EVALUASI GEOMETRIK, KINERJA DAN PERKERASAN LENTUR JALAN RAYA GUMITIR KABUPATEN JEMBER

(Studi Kasus Jalan Raya Gumitir, Kecamatan Silo, Kabupaten Jember)

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RINGKASAN

Pentingnya peningkatan prasarana transportasi darat berupa jalan yang baik dapat member kenyamanan, keselamatan, dan keamanan bagi pengguna jalan, khususnya kendaraan berat seperti bus, truk dan kendaraan pribadi. Salah satu jalan yang banyak dilintasi kendaraan tersebut adalah jalan raya Gumitir Kabupaten Jember. Jalan raya Gumitir merupakan jalan raya kelas I sebagai jalan lintas antar kabupaten dan kota (Jember - Banyuwangi). Kondisi medan jalan raya ini dengan lebar 7 meter serta berliku dan terdapat kelandaian. Jalan raya ini banyak dilewati kendaraan berat yang dapat menyebabkan pembebanan (tonase) *overloading*, sehingga mengakibatkan seringnya terjadi kerusakan pada badan jalan. Dengan kondisi tersebut diperlukan evaluasi geometrik (tentang panjang lengkunganya) dan perhitungan tebal perkerasan lenturnya pada jalan raya Gumitir Kabupatan Jember.

Masalah dalam penelitian ini adalah bagaimana kinerja jalan raya Gumitir, bagaimana kondisi geometric jalan raya Gumitir STA 229+664 - STA+019, bagaimana mengevaluasi kondisi perkerasan lentur dengan metode bina marga 2013 UR 20 tahun, dan bagaimana inventarisasi jalan raya Gumitir. Penelitian ini bertujuan untuk (1) menganalisa kinerja pada jalan raya Gumitir, (2) menganalisa geometric jalan raya Gumitir STA 229+664 - STA+019, (3) menganalisa kondisi perkerasan lentur dengan metode bina marga 2013 UR 20 tahun, (4) menganalisa inventaris jalan raya Gumitir.

Penelitian dilaksanakan di Jl. Jember - Banyuwangi (*Rest Area* Gumitir), dengan metode *Full Circle* (Lengkungan/kurva sederhana) untuk menghitung kondisi geometric jalan raya Gumitir dan metode Bina Marga 2013 UR 20 untuk menghitung tebal perkerasan lentur jalan raya Gumitir.

Berdasarkan hasil penelitian dari perhitungan geometric lengkung kurva horizontal hasilnya terdapat perbedaan panjang $LC_{lapangan}$ dengan $LC_{analisa}$ pada setiap lokasi. Lokasi I : $LC_{lapangan}$= 52 m, $LC_{analisa}$ = 37,678 m, selisih panjang 14,322 m, tidak diperlukan redesain jalan. Lokasi II : $LC_{lapangan}$ = 63 m, $LC_{analisa}$ = 36,455 m, selisih panjang 26,545 m, tidak diperlukan redesain jalan. Sedangkan pada perhitungan geometric lengkung vertikal hasilnya terdapat perbedaan tinggi yang mengakibatkan adanya timbunan dan galian pada setiap lokasi yang diteliti. Perhitungan ke I kurva EV dan kurva EV II diperlukan timbunan pada titik 2 sebesar 0,0169 m dan 0,019249 m. Hasil perhitungan perencanaan tebal perkerasan bina marga 2013 didapatkan tebal perkerasan lentur sebesar 44 cm, HRS WC 3 cm, HRS Base 3,5 cm, LPA Kelas A 25 cm dan LPA kelas B 12,5 cm. Hasil perencanan penambahan titik rambu-rambu peringatan didapatkan tiang listrik 8 buah, lampu penerangan jalan 10 buah, rambu – rambu lalu lintas 8 buah (penambahan 8 titik) dan marka jalan membujur berupa garis utuh.

Kata Kunci: *Geometrik, Kinerja, Perkerasan Lentur Jalan Raya, Inventaris Jalan Raya, Gumitir,*
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GEOMETRIC EVALUATION, PERFORMANCE AND FLEXIBLE PAVEMENT OF GUMITIR STREET, JEMBER DISTRICT

(Case Study of Gumitir Highway, Silo District, Jember Regency)

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ABSTRACT

The importance of improving land transportation infrastructure in the form of good roads can provide comfort, safety and security for road users, especially heavy vehicles such as buses, trucks and private vehicles. One of the roads that is widely crossed by these vehicles is the Gumitir highway in Jember district. Gumitir Road is a class I highway as a crossing road between regencies and cities (Jember-Banyuwangi). The terrain of this highway with a width of 7 meters and winding and there are slopes. This highway is heavily passed by heavy vehicles which can cause overloading (tonnage) loading, resulting in frequent damage to the road body. Under these conditions a geometric evaluation (of the length of the arch) and calculation of the thickness of the flexible pavement on the JemberGumitir highway.

The problem in this research is how the performance of the Gumitir highway, how the geometric conditions of the Gumitir highway STA 229 + 664-STA + 019, how to evaluate the flexible pavement conditions with the 2013 UR20 year binamarga method, and how the safety and safety of the Gumitir highway. This study aims to (1) analyze the performance of the Gumitir highway, (2) analyze the geometry of the Gumitir highway STA 229 + 664-STA + 019, (3) analyze the flexible pavement conditions with the 2013 UR20 years binamarga method, (4) analyze security and road safety of Gumitir.

The study was conducted at Jl. Jember-Banyuwangi (Rest Area Gumitir), with the Full Circle method to calculate the geometric conditions of the Gumitir highway and the 2013 UR20 BinaMargamethod to calculate the flexural pavement thickness of the Gumitir highway.

Based on the research results from the geometric calculations of horizontal curve curves, the result is that there is a difference in the length of the LCl field with LCanalysis at each location. Location I: Field = 52 m, Analysis = 37,678 m, length difference of 14,322 m, no road redesign is needed. Location II: Field = 63 m, Analysis = 36,455 m, length difference of 26,545 m, no road redesign is needed. Whereas the geometrical calculation of the vertical arcing results in a height difference which results in the excavation of the excavated fan at each location studied. Calculations to the EV curve and the EV curve II require a heap at point 2 of 0,0169 m and 0,019249 m. The results of the 2013 Binamarga pavement thickness calculation results obtained a flexible pavement thickness of 44 cm, WC HRS 3 cm, HRS Base 3,5 cm, LPA Class A 25 cm and LPA Class B 12,5 cm. The results of planning the addition of warning signs point obtained 8 electric poles, 10 street lighting lamps, 4 traffic signs (addition of 4 points) and longitudinal road markings in the form of solid lines.

Keywords: Geometry, Performance, Flexurel Pavement, Highway Inventory, Gumitir, Jember Regency