

**PERANCANGAN GEOMETRIK DAN TEBAL PERKERASAN KAKU
JALAN BTS. KOTA BATURAJA – SUNGAI TUHA STA 02+500 –
STA 10+500 KABUPATEN OGAN KOMERING ULU
PROVINSI SUMATERA SELATAN**

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ABSTRAK

Ruas Jalan Bts. Kota Baturaja – Sungai Tuha STA 02+500 – STA 10+500 di Kabupaten Ogan Komering Ulu, Provinsi Sumatera Selatan, merupakan jalur strategis yang mendukung mobilitas masyarakat dan distribusi barang antar daerah. Peningkatan volume lalu lintas pada ruas ini memerlukan perencanaan geometrik jalan dan perkerasan yang sesuai dengan standar teknis agar tercipta jalan yang aman, nyaman, dan efisien. Penelitian ini bertujuan untuk merencanakan geometrik jalan, menentukan tebal perkerasan kaku, serta menyusun manajemen proyek dan rencana anggaran biaya. Metode perencanaan geometrik mengacu pada Pedoman Desain Geometrik Jalan Bina Marga No. 20/SE/Db/2021, sedangkan perencanaan perkerasan kaku menggunakan Manual Desain Perkerasan Jalan Bina Marga No. 03/M/BM/2024. Hasil perencanaan menunjukkan bahwa ruas jalan memiliki volume lalu lintas sebesar 44.071,08 SMP/hari dan diklasifikasikan sebagai Jalan Arteri Kelas I dengan tipe jalan 2/2-TT dan kecepatan rencana 70 km/jam pada medan datar. Desain alinyemen horizontal terdiri atas 6 tikungan, yaitu 3 tikungan *Full Circle* (FC) dan 3 tikungan *Spiral-Circle-Spiral* (SCS), serta 20 lengkung vertikal yang terdiri atas 10 lengkung cembung dan 10 lengkung cekung. Perencanaan perkerasan menghasilkan jenis perkerasan *Jointed Plain Concrete Pavement* (JPCP) dengan mutu beton $f_c' = 36$ MPa dan tebal pelat beton 20 cm. Bangunan pelengkap yang direncanakan meliputi saluran samping tipe *U-Ditch* berukuran $0,8 \text{ m} \times 0,8 \text{ m}$ sebanyak 7.667 unit dan 8 unit *box culvert* berukuran $1 \text{ m} \times 1 \text{ m}$. Total biaya pembangunan yang dibutuhkan sebesar Rp104.385.537.000,00 dengan waktu pelaksanaan selama 192 hari kerja.

Kata Kunci: Geometrik Jalan, Perkerasan Kaku, JPCP, Rencana Anggaran Biaya,

**GEOMETRIC AND RIGID PAVEMENT DESIGN OF
BATURAJA CITY LIMITS – SUNGAI TUHA ROAD STA
02+500 – STA 10+500 OGAN KOMERING ULU REGENCY
SOUTH SUMATRA PROVINCE**

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ABSTRACT

The Baturaja City Boundary – Sungai Tuha Road Section at STA 02+500 – STA 10+500 in Ogan Komering Ulu Regency, South Sumatra Province, is a strategic route that supports community mobility and interregional goods distribution. The increasing traffic volume on this road section requires geometric road and pavement planning in accordance with technical standards to ensure safe, comfortable, and efficient transportation infrastructure. This study aims to design the road geometry, determine the thickness of rigid pavement, and prepare project management planning and cost estimation. The geometric design refers to the Bina Marga Geometric Road Design Guidelines No. 20/SE/Db/2021, while the rigid pavement design follows the Bina Marga Pavement Design Manual No. 03/M/BM/2024. The results indicate that the road section has a traffic volume of 44,071.08 PCU/day and is classified as a Class I Arterial Road with a 2/2 undivided two-lane road type and a design speed of 70 km/h on flat terrain. The horizontal alignment consists of six curves, including three Full Circle (FC) curves and three Spiral-Circle-Spiral (SCS) curves, while the vertical alignment consists of twenty curves, comprising ten crest curves and ten sag curves. The pavement design resulted in the use of Jointed Plain Concrete Pavement (JPCP) with a concrete compressive strength of $f_c' 36 \text{ MPa}$ and a slab thickness of 20 cm. Supporting structures include 7,667 units of U-Ditch side drains measuring $0.8 \text{ m} \times 0.8 \text{ m}$ and eight units of box culverts measuring $1 \text{ m} \times 1 \text{ m}$. The total construction cost is estimated at IDR 104,385,537,000.00, with a project implementation period of 192 working days.

Keywords: *Geometric Road Design, Rigid Pavement, JPCP, Cost Estimation,*