

**IMPLEMENTASI *BUILDING INFORMATION MODELING*
(BIM) PADA PERANCANGAN JEMBATAN BETON
PRATEGANG DI JALAN TOL BETUNG-TEMPINO-JAMBI
STA 55+925**

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ABSTRAK

Jembatan beton prategang pada Proyek Jalan Tol Betung-Tempino-Jambi STA 55+925 di Kabupaten Musi Banyuasin, Provinsi Sumatera Selatan, difungsikan sebagai penghubung jalan utama. Jembatan memiliki panjang bentang 46,2 meter dan lebar 26,9 meter. Perancangan jembatan mengacu pada Standar Nasional Indonesia (SNI) yang berlaku dan didukung Panduan Praktis Perencanaan Teknis Jembatan 2021 untuk perhitungan bangunan atas dan bangunan bawah. Hasil perancangan dikembangkan dengan mengimplementasikan sistem *Building Information Modelling* (BIM) yang mencakup *Detail Engineering Design* 2D, visualisasi model 3D, penjadwalan proyek 4D, serta *quantity take-off* 5D menggunakan *software* Autodesk. Berdasarkan analisis, perancangan jembatan beton prategang dibutuhkan biaya sebesar Rp30.300.861.730,60 serta waktu pelaksanaan selama 294 hari kalender.

Kata Kunci: Jembatan, Beton Prategang, *Building Information Modeling* (BIM), Manajemen Proyek

**IMPLEMENTATION OF BUILDING INFORMATION
MODELING (BIM) IN THE DESIGN OF A PRE-STRESSED
CONCRETE BRIDGE ON THE BETUNG-TEMPINO-JAMBI
HIGHWAY STA 55+925**

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ABSTRACT

The prestressed concrete bridge on the Betung-Tempino-Jambi Toll Road Project at STA 55+925 in Musi Banyuasin Regency, South Sumatra Province, serves as a main road connector. The bridge has a span length of 46.2 meters and a width of 26.9 meters. The bridge design refers to the applicable Indonesian National Standards (SNI) and is supported by the 2021 Practical Guide for Bridge Technical Planning for the superstructure and substructure calculations. The design results were developed by implementing a Building Information Modelling (BIM) system, which includes 2D Detail Engineering Design, 3D model visualization, 4D project scheduling, and 5D quantity take-off using Autodesk software. Based on the analysis, the prestressed concrete bridge design requires an estimated cost of Rp30,300,861,730.60 and a construction duration of 294 calendar days.

Keywords: *Bridge, Prestressed Concrete, Building Information Modeling (BIM), Project Management*