PERENCANAAN ULANG GROUNDSILL BATANG NAREH DI KAB. PADANG PARIAMAN

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Abstrak

Perencanaan yang dilakukan ini adalah merencanakan ulang bangunan *Groundsill* dengan curah hujan 10 tahun. Data hujan yang diambil hanya 2 stasiun yaitu stasiun santok dan stasiun paraman talang. Perhitungan hujan rencana periode ulang menggunakan 4 metode *Distribusi Probabilitas* yaitu, Normal, Log Normal, Log Person III, dan Gumbel. Lalu gunakan Uji Chi-Kuadrat dan Smirnov Kolmogorov untuk menentukan Distribusi Probabilitas yang diterima dan mempunyai selisih nilai terkecil yaitu Metode Gumbel. Perhitungan *Debit Banjir* periode ulang digunakan Metode Hasper, Melchior, dan Mononobe. Berdasarkan hasil pehitungan yang digunakan metode Melchior Q50 = 411,940 m^3/dt. Jari-jari bak yang diizinkan Rmin = 3,168m dengan batasan minimum tinggi air hilir Tmin = 4,128m. Kontrol *Stabilitas* untuk tubuh groundsill ditinjau pada kondisi air normal dan air banjir. Hasil yang diperoleh adalah tubuh groundsill dianggap cukup stabil dan aman terhadap bahaya.

Kata Kunci: Groundsill, Distribusi Probabilitas, Debit Banjir, Stabilitas

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REPLANNING GROUNDSILL BATANG NAREH IN KAB. PADANG PARIAMAN

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Abstract

This plan is to re-plan the Groundsill building with 10 years of rainfall. Rain data taken only 2 stations, namely Santok station and Paraman Talang station. The calculation of the rain plan for the return period uses 4 Probability Distribution methods, namely, Normal, Normal Log, Person III Log, and Gumbel. Then use Kolmogorov's Chi-Square and Smirnov Test to determine the Probability Distribution that is accepted and has the smallest difference in value, namely the Gumbel Method. The calculation of Flood Discharge for the return period used the Hasper, Melchior, and Mononobe methods. Based on the calculation results used the Melchior method Q50 = 411,940 m3 / s. Permissible trough radius Rmin = 3.168m with minimum limit of downstream water level Tmin = 4.128m. Stability control for groundsill bodies was reviewed under normal water conditions and flood water. The results obtained were groundsill body was considered quite stable and safe against harm.

Keywords: Groundsill, Probability Distribution, Flood Discharge, Stability

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