ABSTRAK

Judul: Analisis Kapasitas Sistem Drainase Komplek Rusun Nagrak Cilincing –Jakarta Utara, Penulis: Ari Purnomo Aji, Nim: 41114110025, Dosen Pembimbing: Acep Hidayat,ST.MT, Tahun : 2018/2019

Pembangunan rumah susun merupakan salah satu alternatif pemecahan masalah kebutuhan perumahan dan pemukiman di daerah perkotaan yang jumlah penduduknya terus meningkat. Komplek Rusun Nagrak memiliki luas lahan 10,5 hektar dimana 70% lahan diguanakan untuk fasum dan infrastruktur. Selain memiliki lingkungan yang layak dan nyaman rumah susun yang baik harus memperhatikan infrastruktur yang baik, salah satunya adalah sistem drainase. Drainase Komplek Rusun Nagrak ini menggunaan sistem buangan terpisah antara air hujan dengan air kotor, untuk air kotor di alirkan menuju bangunan STP (Sewage Treatment Plant).

Langkah-langkah analisis sistem drainase meliputi pengumpulan data primer dan sekunder, perhitungan curah hujan rencana, analisis frekuensi dengan metode log pearson type III, perhitungan intensitas hujan, analisis debit rencana metode rasional, hingga perhitungan debit eksisiting. dan solusi alternatif dari hasil analisis.

Berdasarkan hasil perhitungan didapat curah hujan rencana kala ulang dua tahunan sebesar 120,151mm, untuk hasil perbandingan antara debit banjir rencana dengan debit eksisting saluran terdapat beberapa saluran tidak memenuhi, sehingga solusi alternatifnya adalah dibangun kolam retensi,

Dikarenakan keterbatasan lahan yang tersedia kolam retensi dibagi menjadi tiga bagian, dengan dimensi masing-masing sebagai berikut:

- *Kolam retensi 1 luas 1.350m^2, kedalaman 2,75m dengan tinggi jagaan 2,75m, kemiringan dinding 1:1 dan keliling 228,5 sehingga didapat volume tampung 3280,49m^3*
- *Kolam retensi 2 luas 1.853m^2, kedalaman 1,5m dengan tinggi jagaan 1,5m, kemiringan dinding 1:1 dan keliling 229,2 sehingga didapat volume tampung 2650,58m^3*
- *Kolam retensi 3 luas 1.294m^2, kedalaman 2,25m dengan tinggi jagaan 1,5m, kemiringan dinding 1:1 dan keliling 220,6 sehingga didapat volume tampung 2632,3m^3*

Kata Kunci: *Hidrologi, Sistem Drainase, Banjir, Kolam retensi*

ABSTRACT

Title: Capacity Analysis of Drainage Systems for Nagrak Cilincing Flat Complex - North Jakarta, Author: Ari Purnomo Aji, Nim: 41114110025, Supervisor: Acep Hidayat, ST.MT, Year: 2018/2019

the construction of flats is an alternative solution to the problem of housing and residential needs in urban areas where the population continues to increase. The Nagrak Flat Complex has an area of 10.5 hectares where 70% of the land is used for public facilities and infrastructure. Besides having a decent and comfortable environment, a good apartment must pay attention to good infrastructure, one of which is the drainage system. Drainage The Nagrak Flat Complex uses a separate exhaust system between rainwater and dirty water, for dirty water to flow to the STP (Sewage Treatment Plant) building.

The analysis analysis steps include primary and secondary data collection, calculation of planned test results, frequency analysis with type III log pearson method, calculation of rain intensity, discharge analysis of rational method plans, and calculation of existing discharge and alternative solutions from analysis results

based on the calculation results, it is obtained that the rainfall plan for biennial repetition is 120,151mm, for the results of the comparison between the planned flood discharge and the existing discharge channel there are several channels that do not meet, so the alternative solution is to build a retention pond due to the limitations of the available material the retention pool is divided into three parts, with their respective dimensions as follows

- *The retention pond 1 is 1.350m2 wide, 2.75m deep with 2.75m height, 1:1 wall slope and 228.5 circumference so that the volume is 3280,49m3*
- *Retention pool 2 area is 1,853m2, depth of 1.5m with height of 1.5m, wall slope of 1: 1 and circumference of 229.2 so that the volume obtained is 2650.58m3*
- *The retention pool 3 has an area of 1,294 m2, a depth of 2,25m with a height of 1.5m, the slope of the wall is 1: 1 and the circumference of 220.6 so that the volume of storage is 2632,3m3*

Keywords: Hydrology, Drainage System, Flood, Retention Pond