

ABSTRAK

PERANCANGAN STRUKTUR DAN BIAYA JEMBATAN TIMBANG MENGUNAKAN SNI 1725:2016 PADA PT. TRIMATA BENUA KABUPATEN MUSI BANYUASIN

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Jembatan timbang merupakan salah satu bagian dari infrastruktur transportasi yang berfungsi untuk mengontrol beban kendaraan angkut material tambang, guna memastikan pencatatan beban agar mencegah kesalahan yang berdampak terhadap kerugian. Struktur dirancang mampu menahan beban tinggi dari truk yang memiliki tonase besar dan frekuensi lintasan tinggi. Perancangan struktur membahas perhitungan struktur bangunan atas, meliputi perancangan pelat lantai baja 16 mm, gelagar memanjang IWF 300.200.9.14 mm, gelagar melintang IWF 350.250.9.14 mm, diafragma IWF 200.200.8.13 mm, dan gelagar induk IWF 700.300.13.24 mm. Serta perhitungan struktur bangunan bawah, meliputi pelat injak fc 24,90 MPa, kolom *headwall* fc 24,90 MPa, dan pondasi rakit yang di gabungkan dengan pondasi tiang pancang yang menggunakan *mini pile* diameter 350.350 mm. Perancangan juga meliputi perhitungan sambungan yang digunakan sebagai media sambung antar elemen struktur berupa sambungan baut dan las. Perhitungan dilakukan dengan mengacu pada Standar Nasional Indonesia (SNI) 1725:2016 mengenai pembebanan struktur jembatan yang meliputi beban mati struktur, beban hidup berupa beban kendaraan angkut, maupun beban lain yang digunakan selama masa layan. Hasil perhitungan menunjukkan bahwa seluruh elemen struktur yang dirancang memenuhi syarat kekuatan lentur, geser, dan stabilitas defleksi. Rencana anggaran biaya yang didapat ialah Rp2.254.126.334 (Dua miliar dua ratus lima puluh empat juta seratus dua puluh enam ribu tiga ratus tiga puluh empat rupiah).

Kata Kunci: Baja, Fondasi, Gelagar, Jembatan timbang, Struktur

ABSTRACT

DESIGN STRUCTURAL AND COST OF WEIGHBRIDGE USING SNI 1725:2016 AT PT. TRIMATA BENUA MUSI BANYUASIN DISTRICT

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Weighbridges are one part of the transportation infrastructure that serves to control the load of mining material transport vehicles, to ensure the recording of loads in order to prevent errors that have an impact on losses. The structure is designed to withstand high loads from trucks that have large tonnage and high track frequency. The structural design discusses the calculation of the superstructure, including the design of 16 mm steel floor plates, IWF 300.200.9.14 mm longitudinal girders, IWF 350.250.9.14 mm transverse girders, IWF 200.200.8.13 mm diaphragms, and IWF 700.300.13.24 mm main girders. As well as the calculation of the structure of the lower building, including stepping plates fc 24.90 MPa, headwall columns fc 24.90 MPa, and raft foundations combined with pile foundations using mini piles diameter 350.350 mm. The design also includes the calculation of the connection used as a connecting medium between structural elements in the form of bolt and welding connections. Calculations are carried out with reference to Indonesian National Standard (SNI) 1725: 2016 regarding the loading of bridge structures which include structural dead loads, live loads in the form of transport vehicle loads, and other loads used during service life. The calculation results show that all structural elements designed meet the requirements of flexural strength, shear, and deflection stability. The obtained budget plan (RAB) amounts to Rp2.254.126.334 (Two billion two hundred fifty-four million one hundred twenty-six thousand three hundred thirty-four rupiah).

Keywords: *Steel, Foundation, Girder, Weighbridge, Structure*