ANNEXURE 1:

Mandatory Requirements & Technical Evaluation Criteria

1. Introduction

The intention of this document is to:

- Provide evaluation criteria for submissions of the High Temperature Low Sag (HTLS) conductor awareness workshops (theoretical classroom sessions and practical demonstrations)
- Submissions will be technically evaluated based on two criteria, that is mandatory information and functional requirements. Please refer to Section 3.1 for Table A.1 and Annexure A for Table A.2. Table A.1 indicates the Mandatory requirements, and the functionality requirements are indicated in Table A.2.

This note confirms that the technical evaluation for submissions of the HTLS conductor awareness workshops (theoretical classroom sessions and practical demonstrations) will be conducted in 2 stages:

- **Stage 1:** Evaluation of mandatory requirements (Section 3.1)
- **Stage 2:** Functional requirements - Evaluation and scoring (Section 3.2.1 and Section 3.2.2)

2. Supporting clauses

2.1 Scope

The purpose of this document is to describe the criteria which are to be used when evaluating tender submissions for the HTLS conductor awareness workshops (theoretical classroom sessions and practical demonstrations)

2.1.1 Purpose

This document consists of the technical evaluation criteria on which suppliers will be assessed. Passing submissions will be considered technically compliant. A minimum score of 50% is required for suppliers to pass this phase of the project.

3. Technical Tender Evaluation Procedure

Section 3.1, Section 3.2.1 and Section 3.2.2 require responses from suppliers and will be evaluated accordingly. The technical evaluation procedure is specific to each type of high temperature low sag (HTLS) conductor. The items include, but are not limited to, composite cores, alloyed cores, steel core and high temperature mechanically compacted ACSR (plastically deformed) conductor technology submissions.

Note - A type of conductor technology is referring to the overall model of the conductor, including the core and stranding. Example; an HTLS conductor with a solid composite core and a concentric stranding is considered a different technology to the HTLS conductor with a solid core and trapezoidal stranding. Likewise, a solid composite core and a stranded composite core are considered different conductor technologies. The same is implied for alloyed core, steel core and high temperature mechanically compacted ACSR (plastically deformed) conductor technologies.

Section 3.1 refers to mandatory information. Supplier submissions with a “No” response to either one or all of the questions will be disqualified. Furthermore, omission of either one or all of the questions will also result in disqualification.

Section 3.2.1, information is to be submitted for a particular HTLS technology type **closest to 3 diameter equivalent conductors, ACSR Chickadee, IEC 315, and ACSR Tern conductors**.

Section 3.2.2 focuses on a questionnaire for the submitted conductor technology.

In order to pass the technical assessment, the minimum score of 50% must be achieved for each of the functional assessment sections. That is, a minimum score of 50% for section 3.2.1 and a minimum score of 50% for section 3.2.2 is required. Submissions that do not meet the minimum required threshold of 50% for each section will be considered non-compliant.

Note: Suppliers are not limited to submit one type of HTLS conductor technology. Should suppliers provide different conductor technology submissions, sections 3.1 , 3.2.1 and 3.2.2, for each technology submission will be evaluated independently. This implies that different conductor technology submissions will be evaluated and assessed individually and treated as separate submissions.

Evaluation Stages

The technical evaluation of any potential supplier will be in two stages for this phase of the project. **This two stage approach** will entail:

1. **The evaluation of the mandatory responses**. Suppliers who submit this information will thereafter proceed to the functional scoring assessment. Omission of mandatory information will result in disqualification.
2. **Evaluation of functional requirements and scoring.** A minimum score of 50% is required for section 3.2.1 and a minimum score 50% is required for section 3.2.2, for successful candidates. Passing submissions will be considered **technically compliant.**

During this process, the tender documentation submitted by **potential suppliers are evaluated against the criteria listed in Table A.1 (Section 3.1), Table A.2 and Table A.3 outlined in Annexure A of this report**. Sections 3.1, 3.2.1 and 3.2.2 are indicated in this document. The Eskom evaluating representatives will go through the details of the returnable submissions that are required and will, firstly, ensure that the mandatory criteria are met. Omission of Mandatory information will result in disqualification. The supplier/s will thereafter not proceed to the functional scoring assessment.

Returnable information and Mandatory list

3.1 Mandatory Requirements

In order for the suppliers to progress to the functional scoring assessment, mandatory information indicated in Table A.1 must be provided. **Please refer to Table A.1 for information on mandatory requirements.**

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Table A.1 – Mandatory Information

Column 1	Column 2	Column 3
	Yes/No	If Yes to Column 2
1.1 Is information on the **construction processes** when installing the conductor available? **If Yes please refer to Column 3.**		Please provide detailed information on the processes, such as the use of running blocks and pulleys. Submission of a stringing and regulating method statement is advised. The method statement must clearly describe the construction process when installing the conductor, from start to the end of construction. Please provide the following information as part of the stringing and regulating method statement: • Correct equipment to be used such as tensioner, drums, running blocks, pulley and pilot wires. • Diagrams of the suggested positioning of conductor drums behind the tensioner, maximum angle of deviation (offset angle) between center line of tensioner and conductor drums, distance between drums and tensioner etc. • Details on the regulation / clamping in of conductor to the tower (dead – ending of the conductor) • Recommended pulling speed during stringing. • Technical details for tensioner and puller, including braking operation during stringing. • Details on the pilot wires that can be used for the different types of conductors. • Drawing showing the attachment of the pilot wire to the conductor bundle, including the pulling sock and swivel **Note :** When providing information on stringing and regulating, please make reference to the tower outline drawings attached in the Annexure B of this document. These are the, 518 self-support and strain towers and the guyed towers (520B Guyed Vee and 529C cross rope structures)
1.2 Is there information on the **installation methods of the conductor?** This includes installation processes for the conductor to conductor and conductor to hardware jointing processes. Jointing processes for the core and stranding to be provided.. **If Yes please refer to Column 3.**		If yes, please provide specifications and methods for installation. Please provide the following information as part of the specification: • Drawings for: mid span joints, compression dead-ends, spacer dampers and clamps. • Information on bolted and/or preformed type, rigid spacers for jumpers, repair sleeves etc. must also be provided. • Material used for manufacture. • Mechanical strength of end fittings • Any special inserts required for end – fittings.

3.2 Functional Assessment – Technical evaluation

Sections 3.2.1 and Section 3.2.2 includes the functional requirements. Should the Mandatory requirements be met, submissions will be evaluated based on responses to Section 3.2.1 (Table of inputs) and Section 3.2.2 (Questionnaire). **Please refer to Annexure A, Table A.2 for the evaluation criteria of the functional requirements.**

3.2.1 Table Inputs

Please provide the following information:

Description: Eskom requires information on HTLS conductors that can match or are closest in diameter size to the conventional ACSR conductors. The ACSR conductors and their diameters that are mentioned in row 1 of **Table A3.**, Error! Reference source not found. Error! Reference source not found. **and** Error! Reference source not found. are:

- ACSR Chickadee – 18.87 mm
- ACSR IEC 315 – 23.90 mm
- ACSR Tern – 27.00 mm

Table A3. refers to information required for HTLS ***composite core conductors***, **Error! Reference source not found.** refers to ***alloyed core conductors*** and **Error! Reference source not found.** refers to ***steel core conductors*** and Table A.3.2.4 refers to the **high temperature mechanically compacted ACSR (plastically deformed) conductor technology** . Please **populate the tables with the relevant HTLS conductor information**. The HTLS conductor should be equivalent to or closest in diameter size to the ACSR/IEC conductor diameter mentioned in the column heading of the table. The required stranding information is also indicated in the column heading of the tables.

Example – An HTLS diameter equivalent conductor to ACSR Tern should have a diameter close to 27.00 mm. The information for the diameter equivalent HTLS conductor should be provided.

Ampacity ratings – Information to be provided based on the weather conditions provided (page 18)

*This is the maximum amount of current that a conductor can handle under normal continuous operation. The following deterministic weather conditions have to be considered, for the calculation of a rating at 75° C, 90° C and 150˚C. Please indicate what the maximum operating temperature that the conductor is rated for and indicate the weather condition parameters used to obtain this rating.

Weather Conditions to be used for ampacity rating calculations at 75˚C, 90˚C and 150˚C

Wind speed - 0.40m/s
Wind direction – 90° (across the conductor direction)
Solar- 1120 W/m^2
Ambient temperature- 40°C

Diameter equivalent conductors

This refers to the overall outer diameter of the conductor, which mostly serves as an input to wind loading calculations on a tower, but also has a bearing on the corona performance.

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Table A3.2.1 Composite core conductors

Overall diameter in mm Type of Core and stranding	18.87 Solid core, Concentric stranding	18.87 Solid core Trapezoidal stranding	18.87 Stranded core, Concentric stranding	18.87 Stranded core Trapezoidal stranding	23.90 Solid core, Concentric stranding	23.90 Solid core Trapezoidal stranding	23.90 Stranded core, Concentric stranding	23.90 Stranded core Trapezoidal stranding	27.00 Solid core, Concentric stranding	27.00 Solid core Trapezoidal stranding	27.00 Stranded core, Concentric stranding	27.00 Stranded core Trapezoidal stranding	Comments
IEC Code													
Composite core equivalent conductor													
Conductor overall diameter (mm)													
Core diameter (mm) and strand diameter (if applicable)													
Aluminum strand diameter (mm)													
Total Area (mm^2)													
Area of core or composite (mm^2)													
Area of Aluminium (mm^2)													
Total mass (kg/km)													
Mass of core (kg/km)													
Mass of Aluminium (kg/km)													
UTS (Kn)													
Roughness factor if available													
Ampacity Rating * 75˚ 90˚ 150˚ Max operating temp													

***Please refer to section 3.2.1, page 5. Ampacity ratings to be calculated based on the environmental conditions provided.**

Mechanical inputs/ PLS Cad inputs													
ALCAN chart equivalent													
Final modulus of elasticity of outer strands(Mpa/100)													
Final modulus of elasticity of core (Mpa/100)													
Thermal expansion coefficient for outer strands (/100 °)													
Thermal expansion coefficient for core (/100 °)													
Polynomial coefficients for stress-strain in outer strands. Strain in %. Stress in Mpa. a_0,a_1 a_2,a_3													
Polynomial coefficients for stress-strain in the core. Strain in %. Stress in Mpa. b_0,b_1 b_2,b_2													
Polynomial coefficients for creep in outer strands. Strain in %. Stress in Mpa. c_0,c_1 c_2,c_3													

Polynomial coefficients for creep in the core. Strain in %. Stress in Mpa. d_0,d_1 d_2,d_3													
Thermal ratings													
DC resistance at 20°C(ohm/km)													
DC Resistance at 180°C (ohm/km)													
DC Resistance at 200°C(ohm/km)													
Emissivity coefficient													
Solar absorption coefficient													
Core heat capacity (Watt-s/m-˚ C)													
Outer strands heat capacity (Watt-s/m-˚ C)													

Table A3.2.2- Alloyed core conductors

Overall diameter in mm Type of Core and stranding	18.87 Solid core, Concentric stranding	18.87 Solid core Trapezoidal stranding	18.87 Stranded core, Concentric stranding	18.87 Stranded core Trapezoidal stranding	23.90 Solid core, Concentric stranding	23.90 Solid core Trapezoidal stranding	23.90 Stranded core, Concentric stranding	23.90 Stranded core Trapezoidal stranding	27.00 Solid core, Concentric stranding	27.00 Solid core Trapezoidal stranding	27.00 Stranded core, Concentric stranding	27.00 Stranded core Trapezoidal stranding	Comments
IEC Code													
Composite core equivalent conductor													
Conductor overall diameter (mm)													
Core diameter (mm) and strand diameter (if applicable)													
Aluminum strand diameter (mm)													
Total Area (mm^2)													
Area of core or composite (mm^2)													
Area of Aluminium (mm^2)													
Total mass (kg/km)													
Mass of core (kg/km)													
Mass of Aluminium (kg/km)													
UTS (Kn)													
Roughness factor if available													
Ampacity Rating * 75˚ 90˚ 150˚ Max operating temp													

***Please refer to section 3.2.1, page 5. Ampacity ratings to be calculated based on the environmental conditions provided.**

Mechanical inputs/ PLS Cad inputs													
ALCAN chart equivalent													
Final modulus of elasticity of outer strands(Mpa/100)													
Final modulus of elasticity of core (Mpa/100)													
Thermal expansion coefficient for outer strands (/100 °)													
Thermal expansion coefficient for core (/100 °)													
Polynomial coefficients for stress-strain in outer strands. Strain in %. Stress in Mpa. a_0,a_1 a_2,a_3													
Polynomial coefficients for stress-strain in the core. Strain in %. Stress in Mpa. b_0,b_1 b_2,b_2													
Polynomial coefficients for creep in outer strands. Strain in %. Stress in Mpa. c_0,c_1 c_2,c_3													

Polynomial coefficients for creep in the core. Strain in %. Stress in Mpa. d_0,d_1 d_2,d_3													
Thermal ratings													
DC resistance at 20°C(ohm/km)													
DC Resistance at 180°C (ohm/km)													
DC Resistance at 200°C(ohm/km)													
Emissivity coefficient													
Solar absorption coefficient													
Core heat capacity (Watt-s/m-˚ C)													
Outer strands heat capacity (Watt-s/m-˚ C)													

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Table A3.2.3 – Steel core conductors

Overall diameter in mm Type of Core and stranding	18.87 Solid core, Concentric stranding	18.87 Solid core Trapezoidal stranding	18.87 Stranded core, Concentric stranding	18.87 Stranded core Trapezoidal stranding	23.90 Solid core, Concentric stranding	23.90 Solid core Trapezoidal stranding	23.90 Stranded core, Concentric stranding	23.90 Stranded core Trapezoidal stranding	27.00 Solid core, Concentric stranding	27.00 Solid core Trapezoidal stranding	27.00 Stranded core, Concentric stranding	27.00 Stranded core Trapezoidal stranding	Comments
IEC Code													
Composite core equivalent conductor													
Conductor overall diameter (mm)													
Core diameter (mm) and strand diameter (if applicable)													
Aluminum strand diameter (mm)													
Total Area (mm^2)													
Area of core or composite (mm^2)													
Area of Aluminium (mm^2)													
Total mass (kg/km)													
Mass of core (kg/km)													
Mass of Aluminium (kg/km)													
UTS (Kn)													
Roughness factor if available													
Ampacity Rating * 75˚ 90˚ 150˚ Max operating temp													

***Please refer to section 3.2.1, page 5. Ampacity ratings to be calculated based on the environmental conditions provided.**

Mechanical inputs/ PLS Cad inputs													
ALCAN chart equivalent													
Final modulus of elasticity of outer strands(Mpa/100)													
Final modulus of elasticity of core (Mpa/100)													
Thermal expansion coefficient for outer strands (/100 °)													
Thermal expansion coefficient for core (/100 °)													
Polynomial coefficients for stress-strain in outer strands. Strain in %. Stress in Mpa. a_0,a_1 a_2,a_3													
Polynomial coefficients for stress-strain in the core. Strain in %. Stress in Mpa. b_0,b_1 b_2,b_2													
Polynomial coefficients for creep in outer strands. Strain in %. Stress in Mpa. c_0,c_1 c_2,c_3													

Polynomial coefficients for creep in the core. Strain in %. Stress in Mpa. d_0,d_1 d_2,d_3													
Thermal ratings													
DC resistance at 20°C(ohm/km)													
DC Resistance at 180°C (ohm/km)													
DC Resistance at 200°C(ohm/km)													
Emissivity coefficient													
Solar absorption coefficient													
Core heat capacity (Watt-s/m-˚ C)													
Outer strands heat capacity (Watt-s/m-˚ C)													

Table A3.2.4 - High temperature mechanically compacted ACSR (plastically deformed) conductor technology

Overall diameter in mm Type of Core and stranding	18.87 Solid core, Concentric stranding	18.87 Solid core Trapezoidal stranding	18.87 Stranded core, Concentric stranding	18.87 Stranded core Trapezoidal stranding	23.90 Solid core, Concentric stranding	23.90 Solid core Trapezoidal stranding	23.90 Stranded core, Concentric stranding	23.90 Stranded core Trapezoidal stranding	27.00 Solid core, Concentric stranding	27.00 Solid core Trapezoidal stranding	27.00 Stranded core, Concentric stranding	27.00 Stranded core Trapezoidal stranding	Comments
IEC Code													
Composite core equivalent conductor													
Conductor overall diameter (mm)													
Core diameter (mm) and strand diameter (if applicable)													
Aluminum strand diameter (mm)													
Total Area (mm^2)													
Area of core or composite (mm^2)													
Area of Aluminium (mm^2)													
Total mass (kg/km)													
Mass of core (kg/km)													
Mass of Aluminium (kg/km)													
UTS (kN)													
Roughness factor if available													
Ampacity Rating * 75˚ 90˚ 150˚ Max operating temp													

***Please refer to section 3.2.1, page 5. Ampacity ratings to be calculated based on the environmental conditions provided**

Polynomial coefficients for creep in the core. Strain in %. Stress in MPa. d_0,d_1 d_2,d_3													
Thermal ratings													
DC resistance at 20°C(ohm/km)													
DC Resistance at 180°C (ohm/km)													
DC Resistance at 200°C(ohm/km)													
Emissivity coefficient													
Solar absorption coefficient													
Core heat capacity (Watt-s/m-˚ C)													
Outer strands heat capacity (Watt-s/m-˚ C)													

Mechanical inputs/ PLS Cad inputs													
ALCAN chart equivalent													
Final modulus of elasticity of outer strands(MPa/100)													

Final modulus of elasticity of core (MPa/100)													
Thermal expansion coefficient for outer strands (/100 °)													
Thermal expansion coefficient for core (/100 °)													
Polynomial coefficients for stress-strain in outer strands. Strain in %. Stress in MPa. a_0,a_1 a_2,a_3													
Polynomial coefficients for stress-strain in the core. Strain in %. Stress in MPa. b_0,b_1 b_2,b_2													
Polynomial coefficients for creep in outer strands. Strain in %. Stress in MPa. c_0,c_1 c_2,c_3													

3.2.2 Questionnaire

- **Mechanical information**

3.2.2.1 Populate Section 3.2.1 of the report and provide cable files to be used in software programs used to calculate creep and sag? If this cannot be provided now, will the supplier provide this information to Eskom if they are successful and nominated by Eskom to provide HTLS conductor awareness workshops (theoretical classroom sessions and practical demonstrations)

3.2.2.2 Does the core of the conductor require the use of standard ACSR hardware and fittings or are different hardware and fittings required?

3.2.2.3 Indicate the type of grease used for hardware attachments?

3.2.2.4 What detection methods should be used or followed to determine the mechanical integrity of the conductor once installed? Parameters to be checked include (but is not limited to) corrosion, internal damage due to conductor mechanical vibration etc.

3.2.2.5 What are the proposed methods of condition monitoring of the conductor? State the estimated lifespan of the conductor and under what conditions is this based on?

3.2.2.6 What are the recommended gripping technologies to be used during different stringing activities if the conductor needs to be pulled to the correct tension during regulating? As an example; provide guidelines for construction clamps to be used and how they differ compared to equipment used for ACSR conductors.

3.2.2.7 What are the handling characteristics to adhere to in terms of bending radius and tension compared to ACSR conductor?

3.2.2.8 Are the repair procedures for the conductors different to that of ACSR? Please provide supporting documentation.

3.2.2.9 When routine tensile tests are performed on Eskom conductors the guidelines of IEC 61089 are followed. Do we continue following the same specification for HTLS conductor, alternatively provide the relevant specification(s) to be used?

3.2.2.10 Provide confirmation of compatibility of conductor and hardware for electrolytic corrosion when exposed to marine pollution to at least C5 corrosion level. Please refer to ISO12944.

3.2.2.11 Please provide historical documentation or references from utilities regarding the performance and maintenance of the conductor? Maintenance procedures to be clearly indicated.

- **Electrical information**

3.2.2.12 Has the conductor been tested for corona performance? If yes, please provide test reports stating which conductor surface temperatures and environmental conditions the tests were conducted at. Also, what was the maximum conductor electric field surface gradient (kV/cm)?

3.2.2.13 If available, please provide the roughness factor for the conductor.

- **Test reports and standards**

3.2.2.14 Have the conductors been tested in an independent accredited testing laboratory? Certificate to be provided.

3.2.2.15 Show evidence of Type testing of the HTLS conductor in accordance to applicable IEC standards. Latest type test report to be submitted.

3.2.2.16 Show evidence of Sample testing of the HTLS conductor on each individual product in accordance to applicable IEC standards. Sample test report to be submitted.

3.2.2.17 Show evidence of Production testing of the HTLS conductor on each individual product in accordance to applicable IEC standards. Production sample test report to be submitted.

3.2.2.18 Show evidence of material checking and verification from raw to final product stages. Report or certificate to be provided.

If standards other than IEC have been used, please provide this information. If possible, attach test certificates.

- **Construction Information**

3.2.2.19 Provide transportation and handling requirements for the conductors.

3.2.2.20 Please include minimum storage protocols for the conductors when being stored on site before use.

3.2.2.21 Please include lifespan of conductors being stored in drums and provide damage mitigation measures to the core and strands?

3.2.2.22 Specify drum material type (wood, steel or either), and whether the drums can be stored outside, exposed to weather elements.

3.2.2.23 Is the disposal of the HTLS type of conductor different to the disposal of ACSR conductors? If yes, please indicate the process that should be followed.

3.2.2.24 Indicate the requirements/certification required by individuals that partake in the construction activities? Please indicate the training and accreditation process to be followed.

- **Manufacturing (For information purposes only, not to be scored)**

3.2.2.25 Are the conductors manufactured in South Africa? Please indicate if the core and/or the conductive strands are manufactured/ produced in South Africa or if either needs to be imported? Please indicate the names of suppliers used in either case?

3.2.2.26 Has the organization previously conducted training on conductor installation processes and construction activities for South African contractors/installers?

3.2.2.27 Is there a facility in South Africa that does the conductor stranding? If not, please advise how this service will be provided?

3.2.2.28 What is the lead time for delivery? What are the possible risks that could impact the lead time?

3.3 Summary of Conductor Evaluation

- Submissions will first evaluated for Mandatory requirements, this is indicated in Table A.1 (Section 3.1). Should the mandatory requirements be met, the submissions will be assessed on the functional requirements. Functional requirements are indicated in Section 3.2.1 and Section 3.2.2. Table A.2 in Annexure A refers to the evaluation criteria of the functional requirements.
- Mandatory information should include the submission of a specification including installation methods and processes for the conductor and hardware jointing. A stringing and regulating methodology document to be submitted. Table A.1 provides further details.

The functional requirements should consist of but not be limited to:

- Submission of electrical inputs requested for either Tables A.3.2.1, A.3.2.2 , A.3.2.3 or A.3.2.4 of section 3.2.1.
- Submission of mechanical inputs and cable files for either Tables A.3.2.1, A.3.2.2 , A.3.2.3 or A.3.2.4 of section 3.2.1.
- Submission of thermal inputs requested for either Tables A.3.2.1, A.3.2.2 , A.3.2.3 or A.3.2.4 of section 3.2.1.

- Suppliers are not limited to providing one type of conductor submission. Different conductor technologies will be evaluated independently.
- Suppliers are expected to provide clear responses to all questions in section 3.2.2. Where indicated, supporting documents to be provided.
- Test reports, as part of the electrical and mechanical questionnaire, to be submitted. Standards followed to be provided.
- An indication of the manufacturing location and lead times to be provided (Eskom information purposes).

Note – Different technical responses may be submitted for different conductor technologies. Please provide information describing the technology. If a supplier submits different conductor technologies, the supplier should complete all sections for each type of technology. Eskom will evaluate the different technologies independently. The evaluation process will be followed.

Annexure A – Technical Evaluation scoring criteria

Table A.2 - Technical Evaluation Criteria

Item	Section Number	Description	Criteria	Total Score /Section	Breakdown of Scoring (Based on the submission of 1 type of conductor technology
1.1	Section 3.2.1	Electrical Inputs	Information provided for either table A.3.2.1, A.3.2.2, A.3.2.3, A.3.2.4	25.5	19.5 points (0.5 points per input , 6.5 points for submission of 13 inputs for 1 diameter equivalent conductor type, 19.5 points for submission of 3 diameter equivalent conductor types)
			Ampacity ratings submitted using the provided weather conditions.		6 points (0.5 points for each ampacity rating input, 2 points for 1 diameter equivalent conductor type , 6 points for submission of 3 diameter equivalent conductor inputs). Suppliers submitting inputs without using the Eskom environmental requirements will receive a score of 0.
1.2	Section 3.2.1	Mechanical Inputs	Mechanical inputs - Provision of Mechanical inputs and submission of cable files.	13.5	13.5 points (0.5 points per input , 4.5 points for submission of 9 inputs for 1 diameter equivalent conductor type, 13.5 points for submission of 3 diameter equivalent conductor types).
1.3	Section 3.2.1	Thermal Inputs	Thermal ratings	10.5	10.5 points (0.5 points per input , 3.5 points for submission of 7 inputs for 1 diameter equivalent conductor type, 10.5 points for submission of 3 diameter equivalent conductor types)
Maximum Score for Section 3.2.1				49.5	
1.4	Section 3.2.2	Mechanical Questionnaire	Responses	24.5	20 points (2 points per response, excluding Question 3.2.3.11)
			For 3.2.3.11 Please provide historical documentation or references from utilities regarding the performance and maintenance of the conductor. Maintenance procedures to be clearly indicated.		4.5 points (1 point for each reference letter, maximum 3 points) (1.5 points for maintenance procedures)
1.5	Section 3.2.2	Electrical Questionnaire	Responses	4	2 points per response
1.6	Section 3.2.2	Test reports and standards Questionnaire	Provision of test reports	10	10 points (2 point for each question, that is 1 point per response and 1 point for the submission of the supporting report or certificate per question)
1.7	Section 3.2.2	Construction Questionnaire	Responses	12	12 points (2 points per response)
1.8	Section 3.2.2	Manufacturing Questionnaire	This is for Eskom information. It is not a mandatory and the supplier will not be scored on this.		Information purposes
Maximum Score for Section 3.2.2				50.5	
Maximum Score for Sections 3.2.1 and 3.2.2				100	

- **Assessment Methodology**

The assessment will only be conducted:

- If the mandatory requirements indicated in section 3.1 have been met, sections 3.2.1 and 3.2.2 will be evaluated.
- In order to pass the technical assessment, the minimum score of 50% must be achieved for each of the requested sections. That is, a minimum score of 50% for section 3.2.1 and a minimum score of 50% for section 3.2.2 is required. Submissions that do not meet the minimum required threshold of 50% for each section will be considered non-compliant.
- Once the evaluation assessment is complete, suppliers will be considered technically compliant.

Table A.3 - Technical Scoring Assessment summary

<table>
<tr><th>Item</th><th>Section Number</th><th>Description</th><th>Final Scoring/Desktop</th><th>Scoring /Section</th><th>Criteria</th></tr>
<tr><td>3.1</td><td>Section 3.1</td><td>Mandatory Information</td><td>Submitted or Not submitted</td><td>Yes/No</td><td>Must submit mandatory information in order to proceed</td></tr>
<tr><td>.1</td><td rowspan="3">Section 3.2.1</td><td>Electrical Inputs</td><td>Acceptably submitted/submitted</td><td>25.5</td><td rowspan="3">Must meet 50% threshold to proceed</td></tr>
<tr><td>1.2</td><td>Mechanical Inputs</td><td>Acceptably submitted/submitted</td><td>13.5</td></tr>
<tr><td>1.3</td><td>Thermal Inputs</td><td>Acceptably submitted/submitted</td><td>10.5</td></tr>
<tr><td>1.4</td><td rowspan="5">Section 3.2.2</td><td>Mechanical Questionnaire</td><td>Acceptably submitted/submitted</td><td>24.5</td><td rowspan="4">Must meet 50% threshold to proceed</td></tr>
<tr><td>1.5</td><td>Electrical Questionnaire</td><td>Acceptably submitted/submitted</td><td>4</td></tr>
<tr><td></td><td>Test reports and Standards</td><td>Acceptably submitted/submitted</td><td>10</td></tr>
<tr><td>1.6</td><td>Construction Questionnaire</td><td>Acceptably submitted/submitted</td><td>12</td></tr>
<tr><td>1.8</td><td>Manufacturing Questionnaire</td><td>Information Purposes</td><td>N/A</td><td>N/A</td></tr>
<tr><td colspan="4">Total</td><td>100</td><td></td></tr>
<tr><td colspan="4">Overall minimum threshold for qualifications</td><td>50</td><td></td></tr>
</table>

Annexure B – Tower Drawings

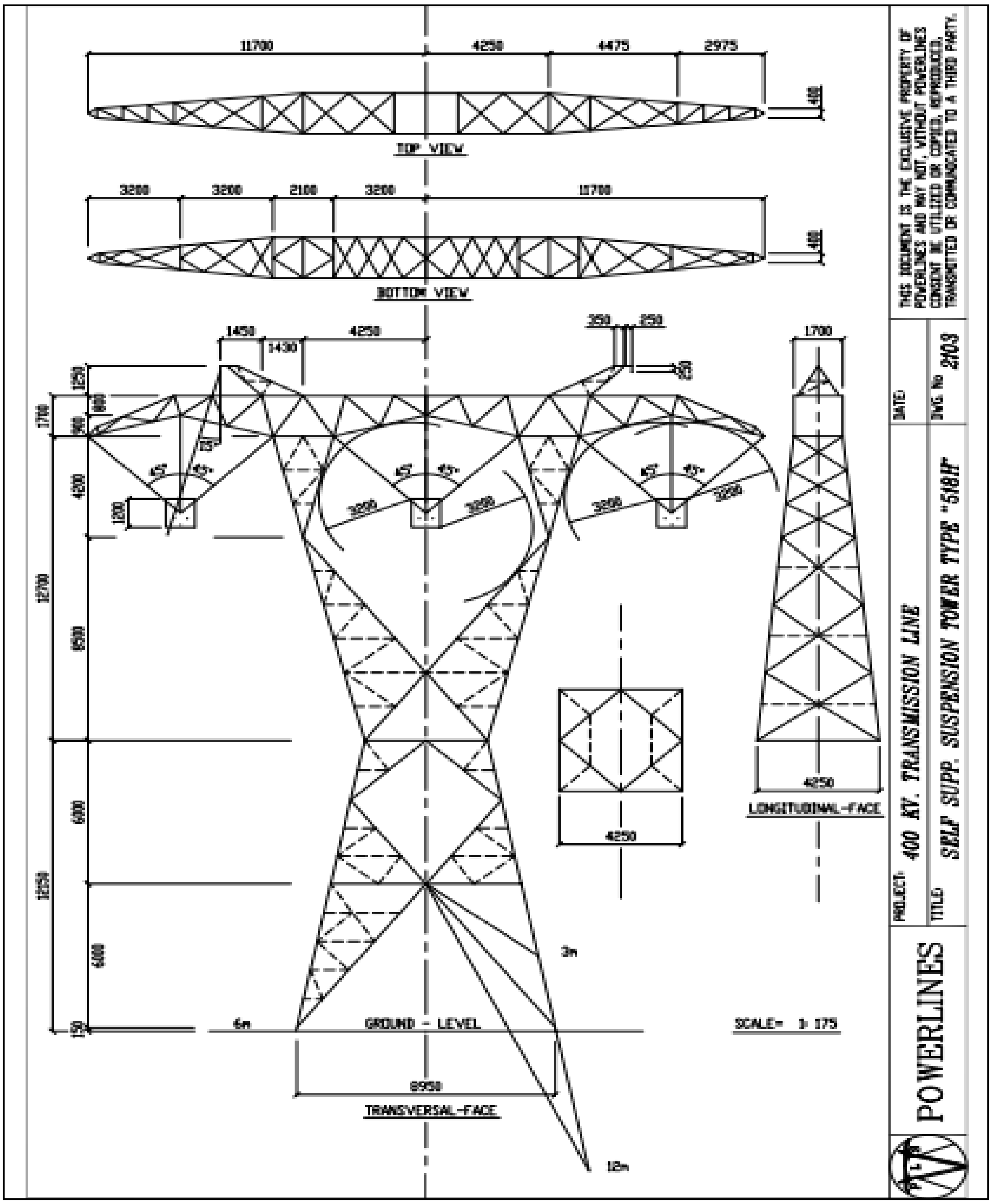

Figure B.1: **518H Self-support suspension structure outline drawing**

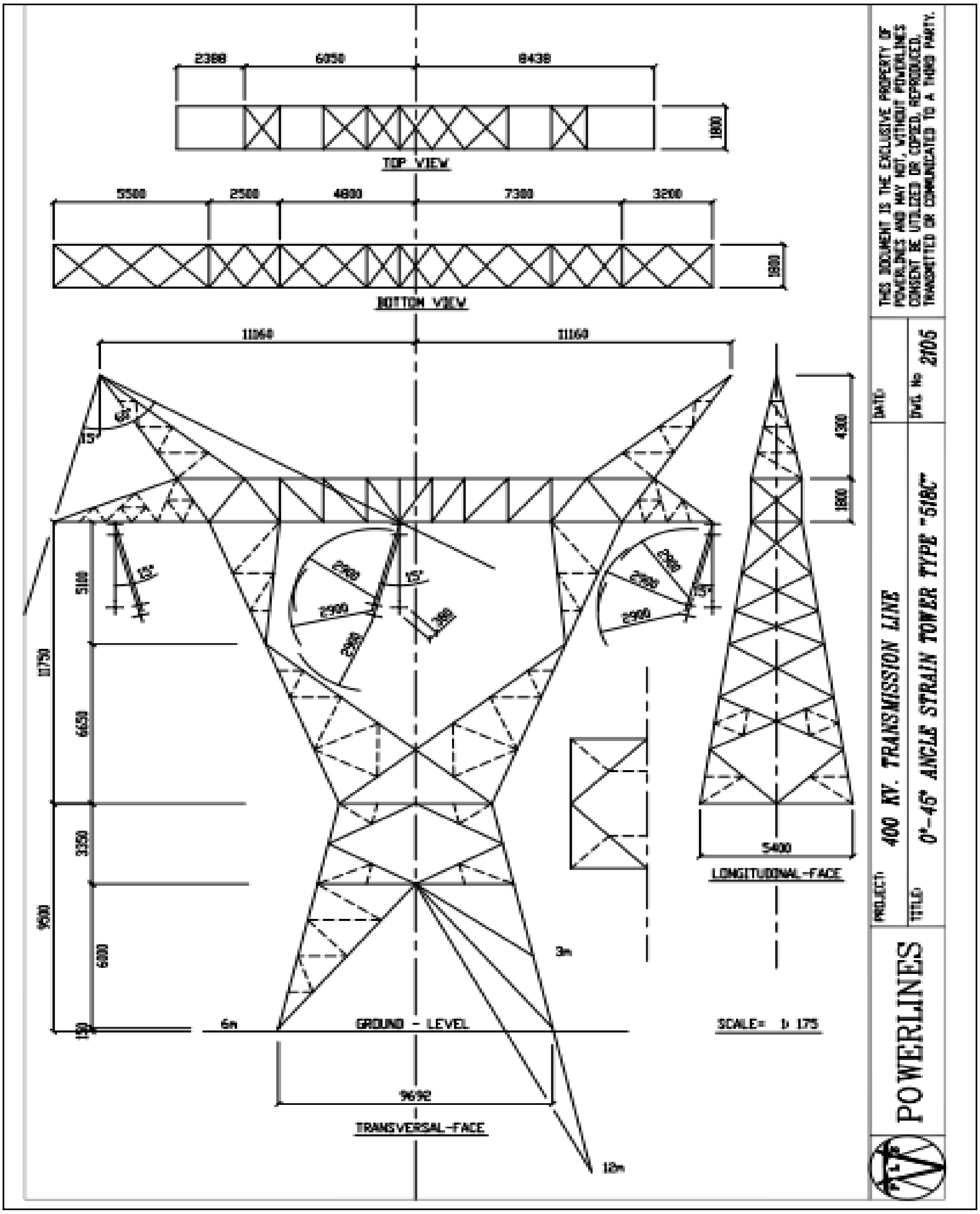

Figure B.2: 518C Self-support strain structure outline drawing

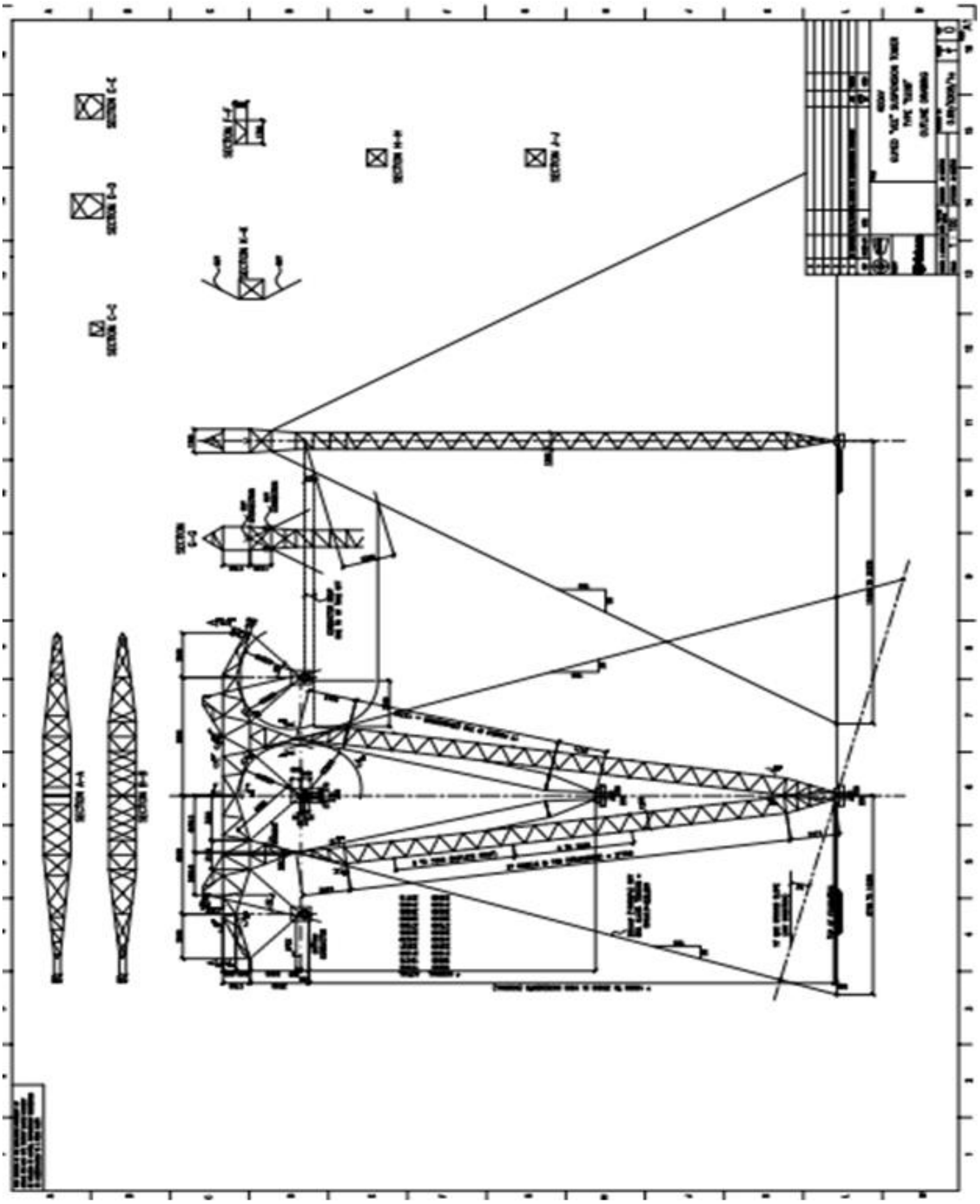

Figure B.3: 520B Guyed Vee structure outline drawing

Eskom

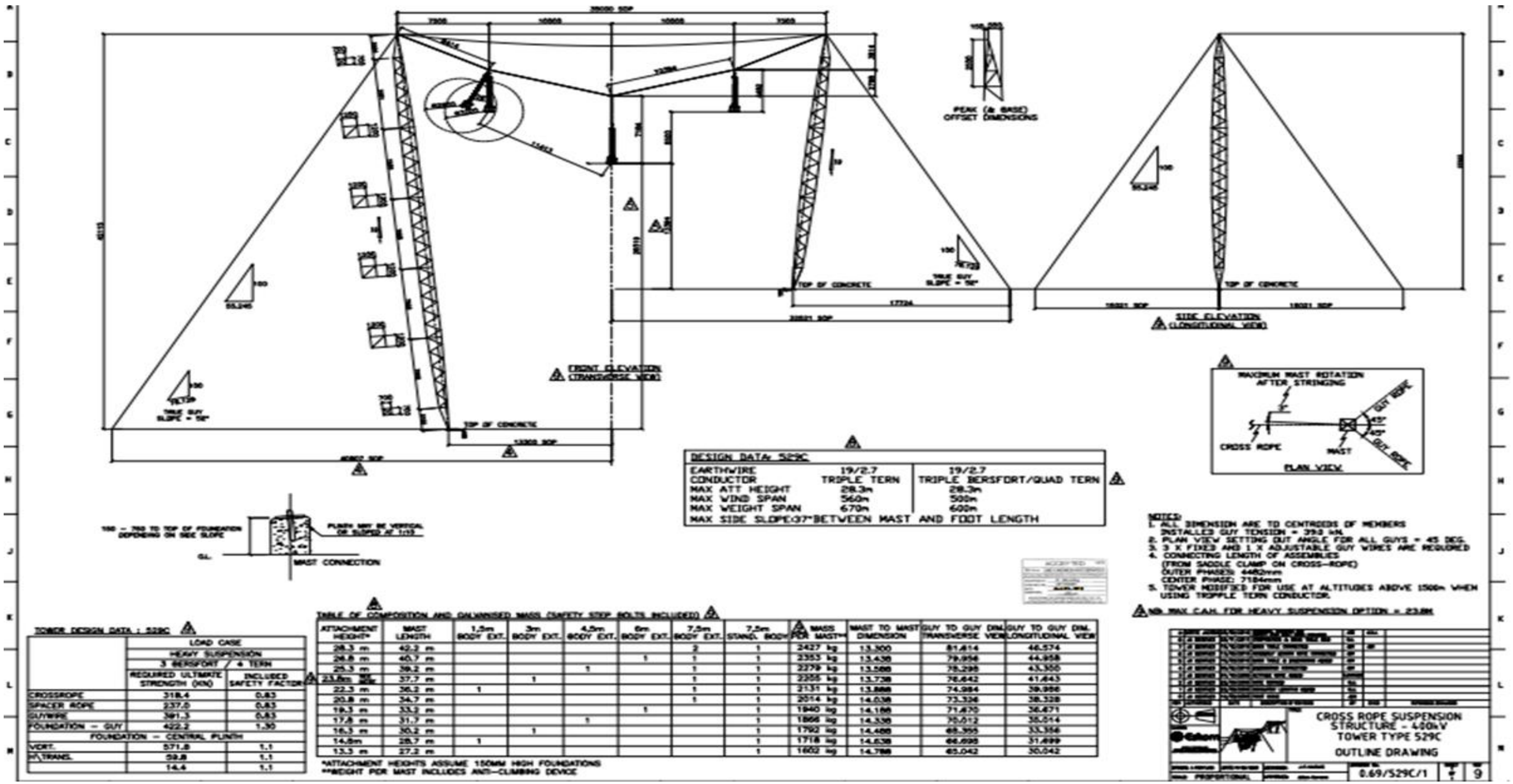

Figure B.4: 529C Guyed Cross rope structure outline drawing