PERANCANGAN GEOMETRIK DAN TEBAL PERKERASAN KAKU JALAN BATUMARTA X – BANTAN STA 0+000 – 8+066,15 KABUPATEN OGAN KOMERING ULU TIMUR PROVINSI SUMATERA SELATAN

ABSTRAK

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Jalan Batumarta X–Bantan di Kabupaten Ogan Komering Ulu Timur memiliki peran penting dalam mendukung mobilitas masyarakat dan distribusi hasil pertanian. Namun, kondisi jalan yang masih berupa tanah, sempit, dan sering tergenang menyebabkan transportasi kurang lancar serta menurunkan kenyamanan dan keselamatan pengguna jalan. Perencanaan ini bertujuan merencanakan trase jalan yang optimal, menghitung alinyemen horizontal dan vertikal, menentukan volume galian dan timbunan, serta merencanakan tebal perkerasan kaku sesuai beban lalu lintas rencana. Data sekunder berupa peta topografi, data lalu lintas, dan data tanah dasar dikumpulkan dan dianalisis mengacu pada Pedoman Desain Geometrik Jalan (2021) serta Manual Desain Perkerasan Jalan (2024). Hasil perencanaan menunjukkan panjang jalan 8.066,15 m dengan 5 tikungan horizontal dan 29 lengkung vertikal. Struktur perkerasan kaku terdiri atas pelat beton setebal 24 cm, *Lean Mix Concrete* (LMC) setebal 15 cm, lapis pondasi atas agregat kelas A setebal 20 cm, dan lapisan stabilisasi tanah dasar setebal 40 cm. Direncanakan pula saluran samping U-Ditch berukuran 0,50 m × 0,60 m serta 32 unit *box culvert*. Berdasarkan hasil perhitungan manajemen proyek, total biaya pembangunan jalan sebesar Rp90.521.612.791 dengan durasi pelaksanaan 189 hari kerja. Hasil perencanaan ini diharapkan menghasilkan jalan yang aman, nyaman, dan mendukung kelancaran transportasi di wilayah tersebut.

Kata kunci: perencanaan geometrik jalan, perkerasan kaku, alinyemen horizontal, alinyemen vertikal, manajemen proyek.

GEOMETRIC DESIGN AND THICKNESS OF RIGID PAVEMENT FOR BATUMARTA X – BANTAN STA 0+000 – 8+066,15 ROAD, EAST OGAN KOMERING ULU REGENCY, SOUTH SUMATRA PROVINCE

ABSTRACT

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The Batumarta X–Bantan Road in East Ogan Komering Ulu Regency plays an important role in supporting community mobility and the distribution of agricultural products. However, the existing road, which is unpaved, narrow, and frequently inundated, hinders transportation and reduces the comfort and safety of road users. This project aims to design an optimal road alignment, calculate the horizontal and vertical alignments, determine cut-and-fill volumes, and design the thickness of a rigid pavement structure based on the projected traffic load. Secondary data, including topographic maps, traffic data, and subgrade soil data, were collected and analyzed in accordance with the Road Geometric Design Guidelines (2021) and the Road Pavement Design Manual (2024). The design results indicate a total road length of 8,066.15 m, comprising five horizontal curves and 29 vertical curves. The rigid pavement structure consists of a 24 cm thick concrete slab, a 15 cm thick Lean Mix Concrete (LMC) layer, a 20 cm thick Class A aggregate base course, and a 40 cm thick subgrade stabilization layer. In addition, the design includes U-Ditch side drains measuring 0.50 m × 0.60 m and 32 box culverts. Based on the project management calculations, the total construction cost is estimated at IDR 90,521,612,791, with a construction duration of 189 working days. This design is expected to provide a safe and comfortable road while supporting smoother transportation in the area.

Keywords: *road geometric design, rigid pavement, horizontal alignment, vertical alignment, project management.*