



ARCHITECTURE | CIVIL, ELECTRICAL, MECHANICAL &
STRUCTURAL ENGINEERING | PROJECT MANAGEMENT |
QUANTITY SURVEYING

JOHANNESBURG SOCIAL HOUSING COMPANY

SELKIRK RESIDENTIAL PROJECT

Sewer Pipe Crossing – Braamfontein Spruit

CSM Consulting Services (Pty) Ltd was appointed by the Johannesburg Social Housing Company (JOSHCO) to provide professional services including Civil, Structural and Electrical Engineering for the conceptualization, planning, design, and implementation of the Selkirk Residential Project. The proposed development is located on erven 34 -39 and erven 41-50 Blairgowrie. As a result of the development, the existing Sewer System is to be upgraded. The sewer line is to accommodate the development along with the current flow from Bordeaux.

Based on existing information from Joburg Water, the line runs behind the development, Parallel to Selkirk Avenue, down Jan Smuts, into Valley Road, to Garden Road, and across the stream to a connection across Bordeaux Riverside Park.

Methodology for Crossing the Spruit

The proposed crossing of the Braamfontein Spruit is in the upper reaches of the Bordeaux Riverside Park. The contractor will negotiate a suitable area for a camp site and the temporary stockpiling of excavated material with Bordeaux Riverside Park. The location of the crossing will be isolated by diverting current flow patterns of the water in the stream around the specified location. This will be achieved with sandbags utilizing material from the site.

The isolated areas will then be de-watered from a temporarily excavated sump. Enough working space should be allowed around the proposed crossing location. Topsoil will be removed to a depth of 500mm below the stream bed level and to the approved plan dimensions as shown on the approved construction drawings. Spoil material will be stockpiled at the designated area or at an approved site to be identified by the contractor.

The sewer line is designed to lay on the riverbed along side the existing sewer line. This results in minimum excavation to the rocky bed save for the outcropped areas which would be reinstated using the concrete. Excavation will be done by means of hand-held drills and/or an excavator equipped with a hydraulic hammer, dependant on the state of the bedrock encountered. The concrete will then be cast for the encasement of the sewer pipe. Once the concrete has set, the in-situ material can be backfilled and compacted as specified. Anchors will be added around the line to insure stability. The backfilling will be done up to the natural stream levels. The contractor should take precautions to ensure the shuttering required for construction will not pollute the site. After the sewer pipe crossing has been constructed, the stream in the construction area shall be restored to its natural condition.

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Verified as Level 1 status B-BBEE contributor; ISO 9001:2015 Certified

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