

ABSTRAK

Oleh :

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Sejarah jembatan sudah cukup lama bersamaan dengan terjadinya hubungan komunikasi dan transportasi antara sesama manusia dan antara manusia dengan alam lingkungannya. Tujuan dibangunnya jembatan agar para pejalan kaki dan pengendara kendaraan dapat melintasi dua bagian jalan yang terputus oleh penghalang seperti aliran sungai, laut, lembah dan lain - lain dengan mudah. Serta dapat menimbulkan manfaat bagi masyarakat sekitar dari segi ekonomi dan sosial. Pembangunan Jembatan Jabungan yang berlokasi di Kelurahan Jabungan, Kecamatan Banyumanik, Kota Semarang memiliki bentang 24,00 meter dengan menggunakan pondasi sumuran berdiameter 3,00 meter sedalam 4,00 meter akan menggunakan metode perencanaan perhitungan penurunan dan daya dukung pondasi sumuran dan tiang pancang secara manual. Berdasarkan hasil perhitungan *Spun Pile* menggunakan data N-SPT di dapatkan Q_{ijin} 81,952 ton pada lapisan ketiga dengan nomer N-SPT 31. Hasil perhitungan penurunan elastis tiang (*spun pile*) tunggal diameter 50 cm didapatkan total penurunan 6,118 mm. Hasil perhitungan penurunan kelompok tiang pancang menggunakan metode *Vesic* (1977), didapatkan angka keamanan $36,4 \text{ mm} < 50 \text{ mm}$ (memenuhi syarat aman). Pada perhitungan analisa pondasi sumuran yang dilakukan, didapatkan angka aman Q_{all} 601,3728 ton \geq 85,0705 ton. Untuk perbandingan efisiensi antara pondasi *Spun Pile* dan sumuran pada proyek ini untuk disarankan menggunakan pondasi sumuran dikarenakan daya dukung yang didapat lebih besar dan efisiensi waktu biaya dan metode pengerjaan lebih baik menggunakan pondasi sumuran.

Kata kunci : Jembatan, Pondasi, Daya dukung, Penurunan

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ABSTRACT

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The history of the bridge has been quite long together with the connection of communication and transportation between each humans and between humans and the natural environment. The purpose of built the bridge is for pedestrians and motorists could cross two parts of the road that were cut off by obstructions such as rivers, seas, valleys and others easily. Also can cause benefits for the local society in terms of economic and social. The construction of the Jabungan Bridge was located in Jabungan Village, Banyumanik Subdistrict, Semarang City has a span of 24.00 meters using a 3.00 meters diameter caisson foundation as deep as 4.00 meters using manual calculation will use the method of calculating the reduction calculation and bearing capacity of the caisson and piles manually. Based on the calculation of Spun Pile using N-SPT data, get Q_{ijin} 81,952 tons in the third layer with the number N-SPT 31. The calculation results of a elastic reduction in (spun pile) single pole diameter 50 cm obtained a total reduction is 6,118 mm. The results of the calculation of the reduction in the group pile using the Vesic method (1977), obtained a safety number is 36.4 mm < 50 mm (qualify the safe conditions). In the calculation of the caisson foundation analysis, obtained a safe number of Q_{all} is 601,3728 tons \geq 85,0705 tons. For a comparison of efficiency between Spun Pile foundations and caisson on this project, it is recommended to use a caisson foundation because of the greater bearing capacity and efficiency of cost time and better working methods using a caisson foundation.

Keynote : Bridge, Foundation, Bearing, Reduction

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