

संदर्भ/Ref : CC-ENGG-C2021001-1001422-T14221-4521-BMSTDD+18

Date : 30/07/2024

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-BMSTDD+18**Revision No. :** 01**Drg. Title :** BILL OF MATERIAL FOR STUB OF TT- DD+18 & +25 FOR 400 kV D/C
WZ-5 (ACSR MOOSE) TL**App. Category :** CAT-I**Release Date :** 30/07/2024

Scan to verify

Comments : Generally in order.**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/
REL-CON निर्माण हेतु जारी।
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/STUB +18M/+25M

NO. OF SHEET : 2

POWER GRID CORPORATION OF INDIA LTD.

(A Government of India Enterprise)

BILL OF MATERIALSINITIAL / FINAL
(GALVANIZED)

STRUCTURE UNIT : 400KV D/C "DD(0°-60°)/DE(0°-15°)"-MKD"G507 DD"

PART : STUB FOR +18M & +25M EXTENSION

REF.DRG.NO. : C:ENGG:TL:4524-4ACSR-M-P-102

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	
SP4BDD XXX	FOR M.S
SP4BDD 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 STUB FOR +18M & +25M EXTENSION	
1	WT.OF ALL (HT) MEMBERS IN KGS.	2543.36	
2	WT.OF ALL (MS) MEMBERS IN KGS.(INCL. PACK WASHERS)	0.00	
3	WT.OF BOLT & NUTS IN KGS.	64.17	
	TOTAL WT. OF STRUCTURES IN KGS.	2607.53	
0	PROTO CORRECTED	30.07.2024	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)

SL/PGCIL/400KV/BUTW-GRKH/DD/STUB +18M/+25M

STRUCTURE : 400KV D/C "DD(0°-60°)/DE(0°-15°)"-MKD"G507 DD"

BILL OF MATERIALS

PART : STUB FOR +18M & +25M EXTENSION

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	SP4BDD	10SH	HL200X200X17		4574	51.40	235.10	4	940.40	
2	SP4BDD	11SH	HL200X200X17		4574	51.40	235.10	3	705.30	
3	SP4BDD	11ASH	HL200X200X17		4574	51.40	235.10	1	235.10	
4	SP4BDD	12SH	HL110X110X7		300	11.80	3.54	32	113.28	
5	SP4BDD	13SH	HL110X110X7		300	11.80	3.54	31	109.74	
6	SP4BDD	13ASH	HL110X110X7		300	11.80	3.54	1	3.54	
7	SP4BDD	14SH	HL200X200X12		515	36.85	18.98	8	151.84	
8	SP4BDD	15SH	H14 THK.	416	515	109.90	23.54	4	94.16	
9	SP4BDD	16SH	H14 THK.	185	515	109.90	10.47	8	83.76	
10	SP4BDD	17SH	H14 THK.	90	336	109.90	3.32	16	53.12	
11	SP4BDD	18SH	H14 THK.	90	336	109.90	3.32	16	53.12	
TOTAL WT=									2543.36	

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

6 THK. PACK WASHERS (For 16 Ø Bolt)	0.021	0	0.00	
8 THK. PACK WASHERS (For 16 Ø Bolt)	0.028	0	0.00	
TOTAL WT.			0.00	Kgs

WEIGHT OF STEEL MEMBERS

A) TOTAL WT. OF HT STEEL FAB. MEMBER	=	2543.36	Kgs
B) TOTAL WT. OF MILD STEEL FAB. MEMBER	=	0.00	Kgs
C) TOTAL WT. OF PACK WASHERS	=	0.00	Kgs
GRAND TOTAL WT. OF FAB. MEMBER WITH PACK WASHERS (A+B+C)	=	2543.36	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		0	0.00	
HRH BOLT / NUT FOR M16X40	0.126		1	0.13	
HRH BOLT / NUT FOR M16X55	0.150		128	19.20	
HRH BOLT / NUT FOR M16X70	0.173		240	41.52	
MS STD. SPR. WASHERS FOR M16 BOLTS	0.009		369	3.32	
STEP BOLTS OF 16X175MM DIA WITH 2 NUTS 1 S.W	0.374		0	0.00	
TOTAL WT. OF HEXAGONAL BOLTS / NUTS , SPRING WASHERS STEP BOLT			=	64.17	Kgs

SUMMARY OF WEIGHTS

A) WT. OF MS MEMBERS	=	0.00	Kgs
B) WT. OF PACK WASHERS	=	0.00	Kgs
C) WT. OF HT MEMBERS	=	2543.36	Kgs
D) WT. OF FAB MEMBERS (A+B+C)	=	2543.36	Kgs
E) WT. OF BOLT & NUTS	=	64.17	Kgs
F) TOTAL	=	2607.53	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)

STRUCTURE : 400KV D/C "DD(0°-60°)/DE(0°-15°)"-MKD"G507 DD" BOM NO. SL/PGCIL/400KV/BUTW-GRKH/DD/STUB +18M/+25M
PART : STUB FOR +18M & +25M EXTENSION

SECTION ABSTRACT

MILD STEEL	WEIGHT (Kg)	HIGH TENSILE	WEIGHT (Kg)	MS. PLATE	WEIGHT
L40X40X3		HL45X30X4		2 THK.	
L40X40X4		HL45X30X5		3 THK.	
L40X40X5		HL45X45X4		4 THK.	
L40X40X6		HL45X45X5		5 THK.	
L45X30X4		HL50X50X4		6 THK.	
L45X30X5		HL50X50X5		8 THK.	
L45X45X4		HL55X55X4		10 THK.	
L45X45X3		HL55X55X5		14 THK.	
L45X45X5		HL60X60X4		32 THK.	
L45X45X6		HL60X60X5		20 THK.	
L50X50X3		HL60X60X6		22 THK.	
L50X50X4		HL65X65X4			
L50X50X5		HL65X65X5		TOTAL MS PLT.	0.00
L50X50X6		HL65X65X6			
L55X55X4		HL70X70X5		HT. PLATE	WEIGHT
L55X55X5		HL70X70X6		H6 THK.	
L55X55X6		HL75X75X5		H5 THK.	
L55X55X8		HL75X75X6		H8 THK.	
L60X60X4		HL80X80X6		H10 THK.	
L60X60X5		HL80X80X8		H12 THK.	
L60X60X6		HL90X90X6		H14 THK.	284.16
L65X65X4		HL90X90X7		H16 THK.	
L65X65X5		HL90X90X8		H20 THK.	
L65X65X6		HL100X100X6		H18 THK.	
L80X80X5		HL100X100X7			
L70X70X5		HL100X100X8		TOTAL HT PLT.	284.16
L70X70X6		HL100X100X10			
L75X75X5		HL110X110X8			
L75X75X6		HL110X110X10			
L80X80X6		HL110X110X12			
L80X80X8		HL110X110X7	226.56		
L90X90X5		HL120X120X8			
L90X90X6		HL120X120X10			
L120X120X8		HL150X150X20			
L120X120X10		HL200X200X12	151.84		
L120X120X12		HL200X200X16			
L130X130X10		HL200X200X17	1880.80		
L130X130X12		HL200X200X20			
L150X150X10		HL200X200X24			
L150X150X12		HL200X200X25			
L150X150X15					
TOTAL	0.00	TOTAL	2259.20		
		GRAND TOTAL =	2543.36		