***ANALYSIS OF CARRYING CAPACITY, SETTLEMENT AND CALCULATION OF DIMENSIONS OF PILE CAP FOR GROUP BORED PILE FOUNDATION***

**(Case Study : Grass Market Building Project, South Jakarta)**

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**ABSTRACT**

Pasar Rumput flats have 25 floors, with 1st – 3rd floors functioning as market areas and 4th – 25th floors functioning as residential areas. As a high building, Market grass flats must have a sturdy and strong structure, not just the upper structure, but also the lower structure. But from the results of the land investigation conducted by PT. TITIK UTAMA AGUNG Geotechnical Engineering Consultant obtained soil type is silty clay, this type of soil is rather difficult to do for planning the foundation because if it is still used the risk of settlement will be very large. The foundation of the group bored pile with the addition of pile cap can help support the building load, reduce the settlement and make the loading location that works properly at the center point of the foundation so as not to cause eccentricity which can cause additional loads on the foundation.

Using the Reese and O'niell (1989) method and the Meyerhof (1976) method, the capacity of a single drill pole carrying capacity with a diameter of 1m and a depth of 20m is 153.80 tons and 309.47 tons. The carrying capacity of the pile group is the most efficient and works close to the maximum is in pile cap number 4, the size of the pile group efficiency based on the Converse-Lebarre method is 0.997 with the pile carrying capacity of the group for three piles is 460.01 tons and 925.64 tons. The dimensions of the pile cap with length, width, thickness based on the IS 456-2000 method are 3.3m, 3.3m, 2.9m. The settlement of group pile foundation analyzed by empirical and semi-empirical methods for single pile and group pile settlement using vesic method (1977) were 0.00561 m and 0.01019 m respectively, declared safe against collapse due to fulfilling the permissible decrease limit requirement of 0.1 m .

Keywords: Group Pile Foundation, Carrying Capacity, Settlement, Pile cap Dimension