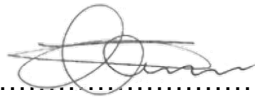


	Specification	Generation Engineering
---	----------------------	-------------------------------

Title: The identification of the connection point and parking bays for the EV project pilot phase at Matimba Power Station Technical Specification	Unique Identifier:	SP/174/003
	Alternative Reference Number:	N/A
	Area of Applicability:	Engineering
	Documentation Type:	Specification
	Revision:	3
	Total Pages:	21
	Next Review Date:	N/A
	Disclosure Classification:	CONTROLLED DISCLOSURE

Compiled by	Functional Responsibility	Authorised by
		
.....		
Electrical Engineer	Electrical Engineering Manager	Engineering Manager
Date: 2026-06-10	Date: 2026-06-18	Date: 2026/06/18

CONTENTS

	Page
1. INTRODUCTION	4
2. SUPPORTING CLAUSES	4
2.1 SCOPE	4
2.1.1 Purpose	4
2.1.2 Applicability	4
2.2 NORMATIVE/INFORMATIVE REFERENCES	4
2.2.1 Normative	4
2.2.2 Informative	5
2.3 DEFINITIONS	5
2.3.1 Disclosure Classification	5
2.4 ABBREVIATIONS	5
2.5 ROLES AND RESPONSIBILITIES	6
2.6 PROCESS FOR MONITORING	7
2.7 RELATED/SUPPORTING DOCUMENTS	7
3. TECHNICAL SPECIFICATION	7
3.1 TECHNICAL REQUIREMENTS	7
3.1.1 Details of Plant	7
3.1.2 Scope of Works	8
3.1.3 Design Requirements	8
3.1.4 Manufacturing Requirements	8
3.1.5 Construction Requirements	9
3.1.5.1 Survey and Site clearance	9
3.1.5.2 Protection of existing manhole cover	10
3.1.5.3 Civil engineering and structural works	10
3.1.5.4 Electrical engineering works	13
3.1.6 Temporary works, Site services & construction constraints related to:	15
3.1.7 Commissioning Requirements	16
3.1.8 Testing Requirements	16
3.1.9 Operating Requirements	16
3.1.10 Maintenance Requirements	16
3.1.11 Handover Requirements	16
3.1.12 Decommissioning Requirements	17
3.1.12.1 Removal of existing interlocking paving blocks	17
3.1.12.2 Removal of existing corrugated iron zinc parking roof sheets.	17
3.1.12.3 Removal of existing concrete kerbs	17
3.2 GENERAL REQUIREMENTS	18
3.2.1 Health & Safety requirements	18
3.2.2 Quality requirements	18
3.2.3 Environmental requirements	18
3.2.3.1 Cutting and removal of tree roots beneath the subbase	18
3.2.4 Documentation requirements	18
3.2.5 Plant codification	18
3.2.6 Plant labelling	19
3.2.7 Drawing requirements	19
3.2.8 Communication requirements	19
3.2.9 Other requirements (Process/Legislative/Contractual)	19
4. AUTHORISATION	19
5. REVISIONS	19
6. DEVELOPMENT TEAM	19
7. ACKNOWLEDGEMENTS	20

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

APPENDIX A : LIST OF DRAWINGS.....21

FIGURES

Figure 1: Identified EV charging infrastructure 8

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

1. INTRODUCTION

Eskom Generation (Gx) has initiated a project to replace its Internal Combustion Engine (ICE) fleet of vehicles with Electric Vehicles (EVs). The project objective is to achieve a more sustainable and environmentally friendly transportation system by reducing Eskom's vehicles CO₂ emissions contribution without compromising the respective vehicle requirements. This is planned to be achieved by transitioning from ICE vehicles to EVs and installing charging infrastructure at Gx Power Stations to support the transition.

EVs are still developing in terms of availability, performance, and infrastructure in South Africa. A pilot project is required to evaluate EV performance under local conditions, assess operational impacts and align with Eskom's emission reduction targets before rollout across the business.

Matimba Power Station is one of the sites chosen for the pilot phase of the project and required to provide a connection point for a charger and identification of parking bays for the charging station.

Gx Engineering has produced the ROC, SRD, EMAP and Site Scope of Work documents for the whole EV project that is informative and useful for the development of the site-specific documents. Matimba Power Station has developed site-specific ROC, SRD, and Concept Design Report. This document does not constitute a basic detailed design but rather highlights the key design elements of the connection point and parking bays.

2. SUPPORTING CLAUSES

2.1 SCOPE

The document covers the construction EV charging infrastructure and installation of power supply to the EV charger.

2.1.1 Purpose

The purpose of the Technical Specification is to specify the necessary criteria or technical requirements for the works or work activities of a project or any other undertaking that is to be carried out by a Contractor.

2.1.2 Applicability

This document shall apply to Matimba Power Station.

2.2 NORMATIVE/INFORMATIVE REFERENCES

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.2.1 Normative

- [1] ISO 9001 Quality Management Systems.
- [2] Occupational Health and Safety Act (Act 85 of 1993)
- [3] 240-56227443 Requirements for Control and Power Cables for Power Stations
- [4] 240-56355815 Field Instrument Installation Standard - Junction Boxes and Cable Termination
- [5] 240-56355754 Field Instrument Installation
- [6] 240-93576498 KKS Coding Standard
- [7] 240-86973501 Engineering Drawing Standard – Common Requirements
- [8] 240-76992014 Technical Document and Record Management Work Instruction

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

- [9] 240-56356396 Earthing and Lighting Protection Standard
- [10] 240-531136385 Design Review Procedure
- [11] 240-56227516 LV Switchgear and Control Gear Assemblies and Associated Equipment for Voltage up to and including 1000 AC and 1500V DC Standard
- [12] 240-77301384 Electrical LV Load Schedule Template
- [13] 240-56176097 Electrical Cable Schedule template
- [14] 240-56364545 Structural Design and Engineering Standard
- [15] SANS 10400-A The application of National Building Regulations-Part A: General principles and requirements
- [16] SANS 10400-L The application of National Building Regulations-Part L: Roofs
- [17] SANS 10160-Part 1 - Part 8

2.2.2 Informative

- [18] 240-53113685 Design Review Procedure
- [19] 240-43898151 Perform Verification and Validation
- [20] 240-53114002 Engineering Change Management Procedure
- [21] 32-421 - Eskom Life Saving Rules
- [22] 240-82410629 Environmental Management Strategy

2.3 DEFINITIONS

Electric Vehicles: An electric vehicle is a vehicle that uses electricity as a source of power and electric motors for moving. Electric vehicles cover a wide range of vehicles that used on the road, rail, water, air and space mediums. This project will focus on Battery Electric and Hybrids vehicles, prioritising the former.

Charging Infrastructure: An electric vehicle charging infrastructure is a system of charging stations or facilities to recharge electric vehicles. There are fast chargers (expensive Leve 3 DC type chargers) used at public and office locations and slow chargers (cheaper Level 2 AC type chargers) used in public and residential areas.

2.3.1 Disclosure Classification

Controlled disclosure: controlled disclosure to external parties (either enforced by law, or discretionary).

2.4 ABBREVIATIONS

Abbreviation	Description
AASHTO	American Association of State Highway and Transport Officials
AC	Alternating Current
CO ₂	Carbon Dioxide
ECSA	Engineering Council of South Africa
EV	Electric Vehicle
EMAP	Engineering Management Plan
GPR	Ground Penetrating Radar
Gx	Generation Business
ICE	Internal Combustion Engine

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

Abbreviation	Description
kA	Kiloamp
KKS	Kraftwerk-Kennzeichen System
LV	Low Voltage ($\leq 1000V$ AC)
mA	Milliampere
MCCB	Moulded Case Circuit Breaker
MPa	Megapascal
OEM	Original Equipment Manufacture
OHSA	Occupational Health and Safety Act
KKS	Kraftwerk-Kennzeichen-System
kW	Kilowatt (1000 Watt)
ROC	Required Operational Capability
SRD	Stakeholder Requirements Definition
QA	Quality Assurance

2.5 ROLES AND RESPONSIBILITIES

Person	Responsibility
Contractor	The Contractor shall design (to the extent specified in the Contract), execute and complete the Works in accordance with the Contract and with the Engineer's instructions, and shall remedy any defects in the Works.
Engineering Design Work Lead (EDWL)	He/she co-ordinates the design work provided by the discipline Design Engineering roles and integrates this work into a final integrated design product. He/she is the custodian of the requirements set, and the interface register between packages, and part of his/her role is to maintain this information. He remains responsible for the integrity of the engineering product and is accountable for the overall management of interfaces and delivery of an integrated product.
Lead Discipline Engineer (LDE)	The role of the Lead Discipline Engineering role is to manage the technical integrity of the design and be accountable for the management of the interfaces within their specific engineering domain
Site Construction Engineering Practitioner	The Site Construction Engineering role is part of the project engineering team and participates in conjunction with other team members of all disciplines in order to assure the technical integrity of a fully functional and operational plant that meets the user requirement and Eskom Engineering expectations and requirements. The Site Construction Engineering role is a key link to facilitate and ensure that the plant, is built and commissioned, is fully aligned with the Design Base, Operating Technical Specifications, and the Maintenance Base. The role provides an assurance function.

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

	Quality inspections, Final acceptance, sign-off and approval
Project manager/Contracts manager	The Project manager coordinates the execution of the Works to achieve the required cost, schedule and quality objectives. The Project manager is delegated authority from the Eskom Employer Representative to manage the defined scope of work.
Engineer	The Engineer is Eskom's representative(s) that ensure that the Technical Specification is captured in a Works Information as part of a contract for tendering purposes and officially communicates with the Contractor through the Contracts manager. The Engineer relays all technical information in the form of the processes prescribed in the Engineering Change Management Procedure as well as on site interaction and meetings to facilitate the resolution of all queries of a technical nature.
Quality Management	Quality ensures Contractors build plant according to quality procedures and contractual specifications, and user requirements and codes. Quality is the custodian of the Quality Management System and quality records and facilitates the work of the Approved Inspection Authority (AIA). The Quality Function's responsibility is to ensure Contractors have a sound quality system in place. Quality checks these systems on behalf of the Employer.

2.6 PROCESS FOR MONITORING

Not Applicable.

2.7 RELATED/SUPPORTING DOCUMENTS

- [23] RT/170/006 Required Operational Capability for Matimba Power Station Electric Vehicle Project
- [24] RT/170/007 Engineering Change Root Cause Analysis for Matimba Power Station Electric Vehicle Project Report
- [25] RT/174/004 Stakeholder Requirements Definition for Matimba Power Station Electric Vehicle Project
- [26] RT/174/003 Concept Design Report for the Identification of the Connection Point and Parking Bays for the EV Project Pilot Phase at Matimba Power Station

3. TECHNICAL SPECIFICATION

3.1 TECHNICAL REQUIREMENTS

Not Applicable.

3.1.1 Details of Plant

A site location has been identified within Matimba Power Station at the administration block car ports, with a functional location code 10-00SAG00BX001 as seen in Figure 1 below.

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

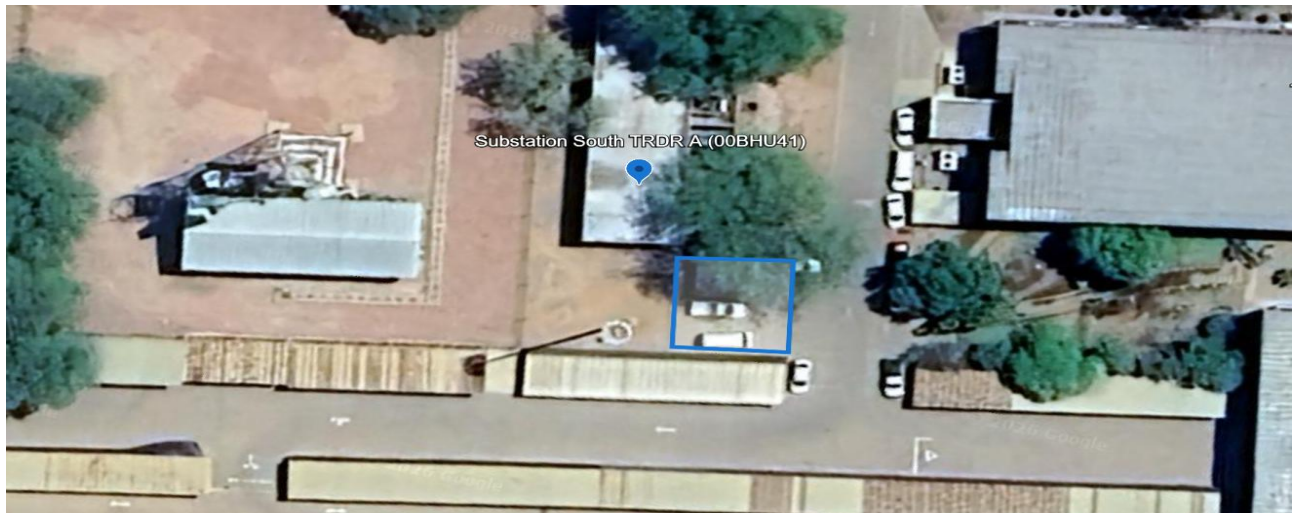


Figure 1: Identified EV charging infrastructure

The EV parking bay will have 2 parking ports.

DESCRIPTION	LENGTH (m)	WIDTH (m)
EV_1	5	3
EV_2	5	3
EV Charger (located space)	1.5	1.5

Each charging station will be connected to the Power Station Low Voltage network. The Power Station safety, operation and maintenance shall not be compromised by the installation of the chargers. Failure of any charger shall not lead to Unit load loss or Unit trip or Multiple Unit Trip.

3.1.2 Scope of Works

Electrical scope

- Refer to **section 3.1.5.4.**

Civil works scope

- Refer to **section 3.1.5.3.**

3.1.3 Design Requirements

All the Electrical Engineering design work is performed by the ECSA-registered Electrical Engineer appointed by the *Contractor* as defined in accordance with the requirements of the Engineering Council of South Africa.

All the Civil Engineering design work is performed by the ECSA-registered personnel (Technician, Technologies or Engineer) appointed by the *Contractor* as defined in accordance with the requirements of the Engineering Council of South Africa.

3.1.4 Manufacturing Requirements

Not Applicable.

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

3.1.5 Construction Requirements

Before any construction begins, both known and unknown underground services must be identified and either protected or relocated to prevent damage during excavation and construction activities. This step is critical to avoid service interruptions and ensure safety during the works.

This includes, but is not limited to, electrical cables, water pipelines, communication lines, and drainage systems.

3.1.5.1 Survey and Site clearance

The *Contractor* shall:

- Utilise approved detection methods such as ground-penetrating radar (GPR) or cable locators to accurately map service locations.
- Verify service positions against available as-built drawings and update records where discrepancies are found.
- Implement protective measures for all identified services, including physical barriers or rerouting where necessary to prevent accidental damage.
- Coordinate with relevant service owners for isolation or relocation of critical utilities prior to excavation.
- Document all findings and protective actions in Service Identification Report, which shall form part of the project handover documentation.

Failure to comply with these requirements may result in service disruption, safety hazards and contractual penalties.

Earthworks

The *Contractor* shall perform all earthworks necessary to prepare the EV parking bay area in accordance with project specifications. This includes:

- Clearing and Grubbing: Remove vegetation, debris, and unsuitable material from the designated area.
- Ground Preparation: Rip and scarify to a depth of 150 mm and consolidate to a minimum of 90% Modified AASHTO density.
- Compaction: Use suitable compaction equipment to achieve uniform density across the platform.
- Moisture Control: Maintain optimal moisture content during compaction to mitigate shrinkage/settlement and ensure density compliance.
- Dust Control & Disposal: Apply dust suppression; dispose of spoil at approved locations.

Testing Protocols – Earthworks

- In-situ Density & Moisture: Perform nuclear density gauge tests at a minimum frequency of 1 test per 50 m² per layer (or per each distinct work front/day, whichever yields more tests). Record wet density, dry density, and moisture content; target ≥ 90% Modified AASHTO.
- Re-work & re-test: Any area failing density/moisture criteria shall be reconditioned (re-wet/re-work or aerated), re-compacted, and re-tested until compliant.
- Test Records: Tabulate test locations (with grid references), dates, results, and corrective actions; include in the QA Handover Pack.

Soil poisoning

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

- Apply weed killer and soil insecticides under floors and shallow furrows as per supplier specifications to prevent vegetation and pests.

Testing/Verification – Soil Poisoning

- Application Certificates: Obtain and file the applicator's Method Statement, product Data Sheets, and Application Certificate indicating product, dosage, coverage rate, and date.
- Coverage Verification: Provide a site layout marked-up by the applicator confirming treated extents; include in QA Handover Pack.

3.1.5.2 Protection of existing manhole cover

- The Contractor shall identify the existing manhole located within or adjacent to the construction area.
- Implement protective measures such as temporary barriers, steel plates, or high-visibility markings to prevent mechanical damage during construction.
- Ensure access to the manhole is maintained throughout construction.
- No loads shall be placed on the manhole cover that exceed its design loading class.

3.1.5.3 Civil engineering and structural works

Detailed below is civil scope of work that the *Contractor* is required to perform and it is not limited to:

Installation of new parking shelter

The *Contractor* shall supply, fabricate, and install a new steel-framed parking shelter covering an area of **14 m × 7 m**, positioned over the designated EV parking bays. This work follows directly after the removal of existing roofing and kerbs described in Section 3.1.12.

Structural steel framework

- Supply and install hot-rolled or cold-formed steel beams, columns, and purlins suitable for outdoor carport structures.
- Steel sizing, connections, and spacing must comply with relevant SANS structural standards and Eskom facility requirements.
- All steel members shall be:
 - Hot-dip galvanised (minimum 80 µm coating) for corrosion protection.
 - Provided with base plates, anchor bolts, and stiffeners as required.
- The Contractor shall ensure alignment and plumbness during erection.

Foundation for steel columns

- Excavate foundation pits for steel columns in accordance with the structural design.
- Cast concrete footings (minimum 25–30 MPa unless otherwise specified).
- Install anchor bolts using approved templates to maintain correct spacing and vertical alignment.

Roof installation

- Supply and install corrugated iron roof sheets, matching or exceeding the profile and thickness of sheets removed earlier.
- Roof area: 14 m × 7 m = 98 m² (allowing for sheets overlap and trimming).
- Fix sheets to purlins using approved roofing fasteners with neoprene washers to prevent ingress.
- Install ridge capping, drip edges, and flashing to ensure weatherproofing.

Structural bracing & stability

- Provide wind bracing, horizontal ties, and moment connections as required by structural design.

CONTROLLED DISCLOSURE

- Ensure shelter design withstands local wind loads per SANS 10160.

Rainwater Management

- Install gutters and downpipes (if required by design) to divert water away from parking bays.
- Ensure that drainage aligns with the site drainage requirements outlined in Section 4.4.8.

Painting & finishes

- Apply corrosion-resistant top-coat paint where applicable (if not fully galvanised).
- Ensure colour and finish are consistent with existing structures at Matimba Power Station.

Safety & quality requirements

- All working at heights must comply with Eskom Safety Regulations and the OHS Act.
- Welders and structural steel installers must be certified.

Submit welding procedures, material test certificates, and erection method statements prior to works.

Cable Trenching

- Excavate a trench along the designated route from the switchgear panel to the EV charger location to accommodate the new power cable.
- The trench depth and width must comply with Generation Requirements for Control and Power Cables for Power Stations Standard, 240-56227443
- Provide a compacted sand bedding at the bottom of the trench to protect the cable.
- Lay the 120 mm², 4-core, PVC-insulated, PVC-bedded, steel wire armoured (SWA), PVC sheathed 600/1000 V cable, manufactured in accordance with SANS 1507-3, and install in compliance with Eskom Standard 240-56227443.
- Install protective covers (e.g., concrete slabs or cable tiles) above the cable and backfill with suitable material, ensuring proper compaction.
- Include warning tape above the protective layer to indicate the presence of electrical cables.
- Ensure the trench route maintains natural drainage and does not compromise structural integrity of the parking bay.

Layer works

The *Contractor* shall construct the paving platform in accordance with Eskom standards and project specifications. The process includes:

- Base preparation: Lay ± 25 –30 mm of concrete sand or river sand as a blinding layer to provide a uniform bedding surface.
- Paver installation: Place 80 mm grey interlocking paving blocks in a herringbone pattern to ensure structural stability.
- Joint filling: Fill joints with river sand to refusal, ensuring full penetration and locking of pavers.
- Edge restraints: Install edge restraints (kerbs or mortar) to prevent lateral movement of pavers.
- Alignment & levelling: Check alignment and level of pavers continuously during installation to maintain design slope and drainage requirements.
- Surface tolerances: Ensure deviations do not exceed 10 mm under a 3 m straightedge; correct any rocking or unevenness.
- Compaction of pavers: Perform vibratory compaction after joint filling to seat pavers firmly and stabilize the surface.
- Drainage considerations: Maintain crossfall and slope as per design to prevent water ponding.

CONTROLLED DISCLOSURE

- Cleaning & finishing: Sweep excess sand from the surface and ensure the area is free of debris before handover.

Testing Protocols – Layer works

- Thickness verification: Spot checks for blinding layer thickness at 1 per 50 m².
- Surface tolerances: Straightedge checks for levelness and slope compliance.
- Joint sand penetration: Random lift-and-check of pavers to confirm joint sand penetration.
- Compaction records: Document vibratory compaction passes and equipment used.

Finishes

The *Contractor* shall ensure that the final surface of the EV parking bay meets the required functional and aesthetic standards. This includes:

- Joint filling: Apply River sand over the interlocked paving blocks and sweep into joints until refusal to ensure full penetration and locking of pavers.
- Edge treatment: Use mortar or approved edge restraints at the perimeter to prevent lateral movement and maintain structural integrity.
- Surface cleaning: Remove excess sand, debris, and construction waste from the paved area before handover.
- Final compaction: Perform a final vibratory compaction pass after joint filling to stabilize the surface.
- Drainage compliance: Verify that the finished surface maintains the design slope and crossfall for effective drainage.
- Visual inspection: Ensure uniformity of colour, alignment, and absence of defects such as rocking pavers or open joints.

Testing/Verification – Finishes

- Straightedge Tolerance: Check surface evenness using a 3 m straightedge; deviations shall not exceed 10 mm.
- Joint Sand Penetration: Random lift-and-check of pavers to confirm joint sand penetration and absence of voids.
- Ride Quality: Confirm no rocking or lipping greater than 5 mm.
- Cleanliness: Document final cleaning and finishing in QA records.

Drainage

The Contractor shall ensure that the EV parking bay maintains proper drainage to prevent water accumulation and structural deterioration. This includes:

- Preserve Natural Slopes: Maintain existing site gradients and crossfalls unless otherwise specified in the design.
- Surface Profile Compliance: Ensure paving and plinth surfaces follow the design slope for effective runoff.
- No Ponding: Verify that water does not accumulate within the parking bays or adjacent areas.
- Integration with Existing Systems: Confirm that drainage paths tie into existing stormwater systems without obstruction.
- Protection During Construction: Implement temporary measures (e.g., berms or channels) to divert water away from work areas during construction.

CONTROLLED DISCLOSURE

Testing/Verification – Drainage

- Level Checks: Perform spot level surveys at corners, midpoints, and centre of each bay to confirm compliance with design slopes.
- Straightedge Tolerance: Use a 3 m straightedge to check surface evenness; deviations shall not exceed 10 mm.
- Functional Test: Conduct a water test (hose or water cart) to observe flow paths and confirm no ponding occurs within 15 minutes after wetting under calm conditions.
- Documentation: Record test results, corrective actions, and photographic evidence in the QA Handover Pack.

Concrete plinth

Location

- The plinth should be positioned at the identified EV parking bay within the administrative block carports (functional location 10-0UZD01)
- Ensure alignment with the cable trench route from Substation South to the charger location.

Formwork

- Construct robust formwork to the required dimensions for the charger base.
- Ensure formwork is level and adequate supported to prevent deformation during concrete pouring.

Casting Concrete (35MPa)

- Use concrete with a compressive strength of 35MPa as per Eskom structural standards.
- Ensure proper mixing and placement techniques to avoid segregation and honeycombing.

Cube tests

- Prepare and cure concrete cubes according to SANS 5863 for compressive strength testing.
- Test cubes at 7 and 28 days to confirm compliance with the 35 MPa requirement.

Curing Process

- Maintain moisture and temperature control for at least 7 days using wet hessian, plastic sheeting, or curing compounds.
- Prevent rapid drying to avoid shrinkage cracks and ensure strength development.

3.1.5.4 Electrical engineering works

The following provides a summary description of the EV Charger power supply infrastructure design outputs and parameters used to carry out the power supply design and the final design outcome:

The combo charger system:

- a. Model: BADC142-D.
- b. AC input voltage: 380V – 415V, 3P + N + PE.
- c. Rated input current: 240A.
- d. Input frequency: 50Hz
- e. Rated power: 142kW.

CONTROLLED DISCLOSURE

- f. Protection level: IP55
- g. Application place: Indoor/Outdoor

Detailed below is the electrical scope of work that the *Contractor* is required to perform and it is not limited to:

- Supply and install a junction box for the EV charger at the EV charger parking area provided by the employer. The junction box, shall be protected against corrosion, shall be IP 65 rated at minimum and an IK rating that accommodates site conditions according to SANS 10142 – 1, The wiring of premises: Low voltage installations standard. The junction box's final finish shall be orange. The junction box shall also be equipped with a mounting rail.
- Supply and install a 250A, 4-pole MCCB inside a junction box.
- Supply and install earthing on the junction box in accordance with Eskom Earthing and lightning protection Standard, 240-56356396.
- Supply and install LED canopy luminaire, 150 W, ≥ 120 lm/W, 4000 K, SANS/SABS approved, IP66 min, IK08 (IK10 preferred) including driver and mounting kit lighting, under the EV parking roof.
- Supply and install a 120 mm², 4-core, PVC insulated, PVC bedded, steel wire armoured (SWA), PVC sheathed 600/1000 V cable from Substation South in accordance with Generation Requirements for Control and Power Cables for Power Stations Standard, 240-56227443. The termination will be done on the 01BHN05AA001 / 01BHN06AA001 panel, 380V Substation South Board A.
- Excavate a trench along the designated route from the switchgear panel 01BHN05AA001 / 01BHN06AA001 at Substation South to the MCCB at the EV charger location to accommodate the new power cable.
- Provide a compacted sand bedding at the bottom of the trench to protect the cable.
- Install protective covers (e.g., concrete slabs or cable tiles) above the cable and backfill with suitable material, ensuring proper compaction.
- Supply and install a cable KKS.
- Terminate the installed power cable at both the switchgear and the junction box in accordance with Generation Requirements for Control and Power Cables for Power Stations Standard, 240-56227443.
- Perform a continuity test on the cable.
- Supply and install KKS labels on the 01BHN05AA001 / 01BHN06AA001 panel at Substation South, the junction box and the power cable in accordance with KKS Coding Standard, 240-93576498.
- Update the red-lined drawings
 - General arrangement drawing for 380V Substation South Board A and B: 0.58/13192 Rev 6
 - Summary Sheet 380V Substation South Board A – 0.58/13192 Rev 4
 - 380V Substation South Board A and B Switchgear Schedule – 0.58/56223 Rev 0
 - 380V Substation South Board A Cable block diagram – 0.58/13639 Rev 6)

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

- Provide the CoCs, where needed.
- Provide all electrical drawings.

Junction box accessories

The junction box accessories to be supplied and installed are not limited to the following:

- 250A, 4-pole MCCB
- Type C MCB, 10 A (lighting circuit protection)
- Copper conductor, 3-core + earth, 2.5 mm² (T&E or 3-core SWA where required)
- 63A Earth Leakage

Qualification and experience

The *Contractor* must have the following:

- 5 years' relevant experience in electrical installations of LV systems (switchgears, cables, earthing and bonding systems) with National Diploma or N6 Certificate in electrical Engineering or equivalent qualification, electrical trade test certificate
- 5 years' relevant experience as an Installation Electrician with N3 qualification, as a minimum, and registration with Department of Employment and Labour as an Installation Electrician.

The *Contractor* must also demonstrate the understanding of the scope by providing the method statement for the Electrical works.

3.1.6 Temporary works, Site services & construction constraints related to:

Accommodation of traffic

The *Contractor* shall implement temporary traffic management measures to ensure safe and efficient movement of vehicles and personnel during construction activities.

These measures shall include, but are not limited to:

- Temporary traffic control measures such as portable STOP and GO signs must be implemented to maintain safe traffic flow during construction.
- Coordination with site security and operations teams to minimize disruption to normal traffic patterns within the power station.
- Compliance with Eskom safety standards and applicable road traffic regulations for temporary traffic control.
- Continuous monitoring and adjustment of traffic control measures based on site conditions and construction progress.

Failure to comply with these requirements may result in service disruption, safety hazards and contractual penalties.

Site services and facilities

The Employer provides the Contractor with ablution, water and electricity facilities for site establishment preparation.

Facilities provided by the Contractor

- The *Contractor* shall provide all the necessary equipment for the site establishment in order for him/her to commence with the construction works of the EV parking bay.

CONTROLLED DISCLOSURE

3.1.7 Commissioning Requirements

Use the *Contractor's* commissioning checklist to document all steps, test results, and any defects.

Installation: Confirm secure mounting, correct wiring, and proper closure per the manufacturer's manual.

Safety Tests: Perform earthing/grounding, RCD (Residual Current Device) tests, insulation resistance tests, and ground fault protection verification.

Power: Verify correct voltage, current, and supply phase.

Compliance: Ensure all work adheres to relevant international (IEC 61851-1) safety and performance standards.

3.1.8 Testing Requirements

Visual Inspection: Check for cable damage, frayed wires, bent pins, and secure connections.

Insulation Resistance: Verify high resistance between live parts and earth.

Earth Loop Impedance: Check for low impedance to ensure fault currents clear quickly.

3.1.9 Operating Requirements

Operating requirements include:

- Operating manual

3.1.10 Maintenance Requirements

Maintenance requirements for the works includes:

- Spares list
- Maintenance tasks definition
- In service inspection and test requirements
- Maintenance periodicities and triggers
- Maintenance manual

3.1.11 Handover Requirements

The *Contractor* shall compile and submit a complete QA Handover Pack to the *Employer* upon completion of the works. This pack shall include, but is not limited to:

- Inspection & Test Plans (ITPs): Approved ITPs for all civil works, electrical installations, and associated activities.

Test Records:

- Earthworks: In-situ density and moisture test results, locations, and corrective actions.
- Layer works: Thickness checks, straightedge tolerance results, joint sand penetration verification.
- Cable Trenching: Bedding and backfill compaction results, trench depth verification, and photographic evidence of protective layers and warning tape.
- Concrete Plinth: Cube test results (7-day and 28-day), slump test records, curing logs, and dimensional checks.

Calibration Certificates:

- For all testing equipment (nuclear density gauge, slump cone, scales, etc.).

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

Material Compliance Documentation:

- Delivery notes and certificates for sand, pavers, concrete, and cable.
- Product data sheets and application certificates for soil poisoning chemicals.
- As-built drawings: Updated drawings showing trench routes, parking bay layout, drainage slopes, and plinth dimensions.

Photographic Records:

- Before, during, and after construction stages.
- Key milestones such as cable protection installation, paving completion, and drainage verification.

Service Identification Report:

- Documenting all existing services detected and protection measures implemented.

Traffic Accommodation Records:

- Method statements and photographic evidence of temporary traffic control measures.

Safety Documentation:

- Safety Clearance Certificates, KKS labelling certificates, and environmental compliance records.

QA Completeness Review:

- Signed-off checklist confirming all quality requirements have been met.

Failure to provide a complete QA Handover Pack will result in delayed acceptance and may incur contractual penalties.

3.1.12 Decommissioning Requirements

The Contractor shall remove existing infrastructure within the footprint of the proposed EV parking bay and associated works. This includes, but is not limited to, the following:

3.1.12.1 Removal of existing interlocking paving blocks

- Carefully uplift and stockpile existing interlocking paving within the work area for disposal or reuse as directed by the Engineer.
- Remove and dispose of all underlying bedding material unsuitable for reuse.
- Ensure the exposed surface is free from debris before earthworks commence.

3.1.12.2 Removal of existing corrugated iron zinc parking roof sheets.

- Dismantle existing corrugated iron roofing sheets, including ancillary components such as purlins, fasteners and gutters where necessary.
- Conduct removal works in a controlled manner to avoid damage to adjacent structures, vehicles or personnel.
- Transport dismantled materials to an approved disposal facility or reuse area as instructed.

3.1.12.3 Removal of existing concrete kerbs

- Transport dismantled materials to an approved disposal facility or reuse area as instructed.
- Remove kerb bedding/mortar and dispose of waste material in compliance with environmental management protocols.
- Prepare edges for new kerb installation or edge restraints as per design.

CONTROLLED DISCLOSURE

3.2 GENERAL REQUIREMENTS

3.2.1 Health & Safety requirements

The *Contractor* shall adhere to the following Eskom procedures:

- 32-95 Environmental, Occupational Health and Safety Incident Management Procedure
- 240-62196227 Life- saving Rules.
- 32-1126 Eskom Smoking Policy
- 32-1134 Access Control at Eskom Premises

3.2.2 Quality requirements

The *Contractor* shall adhere to the ISO 9001 Quality Management Systems during installation, commissioning and testing.

- Witness and hold points during the termination of power cable.

3.2.3 Environmental requirements

3.2.3.1 Cutting and removal of tree roots beneath the subbase

- Identify and expose tree roots encountered during earthworks or subbase preparation.
- Cut and remove roots using approved horticultural and construction methods to avoid regrowth or structural damage.
- Backfill voids created by root removal with suitable compacted material to achieve required subbase integrity.

3.2.4 Documentation requirements

- Signal lists, load lists, cable and equipment schedules,
- Plant Layout and General arrangement drawings.
- Commission documentation: System commissioning procedures, safety clearance documentation, pre-commissioning inspection reports, etc.
- Testing documentation: All pre-commissioning tests, performance tests, acceptance testing and non-destructive testing, reports.
- Design report.
- Operating manuals and procedures.
- Maintenance manuals and procedures.
- Updated switchgear, general arrangement and cable block diagrams in Appendix A.
- Handover Documentation.

3.2.5 Plant codification

- All plant, material, equipment, and documentation supplied will be codified as per the current plant coding applied in existing system.
- KKS Coding and labelling of all Plant & Materials and documentation supplied is part of the Works and is the responsibility of the Contractor and shall be done in accordance with KKS Coding standard (240-93576498).

CONTROLLED DISCLOSURE

- The Employer shall supply the Contractor with the level 1 KKS codes. It is the responsibility of the Contractor/Manufacturer to populate the level 2 and 3 components, before any KKS coding is to be undertaken.

3.2.6 Plant labelling

- The Contractor shall manufacture and install labels according to the 240-71432150 Plant Labelling Standard.
- Any abbreviations to plant descriptions shall be prepared in accordance with the Employer's abbreviation standard, 240-109607332.

3.2.7 Drawing requirements

- The creation and control of all Engineering Drawings shall be in accordance with the latest revision of Engineering Drawing Standard 240-86973501.
- All required drawings shall be prepared in accordance with the requirements as specified in the Engineering Drawing Office and Engineering Drawing Standard 240-86973501.
- A drawing register which records the drawing's information shall be maintained by the Contractor.

3.2.8 Communication requirements

All communications will be done by email through the Project Manager, and a feedback meeting will be held daily.

3.2.9 Other requirements (Process/Legislative/Contractual)

Not Applicable.

4. AUTHORISATION

This document has been seen and accepted by:

Name & Surname	Designation
████████████████████	Senior Technician Civil
████████████████████	Senior Technician Engineering
████████████████████	Senior Supervisor Maintenance
████████████████████	Electrical Engineering Manager
████████████████████	Engineering Manager
████████████████████	Senior Advisor Project Planning

5. REVISIONS

Date	Rev.	Compiler	Remarks
November 2024	0.1	████████████████████	First draft issue for review by stakeholders.
April 2025	1	████████████████████	Final and accepted draft.
January 2026	2	████████████████████	Update of the electrical and civil scope.
May 2026	3	████████████████████	Update of the electrical and civil scope.

6. DEVELOPMENT TEAM

The following people were involved in the development of this document:

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

- ~~_____~~
- ~~_____~~
- ~~_____~~
- ~~_____~~

7. ACKNOWLEDGEMENTS

- Not Applicable.

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

APPENDIX A: LIST OF DRAWINGS

General arrangement drawing for 380V Substation South Board A and B: 0.58/13192 Rev 6

Summary Sheet 380V Substation South Board A – 0.58/13192 Rev 4

380V Substation South Board A and B Switchgear Schedule – 0.58/56223 Rev 0

380V Substation South Board A Cable block diagram – 0.58/13639 Rev 6

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.