Klaarstroom WWTP Storm Water Management Plan

It is proposed that a low earth embankment (1.0m high) be placed on the northern side of the proposed works to channel any stormwater around the proposed works as indicated on the image below. The primary concentrated runoff from the drainage lines as indicated will then be mitigated. Similarly, the second drainage line from the east could be diverted using a trench along the toe-line of the eastern ponds to ensure that stormwater is diverted to the south of the works.

Figure 1: Layout of proposed earth berm

Storm Water Trench Details:

The natural slope of the ground is from East to West. Subsequently, it will be pertinent to have a trench with a flat side slope on the Eastern Side and a steeper side slope on the Western side as illustrated below. The trench is proposed to have a total length of 254m.

The slope along the length of the proposed trench will approximate the natural slope of the ground in a north to south direction as follows:

From Chainage 0.00 where trench commences up to Chainage 100.00, the trench will have a slope of 1 : 100 ; From Chainage 100.00 up to Chainage 200.00, the slope will be 1 : 33, and over the last section from Chainage 200.00 to Chainage 254.00 the slope will be 1 : 54.

The trench is proposed to have a depth no more than 300mm deep on the low side of the slope and will be 1500mm wide. The trench will be formally shaped, but will not be lined. As the cross sectional area is quite large in relation to the expected run-off, low flow velocities are expected which decrease the chance of erosion in the trench.

The Inlet Structure and the Outlet Structure will be formally shaped and lined with stone pitching to avoid scour of the natural ground.

Coordinates Storm water trench starts: 33°19’18.13’’S 22°31’45.43’’E

Coordinates Storm water trench ends: 33°19’22.11’’S 22°31’40.69’’E

Figure 2: Layout of proposed earth berm and trench

Typical Cross Section of Trench:

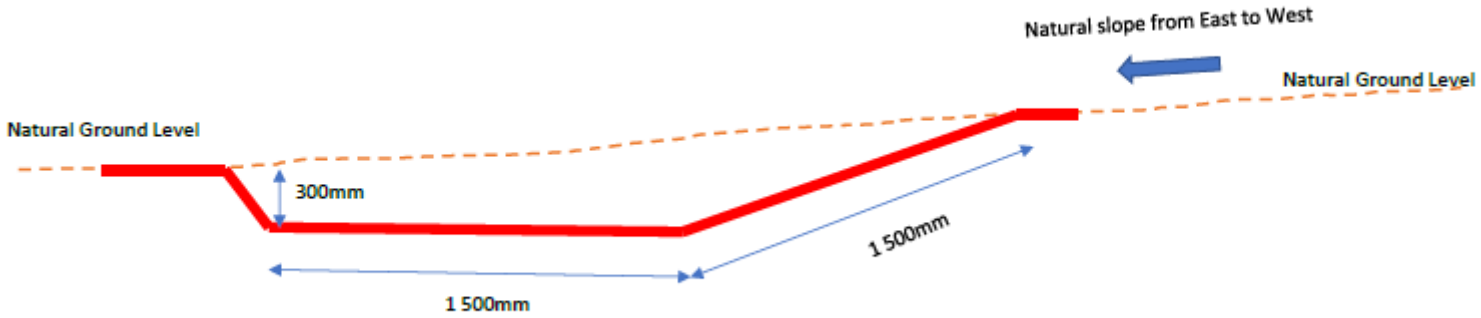

Figure 3: Typical Cross section of proposed trench