

ABSTRAK

PERENCANAAN GEOMETRIK DAN TEBAL PERKERASAN LENTUR DESA JAYA TUNGGAL – DESA REMAYU KABUPATEN MUSI RAWAS PROVINSI SUMATERA SELATAN

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Jalan merupakan prasarana transportasi yang berperan penting dalam meningkatkan aksesibilitas wilayah, mobilitas masyarakat, serta mendukung pertumbuhan ekonomi. Kabupaten Musi Rawas merupakan daerah penghubung antara Provinsi Sumatera Selatan dan Provinsi Jambi yang memiliki aktivitas transportasi cukup tinggi. Untuk mendukung kelancaran arus lalu lintas dan menyediakan jalur alternatif, dilakukan perencanaan geometrik dan tebal perkerasan lentur pada ruas Jalan Desa Jaya Tunggal – Desa Remayu Kabupaten Musi Rawas Provinsi Sumatera Selatan.

Perencanaan ini bertujuan untuk merencanakan geometrik jalan, menentukan tebal perkerasan lentur, serta menyusun dokumen manajemen proyek berupa Rencana Kerja dan Syarat-Syarat (RKS), Rencana Anggaran Biaya (RAB), *Network Planning* (NWP), dan Kurva S. Perencanaan geometrik mengacu pada Pedoman Desain Geometrik Jalan Tahun 2021, sedangkan perencanaan tebal perkerasan lentur menggunakan Manual Desain Perkerasan Jalan Tahun 2024. Data yang digunakan meliputi data topografi, lalu lintas harian rata-rata (LHR), dan data daya dukung tanah (CBR).

Hasil perencanaan menunjukkan bahwa ruas jalan yang direncanakan memiliki panjang 7 km dengan tipe jalan 2/2-TT, lebar jalur 7 m, lebar bahu 2 m, kemiringan melintang normal 2%, serta kecepatan rencana 60 km/jam. Alinyemen horizontal terdiri atas 5 tikungan, yaitu 3 tikungan *Full Circle* (FC) dan 2 tikungan *Spiral-Circle-Spiral* (SCS), sedangkan alinyemen vertikal terdiri atas 9 titik *Point of Vertical Intersection* (PVI), yaitu 6 lengkung cembung dan 3 lengkung cekung. Berdasarkan nilai CBR tanah dasar sebesar 7,304%, struktur perkerasan lentur yang diperoleh terdiri dari lapisan *AC-WC* 40 mm, *AC-BC* 75 mm, *AC-Base* 100 mm, Lapis Pondasi Agregat Kelas A 200 mm, Lapis Pondasi Agregat Kelas B 150 mm, dan stabilisasi semen 200 mm dengan total tebal struktur 765 mm. Hasil perencanaan manajemen proyek menunjukkan kebutuhan biaya sebesar Rp67,065,256,000 dengan waktu pelaksanaan selama 164 hari kerja.

Kata Kunci: geometrik jalan, perkerasan lentur, alinyemen horizontal, alinyemen vertikal, CBR, Musi Rawas.

ABSTRACT

GEOMETRIC DESIGN AND FLEXIBLE PAVEMENT THICKNESS PLANNING OF JAYA TUNGGAL VILLAGE – REMAYU VILLAGE ROAD, MUSI RAWAS REGENCY, SOUTH SUMATRA PROVINCE

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Road infrastructure plays an important role in improving regional accessibility, community mobility, and supporting economic growth. Musi Rawas Regency serves as a connecting area between South Sumatra Province and Jambi Province, resulting in relatively high transportation activities. To support traffic flow and provide an alternative transportation route, a geometric road design and flexible pavement thickness planning were carried out for the Jaya Tunggal Village – Remayu Village road section in Musi Rawas Regency, South Sumatra Province.

This project aims to design the road geometry, determine the flexible pavement thickness, and prepare project management documents, including Technical Specifications (RKS), Cost Estimation (RAB), Network Planning (NWP), and S-Curve. The geometric design refers to the 2021 Road Geometric Design Guidelines, while the flexible pavement design is based on the 2024 Pavement Design Manual. The data used in this planning consist of topographic data, Average Daily Traffic (ADT) data, and California Bearing Ratio (CBR) data.

The planning results indicate that the designed road has a length of 7 km with a 2/2 Undivided Two-Lane Road (2/2-TT), a carriageway width of 7 m, a shoulder width of 2 m, a normal cross slope of 2%, and a design speed of 60 km/h. The horizontal alignment consists of five curves, comprising three Full Circle (FC) curves and two Spiral-Circle-Spiral (SCS) curves, while the vertical alignment consists of nine Points of Vertical Intersection (PVI), including six crest curves and three sag curves. Based on a subgrade CBR value of 7.304%, the flexible pavement structure consists of 40 mm AC-WC, 75 mm AC-BC, 100 mm AC-Base, 200 mm Class A Aggregate Base Course, 150 mm Class B Aggregate Base Course, and 200 mm cement stabilization, resulting in a total pavement thickness of 765 mm. The project management planning estimates a construction cost of IDR 67,065,256,000 with an implementation period of 164 working days.

Keywords: *geometric road design, flexible pavement, horizontal alignment, vertical alignment, CBR, Musi Rawas.*