

APPENDIX – A

General Information & Implementation Schedule for Purulia Kharagpur Transmission Company Limited (PKTCL) has been awarded for implementation of “Supply and installation of 48 Fiber OPGW” for 400 kV D/C Kaharagpur- Chaibasa Transmission Line approved as Communication Scheme in the 38th meeting of NCT held on 25.02.2026.

Sag Tension:

JYOTI STRUCTURES LIMITED		PROJECT CODE		J-659		DRG NO : DES-9					
ANDHERI(W)-MUMBAI-400053		PURCHASER		RELIANCE ENERGY LIMITED		PAGE NO : 2					
TRANS LINE : 400 KV D/C Transmission Line				Spec_No :							
Sag Tension calculations For Wind Zone 4											
Basic_Span [M]		400.00									
Ice Density [Kg/M3]		0.000									
Conductor Wind Pressure [Kg/M2]		158.000									
Groundwire Wind Pressure [Kg/M2]		196.000									
Wire Details		Conductor		Ground_Wire-GW							
Name		MOOSE									
Material		ACSR		GSSW							
Alum. Strands(No/mm)		54+7/3.53		-							
Steel Strands(No/mm)				7/3.66							
Diameter[mm]		31.770		10.980							
Sectional Area[mm2]		597.000		73.650							
Unit Weight[Kg/M]		2.004		0.583							
Ultimate Strength[Kg]		16438.000		6972.000							
E Value[Kg/mm2]		7030.000		19320.000							
Alpha [per Deg C]		1.93E-05		0.115E-04							
SR NO	Temp [DEG C]	Ice Thickness [MM]	Wind Fact %	Conductor Wind Pres [Kg/M2]	Conductor Tension [Kg]	Conductor Sag [M]	Conductor Factor of safety	GW Wind Pres [Kg/M2]	GW Tension [Kg]	GW Sag [M]	GW Factor of safety
01	0.0	0.000	0.00	0.00	4148	9.662	3.963	0.00	1341	8.696	5.200
02	32.0	0.000	0.00	0.00	3617	11.082	4.545	0.00	1213	9.609	5.746
03	32.0	0.000	100.00	158.00	7952		2.067	196.00	3315		2.103
04	32.0	0.000	75.00	118.50	6624		2.481	147.00	2741		2.543
05	53.0	0.000	0.00					0.00	1144	10.193	6.095
06	85.0	0.000	0.00	0.00	3024	13.255	5.436				

[illegible]

SIZE OF SECTION

MAXIMUM LENGTH IN MM	MAXIMUM WEIGHT IN KG	MAXIMUM LENGTH IN MM	MAXIMUM WEIGHT IN KG
1. 40x40x4, 1e	1225	2025	1066
2. 40x40x4, 1e	1225	2025	1066
3. 40x40x4, 1e	2175	3425	1334
4. 40x40x4, 1e	2175	3425	1334
5. 50x50x4, 1e	2425	3825	1887
6. 50x50x4, 1e	2425	3825	1887
7. 50x50x4, 1e	2425	3825	1887
8. 50x50x4, 1e	2425	3825	1887
9. 50x50x4, 1e	2425	3825	1887
10. 50x50x4, 1e	2425	3825	1887
11. 50x50x4, 1e	2425	3825	1887
12. 50x50x4, 1e	2425	3825	1887
13. 50x50x4, 1e	2425	3825	1887
14. 50x50x4, 1e	2425	3825	1887
15. 50x50x4, 1e	2425	3825	1887
16. 50x50x4, 1e	2425	3825	1887
17. 50x50x4, 1e	2425	3825	1887
18. 50x50x4, 1e	2425	3825	1887
19. 50x50x4, 1e	2425	3825	1887
20. 50x50x4, 1e	2425	3825	1887
21. 50x50x4, 1e	2425	3825	1887
22. 50x50x4, 1e	2425	3825	1887
23. 50x50x4, 1e	2425	3825	1887
24. 50x50x4, 1e	2425	3825	1887
25. 50x50x4, 1e	2425	3825	1887
26. 50x50x4, 1e	2425	3825	1887
27. 50x50x4, 1e	2425	3825	1887
28. 50x50x4, 1e	2425	3825	1887
29. 50x50x4, 1e	2425	3825	1887
30. 50x50x4, 1e	2425	3825	1887
31. 50x50x4, 1e	2425	3825	1887
32. 50x50x4, 1e	2425	3825	1887
33. 50x50x4, 1e	2425	3825	1887
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40. 50x50x4, 1e	2425	3825	1887
41. 50x50x4, 1e	2425	3825	1887
42. 50x50x4, 1e	2425	3825	1887
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44. 50x50x4, 1e	2425	3825	1887
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64. 50x50x4, 1e	2425	3825	1887
65. 50x50x4, 1e	2425	3825	1887
66. 50x50x4, 1e	2425	3825	1887
67. 50x50x4, 1e	2425	3825	1887
68. 50x50x4, 1e	2425	3825	1887
69. 50x50x4, 1e	2425	3825	1887

VIEW ON A-A
(Half view shown)

VIEW ON B-B

VIEW ON C-C
(Half view shown)

VIEW ON D-D

VIEW ON E-E
(Half view shown)

VIEW ON F-F

GENERAL NOTES:-

- ALL DIMENSIONS ARE IN mm.
- ALL WIDTH DIMENSIONS ARE FROM C.G. TO C.G. OF ANGLES.
- STIFF SECTION 1:300 TO 1:500.
- * INDICATES 2 BOLTS AT ONE END.
- 2-D STEEL SECTIONS ARE CONFORMING TO IS 2062 GRADE A OR EQUIVALENT.
- HOT ROLLED STEEL CONFORMING TO IS 800 GRADE F4 450 OR EQUIVALENT.
- BOLTS / NUTS ARE 12mm DIA FOR REDUNDANTS AND 16mm DIA FOR BEAM MEMBERS CONFORMING TO IS 1500/1507 PROPERTY CLASS 8.8 OR EQUIVALENT.

TABLE 1: MEMBER MARK

SR No.	MEMBER MARK	SIZE OF SECTION	NO. OF BOLTS
1	16	L 100x100x10	100 D.S.
2	115 E25	L 100x100x10	100 D.S.
3	16	L 100x100x10	100 D.S.
4	16	L 100x100x10	100 D.S.
5	16	L 100x100x10	100 D.S.
6	16	L 100x100x10	100 D.S.
7	16	L 100x100x10	100 D.S.
8	16	L 100x100x10	100 D.S.

TABLE 2: MEMBER MARK

SR No.	MEMBER MARK	SIZE OF SECTION	NO. OF BOLTS
1	16	L 100x100x10	100 D.S.
2	115 E25	L 100x100x10	100 D.S.
3	16	L 100x100x10	100 D.S.
4	16	L 100x100x10	100 D.S.
5	16	L 100x100x10	100 D.S.
6	16	L 100x100x10	100 D.S.
7	16	L 100x100x10	100 D.S.
8	16	L 100x100x10	100 D.S.

TABLE 3: MEMBER MARK

SR No.	MEMBER MARK	SIZE OF SECTION	NO. OF BOLTS
1	16	L 100x100x10	100 D.S.
2	115 E25	L 100x100x10	100 D.S.
3	16	L 100x100x10	100 D.S.
4	16	L 100x100x10	100 D.S.
5	16	L 100x100x10	100 D.S.
6	16	L 100x100x10	100 D.S.
7	16	L 100x100x10	100 D.S.
8	16	L 100x100x10	100 D.S.

TABLE 4: MEMBER MARK

SR No.	MEMBER MARK	SIZE OF SECTION	NO. OF BOLTS
1	16	L 100x100x10	100 D.S.
2	115 E25	L 100x100x10	100 D.S.
3	16	L 100x100x10	100 D.S.
4	16	L 100x100x10	100 D.S.
5	16	L 100x100x10	100 D.S.
6	16	L 100x100x10	100 D.S.
7	16	L 100x100x10	100 D.S.
8	16	L 100x100x10	100 D.S.

TABLE 5: MEMBER MARK

SR No.	MEMBER MARK	SIZE OF SECTION	NO. OF BOLTS
1	16	L 100x100x10	100 D.S.
2	115 E25	L 100x100x10	100 D.S.
3	16	L 100x100x10	100 D.S.
4	16	L 100x100x10	100 D.S.
5	16	L 100x100x10	100 D.S.
6	16	L 100x100x10	100 D.S.
7	16	L 100x100x10	100 D.S.
8	16	L 100x100x10	100 D.S.

TABLE 6: MEMBER MARK

SR No.	MEMBER MARK	SIZE OF SECTION	NO. OF BOLTS
1	16	L 100x100x10	100 D.S.
2	115 E25	L 100x100x10	100 D.S.
3	16	L 100x100x10	100 D.S.
4	16	L 100x100x10	100 D.S.
5	16	L 100x100x10	100 D.S.
6	16	L 100x100x10	100 D.S.
7	16	L 100x100x10	100 D.S.
8	16	L 100x100x10	100 D.S.

TABLE 7: MEMBER MARK

SR No.	MEMBER MARK	SIZE OF SECTION	NO. OF BOLTS
1	16	L 100x100x10	100 D.S.
2	115 E25	L 100x100x10	100 D.S.
3	16	L 100x100x10	100 D.S.
4	16	L 100x100x10	100 D.S.
5	16	L 100x100x10	100 D.S.
6	16	L 100x100x10	100 D.S.
7	16	L 100x100x10	100 D.S.
8	16	L 100x100x10	100 D.S.

TABLE 8: MEMBER MARK

SR No.	MEMBER MARK	SIZE OF SECTION	NO. OF BOLTS
1	16	L 100x100x10	100 D.S.
2	115 E25	L 100x100x10	100 D.S.
3	16	L 100x100x10	100 D.S.
4	16	L 100x100x10	100 D.S.
5	16		

VIEW ON 1-1

VIEW ON 2-2

VIEW ON 3-3

VIEW ON 4-4

VIEW ON 5-5

VIEW ON 6-6

VIEW ON 7-7

VIEW ON 8-8

VIEW ON 9-9

VIEW ON 10-10

VIEW ON 11-11

VIEW ON 12-12

VIEW ON 13-13

VIEW ON 14-14

VIEW ON 15-15

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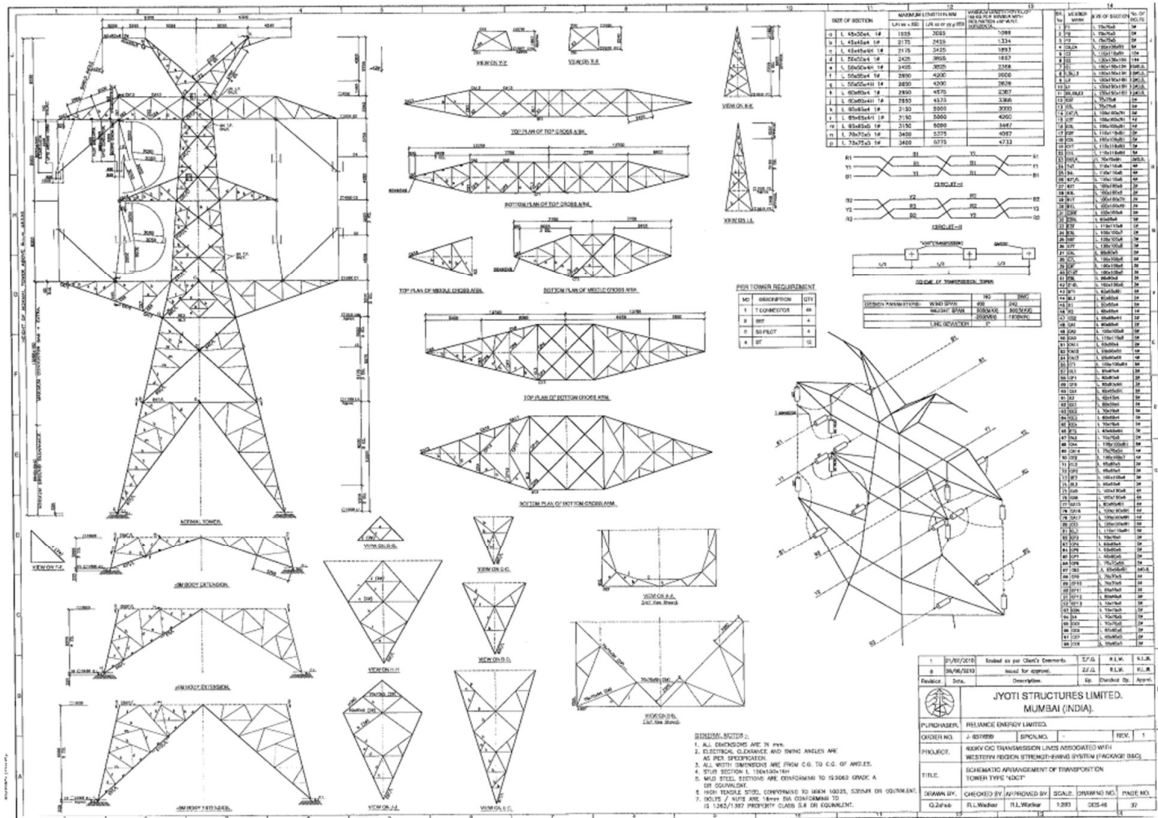
VIEW ON 210-210

VIEW ON 211-211

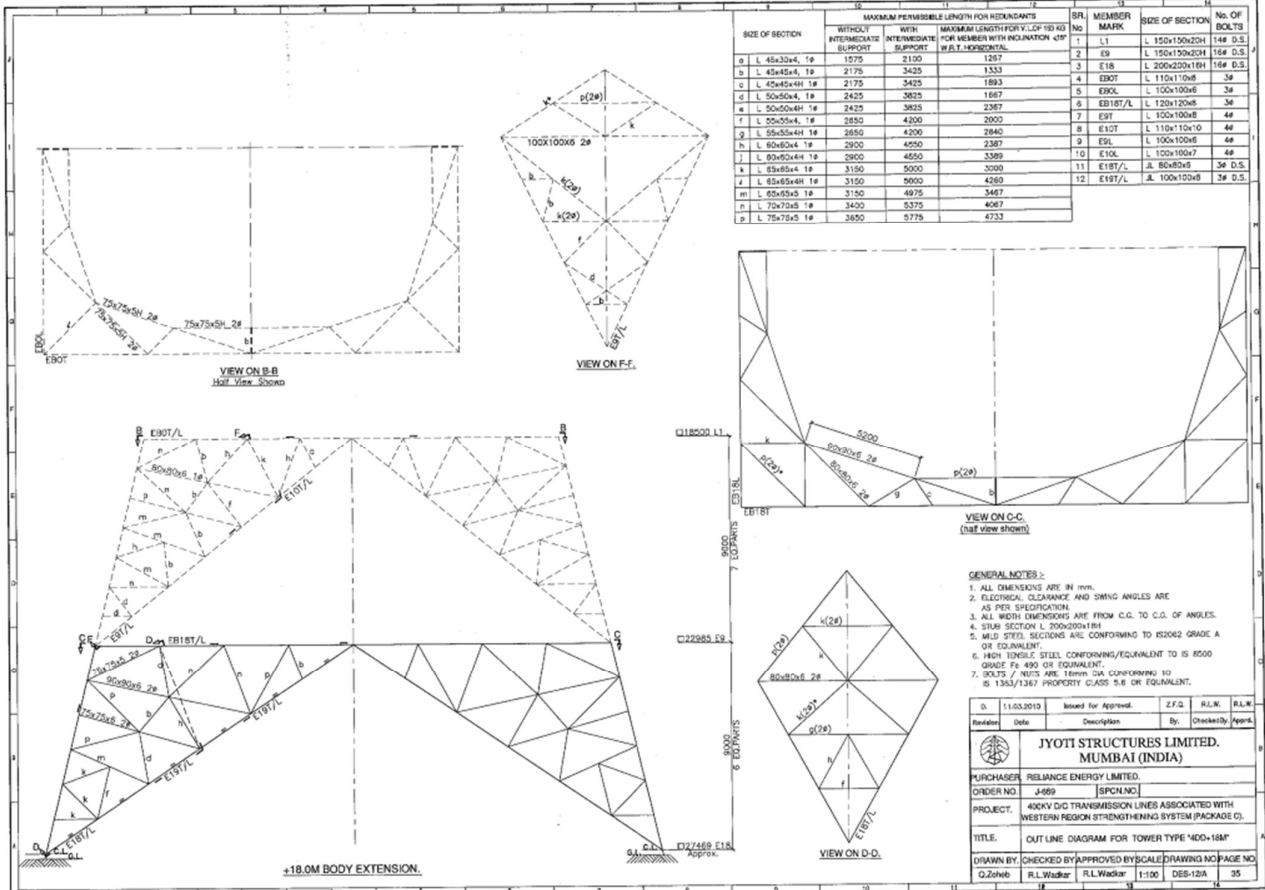
VIEW ON 212-212

VIEW ON 213-213

TOWER TYPE: DCT



TOWER TYPE: DD+18 M EXTENSION



TOWER TYPE: DD +25 M EXTENSION

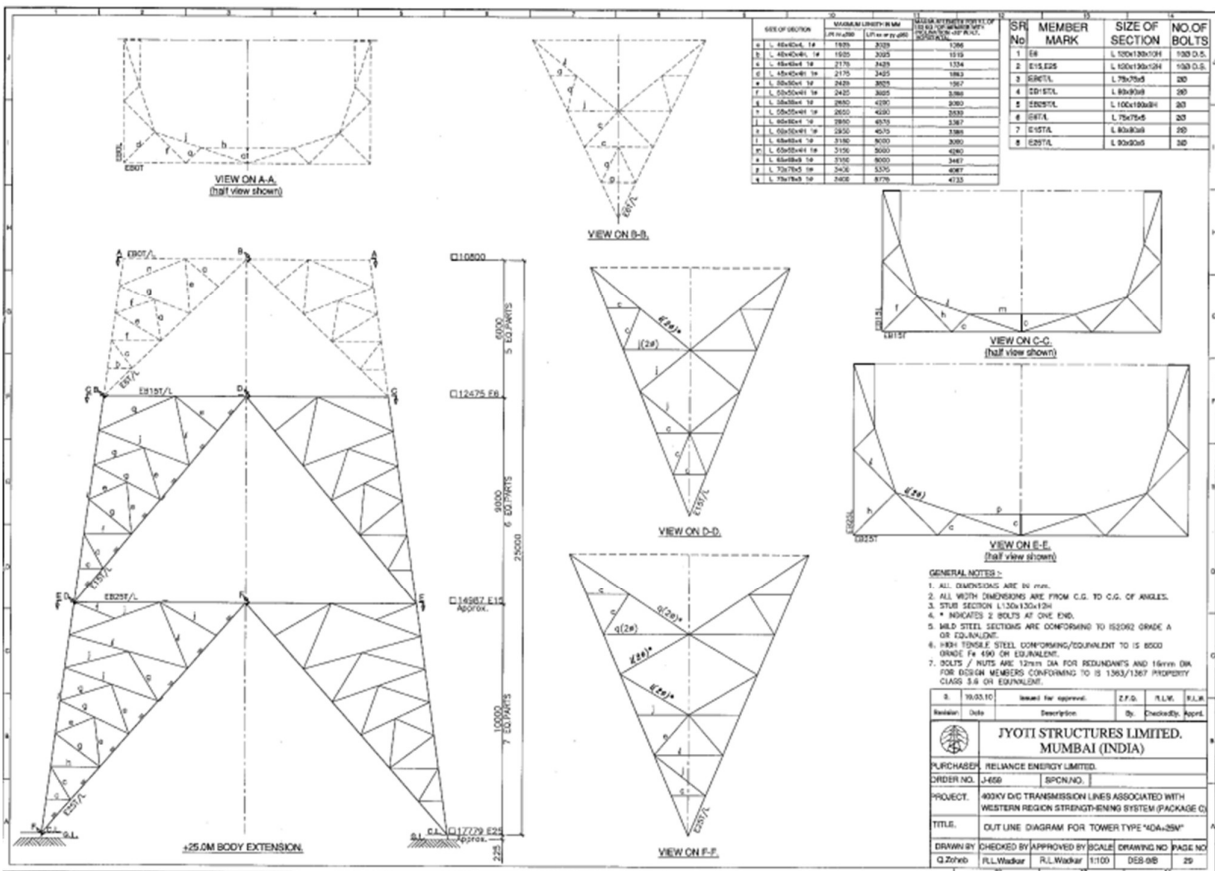


Table A: Implementation Schedule

Line Description	Period in Months from Award
Installation of one (1) OPGW cable containing 48 fibers (48F) by replacing one (1) existing earth wire under live-line condition. One (1) no. STM 16 Fiber Optic Terminal Equipment (FOTE).	

Table B
Proposed OPGW Communication
link Works

Name of Transmission Line	Originating Location	Terminating Location	Line Length (KM)
400 kV D/C Kaharagpur Chaibasa Transmission Line	Kharagpur Substation	Chaibasa substation	161.67

Addition/deletion of links within the provisions of contractual quantity variation may be undertaken during detailed engineering, based on approval received in Regional Power Committee (NRPC)/ NCT meetings.

Location of Communication Equipment(s) will be finalized during detailed engineering.