

**PERANCANGAN GEOMETRIK DAN TEBAL PERKERASAN KAKU
RUAS JALAN SIMPANG MASURAI - KOTOTAPUS STA STA 9 + 500 -
STA 17 + 900 KABUPATEN MERANGIN PROVINSI JAMBI**

Aliqa Aulia Junaz - Zahra, Nadiyah Zahra Shofiyyah
Jurusan Teknik Sipil, Politeknik Negeri Sriwijaya

ABSTRAK

Perancangan Ruas Jalan Simpang Masurai–Kototapus STA 9+500–STA 17+900 Kabupaten Merangin, Provinsi Jambi dilakukan untuk menjawab permasalahan mengenai perencanaan geometrik jalan, penentuan tebal perkerasan kaku, perencanaan drainase, serta penyusunan Rencana Anggaran Biaya (RAB) dan jadwal pelaksanaan proyek sesuai standar yang berlaku. Tujuan perancangan ini adalah menghasilkan desain jalan yang memenuhi persyaratan teknis, memiliki umur rencana yang sesuai, serta mendukung mobilitas masyarakat dan pengembangan wilayah. Metode yang digunakan mengacu pada Pedoman Desain Geometrik Jalan Tahun 2021, Manual Desain Perkerasan Jalan Tahun 2024, Pedoman Desain Drainase Jalan Tahun 2021, serta Analisa Harga Satuan Pekerjaan (AHSP) Bina Marga. Data yang dianalisis meliputi topografi, lalu lintas, tanah dasar (CBR), dan curah hujan. Hasil perencanaan menunjukkan bahwa ruas jalan dirancang sebagai Jalan Kolektor Kelas II dengan panjang trase 8,4 km dan lebar perkerasan 8 m. Alinyemen horizontal terdiri atas 8 tikungan dan alinyemen vertikal terdiri atas 10 lengkung. Struktur perkerasan menggunakan *Jointed Plain Concrete Pavement* (JPCP) dengan tebal pelat beton 23 cm, dilengkapi sistem drainase berupa *U-Ditch* dan *Box Culvert*. Total Rencana Anggaran Biaya sebesar Rp89.029.362.000,00 dengan waktu pelaksanaan selama 174 hari kerja. Berdasarkan hasil perancangan, desain yang dihasilkan diharapkan mampu memberikan pelayanan jalan yang aman, nyaman, dan efisien serta mendukung peningkatan konektivitas dan perkembangan wilayah di Kabupaten Merangin.

Kata Kunci : Perencanaan Geometrik Jalan, Perkerasan Kaku, Drainase Jalan, Manajemen Proyek, Merangin

**GEOMETRIC DESIGN AND RIGID PAVEMENT THICKNESS FOR THE
ROAD SECTION OF SIMPANG MASURAI VILLAGE – KOTOTAPUS
VILLAGE STA 9 + 500 - STA 17 + 900
MERANGI DISTRICT, JAMBI PROVINCE**

Aliqa Aulia Junaz – Zahra, Nadiyah Zahra Shofiyyah
Civil Engineering Department, Sriwijaya State Polytechnic

ABSTRACT

The design of the Simpang Masurai–Kototapus Road Section, STA 9+500–STA 17+900, Merangin Regency, Jambi Province, was conducted to address issues related to geometric road design, rigid pavement thickness design, drainage system planning, as well as the preparation of the Cost Estimate (RAB) and project implementation schedule in accordance with the applicable standards. The objective of this design is to produce a road design that meets technical requirements, has an appropriate design life, and supports community mobility and regional development. The method employed was based on the applicable road design standards by analyzing topographic data, traffic data, subgrade conditions (CBR), and rainfall data. The results indicate that the road section is designed as a Class II Collector Road with a total length of 8.4 km and a pavement width of 8 m. The horizontal alignment consists of eight curves, while the vertical alignment consists of ten vertical curves. The pavement structure uses Jointed Plain Concrete Pavement (JPCP) with a concrete slab thickness of 23 cm and is supported by a drainage system consisting of U-Ditches and Box Culverts. The total estimated construction cost is IDR 89,029,362,000.00, with an implementation period of 174 working days. Based on the design results, the proposed road is expected to provide a safe, comfortable, and efficient transportation facility while improving regional connectivity and supporting the development of Merangin Regency.

Key Words : *Geometric Road Design, Rigid Pavement, Road Drainage, Project Management, Merangin Regency.*