Traffic Accident Reconstruction

McKinzie & Associates, LLC

Technical Analysis & Forensic Mapping

Report For

Ed Dougherty

Dougherty & Holloway

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Reconstruction / Investigation

Motor Vehicle Collision

Date: October 25, 2010

Location: US-71 Highway North of Harry Truman Dr.

Jackson County, MO, USA

Time: 13:19

Report Date: January 20th, 2016

For the case of:

Webb

McKinzie Case No 201506-3346

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Introduction

At the request of Mr. Ed Dougherty, I have completed an analysis / reconstruction of a three vehicle crash. The scope of the reconstruction is open ended. The focus of the reconstruction is identifying vehicle positions immediately prior to the crash.

Background

On the afternoon of October 25th, 2010 a three vehicle crash occurred on southbound US-71 highway about 600 feet north of Harry Truman Dr. underpass. Stuart Webb driving a 1991 Dodge Van was headed south as was Agakais Sitai driving a 1997 Chevrolet Cavalier. A third vehicle was headed northbound and was struck by debris. Webb and Sitai were involved in a conflict that resulted in the Dodge van rolling over.

Methodology

In preparation for this analysis, the following information was examined and or developed.

Grandview Police Accident Report and Photographs

Supplied photographs of vehicles

Site examination and Forensic Map

Scene of the Collision

US-71 highway (now I-49) was a major highway running north and south in western Missouri. In the area of the crash the highway is eight lanes and divided by a concrete barrier wall. This crash occurred on the southbound lanes. The roadway surface is constructed of asphalt and appears in good repair from the at-scene photography and historical aerial images. The southbound lanes are nominally 12 feet wide with improved shoulders. The inside shoulder is approximately eight feet wide. All roadway delineation marks appear in good repair and have a good contrast to the pavement surface.

Examination of Vehicles

Neither vehicle is available for examination. Photographs of the Dodge and Chevrolet are examined for contact damage

Dodge

The Dodge suffered multiple contact damage points during the collision event. The first appears in Figure 1. The left rear quarter panel behind the left rear tire was struck as was the left rear tire and wheel.

Figure 1Post Collision Supplied

During the roll over the top and side made contact with the barrier wall in the center of the roadway. See figure two.

Figure 2 Roll over damage

Due to the police report indicating the left front corner of the van struck the barrier wall figure three is examined. I observe contact damage to the top of the van hood that occurred as the van rolled onto the barrier wall. I do not find any contact damage consistent with a barrier wall contact to the left front fender or bumper. There is no displacement of the bumper and no paint damage detectable. Significant induced damage is evident from the roll event to the top and fender.

Figure 3 Left front of Dodge van

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Chevrolet

The Chevrolet suffered multiple contacts as well. In figure four the left rear tire wheel and fender suffered damage. This damage is consistent with the barrier wall contact observed in the at-scene photographs recorded by the police. The grind marks around the wheel well opening are characteristic of contact with the concrete barrier wall.

Figure 4 Left rear Chevrolet

In figure five, the left front corner of the Chevrolet is visible. Contact damage is visible to the cosmetic bumper cover, right side leading edge of the hood and left front fender. This photograph and additional supplied photos document the presence of blue paint transfer that appears consistent with the Dodge van.

Figure 5 Left front Chevrolet, Blue paint left front of Hood

Figure 6 Chevrolet front tire contact and blue paint.

Figure six depicts the final contact between the front bumper of the Chevrolet and the left rear tire of the van. The dark circular pattern left of the front license plate is caused by the outer edge of the van tire rubbing against the bumper.

Special Topics

Weather

Photographs from the crash site do not suggest weather is a contributing factor

Statement Analysis

See police report.

Reconstruction

Post-crash the site was mapped detailing the contact and fracture damage to the concrete barrier that appears in the scene photographs and are present at the crash site. Using the Supplied photographs and a historical aerial image the tire mark evidence was reconstructed. See figure 7.

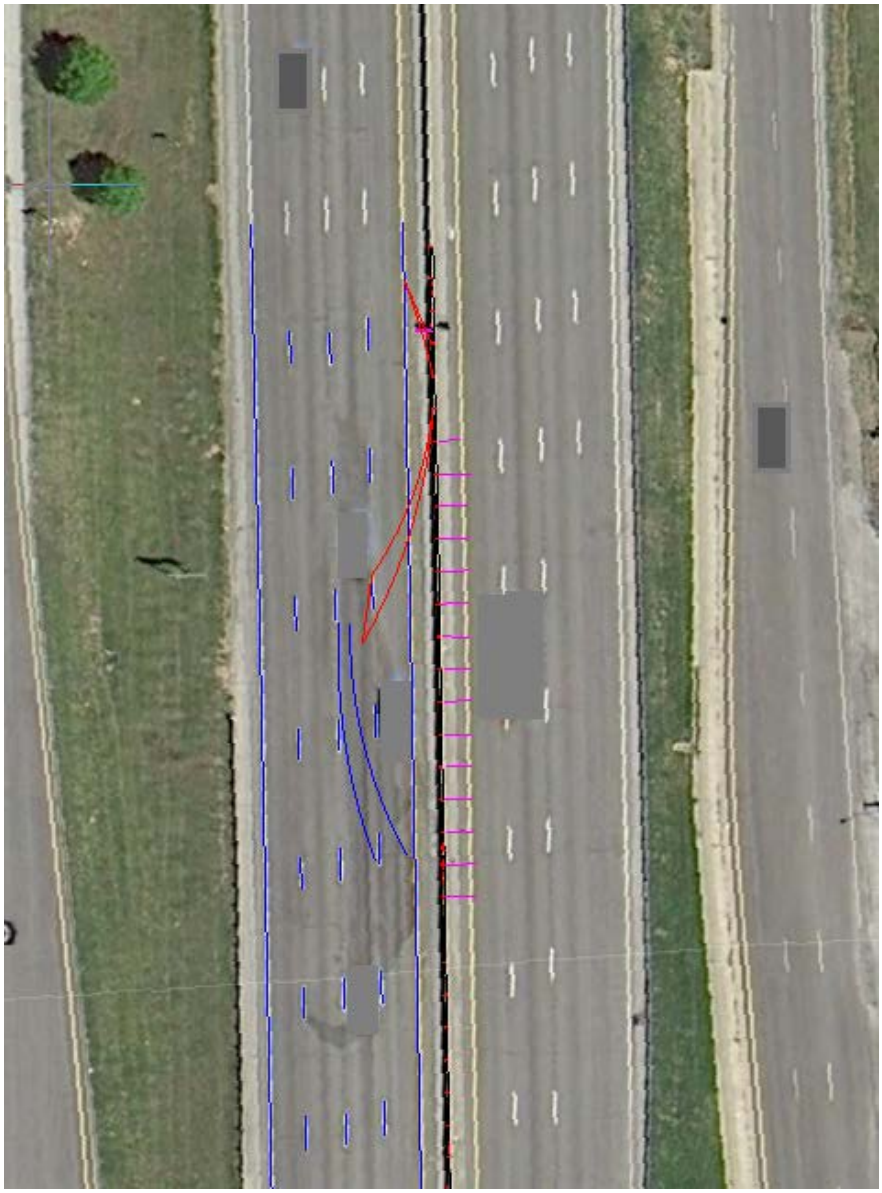

Figure 7 Crash site reconstruction

A unique fracture is observed in the barrier wall near the initial wall contact.

Past the fracture that is believed to be preexisting, a set of time marks go left of the yellow fog line. The tire marks cross a draining grate and lead to contact with the wall. The wall contact damage is consistent with the left rear tire and damaged fender of the Chevrolet.

Figure 8 Police IMG 3519

In figure 9 the tire marks can be observed back on the traffic lanes and entering the number two southbound lane. As the left front of the Chevrolet crosses near the lanes line and into the number two lane a distinct directional change is observed. This tire mark is commonly called a “Crook” and is indicative of a vehicle that has had a force applied from another object and subjected it to a change in direction.

Figure 9 Police IMG 3502

In image nine a straight set of tire marks lead from the number two lane across number one and into the barrier wall. These marks are not connected to this event. These marks are accompanying gouge marks in this direction. Neither the Dodge nor Chevrolet depict a condition where these types of gouge marks could be made.

Figure 10 Police IMG 3514 Looking north

In figure 10, the counter clockwise rotation of the van can be witnessed by the curved tire marks. These marks cease just to the left and behind the parked motorcycle. This is the trip point for the van and are followed by ground contact before the van flips atop the concrete barrier.

In figure 11 the final rest of the vehicles are memorialized.

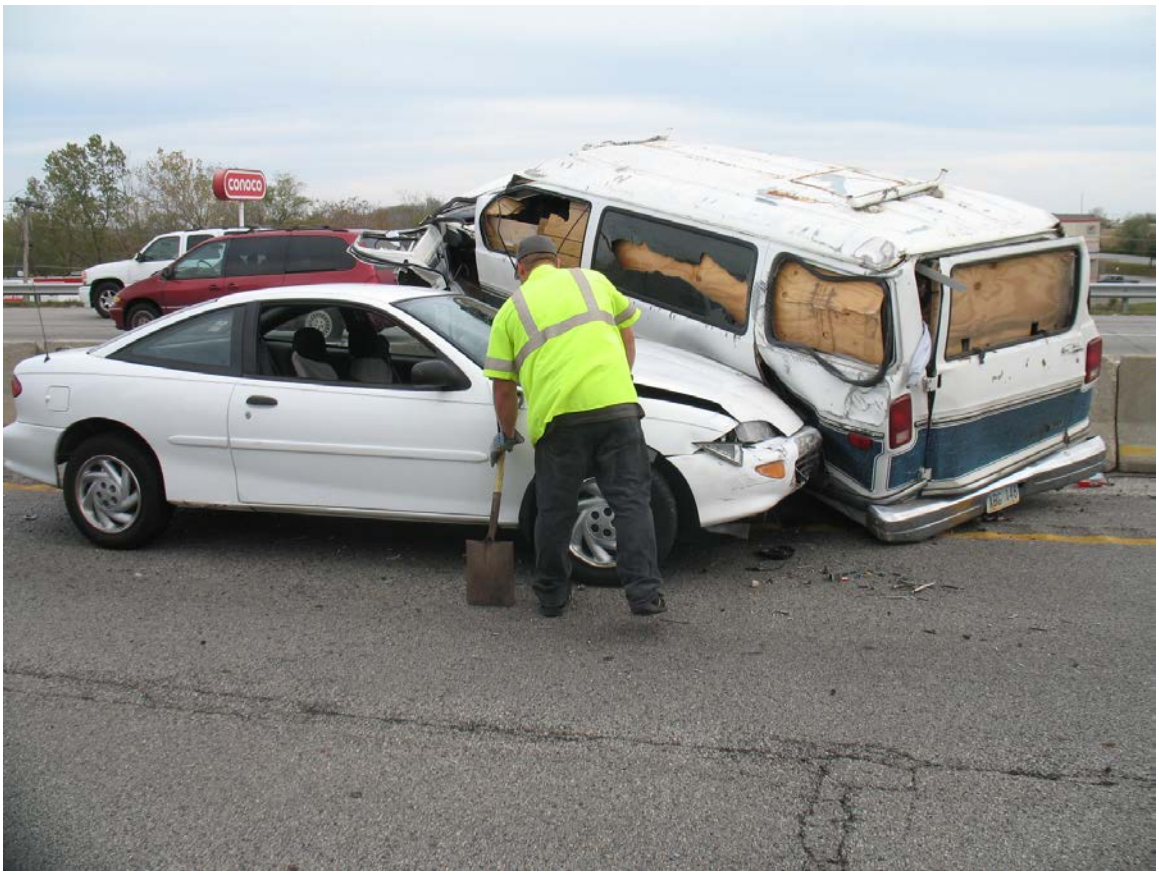

Figure 11Police IMG 3516 Final Rest.

Opinion

Based upon my investigation, reconstruction, analysis and review of materials provided to me, along with my personal site examination, I offer certain facts, inferences and conclusions that are subject to change pending the discovery of new or presentation of additional information.

The Chevrolet struck the median concrete barrier then moved to the southwest toward the number two lane.

Damage to wall, roadway tire marks and damage to left rear of Chevrolet.

The damage to the Dodge (Left Rear) and Chevrolet (Right front) match the roadway physical evidence located in the number two lane of southbound US-71.

Vehicle damage.

Roadway physical evidence.

The Dodge van was in the number two traffic lane heading south when struck by the right front corner of the Chevrolet as it moved southwest.

Crook in tire marks in number two lane.

The Chevrolet impacting the Dodge inducing a counter clockwise rotation that led to the vehicle overturning and landing on top of the barrier wall.

Roadway tire marks.

At or near final rest the van was struck again by the Chevrolet a second time.

Vehicle damage.

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