

Remote Not In Traffic Surveillance Back Over Investigation
Dynamic Science, Inc. (DSI), Case Number (DS07020)
2007 Hyundai Sonata
Colorado
February 2007

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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.

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16. Abstract This single vehicle incident occurred in February 2007 at 1350 hours. The case vehicle is a 2007 Hyundai Sonata four-door sedan that was being driven by a 27-year-old female. The Sonata had been recently purchased by the driver and had a temporary license affixed to the left side of the backlight. The incident occurred in a parking area on private property. The parking area is behind a private building. Access to the parking area is through a south to north driveway. The driver was cleaning a building located adjacent to the parking area. She arrived at 1200 hours and was cleaning until shortly before the incident. The Sonata was initially parked facing west. The drivers's 3-year-old daughter was in the parking area. The driver stated that she had told her daughter to stand next to the building and to stay there while she turned the Sonata around. The driver began backing east and then turned the wheel to continue backing to the north. It appears that the child was in the driver's blind spot at the time of the incident. As the backing motion began, she heard her daughter screaming. She saw her daughter on the ground and went to her. She picked up her daughter and put her in the vehicle. She drove her daughter directly to the hospital. The 3-year-old child sustained a right tibia fracture, as well as a number of contusions and abrasions.				
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Dynamic Science, Inc.
Crash Investigation
Case Number: DS07020

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BACKGROUND

This single vehicle incident occurred in February 2007 at 1350 hours. The case vehicle is a 2007 Hyundai Sonata four-door sedan (see Figure 1) that was being driven by a 27-year-old female. The Sonata had been recently purchased by the driver and had a temporary license affixed to the left side of the backlight. This incident occurred in a parking area on private property. The parking area is behind a private building. Access to the parking area is through a south to north driveway. The driver was cleaning a building located adjacent to the parking area. She arrived at 1200 hours and was cleaning until shortly before the incident. The Sonata was initially parked facing west. The driver's 3-year-old daughter was in the parking area. The driver stated that she had told her daughter to stand next to the building and to stay there while she turned the Sonata around. The driver began backing east and then turned the wheel to continue backing to the north. As the backing motion began, she heard her daughter screaming. She saw her daughter on the ground and went to her. She picked up her daughter and put her in the vehicle. She drove her daughter directly to the hospital. The 3-year-old child sustained a right tibia fracture, as well as a number of contusions and abrasions.



Figure 1. 2007 Hyundai Sonata.

This Remote Not In Transport Surveillance (NITS) investigation was initiated in response to a report of a 3-year-old female seriously injured in a back over incident. The report was located during a review of police reports by NHTSA. The police report was faxed to DSI on April 13, 2007. DSI contacted the investigating police agency and they agreed to send the on-scene photographs. The on-scene photographs arrived on April 23, 2007. DSI was assigned the case on May 9, 2007. The scene was inspected on site during an attempt to secure an in-person interview and vehicle inspection. This incident was reported to the state and records of the incident are on file at the local police jurisdiction.

SUMMARY

Incident Site

The incident occurred in a parking area on private property (see Figure 2). The parking area is behind a private building. Access to the parking area is through a south to north driveway. The parking area measured 19.8 m (65.0 ft) east to west and 12.5 m (41.0 ft) north to south. The driveway is 5.8 m (19.0 ft) wide. Just to the west of the driveway, there is a raised 0.9 m (3.0 ft) sidewalk. The driveway is covered by a metal roof structure. The parking area is level and the concrete surface was dry. There were no other vehicles in the parking area. The temperature at the nearest reporting station was 4 degrees C (39 degrees F).



Figure 2. Overview of incident area. Driver backing from right to left.

Pre-Crash

The Hyundai was being driven by a 27-year-old female. The involved child was the 3-year-old daughter of the driver. The 3-year-old was wearing a shiny pink jacket and blue jeans. The driver was cleaning a building located adjacent to the parking area. She arrived at 1200 hours and was cleaning until shortly before the incident. The Sonata was initially parked facing west (see Figure 3). The driver and her daughter exited from the east side of the building (see Figure 4). The driver stated that she had told her daughter to stand next to the building on the sidewalk and to stay there while she turned the Sonata around. The driver began backing east and then turned the wheel to continue backing to the north. It is believed that the 3-year-old left the sidewalk and began walking northwest toward the Sonata.



Figure 3. Path of Sonata, backing (east)



Figure 4. Path from door to parking area (north)

Crash

As the backing motion began, she heard her daughter screaming. She saw her daughter on the ground and went to her. It appears that the child was knocked down by the left rear bumper and then run over by the left rear tire. There were tire mark contacts to both legs of the child (see Figure 5) and to portions of the child's jacket (see Figure 6).

Post-Crash

The driver picked up her daughter and put her in the vehicle. She drove her daughter directly to the hospital. The 3-year-old child sustained a right tibia fracture, as well as a number of contusions and abrasions (see Figures 7 and 8). She was hospitalized for one day.



Figure 5. Contacts to child's jeans



Figure 6. Contact to child's jacket

VEHICLE DATA - 2007 Hyundai Sonata

The 2007 Hyundai Sonata GLS was identified by the Vehicle Identification Number (VIN): 5NPET46C17Hxxxxxx. The Sonata was a four-door sedan that was equipped with 2.4 liter, four-cylinder engine, a 5-speed automatic transmission, 4-wheel anti-lock brakes, power steering, and a tilt steering wheel. The Sonata was configured with Michelin Energy MXV4 P215/60R16 tires. The tires were inflated and showed little wear. There was no damage to the tires. The Sonata was configured with front bucket seats with adjustable head restraints and a rear 60/40 split folding bench seat with adjustable head restraints.



Figure 7. 2007 Hyundai Sonata (police photo of subject vehicle)

Vehicle Damage - 2007 Hyundai Sonata

There was no damage to the Hyundai Sonata.

Vehicle Dimensions

Dimensions obtained from Canadian vehicle specifications and an exemplar vehicle. Eye height was based on a surrogate driver of the same height as the driver.

Ground to belt line:	112.0 cm (44.0 in)
Ground to top of trunk/tailgate:	110.0 cm (43.3 in)
Ground to top of rear bumper:	72.0 cm (28.3 in)
Ground to bottom of rear bumper:	39.0 cm (15.3in)
Driver's seated eye height:	71.0 cm (28.5 in)
Overall vehicle height:	148.0 cm (58.3 in)
Overall vehicle width:	183.0 cm (72.0 in)
Overall vehicle length:	480.0 cm (189.0 in)
Rear overhang:	110.0 cm (43.3 in)
Track width:	155.0 cm (61.0 in)
Longitudinal distance between the center of the rear bumper and the center of the base of the backlight:	68.0 cm (26.8 in)

Parking Aids/Sensors

The case vehicle was not equipped with any parking aids or backing up sensor/video technology.

Vehicle Sight Distances

A visibility study was conducted in order to determine the nominal blind zone behind the vehicle as well as the nominal blind zone of both side view mirrors. Measurements were taken using a 2007 Hyundai Sonata four-door sedan exemplar vehicle. The standard 71.0 cm (28.0 in) high target was used to obtain the measurements. The measurements were taken on a paved level surface.

The surrogate driver's seated eye height when measured from the seat bottom was 72.0 cm (28.3 in) and when measured from the ground was 124.0 cm (48.8 in). The seat was set between the forward most and middle track position.

The initial set of measurements were taken as if the surrogate driver were looking over his right shoulder through the backlight. The target was moved rearward from the back bumper along the Hyundai's centerline until it became visible to the investigator. The point at which the target became visible to the investigator measured 5.02 m (16.47 ft) rearward of the back bumper. This measurement was used as the point of origin for a set of lateral measurements which were then taken. Measurements taken laterally to the left and right would result in a visibility zone that could be viewed through the backlight. The point at which the roadway surface became visible to the investigator measured 13.54 m (44.42 ft) rearward of the back bumper.

Another set of measurements were taken to simulate the surrogate driver using the rear view mirror to look through the backlight. The target was moved rearward from the back bumper along the Hyundai's centerline until it became visible to the investigator. The point at which the target became visible to the investigator measured 5.02 m (16.47 ft) rearward of the back bumper. This measurement was used as the point of origin for a set of lateral measurements which were then taken. Measurements taken laterally to the left and right would result in a visibility zone that could be viewed through the backlight. The point at which the roadway surface became visible to the investigator measured 13.54 m (44.42 ft) rearward of the back bumper.

Since the investigator was using an exemplar vehicle, he adjusted the side mirrors appropriately for the surrogate driver's seated eye height. With the investigator seated, the side views were examined. The target was placed at the right side of the back bumper. The target was moved from the side of the vehicle laterally to the right until the target became visible through the right side view mirror. The target was then moved laterally to the right to the point where the target was no longer visible. These measurements resulted in a visibility zone which could be viewed through the side view mirror. This process was repeated on the left side of the vehicle. The area between the left and right visibility zones resulted in a blind zone. At 5.02 m (16.47 ft) rearward of the rear bumper, the blind zone was approximately 1.20 m (3.94 ft) in width. At 10.00 m (32.81 ft) rearward of the back bumper, the blind zone was approximately 0.63 m (2.07 ft) in width.

The subject vehicle had been recently purchased by the driver. Police photos of the vehicle show that there was a temporary paper license plate affixed to the left side of the backlight. This plate had the potential for blocking the driver's view when looking to the left rear through the back light.

It appears that the child was in the driver's blind spot at the time of the incident. It is possible that the driver may have been able to see the child transition from the building to the vehicle through the left hand mirror if the driver were looking through the mirror at that time. It is not clear where the driver was looking at the time of the incident, but it would seem more likely than not that she was looking over her right shoulder as she was backing in that direction.

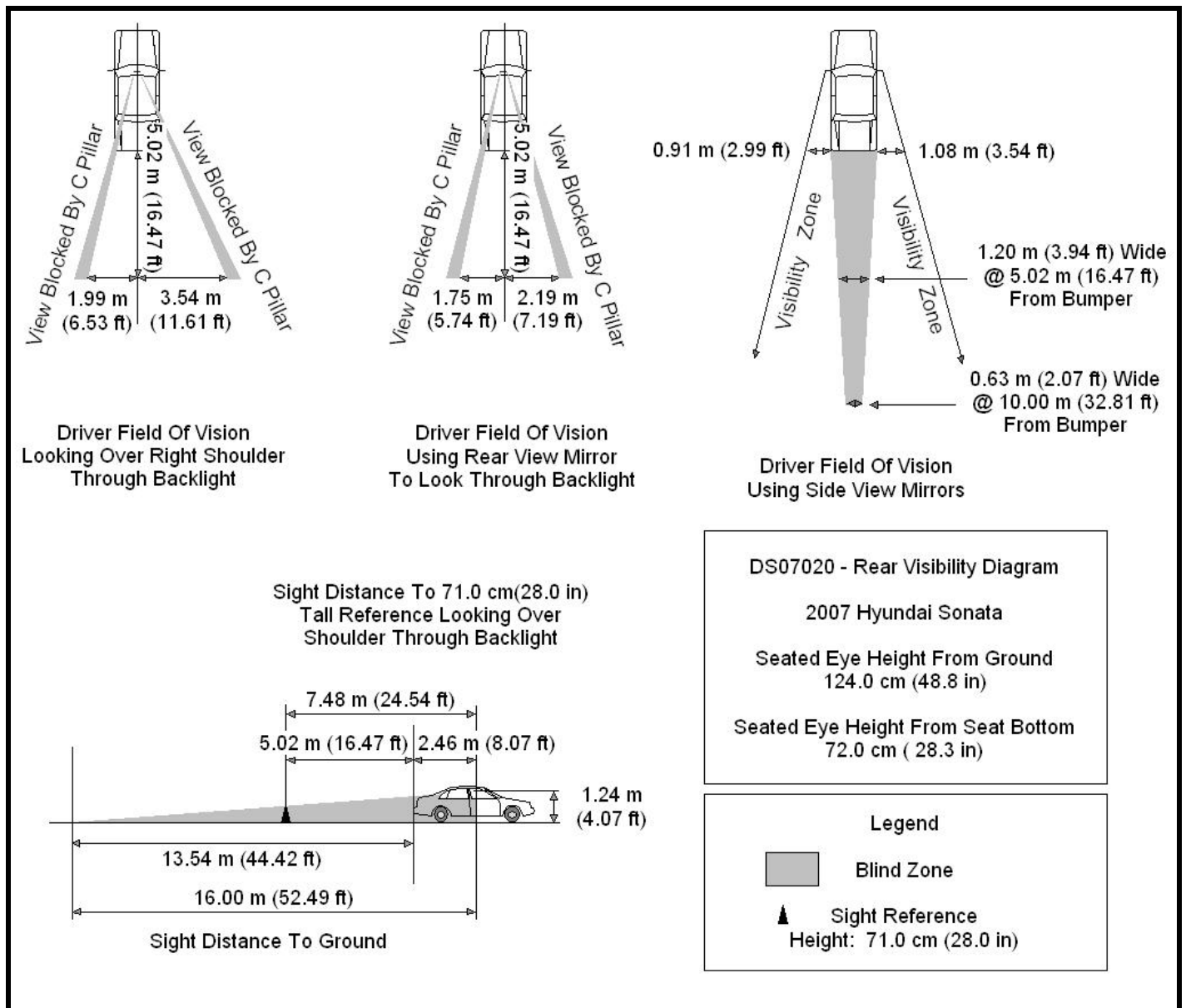


Figure 8. Nominal sight diagram

Interior Damage - 2007 Hyundai Sonata

There was no interior damage.

OCCUPANT DEMOGRAPHICS - 2007 Hyundai Sonata**Driver**

Age/Sex:	27/Female
Seated Position:	Front left
Seat Type:	Bucket
Height:	160 cm (63 in)
Weight:	50 kg (110 lbs)
Occupation:	Custodian
Pre-existing Medical Condition:	None noted
Alcohol/Drug Involvement:	None
Driving Experience:	>10 years
Body Posture:	Normal, upright
Hand Position:	Both on steering wheel
Foot Position:	Left on floor, right alternately on brake and gas
Restraint Usage:	Lap and shoulder belt available, used

NON MOTORIST DEMOGRAPHICS

Age/Sex:	3/Female
Height:	102 cm (40 in)
Weight:	16 kg (35 lbs)
Pre-existing Medical Condition:	None noted
Alcohol/Drug Involvement:	None

INJURIES - 2007 Hyundai Sonata

Driver: Not injured.

Pedestrian/Non-Motorist (3-year-old): Injuries obtained from interview, police report, and police photos.

<u>Injury</u>	<u>OIC Code</u>	<u>Injury Mechanism</u>	<u>Confidence Level</u>
Right tibia fracture	853404.2,1	Left rear tire	Certain
Abrasion, left thigh	890202.1,2	Left rear tire	Probable
Abrasion, behind left knee	890202.1,2	Left rear tire	Probable
Contusion, right thigh	890402.1,1	Left rear tire	Probable
Abrasion, right thigh	890202.1,1	Left rear tire	Probable

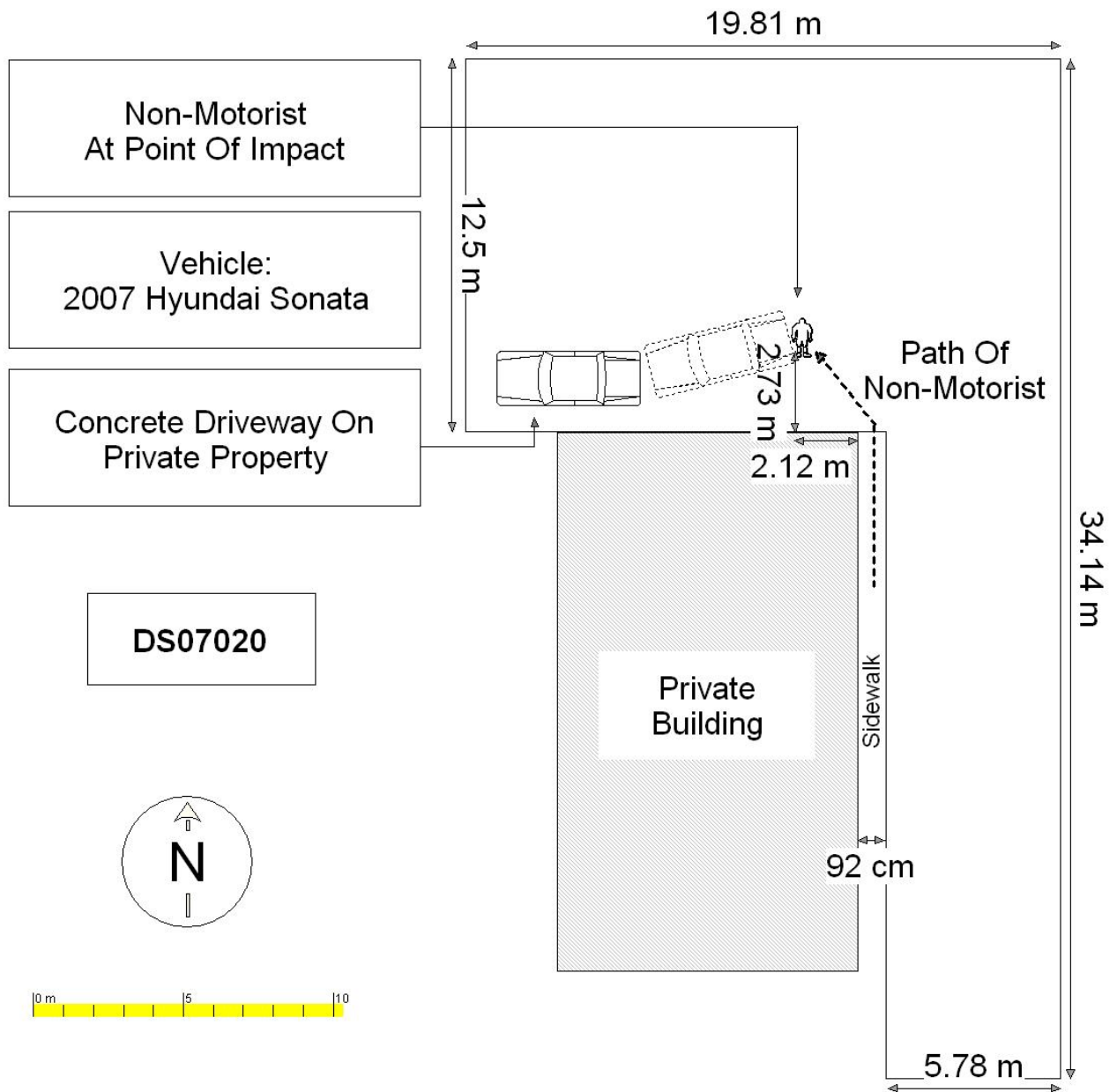


Figure 9. Injuries to child's legs (back view)



Figure 10. Injuries to child's legs (side view)

Attachment 1. Scene Diagram



Attachment 2. Field Data Forms



1. Case Number

IDENTIFICATION

2. Date of Crash ____ / ____ / ____

3. Time of Crash _____

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
- Shrubby
- 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
- Shrubby
- Utility poles
- Signs
- Glare
- Other (specify) _____
- Unknown

11. Grade at parked position +/- _____ %

12. Estimated distance from parked position to impact

_____ m

13. Estimated speed at impact +/- _____ kmph

14. Grade at impact +/- _____ %

15. Estimated distance from impact to vehicle final rest

_____ m

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



VEHICLE FORM

1. Case Number _____

VEHICLE IDENTIFICATION

2. VIN _____

3. Model Year _____

4. Vehicle Make (specify): _____

5. Vehicle Model (specify): _____

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		
2 nd Left		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
2 nd Right		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
3 rd Left		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
3 rd 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 _____

7. LF Tire Size _____

9. RF Tire Size _____

8. LR Tire Size _____

10. RR Tire Size _____

Seats / Head Restraint Data

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

Seat Type codes:

- | | |
|---|--------------------------------------|
| 0 = No seat or seat folded down | 8 = Pedestal (i.e. column supported) |
| 1 = Bucket | 9 = Box mounted (i.e. van type) |
| 2 = Bucket w/ folding back | 10= Other seat type (specify) |
| 3 = Bench | 99= Unknown seat type |
| 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 | |

VEHICLE MEASUREMENTS

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



1. Case Number

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



DRIVER FORM

1. Case Number

DRIVER PROFILE

2. Driver's Age

99 = Unknown

3. Driver's Sex

- Male
- Female
- Unknown

4. Driver's Height

999 = Unknown

_____ cm

5. Driver's Weight

999 = Unknown

_____ kg

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): _____
- 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): _____
- N/A
- Unknown

12. Where was driver going

Description:

13. Driver in a hurry

- Yes N/A
- No Unknown
- 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 Over 60 Seconds
- 11-30 Seconds N/A
- 31-60 Seconds 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): _____
 - 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) _____
 - 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



Non Motorist Form

1. Case Number

NON-MOTORIST PROFILE

2. Non-motorist's Age _____ Months
_____ Years
99 = Unknown

3. Non-motorist's Sex
 Male
 Female
 Unknown

4. Non-motorist's Height _____ cm
999 = Unknown

5. Non-motorist's Weight _____ kg
999 = Unknown

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) _____
 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:

	<u>Colors</u>		<u>Fabrics</u>		<u>Textures</u>		<u>Weights</u>
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
H E A D W E A R	Hat				
	Helmet				
	Hood				
	Other (specify): _____				
U P P E R B O D Y	Short Sleeve				
	Long Sleeve				
	Light Jacket				
	Heavy Jacket				
	Other (Specify): _____				
L O W E R B O D Y	Shorts				
	Pants				
	Shoes				
	Other (specify): _____				