

3 March 2006

Department of **Main Roads**

Australian Road Barriers P/L
RMB H535
Ballarat
VIC 3352

Attn: Mr Laurie McKenna

Dear Laurie,

I refer to your meeting with Mr Noel Dwyer on 1 March 2006 and your submission for acceptance of the JJ Hooks concrete barrier system.

The following information has been received:

- Letter from the Federal Highways Administration (FHWA) dated 26 March 1999, confirming a successful test program of the 3.6m long Type F shape with a base width of 600mm in accordance with NCHRP Report 350, test level TL3.
- Letter of review from the Federal Highways Administration (FHWA) dated 8 December 2000, based on previous test program of the 3.6m long Type F shape, that 6m units with the JJ Hook connection would satisfy NCHRP Report 350, TL3.
- Material report number 0303 from Robert Pyke & Associates dated 15 May 2003, confirming that Australian grade 250 and 300 steel to AS/NZS 1594, exceeds the minimum tensile strength requirements of ASTM A36.
- Letter from Smorgon Reinforcing, dated 28 May 2003, confirming that reinforcement bar D500N, exceeds the yield strength requirement of ASTM A706.
- Test report 40001 from the Texas Transport Institute (TTI), dated 2 May 1999 confirming successful testing with NCHRP Report 350, test level TL3.
- JJ Hooks Installation and Maintenance Instructions Manual.

Of note is the deflection of the system of 1.3m when impacted at 100km/h.

Further to the testing requirements, for the JJ Hooks system to meet AS3845: 1999 Section 1.6 "GENERAL REQUIREMENTS FOR ROAD SAFETY BARRIER SYSTEMS" it shall be:

- (a) supported by technical literature and assembly instructions that clearly illustrate the essential mode of operation and prominently show the test level achieved in crash testing that has been carried out in accordance with this Standard;
- (b) selected and located in accordance with a recognized design procedure that is professionally applied. This procedure shall take account of risk management techniques that address the community of road users and neighbours, which may be affected by the installation;
- (c) erected in accordance with the manufacturer's instructions;
- (d) maintained in a manner that reflects the specified requirements;
- (e) returned into service following a crash only after professional evaluation and execution of repairs; and
- (f) fitted with end treatments and interface devices that are appropriate to the system being used.

The barrier ends are required to be suitably flared so that the exposed end is located outside the clear zone. If this is not possible, an AS3845: 1999 compliant crash attenuator must be used. Flared ends for temporary installations are to be installed on transverse slopes no steeper than 1 on 10 for all speed zones. In determining the clear zone width, the speed value selected must be consistent with the 24-hour operation of the road and not to just satisfy temporary speed zone while work is in progress. The clear zone is to be calculated in accordance with Part 8 of the Queensland Road Planning and Design Manual which is available online (www.mainroads.qld.gov.au).

Any changes to the JJ Hooks product that may adversely affect its in-service performance, durability or maintenance requirements shall be subjected to reassessment by Main Roads prior to installation on the Queensland state road network.

This department reserves the right to rescind the acceptance of your product based on in-service performance information and/or an independent assessment of the crash test results.

Based on the information provided, the JJ Hooks concrete barrier is accepted as an AS3845 compliant system making it eligible for use on the Queensland state-controlled road network, when installed in accordance with the requirements of AS/NZS 3845: 1999 for test level 3.

Yours sincerely



Jon Douglas

Director (Traffic Engineering & Road Safety)