

संदर्भ/Ref : CC-ENGG-C2021001-1001422-T14221-4521-BM BTB DA

Date : 29/04/2025

From : NITESH KUMAR SINHA
Senior DGM**To :** SKIPPER LTD.
3A loudon Street Kolkata 700017
700017**Cc :** ER**Subject :** Tower Package-TW01 for Indian Portion of New Butwal-Gorakhpur 400kV D/C (Quad) line
LOA Ref : 5002002333/CONSULTANCY GIVEN/DOM/A04-CC CS-5/NOA-I/01,NOA-II/02 Dated 13/06/2023

Please find enclosed following drawings/ documents for necessary action at your end.

Vendor Drg. No. :**Orgn. Drg. No. :** C2021001-1001422-T14221-4521-BM BTB DA**Revision No. :** 01**Drg. Title :** BILL OF MATERIAL FOR TT DA BTB FOR 400 kV D/C WZ-5 (ACSR
MOOSE) TL**App. Category :** CAT-I**Release Date :** 29/04/2025

Scan to verify

Comments : approved**अनुमोदित श्रेणी/App. Category:**

- I. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु जारी।
Approved/released for fabrication/construction.
- II. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु अनुमोदित/जारी बशर्ते दिए गए टिप्पणियाँ एवं आशोधनों की सम्मिलित किया जाये। कृपया रिवाइज्ड दस्तावेज अनुमोदनार्थ प्रस्तुत करें।
Approved/released for fabrication/ construction subject to incorporation of comments and modification as noted. Revised drawing required for approval.
- III. टिप्पणियाँ सम्मिलित करने के उपरांत दस्तावेज को अनुमोदनार्थ प्रस्तुत करें।
To be resubmitted for approval after incorporating the comments.
- IV. सूचनार्थ एवं रिकार्ड हेतु।
For information and record.
- CATREL/ निर्माण हेतु जारी।
REL-CON **Released for construction.**

नोट/Note:

1. Approval/Comments conveyed herein neither relieve the contractor of his contractual obligations and his responsibilities, weights, quantities, design details assemble fits, performance particulars and conformity of the supplies with the Indian Statutory Laws as may be applicable, nor does it limits the purchaser's right under the contract.
2. The approval conveyed vide this letter does not cover the approval of make for sub-vendor items.

BOM NO. SL/PGCIL/400KV/BUTW-GRKH/DD/BB

NO. OF SHEET : 14

POWER GRID CORPORATION OF INDIA LTD.

(A Government of India Enterprise)

BILL OF MATERIALSINITIAL / FINAL
(GALVANIZED)

STRUCTURE UNIT : 400KV D/C "DA(0°-2°) MKD"G507 DA"

PART : BASIC BODY

REF.DRG.NO. : C:ENGG:TL:4524-4ACSR-M-P-01 TO 09

NOA No. : 5002002333/CONSULTANCY GIVEN/DOM/ A04-CC CS -5/NOA-I/01 Dated 13.06.2023 (Supply) &
5002002333/CONSULTANCY GIVEN/DOM/A04-CC-CS -5/NOA-II/02 Dated 13.06.2023 (Service)

LINE NAME : Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal -
Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

NOTE FOR PREFIX	
SP4BDA XXX	FOR M.S
SP4BDA XXXH	FOR H.T

THIS BILL OF MATERIAL IS APPLICABLE FOR MANUFACTURE OF TOWERS
AT FACTORY OF SKIPPER LIMITED, HOWRAH

SUMMARY OF WEIGHTS

SL.NO.	DESCRIPTION	WEIGHT OF BASIC BODY		
1	WT.OF ALL (HT) MEMBERS IN KGS.	11320.19		
2	WT.OF ALL (MS) MEMBERS IN KGS.(INCL. PACK WASHERS)	3626.61		
3	WT.OF BOLT & NUTS IN KGS.	593.85		
	WT.OF ACCESSORIES IN KGS.	9.00		
	TOTAL WT. OF STRUCTURES IN KGS.	15549.65		
B	22 DIA D-SHACKLE ADDED		14.04.2025	BKL
A	PROTO CORRECTED & SUCCESSFULLY TESTED AT SKIPPER LTD. TEST BED DATED 20.12.23		27.12.2023	BKL
0	FIRST ISSUE		18.10.2023	BKL
REV. No.	DESCRIPTION		DATE	INITIAL
PREPARED BY:	CHECKED BY:	VERIFIED BY:	CONTRACTOR	
P.KOLE	B.K.LAHA	S.B	SKIPPER LIMITED KOLKATA	

WARNING : THIS IS PROPRIETARY ITEM AND DESIGN RIGHT IS STRICTLY RESERVED WITH POWERGRID.UNDER NO CIRCUMSTANCES
THIS DRAWING SHALL BE USED BY ANYBODY WITHOUT PRIOR PERMISSION FROM THE OWNER IN WRITING.

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

BOM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/BB

STRUCTURE : 400KV D/C "DA(0°-2°)"-MKD"G507 DA"

BILL OF MATERIALS

PART : BASIC BODY

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
1	SP4BDA	20H	HL150X150X14	140	6500	31.60	205.40	2	410.80	
2	SP4BDA	21H	HL150X150X14		6500	31.60	205.40	2	410.80	
3	SP4BDA	22H	HL150X150X14		4900	31.60	154.84	2	309.68	
4	SP4BDA	23H	HL150X150X14		4900	31.60	154.84	2	309.68	
5	SP4BDA	24H	HL130X130X10		422	19.72	8.32	4	33.28	
6	SP4BDA	25H	H12 THK.		422	94.20	5.57	8	44.56	
7	SP4BDA	26H	HL90X90X6		6000	8.32	49.92	2	99.84	
8	SP4BDA	27H	HL90X90X6		6000	8.32	49.92	2	99.84	
9	SP4BDA	28H	HL90X90X6		6000	8.32	49.92	2	99.84	
10	SP4BDA	29H	HL90X90X6		6000	8.32	49.92	2	99.84	
11	SP4BDA	30H	HL90X90X6		3243	8.32	26.98	2	53.96	
12	SP4BDA	31H	HL90X90X6		3243	8.32	26.98	2	53.96	
13	SP4BDA	32	L45X45X4		1344	2.75	3.70	2	7.40	
14	SP4BDA	33	L45X45X4		1344	2.75	3.70	2	7.40	
15	SP4BDA	34	L45X45X4		1721	2.75	4.73	2	9.46	
16	SP4BDA	35	L45X45X4		1721	2.75	4.73	2	9.46	
17	SP4BDA	36	L60X60X4		2608	3.71	9.68	2	19.36	
18	SP4BDA	37	L60X60X4		2608	3.71	9.68	2	19.36	
19	SP4BDA	38	L55X55X4		2584	3.40	8.79	2	17.58	
20	SP4BDA	39	L55X55X4		2584	3.40	8.79	2	17.58	
21	SP4BDA	40	L50X50X4		2356	3.08	7.26	2	14.52	
22	SP4BDA	41	L50X50X4		2356	3.08	7.26	2	14.52	
23	SP4BDA	42	L50X50X4		2283	3.08	7.03	2	14.06	
24	SP4BDA	43	L50X50X4		2283	3.08	7.03	2	14.06	
25	SP4BDA	44	L50X50X4		3690	3.08	11.37	2	22.74	
26	SP4BDA	45	L50X50X4		3690	3.08	11.37	2	22.74	
27	SP4BDA	46	L65X65X4		3170	4.03	12.78	2	25.56	
28	SP4BDA	47	L65X65X4		3170	4.03	12.78	2	25.56	
29	SP4BDA	48	L55X55X4		4251	3.40	14.45	2	28.90	
30	SP4BDA	49	L55X55X4		4251	3.40	14.45	2	28.90	
31	SP4BDA	50	L45X45X4		1676	2.75	4.61	2	9.22	
32	SP4BDA	51	L45X45X4		1676	2.75	4.61	2	9.22	
33	SP4BDA	52	L50X50X4		2481	3.08	7.64	2	15.28	
34	SP4BDA	53	L50X50X4		2481	3.08	7.64	2	15.28	
35	SP4BDA	54	L45X45X4		2746	2.75	7.55	2	15.10	
36	SP4BDA	55	L45X45X4		2746	2.75	7.55	2	15.10	
37	SP4BDA	56	L45X45X4		1021	2.75	2.81	2	5.62	
38	SP4BDA	57	L45X45X4		1021	2.75	2.81	2	5.62	
39	SP4BDA	58	L50X50X4		1704	3.08	5.25	2	10.50	
40	SP4BDA	59	L50X50X4		1704	3.08	5.25	2	10.50	
41	SP4BDA	60H	HL90X90X6		5500	8.32	45.76	2	91.52	
42	SP4BDA	61H	HL90X90X6		5500	8.32	45.76	2	91.52	
43	SP4BDA	62H	HL90X90X6		5500	8.32	45.76	2	91.52	
44	SP4BDA	63H	HL90X90X6		5500	8.32	45.76	2	91.52	

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

BOM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/BB

STRUCTURE : 400KV D/C "DA(0°-2°)"-MKD"G507 DA"

BILL OF MATERIALS

PART : BASIC BODY

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
45	SP4BDA	64H	HL90X90X6	80	3021	8.32	25.13	2	50.26	
46	SP4BDA	65H	HL90X90X6		3021	8.32	25.13	2	50.26	
47	SP4BDA	66H	HL70X70X5		346	5.38	1.86	8	14.88	
48	SP4BDA	67H	H8 THK.		346	62.80	1.74	16	27.84	
49	SP4BDA	68	L45X45X4		1090	2.75	3.00	2	6.00	
50	SP4BDA	69	L45X45X4		1090	2.75	3.00	2	6.00	
51	SP4BDA	70	L45X45X4		1740	2.75	4.79	2	9.58	
52	SP4BDA	71	L45X45X4		1740	2.75	4.79	2	9.58	
53	SP4BDA	72	L55X55X4		2109	3.40	7.17	2	14.34	
54	SP4BDA	73	L55X55X4		2109	3.40	7.17	2	14.34	
55	SP4BDA	74	L50X50X4		2381	3.08	7.33	2	14.66	
56	SP4BDA	75	L50X50X4		2381	3.08	7.33	2	14.66	
57	SP4BDA	76	L50X50X4		2356	3.08	7.26	2	14.52	
58	SP4BDA	77	L50X50X4		2356	3.08	7.26	2	14.52	
59	SP4BDA	78	L45X45X4		1931	2.75	5.31	2	10.62	
60	SP4BDA	79	L45X45X4		1931	2.75	5.31	2	10.62	
61	SP4BDA	80	L45X45X4		3227	2.75	8.87	2	17.74	
62	SP4BDA	81	L45X45X4		3227	2.75	8.87	2	17.74	
63	SP4BDA	82	L65X65X4		3229	4.03	13.01	2	26.02	
64	SP4BDA	83	L65X65X4		3229	4.03	13.01	2	26.02	
65	SP4BDA	84	L50X50X4		3493	3.08	10.76	2	21.52	
66	SP4BDA	85	L50X50X4		3493	3.08	10.76	2	21.52	
67	SP4BDA	86	L45X45X4		1496	2.75	4.11	2	8.22	
68	SP4BDA	87	L45X45X4		1496	2.75	4.11	2	8.22	
69	SP4BDA	88	L50X50X4		2488	3.08	7.66	2	15.32	
70	SP4BDA	89	L50X50X4		2488	3.08	7.66	2	15.32	
71	SP4BDA	90	L45X45X4		2370	2.75	6.52	2	13.04	
72	SP4BDA	91	L45X45X4		2370	2.75	6.52	2	13.04	
73	SP4BDA	92	L45X45X4		1004	2.75	2.76	2	5.52	
74	SP4BDA	93	L45X45X4		1004	2.75	2.76	2	5.52	
75	SP4BDA	94	L45X45X4		1380	2.75	3.80	2	7.60	
76	SP4BDA	95	L45X45X4		1380	2.75	3.80	2	7.60	
77	SP4BDA	96	5 THK.	104	153	39.25	0.62	2	1.24	
78	SP4BDA	97	5 THK.	112	144	39.25	0.63	2	1.26	
79	SP4BDA	98	L45X45X4	120	1620	2.75	4.46	2	8.92	
80	SP4BDA	99	L45X45X4		3470	2.75	9.54	2	19.08	
81	SP4BDA	100	L45X45X4		2887	2.75	7.94	2	15.88	
82	SP4BDA	101	L60X60X4		4865	3.71	18.05	2	36.10	
83	SP4BDA	102	L55X55X4		4185	3.40	14.23	2	28.46	
84	SP4BDA	103	L60X60X4		6214	3.71	23.05	2	46.10	
85	SP4BDA	104	L50X50X4		5542	3.08	17.07	2	34.14	
86	SP4BDA	105	5 THK.		155	39.25	0.73	8	5.84	
87	SP4BDA	106	5 THK.		232	39.25	1.09	2	2.18	
88	SP4BDA	107	5 THK.		228	39.25	1.07	2	2.14	

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

BOM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/BB

STRUCTURE : 400KV D/C "DA(0°-2°)"-MKD"G507 DA"

BILL OF MATERIALS

PART : BASIC BODY

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
89	SP4BDA	108	5 THK.		185	39.25	0.87	2	1.74	
90	SP4BDA	109	5 THK.		193	39.25	0.91	2	1.82	
91	SP4BDA	110	L45X45X4		1634	2.75	4.49	2	8.98	
92	SP4BDA	111	L45X45X4		2898	2.75	7.97	2	15.94	
93	SP4BDA	112	L45X45X4		3480	2.75	9.57	2	19.14	
94	SP4BDA	113	L55X55X4		4200	3.40	14.28	2	28.56	
95	SP4BDA	114	L60X60X4		4879	3.71	18.10	2	36.20	
96	SP4BDA	115	L50X50X4		5560	3.08	17.12	2	34.24	
97	SP4BDA	116	L60X60X4		6231	3.71	23.12	2	46.24	
98	SP4BDA	117	5 THK.	120	155	39.25	0.73	8	5.84	
99	SP4BDA	118	5 THK.	120	228	39.25	1.07	2	2.14	
100	SP4BDA	119	5 THK.	120	233	39.25	1.10	2	2.20	
101	SP4BDA	120	5 THK.	120	193	39.25	0.91	2	1.82	
102	SP4BDA	121	5 THK.	120	185	39.25	0.87	2	1.74	
103	SP4BDA	122	L70X70X5		4519	5.38	24.31	2	48.62	
104	SP4BDA	123	L50X50X4		2339	3.08	7.20	2	14.40	
105	SP4BDA	124	5 THK.	120	193	39.25	0.91	2	1.82	
106	SP4BDA	125	5 THK.	120	192	39.25	0.90	2	1.80	
107	SP4BDA	126	5 THK.	120	155	39.25	0.73	8	5.84	
108	SP4BDA	127	L70X70X5		4510	5.38	24.26	2	48.52	
109	SP4BDA	128	L50X50X4		2334	3.08	7.19	2	14.38	
110	SP4BDA	129	5 THK.	120	192	39.25	0.90	2	1.80	
111	SP4BDA	130	5 THK.	120	193	39.25	0.91	2	1.82	
112	SP4BDA	131	5 THK.	110	189	39.25	0.82	2	1.64	
113	SP4BDA	132	5 THK.	120	189	39.25	0.89	2	1.78	
114	SP4BDA	133H	HL70X70X5		266	5.38	1.43	8	11.44	
115	SP4BDA	134H	H8 THK.	80	266	62.80	1.34	16	21.44	
116	SP4BDA	135H	HL130X130X10		402	19.72	7.93	4	31.72	
117	SP4BDA	136H	H12 THK.	140	402	94.20	5.30	8	42.40	
118	SP4BDA	140H	HL75X75X5		7000	5.77	40.39	2	80.78	
119	SP4BDA	141H	HL75X75X5		5975	5.77	34.48	2	68.96	
120	SP4BDA	142H	HL70X70X5		346	5.38	1.86	2	3.72	
121	SP4BDA	143H	H6 THK.	65	306	47.10	0.94	4	3.76	
122	SP4BDA	144H	HL75X75X5		5800	5.77	33.47	2	66.94	
123	SP4BDA	145H	HL75X75X5		4185	5.77	24.15	2	48.30	
124	SP4BDA	146H	HL60X60X4		316	3.71	1.17	2	2.34	
125	SP4BDA	147H	H6 THK.	60	281	47.10	0.79	4	3.16	
126	SP4BDA	150	L60X60X4		6977	3.71	25.88	2	51.76	
127	SP4BDA	151	L60X60X4		6977	3.71	25.88	2	51.76	
128	SP4BDA	152	L60X60X4		5979	3.71	22.18	2	44.36	
129	SP4BDA	153	L60X60X4		5979	3.71	22.18	2	44.36	
130	SP4BDA	154H	HL50X50X4		4367	3.08	13.45	2	26.90	
131	SP4BDA	155	L45X45X4		801	2.75	2.20	2	4.40	
132	SP4BDA	156	L50X50X4		3372	3.08	10.39	2	20.78	

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BOM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/BB

STRUCTURE : 400KV D/C "DA(0°-2°)"-MKD"G507 DA"

BILL OF MATERIALS

PART : BASIC BODY

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
133	SP4BDA	157	L45X45X4		1040	2.75	2.86	2	5.72	
134	SP4BDA	158H	HL45X45X4		1380	2.75	3.80	2	7.60	
135	SP4BDA	159H	HL45X45X4		1380	2.75	3.80	2	7.60	
136	SP4BDA	160H	HL45X45X4		1409	2.75	3.87	2	7.74	
137	SP4BDA	161H	HL45X45X4		1409	2.75	3.87	2	7.74	
138	SP4BDA	162	L45X45X4		1035	2.75	2.85	2	5.70	
139	SP4BDA	163	L45X45X4		1035	2.75	2.85	2	5.70	
140	SP4BDA	164	L45X45X4		1202	2.75	3.31	2	6.62	
141	SP4BDA	165	L45X45X4		1202	2.75	3.31	2	6.62	
142	SP4BDA	166H	H6 THK.	126	302	47.10	1.79	2	3.58	
143	SP4BDA	167H	H6 THK.	137	235	47.10	1.52	2	3.04	
144	SP4BDA	168	6 THK.	115	151	47.10	0.82	4	3.28	
145	SP4BDA	169	6 THK.	115	120	47.10	0.65	4	2.60	
146	SP4BDA	170	6 THK.	115	120	47.10	0.65	4	2.60	
147	SP4BDA	171H	HL70X70X5		361	5.38	1.94	4	7.76	
148	SP4BDA	172	6 THK.	111	209	47.10	1.09	4	4.36	
149	SP4BDA	180H	HL150X150X12		3500	27.29	95.52	2	191.04	
150	SP4BDA	181H	HL150X150X12		3500	27.29	95.52	2	191.04	
151	SP4BDA	182H	HL150X150X12		3553	27.29	96.96	2	193.92	
152	SP4BDA	183H	HL150X150X12		3553	27.29	96.96	2	193.92	
153	SP4BDA	184H	HL120X120X10		402	18.15	7.30	4	29.20	
154	SP4BDA	185H	H12 THK.	140	402	94.20	5.30	16	84.80	
155	SP4BDA	186	2 THK.	105	196	15.70	0.32	8	2.56	
156	SP4BDA	187H	HL120X120X10		402	18.15	7.30	4	29.20	
157	SP4BDA	188H	HL90X90X6		5216	8.32	43.40	2	86.80	
158	SP4BDA	189H	HL90X90X6		5216	8.32	43.40	2	86.80	
159	SP4BDA	190H	HL90X90X6		4291	8.32	35.70	2	71.40	
160	SP4BDA	191H	HL90X90X6		4291	8.32	35.70	2	71.40	
161	SP4BDA	192H	HL70X70X5		346	5.38	1.86	4	7.44	
162	SP4BDA	193H	H8 THK.	80	346	62.80	1.74	8	13.92	
163	SP4BDA	194H	HL90X90X6		4800	8.32	39.94	2	79.88	
164	SP4BDA	195H	HL90X90X6		4800	8.32	39.94	2	79.88	
165	SP4BDA	196H	HL90X90X6		4341	8.32	36.12	2	72.24	
166	SP4BDA	197H	HL90X90X6		4341	8.32	36.12	2	72.24	
167	SP4BDA	198H	HL70X70X5		266	5.38	1.43	4	5.72	
168	SP4BDA	199H	H8 THK.	80	266	62.80	1.34	8	10.72	
169	SP4BDA	200	L45X45X4		803	2.75	2.21	2	4.42	
170	SP4BDA	201	L45X45X4		803	2.75	2.21	2	4.42	
171	SP4BDA	202	L45X45X4		1387	2.75	3.81	2	7.62	
172	SP4BDA	203	L45X45X4		1387	2.75	3.81	2	7.62	
173	SP4BDA	204	L45X45X4		1555	2.75	4.28	2	8.56	
174	SP4BDA	205	L45X45X4		1555	2.75	4.28	2	8.56	
175	SP4BDA	206	L45X45X4		1872	2.75	5.15	2	10.30	
176	SP4BDA	207	L45X45X4		1872	2.75	5.15	2	10.30	

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

BOM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/BB

STRUCTURE : 400KV D/C "DA(0°-2°)"-MKD"G507 DA"

BILL OF MATERIALS

PART : BASIC BODY

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
177	SP4BDA	208	L45X45X4		1775	2.75	4.88	2	9.76	
178	SP4BDA	209	L45X45X4		1775	2.75	4.88	2	9.76	
179	SP4BDA	210	L45X45X4		1372	2.75	3.77	2	7.54	
180	SP4BDA	211	L45X45X4		1372	2.75	3.77	2	7.54	
181	SP4BDA	212	L45X45X4		2496	2.75	6.86	2	13.72	
182	SP4BDA	213	L45X45X4		2496	2.75	6.86	2	13.72	
183	SP4BDA	214	L50X50X4		2435	3.08	7.50	2	15.00	
184	SP4BDA	215	L50X50X4		2435	3.08	7.50	2	15.00	
185	SP4BDA	216	L45X45X4		2033	2.75	5.59	2	11.18	
186	SP4BDA	217	L45X45X4		2033	2.75	5.59	2	11.18	
187	SP4BDA	218	L45X45X4		937	2.75	2.58	2	5.16	
188	SP4BDA	219	L45X45X4		937	2.75	2.58	2	5.16	
189	SP4BDA	220	L45X45X4		1499	2.75	4.12	2	8.24	
190	SP4BDA	221	L45X45X4		1499	2.75	4.12	2	8.24	
191	SP4BDA	222H	H12 THK.	234	413	94.20	9.10	2	18.20	
192	SP4BDA	223H	H12 THK.	234	413	94.20	9.10	2	18.20	
193	SP4BDA	224	6 THK.	105	153	47.10	0.76	2	1.52	
194	SP4BDA	225	L45X45X4		768	2.75	2.11	2	4.22	
195	SP4BDA	226	L45X45X4		768	2.75	2.11	2	4.22	
196	SP4BDA	227	L45X45X4		1475	2.75	4.06	2	8.12	
197	SP4BDA	228	L45X45X4		1475	2.75	4.06	2	8.12	
198	SP4BDA	229	L45X45X4		1487	2.75	4.09	2	8.18	
199	SP4BDA	230	L45X45X4		1487	2.75	4.09	2	8.18	
200	SP4BDA	231	L45X45X4		1980	2.75	5.45	2	10.90	
201	SP4BDA	232	L45X45X4		1980	2.75	5.45	2	10.90	
202	SP4BDA	233	L45X45X4		1831	2.75	5.04	2	10.08	
203	SP4BDA	234	L45X45X4		1831	2.75	5.04	2	10.08	
204	SP4BDA	235	L45X45X4		1225	2.75	3.37	2	6.74	
205	SP4BDA	236	L45X45X4		1225	2.75	3.37	2	6.74	
206	SP4BDA	237	L45X45X4		2590	2.75	7.12	2	14.24	
207	SP4BDA	238	L45X45X4		2590	2.75	7.12	2	14.24	
208	SP4BDA	239	L55X55X4		2532	3.40	8.61	2	17.22	
209	SP4BDA	240	L55X55X4		2532	3.40	8.61	2	17.22	
210	SP4BDA	241	L45X45X4		1806	2.75	4.97	2	9.94	
211	SP4BDA	242	L45X45X4		1806	2.75	4.97	2	9.94	
212	SP4BDA	243	L45X45X4		987	2.75	2.71	2	5.42	
213	SP4BDA	244	L45X45X4		987	2.75	2.71	2	5.42	
214	SP4BDA	245H	HL45X45X4		1433	2.75	3.94	2	7.88	
215	SP4BDA	246H	HL45X45X4		1433	2.75	3.94	2	7.88	
216	SP4BDA	247H	H12 THK.	177	343	94.20	5.72	2	11.44	
217	SP4BDA	248H	H12 THK.	177	343	94.20	5.72	2	11.44	
218	SP4BDA	249	6 THK.	108	149	47.10	0.76	2	1.52	
219	SP4BDA	250	6 THK.	120	229	47.10	1.29	2	2.58	
220	SP4BDA	251	6 THK.	120	229	47.10	1.29	2	2.58	

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

BOM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/BB

STRUCTURE : 400KV D/C "DA(0°-2°)"-MKD"G507 DA"

BILL OF MATERIALS

PART : BASIC BODY

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
221	SP4BDA	252	L45X45X4		1081	2.75	2.97	4	11.88	
222	SP4BDA	253	L45X45X4		2209	2.75	6.07	2	12.14	
223	SP4BDA	254	L45X45X4		1925	2.75	5.29	2	10.58	
224	SP4BDA	255	L45X45X4		3133	2.75	8.62	2	17.24	
225	SP4BDA	256	L45X45X4		2803	2.75	7.71	2	15.42	
226	SP4BDA	257	L50X50X4		3982	3.08	12.26	2	24.52	
227	SP4BDA	258	L50X50X4		3667	3.08	11.29	2	22.58	
228	SP4BDA	259	5 THK.	120	155	39.25	0.73	16	11.68	
229	SP4BDA	260	5 THK.	120	155	39.25	0.73	16	11.68	
230	SP4BDA	261	L50X50X4		2419	3.08	7.45	4	29.80	
231	SP4BDA	262	5 THK.	110	155	39.25	0.67	4	2.68	
232	SP4BDA	263	5 THK.	110	155	39.25	0.67	4	2.68	
233	SP4BDA	264	L45X45X4		1924	2.75	5.29	2	10.58	
234	SP4BDA	265	L45X45X4		2209	2.75	6.07	2	12.14	
235	SP4BDA	266	L45X45X4		2802	2.75	7.71	2	15.42	
236	SP4BDA	267	L45X45X4		3131	2.75	8.61	2	17.22	
237	SP4BDA	268	L50X50X4		3665	3.08	11.29	2	22.58	
238	SP4BDA	269	L50X50X4		3981	3.08	12.26	2	24.52	
239	SP4BDA	280H	HL130X130X12		4000	23.45	93.80	2	187.60	
240	SP4BDA	281H	HL130X130X12		4000	23.45	93.80	2	187.60	
241	SP4BDA	282H	HL110X110X10		4500	16.58	74.61	2	149.22	
242	SP4BDA	283H	HL110X110X10		4500	16.58	74.61	2	149.22	
243	SP4BDA	284H	HL120X120X8		442	14.66	6.48	4	25.92	
244	SP4BDA	285H	H10 THK.	120	442	78.50	4.16	8	33.28	
245	SP4BDA	286H	HL100X100X7		362	10.73	3.88	4	15.52	
246	SP4BDA	287H	H10 THK.	100	362	78.50	2.84	8	22.72	
247	SP4BDA	288	2 THK.	82	170	15.70	0.22	8	1.76	
248	SP4BDA	289H	HL100X100X7		4999	10.73	53.64	2	107.28	
249	SP4BDA	290	L45X45X4		1961	2.75	5.39	2	10.78	
250	SP4BDA	291H	HL90X90X7		6012	9.61	57.78	2	115.56	
251	SP4BDA	292H	HL90X90X7		6012	9.61	57.78	2	115.56	
252	SP4BDA	293H	H8 THK.	352	456	62.80	10.08	2	20.16	
253	SP4BDA	294H	H8 THK.	352	456	62.80	10.08	2	20.16	
254	SP4BDA	296	L45X45X4		1216	2.75	3.34	4	13.36	
255	SP4BDA	297	L45X45X4		1414	2.75	3.89	4	15.56	
256	SP4BDA	298H	HL80X80X6		2411	7.36	17.74	2	35.48	
257	SP4BDA	299H	HL80X80X6		2411	7.36	17.74	2	35.48	
258	SP4BDA	300	L45X45X4		1606	2.75	4.42	2	8.84	
259	SP4BDA	301	L45X45X4		1606	2.75	4.42	2	8.84	
260	SP4BDA	302	L45X45X4		1213	2.75	3.34	2	6.68	
261	SP4BDA	303	L45X45X4		1213	2.75	3.34	2	6.68	
262	SP4BDA	304H	H8 THK.	150	363	62.80	3.42	4	13.68	
263	SP4BDA	305H	HL110X110X8		6348	13.40	85.06	2	170.12	
264	SP4BDA	306H	HL110X110X8		6348	13.40	85.06	2	170.12	

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

BOM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/BB

STRUCTURE : 400KV D/C "DA(0°-2°)"-MKD"G507 DA"

BILL OF MATERIALS

PART : BASIC BODY

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
265	SP4BDA	307	L45X30X4	221	1107	2.27	2.51	4	10.04	
266	SP4BDA	307X	L45X30X4		1115	2.27	2.53	4	10.12	
267	SP4BDA	308	L45X30X4		1485	2.27	3.37	4	13.48	
268	SP4BDA	309	L45X30X4		1472	2.27	3.34	4	13.36	
269	SP4BDA	310	L60X60X4		2137	3.71	7.93	2	15.86	
270	SP4BDA	310X	L60X60X4		2137	3.71	7.93	2	15.86	
271	SP4BDA	311	L60X60X4		2135	3.71	7.92	2	15.84	
272	SP4BDA	311X	L60X60X4		2135	3.71	7.92	2	15.84	
273	SP4BDA	312	L45X45X4		1724	2.75	4.74	2	9.48	
274	SP4BDA	312X	L45X45X4		1724	2.75	4.74	2	9.48	
275	SP4BDA	313	L45X45X4		1692	2.75	4.65	2	9.30	
276	SP4BDA	313X	L45X45X4		1692	2.75	4.65	2	9.30	
277	SP4BDA	314	L45X30X4		1080	2.27	2.45	4	9.80	
278	SP4BDA	315	L45X30X4		1035	2.27	2.35	4	9.40	
279	SP4BDA	317H	H10 THK.		442	78.50	7.67	4	30.68	
280	SP4BDA	318H	HL70X70X6		5308	6.39	33.92	2	67.84	
281	SP4BDA	318A	L70X70X6		258	6.39	1.65	2	3.30	
282	SP4BDA	319	L45X45X4		1925	2.75	5.29	2	10.58	
283	SP4BDA	320H	HL90X90X7		6077	9.61	58.40	2	116.80	
284	SP4BDA	321H	HL90X90X7		6077	9.61	58.40	2	116.80	
285	SP4BDA	322	L45X45X4		1309	2.75	3.60	4	14.40	
286	SP4BDA	323	L45X45X4		1487	2.75	4.09	4	16.36	
287	SP4BDA	324H	HL70X70X5		2410	5.38	12.97	4	51.88	
288	SP4BDA	325	L45X45X4		1593	2.75	4.38	2	8.76	
289	SP4BDA	326	L45X45X4		1593	2.75	4.38	2	8.76	
290	SP4BDA	327	L45X45X4		1196	2.75	3.29	2	6.58	
291	SP4BDA	327X	L45X45X4		1196	2.75	3.29	2	6.58	
292	SP4BDA	328H	H8 THK.	150	363	62.80	3.42	4	13.68	
293	SP4BDA	329H	HL110X110X8	140	6302	13.40	84.45	2	168.90	
294	SP4BDA	330H	HL110X110X8		6302	13.40	84.45	2	168.90	
295	SP4BDA	331H	H10 THK.	140	410	78.50	4.51	4	18.04	
296	SP4BDA	333	L45X45X4	110	1909	2.75	5.25	4	21.00	
297	SP4BDA	334	5 THK.		155	39.25	0.67	8	5.36	
298	SP4BDA	335	L45X45X4	110	1653	2.75	4.55	4	18.20	
299	SP4BDA	336	5 THK.		155	39.25	0.67	8	5.36	
300	SP4BDA	337	L45X45X4	110	1586	2.75	4.36	4	17.44	
301	SP4BDA	338	5 THK.		155	39.25	0.67	8	5.36	
302	SP4BDA	339	L45X45X4	110	1406	2.75	3.87	4	15.48	
303	SP4BDA	340	5 THK.		155	39.25	0.67	8	5.36	
304	SP4BDA	341	6 THK.	130	222	47.10	1.36	2	2.72	
305	SP4BDA	342	6 THK.	97	205	47.10	0.94	2	1.88	
306	SP4BDA	343H	H10 THK.	207	447	78.50	7.26	2	14.52	
307	SP4BDA	344H	H10 THK.	159	289	78.50	3.61	2	7.22	
308	SP4BDA	350H	HL110X110X10		5206	16.58	86.32	2	172.64	

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

BOM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/BB

STRUCTURE : 400KV D/C "DA(0°-2°)"-MKD"G507 DA"

BILL OF MATERIALS

PART : BASIC BODY

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
309	SP4BDA	351H	HL110X110X10	100	5206	16.58	86.32	2	172.64	
310	SP4BDA	352H	HL75X75X6		3462	6.86	23.75	2	47.50	
311	SP4BDA	353H	HL75X75X6		3462	6.86	23.75	2	47.50	
312	SP4BDA	354H	HL75X75X6		1798	6.86	12.33	2	24.66	
313	SP4BDA	355H	HL75X75X6		1798	6.86	12.33	2	24.66	
314	SP4BDA	356H	HL100X100X7		362	10.73	3.88	4	15.52	
315	SP4BDA	357H	H8 THK.		362	62.80	2.27	8	18.16	
316	SP4BDA	358H	HL100X100X7		3901	10.73	41.86	2	83.72	
317	SP4BDA	359	L45X45X4		1668	2.75	4.59	2	9.18	
318	SP4BDA	360H	HL80X80X6		2590	7.36	19.06	2	38.12	
319	SP4BDA	361H	HL80X80X6	171	2590	7.36	19.06	2	38.12	
320	SP4BDA	362H	HL90X90X6		3668	8.32	30.52	2	61.04	
321	SP4BDA	363H	H8 THK.		330	62.80	3.54	2	7.08	
322	SP4BDA	364H	H8 THK.		418	62.80	9.77	2	19.54	
323	SP4BDA	365H	H8 THK.		418	62.80	9.77	2	19.54	
324	SP4BDA	366	L45X30X4		950	2.27	2.16	2	4.32	
325	SP4BDA	367	L45X30X4		950	2.27	2.16	2	4.32	
326	SP4BDA	368	L45X30X4		1186	2.27	2.69	2	5.38	
327	SP4BDA	369	L45X30X4		1186	2.27	2.69	2	5.38	
328	SP4BDA	370H	HL90X90X7		4872	9.61	46.82	2	93.64	
329	SP4BDA	371H	HL90X90X7	180	4872	9.61	46.82	2	93.64	
330	SP4BDA	372H	H8 THK.		341	62.80	3.85	4	15.40	
331	SP4BDA	373	L45X30X4		1172	2.27	2.66	4	10.64	
332	SP4BDA	374	L45X30X4		1172	2.27	2.66	4	10.64	
333	SP4BDA	375	L45X45X4		1717	2.75	4.72	8	37.76	
334	SP4BDA	376	L45X30X4		1329	2.27	3.02	4	12.08	
335	SP4BDA	377	L45X30X4		1329	2.27	3.02	4	12.08	
336	SP4BDA	378H	HL100X100X7		4390	10.73	47.10	2	94.20	
337	SP4BDA	379H	HL100X100X7		4390	10.73	47.10	2	94.20	
338	SP4BDA	380	L45X30X4		1055	2.27	2.39	2	4.78	
339	SP4BDA	381	L45X30X4	363	1055	2.27	2.39	2	4.78	
340	SP4BDA	382	L45X30X4		1585	2.27	3.60	4	14.40	
341	SP4BDA	383	L45X30X4		1207	2.27	2.74	2	5.48	
342	SP4BDA	384	L45X30X4		1207	2.27	2.74	2	5.48	
343	SP4BDA	385H	HL90X90X7		2781	9.61	26.73	2	53.46	
344	SP4BDA	386H	H10 THK.		454	78.50	12.94	2	25.88	
345	SP4BDA	387H	H10 THK.		454	78.50	12.94	2	25.88	
346	SP4BDA	388	L60X60X5		3175	4.58	14.54	2	29.08	
347	SP4BDA	389	L60X60X5		3175	4.58	14.54	2	29.08	
348	SP4BDA	390	L45X30X4		1059	2.27	2.40	2	4.80	
349	SP4BDA	390A	L65X65X4	389	180	4.03	0.73	2	1.46	
350	SP4BDA	391H	HL65X65X5		2502	4.98	12.46	2	24.92	
351	SP4BDA	392H	H10 THK.		447	78.50	13.65	2	27.30	
352	SP4BDA	393H	H10 THK.		447	78.50	13.65	2	27.30	

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

BOM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/BB

STRUCTURE : 400KV D/C "DA(0°-2°)"-MKD"G507 DA"

BILL OF MATERIALS

PART : BASIC BODY

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
353	SP4BDA	394H	HL65X65X4		4180	4.03	16.85	2	33.70	
354	SP4BDA	395	L45X45X4		1705	2.75	4.69	2	9.38	
355	SP4BDA	396H	HL80X80X6		2657	7.36	19.56	2	39.12	
356	SP4BDA	397H	HL80X80X6		2657	7.36	19.56	2	39.12	
357	SP4BDA	398H	HL100X100X6		3664	9.26	33.93	2	67.86	
358	SP4BDA	399H	H8 THK.	155	329	62.80	3.20	2	6.40	
359	SP4BDA	400H	H8 THK.	135	307	62.80	2.60	4	10.40	
360	SP4BDA	401	L45X30X4		999	2.27	2.27	2	4.54	
361	SP4BDA	402	L45X30X4		999	2.27	2.27	2	4.54	
362	SP4BDA	403	L45X30X4		1213	2.27	2.75	4	11.00	
363	SP4BDA	404H	HL90X90X7		4872	9.61	46.82	2	93.64	
364	SP4BDA	405H	HL90X90X7		4872	9.61	46.82	2	93.64	
365	SP4BDA	406H	H10 THK.	184	321	78.50	4.64	4	18.56	
366	SP4BDA	407H	HL90X90X7		4348	9.61	41.78	2	83.56	
367	SP4BDA	408H	HL90X90X7		4348	9.61	41.78	2	83.56	
368	SP4BDA	409	L60X60X4		3042	3.71	11.29	2	22.58	
369	SP4BDA	410H	H8 THK.	160	445	62.80	4.47	4	17.88	
370	SP4BDA	411	L45X30X4		1098	2.27	2.49	2	4.98	
371	SP4BDA	412	L60X60X5		3241	4.58	14.84	2	29.68	
372	SP4BDA	413	L60X60X5		3241	4.58	14.84	2	29.68	
373	SP4BDA	414	L60X60X4		2516	3.71	9.33	2	18.66	
374	SP4BDA	415H	H6 THK.	162	320	47.10	2.44	4	9.76	
375	SP4BDA	416	L60X60X4		3439	3.71	12.76	1	12.76	
376	SP4BDA	417	L60X60X4		3439	3.71	12.76	1	12.76	
377	SP4BDA	418	6 THK.	105	126	47.10	0.62	4	2.48	
378	SP4BDA	419	L45X30X4		1003	2.27	2.28	2	4.56	
379	SP4BDA	420	10 THK.	80	130	78.50	0.82	2	1.64	
380	SP4BDA	421	L45X30X4		1058	2.27	2.40	2	4.80	
381	SP4BDA	422	L45X30X4		1058	2.27	2.40	2	4.80	
382	SP4BDA	423	L45X30X4		1543	2.27	3.50	4	14.00	
383	SP4BDA	424	L45X30X4		1174	2.27	2.66	2	5.32	
384	SP4BDA	425	L45X30X4		1174	2.27	2.66	2	5.32	
385	SP4BDA	430H	HL110X110X8		3338	13.40	44.73	2	89.46	
386	SP4BDA	431H	HL110X110X8		3338	13.40	44.73	2	89.46	
387	SP4BDA	432H	HL110X110X8		3798	13.40	50.89	2	101.78	
388	SP4BDA	433H	HL110X110X8		3798	13.40	50.89	2	101.78	
389	SP4BDA	434H	HL90X90X6		426	8.32	3.54	2	7.08	
390	SP4BDA	435H	HL90X90X6		426	8.32	3.54	2	7.08	
391	SP4BDA	436H	H8 THK.	100	426	62.80	2.68	8	21.44	
392	SP4BDA	437H	HL75X75X6		3870	6.86	26.55	2	53.10	
393	SP4BDA	438H	HL75X75X6		3870	6.86	26.55	2	53.10	
394	SP4BDA	439H	HL75X75X6		3178	6.86	21.80	2	43.60	
395	SP4BDA	440H	HL75X75X6		3178	6.86	21.80	2	43.60	
396	SP4BDA	441H	HL60X60X5		426	4.58	1.95	2	3.90	

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

BOM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/BB

STRUCTURE : 400KV D/C "DA(0°-2°)"-MKD"G507 DA"

BILL OF MATERIALS

PART : BASIC BODY

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
397	SP4BDA	442H	HL60X60X5	65	426	4.58	1.95	2	3.90	
398	SP4BDA	443H	H8 THK.		426	62.80	1.74	8	13.92	
399	SP4BDA	444H	HL70X70X5		6998	5.38	37.65	1	37.65	
400	SP4BDA	445H	HL70X70X5		6998	5.38	37.65	1	37.65	
401	SP4BDA	446H	HL70X70X5		3577	5.38	19.24	2	38.48	
402	SP4BDA	447H	HL70X70X5		3577	5.38	19.24	2	38.48	
403	SP4BDA	448	L45X45X4		1369	2.75	3.76	1	3.76	
404	SP4BDA	448X	L45X45X4		1369	2.75	3.76	1	3.76	
405	SP4BDA	449	L45X45X4		1369	2.75	3.76	1	3.76	
406	SP4BDA	449X	L45X45X4		1369	2.75	3.76	1	3.76	
407	SP4BDA	450	L45X45X4	173	1214	2.75	3.34	1	3.34	
408	SP4BDA	450X	L45X45X4		1214	2.75	3.34	1	3.34	
409	SP4BDA	451	L45X45X4		1214	2.75	3.34	1	3.34	
410	SP4BDA	451X	L45X45X4		1214	2.75	3.34	1	3.34	
411	SP4BDA	452H	H8 THK.		258	62.80	2.80	2	5.60	
412	SP4BDA	453H	HL80X80X5		927	6.17	5.72	2	11.44	
413	SP4BDA	454H	HL55X55X4		2664	3.40	9.06	2	18.12	
414	SP4BDA	455H	HL55X55X4		2664	3.40	9.06	2	18.12	
415	SP4BDA	456H	HL50X50X4		3369	3.08	10.38	2	20.76	
416	SP4BDA	457H	HL50X50X4		3369	3.08	10.38	2	20.76	
417	SP4BDA	458H	HL45X45X4	220	1854	2.75	5.10	2	10.20	
418	SP4BDA	459H	H10 THK.		394	78.50	6.80	2	13.60	
419	SP4BDA	460H	HL100X100X8		220	12.18	2.68	4	10.72	
420	SP4BDA	461	L45X45X4		2522	2.75	6.94	2	13.88	
421	SP4BDA	462	L45X45X4		2522	2.75	6.94	2	13.88	
422	SP4BDA	463	L45X30X4		1270	2.27	2.88	2	5.76	
423	SP4BDA	464	L45X30X4		1270	2.27	2.88	2	5.76	
424	SP4BDA	465	L45X45X4		2322	2.75	6.39	2	12.78	
425	SP4BDA	466	L45X45X4		2322	2.75	6.39	2	12.78	
426	SP4BDA	467	L45X30X4		688	2.27	1.56	2	3.12	
427	SP4BDA	468	L45X30X4	127	688	2.27	1.56	2	3.12	
428	SP4BDA	469	L45X45X4		2543	2.75	6.99	2	13.98	
429	SP4BDA	470H	H6 THK.		129	47.10	0.77	1	0.77	
430	SP4BDA	471	5 THK.		113	39.25	0.48	4	1.92	
431	SP4BDA	472	5 THK.		138	39.25	0.59	4	2.36	
432	SP4BDA	473	6 THK.		154	47.10	0.65	2	1.30	
433	SP4BDA	474H	H8 THK.		221	62.80	1.67	2	3.34	
434	SP4BDA	475	L45X45X4		185	2.75	0.51	2	1.02	
435	SP4BDA	476H	H6 THK.		251	47.10	1.77	4	7.08	
436	SP4BDA	477	5 THK.		113	39.25	0.49	4	1.96	
437	SP4BDA	480H	HL110X110X8	110	6435	13.40	86.23	2	172.46	
438	SP4BDA	481H	HL110X110X8		6435	13.40	86.23	2	172.46	
439	SP4BDA	482H	HL75X75X6		6365	6.86	43.66	2	87.32	
440	SP4BDA	483H	HL75X75X6		6365	6.86	43.66	2	87.32	

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

BOM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/BB

STRUCTURE : 400KV D/C "DA(0°-2°)"-MKD"G507 DA"

BILL OF MATERIALS

PART : BASIC BODY

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
441	SP4BDA	484H	H10 THK.	220	399	78.50	6.89	2	13.78	
442	SP4BDA	485H	HL100X100X8		220	12.18	2.68	4	10.72	
443	SP4BDA	486	L50X50X4		5436	3.08	16.74	1	16.74	
444	SP4BDA	487	L50X50X4		5436	3.08	16.74	1	16.74	
445	SP4BDA	488	L55X55X4		2789	3.40	9.48	2	18.96	
446	SP4BDA	489	L55X55X4		2789	3.40	9.48	2	18.96	
447	SP4BDA	490H	H6 THK.	159	180	47.10	1.35	2	2.70	
448	SP4BDA	491H	HL80X80X5		830	6.17	5.12	2	10.24	
449	SP4BDA	492H	HL55X55X4		3761	3.40	12.79	2	25.58	
450	SP4BDA	493H	HL55X55X4		3761	3.40	12.79	2	25.58	
451	SP4BDA	494H	HL45X45X4		2817	2.75	7.75	2	15.50	
452	SP4BDA	495H	HL45X45X4		2817	2.75	7.75	2	15.50	
453	SP4BDA	496H	HL45X45X4		1479	2.75	4.07	2	8.14	
454	SP4BDA	497	L45X45X4		2280	2.75	6.27	2	12.54	
455	SP4BDA	498	L45X45X4		2280	2.75	6.27	2	12.54	
456	SP4BDA	499	L45X30X4		1209	2.27	2.74	2	5.48	
457	SP4BDA	500	L45X30X4		1209	2.27	2.74	2	5.48	
458	SP4BDA	501	L45X45X4		2086	2.75	5.74	2	11.48	
459	SP4BDA	502	L45X45X4		2086	2.75	5.74	2	11.48	
460	SP4BDA	503	L45X30X4		658	2.27	1.49	2	2.98	
461	SP4BDA	504	L45X30X4		658	2.27	1.49	2	2.98	
462	SP4BDA	505	6 THK.	110	113	47.10	0.59	4	2.36	
463	SP4BDA	506	6 THK.	90	159	47.10	0.67	2	1.34	
464	SP4BDA	507	L45X45X4		1988	2.75	5.47	2	10.94	
465	SP4BDA	508	L45X45X4		177	2.75	0.49	2	0.98	
466	SP4BDA	509H	H6 THK.	166	228	47.10	1.78	4	7.12	
467	SP4BDA	510H	HL110X110X10		6173	16.58	102.35	2	204.70	
468	SP4BDA	511H	HL110X110X10		6173	16.58	102.35	2	204.70	
469	SP4BDA	512H	HL75X75X6		6256	6.86	42.92	2	85.84	
470	SP4BDA	513H	HL75X75X6		6256	6.86	42.92	2	85.84	
471	SP4BDA	514H	H10 THK.	220	404	78.50	6.98	2	13.96	
472	SP4BDA	515H	HL100X100X8		220	12.18	2.68	4	10.72	
473	SP4BDA	516	L70X70X5		3816	5.38	20.53	1	20.53	
474	SP4BDA	517	L70X70X5		3816	5.38	20.53	1	20.53	
475	SP4BDA	518H	HL45X45X4		2953	2.75	8.12	2	16.24	
476	SP4BDA	519H	HL45X45X4		2953	2.75	8.12	2	16.24	
477	SP4BDA	520H	HL45X45X4		2406	2.75	6.62	2	13.24	
478	SP4BDA	521H	HL45X45X4		2406	2.75	6.62	2	13.24	
479	SP4BDA	522	L45X45X4		1103	2.75	3.03	2	6.06	
480	SP4BDA	523	L65X65X5		1928	4.98	9.60	2	19.20	
481	SP4BDA	524	L65X65X5		1928	4.98	9.60	2	19.20	
482	SP4BDA	525	L45X45X4		1475	2.75	4.06	2	8.12	
483	SP4BDA	526	L45X45X4		1475	2.75	4.06	2	8.12	
484	SP4BDA	527	L45X45X4		2035	2.75	5.60	2	11.20	

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

BOM NO. SL/PGCIL/400KV/BUTW-GRKH/DD/BB

STRUCTURE : 400KV D/C "DA(0°-2°)"-MKD"G507 DA"

BILL OF MATERIALS

PART : BASIC BODY

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
485	SP4BDA	528	L45X45X4		2035	2.75	5.60	2	11.20	
486	SP4BDA	529	L45X30X4		720	2.27	1.63	2	3.26	
487	SP4BDA	530	L45X30X4		720	2.27	1.63	2	3.26	
488	SP4BDA	531	L45X45X4		1899	2.75	5.22	2	10.44	
489	SP4BDA	532	L45X30X4		986	2.27	2.24	2	4.48	
490	SP4BDA	533	6 THK.	90	156	47.10	0.66	2	1.32	
491	SP4BDA	534H	H6 THK.	166	228	47.10	1.78	4	7.12	
492	SP4BDA	535H	HL80X80X5		650	6.17	4.01	2	8.02	
493	SP4BDA	540H	HL65X65X5		3783	4.98	18.84	2	37.68	
494	SP4BDA	541H	HL65X65X5		3783	4.98	18.84	2	37.68	
495	SP4BDA	542	L60X60X5		2705	4.58	12.39	2	24.78	
496	SP4BDA	543	L60X60X5		2705	4.58	12.39	2	24.78	
497	SP4BDA	544H	H10 THK.	123	214	78.50	2.07	2	4.14	
498	SP4BDA	545H	HL75X75X6		140	6.86	0.96	2	1.92	
499	SP4BDA	545XH	HL75X75X6		140	6.86	0.96	2	1.92	
500	SP4BDA	546	L45X30X4		918	2.27	2.08	2	4.16	
501	SP4BDA	547	L45X30X4		918	2.27	2.08	2	4.16	
502	SP4BDA	548	L45X30X4		1210	2.27	2.75	2	5.50	
503	SP4BDA	549	L45X30X4		1210	2.27	2.75	2	5.50	
504	SP4BDA	550	L45X30X4		1376	2.27	3.12	2	6.24	
505	SP4BDA	551H	H6 THK.	100	136	47.10	0.64	2	1.28	
506	SP4BDA	552	L45X30X4		954	2.27	2.17	2	4.34	
507	SP4BDA	553H	H6 THK.	140	152	47.10	1.00	2	2.00	
508	SP4BDA	554H	H10 THK.	245	273	78.50	5.25	2	10.50	
509	SP4BDA	555H	H10 THK.	245	273	78.50	5.25	2	10.50	
TOTAL WT=									14938.51	

For MILD STEEL : (As Per IS : 2062, Designated Y.S. 250Mpa)

For HIGH TENSILE STEEL : (As Per IS:2062, Designated Y.S. 350Mpa)

LIST OF PACK WASHERS

4 THK. PACK WASHERS (For 16 Ø Bolt)	0.014	0	0.00	
5 THK. PACK WASHERS (For 16 Ø Bolt)	0.018	16	0.29	
6 THK. PACK WASHERS (For 16 Ø Bolt)	0.021	105	2.21	
8 THK. PACK WASHERS (For 16 Ø Bolt)	0.028	26	0.73	
10 THK. PACK WASHERS (For 16 Ø Bolt)	0.036	112	4.03	
12 THK. PACK WASHERS (For 16 Ø Bolt)	0.043	24	1.03	
TOTAL WT.			8.29	Kgs

				SKIPPER LIMITED
REV. No	REVISION		DATE	INITIAL

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

BOM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/BB

STRUCTURE : 400KV D/C "DA(0°-2°)"-MKD"G507 DA"

BILL OF MATERIALS

PART : BASIC BODY

SL.No.	MARK No.	SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
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WEIGHT OF STEEL MEMBERS

A) TOTAL WT. OF HT STEEL FAB. MEMBER	=	11320.19	Kgs
B) TOTAL WT. OF MILD STEEL FAB. MEMBER	=	3618.32	Kgs
C) TOTAL WT. OF PACK WASHERS	=	8.29	Kgs
GRAND TOTAL WT. OF FAB. MEMBER WITH PACK WASHERS (A+B+C)	=	14946.80	Kgs

TOWER ACCESSORIES

22MM DIA D-SHACKLE		1.50		6	9.00	
TOTAL WT.						9.00 Kgs

LIST OF BOLTS & NUTS CONFORMING TO IS:12427 WITH MECHANICAL PROPERTIES CONFORMING TO PROPERTY CLASS 5.6 FOR BOLTS AND CLASS 5.0 FOR NUTS.
LIST OF SPRING WASHERS (TYPE-B) AS PER IS:3063-1994, ELECTRO GALVD.

BOLT & NUTS

HRH BOLT / NUT FOR M16X35	0.119		662	78.78
HRH BOLT / NUT FOR M16X40	0.126		838	105.59
HRH BOLT / NUT FOR M16X45	0.134		1092	146.33
HRH BOLT / NUT FOR M16X50	0.142		242	34.36
HRH BOLT / NUT FOR M16X55	0.150		408	61.20
HRH BOLT / NUT FOR M16X60	0.158		313	49.45
HRH BOLT / NUT FOR M16X65	0.164		122	20.01
HRH BOLT / NUT FOR M16X70	0.173		8	1.38
HRH BOLT / NUT FOR M16X75	0.180		0	0.00
MS STD. SPR. WASHERS FOR M16 BOLTS	0.009		3685	33.17
STEP BOLTS OF 16X175MM DIA WITH 2 NUTS 1 S.W	0.374		170	63.58
TOTAL WT. OF HEXAGONAL BOLTS / NUTS , SPRING WASHERS STEP BOLT		=	593.85	Kgs

SUMMARY OF WEIGHTS

A) WT. OF MS MEMBERS	=	3618.32	Kgs
B) WT. OF PACK WASHERS	=	8.29	Kgs
C) WT. OF HT MEMBERS	=	11320.19	Kgs
D) WT. OF FAB MEMBERS (A+B+C)	=	14946.80	Kgs
E) WT. OF BOLT & NUTS	=	593.85	Kgs
F) WT. OF ACCESSORIES	=	9.00	Kgs
G) TOTAL	=	15549.65	Kgs

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REV. No	REVISION	DATE	INITIAL
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Tower Package TW01 for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

STRUCTURE : 400KV D/C "DA(0°-2°)"-MKD"G507 DA"
PART : BASIC BODY

BOM NO. SL/PGCIL/400KV/BUTW-GRKH/DD/BB

SECTION ABSTRACT

MILD STEEL	WEIGHT (Kg)	HIGH TENSILE	WEIGHT (Kg)	MS. PLATE	WEIGHT
L40X40X3		HL45X30X4		2 THK.	4.32
L40X40X4		HL45X30X5		3 THK.	
L40X40X5		HL45X45X4	154.74	4 THK.	
L40X40X6		HL45X45X5		5 THK.	102.86
L45X30X4	310.20	HL50X50X4	68.42	6 THK.	34.44
L45X30X5		HL50X50X5		8 THK.	
L45X45X4	1344.82	HL55X55X4	87.40	10 THK.	1.64
L45X45X3		HL55X55X5		14 THK.	
L45X45X5		HL60X60X4	2.34	32 THK.	
L45X45X6		HL60X60X5	7.80	20 THK.	
L50X50X3		HL60X60X6		22 THK.	
L50X50X4	591.66	HL65X65X4	33.70		
L50X50X5		HL65X65X5	100.28	TOTAL MS PLT.	143.26
L50X50X6		HL65X65X6			
L55X55X4	251.02	HL70X70X5	255.10	HT. PLATE	WEIGHT
L55X55X5		HL70X70X6	67.84	H6 THK.	51.37
L55X55X6		HL75X75X5	264.98	H5 THK.	
L55X55X8		HL75X75X6	687.88	H8 THK.	300.30
L60X60X4	525.76	HL80X80X6	225.44	H10 THK.	317.86
L60X60X5	167.08	HL80X80X8		H12 THK.	231.04
L60X60X6		HL90X90X6	1669.72	H14 THK.	
L65X65X4	104.62	HL90X90X7	1059.86	H16 THK.	
L65X65X5	38.40	HL90X90X8		H20 THK.	
L65X65X6		HL100X100X6	67.86	H18 THK.	
L80X80X5		HL100X100X7	410.44		
L70X70X5	138.20	HL100X100X8	32.16	TOTAL HT PLT.	900.57
L70X70X6	3.30	HL100X100X10			
L75X75X5		HL110X110X8	1405.44		
L75X75X6		HL110X110X10	1053.12		
L80X80X6		HL110X110X12			
L80X80X8		HL80X80X5	29.70		
L90X90X5		HL120X120X8	25.92		
L90X90X6		HL120X120X10	58.40		
L90X90X7		HL120X120X12			
L90X90X8		HL130X130X10	65.00		
L100X100X6		HL130X130X12	375.20		
L100X100X7		HL150X150X10			
L100X100X8		HL150X150X12	769.92		
L100X100X10		HL150X150X14	1440.96		
L150X150X20		HL90X90X5			
L200X200X16		HL110X110X6			
L200X200X20		HL110X110X7			
		HL120X120X7			
		HL200X200X12			
		HL200X200X17			
		HL120X120X9			
TOTAL	3475.06	TOTAL	10419.62		
		GRAND TOTAL =	14938.51		