

Electricity Specification 400A2

Issue 4 March 2024

Anti-Climbing Devices





Amendment Summary

ISSUE NO. DATE	DESCRIPTION		
Issue 3	New template	applied throughout.	
07/09/21	Prepared by:	D M Talbot	
	Approved by:	Policy Approval Panel and signed on its behalf by Steve Cox, Engineering and Technical Director	
Issue 4	Updated General Requirements to latest template for ES documents		
March 24	Dwg I-400A2-A Dwg I-400A2-A Dwg I-400A2-A Dwg I-400A2-A	strand spacer bars updated from hook type to bolted pairs. CD-006 Sht 2 amended CD-007 Sht 2 amended CD-008 Sht 8 amended CD-009 amended CD-010 amended	
	Prepared by:	P. Howell	
	Approved by:	Policy Approval Panel and signed on its behalf by Paul Turner, PAP Chair Person	



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ES400A2



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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.	



General Requirements for Approvals and Testing

Mar 24

4.1 Product not to be Changed

Compliance with this clause shall be in accordance with ES001.

4.2 Electricity North West Limited Technical Approval

Compliance with this clause shall be in accordance with ES001.

4.3 Quality Assurance

Compliance with this clause shall be in accordance with ES001.

4.4 Formulation

Compliance with this clause shall be in accordance with ES001.

4.5 Identification Markings

Compliance with this clause shall be in accordance with ES001.

4.6 Minimum Life Expectancy

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

4.7 Product Conformity

Compliance with this clause shall be in accordance with ES001.

4.8 Confirmation of Conformance

The Tenderer shall complete the conformance declaration sheets in Appendix B.

Failure to complete these declaration sheets may result in an unacceptable bid.

5 Requirements for Type and Routine Testing

Compliance with this clause shall be in accordance with ES001.

5.1 Requirement for Type Tests at Suppliers Premises

Compliance with this clause shall be in accordance with ES001.

5.2 Requirement for Routine Tests at the Supplier's Premises

Compliance with this clause shall be in accordance with ES001.



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.
CP311:	Equipment Approval Process.



ANTI-CLIMBING DEVICES

ES400A2

ES400F1:	Specification for Fasteners and Washers for Wood Pole Overhea Lines.
ES400W4:	Barbed wire.

8 Keywords

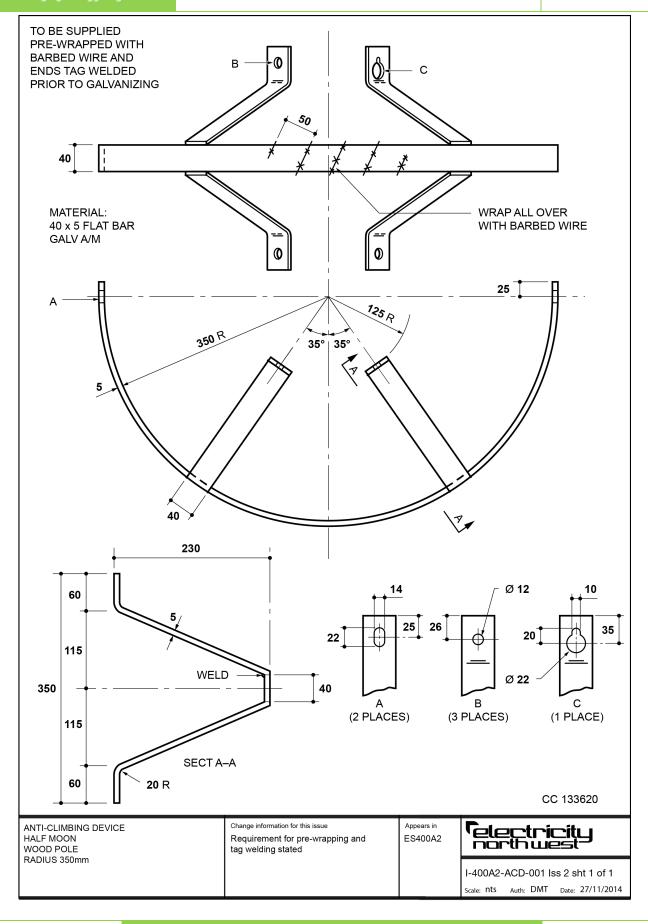
ACD



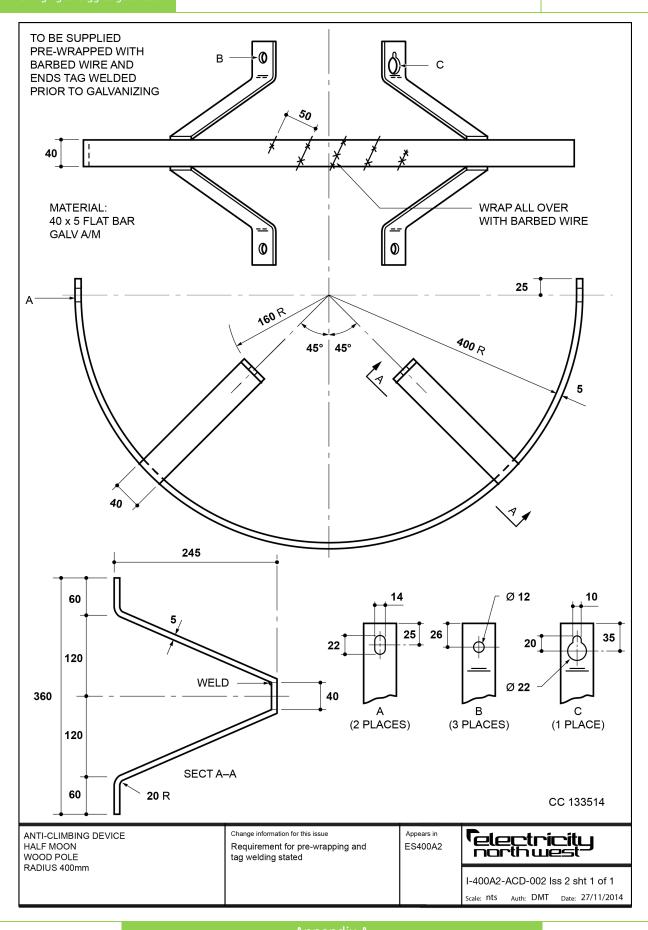
Appendix A – Schedule of All ACDs

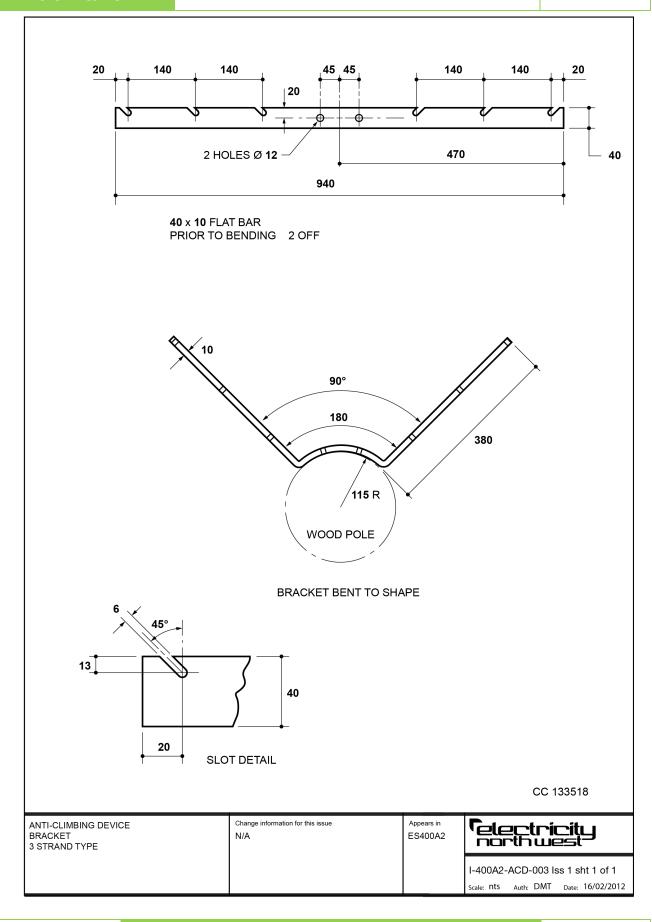
Item No	Approved Description (for purchasing and product labelling)	Drawing Reference	CC number			
1	Anti-climbing device, half moon, wood pole, radius 350mm (Dwg I-400A2-ACD-001)	I-400A2-ACD-001	133620			
2	Anti-climbing device, half moon, wood pole, radius 400mm (Dwg I-400A2-ACD-002)	I-400A2-ACD-002	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.					

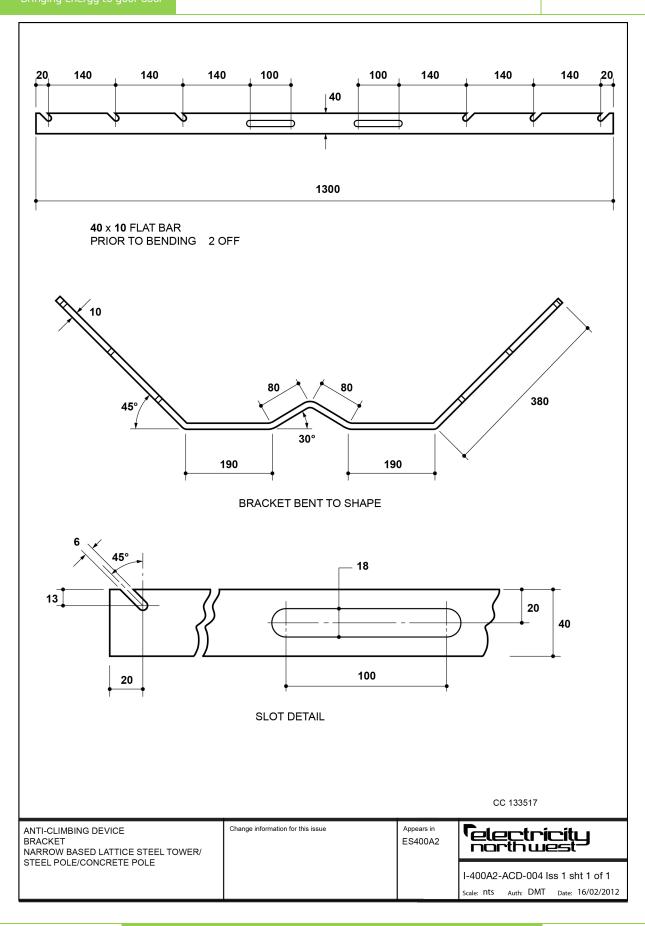
Bringing energy to your door

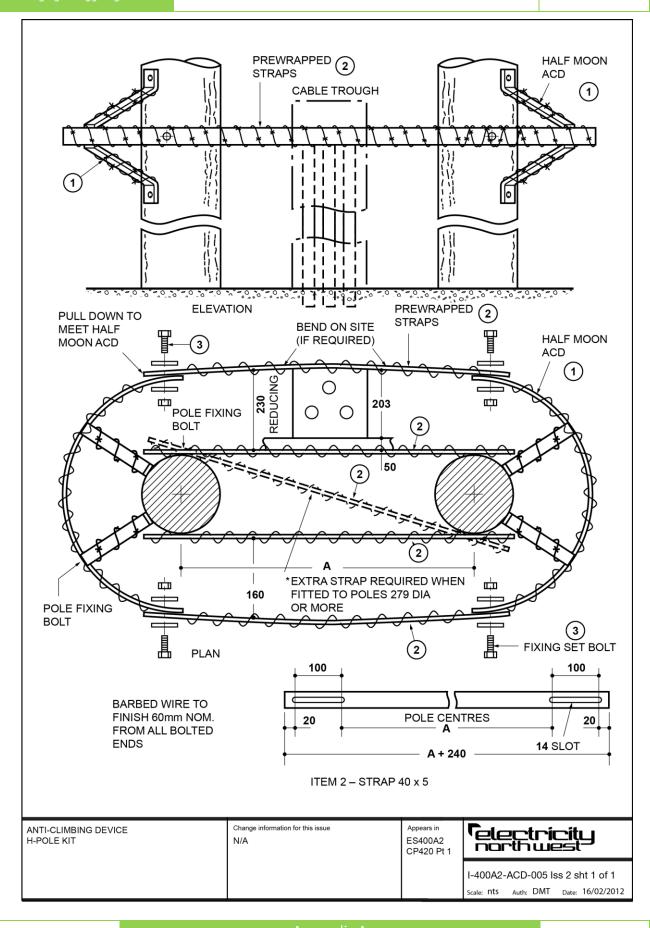


Bringing energy to your door











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

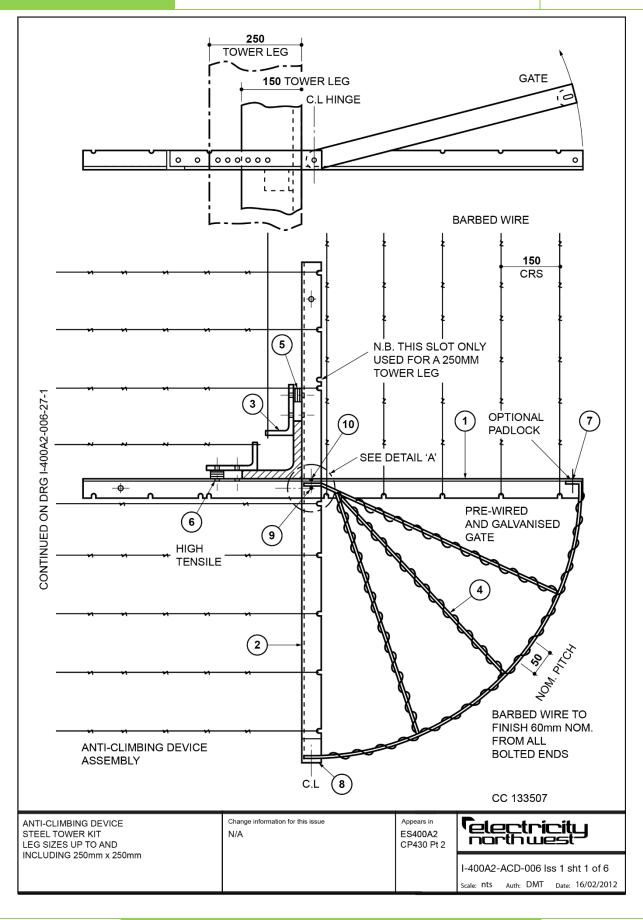
		Drawing No:		D-005
Item Number (refer to drawing)	Description	ES Ref No	CC number	Quantity
2	Strap (Dimension A = 1830mm)	-	-	3
3	M12 x 35mm bolt, c/w nut	-	-	4
3	M12 washer	-	-	8
(Addition	nal Items Required for Kit - But Not Included in Kit	Contents)		
-	Barbed wire Spacing: 150mm between strands (unsupported); 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.

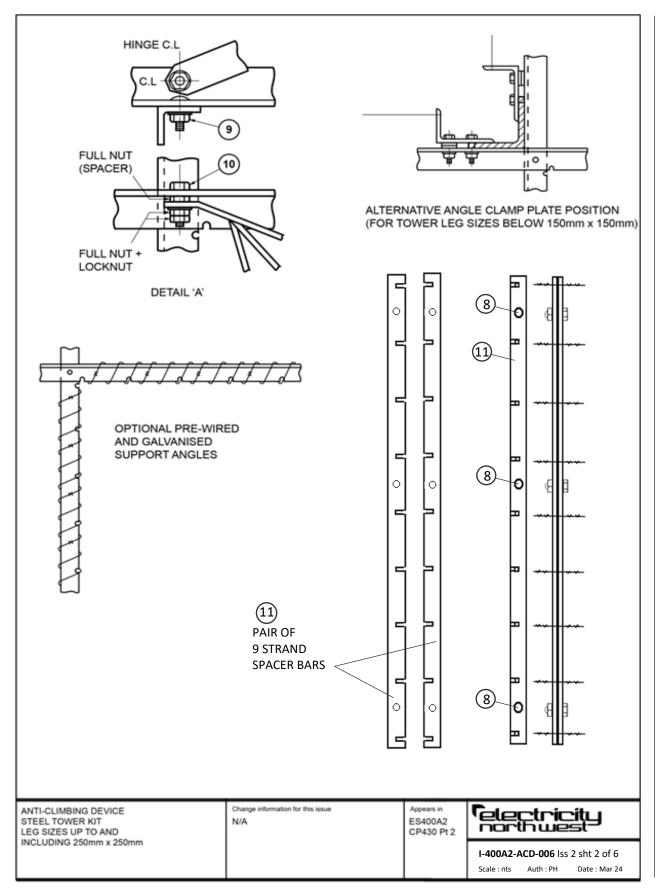
Anti Climbing Device, H-Pole Kit (Pole Centres 2500mm) – CC Number 133520

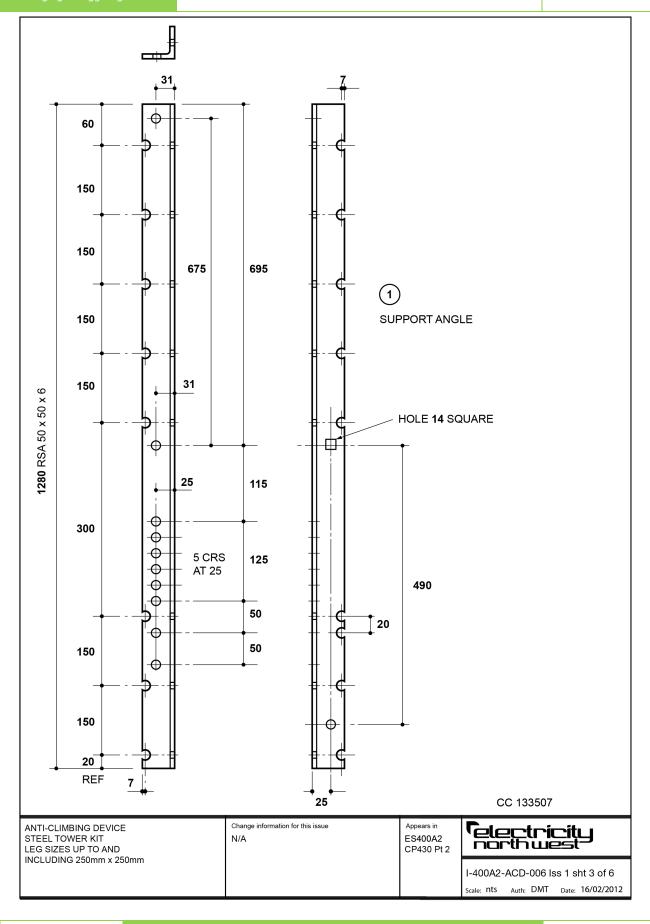
		Drawing No: I-400A2-ACD-005		D-005
Item Number (refer to drawing)	Description	ES Ref No	CC number	Quantity
2	Strap (Dimension A = 2500mm)	-	-	3
3	M12 x 35mm bolt, c/w nut	-	-	4
3	M12 washer	-	-	8
(Additional Items Required for Kit - But Not Included in Kit		Contents)		
-	Barbed wire Spacing: 150mm between 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.



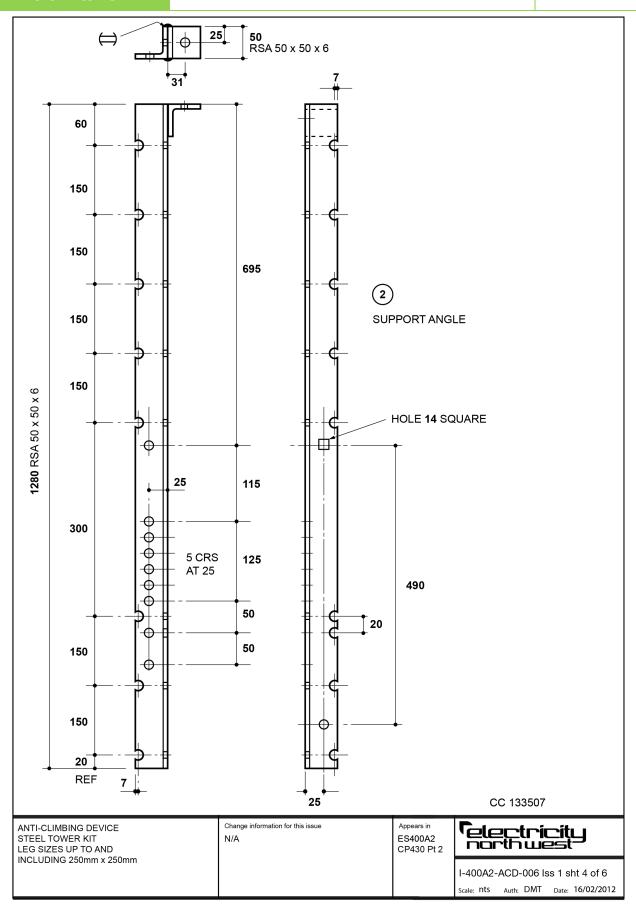
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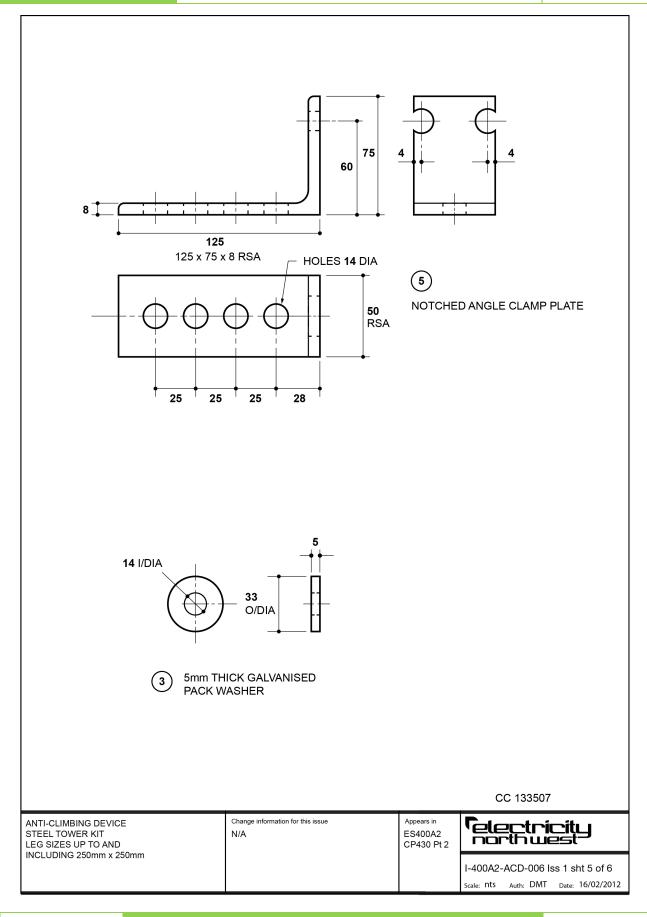


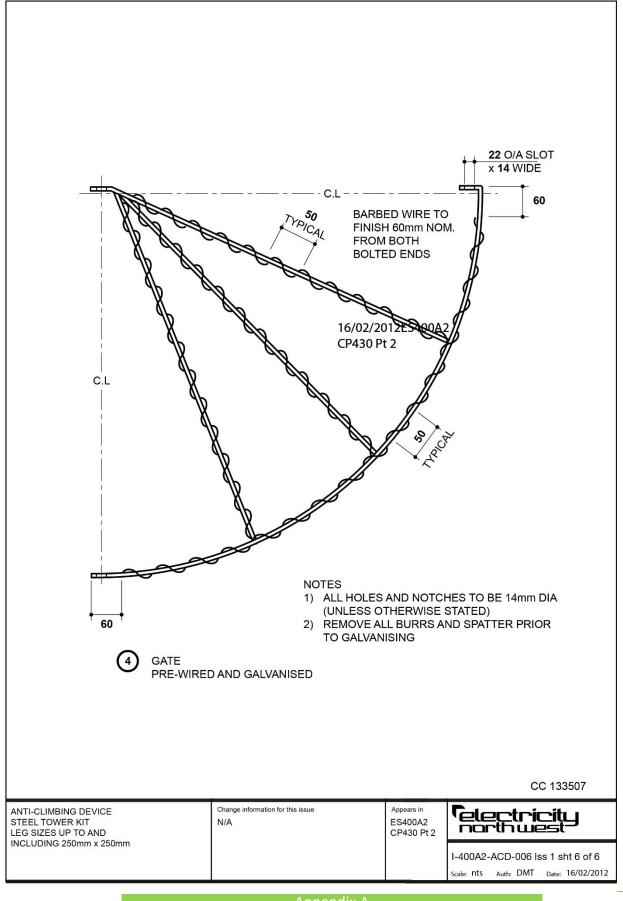


Bringing energy to your door











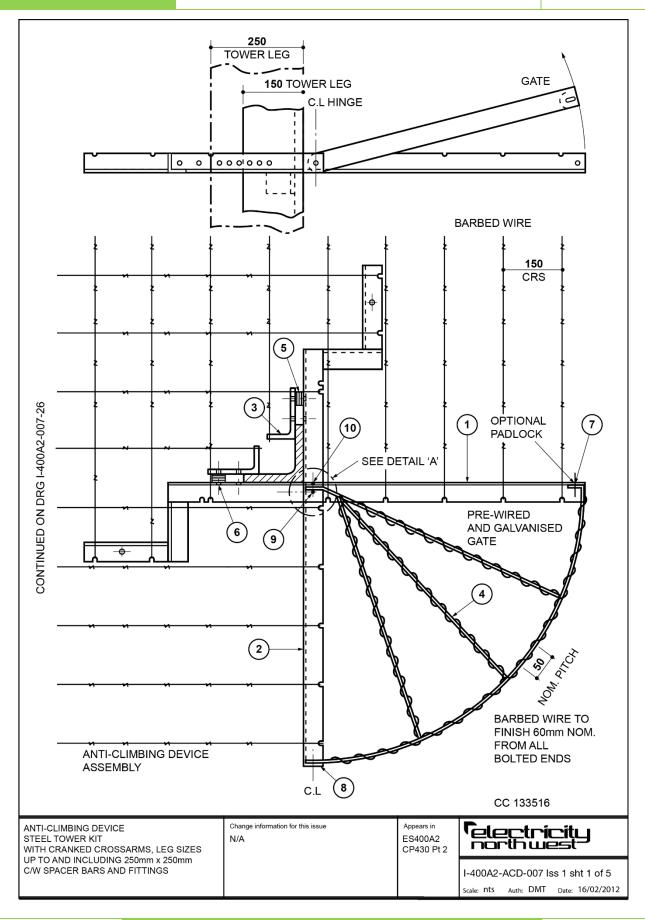
Anti-Climbing Device, Steel Tower Kit, Leg Sizes up to and Including 250mm x 250mm, C/W Spacer Bars and Fittings – KIT CC Number 133507

		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	-	-	64
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 pairs
-	Stainless steel ties to Drawing I-400A2-ACD-012	ES400A2	-	64
(,	Additional Items That May be Required for Kit - But I	Not Included in Kit (Contents)	
-	Barbed wire	ES400W4	197408	As req

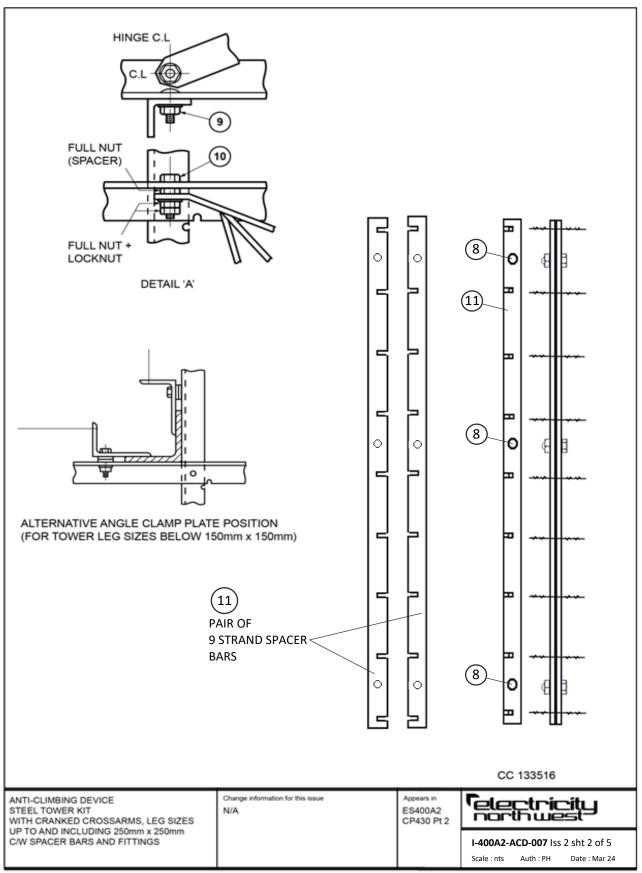
^{*} Pre-wiring/not pre-wiring options need to be specified (see drawing).

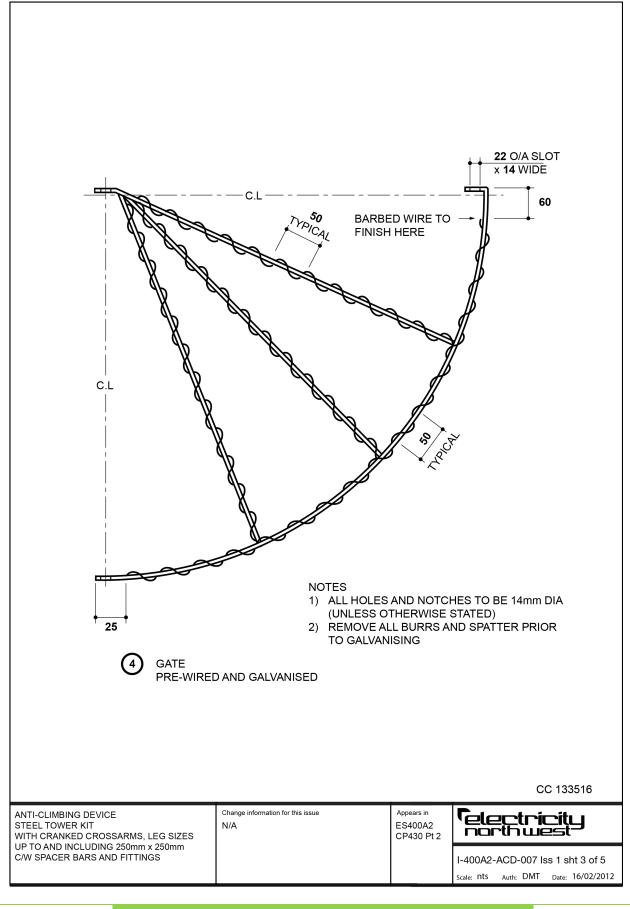
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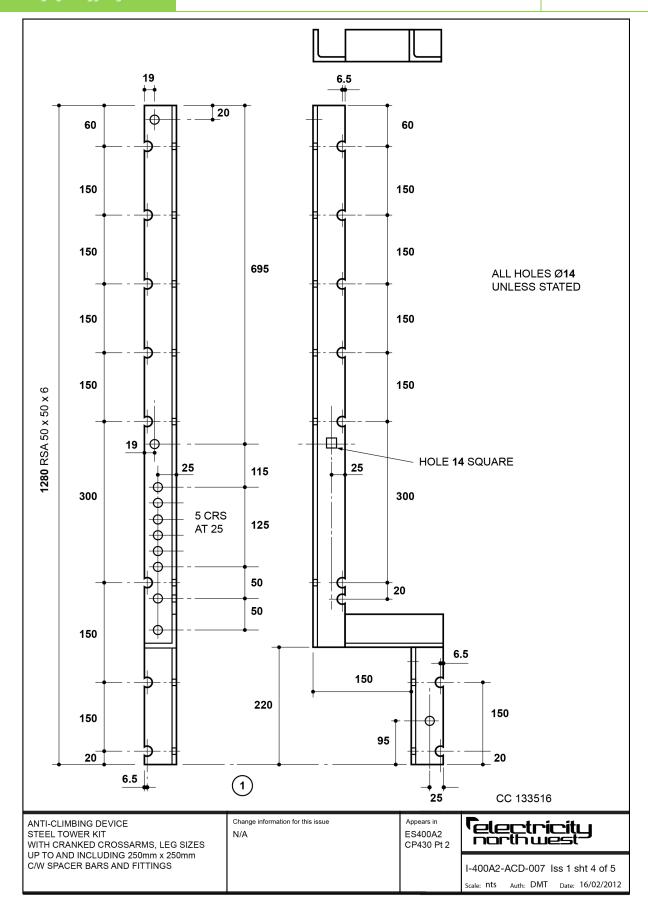
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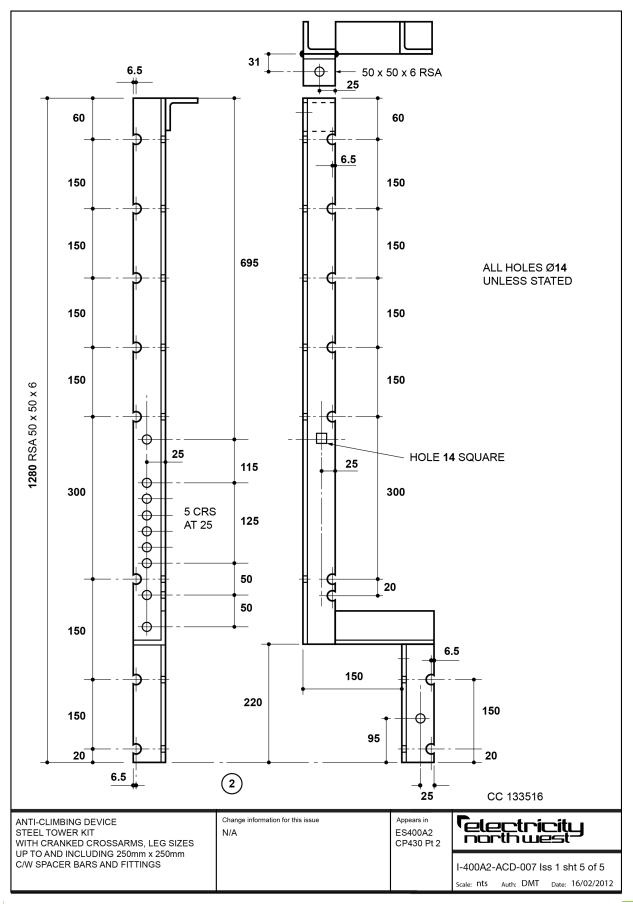


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Anti-Climbing Device, Steel Tower Kit with Cranked Crossarms, Leg Sizes up to and Including 250mm x 250mm, C/W Spacer Bars and Fittings – KIT CC Number 133516

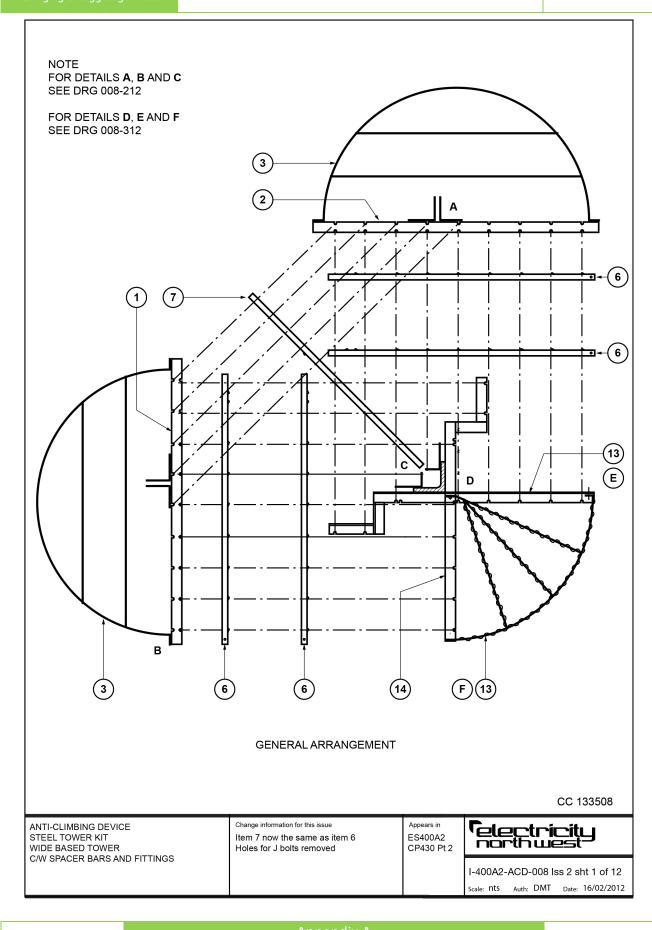
		Drawing No: I-400A2-ACD-007		
Item Number (refer to drawing)	Description	ES Ref No	CC number	Quantity
1*	Support angle	-	-	4
2*	Support angle	-	-	4
3	Notched angle clamp plate (refer to Dwg I-400A2-ACD-006, item 3)	-	-	8
4	Gate	-	-	4
5	Washer (refer to Dwg I-400A2-ACD-006, item 5)	-	-	24
6	Screw, set, 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	-	-	64
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 pairs
-	Stainless steel ties to Drawing I-400A2-ACD-012	ES400A2	-	64
	Additional Items That May be Required for Kit - But N	Not Included in Kit C	ontents)	
-	Barbed wire	ES400W4	197408	As req

^{*} Pre-wiring/not pre-wiring options need to be specified (see drawing).

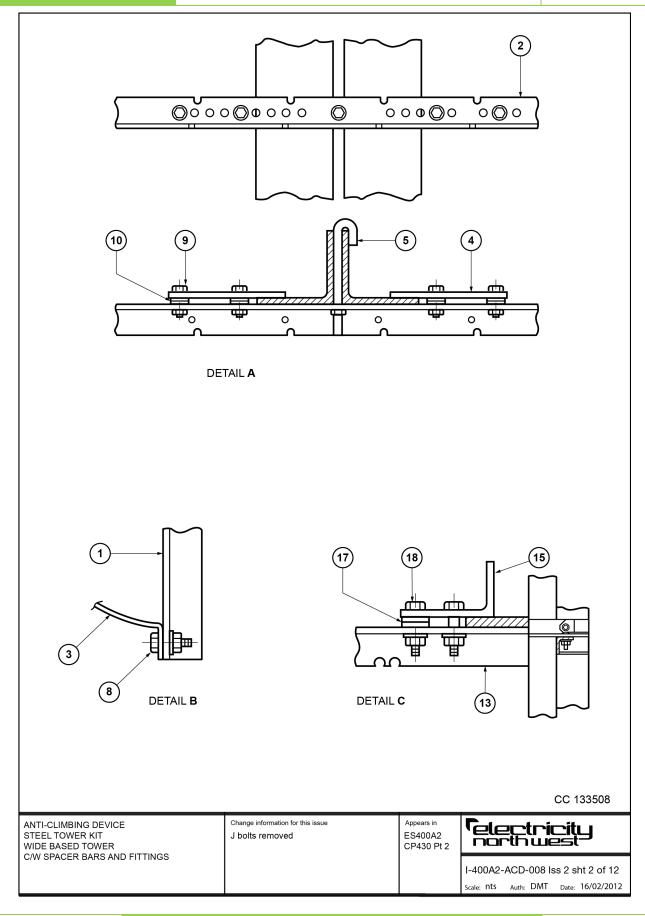
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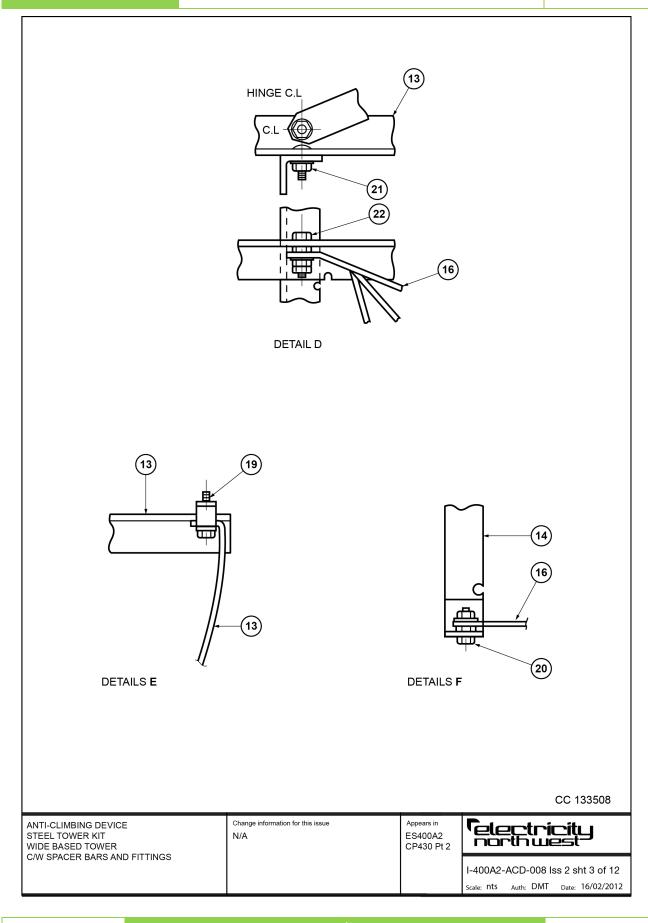
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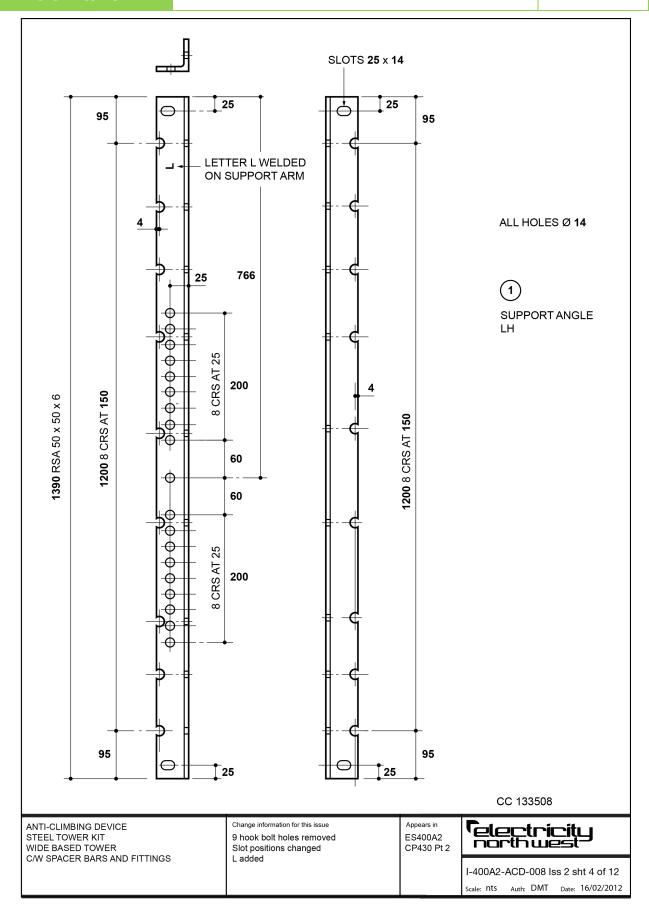


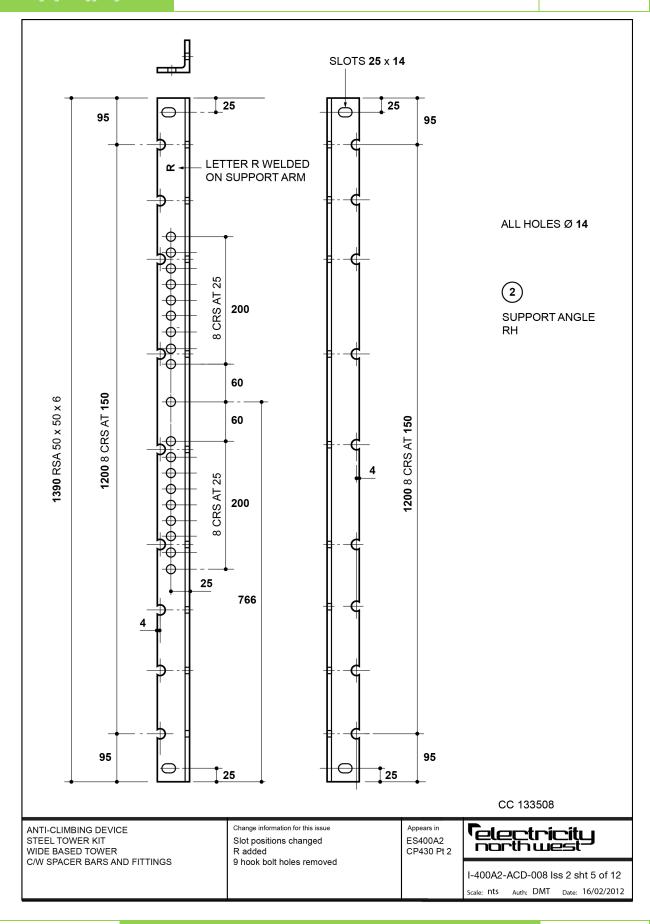


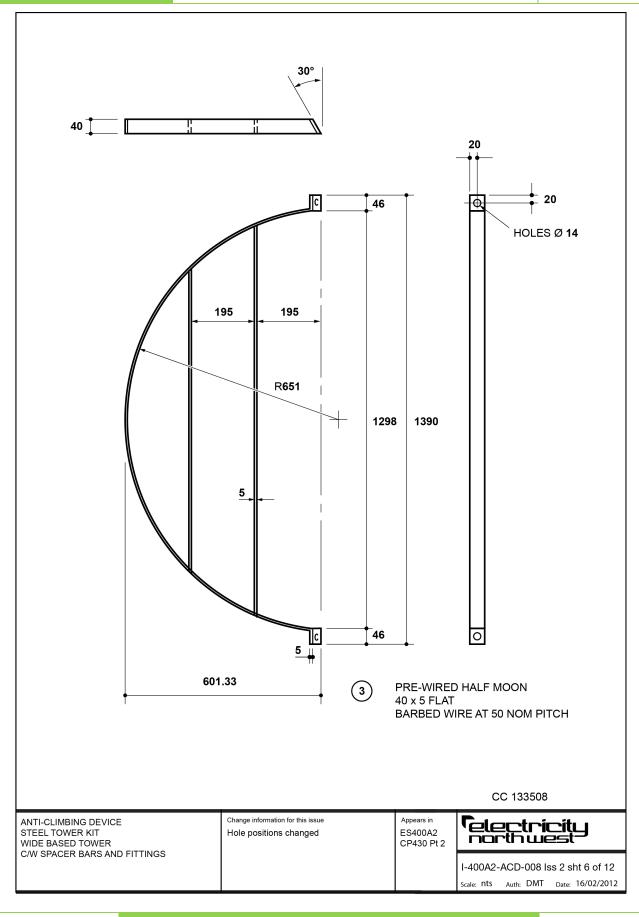


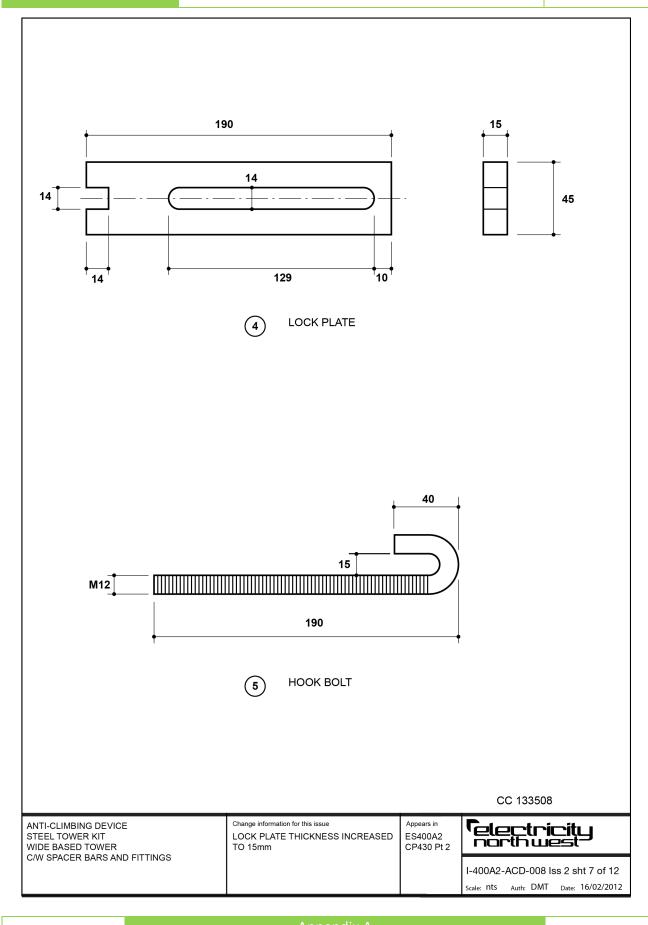








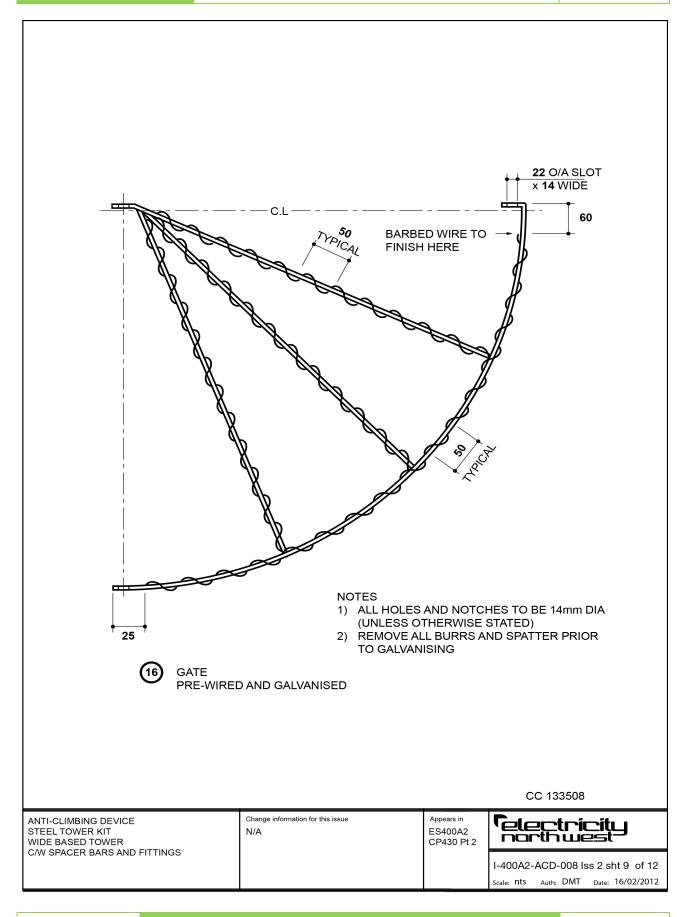




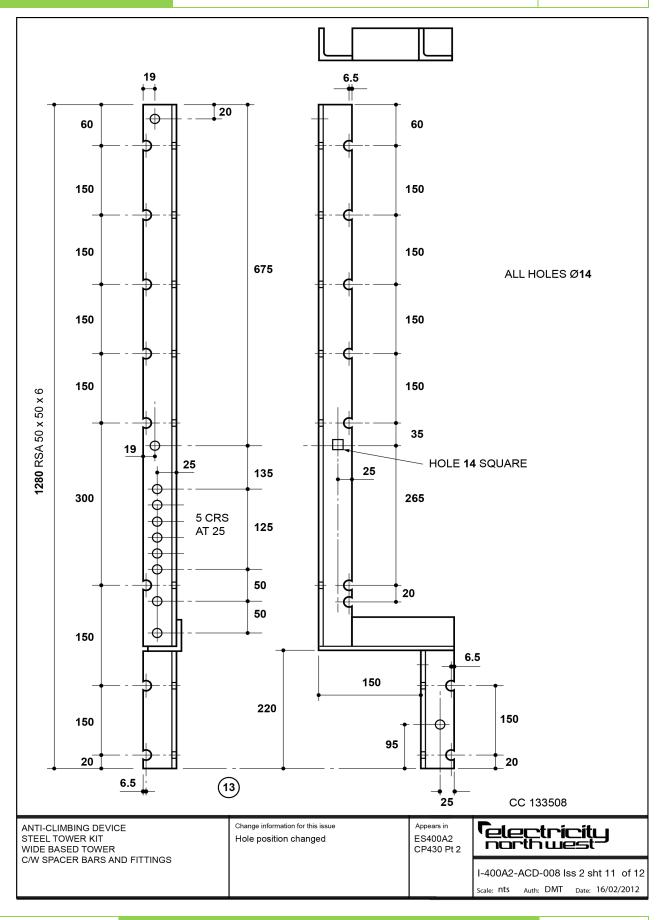


(8) **6** 8 ٥ 0 0 н Þ **(6)** PAIR OF 9 STRAND SPACER BARS 8 Ö 0 0 CC 133508 Appears in ES400A2 CP430 Pt 2 ANTI-CLIMBING DEVICE Change information for this issue **Celectricit** northwest STEEL TOWER KIT Hole added and dimensions changed WIDE BASED TOWER C/W SPACER BARS AND FITTINGS I-400A2-ACD-008 Iss 2 sht 8 of 12 Scale : nts Auth : PH

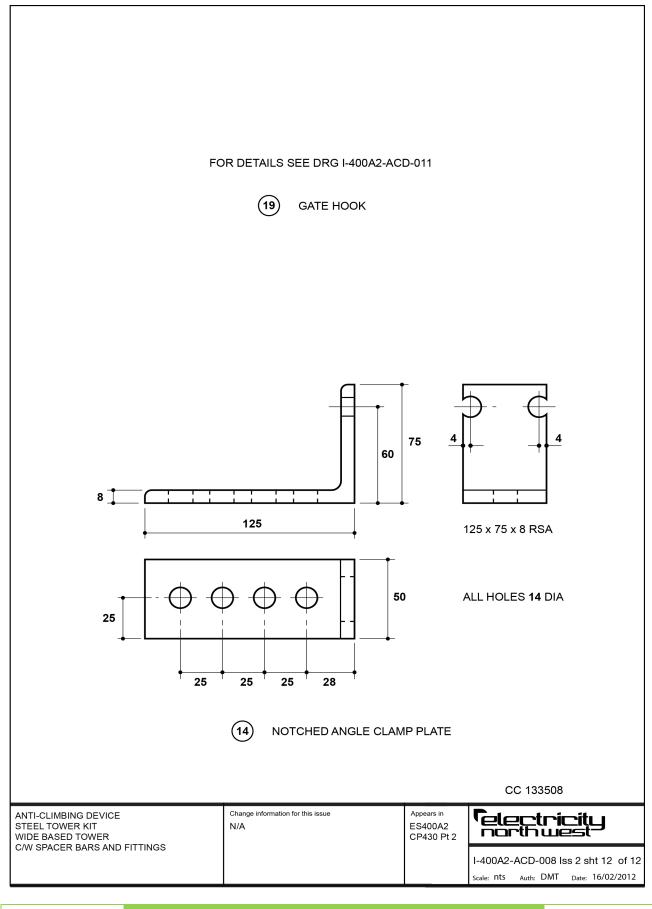
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31 50 x 50 x 6 RSA 25 6.5 60 60 6.5 150 150 150 150 ALL HOLES Ø14 695 150 150 150 150 1280 RSA 50 x 50 x 6 Φ 25 - HOLE 14 SQUARE 115 Φ 300 300 5 CRS Φ 125 AT 25 Φ φ ф 50 20 Φ 50 Ф 150 6.5 150 220 150 150 25 95 20 20 (14) CC 133508 ANTI-CLIMBING DEVICE STEEL TOWER KIT Change information for this issue Appears in **Celectricity** northwest N/A ES400A2 WIDE BASED TOWER CP430 Pt 2 C/W SPACER BARS AND FITTINGS I-400A2-ACD-008 Iss 2 sht 10 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		8	
6	Spacer bar, 9-strand (long) - 133515 16 p		16 pairs	
7	Spacer bar, 5-strand (short) (Refer to Dwg I-400A2-ACD-009)	ES400A2	133510	4 pairs
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		8	
16	Gate		4	
17	Washer, packing, M12, 5mm thick, bolt galvanized	-	-	24
18	Screw, set, M12, 60mm, high-tensile steel		-	16
19	Gate hook (Refer to Dwg I-400A2-ACD-011) ES400 + flat washer		133521	4 4
20	Bolt, M12, 35mm + full nut, lock nut and flat washer	-	-	4
21			67	
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		200	

NOTE:

(a) Item 11: number required will depend on number of lines of barbed wire required to fill the central gap.

Mar 24



All Dimensions in mm 20 20 25 25 13.5 dia. 75 100 75 175 150 Notch 10 x 25 Typ. 650 325 150 475 13.5 dia. 75 550 75 Used as a pair 625 bolted together in 25 opposite planes to trap barbed wire Commodity Code: 133510 ANTI-CLIMBING DEVICE SPACER BAR Change information for this issue **Celectricity** northwest ES400A2 CP430 Pt 2 N/A 5-STRAND (SHORT) I-400A2-ACD-009 Iss 2 sht 1 of 1 Scale : nts Auth : PH Date : Mar 24

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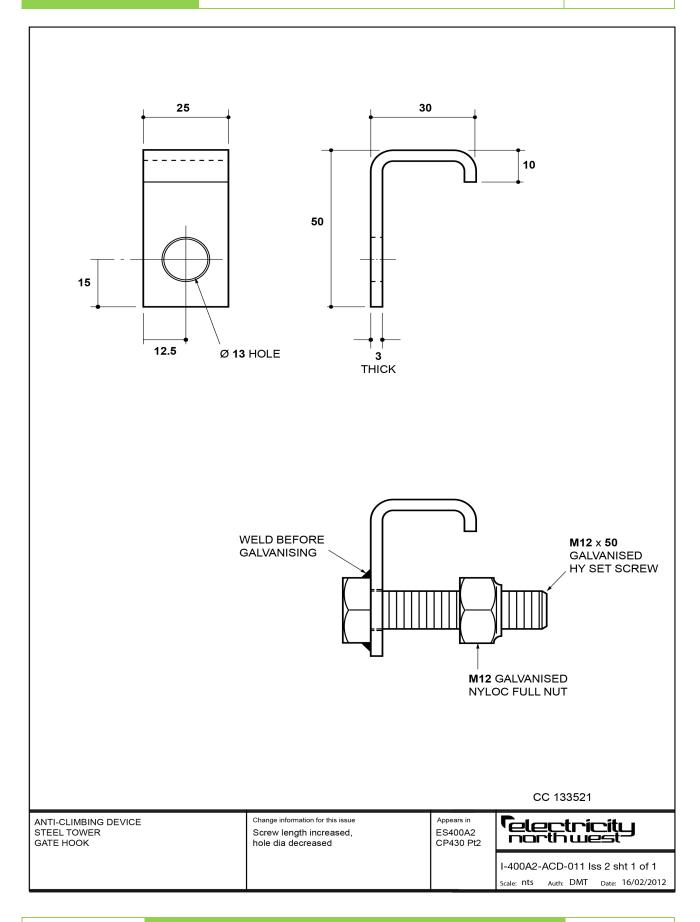


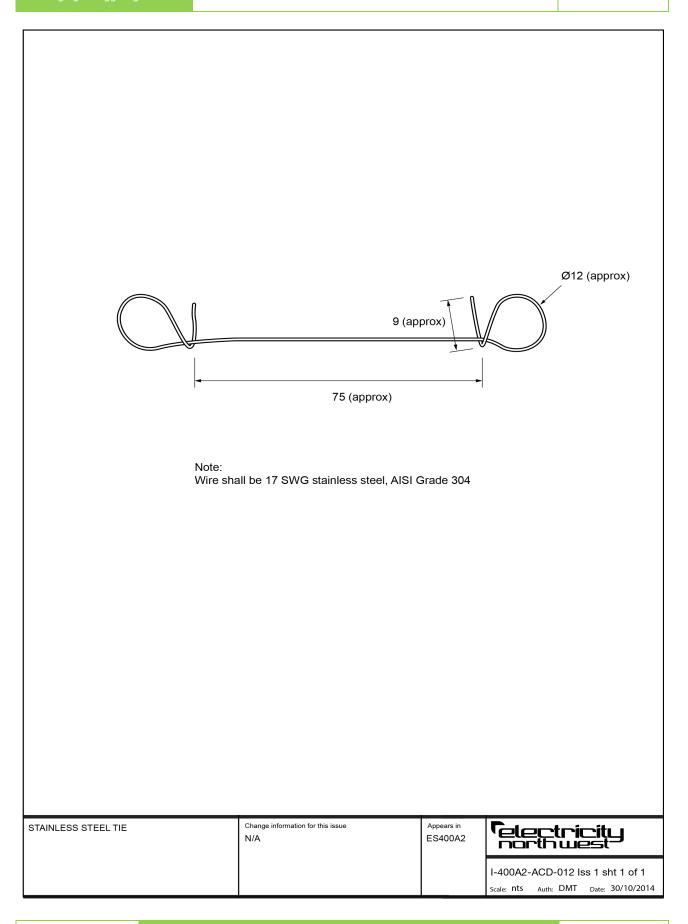
All Dimensions in mm 20 25 ω 25 75 100 75 13.5 dia. 175 150 325 150 475 150 13.5 dia. 625 75 700 0 75 775 150 Notch 10 x 25 Typ. 925 150 -1075 Used as a pair 75 bolted together in -1150 О 13.5 dia. opposite planes to 75 trap barbed wire 1225 25 1250 Commodity Code: 15 25 133515 ANTI-CLIMBING DEVICE SPACER BAR 9-STRAND (LONG) Change information for this issue Appears in ES400A2 N/A CP430 Pt 2 I-400A2-ACD-010 Iss 2 sht 1 of 1

Mar 24

Date : Mar 24

Scale : nts Auth : PH







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	Product Conformity				
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: