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ANALYSIS OF FLOOD DRAINAGE SYSTEM IN BATAM CITY (CASE STUDY: DUYUNG ROAD, BATU AMPAR SUB DISTRICT)

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Abstract

This study aims to determine the analysis of the drainage system against inundation (flooding) in Duyung Road, Batu Ampar Sub District, Batam. Duyung Road, Batu Ampar Sub District is one of the problematic location in Batam, where often times found the puddle of water on the road during high rainfall intensity. The Duyung Road is located in Batu Ampar District, Batam City. The location of the occurrence of puddles is right along Duyung Road starting from the U-turn Batu Ampar to front of the Pacific hotel. The distribution analysis used was the Gumbel distribution, the Gumbel distribution was chosen by conducting the Smirnov Kolmogorov test. The return period chosen is 5 year.

Based on the results of the analysis, the calculation of the existing discharge is greater than the planned discharge where $Q_{eksisting}$ = 0.1023 m^3 / sec, while the plan discharge is Q_{plan} = 0.038 m^3 / sec. The calculation of the dimensions of the existing channel fulfilled the plan dimensions. Where the value of $b_{eksisiting}$ = 0.40 m > b_{plan} = 0.33 m and $h_{eksisting}$ = 0.45 m> h_{plan} = 0.33 m. which means there is nothing wrong with the planning of the dimensions of the drainage channel in Duyung Road, Batu Ampar Sub District. The garbage in water drains clogged the waste disposalas well as the drainage and as a result it inhibits the flow of water in this area.

Keywords : Debit, Dimension, Drainage, Inundation