

ABSTRAK

PERENCANAAN GEOMETRIK DAN TEBAL PERKERASAN LENTUR JALAN LINGKAR SIMPANG BETUNG

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Pembangunan jalan alternatif menjadi solusi strategis untuk mengatasi kemacetan, kerusakan struktural, dan overkapasitas jalur utama, khususnya di Jalan Simpang Betung - Sei Lilin, Provinsi Sumatera Selatan. Penelitian ini bertujuan merancang geometrik dan struktur perkerasan lentur pada ruas Jalan Betung - Sei lilin sepanjang 5,374 km (STA 0+000 – STA 5+374). Perancangan geometrik mengacu pada kecepatan rencana 60 km/jam, menghasilkan 4 tikungan horizontal (1 Full Circle dan 3 Spiral Circle-Spiral) serta 28 lengkung vertikal (14 cekung dan 14 cembung). Dimensi jalan meliputi lebar badan 7 meter dan bahu jalan 2 meter. Struktur perkerasan dirancang berdasarkan MDPJ 2024, terdiri dari LFA kelas C (200 mm), LFA kelas B (150 mm), LFA kelas A (200 mm), AC-BC (75 mm), dan AC-WC (40 mm). Estimasi biaya pembangunan sebesar Rp49.408.247.193. dengan waktu pelaksanaan 201 hari kerja. Hasil perancangan ini diharapkan mendukung konektivitas wilayah, distribusi logistik, serta meningkatkan kenyamanan dan keselamatan pengguna jalan.

Kata kunci: estimasi biaya, jalan alternatif, perancangan geometrik, perkerasan lentur.

ABSTRACT

GEOMETRIC DESIGN AND FLEXIBLE PAVEMENT THICKNESS PLANNING OF THE BETUNG RING ROAD

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The construction of an alternative road is a strategic solution to address traffic congestion, structural deterioration, and overcapacity on the main roadway, particularly along the Simpang Betung–Sei Lilin Road in South Sumatra Province. This study aims to design the road geometry and flexible pavement structure for the Betung–Sei Lilin Road section with a total length of 5.374 km (STA 0+000 – STA 5+374). The geometric design is based on a design speed of 60 km/h, resulting in 4 horizontal curves (1 Full Circle and 3 Spiral-Circle-Spiral curves) and 28 vertical curves (14 sag curves and 14 crest curves). The road dimensions consist of a 7-meter carriageway and 2-meter shoulders. The pavement structure was designed in accordance with the 2024 Road Pavement Design Manual (MDPJ), consisting of a 200 mm Class C Aggregate Base Layer, 150 mm Class B Aggregate Base Layer, 200 mm Class A Aggregate Base Layer, 75 mm Asphalt Concrete Binder Course (AC-BC), and 40 mm Asphalt Concrete Wearing Course (AC-WC). The estimated construction cost is IDR 49,408,247,193, with a construction period of 201 working days. The proposed design is expected to improve regional connectivity, support logistics distribution, and enhance the comfort and safety of road users.

Keywords: cost estimation, alternative road, geometric design, flexible pavement.