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ON-SITE NOT-IN-TRAFFIC SURVEILLANCE BACK OVER INVESTIGATION

CASE NUMBER - IN-07-003
LOCATION - NEBRASKA
VEHICLE - 1990 GEO STORM
INCIDENT DATE - January 2007

Submitted:

April 12, 2007
Revised October 3, 2007

Contract Number: DTNH22-07-C-00044

Prepared for:

U.S. Department of Transportation
National Highway Traffic Safety Administration
National Center for Statistics and Analysis
Washington, D.C. 20590-0003

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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points be coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.

Technical Report Documentation Page

1. *Report No.* IN-07-003	2. *Government Accession No.*	3. *Recipient's Catalog No.*	
4. *Title and Subtitle* On-Site Not-In-Traffic Surveillance Back Over Investigation Vehicle - 1990 Geo Storm Location - Nebraska		5. *Report Date:* April 12, 2007 6. *Performing Organization Code*	
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15. *Supplementary Notes* On-site not-in-traffic surveillance back over investigation involving a 1990 Geo Storm and a non-motorist.			
16. *Abstract* This report covers an on-site not-in-transport surveillance back over investigation involving a 1990 Geo Storm (case vehicle), which backed over a non-motorist on a roadway. This incident is of special interest because the Geo backed over a non-motorist [13-year-old male], who sustained critical injuries, resulting in his death. The Geo's driver was initially westbound on a residential street. The driver pulled the Geo over to the north side of the roadway and parked parallel to the road edge, just beyond an area and on the same side of the street where some youths were sledding. The Geo's driver was delivering some sleds to the youths. After delivering the sleds, the Geo's driver got back into the Geo and began to back up. Unknown to the driver, a youth had sledded down the hill and had come to a stop immediately behind the Geo just before the driver began to back up. The non-motorist was struck by the back bumper as he was pushing himself up off the ground and was run over by the Geo's back wheels. The non-motorist was transported by ambulance to a hospital and was pronounced dead approximately two days later.			
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BACKGROUND

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This incident was brought to NHTSA's attention on or before January 3, 2007 by a story in a Nebraska newspaper. This incident involved a 1990 Geo Storm (case vehicle), which was backing uphill on a residential street. The incident occurred in January 2007 at 12:01 p.m., in Nebraska and was investigated by the applicable county sheriff's department. The investigating deputy completed an incident report, which was filed at the sheriff's department and not reported to the state. This incident is of special interest because the Geo backed over a non-motorist [13-year-old, male], who sustained critical injuries, resulting in his death. This contractor inspected the scene and Geo on March 12, 2007. This contractor interviewed the Geo's driver and a witness, also on March 12, 2007. This report is based on the sheriff's department incident report and on-scene photographs; interviews with the Geo's driver, a witness, and the investigating sheriff's deputy; scene and Geo inspections, backup acceleration tests, and this contractor's evaluation of the evidence.

SUMMARY

The Geo's driver was initially westbound on a residential street. The driver pulled the Geo over to the north side of the roadway and parked parallel to the road edge, just beyond and on the same side of the street where some youths were sledding. The Geo's driver was delivering some sleds to the youths. After getting the sleds out of the Geo, the driver briefly spoke with his brother near the left front door. The driver then got back into the Geo and began to back up. Unknown to the driver, a youth had sledded down the hill and had come to a stop immediately behind the Geo just before the driver began to back up. As the driver backed up, the non-motorist was struck by the back bumper and knocked to the ground and run over by the Geo's back wheels. The non-motorist was reportedly just pushing himself up off the ground when he was struck. The Geo's driver immediately stopped the vehicle. The non-motorist was trapped under the Geo between the front and rear wheels. The non-motorist was transported by ambulance to a hospital and was pronounced dead approximately two days later.

CRASH CIRCUMSTANCES

Crash Environment: The trafficway on which the Geo was traveling was a two-lane, undivided, residential city street, traversing in a westerly and easterly direction. Each travel lane was approximately 3.3 meters (10.8 feet) in width. The roadway had no centerline or other pavement markings. A residence was located on the north side of the street. A group of four youths were in the back yard sledding down a hill. The bottom of the hill ended directly at the edge of the roadway. There was no ditch or obstruction to limit the ingress of a sled directly into the roadway. At the time of the incident, the light condition was daylight, the atmospheric condition was clear, and the roadway pavement was bituminous with snow on the outer edges and areas of wet and dry pavement with a few ice patches. The on-scene photographs indicated that the Geo's right front wheel was likely in or passed through an area of thin snow on the pavement. In addition, the pavement appeared to be dry adjacent to the area of the thin snow. Lastly, the Geo was backing up a hill with a positive 8.5% grade. There was no other traffic present, and the site of the incident was residential. See the Crash Diagram at end of this report.

Pre-Crash: The Geo's driver was initially westbound. The driver pulled the Geo over to the north side of the roadway and parked parallel to the road edge, just beyond the area where the youths were sledding, in order to deliver some sleds to the youths (**Figure 1**). According to the driver, after getting the sleds out of the Geo, he briefly spoke with his brother near the left front door. The driver then got back into the Geo. The driver indicated that he saw all the youths at the top of the hill, including the victim, prior to getting back in the Geo. The driver indicated that after he got in the Geo, he looked to his right toward the top of the hill and again saw all the youths at the top of the hill. The driver gave no indication of any vision obstruction either from his vehicle or in the environment. The driver indicated he checked his side view and rear view mirrors and then turned his head to the left and looked back over his left shoulder through the left front window and began to back up the Geo. The driver estimated the time from entering the Geo to when he started to back up was in a range of 11 to 30 seconds. His intention was to back up to the intersection, which was approximately 42 meters (137.8 feet) away, turn the vehicle around and proceed to a friend's home. Meanwhile, just prior to the driver backing up and after the driver looked toward the top of the hill, the non-motorist rode down the hill on a sledding board (**Figure 2**), unseen by the driver, and entered the street coming to a stop behind the Geo. A witness who was at the top of the hill, estimated that the non-motorist came to a stop less than 1.5 meters (5 feet) directly behind the Geo just moments before the Geo's driver began to back up.

Figure 1: View south to roadway from top of hill showing position of Geo following removal of non-motorist

Figure 2: Non-motorist's sled

Figure 3: Back of Geo

Crash: The non-motorist was reportedly on his stomach and as he was attempting to get up, the driver began to back up the Geo. Based on statements by the driver and a witness, almost immediately after the Geo began to move rearward, the non-motorist was struck by the back bumper (**Figure 3**), knocked back to the ground and the rear wheels passed over his body. The available information indicates that the non-motorist was pushing himself up off the ground with his hands and was just beginning to rise off his stomach when he was struck. Descriptions of the

non-motorists injury and his reported position under the Geo following the incident indicated that the Geo's left rear wheel passed over his head. In addition, it is likely that the right rear wheel passed over his feet. Given the reported short distance backed to impact, the fact that the Geo's rear wheels passed over the non-motorist, and the driver was about to back uphill, this contractor believes that the Geo driver's back up maneuver could reasonably be characterized as a "rapid acceleration". Based on the available information, the Geo traveled backward approximately 1.9 meters (6.2 feet) from impact to final rest.

Given the available information, certain reasonable assumptions have to be made in order to develop a likely range of impact speeds and times to impact. This analysis will assume a "rapid" acceleration as the Geo backed up based on the factors indicated above, negligible affect on traction due to the roadway surface condition, and a range of backup distances to impact of 0.6 meters (2 feet) to 1.4 meters (4.6 feet). An average acceleration rate of 0.22g was used based on a series of four backup acceleration tests conducted with a representative vehicle on an approximate 8% positive grade. The test driver used his best judgement as to what constituted "rapid" acceleration. The likely range of speeds at impact and range of times to impact based on these assumptions and the acceleration test data are, respectively: 5.8 km.p.h. (3.6 m.p.h.) and 0.75 seconds to 8.9 km.p.h (5.5 m.p.h.) and 1.14 seconds. The range of times to impact is consistent with the driver and witness statements indicating that the non-motorist was struck almost immediately after the driver began to back up the Geo.

Post-Crash: The Geo's driver stated he thought he had backed over a sled. He immediately stopped the Geo and got out. He discovered that the Geo was on top of the non-motorist. The sheriff's department crash report described the non-motorist as laying in somewhat of a semi-circular position and slightly on one side (which side was not indicated). He was positioned approximately halfway between the front and rear wheels with his head to the driver's side angled toward the left front wheel and his feet to the passenger side angled toward the right rear wheel. Rescue and law enforcement personnel lifted the back of the vehicle and rotated the back end to the south (**Figure 4**) as a member of the rescue squad pulled the non-motorist out from under the Geo. The non-motorist was transported by ambulance to a hospital and was pronounced dead approximately two days later.

Figure 4: Geo's position after rescue personnel had picked up the back end and rotated it to the south to remove non-motorist

CASE VEHICLE

The 1990 Geo Storm (**Figures 5** and **6** below) was a front wheel drive, two-door hatchback (VIN: J81RF2368L7------) equipped with a four cylinder engine and automatic transmission. The Geo was equipped with no after-market equipment. The Geo's wheelbase was measured as 244

centimeters (96.1 inches). The average track width was 142 centimeters (55.9 inches). The rear overhang was 77 centimeters (30.3 inches) and the overall length was 415 centimeters (163.4 inches). The mileage at the time of the inspection is not known.

Figure 5: Front view of Geo

Figure 6: Right side view of Geo

Figure 7: Right side view of Geo and location of target (arrow) where it first came into view with surrogate driver looking over right shoulder

CASE VEHICLE DAMAGE

There was no evidence of non-motorist contact to the Geo's back bumper. However, based on the witness testimony of the plane contacted, a partial Collision Deformation Classification was determined to be: **06-B9LU-1**. The Geo was driven from the scene.

CASE VEHICLE DRIVER

The Geo's driver was a 16-year-old male. He was 165 centimeters (65 inches) tall and weighed 59 kilograms (130 pounds). The Geo did not belong to the driver. He indicated that he had borrowed the car on this occasion as well as on other occasions. The Geo's driver indicated he had driven the Geo 6-10 times in the last three months. He indicated that he drives on the roadway where the incident occurred weekly. Based on the sheriff's department incident report, the driver was not under the influence of drugs or alcohol.

CASE VEHICLE VISIBILITY STUDY

A visibility study was conducted during the Geo inspection in order to determine the nominal blind zone behind the Geo as well as the right "C"pillar blind zone. In addition, the approximate field of view through the sideview and rearview mirrors was assessed. The assessments were made with a surrogate driver looking over his right shoulder as well as through the subject mirrors. The surrogate driver for this study was 180 centimeters (71 inches) tall, which was 15 centimeters (6 inches) taller that the Geo's driver, and his eye height was 108 centimeters (42.5 inches) above the ground as he sat in the driver's seat. A target 71 centimeters (28 inches) in height was moved rearward from the back of the Geo along the approximate centerline of the vehicle until the target came into view (**Figure 7** and **Figure 8** below). The target had to be moved rearward from the back of the Geo

approximately 2.6 meters (8.5 feet) before the top of the target began to come into the surrogate driver's view above the base of the backlight. The lateral extent of the blind zone behind and to the right rear side of the Geo as well as the "C"-pillar blind zone was also determined by moving the target laterally until it went out of view due to the "C"-pillar and then came back into view beyond the right side of the "C"-pillar as the surrogate driver looked through the right rear window. The target was also used to determine the field of view of the rearview mirror (**Figure 9**) and sideview mirrors. See the nominal visibility diagram at the end of this report, which documents all the visibility measurements.

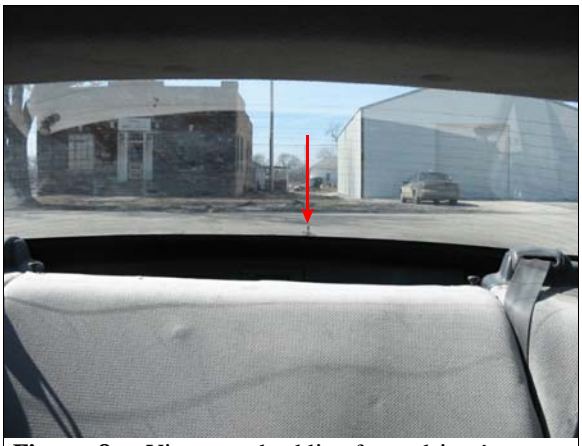


Figure 8: View out backlite from driver's seat, arrow shows top of target

Figure 9: View through rearview mirror, arrow shows top of target

The driver stated in his interview that after he entered the Geo, he looked toward the top of the hill prior to backing up and saw all the youths, including the victim still at the top of the hill. It was not determined if the driver had looked out of the right front or right rear window. The driver indicated he also checked his side view and rear view mirrors prior to backing up. He then looked over his left shoulder and out the left front window as he backed up. The available information indicated that the non-motorist sledded down the hill after the driver looked toward the top of the hill and came to a stop directly behind the Geo just before the driver began to back up. The available information indicated the non-motorist was not seen sledding down the hill by the driver. Once the non-motorist was directly behind and within 1.5 meters (5 feet) of the Geo, the visibility study showed that he would have been well within the Geo's rear blind zone as well as out of the field of view of the side view and rear view mirrors. In addition, the Geo's driver could not have seen the non-motorist as he looked over his left shoulder and out the left front window as he backed up.

NON-MOTORIST

The non-motorist [13-year-old, White (non-Hispanic) male; 152 centimeters and 63.5 kilograms (60 inches, 140 pounds)] was reportedly wearing a green ski hat, a blue coat, black pants and white running shoes. He was transported from the scene by ambulance to a hospital and was subsequently transferred to a second hospital for surgery. It was reported that he underwent surgery to lower the pressure on his brain. He died from his brain injuries two days following the incident.

IN-07-003

Nominal Visibilty Diagram
Case Vehicle = 1990 Geo Storm 2-Door Hatchback

Surrogate Driver Eye Height From Ground = 108 cm (42.5 in)

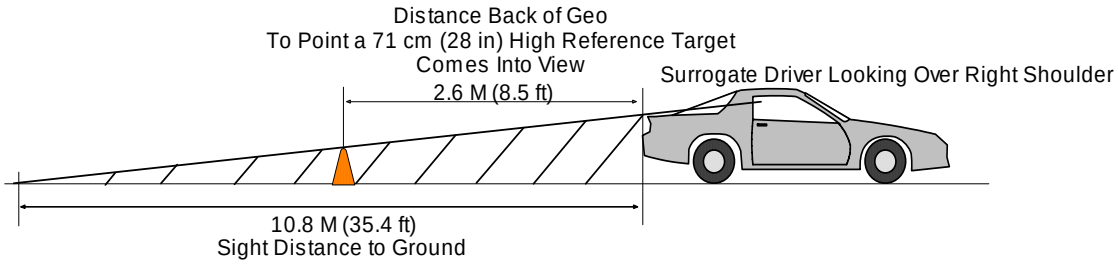
Surrogate Driver Height = 180 cm (71 in)

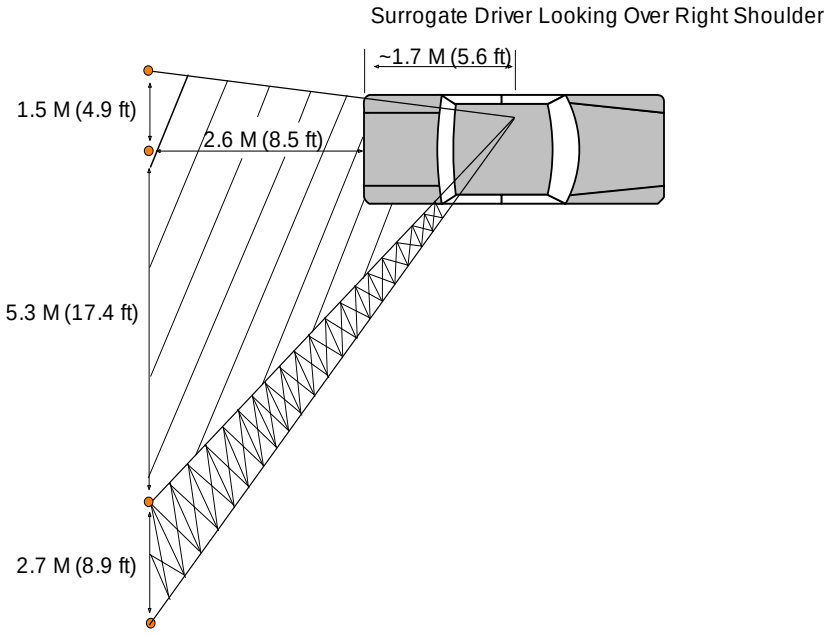
= Blind Zone Behind and to Rear Passenger Side of Geo

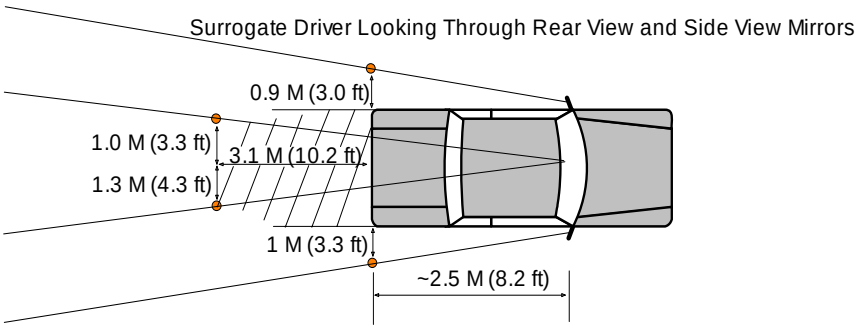
= Case Vehicle C-Pillar Bind Zone

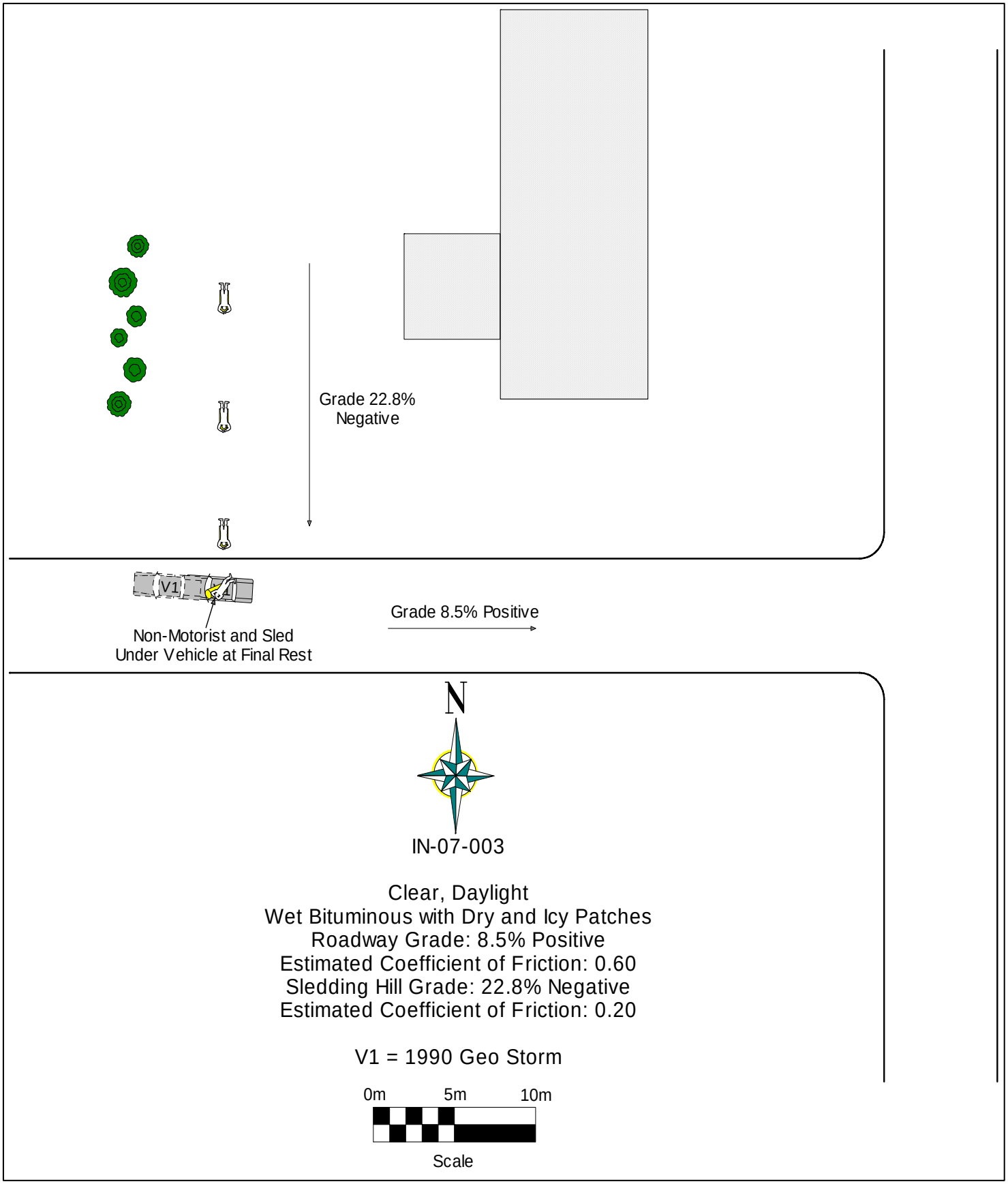
= Side View and Rear View Mirror Visibility Zone

= 71 cm (28 in) High Target








Grade 22.8%
Negative
V1
Non-Motorist and Sled
Under Vehicle at Final Rest
Grade 8.5% Positive
N
IN-07-003
Clear, Daylight
Wet Bituminous with Dry and Icy Patches
Roadway Grade: 8.5% Positive
Estimated Coefficient of Friction: 0.60
Sledding Hill Grade: 22.8% Negative
Estimated Coefficient of Friction: 0.20
V1 = 1990 Geo Storm
0m
5m
10m
Scale

Not Applicable ☐

Reset Values

Print Forms

U.S. Department of Transportation
National Highway Traffic Safety Administration

SCENE FORM

Special Crash Investigations
Not In Traffic Surveillance

1. Case Number

I N 0 7 0 0 3

IDENTIFICATION

2. Date of Crash 0 1 / x x / 0 7

3. Time of Crash 1 2 0 1

Code reported military time of crash.

NOTE: Midnight = 2400
Unknown = 9999

AMBIENT CONDITIONS

4. Light Conditions

- (•) Daylight
- ( ) Dark
- ( ) Dark but lighted
- ( ) Dawn
- ( ) Dusk
- ( ) Unknown

5. Atmospheric Conditions
(*Select all that apply)*

- (•) Clear-No adverse conditions
- ( ) Cloudy
- ( ) Rain
- ( ) Snow
- ( ) Fog, Smog, Smoke
- ( ) Sleet, Hail (freezing rain or drizzle)
- ( ) Blowing Snow
- ( ) Severe Crosswinds
- ( ) Blowing Sand, Soil, Dirt
- ( ) Other (specify):_____
- ( ) Unknown

6. Temperature

- (•) Below 0 degrees Celsius (Below 32 F)
- ( ) 1-10 degrees Celsius (33-50 F)
- ( ) >10-24 degrees Celsius (51-75 F)
- ( ) Over 24 degrees Celsius (Over 75 F)
- ( ) Unknown

SCENE INFORMATION

7. Type of area in which crash occurred
(*Select all that apply)*

- (•) Single family residential
- ( ) Row houses/townhouses
- ( ) Multi family housing
- ( ) Commercial
- ( ) Industrial
- ( ) Rural
- ( ) Unknown

8. Driver exterior sightline obstructions
(*Select all that apply)*

- (•) None
- ( ) Other vehicles
- ( ) Building
- ( ) Trees
- ( ) Shrubbery
- ( ) Other (specify)_____
- ( ) Utility poles
- ( ) Signs
- ( ) Glare
- ( ) Unknown
- ( ) No driver present

9. Crash location

- ( ) Driveway
- ( ) Parking Lot
- ( ) Sidewalk
- ( ) Alley
- ( ) Intersection of driveway and sidewalk
- (•) Road / street
- ( ) Roadside / shoulder
- ( ) Other (specify)_____
- ( ) Unknown

10. Non motorist sightline obstructions
(*Select all that apply)*

- (•) None
- ( ) Other vehicles
- ( ) Building
- ( ) Trees
- ( ) Shrubbery
- ( ) Utility poles
- ( ) Signs
- ( ) Glare
- ( ) Other (specify) _____
- ( ) Unknown

11. Grade at parked position (+) / - 0 9 %

12. Estimated distance from parked position to impact

0 0 1 . 0 m

13. Estimated speed at impact 0 0 7 kmph

14. Grade at impact (+) - 0 9 %

15. Estimated distance from impact to vehicle final rest

0 0 1 . 9 m

Unknown = 999 Reference Items 11,12, 13, 14, 15

Not Applicable ☐

Reset Values

U.S. Department of Transportation
National Highway Traffic Safety Administration

VEHICLE FORM

Special Crash Investigations
Not In Traffic Surveillance

1. Case Number I N 0 7 0 0 3

VEHICLE IDENTIFICATION

2. VIN J 8 1 R F 2 3 6 8 L 7 x x x x x x

3. Model Year 1 9 9 0

4. Vehicle Make (specify): Geo

5. Vehicle Model (specify): Storm

GLAZING

Location	Presence (check)	Status (select)	Clarity (select)	Tint (check)	Glazing Obstructions (specify if present)
Windshield	☑	☑ Fixed / ☐ Closed / ☐ Open / ☐ Partially Open / ☐ Unknown	☑ Clear / ☐ Hazy / ☐ Very Dirty / ☐ Unknown	☐	
LF	☑	☐ Fixed / ☑ Closed / ☐ Open / ☐ Partially Open / ☐ Unknown	☑ Clear / ☐ Hazy / ☐ Very Dirty / ☐ Unknown	☐	
RF	☑	☐ Fixed / ☑ Closed / ☐ Open / ☐ Partially Open / ☐ Unknown	☑ Clear / ☐ Hazy / ☐ Very Dirty / ☐ Unknown	☐	
2nd Left	☑	☑ Fixed / ☐ Closed / ☐ Open / ☐ Partially Open / ☐ Unknown	☑ Clear / ☐ Hazy / ☐ Very Dirty / ☐ Unknown	☐	
2nd Right	☑	☑ Fixed / ☐ Closed / ☐ Open / ☐ Partially Open / ☐ Unknown	☑ Clear / ☐ Hazy / ☐ Very Dirty / ☐ Unknown	☐	
3rd Left	☐	☐ Fixed / ☐ Closed / ☐ Open / ☐ Partially Open / ☐ Unknown	☐ Clear / ☐ Hazy / ☐ Very Dirty / ☐ Unknown	☐	
3rd Right	☐	☐ Fixed / ☐ Closed / ☐ Open / ☐ Partially Open / ☐ Unknown	☐ Clear / ☐ Hazy / ☐ Very Dirty / ☐ Unknown	☐	
Backlight	☑	☑ Fixed / ☐ Closed / ☐ Open / ☐ Partially Open / ☐ Unknown	☑ Clear / ☐ Hazy / ☐ Very Dirty / ☐ Unknown	☐	
Left Backlight	☐	☐ Fixed / ☐ Closed / ☐ Open / ☐ Partially Open / ☐ Unknown	☐ Clear / ☐ Hazy / ☐ Very Dirty / ☐ Unknown	☐	
Right Backlight	☐	☐ Fixed / ☐ Closed / ☐ Open / ☐ Partially Open / ☐ Unknown	☐ Clear / ☐ Hazy / ☐ Very Dirty / ☐ Unknown	☐	
Roof	☐	☐ Fixed / ☐ Closed / ☐ Open / ☐ Partially Open / ☐ Unknown	☐ Clear / ☐ Hazy / ☐ Very Dirty / ☐ Unknown	☐	
Other (specify)	☐	☐ Fixed / ☐ Closed / ☐ Open / ☐ Partially Open / ☐ Unknown	☐ Clear / ☐ Hazy / ☐ Very Dirty / ☐ Unknown	☐	

TIRE DATA

6. Vehicle Manufacturer Recommended Tire Size P185/60R14

7. LF Tire Size P195/65R14

8. LR Tire Size P195/65R14

9. RF Tire Size P195/65R14

10. RR Tire Size P195/65R14

Seats / Head Restraint Data

Seat Position	Seat Type (Select from below)	Head Restraint (Check if available)	Head Restraint Adjustment (select)
Front Left	2	☑	☐ ☐ ☑ Full Down / Mid / Full Up
Front Middle	0	☐	☐ ☐ ☐ Full Down / Mid / Full Up
Front Right	2	☑	☐ ☐ ☑ Full Down / Mid / Full Up
2nd Left	5	☐	☐ ☐ ☐ Full Down / Mid / Full Up
2nd Middle	5	☐	☐ ☐ ☐ Full Down / Mid / Full Up
2nd Right	5	☐	☐ ☐ ☐ Full Down / Mid / Full Up
3rd Left		☐	☐ ☐ ☐ Full Down / Mid / Full Up
3rd Middle		☐	☐ ☐ ☐ Full Down / Mid / Full Up
3rd Right		☐	☐ ☐ ☐ Full Down / Mid / Full Up

NOTES:

Head restraints are integral, default is "Full Up"

Seat Type codes:

0 = No seat or seat folded down
1 = Bucket
2 = Bucket w/ folding back
3 = Bench
4 = Bench with folding back cushions
5 = Bench w/ folding back
6 = Split bench w/ separate back cushions
7 = Split bench w/ separate folding back
8 = Pedestal (i.e. column supported)
9 = Box mounted (i.e. van type)
10= Other seat type (specify)
99= Unknown seat type

VEHICLE MEASUREMENTS

Clearance Heights		Measurements (all from ground, and in centimeters	NOTES
Beltline		89	
Top of trunk/tailgate		98	
Bottom of bumper		31	
Trailer hitch (if applicable)		N/A	
Undercarriage			
	Sway bar	N/A	
	Axle	22	
	Differential	N/A	
	Other (specify): Muffler	21	
Sensor Height (if equipped)		N/A	
Camera Height (if equipped)		N/A	

Not Applicable ✔

Reset Values

U.S. Department of Transportation
National Highway Traffic Safety Administration

Back Up / Parking Aid Form

Special Crash Investigations
Not In Traffic Surveillance

1. Case Number

I N 0 7 0 0 3

PARKING AID PRESENCE

2. Type of backing/parking aid present

- ○ OEM camera
- ○ OEM ultrasonic/radar sensor
- ○ OEM combination camera-ultrasonic/radar sensor
- ○ OEM Fresnel lens
- ○ OEM interior mirrors
- ○ Aftermarket camera
- ○ Aftermarket ultrasonic/radar sensor
- ○ Aftermarket combination camera-ultrasonic radar sensor
- ○ Aftermarket Fresnel lens
- ○ Aftermarket interior mirrors
- ○ Other (specify): _____

CAMERA INFORMATION

Specify field of view measurements on diagram

3. System make/model

_____

4. Video monitor type

- ○ None present
- ○ LCD (color)
- ○ CRT (black & white)
- ○ Unknown

5. Video display size _____ cm
(Diagonal)

6. Camera location

- ○ None present
- ○ Bumper
- ○ License plate
- ○ Tailgate/Hatch/Trunk
- ○ Other (specify): _____

7. Video image quality under scene lighting conditions

- ○ None present
- ○ Good
- ○ Average
- ○ Poor (specify): _____
- ○ Unknown

8. Was the camera functioning properly

- ○ None present
- ○ Yes
- ○ No, poor image quality due to glare
- ○ No, poor image quality due to atmospheric conditions
- ○ No, camera turned off
- ○ No, camera inoperable
- ○ Unknown

ULTRASONIC/RADAR SENSOR

Specify object detection range on diagram

9. System make/model

_____

10. Auditory warning illumination

- ○ No sensor present
- ○ Yes
- ○ No
- ○ Unknown

11. Number of sensors ____

12. Sensor locations
(Select all that apply)

- ○ No sensor present
- ○ Left bumper
- ○ Center bumper
- ○ Right bumper
- ○ License plate area
- ○ Tailgate/Hatch/Trunk

13. Was warning system functioning properly

- ○ No sensor present
- ○ Yes, system alerted driver
- ○ No, system did not alert driver
- ○ No, system turned off
- ○ No, system inoperable
- ○ Unknown

14. Did driver react to warning

- ○ No sensor present
- ○ Yes
- ○ No
- ○ Unknown

15. Did driver report common false warnings

- ○ No sensor present
- ○ Yes
- ○ No
- ○ Unknown

No Driver Present ☐

Reset Values

U.S. Department of Transportation
National Highway Traffic Safety Administration

DRIVER FORM

Special Crash Investigations
Not In Traffic Surveillance

1. Case Number

I N 0 7 0 0 3

DRIVER PROFILE

2. Driver's Age 1 6
99 = Unknown

3. Driver's Sex
- ◉ Male
- ○ Female
- ○ Unknown

4. Driver's Height 1 6 5 cm
999 = Unknown

5. Driver's Weight 0 5 9 kg
999 = Unknown

6. Driver eyewear worn
(Select all that apply)
- ○ None
- ◉ Eyeglasses
- ○ Sunglasses
- ○ Contacts
- ○ Unknown

7. Driver vision deficiency condition
(Select all that apply)
- ○ None
- ○ Near sighted
- ○ Far sighted
- ○ Astigmatism
- ○ Other (specify) _____
- ◉ Unknown

8. Non motorist's relationship to driver
- ◉ No relationship
- ○ Child
- ○ Grandchild
- ○ Sibling
- ○ Neighbor
- ○ Friend
- ○ Other (specify): _____
- ○ Unknown

DRIVER ACTIONS

9. Driver approach to vehicle for entry
- ○ From left front
- ◉ From left
- ○ From left rear
- ○ From right rear
- ○ From right front
- ○ Circled vehicle
- ○ Return trip (backing into driveway/lot)
- ○ Other (specify): _____
- ○ N/A
- ○ Unknown

10. Driver entry interruption
(Select all that apply)
- ○ Direct trip from building to vehicle
- ○ Loaded items into vehicle
- ◉ Spoke with family
- ○ Spoke with neighbors
- ○ Spoke with contacted nonmotorist
- ○ Return trip (backing into driveway/lot)
- ◉ Other (specify): Unloaded sled
- ○ N/A
- ○ Unknown

☐11. Purpose of backing
- ○ Leaving parking space in parking lot
- ○ Backing onto roadway from driveway
- ○ Entering parking space in parking lot
- ○ Backing into driveway from roadway
- ◉ Other (specify): Back to intersection
- ○ N/A
- ○ Unknown

12. Where was driver going
Description:

Going to a friend's house

13. Driver in a hurry
- ○ Yes
- ◉ No
- ○ N/A
- ○ Unknown

14. How did driver check behind (rear area of vehicle) after vehicle entry
(Select all that apply)
- ○ Did not look
- ◉ Checked mirrors
- ◉ Turned right and looked back
- ◉ Turned left and looked back
- ○ Viewed Camera
- ○ Listened for auditory/visual warning from system
- ○ Other (specify): _____
- ○ N/A
- ○ Unknown

15. Estimated time between vehicle entry and start of backing
- ○ 0-10 Seconds
- ◉ 11-30 Seconds
- ○ 31-60 Seconds
- ○ Over 60 Seconds
- ○ N/A
- ○ Unknown

16. What direction was the driver looking during backing maneuver
(Select all that apply)

- ○ Straight ahead
- ○ Right
- ○ Left
- ◉ Rearward
- ○ At object inside the car
- ○ At mirrors
- ○ Other (specify): _____
- ○ N/A
- ○ Unknown

17. Was the driver distracted during back up maneuver
(Select all that apply)

- ◉ No non-driving activities

External

- ○ Looking at other vehicles
- ○ Looking at other non motorist
- ○ Looking at intended turn destination
- ○ External focus, not specified
- ○ Other external focus (specify): _____

Internal

- ○ Looking at other occupant
- ○ Talking to passenger
- ○ Dialing phone
- ○ Talking on phone
- ○ Listening to radio/cd/portable playback device
- ○ Adjusting radio/cd player
- ○ Adjusting climate controls
- ○ Using a device/controls integral to vehicle (specify): _____
- ○ Reading/adjusting navigation system
- ○ Eating or drinking
- ○ Smoking related
- ○ Retrieving fallen object (specify): _____
- ○ Internal focus, not specified
- ○ Focused on other internal object (specify): _____
- ○ N/A
- ○ Unknown

18. Driver avoidance actions prior to impact
(Select all that apply)

- ◉ None
- ○ Braking
- ○ Steering left
- ○ Steering right
- ○ Accelerating
- ○ Other (specify): _____
- ○ N/A
- ○ Unknown

19. Did driver see struck non motorist prior to impact
(Select all that apply)

- ○ No, never saw non motorist
- ◉ Saw non motorist prior to entering vehicle
- ◉ Saw non motorist after entering vehicle
- ◉ Other (specify): Did not see sled down hill
- ○ N/A
- ○ Unknown

20. Est time between start of backing and impact

- ○ <2 or = 1 second
- ◉ 2-5 seconds
- ○ 6-10 seconds
- ○ > 10 seconds
- ○ N/A
- ○ Unknown

21. Driver interior sightline obstructions
(Select all that apply)

- ○ Pillar
- ◉ Headrest
- ○ Cargo
- ○ Other occupant
- ◉ Other (specify) B & C pillars
- ○ Unknown
- ○ None

22. Recent experience driving this vehicle

- ○ More than 10 times the last three months
- ◉ 6-10 times the last three months
- ○ 2-5 times the last three months
- ○ Less than 2 times the last three months
- ○ First time driving this vehicle
- ○ N/A
- ○ Unknown

23. Frequency of driving in this parking lot/driveway

- ○ Daily
- ◉ Weekly
- ○ Several times a month
- ○ Monthly
- ○ Rarely
- ○ First time in lot/driveway
- ○ N/A
- ○ Unknown

24. Driver Impairment
(Select all that apply)

- ◉ No drugs or alcohol present
- ○ Alcohol present (specify BAC): _____
- ○ Drugs present (specify):_____
- ○ Unknown

25. Source of alcohol/drug results

- ◉ Police reported
- ○ Medical record
- ○ Other (specify)_____
- ○ Not Tested
- ○ Unknown if tested

Not Applicable ☐

U.S. Department of Transportation
National Highway Traffic Safety Administration

Non Motorist Form

Reset Values

Special Crash Investigations
Not In Traffic Surveillance

1. Case Number
I N 0 7 0 0 3

NON-MOTORIST PROFILE

2. Non-motorist's Age
99 = Unknown
1 3 ○ Months ◉ Years

3. Non-motorist's Sex
◉ Male
○ Female
○ Unknown

4. Non-motorist's Height
999 = Unknown
1 5 2 cm

5. Non-motorist's Weight
999 = Unknown
0 6 4 kg

6. Medical outcome
○ Not injured
○ ER only
○ Hospitalized 1-4 days
○ Hospitalized 5 days or more
○ Treatment later
◉ Fatal
○ Unknown

7. Source of most severe injury
○ Bumper
◉ Tire
○ Undercarriage
○ Other Specify:_____
○ Ground
○ N/A
○ Unknown

8. Non-motorist impairment
(Select all that apply)
○ No drugs or alcohol present
○ Positive for alcohol (specify BAC): _____
○ Positive for drugs (specify): _____
◉ Unknown

9. Source of alcohol/drug results
○ Police reported
○ Medical Report
○ Other (specify) _____
○ Not Tested
◉ Unknown if tested

NON-MOTORIST ACTIONS

10. Non-motorist attitude
○ Standing
○ Bending at waist
○ Sitting
○ Crouching
○ Kneeling
○ On skates/skateboard
○ On bike/scooter
◉ Other (specify) On sled
○ Unknown

11. Non-motorist motion
○ Not moving
○ Walking slowly
○ Walking rapidly
○ Running or jogging
○ Skipping/Hopping/Jumping
◉ Falling/Stumbling/Rising
○ On skates/skateboard
○ On bike/scooter
○ Other (specify): _____
○ Unknown

12. Non-motorist approach relative to rear of vehicle
○ Stationary
○ From left
◉ From right
○ From behind
○ Other (specify): _____
○ Unknown

13. Non-motorist first avoidance action
◉ No avoidance actions
○ Stopped
○ Accelerated pace
○ Ran away (along vehicle path)
○ Jumped
○ Turned away from vehicle
○ Turned toward vehicle and braced
○ Dove or fell away from vehicle
○ Other (specify): _____
○ Unknown

14. Non-motorist primary focus of attention
○ Striking vehicle
○ Play object
○ Person
○ Surrounding traffic
○ Animal
○ Handheld electronic (phone, MP3 player, etc.)
○ Other Object (specify) _____
◉ Unknown

15. Were any other Non-motorists present?
(Select all that apply)
○ Alone
○ One adult present
○ One other child present
○ Multiple adults present
◉ Multiple children present
○ Unknown

NON MOTORIST CLOTHING

NOTES:

- Specify Color, Fabric and Texture/Weight for outermost layer only
- Indicate "*NONE*" if applicable
- Available codes:

Colors		***Fabrics***	***Textures***	***Weights***
Black	Charcoal gray	Natural	Soft	Heavy
Lt gray/silver	Brown	Synthetic	Slick	Medium
Gold/tan	Purple	Blend	Coarse	Light
Dark blue	Light blue			
Dark green	Light green			
Maroon	Red			
Orange	Yellow			
White	Other (specify)			

	Clothing	Color	Fabric	Texture	Weight
HEADWEAR	Hat	Dark green	Unknown	Soft	Light
	Helmet				
	Hood				
	Other (specify): _____				
UPPER BODY	Short Sleeve				
	Long Sleeve				
	Light Jacket				
	Heavy Jacket	Dark blue	Unknown	Unknown	Unknown
	Other (Specify): _____				
LOWER BODY	Shorts				
	Pants	Black	Natural	Soft	Medium
	Shoes	White	Blend	Soft	Light
	Other (specify): _____				