

ABSTRACT

Christopher Anthony (02120020012)

**DESIGN OF TELECOMMUNICATION TOWER
USING LOAD AND RESISTANCE FACTOR DESIGN (LRFD)
AISC STANDARD 1999**

(xvi + 78 pages: 9 tables, 30 figures)

Telecommunication towers are very essential for the use of cell phones. In practice at Indonesia, they are still often designed with the Allowable Stress Design concept. This paper deals with the design of a self-supporting telecommunication tower using the Load and Resistance Factor Design (LRFD) method. The design is based on a project that has been successfully built. From this construction, a new design is made with some changes, such as the design method that uses LRFD, the use of inclination for the tower's feet, and also the use of a different configuration and steel sections.

The analysis was made using the SAP 2000 computer program and also using the LRFD compression and tension steel member analysis. Thus also designed the connection (welded and high tension bolts) and the base plate design.

Stability can not be set apart from economical design. Both are essential. Especially for telecommunication towers that also needed a short time period of construction; the easiness in putting all parts together can make a very economical design. The use of LRFD method put a member to its optimum limit. The design of the 25 meter high telecommunication tower in this paper satisfies the specified limitations of twist, sway and displacement; and the combined loadings that contain wind loads gave bigger effect on the tower than the load combination with earthquake load.

References: 7 (1968 - 2004)