

ABSTRAK

PERANCANGAN STRUKTUR GEDUNG DEPO MEKANIK PT. KERETA API INDONESIA (KAI) KABUPATEN MUARA ENIM

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Perancangan Gedung Depo Mekanik PT Kereta Api Indonesia (KAI) Kabupaten Muara Enim merupakan Bangunan depo mekanik membutuhkan ruang bebas kolom yang luas sehingga digunakan konstruksi baja bentang lebar (*long span steel structure*) yang mampu menjangkau bentang panjang secara efisien. Tugas Akhir ini bertujuan merancang struktur Gedung Depo Mekanik PT Kereta Api Indonesia (KAI) Kabupaten Muara Enim berdasarkan Standar Nasional Indonesia (SNI) yang berlaku serta menyusun perencanaan manajemen pelaksanaan proyek. Perancangan meliputi struktur atas berupa rangka atap dengan menggunakan profil iwf 350 x 175, gording CNP 150 x 65, kolom profil 350 x 175, balok 150 x 75, serta struktur bawah berupa pedestal, sloof, pile cap, dan pondasi tiang pancang. Lantai dasar dirancang menggunakan beton bertulang dengan tebal 25 cm. Selain perancangan struktur, dilakukan penyusunan Rencana Kerja dan Syarat-Syarat (RKS), Perhitungan Rencana Anggaran Biaya (RAB), *Bar Chart*, Kurva S, dan *Critical Path Method* (CPM). Berdasarkan hasil perhitungan, biaya pekerjaan struktur diperoleh sebesar Rp6.093.500.000,00 termasuk PPN 11%, dengan durasi pelaksanaan berdasarkan Kurva S selama 129 hari kerja. Hasil perancangan diharapkan dapat menjadi informasi dan referensi untuk perhitungan gedung serupa agar menghasilkan bangunan yang aman, kuat, fungsional, dan efisien dalam pelaksanaannya.

Kata kunci: Struktur Bangunan, Baja, Beton, Pondasi, Manajemen.

ABSTRACT

DESIGN OF THE MECHANICAL DEPOT BUILDING STRUCTURE OF PT KERETA API INDONESIA (KAI), MUARA ENIM REGENCY

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The design of the Mechanical Depot Building of PT Kereta Api Indonesia (KAI) in Muara Enim Regency is a building design that requires a large column-free space; therefore, a long-span steel structure is used to efficiently accommodate long spans. This Final Project aims to design the structure of the Mechanical Depot Building of PT Kereta Api Indonesia (KAI) in Muara Enim Regency based on the applicable Indonesian National Standards (SNI) and to develop a project construction management plan. The structural design includes the upper structure consisting of a roof frame using IWF 350 × 175 profiles, CNP 150 × 65 purlins, IWF 350 × 175 columns, and IWF 150 × 75 beams, as well as the lower structure consisting of pedestals, tie beams, pile caps, and pile foundations. The ground floor is designed using reinforced concrete with a thickness of 25 cm. In addition to the structural design, the project includes the preparation of Work Requirements and Specifications (RKS), Cost Estimate (RAB), Bar Chart, S-Curve, and Critical Path Method (CPM). Based on the calculation results, the structural construction cost is Rp6,093,500,000.00, including 11% VAT, with a planned construction duration of 129 working days based on the S-Curve. The design is expected to provide information and serve as a reference for similar building designs, resulting in a safe, strong, functional, and efficient building.

Keywords: Building Structure, Steel, Concrete, Foundation, Management Project.