

ANNEXURE C3.2: SCOPE OF WORK (INCLUDING DRAWINGS, WHERE APPLICABLE)

The scope requires the design and refurbishment of the internal sump Infrastructure at the Rand Water Zuikerbosch Pumping Station. The existing infrastructure should be used as a reference for the new design and satisfy client requirements. A competent contractor with a with a minimum CIDB grading of 2ME shall work on the following sumps:

Sumps on Site	Guides	Internal Pipes	Pumps	Stairs
1.-Sewage sump at Civil Yard.	x	x	1	
2.-Sewage Sump net to Staff house 1.	x	x	2	x
3.-Sewage sump next to Rec. Club.	x	x	2	x
4.-Sewer sump at small System Road.	x		2	
5.-Sewer sump at No.3 Control Room.			2	x
6.-Sewer sump next to No.4 Wash Water Treatment Plant.	x	x	2	x
7.-Main sump No. 8. At No.3 Station.	x	x	2	x

8. Design and Provide drawings

9. ZB Safety files

1. Design, Fabricate, Install and Commission/ Client Requirements

It should include the following.

- Piping Work, Flanges, Elbows, Fasteners and Cat Ladders to be of (Stainless Steel 304 grading) Schedule 10
- Chain (Stainless Steel 316 grading)
- Gasket
- Valve (Non-Return valves & Gates valves)
- Float Switches
- Guides

1.1 Float Switch

Install and connect float switch on control panel to make submersible pump run on and off automatically. This will ensure the pump automatically stop running when the sewage levels

are low to prevent dry-running and damage on the pump motor coil. The number of float switches per pump will be dependable to the depth of the sump.

1.2 Removal of deteriorated material

The contractor shall remove and dispose of, all the (pipes, guides, chains) that are deteriorated inside the sump and provide proof of disposal.

1.3 Guide Rail

Guide rails made from stainless steel and should be mounted on the bracket on top and the bar should be attached to the connection bend that will be anchored with stainless steel bolts on the concrete base(floor). The pump will be locked to a hook that will glide on the guide rail bar.

1.4 Lifting Chain

A stainless-steel lifting chain will be installed and hooked on the submersible pump.

1.5 Inlet and discharge pipe

1.5.1 Replace the existing inlet pipe with Stainless steel pipe. The level at which the inlet pipe enters the sump will be on the same level as the existing pipe. If changes are made the client should approve such changes before the installation takes place.

1.5.2 The discharge pipe must be replaced, attached to the main body of cast iron quick discharge device (connection bend) all the way to the top and connect to the existing main delivery line.

1.6 Step ladders

Fabrication and installation of cat ladders inside the sumps with stainless steel material that will not be easily corroded. The cat ladder should be installed from the top to the bottom of the sump to allow safe and easy access.

1.7 Safe Work Plan

1.7.1 The contract shall supply a safety file including detailed method statements (Safe Working Procedure) to the client before he commences with the work. The contractor shall supply the employees with the correct personal protective equipment throughout the duration of the works. The contractor shall make sure the gas levels are monitored while working inside the sump.

1.8 Documentation

1.8.1 The contractor shall submit a detailed site report after the completion of works. The report shall have pictures showing the progression of the works in pictures, challenges encountered, and recommendations on sewer sumps for implementation by the client.

The contractor shall supply the client with drawings of all the sumps the contractor has, worked on. The drawings must show in detail the size of the sumps, all the internal infrastructure including the specification.

2. Pictures

2.1 The picture below is a reference of the existing setup of the sumps which need to be refurbished.

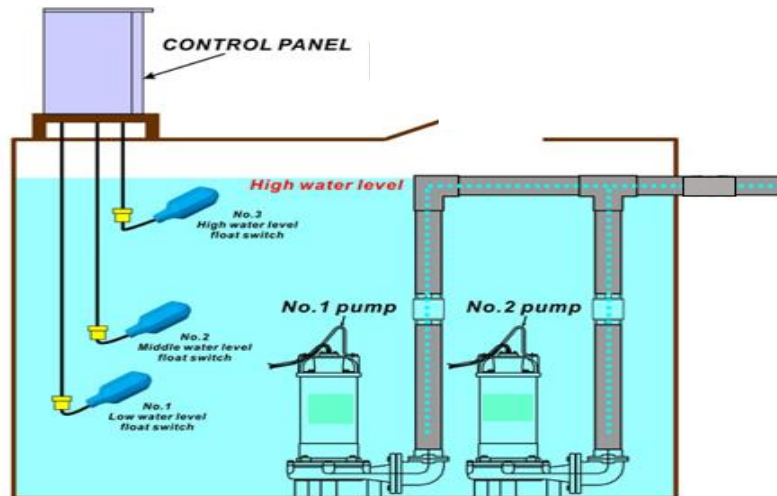


FIGURE 1: SUBMERSIBLE SEWAGE PUMPS ALTERNATIVE & PARALLEL OPERATION

2.2 The picture below shows all the items that shall be refurbished, the stainless-steel chain, guiderail, the hook, connection bend and discharge pipe. This is a reference of client requirements.

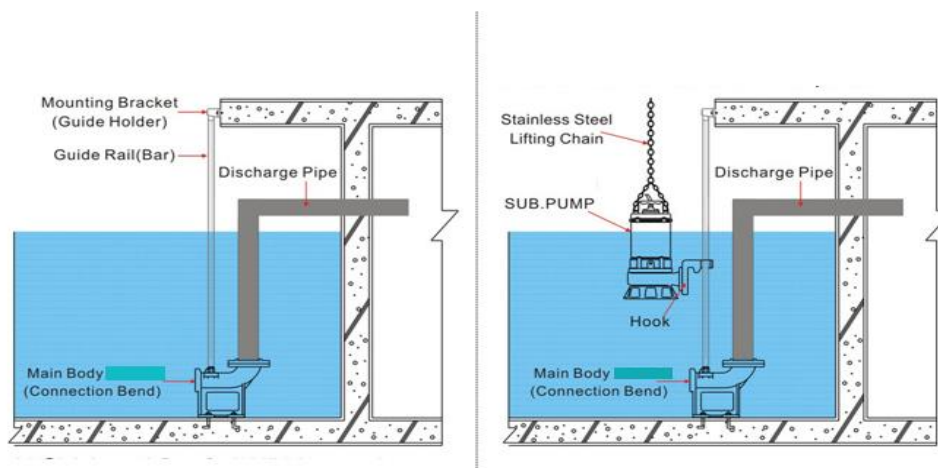


FIGURE 2: REFERENCE OF THE SUMPS AFTER COMPLETION OF WORKS

- of the work on site.