ABSTRAK

Tower BTS memerlukan fondasi yang kuat dan stabil supaya tower yang berdiri tinggi tidak mengalami keruntuhan yang akan membahayakan jiwa masyarakat sekitarnya. Fungsi dari fondasi adalah menyalurkan beban struktur kedalam tanah, dengan mengetahui kondisi lokasi yang akan dikerjakan maka dalam pelaksanaanya memerlukan suatu jenis fondasi yang tepat supaya mudah dikerjakan (*workability*), aman, nyaman dan ekonomis.

Fondasi yang digunakan pada struktur tower SST 41 m 3 kaki adalah fondasi dangkal berupa fondasi telapak.

Hasil analisa struktur tower SST 41 meter didapat gaya tekan = 221,015 kN, gaya tarik = 340,250 kN, gaya geser = 21,242 kN, dan momen = 0,884 kN m. Dan fondasi yang digunakan fondasi fondasi telapak dengan dimensi 300 x 300 cm dengan tebal 45 cm dan kedalaman 250 cm. Stabilitas fondasi didapat faktor keamanan (FK) gaya angkat = 1,087 dan 1,646, FK daya dukung = 1,60, dan FK geser = 10,01. Volume material beton yang didapat adalah 16,19 m^3 dan volume pembesian yang didapat sebesar 2074,63 kg.

Kata Kunci : tower BTS, fondasi dangkal, fondasi telapak, faktor keamanan (FK), FK gaya angkat, FK daya dukung, FK geser

ABSTRACT

The BTS tower requires a strong and stable foundation so that the tower that stands tall does not collapse which will endanger the lives of the surrounding community. The function of the foundation is to channel the load of the structure into the soil, by knowing the conditions of the location to be worked on, in its implementation it requires an appropriate type of foundation so that it is easy to work (workability), safe, comfortable and economical.

The foundation used in the 41 m 3 legs SST tower structure is a shallow foundation in the form of a foot foundation.

The results of the analysis of the 41 meter SST tower structure obtained compressive force = 221.015 kN, tensile force = 340.250 kN, shear force = 21.242 kN, and moment = 0.884 kN m. And the foundation used is the footing foundation with dimensions of 300 x 300 cm with a thickness of 45 cm and a depth of 250 cm. The stability of the foundation obtained by the factor of safety (SF) uplift = 1.087 and 1.646, SF bearing capacity = 1.60, and SF sliding = 10.01. The volume of concrete material obtained is 16.19 m^3 and the volume of iron obtained is 2074.63 kg.

Key Words : BTS tower, shallow foundation, foot foundation, safety factor (SF), SF uplift, SF bearing capacity, SF sliding