



**General Information**

Test Agency ..... Texas Transportation Institute  
 Test No. .... 405181-12  
 Date ..... 07/23/01

**Test Article**

Type ..... Bridge Rail  
 Name ..... Natchez Trace Bridge Rail  
 Installation Length (m) ..... 21.5  
 Material or Key Elements ... Concrete Beam and Post on Curb

**Soil Type and Condition**

..... Concrete Pavement, Dry

**Test Vehicle**

Type ..... Production  
 Designation ..... 2000P  
 Model ..... 1997 Chevrolet 2500 pickup truck  
 Mass (kg)  
 Curb ..... 2131  
 Test Inertial ..... 2000  
 Dummy ..... 116  
 Gross Static ..... 2116

**Impact Conditions**

Speed (km/h) ..... 98.3  
 Angle (deg) ..... 26.1

**Exit Conditions**

Speed (km/h) ..... 73.7  
 Angle (deg) ..... 5.2

**Occupant Risk Values**

Impact Velocity (m/s)  
 x-direction ..... 5.4  
 y-direction ..... 7.4  
 THIV (km/h) ..... 32.1  
 Ridedown Accelerations (g's)  
 x-direction ..... -11.8  
 y-direction ..... -8.7  
 PHD (g's) ..... 13.8  
 ASI ..... 1.50  
 Max. 0.050-s Average (g's)  
 x-direction ..... -9.6  
 y-direction ..... -11.9  
 z-direction ..... -4.3

**Test Article Deflections (m)**

Dynamic ..... N/A  
 Permanent ..... N/A  
 Working Width ..... 0.587

**Vehicle Damage**

Exterior  
 VDS ..... 01RFQ2  
 CDC ..... 01REK2  
 &01RYEW2  
 Maximum Exterior  
 Vehicle Crush (mm) ..... 680  
 Interior  
 OCDI ..... FS1112000  
 Max. Occupant Compartment  
 Deformation (mm) ..... 130

**Post-Impact Behavior**

(during 1.0 s after impact)  
 Max. Yaw Angle (deg) ..... -33  
 Max. Pitch Angle (deg) ..... -12  
 Max. Roll Angle (deg) ..... 15

Summary of results for test 405181-12, NCHRP Report 350 test 3-11