

Suswa

Narok, Kenya

Ground improvement for converter substation in Suswa, Kenya.



The project

The initial scope of the project entailed treatment by dynamic compaction of a 102500m² site for the development of a converter substation in Suswa.

This substation forms part of the HVDC interconnection between the electrical power systems of Kenya and Ethiopia, allowing exchange of 2000MW in both directions. By the end of the project, the scope included both dynamic compaction and dynamic replacement.

The challenge

The considerable shipment duration of the imported cranes, customs delays and annual company shutdowns led to the extension of the project start and end date.

The end date was further delayed by extended periods of heavy rainfall, encountering unexpected uncompressible saturated clays which required a change in treatment type, on-site poulder modification to allow for rock driving and an unreliable rock supply.

The solution

The site was generally treated by dynamic compaction and where clays were encountered, by dynamic replacement.

The treatment method was either shallow or deep treatment, with the site subdivided into 3 zones and a road section. Deep treatment areas were treated by primary and secondary prints followed by ironing, and shallow treatment areas were treated by primary prints followed by ironing.

To carry out the works timeously, extended shifts (limited strictly to daylight) were implemented.

The ground improvement included the dynamic compaction of 84089m² and dynamic replacement of 18411m².

Project facts

Owner(s)

Siemens AG

Keller business unit(s)

Keller East Africa

Main contractor(s)

CCECC

Solutions

Bearing capacity / settlement control

Markets

Power

Techniques

Dynamic compaction
Dynamic replacement

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