

FHWA/NHTSA NATIONAL CRASH ANALYSIS CENTER LIBRARY
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[HTTP://WWW.NCAC.GWU.EDU](http://www.ncac.gwu.edu)

NCAC FILM NO: _____
TODAY'S DATE (mm/dd/yyyy): _____

CRASH TEST DATA

TEST CONTRACTOR: _____ CONTRACTOR TEST NO.: _____
PRINCIPAL INVESTIGATOR: _____ Phone Number: _____
TEST DATE(mm/dd/yyyy): _____ FHWA CONTRACT NO.: _____

PLEASE CHECK THE ITEMS YOU ARE SUBMITTING:

16MM FILM	BETA CAM	S-VHS	VHS
PAPER REPORT	SLIDES	PHOTOGRAPHS	DATA DISK

FILM TITLE: _____

CONTRACT OR STUDY TITLE: _____

TEST REPORT TITLE: _____

FHWA REPORT NO.: _____

FHWA REPORT TITLE: _____

TEST DESCRIPTION: _____

TEST TYPE: _____ TEST CLASS: _____
APPURTENANCE DESCRIPTION: _____

APPURTENANCE TYPE: _____ APPURTENANCE HEIGHT (FT): _____
APPURTENANCE LENGTH (FT): _____ APPURTENANCE DEPTH (IN): _____

BOLT DIAMETER (IN): _____ LUMINAIRE ARM LENGTH (FT): _____

LUMINAIRE, SIGN OR
CALL BOX WEIGHT (LB): _____

POST SUPPORT TYPE: _____ POST SPACING (FT): _____

BLOCK OUT TYPE: _____ RAIL TYPE: _____

FOUNDATION TYPE: _____ CURB HEIGHT (IN): _____

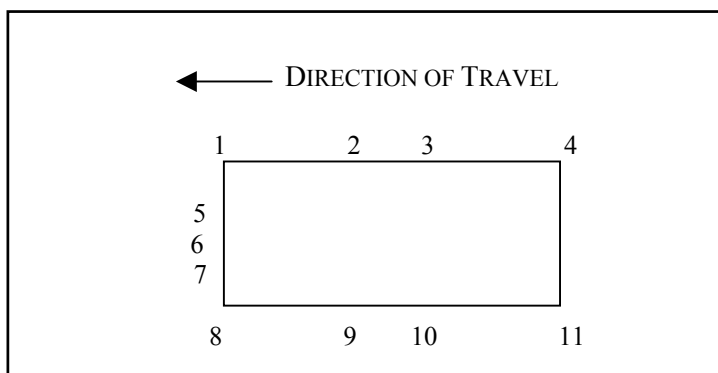
CURB WIDTH (IN): _____ DISTANCE OF BREAKPOINT (IN): _____

VEHICLE DESCRIPTION: _____

VEHICLE MAKE: _____ VEHICLE MODEL: _____
 VEHICLE YEAR: _____ VEHICLE WEIGHT (LB): _____
 TRACTOR WEIGHT (LB): _____ TRAILER WEIGHT (LB): _____
 NUMBER OF AXLES: _____ DRIVER TYPE: _____
 BUMPER HEIGHT (IN): _____
 NO. OF DUMMIES: _____
 DUMMY 1 LOCATION: _____ DUMMY 2 LOCATION: _____
 DUMMY 3 LOCATION: _____
 DUMMY 1 RESTRAINT: _____ DUMMY 2 RESTRAINT: _____
 DUMMY 3 RESTRAINT: _____
 DUMMY 1 TYPE: _____ DUMMY 2 TYPE: _____
 DUMMY 3 TYPE: _____
 Vehicle DESCRIPTION: _____

 IMPACT ANGLE (DEG): _____ HEADING ANGLE (DEG): _____
 IMPACT SPEED (MPH): _____
 LOCATION OF IMPACT OF THE APPURTENANCE (SEE FIGURE 1): _____
 LOCATION OF IMPACT ON THE VEHICLE (SEE FIGURE 1): _____

FIGURE 1



TEST BEHAVIOR:
 MAXIMUM PERMANENT APPURTENANCE DEFLECTION OR CRUSH (IN): _____
 MAXIMUM DYNAMIC APPURTENANCE DEFLECTION OR CRUSH (IN): _____
 STUB HEIGHT OF THE SUPPORT AFTER TEST (IN): _____
 TAD VEHICLE DAMAGE INDEX: _____ VDI VEHICLE DAMAGE INDEX: _____
 EXIT SPEED (MPH): _____ EXIT ANGLE (DEG): _____
 DELTA V (FT/S): _____ CHANGE IN MOMENTUM (LB/SEC): _____
 AVERAGE LONGITUDINAL ACCELERATION (GS): _____
 AVERAGE LATERAL ACCELERATION (GS): _____
 LONGITUDINAL OCCUPANT RISK OR IMPACT VELOCITY (FT/S): _____
 LATERAL OCCUPANT RISK OR IMPACT VELOCITY (FT/S): _____
 INTERACTION FRICTION: _____

IMPACT DESCRIPTION, INCLUDE WEATHER CONDITIONS, DESCRIPTIONS OF TERRAIN, ETC., AS WELL AS ANY UNUSUAL OCCURRENCES SUCH AS "VEHICLE MISSED IMPACT POINT": _____

VEHICLE BEHAVIOR DURING AND AFTER IMPACT. INCLUDE SUCH ITEMS AS "FRONT TIRE CAME OFF", "HOOD RELEASED", & WENT THROUGH THE WINDSHIELD": _____

DUMMY BEHAVIOR DURING IMPACT. INCLUDE SUCH ITEMS AS "PASSENGER DUMMY'S HEAD WENT THROUGH DRIVER'S WINDOW", DRIVER'S LEG WAS AMPUTATED": _____

APPURTENANCE BEHAVIOR AND DAMAGE. INCLUDE SUCH ITEMS AS "W-BEAM TORE IN HALF", POST BOLTS PULLED OUT OF DECK", "Luminaire STUB TORE BOTTOM OF VEHICLE": _____

TEST ANOMALIES OR REASONS FOR FAILURE. INCLUDE SUCH ITEMS AS "GUIDE CABLE BROKE CAUSING CAR TO MISS BARRIER", "VEHICLE IMPACTED TREE AFTER TEST", "LACK OF REINFORCING CAUSED BEAM TO DEFLECT CREATING SNAGGING": _____

CRASH TEST DATA FIELD KEY

APPURTENANCE BEHAVIOR – Enter a narrative description of the behavior and damage of the appurtenance during and after impact. Include items such as “W-beam tore in half,” “post bolts pulled out of deck,” “luminaire stub tore bottom of vehicle,” etc.

APPURTENANCE DEPTH (IN) – Use up to two decimal places. Enter the depth of the appurtenance (in inches) as follows for:

- Guardrails – front face of rail to back of post.
- Bridge rails – front face of rail to back of post.
- Median barriers – front face of rail to front face of opposite rail.
- Crash cushion – front face of crash cushion to back face of crash cushion at leading point.
- Luminaire – diameter of luminaire base.
- Sign support – diameter of support base or front face of support to back face of support.
- Utility pole – diameter of pole base.

APPURTENANCE DESCRIPTION – Enter a narrative description of the appurtenance tested. Include the AASHTO designation such as G4(1S) or the manufacturer’s name such as SERB or VAT if applicable. Include a brief description of any modifications to hardware.

APPURTENANCE HEIGHT (FT) – Use up to two decimal places. Enter the height of the appurtenance, (in feet) as follows for:

- Guardrails - ground level to top of rail.
- Bridge rails - finish deck surface to top of rail.
- Median barriers - ground level to top of rail.
- Crash cushions - ground level to top of system.
- Luminaire - ground level to top of luminaire pole.
- Sign support - ground level to top of sign support.

APPURTENANCE LENGTH (FT) – Use up to two decimal places. Enter the length of the appurtenance (in feet) as follows for:

- Guardrails – total length from end to end of system.
- Bridge rails – length of bridge rail, not including transitions or guardrail.
- Median barriers – total length from end to end of system.
- Transitions – total length from end to end of system.
- Crash cushion – length of crash cushion, not including structure behind it.
- End Treatment – total length from end to end of system.
- TMA – length of TMA from front to back.

APPURTENANCE TYPE– Choose the appropriate selection from the drop down list provided in the form.

AVERAGE LATERAL ACCELERATION (GS) – Enter the maximum 50-ms average lateral acceleration (in Gs). **Do not** include the +/- sign. If this is not calculated, leave blank.

AVERAGE LONGITUDINAL ACCELERATION (GS) – Enter the maximum 50-ms average longitudinal acceleration (in Gs). Include the +/- sign. If this is not calculated, leave blank.

BLOCKOUT TYPE – **Choose the appropriate selection from the drop down list provided in the form.**

BOLT DIAMETER (IN) – Enter the diameter of the bolt circle (in inches). Use up to one decimal place.

BUMPER HEIGHT (IN) – enter the height of the bumper from ground level to the highest point along the front most edge of the bumper (in inches). Use up to one decimal place.

Change in Momentum (lb-sec) – Enter the change in momentum (in lb-sec). If this is not calculated leave this field blank.

CONTRACTOR TEST NO – Enter the Contractors Test Number.

CURB HEIGHT (IN) – Enter the height of the curb (in inches). If no curb was used leave space blank.

CURB WIDTH (IN) – Enter the distance from the face of the curb to the front most face of the appurtenance (i.e., face of rail, or front edge of luminaire) (in inches). This includes the width of a raised sidewalk. If no curb was used leave space blank.

DELTA V (FT/S) – Enter the change in velocity (in feet/sec). If this is not calculated leave this field blank.

DISTANCE OF BREAKPOINT (IN) – Enter the distance from the front-most face of the appurtenance to the breakpoint (in inches). The breakpoint is the location where the slope of the terrain changes behind an appurtenance. If the test does not include a change in the terrain leave blank.

DRIVER TYPE – **Choose the appropriate selection from the drop down list provided in the form.**

DUMMY 1 LOCATION – **Choose the appropriate selection from the drop down list provided in the form.**

DUMMY 1 RESTRAINT – **Choose the appropriate selection from the drop down list provided in the form.**

DUMMY 1 TYPE – **Choose the appropriate selection from the drop down list provided in the form.**

DUMMY 2 LOCATION – **Choose the appropriate selection from the drop down list provided in the form.**

DUMMY 2 RESTRAINT – **Choose the appropriate selection from the drop down list provided in the form.**

DUMMY 2 TYPE – **Choose the appropriate selection from the drop down list provided in the form.**

DUMMY 3 LOCATION – **Choose the appropriate selection from the drop down list provided in the form.**

DUMMY 3 RESTRAINT – **Choose the appropriate selection from the drop down list provided in the form.**

DUMMY 3 TYPE – **Choose the appropriate selection from the drop down list provided in the form.**

DUMMY BEHAVIOR – Enter a narrative description of the behavior of the dummies during the impact. Include items such as “passenger dummy’s head went through driver’s window,” “driver’s leg was amputated,” etc.

EXIT ANGLE (DEG) – Enter the vehicle exit angle as it leaves the appurtenance (in degrees). If the exit angle is not determined leave this field blank. If the vehicle stops or does not leave the appurtenance, enter 0.

EXIT SPEED (MPH) – Enter the vehicle speed as it leaves the appurtenance (in mph). If the exit speed is not determined, leave blank. If the vehicle is brought to a stop or reverses direction, enter 0.

FHWA CONTRACT NO – Enter the FHWA contract number under which the test was performed. If the test was not performed for the FHWA, enter the first 14 characters of the agency or company sponsoring the test.

NOTE: Do not include dashes or slashes in entry.

FHWA REPORT NO – Enter the FHWA assigned test report number.

FHWA REPORT TITLE – Enter the FHWA test report title.

FOUNDATION TYPE – **Choose the appropriate selection from the drop down list provided in the form.**

HEADING ANGLE (DEG) – Enter heading angle in degrees.

IMPACT ANGLE (DEG) – Enter the impact angle in degrees.

IMPACT DESCRIPTION – Enter a narrative description of the impact. Include weather conditions, descriptions of terrain, etc., as well as any unusual occurrences such as “vehicle missed impact point.”

IMPACT SPEED (MPH) – Enter the impact speed in mph.

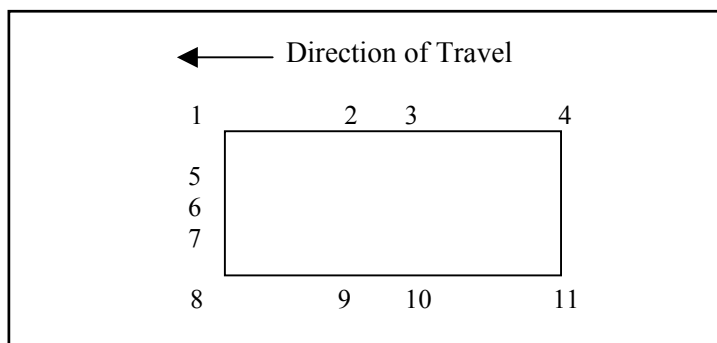
INTERACTION FRICTION – Enter the interaction friction. If this is not calculated, leave blank.

LATERAL OCCUPANT RISK OF IMPACT VELOCITY (F/S) – Enter the lateral occupant risk or impact velocity (in feet/sec). **Do not** include the +/- sign. If this is not calculated, leave blank.

LOCATION OF IMPACT OF THE APPURTENANCE– Please enter the number corresponding to the Location of Impact of the Appurtenance. **See Figure 1.**

LOCATION OF IMPACT ON THE VEHICLE – Please enter the number corresponding to the Location of Impact on the Vehicle. **See Figure 1.**

Figure 1



LONGITUDINAL OCCUPANT RISK OR IMPACT VELOCITY (F/S) – Enter the longitudinal occupant risk or impact velocity (in feet/sec). **Do not** include the +/- sign. If this is not calculated, leave blank.

LUMINAIRE ARM LENGTH (FT) – Enter the length of the luminaire arm length (in feet). Use up to two decimal places.

LUMINAIRE, SIGN OR CALL BOX WEIGHT (LB) – Enter the weight of the luminaire, sign or call box (in pounds).

MAXIMUM DYNAMIC APPURTENANCE DEFLECTION OR CRUSH (IN) – Enter the maximum dynamic appurtenance deflection or crush (in inches). If deflection was not measured, enter 0 in this field.

MAXIMUM PERMANENT APPURTENANCE DEFLECTION OR CRUSH (IN) – Enter the maximum permanent appurtenance deflection or crush (in inches). If the appurtenance did not deflect, enter 0.

NUMBER OF AXLES – Enter the number of axles on the vehicle. Include axles on the trailer if applicable.

NUMBER OF DUMMIES – Enter the number of dummies in the test vehicle. If no dummies were used, enter 0.

POST SPACING (FT) – Enter the distance between posts or sign supports (in feet).

POST SUPPORT TYPE – **Choose the appropriate selection from the drop down list provided in the form.**

RAIL TYPE – **Choose the appropriate selection from the drop down list provided in the form.**

STUB HEIGHT (IN) – Enter the stub height of the support after the test (in inches). If the appurtenance broke away at or below ground level, enter 0.

TAD VEHICLE DAMAGE INDEX – Enter the TAD vehicle damage index. If the TAD is not provided, enter 0 in this field.

TEST ANOMALIES – Enter a narrative description of any test anomalies or reasons for failure. Include items such as “guide cable broke causing car to miss barrier,” “vehicle impacted tree after test,” “lack of reinforcing caused beam to deflect creating snagging,” etc.

TEST BEHAVIOR – Choose the appropriate selection from the drop down list provided in the form.

TEST CLASS – Choose the appropriate selection from the drop down list provided in the form.

TEST CONTRACTOR – Enter the name of the agency that performed the test.

TEST DATE – Enter the date of the test.

TEST DESCRIPTION – Enter a short narrative description of the test performed. Include: Criteria evaluation test such as “NCHRP 230 Test 41,” “special design changes such as “lowered rail to 27 inches,” description such as “into end at 20 deg, 40mph, 5400 lb,” item of interest such as “deeper posts on hinge point.”

TEST REPORT TITLE – Enter the test report title. If the individual test report does not exist, enter the research report title. If no report can be found, leave blank.

TEST TYPE – Choose the appropriate selection from the drop down list provided in the form.

TRACTOR WEIGHT (LBS) – Enter the total weight of the tractor (in pounds).

TRAILER WEIGHT (LBS) – Enter the total weight of the trailer (in pounds).

VDI VEHICLE DAMAGE INDEX – Enter the VDI vehicle damage index. If the VDI is not provided, enter 0.

VEHICLE BEHAVIOR – Enter a narrative description of the behavior of the vehicle during and after the impact. Include items such as “front right tire came off,” “hood released,” and “went through the windshield,” etc.

VEHICLE DESCRIPTION – Enter a narrative description of the vehicle.

VEHICLE MAKE– Choose the appropriate selection from the drop down list provided in the form.

VEHICLE MODEL – Please enter the Model of the vehicle used in the test.

VEHICLE WEIGHT (LBS) – Enter the total weight of the vehicle, including the combined weight of the tractor and trailer (in pounds). Also include dummies, instrumentation, etc.

VEHICLE YEAR – Enter the last two numbers of the year that the vehicle was manufactured.