

# **ANALISIS DAYA DUKUNG PONDASI TIANG PANCANG MENGGUNAKAN METODE LUCIANO DECOURT DAN METODE BRIAUD BERDASARKAN DATA SPT PADA PROYEK PEMBANGUNAN KANTOR PEMERINTAHAN TERPADU (KPT) KABUPATEN BREBES**

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## **ABSTRAK**

Pembangunan Gedung Kantor Pemerintahan Terpadu (KPT) Kabupaten Brebes menggunakan pondasi tiang pancang diameter 50 cm dan kedalaman 48 m. Dalam Proses pelaksanaan pemancangan pondasi tiang dilakukan menggunakan mesin Hidraulic Static Pile Driver (HSPD), terjadi insiden tiang patah sebelum mencapai kedalam tanah rencana 48 m. tiang yang patah berada di titik As H4 dengan kedalaman patah 44 m selisih 4 meter dengan kedalam rencana. Tujuan dari penelitian ini adalah untuk mengetahui berapa nilai daya dukung tiang pancang di titik As H4 tunggal dan kelompok menggunakan metode Luciano Decourt dan metode Briaud berdasarkan data SPT dengan kedalaman 44 m dan 46 m, mengitung penurunan pondasi tiang menggunakan metode Versic dan menghitung daya dukung tiang lateral. Dari perhitungan didapatkan daya dukung ijin tiang tunggal (Qijin) metode Luciano Decourt dengan kedalaman 44 m dan 46 m sebesar 223,459 ton dan 248,387 ton, dan metode Briaud kedalaman 44 m dan 46 m sebesar 170,445 ton dan 181,074 ton. Daya dukung tiang kelompok (Qg) metode Luciano Decourt kedalaman 44 m dan dan 46 m sebesar 692,0269 ton dan 527,85 ton dan metode Briaud kedalaman 44 m dan 46 m sebesar 618,603 ton dan 657,179 ton. Penurunan tiang tunggal (Se) berdasarkan (Qijin) tiang tunggal metode Luciano Decourt kedalaman 44 m dan 46 m sebesar 0,0645 m dan 0,0667 m dan berdasarkan metode Briaud kedalaman 44 m dan 46 m sebesar 0,0453 m dan 0,0481m. Penurunan tiang kelompok (Sg) berdasarkan (Qg) metode Luciano Decourt kedalaman 44 m dan 46 m sebesar 0,258 m dan 0,356 m, berdasarkan metode Briaud kedalaman 44 m dan 46 m sebesar 0,258 m dan 0,356 m. Daya dukung lateral tiang (H) metode Brom's kedalaman 44 m dan 46 m lebih besar dari beban lateral bekerja (Hu) sebesar 12,485 tonm.

Kata kunci: Daya Dukung tiang, daya dukung lateral, penurunan tiang, SPT, HSPD

# **ANALYSIS OF SUPPORTING CAPACITY OF PILE FOUNDATION USING LUCIANO DECOURT METHOD AND BRIAUD METHOD BASED ON SPT DATA ON THE INTEGRATED GOVERNMENT OFFICE DEVELOPMENT PROJECT (KPT) BREBES DISTRICT**

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## **ABSTRACT**

The construction of the Integrated Government Office Building (KPT) in Brebes Regency uses a pile foundation with a diameter of 50 cm and a depth of 48 m. In the process of implementing the pile foundation erection using a Hydraulic Static Pile Driver (HSPD) machine, there was an incident of a broken pile before it reached the planned 48 m soil. The broken pile is at As H4 point with a fracture depth of 44 m, a difference of 4 meters from the plan. The purpose of this study was to determine the value of the pile bearing capacity at the single and group As H4 points using the Luciano Decourt method and the Briaud method based on SPT data with a depth of 44 m and 46 m, calculate the pile foundation settlement using the Versic method and calculate the lateral pile bearing capacity. From the calculation, the carrying capacity of the single pile permit ( $Q_{ijin}$ ) with the Luciano Decourt method with a depth of 44 m and 46 m is 223,459 tons and 248,387 tons, and the Briaud method with a depth of 44 m and 46 m is 170,445 tons and 181,074 tons, respectively. The pile bearing capacity ( $Q_g$ ) using the Luciano Decourt method at a depth of 44 m and 46 m was 692.0269 tons and 527.85 tons and the Briaud method at a depth of 44 m and 46 m was 618.603 tons and 657.179 tons, respectively. Single pile settlement ( $S_e$ ) based on ( $Q_{ijin}$ ) single pile Luciano Decourt method with a depth of 44 m and 46 m of 0.0645 m and 0.0667 m and based on the Briaud method a depth of 44 m and 46 m of 0.0453 m and 0.0481 m. The subsidence of group piles ( $S_g$ ) based on ( $Q_g$ ) Luciano Decourt method with a depth of 44 m and 46 m of 0.258 m and 0.356 m, based on the Briaud method with a depth of 44 m and 46 m of 0.258 m and 0.356 m. The lateral bearing capacity of the pile ( $H$ ) of the Brom's method with a depth of 44 m and 46 m is greater than the working lateral load ( $H_u$ ) of 12.485 tonm.

Keywords: Pile bearing capacity, lateral bearing capacity, pile settlement, SPT, HSPD