ABSTRAK

PERKUATAN SST 4 LEG 62 AKIBAT PENAMBANGAN TINGGI DAN BEBAN ANTENNA

(Studi Kasus: Site Yon Zipur Probolinggo)

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Meningkatnya kebutuhan terhadap teknologi komunikasi yang murah dan mudah, memaksa penyedia layanan telepon seluler untuk memperbaiki sinyal jaringan telepon seluler. Sebagai konsekuensi dari perkembangan ini, maka harus diiringi dengan bertambahnya jumlah konstruksi tower BTS di daerah pemukiman dan perkotaan. Pemerintah daerah telah mengeluarkan regulasi baru tentang perencanaan dan pelaksanaan tower BTS di dalam kota. Regulasi baru ini berisi tentang vendor telepon untuk menggunakan satu tower (02/PER/M.KOMINFO/3/2008).

Pada perencanaan tower, beban yang berpengaruh secara dominan adalah beban angin. Beban angin diperhitungkan berdasarkan peraturan Telecommunications Industry Association and Electronic Industries Alliance (TIA/EIA) standard structural standards for steel antenna tower and antenna supporting structure (TIA/EIA-222-G, 2005). Analisis menggunakan program MS Tower V6, sebagai aplikasi untuk mempermudah dalam pemodelan tower telekomunikasi. Tujuan dari penulisan ini untuk mencari alternatif perkuatan tower agar dapat menahan beban tambahan, baik itu beban tambahan akibat *extend* dan beban tambahan akibat *proposed* antenna.

Perkuatan ini menggunakan *existing* tower dengan ketinggian 62, dengan beban antenna awal 10 Unit antenna *microwave* dan 6 Unit antenna *sectoral*. Yang akan ditambakan 2 unit antenna *microwave* dan 3 unit antenna *sectoral*. Berat tower *existing* juga akan bertambah akibat *extend* tower 3 meter. Syarat ketentuan tower dianggap kuat jika, *twist* = 0.5º, *sway* = 0.5º, *displacement horizontal* = H/200 (H = tinggi tower), *strees ratio* < 1.

Kata kunci : perkuatan, tower BTS, beban angin, beban antenna, MS. Tower

ABSTRACT

The increasing need for cheap and easy communication technology has forced cell phone service providers to improve cell phone network signals. As a consequence of this development, it must be accompanied by an increase in the number of BTS tower construction in residential and urban areas. The local government has issued new regulations regarding the planning and implementation of BTS towers in the city. This new regulation contains telephone vendors to use one tower. (02 / PER / M.KOMINFO / 3/2008).

In tower planning, the dominant load is wind load. Wind loads are calculated based on the Telecommunications Industry Association and Electronic Industries Alliance (TIA / EIA) regulations structural standards for steel tower towers and supporting structure structures (TIA / EIA-222-G, 2005). The analysis uses MS Tower V6 program, as an application to simplify telecommunication tower modeling. The purpose of this paper is to find an alternative tower strength so that it can withstand additional loads, both the additional load due to extend and the additional load due to the proposed antenna.

Strengthen this using the existing tower with a height of 62, with an initial load of 10 units of a microwave antenna and 6 units of a sectoral antenna. That will be added 2 units of a microwave antenna and 3 units of a sectoral antenna. Existing tower weight will also increase due to extend tower 3 meters. The tower conditions are considered strong if, twist = 0.5, sway = 0.5, displacement = H / 200 (H = tower height), strees ratio <1.

Keywords : straightening, tower BTS, wind load, antenna load, tower structural analysis