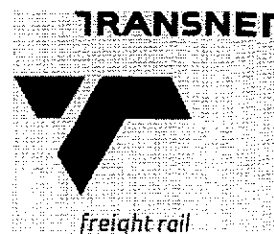


# RFQ / TENDER

Tender No: HAM 68



Vendor No: 11001386

BOARD LIST  
BOARD LIST  
TRANSNET FREIGHT RAIL  
PROCUREMENT DEPARTMENT  
2000

Purchaser : Helena Mauger  
Telephone : 011 584 0604  
Fax Number : .

Please quote reference:  
DD3/6000566653

Deliver to:  
TFR Head Office  
Supply Chain Services  
2000 Johannesburg

Closing Date : 24.05.2011  
Validity Date : 26.08.2011  
RFQ No : 6000566653

## 1. RETURN OF QUOTATION/S:

1.1 QUOTATION/S MUST BE SUBMITTED PUNCTUALLY AT 10:00 ON THE CLOSING DATE AND LATE QUOTATIONS WILL NOT BE CONSIDERED, AND MUST BE ENCLOSED IN A SEALED ENVELOPE WHICH MUST HAVE INSCRIBED ON THE OUTSIDE: TENDER NO: HAM 68, DESCRIPTION: FALL PROTECTION SERVICES CLOSING DATE AND TIME: 24 MAY 2011 AT 10:00 HOURS

### 1.2 IF POSTED:

SECRETARY (TRANSNET ACQUISITION COUNCIL)  
PO BOX 4244  
JOHANNESBURG  
2000

### 1.3 IF DELIVERED BY HAND:

SECRETARY (TRANSNET ACQUISITION COUNCIL)  
GROUND FLOOR  
21 WELLINGTON ROAD  
PARKTOWN  
2193

## 2. CONDITIONS:

- 2.1, ANY PURCHASE ORDER PLACED AS A RESULT OF YOUR QUOTATION WILL BE SUBJECT TO THE STANDARD TERMS AND CONDITIONS OF CONTRACT, FORM US7, (LATEST), GENERAL TENDER CONDITIONS, FORM CSS5 (LATEST ) AND CONDITIONS MENTIONED HEREIN.
- 2.2, TENDERERS MAY OFFER AN EARLIER VALIDITY DATE, BUT THEIR QUOTATION MAY, IN THAT EVENT, BE DISREGARDED FOR THIS REASON.
- 2.3, TENDERERS ARE REQUIRED TO OFFER ONLY FIRM PRICES.
- 2.4, BEST DELIVERY TIME MUST BE OFFERED.
- 2.5, DISCOUNT (TRADE DISCOUNT) CASH DISCOUNT (CONDITIONAL DISCOUNT) VALUE ADDED TAX (VAT) MUST BE SHOWN SEPARATELY.
- 2.6, TRANSNET RESERVES THE RIGHT TO NEGOTIATE PRICES AND COMMERCIAL ASPECTS AFTER THE CLOSING DATE OF THE QUOTATION.

DATE: ..... SIGNATURE OF TENDERER(S): .....  
CONTACT PERSON: ..... TEL No: .....

# RFQ / TENDER

Tender No : HAM 68  
Date : 11.05.2011

Page  
2

BOARD LIST  
TRANSNET FREIGHT RAIL  
PROCUREMENT DEPARTMENT

2.7. DIRECT DELIVERY INTIMATES DELIVERY BEING EFFECTED TO THE ACTUAL POINT OF SUPPLY AND SHOULD THEREFORE INCLUDE ANY TRANSPORTATION MODE DEEMED NECESSARY IN EXECUTING THIS METHOD OF DELIVERY BASIS IN ORDER TO MEET THE REQUIRED DELIVERY DATE.

## TAX CLEARANCE CERTIFICATES:

The Regulations in terms of the Public Finance Management Act, 1999: Framework for Supply Chain Management as published in Government Gazette No. 25767 dated 5 December 2003, Clause 9 (1) (d), stipulates that the accounting officer or accounting authority of an institution to which these regulations apply must reject any bid from a supplier who fails to provide written proof from the South African Revenue that the supplier either has no outstanding tax obligations or has made arrangements to meet outstanding tax obligations. Tenderers will be disqualified if a valid tax clearance certificate or written proof from the South African Revenue Service that supplier has made arrangements to meet outstanding tax obligations is not submitted with the tender.

## BROAD BASED BLACK ECONOMIC EMPOWERMENT (BBBEE)

Transnet fully endorses and supports the Government's Broad-based Black Economic Empowerment Programme and it is strongly of the opinion that all South African Business Enterprises have an equal obligation to redress the imbalances of the past. Transnet will therefore prefer to do business with local business enterprises who share these same values. Transnet will endeavour to do business with local business enterprises that possess a BBBEE "recognition level" of at least a level 5. Transnet urges Tenderers (large enterprises and QSE's - see below) to have themselves accredited by any one of the various Accreditation Agencies available, who do their BBBEE ratings in accordance with the latest Codes (i.e. those promulgated on 9 February 2007) and whose names appear on the present ABVA (Association of BEE Verification Agencies) - "List of Full Members" as displayed on the ABVA website ([www.abva.co.za](http://www.abva.co.za)). Although no agencies have, as yet, been accredited by SANAS (SA National Accreditation System), Transnet will, in the interim, accept rating certificates of tenderers who have been verified by any of the listed agencies.

Enterprises will be rated by such agency based on the following:

1. Large Enterprises (i.e. annual turnover >R35million):  
Rating level based on all seven elements of the BBBEE scorecard.

2. Qualifying Small Enterprises - (QSE) (i.e. annual turnover >R5million but <R35million):  
Rating based on any four elements of the BBBEE scorecard.

NB:

3. Emerging Micro Enterprises - (EME) (i.e. annual turnover <R5m) are exempted from being rated/verified:

Automatic rating of Level 4 BBBEE irrespective of race of ownership, i.e.: 100% BBBEE recognition

Black ownership >50% or Black Women ownership >30% automatically qualifies as Level 3 BBBEE, i.e.: 110% BBBEE recognition

EME's should provide certified documentary proof of annual turnover (i.e. audited financials) plus proof of Black ownership if Black

ownership >50% or Black Women ownership >30% from the EME's Auditor/Accounting Officer.

4. In addition to the above, Tenderers who wish to enter into a Joint Venture or subcontract portions of the contract to BBBEE companies, must state in their tenders the percentage of the total contract value that will be allocated to such BBBEE companies, should they be successful in being awarded any business. A rating certificate in respect of such BBBEE JV-partners and / or sub-contractor/s, as well as a breakdown of the distribution of the aforementioned percentage must also be furnished

In view of the high emphasis which Transnet places on Broad-based Black Economic Empowerment, Transnet will allow certain preference points for BBBEE in the evaluation of all responses. Depending upon the value of the ensuing business award (i.e. below or in excess of R2m), the 80/20 or 90/10 point preference systems will be utilized where BBBEE will count out of 20 or 10 respectively in the evaluation process.

DATE: .....

SIGNATURE OF TENDERER(S): .....

# RFQ / TENDER

Tender No : HAM 68 Page  
Date : 11.05.2011 3

BOARD LIST  
TRANSNET FREIGHT RAIL  
PROCUREMENT DEPARTMENT

**EACH RESPONDENT IS REQUIRED TO FURNISH PROOF OF THE ABOVE TO TRANSNET. FAILURE TO DO SO WILL RESULT IN A SCORE OF ZERO BEING ALLOCATED FOR BBEE.**

Turnover: Kindly indicate your company's annual turnover for the past year R \_\_\_\_\_

If annual turnover <R5m, please attach certified confirmation from your Auditor/Accounting Officer

If annual turnover >R5m please attach original or certified copy of accreditation certificate and detailed scorecard by an ABVA accreditation agency (registered as a "Full Member")

## PAYMENT TERMS

The following payment terms will apply as from 1 October 2008.

All suppliers will be paid 30 days from receipt of month end statement, i.e. payment term F055.

All CIDB suppliers will be paid 21 days from date of invoice, i.e. payment term F057.

## CONDITIONS:

This quotation is subject to the provisions of the Standard Terms and Conditions of Contract, Form US7, (Latest) and the General Tender Conditions, Form CSS5 (Latest) and any other standard or special conditions mentioned and/or embodied in the quotation request.

DATE: .....

SIGNATURE OF TENDERER(S): .....

# RFQ / TENDER

Tender No: HAM 68 Page  
Date : 11.05.2011 4

BOARD LIST  
TRANSNET FREIGHT RAIL  
PROCUREMENT DEPARTMENT

**SCHEDULE OF REQUIREMENTS**  
**TENDERERS SHOULD INSERT THEIR PRICES UNDER THE APPROPRIATE HEADINGS HEREUNDER.**

**IN THIS REGARD THE TENDERER'S ATTENTION IS DIRECTED TO PARAGRAPH 16 OF FORM CSS5 (LATEST).**

**NB. TENDERERS OFFERING GOODS FROM IMPORTED SUPPLIES MUST SUBMIT THEIR PRICES ON THE DELIVERY BASIS APPEARING UNDER COLUMN (C) OF THIS SCHEDULE OF REQUIREMENTS.**

Item	Qty	Material	Description
------	-----	----------	-------------

00010	1		Fall protection services
-------	---	--	--------------------------

R.....  
Each

Delivery Date: 31.08.2011

**FULL DETAILS OF DESCRIPTION**

Item 1: A report recommending a practically executable test procedure - Overhead Electrification wires as anchor lines  
A BRIEFING SESSION WILL BE HELD ON 16 MAY 2011 AT 10:00 AT INYANDA  
NO 3 SECOND FLOOR 12A GIRTON ROAD PARKTOWN, BOARDROOM NAME TO BE ADVISED. FAILURE TO ATTEND THE BRIEFING SESSION WILL DISQUALIFY TENDERERS. REQUIREMENTS ARE TO BE IN ACCORDANCE WITH TECHNICAL REQUIREMENTS ATTACHED FOR TECHNICAL RELATED MATTERS, PLEASE CONTACT MR CHARL DU TOIT ON TELEPHONE NO 011-583-0143 PROSPECTIVE TENDERERS NEED TO BE REGISTERED WITH SANS "WORKING AT HEIGHTS" PROOF OF REGISTRATION NEED TO BE SUBMITTED WITH TENDER

00020	1		Fall protection services
-------	---	--	--------------------------

R.....  
Each

Delivery Date: 31.08.2011

**FULL DETAILS OF DESCRIPTION**

Item 2: A report recommending alternative fall arrest methods should the Overhead lines not be suitable.

00030	1		Fall protection services
-------	---	--	--------------------------

R.....  
Each

Delivery Date: 31.08.2011

**FULL DETAILS OF DESCRIPTION**

Item 3: A report recommending a suitable self rescue system in the event of a person being suspended from a fall arrestor.

00040	1		Fall protection services
-------	---	--	--------------------------

R.....  
Each

Delivery Date: 31.08.2011

DATE: .....

SIGNATURE OF TENDERER(S): .....

# RFQ / TENDER

Tender No : HAM 68 Page  
Date : 11.05.2011 5

BOARD LIST  
TRANSNET FREIGHT RAIL,  
PROCUREMENT DEPARTMENT

Item	Qty	Material	Description
------	-----	----------	-------------

**FULL DETAILS OF DESCRIPTION**

Item 4: A report Recommended a fall protection system for working "LIVE"(HOTWORK)

00050 1 Fall protection services

Delivery Date: 31.08.2011

R.....  
Each

**FULL DETAILS OF DESCRIPTION**

Item 5: A risk analysis based on the work method and recommended fall prevention apparatus.

00060 40:000 Assistance

Delivery Date: 31.08.2011

R.....  
Hour

**FULL DETAILS OF DESCRIPTION**

Item 6: Assistance in the field with performing such tests of actual installations

00070 1 Sundries

R.....  
Each

Delivery Date: 31.08.2011

**FULL DETAILS OF DESCRIPTION**

Item 7: Sundries tenderer to specify.

“Preview Copy”

DATE: .....

SIGNATURE OF TENDERER(S): .....

.....



**Transnet Freight Rail**  
**FALL PROTECTION SERVICE FOR RAILWAY ELECTRIFICATION**

**SCOPE**

The requirements for the service involves the following:

1. A report is required which recommends a practically executable test procedure which will establish if overhead electrification wires are suitable to act as anchor lines for attaching fall arrestors.
2. Recommendation of an alternative fall arrest method, should the overhead lines not be suitable.
3. Recommend a suitable self-rescue system in the event of a person being suspended from a fall arrestor.
4. Recommend a fall protection system for working "live" (hotwork).
5. A risk analysis based on the work method and recommended fall prevention apparatus.
6. Assistance in the field with performing such tests of actual installations.

**BACKGROUND**

7. Transnet Freight Rail maintains overhead electrification lines of various designs for electric railway traction.
8. Work procedures at height involves Mobile aerial working platforms, Trestle ladders and Extension ladders. For the purpose of this service the focus is on working with extension ladders.
9. The overhead lines are installed in spans between 30 and 70m long. Structures are either steel or concrete. At these structures there are a variety of attachment points.
10. In between structures there are conductors installed with a variety of components which require maintenance, hence access is necessary.
11. The present approved method of working involve ascending to the overhead equipment, attaching a fall arrestor to a conductor, and proceeding to work. This present two issues:
  - The worker is exposed to fall while ascending and descending the ladder
  - The function of the overhead wires are not proven as sufficient to perform the function of an anchor line.
12. The details of the design is included in this document.

**SERVICE REQUIRED**

13. A written report is required to address the matters listed in the scope above.
14. The system for evaluating the wires as anchor lines must be based on an accepted international standard.
15. Documentary proof of the recommendation being supported by international practice and experience in the railway electrification maintenance field.

**METHOD OF TENDERING**

16. Proof of competence in the field supported by documentary proof of membership of the SANS working at height workgroup, must be submitted.

17. Completion of the following schedule of quantities.

Item	Description	Unit	Price
a	A report recommending a practically executable test procedure - overhead electrification wires as anchor lines.	Item	
b	A report recommending alternative fall arrest methods should the overhead lines not be suitable.	Item	
c	A report recommending a suitable self-rescue system in the event of a person being suspended from a fall arrestor.	Item	
d	A report Recommend a fall protection system for working "live" (hotwork).	Item	
e	A risk analysis based on the work method and recommended fall prevention apparatus.	Item	
f	Assistance in the field with performing such tests of actual installations	Hour	
g	Other Tenderer to specify:		

**ATTACHMENTS:**

Annexure 1: Typical Overhead Wiring Arrangements

END

## STRUCTURES

### UNIVERSAL COLUMNS

206 x 204 rated bending moment of 64 kN-m

216 x 206 rated bending moment of 85 kN-m

### CONDUCTOR STRENGTH

#### ACSR

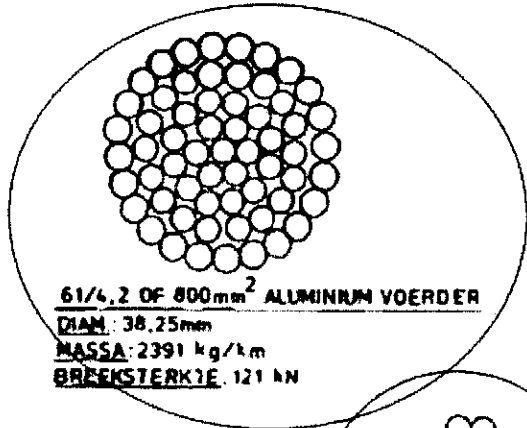
Aluminium Conductor Steel Reinforced - ACSR (British Standard Sizes)																	
Code name	Equal copper area	Stranding and steel diameter	Diameter over steel	Overall diameter (Std)	Aluminium area	Steel area	Total area	Mass kg/km			Ultimate tensile strength	Coefficient of linear expansion	Initial modulus of elasticity	Final modulus of elasticity	DC resistance at 20°C	Current rating	Standard drum length
	mm <sup>2</sup>	mm	mm	mm	mm <sup>2</sup>	mm <sup>2</sup>	mm <sup>2</sup>	Aluminium	Steel	Steel	N/mm <sup>2</sup>	10 <sup>-6</sup> /°C	N/m <sup>2</sup>	N/m <sup>2</sup>	Ω/km	A	m
TIGER	80,65	20/7/2,35	4,72	16,52	131,29	30,82	161,85	364	242	508	58700	18,43	86900	83400	0,2202	420	2000

#### AAC

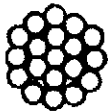
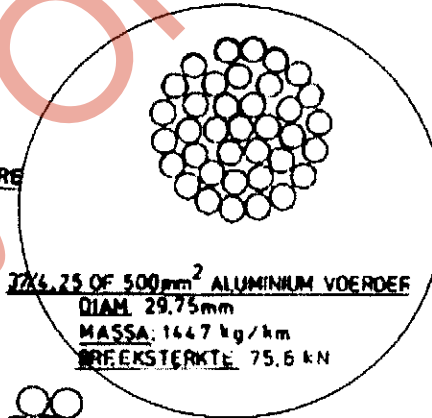
Cockroach – 160mmsq, Scorpion – 500mmsq, Bull – 800mmsq

All Aluminium Conductor - AAC (British Standard Sizes)												
Code name	Equal copper area	Stranding and steel diameter	Overall diameter	Aluminium area	Mass	Ultimate tensile strength	Coefficient of linear expansion	Initial modulus of elasticity	Final modulus of elasticity	DC resistance at 20°C	Current rating	Standard drum length
	mm <sup>2</sup>	mm	mm	mm <sup>2</sup>	kg/km	N/mm <sup>2</sup>	10 <sup>-6</sup> /°C	N/m <sup>2</sup>	N/m <sup>2</sup>	Ω/km	A	m
COCKROACH	161,30	19/4,22	21,10	265,75	733	42700	23	49050	59050	0,1083	632	1500
SCORPION	322,66	37/4,27	39,88	529,94	1460	85000	23	48200	58000	0,0844	987	1000
CICADA	387,10	37/4,65	32,55	628,34	1740	100000	23	48250	58000	0,0459	1070	1000
TARANTULA	483,90	37/5,23	36,61	794,87	2200	129000	23	48250	58000	0,0363	1230	1000
BULL	527,67	61/4,25	38,25	865,36	2400	159000	23	46200	57570	0,0334	1300	1000

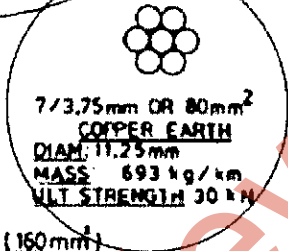
# CONDUCTORS



**6/1/3.35 ACSR (150mm<sup>2</sup>) EARTH WIRE**  
**DIAM 10.05mm**  
**MASS 214 kg/km**  
**ULT. STRENGTH: 18.4 kN**



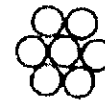
**19/3.75 AL EARTH WIRE (150mm<sup>2</sup>)**  
**DIAM: 16.75mm**  
**MASS: 461 kg/km**  
**ULT. STRENGTH: 74.7 kN**



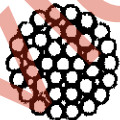
**7/3.75mm OR 80mm<sup>2</sup> COPPER EARTH**  
**DIAM: 11.25mm**  
**MASS: 693 kg/km**  
**ULT STRENGTH 30 kN**



**7/4.2mm OF 100mm<sup>2</sup> KOPER**  
**DIAM 12.6mm**  
**MASSA 88 kg/km**  
**BREEKSTERKTE 38 kN**



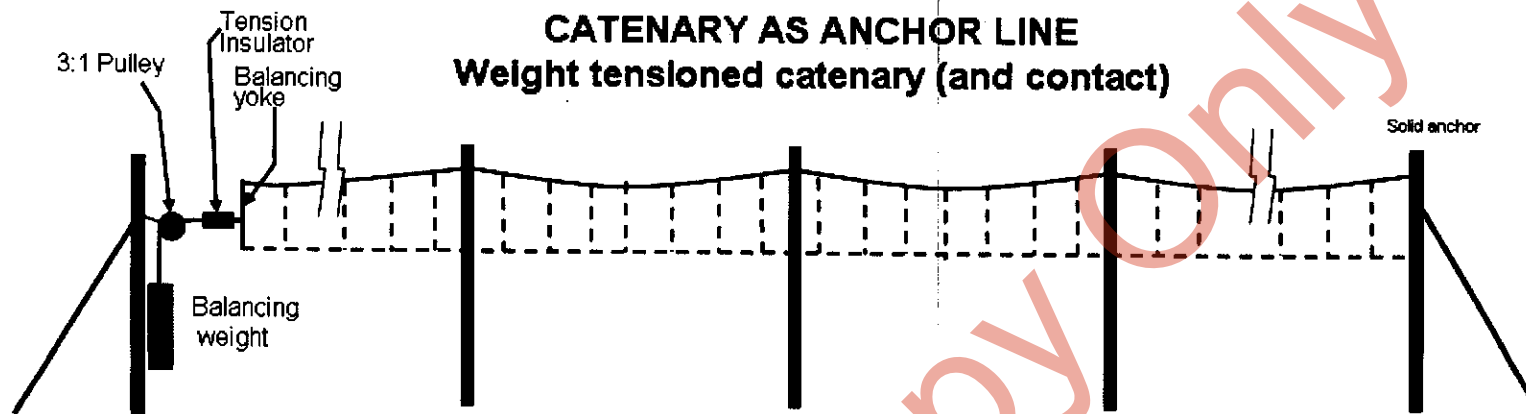
**7/5.46mm OR 160mm<sup>2</sup> COPPER**  
**DIAM 16.4mm**  
**MASS: 1485 kg/km**  
**ULT STRENGTH 61.4 kN**



**37/3.0mm OF 250mm<sup>2</sup> KOPER DRAKABEL OF VOEDER**  
**DIAM 21mm**  
**MASSA: 2368 kg/km**  
**BREEKSTERKTE 103 kN**

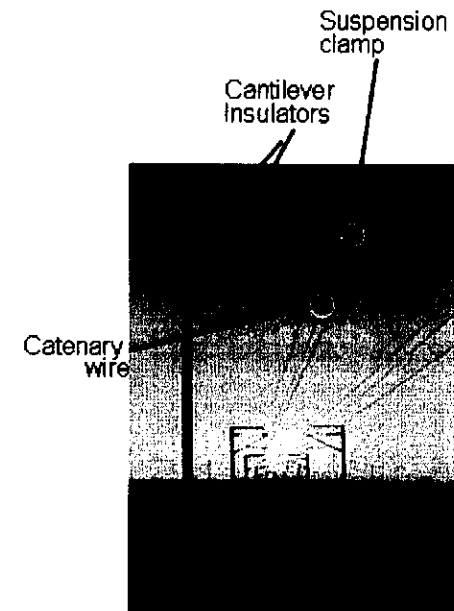


**161mm<sup>2</sup> COPPER CONTACT WIRE**  
**DIAM: 15mm**  
**MASS: 1440 kg/km**  
**ULT. STRENGTH: 66 kN**



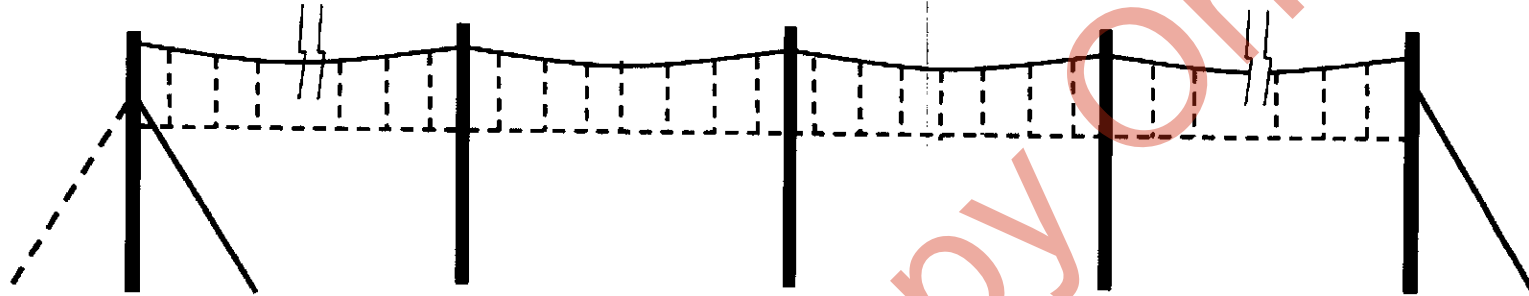
#### Configuration

- Catenary wire automatically tensioned with maximum spans of 70m.
  - (a) Wire size 80mmsq stranded HD copper
    - Max Working load = 11 kN
    - Max Breaking load = (MBS = 30 kN)
  - OR
  - (b) Wire size 160mmsq ACSR
    - Max Working load = 14.5 kN.
    - Max breaking load= 58.7 kN
- Static vertical load: a 107mm<sup>2</sup> copper HD solid wire (951kg/km) with vertical droppers.
- Cantilever insulator (tongue and clevis):
  - Min Tensile Breaking Load : 22.24kN
  - Min Tensile Working Load : 8.89kN
  - Compression load: 23.5kN
  - Min Bending load: 2kN-m
- Tension insulator: Min. tensile breaking load 60kN
- All suspension clamps are cast iron or mild steel components, .

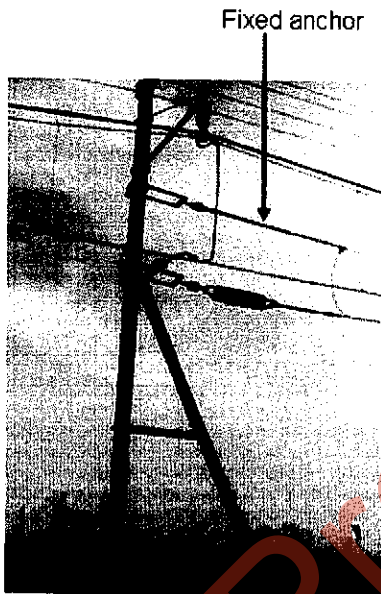


## CATENARY AS ANCHOR LINE

Fixed anchor Catenary, without feeder (usually yard lines)



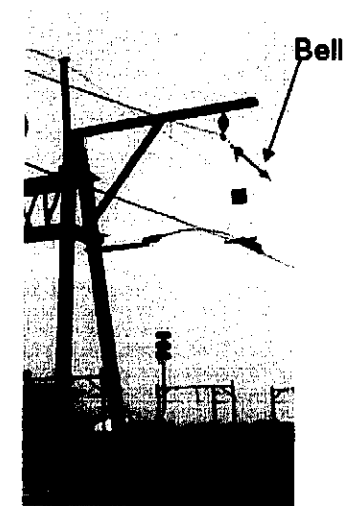
6 of 7



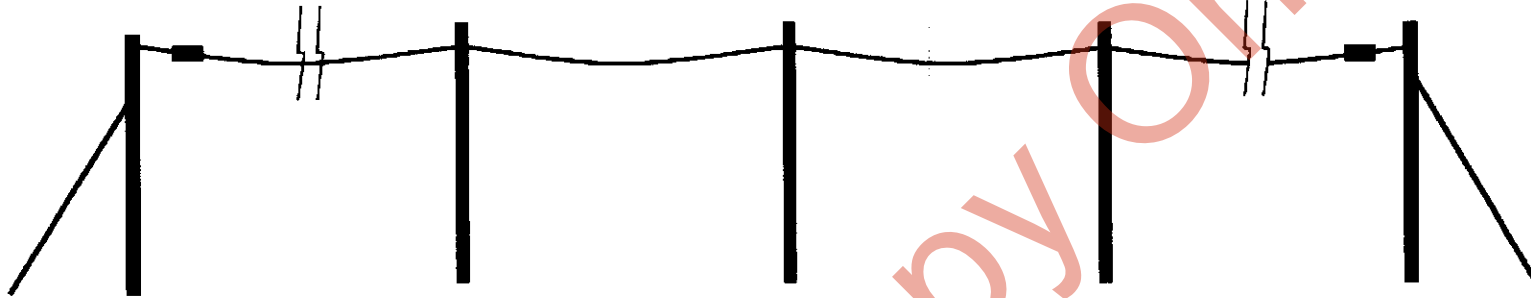
### Configuration

- Catenary anchor line, loaded with a 160mm<sup>2</sup> copper HD solid wire (1430kg/km) with vertical droppers
- Wire size
  - (a) 80mm<sup>2</sup> HD copper. (MBS = 30 kN)
  - (b) 160mm<sup>2</sup> sq ACSR (MBS = 58,7kN)
- Maximum spans 67m.
- Tension of catenary at 25°C
- Tension spec' of bell insulators
  - Tensile Breaking load 54kN
  - Bending load 6kN
- All suspension clamps are cast iron or mild steel components

### Catenary (without feeder); Bell string insulators in catenary



## FEEDER WIRE AS ANCHOR LINE Fixed anchor Feeder wire (3kV Main lines)



Feeder wire suspended  
On same insulator as catenary



### Configuration

- Feeder wire, AAC, unloaded.
  - (a) 500mm<sup>2</sup> Max Working tension = 6.5kN  
Max Breaking load = 85.0kN
  - (b) 800mm<sup>2</sup> Max Working tension = 10.5kN  
Max Breaking load = 126.0kN
  - (c) 160mm<sup>2</sup> AAC not to be used as anchor line!
- Maximum spans 67m.
- Tension spec' of insulators as for catenary.

