



Annexure C3.2

BID NUMBER 10416289

REPAIR AND TESTING OF RAILS IN THE SEDIMENTATION TANK FOR SYSTEM N AT ZUIKERBOSCH WATER TREATMENT STATION.

1. SCOPE OF WORK

1.1. Purpose

The purpose of the document is to outline the scope of work for repairing and testing of rails in the sedimentation tanks for system N at Zuikerbosch Water Treatment Station.

1.2. Background

Sedimentation is a physical water treatment process using gravity to remove suspended solids from water, these solids are then removed from the tanks with submersible pumps travelling along the tank with the use of a gantry travelling through a railway. The railway concrete foundation is now cracking around the supports due to heavy loads as well as wear and tear.

2. PROJECT SCOPE SUMMARY

The scope is for repairing and testing of rails in the sedimentation tank for system N at Zuikerbosch Water Treatment Station. It is proposed that work is carried out only after sedimentation bay have been decommissioned. As a result of this, all works will be undertaken at a height of approximately 4.2 m above the top of concrete of the sedimentation bay floor. The Contractor can only carry out the work once the sedimentation tank is made available.

2.1. Manufacturing

- Verification of quantities for railway anchor connections.
- Draughting of shop drawings for the anchor connections and the turn tables to be manufactured (reviewed by Rand Water's representatives) for Approval.
- Manufacture of anchor connection plates, bolts, and accessories.
- Manufacture new turn tables.
- Manufacture new handrails for N sedimentation tank.

2.2. Construction

- Erection of fall protection equipment and relevant scaffolding.
- Demolition of existing grouting, remove packers and non-destructive removal of accompanying anchor bolts,
- Demolition of the existing grouting, plates and the anchor bolts on the turn tables.
- Erection of railway anchor connection plates and packers including anchoring the plates into the existing sedimentation walls with chemical anchors.
- Erection of the turn tables.
- Alignment of rails
- Testing of sludge bridges

On-site welding is required to achieve the required railway level as well as rails systems that were initial joined by connection plates.

2.3. Demolition of Existing Structures

- The contractor to compile a report (to be reviewed by Rand Water's representative) showing and describing the condition of the structure prior to demolition works and the condition after the proposed anchor connections are installed.
- The demolition of the existing retrofit concrete corbels and existing railway anchor connections is proposed to be undertaken to make way for the installation of a revised anchor connection solution for the sludge bridge railway.
- Demolition work should be undertaken in a non-destructive manner (i.e., no structural damage should be imposed on the existing structures).

3. PROJECT SPECIFICATION

3.1. On-Site Hot Work

- In an effort to remain within the allowable tolerances with regards to the level of the railway, on site welding and grinding of material to support the anchor connection plates will need to be executed.
- The welding may need to be undertaken at heights or near a large body of water.
- The welding quality is also critical as the welding will be undertaken in an uncontrolled environment.
- Safety file to be submitted should also address the hot work on site.

3.2. Project Assumptions and Design Data

The following assumptions have been made:

- The anchor connections and the turn tables are to be installed at the same locations as existing railway anchor connections.; if the service provider chooses to deviate from the original location, the proposal must be submitted in writing for approval.
- The existing concrete was assumed to be 25 MPa. Service provider to provide a solution that will meet the load factor of at least 25 MPa or higher.

3.3. Project Constraints

The following are the constraints for the project:

- Working at heights.
- On-site hot work.
- The demolition of structures needs to be non-destructive.
- Working near water.

3.4. Quality Plan

The contractor shall prepare the following:

- Detailed programme of work and weekly progress reports
- Quality control plan and the method statement.
- Submit a complete data pack and signed QCP's upon Completion of the sedimentation repairs.

3.5. Existing Services and structures

- Care must be taken to ensure that the existing structures and services are not damaged during any activity necessary for the execution of the works.
- Should existing services be damaged due to the contractor's activities; the cost of repairs will be for the contractor responsibility.

3.6. Work Isolation and plant in operation

- It is proposed that work is carried out only after sedimentation bays have been decommissioned (for maintenance to drain and clear of sludge). As a result of this, all works will be undertaken at a height of approximately 4.2m above the top of concrete of the sedimentation bay floors.

- The contractor to be adequately skilled and experienced to undertake work of such a nature at heights (competence and suitability for the project will be reviewed by the Rand Water SHEQ department).

3.7. Deliverables and Work Breakdown Structure

The Contractor shall be responsible for the provision of the following deliverables and work, which shall comply fully with Rand Water requirements and all other applicable specifications as part of this Scope of Work document:

a. PHASE 1: Compilation and Submission of Preliminary documentation

- **Health and Safety Plan:** Compile a Health and Safety Plan in compliance with the OHS ACT. This document shall be submitted to the Rand Water Site OHS Officer for approval, within 28 (twenty-eight) of Commencement Date. A copy of the approved document shall be submitted to the Engineer.
- **Appointment of OHS Site Representative:** Submit to the Engineer a copy of the appointment and acceptance document of the full-time employee that shall be the Contractor's Site Representative in terms of the OHS act requirements within 14 (fourteen) days of Commencement Date.
- **Performance Security:** Provide to the Engineer a Performance Security, issued on an official letterhead of a bank or insurance company having an office in the Republic of South Africa, within 28 (twenty-eight) days of receiving the Letter of Acceptance. The Performance Security shall be valid until the Taking-Over Certificate has been issued and approved by the Engineer. Performance Security with a validity date will not be accepted.
- **Detailed Project Programme:** Provide the Engineer with a detailed project programme within 28 (twenty-eight) days of signing of the Contract. Provide weekly feedback to the Engineer. Any deviations to the programme to be discuss with the Engineer as soon as they are foreseen.
- **Quality Control Plan:** Submit to the Engineer a comprehensive QCP for approval within 28 (twenty-eight) days of signing of the Contract. Engineer shall indicate intervention points and then approve the QCP. All steps in the QCP to be adhered to, failure to follow it might result to work being rejected.
- **Preparation and Submission for Review and Approval of Fabrication Design Drawings:** based on Standardized and Rand Water Standard Specifications.

b. PHASE 2: SITE ESTABLISHMENT

- Establishment on site (after obtaining a Site Access Certificate from Zuikerbosch Water Treatment Station).

c. PHASE 3: PROCUREMENT, MANUFACTURE, PREPARATION, TESTING AND DELIVERY

- Procurement of all material required to complete the works - identified by the Contractor in their Bill of Quantities,
- Manufacturing of above material (if any).
- Preparations for, and delivery of, all, Material to site as per specifications. All material delivered to site shall be safely stored by, and shall be the responsibility of, the Contractor.

d. PHASE 4: INSTALLATION AND COMMISSIONING PHASE

- Installation of the rails and laser aligning of the rails.
- Pre-commission all rail and perform all stand-alone and inspections. Any further tests recommended by the Contractor shall also be submitted to the Engineer for approval and shall be performed at this time.
- Commission and test the railway according to Rand Water requirements.
- Successfully commission and put the complete Sedimentation system into operation in conjunction with Rand Water staff.

e. PHASE 5: HANDOVER (INCLUDES COMPLETION AND SUBMISSION OF DOCUMENTATION)

- Officially handover the system to Site and Operation team.

f. PHASE 6: PROVING PERIOD AND PERFORMANCE TESTING PHASE

- Monitor, maintain and correct any defects on the plant during a Proving Period for the duration specified in this tender document, starting from the date that the entire System has been successfully commissioned and put into operation.

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Non Compulsory Site Briefing 09.09.2025 @ 10:00

RAND WATER ZUIKERBOSCH – we meet at Risk Control Parking Area

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.