Specification – Overhead Bare Conductor

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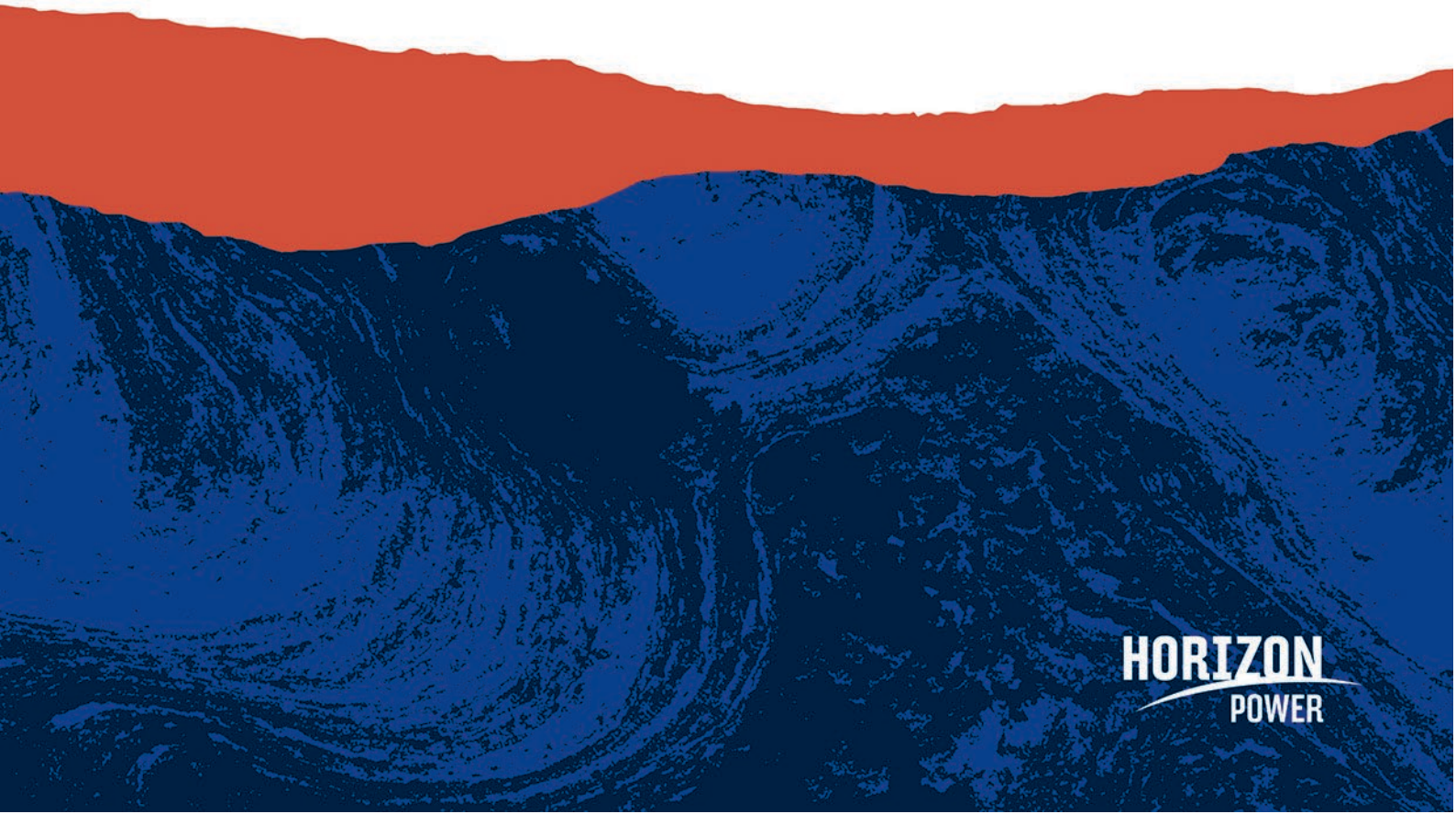

Document Control			
Revision 2 Author	**Name:**	Oliver Blakeley **Position:** Intern Standards & Plant Engineer	Digitally signed by Paul Savig Date: 2026.02.10 12:04:39 +08'00'
Reviewed By	**Name:**	Paul Savig **Position:** Senior Standards & Plant Engineer	Digitally signed by Paul Savig Date: 2026.02.10 12:04:47 +08'00'
Endorsed By	**Name:**	Johnathan Choi **Position:** Standards and Plant Manager	Digitally signed by Johnathan Choi Date: 2026.02.10 13:07:52 +08'00'
Approved By *	**Name:**	Victor Cheng **Position:** Senior Manager Engineering and Project Services	Digitally signed by Victor Cheng Date: 2026.02.10 13:26:34 +08'00'
Date Created/Last Updated	10 February 2026		
Review Frequency **	3 yearly		
Next Review Date **	10 February 2029		

** Shall be the Process Owner and is the person assigned authority and responsibility for managing the whole process, end-to-end, which may extend across more than one division and/or functions, in order to deliver agreed business results.*

*** Frequency period is dependent upon circumstances– maximum is 5 years from last issue, review, or revision whichever is the latest. If left blank, the default shall be 1 year unless otherwise specified.*

Revision Control		
Revision	**Date**	**Description**
2	10/02/2026	Review and update to reflect current standards

STAKEHOLDERS *The following positions shall be consulted if an update or review is required:*	
Senior Manager – Engineering & Project Services	Senior Manager – Asset Services
Senior Manager – Energy Planning	Senior Manager – System Operations
Head of People and Safety	Senior Manager – Project Delivery

Table of Contents

1. Scope

This Specification sets out the technical (electrical and mechanical) requirements for the performance, testing and supply of overhead conductor used on Horizon Power systems.

Tests prescribed will evaluate the performance of these conductors and shall comply with this specification.

Approval in terms of this specification shall be obtained by one or a combination of the following:

a) successful completion of the appropriate tests required by this specification by an independent and accredited test authority.
b) provision of test certificates from an independent and accredited test authority based upon an alternative specification, with test requirements at least equivalent to this specification.

NOTE: Verification of accreditation of the test authority shall be provided by NATA (National Association of Testing Authorities) accredited test house or by a test house possessing accreditation from a NATA MRA (Mutual Recognition Agreement) partner.

Tenderers must state any non-compliance with the specification in any tender submission and any alternative offers must be submitted in full and separately from any main offer.

2. Normative References

2.1 Standards

2.1.1 Horizon Power Standards

[1]. *Horizon Power Environmental Conditions*, standard number HPC-9EJ-01-0001-2013, available at http://horizonpower.com.au/contractors-suppliers/contractors/manuals-and-standards/ under the 'Standards' heading.

[2]. *Technical Rules HPC-9DJ-01-0001-2012, available at* http://horizonpower.com.au/contractors-suppliers/contractors/manuals-and-standards/*under the 'Technical Rules' heading.*

2.1.2 Australian Standards

The following standards are available at http://www.intertekinform.com/.

[3]. *AS 1222.1:1992 (R2016), Steel conductors and stays – Bare overhead – Galvanised (SC/GZ)*

[4]. *AS 1222.2:1992 (R2016), Steel conductors and stays – Bare overhead – Aluminium clad (SC/AC)*

[5]. *AS 1531:1991 (R2016), Conductors – Bare overhead – Aluminium and aluminium alloy*

[6]. *AS 1746:1991 (R2016), Conductors – Bare overhead – Hard drawn copper*

[7]. *AS 2848.1:1998 (R2018), Aluminium and aluminium alloys - Compositions and designations Wrought products*

[8]. *AS/NZS 2857:1996 (R2017), Timber drums for insulated electric cable and bare conductors*

[9]. *AS 3607:1989 (R2016), Conductors – Bare overhead, aluminium and aluminium alloy – Steel reinforced*

[10]. *AS 3822:2002 (R2016), Test methods for bare overhead conductors*

2.1.3 International Standards

The following standards are available at http://www.intertekinform.com/.

[11]. *IEC 60812:2018 Analysis techniques for system reliability—Procedure for failure mode and effects analysis (FMEA), International Electrotechnical Commission*

2.1.4 Compliance With Standards

Various Standards are referenced in this Specification. The Standards have reference to the year they were published. If over the life of the Tender the Standards change, the Vendor is required to conform to the new edition of the Standard.

Unless otherwise specified herein, the Equipment shall be designed, manufactured and type and routine tested in accordance with the referenced Australian Standards, including all amendments. Where there is no Australian Standard equivalent, International Standards or Codes as defined in this specification shall be used. The specified documents contain provisions that, through reference in the text, constitute requirements of this Specification. At the time of publication of this Specification, the editions indicated were valid. Information on currently valid national and international standards may be obtained from the Australian Standards website – http://www.intertekinform.com/.

2.2 Definitions and Abbreviations

For the purposes of this specification, definitions shall apply as in the relevant Australian Standards with the addition of a few general definitions listed below in alphabetical order.

2.2.1 Definitions

All aluminium alloy conductors (AAAC): A conductor comprising helically wound aluminium alloy wire.

Aluminium conductors (AAC): A conductor comprising helically wound hard drawn aluminium wire.

Aluminium, steel reinforced conductors (ACSR): A conductor comprising hard drawn aluminium strands helically wound around steel reinforcing strands.

Bare conductor: A conductor without any insulation.

Conductor: An electrical conductor arranged to be electrically connected to a source of electrical energy.

***Equipment*:** means conductor in relation to this specification.

Steel conductor, aluminium clad (SC/AC): A conductor comprising helically wound aluminium clad steel wires.

Steel conductor, zinc galvanised (SC/GZ): A conductor comprising helically wound zinc galvanised steel wires.

2.2.2 Abbreviations

AAAC: All aluminium alloy conductor

AAC: All aluminium conductor

ACSR: Aluminium steel reinforced conductor

AS: Australian Standard

HDBC: Hard Drawn Bare Copper

SC/AC: Steel conductor aluminium clad

SC/GZ: Steel conductor zinc galvanised

2.3 Drawings

The drawings listed below form part of this specification, see Appendix I:

1) HPA-SD-E-00020-01 (ACSR Conductor)
2) HPA-SD-E-00021-01 (SC/AC Conductor)
3) HPA-SD-E-00022-01 (SC/GZ Conductor)
4) HPA-SD-E-00023-01 (Copper Conductor)
5) HPA-SD-E-00024-01 (AAC/1350 & AAAC/1120 Conductor)

3. Requirements

3.1 Power System Particulars

No requirements.

3.2 Environmental Conditions

The performance of the *Equipment* must meet the requirements set out in Section 4.1 of the *Horizon Power Environmental Conditions [1].*

3.3 Description of Conductor

Conductors shall have a method of identification for asset management purposes i.e. a means of capturing batch information for traceability of any future problems with the conductors. In addition, a discrete means of identification of stolen conductors shall be proposed.

Full details of the application of the identification marking and method to read or retrieve the information shall be provided with the submission. The identification marking shall be indelible and difficult to remove from the conductor.

3.4 Materials and Construction

3.4.1 Construction

The conductor construction shall be one of the following:

Table 1: Fabrication

Conductor	Fabrication requirements
ACSR	Aluminium steel reinforced conductors constructed in accordance to AS 3607 [9]
AAC/AAAC	AS 1531 [5], which shall be constructed of aluminium or aluminium alloy wires complying with the alloy designation 1350 or 1120, the compositions of which are specified in AS 2848.1 [7]
HDBC	Hard drawn bare copper conductors constructed in accordance to AS 1746 [6]
SC/AC	Aluminium-clad steel conductors constructed in accordance to AS 1222.2 [4]
SC/GZ	Galvanised steel conductors constructed in accordance to AS 1222.1 [3]

3.4.2 Welds and Joints

All joints made during the stranding operation shall be free from visible defects.

There shall be no joints in any individual wire of a steel core conductor containing less than seven wires. No butt welds of the aluminium clad steel wires, after cladding, shall be contained in any drum of conductor.

Butt welding shall be carried out for aluminium conductors as per AS 1531 [5].

The location of all welds in individual aluminium wires shall be recorded. Copies of these records shall be forwarded to Horizon Power when the conductor is dispatched.

3.4.3 Rigidity of Conductor

The wire shall be so stranded that the conductor is essentially free from the tendency to untwist or spring apart when cut.

The complete conductor shall be uniformly cylindrical and shall be capable of withstanding normal handling during manufacturing, transportation and installing without being deformed from its cylindrical form.

3.4.4 Grease Requirements

The following conductors shall not be greased:

1) All bare copper conductors; and
2) All 3-strand bare conductors;

All remaining bare overhead conductors not already specified shall be greased for additional corrosion protection as specified in Appendix G, in accordance with the respective Standards AS 1222.1 [3], AS 1222.2 [4], or AS 1531 [5], or AS 3607 [9].

The grease shall be suitable for use over a temperature range of -5 to +160 degrees Celsius without becoming hard or brittle and the grease shall remain non migratory.

Fully Greased shall have the same meaning as defined in the respective Standards above (i.e. grease is applied to all wires with the exception of the outermost layer).

3.4.5 Lay Ratio

Lay ratio of conductors shall be as indicated in Table 2.

Table 2: Lay Ratio

Conductor	Lay
ACSR	AS 3607 [9] for aluminium steel reinforced conductors, where the direction of lay for the outermost layer shall be right-handed
AAC/AAAC	AS 1531 [5] for aluminium and aluminium alloy conductors, where the direction of lay for the outermost layer shall be right-handed
HDBC	AS 1746 [6] for copper conductors, where the direction of lay for the outermost layer shall be right-handed
SC/AC	AS 1222.2 [4] for aluminium-clad steel conductors, where the direction of lay for the outermost layer shall be left-handed
SC/GZ	AS 1222.1 [3] for galvanised steel conductors, where the direction of lay for the outermost layer shall be right-handed

3.5 Conductor Length

Conductors shall be supplied in drum lengths specified in Appendix F of the document.

The conductor length on a drum shall not vary by more than +2% and -0% from the nominal length.

4. Conductor Drums / Coils

4.1 Timber Drums

Conductor drum reels shall be constructed generally in accordance with the requirements of AS/NZS 2857 [8].

Nominal drum dimensions shall be in accordance with Table 3.1 of AS/NZS 2857 [8] and as extended in range by the table in Appendix G (Note actual drum dimensions may vary slightly from those listed in Appendix G and in such cases the requirements of the closest nominal size shall prevail meeting the requirements of Appendix F). Maximum flange diameter acceptable is 2.45 m. Barrel supports shall be provided as per Section 3 of AS/NZS 2857 [8].

When lagging is required, battens shall be secured with steel tape banding adjacent to each flange and secured with nails or staples that will not protrude through the battens. Banding shall be painted or galvanized and shall be no less than 0.65 mm thick and 32 mm wide.

Conductor drums shall be suitably lagged with timber for transportation, either by rail, road or ship. They shall give complete protection from damage to the conductor during transit.

Conductor ends shall be securely affixed to the drum flange to prevent them from being dislodged. Any conductor ends that project from the drum flanges shall be adequately protected against mechanical damage during transport and storage.

4.2 Coil Packaging

Stay wire shall be supplied suitably packaged in coils and arranged on pallets. Coils shall be of the lengths and diameter as specified in Appendix F. Coils may be packaged in heat shrink plastic wrap, polyester wrap or other approved wrapping.

4.3 Drum Marking

Drums shall be clearly stencilled with the following information:

1) Manufacturer’s name
2) Manufacturers drum traceability number
3) Week and Year of manufacture
4) Size, type and name of conductor
5) Total gross weight of conductor, drum and lagging
6) Arrow to indicate direction of rotation of the drum marked with the words "ROLL THIS WAY"

7) Specification Number
8) Stock number
9) Order number
10) Length of conductor
11) Batch number.

4.4 Coil Marking

The following information shall be legibly and durably marked on a waterproof label securely attached to the coil:

1) Manufacturer's name
2) Manufacturers drum traceability number
3) Week and Year of manufacture
4) Size, type and name of conductor
5) Specification Number
6) Stock number
7) Order number
8) Length of conductor
9) Batch number

5. Storage

All drums shall be suitable for outdoor storage for a minimum period of 36 months under the environmental conditions of Section 4.1 of the *Horizon Power Environmental Conditions [1]*.

6. Reliability

Vendors shall provide information on the reliability of the *Equipment* and the performance of the materials offered over **an operational life of 30 years minimum** under the specified field of application and conditions of service.

Information provided shall evidence the claimed reliability and performance for the *Equipment* offered, including details on Failure Mode and Effect Analysis, carried out in accordance with IEC 60812 [11]. Failure modes should be described; taking cantilever mechanical failure as an example, the failure may be excessive deflection, or brittle fracture. Electrical failure may be material damage such as puncture, polymer degradation, carbonisation, loss of hydrophobicity, etc.

Vendors may offer their standard *Equipment* but any variation to the foregoing standards must be clearly stated in writing at the time of the proposal. The products offered in the standing offer should be equal to or better in quality and performance than the existing items as listed under this Specification.

7. Safety

Material Safety Data Sheets (MSDS) applicable for each different Equipment or chemical ingredient in the Equipment which is considered harmful to personnel or environment in any manner, shall be supplied with the Proposal.

8. Environmental Considerations

Vendors are required to provide information on the environmental soundness of the design and the materials used in the manufacture of the Equipment offered. Vendors shall provide a detailed outline of the steps that have been put in place to fulfil any obligations that may be required pursuant to the *Waste Avoidance and Resource Recovery Act 2001* and any amendments. In particular:

a) Management of waste reduction;

b) The use of re-usable packing; and

c) Extended producer responsibility for the safe disposal of materials at the end of their life.

9. Tests

9.1 Test Requirements

The Vendor shall, prior to first Delivery, complete the design, type, routine, sample and special tests and inspections as required by the relevant Australian Standards or IEC Standard.

The passing of such tests does not prejudice the right of Horizon Power to reject the *Equipment* if it does not comply with this Specification when installed.

9.2 Test Certificates

At the time of submitting the offer on the tender, single copies of test certificates, in English, shall be provided and shall be clearly marked and contain a reference number. If all the required test certificates are not submitted the tender will be rated incomplete and may not be considered.

Electronic copies of type test certificates shall be arranged in the order set out in this Specification and shall be marked clearly with the identifier and description in the contents Section. Any extra test certificates shall be marked with “extra tests” and kept separate from the required test certificates.

All test certificates shall be submitted in electronic form and Adobe Acrobat (.pdf) format.

9.3 Type Tests

The tests are intended to verify the main characteristics and suitability of the design, dimensions, materials, and method of manufacture (technology).

Certified type test results shall be submitted with the Proposal, these type tests shall include those outlined in AS 3822 [10]. The Vendor shall, in their evaluation submission, state which tests the *Equipment* have passed.

Table 3: Type Tests

Description	Standard
	AS 3822 Clause
Geometric properties evaluation	7.1
Breaking load test	7.2
Coefficient of thermal elongation test	7.3
Stress / strain test	7.4
Creep test	7.5
D.C. resistance test	6.6
Fatigue test	7.6
Thermal aging test	7.7

9.4 Routine and Sample Tests

Routine tests are intended to eliminate defective units and shall be carried out during the manufacturing process. Routine tests shall be carried out on every *Equipment* and should not consist of visual examination only, these routine tests shall include those outlined in AS 1222.1 [3], AS 1222.2 [4], AS 1531 [5], AS 1746 [6] and AS 3607 [9].

The Vendor shall supply duly certified copies of the routine tests performed on the *Equipment* to Horizon Power, either prior to or upon delivery.

Table 4: Routine Tests

Description	SC/GZ	SC/AC	Bare Al	HDBC	ACSR
Standard	AS 1222.1 Clause	AS 1222.2 Clause	AS 1531 Clause	AS 1746 Clause	AS 3607 Clause
Dimension test	4.2.1	4.2.1	4.2.1	4.2.1	4.2.1
Ultimate tensile stress test	4.2.2	4.2.2	4.2.2	4.2.2	4.2.2
Elongation test	N/A	4.2.3	4.2.3	N/A	4.2.3
Torsion test	4.2.3	4.2.4	N/A	N/A	4.2.4
Wrapping test	4.2.4	N/A	4.2.4	4.2.3	4.2.5
Coating	4.3	4.3	N/A	N/A	4.3
Resistivity test	N/A	4.4	4.3	4.3	4.4

10. Documentation and Samples

10.1 Documentation to be provided with Proposals

Submitted proposals shall provide all documentation and information as requested in this specification, including any further relevant information on the *Equipment* offered. The proposal must be complete in all respects. Failure to comply may cause the proposal to be considered incomplete and hence informal.

The vendor shall provide an electronic version of all documents in Adobe Acrobat (.pdf) format containing the information detailed below with their offer:

- Any non-compliance of the Specification shall be detailed in the Technical Deviation schedule;

- All information provided in Technical Requirements shall be in English and measurement units shall be in metric units;
- Material Safety Data Sheets;
- CAD drawings (Micro station preferred DGN format) of all *Equipment* showing all critical dimensions;
- *Equipment* data sheets showing the weight, material type, protective coatings, mechanical & electrical properties (Combined Load Charts shall be included);
- Installation instructions included in the packaging; and
- A copy of the Vendor's current Quality Assurance accreditation and category.

Should the preferred vendor submit drawings for approval by Horizon Power, this will in no way exonerate it from being responsible for the correct and proper function of the *Equipment*.

10.2 Type Test Certificates / Reports

Test certificates, test reports or any other supporting documents supplied as evidence for compliance to relevant standards shall be made available in English for review by Horizon Power Service history.

Vendors shall state:

- Other Australian electricity supply authorities who have a service history of the items offered; and
- Contact details of those supply authorities who can verify the service performance claimed.

10.3 Training Materials

Training material in the form of drawings, instructions and/or audio-visuals must be provided for the items accepted under the offer.

Vendors shall state the availability of training materials which could include but is not limited to the following topics:

- Handling and storage;
- Application (particularly in areas of heavy coastal pollution);
- Installation;
- Maintenance;
- Environmental performance;
- Electrical performance;
- Mechanical performance;

- Disposal at the end of service life; and
- Production process and testing.

10.4 Samples

Samples of all proposed *Equipment* types are to be provided upon request of Horizon Power as part of the submitted proposals.

10.4.1 Test Samples

For the purpose of evaluation, the Vendor shall submit 1 m conductor sample lengths of each conductor category with the Proposal. The conductor construction lay up of the samples shall meet the requirements of this Technical Specification. Each sample shall be labelled with a robust tag stating:

1) Vendor Name
2) Conductor Number
3) Stock Code
4) Batch number
5) Appropriately identified in Schedule D of this Specification

When requested, the Vendor shall supply Horizon Power test samples free of charge and within 4 weeks of the request.

APPENDIX A. REVISION INFORMATION

(Informative) Horizon Power has endeavoured to provide standards of the highest quality and would appreciate notification of errors or queries.

Each Standard makes use of its own comment sheet which is maintained throughout the life of the standard, which lists all comments made by stakeholders regarding the standard.

A comment sheet found in **DM# 1793303**, can be used to record any errors or queries found in or pertaining to this standard. This comment sheet will be referred to each time the standard is updated.

Date	Rev No.	Notes
18/10/2013	0	Initial Document Creation
25/07/2022	1	Applied new template, updated standards list and general review
10/02/2026	2	Review and update to reflect current standards

APPENDIX B. QUALITY ASSURANCE (TO BE COMPLETED BY STORES)

DOCUMENT NUMBER	HPC-8DJ-03-0005-2012			**QUALITY ASSURANCE**		**DM NUMBER**		
DEVICE DESCRIPTION	**LABEL MATERIAL NO.**			**OVERHEAD CONDUCTOR PURCHASE**		**ASSET OWNER**		
	ASSET ID/ STOCK NO							
MANUFACTURER		**DIMENSION**						

ITEM	OPERATION/EQUIPMENT/FACILITY	DOCUMENT REF.	WHO CHECKS	INITIAL	DATE/ TIME	QUALITY ASSURANCE CRITERIA	PASS Y/N	COMMENTS
1	DRUM LABELLING							
1.1	Name of Manufacturer					*******		
1.2	Manufacturer Drum Trace Number					*******		
1.3	Week & Year of Manufacture					*******		
1.4	Conductor Information							
1.4.1	Size and Type Conductor					*******		
1.5	Gross Weight Conductor/Drum & Lagging					*******		
1.6	Arrow (ROLL THIS WAY)					*******		
1.7	Specification Number					*******		
1.8	Stock Number					*******		

1.9	Order Number					*******		
ITEM	**OPERATION/EQUIPMENT/FACILITY**	**DOCUMENT REF.**	**WHO CHECKS**	**INITIAL**	**DATE/ TIME**	**QUALITY ASSURANCE CRITERIA**	**PASS Y/N**	**COMMENTS**
1.10	Length of Conductor					*******		
1.11	Batch Number					*******		
1.12	Welding certificate provided					*******		

SYMBOLS AND ABBREVIATIONS								
H = HOLD POINT	S = SUPERVISOR							
W = WITNESS POINT	T = TECHNICIAN, EL = ELECTRICIAN	REVISION						
V = VERIFICATION POINT	E = ENGINEER	DATE						
S/C = SUBCONTRACTOR	PM = PROJECT MANAGER	APPROVED BY						

APPENDIX C. SCHEDULES A & B: ENQUIRY DOCUMENT

HORIZON POWER	**SPECIFICATION ENQUIRY**	**HPC-8DJ-03-0005-2012**
	VENDOR'S NAME	
	DATE	

TECHNICAL SCHEDULES A & B

ITEM 1: Aluminium AAAC/1120 Conductor

VOLTAGE	N/A	N/A	N/A			
ITEM	1.1	1.2	1.3			
TYPE	7/2.50	7/4.75	19/3.25			
SIZE (mm^2)	35	120	150			

SCHEDULE A: Horizon Power's specific requirements

SCHEDULE B: Particulars of equipment to be supplied (to be completed by Vendor)

No.	Clause	Description		Schedule A	Schedule B
		Distribution Standard Buyers Guide drawing		HPA-SD-E-00024-01	xxxx
1		**Conductor Construction**			
1.1	3.4.1	Conductor		Aluminium	xxxxx
		Size:	mm^2		xxxxx
		Diameter:	mm	xxxx	
1.2	3.4.2	Welds and Joints >15 m apart	(Yes/No)	xxxx	
1.3	3.4.4	Grease	(Yes/No)	xxxx	
1.4	3.4.5	Lay Ratio			xxxx
1.5	3.5	Conductor Length	m		xxxx
2		**Drum Size**			
	4	Flange x Barrel x Width	mm	xxxx	
3		**Test certificate requirements**			
	9.3	Test certificate provided according to AS 3822		xxxx	
	9.4	Test certificate provided according to AS 1531		xxxx	
4		Manufacturer		xxxx	
		Brand / Catalogue No. / Model		xxxx	
		Country of Manufacture		xxxx	

HORIZON POWER	**SPECIFICATION ENQUIRY**	**HPC-8DJ-03-0005-2012**
	VENDOR'S NAME	
	DATE	

TECHNICAL SCHEDULES A & B

ITEM 2: Aluminium AAC/1350 Conductor

VOLTAGE	N/A					
ITEM	2.1					
Type	37/3.75					
SIZE (mm^2)	400					

SCHEDULE A: Horizon Power's specific requirements
SCHEDULE B: Particulars of equipment to be supplied (to be completed by Vendor)

No.	Clause	Description		Schedule A	Schedule B
		Distribution Standard Buyers Guide drawing		HPA-SD-E-00024-01	xxxx
1		**Conductor Construction**			
1.1	3.4.1	Conductor		Aluminium	xxxxx
		Size:	mm^2		xxxxx
		Diameter:	mm	xxxx	
1.2	3.4.2	Welds and Joints >15 m apart	(Yes/No)	xxxx	
1.3	3.4.4	Grease	(Yes/No)	xxxx	
1.4	3.4.5	Lay Ratio			xxxx
1.5	3.5	Conductor Length	m		xxxx
2		**Drum Size**			
	4	Flange x Barrel x Width	mm	xxxx	
3		**Test certificate requirements**			
	9.3	Test certificate provided according to AS 3822		xxxx	
	9.4	Test certificate provided according to AS 1531		xxxx	
4		Manufacturer		xxxx	
		Brand / Catalogue No. / Model		xxxx	
		Country of Manufacture		xxxx	

HORIZON POWER	**SPECIFICATION ENQUIRY**	**HPC-8DJ-03-0005-2012**
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	DATE	

TECHNICAL SCHEDULES A & B

ITEM 3: Aluminium Steel Reinforced (ACSR/AC or GZ) Conductor

VOLTAGE	N/A					
ITEM	3.1					
Type	6/1/3.00					
SIZE (mm^2)	9					

SCHEDULE A: Horizon Power's specific requirements

SCHEDULE B: Particulars of equipment to be supplied (to be completed by Vendor)

No.	Clause	Description		Schedule A	Schedule B
		Distribution Standard Buyers Guide drawing		HPA-SD-E-00020-01	xxxx
1		**Conductor Construction**			
1.1	3.4.1	Conductor		Steel	xxxxx
		Size:	mm^2		xxxxx
		Protection – Aluminium or Galvanised			
		Diameter:	mm	xxxx	
1.2	3.4.1	Conductor		Aluminium	xxxxx
		Size:	mm^2		xxxxx
		Diameter:	mm	xxxx	
1.3	3.4.2	Welds and Joints >15 m apart	(Yes/No)	xxxx	
1.4	3.4.4	Grease	(Yes/No)	xxxx	
1.5	3.4.5	Lay Ratio			xxxx
1.6	3.5	Conductor Length	m		xxxx
2		**Drum Size**			
	4	Flange x Barrel x Width	mm	xxxx	
3		**Test certificate requirements**			
	9.3	Test certificate provided according to AS 3822		xxxx	
	9.4	Test certificate provided according to AS 3607		xxxx	
4		Manufacturer		xxxx	
		Brand / Catalogue No. / Model		xxxx	
		Country of Manufacture		xxxx	

HORIZON POWER	**SPECIFICATION ENQUIRY**	**HPC-8DJ-03-0005-2012**
	VENDOR'S NAME	
	DATE	

TECHNICAL SCHEDULES A & B

ITEM 4: Hard Drawn Bare Copper (HDBC) Conductor

VOLTAGE	N/A					
ITEM	4.1					
Type	19/2.14					
SIZE (mm^2)	70					

SCHEDULE A: Horizon Power's specific requirements
SCHEDULE B: Particulars of equipment to be supplied (to be completed by Vendor)

No.	Clause	Description		Schedule A	Schedule B
		Distribution Standard Buyers Guide drawing		HPA-SD-E-00023-01	xxxx
1		**Conductor Construction**			
1.1	3.4.1	Conductor		Copper	xxxxx
		Size:	mm^2		xxxxx
		Diameter:	mm	xxxx	
1.2	3.4.2	Welds and Joints >15 m apart	(Yes/No)	xxxx	
1.3	3.4.5	Lay Ratio			xxxx
1.4	3.5	Conductor Length	m		xxxx
2		**Drum Size**			
	4	Flange x Barrel x Width	mm	xxxx	
3		**Test certificate requirements**			
	9.13	Test certificate provided according to AS 3822		xxxx	
	9.4	Test certificate provided according to AS 1746		xxxx	
4		Manufacturer		xxxx	
		Brand / Catalogue No. / Model		xxxx	
		Country of Manufacture		xxxx	

HORIZON POWER	**SPECIFICATION ENQUIRY**	**HPC-8DJ-03-0005-2012**
	VENDOR'S NAME	
	DATE	

TECHNICAL SCHEDULES A & B

ITEM 5: Steel Core Aluminium Clad or Galvanised (SC/AC OR SC/GZ) Conductor

VOLTAGE	N/A	N/A	N/A			
ITEM	5.1	5.2	5.3			
Type	3/2.75 SC/AC	19/2.00 SC/GZ	19/2.75 SC/GZ			
SIZE (mm^2)	5.93	10	13.8			

SCHEDULE A: Horizon Power's specific requirements
SCHEDULE B: Particulars of equipment to be supplied (to be completed by Vendor)

No.	Clause	Description		Schedule A	Schedule B
		Distribution Standard Buyers Guide drawing		HPA-SD-E-00021-01 & HPA-SD-E-00022-01	xxxx
1		**Conductor Construction**			
1.1	3.4.1	Conductor		Steel	xxxxx
		Size:	mm^2		xxxxx
		Diameter:	mm	xxxx	
1.2	3.4.2	Welds and Joints >15 m apart	(Yes/No)	xxxx	
1.3	3.4.4	Grease	(Yes/No)	xxxx	
1.4	3.4.5	Lay Ratio			xxxx
1.5	3.5	Conductor Length	m		xxxx
2		**Drum Size**			
	4	Flange x Barrel x Width	mm	xxxx	
3		**Test certificate requirements**			
	9.13	Test certificate provided according to AS 3822		xxxx	
	9.4	Test certificate provided according to AS 1222		xxxx	
4		Manufacturer		xxxx	
		Brand / Catalogue No. / Model		xxxx	
		Country of Manufacture		xxxx	

APPENDIX D. SCHEDULE C: COMPLIANCE DOCUMENT

The Vendor shall indicate below whether this offer is fully compliant with the nominated clause in this Specification. A YES shall ONLY be indicated if the offer is 100% compliant with the relevant Clause. If NO is indicated and supporting documents are submitted, then mark the ATT box with the attachment number. Details of departure shall be provided in Schedule D Appendix E.

	CLAUSE NUMBER	YES	NO	ATT.
3	Requirements			
3.1	Power System Particulars			
3.2	Environmental Conditions	☐	☐	
3.3	Description of Conductor	☐	☐	
3.4	Materials and Construction			
3.4.1	*Construction*	☐	☐	
3.4.2	*Welds & Joints*	☐	☐	
3.4.3	*Rigidity of Conductor*			
3.4.4	*Grease Requirements*	☐	☐	
3.4.5	*Lay Ratio*	☐	☐	
3.5	Conductor Length			
4	Conductor Drums / Coils			
4.1	Timber Drums	☐	☐	
4.2	Coil Packaging	☐	☐	
4.3	Drum Marking	☐	☐	
4.4	Coil Marking	☐	☐	
5	Storage	☐	☐	
6	Reliability	☐	☐	

	CLAUSE NUMBER	YES	NO	ATT.
7	Safety	☐	☐	
8	Environmental Considerations	☐	☐	
9	Tests			
9.1	Test Requirements	☐	☐	
9.2	Test Certificates	☐	☐	
9.3	Type Tests	☐	☐	
9.4	Routine and Sample Tests	☐	☐	
10	Documentation and Samples			
10.1	Documentation to be provided with Proposals	☐	☐	
10.2	Type Test Certificates / Reports	☐	☐	
10.3	Training Materials	☐	☐	
10.4	Samples	☐	☐	
10.4.1	Test Samples	☐	☐	

APPENDIX E. SCHEDULE D: DEPARTURES FROM TECHNICAL SPECIFICATION

The Vendor shall nominate the Clause and describe the departure:

CLAUSE NO.	DEPARTURE

APPENDIX F. CONDUCTOR DESCRIPTION

Drum dimensions stated in this section shall be maximum values for Flange diameter and External Width and shall be minimum values for Barrel Diameter. Drums having weight of 2 ton or more shall be as specified in Appendix G, however not exceeding flange and external width dimensions stated herein.

Stay wires (Item 5.2 and 5.3) are to be supplied in coils as per description.

ITEM	DESCRIPTION	DISTRIBUTION STANDARD DRAWING
1	**Aluminium AAAC/1120 Conductor**	
1.1	Short Description: WIRE ELECT 35 SQ AAAC/1120 3400M Technical Description: WIRE ELECT; 35 mm SQ (7/2.50) AAAC/1120 (CHLORINE); FULLY GREASED; AERIAL CONDUCTOR UNINSULATED; Drum Size: (Flange x Barrel x Width) 850mm x 280mm x 620mm	HPA-SD-E-00024-01
1.2	Short Description: WIRE ELECT 120 SQ AAAC/1120 2000M Technical Description: WIRE ELECT; 120 mm SQ (7/4.75) AAAC/1120 (IODINE); FULLY GREASED; AERIAL CONDUCTOR UNINSULATED; Drum Size: (Flange x Barrel x Width) 1050 mm x 500 mm x 920 mm	HPA-SD-E-00024-01
1.3	Short Description: WIRE ELECT 150 SQ AAAC/1120 2000M Technical Description: WIRE ELECT; 150 mm SQ (19/3.25) AAAC/1120 (KRYPTON); FULLY GREASED; AERIAL CONDUCTOR UNINSULATED; Drum Size: (Flange x Barrel x Width) 1250 mm x 600 mm x 850 mm	HPA-SD-E-00024-01
2	**AAC/1350 Conductor**	
2.1	Short Description: WIRE ELECT 400 SQ AAC/1350 1000M Technical Description: WIRE ELECT; 400 mm SQ (37/3.75) AAC/1350 (TRITON); FULLY GREASED; AERIAL CONDUCTOR UNINSULATED; Drum Size: (Flange x Barrel x Width) 1580 mm x 740 mm x 900 mm	HPA-SD-E-00024-01

ITEM	DESCRIPTION	DISTRIBUTION STANDARD DRAWING
3	**Aluminium Conductor Steel Reinforced ACSR**	
3.1	Short Description: WIRE ELECT 9 SQ ACSR 3400M Technical Description: WIRE ELECT; 9 mm SQ (6/1/3.00) ACSR; FULLY GREASED; AERIAL CONDUCTOR UNINSULATED; Drum Size: (Flange x Barrel x Width) 850mm x 280mm x 620mm	HPA-SD-E-00020-01
4	**Hard Drawn Bare Copper (HDBC) Conductor**	
4.1	Short Description: WIRE ELECT 70 SQ HDBC 100M Technical Description: WIRE ELECT; 70 mm SQ (19/2.14) HDBC; AERIAL CONDUCTOR UNINSULATED; Drum Size: (Flange x Barrel x Width) 450 mm x 250 mm x 380 mm	HPA-SD-E-00023-01
5	**Steel Core Aluminium Clad or Galvanised (SC/AC OR SC/GZ) Conductor**	
5.1	Short Description: STRAND ELECT 5.93 SQ SC/AC 3000M Technical Description: WIRE ELECT; 5.93 mm SQ (3/2.75) SC/AC; AERIAL CONDUCTOR UNINSULATED; Drum Size: (Flange x Barrel x Width) 750 mm x 450 mm x 550 mm	HPA-SD-E-00021-01
5.2	Short Description: STRAND ELECT 10 SQ STAY SC/GZ 15M Technical Description: WIRE ELECT; 10 mm SQ (19/2.00) SC/GZ; AERIAL CONDUCTOR UNINSULATED; To be supplied in coil packaging Maximum Coil Diameter: 800 mm	HPA-SD-E-00022-01
5.3	Short Description: STRAND ELECT 13.8 SQ STAY SC/GZ 15M Technical Description: WIRE ELECT; 13.8 mm SQ (19/2.75) SC/GZ; AERIAL CONDUCTOR UNINSULATED; To be supplied in coil packaging Maximum Coil Diameter: 800 mm	HPA-SD-E-00022-01

APPENDIX G. STANDARD TIMBER DRUM DIMENSIONS

Construction Details for Standard Timber Drum with Barrel end Supports (2 to 6 Tonne)

Drum reference number (arranged in ascending order of barrel diameter)	Flange details		Barrel details											Overall drum width (excl. bolt projections) (mm)	Spindle hole diameter (mm)
	Diameter (mm)	Nominal thickness (mm)	Diameter (mm)	Internal width (mm)	End support minimum thickness (mm)	Stretchers		Number of diagonal crow braces	Bolts		Minimum boar thickness (mm)	Number of intermediate supports	Square washers (or equivalent round washers)		
						Number	Size (mm)		Number	Minimum diameter (mm)					
700 / 400 / 300	700	35	400	300	25	3	100 × 35		3	8	19		40 × 4	370	60
700 / 400 / 400	700	35	400	400	25	3	100 × 35		3	8	19		40 × 4	470	60
800 / 400 / 350	800	35	400	350	25	3	100 × 35		3	8	19		40 × 4	420	60
800 / 400 / 450	800	35	400	450	25	3	100 × 35		3	8	19		40 × 4	520	60
900 / 500 / 500	900	45	500	500	35	4	100 × 35		4	12	32		50 × 4	590	60
900 / 500 / 600	900	45	500	600	35	4	100 × 35		4	12	32		50 × 4	690	60
1000 / 500 / 550	1000	45	500	550	35	4	100 × 35		4	12	32		50 × 4	640	95
1000 / 700 / 650	1000	45	700	650	35	4	100 × 35		4	12	32		50 × 4	740	95
1100 / 600 / 650	1100	45	600	650	35	4	100 × 35		4	12	32		50 × 4	740	95
1200 / 600 / 650	1200	60	600	650	35	4	100 × 35		4	12	32		50 × 4	770	95
1200 / 600 / 800	1200	60	600	800	35	4	100 × 35		4	12	32		50 × 4	920	95
1200 / 800 / 550	1200	60	800	550	35	5	100 × 35		5	12	32		50 × 4	670	95
1200 / 800 / 700	1200	60	800	700	35	5	100 × 35		5	12	32		50 × 4	820	95
1300 / 900 / 800	1300	70	900	800	35	5	100 × 35		5	12	32		75 × 6	940	95
1400 / 700 / 750	1400	70	700	750	35	4	200 × 35		4	12	32		75 × 6	890	95
1400 / 1000 / 900	1400	70	1000	900	35	6	200 × 35		6	16	32		75 × 6	1040	95
1600 / 800 / 750	1600	70	800	750	35	5	200 × 35		5	16	32		75 × 6	890	95
1600 / 1100 / 850	1600	70	1100	850	35	6	200 × 35		6	16	32		75 × 6	990	95
1600 / 1100 / 1100	1600	70	1100	1100	35	6	200 × 35		6	16	32	1	75 × 6	1240	95
1600 / 800 / 950	1600	70	800	800	35	5	200 × 35		5	16	32	1	75 × 6	1090	95
1800 / 900 / 950	1800	70	900	950	35	5	200 × 35		5	16	32	1	75 × 6	1090	110
1800 / 900 / 1200	1800	70	900	1200	35	5	200 × 35		5	12	32	2	75 × 6	1340	110

Drum reference number (arranged in ascending order of barrel diameter)	Flange details		Barrel details											Overall drum width (excl. bolt projections) (mm)	Spindle hole diameter (mm)
	Diameter (mm)	Nominal thickness (mm)	Diameter (mm)	Internal width (mm)	End support minimum thickness (mm)	Stretchers		Number of diagonal crow braces	Bolts		Minimum boar thickness (mm)	Number of intermediate supports	Square washers (or equivalent round washers)		
						Number	Size (mm)		Number	Minimum diameter (mm)					
1800 / 1200 / 1000	1800	70	1200	1000	35	6	200 × 35		6	16	32	1	75 × 6	1140	110
2000 / 1000 / 950	2000	70	1000	950	35	6	200 × 35		6	16	32	1	75 × 6	1090	110
2000 / 1000 / 1200	2000	70	1000	1200	35	6	200 × 35		6	16	32	2	75 × 6	1340	110
2000 / 1400 / 1150	2000	70	1400	1150	35	8	200 × 35	4	8	16	32	1	75 × 6	1290	110
2200 / 1100 / 950	2200	70	1100	950	35	6	200 × 35	4	6	16	32	1	75 × 6	1090	110
2200 / 1100 / 1300	2200	70	1100	1300	35	6	200 × 35	4	6	16	32	2	75 × 6	1440	110
2200 / 1500 / 1300	2200	70	1500	1300	35	8	200 × 35	4	8	16	32	2	75 × 6	1440	110
2400 / 1200 / 1400	2400	95	1200	1400	35	6	200 × 35	4	6	16	32	2	75 × 6	1590	110
2400 / 1400 / 1200	2400	95	1400	1200	35	8	200 × 35	4	8	16	32	2	75 × 6	1390	110
2400 / 1400 / 1400	2400	95	1400	1400	35	8	200 × 35	4	8	16	32	2	75 × 6	1590	110
2600 / 1400 / 1300	2600	95	1400	1300	35	12	200 × 35	6	12	16	32	2	75 × 6	1490	110
2600 / 1600 / 1300	2600	95	1600	1300	35	12	200 × 35	6	12	16	32	2	75 × 6	1490	110
2800 / 1600 / 1200	2800	110	1600	1200	35	12	200 × 35	6	12	22	32	2	75 × 6	1420	110
2800 / 1800 / 1400	2800	110	1800	1400	35	12	200 × 35	6	12	22	32	2	75 × 6	1620	110
3000 / 1600 / 1200	3000	110	1600	1200	35	12	200 × 35	6	12	22	32	2	75 × 6	1420	110
3000 / 1800 / 1400	3000	110	1800	1400	35	12	200 × 35	6	12	22	32	2	75 × 6	1620	110

APPENDIX H. SPECIFICATION DRAWINGS

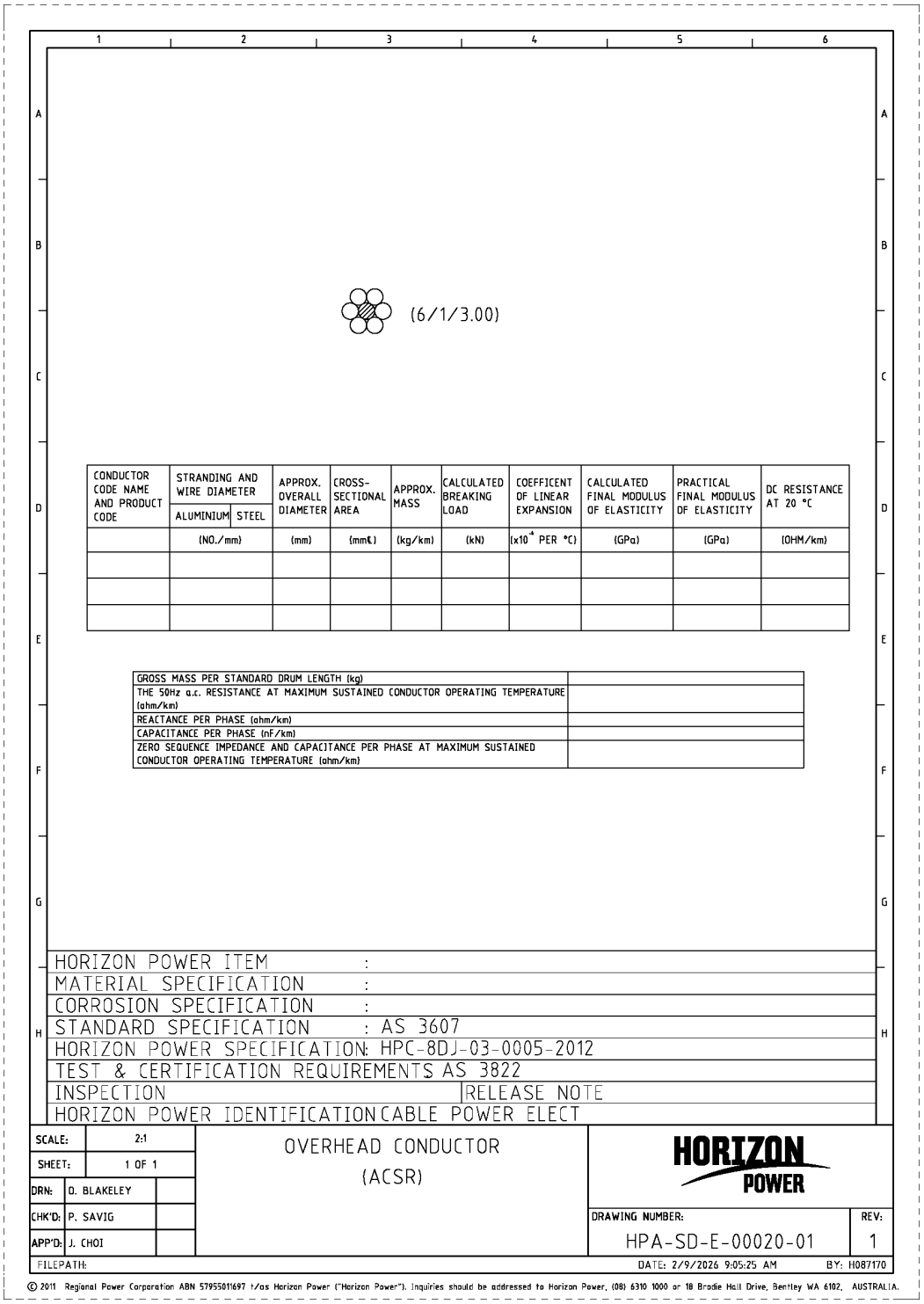

Figure 1 - HPA-SD-E-00020-01 (ACSR Conductor)

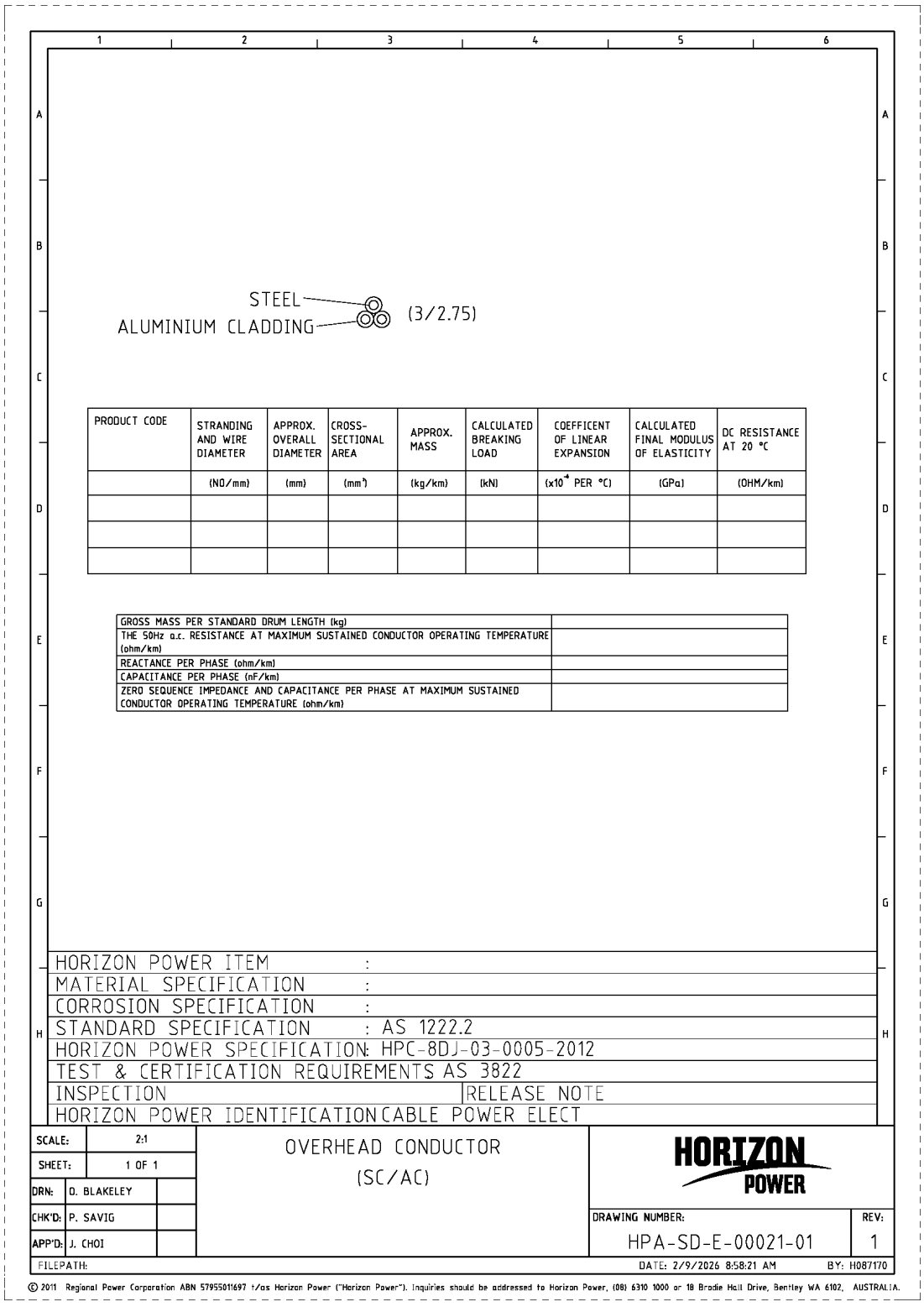

Figure 2 - HPA-SD-E-00021-01 (SC/AC Conductor)

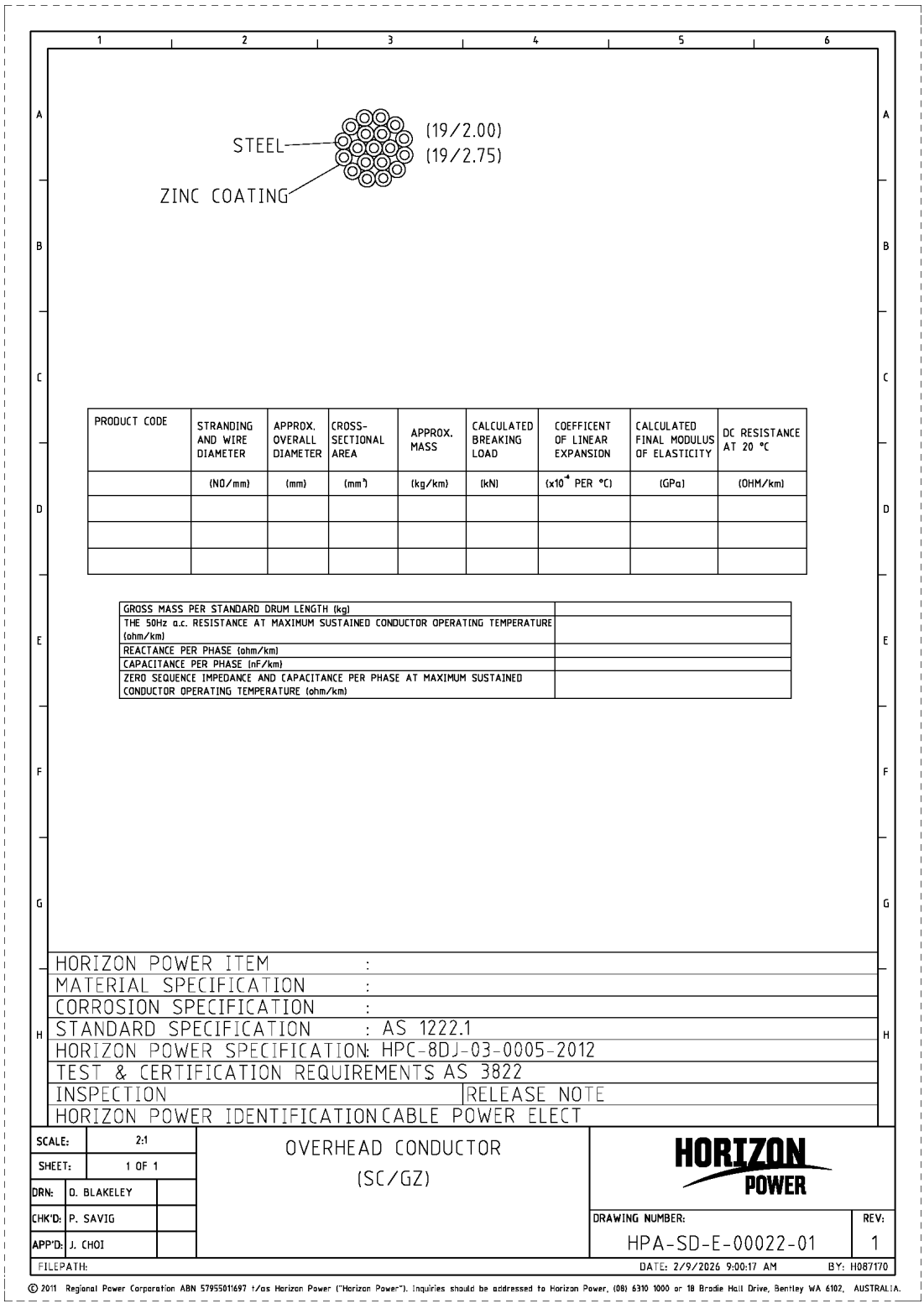

Figure 3 - HPA-SD-E-00022-01 (SC/GZ Conductor)

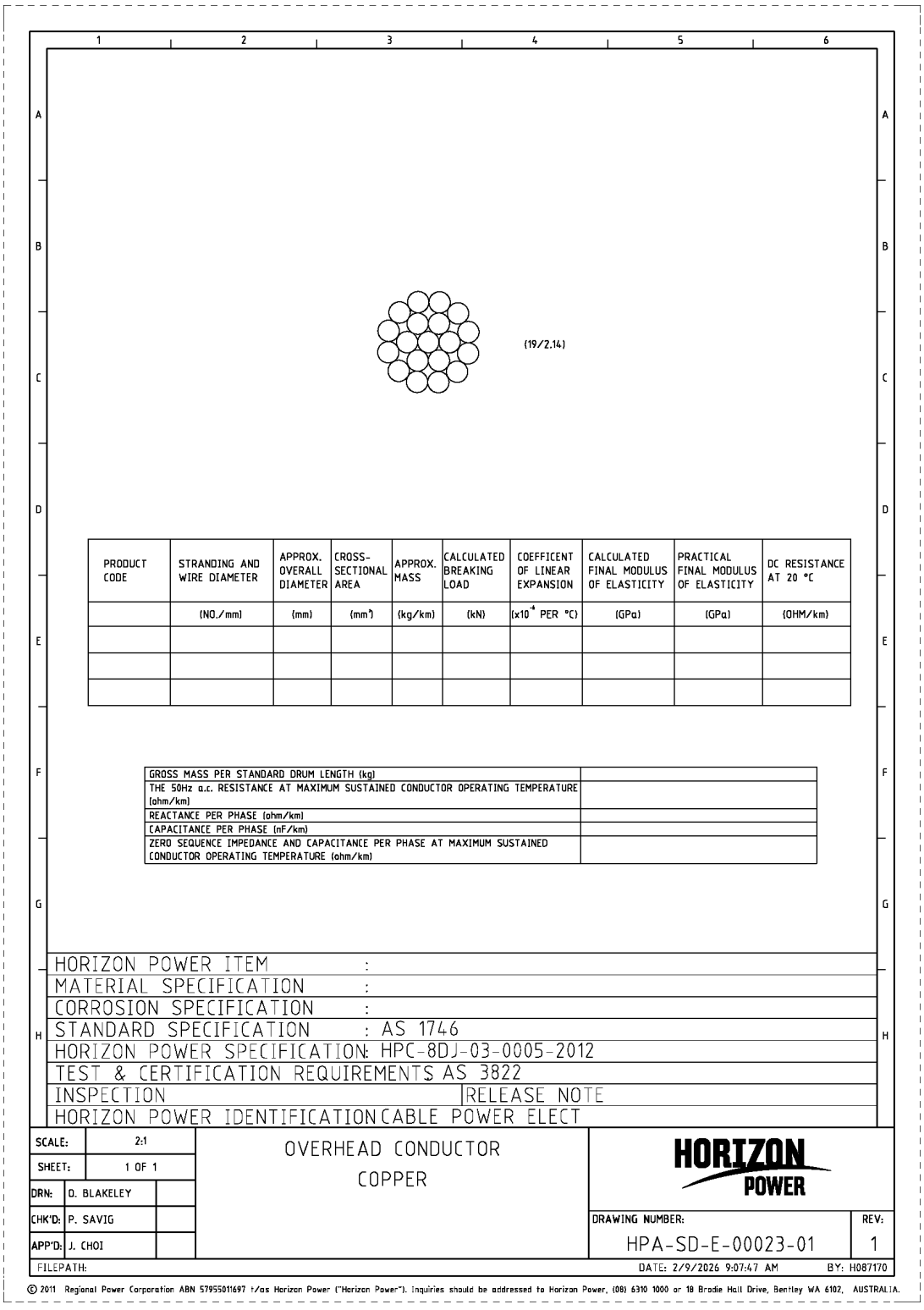

Figure 4 - HPA-SD-E-00023-01 (Copper Conductor)

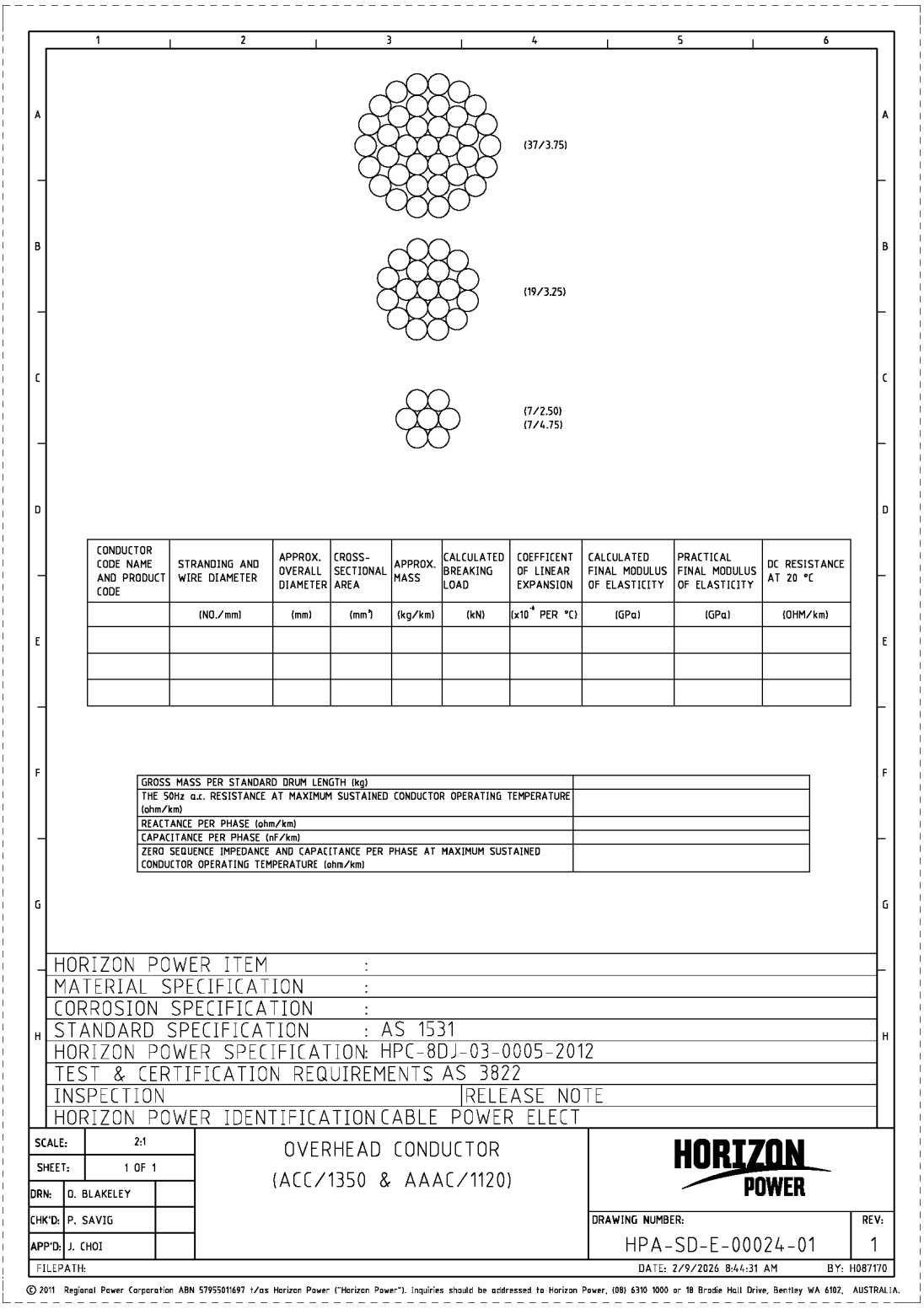

Figure 5 - HPA-SD-E-00023-01 (AAC/1350 & AAAC/1120)