WESTERN POWER DISTRIBUTION

Serving the South West and Wales

Company Directive

STANDARD TECHNIQUE : OH4M

Relating to Anti-Climbing Devices for HV Lines Up to and Including 132 kV

Author: **P Hooper**

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Approved by PJ Lau

Policy Manager

Date: 09-04-08

1.0 FOREWORD

This Standard Technique is designed to address the requirements of the Electricity Safety, Quality and Continuity Regulations with regards to the prevention of unathorised climbing of supports such as wood poles, towers etc carrying HV conductors. This ST must be read in conjunction with the following Standard Techniques:-

- ST:OH3A and ST:OH5A - Inspection of Overhead Lines
- ST:OH3F - Overhead Line Records of Risks to Public and Risk Reduction Actions
- ST:OH4N - Notices for Overhead Lines

2.0 SCOPE

This Standard Technique details the requirements for anti-climbing devices to be fitted to HV supports within the WPD area and is based upon ENA TS 43-90.

3.0 ASSESSMENT OF ANTI-CLIMBING GUARD REQUIREMENTS

In order to determine the need for the fitting of anti-climbing guards it will be necessary to assess:-

- The possibility of unathorised climbing
- Type of support ("H" pole, Concrete poles etc)
- Type of Area (high vandalism etc)
- Use of Land
- Adjacent structures (walls, fencing, trees etc)
- Ease of climbing

Any anti-climbing device must be placed such that it does not constitute a hazard to personnel engaged in authorised activities on overhead line supports.

4.0 ASSESSMENT OF LAND

When deciding on the use and type of anti-climbing guard it is important to assess the site for any activity or structure that may increase the possibility of the unathorised climbing of supports.

Although it is impossible to give a complete listing of "high risk" areas the following comprises of examples of areas which may require additional consideration:-

- Schools
- Children's play areas (authorised and unauthorised)
- Areas of high vandalism
- Caravan, Camping and Chalet sites
- Recreational site - Boating areas including boat storage parks, fishing areas
- Walls or Structures from which access to the support could be obtained
- Permanent show grounds for agricultural, festival or similar purposes
- Designated heavy goods vehicle lorry parks

When carrying out this assessment it will be necessary to take into account any foreseeable situations that could change the way in which the land would be used.

5.0 ASSESSMENT OF THE SUPPORT

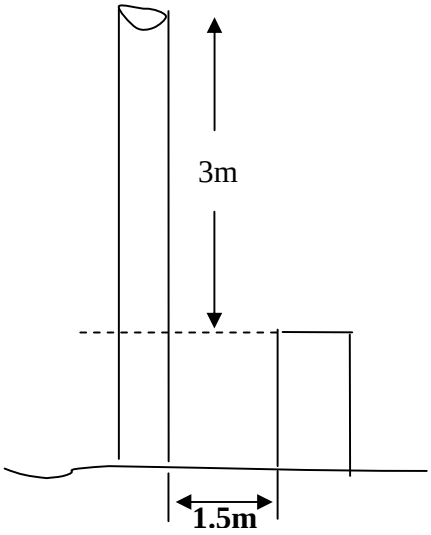

Fig 1

Where there is an unbroken surface of 3m above the point at which a person could gain access to the structure it may be considered to be un-climbable.

Where an obstacle is within a distance of 1.5m of the structure then this is to be taken as the point of access as shown in fig 1.

Where a structure comprises of two poles such as “H” pole or “Portal” construction and the distance between the poles is 1.5m or less, the structure must be considered as climbable.

Where auxiliary equipment is attached to the support below 3m (e.g. cables etc) the structure shall be considered as climbable. The only exception to this may be where a single earth conductor is attached to the structure.

All lattice structures shall be considered as climbable.

6.0 SELECTION OF ANTI-CLIMBING DEVICE

All climbable structures shall have an anti-climbing guard fitted. The type of anti-climbing guard required will be dependent upon the type support and nearness of any structure that may aid in climbing the support. Examples of anti-climbing guards are shown in Appendix A.

Barbed wire shall not be applied within two metres of ground level. Where it is to be applied to a pole it shall wrapped with 12 turns and secured with sufficient staples to ensure it can not easily be pulled off.

Where an outrigger bracket to drawing 439516 is to be used it shall be attached to the wood pole using 10mm x 76mm coach bolts. Brackets for concrete poles shall be secured using M16 nuts and bolts. Barbed wire should be fitted taut in the bracket slots and made off by tightly winding it back on itself.

7.0 SAFETY SIGNS

All supports shall be fitted with Safety signs in accordance with ST: OH4N.

8.0 COMPONENTS

Barbed wire

Galvanised steel barbed wire to BS EN 10223 shall be used.

Wire Staples

Wire staples shall be 4mm dia x 40mm long and comply with BS 1494-1 and galvanized to BS EN 102 44-2.

Outrigger Brackets

For wood pole supports- to ESI drawing 439516
For concrete or steel poles- to ESI drawing 439517

Steel Tower Anti-climbing Device

Guards for steel towers shall be in accordance with WPD drawing

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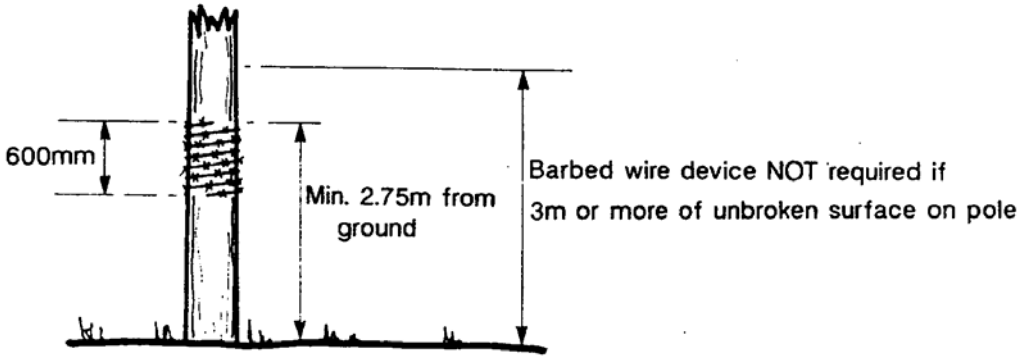

Fig. 2A - Single wood pole in normal locations

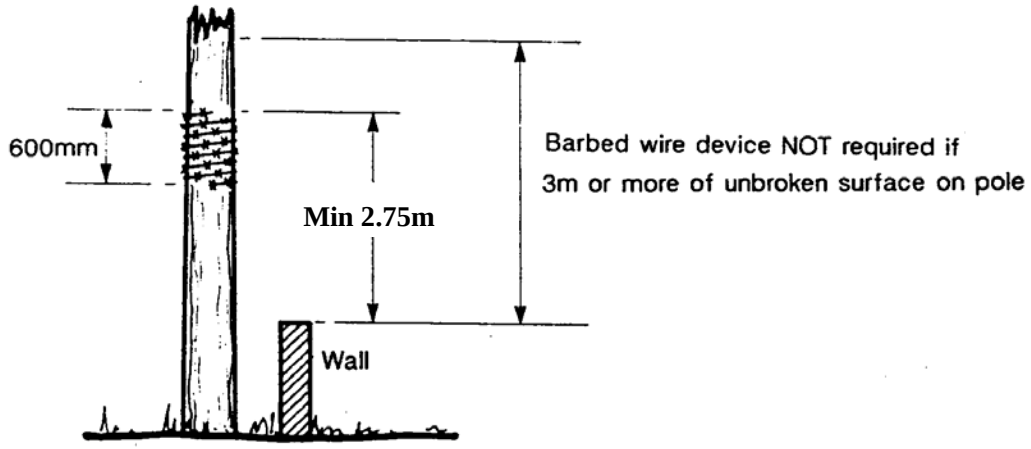

Fig. 2B - Single wood pole close to obstacle

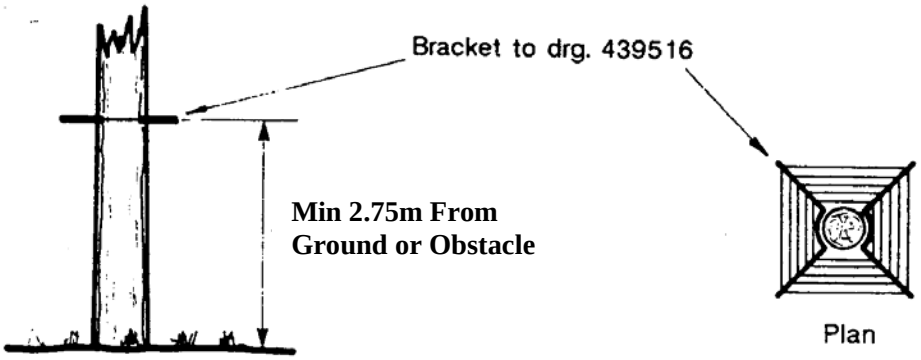

Fig. 2C - Single wood pole in high risk area

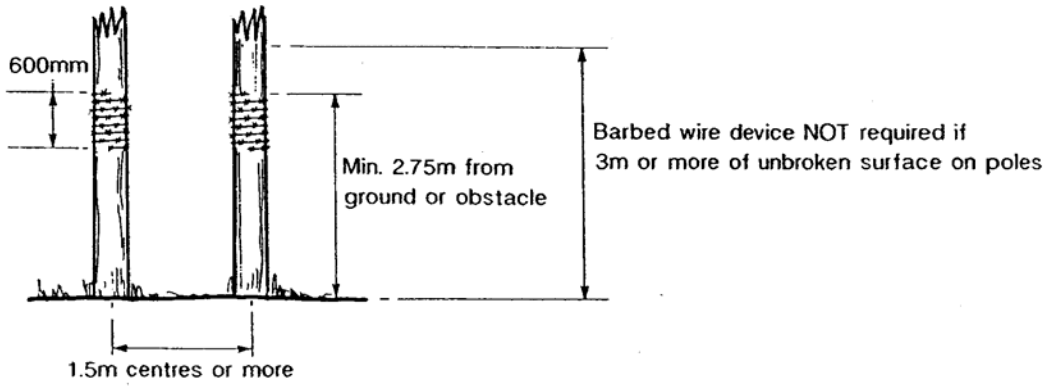

Fig. 3A - 'H' Pole in normal locations.

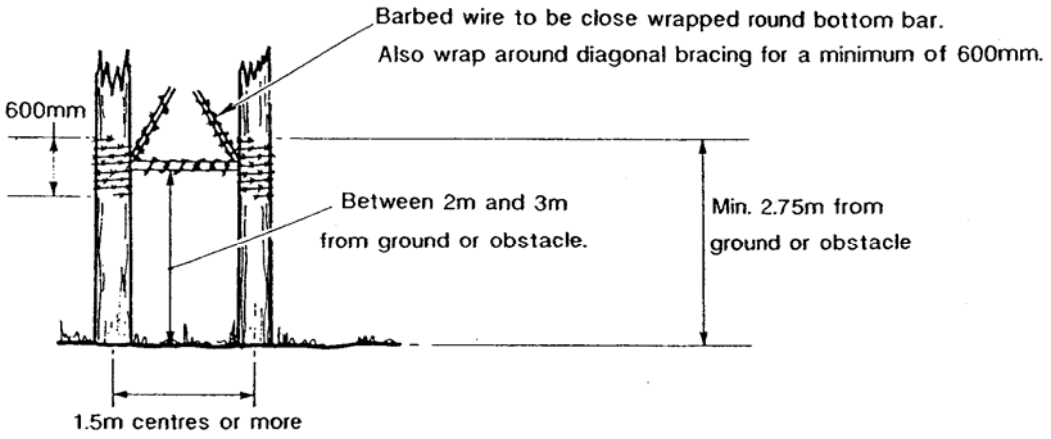

Fig. 3B - 'H' Pole with cross bracing.

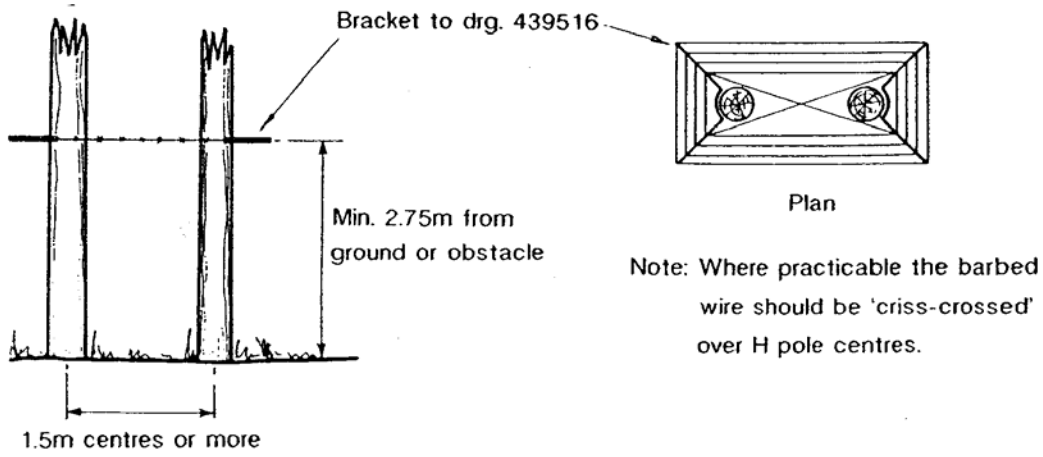

Fig. 3C - 'H' Pole in high risk area.

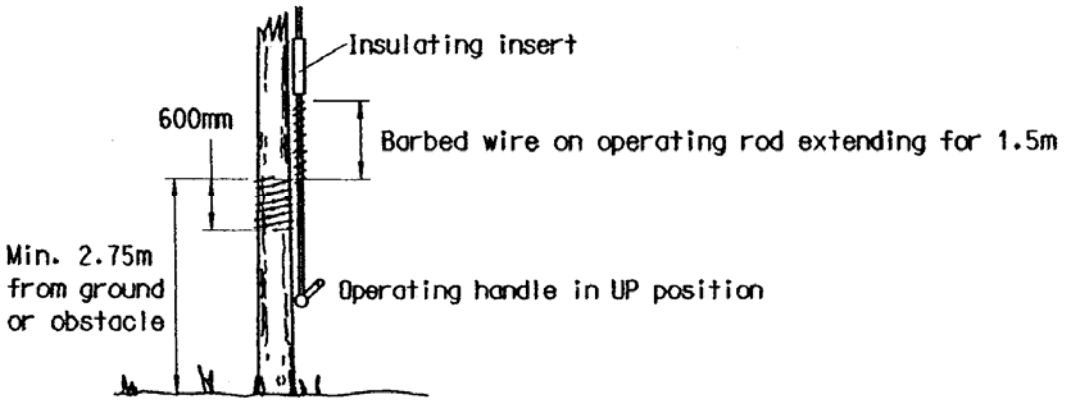

Fig. 4A – Single wood Pole (or "H" pole member) in normal locations

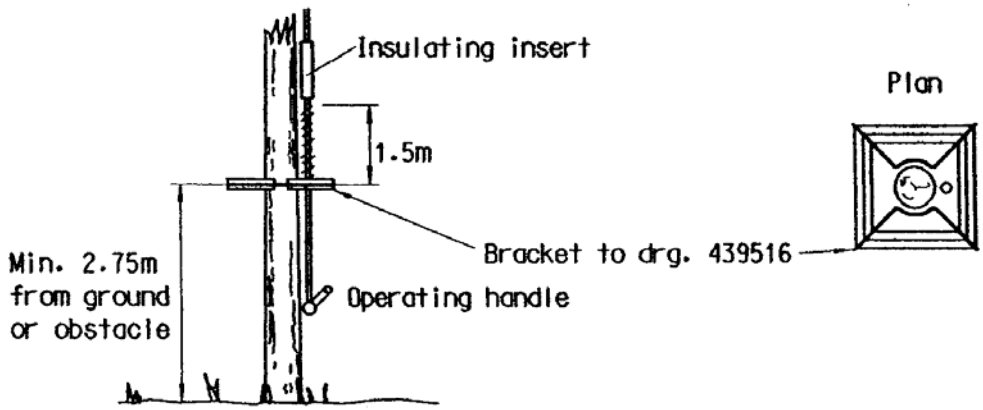

Fig. 4B – Single wood Pole in high risk areas

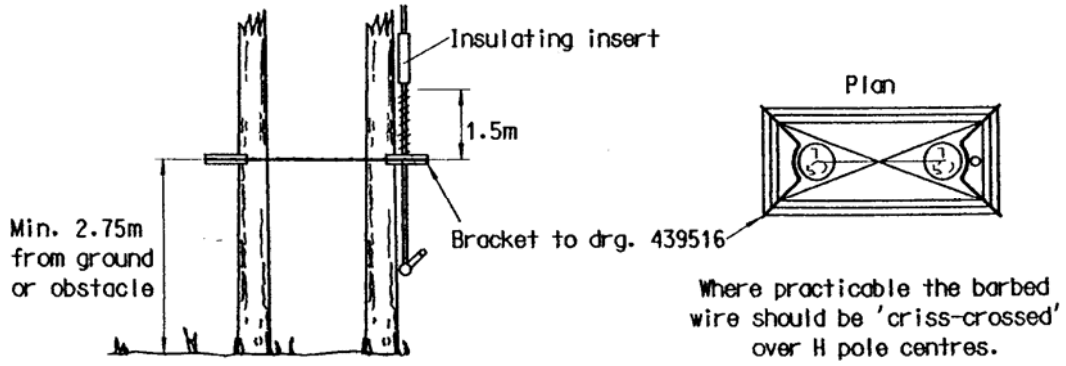

Fig. 4C – "H" Pole in high risk area

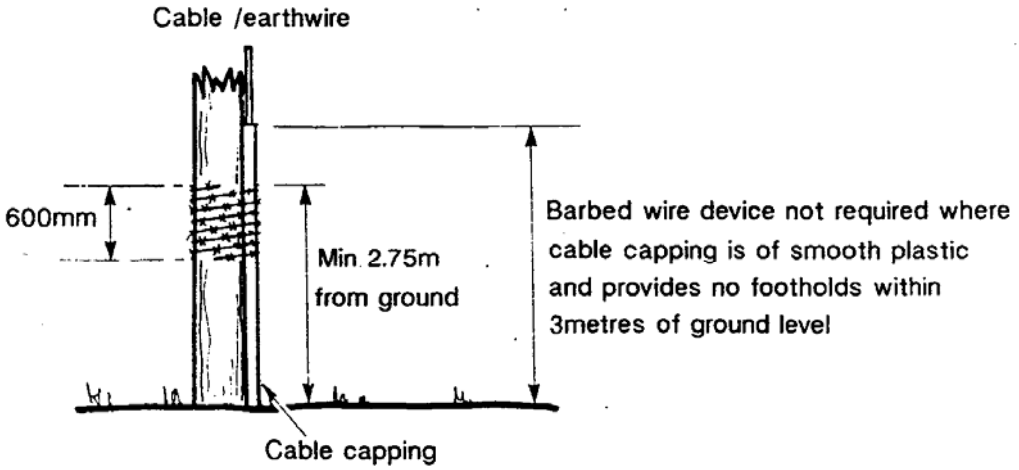

Fig. 5A - Cable Pole in normal locations.

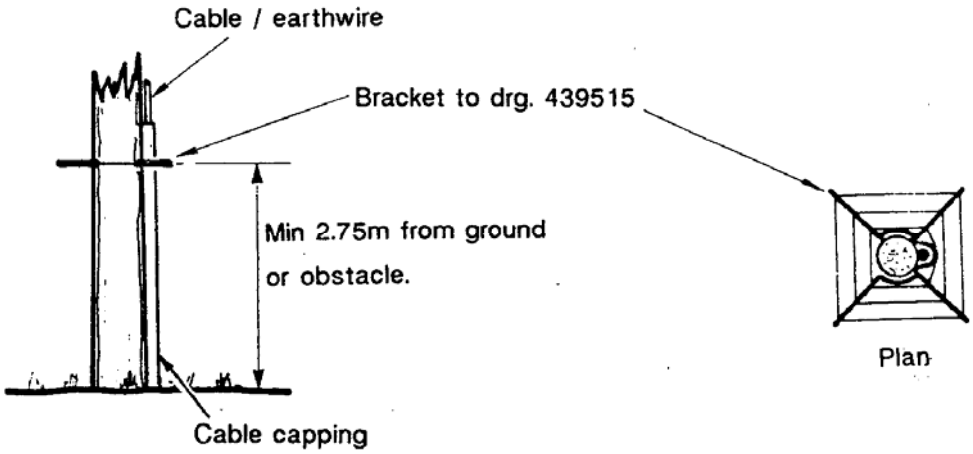

Fig. 5B - Cable Pole in high risk area.

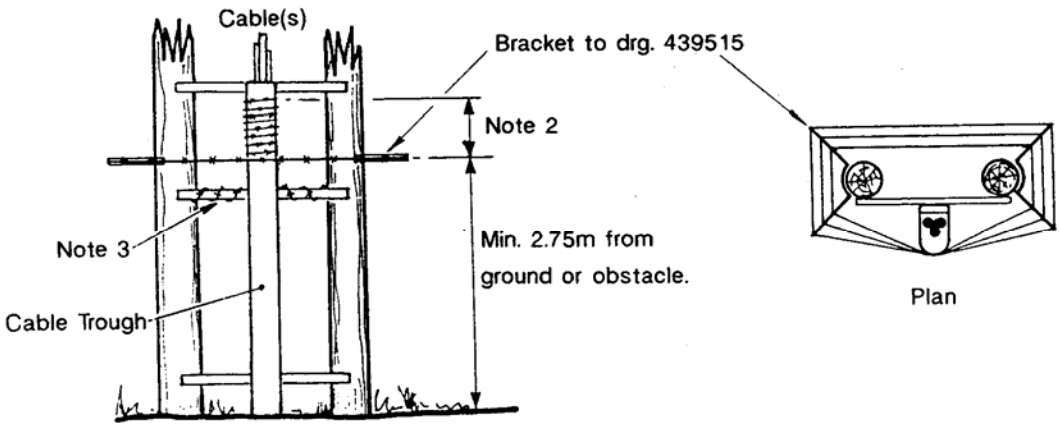

Fig. 5C - 132 or 33kV Cable Poles in all locations.

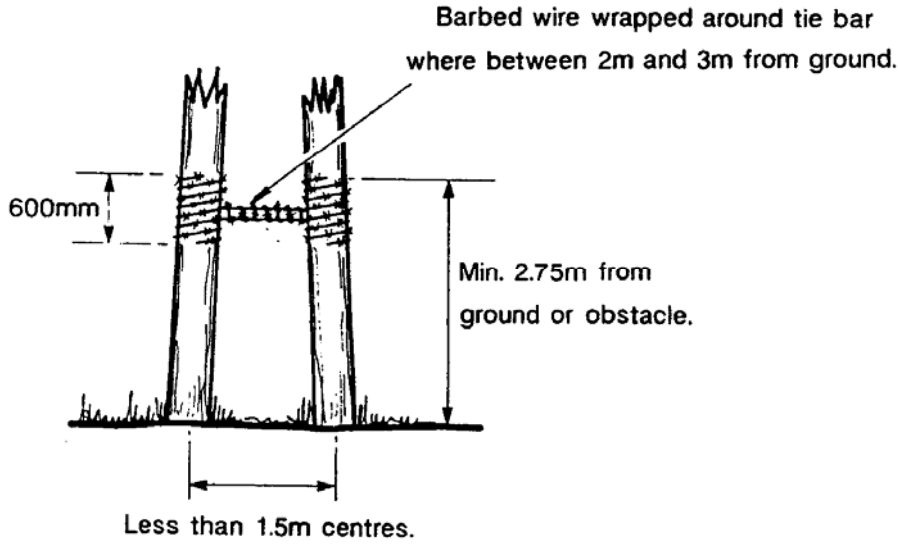

Fig. 6A - 'A' pole in normal locations.

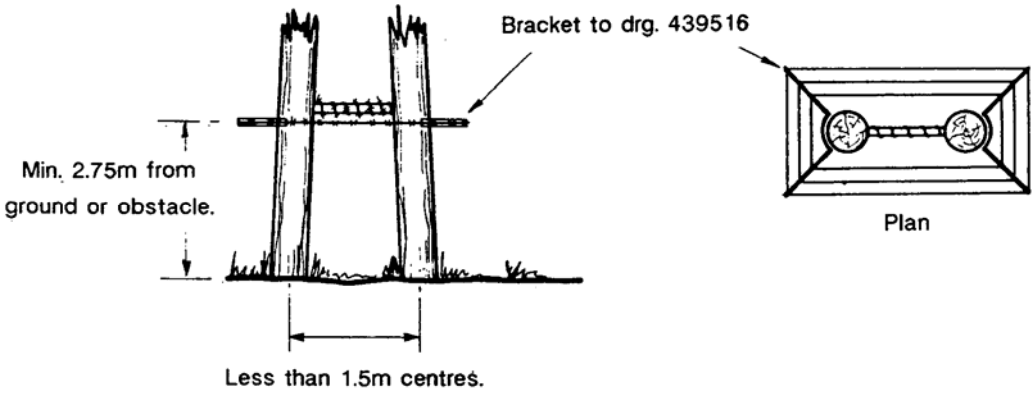

Fig. 6B - 'A' pole in high risk area.

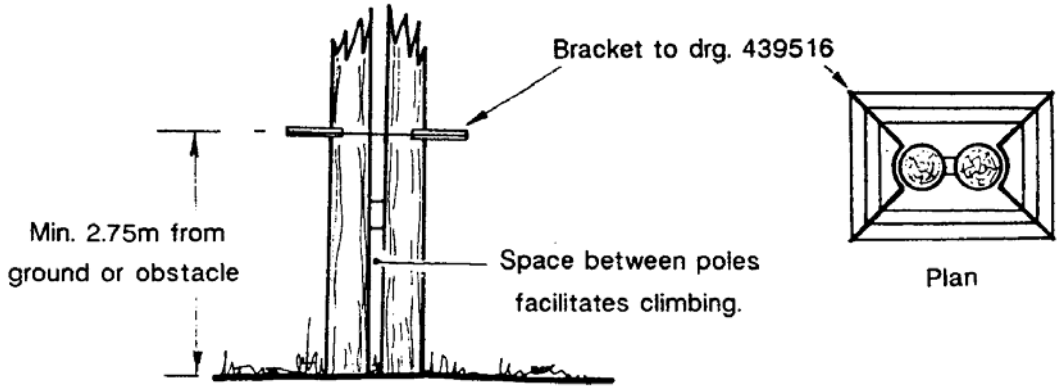

Fig. 6C - Twin wood poles in all situations.

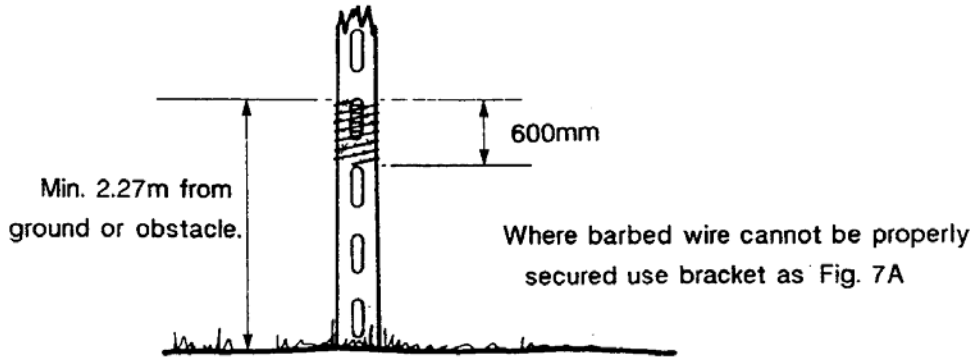

Fig. 7A - Concrete pole in normal locations.

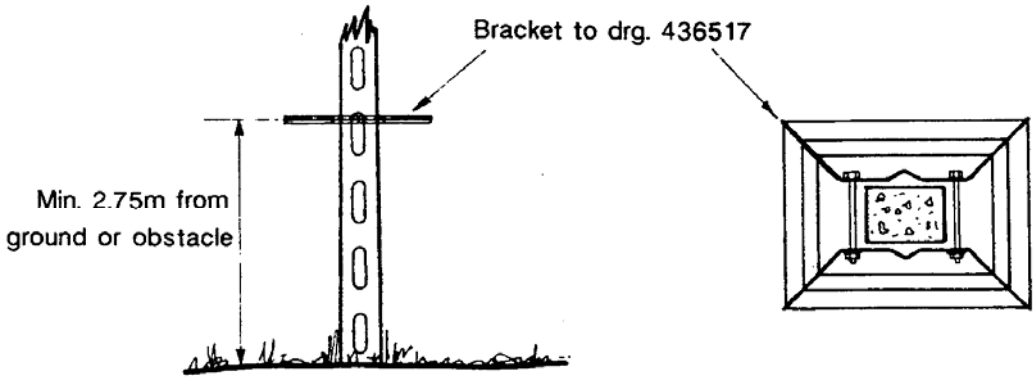

Fig. 7B - Concrete pole in high risk area.

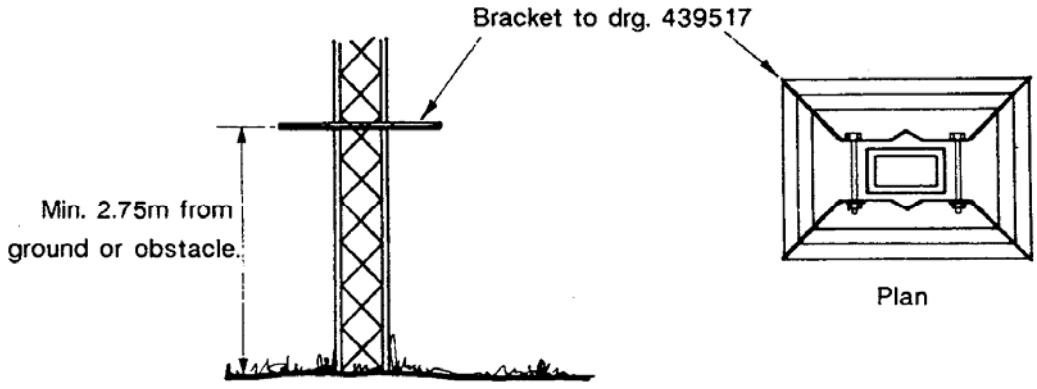

Fig. 7C - Lattice masts in all locations.

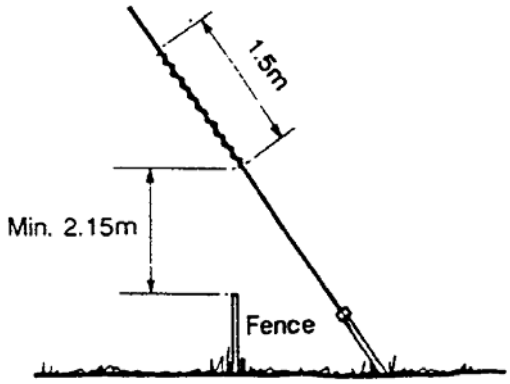

Fig. 8A - Stay close to obstacle.

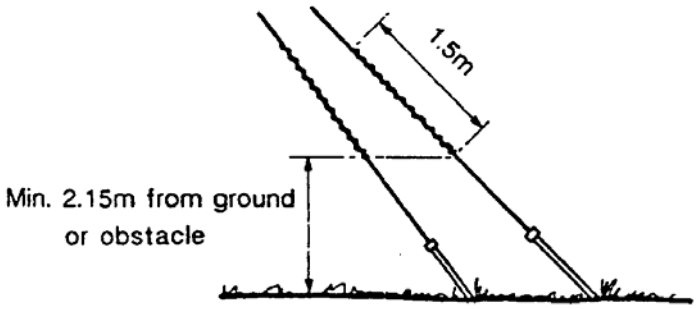

Fig. 8B - Stays in close proximity.

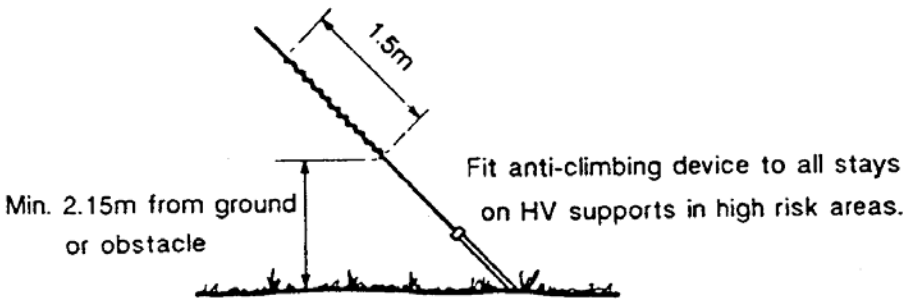

Fig. 8C - Stay in high risk area.

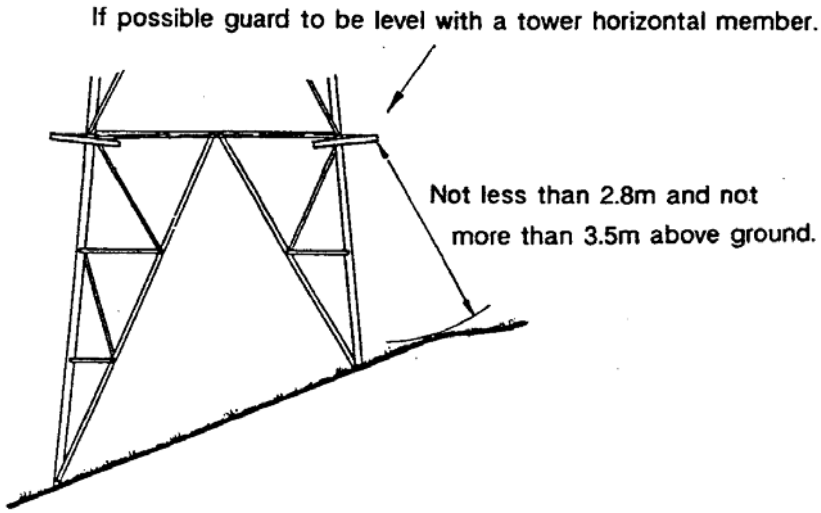

Fig. 9A - Typical Elevation.

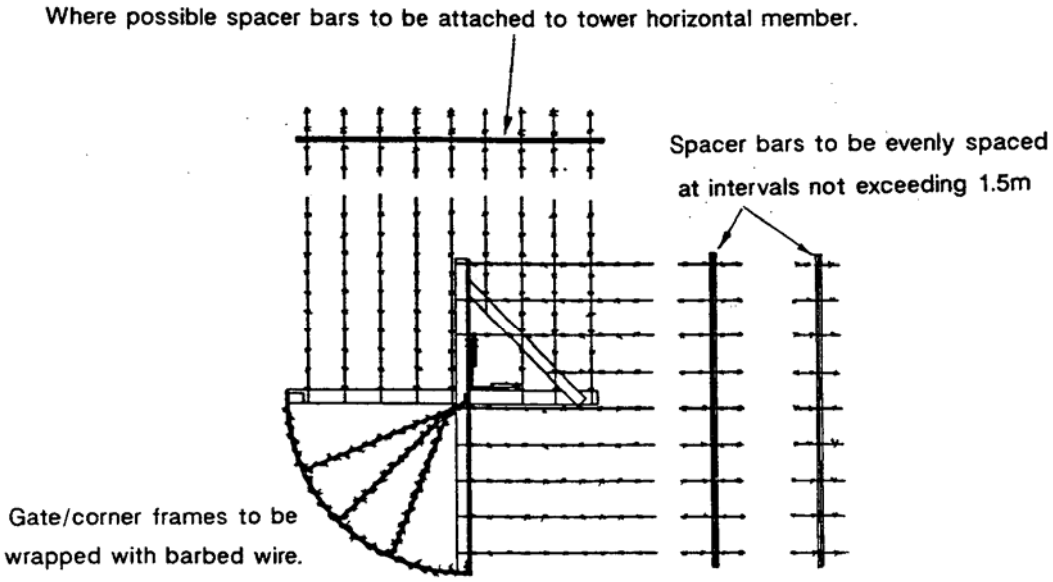

Fig. 9B - Plan at tower leg.

APPENDIX B

SUPERSEDED DOCUMENTATION

Section 43-90 found within Part 2 of the Overhead Manual

APPENDIX C

ASSOCIATED DOCUMENTATION

ST: OH 4N (Section 43-97 found within Part 2 of the Overhead Manual until issued)

APPENDIX D

IMPACT ON COMPANY POLICY

There is no change to company policy

APPENDIX E

IMPLEMENTATION OF POLICY

This policy shall be implemented immediately

APPENDIX F

KEY WORDS

Anti-climbing devices