

Appendix A
DESIGN EXCEPTION
MEMORANDUM



Arizona Department of Transportation

ROADWAY ENGINEERING GROUP

MEMORANDUM

To: Mary Viparina, 611E
Assistant State Engineer
Roadway Engineering Group

Date: February 24, 2006

From: Vincent Li, 605E *VL*
Manager
Roadway Predesign Section

Subject: Design Exception Request
Project 093 YV 161 H4871 01L
US 93 – Wickenburg to Santa Maria River
Kingman-Wickenburg Highway

The implementation phase of this Design Concept study has not been programmed for construction but listed as design phase in FY 2006 in the 2006-2010 ADOT Five-Year Transportation Facilities Construction Program.

US 93 is a major rural arterial highway linking Phoenix to northwestern Arizona and beyond. The existing roadway between SR 89 and the Santa Maria River is a two-lane facility. The traffic on existing US 93 is increasing and has already reached the point where a four-lane highway is needed. This project is intended to provide needed capacity on US 93. A new two-lane roadway is proposed to serve as the southbound lanes and will be built per current Roadway Design Guidelines. The existing two-lane roadway will serve as the northbound lanes.

Design Exceptions are hereby requested for improvements on the existing two-lane roadway for shoulder width at three locations and superelevation at one location as per the attached AASHTO Controlling Design Criteria Report (November 2005). An Accident Evaluation Report has also been prepared for the project and is also attached.

Reasons for requesting the design exceptions are as follows:

1. **Superelevation:** The existing superelevation rate of 0.015'/ft is 0.015'/ft less than the AASHTO recommended rate of 0.030'/ft from MP 177.46 to MP 177.64. The calculated speed of the curve based on AASHTO Method 2 is 85 mph with a posted speed of 65 mph and therefore, no improvements to the superelevation are recommended.
2. **Shoulder Width:** The existing shoulder width is 6' (2' less than the AASHTO recommended minimum width of 8') from MP 161.30 to MP 172.70, MP 173.50 to MP 174.40, and MP 175.60 to MP 177.00. Per as-builts, the typical rates of side slopes are 6:1 which can be negotiated by a vehicle with a good chance of recovery. Also, implementation of full shoulders in rolling terrain (from MP 161.5 to MP 177.0) will be a major expenditure.

The Accident Analysis Report states that there are no indications that the existing roadway geometrics contributed to any of the reported accidents on US 93 in the segments selected for the design exceptions during the five-year evaluation period.

Approved:

Mary Viparina
Mary Viparina

8/29/06
Date

cc Project Manager, *Harry Doescher* (w/attachments)
Contracts & Specifications, Barry Crockett (w/o attachments)
Predesign Records Retention (w/attachments)
FHWA, Robert Hollis, Attn: Aryan Lirange (w/o attachments)