

Jabalpur Transmission Company Limited

(A wholly owned subsidiary of Sterlite Technologies Limited)

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"The Mira Corporate Suites",

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www.sterlitetechnologies.com

To,
Mr.R. Ranjan,
M/s Lanco Infratech Ltd.
EPC Division, Plot No 404-405,
Udyog Vihar, Phase-III
Gurgaon- Haryana

Ref No: SGL/JTCL/ENGG/LANCO/11

Dated: 7th Jan'2013**Subject:** Approval of tower accessories drawing of 765KV D/C JTCL T/L.

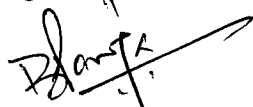
Dear Sir,

This is in reference to tower accessories drawings submitted by you for approval. We have examined the same & found generally in order. We are hereby conveying our approval on the below mentioned drawing:-

Sr. No.	Description	Document No.	Rev. No.
1.	Pipe Type Earthing	SGL/765KV DC/ACC/001	0
2.	Counter Poise Earthing	SGL/765KV DC/ACC/002	0
3.	Flats for Earthing	SGL/765KV DC/ACC/003	0
4.	Phase Plate	SGL/765KV DC/ACC/004	0
5.	Danger Plate	SGL/765KV DC/ACC/005	0
6.	Number Plate	SGL/765KV DC/ACC/006	0
7.	Circuit Plate	SGL/765KV DC/ACC/007	0
8.	Bird Guard	SGL/765KV DC/ACC/008	0
9.	ACD	SGL/765KV DC/ACC/009	0
10.	Step Bolt	SGL/765KV DC/ACC/010	0

Approval conveyed herein neither relieve M/s LANCO of his contractual obligation & his responsibilities for correctness of dimension , materials of construction , weights ,designed details , assembly fits, performance particulars & conformity of the supplies with the Indian statutory laws as may be applicable , nor does it limit the JTCL rights under the contract.

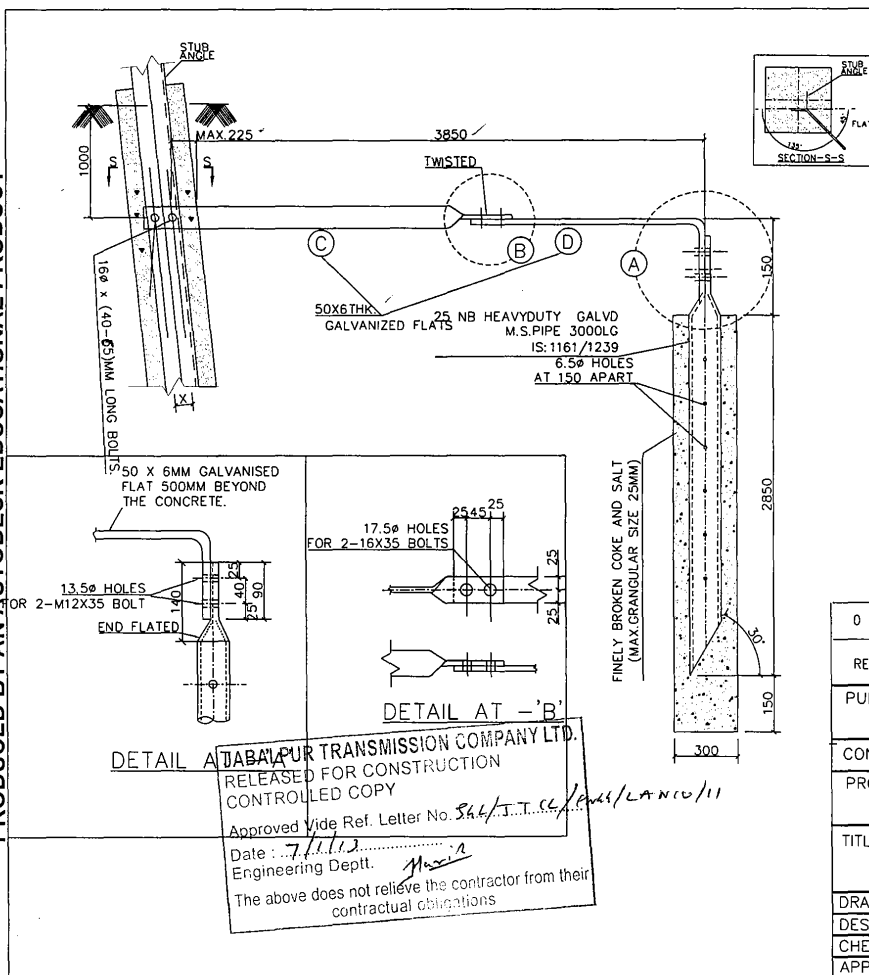
Regards



Bigyan Parija
Engineer in Chief - Transmission Line

Encl: Above mentioned drawings/documents
Copy to:

1. Mr Jagan Mohan along with Encl.



NOTE :-

- "C" STRIP IS TO BE PROVIDED ON ONE LEG OF EACH TOWER, WHICH WILL BE SUPPLIED WITH STUB.
- "D" STRIP WITH PIPE EARTHING ARRANGEMENT IS TO BE PROVIDED ON ONLY ONE LEG.
- 17.5Ø HOLES SUITABLE FOR 16MM Ø BOLT CONFIRMING TO IS:12427-2001, CLASS 5.6 & IS:14394-1996, Gr. 5 FOR HEX NUT UNLESS OTHERWISE SPECIFIED.
- FOR COUNTERPOSE EARTHING STRIP 'C' SHALL BE CONNECTED WITH COUNTERPOSE WIRE THROUGH 'A' LUG.
- ALL DIMENSIONS ARE IN MM.
- 12 & 16MM DIA SPIRING WASHER SHALL CONFIRM TO IS:3063-1994 TYPE B AND ELECTRO GALVANIZED AS PER IS:1573-1986.
- HDG BOLT/NUTS TO BE GALVANIZED AS PER IS:1367(P-13)-1983.
- C & D FLATS TO BE HOT DIP GALVANIZED AS PER IS:2629-1985.
- MATERIAL FOR C & D FLAT AS PER IS:2062 GRADE "A".
- X TO BE COMPATIBLE WITH STUB

LIST OF BOLTS & NUTS / TOWER.						
S.NO	SIZE					
1	STUB THICK (mm)	7-11	12-16	17-21	22-26	27-31
1	LENGTH OF M16 BOLT (mm)	40	45	50	55	60
2	M-16 x 35LG					
3	M-12 x 35LG					
4	16MM DIA 3.5MM THK.SP.WASHER					
5	12MM DIA 2.5MM THK.SP.WASHER					

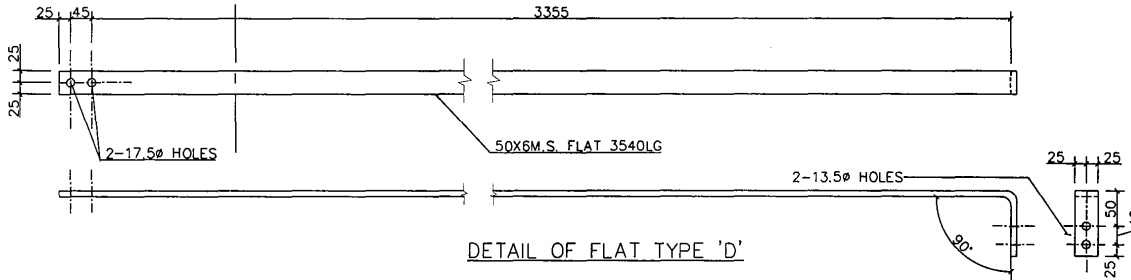
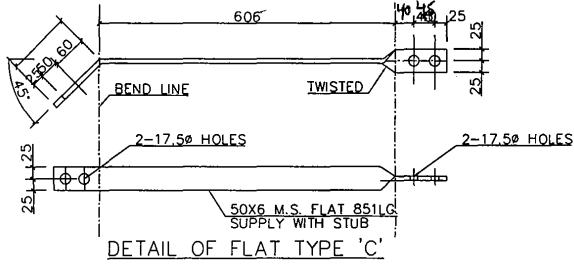
0	18/12/2012	FIRST ISSUE	SEA	NK	VKG
REV	DATE	DESCRIPTION	DRAWN	CHKD	APPD
PURCHASER :-		Sterlite Grid Limited			
CONTRACTOR		LANCO INFRATECH LTD.			
PROJECT :-		765 kV D/C DHARAMJAYGARH-JABALPUR TRANSMISSION LINE PKG- C 1 (WIND ZONE - 2)			
TITLE:-		PIPE TYPE EARTHING			
DRAWN BY	SEA		SCALE-NTS		
DESIGN BY	NK		DRAWING NO.:-		
CHECKED BY	NK		SGL/765KV DC/ACC/001		
APPD. BY	VKG		REVISION 0		
					SHEET NO.:
					1 OF 1



0	18/12/2012	FIRST ISSUE		SEA	NK	VKG
REV	DATE	DESCRIPTION		DRAWN	CHKD	APPD
PURCHASER :- Sterlite Grid Limited.						
CONTRACTOR LANCO INFRATECH LTD.						
PROJECT :- 765 KV D/C DHARAMJAYGARH-JABALPUR TRANSMISSION LINE PKG- C 1 (WIND ZONE - 2)						
TITLE:- COUNTERPOISE EARTHING						
DRAWN BY		SEA		SCALE- NTS		
DESIGN BY		NK		DRAWING NO.:-		SHEET NO.:
CHECKED BY		NK		SGL/765kv DC/ACC/002		
APPD. BY		VKG		REVISION 10		
						1 OF 1

NOTE :-

1. ALL DIMENSIONS ARE IN MM.
2. AFTER FABRICATION BOTH FLATS TO BE HOT-DIP GALVANISED AS PER IS:2629.
3. FLAT TYPE 'C' IS TO BE PROVIDED ON ONE LEG OF EACH TOWER.
4. FLAT TYPE 'D' IS TO BE PROVIDED WITH PIPE TYPE EARTHING ARRANGEMENT AND TO BE CONNECTED WITH FLAT 'C' FOR THE LOCATION WHERE TOWER FOOTING RESISTANCE IS MORE THAN 10 OHMS.

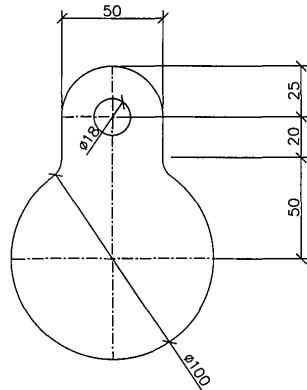


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Approved Vide Ref. Letter No. *SL/51/L/24/LAWCO/11*
Date : *7/1/13*
Engineering Deptt. *gauri*
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0	18/12/2012	FIRST ISSUE	SEA	NK	VKG
REV	DATE	DESCRIPTION	DRAWN	CHKD	APPD
PURCHASER :-			Sterlite Grid Limited		
CONTRACTOR			LANCO INFRA TECH LTD.		
PROJECT :-			765 KV D/C DHARAMJAYGARH-JABALPUR TRANSMISSION LINE PKG- C 1 (WIND ZONE - 2)		
TITLE:-			FLATS FOR EARTHING		
DRAWN BY	SEA	SCALE-NTS	DRAWING NO.:- SGL/765KV DC/ACC/003 REVISION 01		
DESIGN BY	NK				
CHECKED BY	NK				
APPD. BY	VKG				
			SHEET NO.:- 1 OF 1		

NOTE :-

1. ALL DIMENSIONS ARE IN MM.
2. M.S PLATE 1.6MM THK (MIN) AS IS:1079-1994 (GRADE O).
3. PHASE PLATE TO BE ENAMILLED RED,YELLOW AND BLUE ON FRONT AND BACK.
4. GENERAL TOLERANCE $\pm 3\%$ UNLESS OTHERWISE SPECIFIED.
5. PHASE PLATE SHALL BE AS PER IS:3613 (PART-2).
6. BOLT/NUT TO BE GALVANIZED AS PER IS:1367 (P-13)-1983.
7. QUANTITY PER SET ONE PLATE EACH OF RED, YELLOW & BLUE.
8. ONE SET FOR EACH CIRCUIT IS TO BE SUPPLIED.

**TOWER PHASE PLATE**

LIST OF 16 Dia BOLTS, NUTS & WASHER
TO BE SUPPLIED WITH EACH SET

DETAILS	QTY
M-16 x 35LG	03
2MM THICK LEAD WASHER	06

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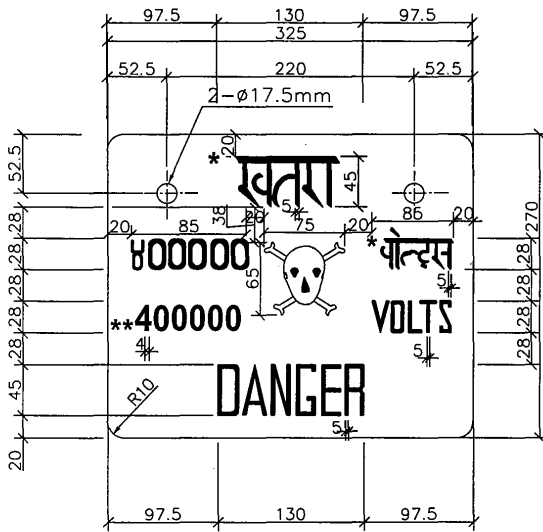
0	18/12/2012	FIRST ISSUE	SEA	NK	VKG
REV	DATE	DESCRIPTION	DRAWN	CHKD	APPD
PURCHASER :- Sterlite Grid Limited					
CONTRACTOR		LANCO INFRATECH LTD.			
PROJECT :-		765 kV D/C DHARAMJAYGARH-JABALPUR TRANSMISSION LINE PKG- C 1 (WIND ZONE - 2)			
TITLE:- PHASE PLATE					
DRAWN BY	SEA			SCALE-NTS	
DESIGN BY	NK			DRAWING NO.:-	
CHECKED BY	NK			SGL/765kV DC/ACC/004	
APPD. BY	VKG			REVISION	0
				SHEET NO.:	
				1 OF 1	

NOTE :-

1. ALL DIMENSIONS ARE IN MM.
2. LETTRING & FIGURE RED ENAMELLED.
3. BACKGROUND WHITE VITREOUS ENAMELLED.
4. BACK BLACK VITREOUS ENAMELLED.
5. MINIMUM 1.6THK. M.S PLATE AS PER IS:1079-1994 (GRADE O).
6. GENERAL TOLERANCE $\pm 3\%$ UNLESS OTHERWISE SPECIFIED.
7. THE CORNERS OF THE PLATE SHPULD BE ROUNDED OFF.
8. ALL LETTERS SHOULD BE CENTRALLY SPACED.
9. BOLT/NUT TO BE GALVANIZED AS PER IS:1367 (P-13)-1983.
10. DESIGN OF DANGER PLATE IS AS PER IS:2551:1982.

*
IN CASE LOCAL LANGAUGAE IS OTHER THAN HINDI LETTERS SHALL BE REPLACED BY LOCAL LANGUAGE TO BE CONFIRMED FROM SITE IN CHARGE

**
IN CASE 765000 VOLTS, 400000 VOLTS & 220000 VOLTS TO BE WRITTEN FOR 765 KV, 400KV & 220KV RESPECTAELY.



0	18/12/2012	FIRST ISSUE	SEA	NK	VKG
REV	DATE	DESCRIPTION	DRAWN	CHKD	APPD

PURCHASER :-

Sterlite Grid Limited

CONTRACTOR

LANCO INFRATECH LTD.

PROJECT :-

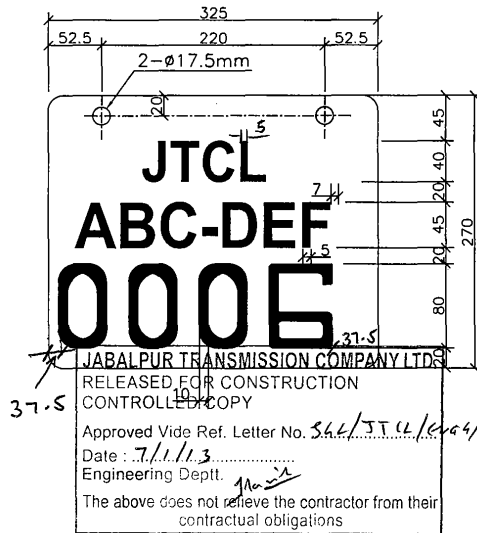
765 kV D/C DHARAMJAYGARH-JABALPUR TRANSMISSION LINE
PKG- C 1 (WIND ZONE - 2)

TITLE:-

DANGER PLATE

JABALPUR TRANSMISSION COMPANY LTD.
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Date : 7.1.13
Engineering Deptt. *[Signature]*
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DRAWN BY	SEA		SCALE -NTS	
DESIGN BY	NK		DRAWING NO.:- SGL/765kV DC/ACC/005	SHEET NO.:
CHECKED BY	NK			1 OF 1
APPD. BY	VKG		REVISION 0	



LIST OF 16 Dia BOLTS, NUTS & WASHER
TO BE SUPPLIED WITH EACH SET

DETAILS	QTY
M-16X35 LONG HRH BOLT AS PER IS:12427-2001	2
CLASS 5.6 AND NUT AS PER IS:14394-1996 CLASS 5	
2MM THICK LEAD WASHER	4

NOTE :-

1. ALL DIMENSIONS ARE IN MM.
2. LETTRING RED ENAMELLED.
3. BACKGROUND WHITE VITREOUS ENAMELLED.
4. BACK BLACK VITREOUS ENAMELLED.
5. MINIMUM 1.6THK. M.S PLATE AS PER IS:1079-1994 (GRADE O).
6. EACH NUMBER WILL HAVE FOUR DIGITS AS SHOWN.
NUMBERS TO BE STARTED FROM "0001" ONWARDS.
7. GENERAL TOLERANCE $\pm 3\%$ UNLESS OTHERWISE SPECIFIED.
8. THE CORNERS OF THE PLATE SHOULD BE ROUNDED OFF.
9. ALL LETTERS SHOULD BE CENTRALLY SPACED.
10. BOLT/NUT TO BE GALVANIZED AS PER IS:1367 (P-13)-1983.

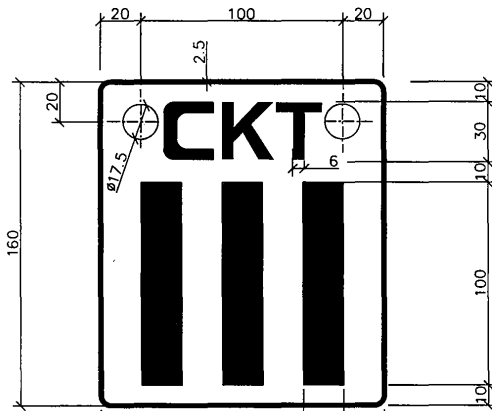
ABC CODE FOR SENDING END AND DEF CODE FOR RECEIVING
END TO BE FURNISHED BY SITE INCHARGE

0	18/12/2012	FIRST ISSUE	SEA	NK	VKG
REV	DATE	DESCRIPTION	DRAWN	CHKD	APPD
PURCHASER :-		Sterlite Grid Limited			
CONTRACTOR		LANCO INFRATECH LTD.			
PROJECT :-		765 kV D/C DHARAMJAYGARH-JABALPUR TRANSMISSION LINE PKG- C 1 (WIND ZONE - 2)			
TITLE:-		TOWER NUMBER PLATE			
DRAWN BY	SEA		SCALE-NTS		
DESIGN BY	NK		DRAWING NO.:- SGL/765kV DC/ACC/006		
CHECKED BY	NK		SHEET NO.:		
APPD. BY	VKG		1 OF 1		
REVISION		0			

NOTE :-

1. ALL DIMENSIONS ARE IN MM.
2. LETTRING RED ENAMELLED.
3. BACKGROUND WHITE VITREOUS ENAMELLED.
4. BACK BLACK VITREOUS ENAMELLED.
5. MINIMUM 1.6THK. M.S PLATE AS PER IS:1079-1994 (GRADE O).
6. GENERAL TOLERANCE $\pm 3\%$ UNLESS OTHERWISE SPECIFIED.
7. THE CORNERS OF THE PLATE SHPULD BE ROUNDED OFF.
8. ALL LETTERS SHOULD BE CENTRALLY SPACED.
9. BOLT/NUT TO BE GALVANIZED AS PER IS:1367 (P-13)-1983.
10. EQUAL NOS OF CKT. PLATED FOR EACH CKTS ARE TO BE SUPPLIED.

* CIRCUIT NUMER I,II,III OR IV. TO BE FURNISHED BY SITE



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 Engineering Deptt. *Man*
 The above does not relieve the contractor from their
 contractual obligations

LIST OF 16 Dia BOLTS, NUTS & WASHER
 TO BE SUPPLIED WITH EACH SET

DETAILS	QTY
M-16X35 LONG HRH BOLT AS PER IS:12427-2001	2
CLASS 5.6 AND NUT AS PER IS:14394-1996 CLASS 5	
2MM THICK LEAD WASHER	4

0	18/12/2012	FIRST ISSUE	SEA	NK	VKG
REV	DATE	DESCRIPTION	DRAWN	CHKED	APPD
PURCHASER :-		Sterlite Grid Limited			
CONTRACTOR		LANCO INFRATECH LTD.			
PROJECT :-		765 kV D/C DHARAMJAYGARH-JABALPUR TRANSMISSION LINE PKG- C 1 (WIND ZONE - 2)			
TITLE:-		CIRCUIT PLATE			
DRAWN BY	SEA	SCALE-NTS			
DESIGN BY	NK	DRAWING NO.:-		SHEET NO.:	
CHECKED BY	NK	SGL/765KV DC/ACC/007		1 OF 1	
APPD. BY	VKG	REVISION		0	

BIRD GUARD

LG=100

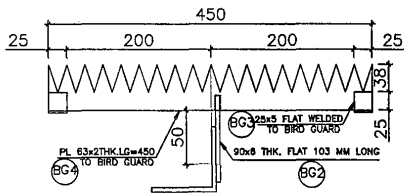
(2-M16X40)

TIE MEMBER

(2-M16X35)

X- ARM

(2 NOS.)
HL130X130X12
LG=222

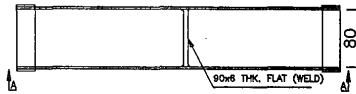
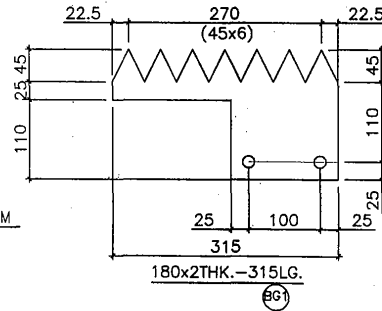


SECTION A-A

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Date : *7.1.1.13*
Engineering Deptt. *M. S.*
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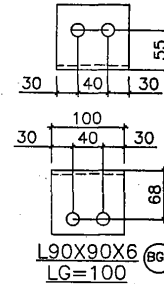
NOTES:-

1. ALL DIMENSIONS ARE IN mm
2. GALVANIZED AFTER FABRICATION.
3. ALL ITEM NOS. ARE TO BE PREFIXED WITH "SGL-DA"



SECTION B-B

MATERIAL LIST		
ITEM NO.	DESCRIPTION	QTY/TWK
BG1	2mm THK. PLATE 180x315	6
BG2	6mm THK. PLATE 90x103	3
BG3	5mm THK. FLAT 25x148	6
BG4	2mm THK. PLATE 43x490	6
BG5	L 90X90X6 LG 100	3
	#16x35mm LG. BOLT	12
	#16x40mm LG. BOLT	6
	SPW 18X3.5	18



W.O. A184

PURCHASER :-

Sterlite Grid Limited

CONTRACTOR

LANCO INFRATECH LTD.

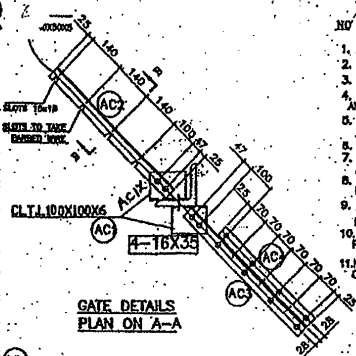
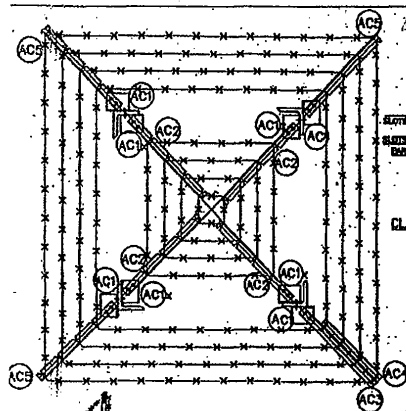
PROJECT :-

765 kV D/C DHARAMJAYGARH-JABALPUR TRANSMISSION LINE
PKG- C 1 (WIND ZONE - 2)

TITLE:-

TOWER TYPE : DA DETAILS OF
BIRD-GUARD

DRAWN BY	SEA	SCALE-NTS	
DESIGN BY	NK	DRAWING NO.:-	
CHECKED BY	NK	SGL/765KV DC/ACC/008	SHEET NO.:
APPD. BY	VKG	REVISION	1 OF 1

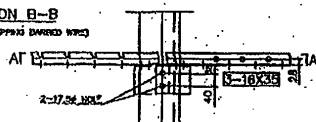


GATE DETAILS
PLAN ON A-A

NO

1. ALL DIMENSIONS ARE IN MM.
2. ALL HOLES ARE 17.5MM FOR 16MM BOLTS.
3. BLANK HOLES AT GATE ARE TO RECEIVE BARBED WIRE.
4. STD. SPRING WASHER TO BE SUPPLIED WITH EACH BOLT AND SHALL CONFORM TO IS : 3063 (UP) SERVICE GRADE-4.
5. ALL STEEL SHALL BE HOT-DIP GALVANIZED.
6. AS PER IS : 2828.
7. ALL STEEL SHALL CONFORM TO IS : 2062 GRADE 'A'.
8. GALVANIZED STEEL BARBED WIRE SHALL CONFORM TO A-1, IS : 278.
9. BOLT TO BE CONFORMING TO IS 12427-2001 Gr. 5.8 & NUT CONFORMING TO IS 14334-1995 (Gr. 5).
10. BOLT / NUT TO BE HOT DIP GALVANIZED AS PER IS 1367 (P-13) - 1983.
11. BARBED WIRE SHALL BE GIVEN CHROMATING DIP AS PER PROCEDURE Laid down in IS : 1340.
12. NOMINAL LENGTH OF BARBED WIRE SHALL BE WORKED OUT AS PER FOLLOWING FORMULAE:
 $L = B \times H \times 2 \times \text{Turns}$
 $B = \text{B/W Width of CL for Normal Tower in Mtrs.}$
 $H = \text{Height of Body Extn if any in Mtrs.}$
 $N = \text{NUMBER OF BARBED WIRE TURNS}$
 $T = \text{TOWER SLOPE}$

VIEW ON B-B
DETAILS OF SHAPING BARBED WIRE



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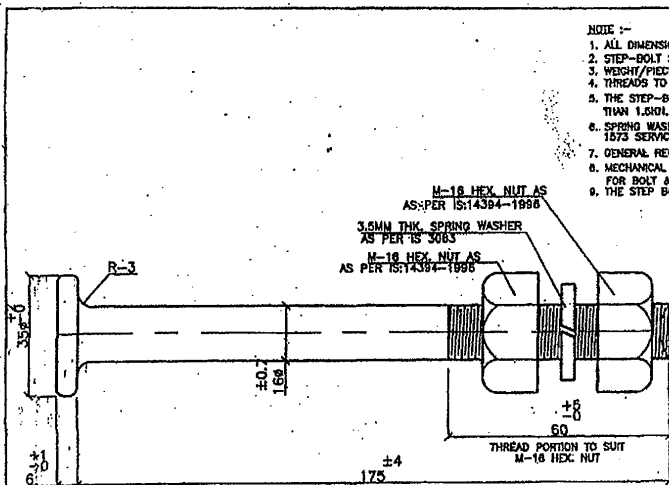
BILL OF MATERIAL			
MARK NO	SECTION	LENGTH (mm)	QTY NOS
AC1/AC1X	L 100x100x8	128	4+4=B
AC2	L 50x50x5	617	4
AC3	L 50x50x5	617	1
AC4	L 50x50x5	470	1
AC5	L 50x50x5	617	3

LIST OF BOLTS & NUTS / TOWER			
S.NO	SIZE	QTY	
1	Bolt 16mm dia x 110mm length	8	
2	M-16 x 35LD	19	
3	16mm dia x 35mm thick SPR. WASHER	27	

REVISION			
NO	DATE	DESCRIPTION	BY
1	11/11/13	RELEASED FOR CONSTRUCTION	11/11/13

PURCHASER :-		Sterlite Grid Limited	
CONTRACTOR		LANCO INFRA TECH LTD.	
PROJECT :-		75 KV D/C BARKHATA-JABALPUR TRANSMISSION LINE	
TITLE :-		ANTI CLIMBING DEVICE	
DESIGNED BY	SEA	CHECKED BY	SEA
DRAWN BY	TK	APPROVED BY	SEA
CHECKED BY	TK	REVISION	(0)

REV.	DESCRIPTION	DATE	SIGN
1			



- NOTE :-
1. ALL DIMENSIONS ARE IN MM.
 2. STEP-BOLT SHALL BE HOT-DIP GALVANIZED AS PER IS:1387(P-13)-1983.
 3. WEIGHT/PIECE WITH TWO NUTS AND ONE SPRING WASHER=0.417 Kg.
 4. THREADS TO BE UNDER CUT BY 0.3MM.
 5. THE STEP-BOLT SHALL BE CAPABLE OF WITHSTANDING A VERTICAL LOAD NOT LESS THAN 1.6KN.
 6. SPRING WASHER SHALL CONFORM TO IS:3063 & ELECTRO GALVANIZED AS PER IS: 1873 SERVICE CONDITION 4.
 7. GENERAL REQUIREMENT SHALL CONFORM TO IS 10238.
 8. MECHANICAL PROPERTIES SHALL CONFORM TO CLASS 4.6 AS PER IS:1307(PART-3) FOR BOLT & CLASS 8 AS PER IS:1387 (P-V) FOR NUT.
 9. THE STEP BOLT SHALL WITH STAND CANTILEVER TEST, AS PER IS:10238.

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REV	DATE	DESCRIPTION	DESIGN	DRAWN	APPROVED
PURCHASER :-					
CONTRACTOR					
PROJECT :-					
TITLE:-					
DRAWN BY	SEA				
CHECKED BY	NR				
APPROVED BY	VRG				

REV.	DESCRIPTION	DATE	SIGN