

Overhead Line Drawings

Item	Title
Existing 400 kV Suswa-Isinya OHL As-built data and drawing	
1	ACSR conductor "CONDOR" Data Sheet
2	ACS Shield Wire (7x3.26mm) Data Sheet
3	OPGW Data Sheet
4	Insulators Drawings
5	400kV Double "I" Suspension Insulator String for Triple ACSR "CONDOR" Conductor
6	400kV Double Tension Insulator String for Triple ACSR "CONDOR" Conductor
7	400kV Pilot "I" Suspension Insulator String for Triple ACSR "CONDOR" Conductor
8	Suspension Assembly for 7/3.26 mm Earthwire
9	Tension Clamp Assembly for 7/3.26 mm Earthwire
10	Splicing tension assembly for OPGW
11	Double Dead End Set Passing for OPGW
12	Towers outline and electrical clearance diagram
Other document	
13	Sketch of Suswa-Kimuka -Isinya (present, future (2021) and Kesip scope (current tender scope of work))
14	Kimuka substation and transmission line route corridor on google earth

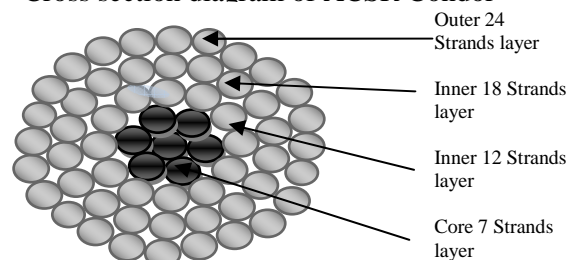


Concentric Lay Stranded Aluminum Conductors steel Reinforced –ACSR Conductor

Manufacturer	Sterlite Technologies Ltd
Conductor Type & Code	ACSR Conductor
General Specification Standard	ASTM B232
Cross Sectional area - Aluminum	402.30 sq.mm
Cross Sectional area – Steel Core	52.15 sq.mm
Total Area of cross Section	454.5 sq.mm
No. & Diameter of Aluminum	54 x 3.08 mm
No. & Diameter of Steel core	7 x 3.08 mm
Overall Diameter of Conductor	27.72 mm
Mass Per Unit Length-Aluminum	1116 kg/km
Mass Per Unit Length-Steel Core	407 kg/km
Mass Per Unit Length -Conductor	1523 kg/km
Minimum Braking Strength of the conductor	127.90 kN
Maximum DC Resistance at 20°C	0.0718 ohm/km

Lay Direction of outer layer	Right hand
Lay ratio	
Outer Layer of Aluminum Wire	Min.10 Max.13
Inner Layer of Aluminum Wire	Min.10 Max.16
Inner most layer of Aluminum Wire	Min.10 Max.17
Inner layer of Steel Core	Min.18 Max.30

Cross section diagram of ACSR Conductor




Individual Aluminum Wires (Before standing)	Individual Steel Wire (Before standing)
Maximum Resistivity	28.265 Ohm mm ² /m
Minimum Tensile Strength	160 Mpa
	Minimum Tensile Strength 1410 Mpa
	Minimum Stress at 1 % 1240 Mpa
	Minimum mass Of Zinc Coating 240 g/m ²

Coefficient of thermal expansion	19.3 x10-6/°C	Final modulus elasticity	68646 N/sq.mm
Standard length /Drum	3000 +/- 5% Meter		
Mass of Grease (all inner layers Greased)	54.45 kg/km +/- (20%)		


Prepared By


Ajay Parmar

Reviewed By


Vishnu Ojha

Approved by


Rakesh Tripathi

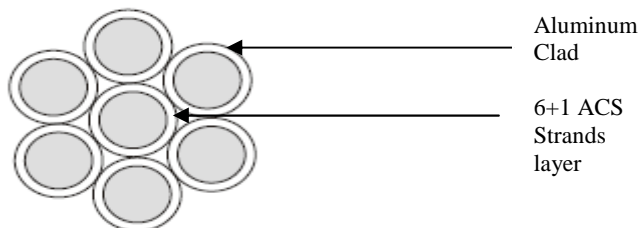


Concentric-Lay Stranded Aluminum-Clad steel Conductor –ACS (7x3.26mm)

Manufacturer	Sterlite Technologies Ltd
Conductor Type & Code	ACS Conductor
General Specification Standard	ASTM B416
No. and size of wire	7 No 8 AWG
Total area of cross Section	58.56 sq.mm
No. & Diameter of Steel stands	7 x 3.26 mm
Overall Diameter of Conductor	9.78 mm
Mass Per Unit Length -Conductor	389.6 kg/km
Rated Braking Strength of the conductor	7225 kg
Maximum Resistance at 20°C	1.463 ohm/km
Density at 20°C	6.59 G/cm ³
Conductivity at 20 C (%IACS)	20.3 % IACS

Cross section diagram of ACS Conductor

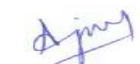
Lay Direction of outer layer	Left hand
Lay ratio	
Outer Layer of ACS Wire	Min.10 Max.16
Aluminum Thickness (Nom)	10% of nominal wire radius.
Single wire Resistance at 20°C	10.135Ohm/km
Wire Diameter	3.26 +/- 2 %
Min Elongation at 250mm	1.5 %



Temperature Co-efficient of resistance	0.0036/°C
----------------------------------------	-----------

Maximum Standard length /Drum	3000 Mtr +/- 5%	Coefficient of linear expansion	12.6x10 ⁻⁶ /°C
Outer diameter of reel (Drum)	1250 mm	Modulus of elasticity	160 Gpa
Internal width of reel (Drum)	500 mm	Maximum Resistivity at 20°C	84.8 n.ohm.m
Diameter of Spindle Hole	105mm		

Prepared By



Ajay Parmar

Reviewed By



Vishnu Ojha

Approved by



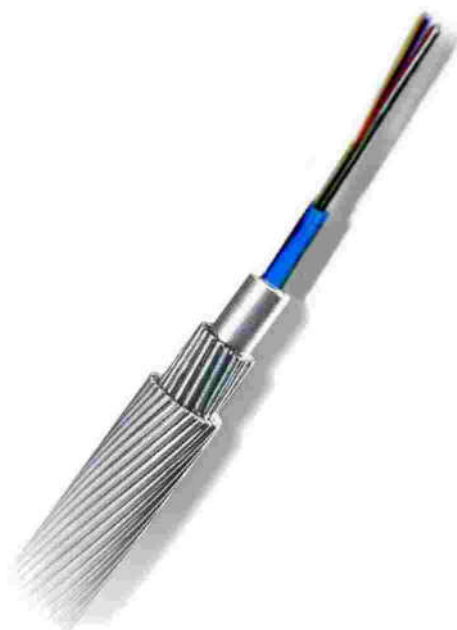
Rakesh Tripathi

General Specification standard ASTM-B232

OPGW 97T77Dz

Ref: 7344B

OPTICAL GROUND WIRE with capacity for 48 optical fibres



Introduction

Features and benefits

This cable has been custom designed to best match with customer requirements from optical, electrical, mechanical, quality and cost point of view, optimising diameter, weight, breaking load and short circuit capacity.

Optical core is made of optical fibres [1] covered by small PBT loose buffer tube [2] that leaves the fibres free from strain even at highest operating loads.

In sections where there is a high contamination or in the proximity of the sea, Prysmian recommend greasing the cable.

A hydrogen absorbent jelly [3] protects the fibres against the optical degradation caused by this element.

The aluminium tube [4] provides the cable with:

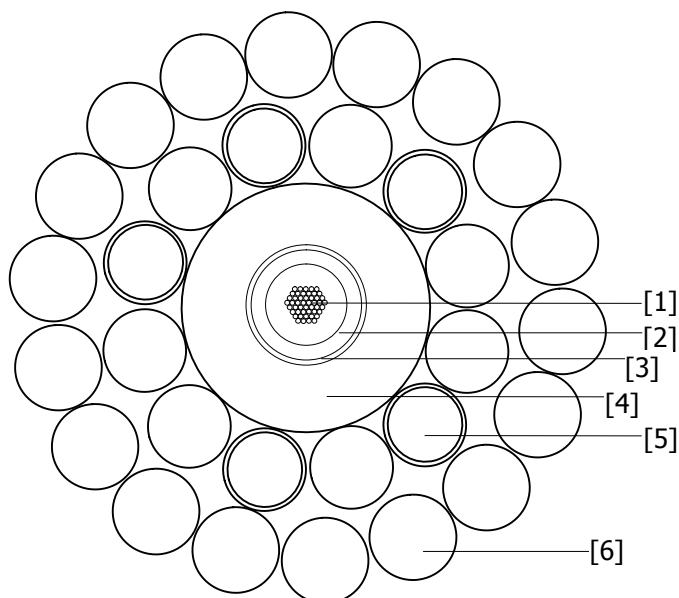
- high short circuit capacity minimizing material
- best solution to avoid cable corrosion
- a perfect sealing for the optical core
- a high crush resistance

The wires of...

- aluminium clad steel [5].
- aluminium alloy [6]

...provides the cable with:

- the required strength.
- best solution to avoid cable corrosion.
- the remaining short circuit capacity.



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Rev.:
00

Date:
10-jan-13

Issued by:
L. Roldán

OPGW 97T77Dz

Ref: 7344B

OPTICAL GROUND WIRE with capacity for 48 optical fibres

Fibre characteristics Single mode optical fibre ITU-T G655

Attenuation coefficients	
at 1550 nm	≤ 0.22 dB/km
at 1625 nm	≤ 0.24 dB/km
Dispersion coefficients	
at 1550 nm	≤ 5 ps/(nm·km)
at 1625 nm	≤ 12.4 ps/(nm·km)
polarisation mode dispersion on individual fibre	≤ 0.1 ps/√km

Cable structure

Optical core

Cables with 48 fibres:

- Without rings: blue, orange, green, brown, slate, white, red, natural, yellow, violet, pink, aqua.
- With 1, 2 and 3 rings: blue, orange, green, brown, slate, white, red, natural, yellow, violet, pink, aqua.

Aluminium Tube

Approximate Outer Diameter: 8.4 mm

Armour

Layer 1:

- 5 aluminium-clad steel of 20.3% IACS wires of 2.82 mm.
- 7 aluminium alloy wires of 2.82 mm.
- Left lay sense (S).

Layer 2:

- 18 aluminium alloy wires of 2.82 mm.
- Right lay sense (Z).

Cable characteristics

Mechanical and physical

Approximate cable diameter:	19.7 mm
Approximate cable weight:	767 kg/km
Ultimate tensile strength:	≥ 93 kN
Rated tensile strength (IEEE 1138):	86.4 kN
Maximum load without fibre elongation:	56 kN
Elasticity Modulus*:	74.7 kN/mm ²
Section*:	226.2 mm ²
Linear expansion thermal coefficient:	$20 \times 10^{-6} \text{ }^{\circ}\text{C}^{-1}$
Minimum bending radius**:	
• On pulley blocks (first and last of each reel, span ≥ 600 m or angles $> 15^{\circ}$):	400 mm
• On pulley blocks (others):	400 mm
• On tensioner devices:	750 mm
• After clamping (slack cable):	300 mm
Operating temperature range:	from -30°C to $+70^{\circ}\text{C}$

*for stress-strain calculus

**see "Installation procedures for OPGW fibre optic cable" document reference SIG-07-PE-PA-013

Electrical

Electrical resistance (20°C): 0.16 Ω /km

Short circuit rating from 20°C: 496 kA²s

Short circuit current for 1 s: 22.3 kA

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L. Roldán

OPGW 97T77Dz

Ref: 7344B

OPTICAL GROUND WIRE with capacity for 48 optical fibres

Routine tests

100% of optical fibres will be measured by OTDR technique before leaving factory.

Installation procedure

Prysmian recommends to install the cable described in this specification following the latest version of our "Installation procedures for OPGW fibre optic cable" reference SIG-07-PE-PA-013, "Instruction for the installation of the EWMJ joint box" reference FO-02 and "Instruction for the installation of the EWJ joint box" reference FO-01.

Reels

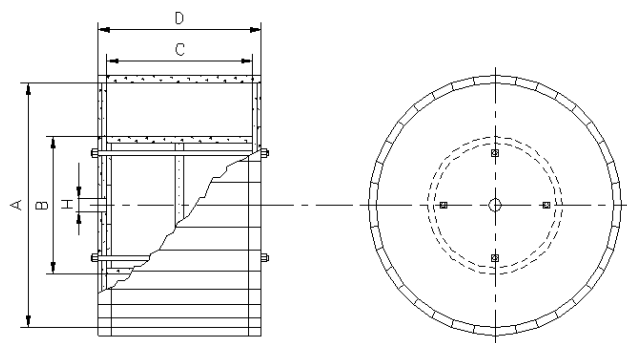
	Type N	Type P
Wheel (A):	1700 mm	2100 mm
Cylinder (B):	900 mm	900 mm
Inside (C):	900 mm	900 mm
Outside (D):	1050 mm	1050 mm
Axe (H):	105 mm	105 mm
Weight:		
- empty:	290 kg	360 kg
- full:	2361 kg	3965 kg
Maximum length:	2.7 km	4.7 km
Tolerance length of the produced reel: $\pm 3\%$		

NOTE:

Ordered lengths should include a distribution of lengths, i.e., all reels cannot be ordered at the maximum.

The reel lengths' distribution should be as follows:

Reel lengths	
0 - 2500	More than 10%
2500 - 4500	More than 35%
4500 - 4700	Less than 55%



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Rev.:
00

Date:
10-jan-13

Issued by:
L. Roldán

[illegible]

Mechanical data
Specified mechanical load tension

225 kN

Electrical data

> 1900 kV	Lightning impulse withstand volt.
> 850 kV	Power frequency withstand volt. wet
> 1050 kV	Switching impulse withstand volt. wet

Minimum creepage distance 16000 mm
Arcing distance ca. 3580 mm

This is a preliminary drawing. Subject to change!

APPROVED

IEC 60120 20 socket

IEC 60120 20 ball

46 large sheds
45 small sheds

marking

160

54

195

163

4020

40

46

160

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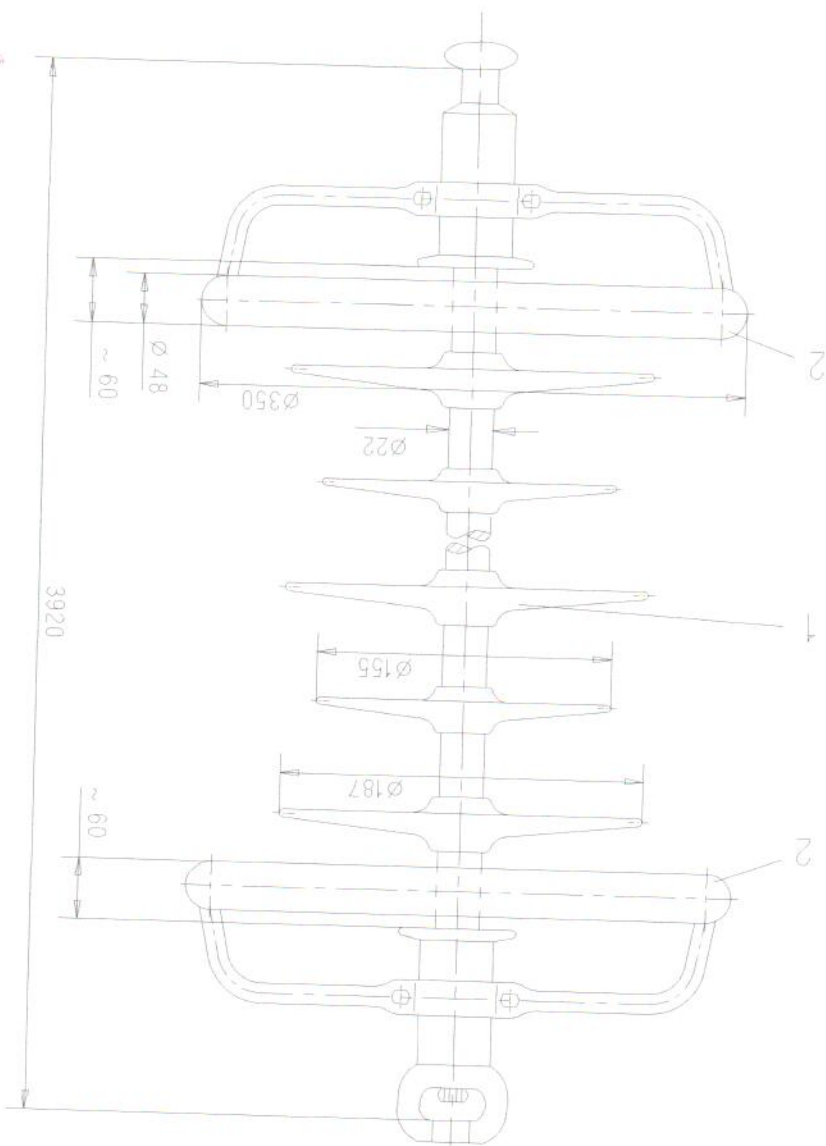
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mat.no.	XXX	insul. part	III
mat.no.	XXX	insul. part	II
mat.no.	XXX	insul. part	I
mat.no.	XXX	insul. part	
origin no.	12K1276-A	name	23.08.12 PURUCKER
replacment for:	23.08.12 WEBER	vent.	23.08.12 WEBER
scale:	1	and is valid without any signature	
<div style="display: flex; justify-content: space-between;"> <div> <p>RODURFLEX®</p> <p>Insulator string</p> <p>Um = 420 kV</p> </div> <div> <p>LAPP</p> <p>INSULATORS</p> </div> </div>			
reg.no./draw.no.	12K1276/A		

modification	date name	part	drwg. no.	part no.	material	remark
(a) x x	x	2	354 189	600 858	St. hot dip galvanized	
(b) x x	x	1	12K1276			
(c) x x	x					
(d) x x	x					
(e) x x	x					
(f) x x	x					

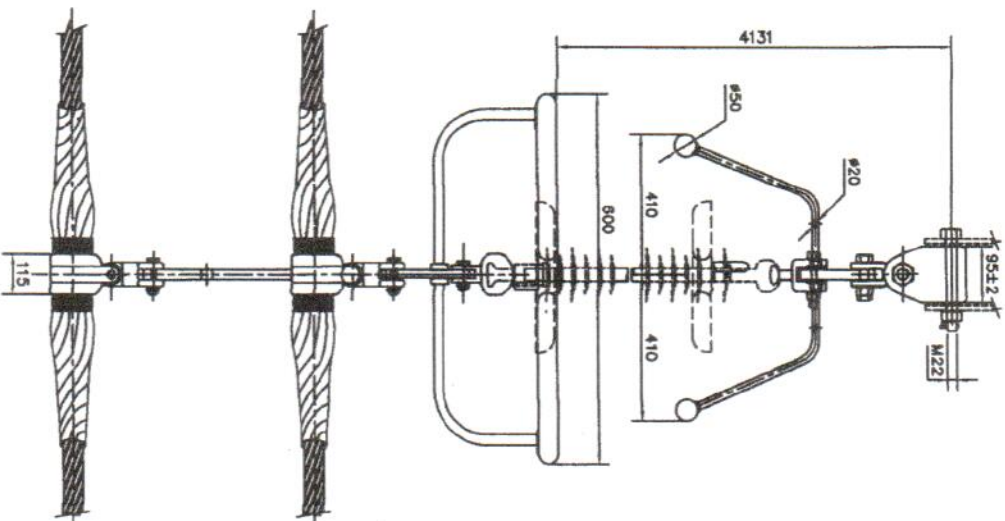
Minimum creepage distance 16000 mm
 Arcing distance ca. 3580 mm
 Electrical data
 Lightning impulse withstand volt. > 1900 kV
 Power frequency withstand volt. wet > 850 kV
 Switching impulse withstand volt. wet > 1050 kV
 Mechanical data
 Specified mechanical load tension 120 kN
 Weight approx.: 29.1 kg




This is a preliminary drawing.
 Subject to change!

APPROVED
 29.01.13

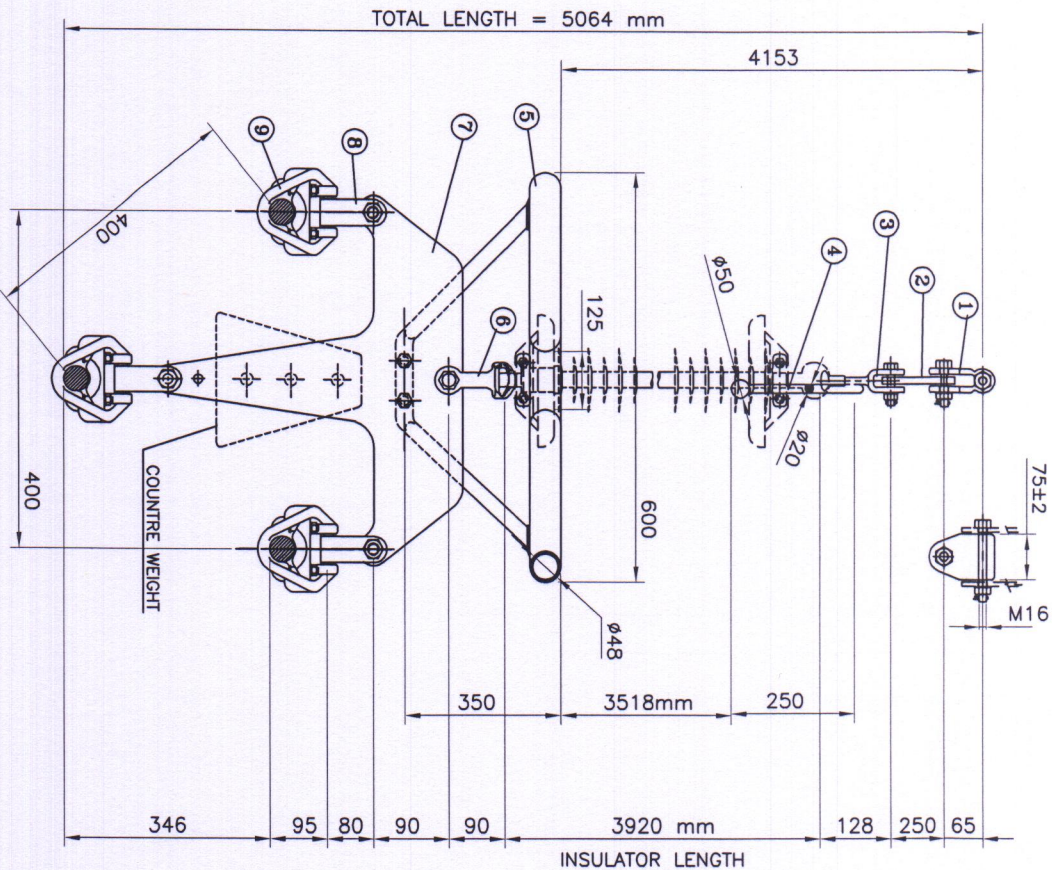
APPROVED
 29.01.13



		101, CENTRE POINT BUILDING, PAREL (MUMBAI, INDIA)	
SCALE : NOT TO SCALE		TITLE:	
DRAWN	A.SINGH	400 KV DOUBLE "I" SUSPENSION	
CHECKED	<i>hary</i>	INSULATOR STRING FOR TRIPLE	
APPROVED	<i>gagan</i>	ACSR "CONDOR" CONDUCTOR	
DATE	07.09.2012	UTS : 240 KN.	
DRG.NO.: EMI/400 KV.24/DSTI-11570		REVISION	

- 1) ALL DIMENSION ARE IN mm.
- 2) TOLERANCES ON TOTAL LENGTH OF HARDWARE FITTINGS : $\pm 2\%$.
- 3) SLIP STRENGTH OF SUSPENSION CLAMP APPROXIMATE 15% OF CONDUCTOR UTS.
- 4) BALL & SOCKET SIZE 16mm AS PER IEC-120.
- 5) ALL FERROUS PARTS HOT DIP GALVANIZED AS PER BS EN ISO-1461.
- 6) TOTAL WEIGHT : 72.00 KG (APPROX).

APPROVED
John D. O'Neil



S/N	DESCRIPTION	MATERIAL	UTS	UTS	QTY.
9	SUSPENSION CLAMP	ALUMINIUM ALLOY & STEEL	EM/SCEN-1901A	70 KN	3
8	CLEVIS CONNECTOR	FORGED STEEL	EM/CC-1916	70 KN	3
7	YOKE PLATE (LINE SIDE)	MILD STEEL	EM/YPS-5586	120 KN	1
6	SOCKET CLEVIS	FORGED STEEL	EM/SC-1138	120 KN	1
5	GRADING RING	MILD STEEL	EM/GR-2041	---	1
4	ARCING HORN (TOWER SIDE)	MILD STEEL	EM/AH-5585	---	1
3	HORN HOLDER BALL CLEVIS	FORGED STEEL	EM/HHBC-3692A	120 KN	1
2	EXTENSION LINK	MILD STEEL	EM/EL-5584	120 KN	1
1	HINGE CLAMP	FORGED STEEL	EM/HCS-3524	120 KN	1

TECHNICAL DETAILS:

- 1) ALL DIMENSION ARE IN mm.
- 2) TOLERANCES ON TOTAL LENGTH OF HARDWARE FITTINGS : $\pm 2\%$.
- 3) SLIP STRENGTH OF SUSPENSION CLAMP APPROXIMATE 15% OF CONDUCTOR UTS.
- 4) BALL & SOCKET SIZE 16mm AS PER IEC-120.
- 5) ALL FERROUS PARTS HOT DIP GALVANIZED AS PER BS EN ISO-1461.
- 6) TOTAL WEIGHT : 41.0KG (APPROX).

NOTE :- GRADING RING ATTACHED WITH INSULATOR SHALL BE SUPPLIED BY INSULATOR MANUFACTURER.

Revision	Date	Description	Drawn By	Checked By	Approved By



JYOTI STRUCTURES LIMITED.
MUMBAI, INDIA.

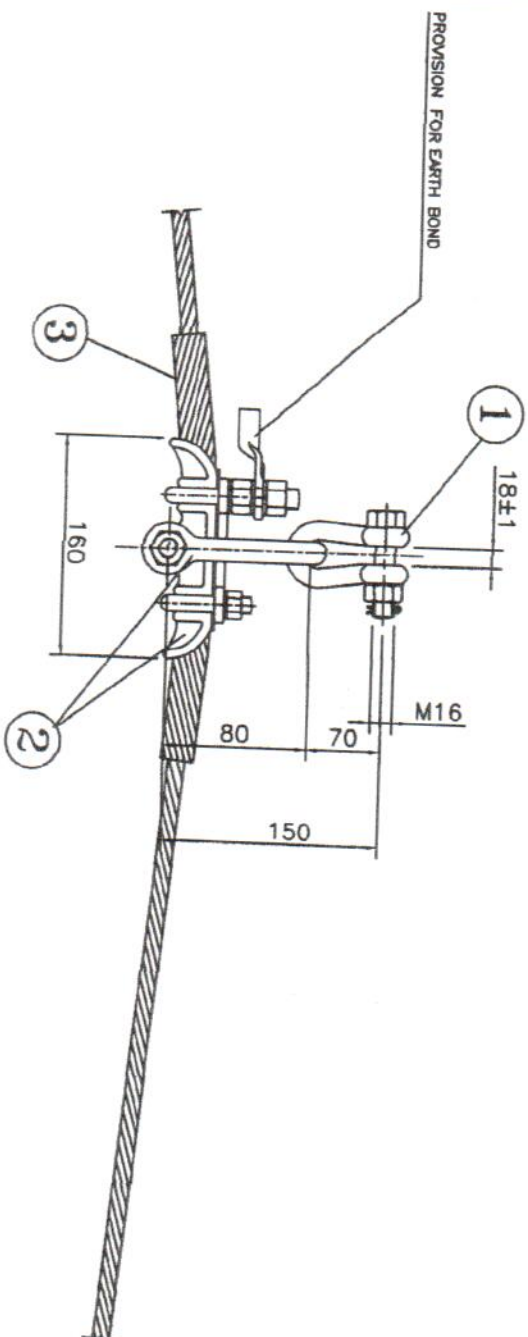
PURCHASER	KENYA ELECTRICITY TRANSMISSION COMPANY LIMITED (KETRACO)
CONTRACT NO	KETRACO/PT/017/2011
PROJECT	CONSTRUCTION OF 400KV DOUBLE CIRCUIT TRANSMISSION LINE, ISINYA-SUSWA
CONSULTANT	POWER ENGINEERS, USA.



EMI TRANSMISSION LIMITED
101, CENTRE POINT BUILDING, PAREL
(MUMBAI, INDIA)

SCALE : NOT TO SCALE	TITLE:
DRAWN : J.B	400 KV PILOT "I" SUSPENSION
CHECKED :	INSULATOR STRING FOR TRIPLE
APPROVED :	ACSR "CONDOR" CONDUCTOR
DATE : 21.05.2013	UTS : 120 KN.

DRG.NO.: EMI/400 KV.12/SSP-23095



TECHNICAL DETAILS:

- 1) ALL DIMENSIONS ARE IN MM
- 2) ALL FERROUS PARTS HOT DIP GALVANISED AS PER BS EN ISO-1461
- 3) GENERAL TOLERANCE $\pm 3\%$
- 4) TOTAL WEIGHT : 3.5 KG.(APPROX.)



3	ARMOUR ROD	HIGH TENSILE STEEL WIRE	EMI/EMAR-2308	1,SET
2	SUSPENSION CLAMP ASSEMBLY	MALLEABLE CAST IRON / S.G.I	EMI/SCFC-486	1
1	ANCHOR SHACKLE	FORGED STEEL	EMI/AS-301	2
NO	DESCRIPTION	MATERIAL		QTY.

Revision	Date	Description	Drawn By	Checked By	Approved By

JYOTI STRUCTURES LIMITED.
MUMBAI, INDIA.

PURCHASER
(KETRACO)
KENYA ELECTRICITY TRANSMISSION COMPANY LIMITED

CONTRACT NO
KETRACO/PT/017/2011

PROJECT
CONSTRUCTION OF 400KV DOUBLE CIRCUIT
TRANSMISSION LINE, ISINYA-SUSWA

CONSULTANT
POWER ENGINEERS, USA.

MANUFACTURER
EMI TRANSMISSION LIMITED
101, CENTRE POINT BUILDING, PAREL
(MUMBAI, INDIA)

TITLE
SUSPENSION ASSEMBLY
FOR 7/326mm EARTHWIRE.

DRG. NO
EMI/EMSCFC-16070

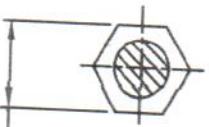
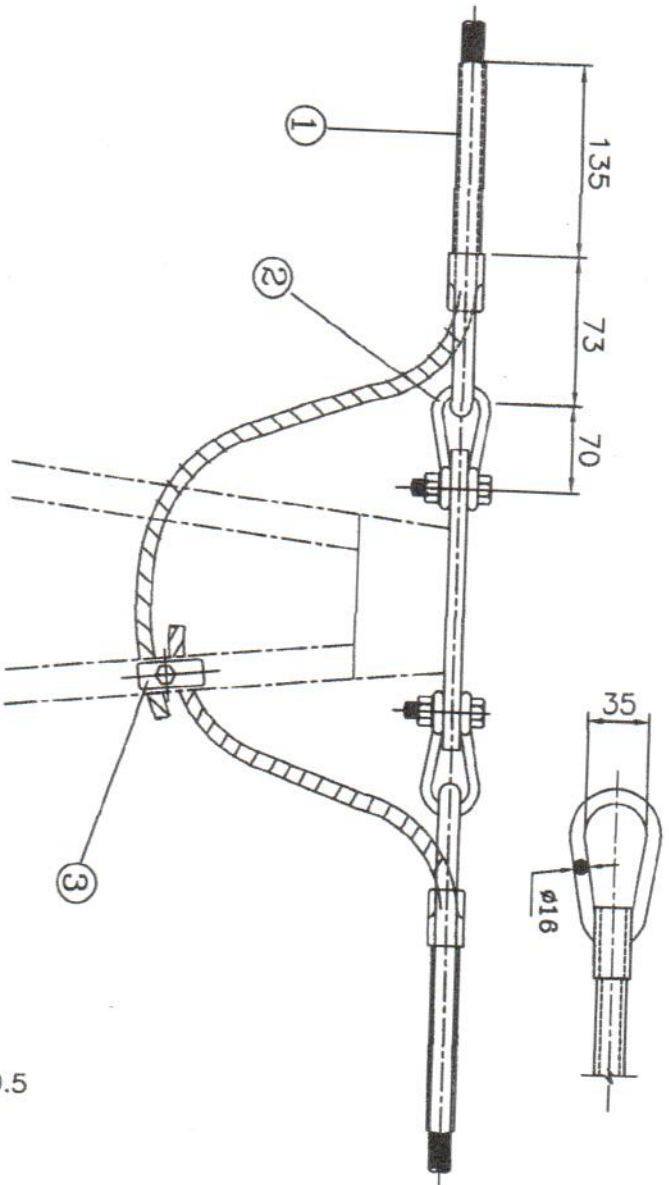
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K SHEKHAR

Checked By.

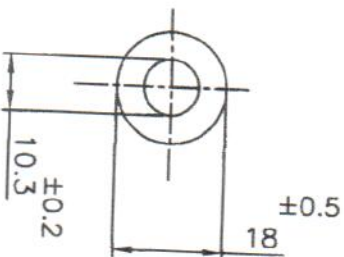
Approved By.

Scale.

NTS.



±0.5
15.1



±0.2
10.3

AFTER COMPRN.

BEFORE COMPRN.

TECHNICAL DATA:

- 1) ALL DIMENSIONS ARE IN mm.
- 2) GENERAL TOLERANCES : $\pm 3\%$.
- 3) TOTAL WEIGHT : 3.0 KG. (APPROX.)
- 4) ALL FERROUS PARTS ARE HOT DIP GALVANIZED, AS PER BS EN ISO-1461.
- 5) CAPACITY HYDRAULIC COMPRESSOR : 100 TON
- 6) SLIP STRENGTH : 95% OF UTS OF EARTHWIRE



JYOTI STRUCTURES LIMITED.
MUMBAI, INDIA.

PURCHASER
(KETRACO)
KENYA ELECTRICITY TRANSMISSION COMPANY LIMITED

CONTRACT NO
KETRACO/PT/017/2011

PROJECT
CONSTRUCTION OF 400KV DOUBLE CIRCUIT
TRANSMISSION LINE, ISINYA-SUSWA

CONSULTANT
POWER ENGINEERS, USA.



EMI TRANSMISSION LIMITED
101, CENTRE POINT BUILDING, PAREL
(MUMBAI, INDIA)

TITLE
TENSION CLAMP ASSEMBLY
FOR 7/3.26 mm GSW EARTHWIRE

DRG. NO
EMI/EWTC-35135 9.78

Drawn By
Checked By.

K SHELAR

Approved By.

Scale.

NTS.

3	GROUNDING CLAMP	FORGED STEEL/MCI	EMI/EWGC-405710- ϕ 9.78	1
2	ANCHOR SHACKLE	FORGED STEEL	EMI/AS-301	2
1	LINK TYPE TENSION CLAMP	FORGED STEEL	EMI/LTA-1635135	2
NO	DESCRIPTION	MATERIAL	DRG.NO	QTY

Technical drawing of a cable-stayed bridge. The drawing shows the main span, approach spans, and various components labeled with numbers 1 through 6. A table of reference weights is provided on the right.

RTS [kg]	REFERENCE
6500	RAAW 16/P + EPAW 10/Q/2200
7000	RAAW 16/P + EPAW 10.5/Q/2200
7500	RAAW 17/P + EPAW 11/Q/2200
9000	RAAW 18.5/P + EPAW 12/Q/2600
9000	RAAW 19/P + EPAW 12.5/Q/2600
9500	RAAW 20/P + EPAW 13.3/Q/2600
12000	RAAW 21/P + EPAW 14/Q/2600
12000	RAAW 21.5/P + EPAW 15/Q/2600
12000	RAAW 22.5/P + EPAW 16/Q/2600

Labels in the drawing:

- 1: Main span cable
- 2: Approach span cable
- 3: Cable anchor
- 4: Cable anchor
- 5: Cable anchor
- 6: Cable anchor

Alternative fixation to tower:

Diagram showing an alternative fixation to the tower, labeled with dimensions $\phi 16$ and $\phi 15$.

Diagram illustrating an alternative fixation to a tower. The structure is a diamond shape with four circular openings. It is shown being attached to a horizontal support (tower) via two sets of hardware (bolts and washers) at the top and bottom vertices. A label #16 points to the top vertex connection.

REV	DATE	DESCRIPTION



PRYSMIAN
CABLES & SYSTEMS

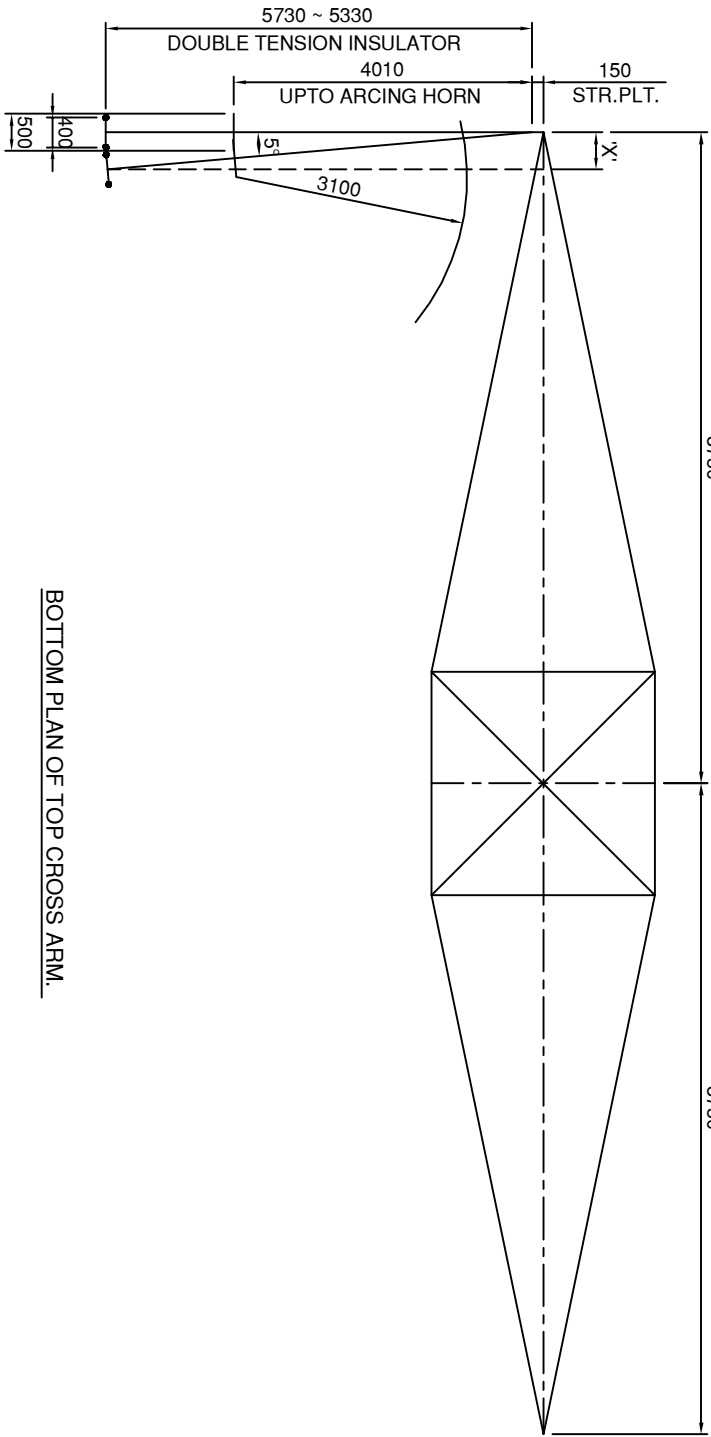
SPlicing Tension Assembly for OPGW Cable

28.025.LDD

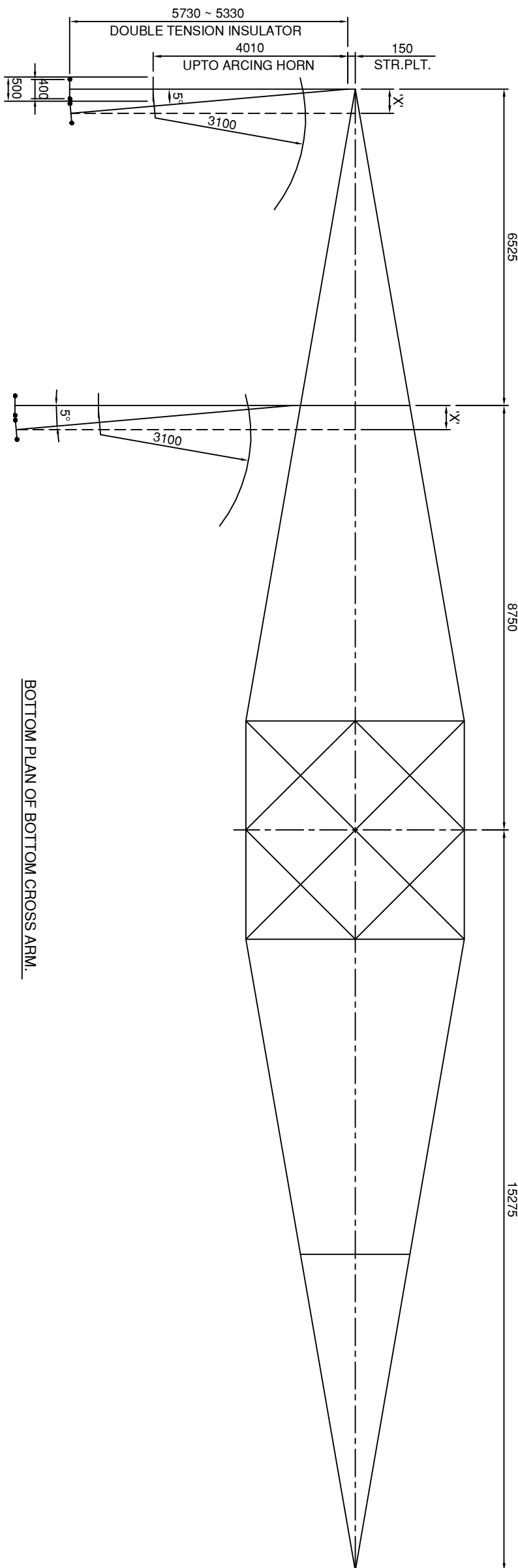
RTS Kg]	REFERENCE
5500	RAAW 16/P + EPaw 10/Q/2200
7000	RAAW 16/P + EPaw 10.5/Q/2200
7500	RAAW 17/P + EPaw 11/Q/2200
8000	RAAW 18.5/P + EPaw 12/Q/2600
8500	RAAW 19/P + EPaw 12.5/Q/2600
9000	RAAW 20/P + EPaw 13.3/Q/2600
9500	RAAW 21/P + EPaw 14/Q/2600
10000	RAAW 21.5/P + EPaw 15/Q/2600
10500	RAAW 22.5/P + EPaw 16/Q/2600
11000	RAAW 23.5/P + EPaw 17/Q/2600

ALTERNATIVE FIXATION TO TOWER

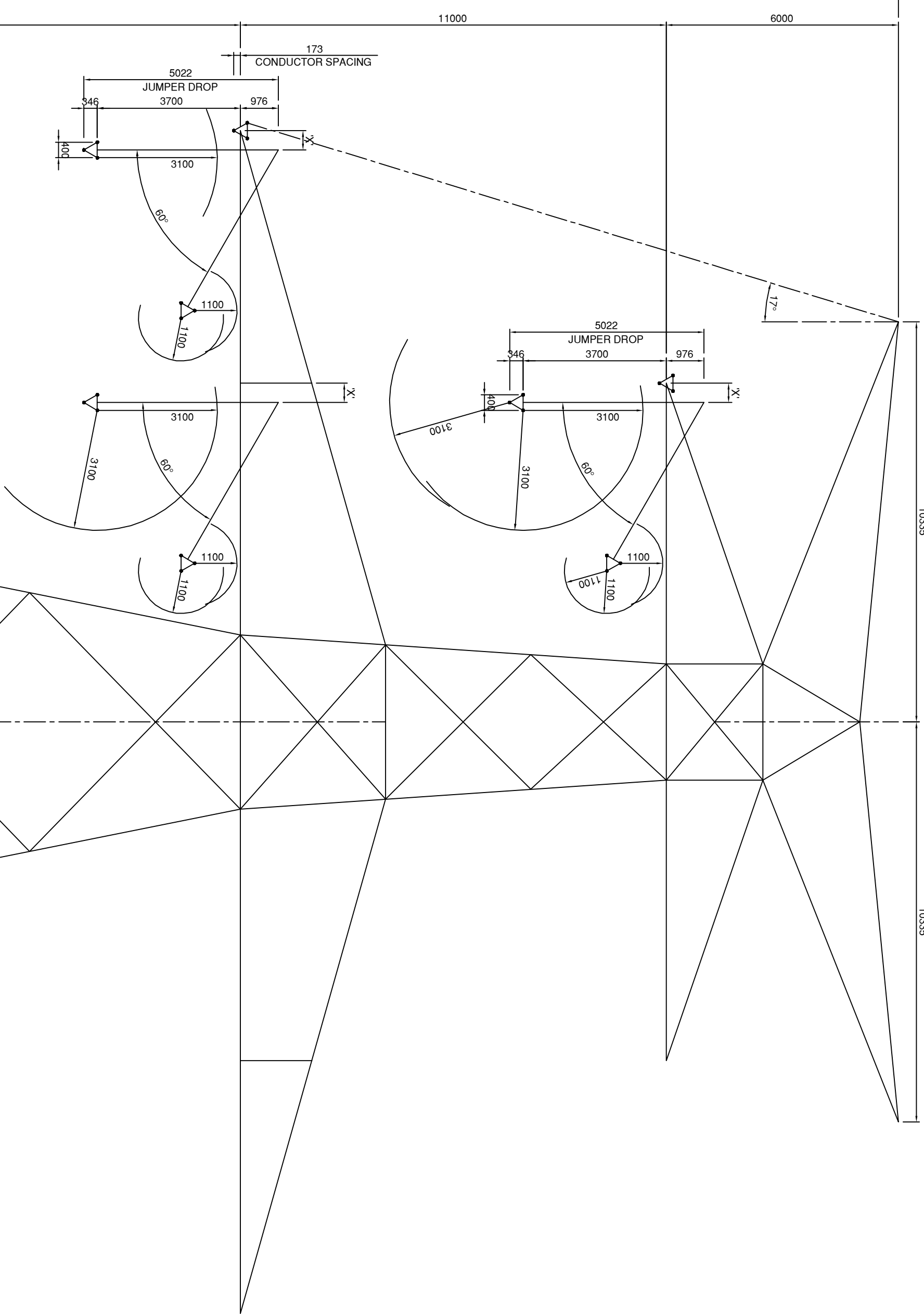
Standard catalog for OPGW fittings (codified)



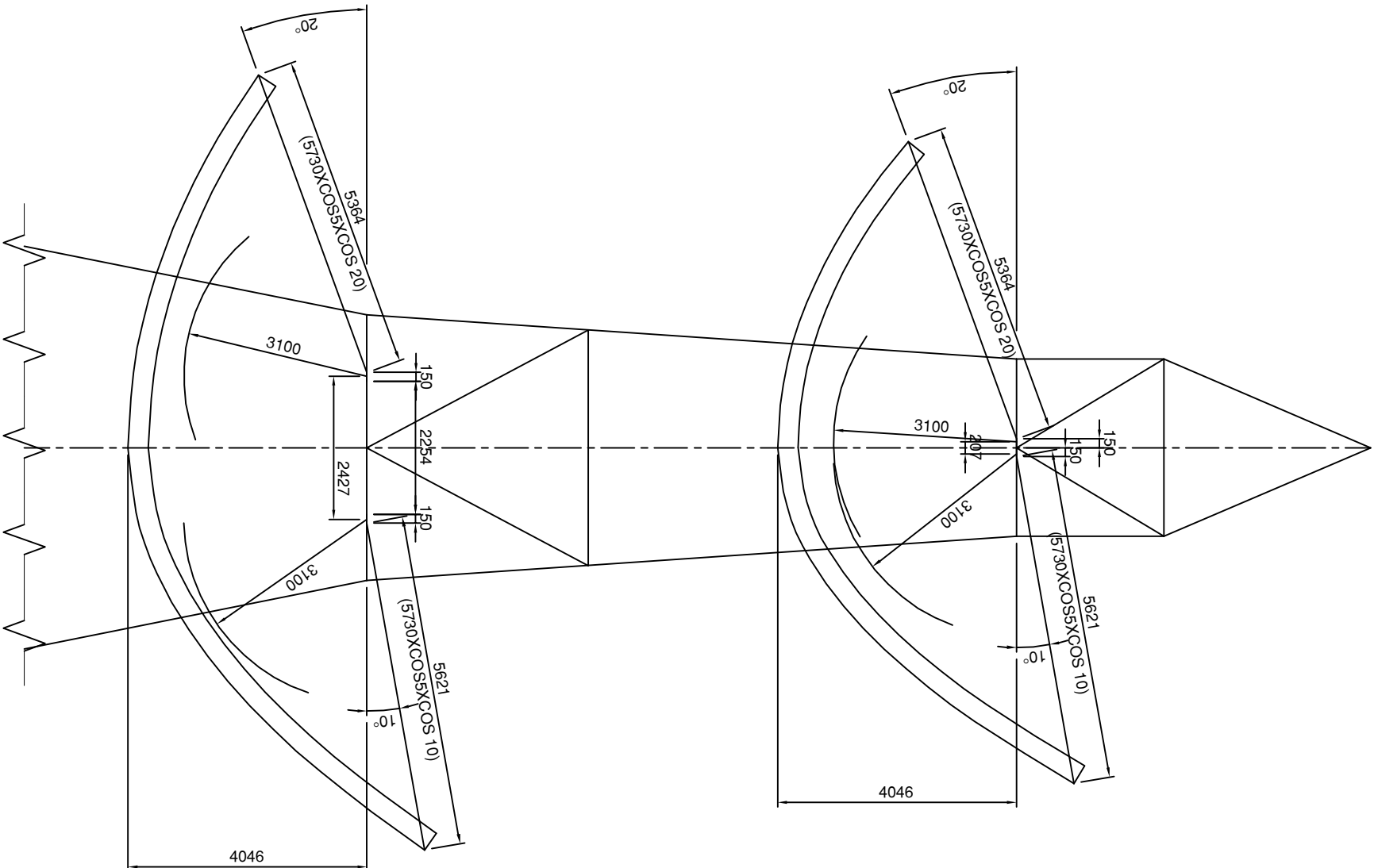
BOTTOM PLAN OF TOP CROSS ARM.



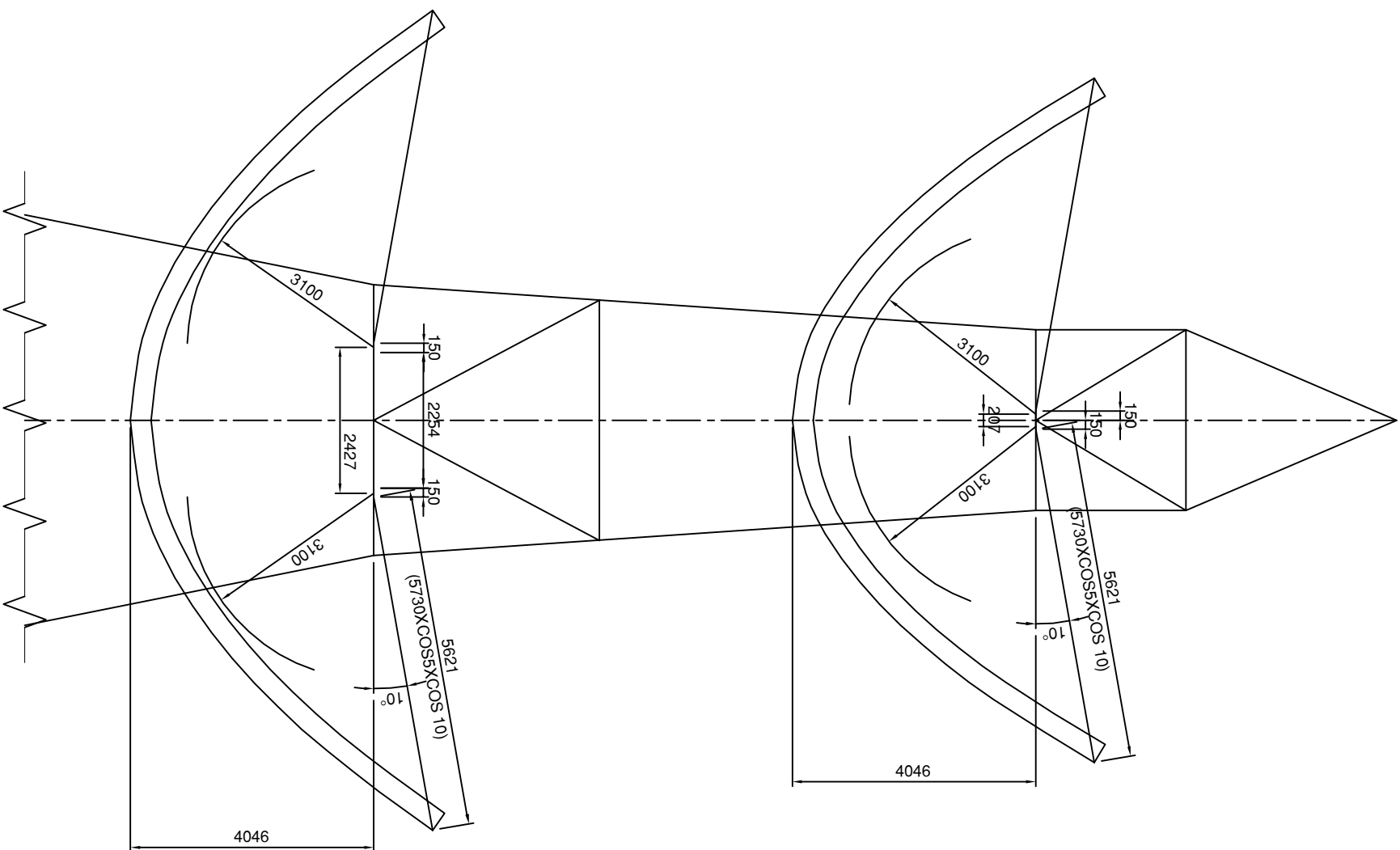
BOTTOM PLAN OF BOTTOM CROSS ARM.



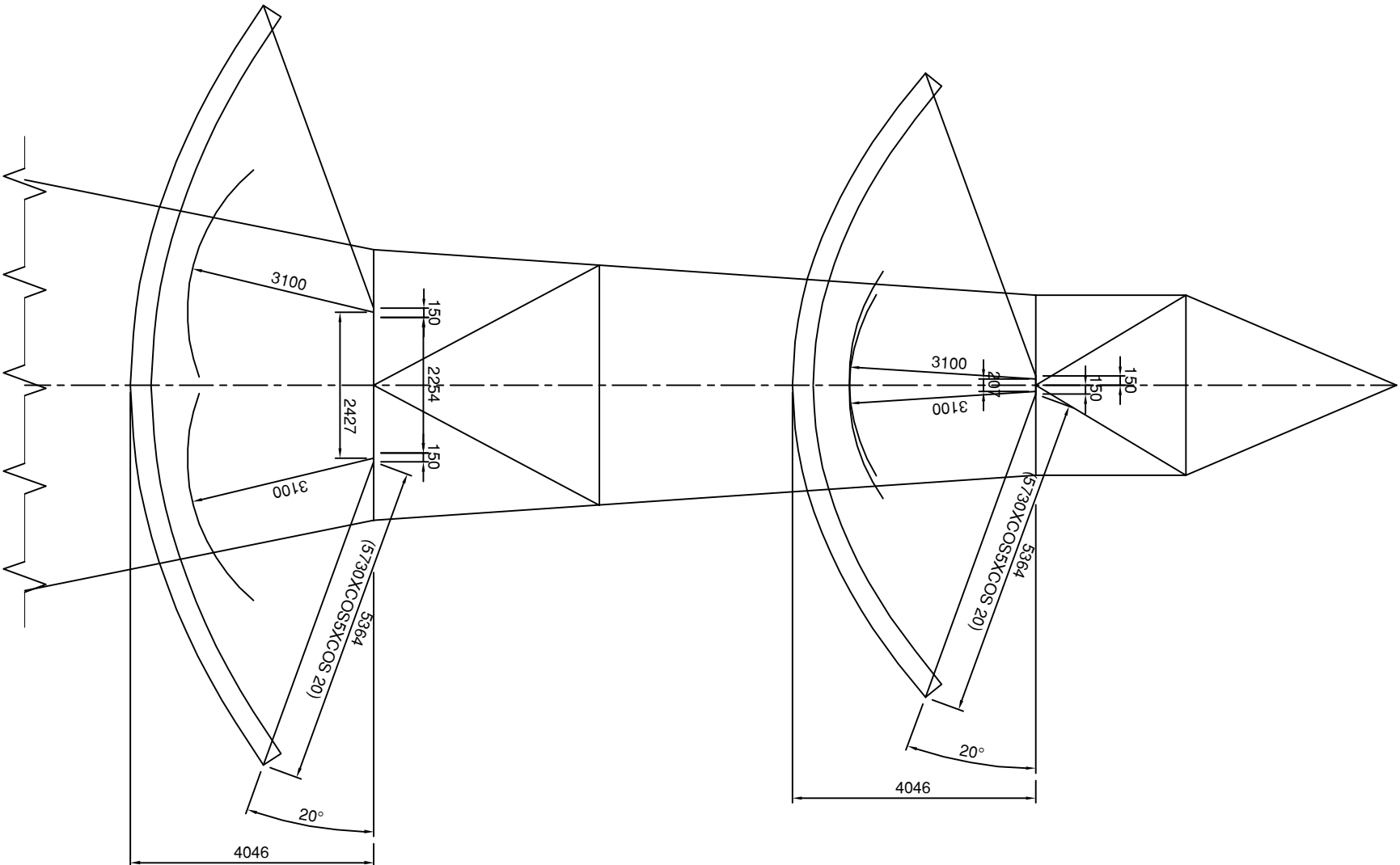
JUMPER ARRANGEMENT FOR
ONE SIDE 20° DOWN DROP CONDUCTOR &
OTHER SIDE 10° UPLIFT CONDUCTOR.



JUMPER ARRANGEMENT FOR
BOTH SIDE 10° UPLIFT CONDUCTOR.



JUMPER ARRANGEMENT FOR
BOTH SIDE 20° DOWN DROP CONDUCTOR.




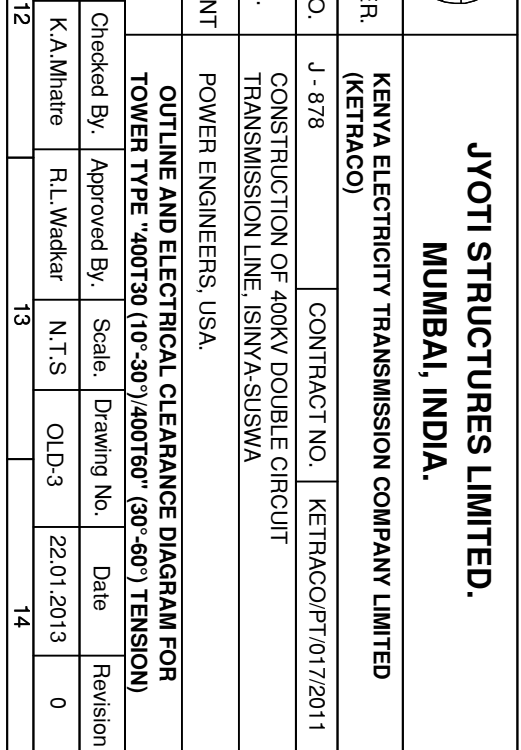
NOTES :-
1. ALL DIMENSIONS ARE IN mm.
2. ELECTRICAL CLEARANCE AND SWING
ANGLES ARE AS PER SPECIFICATION.
3. 'X' - CONDUCTOR SHIFT
4. SUITABLE PROVISION SHALL BE MADE FOR
-1.0 TO -6.0MT TELLER MADE LEG EXTENSIONS.
5. MINIMUM GROUND CLEARANCE REQUIRED IS 8.1M FOR NORMAL GROUND.
6. MAXIMUM CONDUCTOR SAG WITH CREEP SHALL BE CONSIDERED
DURING SPOTTING OF THE TOWER ON PROFILES AND ACCORDINGLY
EITHER SPAN SHALL BE ADJUSTED OR ADDITIONAL BODY/LEG EXTENSIONS
SHALL BE PROVIDED WHEREVER REQUIRED TO GET REQUISITE GROUND
CLEARANCE OF 8.1M FOR NORMAL GROUND.

OVERALL TOWER HEIGHT (STANDARD HEIGHT TOWER) = 39750
HEIGHT ABOVE GROUND OF BOTTOM CONDUCTOR CROSS ARM (STANDARD HEIGHT TOWER)

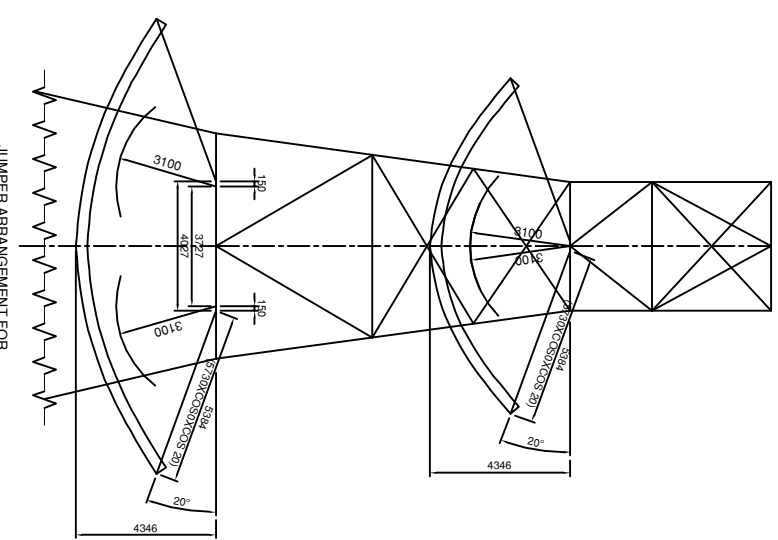
TRANSVERSE FACE

TRANSVERSE FACE

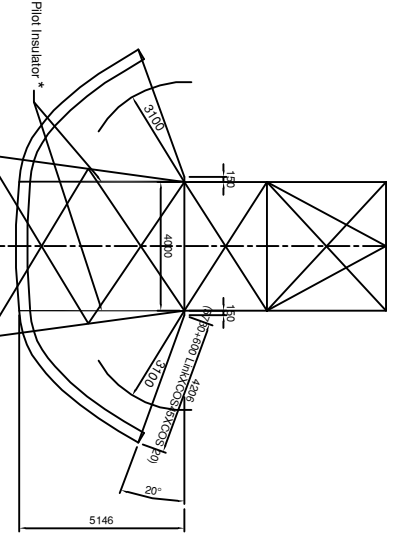
1	25.01.2013	Revised as per Consultant's comments.				Z.F.O.	K.A.M.	R.L.W.
Revision:	Date:	Description:				By:	Checked By:	Approved By:
		JYOTI STRUCTURES LIMITED.						
		MUMBAI, INDIA.						
PURCHASER:		KENYA ELECTRICITY TRANSMISSION COMPANY LIMITED (KETRACO)						
JSL W.O.NO.		J - 878	CONTRACT NO.		KETRACOP/T/017/2011			
PROJECT:		CONSTRUCTION OF 400KV DOUBLE CIRCUIT TRANSMISSION LINE, ISINYA-SUSUMA						
CONSULTANT:		POWER ENGINEERS, USA.						
TITLE:		OUTLINE AND ELECTRICAL CLEARANCE DIAGRAM FOR TOWER TYPE "400T10" (0°-10° TENSION)						
Drawn By:	Checked By:	Approved By:	Scale:	Drawing No.	Date	Revision		
Q.Zohab	K.A.Mhairs	R.L.Wadkar	N.T.S	OLD-2	30.08.2012	1		



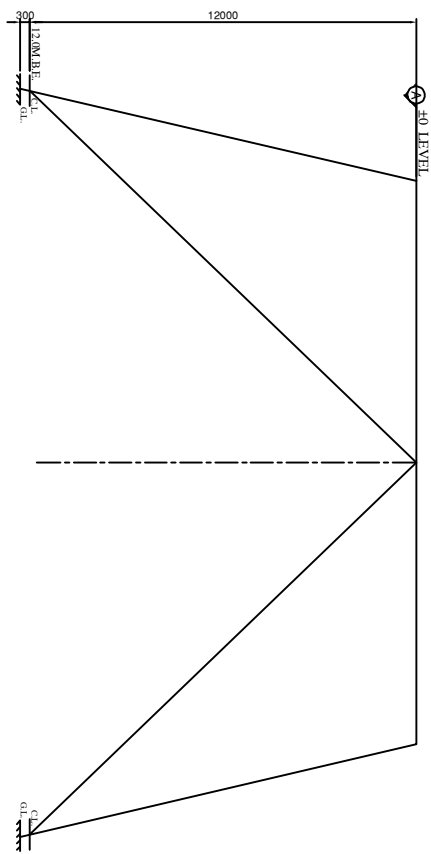
BOTTOM PLAN OF BOTTOM CROSS ARM.




JUMPER ARRANGEMENT FOR
BOTH SIDE 20" DOWN DROP CONDUCTOR,
FOR RIGHT SIDE CROSS ARM



TRANSVERSE FACE

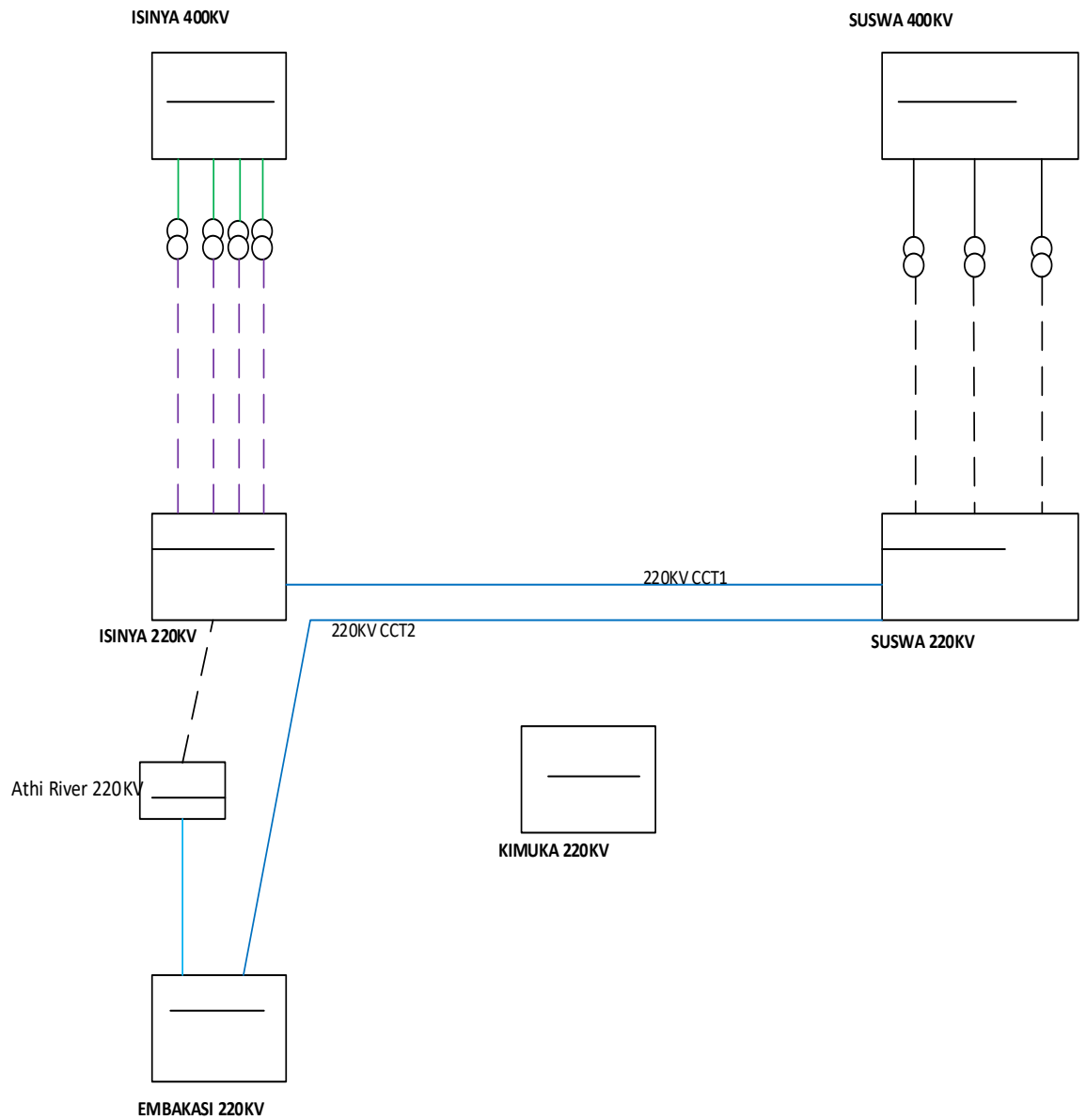


- NOTES:**
1. ALL DIMENSIONS ARE IN mm.
 2. ELECTRICAL CLEARANCE AND SWING ANGLES ARE AS PER SPECIFICATION.
 3. SURTABLE PROVISION SHALL BE MADE FOR +1.0 TO +6.0M TELLER MAINTENANCE LEAD EXTENSIONS.
 4. 5 NOS PLOT INSULATORS ARE REQUIRED PER TOWER
 5. MINIMUM GROUND CLEARANCE REQUIRED IS 5.1M FOR NORMAL GROUND.
 6. MAXIMUM GROUND CLEARANCE REQUIRED SHALL BE CONSIDERED DURING SPOTTING OF THE TOWER ON PROFILES AND ACCORDINGLY EITHER SPAN SHALL BE ADJUSTED OR ADDITIONAL BODY LEAD EXTENSIONS SHALL BE PROVIDED WHEREVER REQUIRED TO GET REQUISITE GROUND CLEARANCE OF 8.1M FOR NORMAL GROUND.

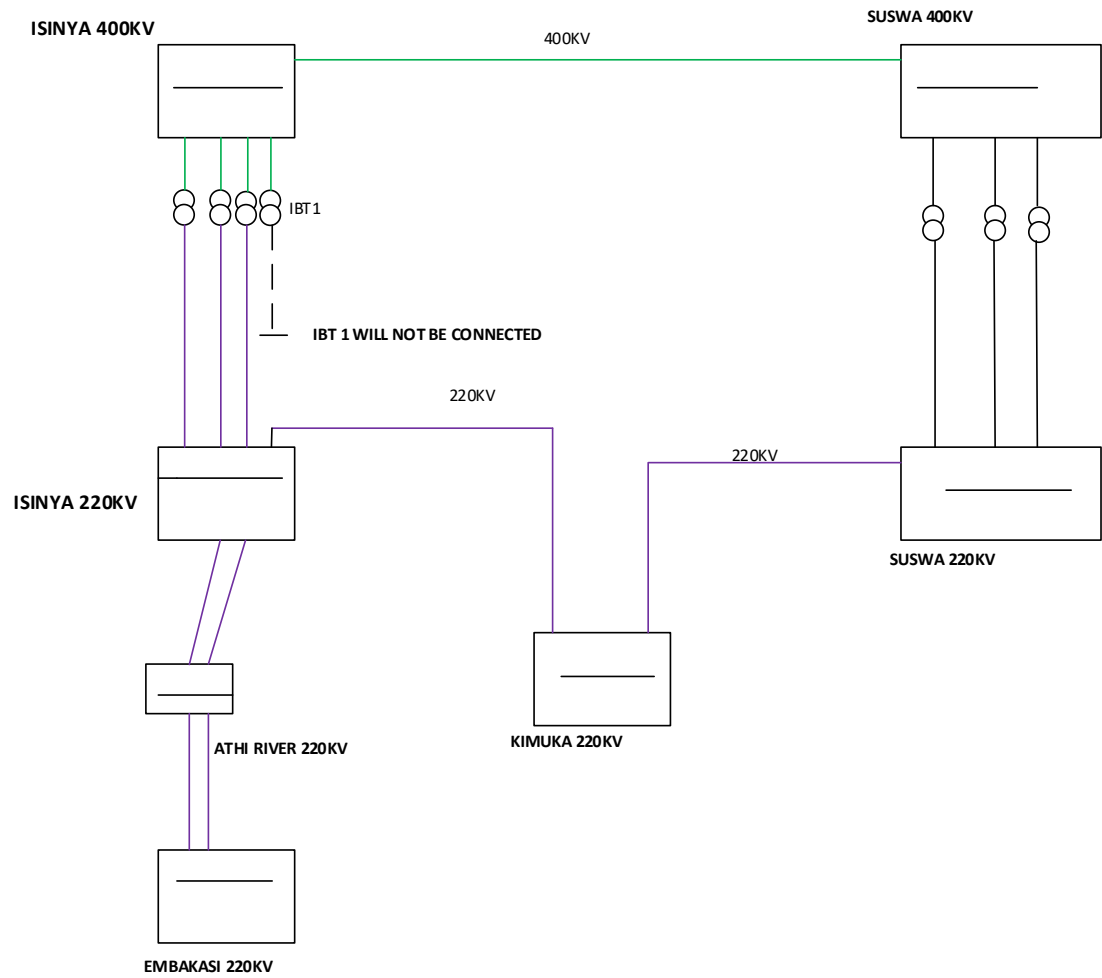
		JYOTI STRUCTURES LIMITED, MUMBAI, INDIA.			
PURCHASER,		KENYA ELECTRICITY TRANSMISSION COMPANY LIMITED (KETRAPCO)			
JSL W/O.NO.		J-878	CONTRACT NO.	KETRAPCO/PT/017/2011	
PROJECT.		CONSTRUCTION OF 400KV DOUBLE CIRCUIT TRANSMISSION LINE, ISINYA-SUSUMA			
CONSULTANT		POWER ENGINEERS, USA.			
TITLE.		OUTLINE AND ELECTRICAL CLEARANCE DIAGRAM FOR TOWER TYPE "400T90 (60°-90°) 400TRM (0°-45°) TENSION"			
Drawn By.	Checked By.	Approved By.	Scale.	Drawing No.	Date
Q.Zahab	K.A.Maire	R.L.Wackar	N.T.S	OLD-4	29.03.2013
					Revision
					0

SUSWA-KIMUKA -ISINYA PRESENT, FUTURE AND KESIP SCOPE

1. Current configuration



2. Future configuration (2021)



3. KESIP scope

