/C	S	71-72	310		3	3	0	3	0	0	0	6	3	0	0	0	0	
24	73	D/C	S	72-73	291		3	3	0	3	0	0	0	6	3	0	0	0	0	
25	74	D/C	S	73-74	320		3	3	0	3	0	0	0	6	3	0	0	0	0	
26	75	D/C	S	74 - 75	292		6	6	0	0	3	0	0	6	3	0	0	0	0	Canal
27	76	D/C	S	75 - 76	320		6	6	0	0	3	0	0	6	3	0	0	0	0	
28	77	D/C	S	76 - 77	324		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
29	78	D/C	S	77 - 78	315		6	6	0	0	3	0	0	6	3	0	0	0	0	Canal
30	79	D/C	S	78 - 79	307		6	6	0	0	3	0	0	6	3	0	0	0	0	
31	80	D/C	S	79 - 80	308		3	3	0	3	0	0	0	6	3	0	0	0	0	
32	81	D/C	S	80 - 81	305		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
33	82	D/C	S	81 - 82	312		3	3	0	3	0	0	0	6	3	0	0	0	0	
34	83	D/C	TB	82 - 83	319		9	0	9	0	0	3	3	6	0	3	3	0	0	SH 166 Kosamba mangrol and Kosamba Umarpada Railway track
35	84	D/C	TB	83 - 84	180	180	9	0	9	0	0	3	3	6	0	0	0	0	0	
36	85	D/C	S	84 - 85	319		3	3	0	3	0	0	0	6	3	0	0	0	0	
37	86	D/C	S	85 - 86	308		3	3	0	3	0	0	0	6	3	0	0	0	0	
38	87	D/C	S	86 - 87	295		6	6	0	0	3	0	0	6	3	0	0	0	0	River

220KV Kim - Kosamba line : 2

Sr No	Location	S/C or D/C	Tower Type	Span Between Tower No.	Span Length	Section Span length	Total SRI Required	220KV-90 kN Suspension SRI	220KV-120 kN Tension SRI	Single Suspension H/W for HTLS Zebra	Double Suspension H/W for HTLS Zebra	Single Tension H/W for HTLS Zebra	Double Tension H/W for HTLS Zebra	Vibration damper fro HTLS Zebra	PA Armour rod for HTLS Zebra	Midspan joint for HTLS Zebra	Repair sleeve for HTLS Zebra	T-connector with Pad	Jumper terminal without hole with suitable N&B	REMARKS
39	88	D/C	S	87 - 88	313	3721	6	6	0	0	3	0	0	6	3	0	0	0	0	
40	89	D/C	S	88 - 89	315		3	3	0	3	0	0	0	6	3	0	0	0	0	
41	90	D/C	S	89 - 90	296		3	3	0	3	0	0	0	6	3	0	0	0	0	
42	91	D/C	S	90 - 91	310		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
43	92	D/C	S	91 - 92	304		3	3	0	3	0	0	0	6	3	0	0	0	0	
44	93	D/C	S	92 - 93	285		3	3	0	3	0	0	0	6	3	0	0	0	0	
45	94	D/C	S	93 - 94	323		3	3	0	3	0	0	0	6	3	0	0	0	0	
46	95	D/C	S	94 - 95	349		3	3	0	3	0	0	0	6	3	0	0	0	0	
47	96	D/C	T	95 - 96	304		6	0	6	0	0	6	0	6	0	0	0	0	0	
48	97	D/C	S	96 - 97	313	3720	3	3	0	3	0	0	0	6	3	0	0	0	0	
49	98	D/C	S	97 - 98	310		3	3	0	3	0	0	0	6	3	0	0	0	0	
50	99	D/C	S	98 - 99	307		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
51	100	D/C	S	99 - 100	304		3	3	0	3	0	0	0	6	3	0	0	0	0	
52	101	D/C	S	100 - 101	246		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
53	102	D/C	S	101 - 102	368		3	3	0	3	0	0	0	6	3	0	0	0	0	
54	103	D/C	S	102 - 103	306		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
55	104	D/C	S	103 - 104	297		3	3	0	3	0	0	0	6	3	0	0	0	0	
56	105	D/C	S	104 - 105	290		3	3	0	3	0	0	0	6	3	0	0	0	0	
57	106	D/C	S	105 - 106	332		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
58	107	D/C	S	106 - 107	327		3	3	0	3	0	0	0	6	3	0	0	0	0	
59	108	D/C	T	107 - 108	320		6	0	6	0	0	6	0	6	0	0	0	0	0	Tar Road
60	109	D/C	S	108 - 109	309	3359	3	3	0	3	0	0	0	6	3	0	0	0	0	
61	110	D/C	S	109 - 110	311		3	3	0	3	0	0	0	6	3	0	0	0	0	
62	111	D/C	S	110 - 111	315		3	3	0	3	0	0	0	6	3	0	0	0	0	
63	112	D/C	S	111 - 112	295		3	3	0	3	0	0	0	6	3	0	0	0	0	
64	113	D/C	S	112 - 113	262		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
65	114	D/C	S	113 - 114	317		3	3	0	3	0	0	0	6	3	0	0	0	0	
66	115	D/C	S	114 - 115	294		3	3	0	3	0	0	0	6	3	0	0	0	0	
67	116	D/C	S	115 - 116	325		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
68	117	D/C	S	116 - 117	310		3	3	0	3	0	0	0	6	3	0	0	0	0	
69	118	D/C	S	117 - 118	310		3	3	0	3	0	0	0	6	3	0	0	0	0	
70	119	D/C	T	118 - 119	311		9	0	9	0	0	3	3	6	0	3	3	0	0	SH Kim Mandvi Road
71	119A	D/C	TB	119 - 119A	70	70	12	0	12	0	0	0	6	6	0	0	0	0	0	
72	119B	D/C	TB	119A - 119B	92	92	12	0	12	0	0	0	6	6	0	0	0	0	0	NE 4 Vadodara Mumbai
73	120	D/C	T	119B - 120	175	175	9	0	9	0	0	3	3	6	0	0	0	0	0	Tar Road
74	121	D/C	T	120 - 121	266	266	6	0	6	0	0	6	0	6	0	0	0	0	0	
75	122	D/C	S	121 - 122	273	1676	3	3	0	3	0	0	0	6	3	0	0	0	0	
76	123	D/C	S	122 - 123	330		3	3	0	3	0	0	0	6	3	0	0	0	0	
77	124	D/C	S	123 - 124	310		3	3	0	3	0	0	0	6	3	0	0	0	0	
78	125	D/C	S	124 - 125	246		3	3	0	3	0	0	0	6	3	0	0	0	0	

220KV Kim - Kosamba line : 2

Sr No	Location	S/C or D/C	Tower Type	Span Between Tower No.	Span Length	Section Span length	Total SRI Required	220KV-90 kN Suspension SRI	220KV-120 kN Tension SRI	Single Suspension H/W for HTLS Zebra	Double Suspension H/W for HTLS Zebra	Single Tension H/W for HTLS Zebra	Double Tension H/W for HTLS Zebra	Vibration damper fro HTLS Zebra	PA Armour rod for HTLS Zebra	Midspan joint for HTLS Zebra	Repair sleeve for HTLS Zebra	T-connector with Pad	Jumper terminal without hole with suitable N&B	REMARKS
79	126	D/C	S	125 - 126	244		6	6	0	0	3	0	0	6	3	0	0	0	0	Canal and Tar Road
80	127	D/C	TC	126 - 127	273		12	3	9	3	0	3	3	6	3	0	0	0	0	
81	128	D/C	TC	127 - 128	53	53	9	3	6	3	0	6	0	6	3	0	0	0	0	
82	129	D/C	T	128 - 129	45	45	6	0	6	0	0	6	0	6	0	0	0	0	0	
83	130	D/C	TB	129 - 130	222	222	9	0	9	0	0	3	3	6	0	0	0	0	0	Canal and Tar Road
84	131	D/C	DTB	130 - 131	342	342	12	0	12	0	0	0	6	6	0	0	0	0	0	
85	132	D/C	DS	131 - 132	354	1036	6	6	0	0	3	0	0	6	3	0	0	0	0	
86	133	D/C	S	132 - 133	334		3	3	0	3	0	0	0	6	3	0	0	0	0	
87	134	D/C	T	133 - 134	348		6	0	6	0	0	6	0	6	0	0	0	0	0	
88	135	D/C	S	134 - 135	276	641	3	3	0	3	0	0	0	6	3	0	0	0	0	
89	136	D/C	T	135 - 136	365		6	0	6	0	0	6	0	6	0	0	0	0	0	
90	137	D/C	T	136 - 137	253	253	6	0	6	0	0	6	0	6	0	0	0	0	0	
91	Kim Gantry	GANTRY	TC	137 - Kim Gantry	85	85	6	3	3	3	0	3	0	3	3	12	12	6	9	
	Total				25,555	25,555	432	243	189	177	33	111	39	540	210	18	18	12	18	
						Additional Quantity	24	12	12	6	3	6	3	6	3	0	0	0	0	
						Final Quantity	456	255	201	183	36	117	42	546	213	18	18	12	18	
		Line Length			25.555	KM														
		Total HTLS zebra Conductor required			76.666	KM														
		Add Sag 0.5%			0.383	KM														
		Total HTLS Zebra			77.049	KM														

220KV Kim - Kosamba line : 3

Sr No	Location	S/C or D/C	Tower Type	Span Between Tower No.	Span Length	Section Span length	Total SRI Required	220KV-90 kN Suspension SRI	220KV-120 kN Tension SRI	Single Suspension H/W for HTLS Zebra	Double Suspension H/W for HTLS Zebra	Single Tension H/W for HTLS Zebra	Double Tension H/W for HTLS Zebra	Vibration damper fro HTLS Zebra	PA Armour rod for HTLS Zebra	Midspan joint for HTLS Zebra	Repair sleeve for HTLS Zebra	T-connector with Pad	Jumper terminal without hole with suitable N&B	REMARKS
1	Kosamba S/S	Gantry	TC				6	3	3	3	0	3	0	3	3	0	0	6	9	
2	143	D/C	T	Gantry - 143	71	71	6	0	6	0	0	6	0	6	0	0	0	0	0	
3	142	D/C	T	143 - 142	239	239	6	0	6	0	0	6	0	6	0	0	0	0	0	
4	141	D/C	S	142 - 141	241	2616	3	3	0	3	0	0	0	6	3	0	0	0	0	
5	140	D/C	S	141 - 140	353		3	3	0	3	0	0	0	6	3	0	0	0	0	
6	139	D/C	S	140 - 139	319		3	3	0	3	0	0	0	6	3	0	0	0	0	
7	138	D/C	S	139 - 138	330		3	3	0	3	0	0	0	6	3	0	0	0	0	
8	137	D/C	S	138 - 137	350		3	3	0	3	0	0	0	6	3	0	0	0	0	
9	136	D/C	S	137 - 136	334		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
10	135	D/C	S	136 - 135	365		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
11	134	D/C	TB	135 - 134	324		9	0	9	0	0	3	3	6	0	0	0	0	0	Tar Road
12	133	D/C	DS	134 - 133	259	2898	6	6	0	0	3	0	0	6	3	0	0	0	0	
13	132	D/C	S	133 - 132	364		3	3	0	3	0	0	0	6	3	0	0	0	0	
14	131	D/C	S	132 - 131	254		6	6	0	0	3	0	0	6	3	0	0	0	0	Canal and Khadi
15	130	D/C	S	131 - 130	335		6	6	0	0	3	0	0	6	3	0	0	0	0	Khadi
16	129	D/C	S	130 - 129	361		6	6	0	0	3	0	0	6	3	0	0	0	0	Khadi and Tar Road
17	128	D/C	S	129 - 128	341		6	6	0	0	3	0	0	6	3	0	0	0	0	
18	127	D/C	S	128 - 127	303		3	3	0	3	0	0	0	6	3	0	0	0	0	
19	126	D/C	S	127 - 126	327		6	6	0	0	3	0	0	6	3	0	0	0	0	canal
20	125	D/C	TB	126 - 125	354		9	0	9	0	0	3	3	6	0	0	0	0	0	
21	124	D/C	DS	125 - 124	285	1987	6	6	0	0	3	0	0	6	3	0	0	0	0	Tar Road
22	123	D/C	S	124 - 123	359		3	3	0	3	0	0	0	6	3	0	0	0	0	
23	122	D/C	S	123 - 122	307		6	6	0	0	3	0	0	6	3	0	0	0	0	canal
24	121	D/C	S	122 - 121	286		6	6	0	0	3	0	0	6	3	0	0	0	0	
25	120	D/C	S	121 - 120	380		3	3	0	3	0	0	0	6	3	0	0	0	0	
26	119	D/C	T	120 - 119	370		6	0	6	0	0	6	0	6	0	0	0	0	0	
27	118	D/C	S	119 - 118	369	2430	3	3	0	3	0	0	0	6	3	0	0	0	0	
28	117	D/C	S	118 - 117	375		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
29	116	D/C	S	117 - 116	328		3	3	0	3	0	0	0	6	3	0	0	0	0	
30	115	D/C	S	116 - 115	347		3	3	0	3	0	0	0	6	3	0	0	0	0	
31	114	D/C	S	115 - 114	345		3	3	0	3	0	0	0	6	3	0	0	0	0	
32	113	D/C	S	114 - 113	356		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
33	112	D/C	TB	113 - 112	310		9	0	9	0	0	3	3	6	0	3	3	0	0	

220KV Kim - Kosamba line : 3

Sr No	Location	S/C or D/C	Tower Type	Span Between Tower No.	Span Length	Section Span length	Total SRI Required	220KV-90 kN Suspension SRI	220KV-120 kN Tension SRI	Single Suspension H/W for HTLS Zebra	Double Suspension H/W for HTLS Zebra	Single Tension H/W for HTLS Zebra	Double Tension H/W for HTLS Zebra	Vibration damper fro HTLS Zebra	PA Armour rod for HTLS Zebra	Midspan joint for HTLS Zebra	Repair sleeve for HTLS Zebra	T-connector with Pad	Jumper terminal without hole with suitable N&B	REMARKS
34	111	D/C	TB	112 - 111	205	205	9	0	9	0	0	3	3	6	0	0	0	0	0	SH 166 Kosamba mangrol and Kosamba Umarpada Railway track
35	110	D/C	S	111 - 110	305	2508	6	6	0	0	3	0	0	6	3	0	0	0	0	canal
36	109	D/C	S	110 - 109	330		6	6	0	0	3	0	0	6	3	0	0	0	0	
37	108	D/C	S	109 - 108	351		3	3	0	3	0	0	0	6	3	0	0	0	0	
38	107	D/C	S	108 - 107	281		6	6	0	0	3	0	0	6	3	0	0	0	0	Khadi
39	106	D/C	S	107 - 106	258		6	6	0	0	3	0	0	6	3	0	0	0	0	Tar Road
40	105	D/C	S	106 - 105	298		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
41	104	D/C	S	105 - 104	336		3	3	0	3	0	0	0	6	3	0	0	0	0	
42	103	D/C	TB	104 - 103	349		9	0	9	0	0	3	3	6	0	0	0	0	0	canal
43	102	D/C	TB	103 - 102	223	223	9	0	9	0	0	3	3	6	0	0	0	0	0	
44	101	D/C	S	102 - 101	317	317	3	3	0	3	0	0	0	6	3	0	0	0	0	
45	100	D/C	T	101 - 100	360	2041	6	0	6	0	0	6	0	6	0	0	0	0	0	
46	99	D/C	S	100 - 99	367		3	3	0	3	0	0	0	6	3	0	0	0	0	
47	98	D/C	S	99 - 98	302		3	3	0	3	0	0	0	6	3	0	0	0	0	
48	97	D/C	S	98 - 97	333		6	6	0	0	3	0	0	6	3	0	0	0	0	Khadi
49	96	D/C	S	97 - 96	462		6	6	0	0	3	0	0	6	3	0	0	0	0	
50	95	D/C	T	96 - 95	217		6	0	6	0	0	6	0	6	0	0	0	0	0	
51	94	D/C	S	95 - 94	265	1963	3	3	0	3	0	0	0	6	3	0	0	0	0	
52	93	D/C	S	94 - 93	317		3	3	0	3	0	0	0	6	3	0	0	0	0	
53	92	D/C	S	93 - 92	427		3	3	0	3	0	0	0	6	3	0	0	0	0	
54	91	D/C	S	92 - 91	257		3	3	0	3	0	0	0	6	3	0	0	0	0	
55	90	D/C	DS	91 - 90	351		6	6	0	0	3	0	0	6	3	0	0	0	0	
56	89	D/C	DTB	90 - 89	346		12	0	12	0	0	0	6	6	0	0	0	0	0	SH 65 Kim Mandvi road
57	88	D/C	TB	89 - 88	313	313	9	0	9	0	0	3	3	6	0	0	0	0	0	
58	87	D/C	S	88 - 87	307	1690	3	3	0	3	0	0	0	6	3	0	0	0	0	
59	86	D/C	S	87 - 86	356		3	3	0	3	0	0	0	6	3	0	0	0	0	
60	85	D/C	S	86 - 85	362		3	3	0	3	0	0	0	6	3	0	0	0	0	
61	84	D/C	S	85 - 84	328		3	3	0	3	0	0	0	6	3	0	0	0	0	
62	83	D/C	TB	84 - 83	337		9	0	9	0	0	3	3	6	0	0	0	0	0	
63	82	D/C	TB	83 - 82	238	238	9	0	9	0	0	3	3	6	0	0	0	0	0	Canal and Tar road
64	81A	D/C	TB	82 - 81A	234	234	12	0	12	0	0	0	6	6	0	0	0	0	0	NE 4 Vadodara Mumbai
65	81	D/C	TB	81A - 81	126	126	9	0	9	0	0	3	3	6	0	3	3	0	0	

220KV Kim - Kosamba line : 3

Sr No	Location	S/C or D/C	Tower Type	Span Between Tower No.	Span Length	Section Span length	Total SRI Required	220KV-90 kN Suspension SRI	220KV-120 kN Tension SRI	Single Suspension H/W for HTLS Zebra	Double Suspension H/W for HTLS Zebra	Single Tension H/W for HTLS Zebra	Double Tension H/W for HTLS Zebra	Vibration damper fro HTLS Zebra	PA Armour rod for HTLS Zebra	Midspan joint for HTLS Zebra	Repair sleeve for HTLS Zebra	T-connector with Pad	Jumper terminal without hole with suitable N&B	REMARKS
66	80	D/C	S	81 - 80	350	673	3	3	0	3	0	0	0	6	3	0	0	0	0	
67	79	D/C	T	80 - 79	323		6	0	6	0	0	6	0	6	0	0	0	0	0	
68	78	D/C	TC	79 - 78	319	319	15	9	6	9	0	6	0	6	9	0	0	0	0	
69	77B	GANTRY TOWER	T	78 - 77B	84	84	6	0	6	0	0	6	0	6	0	0	0	0	0	Tar Road
70	77A	GANTRY TOWER	T	77B - 77A	57	57	6	0	6	0	0	6	0	6	0	0	0	0	0	
71	76	D/C	T	77A - 76	100	100	6	0	6	0	0	6	0	6	0	0	0	0	0	
72	75	D/C	T	76 - 75	357	357	6	0	6	0	0	6	0	6	0	0	0	0	0	
73	74	D/C	S	75 - 74	302	1687	3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
74	73	D/C	S	74 - 73	382		3	3	0	3	0	0	0	6	3	0	0	0	0	
75	72	D/C	S	73 - 72	345		3	3	0	3	0	0	0	6	3	0	0	0	0	
76	71	D/C	S	72 - 71	315		3	3	0	3	0	0	0	6	3	0	0	0	0	
77	70	D/C	TB	71 - 70	343		9	0	9	0	0	3	3	6	0	0	0	0	0	
78	69	D/C	DTB	70 - 69	149	149	12	0	12	0	0	0	6	6	0	0	0	0	0	Lake
79	68	D/C	TB	69 - 68	151	151	9	0	9	0	0	3	3	6	0	0	0	0	0	
80	67	D/C	T	68 - 67	120	120	6	0	6	0	0	6	0	6	0	0	0	0	0	
81	66	D/C	T	67 - 66	325	325	6	0	6	0	0	6	0	6	0	0	0	0	0	
82	65	D/C	S	66 - 65	214	427	3	3	0	3	0	0	0	6	3	0	0	0	0	
83	64	D/C	T	65 - 64	213		6	0	6	0	0	6	0	6	0	0	0	0	0	
84	63	D/C	T	64 - 63	300	300	9	0	9	0	0	3	3	6	0	0	0	0	0	lake
85	62	D/C	S	63 - 62	205	396	6	6	0	0	3	0	0	6	3	0	0	0	0	
86	61	D/C	T	62 - 61	191		6	0	6	0	0	6	0	6	0	0	0	0	0	
87	60	D/C	S	61 - 60	343	976	3	3	0	3	0	0	0	6	3	0	0	0	0	
88	59	D/C	DS	60 - 59	269		6	6	0	0	3	0	0	6	3	0	0	0	0	Tar Road
89	58	D/C	TB	59 - 58	364		9	0	9	0	0	3	3	6	0	0	0	0	0	
90	57	D/C	S	58 - 57	333	1645	3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
91	56	D/C	S	57 - 56	351		3	3	0	3	0	0	0	6	3	0	0	0	0	
92	55	D/C	S	56 - 55	402		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
93	54	D/C	S	55 - 54	228		3	3	0	3	0	0	0	6	3	0	0	0	0	Tar Road
94	53	D/C	TB	54 - 53	331		9	0	9	0	0	3	3	6	0	0	0	0	0	
95	52	D/C	DTB	53 - 52	156	156	12	0	12	0	0	0	6	6	0	0	0	0	0	Tar Road
96	51	D/C	TB	52 - 51	156	156	9	0	9	0	0	3	3	6	0	0	0	0	0	NH 48
97	27	D/C	TB	51 - 27	143	143	9	0	9	0	0	3	3	6	0	0	0	0	0	
98	26	D/C	S	27 - 26	269	895	3	3	0	3	0	0	0	6	3	0	0	0	0	
99	25	D/C	S	26 - 25	133		3	3	0	3	0	0	0	6	3	0	0	0	0	
100	24	D/C	S	25 - 24	139		6	6	0	0	3	0	0	6	3	0	0	0	0	NH 48
101	23	D/C	T	24 - 23	354		9	0	9	0	0	3	3	6	0	3	3	0	0	

220KV Kim - Kosamba line : 3

Sr No	Location	S/C or D/C	Tower Type	Span Between Tower No.	Span Length	Section Span length	Total SRI Required	220KV-90 kN Suspension SRI	220KV-120 kN Tension SRI	Single Suspension H/W for HTLS Zebra	Double Suspension H/W for HTLS Zebra	Single Tension H/W for HTLS Zebra	Double Tension H/W for HTLS Zebra	Vibration damper fro HTLS Zebra	PA Armour rod for HTLS Zebra	Midspan joint for HTLS Zebra	Repair sleeve for HTLS Zebra	T-connector with Pad	Jumper terminal without hole with suitable N&B	REMARKS
102	22	D/C	S	23 - 22	281	2841	3	3	0	3	0	0	0	6	3	0	0	0	0	
103	21	D/C	S	22 - 21	322		3	3	0	3	0	0	0	6	3	0	0	0	0	
104	20	D/C	S	21 - 20	287		3	3	0	3	0	0	0	6	3	0	0	0	0	
105	19	D/C	S	20 - 19	317		3	3	0	3	0	0	0	6	3	0	0	0	0	
106	18	D/C	S	19 - 18	331		3	3	0	3	0	0	0	6	3	0	0	0	0	
107	17	D/C	S	18 - 17	334		3	3	0	3	0	0	0	6	3	0	0	0	0	
108	16	D/C	S	17 - 16	307		3	3	0	3	0	0	0	6	3	0	0	0	0	
109	15	D/C	S	16 - 15	300		3	3	0	3	0	0	0	6	3	0	0	0	0	
110	14	D/C	S	15 - 14	132		3	3	0	3	0	0	0	6	3	0	0	0	0	
111	13	D/C	T	14 - 13	230		6	0	6	0	0	6	0	6	0	0	0	0	0	
112	12	D/C	T	13 - 12	252	252	6	0	6	0	0	6	0	6	0	0	0	0	0	
113	11	D/C	T	12 - 11	289	289	6	0	6	0	0	6	0	6	0	0	0	0	0	Tar Road
114	10	D/C	S	11 - 10	286	1375	3	3	0	3	0	0	0	6	3	0	0	0	0	
115	9	D/C	S	10 - 9	225		3	3	0	3	0	0	0	6	3	0	0	0	0	
116	8	D/C	S	9 - 8	375		6	6	0	0	3	0	0	6	3	0	0	0	0	Canal and Tar road
117	7	D/C	S	8 - 7	284		6	6	0	0	3	0	0	6	3	0	0	0	0	
118	6	D/C	T	7 - 6	205		6	0	6	0	0	6	0	6	0	0	0	0	0	
119	5	D/C	S	6 - 5	376	1337	3	3	0	3	0	0	0	6	3	0	0	0	0	
120	4	D/C	S	5 - 4	292		3	3	0	3	0	0	0	6	3	0	0	0	0	
121	3	D/C	S	4 - 3	335		3	3	0	3	0	0	0	6	3	0	0	0	0	
122	2	D/C	T	3 - 2	334		6	0	6	0	0	6	0	6	0	0	0	0	0	
123	1	D/C	T	2 - 1	160	160	6	0	6	0	0	6	0	6	0	0	0	0	0	
124	Kim Gantry	GANTRY	TC	1 - Kim Gantry	311	311	6	3	3	3	0	3	0	3	3	9	9	6	9	Tar Road
	Total				35780	35780	657	315	342	189	63	186	78	738	252	18	18	12	18	
						Additional Quantity	24	12	12	6	3	6	3	6	3	0	0	0	0	
						Final Quantity	681	327	354	195	66	192	81	744	255	18	18	12	18	
		Line Length			35.78	KM														
		Total HTLS zebra Conductor required			107.34	KM														
		Add Sag 0.5%			0.537	KM														
		Total HTLS Zebra			107.877	KM														