

PERBANDINGAN PERANCANGAN GEOMETRI JALAN MANUAL DENGAN SOFTWARE CIVIL 3D, (Abdul Sunandi, NRP 22 2014 058, Pembimbing Sofyan Triana, S.T., M.T., Jurusan Teknik Sipil, Fakultas Sipil dan Perencanaan, Institut Teknologi Nasional, Bandung)

ABSTRAK

Perancangan AutoCAD Civil 3D dilakukan untuk mendapatkan hasil perhitungan secara cepat dan teliti, namun tetap aman dan nyaman. Perancangan peraturan mengacu pada AASHTO 2011. Hasil perancangan yang didapat pada software dan manual sama, pada alinyemen horizontal didapat 3 lengkung FC, 1 lengkung SCS dan alinyemen vertikal didapat 5 lengkung vertikal cekung, 4 lengkung vertikal cembung. Perancangan manual panjang L_v lengkung vertikal cekung dan cembung memenuhi syarat nilai K jarak pandang henti dan mendahului, sedangkan pada AutoCAD Civil 3D beberapa tidak tidak memenuhi nilai K jarak pandang henti dan mendahului. Panjang minimum perancangan manual dan AutoCAD Civil 3D pada kenyamanan memenuhi syarat, tetapi pada bentuk visual tidak. Perhitungan volume galian dan timbunan dari perancangan manual dan AutoCAD Civil 3D berbeda, 0,5% untuk galian dan 1,31% untuk timbunan. Penggunaan AutoCAD Civil 3D dinilai sangat efektif. Berdasarkan tugas akhir ini berharap adanya lanjutan penelitian dengan standar yang mengacu bina marga.

Kata kunci: Perancangan Geometri Jalan, Alinyemen Horisontal, Alinyemen Vertikal, AutoCad Civil 3D.

ABSTRACT

The design of AutoCAD Civil 3D is done to get the results of calculations quickly and thoroughly, but still safe and comfortable. The design rules refer to AASHTO 2011. The design results obtained in the software and manual are the same, on the horizontal alignment, there are 3 FC curves, 1 SCS curve and vertical alignment obtained by 5 vertical curves of sag, 4 vertical curve crest. The manual design of the length of the vertical arc L_v sag and crest meets the K value requirements for stopping and overtaking visibility, whereas in AutoCAD Civil 3D some do not meet the K value of stopping and overtaking visibility. The minimum length of manual design and AutoCAD Civil 3D at the comfort of the requirements, but not in the visual form. Calculation of excavation volume and heap from the manual design and 3D AutoCAD Civil are different, 0.5% for cut and 1.31% for fill. The use of AutoCAD Civil 3D is considered very effective. Based on the design of this final project, it is hoped that there will be continued research with standards that refer to the clan of clans.

Keywords: Geometric Road Design, Horizontal Alignment, Vertical Alignment, AutoCad Civil 3D.