

ANNEXURE C3.2: SCOPE OF WORKS

ROAD REHABILITATION – ZUIKERBOSCH PUMPING STATION

Project overview

The works comprise of rehabilitation and maintenance of existing internal roads and the excavation, repair, and installation of stormwater infrastructure at the Zuikerbosch Pumping Station.

The Contractor shall supply all labour, materials, plant, tools, equipment, supervision, and temporary works necessary to complete the works in accordance with this Scope of Works, relevant SANS standards, and good engineering practice.

PART 1: STORMWATER PIPE EXCAVATION, REPAIR, AND INSTALLATION

1. Excavation and Exposure of Existing Stormwater Pipe

- The Contractor shall excavate and expose the existing steel stormwater pipe to a depth of approximately 4.0 m; the estimated volume of excavation is 2 622 m³.
- Prior to commencement of all excavations, the contractor shall identify, locate, and verify all existing underground services, including but not limited to:
 - Electrical cables
 - Signal cables
 - Water pipes
 - Other buried services
- Excavations shall only commence once the Rand Water excavation clearance (**Form ZB SHEQ 00031 F**) has been approved and the Department of Labour notification of excavation has been signed, as the excavation depth exceeds 1.5 m. The form shall be provided by the client representative.
- The contractor shall be fully responsible for the protection of all known services and for the repair and reinstatement of any damage caused during the execution of the works.
- Excavations shall be adequately supported and protected to:
 - Prevent sidewall collapse

- Ensure the safety of personnel
- Prevent damage to existing infrastructure, including the existing 800 mm diameter pipe

2. Backfilling of Excavated Area (Prior to New Pipe Installation)

Backfilling shall be carried out in layers as follows:

- Place a 150 mm thick layer of in-situ roadbed material, compacted to a minimum of 93% Mod AASHTO.
- Place a 150 mm thick layer of G7 material, compacted to a minimum of 93% Mod AASHTO.
- Continue backfilling with G7 material, placed and compacted in 150 mm layers, until the level of the exposed stormwater pipe is reached.

3. Stormwater Pipe Supply and Installation

3.1 Pipe Specification: Compliance to SANS 1200

- Diameter: 300 mm
- Type: Concrete stormwater pipe
- Class: 100D
- Concrete fittings, Class 100D
- Pipe Length: 13 m

3.2 Bedding and Backfill Material

- Bedding and backfill material shall be G7 soil

4. Pipe Laying and Jointing

- Pipes shall be laid on a prepared G7 bedding layer, compacted to a minimum of 93% Mod AASHTO.
- The contractor shall ensure correct alignment, gradient and proper connection to the existing stormwater pipe
- Pipe joints shall be made using approved rubber gasket joints.

- Upon completion, the contractor shall ensure all joints are watertight, no leaks are present and the stormwater system functions correctly

5. Final Road Layer Works

- Backfill above the pipe using G7 material in 150 mm layers, compacted to a minimum of 93% Mod AASHTO, until the pipe is covered by a minimum of 600 mm.
- After the required depth is reached above the storm water pipe, place a 150 mm stabilised sub-base layer, followed by a 150mm thick layer of G5 material, complying with SANS specifications
- Compact the G5 layer to a minimum of 95% Mod AASHTO
- The G5 layer shall be level, conform to the required road profile and provide a stable base for the asphalt surfacing

Note:

The site is affected by groundwater, therefore the contractor shall:

- **Pump out groundwater prior to and during construction**
- **Maintain dry working conditions throughout the execution of the works**

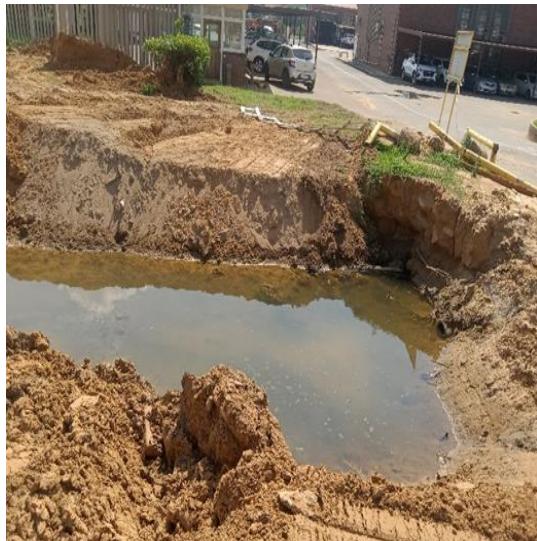
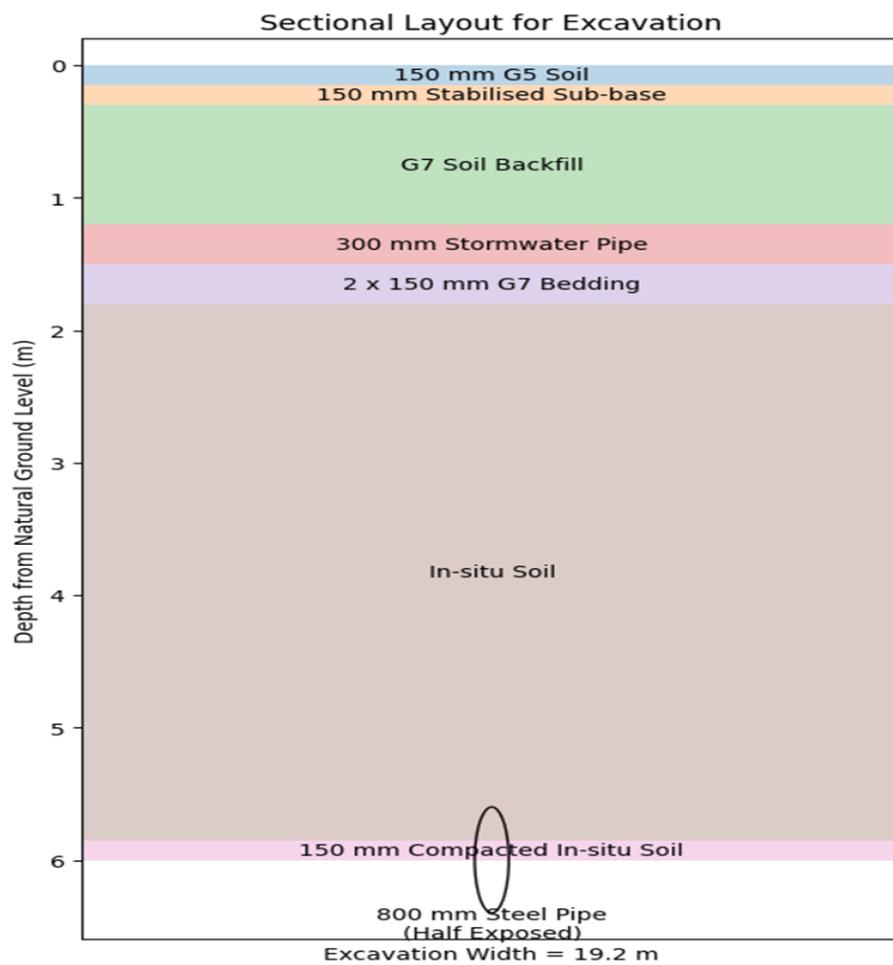


FIGURE 1: AREA TO BE EXCAVATED



PART 2: ROAD REPAIR AND REHABILITATION WORKS

6. Road Repair

The following works shall be carried out on all designated road sections:

- Remove the existing 50 mm asphalt wearing course.
- Rip and loosen the top 150 mm of the base layer, recompact, and re-level the surface.
- Supply and place G5 material where required to restore levels and profile.
- Compact the entire prepared base to a minimum of 98% Mod AASHTO, supported by laboratory compaction test results.
- Apply an approved base coat to the prepared surface.
- Lay 50 mm hot-mix asphalt over the prepared base.

- Compact the asphalt to achieve the required density and finish.
- Remove all debris and dispose of it at an approved dumping site.
- A certificate of disposal shall be provided for all asphalt waste.
- All environmental requirements and site regulations shall be strictly adhered to.

Road Sections Included

- Karee road (hump-to-hump): 144 m × 15 m +18,4m x 7m

(Refer to Figures 2)

7. Road Markings

Apply road markings after the asphalt surface has cured and comply with SANS specifications. The road markings shall:

- Be applied using thermoplastic paint or an equivalent approved by the client representative
- Match existing markings prior to removal, including the centre lines, edge lines, lane markings, etc.



FIGURE 1: KAREE ROAD

PART 3: KERB REMOVAL AND INSTALLATION

8. Kerb Works

8.1 Kerb Supply and Installation

- Remove existing kerbs and dispose of them in an approved manner.
- Width: 300 mm
- Depth: 200 mm
- Kerbs shall be installed on a prepared surface with a minimum fall of 0.5% towards stormwater inlets to ensure smooth and uninterrupted water flow.
- Kerbs shall be bedded in concrete (minimum 25 MPa), hunched as required properly aligned and evenly spaced
- The kerbs shall be installed with a 100 mm kerb reveal above road surface

8.2 Kerb Length

- Karee road: 86 m

9. Health, safety, and environmental requirements

9.1 The Contractor shall be fully responsible for:

- Risk assessments
- Health, safety and environment management
- Compliance with all applicable legislation
- The Contractor shall provide, Appropriate Personal Protective Equipment (PPE) and all equipment necessary to ensure safe working conditions.
- Work areas shall be kept clean, orderly, and free of hazards.
- Clearly visible warning signs and barricades shall be erected to indicate hazardous work zones.

10. General requirements

- Removal and disposal of all rubble and waste material shall be the contractor's responsibility.
- All materials required for the works shall be supplied by the contractor.

- The contractor shall provide its own, **storage and security arrangements**
- Zuikerbosch Pumping Station is a National Key Point; therefore, the Contractor shall comply with all applicable security and site regulations.
- Upon completion, the contractor shall submit a comprehensive handover report, including all test results from the compaction of layer works to asphalt.
- All Preliminary and General (P&G) costs shall be included in the relevant bill items; no separate payment shall be made for these costs.
- Safety file to be submitted and induction to be attended before work commences

Annexure C4 – Site Information

RAND WATER ZUIKERBOSCH – we meet at Risk Control Parking Area (Permit Office)

Vischagat Road, Three Rivers East
Vereeniging, 1939
GPS Coordinates: S 26° 41.520 and E 28° 00.061

THE IMPORTANCE OF WEARING PPE

Everyone accessing the plant will be expected to wear safety shoes, failure to which no access will be granted.

THE IMPORTANCE OF CARRYING YOUR DRIVER'S LICENSE

Everyone accessing the site using personal or company vehicles is requested to always carry their valid driver's license.

VALID CAR DISCS ARE ESSENTIAL

Every company or personal vehicle accessing the site must have a valid car disc. The biometric system will scan and cross-reference these discs to ensure compliance with local regulations. Failure to have a valid car disc may result in the vehicle being refused entry.

DATA SECURITY

The site complies with the principle of Personal Access to Information Act (PAIA) and as such all data collected will be treated with the utmost confidentiality and used solely for security and access control purposes.