

ABSTRACT

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(xvi + 151 + Attachments)

Raft pile foundation is a combination of raft foundation and drilled pile. Raft foundation is used to scrape the foundation layer of soil which has a low bearing capacity. Raft foundations experience a decrease when the load given exceeds the carrying capacity. If the settlement of the soil has a high value and the low carrying capacity of the soil, the settlement of the raft foundation exceeds the allowable settlement. Because of that, a combination foundation is needed, with the addition of drilled pile foundation. The raft bearing capacity calculation method uses the Meyerhoff method, the Bowless method by taking conservative carrying capacity values, the reduction uses the Janbu et.al (1977) method. Bored pile bearing capacity method uses the Meyerhoff method of decreasing the Poulos and Davis (1980) method, lateral bearing capacity and deflection uses the Broms (1964) method. The calculation results obtained that the raft foundation has a length of 51 meters, a width of 48.739 meters with a thickness of 1.4 meters, the decline in the raft foundation reached 2.163 meters exceeding the reduction in permits, which was 65mm, reducing the decrease in the raft foundation added to the bored pile foundation of 238 bored piles with a diameter of 1 meter, depth of 35 meters, the addition of the bored pile foundation resulted in a decrease of 0.009 meters. Reinforcement is used for the raft foundation, namely D32-150 in the x and y directions, while the bored pile foundation uses 12D29 main reinforcement and spiral uses D16-60. The cost of raft pile work is Rp. 31,808,929,090 with 11% VAT of Rp. 3,413,903,297.

Keywords : *Raft Pile Foundation, Raft Foundation, Bored Pile Foundation*