

Abstrak

Oleh :

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Jalan Tol merupakan fasilitas umum yang berbayar yang disediakan pemerintah untuk kalangan umum. Pembangunan Jalan Tol tersebut nantinya sebagai alternatif pengurangan masalah transportasi, peningkatan pemerataan pembangunan, dan meningkatkan pertumbuhan perekonomian. Jalan Tol Ruas Pejagan – Pemalang merupakan bagian dari jaringan Jalan Tol Trans Jawa. Pada proyek pembangunan Jalan Tol Pejagan – Pemalang Seksi 2 terdapat perencanaan *Settlement* dengan berbagai macam cara penanganan seperti penggunaan *Geotextile*, *PVD* dan *PHD*, *Replace Soil*, sehingga perlu dilakukan perhitungan perencanaan *Settlement*. Jenis tanah dasar merupakan tanah lunak, sehingga perlu dilakukan penimbunan tanah karena memiliki daya dukung rendah. Dalam pelaksanaan pekerjaan *Settlement* membutuhkan data-data tanah seperti sondir dan boring sehingga dapat diketahui klasifikasi dan parameter tanah. Pada tugas akhir ini dilakukan permodelan *Settlement* dengan 2 cara yaitu *Settlement Design* dengan program *Plaxis V.8.2* dari data lapangan penampang melintang, dan *Settlement Aktual* dengan program *Excel* yang dihitung dari data sondir di lapangan, sehingga dapat dibandingkan hasil perhitungan *Settlement Design* dengan *Settlement Aktual*. Dari hasil 10 STA yang kita lakukan studi kita gunakan beberapa STA seperti STA 291+300 kita dapatkan perbandingan hasil pada *Settlement t90* dan total waktu sebagai contoh *Settlement Design t90=731mm* dan total waktu 105 hari, dengan *Settlement Aktual t90=410mm* dan total waktu 345 hari. Terjadinya perbedaan yang signifikan antara *Settlement Design* dengan *Settlement Aktual* adalah perbedaan penggunaan penanganan *Settlement* karena *Settlement Design* menggunakan banyak penanganan seperti *Geotextile*, *PVD* dan *PHD*, *Replace Soil*, sedangkan *Settlement Aktual* hanya menggunakan data perhitungan *Settlement* dan total *Settlement* kemudian diolah pada data *Settlement Plate* di *Excel* dengan tabel ASAOKA dan time vs timbunan sehingga tidak ada penanganan tambahan seperti *Settlement Desson* karena di lapangan penanganan tersebut sudah dilakukan. Ada beberapa STA yang memiliki perbandingan yang bermacam-macam, ada yang sangat jauh dan ada yang hampir sama antara *Settlement Design* dan *Settlement Aktual* seperti contoh STA 297+350 dengan hasil *Total Settlement Design* 275mm dan *Settlement Aktual* 286mm, kemudian hasil yang jauh berbeda antara desain dengan aktual contoh STA 291+300 dengan hasil *Total Settlement Design* 812mm dan *Settlement Aktual* 321mm perbedaan yang sangat jauh bisa disebabkan karena kurang akuratnya parameter tanah yg dimasukkan tinggi muka air tanah dan lainnya sehingga akibatnya hasil *Total Settlement* di lapangan akan berbeda dengan desain yang kita buat bisa jadi data aktual yang tepat bisa jadi desain yang akurat.

Kata kunci : *Settlement*, *Settlement Design*, *Settlement Aktual*, *Plaxis*, *Excel*.

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Abstract

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Toll Road is a public facility paid by the government for the public. Toll Road construction will be the alternative to reduce transportation problems, increasing equity of development, and increasing economic growth. Pejagan – Pemalang Toll Road is part of the Trans Java Toll Road network. There is a Settlement planning in Pejagan- Pemalang toll road construction project Section 2 with various ways of handling, such as the use of Geotextile, PVD and PHD, Replace Soil. Thus, it is necessary to calculate the Settlement planning. Basic Soil type involves in soft soil, thus, it needs to landfill soil because it has low carrying capacity. In the implementation of Settlement work required soil data such as sondir and boring, thus it could be known the classification and soil parameters. In this final project, Settlement Design with Plaxis V.8.2 is done that taken from cross sectional data field, and Actual Settlement with Excel program which calculated from the data of sondir in the field, thus, it could be compared the result of Settlement Design calculation with the actual Settlement. From the result of the 10 STAs, some STAs such as STA 291 + 300 got comparison result on Settlement t90 and total time as sample Settlement Design t90 = 731mm and total time 105 days with Settlement actual t90 = 410mm and total time 345 days. The significant difference between Settlement Design and Settlement Actual was the used of handling difference, because Settlement Design uses many handling such as Geotextile, PVD and PHD, Replace Soil, while the Settlement actual only used a calculation data of Settlement and Total Settlement, then it processed on Settlement Plate data in Excel with ASAOKA tables and time vs heaps, thus, it did not need an additional handling such as Settlement Dessim because the handling has been done in the field. There were several STAs that have various comparisons, some of them were very far and some were almost same between Settlement Design and Settlement Actual, for example STA 297 + 350 with the result of Total Settlement Design 275mm and Settlement Actual 286mm, then the results were more different between design with actual, for example of STA 291 + 300 with result of Total Settlement Design 812mm and Settlement Actual 321mm, a far difference could be caused by less accurate soil parameters that entered high ground water level and it resulted of Total Settlement in field was different with design that have been made. It could be the right actual data and could be an accurate design.

Keywords: Settlement, Settlement Design, Actual Settlement, Plaxis, Excel.

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