

ABSTRAK

PERANCANGAN STRUKTUR GEDUNG LABORATORIUM KESEHATAN MASYARAKAT KOTA PALEMBANG

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Perancangan Gedung Laboratorium Kesehatan Masyarakat Kota Palembang merupakan langkah strategis untuk memperkuat sistem deteksi dini dan layanan medis di tengah pertumbuhan penduduk. Laporan akhir ini bertujuan untuk merancang struktur gedung yang aman dan efisien sesuai Standar Nasional Indonesia (SNI) serta menyusun manajemen proyek yang komprehensif. Fokus perancangan mencakup analisis struktur atas dan struktur bawah dengan mempertimbangkan karakteristik beban gedung laboratorium dan kondisi tanah setempat, penyusunan Rencana Anggaran Biaya (RAB), Rencana Kerja dan Syarat-syarat (RKS), hingga penjadwalan proyek menggunakan *Time Schedule* metode *barchart*, *kurva-S*, *Critical Path Method* (CPM). Hasil perancangan struktur atas menghasilkan tebal pelat lantai dan atap $t = 120$ mm, dimensi balok induk $350 \text{ mm} \times 500 \text{ mm}$, balok anak $250 \text{ mm} \times 300 \text{ mm}$, kolom $500 \text{ mm} \times 500 \text{ mm}$, serta tangga dengan *optrade* 18 cm, *antrede* 28 cm, dan pelat bordes 180 mm. Perancangan struktur bawah menghasilkan sloof 1 ($350 \text{ mm} \times 500 \text{ mm}$), sloof 2 ($200 \text{ mm} \times 300 \text{ mm}$), serta pondasi tiang pancang *square pile* $40 \text{ cm} \times 40 \text{ cm} \times 1000 \text{ cm}$ dengan *pile cap* $1000 \text{ mm} \times 1000 \text{ mm} \times 600 \text{ mm}$. Dari segi manajemen proyek, diperoleh total estimasi rencana biaya pekerjaan struktur sebesar Rp5.038.363.000,00 termasuk PPN 11%, dengan hasil perhitungan perencanaan durasi selama 194 hari kerja. Hasil perancangan ini diharapkan dapat menjadi referensi teknis untuk perancangan gedung yang aman, efisien, dan tepat waktu untuk pembangunan gedung serupa di masa depan.

Kata kunci: Perancangan Struktur, SNI, RAB, Time Schedule, *Critical Path Method* (CPM).

ABSTRACT

STRUCTURAL DESIGN OF PUBLIC HEALTH LABORATORY BUILDING IN PALEMBANG CITY

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The design of the Palembang City Public Health Laboratory Building is a strategic step to strengthen early detection systems and medical services amidst population growth. This final report aims to design a safe and efficient building structure in accordance with Indonesian National Standards (SNI) and to synthesize a comprehensive project management plan. The design focus encompasses the analysis of the upper and lower structures, accounting for laboratory building load characteristics and local soil conditions, alongside the preparation of the Cost Estimate (RAB), Work Specifications and Requirements (RKS), and project scheduling using time schedule bar charts, S-curves, and the Critical Path Method (CPM). The upper structure design results in a floor and roof slab thickness of $t = 120$ mm, primary beam dimensions of $350 \text{ mm} \times 500 \text{ mm}$, secondary beam dimensions of $250 \text{ mm} \times 300 \text{ mm}$, column dimensions of $500 \text{ mm} \times 500 \text{ mm}$, as well as a staircase with a riser of 18 cm , tread of 28 cm , and landing slab thickness of 180 mm . The lower structure design yields tie beam 1 sloof 1 ($350 \text{ mm} \times 500 \text{ mm}$), tie beam 2 sloof 2 ($200 \text{ mm} \times 300 \text{ mm}$), and a square pile foundation measuring $40 \text{ cm} \times 40 \text{ cm} \times 1000 \text{ cm}$ with a pile cap of $1000 \text{ mm} \times 1000 \text{ mm} \times 600 \text{ mm}$. From a project management perspective, the total estimated cost for the structural work is IDR 5,038,363,000.00 including 11% VAT, with a planned duration of 194 working days. The results of this design are expected to serve as a technical reference for designing safe, efficient, and timely buildings for similar construction projects in the future.

Keywords: Structural Design, SNI, Cost Estimate, Time Schedule, Critical Path Method (CPM).

