

# Electricity Specification 40003

Issue 3      January 2022

## Bare-Wire Overhead-Lines on Wood Poles for 11/6.6 and 33kV: Design and Construction



## Amendment Summary

ISSUE NO. DATE	DESCRIPTION
<b>Issue 3</b>	New template applied.
<b>January 2022</b>	Prepared by: D M Talbot  Approved by: Policy Approval Pane and signed on its behalf by Steve Cox, Engineering and Technical Director.

## Contents

1	Introduction	8
1.1	General Information	8
1.2	Historical Perspective	8
1.3	Notes on Specification Content	8
2	Scope	9
3	Definitions	9
4	Line Design Using this Specification	9
4.1	Introductory Notes	9
4.2	Design Notes	10
4.3	Line Design Process	11
5	Design Information and Validation	13
5.1	General	13
5.2	Notes on use of Appendix C Data	13
6	Construction Information	13
6.1	General	13
	Fig 6.1: Bare-Wire Line: Total Material Requirement	14
	Table 6.1: Supplementary Construction Information for Reference	15
6.2	Wood Poles	17
6.3	Pre-Tensioning of AAAC Conductors	18
6.4	Phase-to-Phase Clearances	18
6.5	Stays	18
6.6	Jumpers	18
6.7	Steelwork	18
6.8	FARAP (Fall Arrest Reliable Anchor Point)	18
6.9	Dropper Kits	18
6.10	Fitting Shrouds to Transformers	19
7	Documents Referenced	19
8	Keywords	20
	Appendix A	22
	A1 General-Arrangement Drawings and Material Lists (In Drawing Number Order)	22
	A2 Application Drawings	173

Appendix B – Index to Bare-Wire Line Materials	181
Appendix C – Design Information and Validation	233
C1 Conductor, HDCu, 38mm <sup>2</sup>	234
Table 1: HDCu, 38mm <sup>2</sup> - In Line Structures	234
Table 2: HDCu, 38mm <sup>2</sup> - Angle Structures	234
Table 3: HDCu, 38mm <sup>2</sup> - Terminal Structures	234
Table 4: HDCu, 38mm <sup>2</sup> - Design Erection Sag/Tension (33% UTS)	235
Table 5: HDCu, 38mm <sup>2</sup> - Pole Data (33% UTS)	236
Table 6: HDCu, 38mm <sup>2</sup> - Single Pole Stay Capability	237
Table 7: HDCu, 38mm <sup>2</sup> - H-Pole Stay Capability	237
Table 8: HDCu, 38mm <sup>2</sup> - Single Pole Strut Loading	238
Table 9: HDCu, 38mm <sup>2</sup> - H-Pole Strut Loading	239
Table 9: HDCu, 38mm <sup>2</sup> - H-Pole Strut Loading (Continued)	240
C2 Conductor, HDCu, 70mm <sup>2</sup>	241
Table 1: HDCu, 70mm <sup>2</sup> - In Line Structures	241
Table 2: HDCu, 70mm <sup>2</sup> - Angle Structures	241
Table 3: HDCu, 70mm <sup>2</sup> - Terminal Structures	241
Table 4: HDCu, 70mm <sup>2</sup> - Design Erection Sag/Tension (33% UTS)	242
Table 5: HDCu, 70mm <sup>2</sup> - Pole Data (33% UTS)	243
Table 5: HDCu, 70mm <sup>2</sup> - Pole Data (33% UTS) (Continued)	244
Table 6: HDCu, 70mm <sup>2</sup> - Single Pole Stay Capability	245
Table 7: HDCu, 70mm <sup>2</sup> - H-Pole Stay Capability	245
Table 8: HDCu, 70mm <sup>2</sup> - Single Pole Strut Loading	246
Table 9: HDCu, 70mm <sup>2</sup> - H-Pole Strut Loading	247
Table 9: HDCu, 70mm <sup>2</sup> - H-Pole Strut Loading (Continued)	248
Table 9: HDCu, 70mm <sup>2</sup> - H-Pole Strut Loading (Continued)	249
Table 9: HDCu, 70mm <sup>2</sup> - H-Pole Strut Loading (Continued)	250
C3 Conductor, HDCu, 100mm <sup>2</sup>	251
Table 1: HDCu, 100mm <sup>2</sup> - In Line Structures	251
Table 2: HDCu, 100mm <sup>2</sup> - Angle Structures	251
Table 3: HDCu, 100mm <sup>2</sup> - Terminal Structures	251
Table 4: HDCu, 100mm <sup>2</sup> - Design Erection Sag/Tension (33% UTS)	252
Table 5: HDCu, 100mm <sup>2</sup> - Pole Data (33% UTS)	253
Table 5: HDCu, 100mm <sup>2</sup> - Pole Data (33% UTS) (Continued)	254



Table 6: HDCu, 100mm <sup>2</sup> - Single Pole Stay Capability	255
Table 7: HDCu, 100mm <sup>2</sup> - H-Pole Stay Capability	255
Table 8: HDCu, 100mm <sup>2</sup> - Single Pole Strut Loading	256
Table 9: HDCu, 100mm <sup>2</sup> - H-Pole Strut Loading	257
Table 9: HDCu, 100mm <sup>2</sup> - H-Pole Strut Loading (Continued)	258
Table 9: HDCu, 100mm <sup>2</sup> - H-Pole Strut Loading (Continued)	259
Table 9: HDCu, 100mm <sup>2</sup> - H-Pole Strut Loading (Continued)	260
C4 Conductor, AAAC, 50mm <sup>2</sup> (Hazel)	261
Table 1: AAAC, 50mm <sup>2</sup> - In Line Structures	261
Table 2: AAAC, 50mm <sup>2</sup> - Angle Structures	261
Table 3: AAAC, 50mm <sup>2</sup> - Terminal Structures	261
Table 4a: AAAC, 50mm <sup>2</sup> - Design Sag/Tension (20% UTS)	262
Table 4b: AAAC, 50mm <sup>2</sup> - Erection Sag/Tension (20% UTS)	263
Table 5: AAAC, 50mm <sup>2</sup> - Pole Data (20% UTS)	264
Table 6: AAAC, 50mm <sup>2</sup> - Single Pole Stay Capability	265
Table 7: AAAC, 50mm <sup>2</sup> - H-Pole Stay Capability	265
Table 8: AAAC, 50mm <sup>2</sup> - Single Pole Strut Loading	266
Table 9: AAAC, 50mm <sup>2</sup> - H-Pole Strut Loading	267
Table 9: AAAC, 50mm <sup>2</sup> - H-Pole Strut Loading (Continued)	268
Table 9: AAAC, 50mm <sup>2</sup> - H-Pole Strut Loading (Continued)	269
Table 9: AAAC, 50mm <sup>2</sup> - H-Pole Strut Loading (Continued)	270
C5 Conductor, AAAC, 100mm <sup>2</sup> (OAK)	271
Table 1: AAAC, 100mm <sup>2</sup> - In Line Structures	271
Table 2: AAAC, 100mm <sup>2</sup> - Angle Structures	271
Table 3: AAAC, 100mm <sup>2</sup> - Terminal Structures	271
Table 4a: AAAC, 100mm <sup>2</sup> - Design Sag/Tension (20% UTS)	272
Table 4b: AAAC, 100mm <sup>2</sup> - Erection Sag/Tension (20% UTS)	273
Table 5: AAAC, 100mm <sup>2</sup> - Pole Data (20% UTS)	274
Table 5: AAAC, 100mm <sup>2</sup> - Pole Data (20% UTS) (Continued)	275
Table 6: AAAC, 100mm <sup>2</sup> - Single Pole Stay Capability	276
Table 7: AAAC, 100mm <sup>2</sup> - H-Pole Stay Capability	276
Table 8: AAAC, 100mm <sup>2</sup> - Single Pole Strut Loading	277
Table 9: AAAC, 100mm <sup>2</sup> - H-Pole Strut Loading	278
Table 9: AAAC, 100mm <sup>2</sup> - H-Pole Strut Loading (Continued)	279

Table 9: AAAC, 100mm <sup>2</sup> - H-Pole Strut Loading (Continued)	280
Table 9: AAAC, 100mm <sup>2</sup> - H-Pole Strut Loading (Continued)	281
C6 Conductor, AAAC, 150MM <sup>2</sup> (ash)	282
Table 1: AAAC, 150mm <sup>2</sup> - In Line Structures	282
Table 2: AAAC, 150mm <sup>2</sup> - Angle Structures	282
Table 3: AAAC, 150mm <sup>2</sup> - Terminal Structures	282
Table 4a: AAAC, 150mm <sup>2</sup> - Design Sag/Tension (20% UTS)	283
Table 4b: AAAC, 150mm <sup>2</sup> - Erection Sag/Tension (20% UTS)	284
Table 5: AAAC, 150mm <sup>2</sup> - Pole Data (20% UTS)	285
Table 5: AAAC, 150mm <sup>2</sup> - Pole Data (20% UTS) (Continued)	286
Table 5: AAAC, 150mm <sup>2</sup> - Pole Data (20% UTS) (Continued)	287
Table 5: AAAC, 150mm <sup>2</sup> - Pole Data (20% UTS) (Continued)	288
Table 6: AAAC, 150mm <sup>2</sup> - Single Pole Stay Capability	289
Table 7: AAAC, 150mm <sup>2</sup> - H-Pole Stay Capability	289
Table 8: AAAC, 150mm <sup>2</sup> - Single Pole Strut Loading	290
Table 9: AAAC, 150mm <sup>2</sup> - H-Pole Strut Loading	291
Table 9: AAAC, 150mm <sup>2</sup> - H-Pole Strut Loading (Continued)	292
Table 9: AAAC, 150mm <sup>2</sup> - H-Pole Strut Loading (Continued)	293
Table 9: AAAC, 150mm <sup>2</sup> - H-Pole Strut Loading (Continued)	294
C7 Conductor, AAAC, 200MM <sup>2</sup> (poplar)	295
Table 1: AAAC, 200mm <sup>2</sup> - In Line Structures	295
Table 2: AAAC, 200mm <sup>2</sup> - Angle Structures	295
Table 3: AAAC, 200mm <sup>2</sup> - Terminal Structures	295
Table 4a: AAAC, 200mm <sup>2</sup> - Design Sag/Tension (20% UTS)	296
Table 4b: AAAC, 200mm <sup>2</sup> - Erection Sag/Tension (20% UTS)	297
Table 5: AAAC, 200mm <sup>2</sup> - Pole Data (20% UTS)	298
Table 5: AAAC, 200mm <sup>2</sup> - Pole Data (20% UTS) (Continued)	299
Table 5: AAAC, 200mm <sup>2</sup> - Pole Data (20% UTS) (Continued)	300
Table 5: AAAC, 200mm <sup>2</sup> - Pole Data (20% UTS) (Continued)	301
Table 6: AAAC, 200mm <sup>2</sup> - Single Pole Stay Capability	302
Table 7: AAAC, 200mm <sup>2</sup> - H-Pole Stay Capability	302
Table 8: AAAC, 200mm <sup>2</sup> - Single Pole Strut Loading	303
Table 9: AAAC, 200mm <sup>2</sup> - H-Pole Strut Loading	304
Table 9: AAAC, 200mm <sup>2</sup> - H-Pole Strut Loading (Continued)	305

Table 9: AAAC, 200mm <sup>2</sup> - H-Pole Strut Loading (Continued)	306
Table 9: AAAC, 200mm <sup>2</sup> - H-Pole Strut Loading (Continued)	307
Appendix D – Compiling Material Requirement/Ordering Information	308
D1 Introduction	308
D2 Instructions for Using the Workbook	308
D2.1 Introduction	308
D2.2 Instructions	308

All Rights Reserved

The copyright of this document, which contains information of a proprietary nature, is vested in Electricity North West Limited. The contents of this document may not be used for purposes other than that for which it has been supplied and may not be reproduced, either wholly or in part, in any way whatsoever. It may not be used by, or its contents divulged to, any other person whatsoever without the prior written permission of Electricity North West Limited.

## 1 Introduction

### 1.1 General Information

This specification describes the design and construction of bare-wire overhead-lines on wood poles used on the electricity distribution network owned and operated by Electricity North West Limited (Electricity North West). The design and construction of 6.6/11 and 33 kV overhead lines of Compact-Covered-Construction on wood poles is covered by specification ES40002. EPD473 gives guidance on which of these two specifications to use in any given set of circumstances.

### 1.2 Historical Perspective

Throughout Electricity North West, light duty overhead lines to the Electricity Association Technical Specification (ENATS) 43-10 and heavy-duty overhead lines to ENATS 43-20 have been used since the 1970s. These two (withdrawn) specifications have now been completely superseded by this specification (ES40003) and ES40002.

### 1.3 Notes on Specification Content

The philosophy and layout of this specification are designed to aid the processes of line design, component ordering and construction. This section provides a brief overview of the content of this specification.

[Sections 1 to 3, 7 and 8](#) contain background/reference information.

[Section 4](#) provides line-design guidance using this specification, by breaking down the process of line design into a series of stages and referring the reader to the appropriate section/sections within this specification at each stage.

Design information and validation data for each conductor type and size are introduced in [Section 5](#) and detailed in [Appendix C](#).

Construction information, including material requirements for the construction of a bare-wire line, is summarised in [Section 6](#).

[Appendix A1](#) contains general-arrangement drawings and associated material lists, preceded by a drawing index, in drawing number order.

[Appendix A2](#) contains application drawings.

[Appendix B](#) comprises an index to materials (in alphabetical order) used in the construction of a bare-wire line. Each material is cross-referenced to all drawings in this specification on which it is used.

[Appendix D](#) provides instructions for compiling a material requirement for a bare-wire line on a pole-by-pole basis using Excel workbook 40003.xls. The data from this workbook can be used to order line materials.

## 2 Scope

This specification covers the design and constructional requirements for the erection of bare-wire, single-circuit overhead-lines on wood pole (single and three-phase), operating in the voltage range 6.6/11 kV up to and including 33 kV, using the following types and sizes of conductors for the voltages listed:

- (a) Hard-drawn copper (HDCu) conductor of the following cross-sectional areas:
  - (i) 38 mm<sup>2</sup> (7/2.65) - 11/6.6 kV only
  - (ii) 70 mm<sup>2</sup> (7/3.55) - 11/6.6 kV only
  - (iii) 100 mm<sup>2</sup> (7/4.3) - 11/6.6 and 33 kV
- (b) All aluminium-alloy conductor (AAAC) of the following cross-sectional areas:
  - (i) 50 mm<sup>2</sup> (7/3.3) (name: Hazel) - 11/6.6 kV only
  - (ii) 100 mm<sup>2</sup> (7/4.65) (name: Oak) - 11/6.6 kV only
  - (iii) 150 mm<sup>2</sup> (19/3.48) (name: Ash) - 11/6.6 and 33 kV
  - (iv) 200 mm<sup>2</sup> (37/2.87) (name: Poplar) - 33 kV only

## 3 Definitions

Definitions are as given in CP420-1.

## 4 Line Design Using this Specification

### 4.1 Introductory Notes

To meet the line design requirements, the engineer can select from a total of forty-four General Arrangement drawings (GAs) and associated Materials Lists as given in [Appendix A](#). Within any GA it is often possible to use different components depending upon the size of the conductor.

It is not practical to produce GAs for every variation and therefore each GA drawing shows only one possible combination of components, but the Materials List associated with each drawing covers the variations required. Each list of materials gives a breakdown of components required to build the corresponding GA for each of the conductors. (An index to all materials used in this specification is included in [Appendix B](#).)

Mechanical and electrical design data are introduced in [Section 5](#) and detailed in [Appendix C](#).

Construction information is contained in [Section 6](#).

The total material requirements of a bare-wire line can be built up on a pole-by-pole basis using the Excel workbook 40003 (refer to [Appendix D](#)).

Once the GA requirements have been defined for a line, these GAs can be ordered in kit-form (each GA/conductor combination has its own commodity code kit number (CC No)). The advantages of ordering in kit-form as opposed to ordering individual components are:

- (a) Fewer items need to be identified at the ordering stage.
- (b) The kits will be supplied to site as kits (i.e. components will not need sorting out and grouping together on site).

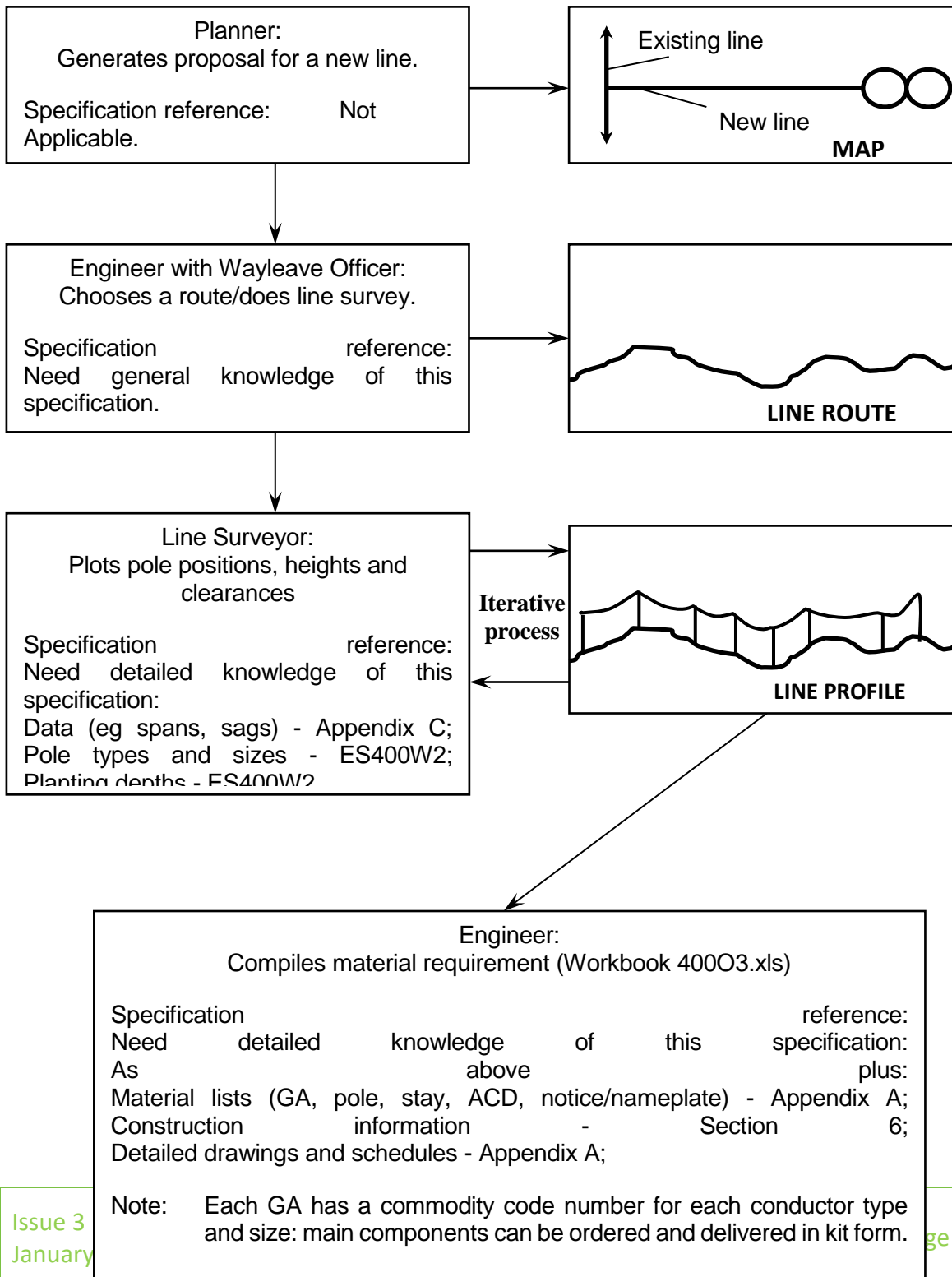
## 4.2 Design Notes

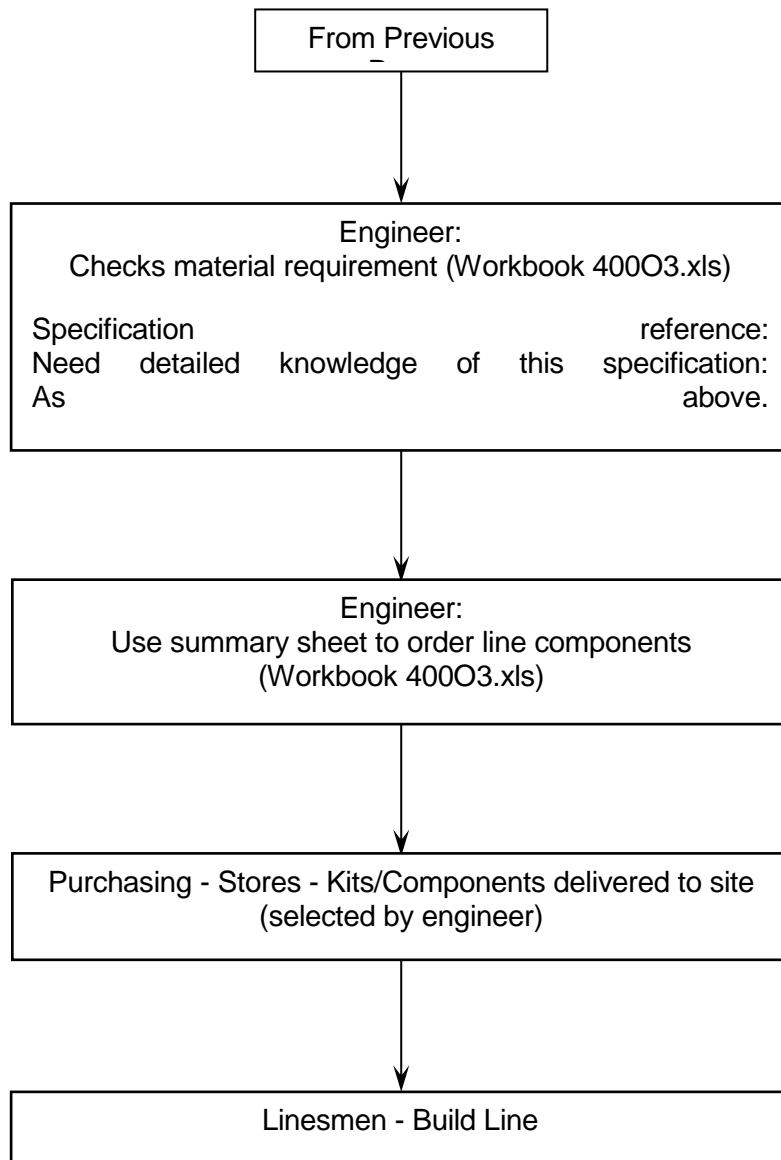
Dependant on system configuration, it may be appropriate to have a number of disconnectable joints: these shall be incorporated into the overhead line at the design stage.

Full-tension mid-span joints are not needed in a well-designed line, however, if they are required, refer to ES400C29 for details of fittings.

For system earthing requirements, refer to CP332 (the construction details are given in the relevant procedures in CP430-1).

### 4.3 Line Design Process







## 5 Design Information and Validation

### 5.1 General

Seven stand alone sets of design data are included as [Appendix C](#):

- [Appendix C1](#): for line design using conductor, HDCu, 38mm<sup>2</sup>
- [Appendix C2](#): for line design using conductor, HDCu, 70mm<sup>2</sup>
- [Appendix C3](#): for line design using conductor, HDCu, 100mm<sup>2</sup>
- [Appendix C4](#): for line design using conductor, AAAC, 50mm<sup>2</sup> (Hazel)
- [Appendix C5](#): for line design using conductor, AAAC, 100mm<sup>2</sup> (Oak)
- [Appendix C6](#): for line design using conductor, AAAC, 150mm<sup>2</sup> (Ash)
- [Appendix C7](#): for line design using conductor, AAAC, 200mm<sup>2</sup> (Poplar)

Each of these appendices contains all the design information for the line type. The data are presented in tabular form. Where appropriate, the design parameters used to construct a table are listed at the top of that table.

### 5.2 Notes on use of Appendix C Data

The data provided in [Appendix C](#) are for poles without electrical plant. For poles containing plant, strut loadings need to be considered and recalculated where necessary. (A 1000kg weight is approximately equivalent to 1000kgf in addition to [Appendix C](#) strut loadings for this purpose.)

[Appendix C](#) calculations are based on minimum pole top diameters as per BS 1990. If strut loadings are found to exceed the figures given in [Appendix C](#), then it will be necessary to calculate the minimum pole top diameter required.

Occasional long spans of 140 metres are permitted but are limited to one per section length.

## 6 Construction Information

### 6.1 General

The total material requirements for any (generic) bare-wire line structure (including conductor) are given in [Fig. 6.1](#). Additional information, supplementary to that shown in [Fig. 6.1](#) is summarised below for reference purposes.

Unless otherwise specified, all construction practices and materials shall comply with this section, Electricity North West's Code of Practice (CP) 420-1 and the appropriate Electricity North West standard.

Table 6.1 provides reference information for all major materials used in the construction of a bare-wire line.

**Fig 6.1: Bare-Wire Line: Total Material Requirement**

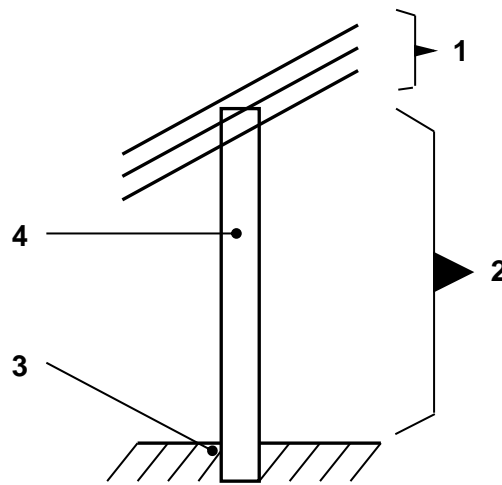


FIG ITEM	DESCRIPTION	NOTES
1	Conductor: type and size as appropriate.	Refer to ES400C3.
2	Pole general arrangement: -GA series of drawings.	(a) Refer to Appendix A of this specification for the appropriate GA. (b) Steelwork, ACD, stay, fitting details, etc are referenced from the list of materials for each GA.
3	Backfilling/Compaction material	Refer to ES400R5.
4	Fabricated pole: -FAB series of drawings.	(a) Refer to ES400W2 for the appropriate fabrication drawing. (b) Planting details, etc, are included for each pole fabrication.

**Table 6.1: Supplementary Construction Information for Reference**

**NOTE:**

- (a) Specification references for the items listed in [Table 6.1](#) are included on the appropriate list of materials for the drawing as identified from [Fig. 6.1](#).
- (b) A prefix of ES or CP in the following table indicates an Electricity North West document: ES indicates specification; CP indicates Code of Practice (containing Electricity North West specific policy/practice information).
- (c) For references to detailed procedural information on erecting, maintaining and dismantling overhead lines (as included in CP430), refer to the appropriate chapter in CP420 (given in the following table).

ITEM DESCRIPTION	DOCUMENT REFERENCE
Aerial Switches	CP420-1.08. ES315.
Anti-Climbing Measures and Devices	CP420-1.10. ES400A2.
Anti-Split Bolts	CP420-1.04. ES400F1.
Augered Holes	CP420-1.03 and CP420-1.04. ES400W2.
Auto-Reclosers/Auto-Sectionalisers	CP420-1.08. ES315.
Cable Terminations	CP420-1. ES400C12.
Clearances	CP420-1.15 and CP420-1.19. ES400V1.

Conductor	CP420-1. ES400C3.
Design	CP420-1. ES400O3.
Drop-Out Expulsion Fuses (DOEF) - Links and Units	CP420-1.08. ES315. ES400S11 for steelwork.
Earthing	CP420-1.21 and CP332. ES400E8.
FARAP	ES400S11.
Fasteners	CP420-1. ES400F1.
Fittings	CP420-1. ES400C29. ES400H2.
Flexible Jumpers	CP420-1. ES400C3.
Foundations	CP420-1.04. ES400W2. ES400S11(for steel braces, etc).
Fuses	CP420-1.21 and CP332. ES315.
General Arrangements	This specification/Appendix A (-GA drawing series).
Insulators	CP420-1. ES400I4.
Notices and Nameplates	CP420-1.09. ES400N1.
Shrouding	CP420-1. ES400S12.
Stays	CP420-1.07. ES400S13.
Steelwork	CP420-1. ES400S11.

Transformer	CP420-1.08. ES321.
Wood Pole Supports	CP420-1.03 and CP420-1.04. ES400W2. (Supports shall be single pole, H-pole or stub pole. Pole dimensions shall be in accordance with BS 1990. Pole fabrication shall be in accordance with the -FAB series of drawings in ES400W2.)

## 6.2 Wood Poles

### 6.2.1 Anti-Split Bolts for Wood Poles

Two anti-split bolts shall be fitted to all poles; these will be delivered already fitted to the pole.

### 6.2.2 Blocks for Wood Poles

Two anti-split bolts shall be fitted to all poles; these will be delivered already fitted to the pole.

### 6.2.3 Augered Holes

When planning to use an auger for excavation, follow these rules:

- (a) Augering is to be used for intermediate poles, pin angles and straight line sections only (i.e. it is not now allowed for any other sections or terminal poles, etc).
- (b) Ensure ground is suitable for use of auger.
- (c) The pole shall be augered 0.5 metre deeper therefore it will need to be 0.5 metre longer.
- (d) After pole erection, hole shall be backfilled with approved compaction material.

### 6.2.4 Pole Caps

Pole caps shall be installed at every pole.

### 6.2.5 Backfilling/Compaction

Backfilling/Compaction materials shall be as stated in ES400R5.

### 6.2.6 Boron Rods

Boron rods shall be fitted to all poles. For poles less than 240mm diameter 3 rods shall be fitted equally spaced at 120° around the circumference of the pole at a depth of 150mm. For poles greater than 240mm diameter 4 rods shall be fitted equally spaced at 90° around the circumference of the pole at a depth of 170mm.

### 6.2.7 Stay Bonding

Poles with stays fitted shall have stay bonding to the steelwork. Should more information be required refer to CP420-1 chapter 7.

### 6.3 Pre-Tensioning of AAAC Conductors

Refer to the appropriate erection sag/tension table in [Appendix C](#) for pre-tensioning instructions.

### 6.4 Phase-to-Phase Clearances

Phase-to-phase clearances depend upon the GA being used. Crossarm details for each GA are given in ES400S11. The minimum phase-to-phase clearance in this specification is 1.2 metres (for a single intermediate pole).

### 6.5 Stays

Only screw-in type or standard wooden 4-tonne stay blocks shall be used.

Light duty stay plates shall not be use. Heavy duty stay plates and load lock anchors may be used, but calculations shall be done on a case-by-case basis to ensure that factor-of-safety (FOS) value of 2.5 is maintained. The maximum working load for a load lock anchor is 28kN.

### 6.6 Jumpers

Jumpers in excess of 2 metres shall be supported by helical side ties to auxiliary crossarm or outriggers.

### 6.7 Steelwork

When an existing line is being refurbished refer to ES400S11 for fitting steelwork.

### 6.8 FARAP (Fall Arrest Reliable Anchor Point)

Every pole shall be equipped with a FARAP fitted at the lower anti-split bolt position. An additional FARAP shall be installed 1.5 metre below the FARAP fitted at the lower anti-split bolt on a pole either side of a section pole.

Wherever pole mounted plant is installed (e.g. transformer) then additional FARAPs shall be fitted at 1500mm below any exposed live metal.

[Appendix A](#) contains a series of Application Drawings showing FARAP positions covering the range of general arrangements used in this specification.

### 6.9 Dropper Kits

Four dropper kits have been developed as follows:

- (a) No. 1 - to be used on ABS/GVR/PMT
- (b) No. 2 - to be used on links above PMT
- (c) No. 3 - to be used on OYS/OYT
- (d) No. 4 - to be used on 11 kV cable terminal

The dropper kit GAs are in [Appendix A1](#).

## 6.10 Fitting Shrouds to Transformers

The middle phase of all three-phase transformers shall be fitted with a shroud over the bus bar where surge arrestors are fitted.

Single-phase transformers depending on the severity of the location shall have one or two shrouds fitted as per the above.

Line switches shall have the middle phase shrouded as per the above.

GVRs shall have all phases in and out shrouded.

Refer to CP430 Part 1 for the method of fitting shrouds.

## 7 Documents Referenced

DOCUMENTS REFERENCED	
BS 1990	Wood poles for overhead lines (power and telecommunications lines).
ENATS 43-10 (SUPERSEDED):	11kV single circuit overhead lines of heavy duty construction on wood poles.
ENATS 43-20 (SUPERSEDED)	11kV and 33kV single circuit overhead lines of heavy duty construction on wood poles.
CP332	Application of protective multiple earthing.
CP420, Part 1 (referenced as 420-1.(chapter number))	Policy and practice for wood pole overhead lines.
CP430, Part 1 (referenced as 430-1)	Overhead line - linesmen's manual - wood pole.
ES315	12kV and 7.2kV pole mounted autoreclosers.
ES321	Pole mounted distribution transformers.
ES400A2	Specification for anti-climbing devices - overhead lines
ES400C3	Specification for wood pole overhead line conductors.

ES400C12	Specification for cable terminations - overhead lines.
ES400C29	Specification for connectors and fittings for overhead line conductors.
ES400E8	Earthing.
ES400F1	Fasteners and washers for wood pole overhead lines.
ES400H2	Overhead line helical fittings.
ES400I4	Insulators for overhead lines.
ES400N1	Specification for notices and nameplates - overhead lines.
ES400O2	Specification for Overhead-Lines of Compact-Covered-Construction for 11/6.6 kV: Design and Construction.
ES400R5	Backfilling/Compaction materials for wood poles - overhead lines
ES400S11	Specification for overhead line steelwork.
ES400S12	Specification for shrouding - overhead lines.
ES400S13	Specification for stay arrangements - overhead lines.
ES400V1	Contract works for control of vegetation adjacent to overhead power lines.
ES400W2	Specification for the supply of wood poles.
40003.xls (Associated Excel workbook)	Bare-wire line schedule - compilation of materials.

## 8 Keywords

Line; Overhead.





## Appendix A

### A1 General-Arrangement Drawings and Material Lists (In Drawing Number Order)

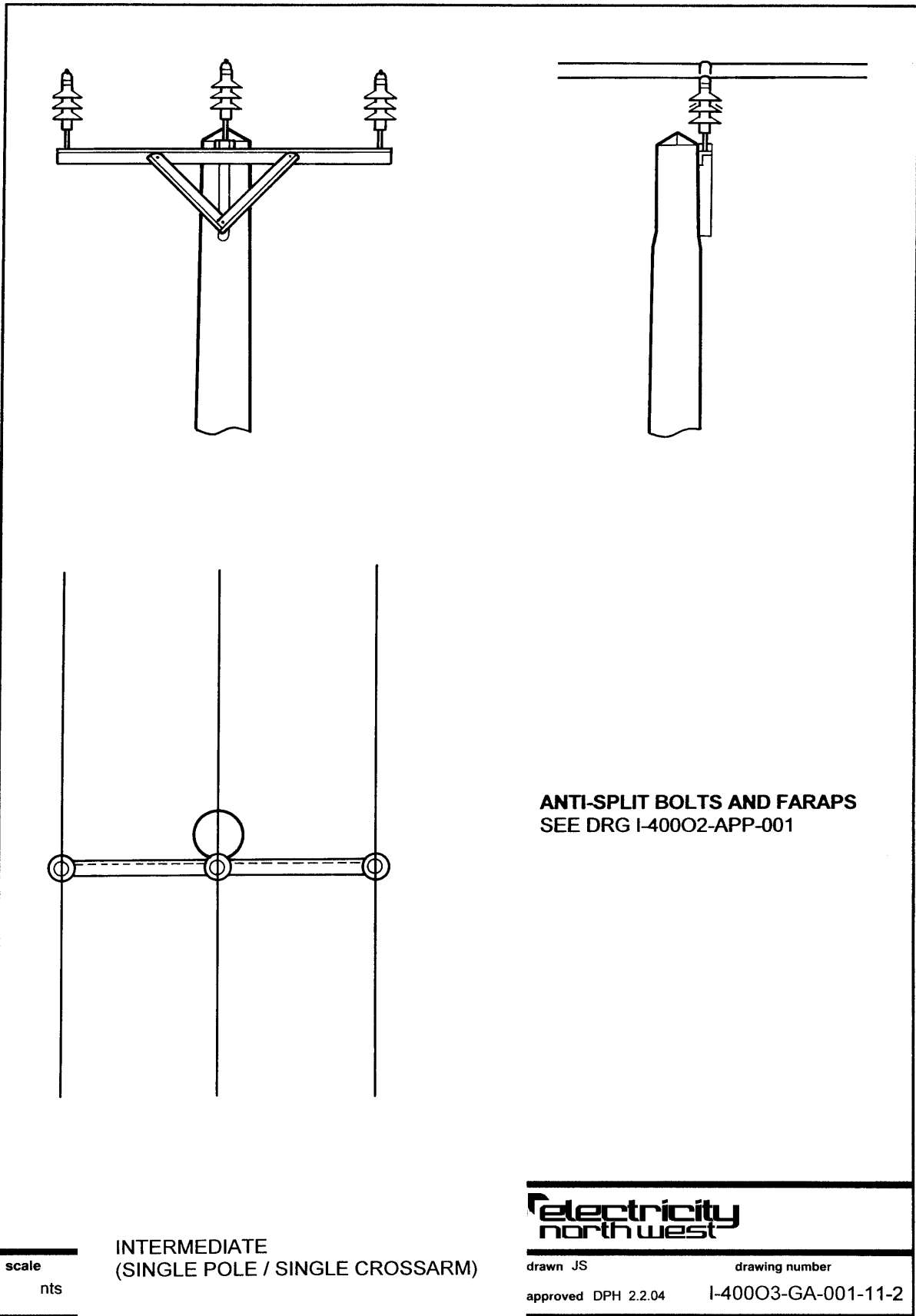
#### Index to Drawings

DRAWING NUMBER	TITLE
I-40002-GA-046	Single Pole Foundations
I-40002-GA-047	Steelwork And Fasteners Kit For H-Pole Foundations
I-40002-GA-048	Dropper Kit 1 (ABS, GVR, PMT)
I-40002-GA-049	Dropper Kit 2 (Links Above PMT)
I-40002-GA-050	Dropper Kit 3 (OYT, OYS)
I-40002-GA-051	Dropper Kit 4 (11kV Cable Term)
I-40003-GA-001	Intermediate (Single Pole/Single Crossarm)
I-40003-GA-045	Intermediate (Single Pole/Double Crossarm)
I-40003-GA-002	Pin Angle (Single Pole/Single Crossarm)
I-40003-GA-046	Pin Angle (Single Pole/Double Crossarm)
I-40003-GA-003	Straight Line Section/Angle Section (Single Pole/Double Crossarm) (Helical Fittings)
I-40003-GA-004	Straight Line Section/Angle Section (Single Pole/Double Crossarm) (Compression Fittings)
I-40003-GA-005	Straight Line Section/Angle Section (H-Pole) (Helical Fittings)
I-40003-GA-006	Straight Line Section/Angle Section (H-Pole) (Compression Fittings)
I-40003-GA-047	Straight Line Section/Angle Section (H-Pole) (Extended Crossarm) (Helical Fittings)
I-40003-GA-048	Straight Line Section/Angle Section (H-Pole) (Extended Crossarms) (Compression Fittings)
I-40003-GA-007	Angle Section (90°) (Single Pole/2 x Double Crossarms) (Helical Fittings)

I-40003-GA-008	Angle Section (90°) (Single Pole/2 x Double Crossarms) (Compression Fittings)
I-40003-GA-009	Angle Section (90°) (3-Pole Arrangement) (Helical Fittings)
I-40003-GA-010	Angle Section (90°) (3-Pole Arrangement) (Compression Fittings)
I-40003-GA-011	Tee-off (Single Pole/Single Crossarm with Double Crossarm Tee-off) (Solid Connection)
I-40003-GA-012	Tee-off (Single Pole/Single Crossarm with Double Crossarm Tee-off) (Connections Via Fuses/Links) (Tee-off Via Helical Fittings)
I-40003-GA-013	Tee-off (Single Pole/Single Crossarm with Double Crossarm Tee-off) (Connections Via Fuses/Links) (Tee-off Via Compression Fittings)
I-40003-GA-014	Transformer (Single Intermediate Pole/Single Bolt Mounting) (Bails/LL Clamps)
I-40003-GA-015	Transformer (Single Intermediate Pole/Single Bolt Mounting) (Bails/LL Clamp/Fuses/Links)
I-40003-GA-016	Transformer (Single Terminal Pole/Single Bolt Mounting) (Helical Fittings)
I-40003-GA-017	Transformer (Single Terminal Pole/Single Bolt Mounting) (Compression Fittings/Bails/LL Clamps)
I-40003-GA-018	Transformer (Single Terminal Pole/Single Bolt Mounting) (Helical Fittings/Fuses/Links)
I-40003-GA-019	Transformer (Single Terminal Pole/Single Bolt Mounting) (Compression Fittings/Bails/LL Clamps/Fuses/Links)
I-40003-GA-020	Transformer (Single Intermediate Pole/Platform Mounting) (Bails/LL Clamps)
I-40003-GA-021	Transformer (Single Intermediate Pole/Platform Mounting) (Bails/LL Clamps/Fuses/Links)
I-40003-GA-022	Transformer (Single Terminal Pole/Platform Mounting) (Helical Fittings)
I-40003-GA-023	Transformer (Single Terminal Pole/Platform Mounting) (Compression Fittings/Bails/LL Clamps)

I-40003-GA-024	Transformer (Single Terminal Pole/Platform Mounting) (Helical Fittings/Fuses/Links)
I-40003-GA-025	Transformer (Single Terminal Pole/Platform Mounting) (Compression Fittings/Bails/LL Clamps/ Fuses/Links)
I-40003-GA-026	Transformer (H-Pole Mounting) (Helical Fittings/Fuses/Links)
I-40003-GA-027	Transformer (H-Pole Mounting) (Compression Fittings/Bails/LL Clamps/ Fuses/Links)
I-40003-GA-028	Transformer (Stub Pole Mounting) (Bails/LL Clamps/Fuses/Links)
I-40003-GA-029	Auto-Recloser/Auto-Sectionaliser (Single Pole/Flying Section) (Compression Fittings/Bails/LL Clamps)
I-40003-GA-030	Auto-Recloser/Auto-Sectionaliser (Single Pole/Straight Line Section) (Compression Fittings/Bails/LL Clamps)
I-40003-GA-031	In-line Fuses/Links (Single Pole/Straight Line Section) (Helical Fittings/Fuses/Links)
I-40003-GA-032	In-line Fuses/Links (Single Pole/Straight Line Section) (Compression Fittings/Bails/LL Clamps/Fuses/Links)
I-40003-GA-033	Aerial Switch (Single Pole/Underslung Mounting) (Helical Fittings)
I-40003-GA-034	Aerial Switch (Single Pole/Underslung Mounting) (Compression Fittings/Bails/LL Clamps)
I-40003-GA-035	Aerial Switch (H-Pole/Underslung Mounting) (Helical Fittings)
I-40003-GA-036	Aerial Switch (H-Pole/Underslung Mounting) (Compression Fittings/Bails/LL Clamps)
I-40003-GA-037	Cable Terminal (Single Pole Terminal) (Helical Fittings)
I-40003-GA-038	Cable Terminal (Single Pole Terminal) (Compression Fittings/Bails/LL Clamps)
I-40003-GA-039	Cable Terminal (Single Pole Terminal) (Helical Fittings/Fuses/Links)
I-40003-GA-040	Cable Terminal (Single Pole Terminal) (Compression Fittings/Bails/LL Clamps/Fuses/Links)
I-40003-GA-041	Cable Terminal (Single Intermediate Pole) (Solid Connection)

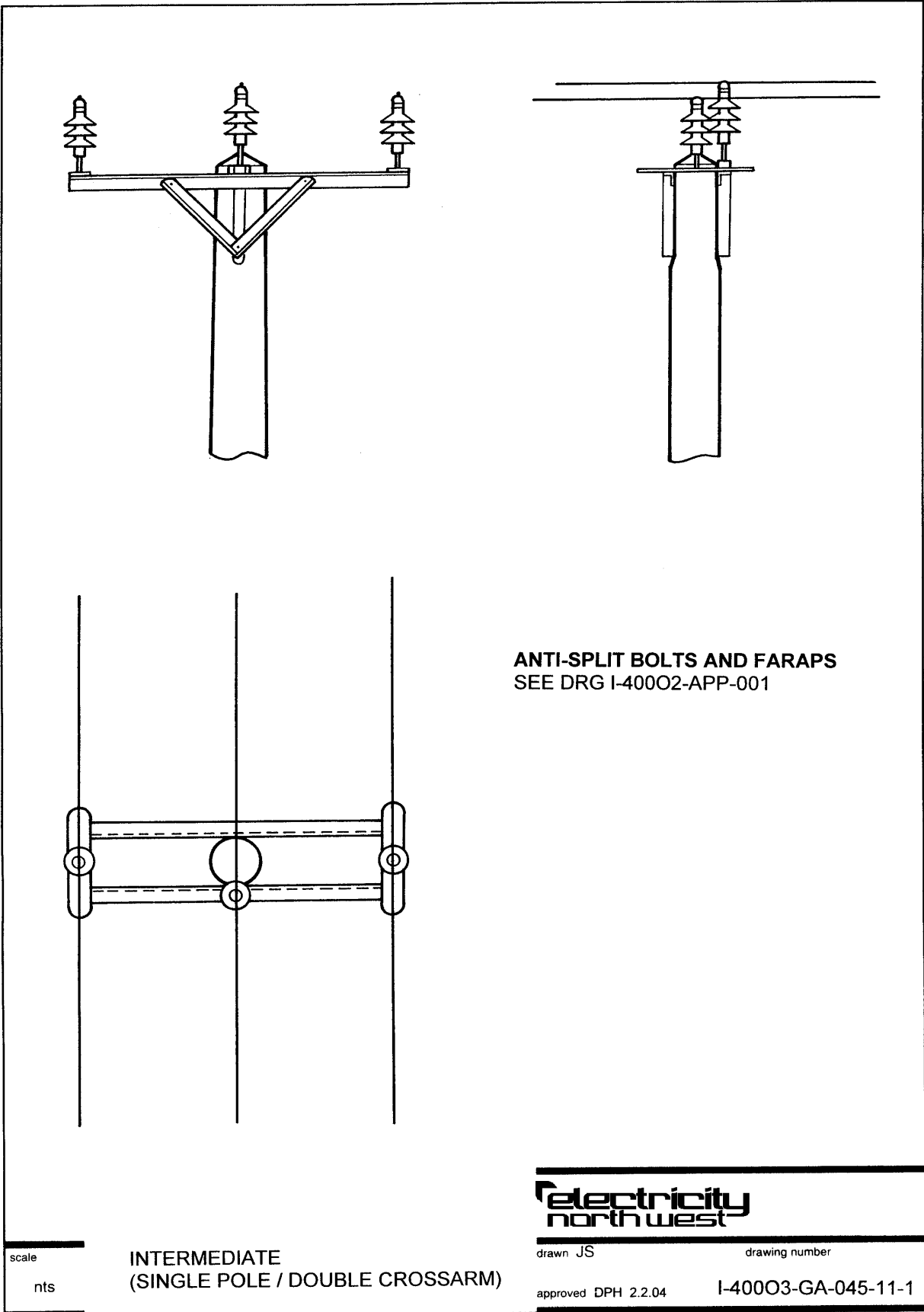
I-40003-GA-042	Cable Terminal (Single Intermediate Pole) (Connection via Fuses/Links)
I-40003-GA-043	Cable Terminal (H-Pole), 11kV
I-40003-GA-044	Cable Terminal, 33kV



**INTERMEDIATE (SINGLE POLE/SINGLE CROSSARM)**

Drawing No: I-40003-GA-001

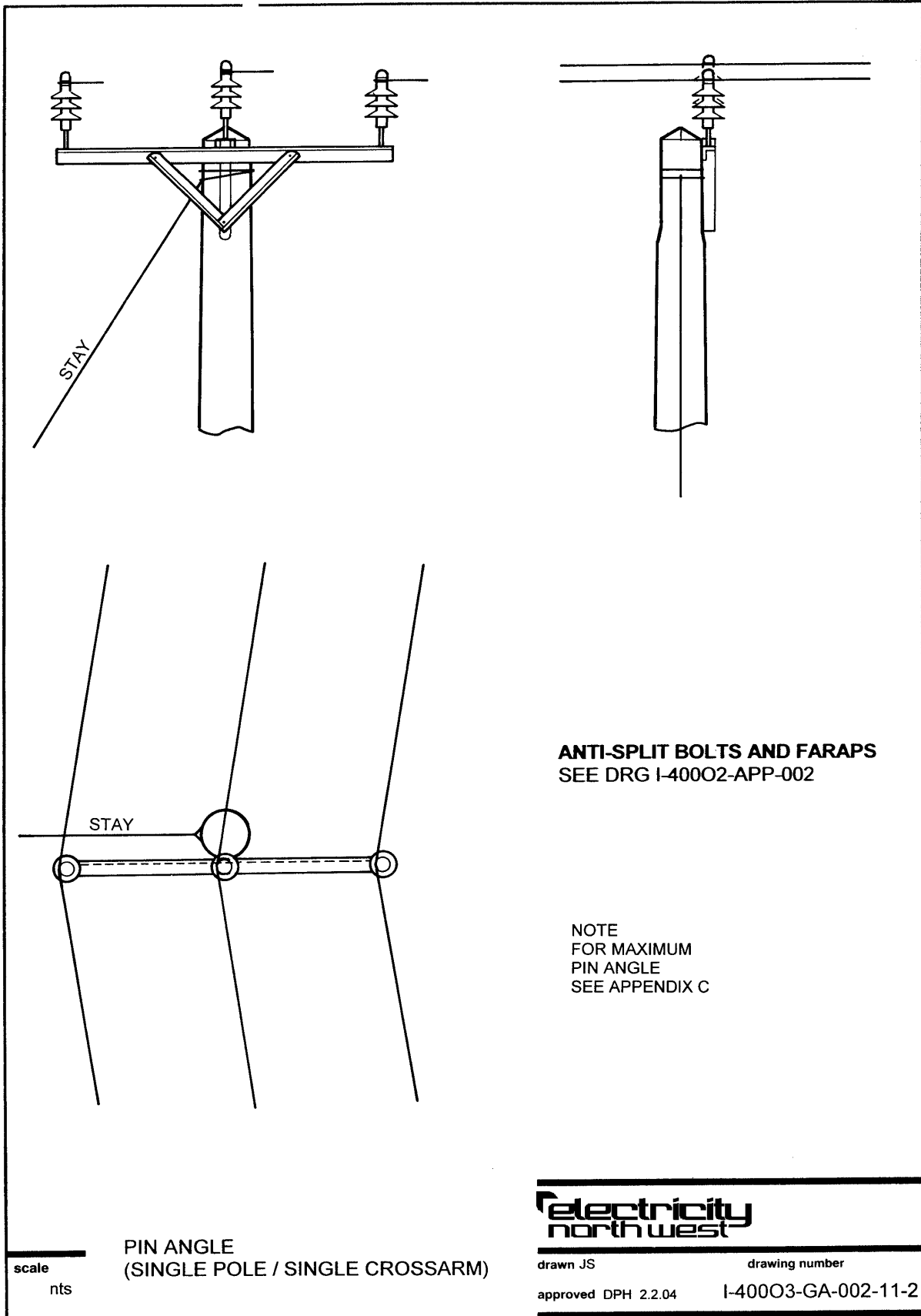
Voltage/Conductor	Ref	GA Kit CC No	Comprising:									
11 kV - HDCu, 38mm <sup>2</sup>	1	500300										
11 kV - HDCu, 70mm <sup>2</sup>		Not applicable										
11 kV - HDCu, 100mm <sup>2</sup>		Not applicable										
11 kV - AAAC, 50mm <sup>2</sup>	4	500303										
11 kV - AAAC, 100mm <sup>2</sup>		Not applicable										
11 kV - AAAC, 150mm <sup>2</sup>		Not applicable										
33 kV - HDCu, 100mm <sup>2</sup>		Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>		Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>		Not applicable										
<b>Item</b>	<b>ES Ref</b>	<b>Item CC No</b>	-	-	-	-	-	-	<b>4</b>	-	-	<b>1</b>
<b>(Items Included in GA Kit Contents)</b>												
Bolt, M20, 300mm	400F1	107735	-	-	-	-	-	-	2	-	-	2
Bolt, M20, 60mm	400F1	107581	-	-	-	-	-	-	4	-	-	4
Bolt, M20, 750mm	400F1	107790	-	-	-	-	-	-	2	-	-	2
Coach Screw	400F1	126810	-	-	-	-	-	-	1	-	-	1
Washer, Square, Curved	400F1	139203	-	-	-	-	-	-	2	-	-	2
Washer, Square, Flat	400F1	139262	-	-	-	-	-	-	4	-	-	4
Helical Intermediate Tie	400H2	138215	-	-	-	-	-	-	-	-	-	3
Helical Intermediate Tie	400H2	138927	-	-	-	-	-	-	3	-	-	-
Insulator, Pin-Mounted	400I4	125202	-	-	-	-	-	-	3	-	-	3
Danger Plate	400N1	195251	-	-	-	-	-	-	2	-	-	2
Gouge-mark Plate	400N1	995610	-	-	-	-	-	-	1	-	-	1
Crossarm	400S11	133310	-	-	-	-	-	-	1	-	-	1
Crossarm Strut	400S11	133353	-	-	-	-	-	-	2	-	-	2
FARAP	400S11	260820	-	-	-	-	-	-	1	-	-	1
Insulator Bracket	400S11	133302	-	-	-	-	-	-	1	-	-	1
Insulator Pin	400S11	128252	-	-	-	-	-	-	3	-	-	3
<b>(Additional Items Required for GA But Not Included in GA Kit Contents)</b>												
Wood Pole	400W2	Ref ES400W2	-	-	-	-	-	-	1	-	-	1
Pole Cap	400W7	Ref ES400W7	-	-	-	-	-	-	1	-	-	1
ACDs	400A2	Ref ES400A2	As required									
Notices	400N1	Ref ES400N1	As required									





**INTERMEDIATE (SINGLE POLE/DOUBLE CROSSARM)**

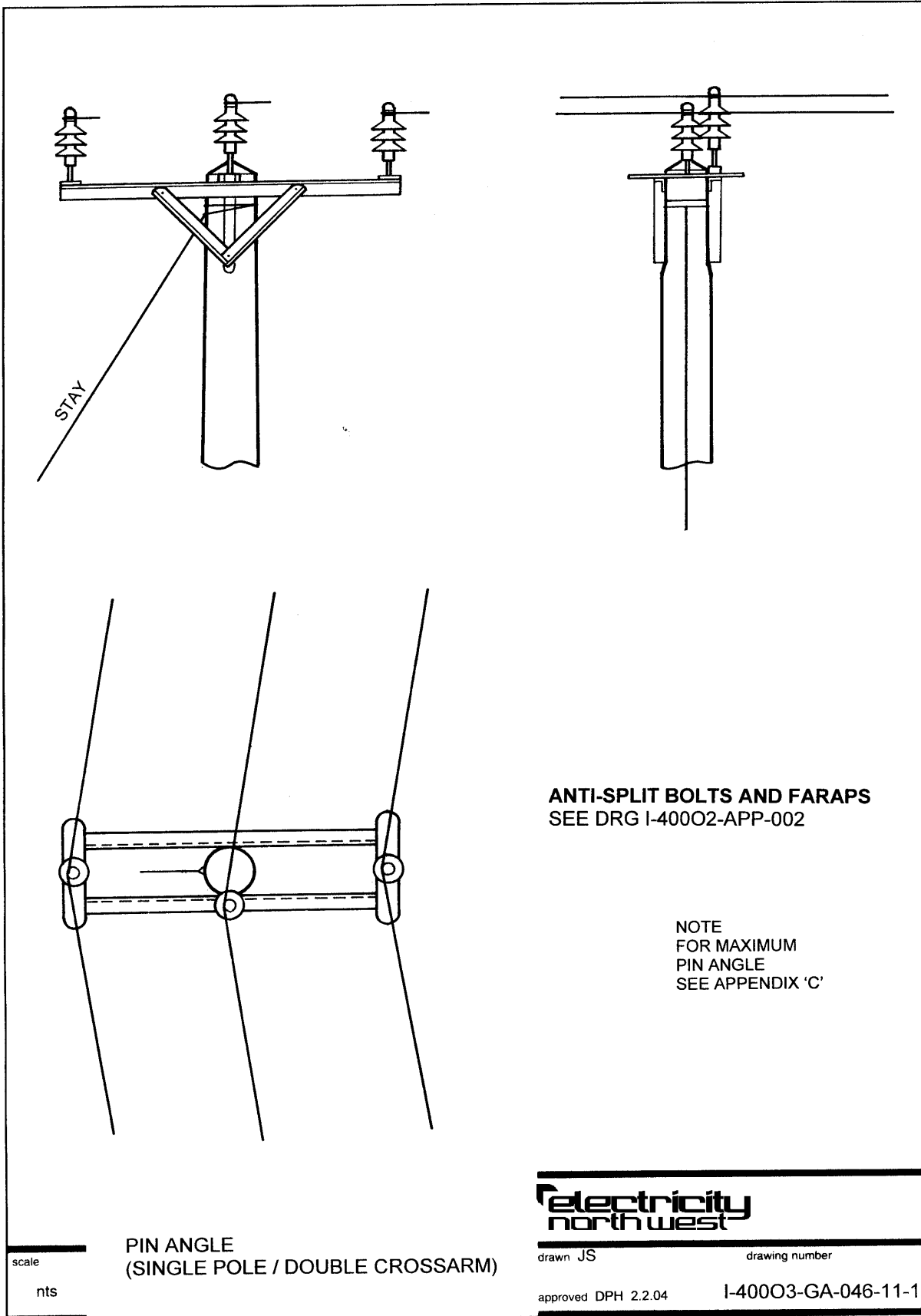
			Drawing No: I-40003-GA-045								
Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>			Not applicable								
11 kV - HDCu, 70mm <sup>2</sup>	2	500301									
11 kV - HDCu, 100mm <sup>2</sup>	3	500302									
11 kV - AAAC, 50mm <sup>2</sup>			Not applicable								
11 kV - AAAC, 100mm <sup>2</sup>	5	500304									
11 kV - AAAC, 150mm <sup>2</sup>	6	500305									
33 kV - HDCu, 100mm <sup>2</sup>	7	500306									
33 kV - AAAC, 150mm <sup>2</sup>	8	500307									
33 kV - AAAC, 200mm <sup>2</sup>	9	500308									
Item	ES Ref	Item CC No	9	8	7	6	5	-	3	2	-
(Items Included in GA Kit Contents)											
Bolt, M20, 300mm	400F1	107735	2	2	2	2	2	-	2	2	-
Bolt, M20, 60mm	400F1	107581	10	10	10	10	10	-	10	10	-
Bolt, M20, 750mm	400F1	107790	2	2	2	2	2	-	2	2	-
Coach Screw	400F1	126810	1	1	1	1	1	-	1	1	-
Washer, Round, Flat	400F1	993018	4	4	4	4	4	-	4	4	-
Washer, Square, Curved	400F1	139203	2	2	2	2	2	-	2	2	-
Washer, Square, Flat	400F1	139262	2	2	2	2	2	-	2	2	-
Helical Intermediate Tie	400H2	138924	-	-	-	-	-	-	-	3	-
Helical Intermediate Tie	400H2	138926	-	-	-	-	-	-	3	-	-
Helical Intermediate Tie	400H2	138932	-	-	-	-	3	-	-	-	-
Helical Intermediate Tie	400H2	138928	-	-	-	3	-	-	-	-	-
Helical Intermediate Tie	400H2	138495	-	-	3	-	-	-	-	-	-
Helical Intermediate Tie	400H2	138312	-	3	-	-	-	-	-	-	-
Helical Intermediate Tie	400H2	138479	3	-	-	-	-	-	-	-	-
Insulator, Pin-Mounted	400I4	125202	-	-	-	3	3	-	3	3	-
Insulator, Pin-Mounted	400I4	125199	3	3	3	-	-	-	-	-	-
Danger Plate	400N1	195251	2	2	2	2	2	-	2	2	-
Gouge-mark Plate	400N1	995610	1	1	1	1	1	-	1	1	-
Crossarm	400S11	133310	2	2	2	2	2	-	2	2	-
Crossarm Strut	400S11	133353	4	4	4	4	4	-	4	4	-
FARAP	400S11	260820	1	1	1	1	1	-	1	1	-
Insulator Bracket	400S11	133302	1	1	1	1	1	-	1	1	-
Insulator Pin	400S11	128252	-	-	-	3	3	-	3	3	-
Insulator Pin	400S11	128104	3	3	3	-	-	-	-	-	-
Section Strap	400S11	133345	2	2	2	2	2	-	2	2	-
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	1	1	1	1	1	-	1	1	-
Pole Cap	400W7	Ref ES400W7	1	1	1	1	1	-	1	1	-
ACDs	400A2	Ref ES400A2	As required								
Notices	400N1	Ref ES400N1	As required								



**PIN ANGLE (SINGLE POLE/SINGLE CROSSARM)**

Drawing No: I-40003-GA-002

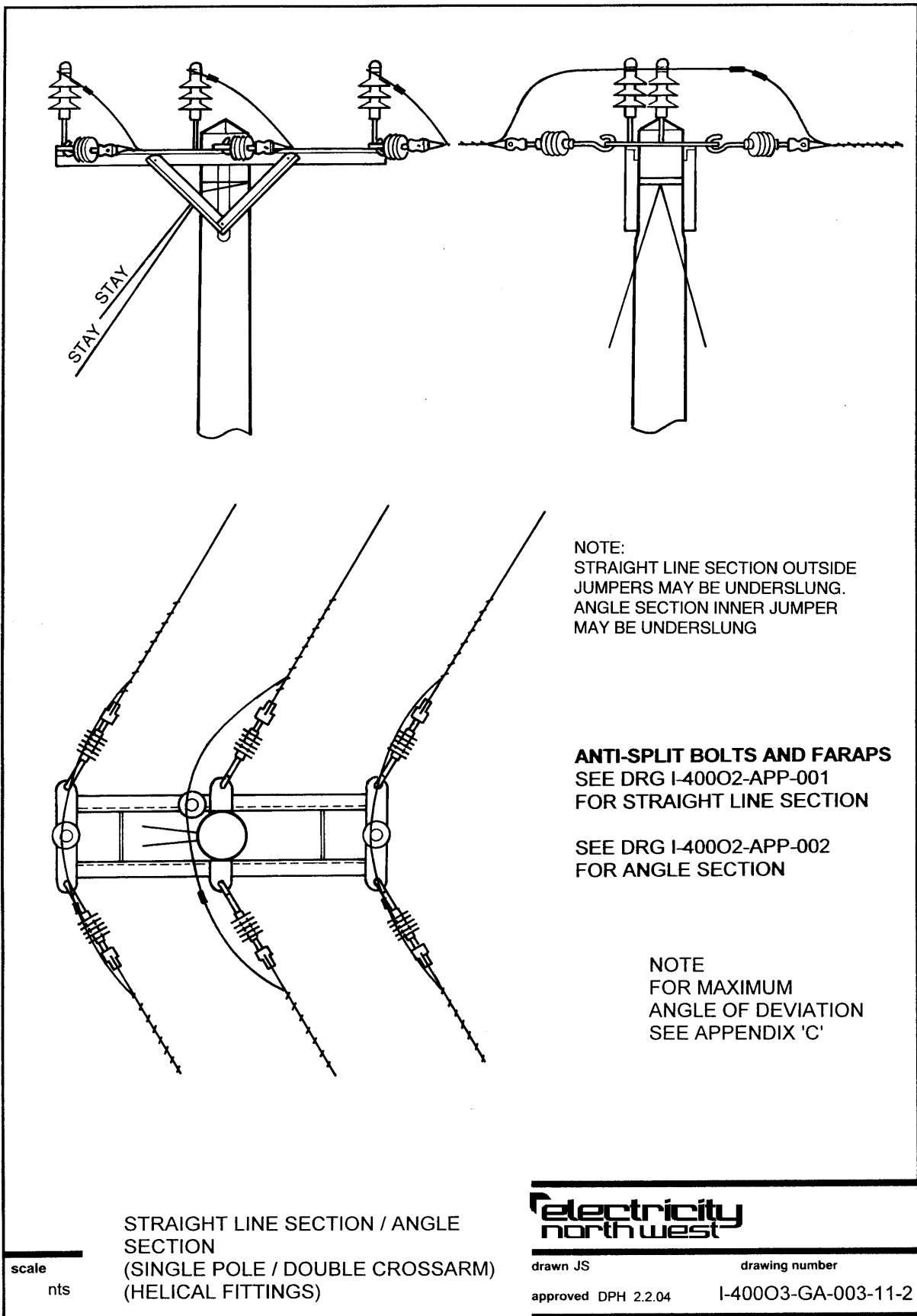
Voltage/Conductor	Ref	GA Kit CC No	Comprising:									
11 kV - HDCu, 38mm <sup>2</sup>	1	500319										
11 kV - HDCu, 70mm <sup>2</sup>		Not applicable										
11 kV - HDCu, 100mm <sup>2</sup>		Not applicable										
11 kV - AAAC, 50mm <sup>2</sup>	4	500322										
11 kV - AAAC, 100mm <sup>2</sup>		Not applicable										
11 kV - AAAC, 150mm <sup>2</sup>		Not applicable										
33 kV - HDCu, 100mm <sup>2</sup>		Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>		Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>		Not applicable										
<b>Item</b>	<b>ES Ref</b>	<b>Item CC No</b>	-	-	-	-	-	-	<b>4</b>	-	-	<b>1</b>
<b>(Items Included in GA Kit Contents)</b>												
Bolt, M20, 300mm	400F1	107735	-	-	-	-	-	-	2	-	-	2
Bolt, M20, 60mm	400F1	107581	-	-	-	-	-	-	4	-	-	4
Bolt, M20, 750mm	400F1	107790	-	-	-	-	-	-	2	-	-	2
Coach Screw	400F1	126810	-	-	-	-	-	-	1	-	-	1
Washer, Square, Curved	400F1	139203	-	-	-	-	-	-	2	-	-	2
Washer, Square, Flat	400F1	139262	-	-	-	-	-	-	4	-	-	4
Helical Side Tie	400H2	138010	-	-	-	-	-	-	-	-	-	3
Helical Side Tie	400H2	138037	-	-	-	-	-	-	3	-	-	-
Insulator, Pin-Mounted	400I4	125202	-	-	-	-	-	-	3	-	-	3
Insulator, Pin-Mounted	400I4	125199	-	-	-	-	-	-	3	-	-	3
Danger Plate	400N1	195251	-	-	-	-	-	-	2	-	-	2
Gouge-mark Plate	400N1	995610	-	-	-	-	-	-	1	-	-	1
Crossarm	400S11	133310	-	-	-	-	-	-	1	-	-	1
Crossarm Strut	400S11	133353	-	-	-	-	-	-	2	-	-	2
FARAP	400S11	260820	-	-	-	-	-	-	1	-	-	1
Insulator Bracket	400S11	133302	-	-	-	-	-	-	1	-	-	1
Insulator Pin	400S11	128252	-	-	-	-	-	-	3	-	-	3
Insulator Pin	400S11	128104	-	-	-	-	-	-	3	-	-	3
<b>(Additional Items Required for GA But Not Included in GA Kit Contents)</b>												
Wood Pole	400W2	Ref ES400W2	-	-	-	-	-	-	1	-	-	1
Pole Cap	400W7	Ref ES400W7	-	-	-	-	-	-	1	-	-	1
ACDs	400A2	Ref ES400A2	As required									
Notices	400N1	Ref ES400N1	As required									
Stays	400S13	Ref ES400S13	As required									



**PIN ANGLE (SINGLE POLE/DOUBLE CROSSARM)**

Drawing No: I-40003-GA-046

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>			Not applicable								
11 kV - HDCu, 70mm <sup>2</sup>	2	500320									
11 kV - HDCu, 100mm <sup>2</sup>	3	500321									
11 kV - AAAC, 50mm <sup>2</sup>			Not applicable								
11 kV - AAAC, 100mm <sup>2</sup>	5	500323									
11 kV - AAAC, 150mm <sup>2</sup>	6	500324									
33 kV - HDCu, 100mm <sup>2</sup>	7	500325									
33 kV - AAAC, 150mm <sup>2</sup>	8	500326									
33 kV - AAAC, 200mm <sup>2</sup>	9	500327									
Item	ES Ref	Item CC No	9	8	7	6	5	-	3	2	-
(Items Included in GA Kit Contents)											
Bolt, M20, 300mm	400F1	107735	2	2	2	2	2	-	2	2	-
Bolt, M20, 60mm	400F1	107581	10	10	10	10	10	-	10	10	-
Bolt, M20, 750mm	400F1	107790	2	2	2	2	2	-	2	2	-
Coach Screw	400F1	126810	1	1	1	1	1	-	1	1	-
Washer, Round, Flat	400F1	993018	4	4	4	4	4	-	4	4	-
Washer, Square, Curved	400F1	139203	2	2	2	2	2	-	2	2	-
Washer, Square, Flat	400F1	139262	2	2	2	2	2	-	2	2	-
Helical Side Tie	400H2	138029	-	-	-	-	-	-	-	3	-
Helical Side Tie	400H2	138130	-	-	-	-	-	-	3	-	-
Helical Side Tie	400H2	138045	-	-	-	-	3	-	-	-	-
Helical Side Tie	400H2	138132	-	-	-	3	-	-	-	-	-
Helical Side Tie	400H2	138140	-	-	3	-	-	-	-	-	-
Helical Side Tie	400H2	138150	-	3	-	-	-	-	-	-	-
Helical Side Tie	400H2	138160	3	-	-	-	-	-	-	-	-
Insulator, Pin-Mounted	400I4	125202	-	-	-	3	3	-	3	3	-
Insulator, Pin-Mounted	400I4	125199	3	3	3	-	-	-	-	-	-
Danger Plate	400N1	195251	2	2	2	2	2	-	2	2	-
Gouge-mark Plate	400N1	995610	1	1	1	1	1	-	1	1	-
Crossarm	400S11	133310	2	2	2	2	2	-	2	2	-
Crossarm Strut	400S11	133353	4	4	4	4	4	-	4	4	-
FARAP	400S11	260820	1	1	1	1	1	-	1	1	-
Insulator Bracket	400S11	133302	1	1	1	1	1	-	1	1	-
Insulator Pin	400S11	128252	-	-	-	3	3	-	3	3	-
Insulator Pin	400S11	128104	3	3	3	-	-	-	-	-	-
Section Strap	400S11	133345	2	2	2	2	2	-	2	2	-
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	1	1	1	1	1	-	1	1	-
Pole Cap	400W7	Ref ES400W7	1	1	1	1	1	-	1	1	-
ACDs	400A2	Ref ES400A2	As required								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								



**STRAIGHT LINE SECTION/ANGLE SECTION (SINGLE POLE/DOUBLE CROSSARM)  
(HELICAL FITTINGS)**

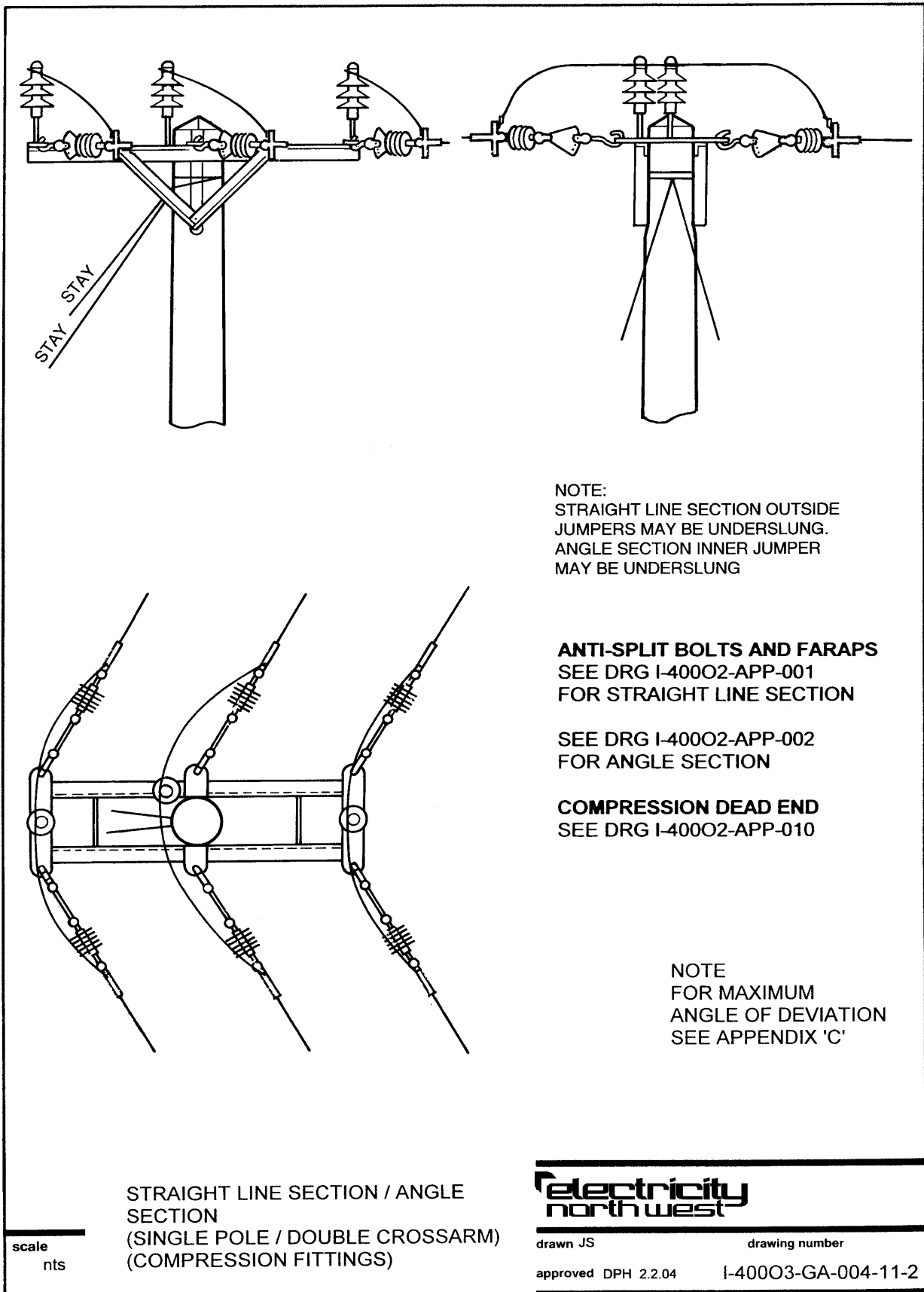
Drawing No: I-40003-GA-003

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500338									
11 kV - HDCu, 70mm <sup>2</sup>	2	500339									
11 kV - HDCu, 100mm <sup>2</sup>	3	500340									
11 kV - AAAC, 50mm <sup>2</sup>	4	500341									
11 kV - AAAC, 100mm <sup>2</sup>	5	500342									
11 kV - AAAC, 150mm <sup>2</sup>	6	500343									
33 kV - HDCu, 100mm <sup>2</sup>	7	500344									
33 kV - AAAC, 150mm <sup>2</sup>	8	500345									
33 kV - AAAC, 200mm <sup>2</sup>	9	500346									
Item	ES Ref	Item CC No	9	8	7	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Jumper Splice	400C29	130664	-	-	-	-	-	-	-	-	3
Jumper Splice	400C29	130850	-	-	-	-	-	-	-	3	-
Jumper Splice	400C29	130670	-	-	3	-	-	-	3	-	-
Jumper Splice	400C29	130842	-	-	-	-	-	3	-	-	-
Jumper Splice	400C29	124990	-	-	-	-	3	-	-	-	-
Jumper Splice	400C29	130675	-	3	-	3	-	-	-	-	-
Jumper Splice	400C29	130680	3	-	-	-	-	-	-	-	-
Socket Thimble	400C29	132233	-	-	6	-	6	6	6	6	6
Socket Thimble	400C29	132234	6	6	-	6	-	-	-	-	-
Bolt, M20, 300mm	400F1	107735	2	2	2	2	2	2	2	2	2
Bolt, M20, 60mm	400F1	107581	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2
Bolt, M20, 750mm	400F1	107790	2	2	2	2	2	2	2	2	2
Coach Screw	400F1	126810	1	1	1	1	1	1	1	1	1
Washer, Round, Flat	400F1	993018	1 6	1 6	1 6	1 6	1 6	1 6	1 6	1 6	1 6
Washer, Square, Curved	400F1	139203	2	2	2	2	2	2	2	2	2
Washer, Square, Flat	400F1	139262	2	2	2	2	2	2	2	2	2
Helical Dead End	400H2	121061	-	-	-	-	-	-	-	-	6
Helical Dead End	400H2	121088	-	-	-	-	-	-	-	6	-
Helical Dead End	400H2	138154	-	-	6	-	-	-	6	-	-
Helical Dead End	400H2	121029	-	-	-	-	-	6	-	-	-
Helical Dead End	400H2	121401	-	-	-	-	6	-	-	-	-
Helical Dead End	400H2	138156	-	6	-	6	-	-	-	-	-
Helical Dead End	400H2	138158	6	-	-	-	-	-	-	-	-
Helical Side Tie	400H2	138010	-	-	-	-	-	-	-	-	3

Drawing No: I-40003-GA-003

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500338									
11 kV - HDCu, 70mm <sup>2</sup>	2	500339									
11 kV - HDCu, 100mm <sup>2</sup>	3	500340									
11 kV - AAAC, 50mm <sup>2</sup>	4	500341									
11 kV - AAAC, 100mm <sup>2</sup>	5	500342									
11 kV - AAAC, 150mm <sup>2</sup>	6	500343									
33 kV - HDCu, 100mm <sup>2</sup>	7	500344									
33 kV - AAAC, 150mm <sup>2</sup>	8	500345									
33 kV - AAAC, 200mm <sup>2</sup>	9	500346									
Item	ES Ref	Item CC No	9	8	7	6	5	4	3	2	1
Helical Side Tie	400H2	138029	-	-	-	-	-	-	-	3	-
Helical Side Tie	400H2	138130	-	-	-	-	-	-	3	-	-
Helical Side Tie	400H2	138037	-	-	-	-	-	3	-	-	-
Helical Side Tie	400H2	138045	-	-	-	-	3	-	-	-	-
Helical Side Tie	400H2	138132	-	-	-	3	-	-	-	-	-
Helical Side Tie	400H2	138140	-	-	3	-	-	-	-	-	-
Helical Side Tie	400H2	138150	-	3	-	-	-	-	-	-	-
Helical Side Tie	400H2	138160	3	-	-	-	-	-	-	-	-
Insulator Set, Tension	400I4	125232	6	6	6	6	6	6	6	6	6
Insulator, Pin-Mounted	400I4	125202	-	-	-	3	3	3	3	3	3
Insulator, Pin-Mounted	400I4	125199	3	3	3	-	-	-	-	-	-
Danger Plate	400N1	195251	2	2	2	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	1	1	1	1	1	1	1	1	1
Crossarm	400S11	133329	2	2	2	2	2	2	2	2	2
Crossarm Strut	400S11	133353	4	4	4	4	4	4	4	4	4
FARAP	400S11	260820	1	1	1	1	1	1	1	1	1
Pilot Pin	400S11	128376	3	3	3	3	3	3	3	3	3
Section Strap	400S11	133345	2	2	2	2	2	2	2	2	2
Terminal Strap	400S11	133361	2	2	2	2	2	2	2	2	2
Tie Rod	400S11	133388	2	2	2	2	2	2	2	2	2
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	1	1	1	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	1	1	1	1	1	1	1	1	1
ACDs	400A2	Ref ES400A2	As required								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								





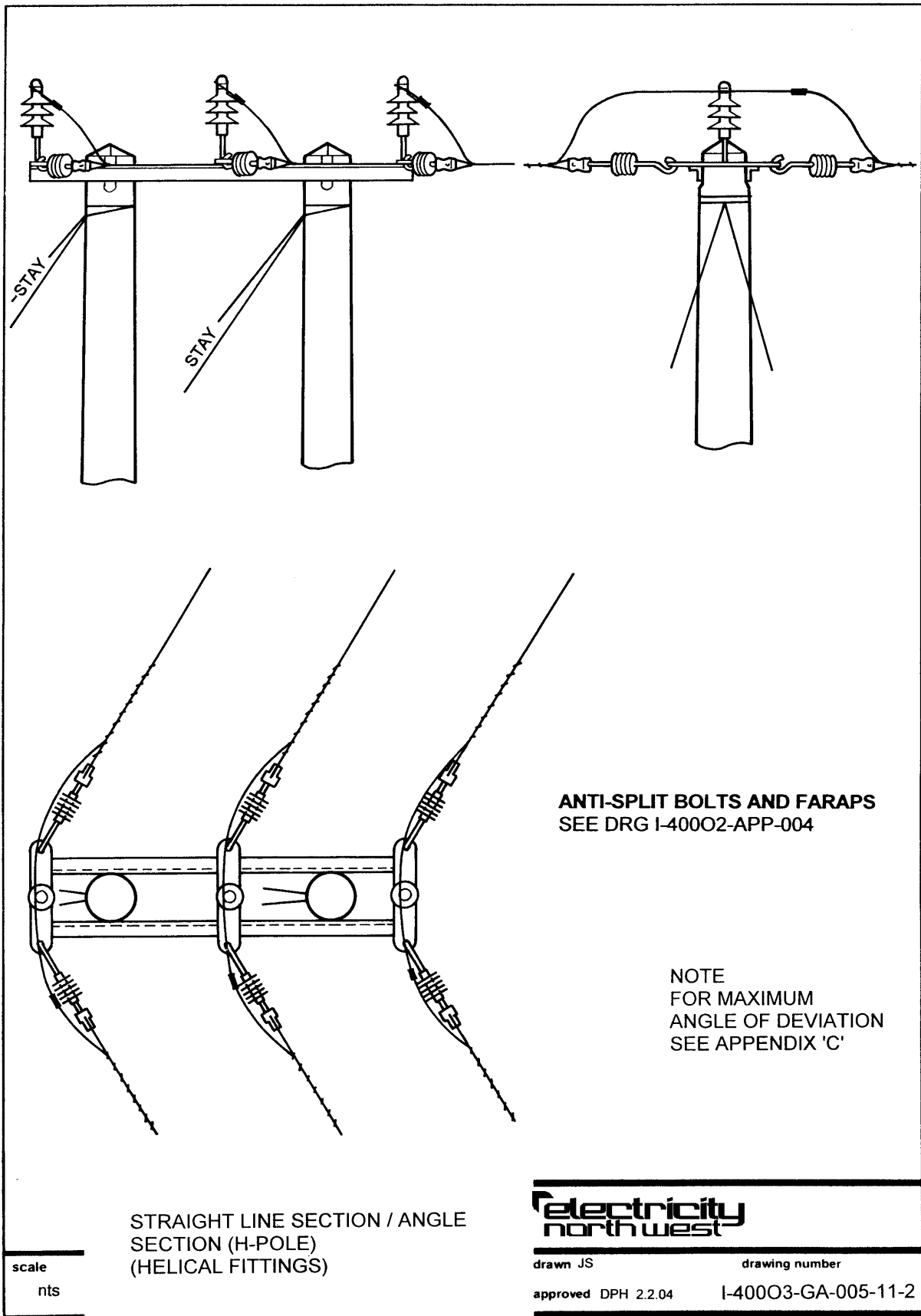
**STRAIGHT LINE SECTION/ANGLE SECTION (SINGLE POLE/DOUBLE CROSSARM)  
(COMPRESSION FITTINGS)**

Drawing No: I-40003-GA-004

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500357									
11 kV - HDCu, 70mm <sup>2</sup>	2	500358									
11 kV - HDCu, 100mm <sup>2</sup>	3	500359									
11 kV - AAAC, 50mm <sup>2</sup>	4	500360									
11 kV - AAAC, 100mm <sup>2</sup>	5	500361									
11 kV - AAAC, 150mm <sup>2</sup>	6	500362									
33 kV - HDCu, 100mm <sup>2</sup>	7	500363									
33 kV - AAAC, 150mm <sup>2</sup>	8	500364									
33 kV - AAAC, 200mm <sup>2</sup>	9	500365									
Item	ES Ref	Item CC No	9	8	7	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Compression Dead End	400C29	130910	-	-	-	-	-	-	-	-	6
Compression Dead End	400C29	130920	-	-	-	-	-	-	-	6	-
Compression Dead End	400C29	130930	-	-	6	-	-	-	6	-	-
Compression Dead End	400C29	130940	-	-	-	-	-	6	-	-	-
Compression Dead End	400C29	130950	-	-	-	-	6	-	-	-	-
Compression Dead End	400C29	130960	-	6	-	6	-	-	-	-	-
Compression Dead End	400C29	130970	6	-	-	-	-	-	-	-	-
Dead End Back Plate	400C29	121020	6	6	6	6	6	6	6	6	6
Bolt, M20, 300mm	400F1	107735	2	2	2	2	2	2	2	2	2
Bolt, M20, 60mm	400F1	107581	1	1	1	1	1	1	1	1	1
			2	2	2	2	2	2	2	2	2
Bolt, M20, 750mm	400F1	107790	2	2	2	2	2	2	2	2	2
Coach Screw	400F1	126810	1	1	1	1	1	1	1	1	1
Washer, Round, Flat	400F1	993018	1	1	1	1	1	1	1	1	1
			4	4	4	4	4	4	4	4	4
Washer, Square, Curved	400F1	139203	2	2	2	2	2	2	2	2	2
Washer, Square, Flat	400F1	139262	2	2	2	2	2	2	2	2	2
Helical Side Tie	400H2	138010	-	-	-	-	-	-	-	-	3
Helical Side Tie	400H2	138029	-	-	-	-	-	-	-	3	-
Helical Side Tie	400H2	138130	-	-	-	-	-	-	3	-	-
Helical Side Tie	400H2	138037	-	-	-	-	-	3	-	-	-
Helical Side Tie	400H2	138045	-	-	-	-	3	-	-	-	-
Helical Side Tie	400H2	138132	-	-	-	3	-	-	-	-	-
Helical Side Tie	400H2	138140	-	-	3	-	-	-	-	-	-
Helical Side Tie	400H2	138150	-	3	-	-	-	-	-	-	-
Helical Side Tie	400H2	138160	3	-	-	-	-	-	-	-	-

Drawing No: I-40003-GA-004

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500357									
11 kV - HDCu, 70mm <sup>2</sup>	2	500358									
11 kV - HDCu, 100mm <sup>2</sup>	3	500359									
11 kV - AAAC, 50mm <sup>2</sup>	4	500360									
11 kV - AAAC, 100mm <sup>2</sup>	5	500361									
11 kV - AAAC, 150mm <sup>2</sup>	6	500362									
33 kV - HDCu, 100mm <sup>2</sup>	7	500363									
33 kV - AAAC, 150mm <sup>2</sup>	8	500364									
33 kV - AAAC, 200mm <sup>2</sup>	9	500365									
Item	ES Ref	Item CC No	9	8	7	6	5	4	3	2	1
Insulator Set, Tension	400I4	125240	6	6	6	6	6	6	6	6	6
Insulator, Pin-Mounted	400I4	125202	-	-	-	3	3	3	3	3	3
Insulator, Pin-Mounted	400I4	125199	3	3	3	-	-	-	-	-	-
Danger Plate	400N1	195251	2	2	2	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	1	1	1	1	1	1	1	1	
Ball End Hook	400S11	122297	6	6	6	6	6	6	6	6	6
Crossarm	400S11	133329	2	2	2	2	2	2	2	2	2
Crossarm Strut	400S11	133353	4	4	4	4	4	4	4	4	4
FARAP	400S11	260820	1	1	1	1	1	1	1	1	1
Pilot Pin	400S11	128376	3	3	3	3	3	3	3	3	3
Sag Link	400S11	260850	6	6	6	6	6	6	6	6	6
Section Strap	400S11	133345	2	2	2	2	2	2	2	2	2
Socket Clevis	400S11	122173	1	1	1	1	1	1	1	1	1
			2	2	2	2	2	2	2	2	2
Terminal Strap	400S11	133361	2	2	2	2	2	2	2	2	2
Tie Rod	400S11	133388	2	2	2	2	2	2	2	2	2
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	1	1	1	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	1	1	1	1	1	1	1	1	1
ACDs	400A2	Ref ES400A2	As required								
Conductor Jumper	400C3	Ref ES400C3	Length & CSA as required								
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								



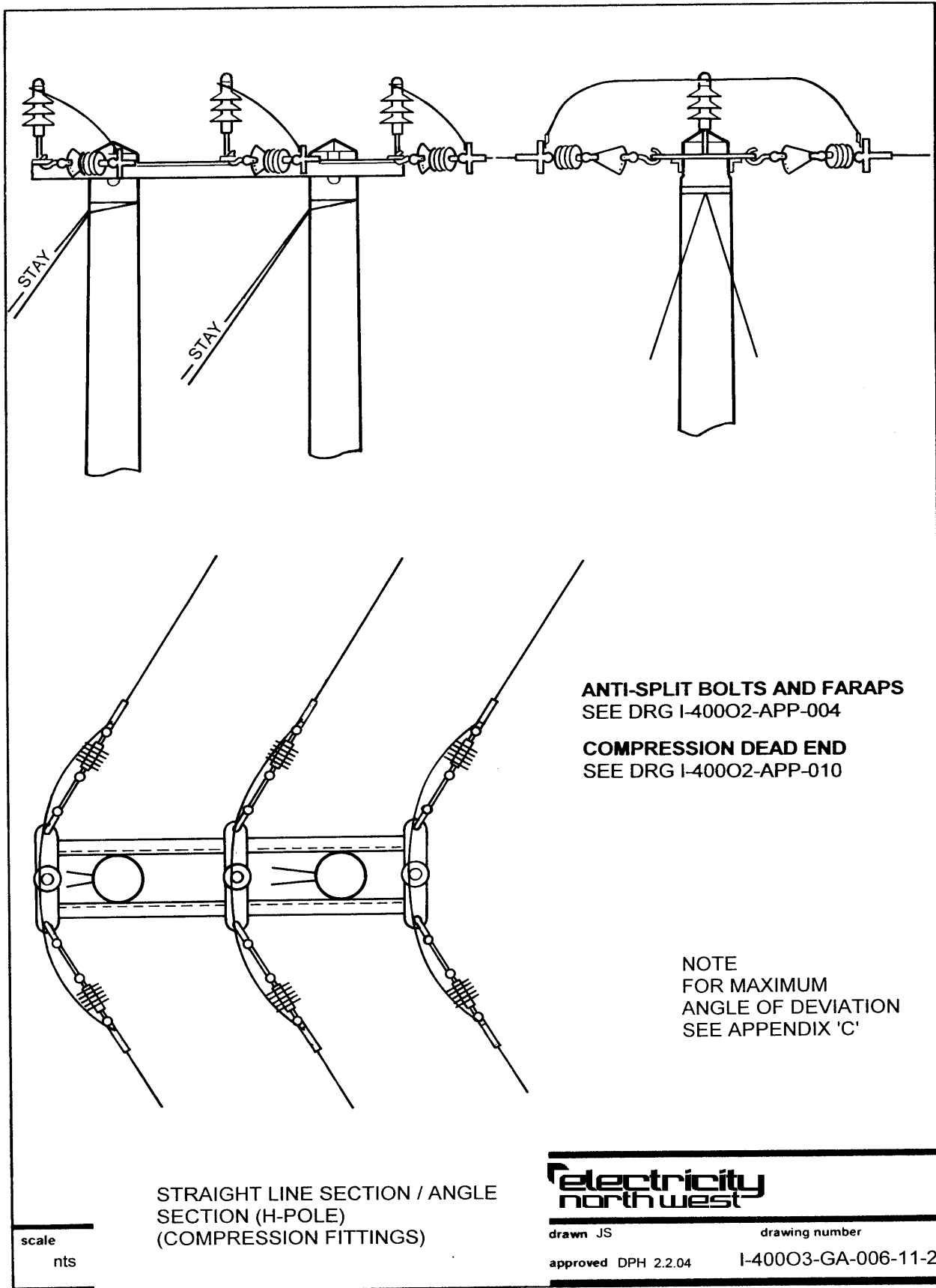
**STRAIGHT LINE SECTION/ANGLE SECTION (H-POLE)  
(HELICAL FITTINGS)**

Drawing No: I-40003-GA-005

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500376									
11 kV - HDCu, 70mm <sup>2</sup>	2	500377									
11 kV - HDCu, 100mm <sup>2</sup>	3	500378									
11 kV - AAAC, 50mm <sup>2</sup>	4	500379									
11 kV - AAAC, 100mm <sup>2</sup>	5	500380									
11 kV - AAAC, 150mm <sup>2</sup>	6	500381									
33 kV - HDCu, 100mm <sup>2</sup>	7	500382									
33 kV - AAAC, 150mm <sup>2</sup>	8	500383									
33 kV - AAAC, 200mm <sup>2</sup>	9	500384									
Item	ES Ref	Item CC No	9	8	7	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Jumper Splice	400C29	130664	-	-	-	-	-	-	-	-	3
Jumper Splice	400C29	130850	-	-	-	-	-	-	-	3	-
Jumper Splice	400C29	130670	-	-	3	-	-	-	3	-	-
Jumper Splice	400C29	130842	-	-	-	-	-	3	-	-	-
Jumper Splice	400C29	124990	-	-	-	-	3	-	-	-	-
Jumper Splice	400C29	130675	-	3	-	3	-	-	-	-	-
Jumper Splice	400C29	130680	3	-	-	-	-	-	-	-	-
Socket Thimble	400C29	132233	-	-	6	-	6	6	6	6	6
Socket Thimble	400C29	132234	6	6	-	6	-	-	-	-	-
Bolt, M20, 300mm	400F1	107735	2	2	2	2	2	2	2	2	2
Bolt, M20, 60mm	400F1	107581	6	6	6	6	6	6	6	6	6
Coach Screw	400F1	126810	2	2	2	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	10	10	10	10	10	10	10	10	10
Helical Dead End	400H2	121061	-	-	-	-	-	-	-	-	6
Helical Dead End	400H2	121088	-	-	-	-	-	-	-	6	-
Helical Dead End	400H2	138154	-	-	6	-	-	-	6	-	-
Helical Dead End	400H2	121029	-	-	-	-	-	6	-	-	-
Helical Dead End	400H2	121401	-	-	-	-	6	-	-	-	-
Helical Dead End	400H2	138156	-	6	-	6	-	-	-	-	-
Helical Dead End	400H2	138158	6	-	-	-	-	-	-	-	-
Helical Side Tie	400H2	138010	-	-	-	-	-	-	-	-	3
Helical Side Tie	400H2	138029	-	-	-	-	-	-	-	3	-
Helical Side Tie	400H2	138130	-	-	-	-	-	-	3	-	-
Helical Side Tie	400H2	138037	-	-	-	-	-	3	-	-	-
Helical Side Tie	400H2	138045	-	-	-	-	3	-	-	-	-
Helical Side Tie	400H2	138132	-	-	-	3	-	-	-	-	-
Helical Side Tie	400H2	138140	-	-	3	-	-	-	-	-	-
Helical Side Tie	400H2	138150	-	3	-	-	-	-	-	-	-
Helical Side Tie	400H2	138160	3	-	-	-	-	-	-	-	-

Drawing No: I-40003-GA-005

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500376									
11 kV - HDCu, 70mm <sup>2</sup>	2	500377									
11 kV - HDCu, 100mm <sup>2</sup>	3	500378									
11 kV - AAAC, 50mm <sup>2</sup>	4	500379									
11 kV - AAAC, 100mm <sup>2</sup>	5	500380									
11 kV - AAAC, 150mm <sup>2</sup>	6	500381									
33 kV - HDCu, 100mm <sup>2</sup>	7	500382									
33 kV - AAAC, 150mm <sup>2</sup>	8	500383									
33 kV - AAAC, 200mm <sup>2</sup>	9	500384									
Item	ES Ref	Item CC No	9	8	7	6	5	4	3	2	1
Insulator Set, Tension	400I4	125232	6	6	6	6	6	6	6	6	6
Insulator, Pin-Mounted	400I4	125202	-	-	-	3	3	3	3	3	3
Insulator, Pin-Mounted	400I4	125199	3	3	3	-	-	-	-	-	-
Danger Plate	400N1	195251	4	4	4	4	4	4	4	4	4
Gouge-mark Plate	400N1	995610	2	2	2	2	2	2	2	2	2
Crossarm	400S11	133329	2	2	2	2	2	2	2	2	2
FARAP	400S11	260820	2	2	2	2	2	2	2	2	2
Foundation Fasteners Kit (Refer to drawing I-40002-GA-047)	400S11	133540	1	1	1	1	1	1	1	1	1
Pilot Pin	400S11	128376	3	3	3	3	3	3	3	3	3
Section Strap	400S11	133345	3	3	3	3	3	3	3	3	3
Tie Rod	400S11	133388	1	1	1	1	1	1	1	1	1
<b>(Additional Items Required for GA But Not Included in GA Kit Contents)</b>											
Wood Pole	400W2	Ref ES400W2	1	1	1	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	2	2	2	2	2	2	2	2	2
ACDs	400A2	Ref ES400A2	As required								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								



**STRAIGHT LINE SECTION/ANGLE SECTION (H-POLE)  
(COMPRESSION FITTINGS)**

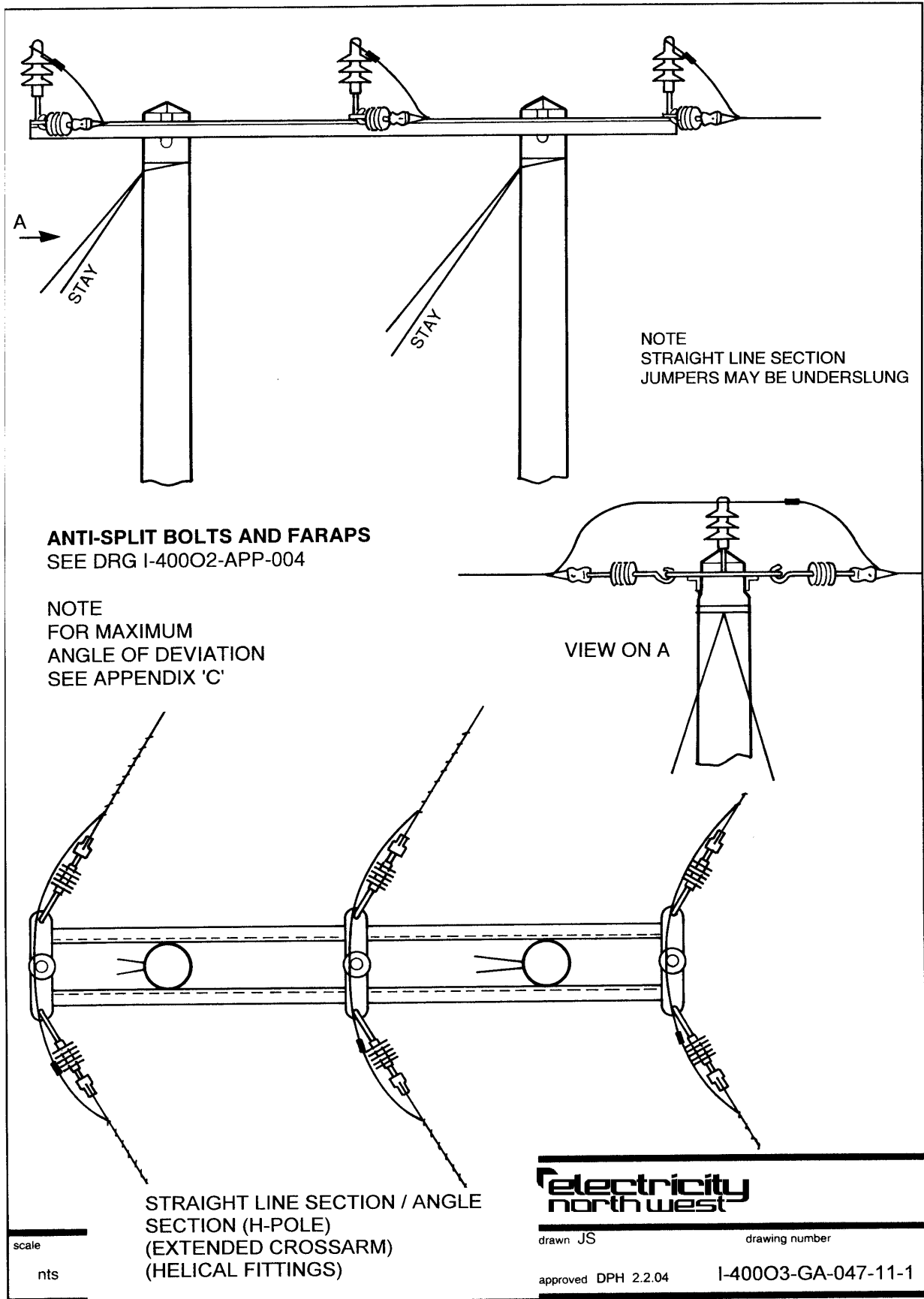
Drawing No: I-40003-GA-006

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500395									
11 kV - HDCu, 70mm <sup>2</sup>	2	500396									
11 kV - HDCu, 100mm <sup>2</sup>	3	500397									
11 kV - AAAC, 50mm <sup>2</sup>	4	500398									
11 kV - AAAC, 100mm <sup>2</sup>	5	500399									
11 kV - AAAC, 150mm <sup>2</sup>	6	500400									
33 kV - HDCu, 100mm <sup>2</sup>	7	500401									
33 kV - AAAC, 150mm <sup>2</sup>	8	500402									
33 kV - AAAC, 200mm <sup>2</sup>	9	500403									
Item	ES Ref	Item CC No	9	8	7	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Compression Dead End	400C29	130910	-	-	-	-	-	-	-	-	6
Compression Dead End	400C29	130920	-	-	-	-	-	-	-	6	-
Compression Dead End	400C29	130930	-	-	6	-	-	-	6	-	-
Compression Dead End	400C29	130940	-	-	-	-	-	6	-	-	-
Compression Dead End	400C29	130950	-	-	-	-	6	-	-	-	-
Compression Dead End	400C29	130960	-	6	-	6	-	-	-	-	-
Compression Dead End	400C29	130970	6	-	-	-	-	-	-	-	-
Dead End Back Plate	400C29	121020	6	6	6	6	6	6	6	6	6
Bolt, M20, 300mm	400F1	107735	2	2	2	2	2	2	2	2	2
Bolt, M20, 60mm	400F1	107581	6	6	6	6	6	6	6	6	6
Coach Screw	400F1	126810	2	2	2	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	10	10	10	10	10	10	10	10	10
Helical Side Tie	400H2	138010	-	-	-	-	-	-	-	-	3
Helical Side Tie	400H2	138029	-	-	-	-	-	-	-	3	-
Helical Side Tie	400H2	138130	-	-	-	-	-	-	3	-	-
Helical Side Tie	400H2	138037	-	-	-	-	-	3	-	-	-
Helical Side Tie	400H2	138045	-	-	-	-	3	-	-	-	-
Helical Side Tie	400H2	138132	-	-	-	3	-	-	-	-	-
Helical Side Tie	400H2	138140	-	-	3	-	-	-	-	-	-
Helical Side Tie	400H2	138150	-	3	-	-	-	-	-	-	-
Helical Side Tie	400H2	138160	3	-	-	-	-	-	-	-	-
Insulator Set, Tension	400I4	125240	6	6	6	6	6	6	6	6	6
Insulator, Pin-Mounted	400I4	125202	-	-	-	3	3	3	3	3	3
Insulator, Pin-Mounted	400I4	125199	3	3	3	-	-	-	-	-	-
Danger Plate	400N1	195251	4	4	4	4	4	4	4	4	4
Gouge-mark Plate	400N1	995610	2	2	2	2	2	2	2	2	2
Ball End Hook	400S11	122297	6	6	6	6	6	6	6	6	6
Crossarm	400S11	133329	2	2	2	2	2	2	2	2	2
FARAP	400S11	260820	2	2	2	2	2	2	2	2	2



Drawing No: I-40003-GA-006

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500395									
11 kV - HDCu, 70mm <sup>2</sup>	2	500396									
11 kV - HDCu, 100mm <sup>2</sup>	3	500397									
11 kV - AAAC, 50mm <sup>2</sup>	4	500398									
11 kV - AAAC, 100mm <sup>2</sup>	5	500399									
11 kV - AAAC, 150mm <sup>2</sup>	6	500400									
33 kV - HDCu, 100mm <sup>2</sup>	7	500401									
33 kV - AAAC, 150mm <sup>2</sup>	8	500402									
33 kV - AAAC, 200mm <sup>2</sup>	9	500403									
Item	ES Ref	Item CC No	9	8	7	6	5	4	3	2	1
Foundation Fasteners Kit (Refer to drawing I-40002-GA-047)	400S11	133540	1	1	1	1	1	1	1	1	1
Pilot Pin	400S11	128376	3	3	3	3	3	3	3	3	3
Sag Link	400S11	260850	6	6	6	6	6	6	6	6	6
Section Strap	400S11	133345	3	3	3	3	3	3	3	3	3
Socket Clevis	400S11	122173	12	12	12	12	12	12	12	12	12
Tie Rod	400S11	133388	1	1	1	1	1	1	1	1	1
<b>(Additional Items Required for GA But Not Included in GA Kit Contents)</b>											
Wood Pole	400W2	Ref ES400W2	1	1	1	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	2	2	2	2	2	2	2	2	2
ACDs	400A2	Ref ES400A2	As required								
Conductor Jumper	400C3	Ref ES400C3	Length & CSA as required								
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								



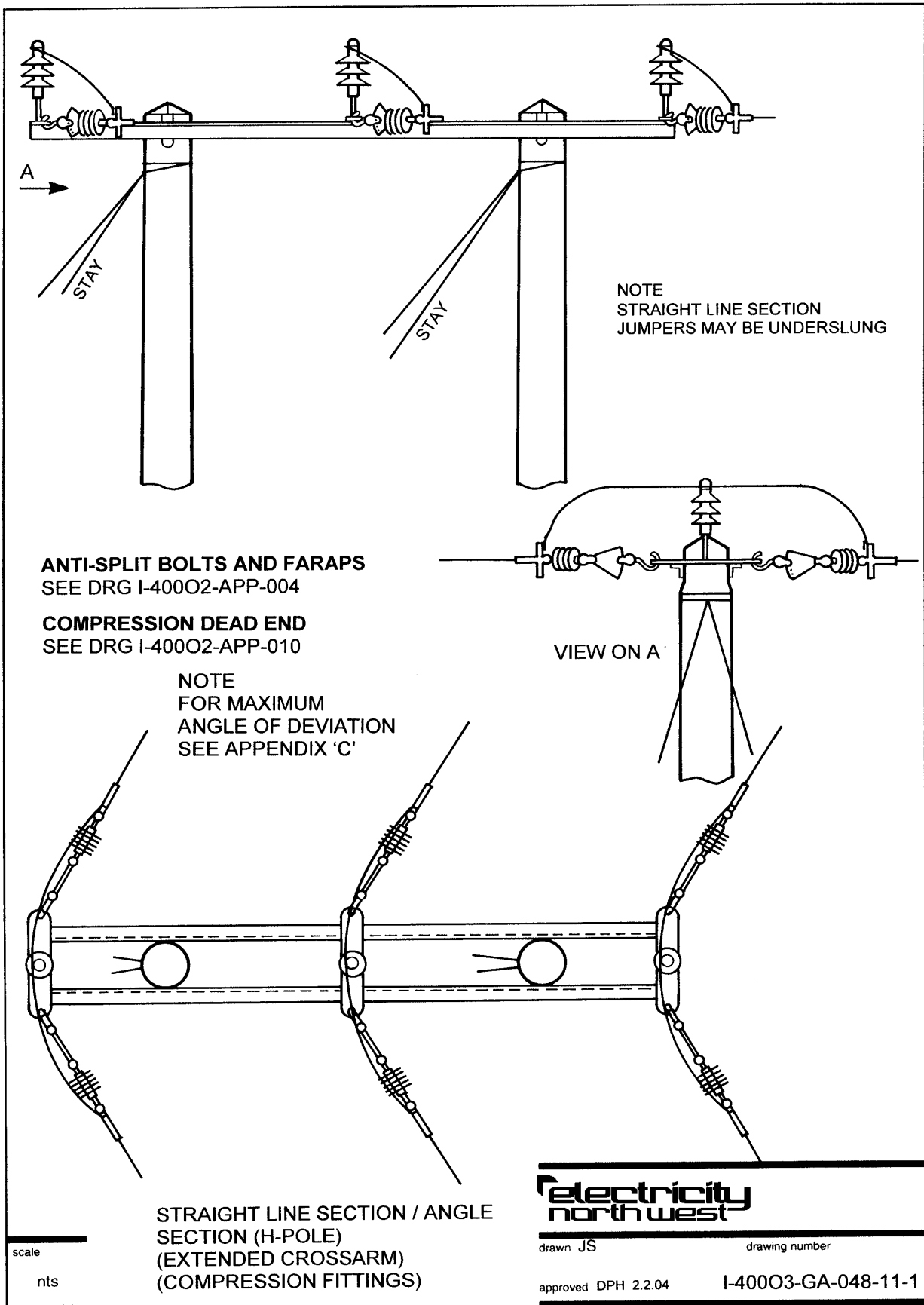
**STRAIGHT LINE SECTION/ANGLE SECTION (H-POLE) (EXTENDED CROSSARM)  
(HELICAL FITTINGS)**

Drawing No: I-40003-GA-047

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500476									
11 kV - HDCu, 70mm <sup>2</sup>	2	500477									
11 kV - HDCu, 100mm <sup>2</sup>	3	500484									
11 kV - AAAC, 50mm <sup>2</sup>	4	500485									
11 kV - AAAC, 100mm <sup>2</sup>	5	500491									
11 kV - AAAC, 150mm <sup>2</sup>	6	500503									
33 kV - HDCu, 100mm <sup>2</sup>	7	500540									
33 kV - AAAC, 150mm <sup>2</sup>	8	500541									
33 kV - AAAC, 200mm <sup>2</sup>	9	500548									
Item	ES Ref	Item CC No	9	8	7	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Jumper Splice	400C29	130664	-	-	-	-	-	-	-	-	3
Jumper Splice	400C29	130850	-	-	-	-	-	-	-	3	-
Jumper Splice	400C29	130670	-	-	3	-	-	-	3	-	-
Jumper Splice	400C29	130842	-	-	-	-	-	3	-	-	-
Jumper Splice	400C29	124990	-	-	-	-	3	-	-	-	-
Jumper Splice	400C29	130675	-	3	-	3	-	-	-	-	-
Jumper Splice	400C29	130680	3	-	-	-	-	-	-	-	-
Socket Thimble	400C29	132233	-	-	6	-	6	6	6	6	6
Socket Thimble	400C29	132234	6	6	-	6	-	-	-	-	-
Bolt, M20, 300mm	400F1	107735	2	2	2	2	2	2	2	2	2
Bolt, M20, 60mm	400F1	107581	6	6	6	6	6	6	6	6	6
Coach Screw	400F1	126810	2	2	2	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	22	22	22	22	22	22	22	22	22
Helical Dead End	400H2	121061	-	-	-	-	-	-	-	-	6
Helical Dead End	400H2	121088	-	-	-	-	-	-	-	6	-
Helical Dead End	400H2	138154	-	-	6	-	-	-	6	-	-
Helical Dead End	400H2	121029	-	-	-	-	-	6	-	-	-
Helical Dead End	400H2	121401	-	-	-	-	6	-	-	-	-
Helical Dead End	400H2	138156	-	6	-	6	-	-	-	-	-
Helical Dead End	400H2	138158	6	-	-	-	-	-	-	-	-
Helical Side Tie	400H2	138010	-	-	-	-	-	-	-	-	3
Helical Side Tie	400H2	138029	-	-	-	-	-	-	-	3	-
Helical Side Tie	400H2	138130	-	-	-	-	-	-	3	-	-
Helical Side Tie	400H2	138037	-	-	-	-	-	3	-	-	-
Helical Side Tie	400H2	138045	-	-	-	-	3	-	-	-	-
Helical Side Tie	400H2	138132	-	-	-	3	-	-	-	-	-
Helical Side Tie	400H2	138140	-	-	3	-	-	-	-	-	-
Helical Side Tie	400H2	138150	-	3	-	-	-	-	-	-	-
Helical Side Tie	400H2	138160	3	-	-	-	-	-	-	-	-

Drawing No: I-40003-GA-047

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500476									
11 kV - HDCu, 70mm <sup>2</sup>	2	500477									
11 kV - HDCu, 100mm <sup>2</sup>	3	500484									
11 kV - AAAC, 50mm <sup>2</sup>	4	500485									
11 kV - AAAC, 100mm <sup>2</sup>	5	500491									
11 kV - AAAC, 150mm <sup>2</sup>	6	500503									
33 kV - HDCu, 100mm <sup>2</sup>	7	500540									
33 kV - AAAC, 150mm <sup>2</sup>	8	500541									
33 kV - AAAC, 200mm <sup>2</sup>	9	500548									
Item	ES Ref	Item CC No	9	8	7	6	5	4	3	2	1
Insulator Set, Tension	400I4	125232	6	6	6	6	6	6	6	6	6
Insulator, Pin-Mounted	400I4	125202	-	-	-	3	3	3	3	3	3
Insulator, Pin-Mounted	400I4	125199	3	3	3	-	-	-	-	-	-
Danger Plate	400N1	195251	4	4	4	4	4	4	4	4	4
Gouge-mark Plate	400N1	995610	2	2	2	2	2	2	2	2	2
Crossarm	400S11	133221	2	2	2	2	2	2	2	2	2
FARAP	400S11	260820	2	2	2	2	2	2	2	2	2
Foundation Fasteners Kit (Refer to drawing I-40002-GA-047)	400S11	133540	1	1	1	1	1	1	1	1	1
Pilot Pin	400S11	128376	3	3	3	3	3	3	3	3	3
Section Strap	400S11	133345	3	3	3	3	3	3	3	3	3
Tie Rod	400S11	133388	4	4	4	4	4	4	4	4	4
<b>(Additional Items Required for GA But Not Included in GA Kit Contents)</b>											
Wood Pole	400W2	Ref ES400W2	1	1	1	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	2	2	2	2	2	2	2	2	2
ACDs	400A2	Ref ES400A2	As required								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								



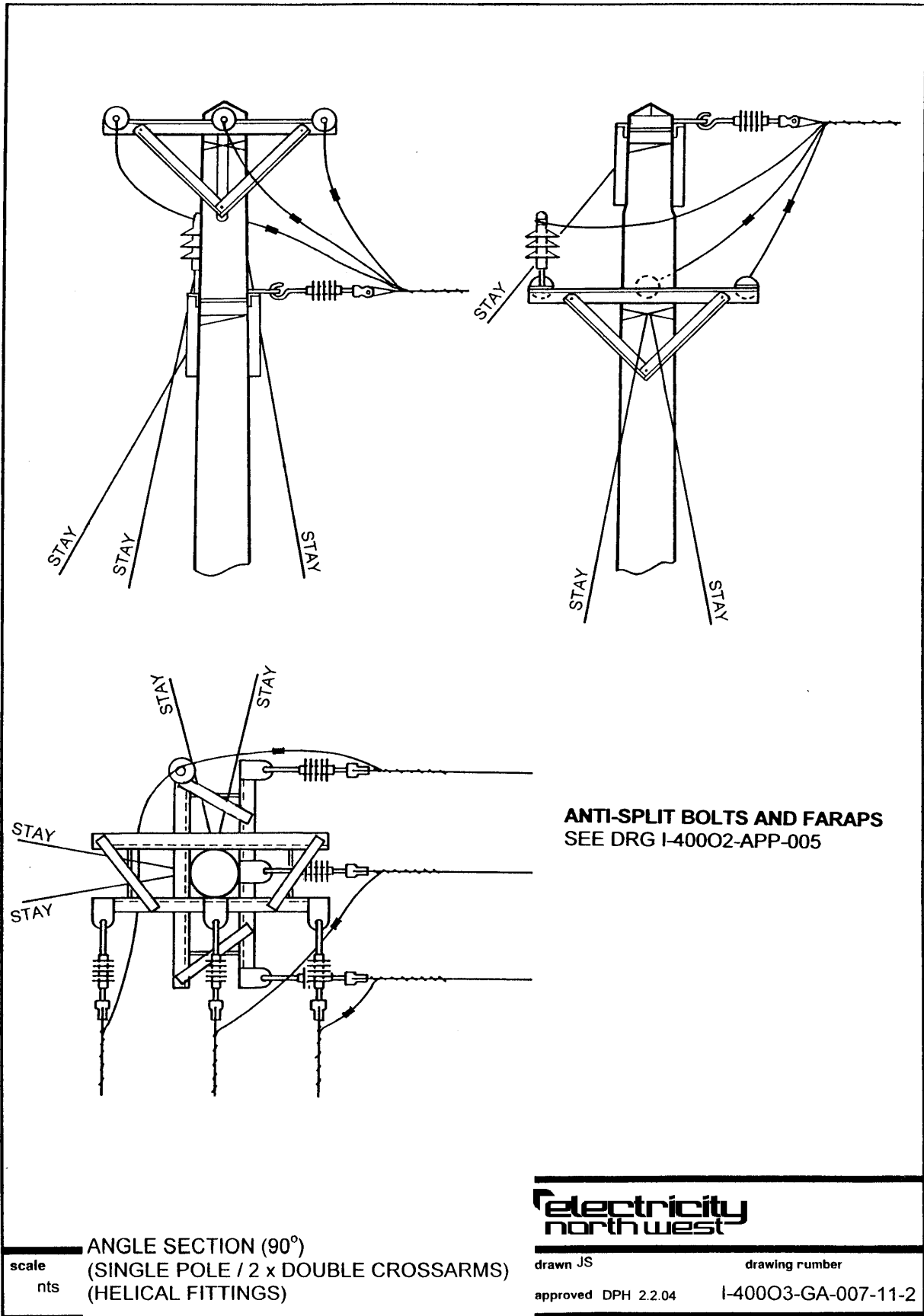
**STRAIGHT LINE SECTION/ANGLE SECTION (H-POLE) (EXTENDED CROSSARM)  
(COMPRESSION FITTINGS)**

Drawing No: I-40003-GA-048

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500549									
11 kV - HDCu, 70mm <sup>2</sup>	2	500550									
11 kV - HDCu, 100mm <sup>2</sup>	3	500551									
11 kV - AAAC, 50mm <sup>2</sup>	4	500552									
11 kV - AAAC, 100mm <sup>2</sup>	5	500553									
11 kV - AAAC, 150mm <sup>2</sup>	6	500554									
33 kV - HDCu, 100mm <sup>2</sup>	7	500555									
33 kV - AAAC, 150mm <sup>2</sup>	8	500556									
33 kV - AAAC, 200mm <sup>2</sup>	9	500557									
Item	ES Ref	Item CC No	9	8	7	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Compression Dead End	400C29	130910	-	-	-	-	-	-	-	-	6
Compression Dead End	400C29	130920	-	-	-	-	-	-	-	6	-
Compression Dead End	400C29	130930	-	-	6	-	-	-	6	-	-
Compression Dead End	400C29	130940	-	-	-	-	-	6	-	-	-
Compression Dead End	400C29	130950	-	-	-	-	6	-	-	-	-
Compression Dead End	400C29	130960	-	6	-	6	-	-	-	-	-
Compression Dead End	400C29	130970	6	-	-	-	-	-	-	-	-
Dead End Back Plate	400C29	121020	6	6	6	6	6	6	6	6	6
Bolt, M20, 300mm	400F1	107735	2	2	2	2	2	2	2	2	2
Bolt, M20, 60mm	400F1	107581	6	6	6	6	6	6	6	6	6
Coach Screw	400F1	126810	2	2	2	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	22	22	22	22	22	22	22	22	22
Helical Side Tie	400H2	138010	-	-	-	-	-	-	-	-	3
Helical Side Tie	400H2	138029	-	-	-	-	-	-	-	3	-
Helical Side Tie	400H2	138130	-	-	-	-	-	-	3	-	-
Helical Side Tie	400H2	138037	-	-	-	-	-	3	-	-	-
Helical Side Tie	400H2	138045	-	-	-	-	3	-	-	-	-
Helical Side Tie	400H2	138132	-	-	-	3	-	-	-	-	-
Helical Side Tie	400H2	138140	-	-	3	-	-	-	-	-	-
Helical Side Tie	400H2	138150	-	3	-	-	-	-	-	-	-
Helical Side Tie	400H2	138160	3	-	-	-	-	-	-	-	-
Insulator Set, Tension	400I4	125240	6	6	6	6	6	6	6	6	6
Insulator, Pin-Mounted	400I4	125202	-	-	-	3	3	3	3	3	3
Insulator, Pin-Mounted	400I4	125199	3	3	3	-	-	-	-	-	-
Danger Plate	400N1	195251	4	4	4	4	4	4	4	4	4
Gouge-mark Plate	400N1	995610	2	2	2	2	2	2	2	2	2
Ball End Hook	400S11	122297	6	6	6	6	6	6	6	6	6
Crossarm	400S11	133221	2	2	2	2	2	2	2	2	2
FARAP	400S11	260820	2	2	2	2	2	2	2	2	2

Drawing No: I-40003-GA-048

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500549									
11 kV - HDCu, 70mm <sup>2</sup>	2	500550									
11 kV - HDCu, 100mm <sup>2</sup>	3	500551									
11 kV - AAAC, 50mm <sup>2</sup>	4	500552									
11 kV - AAAC, 100mm <sup>2</sup>	5	500553									
11 kV - AAAC, 150mm <sup>2</sup>	6	500554									
33 kV - HDCu, 100mm <sup>2</sup>	7	500555									
33 kV - AAAC, 150mm <sup>2</sup>	8	500556									
33 kV - AAAC, 200mm <sup>2</sup>	9	500557									
Item	ES Ref	Item CC No	9	8	7	6	5	4	3	2	1
Foundation Fasteners Kit (Refer to drawing I-40002-GA-047)	400S11	133540	1	1	1	1	1	1	1	1	1
Pilot Pin	400S11	128376	3	3	3	3	3	3	3	3	3
Sag Link	400S11	260850	6	6	6	6	6	6	6	6	6
Section Strap	400S11	133345	3	3	3	3	3	3	3	3	3
Socket Clevis	400S11	122173	12	12	12	12	12	12	12	12	12
Tie Rod	400S11	133388	4	4	4	4	4	4	4	4	4
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	1	1	1	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	2	2	2	2	2	2	2	2	2
ACDs	400A2	Ref ES400A2	As required								
Conductor Jumper	400C3	Ref ES400C3	Length & CSA as required								
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								





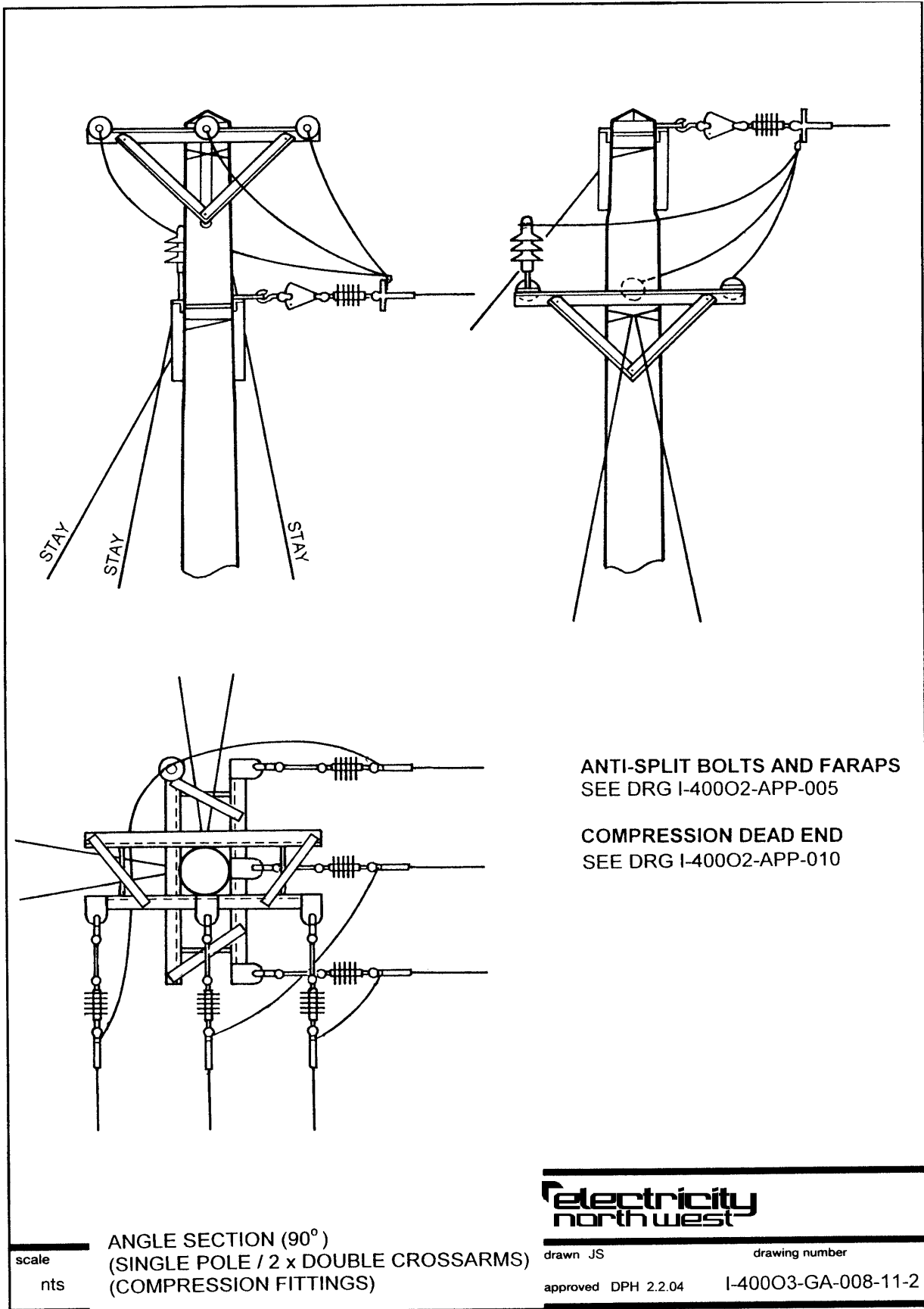
**ANGLE SECTION (90°) (SINGLE POLE/2 X DOUBLE CROSSARM)  
(HELICAL FITTINGS)**

Drawing No: I-40003-GA-007

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500309									
11 kV - HDCu, 70mm <sup>2</sup>	2	500310									
11 kV - HDCu, 100mm <sup>2</sup>	3	500311									
11 kV - AAAC, 50mm <sup>2</sup>	4	500312									
11 kV - AAAC, 100mm <sup>2</sup>	5	500313									
11 kV - AAAC, 150mm <sup>2</sup>	6	500314									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Jumper Splice	400C29	130664	-	-	-	-	-	-	-	-	3
Jumper Splice	400C29	130850	-	-	-	-	-	-	-	3	-
Jumper Splice	400C29	130670	-	-	-	-	-	-	3	-	-
Jumper Splice	400C29	130842	-	-	-	-	-	3	-	-	-
Jumper Splice	400C29	124990	-	-	-	-	3	-	-	-	-
Jumper Splice	400C29	130675	-	-	-	3	-	-	-	-	-
Socket Thimble	400C29	132233	-	-	-	-	6	6	6	6	6
Socket Thimble	400C29	132234	-	-	-	6	-	-	-	-	-
Bolt, M20, 300mm	400F1	107735	-	-	-	5	5	5	5	5	5
Bolt, M20, 60mm	400F1	107581	-	-	-	28	28	28	28	28	28
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	16	16	16	16	16	16
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	2	2	2	2	2	2
Helical Dead End	400H2	121061	-	-	-	-	-	-	-	-	6
Helical Dead End	400H2	121088	-	-	-	-	-	-	-	6	-
Helical Dead End	400H2	138154	-	-	-	-	-	-	6	-	-
Helical Dead End	400H2	121029	-	-	-	-	-	6	-	-	-
Helical Dead End	400H2	121401	-	-	-	-	6	-	-	-	-
Helical Dead End	400H2	138156	-	-	-	6	-	-	-	-	-
Helical Side Tie	400H2	138010	-	-	-	-	-	-	-	-	1
Helical Side Tie	400H2	138029	-	-	-	-	-	-	-	1	-
Helical Side Tie	400H2	138130	-	-	-	-	-	-	1	-	-
Helical Side Tie	400H2	138037	-	-	-	-	-	1	-	-	-
Helical Side Tie	400H2	138045	-	-	-	-	1	-	-	-	-
Helical Side Tie	400H2	138132	-	-	-	1	-	-	-	-	-
Insulator Set, Tension	400I4	125232	-	-	-	6	6	6	6	6	6
Insulator, Pin-Mounted	400I4	125202	-	-	-	1	1	1	1	1	1

Drawing No: I-40003-GA-007

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500309									
11 kV - HDCu, 70mm <sup>2</sup>	2	500310									
11 kV - HDCu, 100mm <sup>2</sup>	3	500311									
11 kV - AAAC, 50mm <sup>2</sup>	4	500312									
11 kV - AAAC, 100mm <sup>2</sup>	5	500313									
11 kV - AAAC, 150mm <sup>2</sup>	6	500314									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133337	-	-	-	4	4	4	4	4	4
Crossarm Brace	400S11	133335	-	-	-	4	4	4	4	4	4
Crossarm Strut	400S11	133353	-	-	-	8	8	8	8	8	8
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Pilot Pin	400S11	128376	-	-	-	1	1	1	1	1	1
Terminal Strap	400S11	133361	-	-	-	6	6	6	6	6	6
Tie Rod	400S11	133388	-	-	-	4	4	4	4	4	4
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
ACDs	400A2	Ref ES400A2	As required								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								



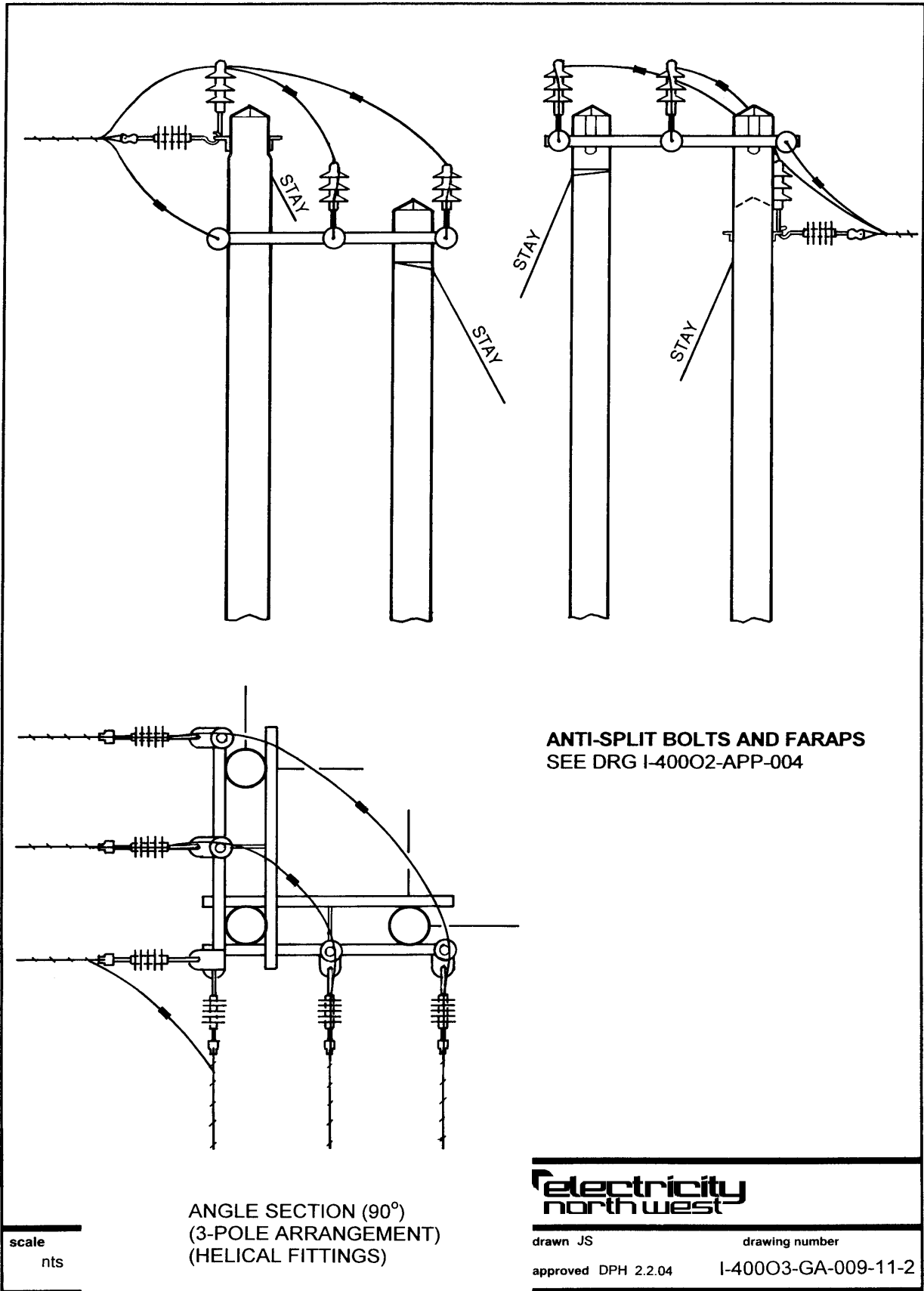
**ANGLE SECTION (90°) (SINGLE POLE/2 X DOUBLE CROSSARM)  
(COMPRESSION FITTINGS)**

Drawing No: I-40003-GA-008

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500315									
11 kV - HDCu, 70mm <sup>2</sup>	2	500316									
11 kV - HDCu, 100mm <sup>2</sup>	3	500317									
11 kV - AAAC, 50mm <sup>2</sup>	4	500318									
11 kV - AAAC, 100mm <sup>2</sup>	5	500328									
11 kV - AAAC, 150mm <sup>2</sup>	6	500329									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Compression Dead End	400C29	130910	-	-	-	-	-	-	-	-	6
Compression Dead End	400C29	130920	-	-	-	-	-	-	-	6	-
Compression Dead End	400C29	130930	-	-	-	-	-	-	6	-	-
Compression Dead End	400C29	130940	-	-	-	-	-	6	-	-	-
Compression Dead End	400C29	130950	-	-	-	-	6	-	-	-	-
Compression Dead End	400C29	130960	-	-	-	6	-	-	-	-	-
Dead End Back Plate	400C29	121020	-	-	-	6	6	6	6	6	6
Bolt, M20, 300mm	400F1	107735	-	-	-	5	5	5	5	5	5
Bolt, M20, 60mm	400F1	107581	-	-	-	28	28	28	28	28	28
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	16	16	16	16	16	16
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	2	2	2	2	2	2
Helical Side Tie	400H2	138010	-	-	-	-	-	-	-	-	1
Helical Side Tie	400H2	138029	-	-	-	-	-	-	-	1	-
Helical Side Tie	400H2	138130	-	-	-	-	-	-	1	-	-
Helical Side Tie	400H2	138037	-	-	-	-	-	1	-	-	-
Helical Side Tie	400H2	138045	-	-	-	-	1	-	-	-	-
Helical Side Tie	400H2	138132	-	-	-	1	-	-	-	-	-
Insulator Set, Tension	400I4	125240	-	-	-	6	6	6	6	6	6
Insulator, Pin-Mounted	400I4	125202	-	-	-	1	1	1	1	1	1
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Ball End Hook	400S11	122297	-	-	-	6	6	6	6	6	6
Crossarm	400S11	133337	-	-	-	4	4	4	4	4	4
Crossarm Brace	400S11	133335	-	-	-	4	4	4	4	4	4

Drawing No: I-40003-GA-008

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500315									
11 kV - HDCu, 70mm <sup>2</sup>	2	500316									
11 kV - HDCu, 100mm <sup>2</sup>	3	500317									
11 kV - AAAC, 50mm <sup>2</sup>	4	500318									
11 kV - AAAC, 100mm <sup>2</sup>	5	500328									
11 kV - AAAC, 150mm <sup>2</sup>	6	500329									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
Crossarm Strut	400S11	133353	-	-	-	8	8	8	8	8	8
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Pilot Pin	400S11	128376	-	-	-	1	1	1	1	1	1
Sag Link	400S11	260850	-	-	-	6	6	6	6	6	6
Socket Clevis	400S11	122173	-	-	-	12	12	12	12	12	12
Terminal Strap	400S11	133361	-	-	-	6	6	6	6	6	6
Tie Rod	400S11	133388	-	-	-	4	4	4	4	4	4
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
ACDs	400A2	Ref ES400A2	As required								
Conductor Jumper	400C3	Ref ES400C3	Length & CSA as required								
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								



**ANGLE SECTION (90°) (3-POLE ARRANGEMENT)  
(HELICAL FITTINGS)**

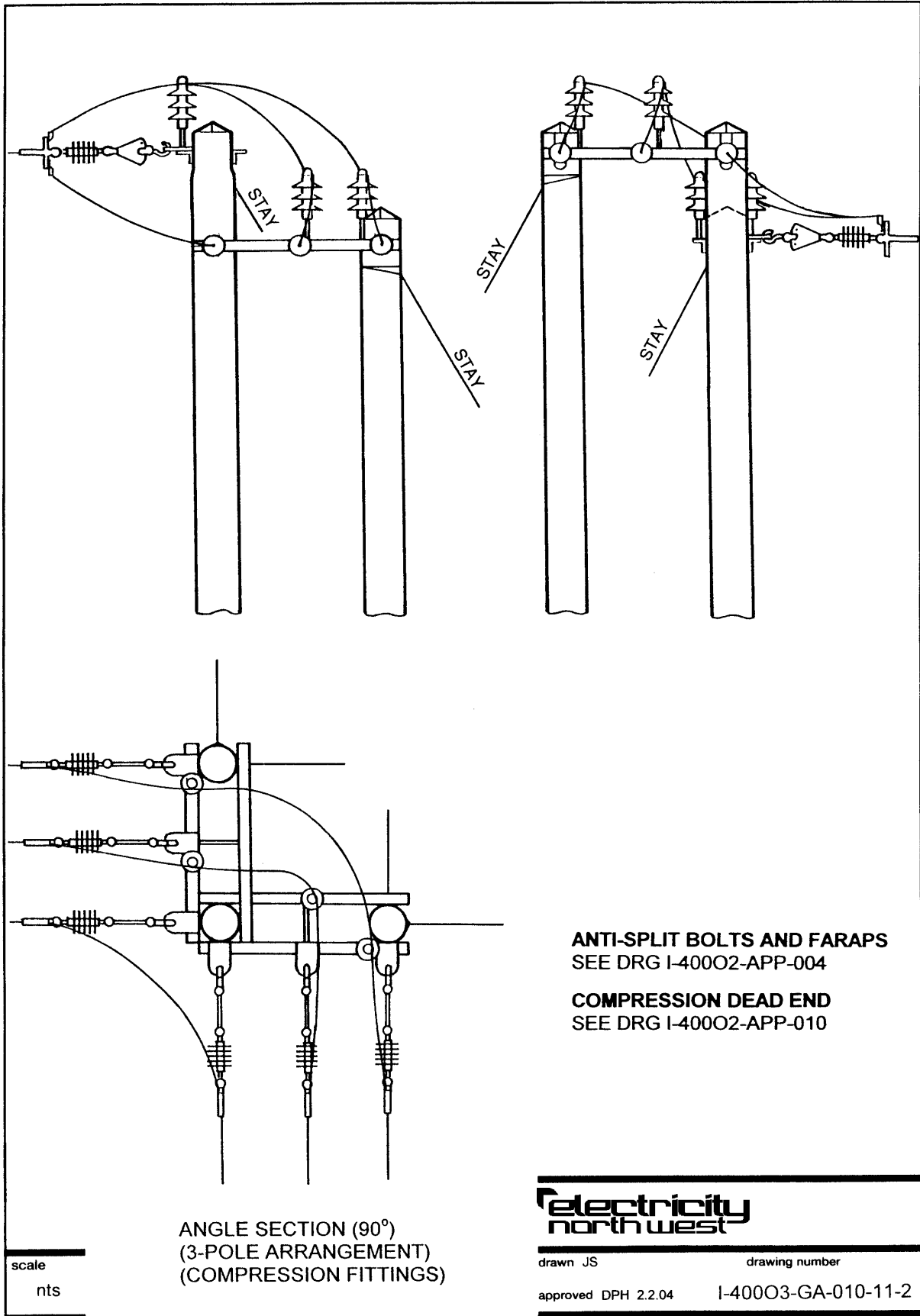
Drawing No: I-40003-GA-009

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500330									
11 kV - HDCu, 70mm <sup>2</sup>	2	500331									
11 kV - HDCu, 100mm <sup>2</sup>	3	500332									
11 kV - AAAC, 50mm <sup>2</sup>	4	500333									
11 kV - AAAC, 100mm <sup>2</sup>	5	500334									
11 kV - AAAC, 150mm <sup>2</sup>	6	500335									
33 kV - HDCu, 100mm <sup>2</sup>	7	500336									
33 kV - AAAC, 150mm <sup>2</sup>	8	500337									
33 kV - AAAC, 200mm <sup>2</sup>	9	500347									
Item	ES Ref	Item CC No	9	8	7	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Jumper Splice	400C29	130664	-	-	-	-	-	-	-	-	3
Jumper Splice	400C29	130850	-	-	-	-	-	-	-	3	-
Jumper Splice	400C29	130670	-	-	3	-	-	-	3	-	-
Jumper Splice	400C29	130842	-	-	-	-	-	3	-	-	-
Jumper Splice	400C29	124990	-	-	-	-	3	-	-	-	-
Jumper Splice	400C29	130675	-	3	-	3	-	-	-	-	-
Jumper Splice	400C29	130680	3	-	-	-	-	-	-	-	-
Socket Thimble	400C29	132233	-	-	6	-	6	6	6	6	6
Socket Thimble	400C29	132234	6	6	-	6	-	-	-	-	-
Bolt, M20, 300mm	400F1	107735	6	6	6	6	6	6	6	6	6
Bolt, M20, 60mm	400F1	107581	12	12	12	12	12	12	12	12	12
Bolt, M20, 750mm	400F1	107790	2	2	2	2	2	2	2	2	2
Coach Screw	400F1	126810	4	4	4	4	4	4	4	4	4
Washer, Round, Flat	400F1	993018	8	8	8	8	8	8	8	8	8
Washer, Square, Curved	400F1	139203	4	4	4	4	4	4	4	4	4
Helical Dead End	400H2	121061	-	-	-	-	-	-	-	-	6
Helical Dead End	400H2	121088	-	-	-	-	-	-	-	6	-
Helical Dead End	400H2	138154	-	-	6	-	-	-	6	-	-
Helical Dead End	400H2	121029	-	-	-	-	-	6	-	-	-
Helical Dead End	400H2	121401	-	-	-	-	6	-	-	-	-
Helical Dead End	400H2	138156	-	6	-	6	-	-	-	-	-
Helical Dead End	400H2	138158	6	-	-	-	-	-	-	-	-
Helical Side Tie	400H2	138010	-	-	-	-	-	-	-	-	4
Helical Side Tie	400H2	138029	-	-	-	-	-	-	-	4	-
Helical Side Tie	400H2	138130	-	-	-	-	-	-	4	-	-
Helical Side Tie	400H2	138037	-	-	-	-	-	4	-	-	-
Helical Side Tie	400H2	138045	-	-	-	-	4	-	-	-	-
Helical Side Tie	400H2	138132	-	-	-	4	-	-	-	-	-
Helical Side Tie	400H2	138140	-	-	4	-	-	-	-	-	-

Drawing No: I-40003-GA-009

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500330									
11 kV - HDCu, 70mm <sup>2</sup>	2	500331									
11 kV - HDCu, 100mm <sup>2</sup>	3	500332									
11 kV - AAAC, 50mm <sup>2</sup>	4	500333									
11 kV - AAAC, 100mm <sup>2</sup>	5	500334									
11 kV - AAAC, 150mm <sup>2</sup>	6	500335									
33 kV - HDCu, 100mm <sup>2</sup>	7	500336									
33 kV - AAAC, 150mm <sup>2</sup>	8	500337									
33 kV - AAAC, 200mm <sup>2</sup>	9	500347									
Item	ES Ref	Item CC No	9	8	7	6	5	4	3	2	1
Helical Side Tie	400H2	138150	-	4	-	-	-	-	-	-	-
Helical Side Tie	400H2	138160	4	-	-	-	-	-	-	-	-
Insulator Set, Tension	400I4	125232	6	6	6	6	6	6	6	6	6
Insulator, Pin-Mounted	400I4	125202	-	-	-	4	4	4	4	4	4
Insulator, Pin-Mounted	400I4	125199	4	4	4	-	-	-	-	-	-
Danger Plate	400N1	195251	6	6	6	6	6	6	6	6	6
Gouge-mark Plate	400N1	995610	3	3	3	3	3	3	3	3	3
Crossarm	400S11	133337	4	4	4	4	4	4	4	4	4
FARAP	400S11	260820	4	4	4	4	4	4	4	4	4
Foundation Fasteners Kit (Refer to drawing I-40002-GA-047)	400S11	133540	1	1	1	1	1	1	1	1	1
Pilot Pin	400S11	128376	4	4	4	4	4	4	4	4	4
Terminal Strap	400S11	133361	6	6	6	6	6	6	6	6	6
Tie Rod	400S11	133388	2	2	2	2	2	2	2	2	2
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole (H)	400W2	Ref ES400W2	1	1	1	1	1	1	1	1	1
Wood Pole (Single)	400W2	Ref ES400W2	1	1	1	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	3	3	3	3	3	3	3	3	3
ACDs	400A2	Ref ES400A2	As required								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								





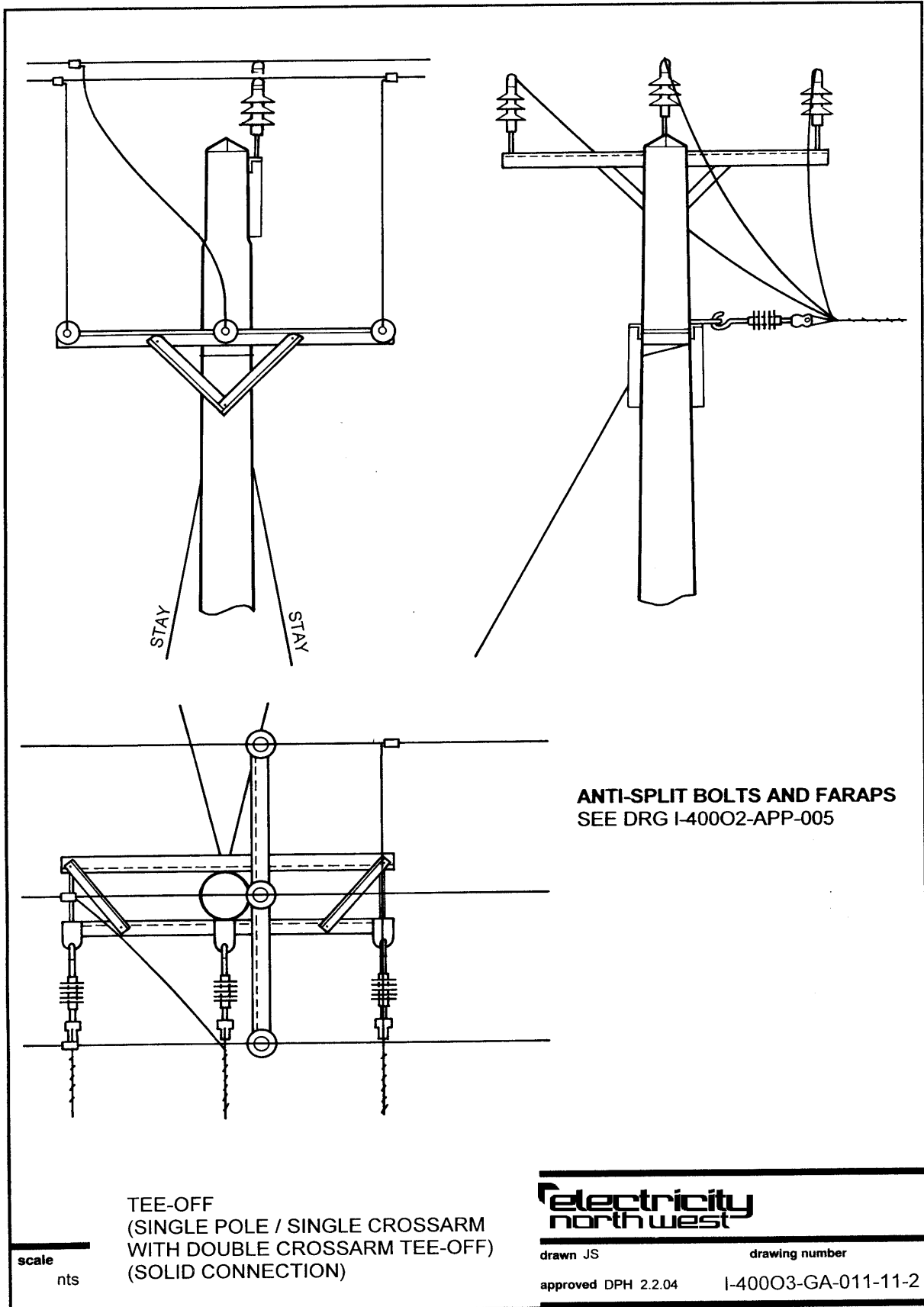
**ANGLE SECTION (90°) (3-POLE ARRANGEMENT)  
(COMPRESSION FITTINGS)**

Drawing No: I-40003-GA-010

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500348									
11 kV - HDCu, 70mm <sup>2</sup>	2	500349									
11 kV - HDCu, 100mm <sup>2</sup>	3	500350									
11 kV - AAAC, 50mm <sup>2</sup>	4	500351									
11 kV - AAAC, 100mm <sup>2</sup>	5	500352									
11 kV - AAAC, 150mm <sup>2</sup>	6	500353									
33 kV - HDCu, 100mm <sup>2</sup>	7	500354									
33 kV - AAAC, 150mm <sup>2</sup>	8	500355									
33 kV - AAAC, 200mm <sup>2</sup>	9	500356									
Item	ES Ref	Item CC No	9	8	7	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Compression Dead End	400C29	130910	-	-	-	-	-	-	-	-	6
Compression Dead End	400C29	130920	-	-	-	-	-	-	-	6	-
Compression Dead End	400C29	130930	-	-	6	-	-	-	6	-	-
Compression Dead End	400C29	130940	-	-	-	-	-	6	-	-	-
Compression Dead End	400C29	130950	-	-	-	-	6	-	-	-	-
Compression Dead End	400C29	130960	-	6	-	6	-	-	-	-	-
Compression Dead End	400C29	130970	6	-	-	-	-	-	-	-	-
Dead End Back Plate	400C29	121020	6	6	6	6	6	6	6	6	6
Bolt, M20, 300mm	400F1	107735	6	6	6	6	6	6	6	6	6
Bolt, M20, 60mm	400F1	107581	12	12	12	12	12	12	12	12	12
Bolt, M20, 750mm	400F1	107790	2	2	2	2	2	2	2	2	2
Coach Screw	400F1	126810	4	4	4	4	4	4	4	4	4
Washer, Round, Flat	400F1	993018	8	8	8	8	8	8	8	8	8
Washer, Square, Curved	400F1	139203	4	4	4	4	4	4	4	4	4
Helical Side Tie	400H2	138010	-	-	-	-	-	-	-	-	4
Helical Side Tie	400H2	138029	-	-	-	-	-	-	-	4	-
Helical Side Tie	400H2	138130	-	-	-	-	-	-	4	-	-
Helical Side Tie	400H2	138037	-	-	-	-	-	4	-	-	-
Helical Side Tie	400H2	138045	-	-	-	-	4	-	-	-	-
Helical Side Tie	400H2	138132	-	-	-	4	-	-	-	-	-
Helical Side Tie	400H2	138140	-	-	4	-	-	-	-	-	-
Helical Side Tie	400H2	138150	-	4	-	-	-	-	-	-	-
Helical Side Tie	400H2	138160	4	-	-	-	-	-	-	-	-
Insulator Set, Tension	400I4	125240	6	6	6	6	6	6	6	6	6
Insulator, Pin-Mounted	400I4	125202	-	-	-	4	4	4	4	4	4
Insulator, Pin-Mounted	400I4	125199	4	4	4	-	-	-	-	-	-
Danger Plate	400N1	195251	6	6	6	6	6	6	6	6	6
Gouge-mark Plate	400N1	995610	3	3	3	3	3	3	3	3	3
Ball End Hook	400S11	122297	6	6	6	6	6	6	6	6	6

Drawing No: I-40003-GA-010

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500348									
11 kV - HDCu, 70mm <sup>2</sup>	2	500349									
11 kV - HDCu, 100mm <sup>2</sup>	3	500350									
11 kV - AAAC, 50mm <sup>2</sup>	4	500351									
11 kV - AAAC, 100mm <sup>2</sup>	5	500352									
11 kV - AAAC, 150mm <sup>2</sup>	6	500353									
33 kV - HDCu, 100mm <sup>2</sup>	7	500354									
33 kV - AAAC, 150mm <sup>2</sup>	8	500355									
33 kV - AAAC, 200mm <sup>2</sup>	9	500356									
Item	ES Ref	Item CC No	9	8	7	6	5	4	3	2	1
Crossarm	400S11	133337	4	4	4	4	4	4	4	4	4
FARAP	400S11	260820	4	4	4	4	4	4	4	4	4
Foundation Fasteners Kit (Refer to drawing I-40002-GA-047)	400S11	133540	1	1	1	1	1	1	1	1	1
Pilot Pin	400S11	128376	4	4	4	4	4	4	4	4	4
Sag Link	400S11	260850	6	6	6	6	6	6	6	6	6
Socket Clevis	400S11	122173	12	12	12	12	12	12	12	12	12
Terminal Strap	400S11	133361	6	6	6	6	6	6	6	6	6
Tie Rod	400S11	133388	2	2	2	2	2	2	2	2	2
<b>(Additional Items Required for GA But Not Included in GA Kit Contents)</b>											
Wood Pole (H)	400W2	Ref ES400W2	1	1	1	1	1	1	1	1	1
Wood Pole (Single)	400W2	Ref ES400W2	1	1	1	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	3	3	3	3	3	3	3	3	3
ACDs	400A2	Ref ES400A2	As required								
Conductor Jumper	400C3	Ref ES400C3	Length & CSA as required								
Lugs	400C29	Ref ES400C29	As required								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								



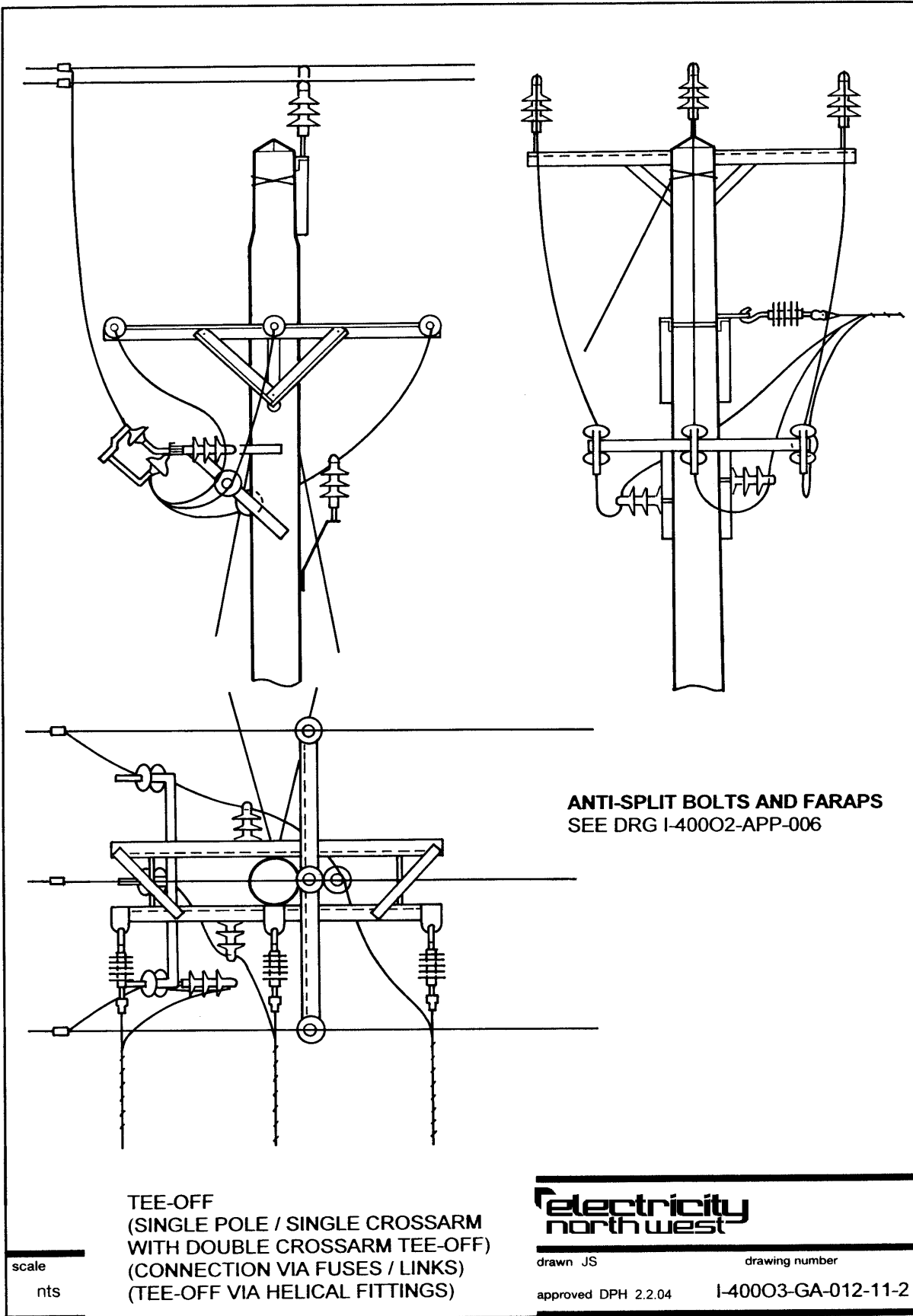
**TEE-OFF (SINGLE POLE/SINGLE CROSSARM WITH DOUBLE  
CROSSARM TEE-OFF) (SOLID CONNECTIONS)**

Drawing No: I-40003-GA-011

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500414									
11 kV - HDCu, 70mm <sup>2</sup>	2	500415									
11 kV - HDCu, 100mm <sup>2</sup>	3	500416									
11 kV - AAAC, 50mm <sup>2</sup>	4	500417									
11 kV - AAAC, 100mm <sup>2</sup>	5	500418									
11 kV - AAAC, 150mm <sup>2</sup>	6	500419									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Socket Thimble	400C29	132233	-	-	-	-	3	3	3	3	3
Socket Thimble	400C29	132234	-	-	-	3	-	-	-	-	-
Bolt, M20, 300mm	400F1	107735	-	-	-	5	5	5	5	5	5
Bolt, M20, 60mm	400F1	107581	-	-	-	16	16	16	16	16	16
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	8	8	8	8	8	8
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	4	4	4	4	4	4
Helical Dead End	400H2	121061	-	-	-	-	-	-	-	-	3
Helical Dead End	400H2	121088	-	-	-	-	-	-	-	3	-
Helical Dead End	400H2	138154	-	-	-	-	-	-	3	-	-
Helical Dead End	400H2	121029	-	-	-	-	-	3	-	-	-
Helical Dead End	400H2	121401	-	-	-	-	3	-	-	-	-
Helical Dead End	400H2	138156	-	-	-	3	-	-	-	-	-
Helical Intermediate Tie	400H2	138215	-	-	-	-	-	-	-	-	3
Helical Intermediate Tie	400H2	138924	-	-	-	-	-	-	-	3	-
Helical Intermediate Tie	400H2	138926	-	-	-	-	-	-	3	-	-
Helical Intermediate Tie	400H2	138927	-	-	-	-	-	3	-	-	-
Helical Intermediate Tie	400H2	138932	-	-	-	-	3	-	-	-	-
Helical Intermediate Tie	400H2	138928	-	-	-	3	-	-	-	-	-
Helical Side Tie	400H2	138010	-	-	-	-	-	-	-	-	1
Helical Side Tie	400H2	138029	-	-	-	-	-	-	-	1	-
Helical Side Tie	400H2	138130	-	-	-	-	-	-	1	-	-
Helical Side Tie	400H2	138037	-	-	-	-	-	1	-	-	-
Helical Side Tie	400H2	138045	-	-	-	-	1	-	-	-	-
Helical Side Tie	400H2	138132	-	-	-	1	-	-	-	-	-
Insulator Set, Tension	400I4	125232	-	-	-	3	3	3	3	3	3
Insulator, Pin-mounted	400I4	125202	-	-	-	4	4	4	4	4	4

Drawing No: I-40003-GA-011

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500414									
11 kV - HDCu, 70mm <sup>2</sup>	2	500415									
11 kV - HDCu, 100mm <sup>2</sup>	3	500416									
11 kV - AAAC, 50mm <sup>2</sup>	4	500417									
11 kV - AAAC, 100mm <sup>2</sup>	5	500418									
11 kV - AAAC, 150mm <sup>2</sup>	6	500419									
33 kV - HDCu, 100mm <sup>2</sup>		Not applicable									
33 kV - AAAC, 150mm <sup>2</sup>		Not applicable									
33 kV - AAAC, 200mm <sup>2</sup>		Not applicable									
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133310	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133337	-	-	-	2	2	2	2	2	2
Crossarm Brace	400S11	133335	-	-	-	2	2	2	2	2	2
Crossarm Strut	400S11	133353	-	-	-	6	6	6	6	6	6
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Insulator Bracket	400S11	133302	-	-	-	1	1	1	1	1	1
Insulator Pin	400S11	128252	-	-	-	3	3	3	3	3	3
Pilot Pin	400S11	128376	-	-	-	1	1	1	1	1	1
Pilot Pin Bracket	400S11	111457	-	-	-	1	1	1	1	1	1
Terminal Strap	400S11	133361	-	-	-	3	3	3	3	3	3
Tie Rod	400S11	133388	-	-	-	2	2	2	2	2	2
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
ACDs	400A2	Ref ES400A2	As required								
Wedge Tap Tee-off	400C29	Ref ES400C29	See Table 3 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								



**TEE-OFF (SINGLE POLE/SINGLE CROSSARM WITH DOUBLE  
CROSSARM TEE-OFF) (CONNECTIONS VIA FUSES/ LINKS)  
(TEE-OFF VIA HELICAL FITTINGS)**

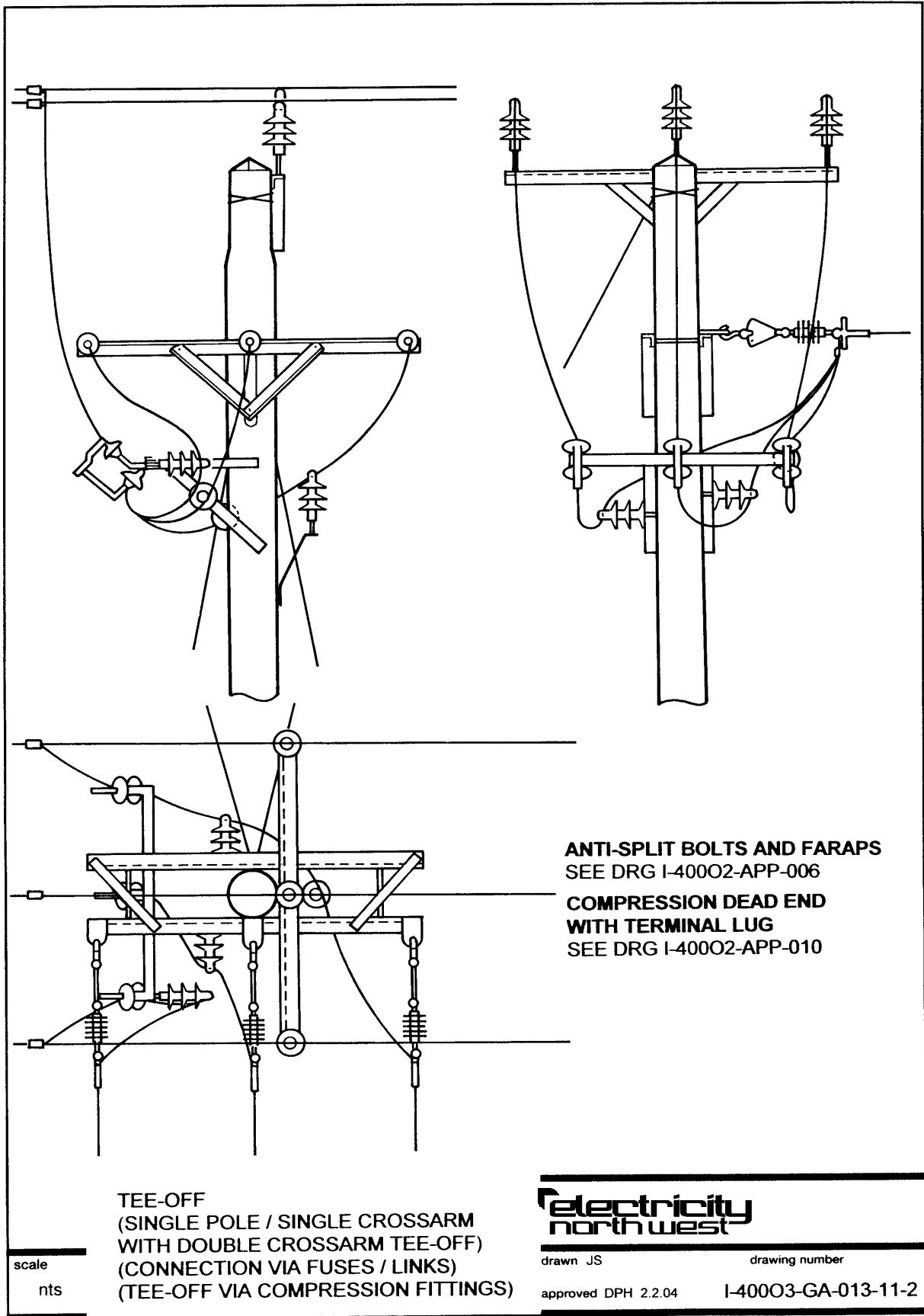
Drawing No: I-40003-GA-012

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500366									
11 kV - HDCu, 70mm <sup>2</sup>	2	500367									
11 kV - HDCu, 100mm <sup>2</sup>	3	500368									
11 kV - AAAC, 50mm <sup>2</sup>	4	500369									
11 kV - AAAC, 100mm <sup>2</sup>	5	500370									
11 kV - AAAC, 150mm <sup>2</sup>	6	500371									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Socket Thimble	400C29	132233	-	-	-	-	3	3	3	3	3
Socket Thimble	400C29	132234	-	-	-	3	-	-	-	-	-
Bolt, M20, 300mm	400F1	107735	-	-	-	7	7	7	7	7	7
Bolt, M20, 60mm	400F1	107581	-	-	-	18	18	18	18	18	18
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	8	8	8	8	8	8
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	4	4	4	4	4	4
Helical Dead End	400H2	121061	-	-	-	-	-	-	-	-	3
Helical Dead End	400H2	121088	-	-	-	-	-	-	-	3	-
Helical Dead End	400H2	138154	-	-	-	-	-	-	3	-	-
Helical Dead End	400H2	121029	-	-	-	-	-	3	-	-	-
Helical Dead End	400H2	121401	-	-	-	-	3	-	-	-	-
Helical Dead End	400H2	138156	-	-	-	3	-	-	-	-	-
Helical Intermediate Tie	400H2	138215	-	-	-	-	-	-	-	-	3
Helical Intermediate Tie	400H2	138924	-	-	-	-	-	-	-	3	-
Helical Intermediate Tie	400H2	138926	-	-	-	-	-	-	3	-	-
Helical Intermediate Tie	400H2	138927	-	-	-	-	-	3	-	-	-
Helical Intermediate Tie	400H2	138932	-	-	-	-	3	-	-	-	-
Helical Intermediate Tie	400H2	138928	-	-	-	3	-	-	-	-	-
Helical Side Tie	400H2	138010	-	-	-	-	-	-	-	-	4
Helical Side Tie	400H2	138029	-	-	-	-	-	-	-	4	-
Helical Side Tie	400H2	138130	-	-	-	-	-	-	4	-	-
Helical Side Tie	400H2	138037	-	-	-	-	-	4	-	-	-
Helical Side Tie	400H2	138045	-	-	-	-	4	-	-	-	-
Helical Side Tie	400H2	138132	-	-	-	4	-	-	-	-	-
Insulator Set, Tension	400I4	125232	-	-	-	3	3	3	3	3	3



Drawing No: I-40003-GA-012

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500366									
11 kV - HDCu, 70mm <sup>2</sup>	2	500367									
11 kV - HDCu, 100mm <sup>2</sup>	3	500368									
11 kV - AAAC, 50mm <sup>2</sup>	4	500369									
11 kV - AAAC, 100mm <sup>2</sup>	5	500370									
11 kV - AAAC, 150mm <sup>2</sup>	6	500371									
33 kV - HDCu, 100mm <sup>2</sup>		Not applicable									
33 kV - AAAC, 150mm <sup>2</sup>		Not applicable									
33 kV - AAAC, 200mm <sup>2</sup>		Not applicable									
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
Insulator, Pin-mounted	400I4	125202	-	-	-	7	7	7	7	7	7
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133310	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133337	-	-	-	2	2	2	2	2	2
Crossarm Brace	400S11	133335	-	-	-	2	2	2	2	2	2
Crossarm Strut	400S11	133353	-	-	-	6	6	6	6	6	6
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Insulator Bracket	400S11	133302	-	-	-	1	1	1	1	1	1
Insulator Pin	400S11	128252	-	-	-	3	3	3	3	3	3
Pilot Pin	400S11	128376	-	-	-	4	4	4	4	4	4
Pilot Pin Bracket	400S11	111457	-	-	-	1	1	1	1	1	1
Steelwork, Links, Long	400S11	133206	-	-	-	1	1	1	1	1	1
Terminal Strap	400S11	133361	-	-	-	3	3	3	3	3	3
Tie Rod	400S11	133388	-	-	-	2	2	2	2	2	2
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Fuses/Links	315	Ref ES315	As required								
ACDs	400A2	Ref ES400A2	As required								
Conductor Jumper	400C3	Ref ES400C3	Length & CSA as required								
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Wedge Tap Tee-off	400C29	Ref ES400C29	See Table 3 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								



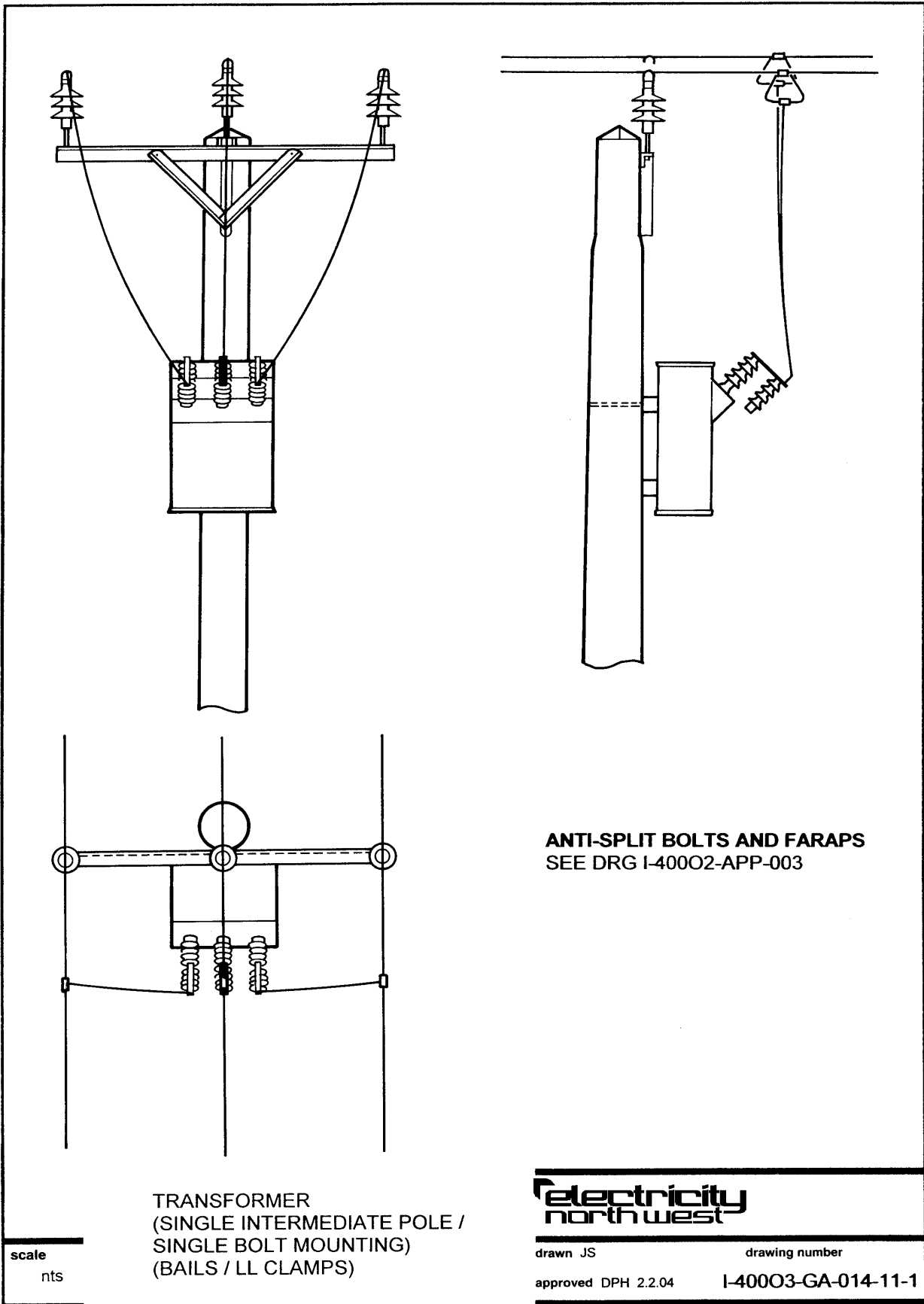
**TEE-OFF (SINGLE POLE/SINGLE CROSSARM WITH DOUBLE  
CROSSARM TEE-OFF) (CONNECTIONS VIA FUSES/ LINKS)  
(TEE-OFF VIA COMPRESSION FITTINGS)**

Drawing No: I-40003-GA-013

<b>Voltage/Conductor</b>	<b>Ref</b>	<b>GA Kit CC No</b>	<b>Comprising:</b>								
11 kV - HDCu, 38mm <sup>2</sup>	1	500372									
11 kV - HDCu, 70mm <sup>2</sup>	2	500373									
11 kV - HDCu, 100mm <sup>2</sup>	3	500374									
11 kV - AAAC, 50mm <sup>2</sup>	4	500375									
11 kV - AAAC, 100mm <sup>2</sup>	5	500385									
11 kV - AAAC, 150mm <sup>2</sup>	6	500386									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
<b>Item</b>	<b>ES Ref</b>	<b>Item CC No</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>(Items Included in GA Kit Contents)</b>											
Compression Dead End	400C29	130910	-	-	-	-	-	-	-	-	3
Compression Dead End	400C29	130920	-	-	-	-	-	-	-	3	-
Compression Dead End	400C29	130930	-	-	-	-	-	-	3	-	-
Compression Dead End	400C29	130940	-	-	-	-	-	3	-	-	-
Compression Dead End	400C29	130950	-	-	-	-	3	-	-	-	-
Compression Dead End	400C29	130960	-	-	-	3	-	-	-	-	-
Dead End Back Plate	400C29	121020	-	-	-	3	3	3	3	3	3
Bolt, M20, 300mm	400F1	107735	-	-	-	7	7	7	7	7	7
Bolt, M20, 60mm	400F1	107581	-	-	-	18	18	18	18	18	18
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	8	8	8	8	8	8
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	4	4	4	4	4	4
Helical Intermediate Tie	400H2	138215	-	-	-	-	-	-	-	-	5
Helical Intermediate Tie	400H2	138924	-	-	-	-	-	-	-	5	-
Helical Intermediate Tie	400H2	138926	-	-	-	-	-	-	5	-	-
Helical Intermediate Tie	400H2	138927	-	-	-	-	-	5	-	-	-
Helical Intermediate Tie	400H2	138932	-	-	-	-	5	-	-	-	-
Helical Intermediate Tie	400H2	138928	-	-	-	5	-	-	-	-	-
Helical Side Tie	400H2	138010	-	-	-	-	-	-	-	-	3
Helical Side Tie	400H2	138029	-	-	-	-	-	-	-	3	-
Helical Side Tie	400H2	138130	-	-	-	-	-	-	3	-	-
Helical Side Tie	400H2	138037	-	-	-	-	-	3	-	-	-
Helical Side Tie	400H2	138045	-	-	-	-	3	-	-	-	-
Helical Side Tie	400H2	138132	-	-	-	3	-	-	-	-	-
Insulator Set, Tension	400I4	125240	-	-	-	3	3	3	3	3	3
Insulator, Pin-mounted	400I4	125202	-	-	-	7	7	7	7	7	7

Drawing No: I-40003-GA-013

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500372									
11 kV - HDCu, 70mm <sup>2</sup>	2	500373									
11 kV - HDCu, 100mm <sup>2</sup>	3	500374									
11 kV - AAAC, 50mm <sup>2</sup>	4	500375									
11 kV - AAAC, 100mm <sup>2</sup>	5	500385									
11 kV - AAAC, 150mm <sup>2</sup>	6	500386									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Ball End Hook	400S11	122297	-	-	-	3	3	3	3	3	3
Crossarm	400S11	133310	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133337	-	-	-	2	2	2	2	2	2
Crossarm Brace	400S11	133335	-	-	-	2	2	2	2	2	2
Crossarm Strut	400S11	133353	-	-	-	6	6	6	6	6	6
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Steelwork, Links, Long	400S11	133206	-	-	-	1	1	1	1	1	1
Insulator Bracket	400S11	133302	-	-	-	1	1	1	1	1	1
Insulator Pin	400S11	128252	-	-	-	3	3	3	3	3	3
Pilot Pin	400S11	128376	-	-	-	4	4	4	4	4	4
Pilot Pin Bracket	400S11	111457	-	-	-	1	1	1	1	1	1
Sag Link	400S11	260850	-	-	-	3	3	3	3	3	3
Socket Clevis	400S11	122173	-	-	-	6	6	6	6	6	6
Terminal Strap	400S11	133361	-	-	-	3	3	3	3	3	3
Tie Rod	400S11	133388	-	-	-	2	2	2	2	2	2
<b>(Additional Items Required for GA But Not Included in GA Kit Contents)</b>											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Fuses/Links	315	Ref ES315	As required								
ACDs	400A2	Ref ES400A2	As required								
Conductor Jumper	400C3	Ref ES400C3	Length & CSA as required								
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Wedge Tap Tee-off	400C29	Ref ES400C29	See Table 3 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								

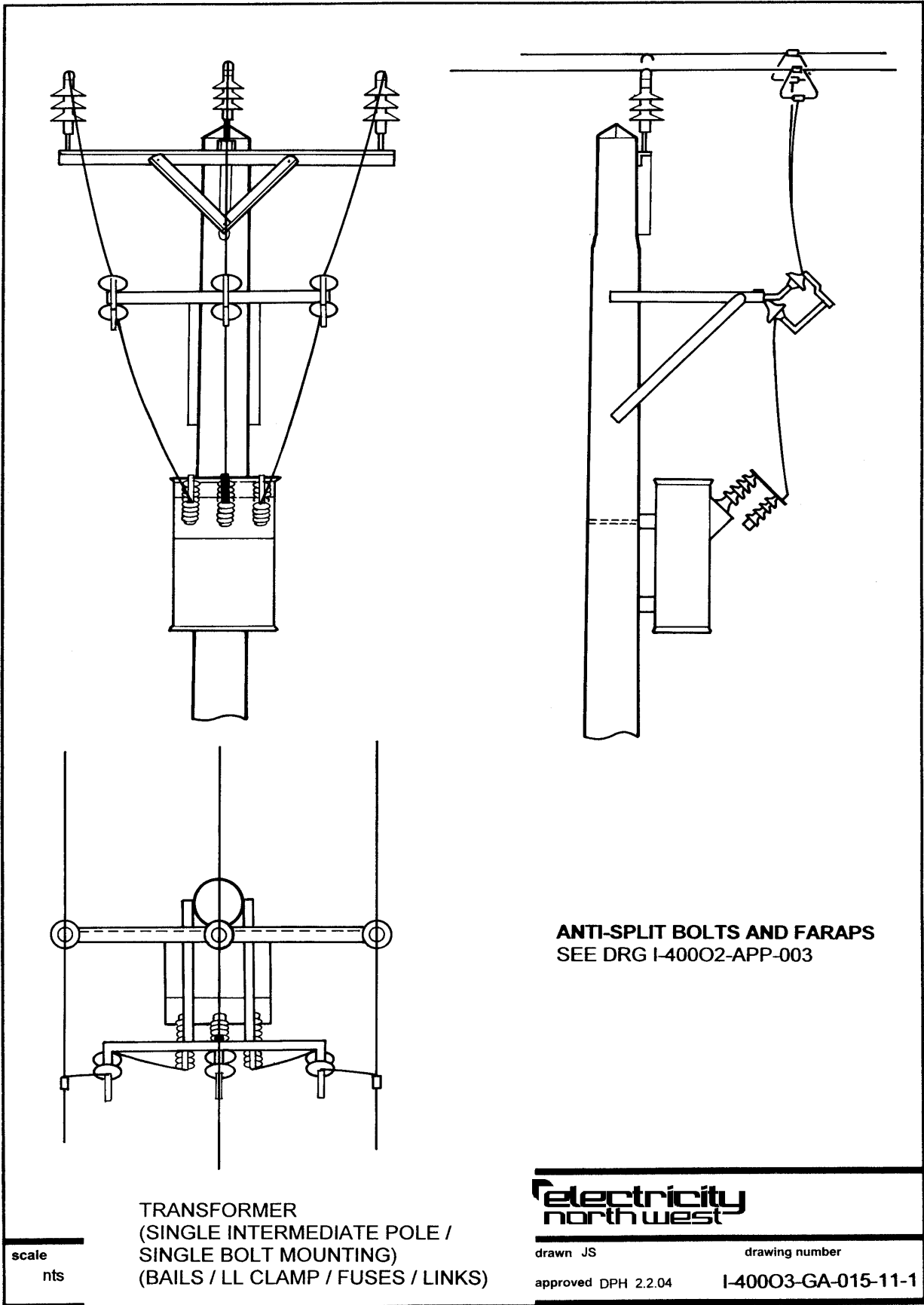


**TRANSFORMER (SINGLE INTERMEDIATE POLE/SINGLE BOLT MOUNTING) - (BAILS/LL CLAMPS)**

Drawing No: I-40003-GA-014

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV – HDCu, 38mm <sup>2</sup>	1	500446									
11 kV – HDCu, 70mm <sup>2</sup>	2	500447									
11 kV – HDCu, 100mm <sup>2</sup>	3	500448									
11 kV – AAAC, 50mm <sup>2</sup>	4	500449									
11 kV – AAAC, 100mm <sup>2</sup>	5	500450									
11 kV – AAAC, 150mm <sup>2</sup>	6	500451									
33 kV – HDCu, 100mm <sup>2</sup>		Not applicable									
33 kV – AAAC, 150mm <sup>2</sup>		Not applicable									
33 kV – AAAC, 200mm <sup>2</sup>		Not applicable									
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Dropper Kit 1	400C29	124871	-	-	-	3	3	3	3	3	3
Bolt, M20, 300mm	400F1	107735	-	-	-	4	4	4	4	4	4
Bolt, M20, 60mm	400F1	107581	-	-	-	4	4	4	4	4	4
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Square, Curved	400F1	139203	-	-	-	5	5	5	5	5	5
Washer, Square, Flat	400F1	139262	-	-	-	4	4	4	4	4	4
Helical Intermediate Tie	400H2	138215	-	-	-	-	-	-	-	-	3
Helical Intermediate Tie	400H2	138924	-	-	-	-	-	-	-	3	-
Helical Intermediate Tie	400H2	138926	-	-	-	-	-	-	3	-	-
Helical Intermediate Tie	400H2	138927	-	-	-	-	-	3	-	-	-
Helical Intermediate Tie	400H2	138932	-	-	-	-	3	-	-	-	-
Helical Intermediate Tie	400H2	138928	-	-	-	3	-	-	-	-	-
Insulator, Pin-mounted	400I4	125202	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133310	-	-	-	1	1	1	1	1	1
Crossarm Strut	400S11	133353	-	-	-	2	2	2	2	2	2
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Insulator Bracket	400S11	133302	-	-	-	1	1	1	1	1	1
Insulator Pin	400S11	128252	-	-	-	3	3	3	3	3	3
Shroud, Insulated	400S12	160798	-	-	-	1	1	1	1	1	1
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Conductor, Flexible, 65mm <sup>2</sup>	400C3	012130	-	-	-	*	*	*	*	*	*
Transformer	321	Ref ES321	As required								
ACDs	400A2	Ref ES400A2	As required								
Wedge Tap Bail	400C29	Ref ES400C29	See Table 2 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								

\* Quantity as required



**TRANSFORMER (SINGLE INTERMEDIATE POLE/SINGLE BOLT MOUNTING) - (BAILS/LL CLAMP/FUSES/LINKS)**

Drawing No: I-40003-GA-015

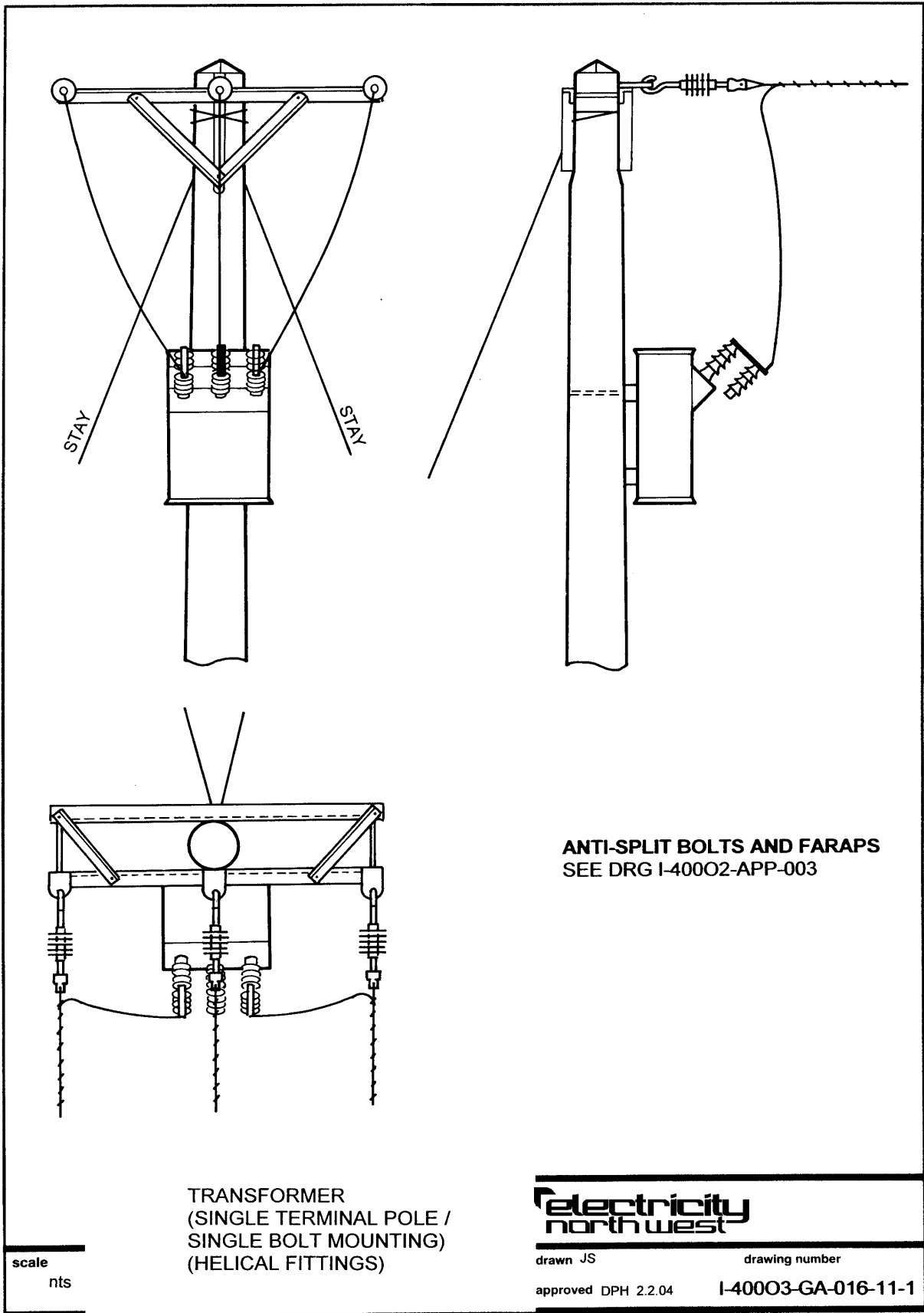
Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV – HDCu, 38mm <sup>2</sup>	1	500462									
11 kV – HDCu, 70mm <sup>2</sup>	2	500463									
11 kV – HDCu, 100mm <sup>2</sup>	3	500464									
11 kV – AAAC, 50mm <sup>2</sup>	4	500465									
11 kV – AAAC, 100mm <sup>2</sup>	5	500466									
11 kV – AAAC, 150mm <sup>2</sup>	6	500467									
33 kV – HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV – AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV – AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Dropper Kit 2	400C29	121010	-	-	-	3	3	3	3	3	3
Bolt, M20, 300mm	400F1	107735	-	-	-	6	6	6	6	6	6
Bolt, M20, 60mm	400F1	107581	-	-	-	4	4	4	4	4	4
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Square, Curved	400F1	139203	-	-	-	5	5	5	5	5	5
Washer, Square, Flat	400F1	139262	-	-	-	4	4	4	4	4	4
Helical Intermediate Tie	400H2	138215	-	-	-	-	-	-	-	-	3
Helical Intermediate Tie	400H2	138924	-	-	-	-	-	-	-	3	-
Helical Intermediate Tie	400H2	138926	-	-	-	-	-	-	3	-	-
Helical Intermediate Tie	400H2	138927	-	-	-	-	-	3	-	-	-
Helical Intermediate Tie	400H2	138932	-	-	-	-	3	-	-	-	-
Helical Intermediate Tie	400H2	138928	-	-	-	3	-	-	-	-	-
Insulator, Pin-mounted	400I4	125202	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133310	-	-	-	1	1	1	1	1	1
Crossarm Strut	400S11	133353	-	-	-	2	2	2	2	2	2
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Insulator Bracket	400S11	133302	-	-	-	1	1	1	1	1	1
Insulator Pin	400S11	128252	-	-	-	3	3	3	3	3	3
Steelwork, Links, Short	400S11	133207	-	-	-	1	1	1	1	1	1
Shroud, Insulated	400S12	160798	-	-	-	1	1	1	1	1	1
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Conductor, Flexible, 65mm <sup>2</sup>	400C3	012130	-	-	-	*	*	*	*	*	*
Fuses/Links	315	Ref ES315	As required								
Transformer	321	Ref ES321	As required								



Drawing No: I-40003-GA-015

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV – HDCu, 38mm <sup>2</sup>	1	500462									
11 kV – HDCu, 70mm <sup>2</sup>	2	500463									
11 kV – HDCu, 100mm <sup>2</sup>	3	500464									
11 kV – AAAC, 50mm <sup>2</sup>	4	500465									
11 kV – AAAC, 100mm <sup>2</sup>	5	500466									
11 kV – AAAC, 150mm <sup>2</sup>	6	500467									
33 kV – HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV – AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV – AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
ACDs	400A2	Ref ES400A2	As required								
Wedge Tap Bail	400C29	Ref ES400C29	See Table 2 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								

\* Quantity as required



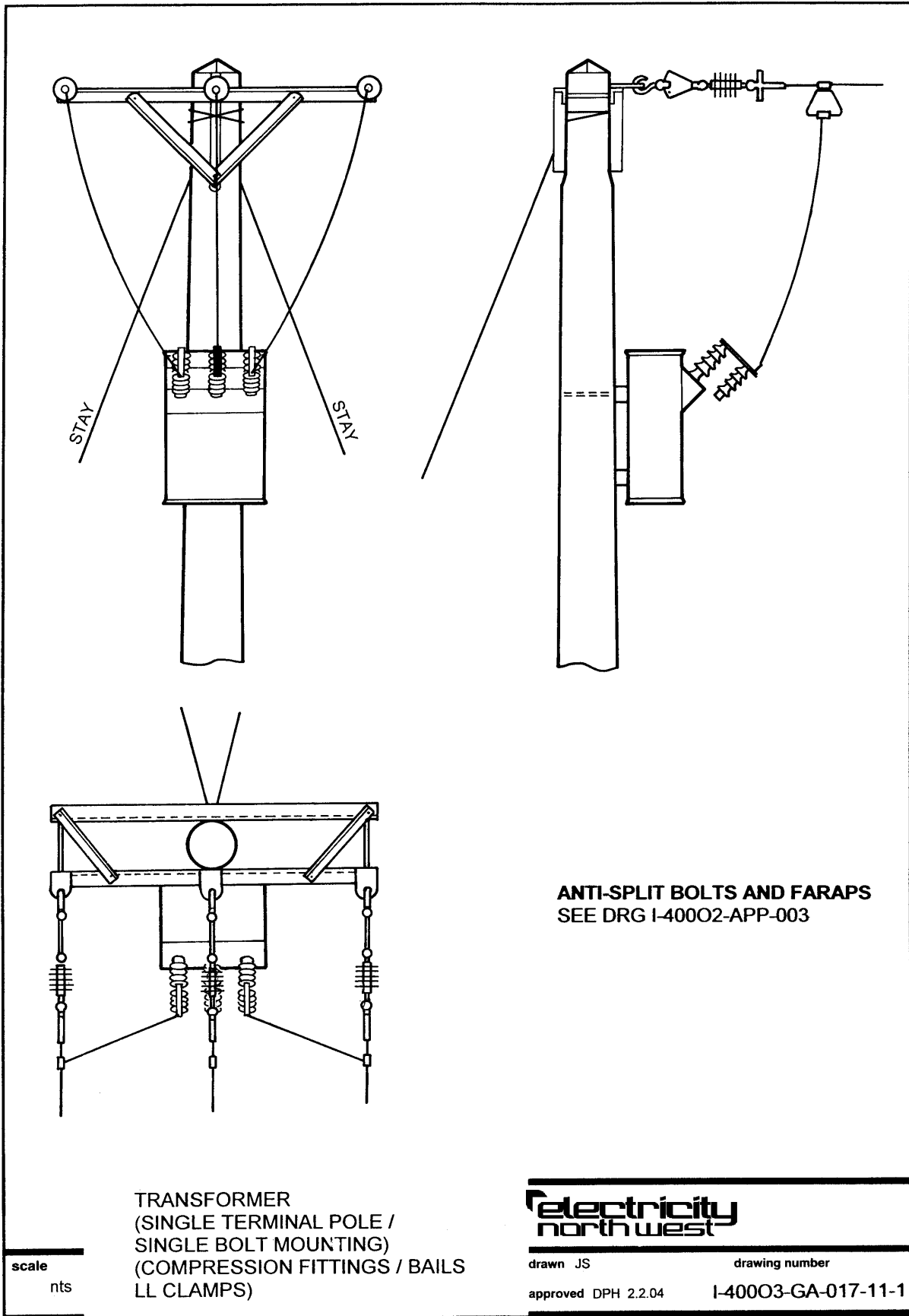
**TRANSFORMER (SINGLE TERMINAL POLE/SINGLE BOLT MOUNTING) - (HELICAL FITTINGS)**

Drawing No: I-40003-GA-016

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV – HDCu, 38mm <sup>2</sup>	1	500387									
11 kV – HDCu, 70mm <sup>2</sup>	2	500388									
11 kV – HDCu, 100mm <sup>2</sup>	3	500389									
11 kV – AAAC, 50mm <sup>2</sup>	4	500390									
11 kV – AAAC, 100mm <sup>2</sup>	5	500391									
11 kV – AAAC, 150mm <sup>2</sup>	6	500392									
33 kV – HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV – AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV – AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
<b>(Items Included in GA Kit Contents)</b>											
Socket Thimble	400C29	132233	-	-	-	-	3	3	3	3	3
Socket Thimble	400C29	132234	-	-	-	3	-	-	-	-	-
Bolt, M20, 300mm	400F1	107735	-	-	-	4	4	4	4	4	4
Bolt, M20, 60mm	400F1	107581	-	-	-	14	14	14	14	14	14
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	8	8	8	8	8	8
Washer, Square, Curved	400F1	139203	-	-	-	5	5	5	5	5	5
Washer, Square, Flat	400F1	139262	-	-	-	2	2	2	2	2	2
Helical Dead End	400H2	121061	-	-	-	-	-	-	-	-	3
Helical Dead End	400H2	121088	-	-	-	-	-	-	-	3	-
Helical Dead End	400H2	138154	-	-	-	-	-	-	3	-	-
Helical Dead End	400H2	121029	-	-	-	-	-	3	-	-	-
Helical Dead End	400H2	121401	-	-	-	-	3	-	-	-	-
Helical Dead End	400H2	138156	-	-	-	3	-	-	-	-	-
Insulator Set Tension	400I4	125232	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133337	-	-	-	2	2	2	2	2	2
Crossarm Brace	400S11	133335	-	-	-	2	2	2	2	2	2
Crossarm Strut	400S11	133353	-	-	-	4	4	4	4	4	4
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Terminal Strap	400S11	133361	-	-	-	3	3	3	3	3	3
Tie Rod	400S11	133388	-	-	-	2	2	2	2	2	2
Shroud, Insulated	400S12	160798	-	-	-	1	1	1	1	1	1
<b>(Additional Items Required for GA But Not Included in GA Kit Contents)</b>											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Transformer	321	Ref ES321	As required								

Drawing No: I-40003-GA-016

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV – HDCu, 38mm <sup>2</sup>	1	500387									
11 kV – HDCu, 70mm <sup>2</sup>	2	500388									
11 kV – HDCu, 100mm <sup>2</sup>	3	500389									
11 kV – AAAC, 50mm <sup>2</sup>	4	500390									
11 kV – AAAC, 100mm <sup>2</sup>	5	500391									
11 kV – AAAC, 150mm <sup>2</sup>	6	500392									
33 kV – HDCu, 100mm <sup>2</sup>		Not applicable									
33 kV – AAAC, 150mm <sup>2</sup>		Not applicable									
33 kV – AAAC, 200mm <sup>2</sup>		Not applicable									
<b>Item</b>	<b>ES Ref</b>	<b>Item CC No</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
ACDs	400A2	Ref ES400A2									
Lugs	400C29	Ref ES400C29									
Notices	400N1	Ref ES400N1									
Stays	400S13	Ref ES400S13									



**TRANSFORMER (SINGLE TERMINAL POLE/SINGLE BOLT MOUNTING)  
(COMPRESSION FITTINGS/BAILS/LL CLAMPS)**

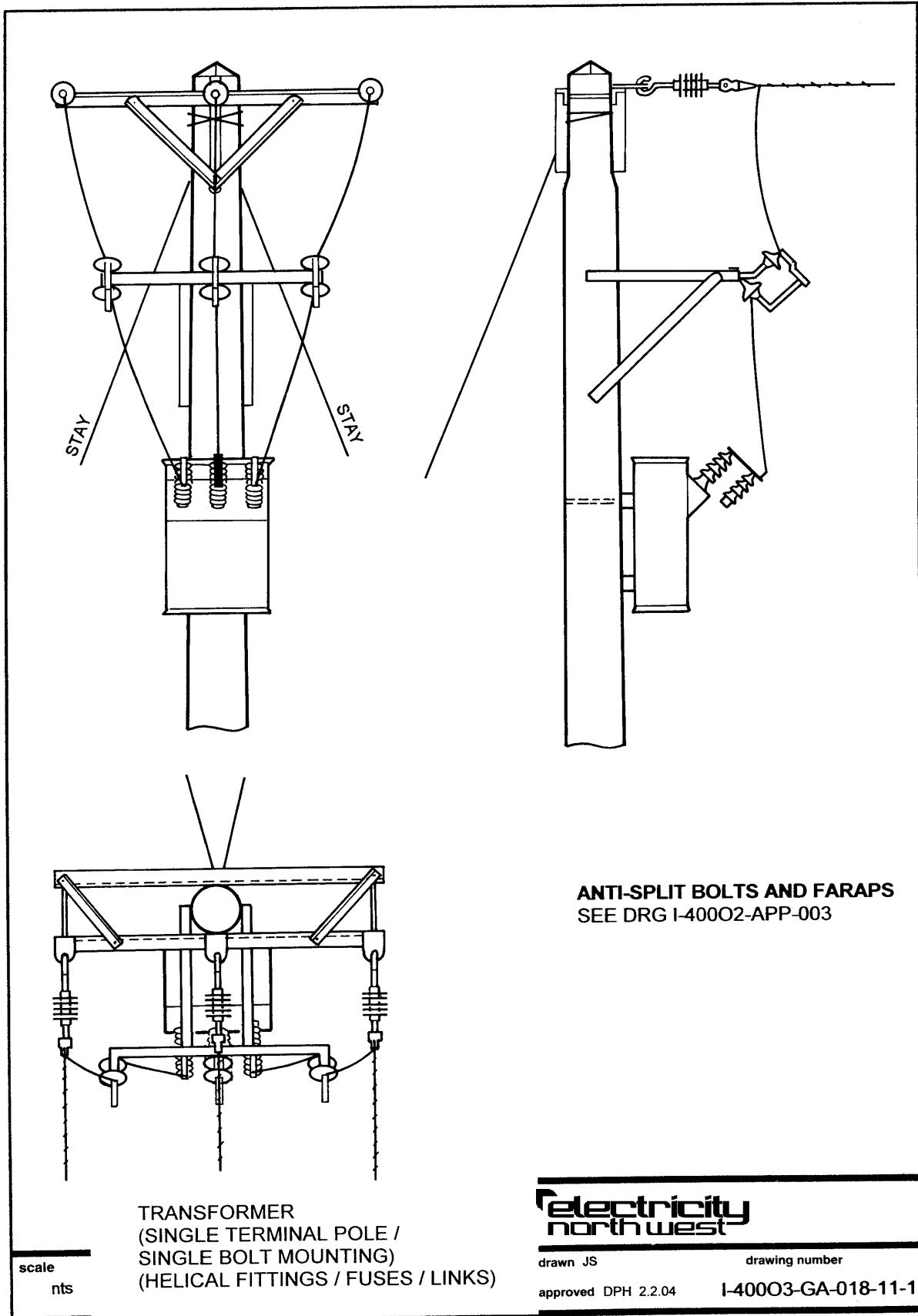
Drawing No: I-40003-GA-017

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500478									
11 kV - HDCu, 70mm <sup>2</sup>	2	500479									
11 kV - HDCu, 100mm <sup>2</sup>	3	500480									
11 kV - AAAC, 50mm <sup>2</sup>	4	500481									
11 kV - AAAC, 100mm <sup>2</sup>	5	500482									
11 kV - AAAC, 150mm <sup>2</sup>	6	500483									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Compression Dead End	400C29	130910	-	-	-	-	-	-	-	-	3
Compression Dead End	400C29	130920	-	-	-	-	-	-	-	3	-
Compression Dead End	400C29	130930	-	-	-	-	-	-	3	-	-
Compression Dead End	400C29	130940	-	-	-	-	-	3	-	-	-
Compression Dead End	400C29	130950	-	-	-	-	3	-	-	-	-
Compression Dead End	400C29	130960	-	-	-	3	-	-	-	-	-
Dead End Back Plate	400C29	121020	-	-	-	3	3	3	3	3	3
Dropper Kit 1	400C29	124871	-	-	-	3	3	3	3	3	3
Bolt, M20, 300mm	400F1	107735	-	-	-	4	4	4	4	4	4
Bolt, M20, 60mm	400F1	107581	-	-	-	14	14	14	14	14	14
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	8	8	8	8	8	8
Washer, Square, Curved	400F1	139203	-	-	-	5	5	5	5	5	5
Washer, Square, Flat	400F1	139262	-	-	-	2	2	2	2	2	2
Insulator Set, Tension	400I4	125240	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Ball End Hook	400S11	122297	-	-	-	3	3	3	3	3	3
Crossarm	400S11	133337	-	-	-	2	2	2	2	2	2
Crossarm Brace	400S11	133335	-	-	-	2	2	2	2	2	2
Crossarm Strut	400S11	133353	-	-	-	4	4	4	4	4	4
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Sag Link	400S11	260850	-	-	-	3	3	3	3	3	3
Socket Clevis	400S11	122173	-	-	-	6	6	6	6	6	6
Terminal Strap	400S11	133361	-	-	-	3	3	3	3	3	3
Tie Rod	400S11	133388	-	-	-	2	2	2	2	2	2
Shroud, Insulated	400S12	160798	-	-	-	1	1	1	1	1	1

Drawing No: I-40003-GA-017

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500478									
11 kV - HDCu, 70mm <sup>2</sup>	2	500479									
11 kV - HDCu, 100mm <sup>2</sup>	3	500480									
11 kV - AAAC, 50mm <sup>2</sup>	4	500481									
11 kV - AAAC, 100mm <sup>2</sup>	5	500482									
11 kV - AAAC, 150mm <sup>2</sup>	6	500483									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Conductor, Flexible, 65mm <sup>2</sup>	400C3	012130	-	-	-	*	*	*	*	*	*
Transformer	321	Ref ES321	As required								
ACDs	400A2	Ref ES400A2	As required								
Wedge Tap Bail	400C29	Ref ES400C29	See Table 2 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								

\* Quantity as required





**TRANSFORMER (SINGLE TERMINAL POLE/SINGLE BOLT MOUNTING)  
(HELICAL FITTINGS/FUSES/LINKS)**

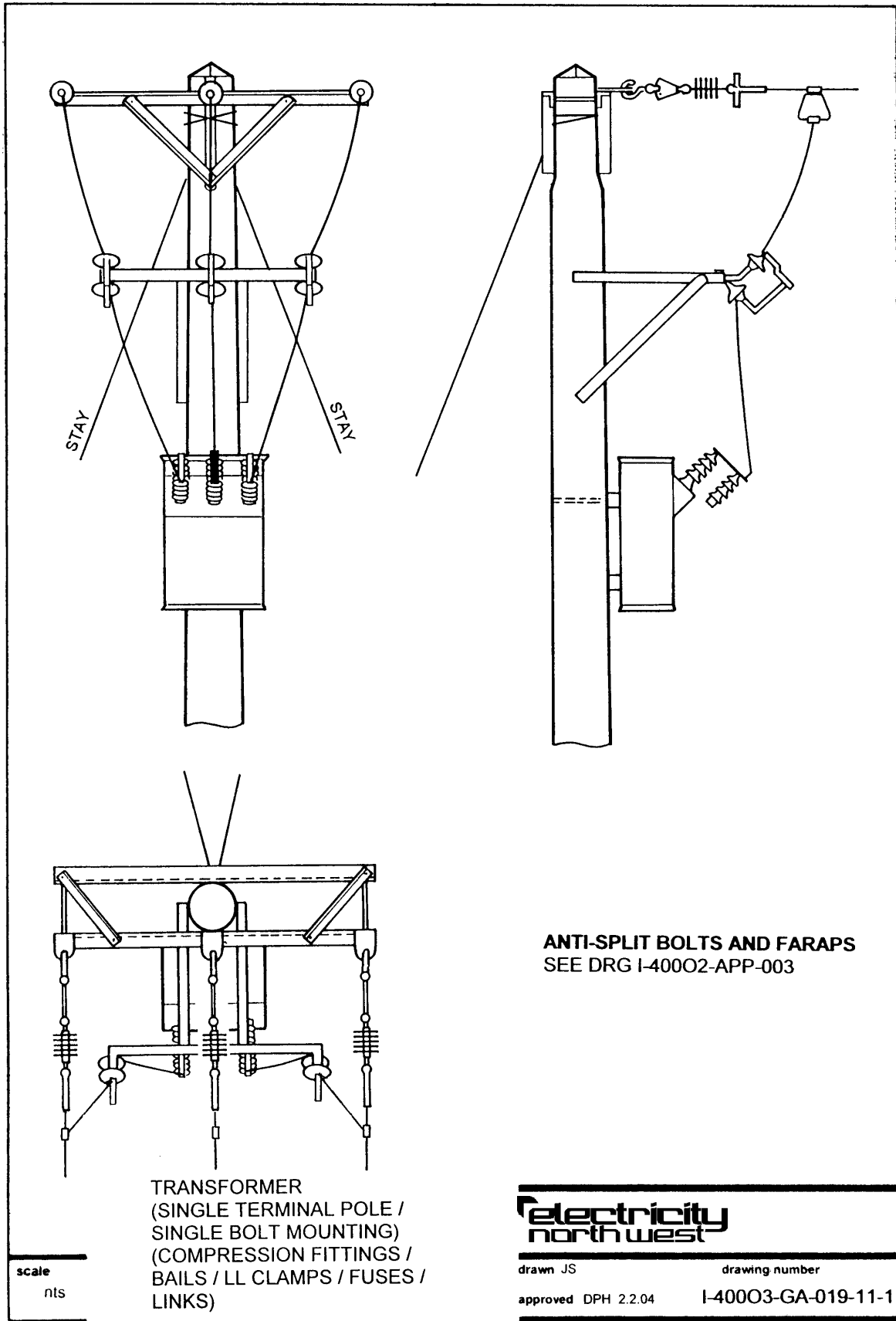
Drawing No: I-40003-GA-018

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500494									
11 kV - HDCu, 70mm <sup>2</sup>	2	500495									
11 kV - HDCu, 100mm <sup>2</sup>	3	500496									
11 kV - AAAC, 50mm <sup>2</sup>	4	500497									
11 kV - AAAC, 100mm <sup>2</sup>	5	500498									
11 kV - AAAC, 150mm <sup>2</sup>	6	500499									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Socket Thimble	400C29	132233	-	-	-	-	3	3	3	3	3
Socket Thimble	400C29	132234	-	-	-	3	-	-	-	-	-
Bolt, M20, 300mm	400F1	107735	-	-	-	6	6	6	6	6	6
Bolt, M20, 60mm	400F1	107581	-	-	-	14	14	14	14	14	14
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	8	8	8	8	8	8
Washer, Square, Curved	400F1	139203	-	-	-	5	5	5	5	5	5
Washer, Square, Flat	400F1	139262	-	-	-	2	2	2	2	2	2
Helical Dead End	400H2	121061	-	-	-	-	-	-	-	-	3
Helical Dead End	400H2	121088	-	-	-	-	-	-	-	3	-
Helical Dead End	400H2	138154	-	-	-	-	-	-	3	-	-
Helical Dead End	400H2	121029	-	-	-	-	-	3	-	-	-
Helical Dead End	400H2	121401	-	-	-	-	3	-	-	-	-
Helical Dead End	400H2	138156	-	-	-	3	-	-	-	-	-
Insulator Set, Tension	400I4	125232	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133337	-	-	-	2	2	2	2	2	2
Crossarm Brace	400S11	133335	-	-	-	2	2	2	2	2	2
Crossarm Strut	400S11	133353	-	-	-	4	4	4	4	4	4
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Steelwork, Links, Short	400S11	133207	-	-	-	1	1	1	1	1	1
Terminal Strap	400S11	133361	-	-	-	3	3	3	3	3	3
Tie Rod	400S11	133388	-	-	-	2	2	2	2	2	2
Shroud, Insulated	400S12	160798	-	-	-	1	1	1	1	1	1
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1

Drawing No: I-40003-GA-018

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500494									
11 kV - HDCu, 70mm <sup>2</sup>	2	500495									
11 kV - HDCu, 100mm <sup>2</sup>	3	500496									
11 kV - AAAC, 50mm <sup>2</sup>	4	500497									
11 kV - AAAC, 100mm <sup>2</sup>	5	500498									
11 kV - AAAC, 150mm <sup>2</sup>	6	500499									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Conductor, Flexible, 65mm <sup>2</sup>	400C3	012130	-	-	-	*	*	*	*	*	*
Transformer	321	Ref ES321	As required								
Fuses/Links	315	Ref ES315	As required								
ACDs	400A2	Ref ES400A2	As required								
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								

\* Quantity as required



**TRANSFORMER (SINGLE TERMINAL POLE/SINGLE BOLT MOUNTING)  
(COMPRESSION FITTINGS/BAILS/LL CLAMPS/FUSES/LINKS)**

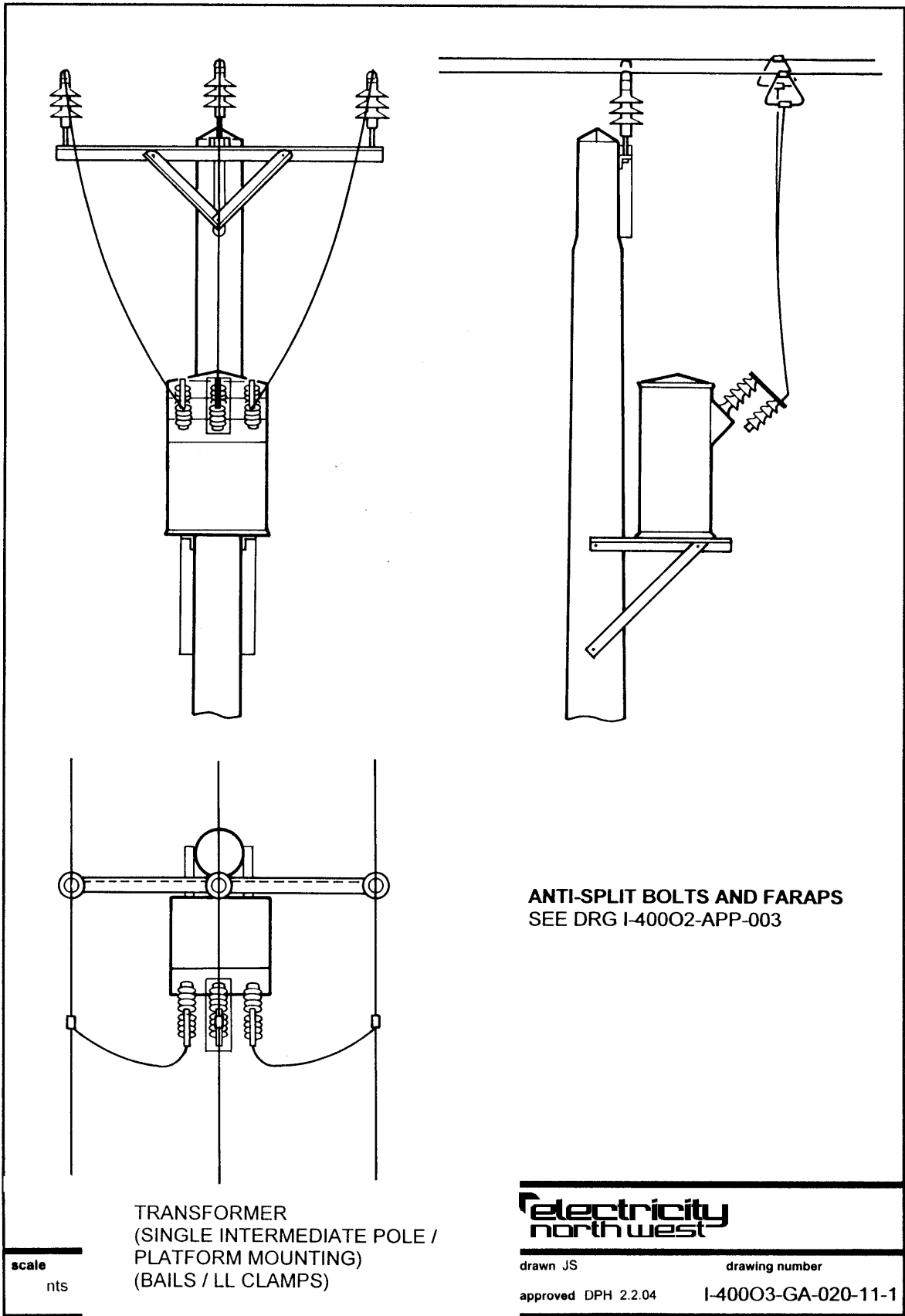
Drawing No: I-40003-GA-019

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500393									
11 kV - HDCu, 70mm <sup>2</sup>	2	500394									
11 kV - HDCu, 100mm <sup>2</sup>	3	500404									
11 kV - AAAC, 50mm <sup>2</sup>	4	500405									
11 kV - AAAC, 100mm <sup>2</sup>	5	500406									
11 kV - AAAC, 150mm <sup>2</sup>	6	500407									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Compression Dead End	400C29	130910	-	-	-	-	-	-	-	-	3
Compression Dead End	400C29	130920	-	-	-	-	-	-	-	3	-
Compression Dead End	400C29	130930	-	-	-	-	-	-	3	-	-
Compression Dead End	400C29	130940	-	-	-	-	-	3	-	-	-
Compression Dead End	400C29	130950	-	-	-	-	3	-	-	-	-
Compression Dead End	400C29	130960	-	-	-	3	-	-	-	-	-
Dead End Back Plate	400C29	121020	-	-	-	3	3	3	3	3	3
Dropper Kit 2	400C29	121010	-	-	-	3	3	3	3	3	3
Bolt, M20, 300mm	400F1	107735	-	-	-	6	6	6	6	6	6
Bolt, M20, 60mm	400F1	107581	-	-	-	14	14	14	14	14	14
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	8	8	8	8	8	8
Washer, Square, Curved	400F1	139203	-	-	-	5	5	5	5	5	5
Washer, Square, Flat	400F1	139262	-	-	-	2	2	2	2	2	2
Insulator Set, Tension	400I4	125240	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Ball End Hook	400S11	122297	-	-	-	3	3	3	3	3	3
Crossarm	400S11	133337	-	-	-	2	2	2	2	2	2
Crossarm Brace	400S11	133335	-	-	-	2	2	2	2	2	2
Crossarm Strut	400S11	133353	-	-	-	4	4	4	4	4	4
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Sag Link	400S11	260850	-	-	-	3	3	3	3	3	3
Socket Clevis	400S11	122173	-	-	-	6	6	6	6	6	6
Steelwork, Links, Short	400S11	133207	-	-	-	1	1	1	1	1	1
Terminal Strap	400S11	133361	-	-	-	3	3	3	3	3	3
Tie Rod	400S11	133388	-	-	-	2	2	2	2	2	2
Shroud, Insulated	400S12	160798	-	-	-	1	1	1	1	1	1

Drawing No: I-40003-GA-019

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500393									
11 kV - HDCu, 70mm <sup>2</sup>	2	500394									
11 kV - HDCu, 100mm <sup>2</sup>	3	500404									
11 kV - AAAC, 50mm <sup>2</sup>	4	500405									
11 kV - AAAC, 100mm <sup>2</sup>	5	500406									
11 kV - AAAC, 150mm <sup>2</sup>	6	500407									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Conductor, Flexible, 65mm <sup>2</sup>	400C3	012130	-	-	-	*	*	*	*	*	*
Transformer	321	Ref ES321	As required								
Fuses/Links	315	Ref ES315	As required								
ACDs	400A2	Ref ES400A2	As required								
Wedge Tap Bail	400C29	Ref ES400C29	See Table 2 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								

\* Quantity as required

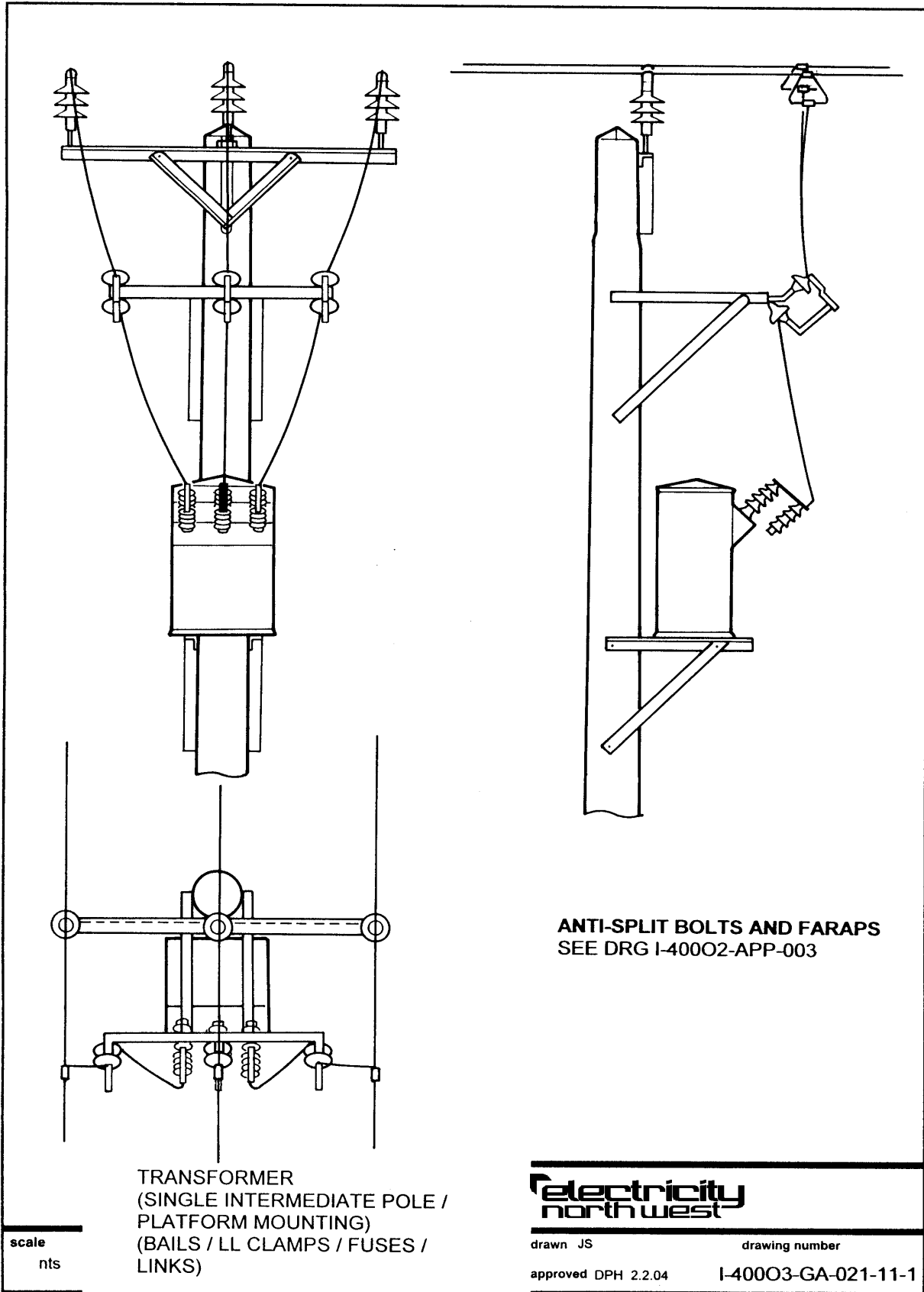


**TRANSFORMER (SINGLE INTERMEDIATE POLE/PLATFORM MOUNTING) - (BAILS/LL CLAMPS)**

Drawing No: I-40003-GA-020

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500510									
11 kV - HDCu, 70mm <sup>2</sup>	2	500511									
11 kV - HDCu, 100mm <sup>2</sup>	3	500512									
11 kV - AAAC, 50mm <sup>2</sup>	4	500513									
11 kV - AAAC, 100mm <sup>2</sup>	5	500514									
11 kV - AAAC, 150mm <sup>2</sup>	6	500515									
33 kV - HDCu, 100mm <sup>2</sup>		Not applicable									
33 kV - AAAC, 150mm <sup>2</sup>		Not applicable									
33 kV - AAAC, 200mm <sup>2</sup>		Not applicable									
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Dropper Kit 1	400C29	124871	-	-	-	3	3	3	3	3	3
Bolt, M20, 300mm	400F1	107735	-	-	-	5	5	5	5	5	5
Bolt, M20, 60mm	400F1	107581	-	-	-	4	4	4	4	4	4
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	4	4	4	4	4	4
Helical Intermediate Tie	400H2	138215	-	-	-	-	-	-	-	-	3
Helical Intermediate Tie	400H2	138924	-	-	-	-	-	-	-	3	-
Helical Intermediate Tie	400H2	138926	-	-	-	-	-	-	3	-	-
Helical Intermediate Tie	400H2	138927	-	-	-	-	-	3	-	-	-
Helical Intermediate Tie	400H2	138932	-	-	-	-	3	-	-	-	-
Helical Intermediate Tie	400H2	138928	-	-	-	3	-	-	-	-	-
Insulator, Pin-mounted	400I4	125202	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133310	-	-	-	1	1	1	1	1	1
Crossarm Strut	400S11	133353	-	-	-	2	2	2	2	2	2
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Insulator Bracket	400S11	133302	-	-	-	1	1	1	1	1	1
Insulator Pin	400S11	128252	-	-	-	3	3	3	3	3	3
Platform Kit	400S11	133396	-	-	-	1	1	1	1	1	1
Shroud, Insulated	400S12	160798	-	-	-	1	1	1	1	1	1
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Conductor, Flexible, 65mm <sup>2</sup>	400C3	012130	-	-	-	*	*	*	*	*	*
Transformer	321	Ref ES321	As required								
ACDs	400A2	Ref ES400A2	As required								
Wedge Tap Bail	400C29	Ref ES400C29	See Table 2 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								

\* Quantity as required





**TRANSFORMER (SINGLE INTERMEDIATE POLE/PLATFORM MOUNTING) - (BAILS/LL CLAMPS/FUSES/LINKS)**

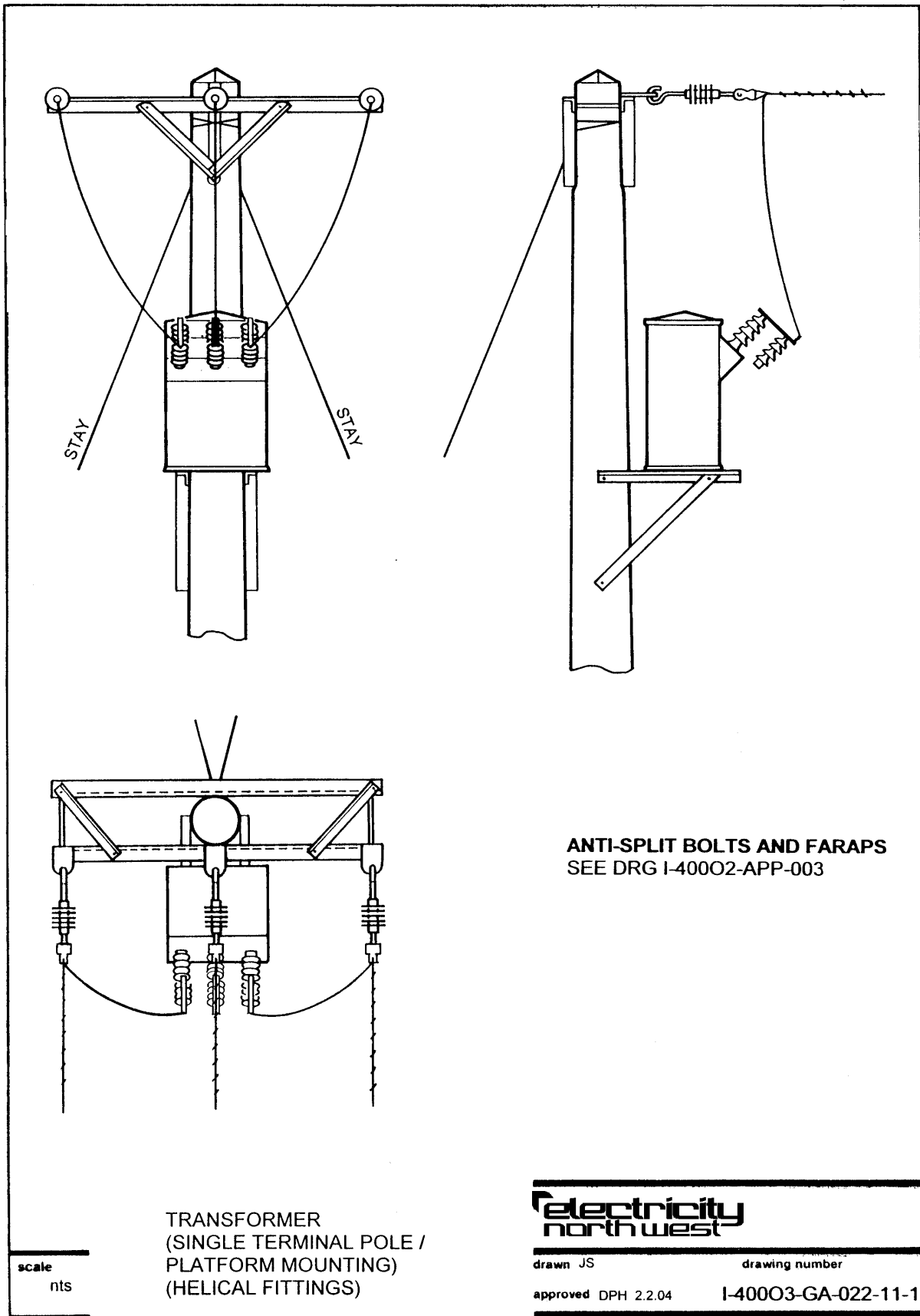
Drawing No: I-40003-GA-021

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500526									
11 kV - HDCu, 70mm <sup>2</sup>	2	500527									
11 kV - HDCu, 100mm <sup>2</sup>	3	500528									
11 kV - AAAC, 50mm <sup>2</sup>	4	500529									
11 kV - AAAC, 100mm <sup>2</sup>	5	500530									
11 kV - AAAC, 150mm <sup>2</sup>	6	500531									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Dropper Kit 2	400C29	121010	-	-	-	3	3	3	3	3	3
Bolt, M20, 300mm	400F1	107735	-	-	-	7	7	7	7	7	7
Bolt, M20, 60mm	400F1	107581	-	-	-	4	4	4	4	4	4
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	4	4	4	4	4	4
Helical Intermediate Tie	400H2	138215	-	-	-	-	-	-	-	-	3
Helical Intermediate Tie	400H2	138924	-	-	-	-	-	-	-	3	-
Helical Intermediate Tie	400H2	138926	-	-	-	-	-	-	3	-	-
Helical Intermediate Tie	400H2	138927	-	-	-	-	-	3	-	-	-
Helical Intermediate Tie	400H2	138932	-	-	-	-	3	-	-	-	-
Helical Intermediate Tie	400H2	138928	-	-	-	3	-	-	-	-	-
Insulator, Pin-mounted	400I4	125202	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133310	-	-	-	1	1	1	1	1	1
Crossarm Strut	400S11	133353	-	-	-	2	2	2	2	2	2
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Insulator Bracket	400S11	133302	-	-	-	1	1	1	1	1	1
Insulator Pin	400S11	128252	-	-	-	3	3	3	3	3	3
Platform Kit	400S11	133396	-	-	-	1	1	1	1	1	1
Steelwork, Links, Short	400S11	133207	-	-	-	1	1	1	1	1	1
Shroud, Insulated	400S12	160798	-	-	-	1	1	1	1	1	1
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Conductor, Flexible, 65mm <sup>2</sup>	400C3	012130	-	-	-	*	*	*	*	*	*
Transformer	321	Ref ES321	As required								

Drawing No: I-40003-GA-021

<b>Voltage/Conductor</b>	<b>Ref</b>	<b>GA Kit CC No</b>	<b>Comprising:</b>								
11 kV - HDCu, 38mm <sup>2</sup>	<b>1</b>	500526									
11 kV - HDCu, 70mm <sup>2</sup>	<b>2</b>	500527									
11 kV - HDCu, 100mm <sup>2</sup>	<b>3</b>	500528									
11 kV - AAAC, 50mm <sup>2</sup>	<b>4</b>	500529									
11 kV - AAAC, 100mm <sup>2</sup>	<b>5</b>	500530									
11 kV - AAAC, 150mm <sup>2</sup>	<b>6</b>	500531									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
<b>Item</b>	<b>ES Ref</b>	<b>Item CC No</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
Fuses/Links	315	Ref ES315	As required								
ACDs	400A2	Ref ES400A2	As required								
Wedge Tap Bail	400C29	Ref ES400C29	See Table 2 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								

\* Quantity as required



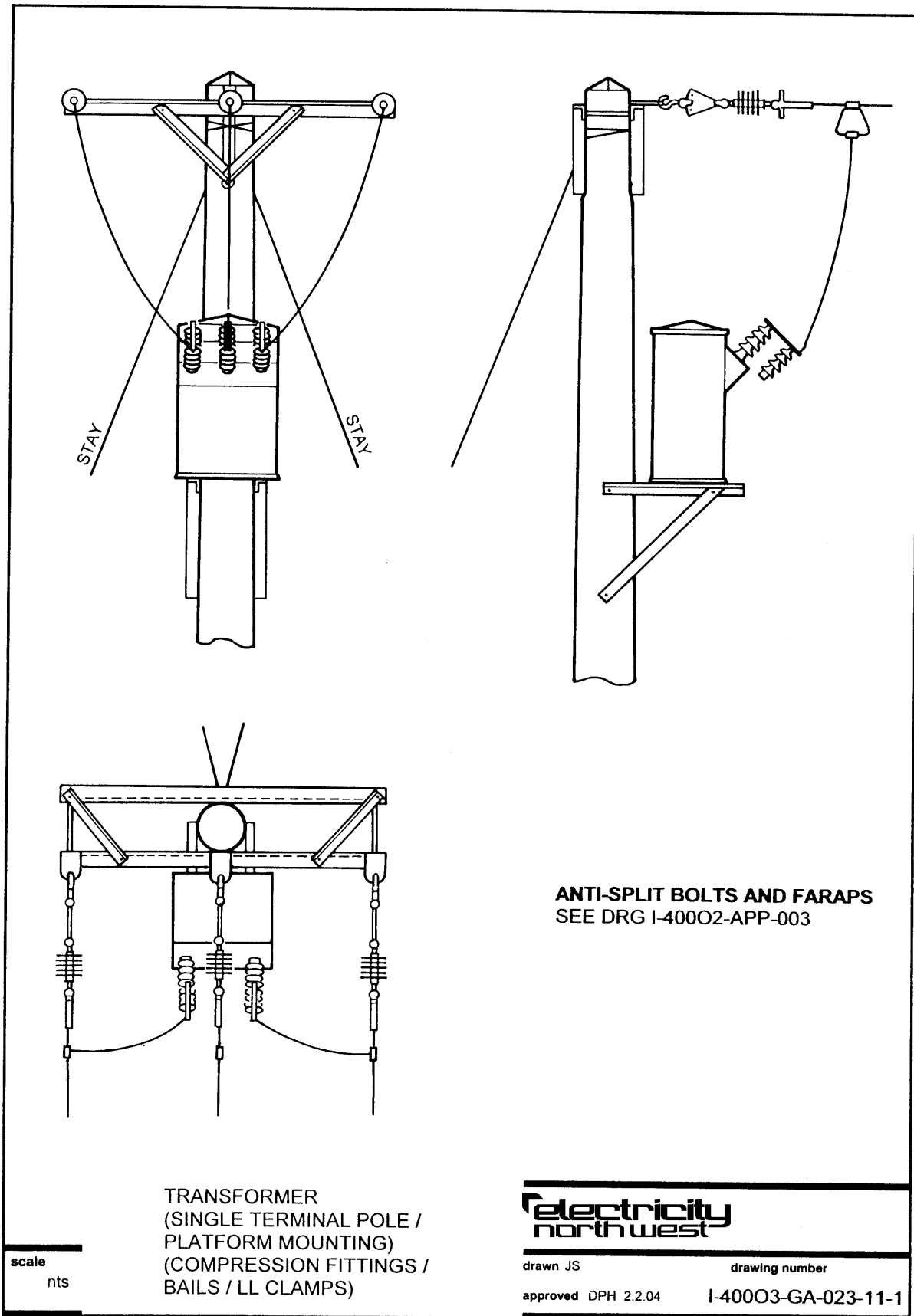
**TRANSFORMER (SINGLE TERMINAL POLE/PLATFORM MOUNTING) - (HELICAL FITTINGS)**

Drawing No: I-40003-GA-022

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500430									
11 kV - HDCu, 70mm <sup>2</sup>	2	500431									
11 kV - HDCu, 100mm <sup>2</sup>	3	500432									
11 kV - AAAC, 50mm <sup>2</sup>	4	500433									
11 kV - AAAC, 100mm <sup>2</sup>	5	500434									
11 kV - AAAC, 150mm <sup>2</sup>	6	500435									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Socket Thimble	400C29	132233	-	-	-	-	3	3	3	3	3
Socket Thimble	400C29	132234	-	-	-	3	-	-	-	-	-
Bolt, M20, 300mm	400F1	107735	-	-	-	5	5	5	5	5	5
Bolt, M20, 60mm	400F1	107581	-	-	-	14	14	14	14	14	14
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	8	8	8	8	8	8
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	2	2	2	2	2	2
Helical Dead End	400H2	121061	-	-	-	-	-	-	-	-	3
Helical Dead End	400H2	121088	-	-	-	-	-	-	-	3	-
Helical Dead End	400H2	138154	-	-	-	-	-	-	3	-	-
Helical Dead End	400H2	121029	-	-	-	-	-	3	-	-	-
Helical Dead End	400H2	121401	-	-	-	-	3	-	-	-	-
Helical Dead End	400H2	138156	-	-	-	3	-	-	-	-	-
Insulator Set Tension	400I4	125232	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133337	-	-	-	2	2	2	2	2	2
Crossarm Brace	400S11	133335	-	-	-	2	2	2	2	2	2
Crossarm Strut	400S11	133353	-	-	-	4	4	4	4	4	4
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Platform Kit	400S11	133396	-	-	-	1	1	1	1	1	1
Shroud, Insulated	400S12	160798	-	-	-	1	1	1	1	1	1
Terminal Strap	400S11	133361	-	-	-	3	3	3	3	3	3
Tie Rod	400S11	133388	-	-	-	2	2	2	2	2	2
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1

Drawing No: I-40003-GA-022

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500430									
11 kV - HDCu, 70mm <sup>2</sup>	2	500431									
11 kV - HDCu, 100mm <sup>2</sup>	3	500432									
11 kV - AAAC, 50mm <sup>2</sup>	4	500433									
11 kV - AAAC, 100mm <sup>2</sup>	5	500434									
11 kV - AAAC, 150mm <sup>2</sup>	6	500435									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
Transformer	321	Ref ES321	As required								
ACDs	400A2	Ref ES400A2	As required								
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								



**TRANSFORMER (SINGLE TERMINAL POLE/PLATFORM MOUNTING)  
(COMPRESSION FITTINGS/BAILS/LL CLAMPS)**

Drawing No: I-40003-GA-023

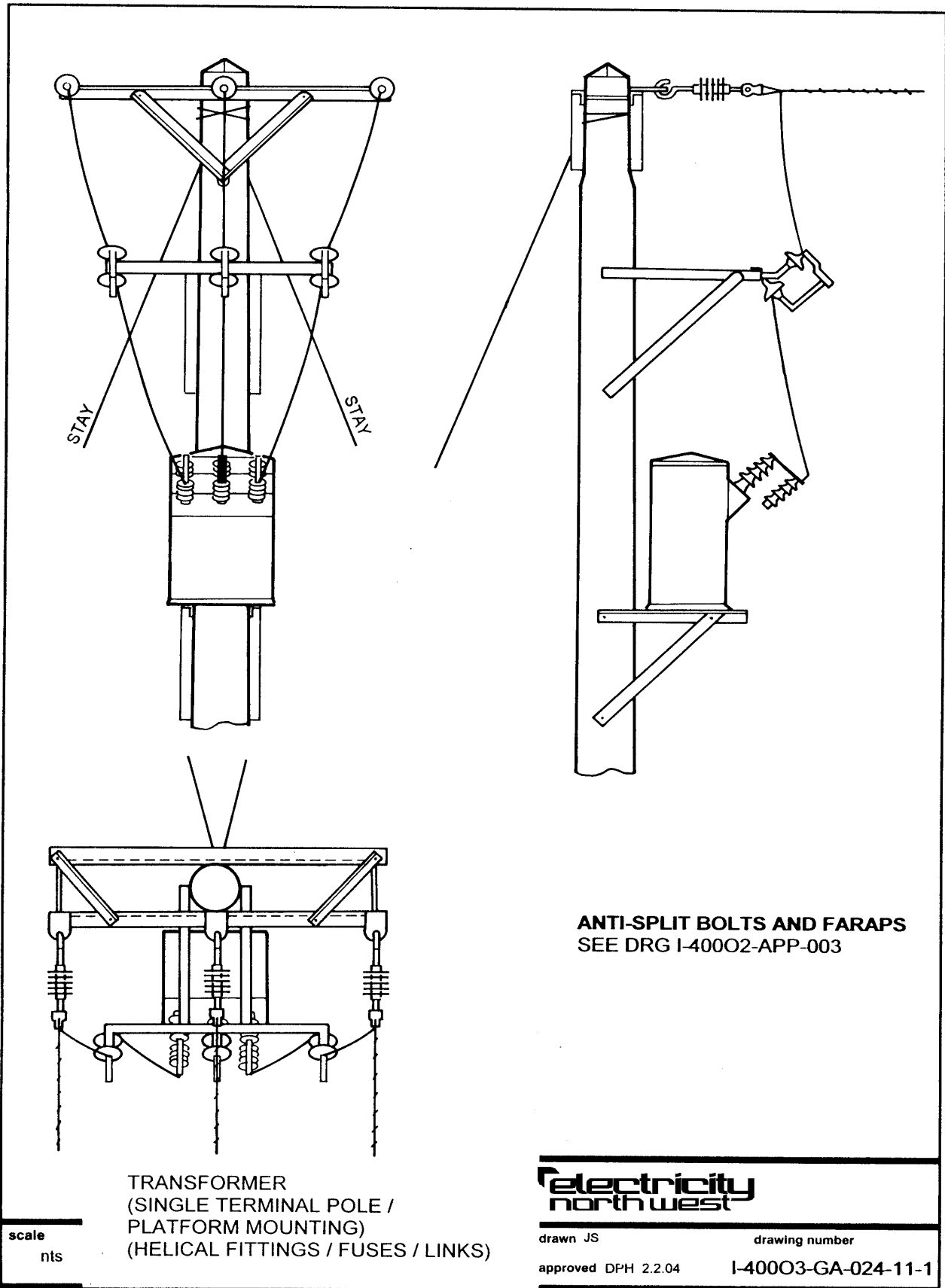
Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500542									
11 kV - HDCu, 70mm <sup>2</sup>	2	500543									
11 kV - HDCu, 100mm <sup>2</sup>	3	500544									
11 kV - AAAC, 50mm <sup>2</sup>	4	500545									
11 kV - AAAC, 100mm <sup>2</sup>	5	500546									
11 kV - AAAC, 150mm <sup>2</sup>	6	500547									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Compression Dead End	400C29	130910	-	-	-	-	-	-	-	-	3
Compression Dead End	400C29	130920	-	-	-	-	-	-	-	3	-
Compression Dead End	400C29	130930	-	-	-	-	-	-	3	-	-
Compression Dead End	400C29	130940	-	-	-	-	-	3	-	-	-
Compression Dead End	400C29	130950	-	-	-	-	3	-	-	-	-
Compression Dead End	400C29	130960	-	-	-	3	-	-	-	-	-
Dead End Back Plate	400C29	121020	-	-	-	3	3	3	3	3	3
Dropper Kit 1	400C29	124871	-	-	-	3	3	3	3	3	3
Bolt, M20, 300mm	400F1	107735	-	-	-	5	5	5	5	5	5
Bolt, M20, 60mm	400F1	107581	-	-	-	14	14	14	14	14	14
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	8	8	8	8	8	8
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	2	2	2	2	2	2
Insulator Set, Tension	400I4	125240	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Ball End Hook	400S11	122297	-	-	-	3	3	3	3	3	3
Crossarm	400S11	133337	-	-	-	2	2	2	2	2	2
Crossarm Brace	400S11	133335	-	-	-	2	2	2	2	2	2
Crossarm Strut	400S11	133353	-	-	-	4	4	4	4	4	4
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Platform Kit	400S11	133396	-	-	-	1	1	1	1	1	1
Sag Link	400S11	260850	-	-	-	3	3	3	3	3	3
Socket Clevis	400S11	122173	-	-	-	6	6	6	6	6	6
Terminal Strap	400S11	133361	-	-	-	3	3	3	3	3	3
Tie Rod	400S11	133388	-	-	-	2	2	2	2	2	2
Shroud, Insulated	400S12	160798	-	-	-	1	1	1	1	1	1

Drawing No: I-40003-GA-023

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500542									
11 kV - HDCu, 70mm <sup>2</sup>	2	500543									
11 kV - HDCu, 100mm <sup>2</sup>	3	500544									
11 kV - AAAC, 50mm <sup>2</sup>	4	500545									
11 kV - AAAC, 100mm <sup>2</sup>	5	500546									
11 kV - AAAC, 150mm <sup>2</sup>	6	500547									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Conductor, Flexible, 65mm <sup>2</sup>	400C3	012130	-	-	-	*	*	*	*	*	*
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Transformer	321	Ref ES321	As required								
ACDs	400A2	Ref ES400A2	As required								
Wedge Tap Bail	400C29	Ref ES400C29	See Table 2 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								

\* Quantity as required





**TRANSFORMER (SINGLE TERMINAL POLE/PLATFORM MOUNTING) - (HELICAL FITTINGS/FUSES/LINKS)**

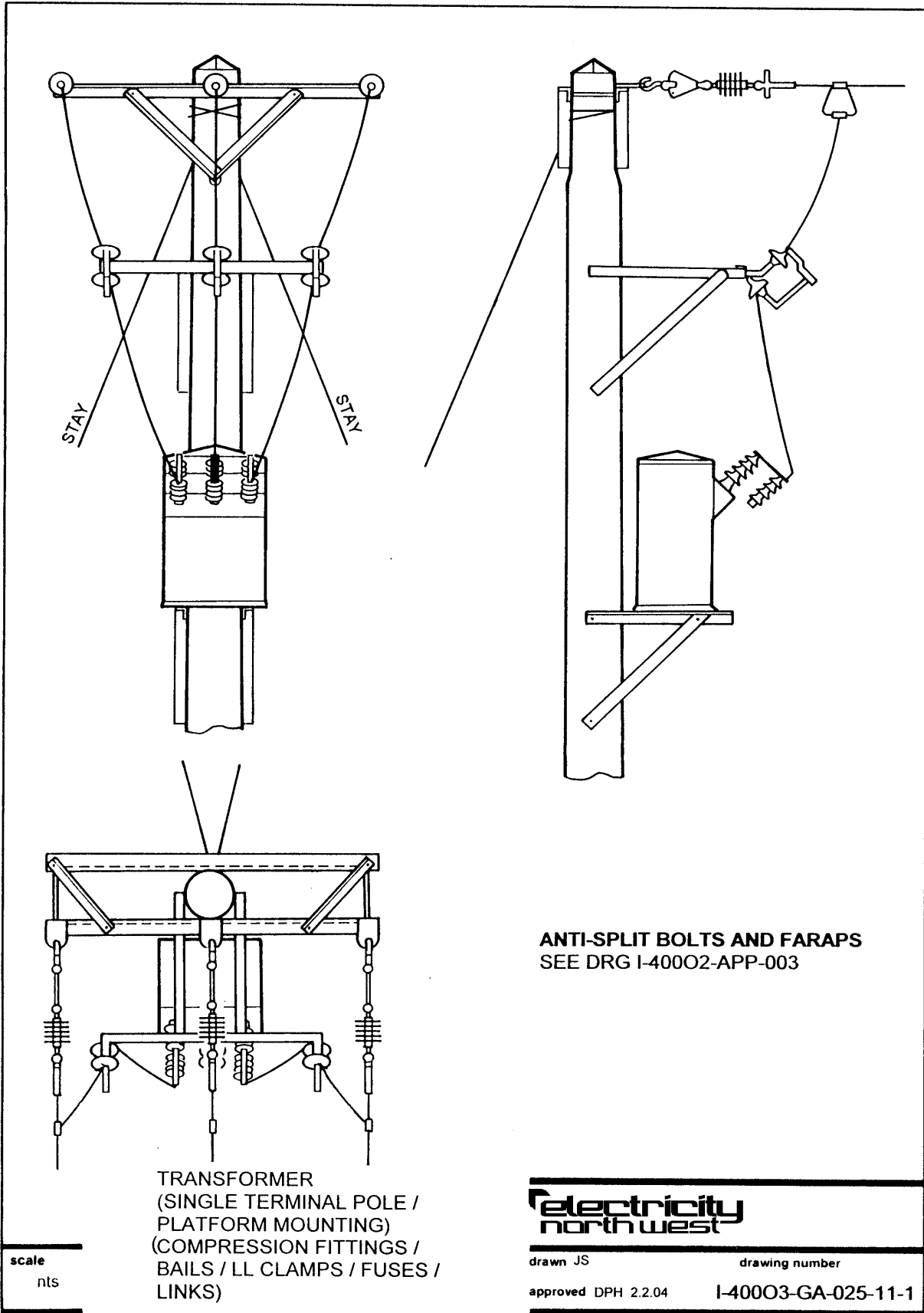
Drawing No: I-40003-GA-024

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500558									
11 kV - HDCu, 70mm <sup>2</sup>	2	500559									
11 kV - HDCu, 100mm <sup>2</sup>	3	500560									
11 kV - AAAC, 50mm <sup>2</sup>	4	500561									
11 kV - AAAC, 100mm <sup>2</sup>	5	500562									
11 kV - AAAC, 150mm <sup>2</sup>	6	500563									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Dropper Kit 2	400C29	121010	-	-	-	3	3	3	3	3	3
Socket Thimble	400C29	132233	-	-	-	-	3	3	3	3	3
Socket Thimble	400C29	132234	-	-	-	3	-	-	-	-	-
Bolt, M20, 300mm	400F1	107735	-	-	-	7	7	7	7	7	7
Bolt, M20, 60mm	400F1	107581	-	-	-	14	14	14	14	14	14
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	8	8	8	8	8	8
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	2	2	2	2	2	2
Helical Dead End	400H2	121061	-	-	-	-	-	-	-	-	3
Helical Dead End	400H2	121088	-	-	-	-	-	-	-	3	-
Helical Dead End	400H2	138154	-	-	-	-	-	-	3	-	-
Helical Dead End	400H2	121029	-	-	-	-	-	3	-	-	-
Helical Dead End	400H2	121401	-	-	-	-	3	-	-	-	-
Helical Dead End	400H2	138156	-	-	-	3	-	-	-	-	-
Insulator Set, Tension	400I4	125232	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133337	-	-	-	2	2	2	2	2	2
Crossarm Brace	400S11	133335	-	-	-	2	2	2	2	2	2
Crossarm Strut	400S11	133353	-	-	-	4	4	4	4	4	4
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Platform Kit	400S11	133396	-	-	-	1	1	1	1	1	1
Steelwork, Links, Short	400S11	133207	-	-	-	1	1	1	1	1	1
Terminal Strap	400S11	133361	-	-	-	3	3	3	3	3	3
Tie Rod	400S11	133388	-	-	-	2	2	2	2	2	2
Shroud, Insulated	400S12	160798	-	-	-	1	1	1	1	1	1
(Additional Items Required for GA But Not Included in GA Kit Contents)											

Drawing No: I-40003-GA-024

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500558									
11 kV - HDCu, 70mm <sup>2</sup>	2	500559									
11 kV - HDCu, 100mm <sup>2</sup>	3	500560									
11 kV - AAAC, 50mm <sup>2</sup>	4	500561									
11 kV - AAAC, 100mm <sup>2</sup>	5	500562									
11 kV - AAAC, 150mm <sup>2</sup>	6	500563									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
Conductor, Flexible, 65mm <sup>2</sup>	400C3	012130	-	-	-	*	*	*	*	*	*
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Transformer	321	Ref ES321	As required								
Fuses/Links	315	Ref ES315	As required								
ACDs	400A2	Ref ES400A2	As required								
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								

\* Quantity as required



**TRANSFORMER (SINGLE TERMINAL POLE/PLATFORM MOUNTING)  
(COMPRESSION FITTINGS/BAILS/LL CLAMPS/ FUSES/LINKS)**

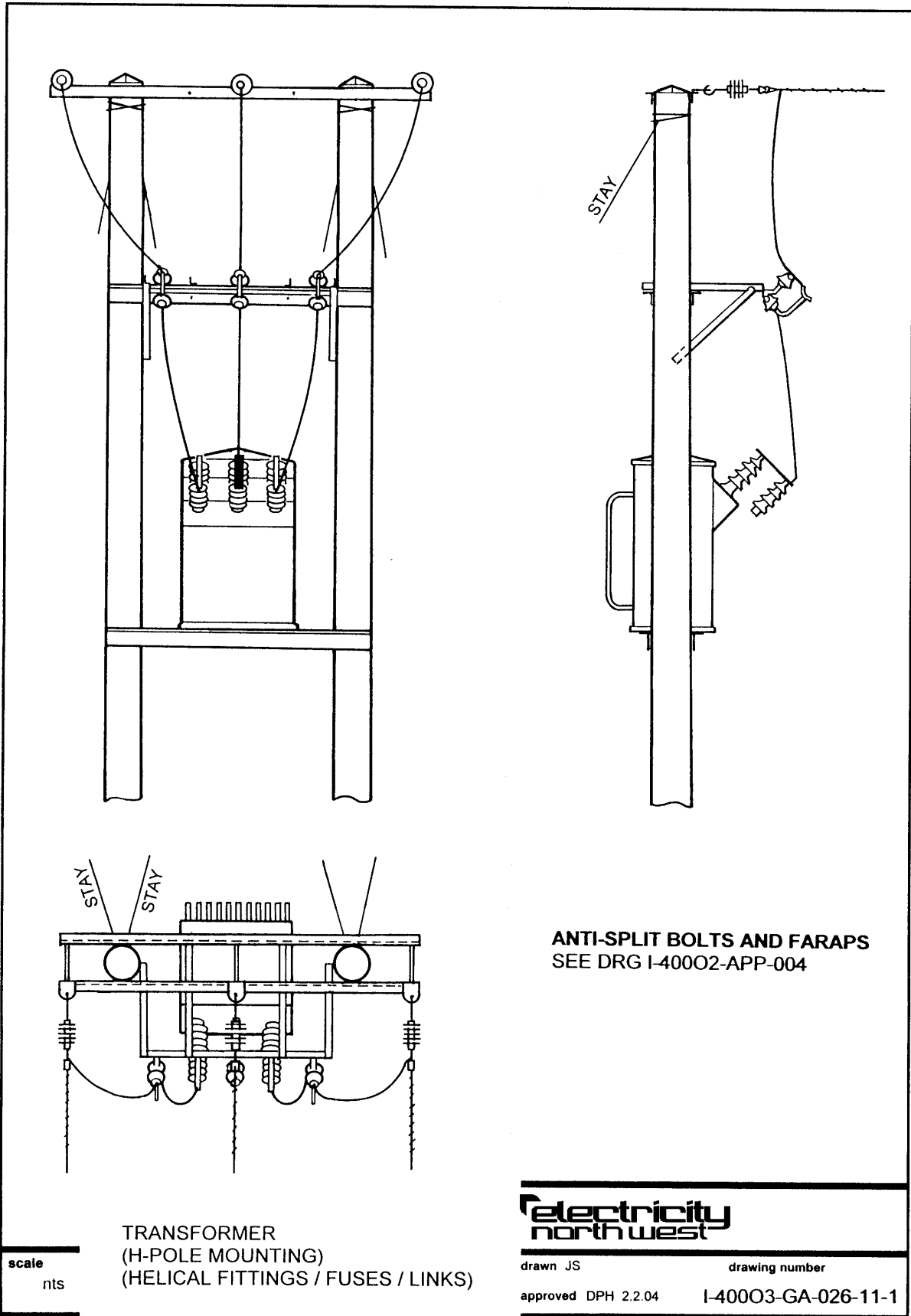
Drawing No: I-40003-GA-025

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500408									
11 kV - HDCu, 70mm <sup>2</sup>	2	500409									
11 kV - HDCu, 100mm <sup>2</sup>	3	500410									
11 kV - AAAC, 50mm <sup>2</sup>	4	500411									
11 kV - AAAC, 100mm <sup>2</sup>	5	500412									
11 kV - AAAC, 150mm <sup>2</sup>	6	500413									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Compression Dead End	400C29	130910	-	-	-	-	-	-	-	-	3
Compression Dead End	400C29	130920	-	-	-	-	-	-	-	3	-
Compression Dead End	400C29	130930	-	-	-	-	-	-	3	-	-
Compression Dead End	400C29	130940	-	-	-	-	-	3	-	-	-
Compression Dead End	400C29	130950	-	-	-	-	3	-	-	-	-
Compression Dead End	400C29	130960	-	-	-	3	-	-	-	-	-
Dead End Back Plate	400C29	121020	-	-	-	3	3	3	3	3	3
Dropper Kit 2	400C29	121010	-	-	-	3	3	3	3	3	3
Bolt, M20, 60mm	400F1	107581	-	-	-	14	14	14	14	14	14
Bolt, M20, 300mm	400F1	107735	-	-	-	7	7	7	7	7	7
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	8	8	8	8	8	8
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	2	2	2	2	2	2
Insulator Set, Tension	400I4	125240	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Ball End Hook	400S11	122297	-	-	-	3	3	3	3	3	3
Crossarm	400S11	133337	-	-	-	2	2	2	2	2	2
Crossarm Strut	400S11	133353	-	-	-	4	4	4	4	4	4
Crossarm Brace	400S11	133335	-	-	-	2	2	2	2	2	2
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Sag Link	400S11	260850	-	-	-	3	3	3	3	3	3
Socket Clevis	400S11	122173	-	-	-	6	6	6	6	6	6
Steelwork, Links, Short	400S11	133207	-	-	-	1	1	1	1	1	1
Terminal Strap	400S11	133361	-	-	-	3	3	3	3	3	3
Tie Rod	400S11	133388	-	-	-	2	2	2	2	2	2
Platform Kit	400S11	133396	-	-	-	1	1	1	1	1	1

Drawing No: I-40003-GA-025

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500408									
11 kV - HDCu, 70mm <sup>2</sup>	2	500409									
11 kV - HDCu, 100mm <sup>2</sup>	3	500410									
11 kV - AAAC, 50mm <sup>2</sup>	4	500411									
11 kV - AAAC, 100mm <sup>2</sup>	5	500412									
11 kV - AAAC, 150mm <sup>2</sup>	6	500413									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
Shroud, Insulated	400S12	160798	-	-	-	1	1	1	1	1	1
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Conductor, Flexible, 65mm <sup>2</sup>	400C3	012130	-	-	-	*	*	*	*	*	*
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Transformer	321	Ref ES321	As required								
Fuses/Links	315	Ref ES315	As required								
ACDs	400A2	Ref ES400A2	As required								
Wedge Tap Bail	400C29	Ref ES400C29	See Table 2 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								

\* Quantity as required



**TRANSFORMER (H-POLE MOUNTING) - (HELICAL FITTINGS/FUSES/LINKS)**

Drawing No: I-40003-GA-026

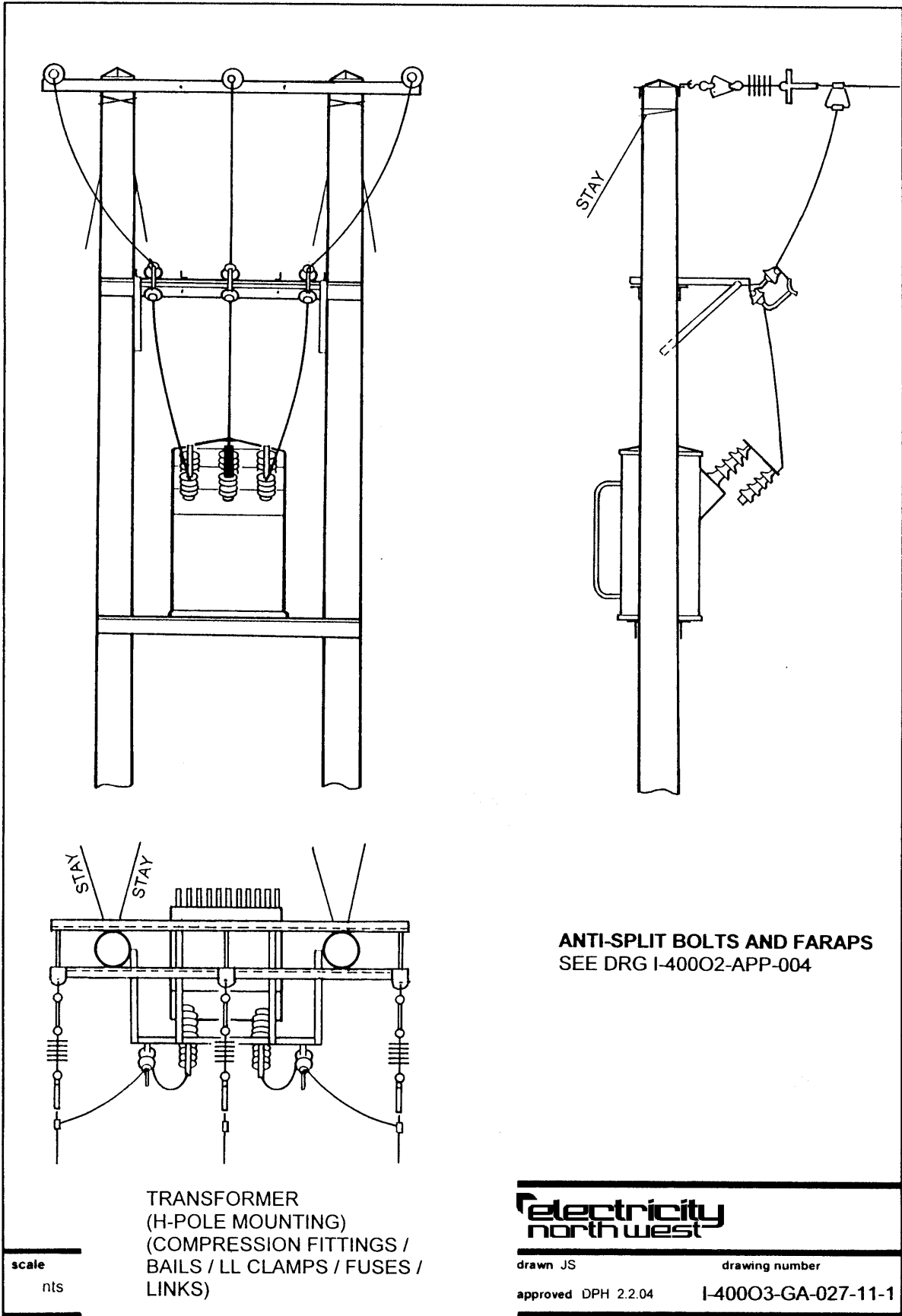
Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500574									
11 kV - HDCu, 70mm <sup>2</sup>	2	500575									
11 kV - HDCu, 100mm <sup>2</sup>	3	500576									
11 kV - AAAC, 50mm <sup>2</sup>	4	500577									
11 kV - AAAC, 100mm <sup>2</sup>	5	500578									
11 kV - AAAC, 150mm <sup>2</sup>	6	500579									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Dropper Kit 2	400C29	121010	-	-	-	3	3	3	3	3	3
Socket Thimble	400C29	132233	-	-	-	-	3	3	3	3	3
Socket Thimble	400C29	132234	-	-	-	3	-	-	-	-	-
Bolt, M20, 300mm	400F1	107735	-	-	-	10	10	10	10	10	10
Bolt, M20, 60mm	400F1	107581	-	-	-	6	6	6	6	6	6
Coach Screw	400F1	126810	-	-	-	4	4	4	4	4	4
Washer, Round, Flat	400F1	993018	-	-	-	12	12	12	12	12	12
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Helical Dead End	400H2	121061	-	-	-	-	-	-	-	-	3
Helical Dead End	400H2	121088	-	-	-	-	-	-	-	3	-
Helical Dead End	400H2	138154	-	-	-	-	-	-	3	-	-
Helical Dead End	400H2	121029	-	-	-	-	-	3	-	-	-
Helical Dead End	400H2	121401	-	-	-	-	3	-	-	-	-
Helical Dead End	400H2	138156	-	-	-	3	-	-	-	-	-
Insulator Set, Tension	400I4	125232	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	4	4	4	4	4	4
Gouge-mark Plate	400N1	995610	-	-	-	2	2	2	2	2	2
Crossarm	400S11	133337	-	-	-	2	2	2	2	2	2
FARAP	400S11	260820	-	-	-	4	4	4	4	4	4
Foundation Fasteners Kit (Refer to drawing I-40002-GA-047)	400S11	133540	-	-	-	1	1	1	1	1	1
Platform Kit	400S11	133213	-	-	-	1	1	1	1	1	1
Steelwork, Links, Short	400S11	133207	-	-	-	1	1	1	1	1	1
Terminal Strap	400S11	133361	-	-	-	3	3	3	3	3	3
Tie Rod	400S11	133388	-	-	-	3	3	3	3	3	3
Shroud, Insulated	400S12	160798	-	-	-	1	1	1	1	1	1
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Conductor, Flexible, 65mm <sup>2</sup>	400C3	012130	-	-	-	*	*	*	*	*	*
Wood Pole	400W2	Ref ES400W2	-	-	-	2	2	2	2	2	2



Drawing No: I-40003-GA-026

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500574									
11 kV - HDCu, 70mm <sup>2</sup>	2	500575									
11 kV - HDCu, 100mm <sup>2</sup>	3	500576									
11 kV - AAAC, 50mm <sup>2</sup>	4	500577									
11 kV - AAAC, 100mm <sup>2</sup>	5	500578									
11 kV - AAAC, 150mm <sup>2</sup>	6	500579									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
Pole Cap	400W7	Ref ES400W7	-	-	-	2	2	2	2	2	2
Fuses/Links	315	Ref ES315	As required								
Transformer	321	Ref ES321	As required								
ACDs	400A2	Ref ES400A2	As required								
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								

\* Quantity as required



**TRANSFORMER (H-POLE MOUNTING) - (COMPRESSION FITTINGS/BAILS/LL CLAMPS/ FUSES/LINKS)**

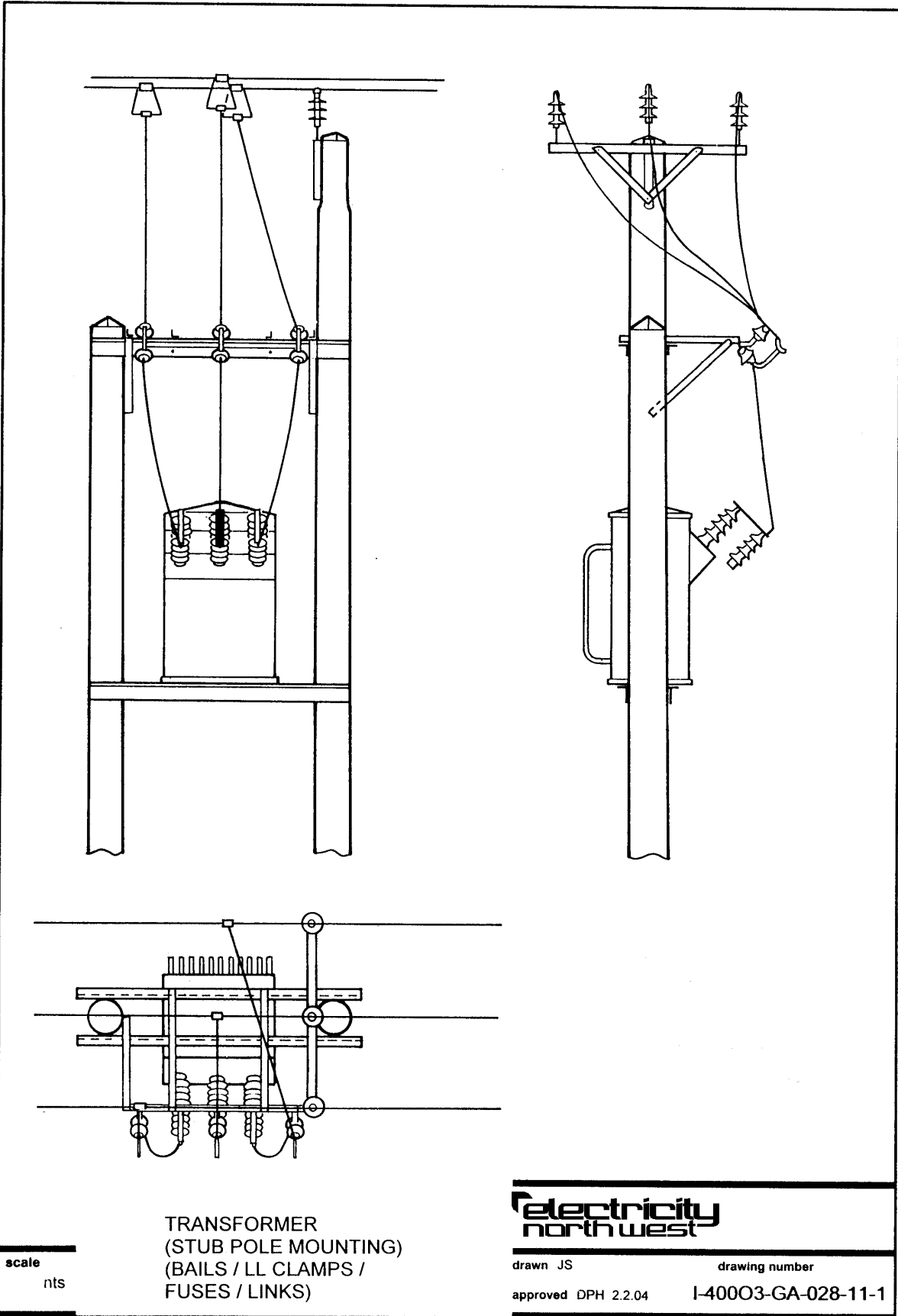
Drawing No: I-40003-GA-027

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500420									
11 kV - HDCu, 70mm <sup>2</sup>	2	500421									
11 kV - HDCu, 100mm <sup>2</sup>	3	500422									
11 kV - AAAC, 50mm <sup>2</sup>	4	500423									
11 kV - AAAC, 100mm <sup>2</sup>	5	500424									
11 kV - AAAC, 150mm <sup>2</sup>	6	500425									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
<b>Item</b>	<b>ES Ref</b>	<b>Item CC No</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>(Items Included in GA Kit Contents)</b>											
Compression Dead End	400C29	130910	-	-	-	-	-	-	-	-	3
Compression Dead End	400C29	130920	-	-	-	-	-	-	-	3	-
Compression Dead End	400C29	130930	-	-	-	-	-	-	3	-	-
Compression Dead End	400C29	130940	-	-	-	-	-	3	-	-	-
Compression Dead End	400C29	130950	-	-	-	-	3	-	-	-	-
Compression Dead End	400C29	130960	-	-	-	3	-	-	-	-	-
Dead End Back Plate	400C29	121020	-	-	-	3	3	3	3	3	3
Dropper Kit 2	400C29	121010	-	-	-	3	3	3	3	3	3
Bolt, M20, 300mm	400F1	107735	-	-	-	10	10	10	10	10	10
Bolt, M20, 60mm	400F1	107581	-	-	-	6	6	6	6	6	6
Coach Screw	400F1	126810	-	-	-	4	4	4	4	4	4
Washer, Round, Flat	400F1	993018	-	-	-	12	12	12	12	12	12
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Insulator Set, Tension	400I4	125240	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	4	4	4	4	4	4
Gouge-mark Plate	400N1	995610	-	-	-	2	2	2	2	2	2
Ball End Hook	400S11	122297	-	-	-	3	3	3	3	3	3
Crossarm	400S11	133337	-	-	-	2	2	2	2	2	2
FARAP	400S11	260820	-	-	-	4	4	4	4	4	4
Foundation Fasteners Kit (Refer to drawing I-40002-GA-047)	400S11	133540	-	-	-	1	1	1	1	1	1
Platform Kit	400S11	133213	-	-	-	1	1	1	1	1	1
Sag Link	400S11	260850	-	-	-	3	3	3	3	3	3
Socket Clevis	400S11	122173	-	-	-	6	6	6	6	6	6
Steelwork, Links, Short	400S11	133207	-	-	-	1	1	1	1	1	1
Terminal Strap	400S11	133361	-	-	-	3	3	3	3	3	3
Tie Rod	400S11	133388	-	-	-	3	3	3	3	3	3
Shroud, Insulated	400S12	160798	-	-	-	1	1	1	1	1	1
<b>(Additional Items Required for GA But Not Included in GA Kit Contents)</b>											

Drawing No: I-40003-GA-027

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500420									
11 kV - HDCu, 70mm <sup>2</sup>	2	500421									
11 kV - HDCu, 100mm <sup>2</sup>	3	500422									
11 kV - AAAC, 50mm <sup>2</sup>	4	500423									
11 kV - AAAC, 100mm <sup>2</sup>	5	500424									
11 kV - AAAC, 150mm <sup>2</sup>	6	500425									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
Conductor, Flexible, 65mm <sup>2</sup>	400C3	012130	-	-	-	*	*	*	*	*	*
Wood Pole	400W2	Ref ES400W2	-	-	-	2	2	2	2	2	2
Pole Cap	400W7	Ref ES400W7	-	-	-	2	2	2	2	2	2
Transformer	321	Ref ES321	As required								
Fuses/Links	315	Ref ES315	As required								
ACDs	400A2	Ref ES400A2	As required								
Wedge Tap Bail	400C29	Ref ES400C29	See Table 2 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								

\* Quantity as required



**TRANSFORMER (STUB POLE MOUNTING) - (BAILS/LL CLAMPS/FUSES/LINKS)**

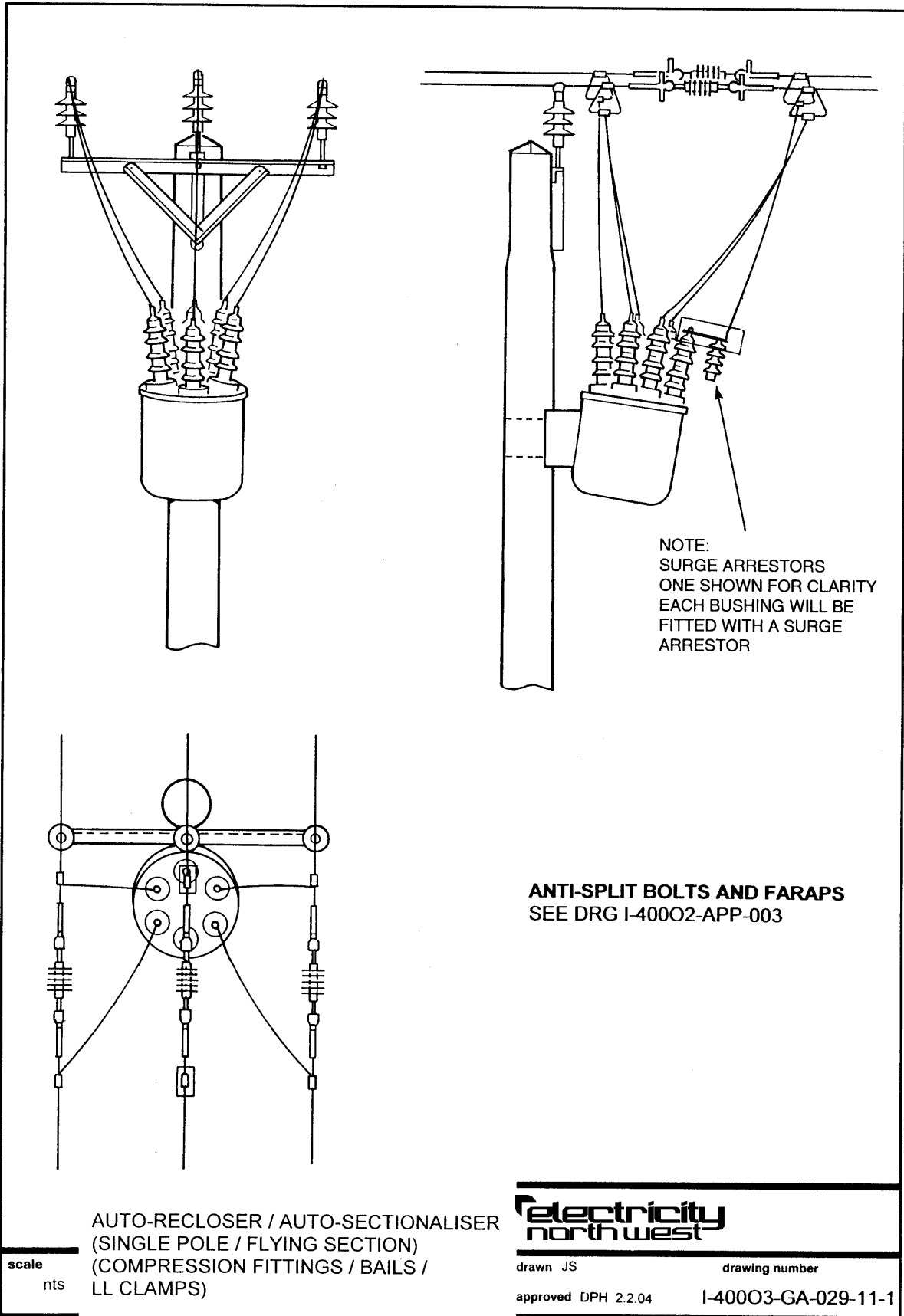
Drawing No: I-40003-GA-028

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500590									
11 kV - HDCu, 70mm <sup>2</sup>	2	500591									
11 kV - HDCu, 100mm <sup>2</sup>	3	500592									
11 kV - AAAC, 50mm <sup>2</sup>	4	500593									
11 kV - AAAC, 100mm <sup>2</sup>	5	500594									
11 kV - AAAC, 150mm <sup>2</sup>	6	500595									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Dropper Kit 2	400C29	121010	-	-	-	3	3	3	3	3	3
Bolt, M20, 300mm	400F1	107735	-	-	-	10	10	10	10	10	10
Bolt, M20, 60mm	400F1	107581	-	-	-	4	4	4	4	4	4
Coach Screw	400F1	126810	-	-	-	4	4	4	4	4	4
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	2	2	2	2	2	2
Helical Intermediate Tie	400H2	138215	-	-	-	-	-	-	-	-	3
Helical Intermediate Tie	400H2	138924	-	-	-	-	-	-	-	3	-
Helical Intermediate Tie	400H2	138926	-	-	-	-	-	-	3	-	-
Helical Intermediate Tie	400H2	138927	-	-	-	-	-	3	-	-	-
Helical Intermediate Tie	400H2	138932	-	-	-	-	3	-	-	-	-
Helical Intermediate Tie	400H2	138928	-	-	-	3	-	-	-	-	-
Insulator, Pin-mounted	400I4	125202	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	4	4	4	4	4	4
Gouge-mark Plate	400N1	995610	-	-	-	2	2	2	2	2	2
Crossarm	400S11	133310	-	-	-	1	1	1	1	1	1
Crossarm Strut	400S11	133353	-	-	-	2	2	2	2	2	2
FARAP	400S11	260820	-	-	-	4	4	4	4	4	4
Foundation Fasteners Kit (Refer to drawing I-40002-GA-047)	400S11	133540	-	-	-	1	1	1	1	1	1
Insulator Bracket	400S11	133302	-	-	-	1	1	1	1	1	1
Insulator Pin	400S11	128252	-	-	-	3	3	3	3	3	3
Platform Kit	400S11	133213	-	-	-	1	1	1	1	1	1
Steelwork, Links, Short	400S11	133207	-	-	-	1	1	1	1	1	1
Shroud, Insulated	400S12	160798	-	-	-	1	1	1	1	1	1
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Conductor, Flexible, 65mm <sup>2</sup>	400C3	012130	-	-	-	*	*	*	*	*	*
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Wood Pole, Stub	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1

Drawing No: I-40003-GA-028

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500590									
11 kV - HDCu, 70mm <sup>2</sup>	2	500591									
11 kV - HDCu, 100mm <sup>2</sup>	3	500592									
11 kV - AAAC, 50mm <sup>2</sup>	4	500593									
11 kV - AAAC, 100mm <sup>2</sup>	5	500594									
11 kV - AAAC, 150mm <sup>2</sup>	6	500595									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
Pole Cap	400W7	Ref ES400W7	-	-	-	2	2	2	2	2	2
Fuses/Links	315	Ref ES315	As required								
Transformer	321	Ref ES321	As required								
ACDs	400A2	Ref ES400A2	As required								
Wedge Tap Bail	400C29	Ref ES400C29	See Table 2 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								

\* Quantity as required





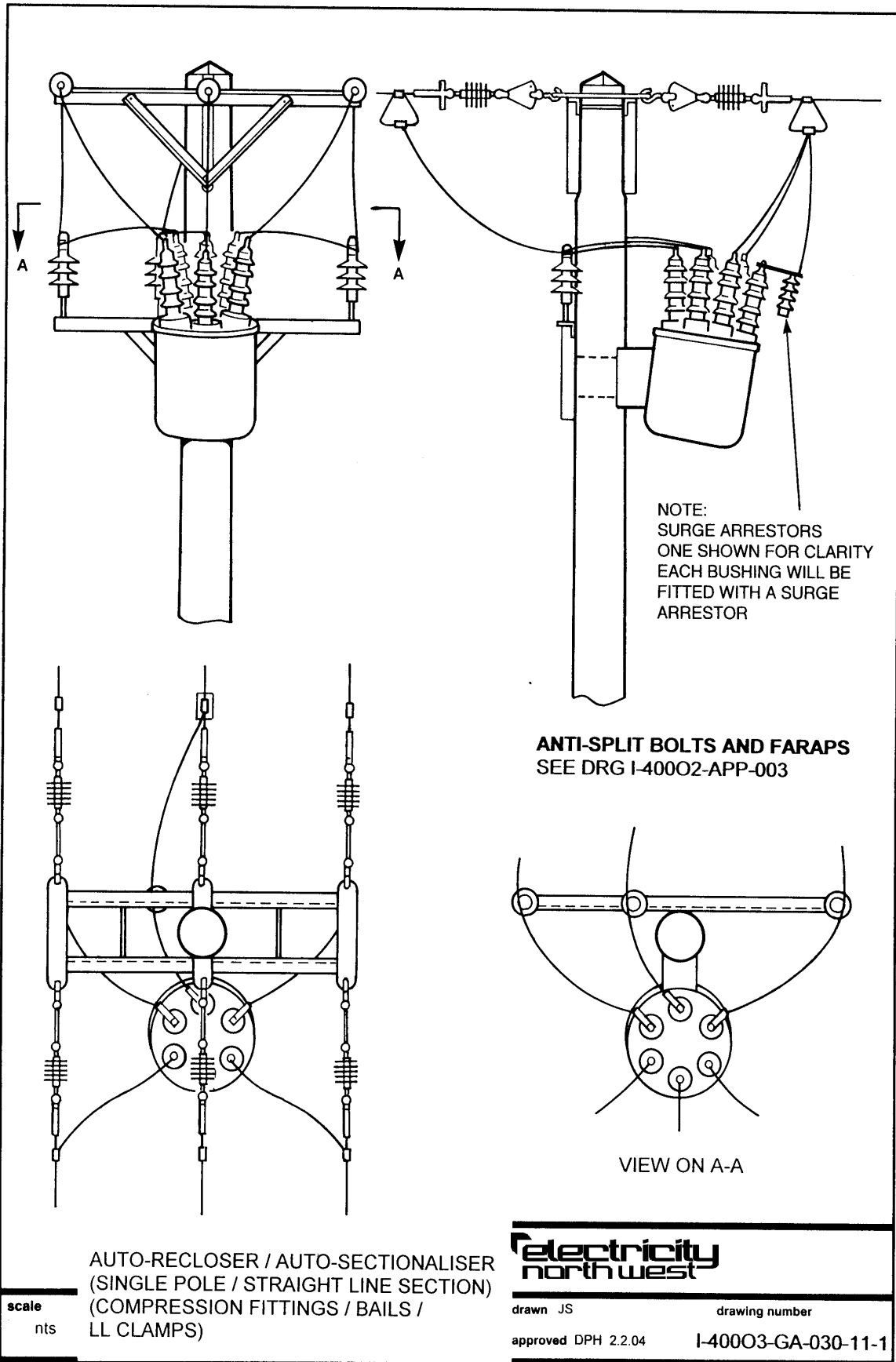
**AUTO-RECLOSER/AUTO-SECTIONALISER (SINGLE POLE/FLYING SECTION)  
(COMPRESSION FITTINGS/BAILS/LL CLAMPS)**

Drawing No: I-40003-GA-029

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500622									
11 kV - HDCu, 70mm <sup>2</sup>	2	500623									
11 kV - HDCu, 100mm <sup>2</sup>	3	500624									
11 kV - AAAC, 50mm <sup>2</sup>	4	500625									
11 kV - AAAC, 100mm <sup>2</sup>	5	500626									
11 kV - AAAC, 150mm <sup>2</sup>	6	500627									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Compression Dead End	400C29	130910	-	-	-	-	-	-	-	-	6
Compression Dead End	400C29	130920	-	-	-	-	-	-	-	6	-
Compression Dead End	400C29	130930	-	-	-	-	-	-	6	-	-
Compression Dead End	400C29	130940	-	-	-	-	-	6	-	-	-
Compression Dead End	400C29	130950	-	-	-	-	6	-	-	-	-
Compression Dead End	400C29	130960	-	-	-	6	-	-	-	-	-
Dead End Back Plate	400C29	121020	-	-	-	6	6	6	6	6	6
Live Line Tap	400C29	137863	-	-	-	6	6	6	6	6	6
Bolt, M20, 300mm	400F1	107735	-	-	-	5	5	5	5	5	5
Bolt, M20, 60mm	400F1	107581	-	-	-	4	4	4	4	4	4
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Square, Curved	400F1	139203	-	-	-	6	6	6	6	6	6
Washer, Square, Flat	400F1	139262	-	-	-	4	4	4	4	4	4
Helical Intermediate Tie	400H2	138215	-	-	-	-	-	-	-	-	3
Helical Intermediate Tie	400H2	138924	-	-	-	-	-	-	-	3	-
Helical Intermediate Tie	400H2	138926	-	-	-	-	-	-	3	-	-
Helical Intermediate Tie	400H2	138927	-	-	-	-	-	3	-	-	-
Helical Intermediate Tie	400H2	138932	-	-	-	-	3	-	-	-	-
Helical Intermediate Tie	400H2	138928	-	-	-	3	-	-	-	-	-
Insulator, Pin-mounted	400I4	125202	-	-	-	3	3	3	3	3	3
Insulator Set, Tension	400I4	125240	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133310	-	-	-	1	1	1	1	1	1
Crossarm Strut	400S11	133353	-	-	-	2	2	2	2	2	2
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Insulator Bracket	400S11	133302	-	-	-	1	1	1	1	1	1
Insulator Pin	400S11	128252	-	-	-	3	3	3	3	3	3

Drawing No: I-40003-GA-029

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500622									
11 kV - HDCu, 70mm <sup>2</sup>	2	500623									
11 kV - HDCu, 100mm <sup>2</sup>	3	500624									
11 kV - AAAC, 50mm <sup>2</sup>	4	500625									
11 kV - AAAC, 100mm <sup>2</sup>	5	500626									
11 kV - AAAC, 150mm <sup>2</sup>	6	500627									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Auto-Recloser	315	Ref ES315	As required								
Auto-Sectionaliser	315	Ref ES315	As required								
ACDs	400A2	Ref ES400A2	As required								
Conductor Jumper	400C3	Ref ES400C3	Length & CSA as required								
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Wedge Tap Bail	400C29	Ref ES400C29	See Table 2 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								



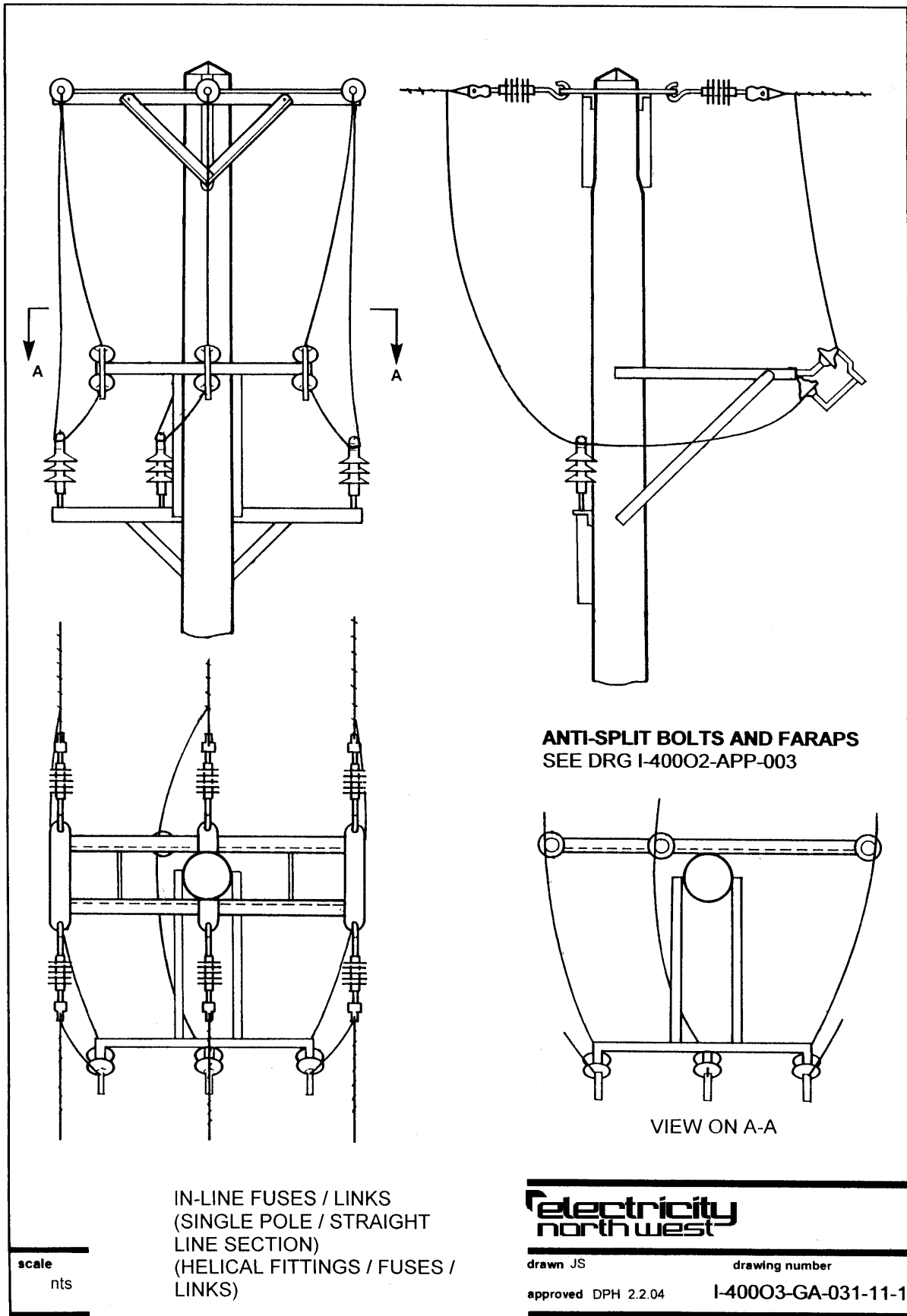
**AUTO-RECLOSER/AUTO-SECTIONALISER  
(SINGLE POLE/STRAIGHT LINE SECTION)  
(COMPRESSION FITTINGS/BAILS/LL CLAMPS)**

Drawing No: I-40003-GA-030

<b>Voltage/Conductor</b>	<b>Ref</b>	<b>GA Kit CC No</b>	<b>Comprising:</b>								
11 kV - HDCu, 38mm <sup>2</sup>	1	500606									
11 kV - HDCu, 70mm <sup>2</sup>	2	500607									
11 kV - HDCu, 100mm <sup>2</sup>	3	500608									
11 kV - AAAC, 50mm <sup>2</sup>	4	500609									
11 kV - AAAC, 100mm <sup>2</sup>	5	500610									
11 kV - AAAC, 150mm <sup>2</sup>	6	500611									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
<b>Item</b>	<b>ES Ref</b>	<b>Item CC No</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>(Items Included in GA Kit Contents)</b>											
Compression Dead End	400C29	130910	-	-	-	-	-	-	-	-	6
Compression Dead End	400C29	130920	-	-	-	-	-	-	-	6	-
Compression Dead End	400C29	130930	-	-	-	-	-	-	6	-	-
Compression Dead End	400C29	130940	-	-	-	-	-	6	-	-	-
Compression Dead End	400C29	130950	-	-	-	-	6	-	-	-	-
Compression Dead End	400C29	130960	-	-	-	6	-	-	-	-	-
Dead End Back Plate	400C29	121020	-	-	-	6	6	6	6	6	6
Live Line Tap	400C29	137863	-	-	-	6	6	6	6	6	6
Bolt, M20, 300mm	400F1	107735	-	-	-	7	7	7	7	7	7
Bolt, M20, 60mm	400F1	107581	-	-	-	14	14	14	14	14	14
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	12	12	12	12	12	12
Washer, Square, Curved	400F1	139203	-	-	-	8	8	8	8	8	8
Washer, Square, Flat	400F1	139262	-	-	-	2	2	2	2	2	2
Helical Side Tie	400H2	138010	-	-	-	-	-	-	-	-	3
Helical Side Tie	400H2	138029	-	-	-	-	-	-	-	3	-
Helical Side Tie	400H2	138130	-	-	-	-	-	-	3	-	-
Helical Side Tie	400H2	138037	-	-	-	-	-	3	-	-	-
Helical Side Tie	400H2	138045	-	-	-	-	3	-	-	-	-
Helical Side Tie	400H2	138132	-	-	-	3	-	-	-	-	-
Insulator Set, Tension	400I4	125240	-	-	-	6	6	6	6	6	6
Insulator, Pin-mounted	400I4	125202	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Ball End Hook	400S11	122297	-	-	-	6	6	6	6	6	6
Crossarm	400S11	133329	-	-	-	2	2	2	2	2	2
Crossarm	400S11	133615	-	-	-	1	1	1	1	1	1

Drawing No: I-40003-GA-030

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500606									
11 kV - HDCu, 70mm <sup>2</sup>	2	500607									
11 kV - HDCu, 100mm <sup>2</sup>	3	500608									
11 kV - AAAC, 50mm <sup>2</sup>	4	500609									
11 kV - AAAC, 100mm <sup>2</sup>	5	500610									
11 kV - AAAC, 150mm <sup>2</sup>	6	500611									
33 kV - HDCu, 100mm <sup>2</sup>		Not applicable									
33 kV - AAAC, 150mm <sup>2</sup>		Not applicable									
33 kV - AAAC, 200mm <sup>2</sup>		Not applicable									
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
Crossarm Strut	400S11	133353	-	-	-	6	6	6	6	6	6
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Pilot Pin	400S11	128376	-	-	-	3	3	3	3	3	3
Sag Link	400S11	260850	-	-	-	6	6	6	6	6	6
Section Strap	400S11	133345	-	-	-	2	2	2	2	2	2
Socket Clevis	400S11	122173	-	-	-	12	12	12	12	12	12
Terminal Strap	400S11	133361	-	-	-	2	2	2	2	2	2
Tie Rod	400S11	133388	-	-	-	2	2	2	2	2	2
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Auto-Recloser	315	Ref ES315	As required								
Auto-Sectionaliser	315	Ref ES315	As required								
ACDs	400A2	Ref ES400A2	As required								
Conductor Jumper	400C3	Ref ES400C3	Length & CSA as required								
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Wedge Tap Bail	400C29	Ref ES400C29	See Table 2 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								



**IN-LINE FUSES/LINKS (SINGLE POLE/STRAIGHT LINE SECTION)  
(HELICAL FITTINGS/FUSES/LINKS)**

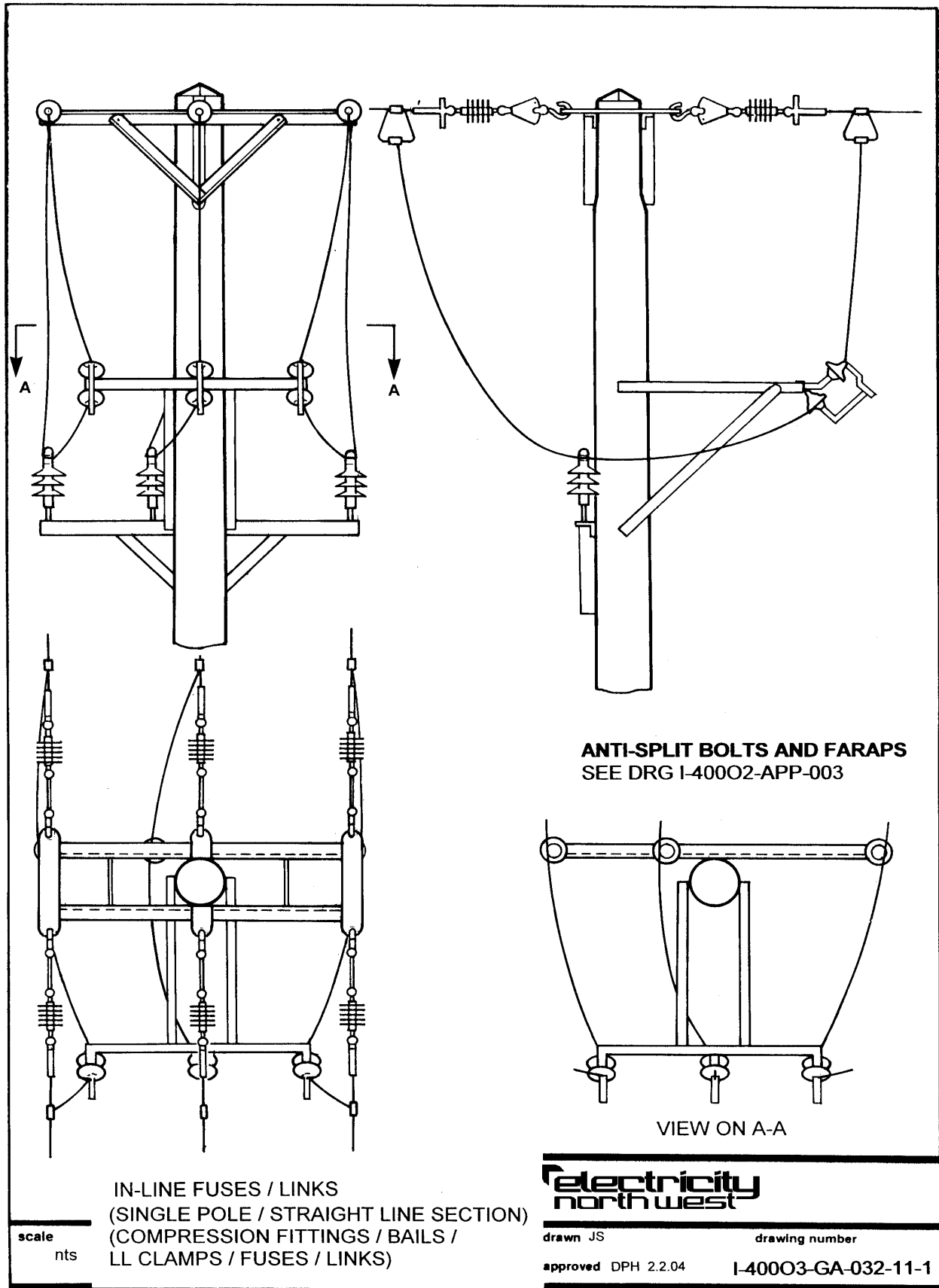
Drawing No: I-40003-GA-031

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500426									
11 kV - HDCu, 70mm <sup>2</sup>	2	500427									
11 kV - HDCu, 100mm <sup>2</sup>	3	500428									
11 kV - AAAC, 50mm <sup>2</sup>	4	500429									
11 kV - AAAC, 100mm <sup>2</sup>	5	500436									
11 kV - AAAC, 150mm <sup>2</sup>	6	500437									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Socket Thimble	400C29	132233	-	-	-	-	6	6	6	6	6
Socket Thimble	400C29	132234	-	-	-	6	-	-	-	-	-
Bolt, M20, 300mm	400F1	107735	-	-	-	7	7	7	7	7	7
Bolt, M20, 60mm	400F1	107581	-	-	-	14	14	14	14	14	14
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	12	12	12	12	12	12
Washer, Square, Curved	400F1	139203	-	-	-	6	6	6	6	6	6
Washer, Square, Flat	400F1	139262	-	-	-	2	2	2	2	2	2
Helical Dead End	400H2	121061	-	-	-	-	-	-	-	-	6
Helical Dead End	400H2	121088	-	-	-	-	-	-	-	6	-
Helical Dead End	400H2	138154	-	-	-	-	-	-	6	-	-
Helical Dead End	400H2	121029	-	-	-	-	-	6	-	-	-
Helical Dead End	400H2	121401	-	-	-	-	6	-	-	-	-
Helical Dead End	400H2	138156	-	-	-	6	-	-	-	-	-
Helical Side Tie	400H2	138010	-	-	-	-	-	-	-	-	3
Helical Side Tie	400H2	138029	-	-	-	-	-	-	-	3	-
Helical Side Tie	400H2	138130	-	-	-	-	-	-	3	-	-
Helical Side Tie	400H2	138037	-	-	-	-	-	3	-	-	-
Helical Side Tie	400H2	138045	-	-	-	-	3	-	-	-	-
Helical Side Tie	400H2	138132	-	-	-	3	-	-	-	-	-
Insulator Set, Tension	400I4	125232	-	-	-	6	6	6	6	6	6
Insulator, Pin-mounted	400I4	125202	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133329	-	-	-	2	2	2	2	2	2
Crossarm	400S11	133615	-	-	-	1	1	1	1	1	1
Crossarm Strut	400S11	133353	-	-	-	6	6	6	6	6	6
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2

Drawing No: I-40003-GA-031

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500426									
11 kV - HDCu, 70mm <sup>2</sup>	2	500427									
11 kV - HDCu, 100mm <sup>2</sup>	3	500428									
11 kV - AAAC, 50mm <sup>2</sup>	4	500429									
11 kV - AAAC, 100mm <sup>2</sup>	5	500436									
11 kV - AAAC, 150mm <sup>2</sup>	6	500437									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
Pilot Pin	400S11	128376	-	-	-	3	3	3	3	3	3
Section Strap	400S11	133345	-	-	-	2	2	2	2	2	2
Steelwork, Links, Short	400S11	133207	-	-	-	1	1	1	1	1	1
Terminal Strap	400S11	133361	-	-	-	2	2	2	2	2	2
Tie Rod	400S11	133388	-	-	-	2	2	2	2	2	2
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Fuses/Links	315	Ref ES315	As required								
ACDs	400A2	Ref ES400A2	As required								
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								





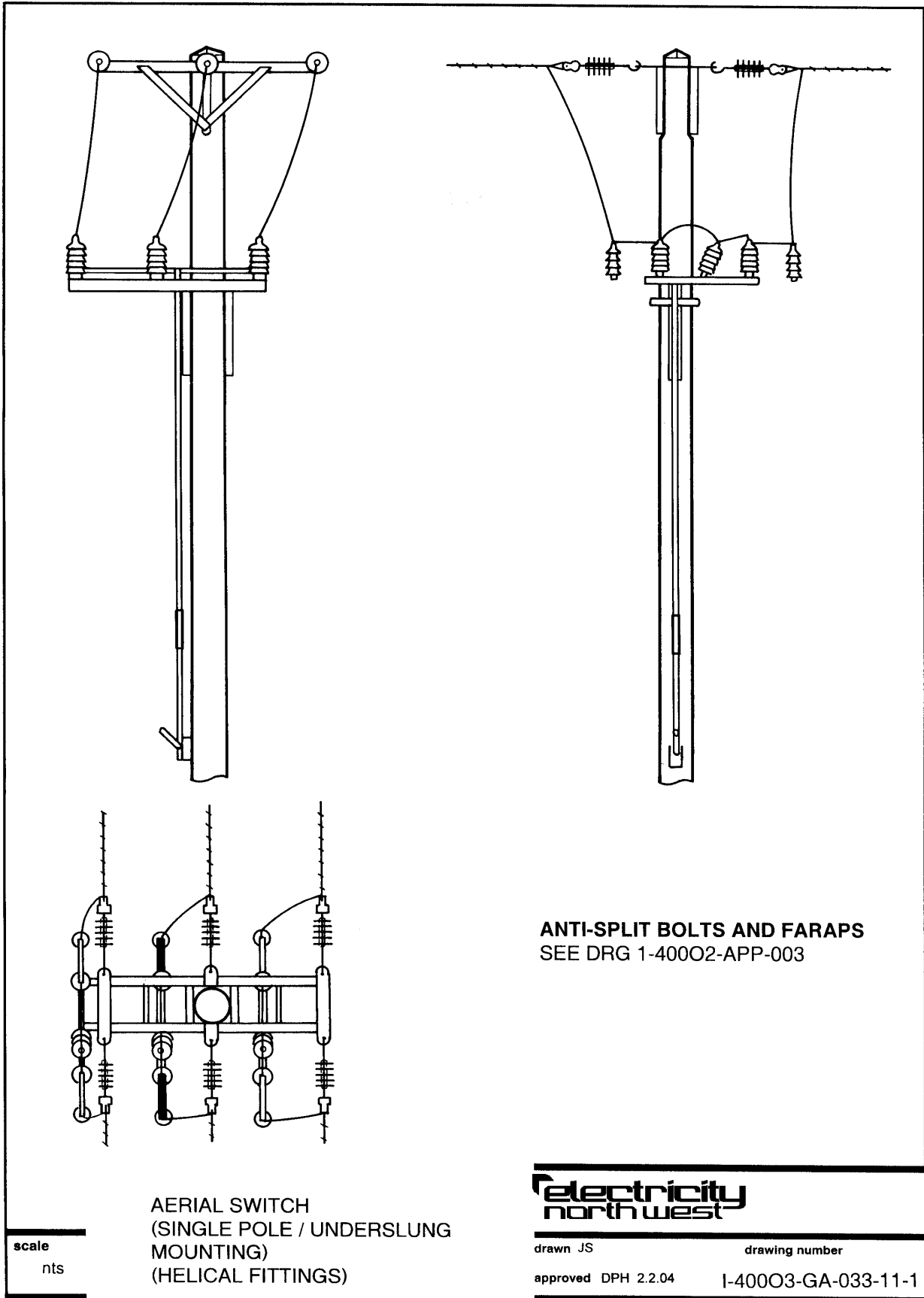
**IN-LINE FUSES/LINKS (SINGLE POLE/STRAIGHT LINE SECTION)  
(COMPRESSION FITTINGS/BAILS/LL CLAMPS/FUSES/LINKS)**

Drawing No: I-40003-GA-032

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500438									
11 kV - HDCu, 70mm <sup>2</sup>	2	500439									
11 kV - HDCu, 100mm <sup>2</sup>	3	500440									
11 kV - AAAC, 50mm <sup>2</sup>	4	500441									
11 kV - AAAC, 100mm <sup>2</sup>	5	500442									
11 kV - AAAC, 150mm <sup>2</sup>	6	500443									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Compression Dead End	400C29	130910	-	-	-	-	-	-	-	-	6
Compression Dead End	400C29	130920	-	-	-	-	-	-	-	6	-
Compression Dead End	400C29	130930	-	-	-	-	-	-	6	-	-
Compression Dead End	400C29	130940	-	-	-	-	-	6	-	-	-
Compression Dead End	400C29	130950	-	-	-	-	6	-	-	-	-
Compression Dead End	400C29	130960	-	-	-	6	-	-	-	-	-
Dead End Back Plate	400C29	121020	-	-	-	6	6	6	6	6	6
Live Line Tap	400C29	137863	-	-	-	6	6	6	6	6	6
Bolt, M20, 300mm	400F1	107735	-	-	-	7	7	7	7	7	7
Bolt, M20, 60mm	400F1	107581	-	-	-	14	14	14	14	14	14
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	12	12	12	12	12	12
Washer, Square, Curved	400F1	139203	-	-	-	6	6	6	6	6	6
Washer, Square, Flat	400F1	139262	-	-	-	2	2	2	2	2	2
Helical Side Tie	400H2	138010	-	-	-	-	-	-	-	-	3
Helical Side Tie	400H2	138029	-	-	-	-	-	-	-	3	-
Helical Side Tie	400H2	138130	-	-	-	-	-	-	3	-	-
Helical Side Tie	400H2	138037	-	-	-	-	-	3	-	-	-
Helical Side Tie	400H2	138045	-	-	-	-	3	-	-	-	-
Helical Side Tie	400H2	138132	-	-	-	3	-	-	-	-	-
Insulator Set, Tension	400I4	125240	-	-	-	6	6	6	6	6	6
Insulator, Pin-mounted	400I4	125202	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Ball End Hook	400S11	122297	-	-	-	6	6	6	6	6	6
Crossarm	400S11	133329	-	-	-	2	2	2	2	2	2
Crossarm	400S11	133615	-	-	-	1	1	1	1	1	1
Crossarm Strut	400S11	133353	-	-	-	6	6	6	6	6	6

Drawing No: I-40003-GA-032

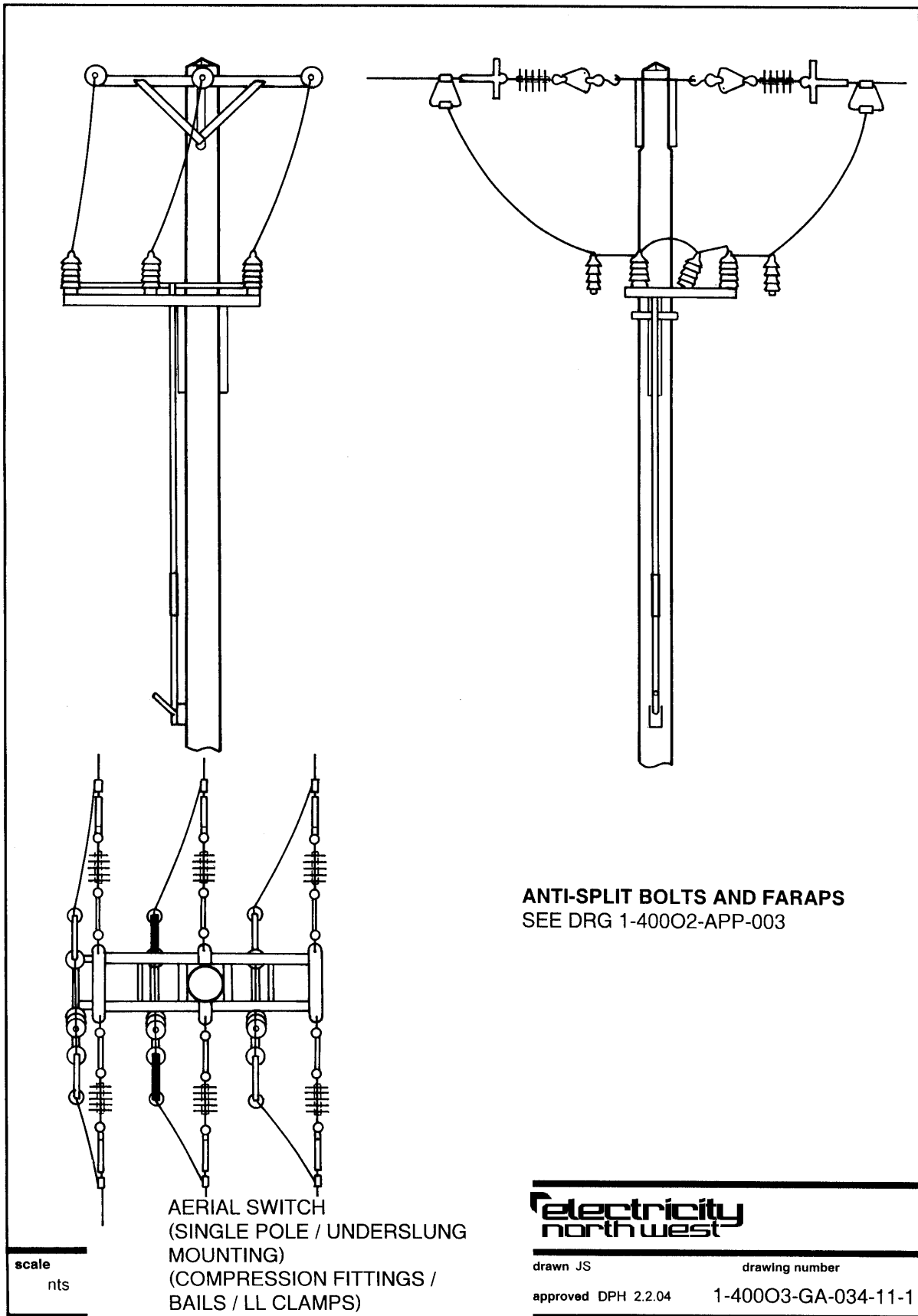
Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500438									
11 kV - HDCu, 70mm <sup>2</sup>	2	500439									
11 kV - HDCu, 100mm <sup>2</sup>	3	500440									
11 kV - AAAC, 50mm <sup>2</sup>	4	500441									
11 kV - AAAC, 100mm <sup>2</sup>	5	500442									
11 kV - AAAC, 150mm <sup>2</sup>	6	500443									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Pilot Pin	400S11	128376	-	-	-	3	3	3	3	3	3
Sag Link	400S11	260850	-	-	-	6	6	6	6	6	6
Section Strap	400S11	133345	-	-	-	2	2	2	2	2	2
Socket Clevis	400S11	122173	-	-	-	12	12	12	12	12	12
Steelwork, Links, Short	400S11	133207	-	-	-	1	1	1	1	1	1
Terminal Strap	400S11	133361	-	-	-	2	2	2	2	2	2
Tie Rod	400S11	133388	-	-	-	1	1	1	1	1	1
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Fuses/Links	315	Ref ES315	As required								
ACDs	400A2	Ref ES400A2	As required								
Conductor Jumper	400C3	Ref ES400C3	Length & CSA as required								
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Wedge Tap Bail	400C29	Ref ES400C29	See Table 2 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								



**AERIAL SWITCH (SINGLE POLE/UNDERSLUNG MOUNTING) - (HELICAL FITTINGS)**

Drawing No: I-40003-GA-033

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500444									
11 kV - HDCu, 70mm <sup>2</sup>	2	500445									
11 kV - HDCu, 100mm <sup>2</sup>	3	500452									
11 kV - AAAC, 50mm <sup>2</sup>	4	500453									
11 kV - AAAC, 100mm <sup>2</sup>	5	500454									
11 kV - AAAC, 150mm <sup>2</sup>	6	500455									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Socket Thimble	400C29	132233	-	-	-	-	6	6	6	6	6
Socket Thimble	400C29	132234	-	-	-	6	-	-	-	-	-
Bolt, M20, 300mm	400F1	107735	-	-	-	5	5	5	5	5	5
Bolt, M20, 60mm	400F1	107581	-	-	-	12	12	12	12	12	12
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	12	12	12	12	12	12
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	2	2	2	2	2	2
Helical Dead End	400H2	121061	-	-	-	-	-	-	-	-	6
Helical Dead End	400H2	121088	-	-	-	-	-	-	-	6	-
Helical Dead End	400H2	138154	-	-	-	-	-	-	6	-	-
Helical Dead End	400H2	121029	-	-	-	-	-	6	-	-	-
Helical Dead End	400H2	121401	-	-	-	-	6	-	-	-	-
Helical Dead End	400H2	138156	-	-	-	6	-	-	-	-	-
Insulator Set, Tension	400I4	125232	-	-	-	6	6	6	6	6	6
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133329	-	-	-	2	2	2	2	2	2
Crossarm Strut	400S11	133353	-	-	-	4	4	4	4	4	4
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Section Strap	400S11	133345	-	-	-	2	2	2	2	2	2
Terminal Strap	400S11	133361	-	-	-	2	2	2	2	2	2
Tie Rod	400S11	133388	-	-	-	2	2	2	2	2	2
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Aerial Switch	315	Ref ES315	As required								
ACDs	400A2	Ref ES400A2	As required								
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								



**AERIAL SWITCH (SINGLE POLE/UNDERSLUNG MOUNTING)  
(COMPRESSION FITTINGS/BAILS/LL CLAMPS)**

Drawing No: I-40003-GA-034

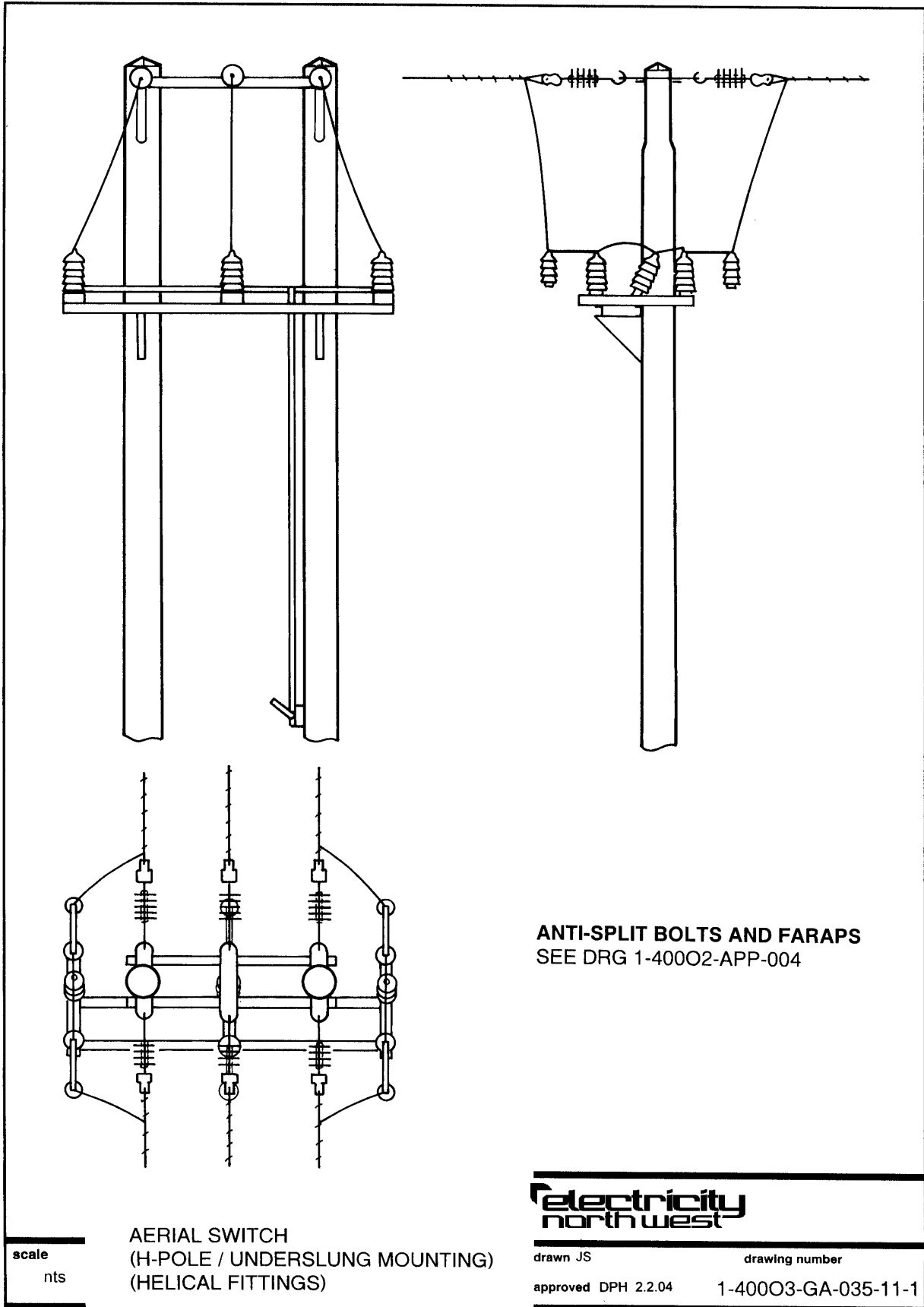
Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500654									
11 kV - HDCu, 70mm <sup>2</sup>	2	500655									
11 kV - HDCu, 100mm <sup>2</sup>	3	500656									
11 kV - AAAC, 50mm <sup>2</sup>	4	500657									
11 kV - AAAC, 100mm <sup>2</sup>	5	500658									
11 kV - AAAC, 150mm <sup>2</sup>	6	500659									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Compression Dead End	400C29	130910	-	-	-	-	-	-	-	-	6
Compression Dead End	400C29	130920	-	-	-	-	-	-	-	6	-
Compression Dead End	400C29	130930	-	-	-	-	-	-	6	-	-
Compression Dead End	400C29	130940	-	-	-	-	-	6	-	-	-
Compression Dead End	400C29	130950	-	-	-	-	6	-	-	-	-
Compression Dead End	400C29	130960	-	-	-	6	-	-	-	-	-
Dead End Back Plate	400C29	121020	-	-	-	6	6	6	6	6	6
Live Line Tap	400C29	137863	-	-	-	6	6	6	6	6	6
Bolt, M20, 300mm	400F1	107735	-	-	-	4	4	4	4	4	4
Bolt, M20, 60mm	400F1	107581	-	-	-	12	12	12	12	12	12
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	12	12	12	12	12	12
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	2	2	2	2	2	2
Insulator Set, Tension	400I4	125240	-	-	-	6	6	6	6	6	6
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Ball End Hook	400S11	122297	-	-	-	6	6	6	6	6	6
Crossarm	400S11	133329	-	-	-	2	2	2	2	2	2
Crossarm Strut	400S11	133353	-	-	-	4	4	4	4	4	4
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Sag Link	400S11	260850	-	-	-	6	6	6	6	6	6
Section Strap	400S11	133345	-	-	-	2	2	2	2	2	2
Socket Clevis	400S11	122173	-	-	-	12	12	12	12	12	12
Terminal Strap	400S11	133361	-	-	-	2	2	2	2	2	2
Tie Rod	400S11	133388	-	-	-	2	2	2	2	2	2
(Additional Items Required for GA But Not Included in GA Kit Contents)											

Drawing No: I-40003-GA-034

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500654									
11 kV - HDCu, 70mm <sup>2</sup>	2	500655									
11 kV - HDCu, 100mm <sup>2</sup>	3	500656									
11 kV - AAAC, 50mm <sup>2</sup>	4	500657									
11 kV - AAAC, 100mm <sup>2</sup>	5	500658									
11 kV - AAAC, 150mm <sup>2</sup>	6	500659									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Aerial Switch	315	Ref ES315	As required								
ACDs	400A2	Ref ES400A2	As required								
Conductor Jumper	400C3	Ref ES400C3	Length & CSA as required								
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Wedge Tap Bail	400C29	Ref ES400C29	See Table 2 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								

\* Quantity as required





**AERIAL SWITCH (H-POLE/UNDERSLUNG MOUNTING) - (HELICAL FITTINGS)**

Drawing No: I-40003-GA-035

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500456									
11 kV - HDCu, 70mm <sup>2</sup>	2	500457									
11 kV - HDCu, 100mm <sup>2</sup>	3	500458									
11 kV - AAAC, 50mm <sup>2</sup>	4	500459									
11 kV - AAAC, 100mm <sup>2</sup>	5	500460									
11 kV - AAAC, 150mm <sup>2</sup>	6	500461									
33 kV - HDCu, 100mm <sup>2</sup>	7	500468									
33 kV - AAAC, 150mm <sup>2</sup>	8	500469									
33 kV - AAAC, 200mm <sup>2</sup>	9	500470									
Item	ES Ref	Item CC No	9	8	7	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Socket Thimble	400C29	132233	-	-	6	-	6	6	6	6	6
Socket Thimble	400C29	132234	6	6	-	6	-	-	-	-	-
Bolt, M20, 300mm	400F1	107735	8	8	8	8	8	8	8	8	8
Bolt, M20, 60mm	400F1	107581	10	10	10	10	10	10	10	10	10
Coach Screw	400F1	126810	4	4	4	4	4	4	4	4	4
Washer, Round, Flat	400F1	993018	6	6	6	6	6	6	6	6	6
Washer, Square, Curved	400F1	139203	4	4	4	4	4	4	4	4	4
Helical Dead End	400H2	121061	-	-	-	-	-	-	-	-	6
Helical Dead End	400H2	121088	-	-	-	-	-	-	-	6	-
Helical Dead End	400H2	138154	-	-	6	-	-	-	6	-	-
Helical Dead End	400H2	121029	-	-	-	-	-	6	-	-	-
Helical Dead End	400H2	121401	-	-	-	-	6	-	-	-	-
Helical Dead End	400H2	138156	-	6	-	6	-	-	-	-	-
Helical Dead End	400H2	138158	6	-	-	-	-	-	-	-	-
Insulator Set Tension	400I4	125232	6	6	6	6	6	6	6	6	6
Danger Plate	400N1	195251	4	4	4	4	4	4	4	4	4
Gouge-mark Plate	400N1	995610	2	2	2	2	2	2	2	2	2
Crossarm	400S11	133329	2	2	2	2	2	2	2	2	2
FARAP	400S11	260820	4	4	4	4	4	4	4	4	4
Foundation Fasteners Kit (Refer to drawing I-40002-GA-047)	400S11	133540	1	1	1	1	1	1	1	1	1
Section Strap	400S11	133345	1	1	1	1	1	1	1	1	1
Terminal Strap	400S11	133361	4	4	4	4	4	4	4	4	4
Tie Rod	400S11	133388	1	1	1	1	1	1	1	1	1
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	2	2	2	2	2	2	2	2	2
Pole Cap	400W7	Ref ES400W7	2	2	2	2	2	2	2	2	2
Aerial Switch	315	Ref ES315	Separate Order								
ACDs	400A2	Ref ES400A2	As required								
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								



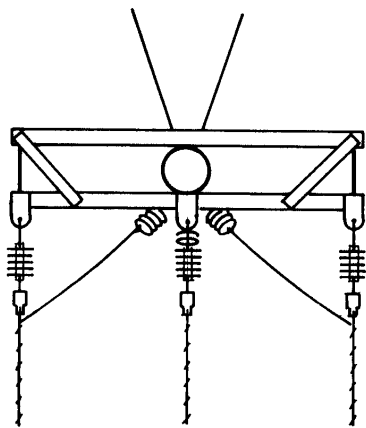
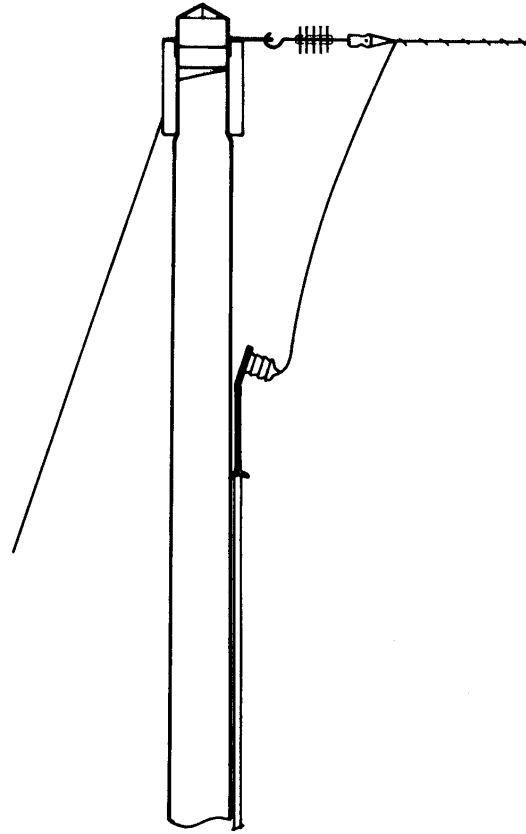
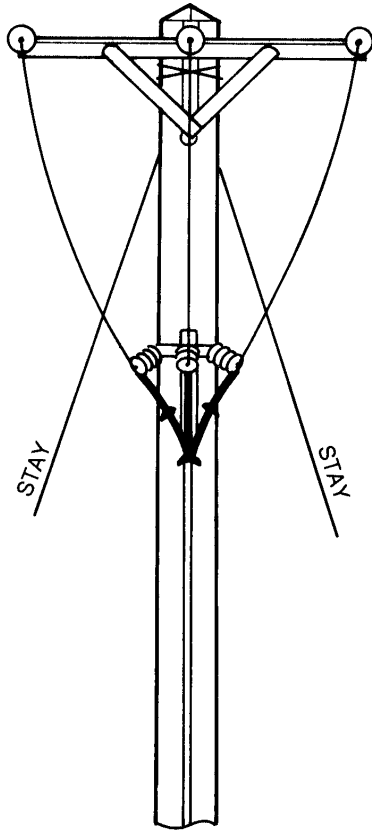
**AERIAL SWITCH (H-POLE/UNDERSLUNG MOUNTING) - (COMPRESSION FITTINGS/BAILS/LL CLAMPS)**

Drawing No: I-40003-GA-036

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500471									
11 kV - HDCu, 70mm <sup>2</sup>	2	500472									
11 kV - HDCu, 100mm <sup>2</sup>	3	500473									
11 kV - AAAC, 50mm <sup>2</sup>	4	500474									
11 kV - AAAC, 100mm <sup>2</sup>	5	500475									
11 kV - AAAC, 150mm <sup>2</sup>	6	Not applicable									
33 kV - HDCu, 100mm <sup>2</sup>	7	Not applicable									
33 kV - AAAC, 150mm <sup>2</sup>	8	Not applicable									
33 kV - AAAC, 200mm <sup>2</sup>	9	Not applicable									
<b>Item</b>	<b>ES Ref</b>	<b>Item CC No</b>	-	-	-	-	5	4	3	2	1
(Items Included in GA Kit Contents)											
Compression Dead End	400C29	130910	-	-	-	-	-	-	-	-	6
Compression Dead End	400C29	130920	-	-	-	-	-	-	-	6	-
Compression Dead End	400C29	130930	-	-	-	-	-	-	6	-	-
Compression Dead End	400C29	130940	-	-	-	-	-	6	-	-	-
Compression Dead End	400C29	130950	-	-	-	-	6	-	-	-	-
Dead End Back Plate	400C29	121020	-	-	-	-	6	6	6	6	6
Live Line Tap	400C29	137863	-	-	-	-	6	6	6	6	6
Bolt, M20, 300mm	400F1	107735	-	-	-	-	8	8	8	8	8
Bolt, M20, 60mm	400F1	107581	-	-	-	-	10	10	10	10	10
Coach Screw	400F1	126810	-	-	-	-	4	4	4	4	4
Washer, Round, Flat	400F1	993018	-	-	-	-	6	6	6	6	6
Washer, Square, Curved	400F1	139203	-	-	-	-	4	4	4	4	4
Insulator Set Tension	400I4	125240	-	-	-	-	6	6	6	6	6
Danger Plate	400N1	195251	-	-	-	-	4	4	4	4	4
Gouge-mark Plate	400N1	995610	-	-	-	-	2	2	2	2	2
Ball End Hook	400S11	122297	-	-	-	-	6	6	6	6	6
Crossarm	400S11	133329	-	-	-	-	2	2	2	2	2
FARAP	400S11	260820	-	-	-	-	4	4	4	4	4
Foundation Fasteners Kit (Refer to drawing I-40002-GA-047)	400S11	133540	-	-	-	-	1	1	1	1	1
Sag Link	400S11	260850	-	-	-	-	6	6	6	6	6
Section Strap	400S11	133345	-	-	-	-	1	1	1	1	1
Socket Clevis	400S11	122173	-	-	-	-	12	12	12	12	12
Terminal Strap	400S11	133361	-	-	-	-	4	4	4	4	4
Tie Rod	400S11	133388	-	-	-	-	1	1	1	1	1
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Wood Pole	400W2	Ref ES400W2	-	-	-	-	2	2	2	2	2
Pole Cap	400W7	Ref ES400W7	-	-	-	-	2	2	2	2	2

Drawing No: I-40003-GA-036

Voltage/Conductor	Ref	GA Kit CC No	Comprising:									
11 kV - HDCu, 38mm <sup>2</sup>	1	500471										
11 kV - HDCu, 70mm <sup>2</sup>	2	500472										
11 kV - HDCu, 100mm <sup>2</sup>	3	500473										
11 kV - AAAC, 50mm <sup>2</sup>	4	500474										
11 kV - AAAC, 100mm <sup>2</sup>	5	500475										
11 kV - AAAC, 150mm <sup>2</sup>	6	Not applicable										
33 kV - HDCu, 100mm <sup>2</sup>	7	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	8	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	9	Not applicable										
Item	ES Ref	Item CC No	-	-	-	-	5	4	3	2	1	
Aerial Switch	315	Ref ES315	Separate Order									
ACDs	400A2	Ref ES400A2	As required									
Conductor Jumper	400C3	Ref ES400C3	Length & CSA as required									
Wedge Tap Bail	400C29	Ref ES400C29	See Table 2 Appendix A1									
Notices	400N1	Ref ES400N1	As required									
Stays	400S13	Ref ES400S13	As required									
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1									



**ANTI-SPLIT BOLTS AND FARAPS**  
SEE DRG 1-40002-APP-003

scale  
nts

CABLE TERMINAL  
(SINGLE POLE TERMINAL)  
(HELICAL FITTINGS)

**Electricity  
north west**

drawn JS

drawing number

approved DPH 2.2.04

1-40003-GA-037-11-1

**CABLE TERMINAL (SINGLE POLE TERMINAL) - (HELICAL FITTINGS)**

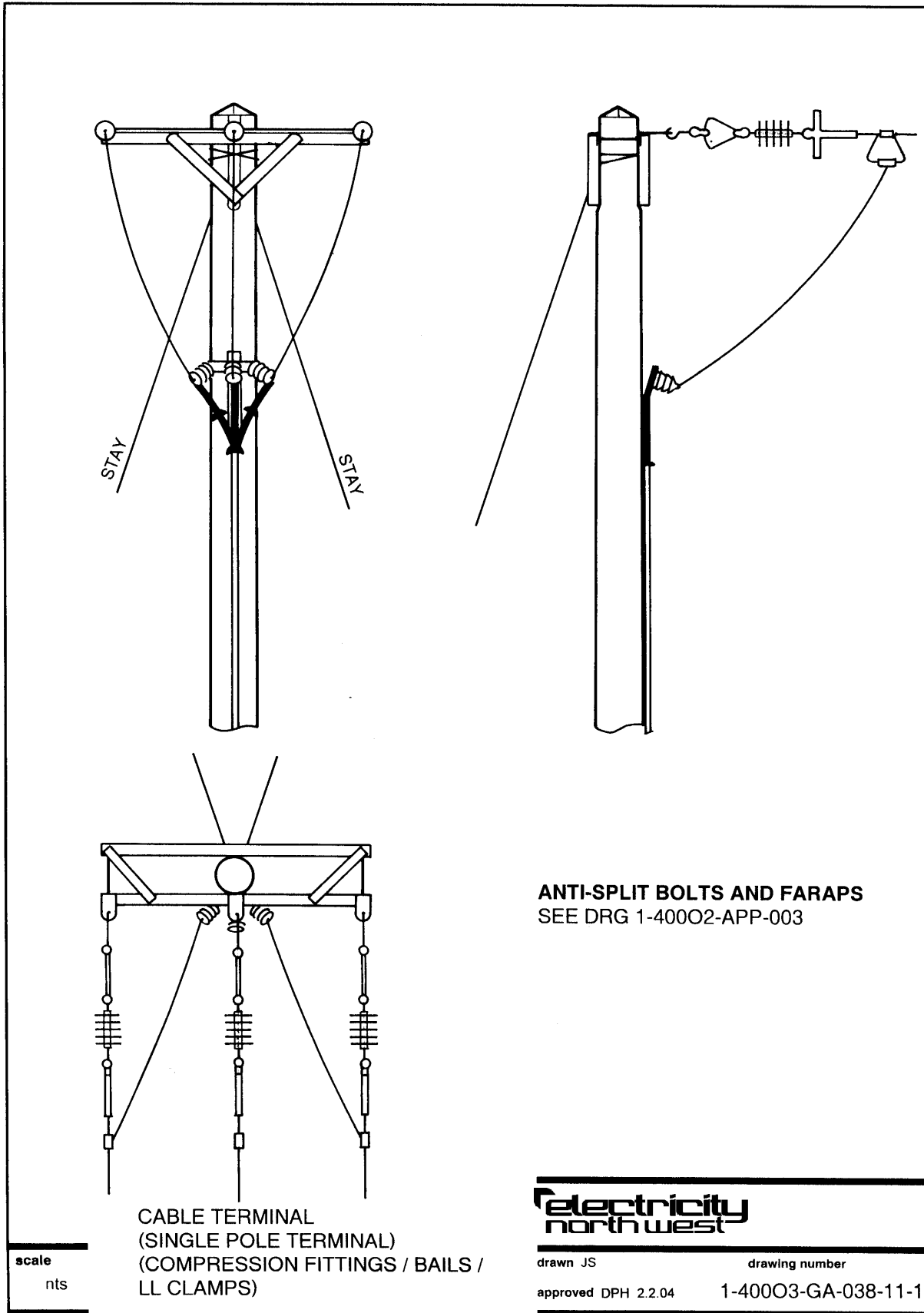
Drawing No: I-40003-GA-037

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500683									
11 kV - HDCu, 70mm <sup>2</sup>	2	500684									
11 kV - HDCu, 100mm <sup>2</sup>	3	500685									
11 kV - AAAC, 50mm <sup>2</sup>	4	500686									
11 kV - AAAC, 100mm <sup>2</sup>	5	500687									
11 kV - AAAC, 150mm <sup>2</sup>	6	500688									
33 kV - HDCu, 100mm <sup>2</sup>		Not applicable									
33 kV - AAAC, 150mm <sup>2</sup>		Not applicable									
33 kV - AAAC, 200mm <sup>2</sup>		Not applicable									
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
<b>(Items Included in GA Kit Contents)</b>											
Socket Thimble	400C29	132233	-	-	-	-	3	3	3	3	3
Socket Thimble	400C29	132234	-	-	-	3	-	-	-	-	-
Bolt, M20, 300mm	400F1	107735	-	-	-	3	3	3	3	3	3
Bolt, M20, 60mm	400F1	107581	-	-	-	14	14	14	14	14	14
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	8	8	8	8	8	8
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	2	2	2	2	2	2
Helical Dead End	400H2	121061	-	-	-	-	-	-	-	-	3
Helical Dead End	400H2	121088	-	-	-	-	-	-	-	3	-
Helical Dead End	400H2	138154	-	-	-	-	-	-	3	-	-
Helical Dead End	400H2	121029	-	-	-	-	-	3	-	-	-
Helical Dead End	400H2	121401	-	-	-	-	3	-	-	-	-
Helical Dead End	400H2	138156	-	-	-	3	-	-	-	-	-
Insulator Set, Tension	400I4	125232	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133337	-	-	-	2	2	2	2	2	2
Crossarm Brace	400S11	133335	-	-	-	2	2	2	2	2	2
Crossarm Strut	400S11	133353	-	-	-	4	4	4	4	4	4
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Terminal Strap	400S11	133361	-	-	-	3	3	3	3	3	3
Tie Rod	400S11	133388	-	-	-	2	2	2	2	2	2
<b>(Additional Items Required for GA But Not Included in GA Kit Contents)</b>											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
ACDs	400A2	Ref ES400A2	As required								
Cable Related Items	400C12	Ref ES400C12	Separate Order								

Drawing No: I-40003-GA-037

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500683									
11 kV - HDCu, 70mm <sup>2</sup>	2	500684									
11 kV - HDCu, 100mm <sup>2</sup>	3	500685									
11 kV - AAAC, 50mm <sup>2</sup>	4	500686									
11 kV - AAAC, 100mm <sup>2</sup>	5	500687									
11 kV - AAAC, 150mm <sup>2</sup>	6	500688									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
<b>Item</b>	<b>ES Ref</b>	<b>Item CC No</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								





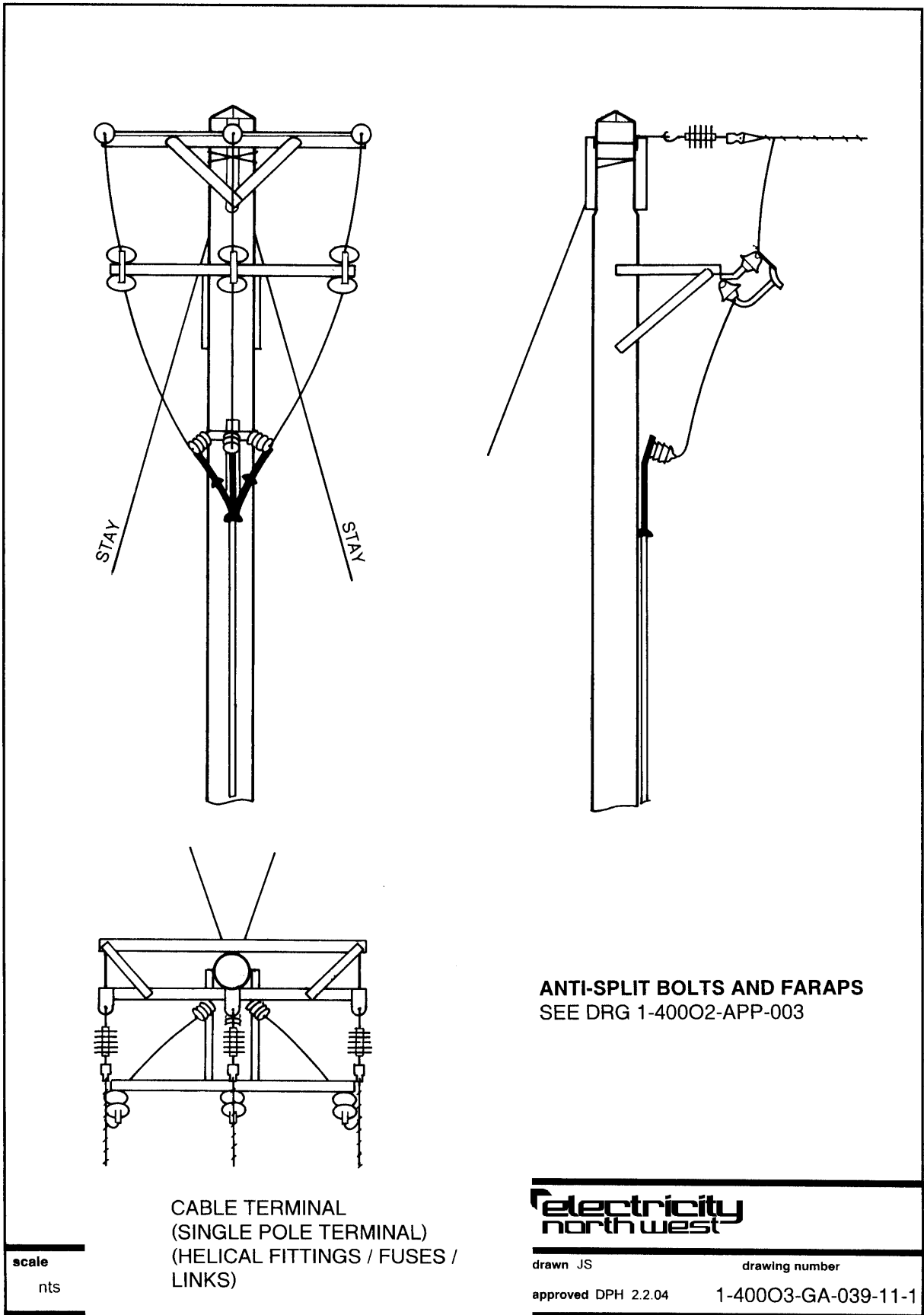
**CABLE TERMINAL (SINGLE POLE TERMINAL) - (COMPRESSION FITTINGS/BAILS/LL CLAMPS)**

Drawing No: I-40003-GA-038

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500486									
11 kV - HDCu, 70mm <sup>2</sup>	2	500487									
11 kV - HDCu, 100mm <sup>2</sup>	3	500488									
11 kV - AAAC, 50mm <sup>2</sup>	4	500489									
11 kV - AAAC, 100mm <sup>2</sup>	5	500490									
11 kV - AAAC, 150mm <sup>2</sup>	6	Not applicable									
33 kV - HDCu, 100mm <sup>2</sup>		Not applicable									
33 kV - AAAC, 150mm <sup>2</sup>		Not applicable									
33 kV - AAAC, 200mm <sup>2</sup>		Not applicable									
Item	ES Ref	Item CC No	-	-	-	-	5	4	3	2	1
<b>(Items Included in GA Kit Contents)</b>											
Compression Dead End	400C29	130910	-	-	-	-	-	-	-	-	3
Compression Dead End	400C29	130920	-	-	-	-	-	-	-	3	-
Compression Dead End	400C29	130930	-	-	-	-	-	-	3	-	-
Compression Dead End	400C29	130940	-	-	-	-	3	-	-	-	-
Compression Dead End	400C29	130950	-	-	-	-	3	-	-	-	-
Dead End Back Plate	400C29	121020	-	-	-	-	3	3	3	3	3
Dropper Kit 4	400C29	124883	-	-	-	-	-	3	-	3	3
Live Line Tap	400C29	137863	-	-	-	-	3	-	3	-	-
Bolt, M20, 300mm	400F1	107735	-	-	-	-	3	3	3	3	3
Bolt, M20, 60mm	400F1	107581	-	-	-	-	14	14	14	14	14
Bolt, M20, 750mm	400F1	107790	-	-	-	-	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	-	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	-	8	8	8	8	8
Washer, Square, Curved	400F1	139203	-	-	-	-	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	-	2	2	2	2	2
Insulator Set, Tension	400I4	125240	-	-	-	-	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	-	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	-	1	1	1	1	1
Ball End Hook	400S11	122297	-	-	-	-	3	3	3	3	3
Crossarm	400S11	133337	-	-	-	-	2	2	2	2	2
Crossarm Brace	400S11	133335	-	-	-	-	2	2	2	2	2
Crossarm Strut	400S11	133353	-	-	-	-	4	4	4	4	4
FARAP	400S11	260820	-	-	-	-	2	2	2	2	2
Sag Link	400S11	260850	-	-	-	-	3	3	3	3	3
Socket Clevis	400S11	122173	-	-	-	-	6	6	6	6	6
Terminal Strap	400S11	133361	-	-	-	-	3	3	3	3	3
Tie Rod	400S11	133388	-	-	-	-	2	2	2	2	2
<b>(Additional Items Required for GA But Not Included in GA Kit Contents)</b>											
Wood Pole	400W2	Ref ES400W2	-	-	-	-	1	1	1	1	1

Drawing No: I-40003-GA-038

Voltage/Conductor	Ref	GA Kit CC No	Comprising:									
11 kV - HDCu, 38mm <sup>2</sup>	1	500486										
11 kV - HDCu, 70mm <sup>2</sup>	2	500487										
11 kV - HDCu, 100mm <sup>2</sup>	3	500488										
11 kV - AAAC, 50mm <sup>2</sup>	4	500489										
11 kV - AAAC, 100mm <sup>2</sup>	5	500490										
11 kV - AAAC, 150mm <sup>2</sup>	6	Not applicable										
33 kV - HDCu, 100mm <sup>2</sup>		Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>		Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>		Not applicable										
Item	ES Ref	Item CC No	-	-	-	-	5	4	3	2	1	
Pole Cap	400W7	Ref ES400W7	-	-	-	-	1	1	1	1	1	
ACDs	400A2	Ref ES400A2	As required									
Conductor Jumper	400C3	Ref ES400C3	Length & CSA as required									
Cable Related Items	400C12	Ref ES400C12	Separate Order									
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1									
Wedge Tap Bail	400C29	Ref ES400C29	See Table 2 Appendix A1									
Notices	400N1	Ref ES400N1	As required									
Stays	400S13	Ref ES400S13	As required									



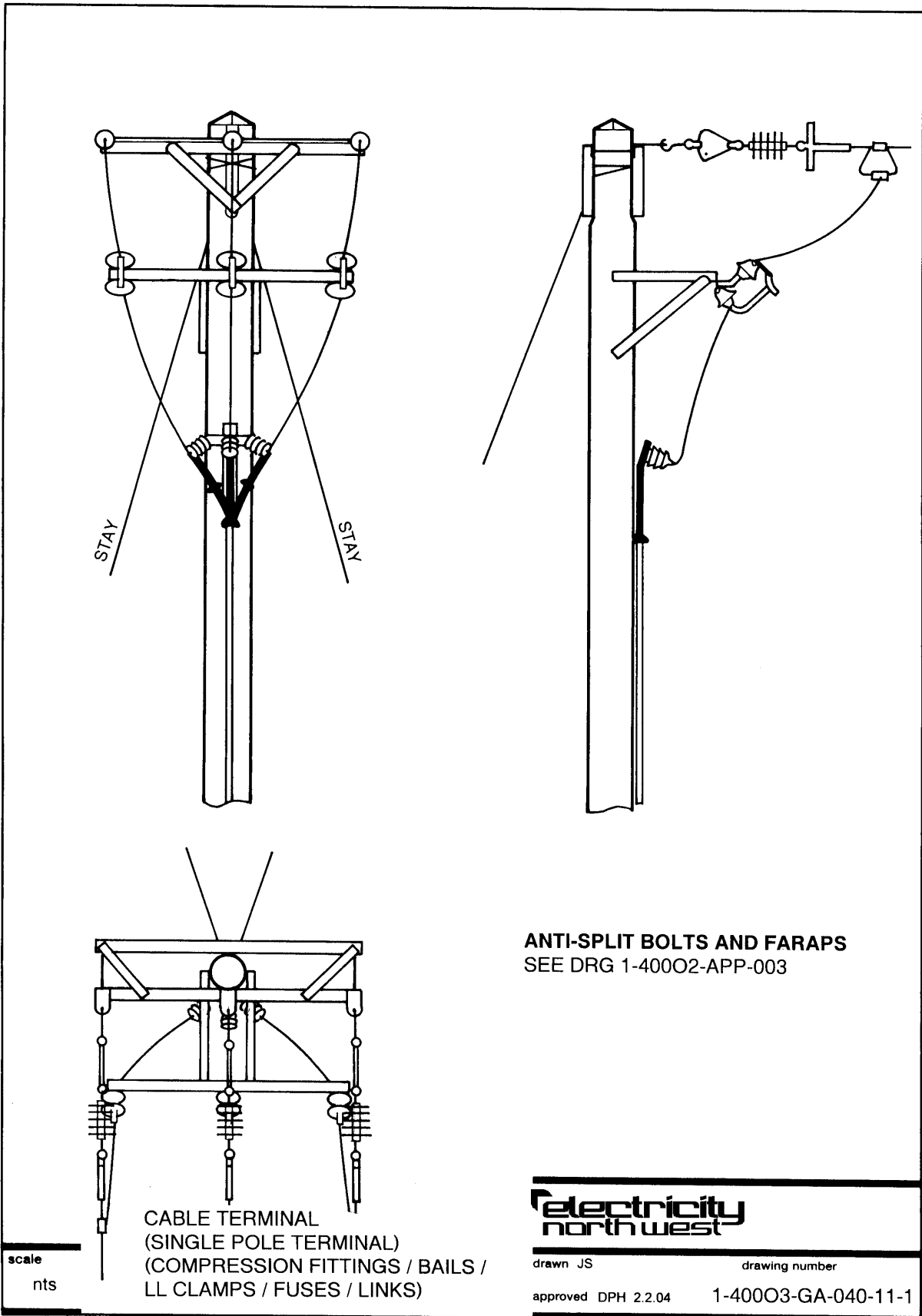
**CABLE TERMINAL (SINGLE POLE TERMINAL) - (HELICAL FITTINGS/FUSES/LINKS)**

Drawing No: I-40003-GA-039

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500699									
11 kV - HDCu, 70mm <sup>2</sup>	2	500700									
11 kV - HDCu, 100mm <sup>2</sup>	3	500701									
11 kV - AAAC, 50mm <sup>2</sup>	4	500702									
11 kV - AAAC, 100mm <sup>2</sup>	5	500703									
11 kV - AAAC, 150mm <sup>2</sup>	6	500704									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
<b>(Items Included in GA Kit Contents)</b>											
Socket Thimble	400C29	132233	-	-	-	-	3	3	3	3	3
Socket Thimble	400C29	132234	-	-	-	3	-	-	-	-	-
Bolt, M20, 300mm	400F1	107735	-	-	-	5	5	5	5	5	5
Bolt, M20, 60mm	400F1	107581	-	-	-	14	14	14	14	14	14
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	8	8	8	8	8	8
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	2	2	2	2	2	2
Helical Dead End	400H2	121061	-	-	-	-	-	-	-	-	3
Helical Dead End	400H2	121088	-	-	-	-	-	-	-	3	-
Helical Dead End	400H2	138154	-	-	-	-	-	-	3	-	-
Helical Dead End	400H2	121029	-	-	-	-	-	3	-	-	-
Helical Dead End	400H2	121401	-	-	-	-	3	-	-	-	-
Helical Dead End	400H2	138156	-	-	-	3	-	-	-	-	-
Insulator Set, Tension	400I4	125232	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133337	-	-	-	2	2	2	2	2	2
Crossarm Brace	400S11	133335	-	-	-	2	2	2	2	2	2
Crossarm Strut	400S11	133353	-	-	-	4	4	4	4	4	4
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Steelwork Links, Short	400S11	133207	-	-	-	1	1	1	1	1	1
Terminal Strap	400S11	133361	-	-	-	3	3	3	3	3	3
Tie Rod	400S11	133388	-	-	-	2	2	2	2	2	2
<b>(Additional Items Required for GA But Not Included in GA Kit Contents)</b>											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Fuses/Links	315	Ref ES315	As required								

Drawing No: I-40003-GA-039

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500699									
11 kV - HDCu, 70mm <sup>2</sup>	2	500700									
11 kV - HDCu, 100mm <sup>2</sup>	3	500701									
11 kV - AAAC, 50mm <sup>2</sup>	4	500702									
11 kV - AAAC, 100mm <sup>2</sup>	5	500703									
11 kV - AAAC, 150mm <sup>2</sup>	6	500704									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
ACDs	400A2	Ref ES400A2	As required								
Conductor Jumper	400C3	Ref ES400C3	Length & CSA as required								
Cable Related Items	400C12	Ref ES400C12	Separate Order								
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								



**CABLE TERMINAL (SINGLE POLE TERMINAL)  
(COMPRESSION FITTINGS/BAILS/LL CLAMPS/FUSES/LINKS)**

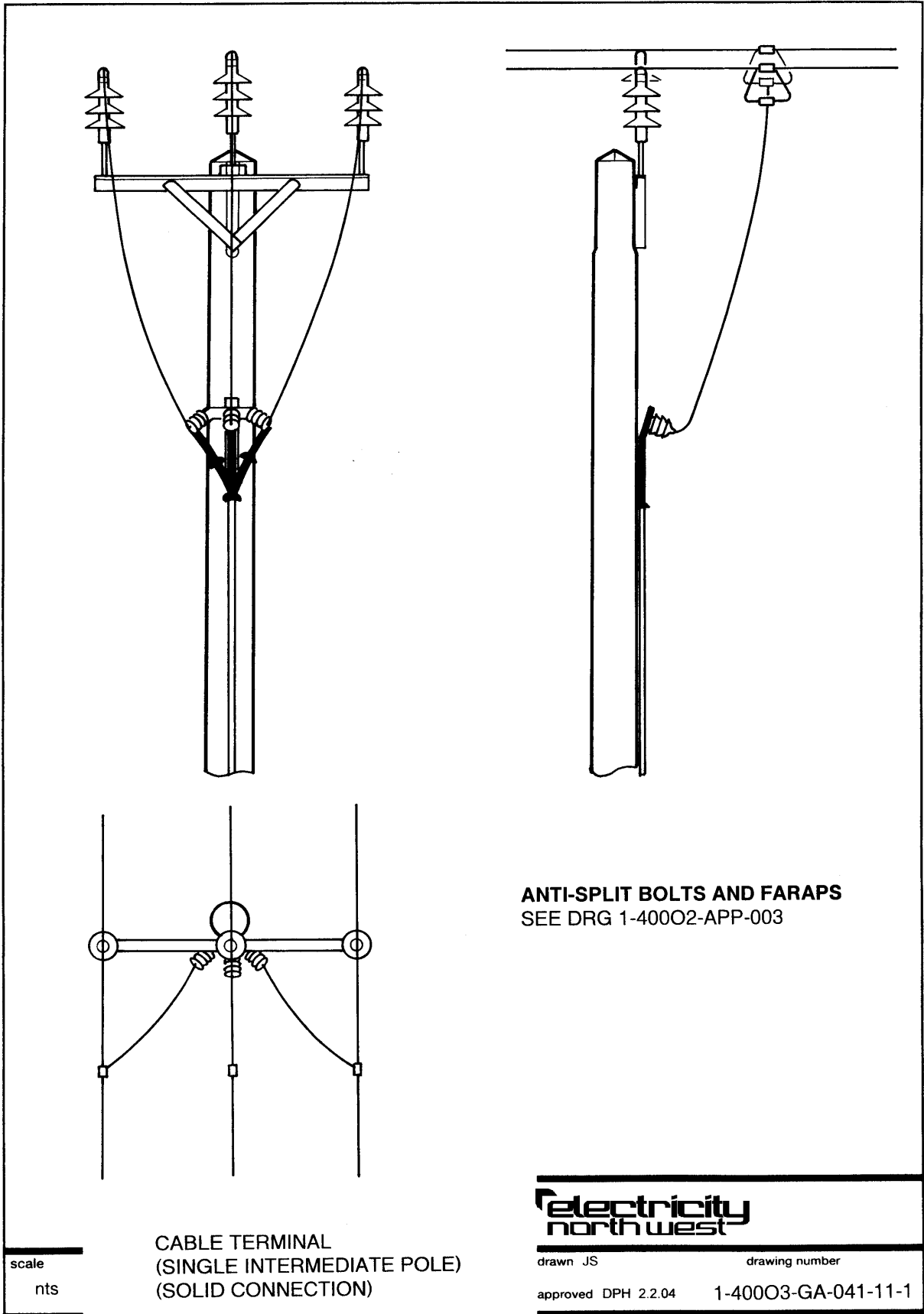
Drawing No: I-40003-GA-040

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500492									
11 kV - HDCu, 70mm <sup>2</sup>	2	500493									
11 kV - HDCu, 100mm <sup>2</sup>	3	500500									
11 kV - AAAC, 50mm <sup>2</sup>	4	500501									
11 kV - AAAC, 100mm <sup>2</sup>	5	500502									
11 kV - AAAC, 150mm <sup>2</sup>	6	Not applicable									
33 kV - HDCu, 100mm <sup>2</sup>		Not applicable									
33 kV - AAAC, 150mm <sup>2</sup>		Not applicable									
33 kV - AAAC, 200mm <sup>2</sup>		Not applicable									
Item	ES Ref	Item CC No	-	-	-	-	5	4	3	2	1
(Items Included in GA Kit Contents)											
Compression Dead End	400C29	130910	-	-	-	-	-	-	-	-	3
Compression Dead End	400C29	130920	-	-	-	-	-	-	-	3	-
Compression Dead End	400C29	130930	-	-	-	-	-	-	3	-	-
Compression Dead End	400C29	130940	-	-	-	-	-	3	-	-	-
Compression Dead End	400C29	130950	-	-	-	-	3	-	-	-	-
Dead End Back Plate	400C29	121020	-	-	-	-	3	3	3	3	3
Dropper Kit 4	400C29	124883	-	-	-	-	-	3	-	3	3
Live Line Tap	400C29	137863	-	-	-	-	3	-	3	-	-
Bolt, M20, 300mm	400F1	107735	-	-	-	-	5	5	5	5	5
Bolt, M20, 60mm	400F1	107581	-	-	-	-	14	14	14	14	14
Bolt, M20, 750mm	400F1	107790	-	-	-	-	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	-	2	2	2	2	2
Washer, Round, Flat	400F1	993018	-	-	-	-	8	8	8	8	8
Washer, Square, Curved	400F1	139203	-	-	-	-	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	-	2	2	2	2	2
Insulator Set, Tension	400I4	125240	-	-	-	-	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	-	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	-	1	1	1	1	1
Ball End Hook	400S11	122297	-	-	-	-	3	3	3	3	3
Crossarm	400S11	133337	-	-	-	-	2	2	2	2	2
Crossarm Brace	400S11	133335	-	-	-	-	2	2	2	2	2
Crossarm Strut	400S11	133353	-	-	-	-	4	4	4	4	4
FARAP	400S11	260820	-	-	-	-	2	2	2	2	2
Sag Link	400S11	260850	-	-	-	-	3	3	3	3	3
Socket Clevis	400S11	122173	-	-	-	-	6	6	6	6	6
Steelwork, Links, Short	400S11	133207	-	-	-	-	1	1	1	1	1
Terminal Strap	400S11	133361	-	-	-	-	3	3	3	3	3
Tie Rod	400S11	133388	-	-	-	-	2	2	2	2	2



Drawing No: I-40003-GA-040

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500492									
11 kV - HDCu, 70mm <sup>2</sup>	2	500493									
11 kV - HDCu, 100mm <sup>2</sup>	3	500500									
11 kV - AAAC, 50mm <sup>2</sup>	4	500501									
11 kV - AAAC, 100mm <sup>2</sup>	5	500502									
11 kV - AAAC, 150mm <sup>2</sup>	6	Not applicable									
33 kV - HDCu, 100mm <sup>2</sup>		Not applicable									
33 kV - AAAC, 150mm <sup>2</sup>		Not applicable									
33 kV - AAAC, 200mm <sup>2</sup>		Not applicable									
<b>Item</b>	<b>ES Ref</b>	<b>Item CC No</b>	-	-	-	-	5	4	3	2	1
<b>(Additional Items Required for GA But Not Included in GA Kit Contents)</b>											
Conductor, Flexible, 65mm <sup>2</sup>	400C3	012130	-	-	-	-	-	*	-	*	*
Wood Pole	400W2	Ref ES400W2	-	-	-	-	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	-	1	1	1	1	1
Fuses/Links	315	Ref ES315	As required								
ACDs	400A2	Ref ES400A2	As required								
Conductor Jumper	400C3	Ref ES400C3	Length & CSA as required								
Cable Related Items	400C12	Ref ES400C12	Separate Order								
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Wedge Tap Bail	400C29	Ref ES400C29	See Table 2 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								



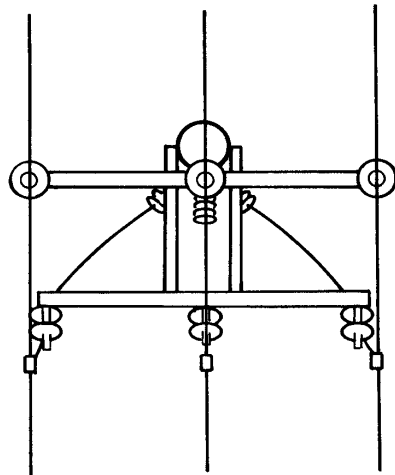
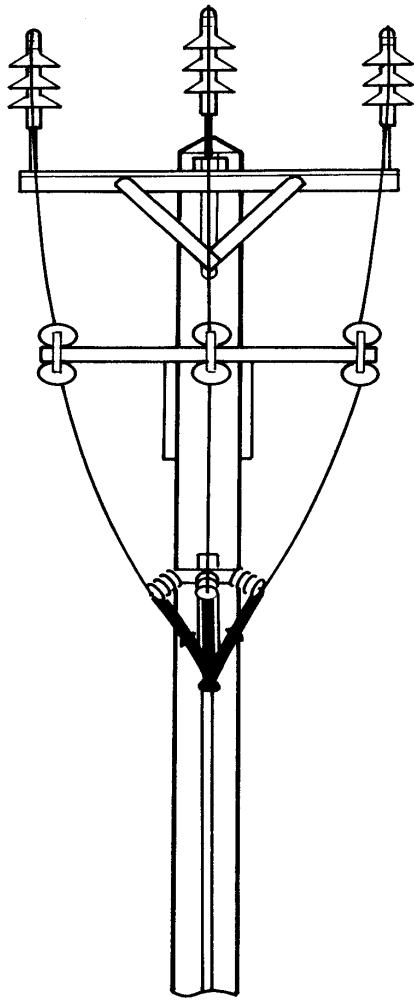
**CABLE TERMINAL (SINGLE INTERMEDIATE POLE) - (SOLID CONNECTIONS)**

Drawing No: I-40003-GA-041

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500504									
11 kV - HDCu, 70mm <sup>2</sup>	2	500505									
11 kV - HDCu, 100mm <sup>2</sup>	3	500506									
11 kV - AAAC, 50mm <sup>2</sup>	4	500507									
11 kV - AAAC, 100mm <sup>2</sup>	5	500508									
11 kV - AAAC, 150mm <sup>2</sup>	6	500509									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
(Items Included in GA Kit Contents)											
Dropper Kit 4	400C29	124883	-	-	-	-	-	3	-	3	3
Live Line Tap	400C29	137863	-	-	-	3	3	-	3	-	-
Bolt, M20, 300mm	400F1	107735	-	-	-	3	3	3	3	3	3
Bolt, M20, 60mm	400F1	107581	-	-	-	4	4	4	4	4	4
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	4	4	4	4	4	4
Helical Intermediate Tie	400H2	138215	-	-	-	-	-	-	-	-	3
Helical Intermediate Tie	400H2	138924	-	-	-	-	-	-	-	3	-
Helical Intermediate Tie	400H2	138926	-	-	-	-	-	-	3	-	-
Helical Intermediate Tie	400H2	138927	-	-	-	-	-	3	-	-	-
Helical Intermediate Tie	400H2	138932	-	-	-	-	3	-	-	-	-
Helical Intermediate Tie	400H2	138928	-	-	-	3	-	-	-	-	-
Insulator, Pin-mounted	400I4	125202	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133310	-	-	-	1	1	1	1	1	1
Crossarm Strut	400S11	133353	-	-	-	2	2	2	2	2	2
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Insulator Bracket	400S11	133302	-	-	-	1	1	1	1	1	1
Insulator Pin	400S11	128252	-	-	-	3	3	3	3	3	3
(Additional Items Required for GA But Not Included in GA Kit Contents)											
Conductor, Flexible, 65mm <sup>2</sup>	400C3	012130	-	-	-	-	-	*	-	*	*
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
ACDs	400A2	Ref ES400A2	As required								
Conductor Jumper	400C3	Ref ES400C3	Length & CSA as required								
Cable Related Items	400C12	Ref ES400C12	Separate Order								

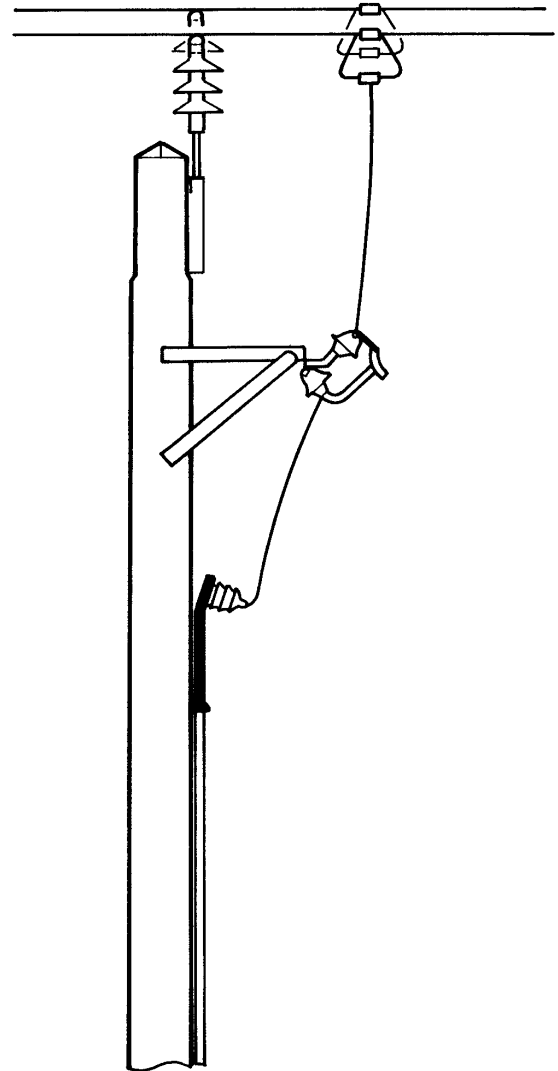
Drawing No: I-40003-GA-041

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500504									
11 kV - HDCu, 70mm <sup>2</sup>	2	500505									
11 kV - HDCu, 100mm <sup>2</sup>	3	500506									
11 kV - AAAC, 50mm <sup>2</sup>	4	500507									
11 kV - AAAC, 100mm <sup>2</sup>	5	500508									
11 kV - AAAC, 150mm <sup>2</sup>	6	500509									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Wedge Tap Bail	400C29	Ref ES400C29	See Table 2 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								



CABLE TERMINAL  
(SINGLE INTERMEDIATE POLE)  
(CONNECTION VIA FUSES / LINKS)

scale  
nts



ANTI-SPLIT BOLTS AND FARAPS  
SEE DRG 1-40002-APP-003

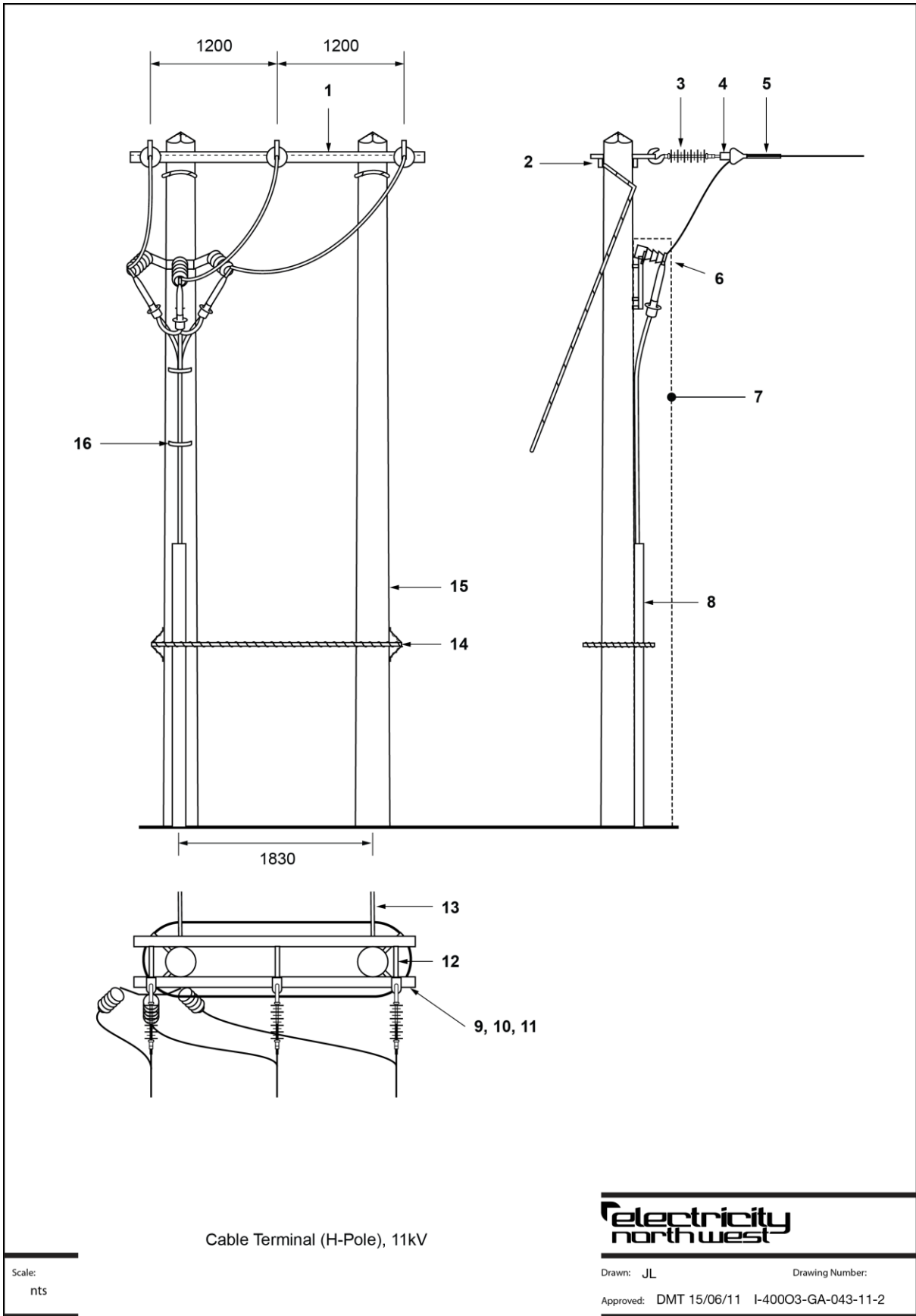
**CABLE TERMINAL (SINGLE INTERMEDIATE POLE) - (CONNECTION VIA FUSES/LINKS)**

Drawing No: I-40003-GA-042

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500516									
11 kV - HDCu, 70mm <sup>2</sup>	2	500517									
11 kV - HDCu, 100mm <sup>2</sup>	3	500518									
11 kV - AAAC, 50mm <sup>2</sup>	4	500519									
11 kV - AAAC, 100mm <sup>2</sup>	5	500520									
11 kV - AAAC, 150mm <sup>2</sup>	6	500521									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
Item	ES Ref	Item CC No	-	-	-	6	5	4	3	2	1
<b>(Items Included in GA Kit Contents)</b>											
Live Line Tap	400C29	137863	-	-	-	3	3	3	3	3	3
Bolt, M20, 300mm	400F1	107735	-	-	-	5	5	5	5	5	5
Bolt, M20, 60mm	400F1	107581	-	-	-	4	4	4	4	4	4
Bolt, M20, 750mm	400F1	107790	-	-	-	2	2	2	2	2	2
Coach Screw	400F1	126810	-	-	-	2	2	2	2	2	2
Washer, Square, Curved	400F1	139203	-	-	-	4	4	4	4	4	4
Washer, Square, Flat	400F1	139262	-	-	-	4	4	4	4	4	4
Helical Intermediate Tie	400H2	138215	-	-	-	-	-	-	-	-	3
Helical Intermediate Tie	400H2	138924	-	-	-	-	-	-	-	3	-
Helical Intermediate Tie	400H2	138926	-	-	-	-	-	-	3	-	-
Helical Intermediate Tie	400H2	138927	-	-	-	-	-	3	-	-	-
Helical Intermediate Tie	400H2	138932	-	-	-	-	3	-	-	-	-
Helical Intermediate Tie	400H2	138928	-	-	-	3	-	-	-	-	-
Insulator, Pin-mounted	400I4	125202	-	-	-	3	3	3	3	3	3
Danger Plate	400N1	195251	-	-	-	2	2	2	2	2	2
Gouge-mark Plate	400N1	995610	-	-	-	1	1	1	1	1	1
Crossarm	400S11	133310	-	-	-	1	1	1	1	1	1
Crossarm Strut	400S11	133353	-	-	-	2	2	2	2	2	2
FARAP	400S11	260820	-	-	-	2	2	2	2	2	2
Insulator Bracket	400S11	133302	-	-	-	1	1	1	1	1	1
Insulator Pin	400S11	128252	-	-	-	3	3	3	3	3	3
Steelwork, Links, Short	400S11	133207	-	-	-	1	1	1	1	1	1
<b>(Additional Items Required for GA But Not Included in GA Kit Contents)</b>											
Wood Pole	400W2	Ref ES400W2	-	-	-	1	1	1	1	1	1
Pole Cap	400W7	Ref ES400W7	-	-	-	1	1	1	1	1	1
Fuses/Links	315	Ref ES315	As required								
ACDs	400A2	Ref ES400A2	As required								
Conductor Jumper	400C3	Ref ES400C3	Length & CSA as required								
Cable Related Items	400C12	Ref ES400C12	Separate Order								

Drawing No: I-40003-GA-042

Voltage/Conductor	Ref	GA Kit CC No	Comprising:								
11 kV - HDCu, 38mm <sup>2</sup>	1	500516									
11 kV - HDCu, 70mm <sup>2</sup>	2	500517									
11 kV - HDCu, 100mm <sup>2</sup>	3	500518									
11 kV - AAAC, 50mm <sup>2</sup>	4	500519									
11 kV - AAAC, 100mm <sup>2</sup>	5	500520									
11 kV - AAAC, 150mm <sup>2</sup>	6	500521									
33 kV - HDCu, 100mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 150mm <sup>2</sup>	Not applicable										
33 kV - AAAC, 200mm <sup>2</sup>	Not applicable										
<b>Item</b>	<b>ES Ref</b>	<b>Item CC No</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
Lugs	400C29	Ref ES400C29	See Table 1 Appendix A1								
Wedge Tap Bail	400C29	Ref ES400C29	See Table 2 Appendix A1								
Notices	400N1	Ref ES400N1	As required								
Stays	400S13	Ref ES400S13	As required								

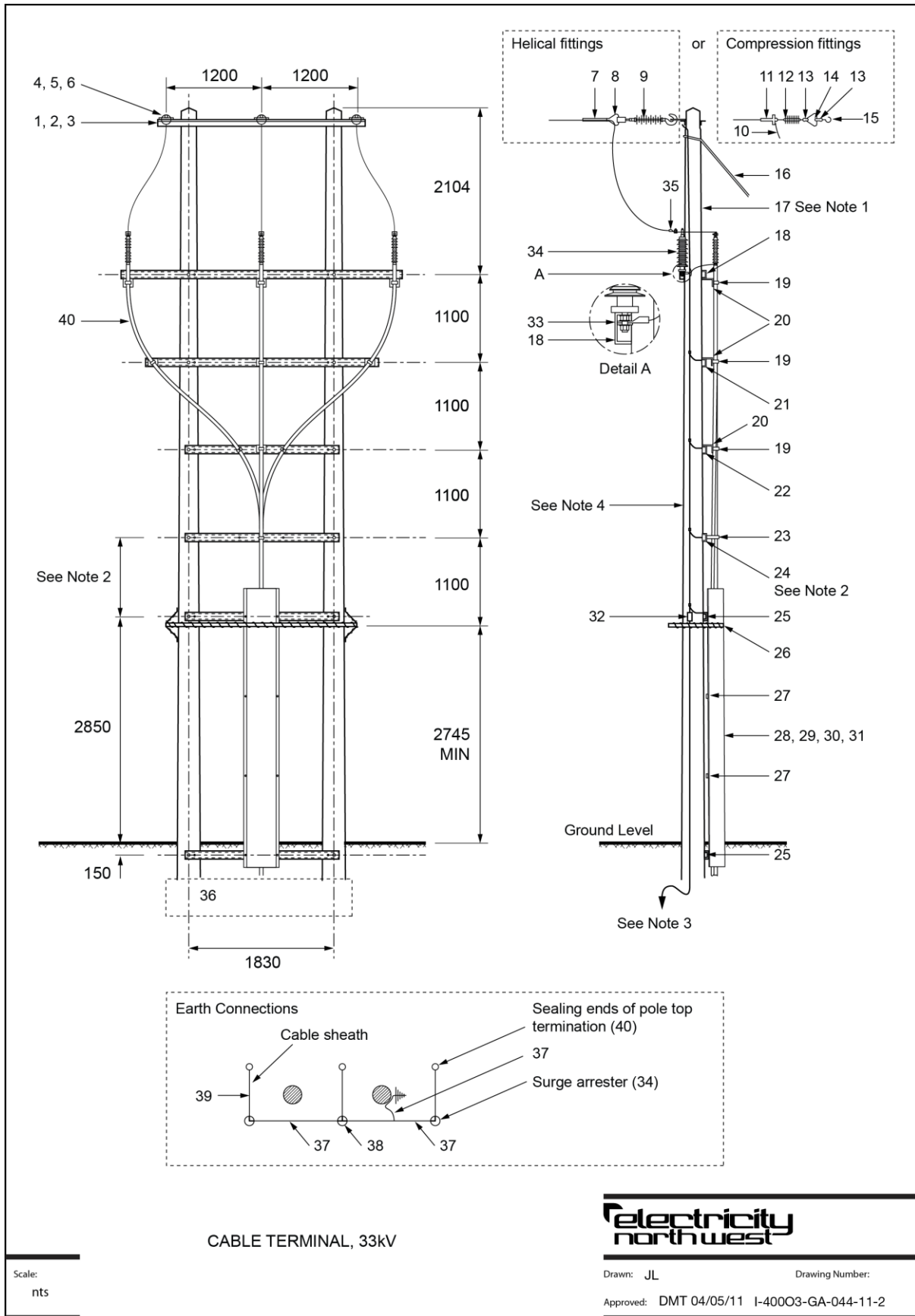




**Cable Terminal (H-Pole), 11kV**

**Drawing I-40003-GA-043**

<b>Conductor (3-phase arrangement)</b>									
11 kV - HDCu, 38mm <sup>2</sup>									
11 kV - HDCu, 70mm <sup>2</sup>									
11 kV - HDCu, 100mm <sup>2</sup>									
11 kV - AAAC, 50mm <sup>2</sup>									
11 kV - AAAC, 100mm <sup>2</sup>									
11 kV - AAAC, 150mm <sup>2</sup>									
No	Item	ES Ref	CC No						
1	Steelwork, crossarm, single pole/H-pole, terminal (Dwg I-400S11-SWK-023)	400S11	133337	2	2	2	2	2	2
2	Bolt, M20, length 300mm, thread length 150mm, galvanized, c/w hex full nut	400F1	107735	2	2	2	2	2	2
3	Insulator, tension, silicone, heavy duty, ball/hook, 70kN MFL (Dwg I-400I4-INS-008)	400I4	125232	3	3	3	3	3	3
4	Steelwork, socket thimble, conductors under 13mm outer diameter (Dwg I-400S11-SWK-032)	400S11	132234	-	3	3	3	3	3
	Steelwork, socket thimble, conductors over 13mm outer diameter (Dwg I-400S11-SWK-033)	400S11	132233	3	-	-	-	-	-
5	Conductor fitting, helical dead end, HDCu, 38mm <sup>2</sup>	400H2	121061	-	-	-	-	-	3
	Conductor fitting, helical dead end, HDCu, 70mm <sup>2</sup>	400H2	121088	-	-	-	-	3	-
	Conductor fitting, helical dead end, HDCu, 100mm <sup>2</sup>	400H2	138154	-	-	-	3	-	-
	Conductor fitting, helical dead end, AAAC, 50mm <sup>2</sup>	400H2	121029	-	-	3	-	-	-
	Conductor fitting, helical dead end, AAAC, 100mm <sup>2</sup>	400H2	121401	-	3	-	-	-	-
	Conductor fitting, helical dead end, AAAC, 150mm <sup>2</sup>	400H2	138156	3	-	-	-	-	-
6	Conductor fitting, lug	400C29	See Table 1 Appendix A1						
7	Underground cable and pole top termination as per jointing code of practice CP411 Part 2	-	-	1	1	1	1	1	1
8	Cable guard	400G1	*	1	1	1	1	1	1
9	Steelwork, terminal strap (Dwg I-400S11-SWK-009)	400S11	133361	3	3	3	3	3	3
10	Bolt, M20, length 60mm, thread length 46mm, galvanized, c/w hex full nut	400F1	107581	6	6	6	6	6	6
11	Washer, round, flat, 22mm hole, outer dia 37mm, thickness 3mm, galvanized	400F1	993018	12	12	12	12	12	12
12	Bolt, tie rod, M20, length 330mm, thread length 120mm, galvanized, c/w four hex full nuts	400F1	133388	3	3	3	3	3	3
13	Stay arrangement as per CP420 Part 1 Chapter 07	-	-	As required					
14	ACD as per CP420 Part 1 Chapter 10	400A2	*	As required					
15	Wood pole pair, H-	400W2	*	1	1	1	1	1	1
16	Cleat	400C20	*	As required					
<b>Additional items that are required, but are not shown on the drawing **</b>									
-	Notice, danger of death (wood poles) (Dwg I-400N1-NOTE-006)	400N1	195251	4	4	4	4	4	4
-	Notice, pole number (wood poles) (Dwg I-400N1-NOTE-020)	400N1	*	2	2	2	2	2	2
-	H-pole foundations (pole centres 1830mm) as per Drawing I-400O2-GA-047	-	-	1	1	1	1	1	1
<b>Additional items that may be required, but are not shown on the drawing **</b>									
-	Notices	400N1	*	As required					
* Select appropriate item (size, type, etc...) from the specification in the adjacent "ES Ref" column.									
** See the main body text for details.									



**Cable Terminal, 33kV (Helical Fittings)**

**Drawing I-40003-GA-044**

<b>Conductor (3-phase arrangement)</b>						
33kV – HDCu, 100mm <sup>2</sup>						
33kV – AAAC, 150mm <sup>2</sup>						
33kV – AAAC, 200mm <sup>2</sup>						
No	Item	ES Ref	CC No			
1	Steelwork, crossarm, single pole/H-pole, terminal (Dwg I-400S11-SWK-023)	400S11	133337	2	2	2
2	Bolt, M20, length 375mm, thread length 150mm, galvanized, c/w hex full nut	400F1	107743	2	2	2
3	Bolt, tie rod, M20, length 330mm, thread length 120mm, galvanized, c/w four hex full nuts	400F1	133388	3	3	3
4	Steelwork, terminal strap (Dwg I-400S11-SWK-009)	400S11	133361	3	3	3
5	Bolt, M20, length 60mm, thread length 46mm, galvanized, c/w hex full nut	400F1	107581	6	6	6
6	Washer, round, flat, 22mm hole, outer dia 37mm, thickness 3mm, galvanized	400F1	993018	12	12	12
7	Conductor fitting, helical dead end, HDCu, 100mm <sup>2</sup>	400H2	138154	-	-	3
	Conductor fitting, helical dead end, AAAC, 150mm <sup>2</sup>	400H2	138156	-	3	-
	Conductor fitting, helical dead end, AAAC, 200mm <sup>2</sup>	400H2	138158	3	-	-
8	Steelwork, socket thimble, conductors under 13mm outer diameter (Dwg I-400S11-SWK-032)	400S11	132234	-	-	3
	Steelwork, socket thimble, conductors over 13mm outer diameter (Dwg I-400S11-SWK-033)	400S11	132233	3	3	-
9	Insulator, tension, silicone, heavy duty, ball/hook, 70kN MFL (Dwg I-400I4-INS-008)	400I4	125232	3	3	3
10 to 15	Not applicable to arrangement using helical fittings	-	-	-	-	-
16	Stay arrangement as per CP420 Part 1 Chapter 07	-	-	As required		
17	Wood pole pair, H-	400W2	*	1	1	1
18	Item 1 of steelwork kit, cable terminal, 33kV (refer to items not shown)	-	-	-	-	-
19	Cleat, M12, single bolt fixing	400C20	††	9	9	9
20	Item 3 of steelwork kit, cable terminal, 33kV (refer to items not shown)	-	-	-	-	-
21	Item 2 of steelwork kit, cable terminal, 33kV (refer to items not shown)	-	-	-	-	-
22	Item 7 of steelwork kit, cable terminal, 33kV (refer to items not shown)	-	-	-	-	-
23	Cleat, trefoil, M12, single bolt fixing	400C20	††	1	1	1
24	Item 4 of steelwork kit, cable terminal, 33kV (refer to items not shown)	-	-	-	-	-
25	Item 4 of steelwork kit, cable terminal, 33kV (refer to items not shown) ***	-	-	-	-	-
26	ACD as per CP420 Part 1 Chapter 10	400A2	*	As required		
27	Item 10 of steelwork kit, cable terminal, 33kV (refer to items not shown)	-	-	-	-	-
28 - 31	Items 6 to 9 of steelwork kit, cable terminal, 33kV (refer to items not shown)	-	-	-	-	-
32	Disconnecting link, comprising: Conductor fitting, lug, 1-hole (13mm), straight, HDCu, 70mm <sup>2</sup> Bolt, M12	-	-	-	-	-
		400C29	124532	2	2	2
		400F1	*	1	1	1
33	Conductor fitting, lug, 1-hole (16mm), straight, HDCu, 70mm <sup>2</sup>	400C29	124583	7	7	7
34	Surge arrester, type ABB MWK29	348	121878	3	3	3
35	Conductor fitting, lug, 1-hole (17mm), straight, HDCu, 100mm <sup>2</sup> Conductor fitting, lug, 1-hole (17mm), straight, bimetallic, AAAC, 150mm <sup>2</sup> Conductor fitting, lug, 1-hole (17mm), straight, bimetallic, AAAC, 200mm <sup>2</sup>	400C29	††	-	-	3
		400C29	††	-	3	-
		400C29	††	3	-	-
36	H-pole foundations (pole centres 1830mm) as per Drawing I-400O2-GA-047	-	-	1	1	1
37	Conductor, HDCu, 70mm <sup>2</sup> (green/yellow covered)	400C3	357243	As required		
38	Conductor fitting, lug	400C29	††	As required		
39	Conductor, HDCu, 50mm <sup>2</sup>	400C3	††	As required		
40	Pole top termination as per jointing code of practice CP412	-	-	-		
<b>Additional items that are required, but are not shown on the drawing **</b>						
-	Steelwork kit, cable terminal, 33kV (See Note 2 below)	400S11	122848	1	1	1
-	Notice, danger of death (wood poles) (Dwg I-400N1-NOTE-006)	400N1	195251	4	4	4

**Cable Terminal, 33kV (Helical Fittings)**

**Drawing I-40003-GA-044**

**Conductor (3-phase arrangement)**

33kV – HDCu, 100mm<sup>2</sup>

33kV – AAAC, 150mm<sup>2</sup>

33kV – AAAC, 200mm<sup>2</sup>

No	Item	ES Ref	CC No			
-	Notice, pole number (wood poles) (Dwg I-400N1-NOTE-020)	400N1	*	2	2	2

**Additional items that may be required, but are not shown on the drawing \*\***

	Notices	400N1		As required		
--	---------	-------	--	-------------	--	--

\* Select appropriate item (size, type, etc...) from the specification in the adjacent "ES Ref" column.

\*\* See the main body text for details.

\*\*\* If the height of the H-pole pair is the minimum 10m, this cable support can be omitted. If the unsupported length over this distance exceeds 1525mm, an additional cable support is required. For each additional cable support, two additional pole bolts, two square curved washers and one trefoil cleat are required.

† Three lugs are required for the middle surge arrester (two each for the outer surge arresters).

†† No CC number has been raised for this item. However, it shall generally comply with the specification in the previous column.

**Notes referenced from the drawing**

1. Minimum height of H-pole pair is 10m for this arrangement.
2. This kit includes nuts, bolts (including pole bolts) and washers.
3. Refer to CP420 Part 1 Chapter 21 for earthing information.
4. Item 37 shall run down one leg of the H-pole from the crossarm to the disconnecting link. The surge arrester, cable neutral and all steelwork shall be bonded together.

**General note**

5. Metric fine thread bolts shall be used for all electrical connections.

**Cable Terminal, 33kV (Compression Fittings)**

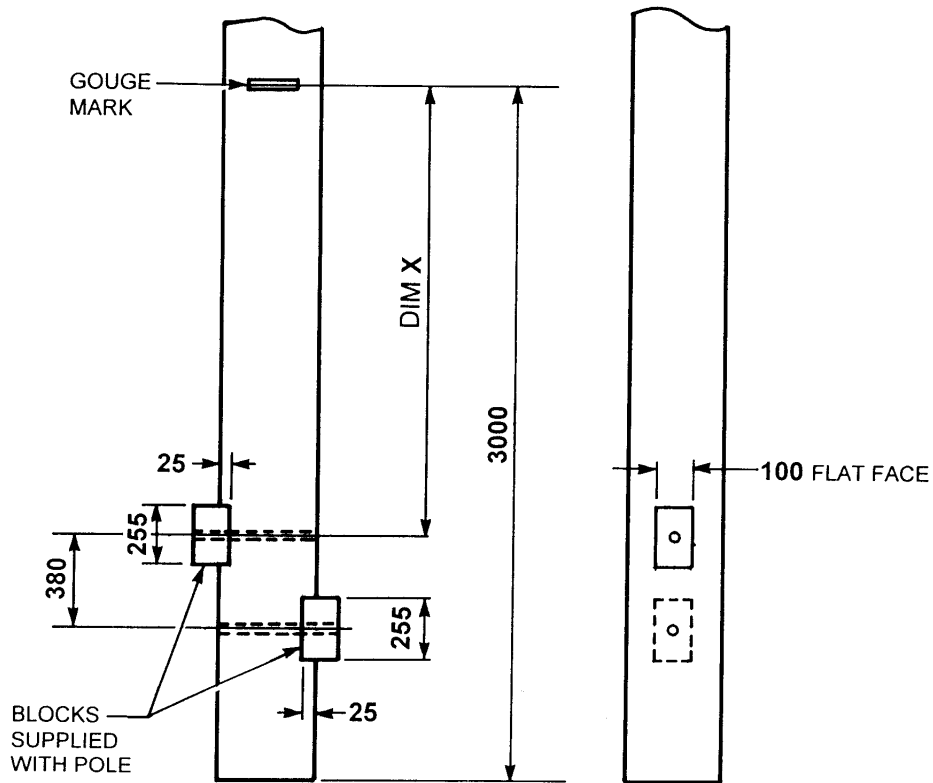
**Drawing I-40003-GA-044**

<b>Conductor (3-phase arrangement)</b>						
33kV – HDCu, 100mm <sup>2</sup>						
33kV – AAAC, 150mm <sup>2</sup>						
33kV – AAAC, 200mm <sup>2</sup>						
No	Item	ES Ref	CC No			
1	Steelwork, crossarm, single pole/H-pole, terminal (Dwg I-400S11-SWK-023)	400S11	133337	2	2	2
2	Bolt, M20, length 375mm, thread length 150mm, galvanized, c/w hex full nut	400F1	107743	2	2	2
3	Bolt, tie rod, M20, length 330mm, thread length 120mm, galvanized, c/w four hex full nuts	400F1	133388	3	3	3
4	Steelwork, terminal strap (Dwg I-400S11-SWK-009)	400S11	133361	3	3	3
5	Bolt, M20, length 60mm, thread length 46mm, galvanized, c/w hex full nut	400F1	107581	6	6	6
6	Washer, round, flat, 22mm hole, outer dia 37mm, thickness 3mm, galvanized	400F1	993018	12	12	12
7 to 9	Not applicable to arrangement using helical fittings	-	-	-	-	-
10	Conductor fitting, backplate, compression dead ends and IPCCs, c/w fixings	400C29	121020	-	-	3
	Conductor fitting, lug, 2-hole (13mm), straight, for HDCu 100mm <sup>2</sup>	400C29	124928	-	-	3
	Length of conductor, HDCu, 100mm <sup>2</sup>	400C3	013199	-	-	3
10	Conductor fitting, backplate, compression dead ends and IPCCs, c/w fixings	400C29	121020	-	3	-
	Conductor fitting, lug, 2-hole (13mm), straight, for AAAC, 150mm <sup>2</sup>	400C29	131260	-	3	-
	Length of conductor, AAAC, 150mm <sup>2</sup>	400C3	013688	-	3	-
10	Conductor fitting, backplate, compression dead ends and IPCCs, c/w fixings	400C29	121020	3	-	-
	Conductor fitting, lug, 2-hole (13mm), straight, for AAAC, 200mm <sup>2</sup>	400C29	††	3	-	-
	Length of conductor, AAAC, 200mm <sup>2</sup>	400C3	013690	3	-	-
11	Conductor fitting, compression dead end, double tee off, 13mm holes, HDCu, 100mm <sup>2</sup>	400C29	130930	-	-	3
	Conductor fitting, compression dead end, double tee off, 13mm holes, AAAC, 150mm <sup>2</sup>	400C29	130960	-	3	-
	Conductor fitting, compression dead end, double tee off, 13mm holes, AAAC, 200mm <sup>2</sup>	400C29	130970	3	-	-
12	Insulator, tension, silicone, heavy duty, ball/ball, 70kN MFL (Dwg I-400I4-INS-010)	400I4	125240	3	3	3
13	Steelwork, socket clevis 15/84 (Dwg I-400S11-SWK-014)	400S11	122173	6	6	6
14	Steelwork, sag variation link (universal) (Dwg I-400S11-SWK-012)	400S11	260850	3	3	3
15	Steelwork, ball ended hook, 15/81 (Dwg I-400S11-SWK-087)	400S11	122298	3	3	3
16	Stay arrangement as per CP420 Part 1 Chapter 07	-	-	As required		
17	Wood pole pair, H-	400W2	*	1	1	1
18	Item 1 of steelwork kit, cable terminal, 33kV (refer to items not shown)	-	-	-	-	-
19	Cleat, M12, single bolt fixing	400C20	††	9	9	9
20	Item 3 of steelwork kit, cable terminal, 33kV (refer to items not shown)	-	-	-	-	-
21	Item 2 of steelwork kit, cable terminal, 33kV (refer to items not shown)	-	-	-	-	-
22	Item 7 of steelwork kit, cable terminal, 33kV (refer to items not shown)	-	-	-	-	-
23	Cleat, trefoil, M12, single bolt fixing	400C20	††	1	1	1
24	Item 4 of steelwork kit, cable terminal, 33kV (refer to items not shown)	-	-	-	-	-
25	Item 4 of steelwork kit, cable terminal, 33kV (refer to items not shown) ***	-	-	-	-	-
26	ACD as per CP420 Part 1 Chapter 10	400A2	*	As required		
27	Item 10 of steelwork kit, cable terminal, 33kV (refer to items not shown)	-	-	-	-	-
28 - 31	Items 6 to 9 of steelwork kit, cable terminal, 33kV (refer to items not shown)	-	-	-	-	-
32	Disconnecting link, comprising:	-	-	-	-	-
	Conductor fitting, lug, 1-hole (13mm), straight, HDCu, 70mm <sup>2</sup>	400C29	124532	2	2	2
32	Bolt, M12	400F1	*	1	1	1
	Conductor fitting, lug, 1-hole (16mm), straight, HDCu, 70mm <sup>2</sup>	400C29	124583	7	7	7
34	Surge arrester, type ABB MWK29	348	121878	3	3	3

**Cable Terminal, 33kV (Compression Fittings)**

**Drawing I-40003-GA-044**

<b>Conductor (3-phase arrangement)</b>						
33kV – HDCu, 100mm <sup>2</sup>						
33kV – AAAC, 150mm <sup>2</sup>						
33kV – AAAC, 200mm <sup>2</sup>						
No	Item	ES Ref	CC No			
35	Conductor fitting, lug, 1-hole (16mm), straight, HDCu, 100mm <sup>2</sup>	400C29	††	-	-	3
	Conductor fitting, lug, 1-hole (16mm), straight, bimetallic, AAAC, 150mm <sup>2</sup>	400C29	††	-	3	-
	Conductor fitting, lug, 1-hole (16mm), straight, bimetallic, AAAC, 200mm <sup>2</sup>	400C29	††	3	-	-
36	H-pole foundations (pole centres 1830mm) as per Drawing I-40002-GA-047	-	-	1	1	1
37	Conductor, HDCu, 70mm <sup>2</sup> (green/yellow covered)	400C3	357243	As required		
38	Conductor fitting, lug	400C29	††	As required		
39	Conductor, HDCu, 50mm <sup>2</sup>	400C3	††	As required		
40	Pole top termination as per jointing code of practice CP412	-	-	-		
<b>Additional items that are required, but are not shown on the drawing **</b>						
-	Steelwork kit, cable terminal, 33kV (See Note 2 below)	400S11	122848	1	1	1
-	Notice, danger of death (wood poles) (Dwg I-400N1-NOTE-006)	400N1	195251	4	4	4
-	Notice, pole number (wood poles) (Dwg I-400N1-NOTE-020)	400N1	*	2	2	2
<b>Additional items that may be required, but are not shown on the drawing **</b>						
	Notices	400N1		As required		
<p>* Select appropriate item (size, type, etc...) from the specification in the adjacent "ES Ref" column.</p> <p>** See the main body text for details.</p> <p>*** If the height of the H-pole pair is the minimum 10m, this cable support can be omitted. If the unsupported length over this distance exceeds 1525mm, an additional cable support is required. For each additional cable support, two additional pole bolts, two square curved washers and one trefoil cleat are required.</p> <p>† Three lugs are required for the middle surge arrester (two each for the outer surge arresters).</p> <p>†† No CC number has been raised for this item. However, it shall generally comply with the specification in the previous column.</p> <p><b>Notes referenced from the drawing</b></p> <ol style="list-style-type: none"> <li>Minimum height of H-pole pair is 10m for this arrangement.</li> <li>This kit includes nuts, bolts (including pole bolts) and washers.</li> <li>Refer to CP420 Part 1 Chapter 21 for earthing information.</li> <li>Item 38 shall run down one leg of the H-pole from the crossarm to the disconnecting link. The surge arrester, cable neutral and all steelwork shall be bonded together.</li> </ol> <p><b>General note</b></p> <ol style="list-style-type: none"> <li>Metric fine thread bolts shall be used for all electrical connections.</li> </ol>						



POLE LENGTH (m)	DIMENSION 'X' (mm)	PLANTING DEPTH (mm)
9	1700	1800
10	1700	1800
11	1700	1800
12	1700	1800
13	1100	2400
14	1100	2400
15	1100	2400
16	1100	2400
17	1100	2400
18	1100	2400
20	500	3000
22	500	3000
24	500	3000

scale  
nts

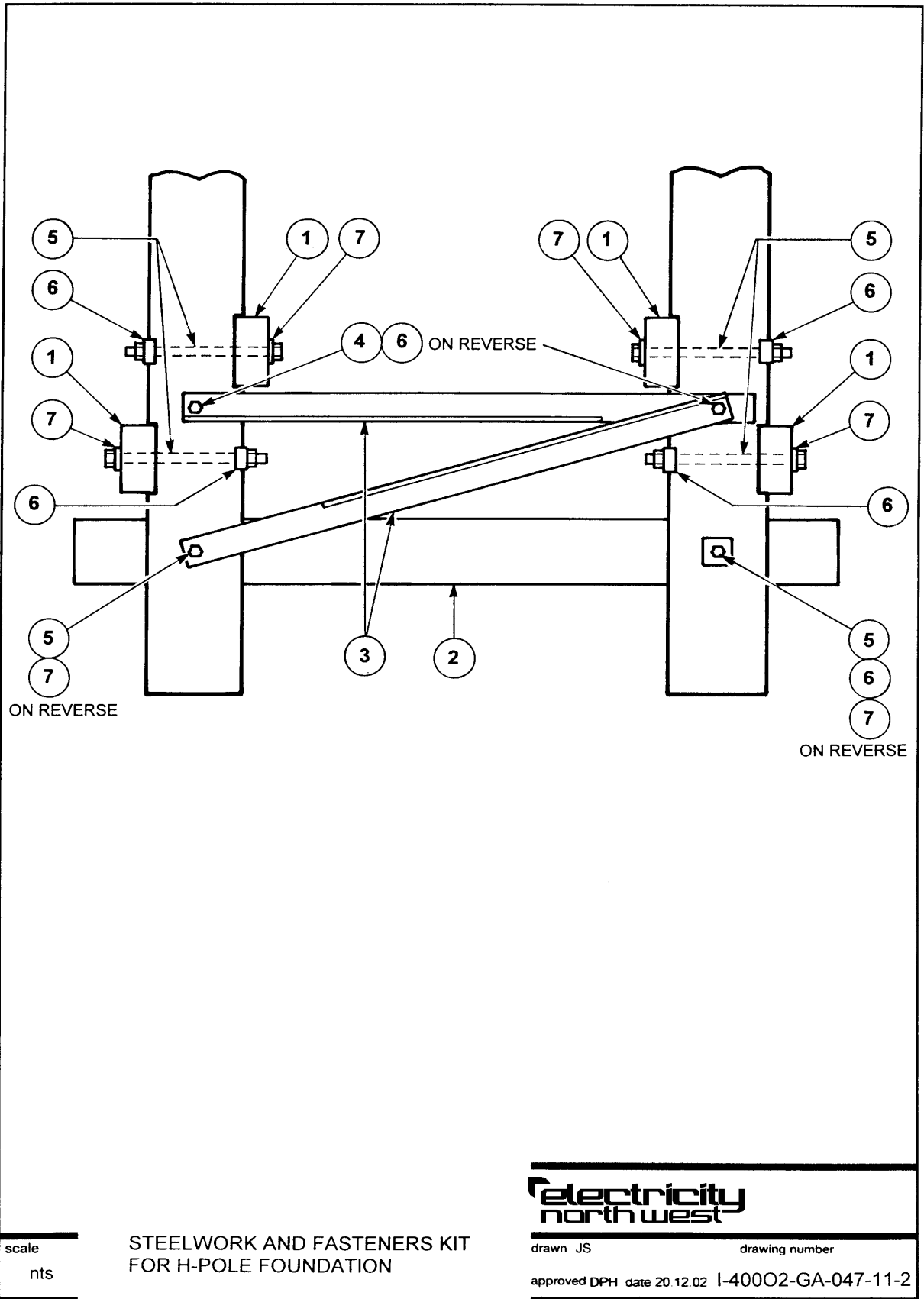
SINGLE POLE FOUNDATIONS

**Electricity  
north west**

drawn JS

drawing number

approved DPH date 20.12.02 | 40002-GA-046-11-2





**STEELWORK AND FASTENERS KIT FOR H-POLE FOUNDATION - (POLE CENTRES 1830MM)**

		Drawing No: I-40002-GA-047		
Item No.	Description	ES Ref	CC No	Quantity
1	Wood Block	400W2	-	4
2	Wood Brace Block	400W2	-	1
3	Steelwork Foundation Brace	400S11	111325	2
4	Bolt M20, 530mm, Steel, Galvanised	400F1	107786	2
5	Bolt M20, 750mm, Steel, Galvanised	400F1	107790	6
6	Washer, Square, Curved	400F1	139203	7
7	Washer, Square, Flat	400F1	139262	6

**NOTE:**

Items 1 and 2 supplied with pole.

Items 3 - 7 supplied in kit CC No. 133540.

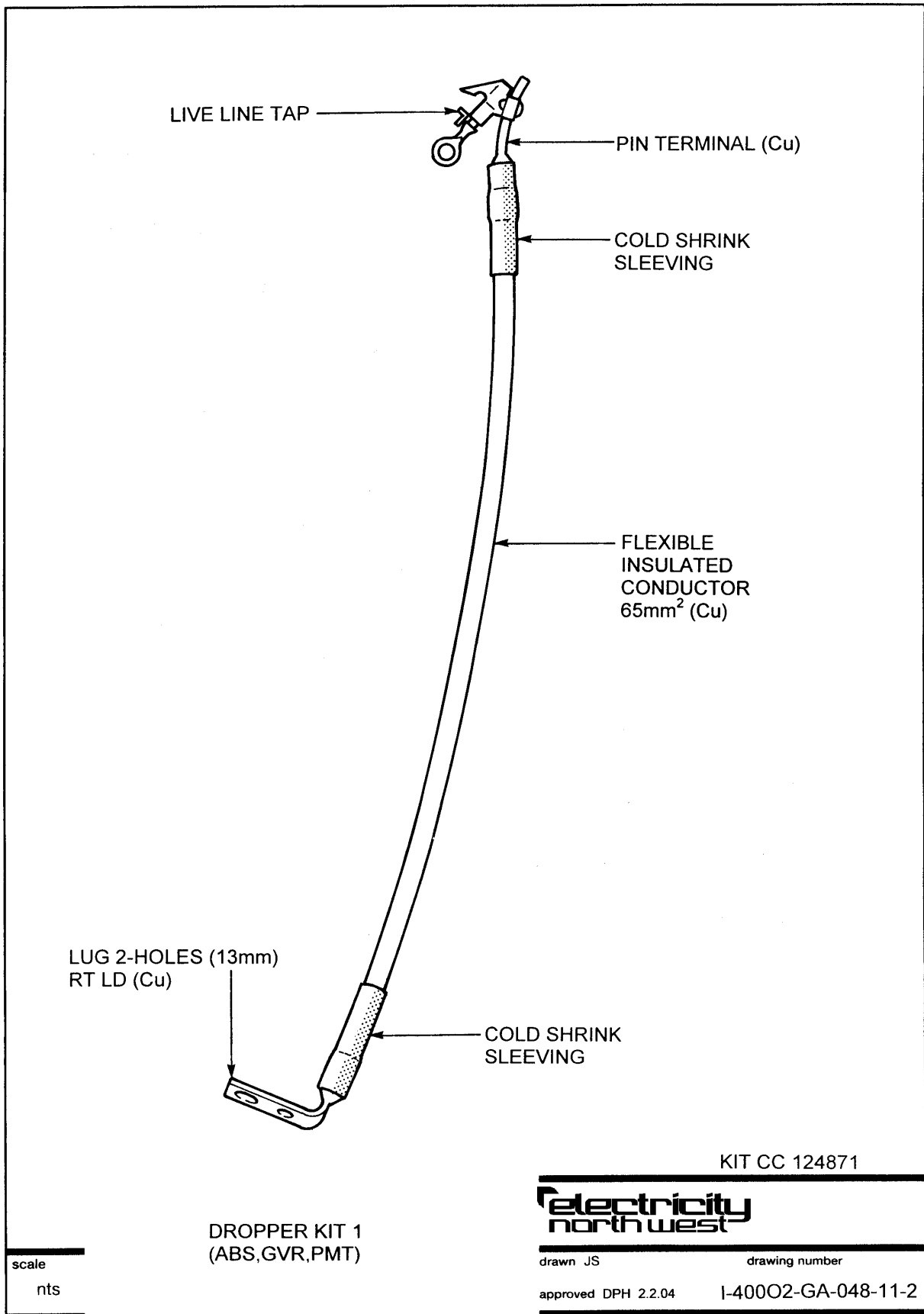
**STEELWORK AND FASTENERS KIT FOR H-POLE FOUNDATION - (POLE CENTRES 2500MM)**

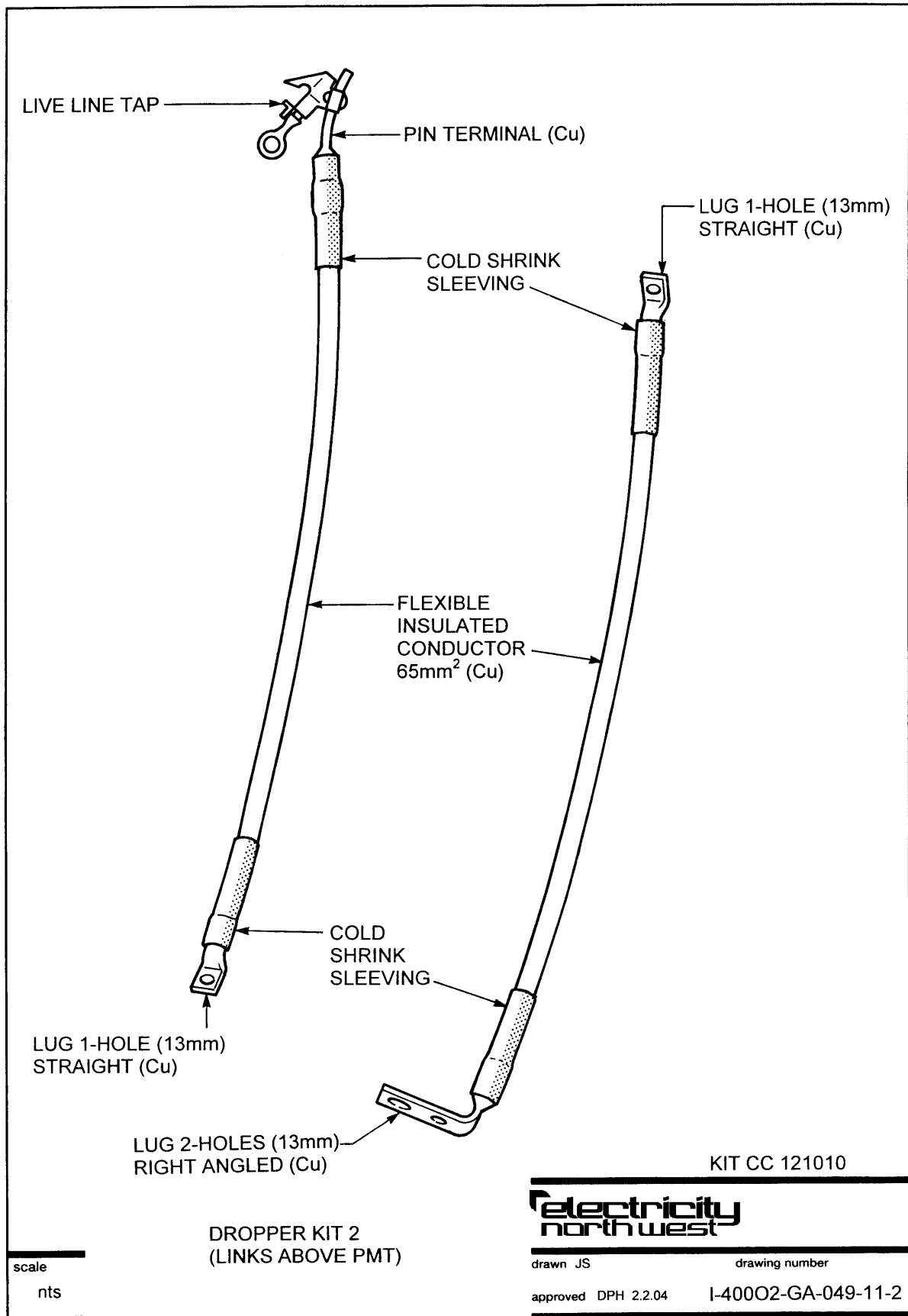
		Drawing No: I-40002-GA-047		
Item No.	Description	ES Ref	CC No	Quantity
1	Wood Block	400W2	-	4
2	Wood Brace Block	400W2	-	1
3	Steelwork Foundation Brace	400S11	111320	2
4	Bolt M20, 530mm, Steel, Galvanised	400F1	107786	2
5	Bolt M20, 750mm, Steel, Galvanised	400F1	107790	6
6	Washer, Square, Curved	400F1	139203	7
7	Washer, Square, Flat	400F1	139262	6

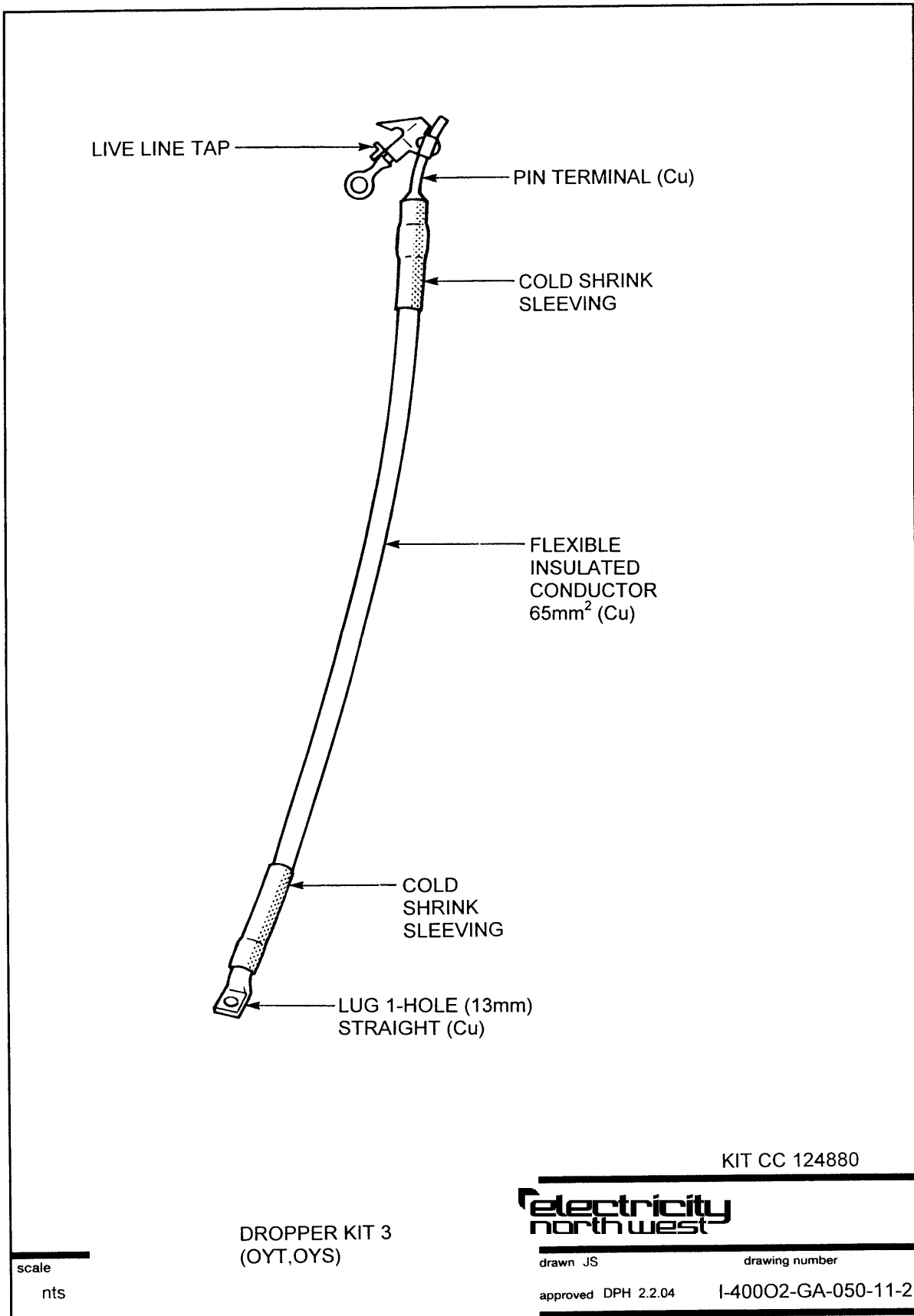
**NOTE:**

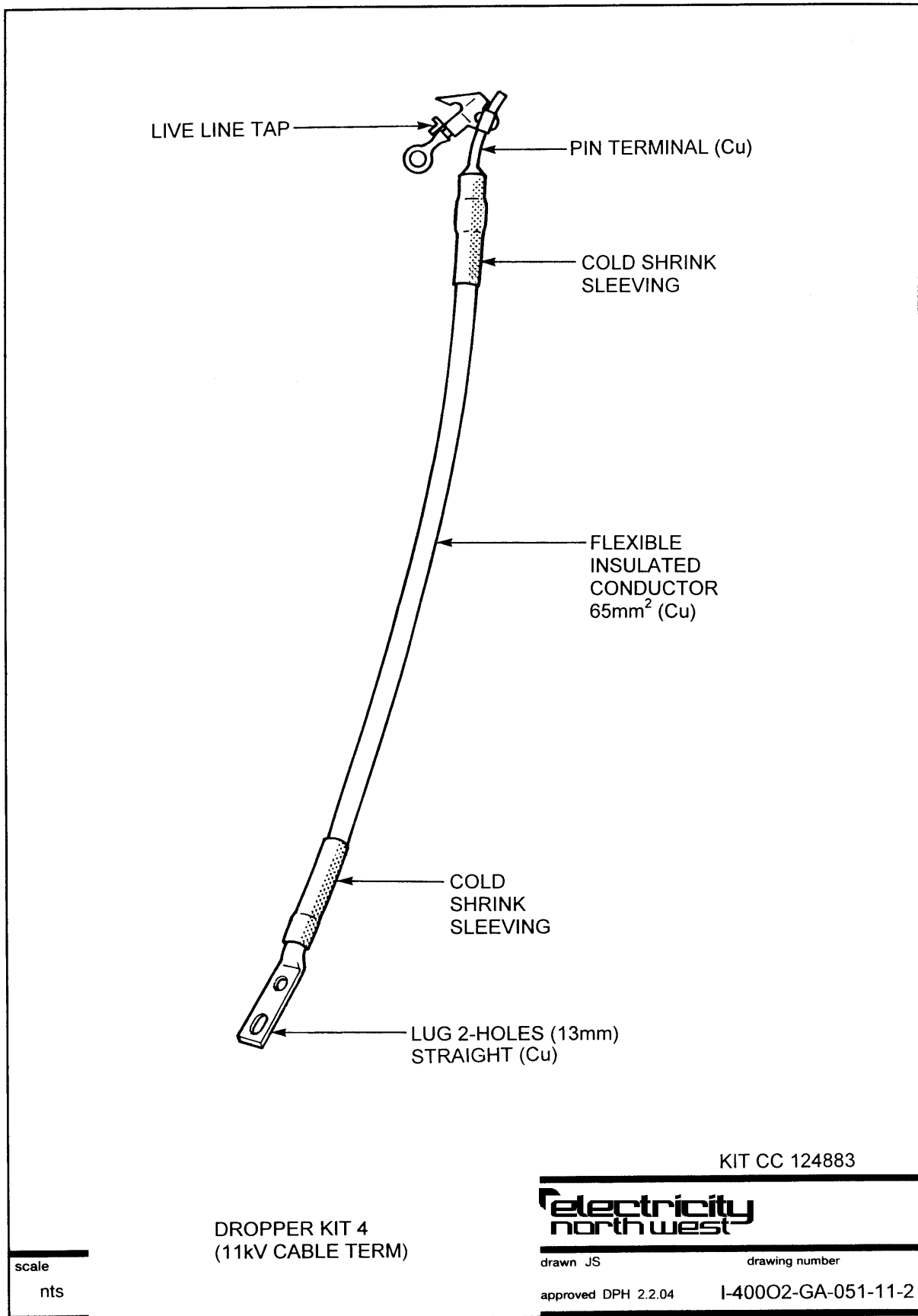
Items 1 and 2 supplied with pole.

Items 3 - 7 supplied in kit CC No. 111330.









**TABLE 1 - LUGS**

<b>APPROVED COMPONENT DESCRIPTION</b>	<b>CC NO.</b>	<b>ABBREVIATED DESCRIPTION</b>
Conductor fitting, lug, 2-hole (13mm), straight, for conductor, flexible, 65mm <sup>2</sup>	124892	Lug, 2-hole, for conductor, flexible, 65mm <sup>2</sup>
Conductor fitting, lug, 2-hole (13mm), right angled, bimetal, for AAAC, 100mm <sup>2</sup>	124942	Lug, 2-hole, right angled, bimetal
Conductor fitting, lug, 2-hole (13mm), right angled, bimetal, for AAAC, 150mm <sup>2</sup>	124944	Lug, 2-hole, right angled, bimetal
Conductor fitting, lug, 2-hole (13mm), right angled, bimetal, for AAAC, 200mm <sup>2</sup>	124938	Lug, 2-hole, right angled, bimetal
Conductor fitting, lug, 2-hole (13mm), right angled, bimetal, for AAAC, 50mm <sup>2</sup>	124940	Lug, 2-hole, right angled, bimetal
Conductor fitting, lug, 2-hole (13mm), right angled, for AAAC, 100mm <sup>2</sup>	131450	Lug, 2-hole, right angled
Conductor fitting, lug, 2-hole (13mm), right angled, for AAAC, 150mm <sup>2</sup>	131460	Lug, 2-hole, right angled
Conductor fitting, lug, 2-hole (13mm), right angled, for AAAC, 200mm <sup>2</sup>	131470	Lug, 2-hole, right angled
Conductor fitting, lug, 2-hole (13mm), right angled, for AAAC, 50mm <sup>2</sup>	131440	Lug, 2-hole, right angled
Conductor fitting, lug, 2-hole (13mm), right angled, for HDCu, 100mm <sup>2</sup>	124932	Lug, 2-hole, right angled
Conductor fitting, lug, 2-hole (13mm), right angled, for HDCu, 38mm <sup>2</sup>	124930	Lug, 2-hole, right angled
Conductor fitting, lug, 2-hole (13mm), right angled, for HDCu, 70mm <sup>2</sup>	130610	Lug, 2-hole, right angled
Conductor fitting, lug, 2-hole (13mm), straight, bimetal, for AAAC, 100mm <sup>2</sup>	130630	Lug, 2-hole, straight, bimetal
Conductor fitting, lug, 2-hole (13mm), straight, bimetal, for AAAC, 150mm <sup>2</sup>	124936	Lug, 2-hole, straight, bimetal
Conductor fitting, lug, 2-hole (13mm), straight, bimetal, for AAAC, 200mm <sup>2</sup>	131340	Lug, 2-hole, straight, bimetal
Conductor fitting, lug, 2-hole (13mm), straight, bimetal, for AAAC, 50mm <sup>2</sup>	130620	Lug, 2-hole, straight, bimetal
Conductor fitting, lug, 2-hole (13mm), straight, for AAAC, 100mm <sup>2</sup>	131250	Lug, 2-hole, straight
Conductor fitting, lug, 2-hole (13mm), straight, for AAAC, 150mm <sup>2</sup>	131260	Lug, 2-hole, straight
Conductor fitting, lug, 2-hole (13mm), straight, for AAAC, 200mm <sup>2</sup>	131270	Lug, 2-hole, straight
Conductor fitting, lug, 2-hole (13mm), straight, for AAAC, 50mm <sup>2</sup>	131240	Lug, 2-hole, straight
Conductor fitting, lug, 2-hole (13mm), straight, for HDC100mm <sup>2</sup>	124928	Lug, 2-hole, straight
Conductor fitting, lug, 2-hole (13mm), straight, for HDCu, 38mm <sup>2</sup>	124926	Lug, 2-hole, straight
Conductor fitting, lug, 2-hole (13mm), straight, for HDCu, 70mm <sup>2</sup>	124745	Lug, 2-hole, straight
Conductor fitting, lug, 2-hole, right angled, Cu for 65mm <sup>2</sup> flex	176255	Lug, 2-hole, RT.LD, Cu for 65mm <sup>2</sup> Flex

**TABLE 2 - WEDGE TAP BAIL**

<b>APPROVED COMPONENT DESCRIPTION</b>	<b>CC NO.</b>	<b>ABBREVIATED DESCRIPTION</b>
Conductor fitting, wedge tap bail, for AAAC, 100mm <sup>2</sup>	131150	Wedge tap bail
Conductor fitting, wedge tap bail, for AAAC, 150mm <sup>2</sup>	131160	Wedge tap bail
Conductor fitting, wedge tap bail, for AAAC, 200mm <sup>2</sup>	131170	Wedge tap bail
Conductor fitting, wedge tap bail, for AAAC, 50mm <sup>2</sup>	131140	Wedge tap bail
Conductor fitting, wedge tap bail, for HDCu, 38mm <sup>2</sup>	131110	Wedge tap bail
Conductor fitting, wedge tap bail, for HDCu, 100mm <sup>2</sup>	131130	Wedge tap bail
Conductor fitting, wedge tap bail, for HDCu, 70mm <sup>2</sup>	131120	Wedge tap bail

**TABLE 3 - WEDGE TAP TEE-OFF**

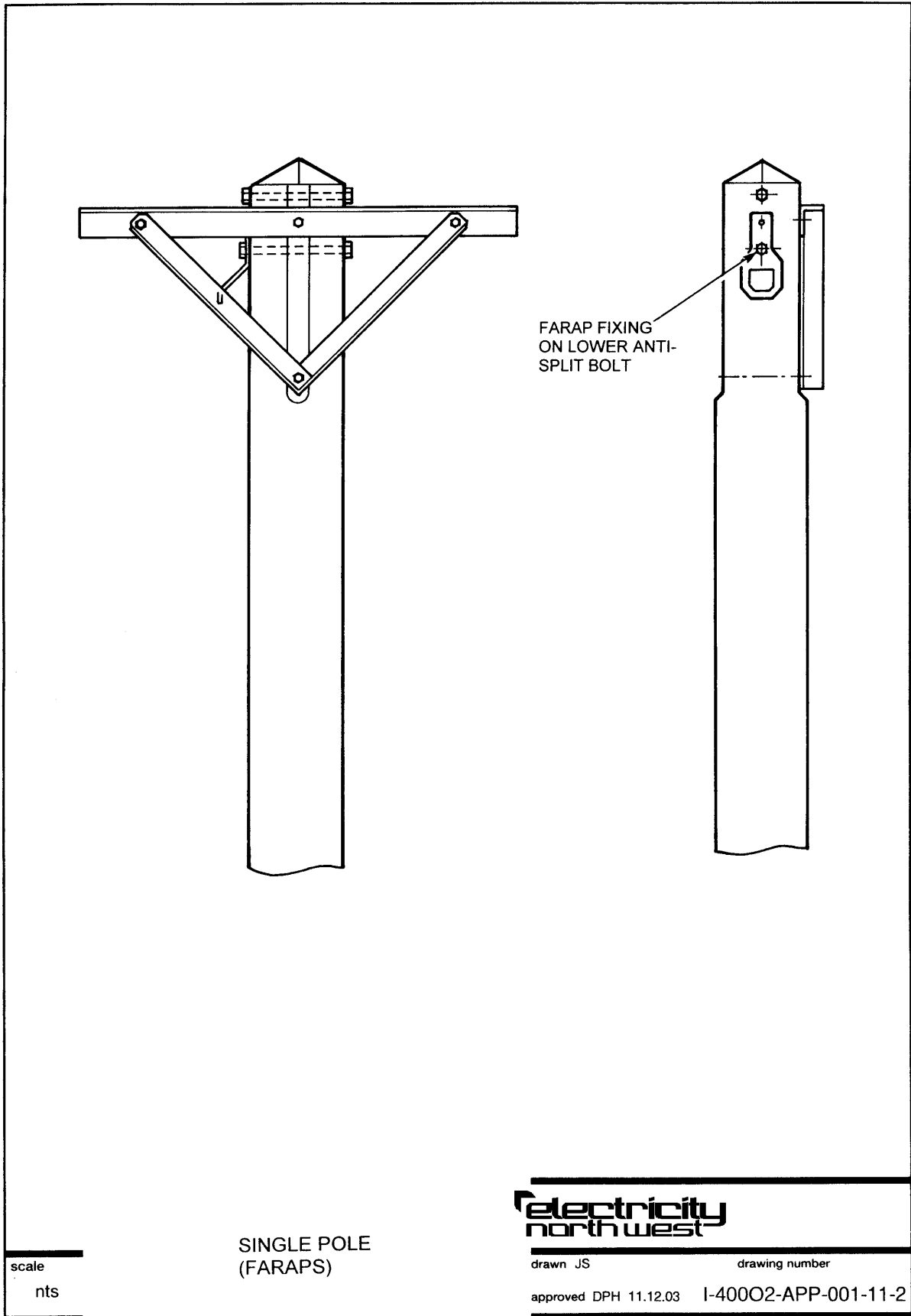
APPROVED COMPONENT DESCRIPTION	CC NO.	ABBREVIATED DESCRIPTION
Conductor fitting, wedge tap tee, for AAAC, 100mm <sup>2</sup> (main line), to AAAC, 100mm <sup>2</sup> (tee off)	124937	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for AAAC, 100mm <sup>2</sup> (main line), to AAAC, 50mm <sup>2</sup> (tee off)	124935	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for AAAC, 100mm <sup>2</sup> (main line), to HDCu, 100mm <sup>2</sup> (tee off)	151270	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for AAAC, 100mm <sup>2</sup> (main line), to HDCu, 38mm <sup>2</sup> (tee off)	151290	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for AAAC, 100mm <sup>2</sup> (main line), to HDCu, 70mm <sup>2</sup> (tee off)	151280	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for AAAC, 150mm <sup>2</sup> (main line), to AAAC, 100mm <sup>2</sup> (tee off)	124941	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for AAAC, 150mm <sup>2</sup> (main line), to AAAC, 150mm <sup>2</sup> (tee off)	124943	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for AAAC, 150mm <sup>2</sup> (main line), to AAAC, 50mm <sup>2</sup> (tee off)	124939	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for AAAC, 150mm <sup>2</sup> (main line), to HDCu, 100mm <sup>2</sup> (tee off)	151220	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for AAAC, 150mm <sup>2</sup> (main line), to HDCu, 38mm <sup>2</sup> (tee off)	151240	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for AAAC, 150mm <sup>2</sup> (main line), to HDCu, 70mm <sup>2</sup> (tee off)	151230	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for AAAC, 200mm <sup>2</sup> (main line), to AAAC, 100mm <sup>2</sup> (tee off)	151130	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for AAAC, 200mm <sup>2</sup> (main line), to AAAC, 150mm <sup>2</sup> (tee off)	151120	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for AAAC, 200mm <sup>2</sup> (main line), to AAAC, 200mm <sup>2</sup> (tee off)	151110	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for AAAC, 200mm <sup>2</sup> (main line), to AAAC, 50mm <sup>2</sup> (tee off)	151140	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for AAAC, 200mm <sup>2</sup> (main line), to HDCu, 100mm <sup>2</sup> (tee off)	151150	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for AAAC, 200mm <sup>2</sup> (main line), to HDCu, 38mm <sup>2</sup> (tee off)	151170	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for AAAC, 200mm <sup>2</sup> (main line), to HDCu, 70mm <sup>2</sup> (tee off)	151160	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for AAAC, 50mm <sup>2</sup> (main line), to AAAC, 50mm <sup>2</sup> (tee off)	124933	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for AAAC, 50mm <sup>2</sup> (main line), to HDCu, 38mm <sup>2</sup> (tee off)	151320	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for HDCu, 100mm <sup>2</sup> (main line), to AAAC, 100mm <sup>2</sup> (tee off)	151360	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for HDCu, 100mm <sup>2</sup> (main line), to AAAC, 50mm <sup>2</sup> (tee off)	151370	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for HDCu, 100mm <sup>2</sup> (main line), to HDCu, 100mm <sup>2</sup> (tee off)	124931	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for HDCu, 100mm <sup>2</sup> (main line), to HDCu, 70mm <sup>2</sup> (tee off)	124929	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for HDCu, 38mm <sup>2</sup> (main line), to AAAC, 50mm <sup>2</sup> (tee off)	151430	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for HDCu, 38mm <sup>2</sup> (main line), to HDCu, 38mm <sup>2</sup> (tee off)	124921	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for HDCu, 70mm <sup>2</sup> (main line), to AAAC, 50mm <sup>2</sup> (tee off)	151410	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for HDCu, 70mm <sup>2</sup> (main line), to HDCu, 38mm <sup>2</sup> (tee off)	124923	Wedge-tap tee-off
Conductor fitting, wedge tap tee, for HDCu, 70mm <sup>2</sup> (main line), to HDCu, 70mm <sup>2</sup> (tee off)	124925	Wedge-tap tee-off

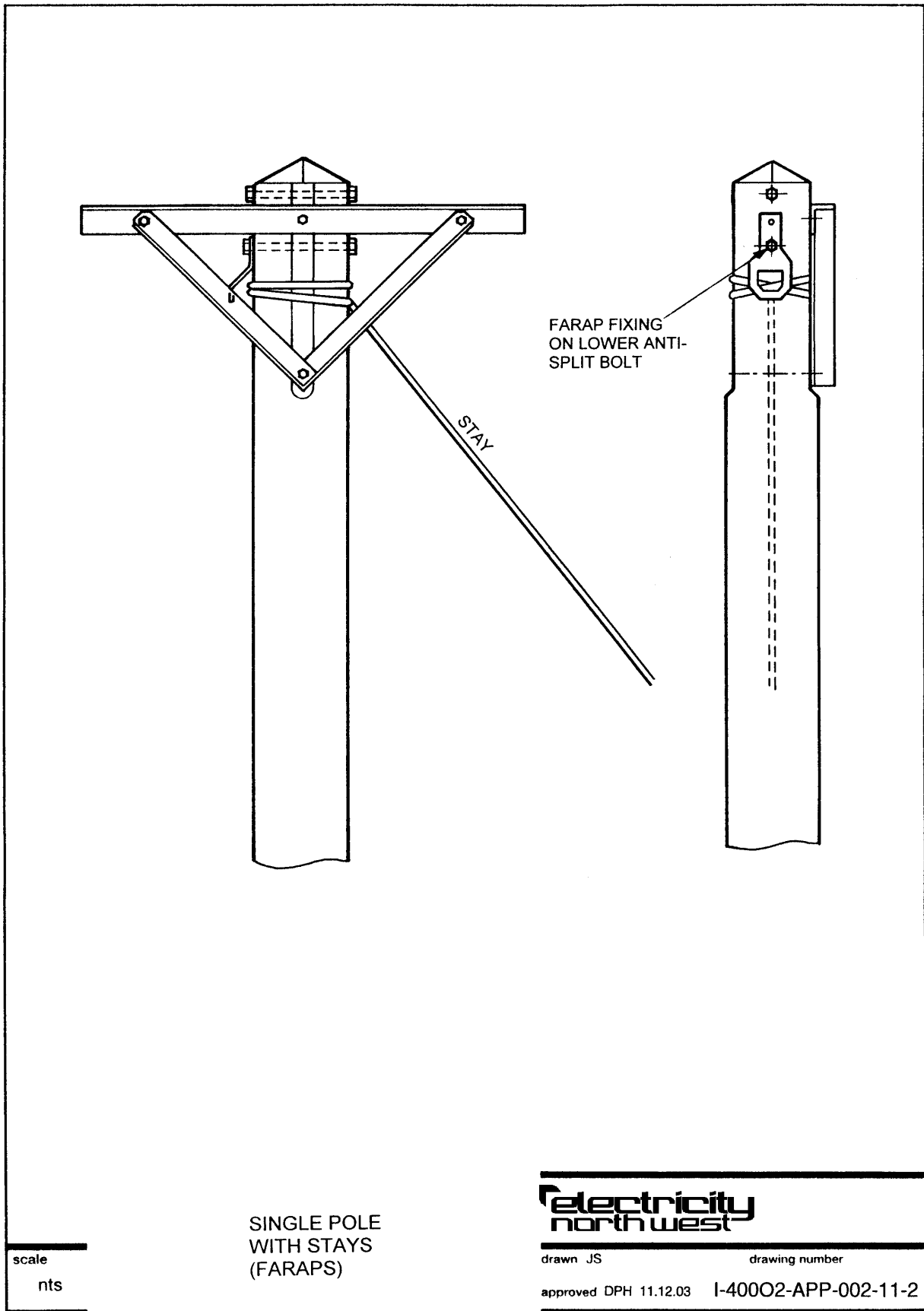


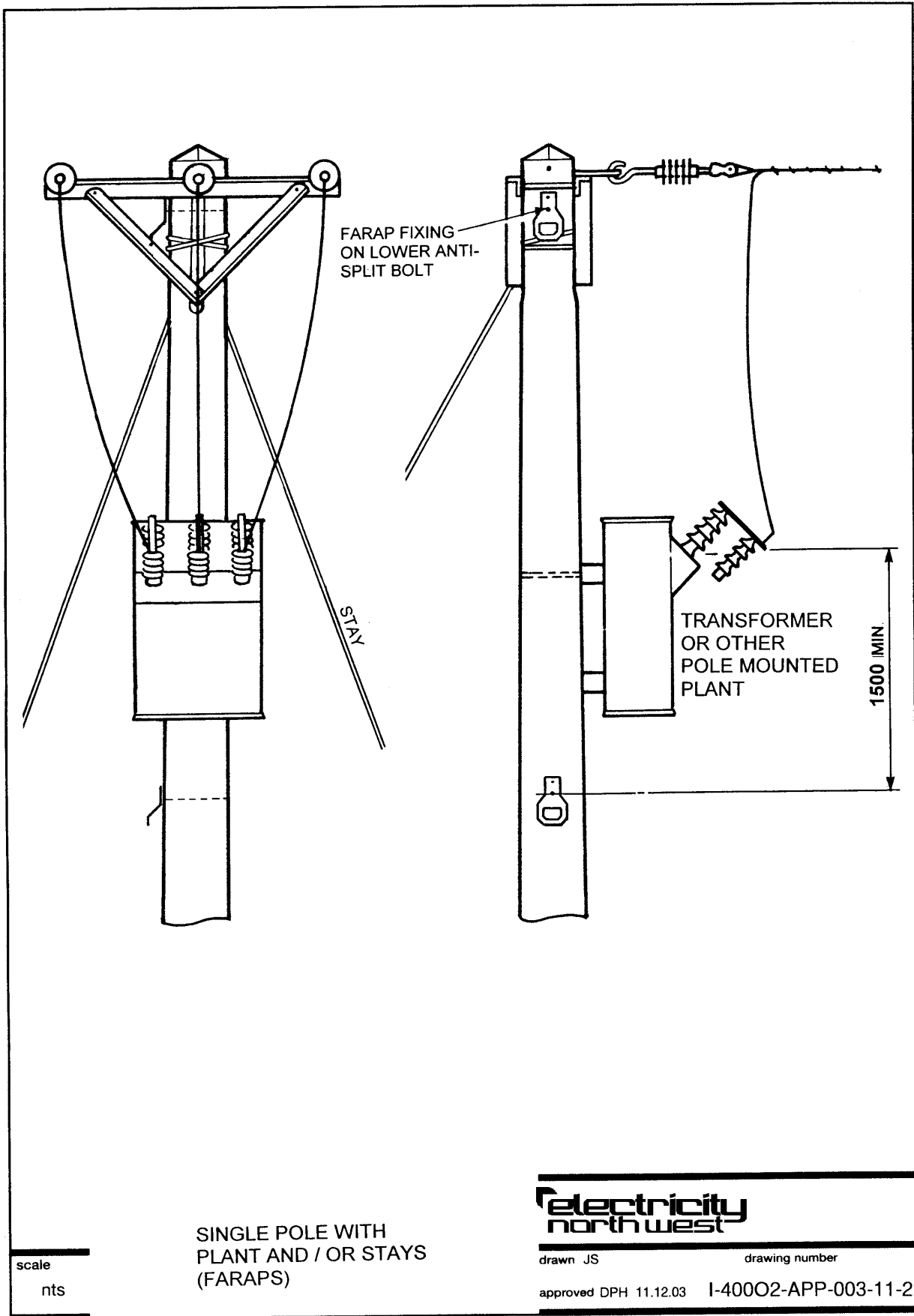
## A2 Application Drawings

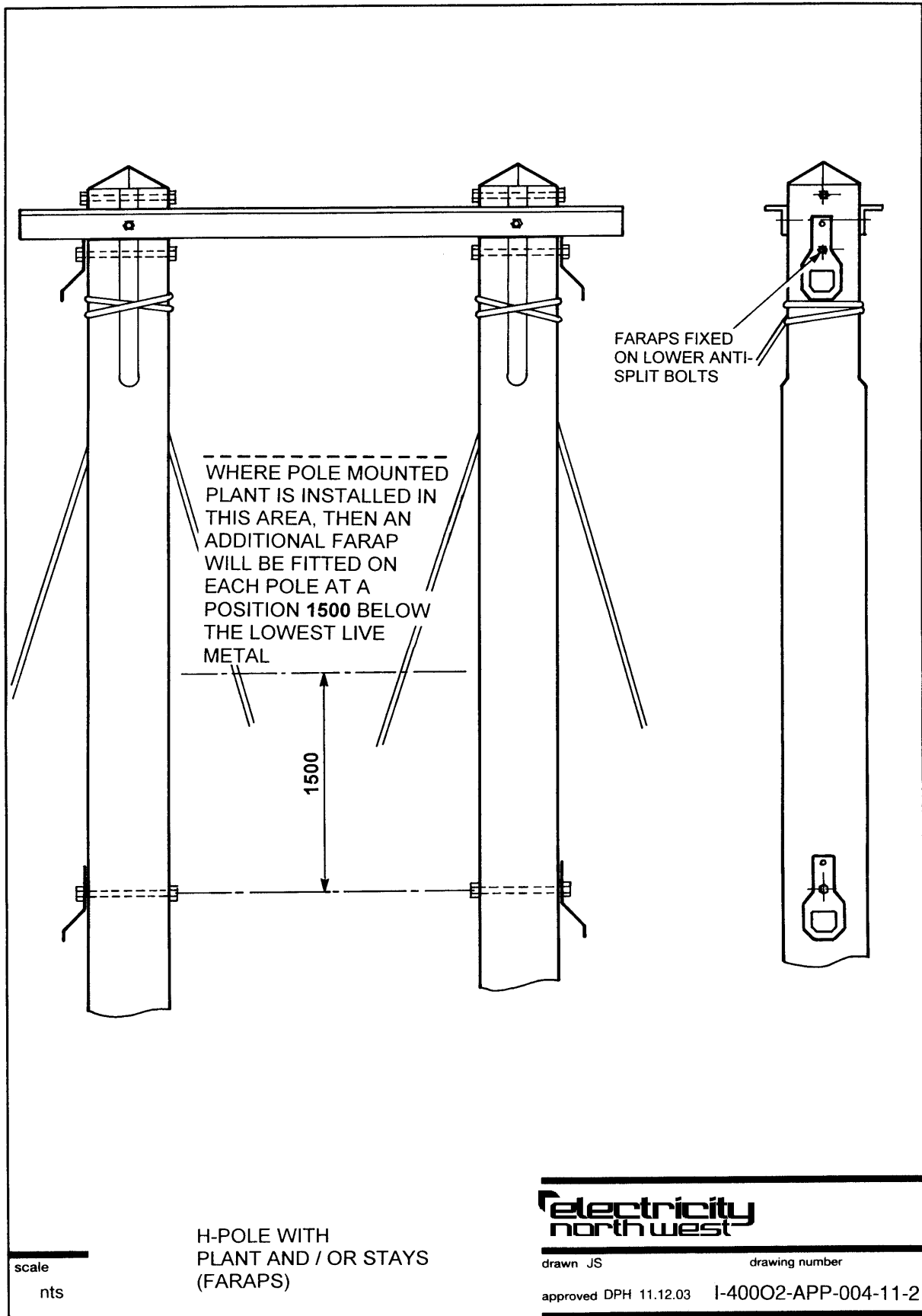
### Index to Drawings

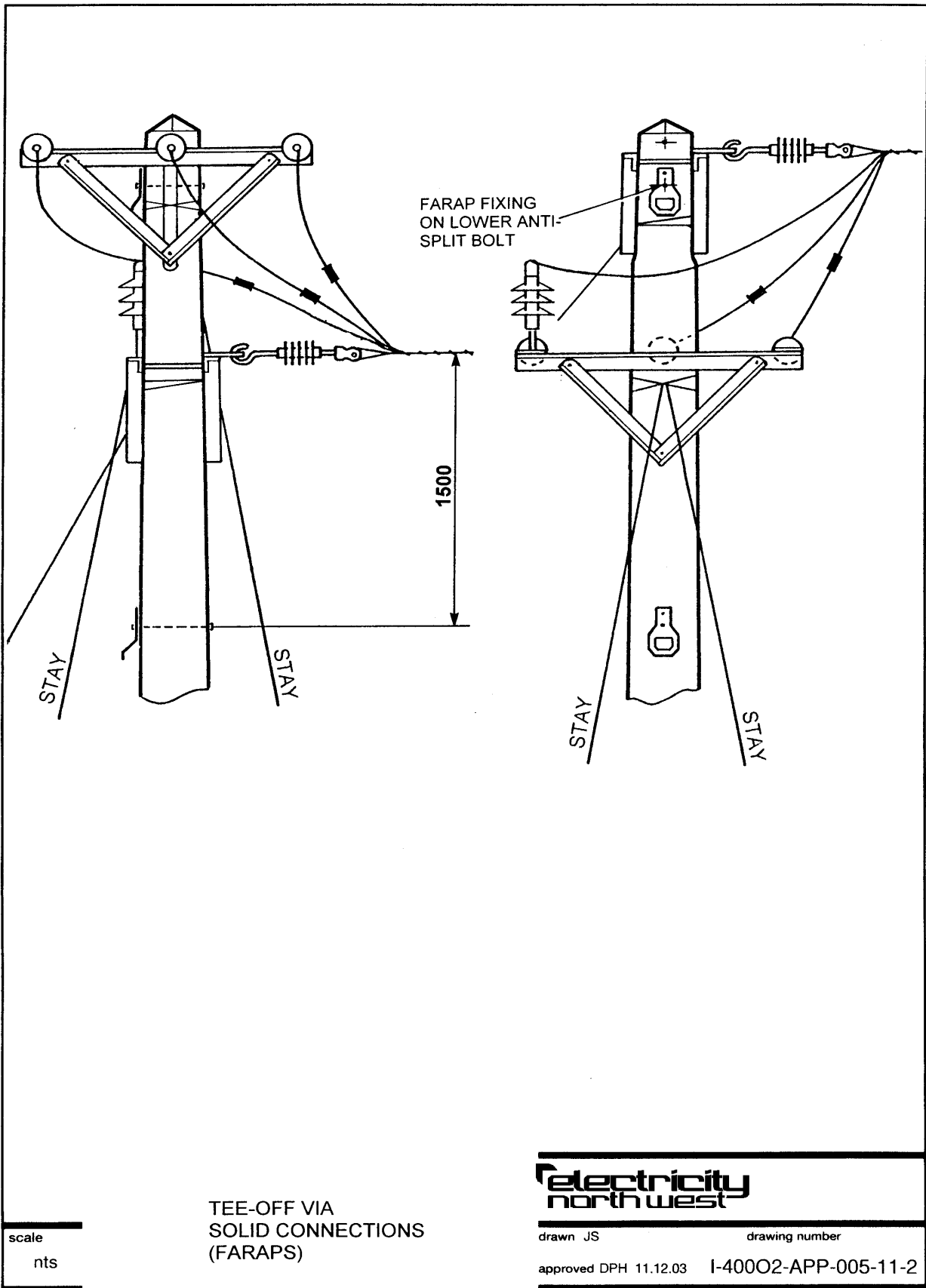
DRAWING NUMBER	TITLE
I-40002-APP-001	Single Pole (FARAPs)
I-40002-APP-002	Single Pole with Stays (FARAPs)
I-40002-APP-003	Single Pole with Plant and/or Stays (FARAPs)
I-40002-APP-004	H-Pole with Plant and/or Stays (FARAPs)
I-40002-APP-005	Tee Off Via Solid Connections (FARAPs)
I-40002-APP-006	Tee Off Via Fuses/Links (FARAPs)
I-40002-APP-007	Spare
I-40002-APP-008	Spare
I-40002-APP-009	Spare
I-40002-APP-010	Conductor Fitting Applications - Compression Dead End with Terminal Lug (Sheet 1)

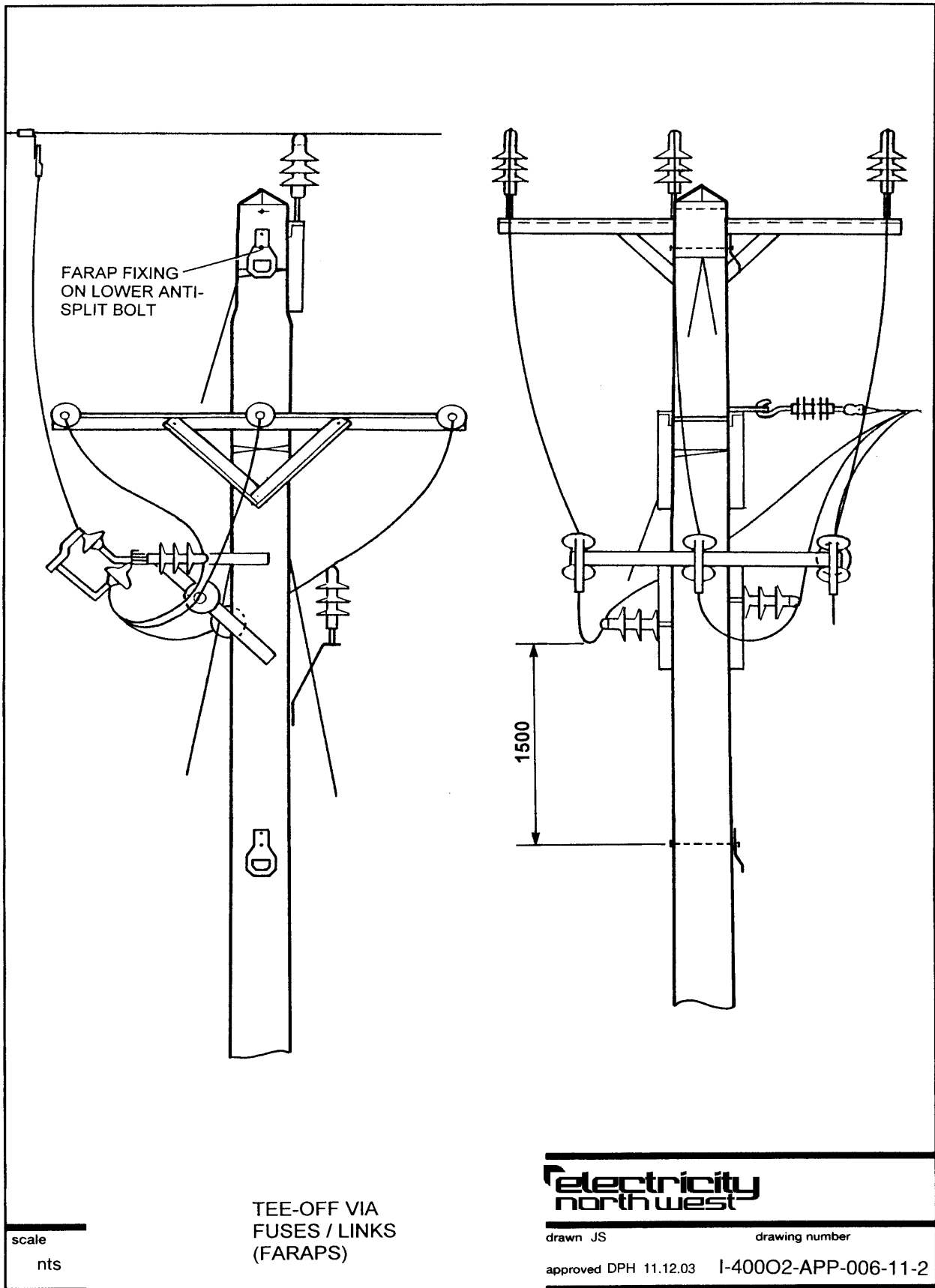


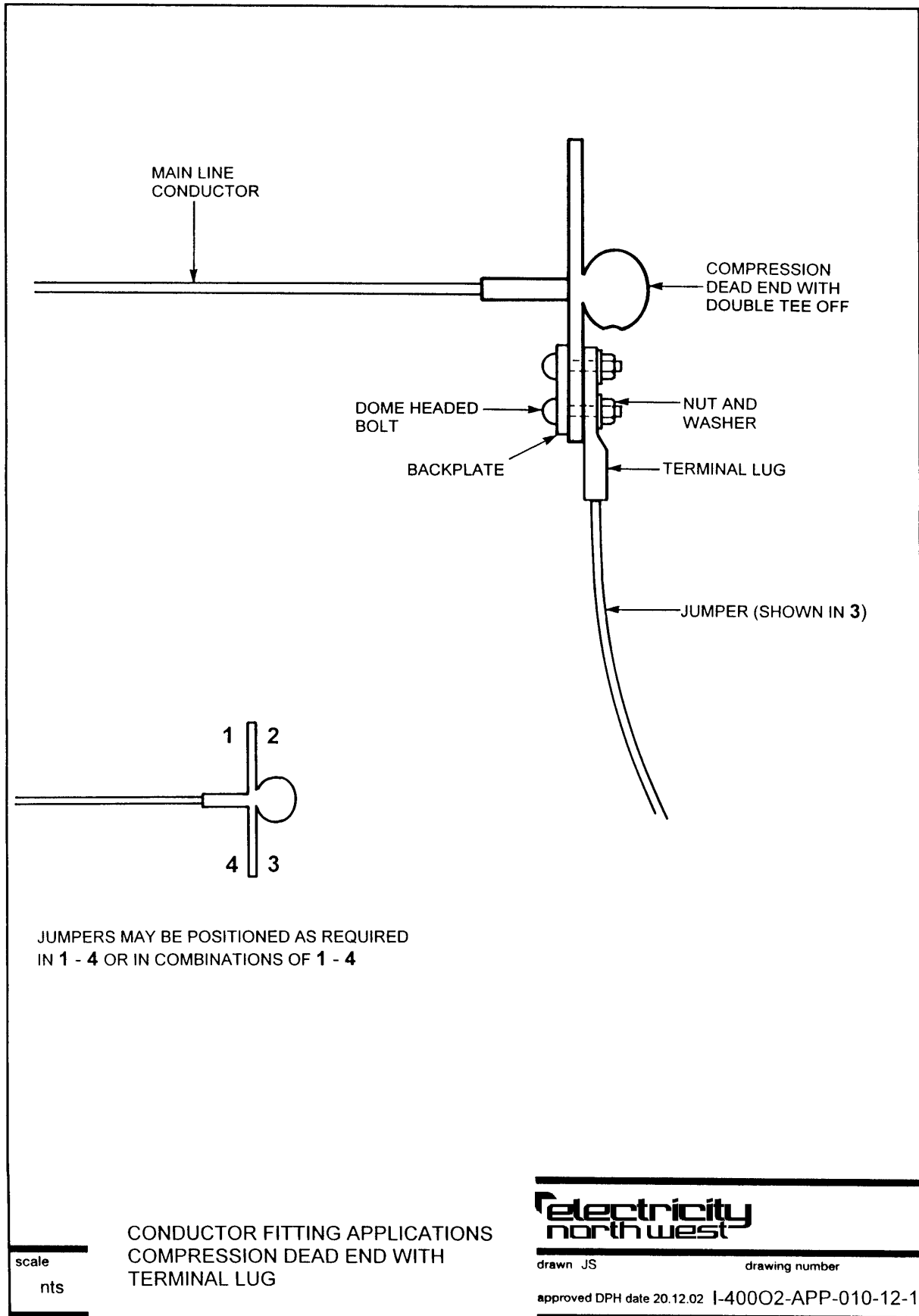














## Appendix B – Index to Bare-Wire Line Materials

This Appendix comprises an index to all materials that are included in this specification. The index is in alphabetical order, and is provided as a means of identifying acceptable materials that can be used in bare-wire line construction (for example, in circumstances where a standard general arrangement may need to be modified). In addition to specification/reference and CC No for each material, the following index cross-references each material to any associated drawings - contained in this specification - on which that material is used.

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
ACDs	400A2	Ref ES400A2	I-40003-GA-001
	400A2	Ref ES400A2	I-40003-GA-002
	400A2	Ref ES400A2	I-40003-GA-003
	400A2	Ref ES400A2	I-40003-GA-004
	400A2	Ref ES400A2	I-40003-GA-005
	400A2	Ref ES400A2	I-40003-GA-006
	400A2	Ref ES400A2	I-40003-GA-007
	400A2	Ref ES400A2	I-40003-GA-008
	400A2	Ref ES400A2	I-40003-GA-009
	400A2	Ref ES400A2	I-40003-GA-010
	400A2	Ref ES400A2	I-40003-GA-011
	400A2	Ref ES400A2	I-40003-GA-012
	400A2	Ref ES400A2	I-40003-GA-013
	400A2	Ref ES400A2	I-40003-GA-014
	400A2	Ref ES400A2	I-40003-GA-015
	400A2	Ref ES400A2	I-40003-GA-016
	400A2	Ref ES400A2	I-40003-GA-017
	400A2	Ref ES400A2	I-40003-GA-018
	400A2	Ref ES400A2	I-40003-GA-019
	400A2	Ref ES400A2	I-40003-GA-020
	400A2	Ref ES400A2	I-40003-GA-021
	400A2	Ref ES400A2	I-40003-GA-022
	400A2	Ref ES400A2	I-40003-GA-023
	400A2	Ref ES400A2	I-40003-GA-024
	400A2	Ref ES400A2	I-40003-GA-025
	400A2	Ref ES400A2	I-40003-GA-026
	400A2	Ref ES400A2	I-40003-GA-027
	400A2	Ref ES400A2	I-40003-GA-028

<b>INDEX TO MATERIALS</b>			
<b>ITEM</b>	<b>SPECIFICATION (ES)</b>	<b>CC NO</b>	<b>USED ON DWG (THIS SPEC)</b>
	400A2	Ref ES400A2	I-40003-GA-029
	400A2	Ref ES400A2	I-40003-GA-030
	400A2	Ref ES400A2	I-40003-GA-031
	400A2	Ref ES400A2	I-40003-GA-032
	400A2	Ref ES400A2	I-40003-GA-033
	400A2	Ref ES400A2	I-40003-GA-034
	400A2	Ref ES400A2	I-40003-GA-035
	400A2	Ref ES400A2	I-40003-GA-036
	400A2	Ref ES400A2	I-40003-GA-037
	400A2	Ref ES400A2	I-40003-GA-038
	400A2	Ref ES400A2	I-40003-GA-039
	400A2	Ref ES400A2	I-40003-GA-040
	400A2	Ref ES400A2	I-40003-GA-041
	400A2	Ref ES400A2	I-40003-GA-042
	400A2	Ref ES400A2	I-40003-GA-043
	400A2	Ref ES400A2	I-40003-GA-044
	400A2	Ref ES400A2	I-40003-GA-045
	400A2	Ref ES400A2	I-40003-GA-046
	400A2	Ref ES400A2	I-40003-GA-047
	400A2	Ref ES400A2	I-40003-GA-048
Aerial Switch	315	Ref ES315	I-40003-GA-033
	315	Ref ES315	I-40003-GA-034
	315	Ref ES315	I-40003-GA-035
	315	Ref ES315	I-40003-GA-036
Auto-Recloser	315	Ref ES315	I-40003-GA-029
	315	Ref ES315	I-40003-GA-030
Auto-Sectionaliser	315	Ref ES315	I-40003-GA-029
	315	Ref ES315	I-40003-GA-030
Ball End Hook	400S11	122297	I-40003-GA-004
	400S11	122297	I-40003-GA-006
	400S11	122297	I-40003-GA-008
	400S11	122297	I-40003-GA-010
	400S11	122297	I-40003-GA-013
	400S11	122297	I-40003-GA-017
	400S11	122297	I-40003-GA-019

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400S11	122297	I-40003-GA-023
	400S11	122297	I-40003-GA-025
	400S11	122297	I-40003-GA-027
	400S11	122297	I-40003-GA-030
	400S11	122297	I-40003-GA-032
	400S11	122297	I-40003-GA-034
	400S11	122297	I-40003-GA-036
	400S11	122297	I-40003-GA-038
	400S11	122297	I-40003-GA-040
	400S11	122297	I-40003-GA-048
	400S11	122298	I-40003-GA-044
Bolt, M12	400F1	Ref ES400F1	I-40003-GA-044
Bolt, M20, 300mm	400F1	107735	I-40003-GA-001
	400F1	107735	I-40003-GA-002
	400F1	107735	I-40003-GA-003
	400F1	107735	I-40003-GA-004
	400F1	107735	I-40003-GA-005
	400F1	107735	I-40003-GA-006
	400F1	107735	I-40003-GA-007
	400F1	107735	I-40003-GA-008
	400F1	107735	I-40003-GA-009
	400F1	107735	I-40003-GA-010
	400F1	107735	I-40003-GA-011
	400F1	107735	I-40003-GA-012
	400F1	107735	I-40003-GA-013
	400F1	107735	I-40003-GA-014
	400F1	107735	I-40003-GA-015
	400F1	107735	I-40003-GA-016
	400F1	107735	I-40003-GA-017
	400F1	107735	I-40003-GA-018
	400F1	107735	I-40003-GA-019
	400F1	107735	I-40003-GA-020
	400F1	107735	I-40003-GA-021
	400F1	107735	I-40003-GA-022
	400F1	107735	I-40003-GA-023

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400F1	107735	I-40003-GA-024
	400F1	107735	I-40003-GA-025
	400F1	107735	I-40003-GA-026
	400F1	107735	I-40003-GA-027
	400F1	107735	I-40003-GA-028
	400F1	107735	I-40003-GA-029
	400F1	107735	I-40003-GA-030
	400F1	107735	I-40003-GA-031
	400F1	107735	I-40003-GA-032
	400F1	107735	I-40003-GA-033
	400F1	107735	I-40003-GA-034
	400F1	107735	I-40003-GA-035
	400F1	107735	I-40003-GA-036
	400F1	107735	I-40003-GA-037
	400F1	107735	I-40003-GA-038
	400F1	107735	I-40003-GA-039
	400F1	107735	I-40003-GA-040
	400F1	107735	I-40003-GA-041
	400F1	107735	I-40003-GA-042
	400F1	107735	I-40003-GA-043
	400F1	107735	I-40003-GA-045
	400F1	107735	I-40003-GA-046
	400F1	107735	I-40003-GA-047
	400F1	107735	I-40003-GA-048
Bolt, M20, 375mm	400F1	107743	I-40003-GA-044
Bolt, M20, 60mm	400F1	107581	I-40003-GA-001
	400F1	107581	I-40003-GA-002
	400F1	107581	I-40003-GA-003
	400F1	107581	I-40003-GA-004
	400F1	107581	I-40003-GA-005
	400F1	107581	I-40003-GA-006
	400F1	107581	I-40003-GA-007
	400F1	107581	I-40003-GA-008
	400F1	107581	I-40003-GA-009
	400F1	107581	I-40003-GA-010

<b>INDEX TO MATERIALS</b>			
<b>ITEM</b>	<b>SPECIFICATION (ES)</b>	<b>CC NO</b>	<b>USED ON DWG (THIS SPEC)</b>
	400F1	107581	I-40003-GA-011
	400F1	107581	I-40003-GA-012
	400F1	107581	I-40003-GA-013
	400F1	107581	I-40003-GA-014
	400F1	107581	I-40003-GA-015
	400F1	107581	I-40003-GA-016
	400F1	107581	I-40003-GA-017
	400F1	107581	I-40003-GA-018
	400F1	107581	I-40003-GA-019
	400F1	107581	I-40003-GA-020
	400F1	107581	I-40003-GA-021
	400F1	107581	I-40003-GA-022
	400F1	107581	I-40003-GA-023
	400F1	107581	I-40003-GA-024
	400F1	107581	I-40003-GA-025
	400F1	107581	I-40003-GA-026
	400F1	107581	I-40003-GA-027
	400F1	107581	I-40003-GA-028
	400F1	107581	I-40003-GA-029
	400F1	107581	I-40003-GA-030
	400F1	107581	I-40003-GA-031
	400F1	107581	I-40003-GA-032
	400F1	107581	I-40003-GA-033
	400F1	107581	I-40003-GA-034
	400F1	107581	I-40003-GA-035
	400F1	107581	I-40003-GA-036
	400F1	107581	I-40003-GA-037
	400F1	107581	I-40003-GA-038
	400F1	107581	I-40003-GA-039
	400F1	107581	I-40003-GA-040
	400F1	107581	I-40003-GA-041
	400F1	107581	I-40003-GA-042
	400F1	107581	I-40003-GA-043
	400F1	107581	I-40003-GA-044
	400F1	107581	I-40003-GA-045

**INDEX TO MATERIALS**

ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400F1	107581	I-40003-GA-046
	400F1	107581	I-40003-GA-047
	400F1	107581	I-40003-GA-048
Bolt, M20, 750mm	400F1	107790	I-40003-GA-001
	400F1	107790	I-40003-GA-002
	400F1	107790	I-40003-GA-003
	400F1	107790	I-40003-GA-004
	400F1	107790	I-40003-GA-007
	400F1	107790	I-40003-GA-008
	400F1	107790	I-40003-GA-009
	400F1	107790	I-40003-GA-010
	400F1	107790	I-40003-GA-011
	400F1	107790	I-40003-GA-012
	400F1	107790	I-40003-GA-013
	400F1	107790	I-40003-GA-014
	400F1	107790	I-40003-GA-015
	400F1	107790	I-40003-GA-016
	400F1	107790	I-40003-GA-017
	400F1	107790	I-40003-GA-018
	400F1	107790	I-40003-GA-019
	400F1	107790	I-40003-GA-020
	400F1	107790	I-40003-GA-021
	400F1	107790	I-40003-GA-022
	400F1	107790	I-40003-GA-023
	400F1	107790	I-40003-GA-024
	400F1	107790	I-40003-GA-025
	400F1	107790	I-40003-GA-029
	400F1	107790	I-40003-GA-030
	400F1	107790	I-40003-GA-031
	400F1	107790	I-40003-GA-032
	400F1	107790	I-40003-GA-033
	400F1	107790	I-40003-GA-034
	400F1	107790	I-40003-GA-037
	400F1	107790	I-40003-GA-038
	400F1	107790	I-40003-GA-039

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400F1	107790	I-40003-GA-040
	400F1	107790	I-40003-GA-041
	400F1	107790	I-40003-GA-042
	400F1	107790	I-40003-GA-043
	400F1	107790	I-40003-GA-044
	400F1	107790	I-40003-GA-045
	400F1	107790	I-40003-GA-046
Cable Guard	400G1	Ref ES400G1	I-40003-GA-037
	400G1	Ref ES400G1	I-40003-GA-038
	400G1	Ref ES400G1	I-40003-GA-039
	400G1	Ref ES400G1	I-40003-GA-040
	400G1	Ref ES400G1	I-40003-GA-041
	400G1	Ref ES400G1	I-40003-GA-042
	400G1	Ref ES400G1	I-40003-GA-043
Cable Related Items	400C12	Ref ES400C12	I-40003-GA-039
	400C12	Ref ES400C12	I-40003-GA-037
	400C12	Ref ES400C12	I-40003-GA-038
	400C12	Ref ES400C12	I-40003-GA-040
	400C12	Ref ES400C12	I-40003-GA-041
	400C12	Ref ES400C12	I-40003-GA-042
	400C12	Ref ES400C12	I-40003-GA-043
	400C12	Ref ES400C12	I-40003-GA-044
Cleat	400C20	various	I-40003-GA-043
	400C20	various	I-40003-GA-044
Coach Screw	400F1	126810	I-40003-GA-001
	400F1	126810	I-40003-GA-002
	400F1	126810	I-40003-GA-003
	400F1	126810	I-40003-GA-004
	400F1	126810	I-40003-GA-005
	400F1	126810	I-40003-GA-006
	400F1	126810	I-40003-GA-007
	400F1	126810	I-40003-GA-008
	400F1	126810	I-40003-GA-009
	400F1	126810	I-40003-GA-010
	400F1	126810	I-40003-GA-011

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400F1	126810	I-40003-GA-012
	400F1	126810	I-40003-GA-013
	400F1	126810	I-40003-GA-014
	400F1	126810	I-40003-GA-015
	400F1	126810	I-40003-GA-016
	400F1	126810	I-40003-GA-017
	400F1	126810	I-40003-GA-018
	400F1	126810	I-40003-GA-019
	400F1	126810	I-40003-GA-020
	400F1	126810	I-40003-GA-021
	400F1	126810	I-40003-GA-022
	400F1	126810	I-40003-GA-023
	400F1	126810	I-40003-GA-024
	400F1	126810	I-40003-GA-025
	400F1	126810	I-40003-GA-026
	400F1	126810	I-40003-GA-027
	400F1	126810	I-40003-GA-028
	400F1	126810	I-40003-GA-029
	400F1	126810	I-40003-GA-030
	400F1	126810	I-40003-GA-031
	400F1	126810	I-40003-GA-032
	400F1	126810	I-40003-GA-033
	400F1	126810	I-40003-GA-034
	400F1	126810	I-40003-GA-035
	400F1	126810	I-40003-GA-036
	400F1	126810	I-40003-GA-037
	400F1	126810	I-40003-GA-038
	400F1	126810	I-40003-GA-039
	400F1	126810	I-40003-GA-040
	400F1	126810	I-40003-GA-041
	400F1	126810	I-40003-GA-042
	400F1	126810	I-40003-GA-045
	400F1	126810	I-40003-GA-046
	400F1	126810	I-40003-GA-047
	400F1	126810	I-40003-GA-048



INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
Compression Dead End	400C29	130910	I-40003-GA-004
	400C29	130910	I-40003-GA-006
	400C29	130910	I-40003-GA-008
	400C29	130910	I-40003-GA-010
	400C29	130910	I-40003-GA-013
	400C29	130910	I-40003-GA-017
	400C29	130910	I-40003-GA-019
	400C29	130910	I-40003-GA-023
	400C29	130910	I-40003-GA-025
	400C29	130910	I-40003-GA-027
	400C29	130910	I-40003-GA-029
	400C29	130910	I-40003-GA-030
	400C29	130910	I-40003-GA-032
	400C29	130910	I-40003-GA-034
	400C29	130910	I-40003-GA-036
	400C29	130910	I-40003-GA-038
	400C29	130910	I-40003-GA-040
	400C29	130910	I-40003-GA-048
	400C29	130920	I-40003-GA-004
	400C29	130920	I-40003-GA-006
	400C29	130920	I-40003-GA-008
	400C29	130920	I-40003-GA-010
	400C29	130920	I-40003-GA-013
	400C29	130920	I-40003-GA-017
	400C29	130920	I-40003-GA-019
	400C29	130920	I-40003-GA-023
	400C29	130920	I-40003-GA-025
	400C29	130920	I-40003-GA-027
	400C29	130920	I-40003-GA-029
	400C29	130920	I-40003-GA-030
	400C29	130920	I-40003-GA-032
	400C29	130920	I-40003-GA-034
	400C29	130920	I-40003-GA-036
	400C29	130920	I-40003-GA-038
	400C29	130920	I-40003-GA-040

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400C29	130920	I-40003-GA-048
	400C29	130930	I-40003-GA-004
	400C29	130930	I-40003-GA-006
	400C29	130930	I-40003-GA-008
	400C29	130930	I-40003-GA-010
	400C29	130930	I-40003-GA-013
	400C29	130930	I-40003-GA-017
	400C29	130930	I-40003-GA-019
	400C29	130930	I-40003-GA-023
	400C29	130930	I-40003-GA-025
	400C29	130930	I-40003-GA-027
	400C29	130930	I-40003-GA-029
	400C29	130930	I-40003-GA-030
	400C29	130930	I-40003-GA-032
	400C29	130930	I-40003-GA-034
	400C29	130930	I-40003-GA-036
	400C29	130930	I-40003-GA-038
	400C29	130930	I-40003-GA-040
	400C29	130930	I-40003-GA-044
	400C29	130930	I-40003-GA-048
	400C29	130940	I-40003-GA-004
	400C29	130940	I-40003-GA-006
	400C29	130940	I-40003-GA-008
	400C29	130940	I-40003-GA-010
	400C29	130940	I-40003-GA-013
	400C29	130940	I-40003-GA-017
	400C29	130940	I-40003-GA-019
	400C29	130940	I-40003-GA-023
	400C29	130940	I-40003-GA-025
	400C29	130940	I-40003-GA-027
	400C29	130940	I-40003-GA-029
	400C29	130940	I-40003-GA-030
	400C29	130940	I-40003-GA-032
	400C29	130940	I-40003-GA-034
	400C29	130940	I-40003-GA-036

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400C29	130940	I-40003-GA-038
	400C29	130940	I-40003-GA-040
	400C29	130940	I-40003-GA-048
	400C29	130950	I-40003-GA-004
	400C29	130950	I-40003-GA-006
	400C29	130950	I-40003-GA-008
	400C29	130950	I-40003-GA-010
	400C29	130950	I-40003-GA-013
	400C29	130950	I-40003-GA-017
	400C29	130950	I-40003-GA-019
	400C29	130950	I-40003-GA-023
	400C29	130950	I-40003-GA-025
	400C29	130950	I-40003-GA-027
	400C29	130950	I-40003-GA-029
	400C29	130950	I-40003-GA-030
	400C29	130950	I-40003-GA-032
	400C29	130950	I-40003-GA-034
	400C29	130950	I-40003-GA-036
	400C29	130950	I-40003-GA-038
	400C29	130950	I-40003-GA-040
	400C29	130950	I-40003-GA-048
	400C29	130960	I-40003-GA-004
	400C29	130960	I-40003-GA-006
	400C29	130960	I-40003-GA-008
	400C29	130960	I-40003-GA-010
	400C29	130960	I-40003-GA-013
	400C29	130960	I-40003-GA-017
	400C29	130960	I-40003-GA-019
	400C29	130960	I-40003-GA-023
	400C29	130960	I-40003-GA-025
	400C29	130960	I-40003-GA-027
	400C29	130960	I-40003-GA-029
	400C29	130960	I-40003-GA-030
	400C29	130960	I-40003-GA-032
	400C29	130960	I-40003-GA-034

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400C29	130960	I-40003-GA-044
	400C29	130960	I-40003-GA-048
	400C29	130970	I-40003-GA-004
	400C29	130970	I-40003-GA-006
	400C29	130970	I-40003-GA-010
	400C29	130970	I-40003-GA-044
	400C29	130970	I-40003-GA-048
Conductor Jumper	400C3	Ref ES400C3	I-40003-GA-004
	400C3	Ref ES400C3	I-40003-GA-006
	400C3	Ref ES400C3	I-40003-GA-008
	400C3	Ref ES400C3	I-40003-GA-010
	400C3	Ref ES400C3	I-40003-GA-012
	400C3	Ref ES400C3	I-40003-GA-013
	400C3	Ref ES400C3	I-40003-GA-029
	400C3	Ref ES400C3	I-40003-GA-030
	400C3	Ref ES400C3	I-40003-GA-032
	400C3	Ref ES400C3	I-40003-GA-034
	400C3	Ref ES400C3	I-40003-GA-036
	400C3	Ref ES400C3	I-40003-GA-038
	400C3	Ref ES400C3	I-40003-GA-039
	400C3	Ref ES 400C3	I-40003-GA-040
	400C3	Ref ES 400C3	I-40003-GA-041
	400C3	Ref ES 400C3	I-40003-GA-042
	400C3	Ref ES400C3	I-40003-GA-048
Conductor, Flexible, 65mm <sup>2</sup>	400C3	012130	I-40003-GA-014
	400C3	012130	I-40003-GA-015
	400C3	012130	I-40003-GA-017
	400C3	012130	I-40003-GA-018
	400C3	012130	I-40003-GA-019
	400C3	012130	I-40003-GA-020
	400C3	012130	I-40003-GA-021
	400C3	012130	I-40003-GA-023
	400C3	012130	I-40003-GA-024
	400C3	012130	I-40003-GA-025
	400C3	012130	I-40003-GA-026

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400C3	012130	I-40003-GA-027
	400C3	012130	I-40003-GA-028
	400C3	012130	I-40003-GA-040
	400C3	012130	I-40003-GA-041
Conductor, HDCu, 50mm <sup>2</sup>	400C3	Ref ES400C3	I-40003-GA-044
Conductor, HDCu, 70mm <sup>2</sup> (green/yellow covered)	400C3	357243	I-40003-GA-044
Conductor, HDCu, 100mm <sup>2</sup>	400C3	013199	I-40003-GA-044
Conductor, HDCu, 150mm <sup>2</sup>	400C3	013688	I-40003-GA-044
Conductor, HDCu, 200mm <sup>2</sup>	400C3	013690	I-40003-GA-044
Crossarm	400S11	133221	I-40003-GA-047
	400S11	133221	I-40003-GA-048
	400S11	133310	I-40003-GA-001
	400S11	133310	I-40003-GA-002
	400S11	133310	I-40003-GA-011
	400S11	133310	I-40003-GA-012
	400S11	133310	I-40003-GA-013
	400S11	133310	I-40003-GA-014
	400S11	133310	I-40003-GA-015
	400S11	133310	I-40003-GA-016
	400S11	133310	I-40003-GA-020
	400S11	133310	I-40003-GA-021
	400S11	133310	I-40003-GA-028
	400S11	133310	I-40003-GA-029
	400S11	133310	I-40003-GA-041
	400S11	133310	I-40003-GA-042
	400S11	133310	I-40003-GA-045
	400S11	133310	I-40003-GA-046
	400S11	133329	I-40003-GA-003
	400S11	133329	I-40003-GA-004
	400S11	133329	I-40003-GA-005
	400S11	133329	I-40003-GA-006
	400S11	133329	I-40003-GA-030
	400S11	133329	I-40003-GA-031
	400S11	133329	I-40003-GA-032
	400S11	133329	I-40003-GA-033

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400S11	133329	I-40003-GA-034
	400S11	133329	I-40003-GA-035
	400S11	133329	I-40003-GA-036
	400S11	133337	I-40003-GA-007
	400S11	133337	I-40003-GA-008
	400S11	133337	I-40003-GA-009
	400S11	133337	I-40003-GA-010
	400S11	133337	I-40003-GA-011
	400S11	133337	I-40003-GA-012
	400S11	133337	I-40003-GA-013
	400S11	133337	I-40003-GA-017
	400S11	133337	I-40003-GA-018
	400S11	133337	I-40003-GA-019
	400S11	133337	I-40003-GA-022
	400S11	133337	I-40003-GA-023
	400S11	133337	I-40003-GA-024
	400S11	133337	I-40003-GA-025
	400S11	133337	I-40003-GA-026
	400S11	133337	I-40003-GA-027
	400S11	133337	I-40003-GA-037
	400S11	133337	I-40003-GA-038
	400S11	133337	I-40003-GA-039
	400S11	133337	I-40003-GA-040
	400S11	133337	I-40003-GA-043
	400S11	133337	I-40003-GA-044
	400S11	133615	I-40003-GA-030
	400S11	133615	I-40003-GA-031
	400S11	133615	I-40003-GA-032
Crossarm Brace	400S11	133335	I-40003-GA-007
	400S11	133335	I-40003-GA-008
	400S11	133335	I-40003-GA-011
	400S11	133335	I-40003-GA-012
	400S11	133335	I-40003-GA-013
	400S11	133335	I-40003-GA-016
	400S11	133335	I-40003-GA-017

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400S11	133335	I-40003-GA-018
	400S11	133335	I-40003-GA-019
	400S11	133335	I-40003-GA-022
	400S11	133335	I-40003-GA-023
	400S11	133335	I-40003-GA-024
	400S11	133335	I-40003-GA-025
	400S11	133335	I-40003-GA-037
	400S11	133335	I-40003-GA-038
	400S11	133335	I-40003-GA-039
	400S11	133335	I-40003-GA-040
Crossarm Strut	400S11	133353	I-40003-GA-001
	400S11	133353	I-40003-GA-002
	400S11	133353	I-40003-GA-003
	400S11	133353	I-40003-GA-004
	400S11	133353	I-40003-GA-007
	400S11	133353	I-40003-GA-008
	400S11	133353	I-40003-GA-011
	400S11	133353	I-40003-GA-012
	400S11	133353	I-40003-GA-013
	400S11	133353	I-40003-GA-014
	400S11	133353	I-40003-GA-015
	400S11	133353	I-40003-GA-016
	400S11	133353	I-40003-GA-017
	400S11	133353	I-40003-GA-018
	400S11	133353	I-40003-GA-019
	400S11	133353	I-40003-GA-020
	400S11	133353	I-40003-GA-021
	400S11	133353	I-40003-GA-022
	400S11	133353	I-40003-GA-023
	400S11	133353	I-40003-GA-024
	400S11	133353	I-40003-GA-025
	400S11	133353	I-40003-GA-028
	400S11	133353	I-40003-GA-029
	400S11	133353	I-40003-GA-030
	400S11	133353	I-40003-GA-031

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400S11	133353	I-40003-GA-032
	400S11	133353	I-40003-GA-033
	400S11	133353	I-40003-GA-034
	400S11	133353	I-40003-GA-037
	400S11	133353	I-40003-GA-038
	400S11	133353	I-40003-GA-039
	400S11	133353	I-40003-GA-040
	400S11	133353	I-40003-GA-041
	400S11	133353	I-40003-GA-042
	400S11	133353	I-40003-GA-045
	400S11	133353	I-40003-GA-046
Danger Plate	400N1	195251	I-40003-GA-001
	400N1	195251	I-40003-GA-002
	400N1	195251	I-40003-GA-003
	400N1	195251	I-40003-GA-004
	400N1	195251	I-40003-GA-005
	400N1	195251	I-40003-GA-006
	400N1	195251	I-40003-GA-007
	400N1	195251	I-40003-GA-008
	400N1	195251	I-40003-GA-009
	400N1	195251	I-40003-GA-010
	400N1	195251	I-40003-GA-011
	400N1	195251	I-40003-GA-012
	400N1	195251	I-40003-GA-013
	400N1	195251	I-40003-GA-014
	400N1	195251	I-40003-GA-015
	400N1	195251	I-40003-GA-016
	400N1	195251	I-40003-GA-017
	400N1	195251	I-40003-GA-018
	400N1	195251	I-40003-GA-019
	400N1	195251	I-40003-GA-020
	400N1	195251	I-40003-GA-021
	400N1	195251	I-40003-GA-022
	400N1	195251	I-40003-GA-023
	400N1	195251	I-40003-GA-024



<b>INDEX TO MATERIALS</b>			
<b>ITEM</b>	<b>SPECIFICATION (ES)</b>	<b>CC NO</b>	<b>USED ON DWG (THIS SPEC)</b>
	400N1	195251	I-40003-GA-025
	400N1	195251	I-40003-GA-026
	400N1	195251	I-40003-GA-027
	400N1	195251	I-40003-GA-028
	400N1	195251	I-40003-GA-029
	400N1	195251	I-40003-GA-030
	400N1	195251	I-40003-GA-031
	400N1	195251	I-40003-GA-032
	400N1	195251	I-40003-GA-033
	400N1	195251	I-40003-GA-034
	400N1	195251	I-40003-GA-035
	400N1	195251	I-40003-GA-036
	400N1	195251	I-40003-GA-037
	400N1	195251	I-40003-GA-038
	400N1	195251	I-40003-GA-039
	400N1	195251	I-40003-GA-040
	400N1	195251	I-40003-GA-041
	400N1	195251	I-40003-GA-042
	400N1	195251	I-40003-GA-043
	400N1	195251	I-40003-GA-044
	400N1	195251	I-40003-GA-045
	400N1	195251	I-40003-GA-046
	400N1	195251	I-40003-GA-047
	400N1	195251	I-40003-GA-048
Dead End Back Plate	400C29	121020	I-40003-GA-004
	400C29	121020	I-40003-GA-006
	400C29	121020	I-40003-GA-008
	400C29	121020	I-40003-GA-010
	400C29	121020	I-40003-GA-013
	400C29	121020	I-40003-GA-017
	400C29	121020	I-40003-GA-019
	400C29	121020	I-40003-GA-023
	400C29	121020	I-40003-GA-025
	400C29	121020	I-40003-GA-027
	400C29	121020	I-40003-GA-029

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400C29	121020	I-40003-GA-030
	400C29	121020	I-40003-GA-032
	400C29	121020	I-40003-GA-034
	400C29	121020	I-40003-GA-036
	400C29	121020	I-40003-GA-038
	400C29	121020	I-40003-GA-040
	400C29	121020	I-40003-GA-044
	400C29	121020	I-40003-GA-048
Dropper Kit 1	400C29	124871	I-40003-GA-014
	400C29	124871	I-40003-GA-017
	400C29	124871	I-40003-GA-020
	400C29	124871	I-40003-GA-023
Dropper Kit 2	400C29	121010	I-40003-GA-015
	400C29	121010	I-40003-GA-019
	400C29	121010	I-40003-GA-021
	400C29	121010	I-40003-GA-024
	400C29	121010	I-40003-GA-025
	400C29	121010	I-40003-GA-026
	400C29	121010	I-40003-GA-027
	400C29	121010	I-40003-GA-028
Dropper Kit 4	400C29	124883	I-40003-GA-038
	400C29	124883	I-40003-GA-040
	400C29	124883	I-40003-GA-041
FARAP	400S11	260820	I-40003-GA-001
	400S11	260820	I-40003-GA-002
	400S11	260820	I-40003-GA-003
	400S11	260820	I-40003-GA-004
	400S11	260820	I-40003-GA-005
	400S11	260820	I-40003-GA-006
	400S11	260820	I-40003-GA-007
	400S11	260820	I-40003-GA-008
	400S11	260820	I-40003-GA-009
	400S11	260820	I-40003-GA-010
	400S11	260820	I-40003-GA-011
	400S11	260820	I-40003-GA-012

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400S11	260820	I-40003-GA-013
	400S11	260820	I-40003-GA-014
	400S11	260820	I-40003-GA-015
	400S11	260820	I-40003-GA-016
	400S11	260820	I-40003-GA-017
	400S11	260820	I-40003-GA-018
	400S11	260820	I-40003-GA-019
	400S11	260820	I-40003-GA-020
	400S11	260820	I-40003-GA-021
	400S11	260820	I-40003-GA-022
	400S11	260820	I-40003-GA-023
	400S11	260820	I-40003-GA-024
	400S11	260820	I-40003-GA-025
	400S11	260820	I-40003-GA-026
	400S11	260820	I-40003-GA-027
	400S11	260820	I-40003-GA-028
	400S11	260820	I-40003-GA-029
	400S11	260820	I-40003-GA-030
	400S11	260820	I-40003-GA-031
	400S11	260820	I-40003-GA-032
	400S11	260820	I-40003-GA-033
	400S11	260820	I-40003-GA-034
	400S11	260820	I-40003-GA-035
	400S11	260820	I-40003-GA-036
	400S11	260820	I-40003-GA-037
	400S11	260820	I-40003-GA-038
	400S11	260820	I-40003-GA-039
	400S11	260820	I-40003-GA-040
	400S11	260820	I-40003-GA-041
	400S11	260820	I-40003-GA-042
	400S11	260820	I-40003-GA-045
	400S11	260820	I-40003-GA-046
	400S11	260820	I-40003-GA-047
	400S11	260820	I-40003-GA-048
Foundation Fasteners Kit (Refer to drawing I-40002-GA-047)	400S11	133540	I-40003-GA-005

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400S11	133540	I-40003-GA-009
	400S11	133540	I-40003-GA-010
	400S11	133540	I-40003-GA-026
	400S11	133540	I-40003-GA-027
	400S11	133540	I-40003-GA-028
	400S11	133540	I-40003-GA-035
	400S11	133540	I-40003-GA-036
	400S11	133540	I-40003-GA-043
	400S11	133540	I-40003-GA-044
	400S11	133540	I-40003-GA-047
	400S11	133540	I-40003-GA-048
Fuses/Links	315	Ref ES315	I-40003-GA-012
	315	Ref ES315	I-40003-GA-013
	315	Ref ES315	I-40003-GA-015
	315	Ref ES315	I-40003-GA-018
	315	Ref ES315	I-40003-GA-019
	315	Ref ES315	I-40003-GA-021
	315	Ref ES315	I-40003-GA-024
	315	Ref ES315	I-40003-GA-025
	315	Ref ES315	I-40003-GA-026
	315	Ref ES315	I-40003-GA-027
	315	Ref ES321	I-40003-GA-028
	315	Ref ES315	I-40003-GA-031
	315	Ref ES315	I-40003-GA-032
	315	Ref ES315	I-40003-GA-039
	315	Ref ES315	I-40003-GA-040
	315	Ref ES315	I-40003-GA-042
Gouge-mark Plate	400N1	995610	I-40003-GA-001
	400N1	995610	I-40003-GA-002
	400N1	995610	I-40003-GA-003
	400N1	995610	I-40003-GA-004
	400N1	995610	I-40003-GA-005
	400N1	995610	I-40003-GA-006
	400N1	995610	I-40003-GA-007
	400N1	995610	I-40003-GA-008

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400N1	995610	I-40003-GA-009
	400N1	995610	I-40003-GA-010
	400N1	995610	I-40003-GA-011
	400N1	995610	I-40003-GA-012
	400N1	995610	I-40003-GA-013
	400N1	995610	I-40003-GA-014
	400N1	995610	I-40003-GA-015
	400N1	995610	I-40003-GA-016
	400N1	995610	I-40003-GA-017
	400N1	995610	I-40003-GA-018
	400N1	995610	I-40003-GA-019
	400N1	995610	I-40003-GA-020
	400N1	995610	I-40003-GA-021
	400N1	995610	I-40003-GA-022
	400N1	995610	I-40003-GA-023
	400N1	995610	I-40003-GA-024
	400N1	995610	I-40003-GA-025
	400N1	995610	I-40003-GA-026
	400N1	995610	I-40003-GA-027
	400N1	995610	I-40003-GA-028
	400N1	995610	I-40003-GA-029
	400N1	995610	I-40003-GA-030
	400N1	995610	I-40003-GA-031
	400N1	995610	I-40003-GA-032
	400N1	995610	I-40003-GA-033
	400N1	995610	I-40003-GA-034
	400N1	995610	I-40003-GA-035
	400N1	995610	I-40003-GA-036
	400N1	995610	I-40003-GA-037
	400N1	995610	I-40003-GA-038
	400N1	995610	I-40003-GA-039
	400N1	995610	I-40003-GA-040
	400N1	995610	I-40003-GA-041
	400N1	995610	I-40003-GA-042
	400N1	995610	I-40003-GA-043

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400N1	995610	I-40003-GA-044
	400N1	995610	I-40003-GA-045
	400N1	995610	I-40003-GA-046
	400N1	995610	I-40003-GA-047
	400N1	995610	I-40003-GA-048
Helical Dead End	400H2	121029	I-40003-GA-003
	400H2	121029	I-40003-GA-005
	400H2	121029	I-40003-GA-007
	400H2	121029	I-40003-GA-009
	400H2	121029	I-40003-GA-011
	400H2	121029	I-40003-GA-012
	400H2	121029	I-40003-GA-016
	400H2	121029	I-40003-GA-018
	400H2	121029	I-40003-GA-022
	400H2	121029	I-40003-GA-024
	400H2	121029	I-40003-GA-026
	400H2	121029	I-40003-GA-031
	400H2	121029	I-40003-GA-033
	400H2	121029	I-40003-GA-035
	400H2	121029	I-40003-GA-037
	400H2	121029	I-40003-GA-039
	400H2	121029	I-40003-GA-043
	400H2	121029	I-40003-GA-047
	400H2	121061	I-40003-GA-003
	400H2	121061	I-40003-GA-005
	400H2	121061	I-40003-GA-007
	400H2	121061	I-40003-GA-009
	400H2	121061	I-40003-GA-011
	400H2	121061	I-40003-GA-012
	400H2	121061	I-40003-GA-016
	400H2	121061	I-40003-GA-018
	400H2	121061	I-40003-GA-022
	400H2	121061	I-40003-GA-024
	400H2	121061	I-40003-GA-026
	400H2	121061	I-40003-GA-031

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400H2	121061	I-40003-GA-033
	400H2	121061	I-40003-GA-035
	400H2	121061	I-40003-GA-037
	400H2	121061	I-40003-GA-039
	400H2	121061	I-40003-GA-043
	400H2	121061	I-40003-GA-047
	400H2	121088	I-40003-GA-003
	400H2	121088	I-40003-GA-005
	400H2	121088	I-40003-GA-007
	400H2	121088	I-40003-GA-009
	400H2	121088	I-40003-GA-011
	400H2	121088	I-40003-GA-012
	400H2	121088	I-40003-GA-016
	400H2	121088	I-40003-GA-018
	400H2	121088	I-40003-GA-022
	400H2	121088	I-40003-GA-024
	400H2	121088	I-40003-GA-026
	400H2	121088	I-40003-GA-031
	400H2	121088	I-40003-GA-033
	400H2	121088	I-40003-GA-035
	400H2	121088	I-40003-GA-037
	400H2	121088	I-40003-GA-039
	400H2	121088	I-40003-GA-043
	400H2	121088	I-40003-GA-047
	400H2	121401	I-40003-GA-003
	400H2	121401	I-40003-GA-005
	400H2	121401	I-40003-GA-007
	400H2	121401	I-40003-GA-009
	400H2	121401	I-40003-GA-011
	400H2	121401	I-40003-GA-012
	400H2	121401	I-40003-GA-016
	400H2	121401	I-40003-GA-018
	400H2	121401	I-40003-GA-022
	400H2	121401	I-40003-GA-024
	400H2	121401	I-40003-GA-026

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400H2	121401	I-40003-GA-031
	400H2	121401	I-40003-GA-033
	400H2	121401	I-40003-GA-035
	400H2	121401	I-40003-GA-037
	400H2	121401	I-40003-GA-039
	400H2	121401	I-40003-GA-043
	400H2	121401	I-40003-GA-047
	400H2	138154	I-40003-GA-003
	400H2	138154	I-40003-GA-005
	400H2	138154	I-40003-GA-007
	400H2	138154	I-40003-GA-009
	400H2	138154	I-40003-GA-011
	400H2	138154	I-40003-GA-012
	400H2	138154	I-40003-GA-016
	400H2	138154	I-40003-GA-018
	400H2	138154	I-40003-GA-022
	400H2	138154	I-40003-GA-024
	400H2	138154	I-40003-GA-026
	400H2	138154	I-40003-GA-031
	400H2	138154	I-40003-GA-033
	400H2	138154	I-40003-GA-035
	400H2	138154	I-40003-GA-037
	400H2	138154	I-40003-GA-039
	400H2	138154	I-40003-GA-043
	400H2	138154	I-40003-GA-044
	400H2	138154	I-40003-GA-047
	400H2	138156	I-40003-GA-003
	400H2	138156	I-40003-GA-005
	400H2	138156	I-40003-GA-007
	400H2	138156	I-40003-GA-009
	400H2	138156	I-40003-GA-011
	400H2	138156	I-40003-GA-012
	400H2	138156	I-40003-GA-016
	400H2	138156	I-40003-GA-018
	400H2	138156	I-40003-GA-022



INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400H2	138156	I-40003-GA-024
	400H2	138156	I-40003-GA-026
	400H2	138156	I-40003-GA-031
	400H2	138156	I-40003-GA-033
	400H2	138156	I-40003-GA-035
	400H2	138156	I-40003-GA-037
	400H2	138156	I-40003-GA-039
	400H2	138156	I-40003-GA-043
	400H2	138156	I-40003-GA-044
	400H2	138156	I-40003-GA-047
	400H2	138158	I-40003-GA-003
	400H2	138158	I-40003-GA-005
	400H2	138158	I-40003-GA-009
	400H2	138158	I-40003-GA-035
	400H2	138158	I-40003-GA-044
	400H2	138158	I-40003-GA-047
Helical Intermediate Tie	400H2	138215	I-40003-GA-001
	400H2	138215	I-40003-GA-011
	400H2	138215	I-40003-GA-012
	400H2	138215	I-40003-GA-013
	400H2	138215	I-40003-GA-014
	400H2	138215	I-40003-GA-015
	400H2	138215	I-40003-GA-020
	400H2	138215	I-40003-GA-021
	400H2	138215	I-40003-GA-028
	400H2	138215	I-40003-GA-029
	400H2	138215	I-40003-GA-041
	400H2	138215	I-40003-GA-042
	400H2	138312	I-40003-GA-045
	400H2	138479	I-40003-GA-045
	400H2	138495	I-40003-GA-045
	400H2	138924	I-40003-GA-011
	400H2	138924	I-40003-GA-012
	400H2	138924	I-40003-GA-013
	400H2	138924	I-40003-GA-014

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400H2	138924	I-40003-GA-015
	400H2	138924	I-40003-GA-020
	400H2	138924	I-40003-GA-021
	400H2	138924	I-40003-GA-028
	400H2	138924	I-40003-GA-029
	400H2	138924	I-40003-GA-041
	400H2	138924	I-40003-GA-042
	400H2	138924	I-40003-GA-045
	400H2	138926	I-40003-GA-011
	400H2	138926	I-40003-GA-012
	400H2	138926	I-40003-GA-013
	400H2	138926	I-40003-GA-014
	400H2	138926	I-40003-GA-015
	400H2	138926	I-40003-GA-020
	400H2	138926	I-40003-GA-021
	400H2	138926	I-40003-GA-028
	400H2	138926	I-40003-GA-029
	400H2	138926	I-40003-GA-041
	400H2	138926	I-40003-GA-042
	400H2	138926	I-40003-GA-045
	400H2	138927	I-40003-GA-001
	400H2	138927	I-40003-GA-011
	400H2	138927	I-40003-GA-012
	400H2	138927	I-40003-GA-013
	400H2	138927	I-40003-GA-014
	400H2	138927	I-40003-GA-015
	400H2	138927	I-40003-GA-020
	400H2	138927	I-40003-GA-021
	400H2	138927	I-40003-GA-028
	400H2	138927	I-40003-GA-029
	400H2	138927	I-40003-GA-041
	400H2	138927	I-40003-GA-042
	400H2	138928	I-40003-GA-011
	400H2	138928	I-40003-GA-012
	400H2	138928	I-40003-GA-013

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400H2	138928	I-40003-GA-014
	400H2	138928	I-40003-GA-015
	400H2	138928	I-40003-GA-020
	400H2	138928	I-40003-GA-021
	400H2	138928	I-40003-GA-028
	400H2	138928	I-40003-GA-029
	400H2	138928	I-40003-GA-041
	400H2	138928	I-40003-GA-042
	400H2	138928	I-40003-GA-045
	400H2	138932	I-40003-GA-011
	400H2	138932	I-40003-GA-012
	400H2	138932	I-40003-GA-013
	400H2	138932	I-40003-GA-014
	400H2	138932	I-40003-GA-015
	400H2	138932	I-40003-GA-020
	400H2	138932	I-40003-GA-021
	400H2	138932	I-40003-GA-028
	400H2	138932	I-40003-GA-029
	400H2	138932	I-40003-GA-041
	400H2	138932	I-40003-GA-042
	400H2	138932	I-40003-GA-045
Helical Side Tie	400H2	138010	I-40003-GA-002
	400H2	138010	I-40003-GA-003
	400H2	138010	I-40003-GA-004
	400H2	138010	I-40003-GA-005
	400H2	138010	I-40003-GA-006
	400H2	138010	I-40003-GA-007
	400H2	138010	I-40003-GA-008
	400H2	138010	I-40003-GA-009
	400H2	138010	I-40003-GA-010
	400H2	138010	I-40003-GA-011
	400H2	138010	I-40003-GA-012
	400H2	138010	I-40003-GA-013
	400H2	138010	I-40003-GA-030
	400H2	138010	I-40003-GA-031

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400H2	138010	I-40003-GA-032
	400H2	138010	I-40003-GA-047
	400H2	138010	I-40003-GA-048
	400H2	138029	I-40003-GA-003
	400H2	138029	I-40003-GA-004
	400H2	138029	I-40003-GA-005
	400H2	138029	I-40003-GA-006
	400H2	138029	I-40003-GA-007
	400H2	138029	I-40003-GA-008
	400H2	138029	I-40003-GA-009
	400H2	138029	I-40003-GA-010
	400H2	138029	I-40003-GA-011
	400H2	138029	I-40003-GA-012
	400H2	138029	I-40003-GA-013
	400H2	138029	I-40003-GA-030
	400H2	138029	I-40003-GA-031
	400H2	138029	I-40003-GA-032
	400H2	138029	I-40003-GA-046
	400H2	138029	I-40003-GA-047
	400H2	138029	I-40003-GA-048
	400H2	138037	I-40003-GA-002
	400H2	138037	I-40003-GA-003
	400H2	138037	I-40003-GA-004
	400H2	138037	I-40003-GA-005
	400H2	138037	I-40003-GA-006
	400H2	138037	I-40003-GA-007
	400H2	138037	I-40003-GA-008
	400H2	138037	I-40003-GA-009
	400H2	138037	I-40003-GA-010
	400H2	138037	I-40003-GA-011
	400H2	138037	I-40003-GA-012
	400H2	138037	I-40003-GA-013
	400H2	138037	I-40003-GA-030
	400H2	138037	I-40003-GA-031
	400H2	138037	I-40003-GA-032

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400H2	138037	I-40003-GA-047
	400H2	138037	I-40003-GA-048
	400H2	138045	I-40003-GA-003
	400H2	138045	I-40003-GA-004
	400H2	138045	I-40003-GA-005
	400H2	138045	I-40003-GA-006
	400H2	138045	I-40003-GA-007
	400H2	138045	I-40003-GA-008
	400H2	138045	I-40003-GA-009
	400H2	138045	I-40003-GA-010
	400H2	138045	I-40003-GA-011
	400H2	138045	I-40003-GA-012
	400H2	138045	I-40003-GA-013
	400H2	138045	I-40003-GA-030
	400H2	138045	I-40003-GA-031
	400H2	138045	I-40003-GA-032
	400H2	138045	I-40003-GA-046
	400H2	138045	I-40003-GA-047
	400H2	138045	I-40003-GA-048
	400H2	138130	I-40003-GA-003
	400H2	138130	I-40003-GA-004
	400H2	138130	I-40003-GA-005
	400H2	138130	I-40003-GA-006
	400H2	138130	I-40003-GA-007
	400H2	138130	I-40003-GA-008
	400H2	138130	I-40003-GA-009
	400H2	138130	I-40003-GA-010
	400H2	138130	I-40003-GA-011
	400H2	138130	I-40003-GA-012
	400H2	138130	I-40003-GA-013
	400H2	138130	I-40003-GA-030
	400H2	138130	I-40003-GA-031
	400H2	138130	I-40003-GA-032
	400H2	138130	I-40003-GA-046
	400H2	138130	I-40003-GA-047

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400H2	138130	I-40003-GA-048
	400H2	138132	I-40003-GA-003
	400H2	138132	I-40003-GA-004
	400H2	138132	I-40003-GA-005
	400H2	138132	I-40003-GA-006
	400H2	138132	I-40003-GA-007
	400H2	138132	I-40003-GA-008
	400H2	138132	I-40003-GA-009
	400H2	138132	I-40003-GA-010
	400H2	138132	I-40003-GA-011
	400H2	138132	I-40003-GA-012
	400H2	138132	I-40003-GA-013
	400H2	138132	I-40003-GA-030
	400H2	138132	I-40003-GA-031
	400H2	138132	I-40003-GA-032
	400H2	138132	I-40003-GA-046
	400H2	138132	I-40003-GA-047
	400H2	138132	I-40003-GA-048
	400H2	138140	I-40003-GA-003
	400H2	138140	I-40003-GA-004
	400H2	138140	I-40003-GA-005
	400H2	138140	I-40003-GA-006
	400H2	138140	I-40003-GA-009
	400H2	138140	I-40003-GA-010
	400H2	138140	I-40003-GA-046
	400H2	138140	I-40003-GA-047
	400H2	138140	I-40003-GA-048
	400H2	138150	I-40003-GA-003
	400H2	138150	I-40003-GA-004
	400H2	138150	I-40003-GA-005
	400H2	138150	I-40003-GA-006
	400H2	138150	I-40003-GA-009
	400H2	138150	I-40003-GA-010
	400H2	138150	I-40003-GA-046
	400H2	138150	I-40003-GA-047

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400H2	138150	I-40003-GA-048
	400H2	138160	I-40003-GA-003
	400H2	138160	I-40003-GA-004
	400H2	138160	I-40003-GA-005
	400H2	138160	I-40003-GA-006
	400H2	138160	I-40003-GA-009
	400H2	138160	I-40003-GA-010
	400H2	138160	I-40003-GA-046
	400H2	138160	I-40003-GA-047
	400H2	138160	I-40003-GA-048
Insulator Bracket	400S11	133302	I-40003-GA-001
	400S11	133302	I-40003-GA-002
	400S11	133302	I-40003-GA-011
	400S11	133302	I-40003-GA-012
	400S11	133302	I-40003-GA-013
	400S11	133302	I-40003-GA-014
	400S11	133302	I-40003-GA-015
	400S11	133302	I-40003-GA-020
	400S11	133302	I-40003-GA-021
	400S11	133302	I-40003-GA-028
	400S11	133302	I-40003-GA-029
	400S11	133302	I-40003-GA-041
	400S11	133302	I-40003-GA-042
	400S11	133302	I-40003-GA-045
	400S11	133302	I-40003-GA-046
Insulator Pin	400S11	128104	I-40003-GA-001
	400S11	128104	I-40003-GA-002
	400S11	128104	I-40003-GA-045
	400S11	128104	I-40003-GA-046
	400S11	128252	I-40003-GA-001
	400S11	128252	I-40003-GA-002
	400S11	128252	I-40003-GA-011
	400S11	128252	I-40003-GA-012
	400S11	128252	I-40003-GA-013
	400S11	128252	I-40003-GA-014

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400S11	128252	I-40003-GA-015
	400S11	128252	I-40003-GA-020
	400S11	128252	I-40003-GA-021
	400S11	128252	I-40003-GA-028
	400S11	128252	I-40003-GA-029
	400S11	128252	I-40003-GA-041
	400S11	128252	I-40003-GA-042
	400S11	128252	I-40003-GA-045
	400S11	128252	I-40003-GA-046
Insulator Set Tension	400I4	125232	I-40003-GA-016
	400I4	125232	I-40003-GA-022
	400I4	125232	I-40003-GA-003
	400I4	125232	I-40003-GA-005
	400I4	125232	I-40003-GA-007
	400I4	125232	I-40003-GA-009
	400I4	125232	I-40003-GA-011
	400I4	125232	I-40003-GA-012
	400I4	125232	I-40003-GA-013
	400I4	125232	I-40003-GA-018
	400I4	125232	I-40003-GA-024
	400I4	125232	I-40003-GA-026
	400I4	125232	I-40003-GA-027
	400I4	125232	I-40003-GA-030
	400I4	125232	I-40003-GA-031
	400I4	125232	I-40003-GA-033
	400I4	125232	I-40003-GA-035
	400I4	125232	I-40003-GA-037
	400I4	125232	I-40003-GA-039
	400I4	125232	I-40003-GA-043
	400I4	125232	I-40003-GA-044
	400I4	125232	I-40003-GA-047
	400I4	125240	I-40003-GA-004
	400I4	125240	I-40003-GA-006
	400I4	125240	I-40003-GA-008
	400I4	125240	I-40003-GA-010



INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	40014	125240	I-40003-GA-017
	40014	125240	I-40003-GA-019
	40014	125240	I-40003-GA-023
	40014	125240	I-40003-GA-025
	40014	125240	I-40003-GA-029
	40014	125240	I-40003-GA-032
	40014	125240	I-40003-GA-034
	40014	125240	I-40003-GA-036
	40014	125240	I-40003-GA-038
	40014	125240	I-40003-GA-040
	40014	125240	I-40003-GA-044
	40014	125240	I-40003-GA-048
Insulator, Pin-Mounted	40014	125199	I-40003-GA-001
	40014	125199	I-40003-GA-002
	40014	125199	I-40003-GA-003
	40014	125199	I-40003-GA-004
	40014	125199	I-40003-GA-005
	40014	125199	I-40003-GA-006
	40014	125199	I-40003-GA-009
	40014	125199	I-40003-GA-010
	40014	125199	I-40003-GA-045
	40014	125199	I-40003-GA-046
	40014	125199	I-40003-GA-047
	40014	125199	I-40003-GA-048
	40014	125202	I-40003-GA-001
	40014	125202	I-40003-GA-002
	40014	125202	I-40003-GA-003
	40014	125202	I-40003-GA-004
	40014	125202	I-40003-GA-005
	40014	125202	I-40003-GA-006
	40014	125202	I-40003-GA-007
	40014	125202	I-40003-GA-008
	40014	125202	I-40003-GA-009
	40014	125202	I-40003-GA-010
	40014	125202	I-40003-GA-011

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400I4	125202	I-40003-GA-012
	400I4	125202	I-40003-GA-013
	400I4	125202	I-40003-GA-014
	400I4	125202	I-40003-GA-015
	400I4	125202	I-40003-GA-020
	400I4	125202	I-40003-GA-021
	400I4	125202	I-40003-GA-028
	400I4	125202	I-40003-GA-029
	400I4	125202	I-40003-GA-030
	400I4	125202	I-40003-GA-031
	400I4	125202	I-40003-GA-032
	400I4	125202	I-40003-GA-041
	400I4	125202	I-40003-GA-042
	400I4	125202	I-40003-GA-045
	400I4	125202	I-40003-GA-046
	400I4	125202	I-40003-GA-047
	400I4	125202	I-40003-GA-048
Jumper Splice	400C29	124990	I-40003-GA-003
	400C29	124990	I-40003-GA-005
	400C29	124990	I-40003-GA-007
	400C29	124990	I-40003-GA-009
	400C29	124990	I-40003-GA-047
	400C29	130664	I-40003-GA-003
	400C29	130664	I-40003-GA-005
	400C29	130664	I-40003-GA-007
	400C29	130664	I-40003-GA-009
	400C29	130664	I-40003-GA-047
	400C29	130670	I-40003-GA-003
	400C29	130670	I-40003-GA-005
	400C29	130670	I-40003-GA-007
	400C29	130670	I-40003-GA-009
	400C29	130670	I-40003-GA-047
	400C29	130675	I-40003-GA-003
	400C29	130675	I-40003-GA-005
	400C29	130675	I-40003-GA-007

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400C29	130675	I-40003-GA-009
	400C29	130675	I-40003-GA-047
	400C29	130680	I-40003-GA-003
	400C29	130680	I-40003-GA-005
	400C29	130680	I-40003-GA-009
	400C29	130680	I-40003-GA-047
	400C29	130842	I-40003-GA-003
	400C29	130842	I-40003-GA-005
	400C29	130842	I-40003-GA-007
	400C29	130842	I-40003-GA-009
	400C29	130842	I-40003-GA-047
	400C29	130850	I-40003-GA-003
	400C29	130850	I-40003-GA-005
	400C29	130850	I-40003-GA-007
	400C29	130850	I-40003-GA-009
	400C29	130850	I-40003-GA-047
Live Line Tap	400C29	137863	I-40003-GA-029
	400C29	137863	I-40003-GA-030
	400C29	137863	I-40003-GA-032
	400C29	137863	I-40003-GA-034
	400C29	137863	I-40003-GA-036
	400C29	137863	I-40003-GA-038
	400C29	137863	I-40003-GA-040
	400C29	137863	I-40003-GA-041
	400C29	137863	I-40003-GA-042
Lugs	400C29	Ref ES400C29	I-40003-GA-012
	400C29	Ref ES400C29	I-40003-GA-013
	400C29	Ref ES400C29	I-40003-GA-016
	400C29	Ref ES400C29	I-40003-GA-018
	400C29	Ref ES400C29	I-40003-GA-022
	400C29	Ref ES400C29	I-40003-GA-024
	400C29	Ref ES400C29	I-40003-GA-026
	400C29	Ref ES400C29	I-40003-GA-029
	400C29	Ref ES400C29	I-40003-GA-030
	400C29	Ref ES400C29	I-40003-GA-031

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400C29	Ref ES400C29	I-40003-GA-032
	400C29	Ref ES400C29	I-40003-GA-033
	400C29	Ref ES400C29	I-40003-GA-034
	400C29	Ref ES400C29	I-40003-GA-035
	400C29	Ref ES400C29	I-40003-GA-036
	400C29	Ref ES400C29	I-40003-GA-037
	400C29	Ref ES400C29	I-40003-GA-038
	400C29	Ref ES400C29	I-40003-GA-039
	400C29	Ref ES400C29	I-40003-GA-040
	400C29	Ref ES400C29	I-40003-GA-041
	400C29	Ref ES400C29	I-40003-GA-042
	400C29	Ref ES400C29	I-40003-GA-043
	400C29	Ref ES400C29	I-40003-GA-044
	400C29	Ref ES400C29	I-40003-GA-048
Notices	400N1	Ref ES400N1	I-40003-GA-001
	400N1	Ref ES400N1	I-40003-GA-002
	400N1	Ref ES400N1	I-40003-GA-003
	400N1	Ref ES400N1	I-40003-GA-004
	400N1	Ref ES400N1	I-40003-GA-005
	400N1	Ref ES400N1	I-40003-GA-006
	400N1	Ref ES400N1	I-40003-GA-007
	400N1	Ref ES400N1	I-40003-GA-008
	400N1	Ref ES400N1	I-40003-GA-009
	400N1	Ref ES400N1	I-40003-GA-010
	400N1	Ref ES400N1	I-40003-GA-011
	400N1	Ref ES400N1	I-40003-GA-012
	400N1	Ref ES400N1	I-40003-GA-013
	400N1	Ref ES400N1	I-40003-GA-014
	400N1	Ref ES400N1	I-40003-GA-015
	400N1	Ref ES400N1	I-40003-GA-016
	400N1	Ref ES400N1	I-40003-GA-017
	400N1	Ref ES400N1	I-40003-GA-018
	400N1	Ref ES400N1	I-40003-GA-019
	400N1	Ref ES400N1	I-40003-GA-020
	400N1	Ref ES400N1	I-40003-GA-021

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400N1	Ref ES400N1	I-40003-GA-022
	400N1	Ref ES400N1	I-40003-GA-023
	400N1	Ref ES400N1	I-40003-GA-024
	400N1	Ref ES400N1	I-40003-GA-025
	400N1	Ref ES400N1	I-40003-GA-026
	400N1	Ref ES400N1	I-40003-GA-027
	400N1	Ref ES400N1	I-40003-GA-028
	400N1	Ref ES400N1	I-40003-GA-029
	400N1	Ref ES400N1	I-40003-GA-030
	400N1	Ref ES400N1	I-40003-GA-031
	400N1	Ref ES400N1	I-40003-GA-032
	400N1	Ref ES400N1	I-40003-GA-033
	400N1	Ref ES400N1	I-40003-GA-034
	400N1	Ref ES400N1	I-40003-GA-035
	400N1	Ref ES400N1	I-40003-GA-036
	400N1	Ref ES400N1	I-40003-GA-037
	400N1	Ref ES400N1	I-40003-GA-038
	400N1	Ref ES400N1	I-40003-GA-039
	400N1	Ref ES400N1	I-40003-GA-040
	400N1	Ref ES400N1	I-40003-GA-041
	400N1	Ref ES400N1	I-40003-GA-042
	400N1	Ref ES400N1	I-40003-GA-043
	400N1	Ref ES400N1	I-40003-GA-044
	400N1	Ref ES400N1	I-40003-GA-045
	400N1	Ref ES400N1	I-40003-GA-046
	400N1	Ref ES400N1	I-40003-GA-047
	400N1	Ref ES400N1	I-40003-GA-048
Pilot Pin	400S11	128376	I-40003-GA-003
	400S11	128376	I-40003-GA-004
	400S11	128376	I-40003-GA-005
	400S11	128376	I-40003-GA-006
	400S11	128376	I-40003-GA-007
	400S11	128376	I-40003-GA-008
	400S11	128376	I-40003-GA-009
	400S11	128376	I-40003-GA-010

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400S11	128376	I-40003-GA-011
	400S11	128376	I-40003-GA-012
	400S11	128376	I-40003-GA-013
	400S11	128376	I-40003-GA-030
	400S11	128376	I-40003-GA-031
	400S11	128376	I-40003-GA-032
	400S11	128376	I-40003-GA-047
	400S11	128376	I-40003-GA-048
Pilot Pin Bracket	400S11	111457	I-40003-GA-011
	400S11	111457	I-40003-GA-012
	400S11	111457	I-40003-GA-013
Platform Kit	400S11	133213	I-40003-GA-026
	400S11	133213	I-40003-GA-027
	400S11	133213	I-40003-GA-028
	400S11	133396	I-40003-GA-020
	400S11	133396	I-40003-GA-021
	400S11	133396	I-40003-GA-022
	400S11	133396	I-40003-GA-023
	400S11	133396	I-40003-GA-024
	400S11	133396	I-40003-GA-025
Pole Cap	400W7	Ref ES400W7	I-40003-GA-001
	400W7	Ref ES400W7	I-40003-GA-002
	400W7	Ref ES400W7	I-40003-GA-003
	400W7	Ref ES400W7	I-40003-GA-004
	400W7	Ref ES400W7	I-40003-GA-005
	400W7	Ref ES400W7	I-40003-GA-006
	400W7	Ref ES400W7	I-40003-GA-007
	400W7	Ref ES400W7	I-40003-GA-008
	400W7	Ref ES400W7	I-40003-GA-009
	400W7	Ref ES400W7	I-40003-GA-010
	400W7	Ref ES400W7	I-40003-GA-011
	400W7	Ref ES400W7	I-40003-GA-012
	400W7	Ref ES400W7	I-40003-GA-013
	400W7	Ref ES400W7	I-40003-GA-014
	400W7	Ref ES400W7	I-40003-GA-015

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400W7	Ref ES400W7	I-40003-GA-016
	400W7	Ref ES400W7	I-40003-GA-017
	400W7	Ref ES400W7	I-40003-GA-018
	400W7	Ref ES400W7	I-40003-GA-019
	400W7	Ref ES400W7	I-40003-GA-020
	400W7	Ref ES400W7	I-40003-GA-021
	400W7	Ref ES400W7	I-40003-GA-022
	400W7	Ref ES400W7	I-40003-GA-023
	400W7	Ref ES400W7	I-40003-GA-024
	400W7	Ref ES400W7	I-40003-GA-025
	400W7	Ref ES400W7	I-40003-GA-026
	400W7	Ref ES400W7	I-40003-GA-027
	400W7	Ref ES400W7	I-40003-GA-028
	400W7	Ref ES400W7	I-40003-GA-029
	400W7	Ref ES400W7	I-40003-GA-030
	400W7	Ref ES400W7	I-40003-GA-031
	400W7	Ref ES400W7	I-40003-GA-032
	400W7	Ref ES400W7	I-40003-GA-033
	400W7	Ref ES400W7	I-40003-GA-034
	400W7	Ref ES400W7	I-40003-GA-035
	400W7	Ref ES400W7	I-40003-GA-036
	400W7	Ref ES400W7	I-40003-GA-037
	400W7	Ref ES400W7	I-40003-GA-038
	400W7	Ref ES400W7	I-40003-GA-039
	400W7	Ref ES400W7	I-40003-GA-040
	400W7	Ref ES400W7	I-40003-GA-041
	400W7	Ref ES400W7	I-40003-GA-042
	400W7	Ref ES400W7	I-40003-GA-045
	400W7	Ref ES400W7	I-40003-GA-046
	400W7	Ref ES400W7	I-40003-GA-047
	400W7	Ref ES400W7	I-40003-GA-048
Sag Link	400S11	260850	I-40003-GA-004
	400S11	260850	I-40003-GA-006
	400S11	260850	I-40003-GA-008
	400S11	260850	I-40003-GA-010

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400S11	260850	I-40003-GA-013
	400S11	260850	I-40003-GA-017
	400S11	260850	I-40003-GA-019
	400S11	260850	I-40003-GA-023
	400S11	260850	I-40003-GA-025
	400S11	260850	I-40003-GA-027
	400S11	260850	I-40003-GA-030
	400S11	260850	I-40003-GA-032
	400S11	260850	I-40003-GA-034
	400S11	260850	I-40003-GA-036
	400S11	260850	I-40003-GA-038
	400S11	260850	I-40003-GA-040
	400S11	260850	I-40003-GA-044
	400S11	260850	I-40003-GA-048
Section Strap	400S11	133345	I-40003-GA-003
	400S11	133345	I-40003-GA-004
	400S11	133345	I-40003-GA-005
	400S11	133345	I-40003-GA-006
	400S11	133345	I-40003-GA-030
	400S11	133345	I-40003-GA-031
	400S11	133345	I-40003-GA-032
	400S11	133345	I-40003-GA-033
	400S11	133345	I-40003-GA-034
	400S11	133345	I-40003-GA-035
	400S11	133345	I-40003-GA-036
	400S11	133345	I-40003-GA-045
	400S11	133345	I-40003-GA-046
	400S11	133345	I-40003-GA-047
	400S11	133345	I-40003-GA-048
Shroud, Insulated	400S12	160798	I-40003-GA-014
	400S12	160798	I-40003-GA-015
	400S12	160798	I-40003-GA-016
	400S12	160798	I-40003-GA-017
	400S12	160798	I-40003-GA-018
	400S12	160798	I-40003-GA-019



INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400S12	160798	I-40003-GA-020
	400S12	160798	I-40003-GA-021
	400S12	160798	I-40003-GA-022
	400S12	160798	I-40003-GA-023
	400S12	160798	I-40003-GA-024
	400S12	160798	I-40003-GA-025
	400S12	160798	I-40003-GA-026
	400S12	160798	I-40003-GA-027
	400S12	160798	I-40003-GA-028
Socket Clevis	400S11	122173	I-40003-GA-004
	400S11	122173	I-40003-GA-006
	400S11	122173	I-40003-GA-008
	400S11	122173	I-40003-GA-010
	400S11	122173	I-40003-GA-013
	400S11	122173	I-40003-GA-017
	400S11	122173	I-40003-GA-019
	400S11	122173	I-40003-GA-023
	400S11	122173	I-40003-GA-025
	400S11	122173	I-40003-GA-027
	400S11	122173	I-40003-GA-030
	400S11	122173	I-40003-GA-032
	400S11	122173	I-40003-GA-034
	400S11	122173	I-40003-GA-036
	400S11	122173	I-40003-GA-038
	400S11	122173	I-40003-GA-040
	400S11	122173	I-40003-GA-044
	400S11	122173	I-40003-GA-048
Socket Thimble	400C29	132233	I-40003-GA-003
	400C29	132233	I-40003-GA-005
	400C29	132233	I-40003-GA-007
	400C29	132233	I-40003-GA-009
	400C29	132233	I-40003-GA-011
	400C29	132233	I-40003-GA-012
	400C29	132233	I-40003-GA-016
	400C29	132233	I-40003-GA-018

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400C29	132233	I-40003-GA-022
	400C29	132233	I-40003-GA-024
	400C29	132233	I-40003-GA-026
	400C29	132233	I-40003-GA-031
	400C29	132233	I-40003-GA-033
	400C29	132233	I-40003-GA-035
	400C29	132233	I-40003-GA-037
	400C29	132233	I-40003-GA-039
	400C29	132233	I-40003-GA-043
	400C29	132233	I-40003-GA-044
	400C29	132233	I-40003-GA-047
	400C29	132234	I-40003-GA-003
	400C29	132234	I-40003-GA-005
	400C29	132234	I-40003-GA-007
	400C29	132234	I-40003-GA-009
	400C29	132234	I-40003-GA-011
	400C29	132234	I-40003-GA-012
	400C29	132234	I-40003-GA-016
	400C29	132234	I-40003-GA-018
	400C29	132234	I-40003-GA-022
	400C29	132234	I-40003-GA-024
	400C29	132234	I-40003-GA-026
	400C29	132234	I-40003-GA-031
	400C29	132234	I-40003-GA-033
	400C29	132234	I-40003-GA-035
	400C29	132234	I-40003-GA-037
	400C29	132234	I-40003-GA-039
	400C29	132234	I-40003-GA-043
	400C29	132234	I-40003-GA-044
	400C29	132234	I-40003-GA-047
Stays	400S13	Ref ES400S13	I-40003-GA-002
	400S13	Ref ES400S13	I-40003-GA-003
	400S13	Ref ES400S13	I-40003-GA-004
	400S13	Ref ES400S13	I-40003-GA-005
	400S13	Ref ES400S13	I-40003-GA-006

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400S13	Ref ES400S13	I-40003-GA-007
	400S13	Ref ES400S13	I-40003-GA-008
	400S13	Ref ES400S13	I-40003-GA-009
	400S13	Ref ES400S13	I-40003-GA-010
	400S13	Ref ES400S13	I-40003-GA-011
	400S13	Ref ES400S13	I-40003-GA-012
	400S13	Ref ES400S13	I-40003-GA-013
	400S13	Ref ES400S13	I-40003-GA-014
	400S13	Ref ES400S13	I-40003-GA-015
	400S13	Ref ES400S13	I-40003-GA-016
	400S13	Ref ES400S13	I-40003-GA-017
	400S13	Ref ES400S13	I-40003-GA-018
	400S13	Ref ES400S13	I-40003-GA-019
	400S13	Ref ES400S13	I-40003-GA-020
	400S13	Ref ES400S13	I-40003-GA-021
	400S13	Ref ES400S13	I-40003-GA-022
	400S13	Ref ES400S13	I-40003-GA-023
	400S13	Ref ES400S13	I-40003-GA-024
	400S13	Ref ES400S13	I-40003-GA-025
	400S13	Ref ES400S13	I-40003-GA-026
	400S13	Ref ES400S13	I-40003-GA-027
	400S13	Ref ES400S13	I-40003-GA-028
	400S13	Ref ES400S13	I-40003-GA-029
	400S13	Ref ES400S13	I-40003-GA-030
	400S13	Ref ES400S13	I-40003-GA-031
	400S13	Ref ES400S13	I-40003-GA-032
	400S13	Ref ES400S13	I-40003-GA-033
	400S13	Ref ES400S13	I-40003-GA-034
	400S13	Ref ES400S13	I-40003-GA-035
	400S13	Ref ES400S13	I-40003-GA-036
	400S13	Ref ES400S13	I-40003-GA-037
	400S13	Ref ES400S13	I-40003-GA-038
	400S13	Ref ES400S13	I-40003-GA-039
	400S13	Ref ES400S13	I-40003-GA-040
	400S13	Ref ES400S13	I-40003-GA-041

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400S13	Ref ES400S13	I-40003-GA-043
	400S13	Ref ES400S13	I-40003-GA-044
	400S13	Ref ES400S13	I-40003-GA-042
	400S13	Ref ES400S13	I-40003-GA-046
	400S13	Ref ES400S13	I-40003-GA-047
	400S13	Ref ES400S13	I-40003-GA-048
Steelwork Kit, Cable Terminal, 33kV	400S11	122848	I-40003-GA-044
Steelwork, Links, Long	400S11	133206	I-40003-GA-012
	400S11	133206	I-40003-GA-013
Steelwork, Links, Short	400S11	133207	I-40003-GA-015
	400S11	133207	I-40003-GA-018
	400S11	133207	I-40003-GA-019
	400S11	133207	I-40003-GA-021
	400S11	133207	I-40003-GA-024
	400S11	133207	I-40003-GA-025
	400S11	133207	I-40003-GA-026
	400S11	133207	I-40003-GA-027
	400S11	133207	I-40003-GA-028
	400S11	133207	I-40003-GA-031
	400S11	133207	I-40003-GA-032
	400S11	133207	I-40003-GA-039
	400S11	133207	I-40003-GA-040
	400S11	133207	I-40003-GA-042
Surge Arrester	348	121878	I-40003-GA-044
Terminal Strap	400S11	133361	I-40003-GA-003
	400S11	133361	I-40003-GA-004
	400S11	133361	I-40003-GA-007
	400S11	133361	I-40003-GA-008
	400S11	133361	I-40003-GA-009
	400S11	133361	I-40003-GA-010
	400S11	133361	I-40003-GA-011
	400S11	133361	I-40003-GA-012
	400S11	133361	I-40003-GA-013
	400S11	133361	I-40003-GA-016
	400S11	133361	I-40003-GA-017

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400S11	133361	I-40003-GA-018
	400S11	133361	I-40003-GA-019
	400S11	133361	I-40003-GA-022
	400S11	133361	I-40003-GA-023
	400S11	133361	I-40003-GA-024
	400S11	133361	I-40003-GA-025
	400S11	133361	I-40003-GA-026
	400S11	133361	I-40003-GA-027
	400S11	133361	I-40003-GA-030
	400S11	133361	I-40003-GA-031
	400S11	133361	I-40003-GA-032
	400S11	133361	I-40003-GA-033
	400S11	133361	I-40003-GA-034
	400S11	133361	I-40003-GA-035
	400S11	133361	I-40003-GA-036
	400S11	133361	I-40003-GA-037
	400S11	133361	I-40003-GA-038
	400S11	133361	I-40003-GA-039
	400S11	133361	I-40003-GA-040
	400S11	133361	I-40003-GA-043
	400S11	133361	I-40003-GA-044
Tie Rod	400S11	133388	I-40003-GA-003
	400S11	133388	I-40003-GA-004
	400S11	133388	I-40003-GA-005
	400S11	133388	I-40003-GA-006
	400S11	133388	I-40003-GA-007
	400S11	133388	I-40003-GA-008
	400S11	133388	I-40003-GA-009
	400S11	133388	I-40003-GA-010
	400S11	133388	I-40003-GA-011
	400S11	133388	I-40003-GA-012
	400S11	133388	I-40003-GA-013
	400S11	133388	I-40003-GA-016
	400S11	133388	I-40003-GA-017
	400S11	133388	I-40003-GA-018

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400S11	133388	I-40003-GA-019
	400S11	133388	I-40003-GA-022
	400S11	133388	I-40003-GA-023
	400S11	133388	I-40003-GA-024
	400S11	133388	I-40003-GA-025
	400S11	133388	I-40003-GA-026
	400S11	133388	I-40003-GA-027
	400S11	133388	I-40003-GA-030
	400S11	133388	I-40003-GA-031
	400S11	133388	I-40003-GA-032
	400S11	133388	I-40003-GA-033
	400S11	133388	I-40003-GA-034
	400S11	133388	I-40003-GA-035
	400S11	133388	I-40003-GA-036
	400S11	133388	I-40003-GA-037
	400S11	133388	I-40003-GA-038
	400S11	133388	I-40003-GA-039
	400S11	133388	I-40003-GA-040
	400S11	133388	I-40003-GA-043
	400S11	133388	I-40003-GA-044
	400S11	133388	I-40003-GA-047
	400S11	133388	I-40003-GA-048
Transformer	321	Ref ES321	I-40003-GA-014
	321	Ref ES321	I-40003-GA-015
	321	Ref ES321	I-40003-GA-016
	321	Ref ES321	I-40003-GA-017
	321	Ref ES321	I-40003-GA-018
	321	Ref ES321	I-40003-GA-019
	321	Ref ES321	I-40003-GA-020
	321	Ref ES321	I-40003-GA-021
	321	Ref ES321	I-40003-GA-022
	321	Ref ES321	I-40003-GA-023
	321	Ref ES321	I-40003-GA-024
	321	Ref ES321	I-40003-GA-025
	321	Ref ES321	I-40003-GA-026

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	321	Ref ES321	I-40003-GA-027
	321	Ref ES321	I-40003-GA-028
Washer, Round, Flat	400F1	993018	I-40003-GA-003
	400F1	993018	I-40003-GA-004
	400F1	993018	I-40003-GA-005
	400F1	993018	I-40003-GA-006
	400F1	993018	I-40003-GA-007
	400F1	993018	I-40003-GA-008
	400F1	993018	I-40003-GA-009
	400F1	993018	I-40003-GA-010
	400F1	993018	I-40003-GA-011
	400F1	993018	I-40003-GA-012
	400F1	993018	I-40003-GA-013
	400F1	993018	I-40003-GA-016
	400F1	993018	I-40003-GA-017
	400F1	993018	I-40003-GA-018
	400F1	993018	I-40003-GA-019
	400F1	993018	I-40003-GA-022
	400F1	993018	I-40003-GA-023
	400F1	993018	I-40003-GA-024
	400F1	993018	I-40003-GA-025
	400F1	993018	I-40003-GA-026
	400F1	993018	I-40003-GA-027
	400F1	993018	I-40003-GA-030
	400F1	993018	I-40003-GA-031
	400F1	993018	I-40003-GA-032
	400F1	993018	I-40003-GA-033
	400F1	993018	I-40003-GA-034
	400F1	993018	I-40003-GA-035
	400F1	993018	I-40003-GA-036
	400F1	993018	I-40003-GA-037
	400F1	993018	I-40003-GA-038
	400F1	993018	I-40003-GA-039
	400F1	993018	I-40003-GA-040
	400F1	993018	I-40003-GA-043

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400F1	993018	I-40003-GA-044
	400F1	993018	I-40003-GA-045
	400F1	993018	I-40003-GA-046
	400F1	993018	I-40003-GA-047
	400F1	993018	I-40003-GA-048
Washer, Square, Curved	400F1	139203	I-40003-GA-001
	400F1	139203	I-40003-GA-002
	400F1	139203	I-40003-GA-003
	400F1	139203	I-40003-GA-004
	400F1	139203	I-40003-GA-007
	400F1	139203	I-40003-GA-008
	400F1	139203	I-40003-GA-009
	400F1	139203	I-40003-GA-010
	400F1	139203	I-40003-GA-011
	400F1	139203	I-40003-GA-012
	400F1	139203	I-40003-GA-013
	400F1	139203	I-40003-GA-014
	400F1	139203	I-40003-GA-015
	400F1	139203	I-40003-GA-016
	400F1	139203	I-40003-GA-017
	400F1	139203	I-40003-GA-018
	400F1	139203	I-40003-GA-019
	400F1	139203	I-40003-GA-020
	400F1	139203	I-40003-GA-021
	400F1	139203	I-40003-GA-022
	400F1	139203	I-40003-GA-023
	400F1	139203	I-40003-GA-024
	400F1	139203	I-40003-GA-025
	400F1	139203	I-40003-GA-026
	400F1	139203	I-40003-GA-027
	400F1	139203	I-40003-GA-028
	400F1	139203	I-40003-GA-029
	400F1	139203	I-40003-GA-030
	400F1	139203	I-40003-GA-035
	400F1	139203	I-40003-GA-036



INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400F1	139203	I-40003-GA-037
	400F1	139203	I-40003-GA-038
	400F1	139203	I-40003-GA-039
	400F1	139203	I-40003-GA-040
	400F1	139203	I-40003-GA-041
	400F1	139203	I-40003-GA-042
	400F1	139203	I-40003-GA-031
	400F1	139203	I-40003-GA-032
	400F1	139203	I-40003-GA-033
	400F1	139203	I-40003-GA-034
	400F1	139203	I-40003-GA-043
	400F1	139203	I-40003-GA-044
	400F1	139203	I-40003-GA-045
	400F1	139203	I-40003-GA-046
Washer, Square, Flat	400F1	139262	I-40003-GA-001
	400F1	139262	I-40003-GA-002
	400F1	139262	I-40003-GA-003
	400F1	139262	I-40003-GA-004
	400F1	139262	I-40003-GA-007
	400F1	139262	I-40003-GA-008
	400F1	139262	I-40003-GA-011
	400F1	139262	I-40003-GA-012
	400F1	139262	I-40003-GA-013
	400F1	139262	I-40003-GA-014
	400F1	139262	I-40003-GA-015
	400F1	139262	I-40003-GA-016
	400F1	139262	I-40003-GA-017
	400F1	139262	I-40003-GA-018
	400F1	139262	I-40003-GA-019
	400F1	139262	I-40003-GA-020
	400F1	139262	I-40003-GA-021
	400F1	139262	I-40003-GA-022
	400F1	139262	I-40003-GA-023
	400F1	139262	I-40003-GA-024
	400F1	139262	I-40003-GA-025

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400F1	139262	I-40003-GA-028
	400F1	139262	I-40003-GA-029
	400F1	139262	I-40003-GA-030
	400F1	139262	I-40003-GA-031
	400F1	139262	I-40003-GA-032
	400F1	139262	I-40003-GA-033
	400F1	139262	I-40003-GA-034
	400F1	139262	I-40003-GA-037
	400F1	139262	I-40003-GA-038
	400F1	139262	I-40003-GA-039
	400F1	139262	I-40003-GA-040
	400F1	139262	I-40003-GA-041
	400F1	139262	I-40003-GA-042
	400F1	139262	I-40003-GA-043
	400F1	139262	I-40003-GA-044
	400F1	139262	I-40003-GA-045
	400F1	139262	I-40003-GA-046
Wedge Tap Bail	400C29	Ref ES400C29	I-40003-GA-014
	400C29	Ref ES400C29	I-40003-GA-015
	400C29	Ref ES400C29	I-40003-GA-017
	400C29	Ref ES400C29	I-40003-GA-019
	400C29	Ref ES400C29	I-40003-GA-020
	400C29	Ref ES400C29	I-40003-GA-021
	400C29	Ref ES400C29	I-40003-GA-023
	400C29	Ref ES400C29	I-40003-GA-025
	400C29	Ref ES400C29	I-40003-GA-027
	400C29	Ref ES400C29	I-40003-GA-028
	400C29	Ref ES400C29	I-40003-GA-029
	400C29	Ref ES400C29	I-40003-GA-030
	400C29	Ref ES400C29	I-40003-GA-032
	400C29	Ref ES400C29	I-40003-GA-034
	400C29	Ref ES400C29	I-40003-GA-036
	400C29	Ref ES400C29	I-40003-GA-038
	400C29	Ref ES400C29	I-40003-GA-040
	400C29	Ref ES400C29	I-40003-GA-041

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400C29	Ref ES400C29	I-40003-GA-042
Wedge Tap Tee-off	400C29	Ref ES400C29	I-40003-GA-011
	400C29	Ref ES400C29	I-40003-GA-012
	400C29	Ref ES400C29	I-40003-GA-013
Wood Pole	400W2	Ref ES400W2	I-40003-GA-001
	400W2	Ref ES400W2	I-40003-GA-002
	400W2	Ref ES400W2	I-40003-GA-003
	400W2	Ref ES400W2	I-40003-GA-004
	400W2	Ref ES400W2	I-40003-GA-005
	400W2	Ref ES400W2	I-40003-GA-007
	400W2	Ref ES400W2	I-40003-GA-008
	400W2	Ref ES400W2	I-40003-GA-009
	400W2	Ref ES400W2	I-40003-GA-010
	400W2	Ref ES400W2	I-40003-GA-011
	400W2	Ref ES400W2	I-40003-GA-012
	400W2	Ref ES400W2	I-40003-GA-013
	400W2	Ref ES400W2	I-40003-GA-014
	400W2	Ref ES400W2	I-40003-GA-015
	400W2	Ref ES400W2	I-40003-GA-016
	400W2	Ref ES400W2	I-40003-GA-017
	400W2	Ref ES400W2	I-40003-GA-018
	400W2	Ref ES400W2	I-40003-GA-019
	400W2	Ref ES400W2	I-40003-GA-020
	400W2	Ref ES400W2	I-40003-GA-021
	400W2	Ref ES400W2	I-40003-GA-022
	400W2	Ref ES400W2	I-40003-GA-023
	400W2	Ref ES400W2	I-40003-GA-024
	400W2	Ref ES400W2	I-40003-GA-025
	400W2	Ref ES400W2	I-40003-GA-028
	400W2	Ref ES400W2	I-40003-GA-029
	400W2	Ref ES400W2	I-40003-GA-030
	400W2	Ref ES400W2	I-40003-GA-031
	400W2	Ref ES400W2	I-40003-GA-032
	400W2	Ref ES400W2	I-40003-GA-033
	400W2	Ref ES400W2	I-40003-GA-034

INDEX TO MATERIALS			
ITEM	SPECIFICATION (ES)	CC NO	USED ON DWG (THIS SPEC)
	400W2	Ref ES400W2	I-40003-GA-037
	400W2	Ref ES400W2	I-40003-GA-038
	400W2	Ref ES400W2	I-40003-GA-039
	400W2	Ref ES400W2	I-40003-GA-040
	400W2	Ref ES400W2	I-40003-GA-041
	400W2	Ref ES400W2	I-40003-GA-042
	400W2	Ref ES400W2	I-40003-GA-045
	400W2	Ref ES400W2	I-40003-GA-046
Wood Pole (H)	400W2	Ref ES400W2	I-40003-GA-006
	400W2	Ref ES400W2	I-40003-GA-009
	400W2	Ref ES400W2	I-40003-GA-010
	400W2	Ref ES400W2	I-40003-GA-026
	400W2	Ref ES400W2	I-40003-GA-027
	400W2	Ref ES400W2	I-40003-GA-035
	400W2	Ref ES400W2	I-40003-GA-036
	400W2	Ref ES400W2	I-40003-GA-043
	400W2	Ref ES400W2	I-40003-GA-044
	400W2	Ref ES400W2	I-40003-GA-047
	400W2	Ref ES400W2	I-40003-GA-048
Wood Pole, Stub	400W2	Ref ES400W2	I-40003-GA-028

## Appendix C – Design Information and Validation

This Appendix comprises seven standalone sets of design data:

APPENDIX	PAGE
Appendix C1: for line design using conductor, HDCu, 38mm <sup>2</sup>	C3
Appendix C2: for line design using conductor, HDCu, 70mm <sup>2</sup>	C11
Appendix C3: for line design using conductor, HDCu, 100mm <sup>2</sup>	C21
Appendix C4: for line design using conductor, AAAC, 50mm <sup>2</sup> (Hazel)	C31
Appendix C5: for line design using conductor, AAAC, 100mm <sup>2</sup> (Oak)	C41
Appendix C6: for line design using conductor, AAAC, 150mm <sup>2</sup> (Ash)	C53
Appendix C7: for line design using conductor, AAAC, 200mm <sup>2</sup> (Poplar)	C67

## C1 Conductor, HDCu, 38mm<sup>2</sup>

### Recommended Span 90m

**NOTE:**

A Factor of Safety (FOS) value of 2.5 is used on Stays, Windspan, Foundation and both Single and H-Pole Strut loading Capabilities.

Occasional Long Span of 140m support specified for this use is I-40003-GA-047 and I-40003-GA-048.

**Table 1: HDCu, 38mm<sup>2</sup> - In Line Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	PIN TYPE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	Inter (Refer to I-40003-GA-001)	Medium	10kN	110
	Section	Medium	10kN	120
	H Section	Medium	10kN	120

**Table 2: HDCu, 38mm<sup>2</sup> - Angle Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	PIN TYPE	MAXIMUM LINE DEVIATION	MINIMUM STAY ANGLE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	Pin Angle (Refer to I-40003-GA-002)	Medium	10kN	25	1 x 30	110
	Section Angle	Stout	-	60	1 x 45	110
	H Section Angle	Stout	-	60	3 x 30	110

**Table 3: HDCu, 38mm<sup>2</sup> - Terminal Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	MINIMUM STAY ANGLE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	Tee off	Stout	1 x 45	110
	Terminal	Stout	1 x 45	110
	H Terminal	Stout	4 x 45	110

**Table 4: HDCu, 38mm<sup>2</sup> - Design Erection Sag/Tension (33% UTS)**

Conductor Code Name	38Cu	Radial Ice Thickness (mm)	0
Basic/Recommended Span (m)	90.00	Absolute Maximum Working Tension (MWT) Limit (kgf)	642
Temperature Shift for Creep (°C)	0.00	Temperature at MWT Limit (Degrees C)	-5.6
Equivalent Percentage Increase in Tension (%)	0.00 at 15°C	Maximum "Everyday" Tension (EDT) Limit (kgf)	481.5
Required Percentage Increase in Tension (%)	0.00 at 15°C	Temperature at EDT Limit (Degrees C)	5
Conductor Weight (kg/m)	0.344	Number of Conductors	3
Cross-Sectional Area of Conductor (mm <sup>2</sup> )	38	Maximum Span (m)	140
Conductor Overall Diameter (mm)	7.92	FACTORS OF SAFETY:	
Coefficient of Linear Expansion (/Degree C)	0.000017	Unstayed Pole	2.5
Modulus of Elasticity (kg/mm <sup>2</sup> )	12660	Stayed Pole	2.5
Rated Breaking Strength of Conductor (kgf)	1605	Stays	2.5
Wind Pressure on Conductor (N/m <sup>2</sup> )	760	Steelwork & Pin Insulator (on UTS for Traditional Design only)	2.5

TEMP (°C)	TENSION (kgf)	DESIGN/ERECTION SAG (m) FOR SPAN LENGTH (m)								
		60.00	70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00
-5.6	518.46	0.30	0.41	0.53	0.67	0.83	1.00	1.19	1.40	1.63
0	483.40	0.32	0.44	0.57	0.72	0.89	1.08	1.28	1.50	1.74
5	453.65	0.34	0.46	0.61	0.77	0.95	1.15	1.36	1.60	1.86
10	425.51	0.36	0.50	0.65	0.82	1.01	1.22	1.46	1.71	1.98
15	399.12	0.39	0.53	0.69	0.87	1.08	1.30	1.55	1.82	2.11
20	374.56	0.41	0.56	0.73	0.93	1.15	1.39	1.65	1.94	2.25
25	351.89	0.44	0.60	0.78	0.99	1.22	1.48	1.76	2.07	2.40
30	331.09	0.47	0.64	0.83	1.05	1.30	1.57	1.87	2.19	2.55
35	312.14	0.50	0.68	0.88	1.12	1.38	1.67	1.98	2.33	2.70
40	294.93	0.52	0.71	0.93	1.18	1.46	1.76	2.10	2.46	2.86
45	279.35	0.55	0.75	0.99	1.25	1.54	1.86	2.22	2.60	3.02
50	265.28	0.58	0.79	1.04	1.31	1.62	1.96	2.33	2.74	3.18
55	252.57	0.61	0.83	1.09	1.38	1.70	2.06	2.45	2.88	3.34
60	241.08	0.64	0.87	1.14	1.44	1.78	2.16	2.57	3.01	3.50
65	230.67	0.67	0.91	1.19	1.51	1.86	2.26	2.68	3.15	3.65
70	221.24	0.70	0.95	1.24	1.57	1.94	2.35	2.80	3.28	3.81
75	212.66	0.73	0.99	1.29	1.64	2.02	2.45	2.91	3.42	3.96
80	204.84	0.76	1.03	1.34	1.70	2.10	2.54	3.02	3.55	4.11

**Table 5: HDCu, 38mm<sup>2</sup> - Pole Data (33% UTS)**

Length (m)	Grade	Top Dia (mm)	Dia 1.5m from Butt (mm)	Planting Depth (mm)	Single Pole Strut Strength (kgf)	Maximum Wind Span Length for Specified Pole (m)		
						Good	Good/Av	Av/Poor
9.00	MEDIUM	150.00	220.00	1800	7617	162	162	162
10.00	MEDIUM	150.00	230.00	1800	6335	163	163	163
11.00	MEDIUM	150.00	240.00	1800	5421	165	165	165
12.00	MEDIUM	150.00	250.00	1800	4743	165	165	158
13.00	MEDIUM	160.00	260.00	2400	5212	172	172	172
14.00	MEDIUM	160.00	275.00	2400	4820	182	182	182
15.00	MEDIUM	165.00	290.00	2400	4816	195	195	195
16.00	MEDIUM	170.00	305.00	2400	4842	208	208	208
17.00	MEDIUM	180.00	320.00	2400	5190	227	227	227
18.00	MEDIUM	180.00	330.00	2400	4819	228	228	212
20.00	MEDIUM	180.00	360.00	3000	4658	244	244	244
22.00	MEDIUM	190.00	380.00	3000	4643	260	260	260
9.00	STOUT	190.00	275.00	1800	19146	318	318	243
10.00	STOUT	190.00	285.00	1800	15667	312	312	210
11.00	STOUT	190.00	295.00	1800	13199	309	298	181
12.00	STOUT	190.00	305.00	1800	11377	306	264	156
13.00	STOUT	195.00	320.00	2400	11703	320	320	320
14.00	STOUT	195.00	335.00	2400	10624	330	330	324
15.00	STOUT	195.00	350.00	2400	9773	338	338	294
16.00	STOUT	200.00	365.00	2400	9581	353	353	266
17.00	STOUT	200.00	375.00	2400	8758	350	350	240
18.00	STOUT	200.00	390.00	2400	8282	357	357	217
20.00	STOUT	200.00	415.00	3000	7633	360	360	360
22.00	STOUT	200.00	435.00	3000	6742	355	355	346
24.00	STOUT	200.00	470.00	3000	6502	371	371	301



**Table 6: HDCu, 38mm<sup>2</sup> - Single Pole Stay Capability**

Conductor Code Name (if any)	38Cu	
Conductor Tension (MWT / MCT) (kgf)	642.7803	
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	760	
Wind Load per Metre / MCP (kg/m)	0.613788	
Maximum Span Length (m)	140	
Number of Conductors	3	
Factor of Safety	2.5	
No Pole Wind Considered	n	
Where two stays are used, calculation is based on 2m separation between stays at ground level.		
<b>MAXIMUM ANGLE OF LINE DEVIATION</b>		
Angle of Stay Slope	Grade 1150 1x7/4.00 (Maximum working load 4000 per stay)	Grade 1150 2x7/4.00 (Maximum working load 4000 per stay)
30	50	60
35	60	60
40	60	60
45	60	60

**Table 7: HDCu, 38mm<sup>2</sup> - H-Pole Stay Capability**

Conductor Code Name (if any)	38Cu	
Conductor Tension (MWT / MCT) (kgf)	642.78	
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	760.00	
Wind Load per Metre / MCP (kg/m)	0.61	
Maximum Span Length (m)	140.00	
Number of Conductors	3.00	
Factor of Safety	2.50	
No Pole Wind Considered	n	
Where one stay per limb of H-pole is required, enter User Defined Stay(s) and cross check strut strength from H STRUT using 4 Stays loading for angle of deviation. Where two stays used, calculation based on 2m separation between stays at ground level.		
<b>MAXIMUM ANGLE OF LINE DEVIATION</b>		
Angle of Stay Slope	Grade 1150 3x7/4.00 (Maximum working load 4000 per stay)	Grade 1150 4x7/4.00 (Maximum working load 4000 per stay)
30	60	60
35	60	60
40	60	60
45	60	60

**Table 8: HDCu, 38mm<sup>2</sup> - Single Pole Strut Loading**

Conductor Code Name (if any)	38Cu			
Conductor Tension (MWT/MCT) (kgf)	642.78			
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	760.00			
Iced Conductor Weight / MCW (kg/m)	0.34			
Wind Load per Metre / MCP (kg/m)	0.61			
Maximum Span Length (m)	140.00			
Number of Conductors	3.00			
Factor of Safety	2.50			
No Pole Wind Considered	n			
Longitudinal Load in Conductor (kgf)	4820.85			
Transverse Load [Normal to Span] (kgf)	644.48			
Vertical Load [No Downpull] (kgf)	916.20			
Vertical Load with Downpull 1: 10.00 (kgf)	1875.59			
Pole Wind Load (kgf)	0.00			
<b>STRUT LOAD in POLE with ONE or TWO STAYS (kgf)</b>				
<b>Line Angle (Degrees)</b>	<b>Stay Angle (Degrees)</b>			
	<b>30.00</b>	<b>35.00</b>	<b>40.00</b>	<b>45.00</b>
<b>Downpull 1: 10.00</b>				
0.00	2991.85	2795.99	2643.64	2520.06
5.00	3719.23	3395.75	3144.12	2940.01
10.00	4443.10	3992.61	3642.19	3357.94
15.00	5162.08	4585.44	4136.89	3773.04
20.00	5874.80	5173.11	4627.29	4184.54
25.00	6579.92	5754.50	5112.44	4591.63
30.00	7276.07	6328.51	5591.44	4993.56
35.00	7961.95	6894.05	6063.37	5389.55
40.00	8636.24	7450.03	6527.32	5778.85
45.00	9297.67	7995.40	6982.42	6160.73
50.00	9944.96	8529.12	7427.79	6534.44
55.00	10576.89	9050.18	7862.60	6899.29
60.00	11192.26	9557.57	8286.01	7254.57

**Table 9: HDCu, 38mm<sup>2</sup> - H-Pole Strut Loading**

Conductor Code Name (if any)	38Cu			
Conductor Tension (MWT/MCT) (kgf)	642.78			
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	760.00			
Iced Conductor Weight / MCW (kg/m)	0.34			
Wind Load per Metre / MCP (kg/m)	0.61			
Maximum Span Length (m)	140.00			
Number of Conductors	3.00			
Factor of Safety	2.50			
No Pole Wind Considered	n			
Longitudinal Load in Conductor (kgf)	4820.85			
Transverse Load [Normal to Span] (kgf)	644.48			
Vertical Load [No Downpull] (kgf)	916.20			
Vertical Load with Downpull 1: 10.00 (kgf)	1875.59			
"H" Structure Wind Load (kgf)	0.00			
<b>STRUT LOAD in POLE with THREE STAYS (kgf)</b> (60% of Line Load for Inner Pole - Worst Case)				
<b>Line Angle (Degrees)</b>	<b>Stay Angle (Degrees)</b>			
	30.00	35.00	40.00	45.00
Downpull 1: 10.00				
0.00	1607.55	1490.04	1398.63	1324.48
5.00	2043.98	1849.89	1698.91	1576.45
10.00	2478.30	2208.01	1997.75	1827.21
15.00	2909.69	2563.70	2294.57	2076.27
20.00	3337.32	2916.31	2588.81	2323.16
25.00	3760.39	3265.14	2879.91	2567.42
30.00	4178.09	3609.55	3167.31	2808.58
35.00	4589.61	3948.87	3450.46	3046.17
40.00	4994.19	4282.46	3728.83	3279.75
45.00	5391.04	4609.68	4001.89	3508.88
50.00	5779.42	4929.91	4269.12	3733.11
55.00	6158.58	5242.55	4530.00	3952.01
60.00	6527.80	5546.99	4784.05	4165.18

**Table 9: HDCu, 38mm<sup>2</sup> - H-Pole Strut Loading (Continued)**

STRUT LOAD in POLE with FOUR STAYS (kgf) (50% of Line Load for Each Pole)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Downpull 1: 10.00				
0.00	1495.93	1398.00	1321.82	1260.03
5.00	1859.62	1697.87	1572.06	1470.01
10.00	2221.55	1996.30	1821.09	1678.97
15.00	2581.04	2292.72	2068.44	1886.52
20.00	2937.40	2586.55	2313.64	2092.27
25.00	3289.96	2877.25	2556.22	2295.82
30.00	3638.04	3164.26	2795.72	2496.78
35.00	3980.98	3447.02	3031.68	2694.78
40.00	4318.12	3725.01	3263.66	2889.43
45.00	4648.83	3997.70	3491.21	3080.36
50.00	4972.48	4264.56	3713.90	3267.22
55.00	5288.45	4525.09	3931.30	3449.64
60.00	5596.13	4778.79	4143.01	3627.29

## C2 Conductor, HDCu, 70mm<sup>2</sup>

### Recommended Span 120m

**NOTE:**

A Factor-of-Safety (FOS) value of 2.5 is used on Stays, Windspan and Foundation Capabilities.

A FOS value of 2.0 is used on the Single Pole Strut loadings. A FOS of 2.5 is used on H-Pole Strut loadings.

Occasional Long Span of 140m support specified for this use is I-40003-GA-047 and I-40003-GA-048.

**Table 1: HDCu, 70mm<sup>2</sup> - In Line Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	PIN TYPE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	Inter	Stout	10kN	120
	(Refer to I-40003-GA-045)	Stout	10kN	120
	Section	Stout	10kN	120
	H Section			

**Table 2: HDCu, 70mm<sup>2</sup> - Angle Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	PIN TYPE	MAXIMUM LINE DEVIATION	MINIMUM STAY ANGLE	MAXIMUM CLASHING SPAN (M)
Refer to Appendix A	Pin Angle	Stout	10kN	13	1 x 30	110
	(Refer to I-40003-GA-046)					
	Section Angle	EXStout ≤ 13	-	60	2 x 45	120
	H Section Angle	EXStout ≤ 18	-	35	2 x 45	120
	H Section Angle	EXStout ≤ 18	-	60	3 x 45	120

**Table 3: HDCu, 70mm<sup>2</sup> - Terminal Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	MINIMUM STAY ANGLE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	Tee off	EXStout ≤ 13	2 x 45	120
	Terminal	EXStout ≤ 13	2 x 45	120
	H Terminal	EXStout ≤ 20	4 x 45	120

**Table 4: HDCu, 70mm<sup>2</sup> - Design Erection Sag/Tension (33% UTS)**

Conductor Code Name	70Cu	Absolute Maximum Working Tension (MWT) Limit (kgf)	1370
Basic/Recommended Span (m)	120.00	Temperature at MWT Limit (Degrees C)	-5.6
Temperature Shift for Creep (°C)	0.00	Maximum "Everyday" Tension (EDT) Limit (kgf)	913.7
Equivalent Percentage Increase in Tension (%)	0.00 at 15°C	Temperature at EDT Limit (Degrees C)	5
Required Percentage Increase in Tension (%)	0.00 at 15°C	Number of Conductors	3
Conductor Weight (kg/m)	0.621	Maximum Span (m)	140
Cross-Sectional Area of Conductor (mm <sup>2</sup> )	70	FACTORS OF SAFETY:	
Conductor Overall Diameter (mm)	10.65	Unstayed Pole	2.5
Coefficient of Linear Expansion (/Degree C)	0.000017	Stayed Pole	2.5
Modulus of Elasticity (kg/mm <sup>2</sup> )	12660	Stays	2.5
Rated Breaking Strength of Conductor (kgf)	2741	Steelwork & Pin Insulator (on UTS for Traditional Design only)	2.5
Wind Pressure on Conductor (N/m <sup>2</sup> )	380	Wind on Pole	y
Radial Ice Thickness (mm)	9.5		

TEMP (°C)	TENSION (kgf)	DESIGN/ERECTION SAG (m) FOR SPAN LENGTH (m)							
		70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00
-5.6	879.6	0.43	0.56	0.71	0.88	1.07	1.27	1.49	1.73
0	829.0	0.46	0.60	0.76	0.94	1.13	1.35	1.58	1.84
5	786.9	0.48	0.63	0.80	0.99	1.19	1.42	1.67	1.93
10	747.7	0.51	0.66	0.84	1.04	1.26	1.49	1.75	2.03
15	711.3	0.53	0.70	0.88	1.09	1.32	1.57	1.84	2.14
20	677.6	0.56	0.73	0.93	1.15	1.39	1.65	1.94	2.25
25	646.5	0.59	0.77	0.97	1.20	1.45	1.73	2.03	2.35
30	618.0	0.62	0.80	1.02	1.26	1.52	1.81	2.12	2.46
35	591.7	0.64	0.84	1.06	1.31	1.59	1.89	2.22	2.57
40	567.5	0.67	0.88	1.11	1.37	1.66	1.97	2.31	2.68
45	545.3	0.70	0.91	1.15	1.42	1.72	2.05	2.41	2.79
50	524.9	0.72	0.95	1.20	1.48	1.79	2.13	2.50	2.90
55	506.1	0.75	0.98	1.24	1.53	1.86	2.21	2.59	3.01
60	488.8	0.78	1.02	1.29	1.59	1.92	2.29	2.68	3.11
65	472.8	0.80	1.05	1.33	1.64	1.99	2.36	2.77	3.22
70	457.9	0.83	1.08	1.37	1.70	2.05	2.44	2.86	3.32
75	444.2	0.86	1.12	1.42	1.75	2.11	2.52	2.95	3.43
80	431.4	0.88	1.15	1.46	1.80	2.18	2.59	3.04	3.53

**Table 5: HDCu, 70mm<sup>2</sup> - Pole Data (33% UTS)**

Length (m)	Grade	Top Dia (mm)	Dia 1.5m from Butt (mm)	Planting Depth (mm)	Single Pole Strut Strength (kgf)	Maximum Wind Span Length for Specified Pole (m)		
						Good	Good/Av	Av/Poor
9.00	MEDIUM	150.00	220.00	1800	7617	79	79	79
10.00	MEDIUM	150.00	230.00	1800	6335	79	79	79
11.00	MEDIUM	150.00	240.00	1800	5421	79	79	79
12.00	MEDIUM	150.00	250.00	1800	4743	80	80	80
13.00	MEDIUM	160.00	260.00	2400	5212	82	82	82
14.00	MEDIUM	160.00	275.00	2400	4820	87	87	87
15.00	MEDIUM	165.00	290.00	2400	4816	94	94	94
16.00	MEDIUM	170.00	305.00	2400	4842	100	100	100
17.00	MEDIUM	180.00	320.00	2400	5190	109	109	109
18.00	MEDIUM	180.00	330.00	2400	4819	109	109	109
20.00	MEDIUM	180.00	360.00	3000	4658	119	119	119
22.00	MEDIUM	190.00	380.00	3000	4643	125	125	125
9.00	STOUT	190.00	275.00	1800	19146	161	161	140
10.00	STOUT	190.00	285.00	1800	15667	156	156	124
11.00	STOUT	190.00	295.00	1800	13199	153	153	110
12.00	STOUT	190.00	305.00	1800	11377	152	152	99
13.00	STOUT	195.00	320.00	2400	11703	159	159	159
14.00	STOUT	195.00	335.00	2400	10624	164	164	164
15.00	STOUT	195.00	350.00	2400	9773	169	169	169
16.00	STOUT	200.00	365.00	2400	9581	176	176	165
17.00	STOUT	200.00	375.00	2400	8758	174	174	153
18.00	STOUT	200.00	390.00	2400	8282	178	178	143
20.00	STOUT	200.00	415.00	3000	7633	180	180	180
22.00	STOUT	200.00	435.00	3000	6742	177	177	177
24.00	STOUT	200.00	470.00	3000	6502	187	187	187

**Table 5: HDCu, 70mm<sup>2</sup> - Pole Data (33% UTS) (Continued)**

Length (m)	Grade	Top Dia (mm)	Dia 1.5m from Butt (mm)	Planting Depth (mm)	Single Pole Strut Strength (kgf)	Maximum Wind Span Length for Specified Pole (m)		
						Good	Good/Av	Av/Poor
9.00	EXSTOUT	190.00	295.00	1800	21771	199	199	142
10.00	EXSTOUT	190.00	305.00	1800	17760	192	192	126
11.00	EXSTOUT	190.00	315.00	1800	14922	186	175	112
12.00	EXSTOUT	190.00	325.00	1800	12834	182	158	100
13.00	EXSTOUT	195.00	340.00	2400	13079	187	187	187
14.00	EXSTOUT	195.00	355.00	2400	11847	190	190	190
15.00	EXSTOUT	195.00	370.00	2400	10874	193	193	181
16.00	EXSTOUT	200.00	385.00	2400	10623	200	200	168
17.00	EXSTOUT	200.00	395.00	2400	9696	197	197	156
18.00	EXSTOUT	200.00	410.00	2400	9152	199	199	146
20.00	EXSTOUT	200.00	435.00	3000	8391	199	199	199
22.00	EXSTOUT	200.00	440.00	3000	7396	194	194	194
24.00	EXSTOUT	200.00	440.00	3000	7109	202	202	202



**Table 6: HDCu, 70mm<sup>2</sup> - Single Pole Stay Capability**

Conductor Code Name (if any)	70Cu	
Conductor Tension (MWT / MCT) (kgf)	1374	
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380	
Wind Load per Metre / MCP (kg/m)	1.149	
Maximum Span Length (m)	140	
Number of Conductors	3	
Factor of Safety	2.5	
Wind assumed on 18 m Stout Pole	y	
Where two stays are used, calculation is based on 2m separation between stays at ground level.		
<b>MAXIMUM ANGLE OF LINE DEVIATION</b>		
Angle of Stay Slope	Grade 1150 1x7/4.00 (Stay strength 10299)	Grade 1150 2x7/4.00 (Stay Strength 10299)
30	20	49
35	25	59
40	29	60
45	33	60

**Table 7: HDCu, 70mm<sup>2</sup> - H-Pole Stay Capability**

Conductor Code Name (if any)	70Cu	
Conductor Tension (MWT / MCT) (kgf)	1374	
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380.00	
Wind Load per Metre / MCP (kg/m)	1.149	
Maximum Span Length (m)	140.00	
Number of Conductors	3.00	
Factor of Safety	2.50	
Wind assumed on 18 m Stout Pole	y	
Where one stay per limb of H-pole is required, enter User Defined Stay(s) and cross check strut strength from H STRUT using 4 Stays loading for angle of deviation. Where two stays used, calculation based on 2m separation between stays at ground level.		
<b>MAXIMUM ANGLE OF LINE DEVIATION</b>		
Angle of Stay Slope	Grade 1150 3x7/4.00 (Stay strength 10299)	Grade 1150 4x7/4.00 (Stay Strength 10299)
30	60	60
35	60	60
40	60	60
45	60	60

**Table 8: HDCu, 70mm<sup>2</sup> - Single Pole Strut Loading**

Conductor Code Name (if any)	70Cu			
Conductor Tension (MWT/MCT) (kgf)	1374			
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380.00			
Iced Conductor Weight / MCW (kg/m)	1.17			
Wind Load per Metre / MCP (kg/m)	1.149			
Maximum Span Length (m)	140.00			
Number of Conductors	3.00			
Factor of Safety	2.00			
Wind assumed on 18 m Stout Pole	y			
Longitudinal Load in Conductor (kgf)	8244.2			
Transverse Load [Normal to Span] (kgf)	965.1			
Vertical Load [No Downpull] (kgf)	1426.8			
Vertical Load with Downpull 1: 10.00 (kgf)	3067.5			
Pole Wind Load (kgf)	179.63			
<b>STRUT LOAD in POLE with ONE or TWO STAYS (kgf)</b>				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Downpull 1: 10.00				
0.00	5050	4702	4432	4212
5.00	6294	5728	5288	4930
10.00	7533	6749	6140	5646
15.00	8764	7764	6987	6356
20.00	9984	8770	7826	7061
25.00	11192	9766	8657	7758
30.00	12385	10750	9478	8447
35.00	13561	11719	10287	9126
40.00	14717	12673	11083	9793
45.00	15852	13609	11864	10449
50.00	16963	14525	12628	11090
55.00	18048	15420	13375	11717
60.00	19106	16291	14103	12327

**Table 9: HDCu, 70mm<sup>2</sup> - H-Pole Strut Loading**

Conductor Code Name (if any)	70Cu			
Conductor Tension (MWT/MCT) (kgf)	1374			
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380.00			
Iced Conductor Weight / MCW (kg/m)	1.71			
Wind Load per Metre / MCP (kg/m)	1.149			
Maximum Span Length (m)	140.00			
Number of Conductors	3.00			
Factor of Safety	2.50			
Wind assumed on 18 m Stout Pole	y			
Longitudinal Load in Conductor (kgf)	10305.2			
Transverse Load [Normal to Span] (kgf)	1206.4			
Vertical Load [No Downpull] (kgf)	1783.5			
Vertical Load with Downpull 1: 10.00 (kgf)	3834.3			
"H" Structure Wind Load (kgf)	336.80			
<b>STRUT LOAD in POLE with THREE STAYS (kgf)</b> <b>(60% of Line Load for Inner Pole - Worst Case)</b>				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Level				
0.00	2495	2214	1995	1818
5.00	3429	2983	2637	2356
10.00	4357	3749	3276	2893
15.00	5280	4510	3911	3426
20.00	6196	5265	4541	3954
25.00	7102	6012	5165	4477
30.00	7996	6750	5780	4994
35.00	8878	7477	6387	5503
40.00	9746	8192	6984	6003
45.00	10597	8894	7569	6495
50.00	11430	9581	8143	6976
55.00	12244	10252	8703	7446
60.00	13037	10906	9248	7904

**Table 9: HDCu, 70mm<sup>2</sup> - H-Pole Strut Loading (Continued)**

STRUT LOAD in POLE with THREE STAYS (kgf) (60% of Line Load for Inner Pole - Worst Case)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Downpull 1: 10.00				
0.00	3521	3239	3021	2843
5.00	4454	4009	3663	3382
10.00	5383	4775	4302	3918
15.00	6306	5536	4937	4451
20.00	7221	6291	5567	4979
25.00	8127	7037	6190	5502
30.00	9022	7775	6806	6019
35.00	9904	8502	7412	6528
40.00	10771	9217	8009	7029
45.00	11622	9919	8595	7520
50.00	12455	10606	9168	8001
55.00	13269	11278	9728	8471
60.00	14062	11931	10274	8929

**Table 9: HDCu, 70mm<sup>2</sup> - H-Pole Strut Loading (Continued)**

STRUT LOAD in POLE with FOUR STAYS (kgf) (50% of Line Load for Each Pole)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Level				
0.00	2228	1994	1811	1663
5.00	3006	2635	2346	2112
10.00	3780	3273	2879	2559
15.00	4549	3907	3408	3003
20.00	5312	4536	3933	3444
25.00	6067	5159	4452	3879
30.00	6812	5773	4965	4310
35.00	7547	6379	5471	4734
40.00	8270	6975	5968	5152
45.00	8979	7560	6456	5561
50.00	9674	8133	6934	5962
55.00	10352	8692	7401	6354
60.00	11013	9237	7856	6735

**Table 9: HDCu, 70mm<sup>2</sup> - H-Pole Strut Loading (Continued)**

STRUT LOAD in POLE with FOUR STAYS (kgf) (50% of Line Load for Each Pole)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Downpull 1: 10.00				
0.00	3254	3019	2837	2689
5.00	4031	3660	3372	3138
10.00	4805	4299	3904	3585
15.00	5574	4933	4434	4029
20.00	6337	5562	4958	4469
25.00	7092	6184	5478	4905
30.00	7838	6799	5991	5335
35.00	8573	7405	6496	5760
40.00	9295	8001	6994	6177
45.00	10005	8586	7482	6586
50.00	10699	9158	7960	6987
55.00	11377	9717	8426	7379
60.00	12038	10262	8881	7761

### C3 Conductor, HDCu, 100mm<sup>2</sup>

#### Recommended Span 120m

**NOTE:**

A Factor-of-Safety (FOS) value of 2.0 is used on Stays, Windspan and Foundation capabilities.

A FOS value of 2.0 is used on the Single Pole Strut loadings. A FOS of 2.5 is used on H Pole Strut loadings.

Occasional Long Span of 140m support specified for this use is I-40003-GA-047 and I-40003-GA-048.

**Table 1: HDCu, 100mm<sup>2</sup> - In Line Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	PIN TYPE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	Inter (Refer to I-40003-GA-045)	Stout	10kN	130
	Section	Stout	10kN	130
	H Section	Stout	10kN	130

**Table 2: HDCu, 100mm<sup>2</sup> - Angle Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	PIN TYPE	MAXIMUM LINE DEVIATION	MINIMUM STAY ANGLE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	Pin Angle (Refer to I-40003-GA-046)	Stout	10kN	7	1 x 30	120
	Section Angle	EXStout ≤ 17	-	19	2 x 45	130
	H Section Angle	EXStout ≤ 13	-	60	3 x 45	130
	H Section Angle	EXStout ≤ 15	-	60	4 x 45	130

**Table 3: HDCu, 100mm<sup>2</sup> - Terminal Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	MINIMUM STAY ANGLE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	H Terminal	ExStout ≤ 15	4 x 45	130

**Table 4: HDCu, 100mm<sup>2</sup> - Design Erection Sag/Tension (33% UTS)**

Conductor Code Name	100Cu	Absolute Maximum Working Tension (MWT) Limit (kgf)	1919
Basic/Recommended Span (m)	120.00	Temperature at MWT Limit (Degrees C)	-5.6
Temperature Shift for Creep (°C)	0.00	Maximum "Everyday" Tension (EDT) Limit (kgf)	1279
Equivalent Percentage Increase in Tension (%)	0.00 at 15°C	Temperature at EDT Limit (Degrees C)	5
Required Percentage Increase in Tension (%)	0.00 at 15°C	Number of Conductors	3
Conductor Weight (kg/m)	0.9112	Maximum Span (m)	140
Cross-Sectional Area of Conductor (mm <sup>2</sup> )	101.5	FACTORS OF SAFETY:	
Conductor Overall Diameter (mm)	12.9	Unstayed Pole	2.5
Coefficient of Linear Expansion (/Degree C)	0.000017	Stayed Pole	2.5
Modulus of Elasticity (kg/mm <sup>2</sup> )	12660	Stays	2.5
Rated Breaking Strength of Conductor (kgf)	3838	Steelwork & Pin Insulator (on UTS for Traditional Design only)	2.5
Wind Pressure on Conductor (N/m <sup>2</sup> )	380	Wind on Pole	y
Radial Ice Thickness (mm)	9.5		

TEMP (°C)	TENSION (kgf)	DESIGN/ERECTION SAG (m) FOR SPAN LENGTH (m)							
		70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00
-5.6	1428.2	0.39	0.51	0.65	0.80	0.96	1.15	1.35	1.56
0	1345.6	0.41	0.54	0.69	0.85	1.02	1.22	1.43	1.66
5	1276.0	0.44	0.57	0.72	0.89	1.08	1.29	1.51	1.75
10	1210.5	0.46	0.60	0.76	0.94	1.14	1.35	1.59	1.84
15	1149.2	0.49	0.63	0.80	0.99	1.20	1.43	1.68	1.94
20	1092.0	0.51	0.67	0.84	1.04	1.26	1.50	1.76	2.04
25	1039.0	0.54	0.70	0.89	1.10	1.33	1.58	1.85	2.15
30	990.0	0.56	0.74	0.93	1.15	1.39	1.66	1.94	2.26
35	944.7	0.59	0.77	0.98	1.21	1.46	1.74	2.04	2.36
40	903.1	0.62	0.81	1.02	1.26	1.53	1.82	2.13	2.47
45	864.9	0.65	0.84	1.07	1.32	1.59	1.90	2.23	2.58
50	829.7	0.67	0.88	1.11	1.37	1.66	1.98	2.32	2.69
55	797.4	0.70	0.91	1.16	1.43	1.73	2.06	2.41	2.80
60	767.7	0.73	0.95	1.20	1.48	1.80	2.14	2.51	2.91
65	740.3	0.75	0.98	1.25	1.54	1.86	2.22	2.60	3.02
70	715.0	0.78	1.02	1.29	1.59	1.93	2.29	2.69	3.12
75	691.7	0.81	1.05	1.33	1.65	1.99	2.37	2.78	3.23
80	670.1	0.83	1.09	1.38	1.70	2.06	2.45	2.87	3.33



**Table 5: HDCu, 100mm<sup>2</sup> - Pole Data (33% UTS)**

Length (m)	Grade	Top Dia (mm)	Dia 1.5m from Butt (mm)	Planting Depth (mm)	Single Pole Strut Strength (kgf)	Maximum Wind Span Length for Specified Pole (m)		
						Good	Good/Av	Av/Poor
9.00	MEDIUM	150.00	220.00	1800	7617	74	74	74
10.00	MEDIUM	150.00	230.00	1800	6335	73	73	73
11.00	MEDIUM	150.00	240.00	1800	5421	74	74	74
12.00	MEDIUM	150.00	250.00	1800	4743	74	74	74
13.00	MEDIUM	160.00	260.00	2400	5212	76	76	76
14.00	MEDIUM	160.00	275.00	2400	4820	81	81	81
15.00	MEDIUM	165.00	290.00	2400	4816	87	87	87
16.00	MEDIUM	170.00	305.00	2400	4842	93	93	93
17.00	MEDIUM	180.00	320.00	2400	5190	101	101	101
18.00	MEDIUM	180.00	330.00	2400	4819	102	102	102
20.00	MEDIUM	180.00	360.00	3000	4658	110	110	110
22.00	MEDIUM	190.00	380.00	3000	4643	116	116	116
9.00	STOUT	190.00	275.00	1800	19146	149	149	130
10.00	STOUT	190.00	285.00	1800	15667	145	145	115
11.00	STOUT	190.00	295.00	1800	13199	143	143	102
12.00	STOUT	190.00	305.00	1800	11377	141	141	92
13.00	STOUT	195.00	320.00	2400	11703	148	148	148
14.00	STOUT	195.00	335.00	2400	10624	153	153	153
15.00	STOUT	195.00	350.00	2400	9773	157	157	157
16.00	STOUT	200.00	365.00	2400	9581	164	164	154
17.00	STOUT	200.00	375.00	2400	8758	162	162	143
18.00	STOUT	200.00	390.00	2400	8282	166	166	133
20.00	STOUT	200.00	415.00	3000	7633	167	167	168
22.00	STOUT	200.00	435.00	3000	6742	165	165	165
24.00	STOUT	200.00	470.00	3000	6502	174	174	174

**Table 5: HDCu, 100mm<sup>2</sup> - Pole Data (33% UTS) (Continued)**

Length (m)	Grade	Top Dia (mm)	Dia 1.5m from Butt (mm)	Planting Depth (mm)	Single Pole Strut Strength (kgf)	Maximum Wind Span Length for Specified Pole (m)		
						Good	Good/Av	Av/Poor
9.00	EXSTOUT	190.00	295.00	1800	21771	185	185	132
10.00	EXSTOUT	190.00	305.00	1800	17760	178	178	117
11.00	EXSTOUT	190.00	315.00	1800	14922	173	163	104
12.00	EXSTOUT	190.00	325.00	1800	12834	169	147	93
13.00	EXSTOUT	195.00	340.00	2400	13079	174	174	174
14.00	EXSTOUT	195.00	355.00	2400	11847	177	177	177
15.00	EXSTOUT	195.00	370.00	2400	10874	179	179	168
16.00	EXSTOUT	200.00	385.00	2400	10623	186	186	156
17.00	EXSTOUT	200.00	395.00	2400	9696	183	183	145
18.00	EXSTOUT	200.00	410.00	2400	9152	185	185	136
20.00	EXSTOUT	200.00	435.00	3000	8391	185	185	185
22.00	EXSTOUT	200.00	440.00	3000	7396	181	181	181
24.00	EXSTOUT	200.00	440.00	3000	7109	188	188	188

**Table 6: HDCu, 100mm<sup>2</sup> - Single Pole Stay Capability**

Conductor Code Name (if any)	100Cu	
Conductor Tension (MWT / MCT) (kgf)	1922.6	
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380	
Wind Load per Metre / MCP (kg/m)	1.236	
Maximum Span Length (m)	140	
Number of Conductors	3	
Factor of Safety	2.0	
Wind assumed on 18 m Stout Pole	y	
Where two stays are used, calculation is based on 2m separation between stays at ground level.		
<b>MAXIMUM ANGLE OF LINE DEVIATION</b>		
Angle of Stay Slope	Grade 1150 1x7/4.00 (Maximum working load 4000 per stay)	Grade 1150 2x7/4.00 (Maximum working load 4000 per stay)
30	14.00	34.00
35	17.00	40.00
40	20.00	47.00
45	23.00	53.00

**Table 7: HDCu, 100mm<sup>2</sup> - H-Pole Stay Capability**

Conductor Code Name (if any)	100Cu	
Conductor Tension (MWT / MCT) (kgf)	1922.6	
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380.00	
Wind Load per Metre / MCP (kg/m)	1.236	
Maximum Span Length (m)	140.00	
Number of Conductors	3.00	
Factor of Safety	2.50	
Wind assumed on 18 m Stout Pole	y	
Where one stay per limb of H-pole is required, enter User Defined Stay(s) and cross check strut strength from H STRUT using 4 Stays loading for angle of deviation. Where two stays used, calculation based on 2m separation between stays at ground level.		
<b>MAXIMUM ANGLE OF LINE DEVIATION</b>		
Angle of Stay Slope	Grade 1150 3x7/4.00 (Maximum working load 4000 per stay)	Grade 1150 4x7/4.00 (Maximum working load 4000 per stay)
30	56	60
35	60	60
40	60	60
45	60	60

**Table 8: HDCu, 100mm<sup>2</sup> - Single Pole Strut Loading**

Conductor Code Name (if any)	100Cu			
Conductor Tension (MWT/MCT) (kgf)	1922.6			
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380.00			
Iced Conductor Weight / MCW (kg/m)	1.522			
Wind Load per Metre / MCP (kg/m)	1.236			
Maximum Span Length (m)	140.00			
Number of Conductors	3.00			
Factor of Safety	2.00			
Wind assumed on 18 m Stout Pole	y			
Longitudinal Load in Conductor (kgf)	11535.6			
Transverse Load [Normal to Span] (kgf)	1038.3			
Vertical Load [No Downpull] (kgf)	1722.1			
Vertical Load with Downpull 1: 10.00 (kgf)	4017.7			
Pole Wind Load (kgf)	179.63			
<b>STRUT LOAD in POLE with ONE or TWO STAYS (kgf)</b>				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Downpull 1: 10.00				
0.00	6127	5757	5469	5236
5.00	7869	7193	6667	6241
10.00	9603	8623	7861	7243
15.00	11328	10045	9047	8238
20.00	13039	11456	10225	9226
25.00	14734	12853	11391	10205
30.00	16409	14234	12543	11172
35.00	18060	15597	13680	12125
40.00	19686	16937	14799	13064
45.00	21283	18253	15897	13986
50.00	22847	19543	16973	14889
55.00	24376	20804	18025	15771
60.00	25867	22033	19051	16632

**Table 9: HDCu, 100mm<sup>2</sup> - H-Pole Strut Loading**

Conductor Code Name (if any)	100Cu			
Conductor Tension (MWT/MCT) (kgf)	1922.6			
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380.00			
Iced Conductor Weight / MCW (kg/m)	1.522			
Wind Load per Metre / MCP (kg/m)	1.236			
Maximum Span Length (m)	140.00			
Number of Conductors	3.00			
Factor of Safety	2.50			
Wind assumed on 18 m Stout Pole	y			
Longitudinal Load in Conductor (kgf)	14419.5			
Transverse Load [Normal to Span] (kgf)	1297.9			
Vertical Load [No Downpull] (kgf)	2152.6			
Vertical Load with Downpull 1: 10.00 (kgf)	5022.2			
"H" Structure Wind Load (kgf)	336.80			
<b>STRUT LOAD in POLE with THREE STAYS (kgf)</b> (60% of Line Load for Inner Pole - Worst Case)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Level				
0.00	2775	2477	2245	2057
5.00	4081	3554	3144	2811
10.00	5382	4627	4039	3562
15.00	6676	5693	4929	4309
20.00	7959	6751	5812	5050
25.00	9230	7799	6686	5784
30.00	10486	8835	7551	6509
35.00	11725	9857	8403	7224
40.00	12944	10862	9242	7928
45.00	14142	11849	10066	8620
50.00	15315	12817	10873	9297
55.00	16462	13762	11662	9959
60.00	17580	14684	12432	10604

**Table 9: HDCu, 100mm<sup>2</sup> - H-Pole Strut Loading (Continued)**

STRUT LOAD in POLE with THREE STAYS (kgf) (60% of Line Load for Inner Pole - Worst Case)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Downpull 1: 10.00				
0.00	4210	3912	3680	3492
5.00	5516	4989	4579	4246
10.00	6817	6061	5474	4997
15.00	8110	7128	6364	5744
20.00	9394	8186	7247	6485
25.00	10665	9234	8121	7219
30.00	11921	10270	8986	7944
35.00	13160	11291	9838	8659
40.00	14379	12297	10677	9363
45.00	15576	13284	11501	10054
50.00	16750	14251	12308	10732
55.00	17896	15197	13097	11394
60.00	19014	16119	13866	12039

**Table 9: HDCu, 100mm<sup>2</sup> - H-Pole Strut Loading (Continued)**

STRUT LOAD in POLE with FOUR STAYS (kgf) (50% of Line Load for Each Pole)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Level				
0.00	2492	2244	2050	1894
5.00	3580	3141	2799	2522
10.00	4664	4035	3545	3148
15.00	5742	4924	4287	3770
20.00	6812	5805	5023	4388
25.00	7871	6679	5751	4999
30.00	8918	7542	6472	5604
35.00	9950	8393	7182	6200
40.00	10966	9231	7881	6786
45.00	11964	10054	8568	7362
50.00	12942	10860	9240	7927
55.00	13897	11648	9898	8479
60.00	14829	12416	10539	9016

**Table 9: HDCu, 100mm<sup>2</sup> - H-Pole Strut Loading (Continued)**

STRUT LOAD in POLE with FOUR STAYS (kgf) (50% of Line Load for Each Pole)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Downpull 1: 10.00				
0.00	3927	3678	3485	3328
5.00	5015	4576	4234	3957
10.00	6099	5470	4980	4583
15.00	7177	6358	5722	5205
20.00	8247	7240	6457	5823
25.00	9306	8114	7186	6434
30.00	10353	8977	7906	7038
35.00	11385	9828	8617	7634
40.00	12401	10666	9316	8221
45.00	13399	11489	10003	8797
50.00	14377	12295	10675	9362
55.00	15332	13083	11333	9913
60.00	16264	13851	11974	10451



## C4 Conductor, AAAC, 50mm<sup>2</sup> (Hazel)

### Recommended Span 90m

**NOTE:**

A Factor of Safety (FOS) value of 2.5 is used on Stays, Windspan, Foundation and both Single and H Pole Strut loading capabilities.

Occasional Long Span of 140m support specified for this use is I-40003-GA-047 and I-40003-GA-048.

**Table 1: AAAC, 50mm<sup>2</sup> - In Line Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	PIN TYPE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	Inter (Refer to I-40003-GA-001)	Medium	10kN	105
	Section	Medium	10kN	115
	H Section	Medium	10kN	115

**Table 2: AAAC, 50mm<sup>2</sup> - Angle Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	PIN TYPE	MAXIMUM LINE DEVIATION	MINIMUM STAY ANGLE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	Pin Angle (Refer to I-40003-GA-002)	Medium	10kN	8	1 x 30	90
	Section Angle	Stout ≤ 13	-	60	1 x 30	115
	H Section Angle	Stout ≤ 20	-	60	1 x 45	115
	H Section Angle	Stout	-	60	3 x 45	115

**Table 3: AAAC, 50mm<sup>2</sup> - Terminal Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	MINIMUM STAY ANGLE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	Tee off	Stout	1 x 45	115
	Terminal	Stout ≤ 14	1 x 30	115
	H Terminal	Stout ≤ 20	1 x 45	115
	H Terminal	Stout	2 x 45	115

**Table 4a: AAAC, 50mm<sup>2</sup> - Design Sag/Tension (20% UTS)**

Conductor Code Name	Hazel	Absolute Maximum Working Tension (MWT) Limit (kgf)	685.2							
Basic/Recommended Span (m)	90.00	Temperature at MWT Limit (Degrees C)	-5.6							
Temperature Shift for Creep (°C)	0.00	Maximum "Everyday" Tension (EDT) Limit (kgf)	342.2							
Equivalent Percentage Increase in Tension (%)	0.00 at 15°C	Temperature at EDT Limit (Degrees C)	5							
Required Percentage Increase in Tension (%)	0.00 at 15°C	Number of Conductors	3							
Conductor Weight (kg/m)	0.1666	Maximum Span (m)	140							
Cross-Sectional Area of Conductor (mm <sup>2</sup> )	59.87	FACTORS OF SAFETY:								
Conductor Overall Diameter (mm)	9.9	Unstayed Pole	2.5							
Coefficient of Linear Expansion (/Degree C)	0.000023	Stayed Pole	2.5							
Modulus of Elasticity (kg/mm <sup>2</sup> )	6016.3	Stays	2.5							
Rated Breaking Strength of Conductor (kgf)	1713	Steelwork & Pin Insulator (on UTS for Traditional Design only)	2.5							
Wind Pressure on Conductor (N/m <sup>2</sup> )	760	Wind on Pole	n							
Radial Ice Thickness (mm)	0									
TEMP (°C)	TENSION (kgf)	DESIGN SAG (m) FOR SPAN LENGTH (m)								
		60.00	70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00
-5.6	420.8	0.18	0.24	0.32	0.40	0.49	0.60	0.71	0.84	0.97
0	378.8	0.20	0.27	0.35	0.45	0.55	0.67	0.79	0.93	1.08
5	342.6	0.22	0.30	0.39	0.49	0.61	0.74	0.88	1.03	1.19
10	308.0	0.24	0.33	0.43	0.55	0.68	0.82	0.97	1.14	1.33
15	275.5	0.27	0.37	0.48	0.61	0.76	0.91	1.09	1.28	1.48
20	245.6	0.31	0.42	0.54	0.69	0.85	1.03	1.22	1.43	1.66
25	218.7	0.34	0.47	0.61	0.77	0.95	1.15	1.37	1.61	1.87
30	195.3	0.38	0.52	0.68	0.86	1.07	1.29	1.54	1.80	2.09
35	175.2	0.43	0.58	0.76	0.96	1.19	1.44	1.71	2.01	2.33
40	158.4	0.47	0.64	0.84	1.06	1.31	1.59	1.89	2.22	2.58
45	144.4	0.52	0.71	0.92	1.17	1.44	1.75	2.08	2.44	2.83
50	132.7	0.56	0.77	1.00	1.27	1.57	1.90	2.26	2.65	3.08
55	122.9	0.61	0.83	1.08	1.37	1.69	2.05	2.44	2.86	3.32
60	114.7	0.65	0.89	1.16	1.47	1.82	2.20	2.61	3.07	3.56
65	107.7	0.70	0.95	1.24	1.57	1.93	2.34	2.78	3.27	3.79
70	101.7	0.74	1.00	1.31	1.66	2.05	2.48	2.95	3.46	4.01
75	96.5	0.78	1.06	1.38	1.75	2.16	2.61	3.11	3.65	4.23
80	91.9	0.82	1.11	1.45	1.84	2.27	2.74	3.26	3.83	4.44

**Table 4b: AAAC, 50mm<sup>2</sup> - Erection Sag/Tension (20% UTS)**

Conductor Code Name	Hazel									
Basic/Recommended Span (m)	90.00									
Temperature Shift for Creep (°C)	0.00									
Equivalent Percentage Increase in Tension (%)	10.00 at 15°C									
Required Percentage Increase in Tension (%)	10.00 at 15°C									
Pre-tension (all temperatures) at 470 kgf for 1 hour. At 15 minute intervals, tension to be readjusted to maintain the pre-tension value. At the end of the pre-tension period conductors are to be tensioned and terminated in accordance with this erection table.										
TEMP (°C)	TENSION (kgf)	ERECTION SAG (m) FOR SPAN LENGTH (m)								
		60.00	70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00
-5.60	453.4	0.17	0.23	0.29	0.37	0.46	0.56	0.66	0.78	0.90
0.00	410.6	0.18	0.25	0.32	0.41	0.51	0.61	0.73	0.86	0.99
5.00	373.4	0.20	0.27	0.36	0.45	0.56	0.67	0.80	0.94	1.09
10.00	337.4	0.22	0.30	0.40	0.50	0.62	0.75	0.89	1.04	1.21
15.00	303.0	0.25	0.34	0.44	0.56	0.69	0.83	0.99	1.16	1.35
20.00	270.9	0.28	0.38	0.49	0.62	0.77	0.93	1.11	1.30	1.51
25.00	241.4	0.31	0.42	0.55	0.70	0.86	1.04	1.24	1.46	1.69
30.00	215.0	0.35	0.47	0.62	0.78	0.97	1.17	1.39	1.64	1.90
35.00	192.1	0.39	0.53	0.69	0.88	1.08	1.31	1.56	1.83	2.13
40.00	172.5	0.43	0.59	0.77	0.98	1.21	1.46	1.74	2.04	2.37
45.00	156.1	0.48	0.65	0.85	1.08	1.33	1.61	1.92	2.25	2.61
50.00	142.5	0.53	0.72	0.94	1.18	1.46	1.77	2.10	2.47	2.86
55.00	131.1	0.57	0.78	1.02	1.29	1.59	1.92	2.29	2.68	3.11
60.00	121.6	0.62	0.84	1.10	1.39	1.71	2.07	2.47	2.89	3.36
65.00	113.6	0.66	0.90	1.17	1.49	1.83	2.22	2.64	3.10	3.59
70.00	106.7	0.70	0.96	1.25	1.58	1.95	2.36	2.81	3.30	3.82
75.00	100.9	0.74	1.01	1.32	1.67	2.06	2.50	2.97	3.49	4.05
80.00	95.8	0.78	1.07	1.39	1.76	2.17	2.63	3.13	3.68	4.26

**Table 5: AAAC, 50mm<sup>2</sup> - Pole Data (20% UTS)**

Length (m)	Grade	Top Dia (mm)	Dia 1.5m from Butt (mm)	Planting Depth (mm)	Single Pole Strut Strength (kgf)	Maximum Wind Span Length for Specified Pole (m)		
						Good	Good/Av	Av/Poor
9.00	MEDIUM	150.00	220.00	1800	7617	130	130	130
10.00	MEDIUM	150.00	230.00	1800	6335	131	131	131
11.00	MEDIUM	150.00	240.00	1800	5421	132	132	132
12.00	MEDIUM	150.00	250.00	1800	4743	132	132	126
13.00	MEDIUM	160.00	260.00	2400	5212	138	138	138
14.00	MEDIUM	160.00	275.00	2400	4820	146	146	146
15.00	MEDIUM	165.00	290.00	2400	4816	156	156	156
16.00	MEDIUM	170.00	305.00	2400	4842	167	167	167
17.00	MEDIUM	180.00	320.00	2400	5190	181	181	181
18.00	MEDIUM	180.00	330.00	2400	4819	183	183	180
20.00	MEDIUM	180.00	360.00	3000	4658	195	195	195
22.00	MEDIUM	190.00	380.00	3000	4643	208	208	208
9.00	STOUT	190.00	275.00	1800	19146	254	254	194
10.00	STOUT	190.00	285.00	1800	15667	250	250	168
11.00	STOUT	190.00	295.00	1800	13199	247	238	145
12.00	STOUT	190.00	305.00	1800	11377	245	211	125
13.00	STOUT	195.00	320.00	2400	11703	256	256	256
14.00	STOUT	195.00	335.00	2400	10624	264	264	259
15.00	STOUT	195.00	350.00	2400	9773	270	270	235
16.00	STOUT	200.00	365.00	2400	9581	282	282	213
17.00	STOUT	200.00	375.00	2400	8758	280	280	192
18.00	STOUT	200.00	390.00	2400	8282	285	285	174
20.00	STOUT	200.00	415.00	3000	7633	288	288	288
22.00	STOUT	200.00	435.00	3000	6742	284	284	277
24.00	STOUT	200.00	470.00	3000	6502	297	297	241

**Table 6: AAAC, 50mm<sup>2</sup> - Single Pole Stay Capability**

Conductor Code Name (if any)	Hazel	
Conductor Tension (MWT / MCT) (kgf)	606.9	
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	760.00	
Wind Load per Metre / MCP (kg/m)	0.767	
Maximum Span Length (m)	140.00	
Number of Conductors	3.00	
Factor of Safety	2.50	
No Pole Wind Considered	n	
Where two stays are used, calculation is based on 2m separation between stays at ground level.		
<b>MAXIMUM ANGLE OF LINE DEVIATION</b>		
Angle of Stay Slope	Grade 1150 1x7/4.00 (Stay strength 10299)	Grade 1150 2x7/4.00 (Stay Strength 10299)
30	58	60
35	60	60
40	60	60
45	60	60

**Table 7: AAAC, 50mm<sup>2</sup> - H-Pole Stay Capability**

Conductor Code Name (if any)	Hazel	
Conductor Tension (MWT / MCT) (kgf)	606.9	
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	760.00	
Wind Load per Metre / MCP (kg/m)	0.767	
Maximum Span Length (m)	140.00	
Number of Conductors	3.00	
Factor of Safety	2.50	
No Pole Wind Considered	n	
Where one stay per limb of H-pole is required, enter User Defined Stay(s) and cross check strut strength from H STRUT using 4 Stays loading for angle of deviation. Where two stays used, calculation based on 2m separation between stays at ground level.		
<b>MAXIMUM ANGLE OF LINE DEVIATION</b>		
Angle of Stay Slope	Grade 1150 3x7/4.00 (Stay strength 10299)	Grade 1150 4x7/4.00 (Stay Strength 10299)
30	60	60
35	60	60
40	60	60
45	60	60

**Table 8: AAAC, 50mm<sup>2</sup> - Single Pole Strut Loading**

Conductor Code Name (if any)	Hazel			
Conductor Tension (MWT/MCT) (kgf)	606.9			
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	760			
Iced Conductor Weight / MCW (kg/m)	0.167			
Wind Load per Metre / MCP (kg/m)	0.767			
Maximum Span Length (m)	140.0			
Number of Conductors	3			
Factor of Safety	2.5			
No Pole Wind Considered	n			
Longitudinal Load in Conductor (kgf)	4551.6			
Transverse Load [Normal to Span] (kgf)	805.6			
Vertical Load [No Downpull] (kgf)	729.9			
Vertical Load with Downpull 1: 10.00 (kgf)	1635.7			
Pole Wind Load (kgf)	0.00			
<b>STRUT LOAD in POLE with ONE or TWO STAYS (kgf)</b>				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Downpull 1: 10.00				
0.00	3031	2786	2596	2441
5.00	3717	3352	3068	2838
10.00	4400	3915	3538	3232
15.00	5077	4473	4004	3623
20.00	5748	5026	4465	4010
25.00	6411	5573	4921	4393
30.00	7064	6112	5371	4770
35.00	7708	6642	5814	5141
40.00	8340	7163	6248	5506
45.00	8959	7674	6674	5864
50.00	9564	8173	7091	6213
55.00	10154	8659	7497	6554
60.00	10728	9132	7892	6885

**Table 9: AAAC, 50mm<sup>2</sup> - H-Pole Strut Loading**

Conductor Code Name (if any)	Hazel			
Conductor Tension (MWT/MCT) (kgf)	606.9			
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	760			
Iced Conductor Weight / MCW (kg/m)	0.167			
Wind Load per Metre / MCP (kg/m)	0.767			
Maximum Span Length (m)	140.0			
Number of Conductors	3			
Factor of Safety	2.5			
No Pole Wind Considered	n			
Longitudinal Load in Conductor (kgf)	4551.6			
Transverse Load [Normal to Span] (kgf)	805.6			
Vertical Load [No Downpull] (kgf)	729.9			
Vertical Load with Downpull 1: 10.00 (kgf)	1635.7			
"H" Structure Wind Load (kgf)	0.0			
<b>STRUT LOAD in POLE with THREE STAYS (kgf)</b> (60% of Line Load for Inner Pole - Worst Case)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Level				
0.00	1202	1055	941	848
5.00	1614	1395	1224	1086
10.00	2024	1732	1506	1323
15.00	2430	2068	1786	1557
20.00	2832	2399	2063	1789
25.00	3230	2727	2336	2019
30.00	3622	3051	2606	2246
35.00	4008	3369	2872	2468
40.00	4387	3682	3133	2687
45.00	4759	3988	3388	2902
50.00	5122	4287	3638	3111
55.00	5476	4579	3882	3316
60.00	5820	4863	4118	3515

**Table 9: AAAC, 50mm<sup>2</sup> - H-Pole Strut Loading (Continued)**

STRUT LOAD in POLE with THREE STAYS (kgf) (60% of Line Load for Inner Pole - Worst Case)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Downpull 1: 10.00				
0.00	1655	1508	1394	1301
5.00	2067	1848	1677	1539
10.00	2476	2185	1959	1775
15.00	2883	2520	2239	2010
20.00	3285	2852	2515	2242
25.00	3683	3180	2789	2472
30.00	4075	3504	3059	2698
35.00	4461	3822	3325	2921
40.00	4840	4134	3585	3140
45.00	5212	4441	3841	3355
50.00	5575	4740	4091	3564
55.00	5929	5032	4334	3769
60.00	6273	5316	4571	3967



**Table 9: AAAC, 50mm<sup>2</sup> - H-Pole Strut Loading (Continued)**

STRUT LOAD in POLE with FOUR STAYS (kgf) (50% of Line Load for Each Pole)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Level				
.00	1063	940	845	768
5.00	1406	1223	1081	966
10.00	1747	1505	1316	1163
15.00	2086	1784	1549	1358
20.00	2421	2060	1780	1552
25.00	2752	2334	2008	1743
30.00	3079	2603	2233	1932
35.00	3401	2868	2454	2118
40.00	3717	3129	2671	2300
45.00	4026	3384	2884	2479
50.00	4329	3633	3092	2654
55.00	4624	3877	3295	2824
60.00	4911	4113	3493	2990

**Table 9: AAAC, 50mm<sup>2</sup> - H-Pole Strut Loading (Continued)**

STRUT LOAD in POLE with FOUR STAYS (kgf) (50% of Line Load for Each Pole)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Downpull 1: 10.00				
0.00	1516	1393	1298	1221
5.00	1859	1676	1534	1419
10.00	2200	1957	1769	1616
15.00	2539	2237	2002	1811
20.00	2874	2513	2233	2005
25.00	3205	2786	2461	2196
30.00	3532	3056	2685	2385
35.00	3854	3321	2907	2571
40.00	4170	3582	3124	2753
45.00	4479	3837	3337	2932
50.00	4782	4086	3545	3107
55.00	5077	4330	3748	3277
60.00	5364	4566	3946	3443

## C5 Conductor, AAAC, 100mm<sup>2</sup> (OAK)

### Recommended Span 120m

#### NOTE:

A Factor-of-Safety (FOS) value of 2.5 is used for Stays, Windspan and Foundation capabilities.

A FOS value of 2.0 is used on the Single Pole Strut loadings. A FOS of 2.5 is used on the H Pole Strut loadings.

Occasional Long Span of 140m support specified for this use is I-40003-GA-047 and I-40003-GA-048.

**Table 1: AAAC, 100mm<sup>2</sup> - In Line Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	PIN TYPE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	Inter (Refer to I-40003-GA-045)	Stout	10kN	125
	Section	Stout	10kN	130
	H Section	Stout	10kN	130

**Table 2: AAAC, 100mm<sup>2</sup> - Angle Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	PIN TYPE	MAXIMUM LINE DEVIATION	MINIMUM STAY ANGLE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	Pin Angle (Refer to I-40003-GA-046)	Stout	10kN	9	1 x 30	115
	Section Angle	EXStout ≤ 13	-	60	2 x 45	125
	H Section Angle	EXStout	-	30	1 x 45	125
	H Section Angle	EXStout ≤ 20	-	60	3 x 45	125

**Table 3: AAAC, 100mm<sup>2</sup> - Terminal Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	MINIMUM STAY ANGLE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	Tee off	EXStout ≤ 13	2 x 45	125
	Terminal	EXStout ≤ 13	2 x 45	125
	H Terminal	EXStout ≤ 20	4 x 45	125

**Table 4a: AAAC, 100mm<sup>2</sup> - Design Sag/Tension (20% UTS)**

Conductor Code Name	Oak	Absolute Maximum Working Tension (MWT) Limit (kgf)	1697.8						
Basic/Recommended Span (m)	120.00	Temperature at MWT Limit (Degrees C)	-5.6						
Temperature Shift for Creep (°C)	0.00	Maximum "Everyday" Tension (EDT) Limit (kgf)	679.1						
Equivalent Percentage Increase in Tension (%)	0.00 at 15°C	Temperature at EDT Limit (Degrees C)	5						
Required Percentage Increase in Tension (%)	0.00 at 15°C	Number of Conductors	3						
Conductor Weight (kg/m)	0.33	Maximum Span (m)	140						
Cross-Sectional Area of Conductor (mm <sup>2</sup> )	118.8	<b>FACTORS OF SAFETY:</b>							
Conductor Overall Diameter (mm)	13.95	Unstayed Pole	2.5						
Coefficient of Linear Expansion (/Degree C)	0.000023	Stayed Pole	2.5						
Modulus of Elasticity (kg/mm <sup>2</sup> )	6000	Stays	2.5						
Rated Breaking Strength of Conductor (kgf)	3395.7	Steelwork & Pin Insulator (on UTS for Traditional Design only)	2.5						
Wind Pressure on Conductor (N/m <sup>2</sup> )	380	Wind on Pole	y						
Radial Ice Thickness (mm)	9.50								
TEMP (°C)	TENSION (kgf)	DESIGN SAG (m) FOR SPAN LENGTH (m)							
		70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00
-5.6	821.4	0.25	0.32	0.41	0.50	0.61	0.72	0.85	0.98
0	744.4	0.27	0.35	0.45	0.55	0.67	0.80	0.94	1.09
5	679.1	0.30	0.39	0.49	0.61	0.74	0.88	1.03	1.19
10	618.0	0.33	0.43	0.54	0.67	0.81	0.96	1.13	1.31
15	561.6	0.36	0.47	0.60	0.74	0.89	1.06	1.24	1.44
20	510.5	0.40	0.52	0.65	0.81	0.98	1.16	1.37	1.58
25	465.0	0.43	0.57	0.72	0.89	1.07	1.28	1.50	1.74
30	425.2	0.48	0.62	0.79	0.97	1.17	1.40	1.64	1.90
35	390.7	0.52	0.68	0.86	1.06	1.28	1.52	1.79	2.07
40	361.0	0.56	0.73	0.93	1.14	1.38	1.65	1.93	2.24
45	335.5	0.60	0.79	1.00	1.23	1.49	1.77	2.08	2.41
50	313.5	0.65	0.84	1.07	1.32	1.59	1.90	2.22	2.58
55	294.5	0.69	0.90	1.14	1.40	1.70	2.02	2.37	2.75
60	278.1	0.73	0.95	1.20	1.48	1.80	2.14	2.51	2.91
65	263.7	0.77	1.00	1.27	1.57	1.89	2.25	2.65	3.07
70	251.0	0.81	1.05	1.33	1.64	1.99	2.37	2.78	3.22
75	239.8	0.84	1.10	1.39	1.72	2.08	2.48	2.91	3.37
80	229.8	0.88	1.15	1.45	1.80	2.17	2.59	3.04	3.52

**Table 4b: AAAC, 100mm<sup>2</sup> - Erection Sag/Tension (20% UTS)**

Conductor Code Name	Oak								
Basic/Recommended Span (m)	120.00								
Temperature Shift for Creep (°C)	0.00								
Equivalent Percentage Increase in Tension (%)	10.00 at 15°C								
Required Percentage Increase in Tension (%)	10.00 at 15°C								
Pre-tension (all temperatures) at 950 kgf for 1 hour. At 15 minute intervals, tension to be readjusted to maintain the pre-tension value. At the end of the pre-tension period conductors are to be tensioned and terminated in accordance with this erection table.									
TEMP (°C)	TENSION (kgf)	ERECTION SAG (m) FOR SPAN LENGTH (m)							
		70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00
-5.60	892.7	0.23	0.30	0.37	0.46	0.56	0.67	0.78	0.91
0.00	812.7	0.25	0.33	0.41	0.51	0.61	0.73	0.86	1.00
5.00	744.1	0.27	0.36	0.45	0.55	0.67	0.80	0.94	1.09
10.00	678.9	0.30	0.39	0.49	0.61	0.74	0.88	1.03	1.19
15.00	617.7	0.33	0.43	0.54	0.67	0.81	0.96	1.13	1.31
20.00	561.3	0.36	0.47	0.60	0.74	0.89	1.06	1.24	1.44
25.00	510.3	0.40	0.52	0.66	0.81	0.98	1.16	1.37	1.59
30.00	464.9	0.44	0.57	0.72	0.89	1.07	1.28	1.50	1.74
35.00	425.1	0.48	0.62	0.79	0.97	1.17	1.40	1.64	1.90
40.00	390.6	0.52	0.68	0.86	1.06	1.28	1.52	1.79	2.07
45.00	360.9	0.56	0.73	0.93	1.14	1.38	1.65	1.93	2.24
50.00	335.4	0.60	0.79	1.00	1.23	1.49	1.77	2.08	2.41
55.00	313.4	0.65	0.84	1.07	1.32	1.59	1.90	2.23	2.58
60.00	294.5	0.69	0.90	1.14	1.40	1.70	2.02	2.37	2.75
65.00	278.0	0.73	0.95	1.20	1.48	1.80	2.14	2.51	2.91
70.00	263.6	0.77	1.00	1.27	1.57	1.89	2.25	2.65	3.07
75.00	251.0	0.81	1.05	1.33	1.64	1.99	2.37	2.78	3.22
80.00	239.8	0.84	1.10	1.39	1.72	2.08	2.48	2.91	3.37

**Table 5: AAC, 100mm<sup>2</sup> - Pole Data (20% UTS)**

Length (m)	Grade	Top Dia (mm)	Dia 1.5m from Butt (mm)	Planting Depth (mm)	Single Pole Strut Strength (kgf)	Maximum Wind Span Length for Specified Pole (m)		
						Good	Good/Av	Av/Poor
9.00	MEDIUM	150.00	220.00	1800	7617	71	71	71
10.00	MEDIUM	150.00	230.00	1800	6335	71	71	71
11.00	MEDIUM	150.00	240.00	1800	5421	71	71	71
12.00	MEDIUM	150.00	250.00	1800	4743	72	72	72
13.00	MEDIUM	160.00	260.00	2400	5212	73	73	73
14.00	MEDIUM	160.00	275.00	2400	4820	79	79	79
15.00	MEDIUM	165.00	290.00	2400	4816	84	84	84
16.00	MEDIUM	170.00	305.00	2400	4842	90	90	90
17.00	MEDIUM	180.00	320.00	2400	5190	98	98	98
18.00	MEDIUM	180.00	330.00	2400	4819	98	98	98
20.00	MEDIUM	180.00	360.00	3000	4658	107	107	107
22.00	MEDIUM	190.00	380.00	3000	4643	112	112	112
9.00	STOUT	190.00	275.00	1800	19146	144	144	126
10.00	STOUT	190.00	285.00	1800	15667	140	140	111
11.00	STOUT	190.00	295.00	1800	13199	138	138	99
12.00	STOUT	190.00	305.00	1800	11377	137	137	89
13.00	STOUT	195.00	320.00	2400	11703	143	143	143
14.00	STOUT	195.00	335.00	2400	10624	148	148	148
15.00	STOUT	195.00	350.00	2400	9773	152	152	152
16.00	STOUT	200.00	365.00	2400	9581	158	158	149
17.00	STOUT	200.00	375.00	2400	8758	157	157	138
18.00	STOUT	200.00	390.00	2400	8282	160	160	129
20.00	STOUT	200.00	415.00	3000	7633	162	162	163
22.00	STOUT	200.00	435.00	3000	6742	160	160	160
24.00	STOUT	200.00	470.00	3000	6502	168	168	168

**Table 5: AAAC, 100mm<sup>2</sup> - Pole Data (20% UTS) (Continued)**

Length (m)	Grade	Top Dia (mm)	Dia 1.5m from Butt (mm)	Planting Depth (mm)	Single Pole Strut Strength (kgf)	Maximum Wind Span Length for Specified Pole (m)		
						Good	Good/Av	Av/Poor
9.00	EXSTOUT	190.00	295.00	1800	21771	179	179	128
10.00	EXSTOUT	190.00	305.00	1800	17760	173	173	113
11.00	EXSTOUT	190.00	315.00	1800	14922	167	157	101
12.00	EXSTOUT	190.00	325.00	1800	12834	163	142	90
13.00	EXSTOUT	195.00	340.00	2400	13079	168	168	168
14.00	EXSTOUT	195.00	355.00	2400	11847	171	171	171
15.00	EXSTOUT	195.00	370.00	2400	10874	174	174	163
16.00	EXSTOUT	200.00	385.00	2400	10623	180	180	151
17.00	EXSTOUT	200.00	395.00	2400	9696	177	177	141
18.00	EXSTOUT	200.00	410.00	2400	9152	179	179	131
20.00	EXSTOUT	200.00	435.00	3000	8391	179	179	179
22.00	EXSTOUT	200.00	440.00	3000	7396	175	175	175
24.00	EXSTOUT	200.00	440.00	3000	7109	182	182	182

**Table 6: AAAC, 100mm<sup>2</sup> - Single Pole Stay Capability**

Conductor Code Name (if any)	Oak	
Conductor Tension (MWT / MCT) (kgf)	1357.1	
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380.00	
Wind Load per Metre / MCP (kg/m)	1.28	
Maximum Span Length (m)	140.00	
Number of Conductors	3.00	
Factor of Safety	2.50	
Wind assumed on 18 m Stout Pole	y	
Where two stays are used, calculation is based on 2m separation between stays at ground level.		
<b>MAXIMUM ANGLE OF LINE DEVIATION</b>		
Angle of Stay Slope	Grade 1150 1x7/4.00 (Stay strength 10299)	Grade 1150 2x7/4.00 (Stay Strength 10299)
30	20.00	49.00
35	24.00	59.00
40	29.00	60.00
45	32.00	60.00

**Table 7: AAAC, 100mm<sup>2</sup> - H-Pole Stay Capability**

Conductor Code Name (if any)	Oak	
Conductor Tension (MWT / MCT) (kgf)	1357.1	
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380.00	
Wind Load per Metre / MCP (kg/m)	1.28	
Maximum Span Length (m)	140.00	
Number of Conductors	3.00	
Factor of Safety	2.50	
Wind assumed on 18 m Stout Pole	y	
Where one stay per limb of H-pole is required, enter User Defined Stay(s) and cross check strut strength from H STRUT using 4 Stays loading for angle of deviation. Where two stays used, calculation based on 2m separation between stays at ground level.		
<b>MAXIMUM ANGLE OF LINE DEVIATION</b>		
Angle of Stay Slope	Grade 1150 3x7/4.00 (Stay strength 10299)	Grade 1150 4x7/4.00 (Stay Strength 10299)
30	60	60
35	60	60
40	60	60
45	60	60



**Table 8: AAAC, 100mm<sup>2</sup> - Single Pole Strut Loading**

Conductor Code Name (if any)	Oak			
Conductor Tension (MWT/MCT) (kgf)	1357.1			
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380.00			
Iced Conductor Weight / MCW (kg/m)	0.96			
Wind Load per Metre / MCP (kg/m)	1.28			
Maximum Span Length (m)	140.00			
Number of Conductors	3.00			
Factor of Safety	2.00			
Wind assumed on 18 m Stout Pole	Y			
Longitudinal Load in Conductor (kgf)	8142.6			
Transverse Load [Normal to Span] (kgf)	1072.5			
Vertical Load [No Downpull] (kgf)	1258.1			
Vertical Load with Downpull 1: 10.00 (kgf)	2878.5			
Pole Wind Load (kgf)	179.63			
<b>STRUT LOAD in POLE with ONE or TWO STAYS (kgf)</b>				
<b>Line Angle (Degrees)</b>	<b>Stay Angle (Degrees)</b>			
	30.00	35.00	40.00	45.00
<b>Downpull 1: 10.00</b>				
0.00	5047	4667	4371	4131
5.00	6276	5680	5216	4840
10.00	7499	6688	6057	5546
15.00	8713	7689	6893	6247
20.00	9917	8682	7721	6942
25.00	11108	9664	8541	7630
30.00	12284	10634	9350	8309
35.00	13443	11590	10148	8978
40.00	14583	12529	10932	9636
45.00	15700	13450	11701	10281
50.00	16794	14352	12453	10913
55.00	17862	15233	13188	11529
60.00	18902	16090	13904	12130

**Table 9: AAAC, 100mm<sup>2</sup> - H-Pole Strut Loading**

Conductor Code Name (if any)	Oak			
Conductor Tension (MWT/MCT) (kgf)	1357.1			
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380.00			
Iced Conductor Weight / MCW (kg/m)	0.96			
Wind Load per Metre / MCP (kg/m)	1.28			
Maximum Span Length (m)	140.00			
Number of Conductors	3.00			
Factor of Safety	2.50			
Wind assumed on 18 m Stout Pole	y			
Longitudinal Load in Conductor (kgf)	10178.3			
Transverse Load [Normal to Span] (kgf)	1340.6			
Vertical Load [No Downpull] (kgf)	1572.6			
Vertical Load with Downpull 1: 10.00 (kgf)	3598.1			
"H" Structure Wind Load (kgf)	336.80			
<b>STRUT LOAD in POLE with THREE STAYS (kgf) (60% of Line Load for Inner Pole - Worst Case)</b>				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Level				
0.00	2530	2224	1986	1793
5.00	3451	2983	2620	2325
10.00	4368	3740	3251	2854
15.00	5279	4491	3877	3380
20.00	6182	5235	4499	3901
25.00	7075	5972	5114	4417
30.00	7957	6699	5720	4927
35.00	8827	7416	6318	5428
40.00	9681	8120	6906	5922
45.00	10519	8811	7483	6406
50.00	11340	9488	8048	6879
55.00	12140	10148	8599	7342
60.00	12920	10791	9135	7792

**Table 9: AAAC, 100mm<sup>2</sup> - H-Pole Strut Loading (Continued)**

STRUT LOAD in POLE with THREE STAYS (kgf) (60% of Line Load for Inner Pole - Worst Case)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Downpull 1: 10.00				
0.00	3542	3236	2999	2806
5.00	4464	3996	3633	3338
10.00	5381	4752	4264	3867
15.00	6292	5503	4890	4393
20.00	7195	6248	5512	4914
25.00	8088	6985	6126	5430
30.00	8970	7712	6733	5939
35.00	9839	8429	7331	6441
40.00	10694	9133	7919	6934
45.00	11532	9824	8496	7418
50.00	12352	10501	9060	7892
55.00	13153	11161	9611	8354
60.00	13933	11804	10148	8805

**Table 9: AAAC, 100mm<sup>2</sup> - H-Pole Strut Loading (Continued)**

STRUT LOAD in POLE with FOUR STAYS (kgf) (50% of Line Load for Each Pole)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Level				
0.00	2239	1984	1786	1625
5.00	3007	2617	2314	2068
10.00	3771	3247	2840	2510
15.00	4530	3873	3362	2948
20.00	5283	4494	3880	3382
25.00	6027	5108	4392	3812
30.00	6762	5714	4898	4236
35.00	7486	6311	5396	4655
40.00	8199	6898	5886	5066
45.00	8897	7474	6367	5469
50.00	9581	8038	6837	5864
55.00	10248	8588	7297	6249
60.00	10898	9124	7744	6624

**Table 9: AAAC, 100mm<sup>2</sup> - H-Pole Strut Loading (Continued)**

STRUT LOAD in POLE with FOUR STAYS (kgf) (50% of Line Load for Each Pole)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Downpull 1: 10.00				
0.00	3252	2997	2799	2638
5.00	4020	3630	3327	3081
10.00	4784	4260	3853	3522
15.00	5543	4886	4375	3961
20.00	6295	5506	4893	4395
25.00	7040	6120	5405	4825
30.00	7775	6726	5911	5249
35.00	8499	7324	6409	5667
40.00	9211	7911	6899	6079
45.00	9910	8487	7380	6482
50.00	10593	9050	7850	6877
55.00	11261	9601	8309	7262
60.00	11911	10137	8757	7637

## C6 Conductor, AAAC, 150MM<sup>2</sup> (ash)

### Recommended Span 120m

#### NOTE:

A Factor-of-Safety (FOS) value of 2.5 is used on Stays.

A FOS value of 2.0 is also used on the Single Pole Strut loadings. A FOS of 2.5 is used on H Pole Strut loadings. A reduced Windspan and Foundation FOS of 2.0 is used in the following summary tables (Tables 1, 2 and 3).

Occasional Long Span of 140m support specified for this use is I-40003-GA-047 and I-40003-GA-048.

**Table 1: AAAC, 150mm<sup>2</sup> - In Line Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	PIN TYPE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	Inter (Refer to I-40003-GA-045)	Stout	10kN	130
	Section	Stout	10kN	130
	H Section	Stout	10kN	130

**Table 2: AAAC, 150mm<sup>2</sup> - Angle Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	PIN TYPE	MAXIMUM LINE DEVIATION	MINIMUM STAY ANGLE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	Pin Angle (Refer to I-40003-GA-046)	Stout	10kN	6	1 x 30	120
	Section Angle	EXStout ≤ 17	-	24	2 x 45	130
	H Section Angle	EXStout ≤ 14	-	60	3 x 45	130
	H Section Angle	EXStout ≤ 16	-	60	4 x 45	130

**Table 3: AAAC, 150mm<sup>2</sup> - Terminal Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	MINIMUM STAY ANGLE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	H Terminal	EXStout ≤ 16	4 x 45	130

**Table 4a: AAAC, 150mm<sup>2</sup> - Design Sag/Tension (20% UTS)**

Conductor Code Name	Ash	Absolute Maximum Working Tension (MWT) Limit (kgf)	2379						
Basic/Recommended Span (m)	120.00	Temperature at MWT Limit (Degrees C)	-5.6						
Temperature Shift for Creep (°C)	0.00	Maximum "Everyday" Tension (EDT) Limit (kgf)	1032.8						
Equivalent Percentage Increase in Tension (%)	0.00 at 15°C	Temperature at EDT Limit (Degrees C)	5						
Required Percentage Increase in Tension (%)	0.00 at 15°C	Number of Conductors	3						
Conductor Weight (kg/m)	0.508	Maximum Span (m)	140						
Cross-Sectional Area of Conductor (mm <sup>2</sup> )	180.7	FACTORS OF SAFETY:							
Conductor Overall Diameter (mm)	17.4	Unstayed Pole	2.5						
Coefficient of Linear Expansion (/Degree C)	0.000023	Stayed Pole	2.5						
Modulus of Elasticity (kg/mm <sup>2</sup> )	5700	Stays	2.5						
Rated Breaking Strength of Conductor (kgf)	5164	Steelwork & Pin Insulator (on UTS for Traditional Design only)	2.5						
Wind Pressure on Conductor (N/m <sup>2</sup> )	380	Wind on Pole	y						
Radial Ice Thickness (mm)	9.50								
TEMP (°C)	TENSION (kgf)	DESIGN SAG (m) FOR SPAN LENGTH (m)							
		70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00
-5.6	1238.4	0.25	0.33	0.42	0.51	0.62	0.74	0.87	1.01
0	1127.2	0.28	0.36	0.46	0.56	0.68	0.81	0.95	1.10
5	1032.8	0.30	0.39	0.50	0.61	0.74	0.89	1.04	1.21
10	943.9	0.33	0.43	0.54	0.67	0.81	0.97	1.14	1.32
15	861.3	0.36	0.47	0.60	0.74	0.89	1.06	1.25	1.44
20	786.1	0.40	0.52	0.65	0.81	0.98	1.16	1.37	1.58
25	718.5	0.43	0.57	0.72	0.88	1.07	1.27	1.49	1.73
30	658.7	0.47	0.62	0.78	0.96	1.17	1.39	1.63	1.89
35	606.4	0.51	0.67	0.85	1.05	1.27	1.51	1.77	2.05
40	561.0	0.55	0.72	0.92	1.13	1.37	1.63	1.91	2.22
45	521.7	0.60	0.78	0.99	1.22	1.47	1.75	2.06	2.39
50	487.7	0.64	0.83	1.05	1.30	1.58	1.87	2.20	2.55
55	458.3	0.68	0.89	1.12	1.39	1.68	2.00	2.34	2.72
60	432.6	0.72	0.94	1.19	1.47	1.78	2.11	2.48	2.88
65	410.1	0.76	0.99	1.25	1.55	1.87	2.23	2.62	3.03
70	390.3	0.80	1.04	1.32	1.63	1.97	2.34	2.75	3.19
75	372.8	0.83	1.09	1.38	1.70	2.06	2.45	2.88	3.34
80	357.1	0.87	1.14	1.44	1.78	2.15	2.56	3.01	3.49

**Table 4b: AAAC, 150mm<sup>2</sup> - Erection Sag/Tension (20% UTS)**

Conductor Code Name		Ash							
Basic/Recommended Span (m)		120.00							
Temperature Shift for Creep (°C)		-10.00							
Equivalent Percentage Increase in Tension (%)		17.27 at 15°C							
Required Percentage Increase in Tension (%)		0.00 at 15°C							
Pre-tension (all temperatures) at 1500 kgf for 1 hour. At 15 minute intervals, tension to be readjusted to maintain the pre-tension value. At the end of the pre-tension period conductors are to be tensioned and terminated in accordance with this erection table.									
TEMP (°C)	TENSION (kgf)	ERECTION SAG (m) FOR SPAN LENGTH (m)							
		70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00
-5.60	1447.4	0.21	0.28	0.36	0.44	0.53	0.63	0.74	0.86
0.00	1328.9	0.23	0.31	0.39	0.48	0.58	0.69	0.81	0.94
5.00	1226.2	0.25	0.33	0.42	0.52	0.63	0.75	0.88	1.01
10.00	1127.2	0.28	0.36	0.46	0.56	0.68	0.81	0.95	1.10
15.00	1032.8	0.30	0.39	0.50	0.61	0.74	0.89	1.04	1.21
20.00	943.9	0.33	0.43	0.54	0.67	0.81	0.97	1.14	1.32
25.00	861.3	0.36	0.47	0.60	0.74	0.89	1.06	1.25	1.44
30.00	786.1	0.40	0.52	0.65	0.81	0.98	1.16	1.37	1.58
35.00	718.5	0.43	0.57	0.72	0.88	1.07	1.27	1.49	1.73
40.00	658.7	0.47	0.62	0.78	0.96	1.17	1.39	1.63	1.89
45.00	606.4	0.51	0.67	0.85	1.05	1.27	1.51	1.77	2.05
50.00	561.0	0.55	0.72	0.92	1.13	1.37	1.63	1.91	2.22
55.00	521.7	0.60	0.78	0.99	1.22	1.47	1.75	2.06	2.39
60.00	487.7	0.64	0.83	1.05	1.30	1.58	1.87	2.20	2.55
65.00	458.3	0.68	0.89	1.12	1.39	1.68	2.00	2.34	2.72
70.00	432.6	0.72	0.94	1.19	1.47	1.78	2.11	2.48	2.88
75.00	410.1	0.76	0.99	1.25	1.55	1.87	2.23	2.62	3.03
80.00	390.3	0.80	1.04	1.32	1.63	1.97	2.34	2.75	3.19



**Table 5: AAAC, 150mm<sup>2</sup> - Pole Data (20% UTS)**

Windspeed withstand factor of 2.5								
Length (m)	Grade	Top Dia (mm)	Dia 1.5m from Butt (mm)	Planting Depth (mm)	Single Pole Strut Strength (kgf)	Maximum Wind Span Length for Specified Pole (m)		
						Good	Good/Av	Av/Poor
9.00	MEDIUM	150.00	220.00	1800	7617	64	64	64
10.00	MEDIUM	150.00	230.00	1800	6335	64	64	64
11.00	MEDIUM	150.00	240.00	1800	5421	65	65	59
12.00	MEDIUM	150.00	250.00	1800	4743	65	65	65
13.00	MEDIUM	160.00	260.00	2400	5212	66	66	66
14.00	MEDIUM	160.00	275.00	2400	4820	71	71	71
15.00	MEDIUM	165.00	290.00	2400	4816	76	76	76
16.00	MEDIUM	170.00	305.00	2400	4842	82	82	82
17.00	MEDIUM	180.00	320.00	2400	5190	88	88	88
18.00	MEDIUM	180.00	330.00	2400	4819	89	89	89
20.00	MEDIUM	180.00	360.00	3000	4658	97	97	97
22.00	MEDIUM	190.00	380.00	3000	4643	102	102	102
9.00	STOUT	190.00	275.00	1800	19146	131	131	114
10.00	STOUT	190.00	285.00	1800	15667	127	127	101
11.00	STOUT	190.00	295.00	1800	13199	125	125	90
12.00	STOUT	190.00	305.00	1800	11377	124	124	80
13.00	STOUT	195.00	320.00	2400	11703	129	129	129
14.00	STOUT	195.00	335.00	2400	10624	134	134	134
15.00	STOUT	195.00	350.00	2400	9773	137	137	137
16.00	STOUT	200.00	365.00	2400	9581	143	143	135
17.00	STOUT	200.00	375.00	2400	8758	142	142	125
18.00	STOUT	200.00	390.00	2400	8282	145	145	117
20.00	STOUT	200.00	415.00	3000	7633	147	147	147
22.00	STOUT	200.00	435.00	3000	6742	144	144	144
24.00	STOUT	200.00	470.00	3000	6502	152	152	152

**Table 5: AAAC, 150mm<sup>2</sup> - Pole Data (20% UTS) (Continued)**

Windspeed withstand factor of 2.5								
Length (m)	Grade	Top Dia (mm)	Dia 1.5m from Butt (mm)	Planting Depth (mm)	Single Pole Strut Strength (kgf)	Maximum Wind Span Length for Specified Pole (m)		
						Good	Good/Av	Av/Poor
9.00	EXSTOUT	190.00	295.00	1800	21771	162	162	116
10.00	EXSTOUT	190.00	305.00	1800	17760	156	156	102
11.00	EXSTOUT	190.00	315.00	1800	14922	152	142	91
12.00	EXSTOUT	190.00	325.00	1800	12834	148	129	81
13.00	EXSTOUT	195.00	340.00	2400	13079	152	152	152
14.00	EXSTOUT	195.00	355.00	2400	11847	155	155	155
15.00	EXSTOUT	195.00	370.00	2400	10874	157	157	148
16.00	EXSTOUT	200.00	385.00	2400	10623	163	163	137
17.00	EXSTOUT	200.00	395.00	2400	9696	160	160	127
18.00	EXSTOUT	200.00	410.00	2400	9152	162	162	119
20.00	EXSTOUT	200.00	435.00	3000	8391	162	162	162
22.00	EXSTOUT	200.00	440.00	3000	7396	158	158	158
24.00	EXSTOUT	200.00	440.00	3000	7109	164	164	164

**Table 5: AAAC, 150mm<sup>2</sup> - Pole Data (20% UTS) (Continued)**

Windspeed withstand factor of 2.0								
Length (m)	Grade	Top Dia (mm)	Dia 1.5m from Butt (mm)	Planting Depth (mm)	Single Pole Strut Strength (kgf)	Maximum Wind Span Length for Specified Pole (m)		
						Good	Good/Av	Av/Poor
9.00	MEDIUM	150.00	220.00	1800	7617	82	82	82
10.00	MEDIUM	150.00	230.00	1800	6335	82	82	82
11.00	MEDIUM	150.00	240.00	1800	5421	83	83	83
12.00	MEDIUM	150.00	250.00	1800	4743	83	83	83
13.00	MEDIUM	160.00	260.00	2400	5212	85	85	85
14.00	MEDIUM	160.00	275.00	2400	4820	91	91	91
15.00	MEDIUM	165.00	290.00	2400	4816	98	98	98
16.00	MEDIUM	170.00	305.00	2400	4842	104	104	104
17.00	MEDIUM	180.00	320.00	2400	5190	113	113	113
18.00	MEDIUM	180.00	330.00	2400	4819	114	114	114
20.00	MEDIUM	180.00	360.00	3000	4658	123	123	123
22.00	MEDIUM	190.00	380.00	3000	4643	130	130	130
9.00	STOUT	190.00	275.00	1800	19146	165	165	145
10.00	STOUT	190.00	285.00	1800	15667	161	161	128
11.00	STOUT	190.00	295.00	1800	13199	159	159	115
12.00	STOUT	190.00	305.00	1800	11377	157	157	104
13.00	STOUT	195.00	320.00	2400	11703	164	164	164
14.00	STOUT	195.00	335.00	2400	10624	170	170	170
15.00	STOUT	195.00	350.00	2400	9773	174	174	174
16.00	STOUT	200.00	365.00	2400	9581	182	182	173
17.00	STOUT	200.00	375.00	2400	8758	180	180	161
18.00	STOUT	200.00	390.00	2400	8282	184	184	152
20.00	STOUT	200.00	415.00	3000	7633	186	186	186
22.00	STOUT	200.00	435.00	3000	6742	183	183	183
24.00	STOUT	200.00	470.00	3000	6502	192	192	192

**Table 5: AAAC, 150mm<sup>2</sup> - Pole Data (20% UTS) (Continued)**

Windspeed withstand factor of 2.0								
Length (m)	Grade	Top Dia (mm)	Dia 1.5m from Butt (mm)	Planting Depth (mm)	Single Pole Strut Strength (kgf)	Maximum Wind Span Length for Specified Pole (m)		
						Good	Good/Av	Av/Poor
9.00	EXSTOUT	190.00	295.00	1800	21771	204	204	147
10.00	EXSTOUT	190.00	305.00	1800	17760	197	197	130
11.00	EXSTOUT	190.00	315.00	1800	14922	191	181	117
12.00	EXSTOUT	190.00	325.00	1800	12834	187	164	105
13.00	EXSTOUT	195.00	340.00	2400	13079	193	193	193
14.00	EXSTOUT	195.00	355.00	2400	11847	196	196	196
15.00	EXSTOUT	195.00	370.00	2400	10874	199	199	189
16.00	EXSTOUT	200.00	385.00	2400	10623	206	206	176
17.00	EXSTOUT	200.00	395.00	2400	9696	202	202	164
18.00	EXSTOUT	200.00	410.00	2400	9152	205	205	154
20.00	EXSTOUT	200.00	435.00	3000	8391	205	205	205
22.00	EXSTOUT	200.00	440.00	3000	7396	200	200	200
24.00	EXSTOUT	200.00	440.00	3000	7109	208	208	208

**Table 6: AAAC, 150mm<sup>2</sup> - Single Pole Stay Capability**

Conductor Code Name (if any)	Ash	
Conductor Tension (MWT / MCT) (kgf)	1807.9	
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380.00	
Wind Load per Metre / MCP (kg/m)	1.41	
Maximum Span Length (m)	140.00	
Number of Conductors	3.00	
Factor of Safety	2.50	
Wind assumed on 18 m Stout Pole	y	
Where two stays are used, calculation is based on 2m separation between stays at ground level.		
<b>MAXIMUM ANGLE OF LINE DEVIATION</b>		
Angle of Stay Slope	Grade 1150 1x7/4.00 (Stay strength 10299)	Grade 1150 2x7/4.00 (Stay Strength 10299)
30	14.00	35.00
35	17.00	42.00
40	20.00	49.00
45	23.00	56.00

**Table 7: AAAC, 150mm<sup>2</sup> - H-Pole Stay Capability**

Conductor Code Name (if any)	Ash	
Conductor Tension (MWT / MCT) (kgf)	1807.9	
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380.00	
Wind Load per Metre / MCP (kg/m)	1.41	
Maximum Span Length (m)	140.00	
Number of Conductors	3.00	
Factor of Safety	2.50	
Wind assumed on 18 m Stout Pole	y	
Where one stay per limb of H-pole is required, enter User Defined Stay(s) and cross check strut strength from H STRUT using 4 Stays loading for angle of deviation. Where two stays used, calculation based on 2m separation between stays at ground level.		
<b>MAXIMUM ANGLE OF LINE DEVIATION</b>		
Angle of Stay Slope	Grade 1150 3x7/4.00 (Stay strength 10299)	Grade 1150 4x7/4.00 (Stay Strength 10299)
30	59	60
35	60	60
40	60	60
45	60	60

**Table 8: AAAC, 150mm<sup>2</sup> - Single Pole Strut Loading**

Conductor Code Name (if any)	Ash			
Conductor Tension (MWT/MCT) (kgf)	1807.9			
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380.00			
Iced Conductor Weight / MCW (kg/m)	1.24			
Wind Load per Metre / MCP (kg/m)	1.41			
Maximum Span Length (m)	140.00			
Number of Conductors	3.00			
Factor of Safety	2.00			
Wind assumed on 18 m Stout Pole	y			
Longitudinal Load in Conductor (kgf)	10847.1			
Transverse Load [Normal to Span] (kgf)	1100.171184.8			
Vertical Load [No Downpull] (kgf)	1403.341486.4			
Vertical Load with Downpull 1: 10.00 (kgf)	3468.283645			
Pole Wind Load (kgf)	179.63			
<b>STRUT LOAD in POLE with ONE or TWO STAYS (kgf)</b>				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Downpull 1: 10.00				
0.00	6008	5594	5271	5009
5.00	7645	6943	6397	5955
10.00	9275	8288	7519	6896
15.00	10895	9623	8634	7831
20.00	12502	10948	9739	8759
25.00	14092	12259	10834	9677
30.00	15664	13555	11915	10584
35.00	17213	14832	12980	11478
40.00	18736	16088	14029	12358
45.00	20232	17321	15058	13221
50.00	21696	18529	16065	14067
55.00	23127	19709	17050	14893
60.00	24521	20858	18009	15698

**Table 9: AAAC, 150mm<sup>2</sup> - H-Pole Strut Loading**

Conductor Code Name (if any)	Ash			
Conductor Tension (MWT/MCT) (kgf)	1807.9			
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380.00			
Iced Conductor Weight / MCW (kg/m)	1.24			
Wind Load per Metre / MCP (kg/m)	1.41			
Maximum Span Length (m)	140.00			
Number of Conductors	3.00			
Factor of Safety	2.50			
Wind assumed on 18 m Stout Pole	y			
Longitudinal Load in Conductor (kgf)	13558.9			
Transverse Load [Normal to Span] (kgf)	1481.0			
Vertical Load [No Downpull] (kgf)	1858.0			
Vertical Load with Downpull 1: 10.00 (kgf)	4556.3			
"H" Structure Wind Load (kgf)	336.80			
<b>STRUT LOAD in POLE with THREE STAYS (kgf)</b> <b>(60% of Line Load for Inner Pole - Worst Case)</b>				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Level				
0.00	2818	2487	2229	2020
5.00	4046	3499	3074	2729
10.00	5268	4507	3915	3434
15.00	6483	5509	4751	4136
20.00	7688	6502	5580	4832
25.00	8881	7486	6401	5520
30.00	10060	8458	7211	6201
35.00	11221	9415	8011	6871
40.00	12364	10358	8797	7531
45.00	13486	11282	9569	8179
50.00	14584	12188	10324	8813
55.00	15657	13073	11063	9432
60.00	16703	13935	11782	10036

**Table 9: AAAC, 150mm<sup>2</sup> - H-Pole Strut Loading (Continued)**

STRUT LOAD in POLE with THREE STAYS (kgf) (60% of Line Load for Inner Pole - Worst Case)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Downpull 1: 10.00				
0.00	4167	3836	3578	3369
5.00	5395	4848	4423	4078
10.00	6618	5856	5264	4784
15.00	7833	6858	6100	5485
20.00	9038	7852	6929	6181
25.00	10230	8835	7750	6869
30.00	11409	9807	8561	7550
35.00	12570	10765	9360	8220
40.00	13713	11707	10146	8880
45.00	14835	12632	10918	9528
50.00	15933	13537	11674	10162
55.00	17006	14422	12412	10781
60.00	18052	15284	13131	11385



**Table 9: AAAC, 150mm<sup>2</sup> - H-Pole Strut Loading (Continued)**

STRUT LOAD in POLE with FOUR STAYS (kgf) (50% of Line Load for Each Pole)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Level				
0.00	2503	2227	2012	1838
5.00	3526	3071	2716	2429
10.00	4545	3911	3417	3017
15.00	5558	4746	4114	3601
20.00	6562	5574	4805	4181
25.00	7556	6393	5489	4755
30.00	8538	7203	6164	5322
35.00	9506	8001	6830	5881
40.00	10458	8786	7486	6431
45.00	11393	9557	8129	6970
50.00	12308	10312	8759	7499
55.00	13202	11049	9374	8015
60.00	14074	11767	9973	8518

**Table 9: AAAC, 150mm<sup>2</sup> - H-Pole Strut Loading (Continued)**

STRUT LOAD in POLE with FOUR STAYS (kgf) (50% of Line Load for Each Pole)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Downpull 1: 10.00				
0.00	3852	3576	3361	3187
5.00	4876	4420	4065	3778
10.00	5894	5260	4766	4366
15.00	6907	6095	5463	4951
20.00	7911	6923	6154	5530
25.00	8905	7742	6838	6104
30.00	9887	8552	7513	6671
35.00	10855	9350	8180	7230
40.00	11807	10135	8835	7780
45.00	12742	10906	9478	8319
50.00	13657	11661	10108	8848
55.00	14552	12398	10723	9364
60.00	15423	13117	11323	9867

## C7 Conductor, AAAC, 200MM<sup>2</sup> (poplar)

### Recommended Span 120m

**NOTE:**

A Factor-of-Safety (FOS) value of 2.5 is used on Stays.

A FOS value of 2.0 is used on the Single Pole Strut loadings. A FOS of 2.5 is used on H Pole Strut loadings. A reduced Windspan and Foundation FOS of 2.0 is used in the following summary tables (Tables 1, 2 and 3).

Occasional Long Span of 140m support specified for this use is I-40003-GA-047 and I-40003-GA-048.

**Table 1: AAAC, 200mm<sup>2</sup> - In Line Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	PIN TYPE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	Inter (Refer to I-40003-GA-045)	Stout	10kN	130
	H Section	Stout	10kN	130

**Table 2: AAAC, 200mm<sup>2</sup> - Angle Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	PIN TYPE	MAXIMUM LINE DEVIATION	MINIMUM STAY ANGLE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	Pin Angle (Refer to I-40003-GA-046)	Stout ≤ 16	10kN	5	1 x 30	125
	H Section Angle	EXStout ≤ 11	-	60	3 x 45	130
	H Section Angle	EXStout ≤ 13	-	60	4 x 45	130

**Table 3: AAAC, 200mm<sup>2</sup> - Terminal Structures**

DRAWING NUMBER	SUPPORT TYPE	SUPPORT CLASS	MINIMUM STAY ANGLE	MAXIMUM CLASHING SPAN (m)
Refer to Appendix A	H Terminal	EXStout ≤ 13	4 x 45	130

**Table 4a: AAAC, 200mm<sup>2</sup> - Design Sag/Tension (20% UTS)**

Conductor Code Name	Poplar	Absolute Maximum Working Tension (MWT) Limit (kgf)	2379						
Basic/Recommended Span (m)	120.00	Temperature at MWT Limit (Degrees C)	-5.6						
Temperature Shift for Creep (°C)	0.00	Maximum "Everyday" Tension (EDT) Limit (kgf)	1368.2						
Equivalent Percentage Increase in Tension (%)	0.00 at 15°C	Temperature at EDT Limit (Degrees C)	5						
Required Percentage Increase in Tension (%)	0.00 at 15°C	Number of Conductors	3						
Conductor Weight (kg/m)	0.681	Maximum Span (m)	140						
Cross-Sectional Area of Conductor (mm <sup>2</sup> )	239.4	<b>FACTORS OF SAFETY:</b>							
Conductor Overall Diameter (mm)	20.09	Unstayed Pole	2.5						
Coefficient of Linear Expansion (/Degree C)	0.000023	Stayed Pole	2.5						
Modulus of Elasticity (kg/mm <sup>2</sup> )	5700	Stays	2.5						
Rated Breaking Strength of Conductor (kgf)	6841	Steelwork & Pin Insulator (on UTS for Traditional Design only)	2.5						
Wind Pressure on Conductor (N/m <sup>2</sup> )	380	Wind on Pole	y						
Radial Ice Thickness (mm)	9.50								
TEMP (°C)	TENSION (kgf)	DESIGN SAG (m) FOR SPAN LENGTH (m)							
		70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00
-5.6	1639.3	0.25	0.33	0.42	0.52	0.63	0.75	0.88	1.02
0	1492.7	0.28	0.36	0.46	0.57	0.69	0.82	0.96	1.12
5	1368.2	0.30	0.40	0.50	0.62	0.75	0.90	1.05	1.22
10	1251.0	0.33	0.44	0.55	0.68	0.82	0.98	1.15	1.33
15	1142.4	0.37	0.48	0.60	0.75	0.90	1.07	1.26	1.46
20	1043.4	0.40	0.52	0.66	0.82	0.99	1.17	1.38	1.60
25	954.5	0.44	0.57	0.72	0.89	1.08	1.28	1.51	1.75
30	875.8	0.48	0.62	0.79	0.97	1.18	1.40	1.64	1.91
35	806.9	0.52	0.68	0.85	1.05	1.28	1.52	1.78	2.07
40	747.1	0.56	0.73	0.92	1.14	1.38	1.64	1.93	2.23
45	695.3	0.60	0.78	0.99	1.22	1.48	1.76	2.07	2.40
50	650.5	0.64	0.84	1.06	1.31	1.58	1.88	2.21	2.57
55	611.5	0.68	0.89	1.13	1.39	1.68	2.00	2.35	2.73
60	577.5	0.72	0.94	1.19	1.47	1.78	2.12	2.49	2.89
65	547.8	0.76	0.99	1.26	1.55	1.88	2.24	2.63	3.05
70	521.5	0.80	1.04	1.32	1.63	1.98	2.35	2.76	3.20
75	498.2	0.84	1.09	1.38	1.71	2.07	2.46	2.89	3.35
80	477.4	0.87	1.14	1.44	1.78	2.16	2.57	3.01	3.49

**Table 4b: AAAC, 200mm<sup>2</sup> - Erection Sag/Tension (20% UTS)**

Conductor Code Name		Poplar							
Basic/Recommended Span (m)		120.00							
Temperature Shift for Creep (°C)		-10.00							
Equivalent Percentage Increase in Tension (%)		17.36 at 15°C							
Required Percentage Increase in Tension (%)		0.00 at 15°C							
Pre-tension (all temperatures) at 1500 kgf for 1 hour. At 15 minute intervals, tension to be readjusted to maintain the pre-tension value. At the end of the pre-tension period conductors are to be tensioned and terminated in accordance with this erection table.									
TEMP (°C)	TENSION (kgf)	ERECTION SAG (m) FOR SPAN LENGTH (m)							
		70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00
-5.60	1915.4	0.22	0.28	0.36	0.44	0.54	0.64	0.75	0.87
0.00	1758.9	0.24	0.31	0.39	0.48	0.59	0.70	0.82	0.95
5.00	1623.3	0.26	0.34	0.42	0.52	0.63	0.76	0.89	1.03
10.00	1492.7	0.28	0.36	0.46	0.57	0.69	0.82	0.96	1.12
15.00	1368.2	0.30	0.40	0.50	0.62	0.75	0.90	1.05	1.22
20.00	1251.0	0.33	0.44	0.55	0.68	0.82	0.98	1.15	1.33
25.00	1142.4	0.37	0.48	0.60	0.75	0.90	1.07	1.26	1.46
30.00	1043.4	0.40	0.52	0.66	0.82	0.99	1.17	1.38	1.60
35.00	954.5	0.44	0.57	0.72	0.89	1.08	1.28	1.51	1.75
40.00	875.8	0.48	0.62	0.79	0.97	1.18	1.40	1.64	1.91
45.00	806.9	0.52	0.68	0.85	1.05	1.28	1.52	1.78	2.07
50.00	747.1	0.56	0.73	0.92	1.14	1.38	1.64	1.93	2.23
55.00	695.3	0.60	0.78	0.99	1.22	1.48	1.76	2.07	2.40
60.00	650.5	0.64	0.84	1.06	1.31	1.58	1.88	2.21	2.57
65.00	611.5	0.68	0.89	1.13	1.39	1.68	2.00	2.35	2.73
70.00	577.5	0.72	0.94	1.19	1.47	1.78	2.12	2.49	2.89
75.00	547.8	0.76	0.99	1.26	1.55	1.88	2.24	2.63	3.05
80.00	521.5	0.80	1.04	1.32	1.63	1.98	2.35	2.76	3.20

**Table 5: AAAC, 200mm<sup>2</sup> - Pole Data (20% UTS)**

Windspeed withstand factor of 2.5								
Length (m)	Grade	Top Dia (mm)	Dia 1.5m from Butt (mm)	Planting Depth (mm)	Single Pole Strut Strength (kgf)	Maximum Wind Span Length for Specified Pole (m)		
						Good	Good/Av	Av/Poor
9.00	MEDIUM	150.00	220.00	1800	7617	60	60	60
10.00	MEDIUM	150.00	230.00	1800	6335	60	60	60
11.00	MEDIUM	150.00	240.00	1800	5421	60	60	60
12.00	MEDIUM	150.00	250.00	1800	4743	61	61	61
13.00	MEDIUM	160.00	260.00	2400	5212	62	62	62
14.00	MEDIUM	160.00	275.00	2400	4820	66	66	66
15.00	MEDIUM	165.00	290.00	2400	4816	71	71	71
16.00	MEDIUM	170.00	305.00	2400	4842	76	76	76
17.00	MEDIUM	180.00	320.00	2400	5190	82	82	82
18.00	MEDIUM	180.00	330.00	2400	4819	83	83	83
20.00	MEDIUM	180.00	360.00	3000	4658	90	90	90
22.00	MEDIUM	190.00	380.00	3000	4643	95	95	95
9.00	STOUT	190.00	275.00	1800	19146	122	122	106
10.00	STOUT	190.00	285.00	1800	15667	118	118	94
11.00	STOUT	190.00	295.00	1800	13199	116	116	83
12.00	STOUT	190.00	305.00	1800	11377	115	115	75
13.00	STOUT	195.00	320.00	2400	11703	120	120	120
14.00	STOUT	195.00	335.00	2400	10624	124	124	124
15.00	STOUT	195.00	350.00	2400	9773	128	128	128
16.00	STOUT	200.00	365.00	2400	9581	133	133	125
17.00	STOUT	200.00	375.00	2400	8758	132	132	116
18.00	STOUT	200.00	390.00	2400	8282	135	135	109
20.00	STOUT	200.00	415.00	3000	7633	137	137	137
22.00	STOUT	200.00	435.00	3000	6742	134	134	134
24.00	STOUT	200.00	470.00	3000	6502	141	141	141

**Table 5: AAAC, 200mm<sup>2</sup> - Pole Data (20% UTS) (Continued)**

Windspeed withstand factor of 2.5								
Length (m)	Grade	Top Dia (mm)	Dia 1.5m from Butt (mm)	Planting Depth (mm)	Single Pole Strut Strength (kgf)	Maximum Wind Span Length for Specified Pole (m)		
						Good	Good/Av	Av/Poor
9.00	EXSTOUT	190.00	295.00	1800	21771	151	151	108
10.00	EXSTOUT	190.00	305.00	1800	17760	145	145	95
11.00	EXSTOUT	190.00	315.00	1800	14922	141	133	85
12.00	EXSTOUT	190.00	325.00	1800	12834	138	120	76
13.00	EXSTOUT	195.00	340.00	2400	13079	142	142	142
14.00	EXSTOUT	195.00	355.00	2400	11847	144	144	144
15.00	EXSTOUT	195.00	370.00	2400	10874	146	146	137
16.00	EXSTOUT	200.00	385.00	2400	10623	151	151	128
17.00	EXSTOUT	200.00	395.00	2400	9696	149	149	118
18.00	EXSTOUT	200.00	410.00	2400	9152	151	151	110
20.00	EXSTOUT	200.00	435.00	3000	8391	151	151	151
22.00	EXSTOUT	200.00	440.00	3000	7396	147	147	147
24.00	EXSTOUT	200.00	440.00	3000	7109	153	153	153

**Table 5: AAAC, 200mm<sup>2</sup> - Pole Data (20% UTS) (Continued)**

Windspeed withstand factor of 2.0								
Length (m)	Grade	Top Dia (mm)	Dia 1.5m from Butt (mm)	Planting Depth (mm)	Single Pole Strut Strength (kgf)	Maximum Wind Span Length for Specified Pole (m)		
						Good	Good/Av	Av/Poor
9.00	MEDIUM	150.00	220.00	1800	7617	76	76	76
10.00	MEDIUM	150.00	230.00	1800	6335	76	76	76
11.00	MEDIUM	150.00	240.00	1800	5421	77	77	77
12.00	MEDIUM	150.00	250.00	1800	4743	77	77	77
13.00	MEDIUM	160.00	260.00	2400	5212	79	79	79
14.00	MEDIUM	160.00	275.00	2400	4820	85	85	85
15.00	MEDIUM	165.00	290.00	2400	4816	91	91	91
16.00	MEDIUM	170.00	305.00	2400	4842	97	97	97
17.00	MEDIUM	180.00	320.00	2400	5190	105	105	105
18.00	MEDIUM	180.00	330.00	2400	4819	106	106	106
20.00	MEDIUM	180.00	360.00	3000	4658	115	115	115
22.00	MEDIUM	190.00	380.00	3000	4643	121	121	121
9.00	STOUT	190.00	275.00	1800	19146	154	154	135
10.00	STOUT	190.00	285.00	1800	15667	150	150	120
11.00	STOUT	190.00	295.00	1800	13199	148	148	107
12.00	STOUT	190.00	305.00	1800	11377	146	146	96
13.00	STOUT	195.00	320.00	2400	11703	153	153	153
14.00	STOUT	195.00	335.00	2400	10624	158	158	158
15.00	STOUT	195.00	350.00	2400	9773	162	162	162
16.00	STOUT	200.00	365.00	2400	9581	169	169	161
17.00	STOUT	200.00	375.00	2400	8758	168	168	150
18.00	STOUT	200.00	390.00	2400	8282	171	171	141
20.00	STOUT	200.00	415.00	3000	7633	173	173	173
22.00	STOUT	200.00	435.00	3000	6742	170	170	170
24.00	STOUT	200.00	470.00	3000	6502	179	179	179



**Table 5: AAAC, 200mm<sup>2</sup> - Pole Data (20% UTS) (Continued)**

Windspeed withstand factor of 2.0								
Length (m)	Grade	Top Dia (mm)	Dia 1.5m from Butt (mm)	Planting Depth (mm)	Single Pole Strut Strength (kgf)	Maximum Wind Span Length for Specified Pole (m)		
						Good	Good/Av	Av/Poor
9.00	EXSTOUT	190.00	295.00	1800	21771	190	190	137
10.00	EXSTOUT	190.00	305.00	1800	17760	184	184	121
11.00	EXSTOUT	190.00	315.00	1800	14922	178	169	109
12.00	EXSTOUT	190.00	325.00	1800	12834	174	153	98
13.00	EXSTOUT	195.00	340.00	2400	13079	180	180	180
14.00	EXSTOUT	195.00	355.00	2400	11847	182	182	182
15.00	EXSTOUT	195.00	370.00	2400	10874	185	185	176
16.00	EXSTOUT	200.00	385.00	2400	10623	191	191	164
17.00	EXSTOUT	200.00	395.00	2400	9696	189	189	153
18.00	EXSTOUT	200.00	410.00	2400	9152	191	191	144
20.00	EXSTOUT	200.00	435.00	3000	8391	190	190	190
22.00	EXSTOUT	200.00	440.00	3000	7396	186	186	186
24.00	EXSTOUT	200.00	440.00	3000	7109	193	193	193

**Table 6: AAAC, 200mm<sup>2</sup> - Single Pole Stay Capability**

Conductor Code Name (if any)	Poplar	
Conductor Tension (MWT / MCT) (kgf)	2239.6	
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380.00	
Wind Load per Metre / MCP (kg/m)	1.51	
Maximum Span Length (m)	140.00	
Number of Conductors	3.00	
Factor of Safety	2.50	
Wind assumed on 18 m Stout Pole	y	
Where two stays are used, calculation is based on 2m separation between stays at ground level.		
<b>MAXIMUM ANGLE OF LINE DEVIATION</b>		
Angle of Stay Slope	Grade 1150 1x7/4.00 (Stay strength 10299)	Grade 1150 2x7/4.00 (Stay Strength 10299)
30	11.00	28.00
35	14.00	33.00
40	16.00	39.00
45	18.00	44.00

**Table 7: AAAC, 200mm<sup>2</sup> - H-Pole Stay Capability**

Conductor Code Name (if any)	Poplar	
Conductor Tension (MWT / MCT) (kgf)	2239.6	
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380.00	
Wind Load per Metre / MCP (kg/m)	1.51	
Maximum Span Length (m)	140.00	
Number of Conductors	3.00	
Factor of Safety	2.50	
Wind assumed on 18 m Stout Pole	y	
Where one stay per limb of H-pole is required, enter User Defined Stay(s) and cross check strut strength from H STRUT using 4 Stays loading for angle of deviation. Where two stays used, calculation based on 2m separation between stays at ground level.		
<b>MAXIMUM ANGLE OF LINE DEVIATION</b>		
Angle of Stay Slope	Grade 1150 3x7/4.00 (Stay strength 10299)	Grade 1150 4x7/4.00 (Stay Strength 10299)
30	46.00	60.00
35	55.00	60.00
40	60.00	60.00
45	60.00	60.00

**Table 8: AAAC, 200mm<sup>2</sup> - Single Pole Strut Loading**

Conductor Code Name (if any)	Poplar			
Conductor Tension (MWT/MCT) (kgf)	2239.6			
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380.00			
Iced Conductor Weight / MCW (kg/m)	1.487			
Wind Load per Metre / MCP (kg/m)	1.51			
Maximum Span Length (m)	140.00			
Number of Conductors	3.00			
Factor of Safety	2.00			
Wind assumed on 18 m Stout Pole	y			
Longitudinal Load in Conductor (kgf)	13437.6			
Transverse Load [Normal to Span] (kgf)	1272.4			
Vertical Load [No Downpull] (kgf)	1693.3			
Vertical Load with Downpull 1: 10.00 (kgf)	4367.4			
Pole Wind Load (kgf)	179.6			
<b>STRUT LOAD in POLE with ONE or TWO STAYS (kgf)</b>				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Downpull 1: 10.00				
0.00	6882	6441	6098	5819
5.00	8911	8114	7493	6990
10.00	10931	9779	8884	8157
15.00	12939	11435	10265	9316
20.00	14932	13078	11637	10467
25.00	16905	14705	12994	11606
30.00	18855	16313	14336	12732
35.00	20778	17899	15659	13842
40.00	22670	19459	16961	14935
45.00	24528	20991	18239	16007
50.00	26348	22492	19492	17058
55.00	28127	23959	20716	18085
60.00	29862	25389	21909	19087

**Table 9: AAAC, 200mm<sup>2</sup> - H-Pole Strut Loading**

Conductor Code Name (if any)	Poplar			
Conductor Tension (MWT/MCT) (kgf)	2239.6			
Wind Pressure / Wind Co-ordinate (N/m <sup>2</sup> )	380.00			
Iced Conductor Weight / MCW (kg/m)	1.487			
Wind Load per Metre / MCP (kg/m)	1.51			
Maximum Span Length (m)	140.00			
Number of Conductors	3.00			
Factor of Safety	2.50			
Wind assumed on 18 m Stout Pole	y			
Longitudinal Load in Conductor (kgf)	16797.0			
Transverse Load [Normal to Span] (kgf)	1590.44			
Vertical Load [No Downpull] (kgf)	2116.6			
Vertical Load with Downpull 1: 10.00 (kgf)	5459.3			
"H" Structure Wind Load (kgf)	336.80			
<b>STRUT LOAD in POLE with THREE STAYS (kgf)</b> <b>(60% of Line Load for Inner Pole - Worst Case)</b>				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Level				
0.00	3061	2710	2436	2215
5.00	4582	3964	3483	3093
10.00	6098	5213	4526	3968
15.00	7604	6455	5562	4837
20.00	9098	7688	6590	5700
25.00	10578	8908	7609	6555
30.00	12041	10114	8615	7399
35.00	13483	11303	9607	8232
40.00	14902	12473	10584	9051
45.00	16296	13622	11542	9856
50.00	17661	14748	12482	10644
55.00	18995	15848	13400	11414
60.00	20296	16920	14295	12165

**Table 9: AAAC, 200mm<sup>2</sup> - H-Pole Strut Loading (Continued)**

STRUT LOAD in POLE with THREE STAYS (kgf) (60% of Line Load for Inner Pole - Worst Case)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Downpull 1: 10.00				
0.00	4733	4381	4108	3886
5.00	6254	5635	5154	4764
10.00	7769	6885	6197	5639
15.00	9275	8127	7233	6509
20.00	10770	9359	8262	7372
25.00	12250	10579	9280	8226
30.00	13712	11785	10286	9070
35.00	15154	12974	11279	9903
40.00	16573	14144	12255	10722
45.00	17967	15293	13214	11527
50.00	19332	16419	14153	12315
55.00	20666	17519	15071	13085
60.00	21967	18592	15966	13836

**Table 9: AAAC, 200mm<sup>2</sup> - H-Pole Strut Loading (Continued)**

STRUT LOAD in POLE with FOUR STAYS (kgf) (50% of Line Load for Each Pole)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Level				
0.00	2727	2434	2207	2022
5.00	3995	3480	3079	2754
10.00	5258	4521	3948	3483
15.00	6513	5556	4811	4208
20.00	7758	6583	5668	4927
25.00	8992	7600	6517	5639
30.00	10210	8605	7355	6342
35.00	11412	9595	8182	7036
40.00	12595	10571	8996	7719
45.00	13756	11528	9795	8389
50.00	14894	12466	10578	9046
55.00	16006	13383	11343	9688
60.00	17089	14277	12089	10314

**Table 9: AAAC, 200mm<sup>2</sup> - H-Pole Strut Loading (Continued)**

STRUT LOAD in POLE with FOUR STAYS (kgf) (50% of Line Load for Each Pole)				
Line Angle (Degrees)	Stay Angle (Degrees)			
	30.00	35.00	40.00	45.00
Downpull 1: 10.00				
0.00	4399	4106	3878	3693
5.00	5666	5151	4750	4425
10.00	6929	6192	5619	5154
15.00	8184	7227	6483	5879
20.00	9430	8254	7340	6598
25.00	10663	9271	8188	7310
30.00	11882	10276	9027	8014
35.00	13083	11267	9854	8707
40.00	14266	12242	10667	9390
45.00	15427	13199	11466	10061
50.00	16565	14137	12249	10718
55.00	17677	15054	13014	11359
60.00	18761	15948	13760	11985

## Appendix D – Compiling Material Requirement/Ordering Information

### D1 Introduction

This Appendix introduces the Excel Workbook 40003.xls. This Workbook basically presents the information necessary to compile the material requirement for a bare-wire line on a pole-by-pole basis, in order to reduce the work involved in generating and writing out a total material requirement by hand.

#### D1.1 Presentation of Information in the Workbook

The Workbook comprises two sheets: Line Schedule - Pole-by-Pole; Summary - Total Materials. The first sheet (Line Schedule - Pole-by-Pole) is the sheet that will be used to compile a total material requirement for any line on a pole-by-pole basis. The second sheet (Summary - Total Materials) is generated automatically from the data input into the first sheet.

##### D1.1.1 Line Schedule – Pole-by-Pole

Most materials required for building a bare-wire line are itemized down the left-hand columns of the sheet, together with drawing reference numbers and Commodity Code numbers. The area to the right of the list of materials is the working area of the sheet. Arbitrary pole numbers are assigned to each column in the working area. Where additional (unlisted) items are required from another specification (e.g. transformer to be selected from ES315), these items can be added to the copy of the workbook, under the appropriate heading.

##### D1.1.2 Summary – Total Materials

The information in this sheet is generated automatically from the data that are entered in the Line Schedule - Pole-by-Pole sheet. It comprises a repeat of the total materials down the left-hand side, followed by a total for the number of each item. (This will include any additional items added as in [D1.1.1](#).)

### D2 Instructions for Using the Workbook

#### D2.1 Introduction

The workbook is designed as a quick means of compiling a sheet containing the total material requirement for a bare-wire line on a pole-by-pole basis. It is designed to be used in conjunction with the information contained in the specification and any other appropriate reference material. Because the Workbook is a simple and flexible means of entering data, it is possible to enter any values, hence errors, in any data cell. Equally, because it is simple, any errors (in data entry) should be self-evident after a quick check.

#### D2.2 Instructions

Use the Workbook as follows:

- (a) Open Workbook 40003.xls.
- (b) Save the Workbook in the appropriate project folder (name as required).
- (c) Identify a pole and corresponding material item, then enter number required in the appropriate cell.
- (d) Continue until the total material requirement for the line has been identified.



- (e) For additional items (refer to [D1.1.1](#)), refer to the appropriate specification and insert the details under the relevant heading.