ABSTRAK

PERANCANGAN GEOMETRIK DAN TEBAL PERKERASAN LENTUR JALAN ALTERNATIF UJAN MAS STA (0+000) - STA (5+800) KABUPATEN MUARA ENIM PROVINSI SUMATRA SELATAN

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Pembangunan jalan alternatif menjadi solusi strategis untuk mengatasi kemacetan, kerusakan struktural, dan *overkapasitas* jalur utama, khususnya di Kabupaten Muara Enim, Provinsi Sumatera Selatan. Penelitian ini bertujuan merancang *geometrik* dan struktur *perkerasan lentur* pada ruas Jalan Ujan Mas sepanjang 5,8 km (STA 0+000 – STA 5+800). Perancangan *geometrik* mengacu pada kecepatan rencana 60 km/jam, menghasilkan 14 tikungan horizontal (5 *Full Circle* dan 9 *SpiralCircle-Spiral*) serta 20 lengkung vertikal (10 cekung dan 10 cembung). Dimensi jalan meliputi lebar badan 7 meter dan bahu jalan 2 meter. Struktur *perkerasan* dirancang berdasarkan *MDPJ 2024*, terdiri dari lapis pondasi bawah (350 mm), pondasi atas (200 mm), *AC Base* (185 mm), *AC-BC* (60 mm), dan *AC-WC* (40 mm). Estimasi biaya pembangunan sebesar Rp58,142,705,000.00, dengan waktu pelaksanaan 146 hari kerja. Hasil perancangan ini diharapkan mendukung konektivitas wilayah, distribusi logistik, serta meningkatkan kenyamanan dan keselamatan pengguna jalan.

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

ABSRACT

GEOMETRIC DESIGN AND FLEXIBLE PAVEMENT THICKNESS PLANNING FOR THE UJAN MAS ALTERNATIVE ROAD STA (0+000) - STA (5+800), MUARA ENIM REGENCY, SOUTH SUMATRA PROVINCE

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The construction of an alternative road is a strategic solution to address congestion, structural damage, and overcapacity on the main road, especially in Muara Enim Regency, South Sumatra Province. This study aims to design the geometric alignment and flexible pavement structure for the Ujan Mas road section with a total length of 5.8 km (STA 0+000 – STA 5+800). The geometric design refers to a design speed of 60 km/h, resulting in 14 horizontal curves (5 Full Circle and 9 Spiral-Circle-Spiral) and 20 vertical curves (10 concave and 10 convex). The road is designed with a 7-meter carriageway and 2-meter shoulders. The flexible pavement structure follows the 2024 Road Pavement Design Manual (MDPJ), consisting of a 350 mm subbase layer, 200 mm base layer, 185 mm AC Base, 60 mm AC-BC, and 40 mm AC-WC. The estimated construction cost is IDR 58,142,705,000.00, with an implementation time of 146 working days. This design is expected to improve regional connectivity, support logistics distribution, and enhance road user comfort and safety.

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