

ABSTRAK

Penelitian ini bertujuan untuk merancang konstruksi tanggul sebagai upaya penanggulangan banjir di Desa Berancah, Kabupaten Bengkalis. Wilayah ini sering mengalami banjir akibat curah hujan tinggi dan pasang surut air laut. Metode yang digunakan meliputi analisis curah hujan menggunakan Distribusi Log Pearson III, pengujian profil sungai, pengujian tanah (sondir dan hand boring), serta perhitungan hidraulika dan daya dukung pondasi. Desain tanggul menggunakan struktur dinding kantilever dengan tinggi 2,3 meter dan pondasi tiang pancang. Hasil evaluasi menunjukkan bahwa tanggul yang dirancang memenuhi syarat stabilitas terhadap guling sebesar 2,65 daya dukung geser sebesar 16,56, dan daya dukung tanah sebesar 101,98 kN sehingga dinyatakan aman untuk digunakan dalam upaya mitigasi banjir.

Kata Kunci: tanggul, banjir, daya dukung, stabilitas.

EMBANKMENT CONSTRUCTION DESIGN AS AN EFFORT TO OVERCOME FLOODING IN BERANCAH VILLAGE BENGKALIS REGENCY

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ABSTRACT

This study aims to design an embankment construction as a flood mitigation measure in Berancah Village, Bengkalis Regency. This area frequently experiences flooding due to high rainfall and tidal fluctuations. The methods used include rainfall analysis using the Log Pearson III Distribution, river profile testing, soil testing (sondir and hand boring), and hydraulic calculations and foundation bearing capacity. The embankment design uses a 2.3-meter-high cantilever wall structure and a pile foundation. The evaluation results indicate that the designed embankment meets the requirements for overturning stability of 2.65, shear bearing capacity of 16.56, and soil bearing capacity of 101.98 kN, thus being declared safe for use in flood mitigation efforts.

Keywords: embankment, flood, bearing capacity, stability.