IN THE COURT OF CLAIMS OF OHIO

PORTAGE COUNTY, OHIO

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JASON WOLGAMOTT, et al.,)
)
Plaintiffs,)
)
vs.)
)
E.R. TRUCKING, INC., et al.,)
)
Defendants &) No. 97-03611-PR
Third-Party Plaintiffs,)
)
vs.)
)
ODOT, et al.,)
)
Third-Party Defendants.)

- - -

Deposition of WILLIAM T. JACKMAN, a Witness herein, called by the Third-Party Defendants for cross-examination pursuant to the Rules of Civil Procedure, taken before me, the undersigned, Melissa Karm, a Stenographic Reporter and Notary Public in and for the State of Ohio, at the offices of Black, McCuskey, Souers & Arbaugh, 1000 United Bank Building, 220 Market Avenue South, Canton, Ohio, at 8:59, a.m., on Wednesday, the 10th day of December, 1997.

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APPEARANCES:

On behalf of the Plaintiffs:

Young & McDowall

By: Debera Talkington, Paralegal sitting in for
Dean A. Young, Attorney at Law
507 Canton Road
Akron, Ohio 44312

On behalf of the Defendant & Third-Party Plaintiffs:

Black, McCuskey, Souers & Arbaugh

By: Robert E. Soles, Attorney at Law
Gust Callas, Attorney at Law
1000 United Bank Plaza
Canton, Ohio 44702

On behalf of the Third-Party Defendants:

Ohio Attorney General's Office

By: Gregg H. Bachmann, Assistant Attorney General
65 East State Street
Suite 1630
Columbus, Ohio 43215

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EXHIBITS

- - -

EXHIBITS	DESCRIPTION	MARKED
Jackman A	deposition duces tecum	4
Jackman B	accident report	30
Jackman C	analysis/evaluation report	40
Jackman D	curves and radiuses	78
Jackman E	drawn diagram	80
Jackman F	Mr. Jackman's resume	110

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WILLIAM T. JACKMAN

of lawful age, a Witness herein, having been first duly sworn as hereinafter certified, deposed and testified as follows:

CROSS-EXAMINATION

By Mr. Bachmann:

Q Would you state your full name for the record, sir.

A William T. Jackman.

Q And what is your address?

A Westlake, Ohio.

Q Is it 1500 Mozart Drive?

A Yes.

Q What county is that in?

A Cuyahoga County.

(Thereupon, Jackman Exhibit A was marked for purposes of identification.)

By Mr. Bachmann:

Q Mr. Jackman, I'm handing you what has been marked as Jackman Exhibit A. That's a copy of a notice of deposition duces tecum.

Have you ever seen a copy of that before?

A Yes.

Q Attached to that is a list. If you'll look on the second page, it's requesting lots of things, Items A through H.

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Did you bring those items with you today, sir?
A Some I did.
Q What did you not bring with you?
A There is no contract that I have with this firm.
Q Okay.
What else did you not bring?
A That's it.
Q Who is your contract with?
A I hate to disappoint you. I don't have a contract.
Q Do you have an agreement?
A Verbal.
Q Tell me what your agreement is.
A I don't understand what you are asking me.
Q Well how did you find out about this case, sir?
A I was contacted by them.
Q By whom?
A I think Mr. Soles, but I'm not sure. It could have been Mr. Callas.
Q What were you told when you were contacted?
A A very brief description of the accident and they asked if I could be of assistance to them in evaluating the roadway.
Q What was the accident that was described to you?
A I was told that there were a number of vehicles stopped at a grade crossing and a truck coming down the

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grade through a series of curves was unable to stop, was involved in a rear-end collision.
Q What were you asked to do?
A Look at materials that became available and make a determination as to whether or not the roadway itself played a role in the occurrence of the accident.
Q Were you asked anything more specific about the roadway or did they say they wanted you to look at this particular aspect of the roadway?
A No. They said, "You're the expert."
Q So they asked you to make a determination as to whether the roadway played a role in the accident?
A Correct.
Q Before I go any further, I guess there are some preliminaries here. You have had your deposition taken before?
A Yes.
Q How many times have you been deposed?
A Guesstimate of 350.
Q So you know the ground rules and what this process is all about probably better than most, right?
A I've been through it 350 plus or minus times, so if you want to change the rules just tell me.
Q Well let me tell you what my general procedure is. If I ask you a question and you don't understand what it

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is that I have asked or you feel that I have mischaracterized something, perhaps something that you have said or a piece of information that's contained in the materials that you have looked at or you want me to repeat or rephrase the question, please ask me to do so.
A Okay.
Q So you know you have got to respond verbally as opposed to a nod or a shake of the head.
A Yes.
Q What is the fee arrangement that you have with Mr. Callas and Mr. Soles?
A It's on an hourly basis.
Q What is that arrangement?
A Because of when they brought me into it, it was under the old fee schedule. It was $120 an hour.
Q That's the fee you are charging throughout the case?
A For them, yes.
Q What are you charging them to testify at trial?
A That's $1,000 for an eight hour day.
Q What is your fee for deposition testimony?
A I don't charge them. You have to pay.
Q What is your fee for deposition testimony?
A $700.
Q Flat rate?
A Yes, for up to four hours. I was told that you

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received a copy of the hour policy.
Q Okay.
What happens after four hours?
A Did you not receive that, sir?
Q Well, Mr. Jackman, I'm not here to answer your questions. I'll be asking the questions.
A It has to do with my fee and you're committed. That's why I'm asking.
Q Just keep that here. We'll make a copy.
A I am going to want it back. Sure we can leave it there. I apologize.
MR. CALLAS: Off the record.
(Thereupon, a discussion was held off the record.)
By Mr. Bachmann:
Q When were you first contacted by these gentlemen?
A The materials I first received were the beginning of January of this year -- beginning of February of this year. Oh, prior to that there was a telephone call, but I never kept track of when that was. It's been a long time, but if memory serves me I think the materials came within a week or so after I talked to them, but I'm not sure about that. It would have been sometime at the end of January or the beginning of February when the phone call occurred. Then the materials, as I said, arrived on

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the 7th of February, the first materials.
Q In the course of your -- I guess I'll call it investigation of the accident. Is that a fair term, investigation?
A It's as good as any.
Q Did you have occasion to talk to Mr. Ruegg?
A No, sir.
Q You never talked to him?
A No, sir.
Q Who did you talk to other than Mr. Callas and Mr. Soles?
A That's it.
Q You never talked to any police officers or state troopers or eyewitnesses?
A Correct, I did not.
Q What date did the accident occur?
THE WITNESS: Is that a 7 or an 8? That's a 7, isn't it?
MR. CALLAS: Yes.
THE WITNESS: The 12th of July of 1996.
By Mr. Bachmann:
Q You have been looking at the OH1 accident report?
A Yes. I just had a hard time making out the month.
Q And do you know how fast Mr. Ruegg was going?
A No, I don't.

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Q You didn't do any speed calculation or anything?
A No.
Q Before we get into detail, can you tell me kind of the -- you talked to Mr. Callas and Mr. Soles and you received some materials. Can you tell me the process that you went through.
A Shortly after receiving the initial materials -- toward the end of February we inspected the scene, took a series of measurements, made observations, and so on.
Q Who's we?
A Mr. Soles met my partner and myself.
Q Who's your partner?
A My daughter, Lyn, L-y-n, single N.
Q Lyn Jackman?
A Yes.
Q Tell me what you did when you went down to the scene in February.
A We took a series of measurements and made observations.
Q What did you measure?
A The road.
Q Where did you measure it?
A I don't understand what you are asking me. What do you want to know?

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Q Where on the road did you measure it? Tell me what you measured.
A We determined -- we measured the two curves. We measured distance along the road using the -- we measured distances along the road going from just south of the Conrail tracks to almost Orrville Street.
Q Okay.
Do you have a diagram there of what you --
A Of course I do.
Q May I see it.
You took a bunch of measurements along the road measuring distances. What was the purpose of taking those measurements?
A To determine where the various devices were to be in order to calculate the design speed of the curves and to, if necessary, prepare a diagram.
Q By devices do you mean the warning signage?
A Yes, traffic control devices.
Q You said to calculate the design speed of the curve, the devices, and there was a third thing.
A If necessary to be able to prepare a diagram.
Q What else did you do out there at that time?
A That's it, made observations.
Q What sort of observations?
A Observed the fact that the foliage had been cut back

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dramatically, fill had been brought in, at least on the west side of the road near the tracks.
Q Any other observations made?
A Offhand that's all I can think of.
Q What was the next -- did you do anything else out there that day?
A No.
Q How long were out there?
A We arrived at 11:20 and left at approximately 12:50.
Q What was the purpose of Mr. Soles being out there that day?
A I have no idea. You'll have to ask Mr. Soles.
Q What was his role when you were out there for that period of time?
A He didn't have any role. He did whatever he did.
Q What did he do?
A I don't know. My daughter and I were making measurements, sir. I really wasn't paying attention to what Mr. Soles was doing.
Q You didn't talk to him at all while you were out there?
A Sure I did. He was asking questions and I was responding.
Q What sort of questions was he asking?
A Oh boy. "What are you doing? Why are you doing

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it. Why are you doing it here and not there?" Those kinds of things.

Basically he wanted to be educated in what a reconstructionist does or at least as far as our role in this case was concerned, what we were doing. He was to be one with us I guess.

Q Did he make any suggestions? "Well I want you to measure this instead of that. I want you to look at this section of the roadway versus that section of the roadway."

A No.

Q Did you make any suggestions at all?

A No.

Q So you made some observations, you took some measurements, and inspected the scene. Tell me what happened next in the process.

A Based on the material that I had, I returned to the office and made some calculations as to the design speed of the two curves and the appropriateness, obviously, of the signage associated with it.

Q So the second step was you made calculations of the design speed and you checked the appropriateness of the signage that was in place, correct?

A That was a question? I don't know about the second step, but that's what we did next, yes.

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Q Is that all that was involved in that step?

A You have steps. What are you talking about? What steps?

Q Well, Mr. Jackman, let's just try to be straight with each other, okay?

A Wait a minute. You set the ground rules. You said if I don't understand what you are asking, I should tell you. I don't understand what you are asking.

Q Well you rendered an opinion in this case, a written report, right?

A Yes, sir.

Q What I am trying to do is -- I set forth initially -- I just want to find out the steps that you had in the process, everything you did at certain points in time that lead up to that report.

First you got some materials, then you went out to the scene, then you went back to the office and made some design speed calculations and the appropriateness of the signage. That's what I mean by steps.

A Okay. Well what I'm having a problem with is you took step one as our being there. You discounted the fact that I possibly looked at the materials that were sent to me before I went out there. That's why I have a problem with steps one, two, and three.

If you want to say, "What did you do next," I'd be

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more than happy to answer that question.

Q So step one was looking at the materials that these fellows gave you, right? Let's just go through it step by step. Tell me what step one was.

A The first thing I did was to review the materials that were sent. The next thing I did is I went out to the scene.

Q All right. The next thing you did was what?

A I made calculations as far as what the design speed of the curves was and the appropriateness of the various signage.

Obviously I used the materials that were sent to me as an aid, for instance the accident report, the photographs. All of these things I used. I didn't just sit down with a calculator and a pencil and paper.

Q Okay.

What was the next step in the process?

A The next step was waiting around for things to come. I had some questions as far as what ODOT did or didn't do. I understand that someplace along the way ODOT was presented with a list of requests for production of documents or interrogatories or some combination of the above.

So as time went on, certain materials came to me from ODOT, but actually from Mr. Soles. Obviously I

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reviewed those things, trying to make a determination.

Since so much had changed between the time of the accident and when I was out there, I was trying to determine what the characteristics of the area were as far as -- at least the west side of the road from the pavement edge of the road into the right-of-way. I wanted to find out what the characteristics were and things obviously having to do with vegetative growth.

Q What sort of documents were you looking for?

A What I was looking for and what I got were two different things. But they needed a report, so I went with what I had. One of them was a photolog of the state route and the first two submissions of ODOT.

To tell you the truth, things have gotten jumbled up in the file. I have no recollection as to which specific documents came on what days. Someplace in there I prepared a scale drawing of the roadway from the railroad tracks north some distance. I forget what it was precisely.

Q What was the purpose of that scale drawing?

A Because of lacking other information, I wanted to use it to attempt to measure across the curve to see what sight distance was available once I determined what the foliage or what the vegetative growth was like.

Now at someplace in there, in the materials that

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ODOT made available, were some plans for the roadway itself that contained design information. As a result, I felt that the scale drawing that I prepared was superfluous. I preferred to use the information that ODOT made available rather than the diagram that I had prepared.

Q What was the next step in the process?

A I prepared the report.

Q How many drafts did you make?

A How many drafts did I make? I write in longhand. I may have crossed out some words.

Q Okay.

So the one draft you made in handwritten form became the final draft in typewritten form?

A Yes.

Q If we can, let's go through your file that you brought with you and just go through it piece by piece and have you explain to me what it is you have. Some stuff I'm sure I have seen and some stuff I'm sure I haven't seen. I know you've got a lot of material in here.

Is it in any particular order?

A Just this, two small stacks that are paper-clipped together. This. (Indicating.)

Q Let's go through what you have just for purposes of

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seeing what it is that you have. Why don't you just tell me so we can make a record what it is that you have, then we'll mark what we need for exhibits.

A This is in no particular order. This is an interoffice communication about the fatality investigation and it's to a Mr. Dreger from a Mr. Ray. They are both ODOT personnel.

Q What's the date of that?

A July 29, 1996.

These are black and white copies of selected photolog pictures.

Q Those are dated September of 1995 by the way; is that right?

A Yes. Purchase orders -- well, wait a minute. A purchase order and a whole series of interoffice communications. The communications are to a Pat Ziegler from a Harry Anderson. There are various dates.

Q Those are weekly road reports?

A Biweekly road reports, it states.

Q Okay.

A A third-party complaint.

MR. CALLAS: Off the record.

(Thereupon, a discussion was held off the record.)

THE WITNESS: A third-party complaint. It's a

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legal document.

This, I believe, is the original complaint.

By Mr. Bachmann:

Q The original complaint by the Wolgamott's against Eugene Ruegg and E.R. Trucking?

A That's what it says.

Q Is that in Stark County?

A Yes.

Q Continue please.

A There's an invoice from American Sand & Gravel.

There are a number from Ontario Stone. There are seven from Ontario Stone.

There are four sheets entitled Daily Log of Mr. Ruegg. There are some more. Sorry. No, those are duplicates. No, they aren't. Let me stop.

Q Take your time.

A There are four more. So there are two sets, if you will.

Q Two sets? They are not the same sets, they are different sets?

A The number had been written over. It looked like a five but one is 15 and one is 16.

Q Here's another set.

A Then there is a state highway patrol vehicle inspection report. It's several pages.

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Q What is the date of that?

A 7/12/96.

These are time sheets received from ODOT for ODOT personnel.

Q May I see those. Is there a series of dates on those?

A 6/25/96. They jump around. Yes, there is a series of dates. It appears that the earliest one is 6/25/95. The latest one or the last one is 11/7/96.

Q Okay. Thank you.

A But they are not all inclusive. There are days missing.

Q Okay.

A This is apparently a computer printout of maintenance history. If I'm reading this correctly, it's from October 31, 1995 to October 31, 1995. I'm not quite sure what that means. They have other dates on here, but this is the title.

Q May I see it.

A Maybe that's when they printed it or something.

An inspector's daily report together with an interoffice communication for a request for a survey and another one talking about the accident, and basically giving approval to trim the foliage back to the right-of-way line.

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Q Okay.
What's the next one?
A A letter from you to Mr. Callas apparently transmitting your answers to the first set of interrogatories and requests for production.
Q Okay.
A This is a piece of paper entitled Field Notes obviously done in the office. It has to do with the right-of-way configuration of the section of highway in question.
Q Okay.
A I have two drawings. These are half-size plan sheets of the road. One shows line and grade. No, they both show line and grade -- I'm sorry -- from some distance south of the grade crossing up to and just beyond Massillon/Orrville Road.
Q Okay.
A I'd give you the page numbers, but the one is off.
Q That's fine.
A These are more time sheets and worksheets. Some of it has to do with signage and the other is for work on the road.
Q Is it all about State Route 93?
A Yes, as best as I can tell.
Q Is there a time frame?

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A This says 7/7/96. This sheet is undated. This says 6/28/96 and 7/31/95.
Q They jump around. Okay. What's next?
A The next is a hodge podge. It's stapled together and it says, "Question three."
Apparently this is your response to the interrogatories. One is a letter to the Lawrence Township Board of Trustees from Robert Smith. Another is a letter from the Lawrence Township Trustee to ODOT. Another is a map.
Interoffice communications from Mr. Dreger, D-r-e-g-e-r, from Mr. DeFuria, D-e-F-u-r-i-a. The subject is the crash history of the railroad crossing on State Route 93.
There is interoffice communique having to do with various traffic-related items below. They are both State Route 93.

A letter from Mr. Bunkley, B-u-n-k-l-e-y, to the police chief of Lawrence Township.
Interoffice communique having to do with the removal of the sign. It has to do with the tracks being uneven. They asked that the sign be removed because the tracks had been repaired.
There is a computer printout.

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Q Is there a title on the computer printout?
A It says State Route 93 around railroad at -- something -- south of Canal Fulton.
The printing is terrible. Here, maybe you can tell better than I can.
Q These are all crashes it says there underneath that. Is the rest of that packet computer printouts?
A No, the next several pages are. There's a breakdown of accidents under various categories.
This is a copy of the accident report or at least part of it. It's several accident reports.
There's a diagram.
Q A diagram of the section of the roadway we're talking about?
A Yes, Orrville Street down to the railroad crossing. It's not to scale, it's just a diagram showing signage apparently in place at the time, but it says 10-89. I suppose that could mean October of '89, but I don't know. It also says in handwritten cursive, "From Lou Mata," M-a-t-a. I have no idea who that gentleman is.
Q What else is in there? Is the rest just correspondence?
A This section is, then there are some more of the police reports and another computer printout page.
Q All right. What's next in your stack there?

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A Letters and interoffice correspondence.
Here's a work order. Well apparently there is more than one. There are a number of work orders and there is a copy of an accident report involving Conrail tracks, a newspaper article, more work orders. There's correspondence, a work order -- I mean work orders.
Q What's the next in your stack?
A Interoffice communique having to do with the Route 93 fatality and it's a list of critical dates, things that happened.
Q That's --
A And another interoffice communication.
Q What is the date of that IOC on top of there?
A This one? October 31, 1996.
Q What's next in your stack?
A Xerox copies of four photographs.
Q Next?
A Work orders having to do with signage.
Q What's next?
A Center line log of Route 93, Page 5 of 7.
Q Okay.
A Pavement marking instructions. This has to do with the railroad crossing.
Q Okay.
A One page out of -- I'm assuming it's the most recent

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account book for District No. 4, Interstate Route 77, and State Route 93.
Q Okay.
A This is a page out of the ODOT design manual having to do with stopping sight distance.
A letter to you from -- well it's unsigned, but it's from Mr. Soles requesting things.
Q All right. What's next? Another letter?
A Yeah, from you to Mr. Soles explaining -- well you're transmitting some of the responses and you're explaining why you don't have them all.
Q Okay.
A This is the photolog, the complete photolog, laser color copy.
Q Okay.
A This is a report from Mr. Hilbert. I'm sorry.
Q Go ahead.
A This is the report of Carmen Daecher, D-a-e-c-h-e-r.
Pictures.
Q Are they dated?
A 9/19/95. The first two are from the photolog. The rest appear to be specifically taken of the roadway. They are not photolog pictures.
Q Is there a date on them?

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A According to this, July 22, 1996.
Q Okay. What's next?
A Deposition testimony of Robert Smith, S-m-i-t-h.
Q Okay. What's next?
A Deposition testimony --
Q Pardon me for interrupting, but let's pull out your notes too and we'll do the notes all at once.
A I'd like to keep these in a separate pile from this.
Q I understand.
A Deposition testimony of David Ray, R-a-y. Deposition testimony of James Marginean, M-a-r-g-i-e-a-n.
Deposition testimony of Michael Young, Y-o-u-n-g.
Expert report I think -- well it's actually -- it's a letter to Mr. Bachmann from Mr. DeFuria.
This is a report. It's unclear to me, at least at this point in time, who it's from or to because there is no letter of transmittal. There is no title page and there is nothing. It's my understanding that it is in fact -- well it's my understanding -- I don't know about the fact that it was prepared by Sergeant Veppert, V-e-p-p-e-r-t, state highway patrol, but I'm ready to stand corrected because there is really nothing on here that says anything about that, at least not that I can find.

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Q Okay.
Now you've got a series of your own notes and it looks like some other papers there. All your notes are contained on the yellow sheets there?
A Yes. I don't think I used any white ones. I think they are all yellow.
Q Other than the yellow sheets, there is one with a green paper clip. What's behind that?
A That's my report. It's a copy of the report.
Q Underneath the other white sheets there are more white sheets. What are those?
A This is a letter to Mr. Soles and another letter to Mr. Soles. There are four letters to Mr. Soles from yours truly.
MR. BACHMANN: At this point I'd like to take a break and get Xeroxed copies of those letters and those yellow sheets, if we could.
(Thereupon, a recess was taken.).
By Mr. Bachmann:
Q Mr. Jackman, while your personal notes and letters to Mr. Callas and Mr. Soles are xeroxed, of these -- while we're dealing with these documents, let's stay on that subject.
Can you tell me of these documents that we've gone through, are these the only documents that you have

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reviewed to date?
A Specific to this case, yes, sir.
Q Did you review all these documents in preparation of your report?
A No, because some came after the report was prepared.
Q Can you tell me what documents you have relied upon in preparation for your report. I know you looked and -- perhaps that's a bad question.
What I want to get to is the documents that you specifically used to come to the opinions that you arrived at.
A I probably put the greatest weight -- well obviously on the accident report and the photographs, the photolog, and the line and grade sheets, those two sheets that I described as line and grade. They were half-sized prints. I would say I relied on that material most heavily.
Q Other than those documents -- let's go to those documents then. What I'd like for you to do is explain to me what you relied upon.
A We are going to have a problem here because as I review these things it becomes a body of knowledge, if you will. I don't really -- when I sit down to write a report, I don't really say, "Aha, here's the piece that goes under Line B."

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I don't do that. What I do is list on my report -- and I'm assuming that they sent you a copy someplace along the way. I list the materials that I have reviewed and relied on, to whatever extent, all of the materials listed. Anything that's not listed, I haven't gotten yet.

For instance, the depositions came after the fact. There were other things that came after the fact. You know that doesn't -- if those materials -- if after the fact stuff had changed my opinion, then I would have had to write an addendum. They didn't necessarily change the opinion. They could have reinforced the opinion, so I don't want to say that.

Therefore, since I didn't have them, I am not relying on them in any way when I testify, assuming I testify. Because it's all a body of knowledge, I have a problem. You're not the first attorney that's asked me, "What did you rely on? Show me specifically on this piece of paper what it is that was important to you."

It's almost impossible to do without leaving things out. I don't want to expose myself at some later date and have somebody say, "Well you never told me," so with that in mind I'll do anything you want.

Q You said you relied upon the accident report?

A Sure.

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Q What information did you glean from the accident report?

A My speech was for naught. Everything in the accident report. I read the statements, the descriptions, the location, where the crash occurred, time of day. All of those things are important.

(Thereupon, Jackman Exhibit B was marked for purposes of identification.)

By Mr. Bachmann:

Q Mr. Jackman, I am handing you what has been marked as Jackman Exhibit B. Can you tell me what that is.

A It's a copy of the report of the accident in this case.

Q There is a lot of information in this report. I don't want to go through it line by line obviously. Can you tell me in terms of your analysis -- and I understand there are lots of factors as you indicated that go into your analysis -- what information you glean from this report that ultimately formulates your opinion.

MR. SOLES: Jack, answer the question as best as you can.

THE WITNESS: I've already been through this. It's the fact that he's driving an International truck.

By Mr. Bachmann:

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Q Let me be more specific and try and help you out a little bit.

What about the accident itself and about Mr. Ruegg driving down that stretch of roadway to the point of the accident from this report do you glean that helps you formulate your opinion?

A The fact that he was driving a large truck. The details, the accident itself, the fact that there were a series of vehicles stopped at the crossing. They were waiting for a train, so there was a reason to stop. The manner in which the accident happened. The reference point the troopers used -- well I'm sorry. It's not a trooper, it's the township police.

Obviously I read the materials that were included in here and I know that the following truck avoided being in the accident by going left of center. I'm not sure if that's contained in this report or not.

As I said, this material becomes all of one to me. It's difficult for me to say, "Well you know here's where I found that." I don't remember anymore where a lot of these things are.

Q You said the following truck avoided the accident by going left of center. You mean there was a truck behind Mr. Ruegg?

A Yes.

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Q Can you describe for me, to the best of your recollection from the documents that you have reviewed, the manner in which the accident happened. If this helps you, that's fine.

A The manner in which the accident happened?

Q Yes.

A Mr. Ruegg attempted to stop, jackknifed and ran into the back end of the van, then there was a domino effect. Several other vehicles were involved.

Q He attempted to stop, jackknifed, then ran into the van; is that correct?

A Well since I didn't do a reconstruction, I really wasn't too concerned about this.

Q That's fine.

A That's my understanding at this point in time. I want to take another look at the photographs if you are going to tie me down to this.

Q So you didn't actually reconstruct the accident?

A You asked me this before and I said no.

Q You said you put your greatest weight on certain types of documents. We'll go through those.

What weight from this did you put on it other than gathering information?

A I can't answer that. I don't weigh these things.

Q I am just trying to use your terminology. You said

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you put your greatest weight on the accident report, the photos, the photolog, and the line and grade sheet.
A Yes. Now you want me to talk about weight on individual items and I didn't do that. I used weight as a term of art, if you will. These were the more important things to me.
Q So all you used the accident report for was to gather information about how the accident appeared, where it occurred, maybe the conditions under which it occurred?
A Date, time, light conditions, and so on.
Q Was there anything other than general background information about the accident that you used the accident report for?
A Other than background information? Everything is background information.
Q Did you use -- well here I can pick up that report, if you will.
Did you use these measurements that occurred on the fourth page of the report?
A Only to locate where the actual impact was.
Q How about the witnesses' statements that are attached?
A I read them.
Q That's just to gain an understanding of how the

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accident occurred; is that correct?
A Sure.
Q Did you have any other reason for reading it?
A It sounds like I'm being nefarious or something. It's part of the report and I read it. I apologize. Maybe I shouldn't have.
Q On the sixth page, if you'll turn to that --
A Yes.
Q -- there is -- it looks like a handwritten drawing to me of the truck jackknifing and impacting with the minivan. Is that your understanding of what that drawing is?
A Yes.
Q Is this of any particular significance to you or is it just more background material as to how the accident occurred?
A Well there are letters on this diagram and they refer to another page here in the report describing what they are. I told you I used this report to determine where the impact occurred, so yes, I used the report to determine where the impact occurred.
Q Other than determining the conditions, that's really -- then am I correct in saying that's really the main purpose of what you used this report for?
A What's that for?

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Q For determining where the impact occurred?
A And the fact that it was a large tractor/trailer and that it was a clear day and it was light and there was no rain. All of these things are significant if I am going to make a determination as to the role the road played in the occurrence of the accident.
Q Now you also stated you put your greatest weight on the accident report, photolog, photographs, and line and grade sheets.
You mentioned photos. What photos are you talking about?
A The ones that you just looked at.
Q I'm handing you a series of photos.
A I am not going the pick out individual photos. I looked at them all. I attempted to determine what the character of the vegetation was. That's what I was looking for.
Q What were you able to determine from the character of the vegetation or about the character of the vegetation?
A That it was close to the driving lane. It varied. That was the reason I wanted the photolog. I knew what I wanted was previous to the accident along the stretch of the road. Not all of those photographs were specifically identified as to where they were taken. Some you could

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tell were of the accident scene.
The accident scene photographs were obviously very specific, but I wanted to see what it was like further back up the road, and the photographs were not specific enough.
The photolog allowed me to look at the road progressively to see what it was that the drivers could see as they were approaching and rounding the curves.
Q Did you use any of the accident photos to help you with regard to the vegetation?
A Not really, no. They were used just in a very general way.
Q That would be the packet marked police photos?
A Yes, correct.
Q So those really didn't help you out that much?
A Not as far as vegetation is concerned, but I looked at them. I can't tell you specifically what I looked at. I don't know where you're coming from as to what helped me and what didn't. I'm telling you it's all a body of information and I used everything that I had.
Q I'm sure you did. So with regard to the vegetation and the accident photos, they were not of much help to you, right?
A Well --
MR. CALLAS: Objection.

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THE WITNESS: I answered with a qualification and that's it. I'm sorry. That's the best I can do for you.
By Mr. Bachmann:
Q You have got a package marked vehicles at salvage area.
A Right.
Q You looked at them, I assume.
A Absolutely.
Q Were they of any assistance to you in rendering your opinions?
A Not in my part of this scenario, no.
Q Now you have also got a packet marked van and scene and after that it says, "Later."
A Yes, meaning not at the time. I should have said site rather than scene.
Q There are three sets of photographs.
A Okay.
Q Do you know where those photos came from?
A This office. I have no idea.
Q You don't know who did them?
A No.
Q Did those help you in determining vegetation?
A To a degree. The problem is that some of these are so innocuous it's difficult to determine where the camera

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was. The scenery there really doesn't matter where you are. It kind of looks like all the same. There is nothing distinctive. You'd almost have to go out there and look at tree limbs and everything else to make a determination as to where a specific photograph was taken. I was using these as a general reference, just getting an idea of what the whole area looked like.
There are two reasons I separated the two site sets. One is obviously before the pavement markings were put down. The other is postpavement markings. They were taken at different times is what I am telling you.
Q Do you have an understanding of where those sets were taken?
A Before and after the pavement markings went down. It's pretty obvious. The pavement markings were put down sometime in the latter part of July.
Q Okay.
A It's in some of the ODOT stuff.
Q In your one hand you have got a photo.
A I have no idea when it was taken. Afterward.
MR. BACHMANN: Gust, can I get copies of those two sets of photos?
MR. CALLAS: Yes.
MR. BACHMANN: Color copies just like that.
By Mr. Bachmann:

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Q Mr. Jackman, I'm sure you'll correct me if I'm wrong in my statement, but it sounds to me like the set of photographs that were most helpful to you in terms of determining what the vegetation was like prior to the accident was the photolog.
A The photolog in conjunction with the scene photos, particularly the ones before the striping.
Q So two sets of photos were your primary source of information?
A Correct.
Q Do you consider one set of photographs -- that is the photos prior to striping or another set of photographs that is the photolog -- to be more representative of what the vegetation was at the time of the accident?
A Obviously the ones that show the area before the striping, not the photolog. The photolog was taken the year before and growth has occurred over that year.
Q I'm not sure if I asked this or if I haven't. The set of photographs where the temporary striping is in place, do you know if that was before or after the accident?
A It's my understanding it was after the accident. That's what I was told.
Q Sometime in July it sounds like, from what you have

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said.
A It would have to be, yeah.
Q Now you also said you used the line and grade sheets from ODOT, correct?
A Yes.
Q That would be in that category of documents that you put your greatest weight on, correct?
A The ones that were most important to me, yes, because there was engineering details in there that I used specifically.
Q Can you tell me what about those line and grade sheets that factors into your analysis?
A By definition, the line is horizontal alignment. The grade is vertical alignment and you need those to make calculations of the design speed of the curve.
Q So the line and grade sheets did not tell you the design speed of the curve, you had to calculate that yourself, right?
A Yes.
Q All you used those sheets for were to calculate the design speed of the curve?
A They also show right-of-way, but there was another sheet that showed right-of-way. I was interested in the right-of-way line.
(Thereupon, Jackman Exhibit C was marked for

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purposes of identification.)
By Mr. Bachmann:
Q Mr. Jackman, I'm handing you what has been marked as Exhibit C.
A Yes, sir.
Q Would you please tell me what that is.
A This is a copy of the report that I prepared in this matter and directed it to Mr. Soles.
Q And does this report contain all of your opinions with regard to this accident?
A As of this date. I understand from listening to a conversation before the deposition started that more information is forthcoming. I have no idea what it contains. Obviously I reserve the right to modify this report or, in fact, supplement the report with additional opinions if this additional information proves it to be necessary, but I don't know.
At this point in time this basically summarizes my opinions with the understanding that you're asking a lot of questions that are also asking me for opinions that go beyond the report. So anything that is included in the deposition that might be considered an opinion is also there.
Q All your written opinions to date are contained in Exhibit C?

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A Correct.
Q In here on the first page you've got A through P. It says that these are documents that you had reviewed. Other than the depositions you had mentioned, are there any other documents that you reviewed since the time you rendered this report?
A The maintenance management system manual, at least a current copy. I have one of my own, but I didn't know if it was current or not. And some additional material that was sent from ODOT. As I said -- to be honest with you, I don't know what it was anymore.
Q Neither of those items change your opinion obviously.
A Correct.
Q Anything else?
A Oh, the two reports. Did you mention those? The Veppert report and the DeFuria report.
Q Anything else?
A No.
Q In here you --
A Here is C.
Q Yes. On the first page you mentioned a copy of a report by Steven Hilbert, I guess.
A Yeah. That's Letter N.
Q And I mean you read that obviously because somebody

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had rendered an opinion. Was that Mr. Hilbert?
A Yeah, I read it. It was sent to me.
Q Can you pull that out.
A As soon as I find it.
Q Is that all the information you had on Hilbert?
A Yes.
Q So I gather you couldn't really say whether what he was doing in there was valid or not valid, because you don't have that much information about his opinion, right?
A This may sound self-serving, but this is a terrible report. I mean it says nothing as far as I'm concerned.
Q It's of no value to you?
A No.
Q How about this? Is it Daecher's or DeFuria's report?
A He pronounces it Daecher.
Q I gather you read that also?
A Yes.
Q And was that of any value to you?
A Value to me? You mean in the preparation of my report?
Q Yes.
A No, because he doesn't concern himself with this. He concerns himself with how the accident happened. I

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noted that he did, in fact, recognize the fact that Mr. Ruegg was sitting higher than the average vehicle driver would be. Other than that, no. I Knew how high Mr. Ruegg was sitting anyway, so I don't need Mr. Daecher to tell me that.
Q You already knew that?
A Sure, because I knew what kind of truck he was in.
Q Otherwise that's of no value to you?
A Basically, no. It was of interest, academic interest, because I do the same thing.
Q The Sergeant Veppert report?
A Yes.
Q Was that of any value to you in your analysis and opinions?
A No. Again it's of academic interest, what he did and how he did it.
Q Do you have any criticisms of his report?
A Of course.
Q What are they?
A I'm not doing a reconstruction, so I don't think it's fair for me to address any criticisms. I didn't really look at it that closely. I just don't feel it's appropriate at this point in time.
Q Can you tell me generally what your criticisms are.
MR. CALLAS: Objection. Answer it if you can.

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THE WITNESS: He obtained a drag factor, a very specific value, by going to a different location that he believes was newly paved, had the same grade and mixture of asphalt, and took a -- I don't even know how he obtained it. I'm assuming he used an accelerometer to do it. But be that as it may, he apparently got a drag factor value by going to another location.

This always bothers me. He, as I said, didn't say how he obtained it. He just said that he did it. In making use of it he did, in fact, modify for the fact that it was a truck rather than a passenger car. As far as perception/reaction time is concerned, he ignored the built-in brake-lag time with the air-brake system. I have no idea why, but at least it doesn't appear in his calculations.

There are a number of other things that I remember commenting to my daughter on without really making any notes of, so those are some of the things that I have a problem with.

But again, I didn't do a reconstruction, so I can't -- I don't want to be more specific than that.

By Mr. Bachmann:

Q Did you read the Davidson report?

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A What Davidson report? Obviously not.

Q Mr. Soles or Mr. Callas hasn't provided you with a report from a man by the name of Davidson?

A No.

Q Have they told you about it?

A A report by Mr. Davidson?

Q Yes.

A I thought I heard them ask you if you got a copy of a report. Other than that, no.

Q They haven't discussed it with you?

A No.

Q Do you plan on creating any exhibits for trial?

A I have no idea. If asked, I will.

Q Have you been asked to?

A No, not yet.

Q You haven't done any yet?

A No. I made that drawing that I showed you during the break.

Things and drawings of less precision than that have been used in trial, so while I'm not waving a flag that that's a trial exhibit, it could be if necessary. But nothing has been said to me one way or the other.

Q Since you didn't do an accident reconstruction, you are not going to do a computer simulation and/or make any sort of scale model or any scale drawing with regard to

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how the accident occurred or a computer printout of how --

A I don't do that. As far as a drawing, anything that I would draw would relate to the role of the road. You said how the accident occurred. I'm saying that the road played a role in the occurrence of the accident. So if I do a diagram, it would address at least in part how the accident occurred.

Q I think before you said you hadn't had any discussions with Mr. Ruegg. You never talked to him?

A I never met him.

Q Did you obtain or were you told about or discussed with anybody evidence of any oily substance bleeding through the surface of the asphalt on July 12, 1996?

A No. It wouldn't surprise me.

Q When you went out there in February of 1997, did you see any such evidence?

A You wouldn't.

Q Why not?

A What you are referring to is the normal evaporation of the soluble materials used in an asphaltic concrete mix to make them -- I am going to use the word fluid, but I don't mean like water, but to make them pliable so that they can be poured and rolled in place. Then the solvents come up to the surface and they are evaporated.

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How quickly they can evaporate is based upon temperature and the humidity. So obviously hot, dry weather will allow this phenomenon to exist for a much shorter period of time than cooler, damp weather.

Q Is that a usual occurrence or unusual occurrence?

A No. It always happens. That's the nature of the asphalt. You can't help it.

Q But in this case you hadn't heard of that?

A I'm not aware of it.

Q How long -- you said obviously depending on the temperature and the humidity -- how long would such a condition last?

A As little as seven days if you got a string of hot, dry days. And maybe as much as four to six weeks if it's miserable weather. Obviously in any place it depends upon the conditions.

Q Did you have any opinions as to the signage that was in place at the time of the accident?

A From what I gathered in reviewing the materials, the signs are misleading or the sign was misleading.

Q What signage in particular are you talking about?

A Advisory speed plate associated with the curve sign.

Q What was that advisory speed plate?

A With the left reverse curve sign, the advisory speed plate was 35 miles per hour.

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Q How is that misleading?
A Drivers have learned that where curves are concerned and an advisory speed is associated with the sign that the state -- assuming it's a state sign -- is based on the geometric conditions. In other words, super elevation, the degree of curve. They have learned that just from experience. I mean not intellectually, but just experiences. If properly done, the advisory speed will be the design speed of the curve.

If you drive your vehicle at that speed, all of the forces on you are neutralized; therefore, you feel very comfortable sitting in your vehicle as you go around the curve. If you drive faster than the design speed, then you feel centrifugal force throwing you forward, outside of the curve. You'd better hang on to the steering wheel, depending upon how much faster you are going.

On the other hand, if you go slower than the advisory speed, then you feel gravity pulling you into the curve; and again you are either ending up against the door or hanging on to the steering wheel.

So if the design speed is 35 miles an hour and if you drive 35 miles an hour, you are very comfortable sitting in the car. There are no forces acting on you.

If, on the other hand, the design speed is higher than 35 -- if it, for instance, is 45 and you're driving

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it 35, you feel uncomfortable. So to attain that feeling of comfort, you will speed up.
Q What was the speed limit through this section of roadway?
A 55, I believe. Yes.
Q And am I correct in thinking that you believe the advisory speed should have been 45?
A Associated with the curve sign, yes. If the state follows their policies, yes.
Q So you believe the advisory speed should have been 45 miles an hour associated with that left -- I think you said left reverse curve sign.
A Correct.
Q Is there any sort of standard or technical standard or something that tells you that this should be -- I mean is there anything in the ODOT materials? You mentioned something in your answer about according to ODOT --
A According to their policies.
Q What policies are you talking about?
A The sign. The manual says if you are going to put up an advisory speed sign, you shall do it in such a way as to properly inform the driver as to what the safe speed is for the conditions, assuming that you have bad weather.

Forget snow, ice, fog, and all that stuff; assuming

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that you have normal driving conditions, in that case what is of concern here is the degree of curve and the rate of super elevation, banking, if you will. The banking of the curve.
Q Is there a particular page or section or chapter of the manual?
A There is a section in the manual that describes how when you have a curve the design speed can be determined. There are two ways of determining it. One is actually going into the field using a device called a ball-bank indicator and actually driving the road at various speeds, noting the readings on the device and then making various adjustments. But this means you have to get involved in traffic and driving at various speeds and it's time consuming.

It's really something that two people should be involved in, not one, because speed is critical. You have to maintain your speed and you have to maintain your alignment on the roadway. That quite often is done and I know the state does do that. I know they have -- to the best of my knowledge, every district has at least one ball-bank indicator that they can install in a car.

The other way of doing it is mathematically. That's determining what the characteristics of the alignment are, physically determining the super elevation and the

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degree of curve, then getting the same results mathematically. Both of these methods are explained in the manual.
Q The 35 miles-an-hour advisory speed plate was designed to warn motorists to moderate their speed as to the condition of going around the curve?
A Correct.
Q Not the grade, the curve?
A The curve, yes.
Q Do you have any other opinions as to the signage?
A Not really.
Q Other than your opinion that the advisory speed plate should have been 45 miles-an-hour associated with the left reverse curve sign, all the other signage was up to standards?
A Some of it's unclear as to what was in place at the time. Apparently ODOT can't agree as to what was in place, what size they were, and when they were in place. It got a little confusing to me and I just kind of gave up on it and said, "What the heck." So, you know, whatever was there --
Q Your focus is just on that one sign, the advisory speed sign, right?
A You asked the question. I didn't focus on anything.
Q Perhaps that was a bad question for you, sir.

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Your opinion as to signage that was in place and the only opinion you have is that the 45 miles an hour should have been a 45 miles-an-hour advisory plate?
A Based on ODOT's methods of doing things and substantiated in my readings of the deposition testimony of the several people.
Q Can you tell me what from the depositions substantiated that?
A I think the deposition testimony of Smith states that they are not concerned with stopping sight distance.
Q Why is that a problem?
A Why is that a problem?
Q Yes.
A I didn't say it was. You said what in the deposition substantiated my opinion and I told you.
Q Do you have any criticisms of that statement by Smith?
A It's a statement. How can I criticize a statement?
Q Well is that the way it should be done or should it be done differently?
A I'm telling you that's the way it is being done.
Q Is that the correct way to do it?
A As with the attorney's general office, ODOT is God. If somebody tells Smith to do something, he will do it.
Q But I mean you're a professional engineer, are you

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not?
A Yes.
Q According to your background, training, and education, is that the correct thing ODOT should be doing with regard to signage and sight distance?
A Well now you're changing the question. They should. Where possible and where practical, they should give the needed sight distance. They should give whatever sight distance they can to approximate -- at least the speed limit of the road, if not the design speed of the road. Quite often roads are designed at higher rates of speed than they are signed for. As a traffic engineer --
Q I don't understand what you said.
A As traffic engineers, we have a responsibility not to fool the public. We have to advise them of the conditions as best we can so that they are prepared to handle the circumstances that they are driving into.
Now it's very inexpensive to put up a sign. Relatively speaking, signs are cheap. To post signs and all that stuff is cheap. It's better to remove an obstacle than to say, "Watch out. There is an obstacle ahead."
So when we're looking at sight distance, yes, we can put up a speed advisory lowering the speed limit, but

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sight distance is not something that the typical motorist is aware of. They don't realize that they can't see far enough to stop until a situation occurs where they have to stop and all of a sudden they realize that they can't stop in the distance they had.
So the better way to do this -- as long as we're not tearing down mountains which can get very expensive. We're talking about cutting trees or cutting back vegetation. You do that so that as people are rounding a curve, they can see across the inside of the curve, away from the road, across this open area, if you will, and see what's ahead of them on the road. Not just along the road, but at an angle so they can see what's around the corner, if you will. Now they can attach some reason to the signage.
As a result you put up a curve sign and you set the speed limit for the curve, whatever it is. In this case it would be 45 miles an hour. You give them enough sight distance so when they are driving comfortably -- which they are going to do anyway, most people are. When they are driving comfortably, they will have adequate sight distance so that if something transpires on the road ahead, they can do something about it and bring their car to a safe stop or whatever is necessary, adjust their speed or whatever.

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Q This is something a traffic engineer should be doing?
A Well the traffic engineer doesn't cut the trees, but the traffic engineer makes a determination of what's necessary and would advise the appropriate parties that certain maintenance procedures have to be done.
Q So it's really up to the traffic engineer to make that determination, right?
A Well sight distance -- look, you're asking me to determine ODOT policy and I can't do that.
Sight distance is a design feature. The design engineers are aware of it. At least they should be, because they are designing these roads.
The construction engineer should be aware of it because they are building the roads.
I would like to believe that the maintenance engineer, since he associates or -- they associate themselves with these other engineering disciplines, would also be aware of it. They really ought to talk to one another. It's a team effort, so there should be an awareness of what is necessary as far as stopping sight distance is concerned on all sections of the roadway, if certain things have to be done in certain areas to attain that desired result, whatever it is.
The traffic engineer out there is interested in

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signage. And generally a traffic engineer will look at things a little differently because the job of the traffic engineer is to take something that is already built and make it work. So when I suggested that he might be the one to be aware of this, I don't think it's his duty to do it. I just think because of his training and because of the things he does on a day-to-day basis, he's the one who more probably will be aware of it or should become aware of it.

The maintenance engineer is saying, "Do I need to cut the grass? Are there limbs overhanging the road? Does the ditch need cleaning?" It's those kinds of things. He's looking at things on a very microlevel, you know, right here.

The traffic engineer has to take the long picture because he has to worry about somebody that is on a 55 mile-an-hour road. He has to worry about somebody driving 55 miles an hour. That guy really doesn't care if the grass is cut or not. Who cares? So it's not his duty as such, but he's the one most logically that would come up with that need, if you will.

Q Is it in terms of roadway engineering, I guess, is what we're talking about, correct?

A Stopping sight distance is an element of that, yes.

Q In terms of roadway engineering, if removing an

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obstacle as you say is part of that roadway engineering process, is it a standard practice in this roadway engineering process -- whether it be design, construction, maintenance, or traffic -- to remove obstacles like that?

Is that a standard practice?

A The idea is to remove obstacles.

Q What is the standard though? What is the standard practice?

A It depends. The idea is to remove obstacles. If the obstacle cannot be removed reasonably, then you must guard against the obstacle. You do that in two ways.

You do that by erecting guardrails, for instance. Impact attenuators, these types of devices that would restrain an errant vehicle from becoming involved with an obstacle. You post the appropriate signage, warning the driver of a condition that either on a temporary basis or on a permanent basis the driver has to live with at least as he traverses his section of road.

Remember I talked about a mountain before this, cutting back a mountain. It's easier to cut trees than to shave a top off a mountain. Well it gets expensive, so if the mountain is too close or if there are jagged boulders or something that can't be reasonably removed, then you put up a guardrail.

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If you're building a road and it costs too much money to fill this valley next to you that's 200 feet deep -- and it really would -- you put up a guardrail so that an errant vehicle doesn't end up tumbling down 200 feet of hillside.

If for some reason you are resurfacing and this procedure or -- maybe shoulder work requires that the edge line that the driver had the benefit of for the last umpteen miles is no longer there -- temporary, but it's no longer there. Now you can't guard that; but you can put up a sign or signs that warn motorists that, "Hey, buddy, you know you've had the benefit of an edge line, but you don't have it for the next umpteen miles. For whatever reason, it's not your concern. You don't have one."

So these are the techniques that we use to inform the drivers of a situation and hopefully make them safer drivers as they traverse this area.

Q Tell me if this is a fair statement then. The standard with regard to this roadway engineering is to either remove the obstacle and if it can't be removed, then to place the appropriate signage to warn the motorists of that condition.

A Or a guard.

Q Or a guard?

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A Right, or both. The situation might be such that you use both guard and warning.

Q Some human being obviously had to make that determination, correct? Whose responsibility is it to make that determination whether they're going to remove the obstacle, guard, or guard and post the appropriate signage?

A The highway department, assuming that it's a state highway.

Q Assuming it's a state highway.

A Yeah, the highway department does.

Q Is there a certain range of options in which they can operate as to determine "Well we could do this. We could do that."

Do they have discretion to determine what they are going to do under the circumstances or is there a set standard for certain conditions?

A Well the standard is there. How they meet that standard, I think is what you are asking me, is a discretionary thing. You know, that's the basis of lawsuits.

It's a little difficult for me to pass judgement, but obviously one of the constraints that the highway department has is money. They have got X number of dollars with which to operate and Y number of demands for

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those dollars. So somebody has to figure out how to apportion the dollars to get the maximum benefit. That's generally a judgement call.
Q So if the highway department has a choice between removing an obstacle, like cutting down trees, and putting up signage, the signage is cheaper to do and in their judgement is enough to warn the motorist of a hazard ahead, whatever that hazard is, then they have met the standard; is that right?
MR. CALLAS: Objection. Go ahead.
THE WITNESS: I've been talking generally about situations. I thought that's what we were talking about. Now you're getting specific. Cutting trees is not that damn expensive, so I don't believe that we can equate $100 worth of signs against $1,000 worth of man-hours to cut some trees.
By Mr. Bachmann:
Q Would it be in the highway department's discretion to make that judgement whether they are going to place signage or cut trees? Do they have that discretion or is there no discretion?
MR. CALLAS: Objection.
THE WITNESS: Well you're asking as if it were an either/or. In this case they did nothing. That in itself is a decision.

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Now I don't know if it was based on knowledge. I have a hunch it was based on ignorance. They didn't know that they had a problem out there. It took a series of accidents to beat them over the head with it to go out and take a look and figure out that maybe they could improve the situation and somebody saying, "Hey, okay. Go ahead. Do it."
By Mr. Bachmann:
Q When you say they did nothing, I assume you are talking about ODOT, correct?
A Yes.
Q Can you be more specific when you say they did nothing?
A Well it's my understanding that a series of accidents have happened in this area before. It's my understanding that they have been asked to take a look at this area before and everybody seemed to think that everything was honky dory.
It's my belief that they were limiting their view to the roadway itself.
"Hey, we put up a hill sign. Hey, we warned about the left reverse curve. We even put up an advisory speed sign. What more do you want from us? We've got crossbucks and flashing lights on the railroad and we've got pavement markings. You know, this is high-class

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stuff."
They never looked at the road sign. They never looked at the fact that people have to see around the curve. They can't. Even with all of this, along comes an accident where somebody is killed. Now they get letters that say, "Hey, now we've killed somebody. Are you going to do something yet?"
All of a sudden, people jump into action. Thank God for state representatives.
Q You think it was wrong that ODOT somehow breached a standard by limiting their view of this stretch of State Route 93 to the roadway?
A Absolutely. They breached a duty of care that they owe the motorists.
Q What is that duty of care?
A To make the road as safe as is reasonably possible and not to confuse or not to misinform the motorist.
Q In this case how did ODOT confuse and/or misinform the motorist?
A They had a curve. They had a set of curves. They had a left reverse curve that was of such a design that the safe speed, the design speed if you will, basically was 45 miles an hour. They signed it for 35.
Motorists, as I told you before, drive so that they are comfortable. If you come into this area and you

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believe the sign and you slow down to 35 when you are driving the curve, you will know that something is wrong and you will tend to pick up speed until you feel more comfortable. You may not know why you're uncomfortable. You may not know what's wrong, what fooled you. You just know that 35 miles an hour is not the appropriate speed for driving purposes.
Sight distance doesn't enter the mind of the typical motorist until they need that sight distance for some reason. Now the highway department posted a sign that says 35 miles an hour associated with the curve. We know, based on the deposition testimony of Smith at least, that ODOT doesn't consider sight distance when they put up these advisory speed signs. If they did, you don't associate it with the curve. You put up another sign that says, "Limited sight distance 35 MPH, 25 MPH," whatever it is.
So if you're going to tell the motorist you want them to slow down because of limited sight distance, then you tell them that it's limited sight distance. It has nothing to do with the curve.
Q Is that something that's in the manual that you are talking about, this limited sight distance sign?
A The manual is a guide for commonly used signs and their application. The manual says that as a traffic

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engineer you have got to use your brain and you use the manual's principles, apply those principles to the situation, and develop the required traffic control devices that you need to handle this particular situation.

If it means you have to develop a new sign, if you will, a sign with a particular legend that may not be in the manual or you may not have on the shelf someplace, so be it. You do what you have to do. It's done all of the time.

Q Is this limited sight distance sign one of the signs in the manual or is that something that you have to develop?

A I'm sorry. I'm not getting through to you. I'm not sure if it's in the current manual or not. I didn't look. In this instance I didn't think it was important, because it was so inexpensive to cut back the vegetation. No traffic engineer worth his salt would even think about putting up a sign rather than cutting back the vegetation.

Q Let me try to summarize the point I think we're at. So it's your opinion that the history of this particular location, this particular stretch of State Route 93 between Orrville Street and the railroad tracks -- more specifically from the area of the railroad tracks -- was

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such that ODOT had a duty to trim back that vegetation, to cut back the vegetation?

A Yes, sir.

Q How far does that duty extend in terms of cutting back the vegetation?

A Obviously to the right-of-way line. They don't control anything beyond that.

Now the highway department can, if necessary, go to private property owners and ask permission to go beyond the right-of-way and make whatever adjustments are necessary.

Stark County has a history of doing this to improve sight distances at intersections. They have been cutting back fields, banks on fields. It doesn't belong to the county. They approach the farmer and ask if they can come in to grade back to this particular field and they show the farmer how they are going to do it. They make the change to open up the cross corner sight distance at intersections. The land still belongs to the farmer.

Obviously money is being spent on private property, but it's being spent for a public safety purpose, so it's legal.

All I'm saying is you don't have to go out and use eminent domain to buy a farmer's field to accomplish your need. You don't necessarily have to buy a couple of

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acres of land to cut down a couple of trees if it's necessary. I'm not suggesting that in this case it was. All I'm saying is ODOT has the responsibility to look at their entire right-of-way and see if there is anything they can do within those limits to maximize safety.

If they find in that investigation that they can partially meet the needs of traffic -- but it better meet the needs of traffic. If they went beyond the limits of the right-of-way, then they have two options. They can acquire additional right-of-way or if it's something simplistic like cutting back vegetative growth or cutting back a farmer's field, then the least expensive and most expedient method would be just to approach the land owner and ask permission, obviously paying the expense of doing it because it's for a public good. The farmer doesn't need it. So as long as ODOT or whoever pays the costs involved, that would be the better way to go. I believe ODOT along with any public agency has that duty.

I had that duty when I was traffic engineer in Erie. I utilized it. I went to private property owners to ask them to cut evergreen trees so there would be a view underneath the canopy of the evergreen trees so that people at a stop sign could see oncoming traffic.

Q It's your opinion that there was limited sight distance around this second curve?

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A Absolutely.

Q Limited sight distance to where?

A To where?

Q Yes.

A Stopping sight distance.

Q At some point -- you mean to a fixed point in the roadway? Tell me how that works.

A To any point in the roadway. How do you know when you're going to run across something in the roadway that you are going to have to react to?

Q So there is --

A It's a constant thing as you go along the road. How far down the road can you see?

Q So anytime that -- and I'm sure you'll correct me if I'm wrong. Anytime according to the design speed of the roadway that there is not adequate sight distance and there is some sort of obstacle, like around a curve, ODOT has a duty to -- if there is brush there -- to cut back to the right-of-way?

A If necessary. If you don't have to cut back to the right-of-way, you don't cut back to the right-of-way. I'm not saying you've got to clear-cut everything.

You look at the individual situation and whatever the needs are you accomplish it. You may only have to go back 10 feet and you've got 50 feet, so go back 10 feet.

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Go back 12 feet, whatever works for the maintenance people.

Remember, this is not something that ODOT does all the time. If you don't want a no-passing zone, ODOT makes a determination as to when it's safe to pass or not. All I'm saying is they can't reasonably make a determination and advise the motorist the way they can with yellow lines as to what the safe stopping sight distance is. They tell them what the safer passing distance is, but not the stopping sight distance. So if you can't tell the motorist, then at least give him the stopping sight distance that he needs if it's within your reasonable control to do it.

Q In reasonable control within the right-of-way?

A Within the right-of-way, as long as you know -- obviously if we've got a hill sign here, I'm not telling you you've got to blast away half a mountain to do it.

Q At what point in time does this duty arise when they build the roadway? When you discover there are accidents at locations?

A When they build the roadway these things are looked at. That's part of the design standard. The problem is roads that have been in existence for a while, you will be told that they weren't designed. That's a lot of

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malarky. Maybe an engineer didn't sit down and draw a sophisticated set of plans like similar to what they would do today, for instance, but somebody did something. That road didn't just happen.

Over time -- if you go back in history enough, some of these roads believe it or not date back to nothing more than animal paths through the forest. Over time they are used by various people and things are cut back.

Back in the 20s and 30s, it was "Get us out of the mud," so we started paving roads. Dirt roads and stone roads began to be paved, so roads happened. But they happened in an organized fashion, so there are design standards whether the road was designed or not.

The people who maintain the roads -- I'm not talking just about maintenance or the maintenance department, I'm talking about the people who have the responsibility for the road in question, who have to look at what the design standards are existing on that road --

Q So --

A -- and act accordingly.

Q So when this road was built and around that curve you had the 45 miles-an-hour design speed and those trees were there, they should have cut back to whatever line they had to cut back to in order to get this accurate sight distance?

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A Unless it was one of those roads that dates back to the early 1800s before we even had automobiles. Then at some point when these roads were built for automobiles and engineers started to take a look at this thing, that's when something should have been done.

Q Would you agree with me that on the date of this accident, July 12, 1996, the driving conditions were ideal?

A No.

Q Why not? I mean other than the trees -- I understand you have a problem with the vegetation.

A Well that goes a long way. If you can't see far enough to stop --

Q Other than the vegetation.

A It was not ideal. The highway department misinformed the motorist as to the design speed of the curve.

I don't know what the pavement surface conditions were like at the time. You seem to be telling me that there might have been an accusation that there was an oily substance on the road that might have contributed to the occurrence of an accident. That's not ideal. I'm not saying that's something that you have to live with, but it doesn't make it ideal.

Q How about the weather conditions?

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A I understand it was a sunny day, so to that extent it's the design weather conditions. You don't have inclement weather.

Q What do you mean design weather conditions?

A I thought I explained that before. We assume that you have noninclement weather, if that's a word. We assume that you have nice weather conditions as opposed to rain, fog, sleet, snow, ice, etc.

Q Assume for what purposes?

A Design purposes. 55 mile-an-hour signs, for instance, are -- well the speed limit in the State of Ohio is prima facie. That means speed reasonable for conditions. The 55 mile-an-hour and the 35 mile-an-hour sign are for normal conditions. Normally -- although today is not a perfect example, normally here in Ohio we have more noninclement weather conditions than we have inclement weather conditions.

Q Correct me of I'm wrong, but you don't have an opinion as to the condition of the pavement or whether the stopping conditions were good?

A You mean as far as the characteristics of the surface of the road are concerned?

Q Yes.

A No, other than what you were alluding to earlier.

Q Since I gather you didn't do an accident

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reconstruction, then let's go to Exhibit C, Page 2.
A I'm there.
Q On Page 2 you've got points which you call your analysis and evaluation work. Are these factual observations really?
A It's setting the scene, if you will.
Q Going to No. 5 on Page 2 of Jackman Exhibit C, do you know how many vehicles were stopped at the railroad crossing grade?
A I suppose I can look it up. I don't know, three or four, something like that.
Q Does the number of vehicles have any bearing on your opinion?
A No. It would just change the point of impact.
Q In No. 6 here on Page 2 of Jackman Exhibit C, it has "That Eugene Ruegg was southbound on State Route 93 at a stated speed of 45 miles an hour."
Where did you get that information?
A Police report.
Q Does that have any bearing on your opinion?
A All this does is set the scene.
Q It doesn't figure into the opinions that you have arrived at, though, the speed of his vehicle and whether he was going 45 or 105?
A Well I made some observations in my opinion,

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statements as to what he could or couldn't have done had the vegetation been cut back, so 105 wouldn't work.
Q Obviously I was being extreme.
A I know, but to that end I did use the 45.
Q Do you know at what point in the curve he became aware of the stopped vehicles?
A No. That would be a reconstruction element. I'd have to back up from the skid marks, make assumptions as to his perception/reaction time.
Q You haven't done that, correct?
A I haven't done a reconstruction.
Q Do you intend to do such --
A I haven't been asked to do it.
Q Let me just ask a series of questions about it. I guess it would be true that you don't know how fast he was going when he saw the vehicles or how fast he was going when he applied his brakes, etc.?
A Well they would probably be the same speed; but what that speed was I don't know other than the police officer indicates an estimate of 45.
Q Let's go down to No. 7. You said, "There was no advisory speed plate W-143 supplementing the Hill sign."
Is there a requirement for that?
A There is never a requirement for an advisory speed sign. There are suggestions as to when one should be

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used, yes or no.
Q So that would be a discretionary thing in other words?
A Yes.
Q You're talking about the Ohio Uniform Manual of Traffic Control Devices, correct?
A Correct.
Q That's the standard that you apply with regard to signage in the State of Ohio?
A By law that's what we apply, yes.
Q In No. 8 you also say, "About 426 feet north of the start of the left reverse curve" -- let me withdraw that and start again.
"At about 426 feet north of the start of the left reverse curve ODOT had installed a pair of left reverse curve signs."
Who did that measurement?
A We did when we were out there.
Q Did you do it or did Lyn do it?
A I was recovering from hip replacement surgery, so she did most of the walking. Since we're talking about an 8 percent grade --
Q How did she measure that?
A We have a wheel.
Q Did you do any surveying when you were out there or

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did Lyn do any surveying?
A I'm assuming you mean with a transit and level --
Q Or with an EDM or whatever.
A No.
Q Did the foliage obstruct any of the signage?
A No.
MR. SOLES: At what point in time?
By Mr. Bachmann:
Q To your knowledge, at the time of the accident?
A No.
Q So again, in your mind the issue is not whether they could see the warning, it was whether the warning was the right warning?
A Warning has nothing to do with this other than you misinformed the motorist as to the proper speed at which the curve should be taken. The problem is you didn't give the motorist adequate stopping sight distance so that if a problem arose at the design speed of the curve, the motorist could take appropriate action.
Q You mention in No. 10 a letter from State Representative Johnnie Maier.
What bearing does that have on your opinion?
A I am setting the scene. Why else would David Ray, maintenance area engineer, decide to undertake an investigation? I'm saying that he did that because he

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was prodded to do it, and because of that certain things happened.
Q Did you talk to Mr. Maier?
A No.
Q You haven't read Mr. Ray's deposition?
A Yes, I did.
MR. BACHMANN: Would you like to stretch your legs for a moment?
THE WITNESS: Would you mind?
(Thereupon, a recess was taken.)
By Mr. Bachmann:
Q Mr. Jackman, let's go to Jackman Exhibit C and Page 3 of that. Again, all your opinions are contained on Pages 3 and 4 of Jackman Exhibit C, Items 1 through 10?
A Yes.
Q Did you actually drive the roadway? I mean I know you're out there looking at the scene, making observations, taking measurements, etc. You were trying to get the lay of the land, so to speak, but did you actually drive up and down the roadway?
A I went up and down once.
Q In what type of vehicle?
A My car.
Q What kind of car?
A It's a Lincoln Town Car.

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Q How fast did you go coming down?
A I don't know. I never paid much attention to it.
Q Now you said the design speed of the left reverse curve is 45 miles an hour, correct?
A Yes, that's what I said.
Q Now is that -- when we're talking about the left reverse curve, is that when you are coming down that hill, you make one to the left and one to the right down to the railroad tracks?
A That's why it's called a left reverse curve.
Q Is that 45 miles-an-hour design for the entire curve or just for segments of it?
A One is 45 and one is 46.
Q May I see the document that you are referring to.
A Signs are made at 5 mile-an-hour increments. We don't put up a sign that says 46 miles an hour. We go to the nearest 5-mile increment. When we have 45 and 46, clearly the appropriate sign is 45.
Q Which one is 45 and which one is 46?
A I say curve number one -- and I'm trying to remember which one curve number one is. Since there is only one mile an hour difference, it really doesn't matter.
Q It's a minimal difference?
A One mile an hour, absolutely.
(Thereupon, Jackman Exhibit D was marked for purposes of identification.)

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By Mr. Bachmann:
Q Let me hand you what has been marked as Jackman Exhibit D. You also have an original in front of you. Can you tell me --
A Is this everything?
Q Make sure that's complete.
A Okay. Go ahead.
Q Can you tell me what page you got that information from.
A Which information?
Q What you just testified as to the design speed of the curve.
A Design speed of the curve I got from this page. (Indicating.)
Q I am just going to mark these one through whatever.
A Be my guest. They are your exhibits.
Q It's a nine-page exhibit and you are talking about the seventh page; is that right?
A According to your numbering, yes.
Q These are the calculations you used to arrive at the design speed?
A Yes.
Q The measurements, the chord, middle ordinate, and super elevation were taken from that one ODOT drawing?

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A No, this was done from the fieldwork that we did.
Q Are those notes contained in your personal notes, your notes from the fieldwork?
A That's this. (Indicating.)
Q The drawing that you did?
A Well it's not -- I wouldn't classify it as a drawing. It's just field notes really. It's always the last one.
(Thereupon, Jackman Exhibit E was marked for purposes of identification.)
By Mr. Bachmann:
Q So Exhibit E is the sketch?
A Yes, sir.
Q These were notes made in the field?
A Yes, sir.
Q Then these notes translate into the design speed calculations that you made on Page 7 of Jackman Exhibit D?
A Well I used some of the information contained in this field worksheet to make the determination of the design speed which occurs.
Q On Page 7 of Jackman Exhibit D, you've got some measurements here at the top right of each edge line. You have 168.9 feet right at the center southbound line, 655.9, etc. Then you have similar measurements and 602

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for the second curve.
Where do these measurements come from?
A If you're in the same order I am, this is seven. Look at the last page.
Q Okay.
Can you show me or are you able to show me on Jackman Exhibit E?
A Which one is E?
Q The sketch where those measurements came from.
A They are not on E.
Q Can you show me, for example, on the last page of Jackman Exhibit D, which is Page 9, it says, "Curve to radius of west edge line."
I guess the R meant radius -- approximately 602 feet. Can you show me where that measurement -- roughly where on Exhibit E that measurement occurs?
A It doesn't.
Q Okay.
Tell me how you got that measurement.
A It's calculated down here on Page 7. And if you'll look at curve two, you'll see R of west edge line is 602.0. This is a simplistic formula. If you know the chord and you know the middle ordinate, then you can determine the radius of the circle. Apparently I just punched it out of the chart. I didn't bother writing it

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down.
Q So you used the chord and the ordinate for all these radiuses of the edge line and pavement edges, etc?
A No. As far as pavement edges and center lines are concerned, I used the one over here on E. There is a cross-section of the road.
Q Where it says, "Edge to edge"?
A Correct, yes. So I knew where the pavement edge was and the edge lines and so on. I could then adjust that so that I could get to the center line and use it. We didn't want to go stand out in the middle of a 55 mile-an-hour road with 100 foot tape, then run to the middle of that tape and measure the middle ordinate. It's not safe. So we do it off on the berm and then mathematically add to it. We know that if you're out measuring the inside of the curve, the radius gets longer. The farther out you go -- as the curve gets bigger, the circle gets bigger and the radius gets longer.
Q Did any trains pass through while you were out there on February the 26th?
A Darned if I know.
Q So simply put, opinion No. 1 is what the design speed is, 45 miles an hour of the left reverse curve, and that if a driver drives at that speed around the curve

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they will be comfortably positioned.
Basically that's what you are saying?
A Yes.
Q Now for what type of vehicle is this design speed? A truck or a passenger vehicle or what?
A We're talking about centrifugal force, the gravity being balanced. What difference does it make what you're riding in?
Q That's what I'm asking you.
A I'm telling you it makes no difference. We are not talking about vehicles. We are talking about forces acting out on the body.
Q So it could be Mr. Ruegg's tractor/trailer rig or it could be a regular old sedan?
A Yes.
Q It doesn't matter?
A Yes.
Q You didn't use a ball-bank indicator that day?
A It takes too much time. It would cost the client too much to do that. No, I did not.
Q Is that a preferable method or more accurate method?
A You really haven't been listening to my answers. No. It's an alternate method. It's what the highway department uses. Why is beyond me. It just means that they don't have to do the kinds of things that I did, get

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out of the car and take some measurements or go to a set of plans and use the geometric information contained in the plans.
Q Both would yield the same result, right?
A If the ball-bank indicator is properly handled. Now I gave you a five-minute dissertation on the shortcomings of a ball-bank indicator. If you want me to go through it again, I will, but it is critical. It's kind of like a computer. Garbage in is garbage out.
I told you that the line of the car and the roadway must be constant. You can't move back and forth between the edge line and the center line. You have got to keep the same spacing. Your speed must be kept constant.
Since the driver is concerned with both speed and alignment, that same person cannot take readings of a moving weight inside a bubble of glycerin, so a second party is needed. How good can they read that ball-bank indicator? It's a very gross instrument. It is not a precise reading. It is not digital. It's an old -- if you have ever ridden in old airplanes, this is the old horizontal instrument for the small planes. That's all it is, yes.
Q What is the required sight distance for such a curve with a design speed of 45 miles an hour?
MR. SOLES: This particular curve or what curve

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are you talking about?
THE WITNESS: 45 miles an hour, minimum 325, preferred 400.
By Mr. Bachmann:
Q Now that's minimum and preferred stopping sight distance, right?
A Yes.
Q That's per the LMD Manual, correct?
A Yes, sir.
Q What section of that are we talking about?
A Hell, it was something that you sent to them.
Q Why don't you tell me what you are looking at there.
A 201-1, reference section 201.2.
Q Now is this for -- are there any assumptions that go into this stopping sight distance of 325 to 400 feet?
A The minimum is based on average running speed and driver's reaction time of two and a half seconds. The preferred is based on stopping sight distance and -- I'm sorry. The preferred stopping sight distance is based on the design speed and a driver's reaction time of two and a half seconds.
Q Could you go through that again a little more slowly for me. The minimum was based upon an assumption of the average running speed of --

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A Not the average running speed. Whatever it says, you know, pick a number.
Q -- 45 miles an hour?
A If we're working on that assumption, yes.
Q On a 45 mile-an-hour design speed?
A If we're assuming a 45 mile-an-hour design speed, the minimum is based on the average running speed. ODOT assumes that people drive under the design speed. This is a rather antiquated idea, but that's their basic assumption. It assumes a driver's reaction time of two and a half seconds.
Now the preferred -- the higher number is based on the design speed -- in other words, 45 miles an hour, not 41 or 42 -- and the same reaction time of two and a half seconds.
Q Now how is that two and a half second reaction time -- why two and a half seconds?
A That's the design standard.
Q Do you know what factors go into that?
A There are no factors. It's a given number.
Q How do they get that number? Is it arbitrary?
A Yes.
Q Somebody said, "Well let's figure at two and half seconds to react at 45 miles an hour. That's what we get."

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A It doesn't matter how fast you are going. Two and a half seconds reaction time -- two is the specific impetus. It's used for design purposes. You've got to have something.
Q Why not three seconds? Why not five seconds?
A I don't know. Why not?
Q You don't know why? In other words --
A I'm telling you the standard is two and a half.
Q I'm asking you if you know why it's two and a half.
A Because ASHTO said so.
Q Do you know why ASHTO said so?
A Jesus Christ. There are certain things that are given, okay? An individual doesn't fight it. This stuff happens over time. A lot of research has gone into developing what a reasonable design reaction time is. How they finally arrived at it is beyond me. It was done by a committee. That means it's a camel, not a horse. But these things are given and it is a standard.
Now if you don't like it, I don't care. I'd be more than happy to make it three. If it's three, you would need more distance. We know that in a panic situation, perception/reaction time is less. But we also know that the typical driver doesn't -- the need for reacting to traffic control devices is different from the need to react to somebody who darts out in front of you from

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behind a parked car.
So we use two and a half seconds reaction time for design purposes and for everything. We use it when we post a sign that tells a driver that there is a curve that he's got to slow down for or tells the driver there is a hidden driveway ahead. We know the drivers are not driving focused on the road ahead. It's not reasonable. It's not safe. They have got to know what's going on around them. That means they are looking in their rearview mirrors and their side-view mirrors so when the object first is capable of being viewed by them, they may not be looking in that direction. So if you give them two and a half seconds, hopefully if they happen to glance in their rearview mirror, within that two and half seconds' time their view will come back to the road ahead. They will see the sign or they will see the need to adjust their speeds accordingly.
We don't design so that people are put in a sudden emergency situation. That's not good design. But you have a good question. Why not three seconds? I don't know. Somebody has decided in their virtual wisdom that two and half is appropriate.
Q Now ASHTO, is that a recognized standard-setting body?
A It sure is. At least the State of Ohio says if it

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doesn't tell you in our book, use ASHTO.
Q Is ASHTO the State of Ohio standard or is that a national organization?
A No. If you want federal dollars, you'd better follow ASHTO standards. If you want to know what it means, you should have asked that.
Q Is ASHTO something that you recognize as a standard authority for this type of thing?
A Not me. In the industry.
Q In the industry?
A The State of Ohio recognizes it as an authority.
Q But also the engineering industry too recognizes it, correct?
A I thought we were talking about the department of transportation, their engineers.
Q Well you are an engineer. I mean you recognize it as an authority, don't you?
A What difference does it make if I recognize it? The important thing is that the State of Ohio recognizes it.
Q Do you recognize it?
A Of course I do.
Q Thank you.
Now in terms of this reaction time, do you know what goes into that? Is that for a particular vehicle that's being driven?

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A Perception/reaction time goes with the individual. The vehicle doesn't respond to a sign, the driver responds to the sign.
Q So again, that could be a driver in a semi-tractor truck and a driver in a sports car?
A That's a redundant question. Obviously, yes.
Q I think somewhere I saw where you had an 8 percent or 8.3 percent grade.
A It's about 8 percent grade.
Q Does that sound about right?
A You probably saw it on that drawing.
Q I think you're right. That does not come into play with regard to the design speed of this curve, right?
A No.
Q We talked about reaction time. We may have covered this, but I want to make double sure.
With regard to the actual stopping sight distance at the 45 miles-an-hour design speed, you have got a minimum of 325 feet and the preferred feet of 400 feet, correct?
A If you are using the design speed, it's 400. If you are using the so-called operating speed, then it's 325.
Q That's for any type of vehicle? That's just what the standard is?
A That's what the standard is. Obviously a truck needs greater distance to stop than a passenger car, but

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the feeling is, at least as far as the law is concerned, the truck driver knows the shortcomings of his vehicle. Any driver knows the shortcomings of his or her vehicle and they have to accommodate that into their thinking as they drive down the road.
Again, our speed laws are prima facie, reasonable for the conditions. One of the conditions that must be taken into consideration is the vehicle itself. So if your brakes are bad, you'd better not drive as fast as you would if the brakes are good.
Q Let's go to Jackman Exhibit C and No. 3. I'm sorry. Let's go to No. 2.
So it's your understanding the branches extended to the pavement edge? Is that to the pavement edge? Not to the edge of where the stripe is on the side, right? Is that what you are talking about --
A Yes.
Q -- to the point where the back-up material would be?
A This is a variable. I'm generalizing here. The state only cuts back a certain height. They cut back four to five feet, but they only go up so high. They disregard trucks basically. They also disregard motorcycles.
That has nothing to did with this case, but I've been involved in so many of these things. The state

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assumes that these vehicles are unique and they don't exist. They concern themselves with the average motorist, John Doe, the driver in the pickup trick, the passenger car, and the van. That's what they are concerned with.
Trucks will cut their own trees if you have enough trucks on the road. You look at the canopy of the tree limbs over the roadway, you will see the profile of the trucks that have gone by. They'll knock off the leaves and they will knock off the branches. So depending upon how close the trucks drive to the edge of the road, that is where the branches are. You know, it's going to vary.
Q In No. 2 here on Jackman Exhibit C of Page 3 of that exhibit you say, "The foliage acted as a view obstruction to any driver of a large truck."
You're not talking about foliage that extended into the roadway itself, correct?
A Correct.
Q You are talking about being able to see through the curve to what's down below?
A Correct.
Q The standard you are advocating would allow the driver in this particular circumstance to see through that curve to what's down below, correct?
A By cutting back the foliage, yes.

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Q What you used to determine the basis for your opinion in No. 2 were the photographs?
A As far as this written report is concerned, yes. It's substantiated in subsequent deposition testimony.
Q Okay.
In No. 4 you say, "ODOT knew, or should have known, that trucks regularly use this route."
A Yes.
Q I guess my question is -- and I don't want to be smart about it, but so what. What is the point here?
A The point -- if you'll read down lower you'll see that because of the various setbacks of the vegetative growth, the driver of a large truck was at a greater disadvantage than was the driver of a passenger car. Both of them were at a disadvantage. Neither had adequate stopping sight distance.
Q Why was the driver of a large truck at a greater disadvantage?
A Because the foliage at his eye level was hanging out farther over the roadway or closer to the edge of the road than was the foliage for the passenger car driver.
Q Let's go to No. 5. You say that, "The available stopping sight distance was nominally 175 feet at the eye level of drivers at large trucks and 220 to 225 at the eye level of passenger vehicle drivers."

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Can you tell me or show me where you calculated that or how you figured that?
A I used the construction drawings.
Q Can you pull that out and just give me a brief description on what you did. What is the drawing called? You had a name for it earlier.
A I call it line and grade.
Q Line and grade is what you called it. Looking at the line and grade drawing, tell me what you did.
A I went from -- this is the center line of the road. (Indicating.) So I went from -- I determined where the pavement edge was -- actually where the two driving lanes were. I went to the center of the driving lane and to the center of the other driving lane.
Based upon where the foliage was in the drawing itself, we knew that the state cut back the low stuff 5 to 7 feet. We know that for practical purposes the overhead foliage was up to the edge of the road. As far as large trucks are concerned, to the eye level of the higher driver, so it's just a matter of going from center of road to center of road and determining what the sight distance is.
Q So what did you do? You just took a rural tour and you somehow figured along the center line?
A It's a scale drawing. What are you asking me?

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Q Well I mean do you actually -- on the center line --
A These are station numbers.
Q Show me how you count.
A Well each station is 100 feet.
Q So going around this -- we'll call this the second curve, the reverse curve closest to the railroad tracks.
A This is the one near the tracks. Here's Orrville Street. (Indicating.)
Q Going toward Orrville Street, this sight distance is at what point along the roadway?
A Center of lane to center of lane.
Q Continuous around the reverse curve?
A Well, yeah, but I assumed that it was uniform. I assumed that the foliage up to about 5 feet was cut back 5 to 7 feet. Above that it was to the edge of the pavement because they don't cut high and the trucks would beat back whatever was up there.
Now, as I said, it's not uniform. I mean the state doesn't go out there with a yardstick and precisely cut back exactly -- that's why they say 5 to 7 feet. It isn't precise. It's someplace in there, so it's going to vary depending upon what's there.
It's the same way with the overhead stuff, depending on where the trucks are as they follow the curvature of the road. We are going to get branches lopped back and

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maybe some are hanging out as far as the white edge line. Others might be farther back, if trucks go over the white edge line. The white edge line and the edge of pavement are not one and the same, so it can be anyplace in there.
Q So in going to Jackman Exhibit C at No. 5 on Page 3, Mr. Ruegg had 175 feet of available stopping sight distance?
A That's why I say nominally.
Q So there is a minimal or maximum?
A You know, plus or minus. I don't know. Nobody can prove it one way or the other. The stuff is gone. It depends on where we are in space, because it's not uniform. It isn't a brick wall that somebody has nicely laid up.
Q Can you tell me where, relatively speaking, this 175 feet of stopping sight distance was?
A In the curve and along the entire length of the curve. As he moves forward, he can see the -- this is a uniform curve. It's a simple curve. The radius remains the same. So if you're here, you can see 175 feet. When you move another 100 feet ahead, you can still see 175 feet. It's a different 175 feet, because you have moved. But that's all you can see ahead until you get past the point, wherever that is, that the foliage is

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interfering with your view.
At some point the curve ceases being a curve and it's very -- the PC, the point of curvature or where the curves ends if you are southbound, from that point on, the road is tangent or straight. So the closer you get to that point, the less the foliage is going to be obstructing your view. That's assuming that the foliage is uniform all the way along here.
Even if it's along the tangent, at some point when you hit the railroad tracks -- even if the foliage is still back to the edge of the pavement, as long as the road is straight, you can see forever. Now the trees don't bother you.
Q You don't know how much available stopping sight distance Mr. Ruegg had for that minivan that was sitting there in the road, do you?
A No. He had an average of 175 feet as he was approaching.
Q As he was approaching, but you don't know if he had 175 or 225 feet or 300 feet before he saw that minivan, do you?
A I doubt very much if it was 300.
Q You don't know if he did?
A I know it wasn't 300.
Q Okay.

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How do you know that?
A The vegetative growth was too dense.
Q Can you give me a maximum that he would have had?
A Now come on now. We've been talking about averages. Don't try to pin me down. I don't know. The cops don't know. The state doesn't know, and they cut the trees down.
Q You don't know?
A And I don't know.
Q Good.
A But I know what the average growth was and I know how it limited it and I know that that van was in the curve. This accident happened while still in the curve, not on the straightaway.
Q Let's go to No. 6 of Jackman Exhibit C on Page 3. So the design speed for large trucks and for passenger vehicles correlates to the available stopping sight distance in No. 5?
A Yes.
Q So in other words -- so I can kind of state it more directly -- given what you called the nominal stopping sight distance for drivers of large trucks, then the design speed for all practical purposes was 27 miles an hour?
A Correct. That's because of the height of the eye of

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the driver, not because it was a truck.
Q You have talked about advisory speed plates and how drivers naturally moderate their behavior, right, so they can drive comfortably around a curve?
A Yes.
Q Do drivers also naturally moderate their behavior for sight distance as well?
A No.
Q Why not?
A Because it isn't of importance to them until they realize they don't have it.
Q Is that based upon some sort of ASHTO standard or study? How do you know that?
A We're talking about human factors, what a person does. What a person does is based upon their senses. If you ask -- count me out -- but if you ask the other four people in the room how long this table is, you are going to get four different answers. It's the same length. It doesn't change.
Now you get out on the road and you ask somebody how far down the road they can see, the number is going to change. Make it better, ask them how far down the road they would be -- if they had to stop right now, where would they end up. I'll guarantee you it's going to be awfully short until it happens. That's why we have

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accidents.
Q Now you were driving your Lincoln Town Car that day?
A Yes, I was.
Q You were the driver, not Lyn?
A I don't remember. I think I was the driver. I am not absolutely -- yeah, I think I was the driver.
Q In No. 6 -- and I don't want to do this because the table would tell us -- but if we went to that same LMD table --
A That's where it came from, yes. Now obviously there is no 27 miles an hour, so this was extra --
Q How did you get to No. 7 here if this area had been cleared on the day of the accident? The sight distance available to all motorists would be only 400 feet. How did you do that?
A Same thing, to where the straight line met the right-of-way line, you know.
Q In the standard that you are applying here -- the standard for cutting back is what we discussed earlier?
A Well I don't know if it's a standard. I'm telling you they had a responsibility to maintain the road in a safe a fashion as is practical. It's my opinion that cutting the trees down was practical. Their actions proved it. The fact that they did cut it down was after the fact, but it was practical because they did cut it

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down.
If they did what was practical at an appropriate time, this accident wouldn't have happened and possibly some of the previous accidents wouldn't have happened, depending upon when they realized that they had a problem with inadequate stopping sight distance.
Q Let's go to No. 8 on Jackman Exhibit C, Page 4.
If the growth had been cut back and 400 feet of sight distance made available, the design speed would have been 40 to 50 miles an hour to the design speed based upon --
A You misread. It's 45 to 50, not 40 to 50.
Q I'm sorry. I probably mumble too much.
A That would be design speed based on stopping sight distance. The design speed based on the force still remains the same, but the two would be -- would approximate one another.
In other words, if you're driving at the design speed of the curve, 45 miles an hour, you would have sufficient sight distance and sufficient stopping sight distance to safely drive at 45 miles an hour. Now I'm saying up to 50.
Q You say the forces acting on the vehicle are gravitational?
A And centrifugal.

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Q Does it matter what the type of vehicle is?
A No. I really should have said the person, because it's what you sense. You adjust your driving to what you as the driver sense happening, to you what you feel.
Q In No. 9 then on Page 4 of Jackman Exhibit C, you said, "Had Mr. Ruegg's available sight distance around the last curve been about 400 feet, given his stated approach speed of 45 miles per hour, he would have been able to stop his vehicle short of the vehicles already stopped for the passing train and no impact would have occurred."
But again you didn't do any calculations with regard to his skid marks or any sort of reconstruction. This is based solely upon design speed and what the sight distance needed for the design speed is?
A Yeah, whether 400 feet would have been sufficient for him to bring his vehicle to a stop at 45 miles an hour.
Q For that vehicle or for just any vehicle generally?
A Any vehicle. He locked his brakes up, so we know he's got brakes.
Q You didn't do any analysis of his reaction time, did you?
A How can I do that?
Q The answer is no?

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A The question is unreasonable.
Q Well what's the answer? You didn't do any analysis of his reaction time, did you?
A If I say no it implies that it's possible. I'm telling you it can't be done.
Q Let's go to No. 1 on Page 4 of Jackman C. "The failure of ODOT to trim back the vegetation to afford approaching drivers a sight distance in keeping with the other design characteristics of the curve was a proximate cause of the accident."
What do you mean by proximate cause?
A The same thing that everybody else means. It was because of the situation. It contributed to the occurrence of the accident.
Q Are there other proximate causes?
A I don't know.
Q Do you attribute any faults to Mr. Ruegg?
A That wasn't my objective. My objective was to look at the role the road played in the accident. I wasn't reconstructing the accident.
Q So it wasn't a factor in what you did, Mr. Ruegg's driving?
A No, other than it was a truck that he was driving.
Q Did you know that he was convicted of vehicular homicide?

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MR. CALLAS: Objection.
THE WITNESS: No, I didn't. What does that have to do with this case, sir?
By Mr. Bachmann:
Q Was that used in obtaining your analysis at all?
A Absolutely not.
Q Why not?
A Why not? If you don't have sight distance and you hit somebody, someone in their wisdom may decide that you were negligent because you were driving too fast and couldn't stop. But the fact remains had the sight distance been there and given that sight distance you could have avoided the accident, then why should I concern myself with what some individual decided was imperfect driving?
Q You would agree with me, wouldn't you, in any accident there are really three factors? One is the roadway or conditions of the roadway. Two is the driving and three the vehicle being driven?
A Yeah, very good.
Q You agree with that?
A That's my mantra, yes. These are three possible things. You said there are three things, no. Three elements, yes. There is physically a vehicle, physically a driver, physically a road. But one, two, or three of

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those elements could have contributed to the cause of the accident. At least one in all accidents. Most accidents will have two and some accidents will have all three.
Q You haven't done that sort of analysis to take into account all those factors, you have just analyzed roadway conditions?
A That's all I was asked to do, sir, yes.
Q Let's go to Page 6 of Jackman Exhibit D. The radius of the center line is 572.76?
A Yes.
Q This is for which, left or the reverse?
A No, this is for the reverse curve. This is using the data that's on here. (Indicating.)
Q Which document is that?
A This is the line and grade sheets that we were looking at before.
Q Now you have down below stopping sight distances. This is from the LMD manual, correct?
A Yes.
Q Then you said offset to sight --
A Obstruction.
Q Where does that come from?
A Well I'm talking now about the -- if we assume that we have a 10.1 degree curve, to get the minimum and maximum. Assuming the stopping sight distance as being

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minimum, the maximum would be looking at 35 miles an hour, 225 to 250. Then the offset would be 12 to 14 feet for the obstruction. In other words, where does that straight line go?
Q That's how far through the curve you need to see, correct? In other words -- let me state it differently.
In other words, how far back you have to trim the vegetation --
A Yeah.
Q -- so you can see through the curve?
A Yes.
Q So going the design sign speed of 45 miles an hour and giving the minimum preferred sight distance here on Page 6 of Jackman Exhibit D, you'd have to trim back 27 to 34 feet --
A Correct.
Q -- in order for you to be able to see through that curve?
A Yes.
Q Then down below it says, "Available offset that was existing"; is that right?
A Yes.
Q Can you explain to me what the four lines down below that are.
A Underneath the horizontal line you mean?

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Q Yes. Is this just another written explanation of what you have done?
A Yes.
Q Let's go to Page 8 which is two pages back. Can you explain to me what this --
A Don't worry yourself about it. All it does is it allows me to make that drawing. I don't have something that's 3,000 feet long or to the scale or 300 inches long to make an arc, so to lay this out. There are other ways of doing it. Using tangents did offer other sets. That's what I did here. It's just a calculation so that I could make the drawing. It has nothing to do with anything.
Q Did you use the line and grade drawing, the point of intersection, the point of tangent, and the point of curvature for any of these calculations?
A No. I didn't have this when I was drawing all of this.
Q Okay.
On Jackman Exhibit E, which is your sketch, you've got the grades here. Were those grades given to you or did you measure them?
A This is all fieldwork.
Q Mr. Jackman, I'm just about done, but I've got a few more things I want to get through here.

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How many active cases do you currently have?
A I have no idea.
Q More than 100?
A There is no way of telling. Quite often we will work up a case and the attorney says, "Fine. Send out a report." Or "Don't bother sending out a report. I'll get back to you."
I've got cases that date back five years. I carry them as open files because I closed one file once and eight years later I had to appear in court. So I'm very careful now about what I call closed. I really don't know. We've got a lot of open files.
Q Is what you do, forensic engineering because I saw that term.
A That is what I call forensic engineering, but I limit it to vehicular accident reconstruction.
Q What is forensic engineering?
A It's kind of like forensic medicine. You utilize facts available to you postaccident and work backward to see if there is something and if you have enough evidence to help you determine what caused the accident initially.
Q Do you work solely for attorneys and insurance companies?
A Well we've taken a couple of private clients, but

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they have been a problem. So for practical purposes, that's it.
Q How long have you been engaged in this forensic engineering solely for attorneys and insurance companies?
A Since '74. I wasn't doing it full time then. I was still doing design work. I started my design practice in '68, so I was doing traffic engineering design work. In '74 I got involved in accident reconstruction work. That year probably, at most, 10 percent of my effort was in accident reconstruction.
Then 12 years later, in '86, I looked at my work and it had reversed. So 90 percent of my effort was accident reconstruction and 10 percent was design work. I said the heck with the design work.
Q When was the last time you designed a state or interstate highway?
A I don't design highways. I am a traffic engineer.
Q You have never designed a roadway?
A I've worked with -- not in private practice, but in other -- I worked with Howard, Needles, Tammen & Bergendoff and the work there was designing roadways.
Q It says, "Responsible for the traffic engineering aspects of the 185 mile Cuyahoga County freeway system."
You are responsible for setting up traffic warning devices?

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A Where are you?
Q Let's just mark it.
(Thereupon, Jackman Exhibit F was marked for purposes of identification.)
By Mr. Bachmann:
Q Mr. Jackman, I am handing you what has been marked as Exhibit F. That's your resume, I assume.
A Yes.
Q It's current?
A Yes.
Q You were working for Howard, Needles, Tammen & Bergendoff. What is the traffic engineering you were doing there?
A Specifically this was the major project. I did other work for them, but this major project was the preparation of a corridor report for the Cuyahoga County freeway system. At that time it was 185 miles. Some of that has been eliminated. The purpose for our work effort was to develop a -- I might as well use the title corridor for each of the freeways that were proposed in Cuyahoga County.
My concern was looking at the desires of motorists. A study had been done, an origin and destination study, using the information of where people are coming from to where they are going. The purpose of the trip was to try

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to locate freeways to serve the motoring public, to locate interchanges on freeways, and to roughly design the interchanges.
For instance, my work says the efforts I made determined the number of lanes that would probably be needed. This is very preliminary. Number of lanes, interchange design based on volume, where should they be located relative to surface streets, those kinds of things.
Q Have you done any design work that involves stopping sight distance or design speed calculations?
A Actual design work?
Q Yes, sir.
A No. I taught it when I was teaching college. I taught this stuff. I use it when I review plans.
Q You are licensed in Ohio, Pennsylvania and Michigan currently?
A We like to consider ourselves registered as opposed to licensed.
Q Okay, registered. Have you ever had any organization attempt to take away your PE license?
A No, sir. I sure as heck wouldn't show it down there.
Q Just asking. Some questions you don't like to ask, but you've got to ask.

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Have you ever been terminated from employment?
MR. SOLES: Objection.
THE WITNESS: Terminated? No. As a matter of fact, the mayor would not accept my resignation. He made me hire my replacement, believe it or not.
By Mr. Bachmann:
Q How many depositions do you give a year?
A It varies. As I said, from '74 until now the number is about 350, whatever that works out to.
Q About how many have you given this year?
A Well I had double surgery last year, so my work load this year is way down. It's five or six, maybe seven.
Q Prior to your surgery?
A It would vary, anywhere from 10 to 20.
Q How many times have you testified on an average annual basis in court?
A On an average, nine times, eight to nine.
Q Just stretch your legs for a minute. Let me just take a minute. I think I'm done, but I just want to make absolutely certain.
(Thereupon, a recess was taken.)
By Mr. Bachmann:
Q Mr. Jackman, you said before we actually started the deposition that you didn't want to be here. I just want to know what you meant by that.

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A You asked to take my deposition. I didn't really feel like getting up early this morning and driving through that rain to be here.

I was concerned about payment and the policies of the state, which I disagree with. I understand their state policies and I understand you can't control them. I was just explaining to you that I am not here by choice. I'm basically here under subpoena. I'm here, but that's what I meant by I didn't want to be here. It's nothing against you.

Q No offense taken. You have read the Joe DeFuria report. Do you have any criticisms of that?

A Yes.

Q Please tell me what they are.

A His railroad advance warning signs.

Q What is your criticism?

A He says the prevailing approach speed is 35 to 45 and I underlined it and I said study it. I was under the impression that we had not -- I was under the impression that the attorneys requested any studies that were made in the area and I didn't see any speed studies, so I don't know how he determined what the prevailing approach speed is.

He is using 45 miles an hour. The particular table for a stop condition justifying the location of the

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railroad advance warning sign, he is saying it needs a minimum of 550 feet versus the 600 feet at which they are actually located.

I guess he wants a pat on the back, but my concern is the speed limit is 55 and you sign for the speed limit. So the advance warning should be placed 750 feet back as opposed to 600 which is actual, so I have a problem with Mr. DeFuria.

Q Any other problem?

A Basically, no, other than the 35 miles an hour. You know, I don't know whether I know that there was a 35 mile-an-hour sign up there. I have no way of knowing where it came from, and it's my understanding neither does he.

Q What do you mean where it came from?

A Well somebody had to put it up. Nobody that is there now put it up. There is no paperwork indicating the basis for the erection of that sign. There is no study that's been made. The manual requires a study.

There is no record of any study that was made and no one knows why a 35 mile-an-hour sign was put up other than it's there, so they continue to leave it in place. In fact, I'm assuming as one wears out or is vandalized or knocked down or what have you, they replace it.

MR. BACHMANN: Thank you, sir.

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(Thereupon, the deposition was concluded at 1:05 p.m.)

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I, WILLIAM T. JACKMAN, do verify that I have read this transcript consisting of one-hundred seventeen (117) pages, and that the questions and answers are correct.

_____
WILLIAM T. JACKMAN

Subscribed and sworn to before me this

_____ day of _____, 1997.

_____ Notary Public.

My commission expires

CERTIFICATE

STATE OF OHIO,)
) SS:
SUMMIT COUNTY.)

I, Melissa Karm, a Notary Public in and for the State of Ohio, duly commissioned and qualified, do hereby certify that the within named witness, WILLIAM T. JACKMAN was by me first duly sworn to testify the truth, the whole truth and nothing but the truth in the cause aforesaid, that the testimony then given by him was by me recorded in stenotype in the presence of said witness, afterwards transcribed using computer-assisted transcription; and that the foregoing is a true and correct transcription of the testimony so given by him as aforesaid.

I do further certify that this deposition was taken at the time and place in the foregoing caption specified, and was completed without adjournment.

I do further certify that I am not a relative, counsel or attorney of either party, or otherwise interested in the event of this action.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal of office at Akron, Ohio on this 15th day of December, 1997.

MELISSA KARM, Stenographic
Reporter and Notary Public for
the State of Ohio.

My commission expires November 29, 2000.

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LAWYER'S NOTES

Page	Line	