



Scope of Work – Substation Engineering

Technology

Title: **Juno Namaqualand
Strengthening Phase 2: Civil
Scope of Work**

Unique Identifier:

Jun12P03-SE-D53

Alternative Reference Number:

N/A

Area of Applicability:

Engineering

Documentation Type:

Report

Revision:

1

Total Pages:

5

Next Review Date:

N/A

Disclosure Classification:

**CONTROLLED
DISCLOSURE**

Compiled by

**Thato Mathe
Senior Technologist (Civil)
Substation Engineering**

Date: 28-09-2021

Functional Responsibility

**Abdullah Kaka
Senior Engineer (Civil)
Substation Engineering**

Date: 29-09-2021

Authorised by

**Andile Maneli
Middle Manager (Civil)
Substation Engineering**

Date: 29 - 09 - 2021

CONTENTS

	Page
1. INTRODUCTION	3
2. REFERENCES	3
3. SCOPE OF WORK.....	3
3.1 REINFORCED CONCRETE FOUNDATIONS	3
3.2 STEELWORK-EQUIPMENT SUPPORTS	4
3.3 DRAINAGE.....	ERROR! BOOKMARK NOT DEFINED.
3.4 YARDSTONE	4
3.5 INSTALLATION OF EARTH TAILS AND ITS BONDING	4
4. DRAWINGS	4
5. AUTHORISATION.....	4
6. REVISIONS	4
7. DEVELOPMENTAL TEAM	5
8. ACKNOWLEDGEMENTS	5

CONTROLLED DISCLOSURE

When downloaded from the EDS database, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the Authorized Version on the database.

1. INTRODUCTION

Juno substation is located in the Northern Cape Operating Unit in Namaqualand area. The techno-economical options were explored to introduce redundancy to the Namaqualand customer load network (CLN). Juno substation has the 400kV yard that comprises of 3 x 400kV feeder and 2 x 400/132/22kV 120MVA transformer bays. A high strung Aluminium busbar arrangement was employed. In addition, correctly sized conductors were chosen to minimise the corona discharge at these ultra-high voltages.

This document provides the civil scope of work for the construction of the new 400kV feeder at the Juno substation.

2. REFERENCES

- [1] (240-55922824) - Substation Layout Design Guideline
- [2] Occupational Health and Safety Act (OHS Act) 85 of 1993
- [3] (0.54/393) – Earthing Standards
- [4] (0.54/390) – HV Yard Civil Work
- [5] (240-108982466) - Standard for HV Yard Stone in Eskom Substations
- [6] SANS 1200: Standardised Specification for Civil Engineering.
- [7] SANS 10162-1: The Structural Use of Steel
- [8] SANS 0100-1: The Structural Use of Concrete

3. SCOPE OF WORK

All construction is to be carried out in accordance with Eskom's Safety, Health and Environmental Specification.

The Civil Scope of Work involves the following:

3.1 REINFORCED CONCRETE FOUNDATIONS

- Construct reinforced concrete foundations for the following equipment and support:
 - Isolator
 - Circuit breaker
 - Label Support
 - Pantograph Isolator

CONTROLLED DISCLOSURE

When downloaded from the EDS database, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the Authorized Version on the database.

- Post Insulator
- Current transformer
- Earth switch
- Line Trap
- Surge arrestor
- CVT

3.2 STEELWORK-EQUIPMENT SUPPORTS

- Supply, assemble and install steel supports for all the equipment.

3.3 YARDSTONE

- Remove yard stone for the construction and reinstate later.

3.4 INSTALLATION OF EARTH TAILS AND ITS BONDING

Install earth connections to the main earthmat for the foundations and equipment.

4. DRAWINGS

- For all the referenced foundation and steelwork drawings, including earthmat and earth tails, refer to the following drawings:
 - Jun12P03-SE-E13 sheet 5 and sheet 5A.

5. AUTHORISATION

This document has been seen and accepted by:

Name	Designation
Abdullah Kaka	Senior Engineer - Civil
Andile Maneli	Middle Manager - Civil

6. REVISIONS

Date	Rev.	Compiler/s	Remarks
September 2021	1	Thato Mathe	First Issue

CONTROLLED DISCLOSURE

When downloaded from the EDS database, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the Authorized Version on the database.

7. DEVELOPMENTAL TEAM

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

- Thato Mathe

8. ACKNOWLEDGEMENTS

None

CONTROLLED DISCLOSURE

When downloaded from the EDS database, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the Authorized Version on the database.