

# **Electricity Specification 400A2**

Issue 3 September 2021

**Anti-Climbing Devices** 





# **Amendment Summary**

ISSUE NO. DATE	DESCRIPTION	
Issue 3	New template app	lied throughout.
07/09/21	Prepared by: D	M Talbot
	an	olicy Approval Panel and signed on its behalf by Steve Cox, Engineering and Technical rector



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#### 1 Introduction

This Specification comprises general requirements for Approvals and testing of anti-climbing devices (ACDs), followed by technical particulars relating to the constructional requirements of all ACDs, and the markings that shall be applied to all ACDs prior to delivery. <u>Appendix A</u> is a schedule of all ACDs in alphanumeric order, followed by associated drawings (in drawing number order).

# 2 Scope

This Specification covers all anti-climbing devices employed within Electricity North West Limited (hereinafter referred to as Electricity North West).

### 3 Definitions

ACD	Anti-climbing device
Approval	Sanction by the Electricity North West Overhead Line Circuits Policy Manager that specified criteria have been satisfied
Contract	The agreement between Electricity North West and the Contractor for the execution of the Works including therein all documents to which reference may properly be made in order to ascertain the rights and obligations of the parties under the said agreement.
Contractor	The person or person's firm or company, including personal representatives, successors and permitted assigns, who's Tender has been accepted by Electricity North West.
Specification	The Specifications and schedules (if any) agreed by the parties for the purpose of the Contract.
Sub-Contractor	Any person (other than the Contractor) named in the Contract for any part of the Works or any person to whom any part of the Contract has been sub-let with the consent in writing of the Electricity North West Overhead Line Circuits Policy Manager, and the legal representatives, successors and assigns of such person.
Supplier	Any person or person's firm or company who supplies goods to Electricity North West or to its Contractor.



Tender	An offer in writing to execute work or supply goods at a fixed price.
Tenderer	The person or person's firm or company, including personal representatives, successors and permitted assigns, invited by Electricity North West to submit a Tender.

# 4 General Requirements for Approvals and Testing

### 4.1 Product not to be Changed

No change in the product, packaging or labelling shall be made after Approval has been granted without prior notice to the Electricity North West Overhead Line Circuits Policy Manager, and receipt of a written agreement to the proposed change from the Electricity North West Overhead Line Circuits Policy Manager.

### 4.2 Electricity North West Technical Approval

The Tenderer shall submit, with this Tender, proposals for testing which will demonstrate, to the satisfaction of the Electricity North West Overhead Line Circuits Manager, compliance with this Specification. Such tests shall be carried out without expense to Electricity North West.

Alternatively, technical reports and other data may be submitted that the Tenderer considers will demonstrate, to the satisfaction of the Electricity North West Overhead Line Circuits Policy Manager, compliance with this Specification. Acceptance of this evidence shall be at the discretion of the Electricity North West Overhead Line Circuits Policy Manager but will not be unreasonably withheld.

Approval shall be 'factory specific' and is not transferable to another factory without the written Approval of the Electricity North West Overhead Line Circuits Policy Manager.

The Supplier and product shall comply with all the relevant requirements of Electricity North West documents EPD311 and CP311.

#### 4.3 Quality Assurance

The Tenderer shall confirm whether or not Approval is held in accordance with a quality assurance scheme accredited under ISO 9000. If not, the Tenderer shall submit a statement of the quality assurance procedures employed to control the quality of the product, including the performance of Suppliers and Sub-Contractors.

The right is reserved for the repeat of such tests, from time to time, that the Electricity North West Overhead Line Circuits Manager may deem to be reasonably necessary to demonstrate continued compliance with the Specification.

The Tenderer shall submit, with the Tender, a list of tests and inspections which are carried out on the product prior to despatch which shall demonstrate, to the satisfaction of the Electricity North West Overhead Line Circuits Policy Manager, fitness for installation and service.

The Tenderer shall provide free of charge to Electricity North West such samples as may, in the opinion of the Electricity North West Overhead Line Circuits Policy Manager, be reasonably required for inspection and/or



retention as quality control samples. The Electricity North West Overhead Line Circuits Policy Manager will confirm the requirement for samples at the time of Tendering.

The right is reserved for inspections to be made of Tenderer's facilities, from time to time, as deemed reasonably necessary by the Electricity North West Overhead Line Circuits Manager to ensure compliance with this Specification and any Contract of which it forms a part.

The Tenderer shall submit, with the Tender, such details of product packaging disposal, as will enable Electricity North West to comply with the requirements of BS EN ISO 14001 - Environmental Management Systems.

#### 4.4 Formulation

The Tenderer shall submit, with the Tender, such details of the formulation and use of the product and associated substances as will enable Electricity North West to comply with the obligations of the Health and Safety at Work Act 1974 and the Control of Substances Hazardous to Health Regulations 2002, in the use, storage and disposal of the product. The Tenderer may stipulate, prior to submission of such information, that it is to remain confidential, and the Electricity North West Overhead Line Circuits Policy Manager will, if requested, confirm agreement to this prior to receipt of the information.

#### 4.5 Identification Markings

The Tenderer shall submit, with the Tender, details of markings which it is proposed to apply to the product or packaging to identify manufacturing batches or items. The forms and content of such markings shall be subject to the Approval of the Electricity North West Overhead Line Circuits Policy Manager and shall in all cases include the Electricity North West approved description and commodity code number.

The Tenderer shall submit, with the Tender, such details of marking gross weight on components, assemblies and packages, as will enable Electricity North West to comply with the Health and Safety Manual Handling Operation Regulations 1992, for components, assemblies and packages supplied with a gross weight over 1kg. The forms and content of such markings shall be subject to the Approval of the Electricity North West Overhead Line Circuits Policy Manager.

#### 4.6 Minimum Life Expectancy

The minimum life expectancy of all products covered by this Specification is 20 years.

#### 4.7 Product Conformity

Preference will be given to those Suppliers who can provide suitable product conformity certification to a recognised or specified standard, or an equivalent certification.

#### 4.8 Confirmation of Conformance

The Tenderer shall complete the conformance declaration sheets in <u>Appendix B</u>. Failure to complete these declaration sheets may result in an unacceptable bid.



## 5 Requirements for Type and Routine Testing

The Electricity North West Overhead Line Circuits Manager shall set out the requirement of the following tests to be carried out by the Supplier at the Supplier's cost.

#### 5.1 Requirement for Type Tests at Suppliers Premises

These are a series of one-off type tests, which are carried out to ensure the satisfactory performance of the product design, under extremes of operating stresses, and of endurance, as may be appropriate, to be determined by the Electricity North West Overhead Line Circuits Manager.

These may or may not be destructive tests.

## 5.2 Requirement for Routine Tests at the Supplier's Premises

These tests may be required to be carried out on every individual unit or component, as specified, or at some regular frequency to be determined by the Electricity North West Overhead Line Circuits Manager.

The results of these tests may be required to be supplied to Electricity North West with each unit purchased or retained for inspection, at a period to be determined by the Electricity North West Overhead Line Circuits Manager.

# 6 Constructional Requirements

#### 6.1 Steelwork

ACD steelwork shall conform to all requirements of this Specification and the general requirements of ENA TS 43-95. Manufacturing tolerances shall be those given in ENA TS 43-95, unless otherwise stated.

#### 6.2 Steelwork Finish

All steelwork shall be galvanized to BS EN ISO 1461. Galvanized steelwork shall be free from sharp edges or points left by the galvanization process.

#### 6.3 Barbed Wire

Barbed wire shall generally be in accordance with ES400W4.

In areas where corrosion is severe, stainless-steel barbed wire may be used.

#### 6.4 Wire Staples

Wire staples shall comply with BS 1494-1, and be of sufficient size to hold the barbed wire in place. Wire staples shall be galvanized to BS EN 10244-2.



# 7 Documents Referenced

	DOCUMENTS REFERENCED
Control of Substances Hazardous to Health (COSHH) Regulations 2002.	
Health and Safety at Work Etc Act: 1974	
Health and Safety Manual Handling Operation Regulations 1992.	
BS EN ISO 1461:	Hot dip galvanized coatings on fabricated iron and steel articles. Specifications and test methods.
BS EN ISO 9000:	Quality Management & Quality Assurance Standards.
BS EN ISO 14001: 2004:	Environmental management systems. Requirements with guidance for use.
BS EN 10025:	Hot rolled products of non-alloy structural steels. Technical deliver conditions.
BS EN 10244-2:	Steel wire and wire products. Non-ferrous metallic coatings on stee wire. Zinc or zinc alloy coatings.
BS 1494-1:	Specification for fixing accessories for building purposes. Fixings for sheet, roof and wall coverings
ENA TS 43-90	Anti-climbing devices and safety signs for lines up to and includin 400kV.
ENA TS 43-95:	Steelwork for overhead lines.
EPD311:	Approval of Equipment.



#### **ANTI-CLIMBING DEVICES**

ES400A2

CP311:	Equipment Approval Process.
ES400F1:	Specification for Fasteners and Washers for Wood Pole Overhea Lines.
ES400W4:	Barbed wire.

# 8 Keywords

ACD

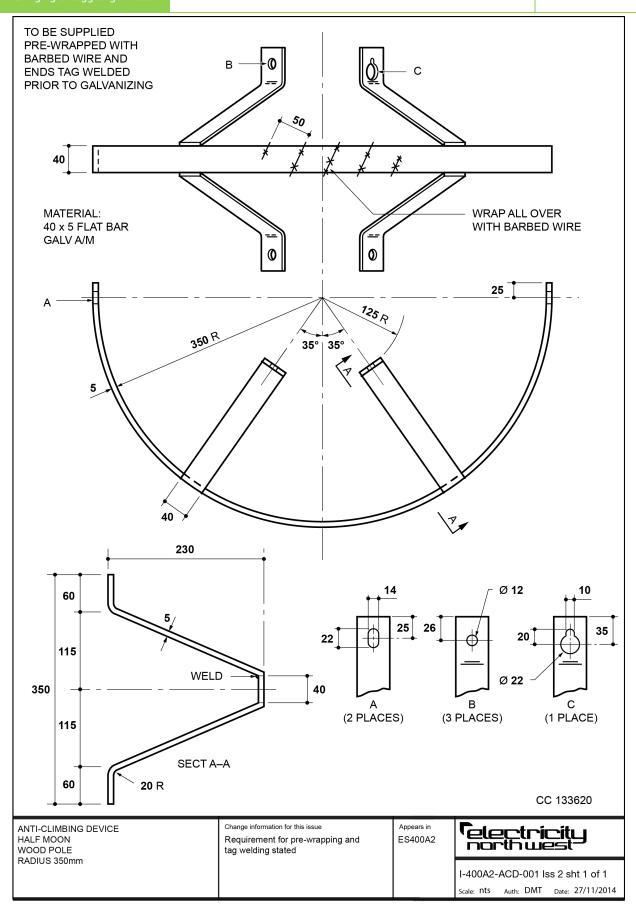


# Appendix A – Schedule of All ACDs

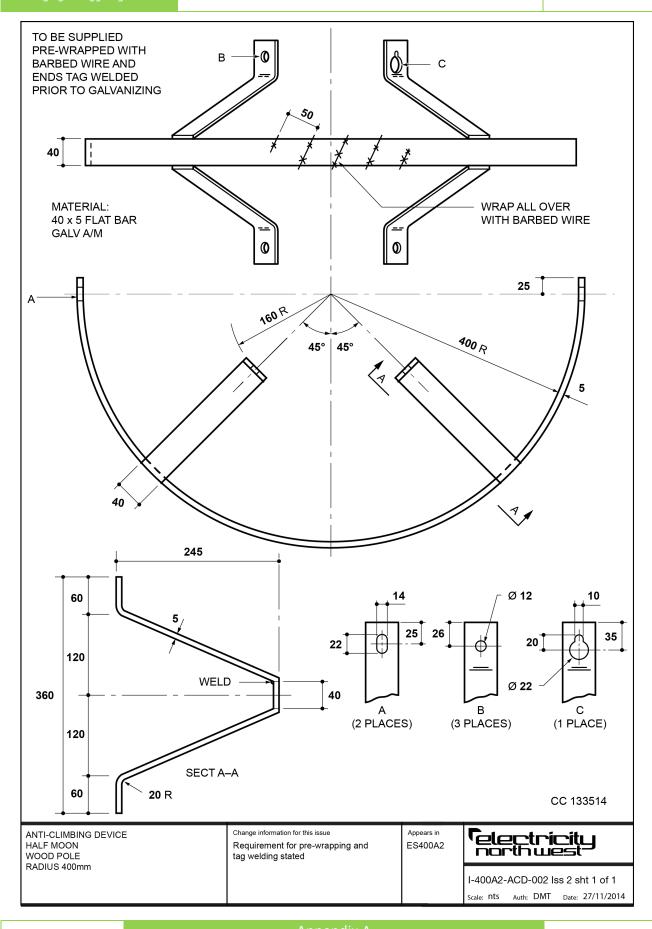
Item No	Approved Description (for purchasing and product labelling)	Drawing Reference	CC number			
1	Anti-climbing device, half moon, wood pole, radius 350mm (Dwg I-400A2-ACD-001)	I-400A2-ACD-001	133620			
2	Anti-climbing device, half moon, wood pole, radius 400mm (Dwg I-400A2-ACD-002)	I-400A2-ACD-002	133514			
3*	Anti-climbing device, bracket, narrow based lattice steel tower/steel pole/concrete pole (Dwg I-400A2-ACD-004)	I-400A2-ACD-004	133517			
4*	Anti-climbing device, bracket, 3 strand type (Dwg I-400A2-ACD-003)	I-400A2-ACD-003	133518			
5	Anti-climbing device, fittings pack	Not applicable (refer to ES400F1)	133512			
6	Anti-climbing device, H-pole kit (pole centres 1830mm) (Dwg I-400A2-ACD-005)	I-400A2-ACD-005	133519			
7	Anti-climbing device, H-pole kit (pole centres 2500mm) (Dwg I-400A2-ACD-005)	I-400A2-ACD-005	133520			
8	Anti-climbing device, spacer bar, 5-strand (short) (Dwg I-400A2-ACD-009)	I-400A2-ACD-009	133510			
9	Anti-climbing device, spacer bar, 9-strand (long) (Dwg I-400A2-ACD-010)	I-400A2-ACD-010	133515			
10	Anti-climbing device, steel tower gate hook (Dwg I-400A2-ACD-011)	I-400A2-ACD-011	133521			
11	Anti-climbing device, steel tower kit, leg sizes up to and including 250mm x 250mm, c/w spacer bars and fittings (Dwg I-400A2-ACD-006)	I-400A2-ACD-006	133507			
12	Anti-climbing device, steel tower kit with cranked crossarms, leg sizes up to and including 250mm x 250mm, c/w spacer bars and fittings (Dwg I-400A2-ACD-007)	I-400A2-ACD-007	133516			
13	Anti-climbing device, steel tower kit, wide based tower, c/w spacer bars and fittings (Dwg I-400A2-ACD-008)	I-400A2-ACD-008	133508			
* To be	* To be supplied with two stainless steel ties to Drawing I-400A2-ACD-012.					

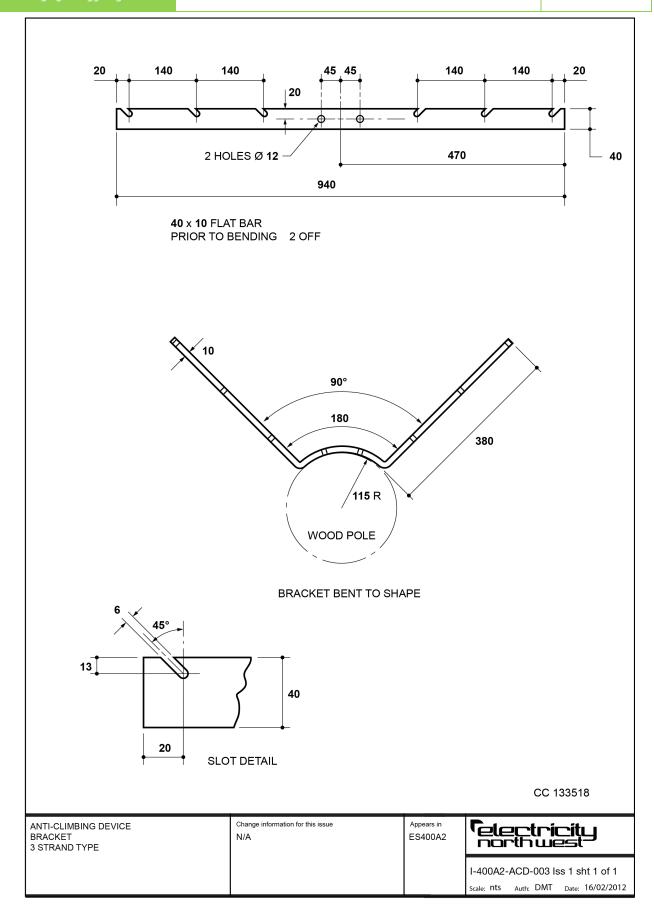


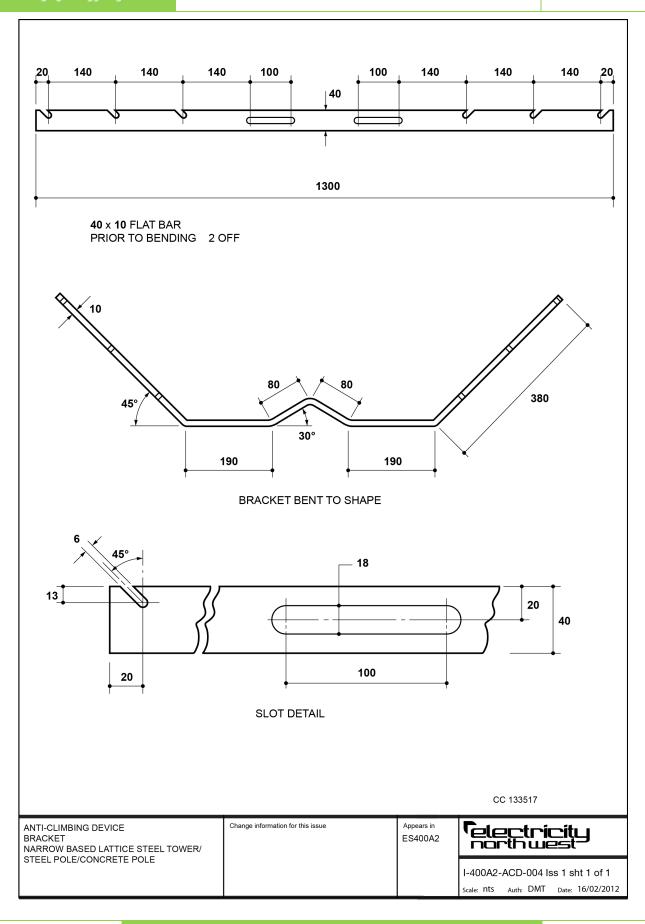
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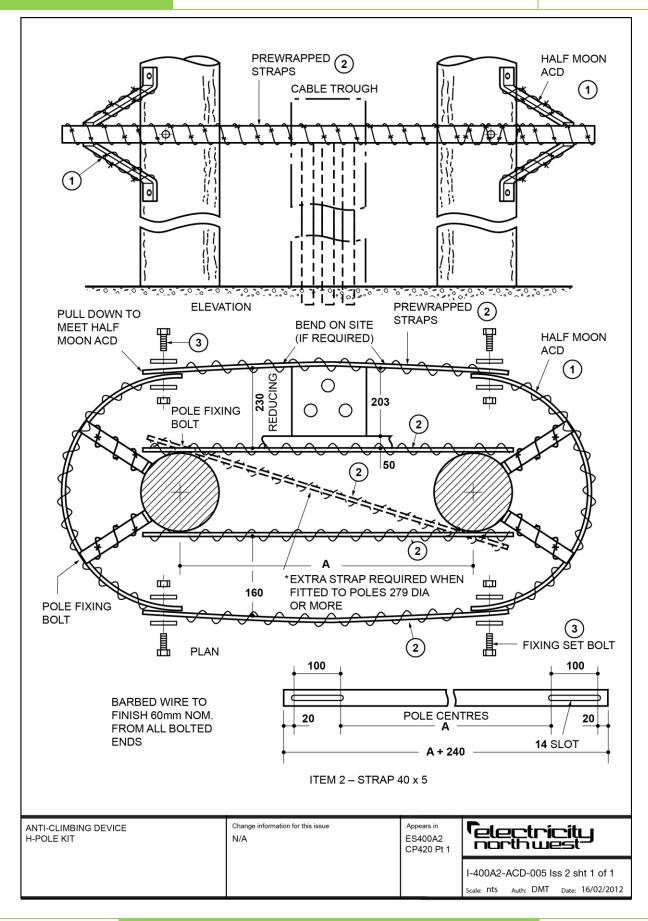


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# Anti Climbing Device, H-Pole Kit (Pole Centres 1830mm) - CC Number 133519

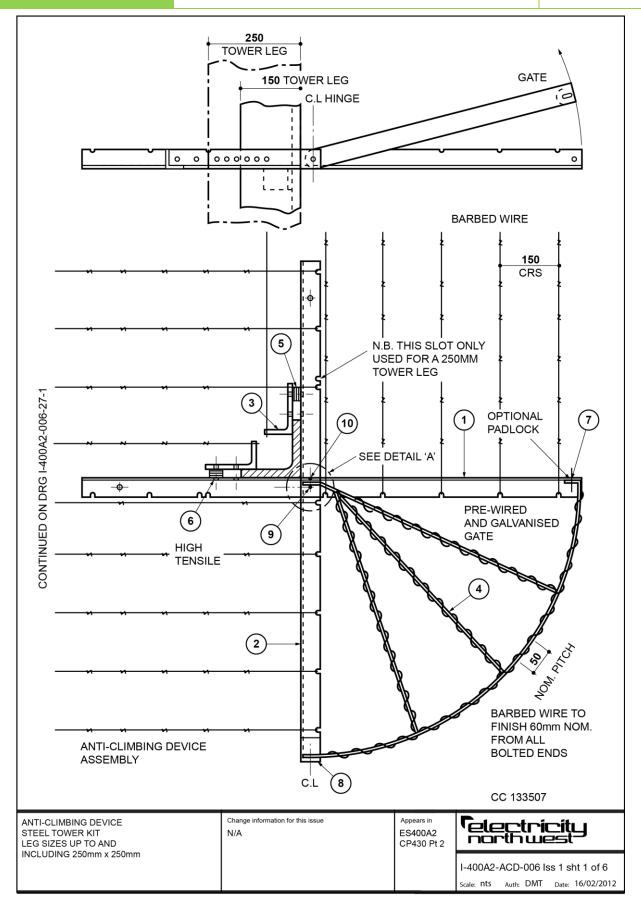
		Drawing No: I-400A2-ACD-005		
Item Number (refer to drawing)	Description	ES Ref No	CC number	Quantity
2	Strap (Dimension A = 1830mm)	-	-	3
3	M12 x 35mm bolt, c/w nut	-	-	4
3	M12 washer	-	-	8
(Addition	nal Items Required for Kit - But Not Included in Kit	Contents)		
-	Barbed wire Spacing: 150mm between strands (unsupported); 230mm unprotected space	ES400W4	197408	As req
1	Half moon ACD	ES400A2	(see Note)	2

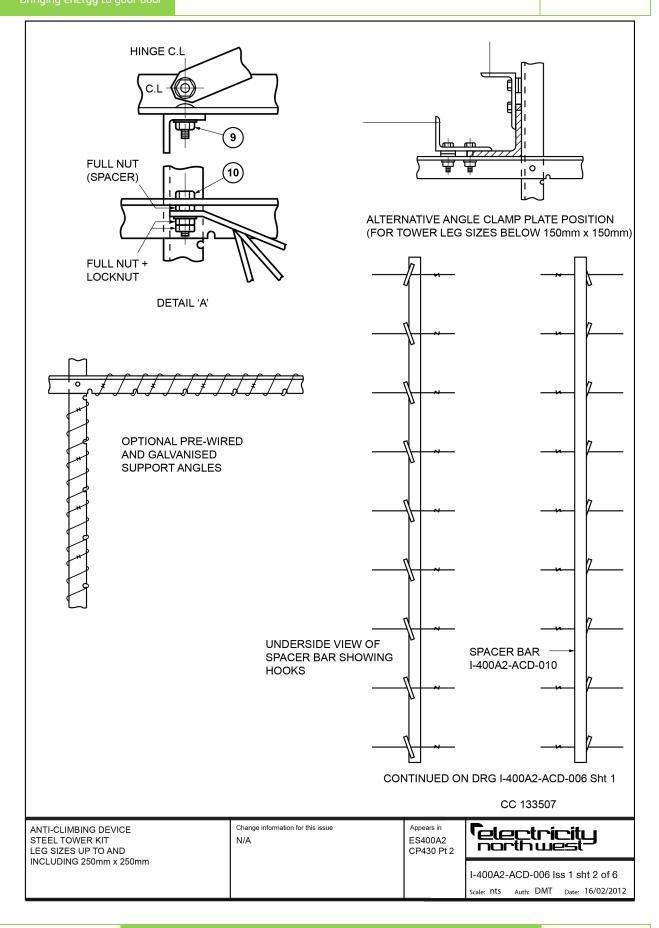
**NOTE:** Appropriate half moon ACDs need to be selecting depending upon the pole sizes.

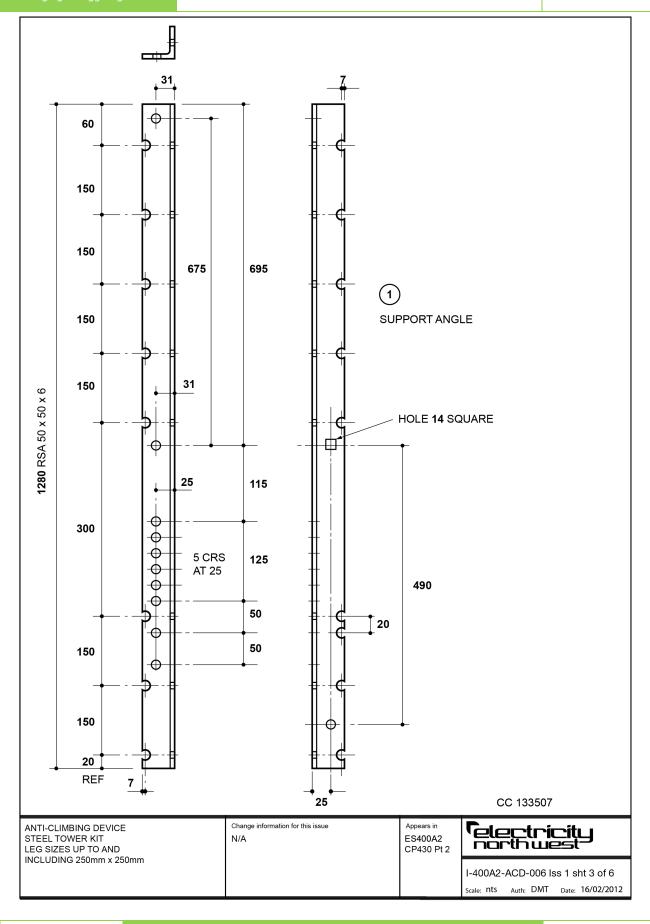
# Anti Climbing Device, H-Pole Kit (Pole Centres 2500mm) – CC Number 133520

		Drawing No: I-400A2-ACD-005		
Item Number (refer to drawing)	Description	ES Ref No	CC number	Quantity
2	Strap (Dimension A = 2500mm)	-	-	3
3	M12 x 35mm bolt, c/w nut	-	-	4
3	M12 washer	-	-	8
(Additional Items Required for Kit - But Not Included in Kit		Contents)		
-	Barbed wire Spacing: 150mm between strands (unsupported); 230mm unprotected space	ES400W4	197408	As req
1	Half-moon ACD	ES400A2	(see Note)	2

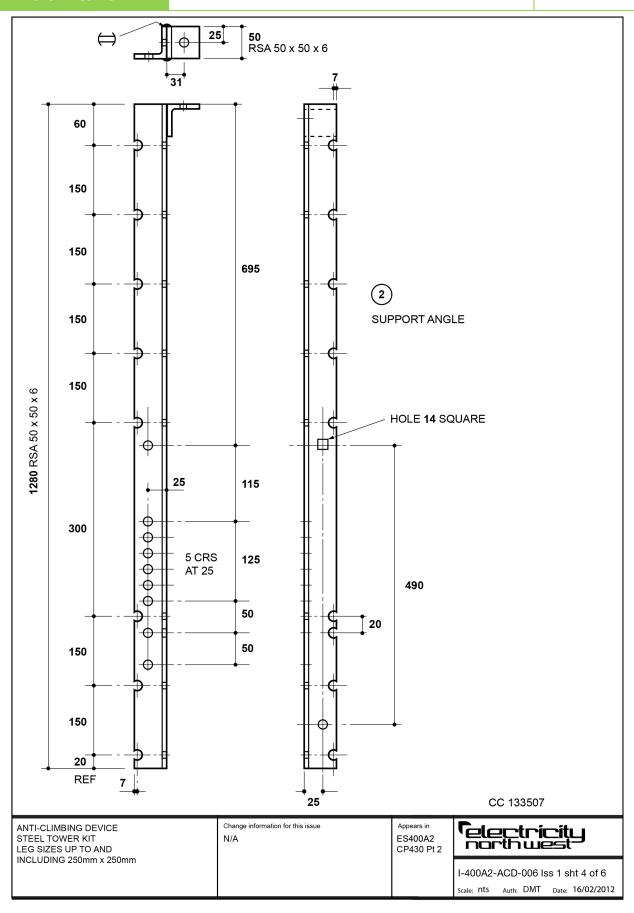
**NOTE:** Appropriate half-moon ACDs need to be selecting depending upon the pole sizes.

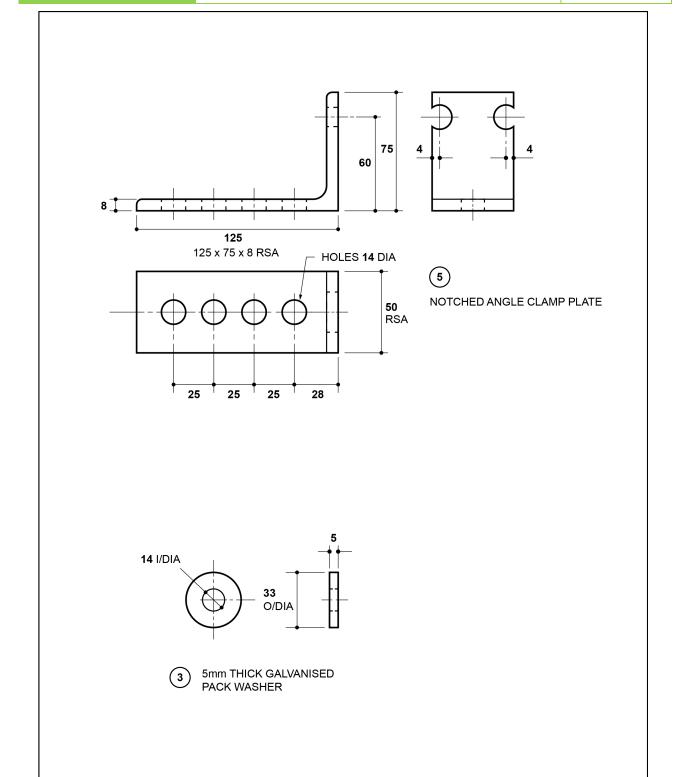






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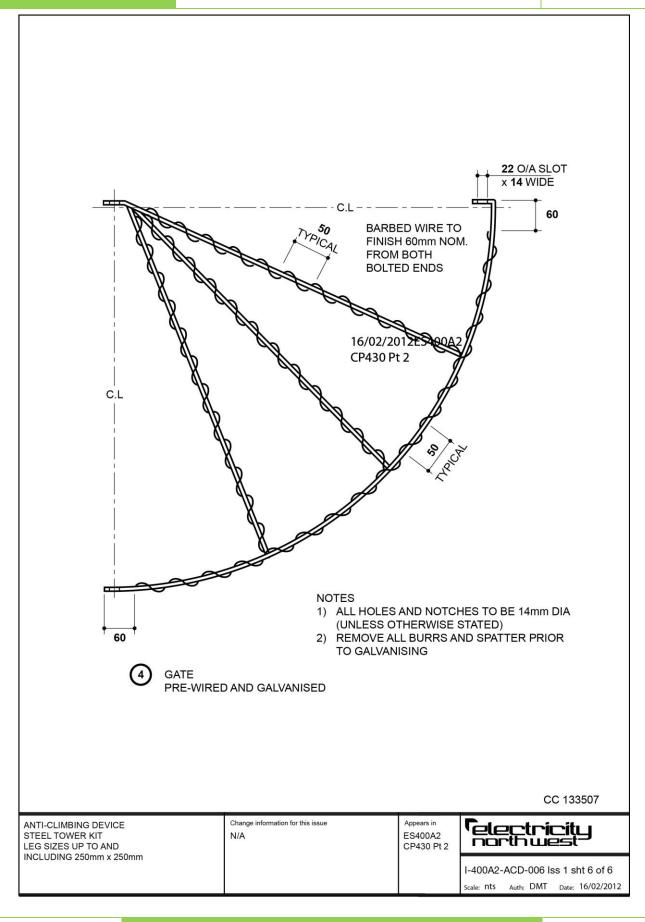


CC 133507

ANTI-CLIMBING DEVICE STEEL TOWER KIT LEG SIZES UP TO AND INCLUDING 250mm x 250mm Change information for this issue N/A

Appears in ES400A2 CP430 Pt 2

**Pelectricity** northwest

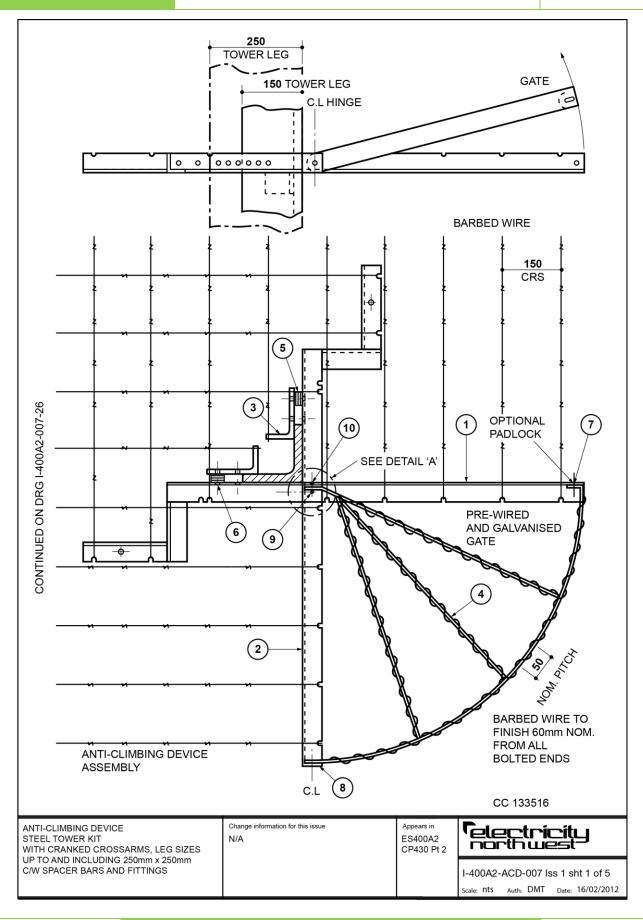


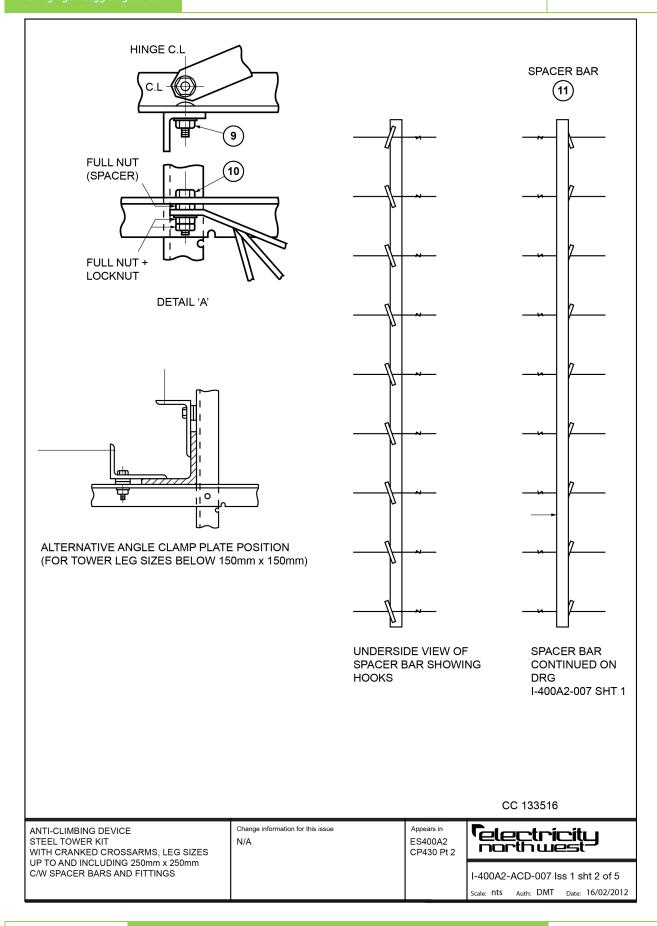


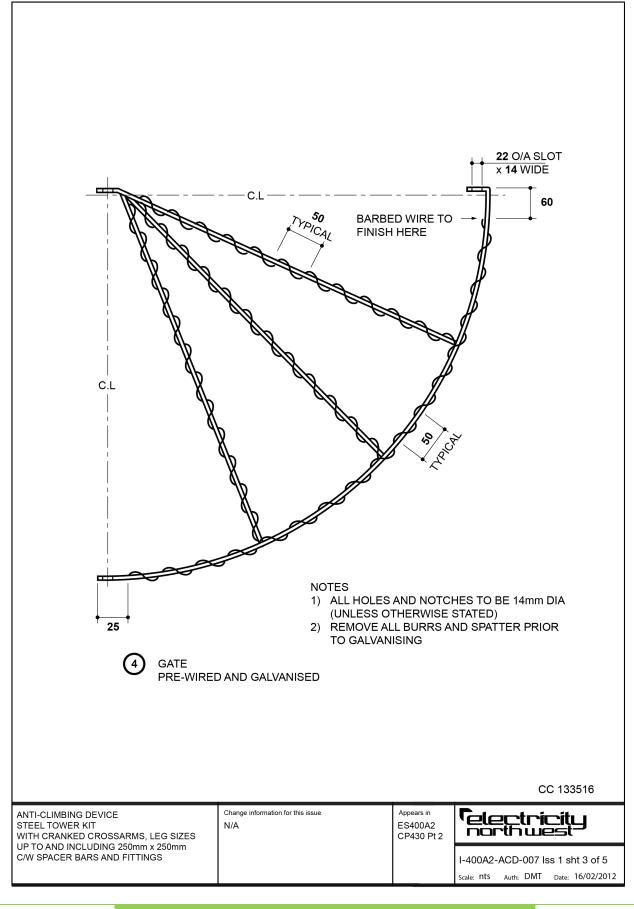
# Anti-Climbing Device, Steel Tower Kit, Leg Sizes up to and Including 250mm x 250mm, C/W Spacer Bars and Fittings – KIT CC Number 133507

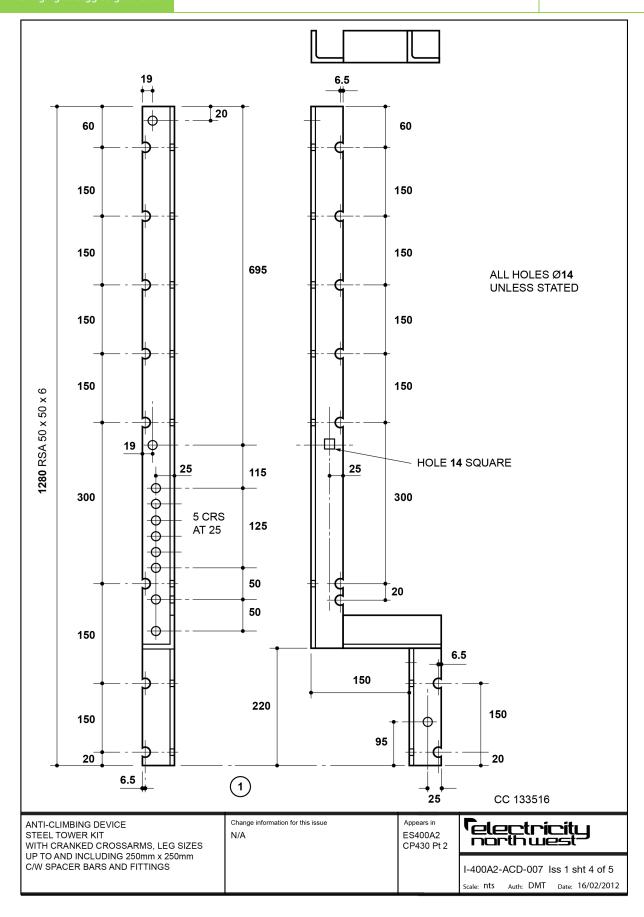
		Drawing No: I-400A2-ACD-006		
Item Number (refer to drawing)	Description	ES Ref No	CC number	Quantity
1*	Support angle	-	-	4
2*	Support angle	-	-	4
3	Notched angle clamp plate	-	-	8
4	Gate	-	-	4
5	Washer	-	-	24
6	Screw, set, M12, 60mm, high-tensile + nut and washer	-	-	16
7	Bolt, M12, 35mm + nyloc and flat washer	-	-	4
8	Bolt, M12, 35mm + full nut, lock nut and flat washer	-	-	4
9	Bolt, dome head, M12, 40mm + full nut and flat washer	-	-	4
10	Bolt, M12, 40mm + 2 full nuts, lock nut and flat washer	-	-	4
-	Gate hook (Refer to Dwg I-400A2-ACD-011) + flat washer	ES400A2	133521	4 4
-	Spacer bar, 9-strand (long) (Refer to Dwg I-400A2-ACD-010)	ES400A2	133515	20
-	Stainless steel ties to Drawing I-400A2-ACD-012	ES400A2	-	64
()	Additional Items That May be Required for Kit - But	Not Included in Kit Co	ontents)	
-	Barbed wire	ES400W4	197408	As req

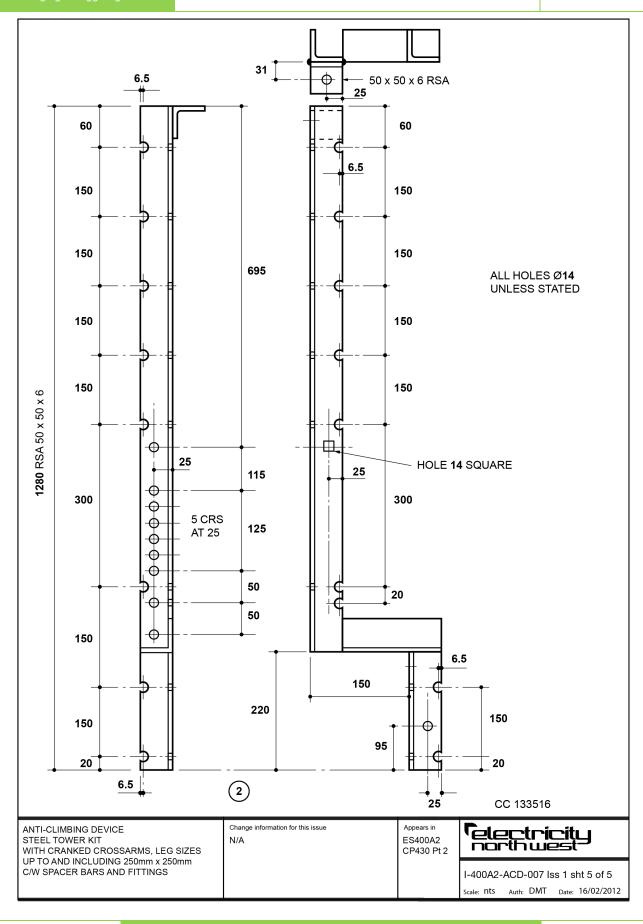
<sup>\*</sup> Pre-wiring/not pre-wiring options need to be specified (see drawing).













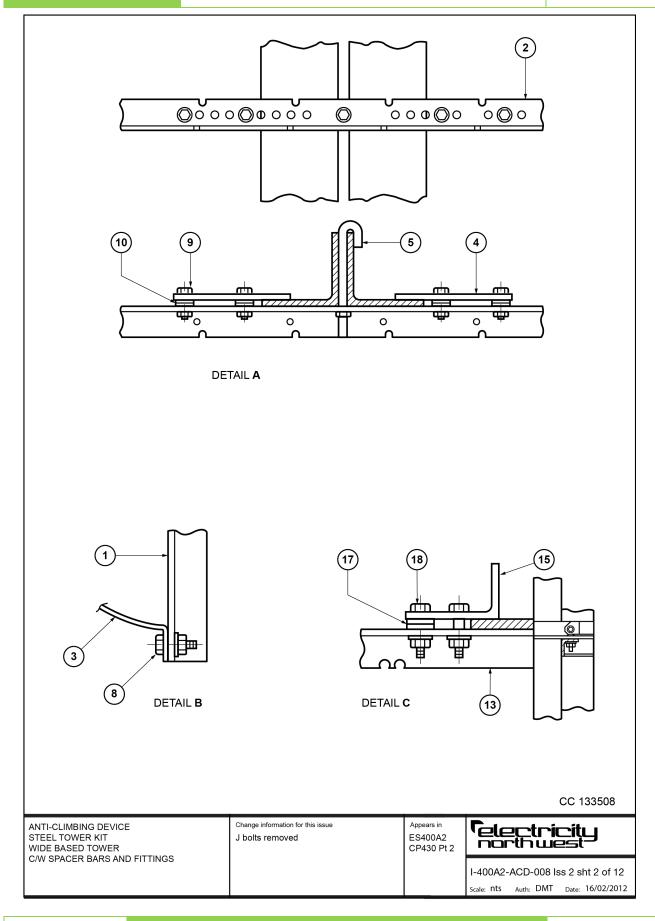
# Anti-Climbing Device, Steel Tower Kit with Cranked Crossarms, Leg Sizes up to and Including 250mm x 250mm, C/W Spacer Bars and Fittings – KIT CC Number 133516

		Drawing No: I-400A2-ACD-007		
Item Number (refer to drawing)	Description	ES Ref No	CC number	Quantity
1*	Support angle	-	-	4
2*	Support angle	-	-	4
3	Notched angle clamp plate (refer to Dwg I-400A2-ACD-006, item 3)	-	-	8
4	Gate	-	-	4
5	Washer (refer to Dwg I-400A2-ACD-006, item 5)	-	-	24
6	Screw, set, M12, 60mm, high-tensile + nut and washer	-	-	16
7	Bolt, M12, 35mm + nyloc and flat washer	-	-	4
8	Bolt, M12, 35mm + full nut, lock nut and flat washer	-	-	4
9	Bolt, dome head, M12, 40mm + full nut and flat washer	-	-	4
10	Bolt, M12, 40mm + 2 full nuts, lock nut and flat washer	-	-	4
-	Gate hook (Refer to Dwg I-400A2-ACD-011) + flat washer	ES400A2	133521	4 4
11	Spacer bar, 9-strand (long) (Refer to Dwg I-400A2-ACD-010)	ES400A2	133515	20
-	Stainless steel ties to Drawing I-400A2-ACD-012	ES400A2	-	64
()	Additional Items That May be Required for Kit - But	Not Included in Kit C	ontents)	
-	Barbed wire	ES400W4	197408	As req

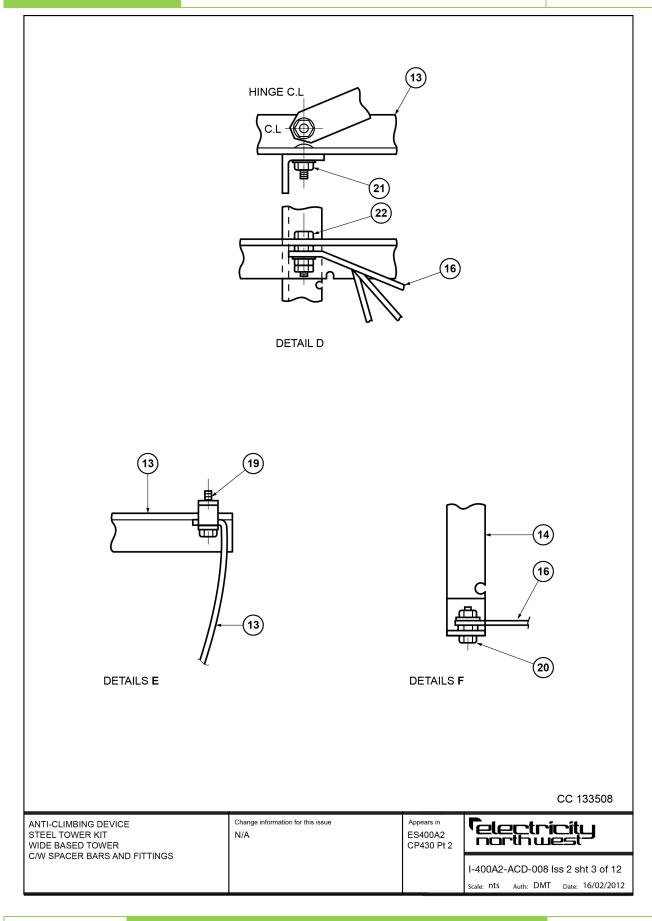
<sup>\*</sup> Pre-wiring/not pre-wiring options need to be specified (see drawing).

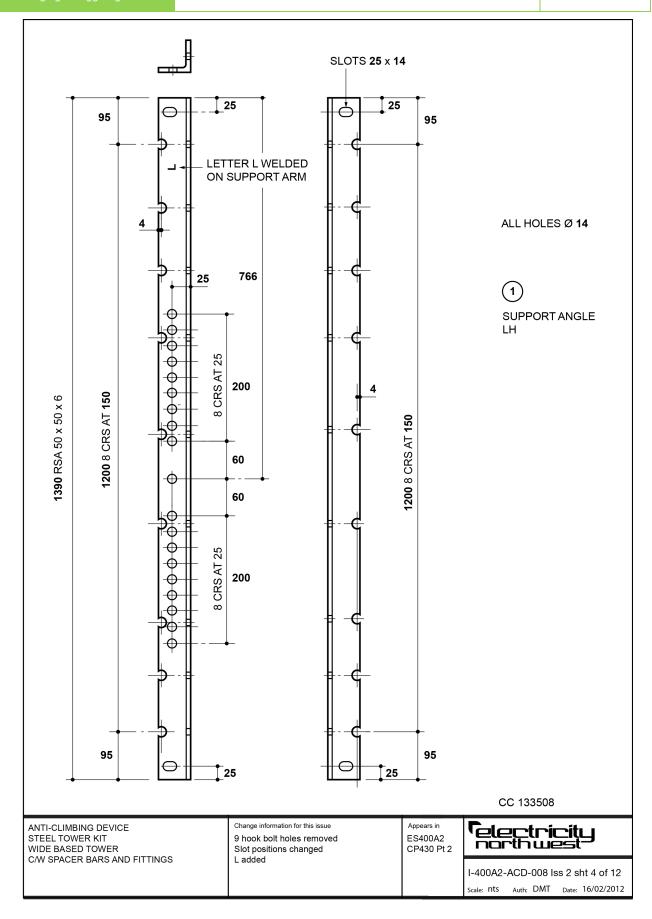
NOTE FOR DETAILS A, B AND C SEE DRG 008-212 FOR DETAILS D, E AND F SEE DRG 008-312 [6] $\left[ 6\right]$ (13) (E) (14) 6 (6) **GENERAL ARRANGEMENT** CC 133508 Change information for this issue Appears in ANTI-CLIMBING DEVICE **Pelectricity** northwest ES400A2 STEEL TOWER KIT Item 7 now the same as item 6 WIDE BASED TOWER
C/W SPACER BARS AND FITTINGS CP430 Pt 2 Holes for J bolts removed I-400A2-ACD-008 Iss 2 sht 1 of 12 Scale: nts Auth: DMT Date: 16/02/2012

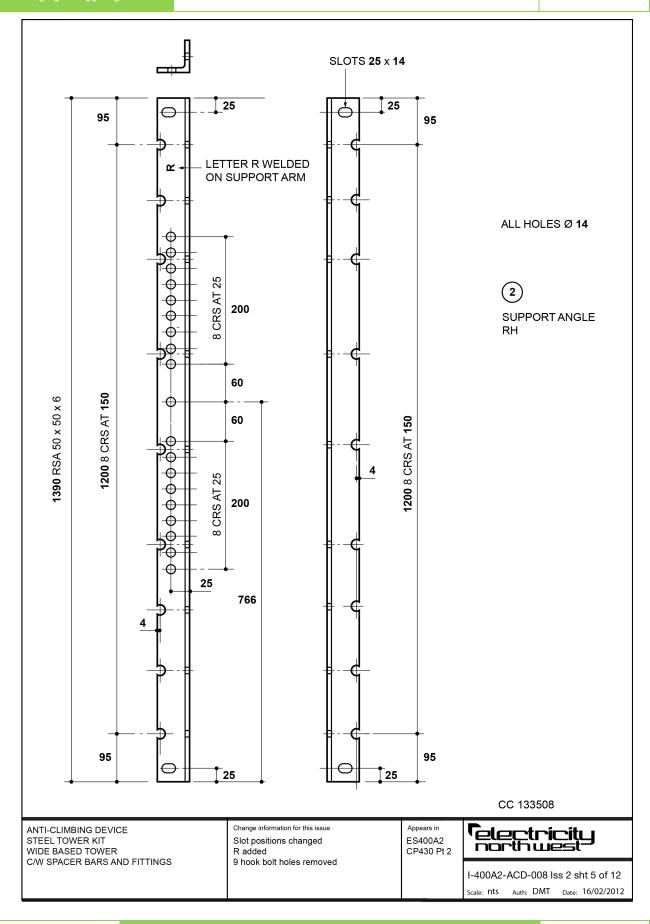


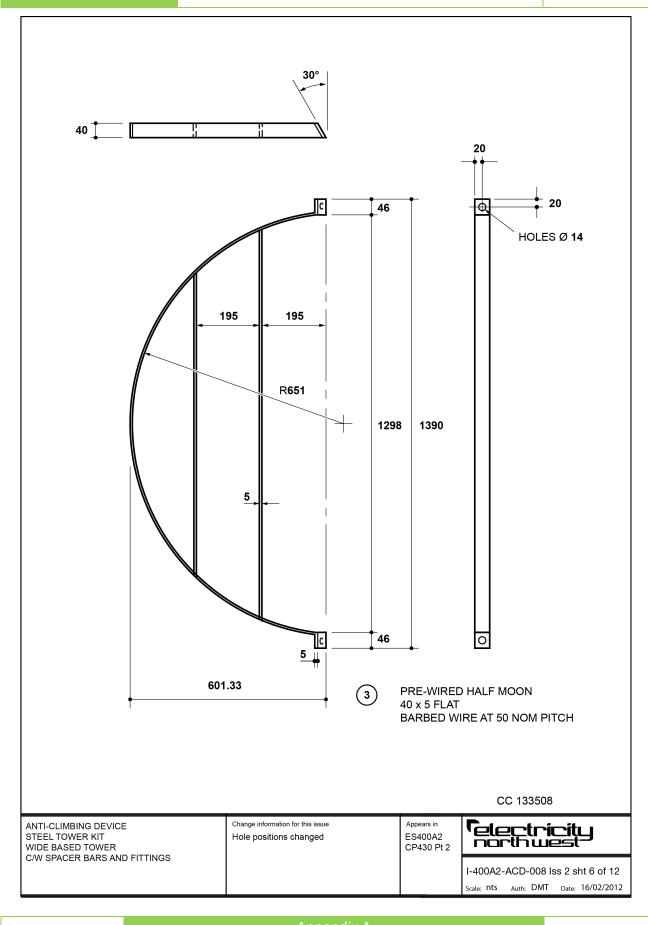


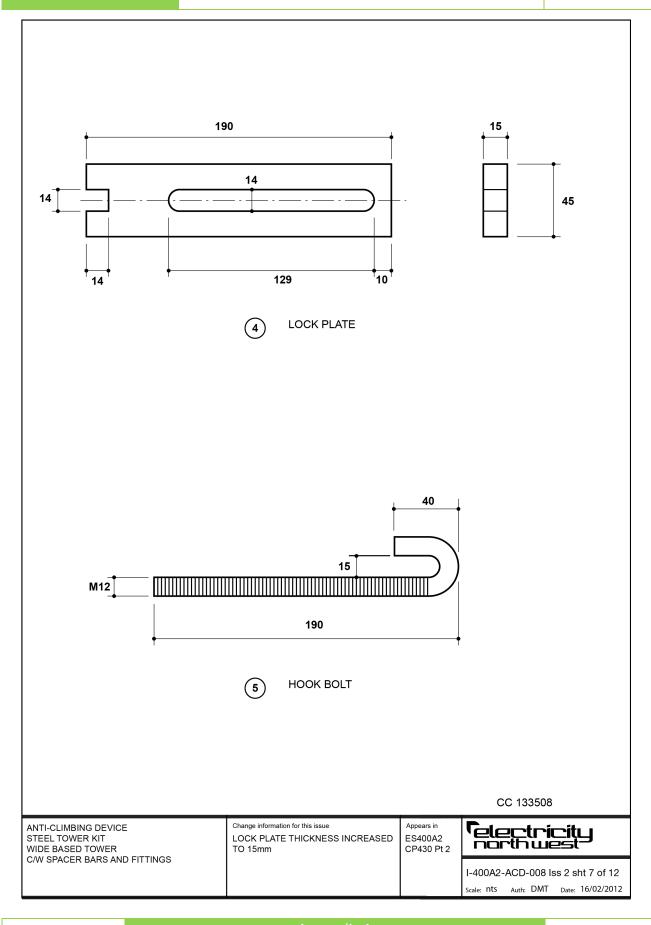


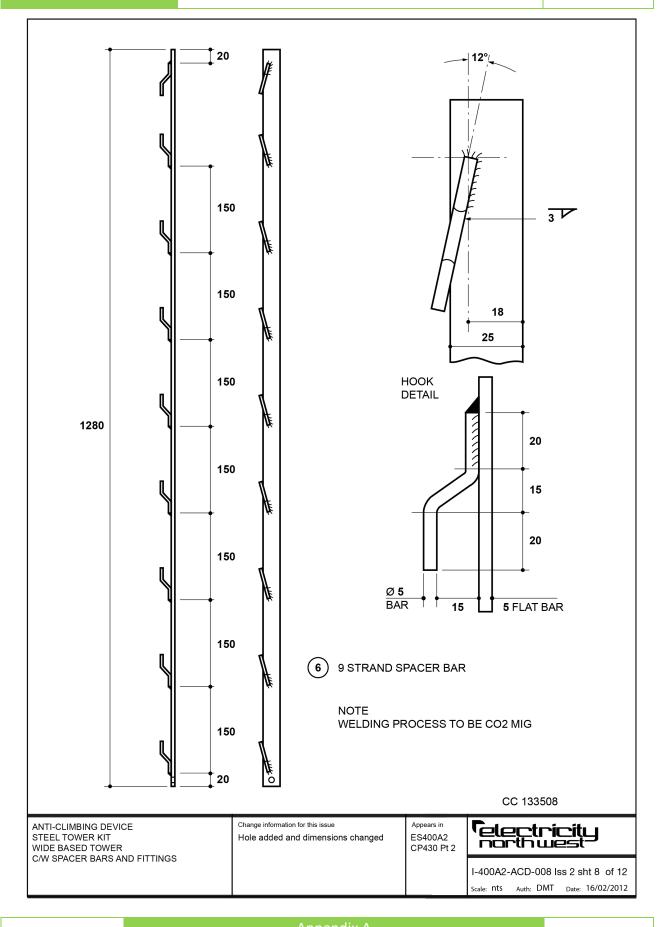


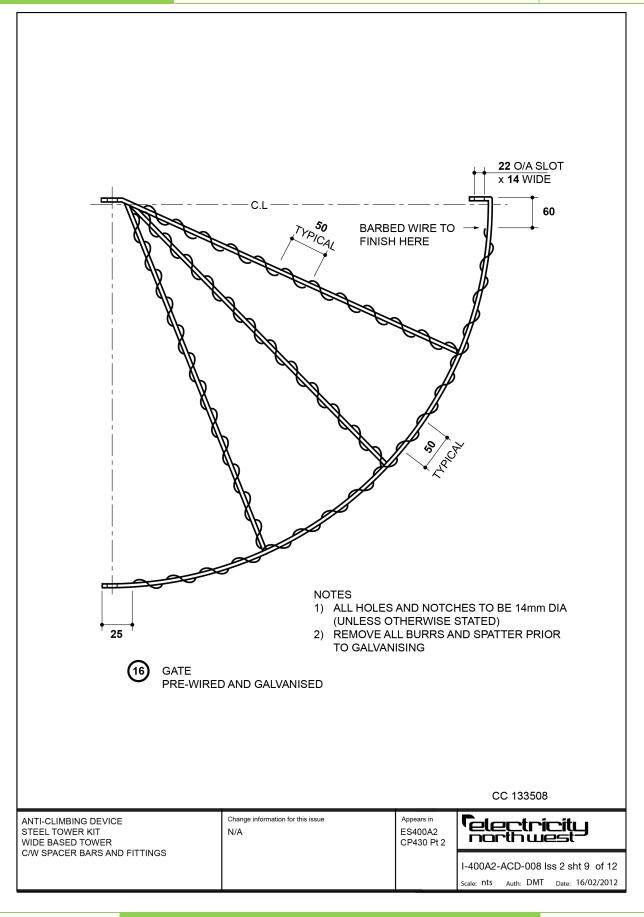


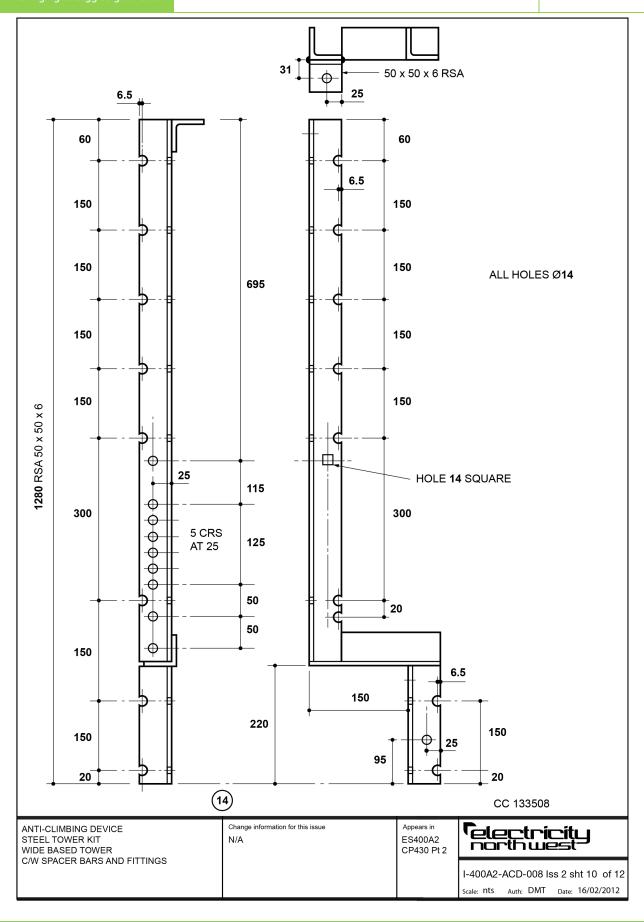


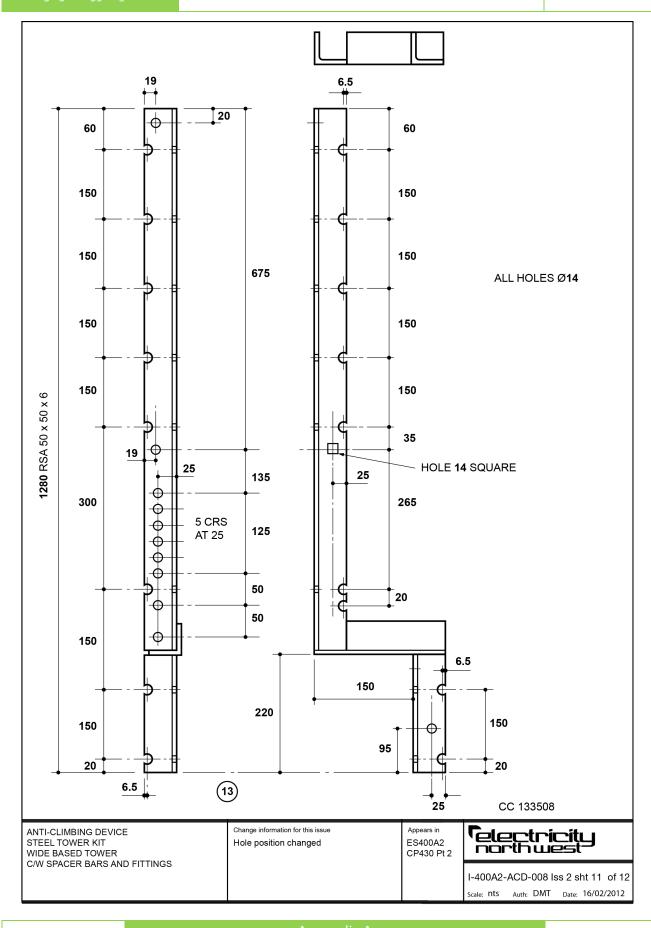




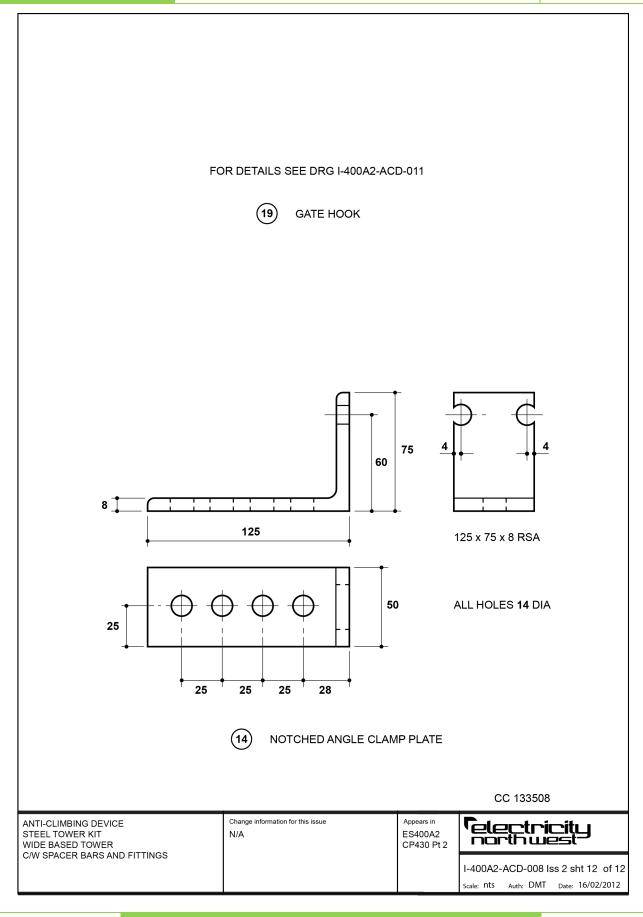












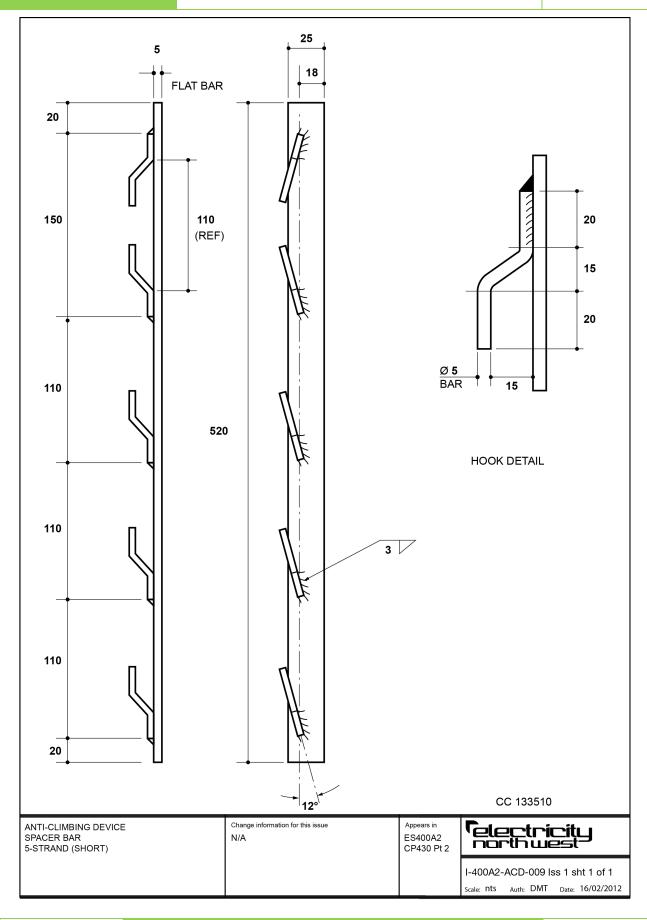


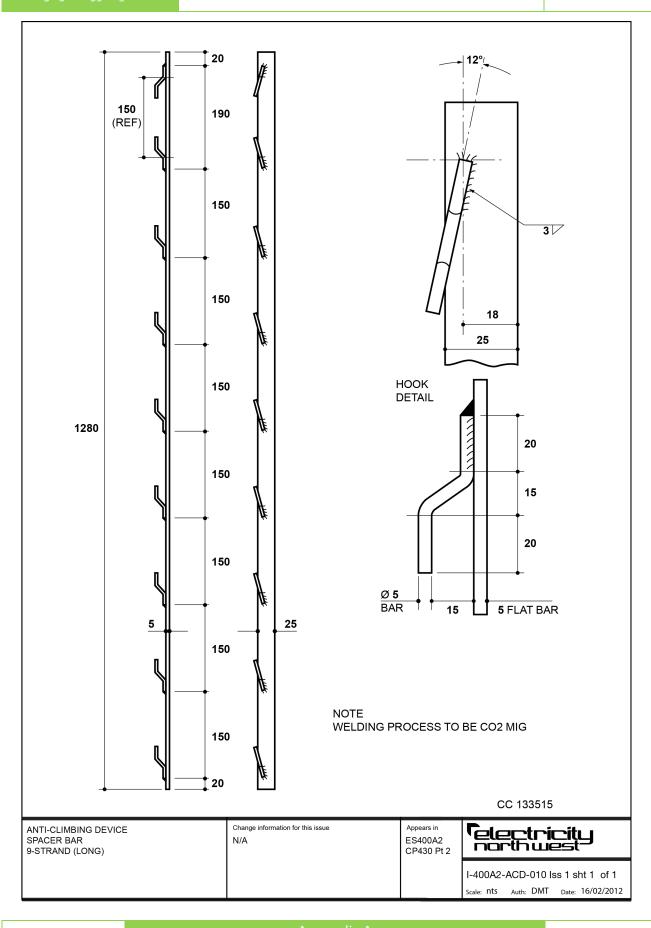
# Anti-Climbing Device, Steel Tower Kit, Wide Based Tower, C/W Spacer Bars and Fittings – KIT CC Number 133508

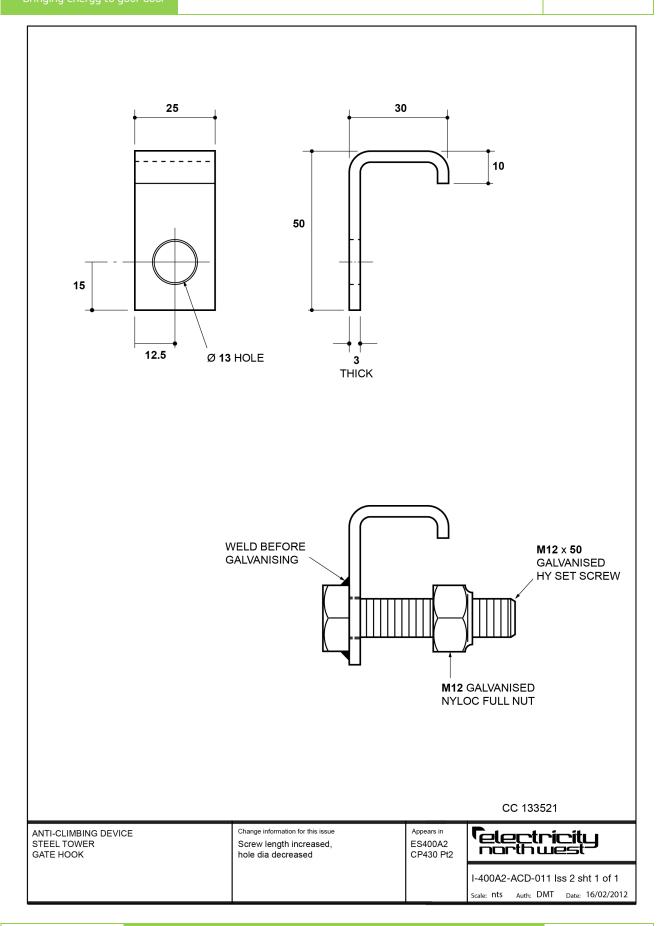
		Drawing No: I-400A2-ACD-008		
Item Number (refer to drawing)	Description	ES Ref No	CC number	Quantity
1	Support angle	-	-	4
2	Support angle	-	-	4
3	Pre-wired half moon	-	-	8
4	Lock plate	-	-	16
5	Hook bolt + nut and washer	-	-	8
6	Spacer bar, 9-strand (long)	-	133515	16
7	Spacer bar, 5-strand (short) (Refer to Dwg I-400A2-ACD-009)	ES400A2	133510	4
8	Screw, set, M12, 35mm + nut and washer	-	-	16
9	Bolt, M12, 60mm, high tensile + 1 nut and washer	-	-	32
10	Washer, packing, M12, 5mm thick, base galvanized	-	-	48
11	Bolt, hook, M12, 105mm + 2 nuts and washers	-	-	72
12	Not used	-	-	-
13	Support angle	-	-	4
14	Support angle	-	-	4
15	Notched angle clamp plate	-	-	8
16	Gate	-	-	4
17	Washer, packing, M12, 5mm thick, bolt galvanized	-	-	24
18	Screw, set, M12, 60mm, high-tensile steel + nut and washer	-	-	16
19	Gate hook (Refer to Dwg I-400A2-ACD-011) + flat washer	ES400A2	133521	4 4
20	Bolt, M12, 35mm + full nut, lock nut and flat washer	-	-	4
21	Bolt, dome head, M12, 40mm + full nut and flat washer		-	4
22	Bolt, M12, 40mm + 2 full nuts, lock nut and flat washer	-	-	4
23	Stainless steel ties to Drawing I-400A2-ACD-012	ES400A2	-	200

## NOTE:

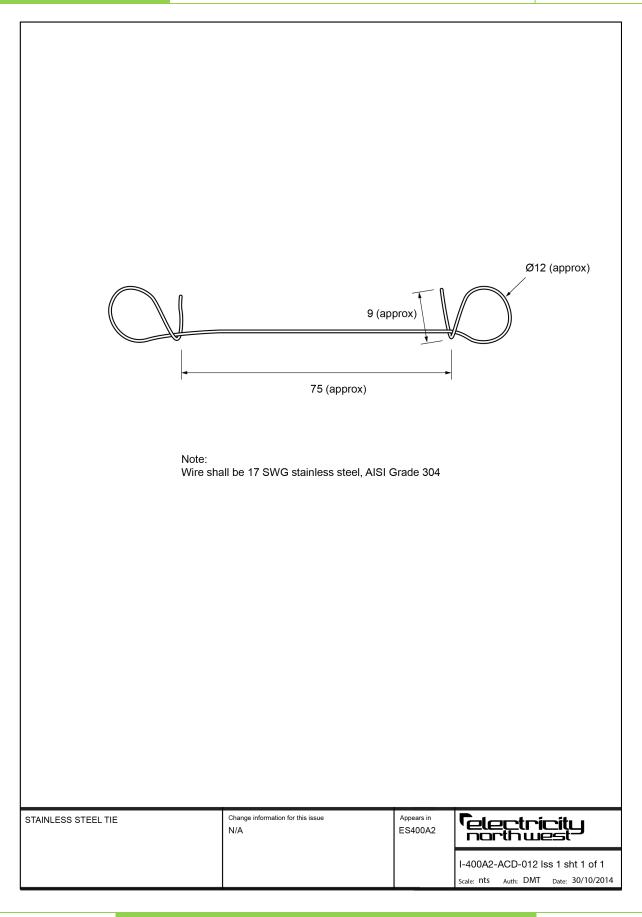
- (a) Item 7: supplied full length; to be cut to length according to tower requirements.
- (b) Item 11: number required will depend on number of lines of barbed wire required to fill the central gap.













# **Appendix B – Conformance Declaration**

# SECTION-BY-SECTION CONFORMANCE WITH SPECIFICATION

The Tenderer shall declare conformance or otherwise for each product/service or range of products/services, section-by-section, using the following Conformance Declaration Codes.

#### **Conformance Declaration Codes:**

N/A =	Clause is not applicable/appropriate to the product/service.	
C1 =	The product/service conforms fully with the requirements of this clause.	
C2 =	The product/service conforms partially with the requirements of this clause.	
C3 =	The product/service does not conform to the requirements of this clause.	
C4 =	The product/service does not currently conform to the requirements of this clause, but the manufacturer proposes to modify and test the product in order to conform.	

C4 -	proposes to modify and test the product in order to conform.				
Manufacturer:					
Product/Servi	ce Description:				
Product/Service Reference:					
Name:					
Company:					
Signature:					



SECTION-BY-SECTION CONFORMANCE					
Section	Section Topic	Conformance Declaration Code	Remarks * (must be completed if code is not C1)		
4.1	Product not to be Changed				
4.2	Electricity North West Technical Approval				
4.3	Quality Assurance				
4.4	Formulation				
4.5	Identification Markings				
4.6	Minimum Life Expectancy				
4.7	<b>Product Conformity</b>				
4.8	Confirmation of Conformance				
5.1	Requirements for Type Tests at the Supplier's Premises				
5.2	Requirement for Routine Tests at the Supplier's Premises				
6.1	Steelwork				
6.2	Steelwork Finish				
6.3	Barbed Wire				
6.4	Wire Staples				



## **ANTI-CLIMBING DEVICES**

ES400A2

\* Applicable specifications shall be stated in the Remarks column where alternatives are quoted within a section. The Remarks column shall also be used to indicate cases where the products or services exceed the quoted specifications.

**Additional Notes:**