UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SIMPSON STRONG-TIE COMPANY, INC.

Petitioner

v.

COLUMBIA INSURANCE COMPANY

Patent Owner

Case PGR2024-00050

Patent 11,920,339

DEPOSITION OF PAUL D. TUCKER, SE, PE

TAKEN ON BEHALF OF THE PETITIONER

AUGUST 7, 2025

(Starting time of the deposition: 9:37 a.m. CT.)

Simpson Strong-Tie Company EX1055
Simpson v. Columbia
PGR2024-00050

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Patent 11,920,339

DEPOSITION OF PAUL D. TUCKER, SE, PE, produced, sworn and examined on August 7, 2025, between the hours of nine o'clock CT in the forenoon and five o'clock CT in the afternoon of that day, at the law offices of Stinson LLP, 7700 Forsyth Boulevard, Suite 1100, St. Louis, Missouri 63105, before William L. DeVries, a Certified Court Reporter (MO), Registered Diplomate Reporter, and Certified Realtime Reporter, in a certain cause now pending in the United States Patent and Trademark Office, Before the Patent Trial and Appeal Board, between SIMPSON STRONG-TIE COMPANY, INC., Petitioner, vs. COLUMBIA INSURANCE COMPANY, Patent Owner; on behalf of the Petitioner.

A P P E A R A N C E S

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IT IS HEREBY STIPULATED AND AGREED by and between counsel for the Petitioner and counsel for the Patent Owner that this deposition may be taken in shorthand by William L. DeVries, RDR/CRR, a Certified Court Reporter and Certified Shorthand Reporter, and afterwards transcribed into typewriting; and the signature of the witness is expressly reserved.

* * * * *

PAUL D. TUCKER, SE, PE,

of lawful age, produced, sworn and examined on behalf of the Petitioner, deposes and says:

(Starting time of the deposition: 9:37 a.m.)

COURT REPORTER: Do you swear or affirm that the testimony you are about to give in this proceeding will be the truth, the whole truth, and nothing but the truth?

THE WITNESS: I do.

EXAMINATION

QUESTIONS BY MS. HOLOUBEK:

Q. Good morning, Mr. Tucker.

A. Good morning.

Q. My name is Michelle Holoubek, and I'll be taking your deposition today. Can you state your full name and address on the record?

A. Yes. My name is Paul David Tucker, and I reside at 3998 Zenyatta Lane, New Smyrna Beach, Florida 32168.

Q. Thank you. And you understand that you're here today to have your deposition taken in connection with the testimony you provided in post-grant review proceeding challenging U.S. Patent Number 11,920,339; is that correct?

A. Yes.

Q. Okay. Throughout the day today I'll refer to the challenged patent by its last three digits, so it will be the '339 patent. Is that okay with you?

A. Yes.

Q. Okay. Just a couple ground rules for the deposition. Will you tell me if you do not understand my question?

A. I will.

Q. Okay. And if you don't ask for clarification, I'll assume that you understood it. Is that understood?

A. Yes.

Q. Okay. Any reason that you cannot testify truthfully today?

A. No.

Q. Are you under any medication that may impair your testimony in any way today?
A. No.
Q. And we'll take periodic breaks. Let me know if you need to take a break, but we can't take a break while a question is pending so we just need to have all questions answered before we break. Okay?
A. Yes.
Q. And do you understand that you're under oath and that means you're required to tell the whole truth to the best of your knowledge; is that correct?
A. Yes.
Q. Okay. Have you ever been deposed before?
A. Yes.
Q. How many times?
A. I don't know the exact number, but probably around 60.
Q. Okay. And has it primarily been in the subject matter of construction or have there been other technologies on which you've been deposed?
A. I've been deposed on many matters in construction, but also premises liability and

engineering-specific that may not necessarily be related to construction.

Q. Okay. What did you do to prepare for today's deposition?

MR. SCHROEDER: Real quick, just I'm going to object to the extent that the question calls for divulging any attorney communications with yourself, but otherwise you may answer.

A. So I had a phone conversation about two weeks ago with John Schroeder and Steven Levitt, and there was another expert on that call. Then I reviewed -- reviewed materials up to that point and then yesterday I had a meeting here also with John and Steven.

Q. (By Ms. Holoubek) Okay. You said about two weeks ago there was another expert on your call with Mr. Schroeder and Mr. Levitt. Do you recall who that expert was?

A. Yes. Richard, and I'm going to -- his last name I'm sure I'm not going to get, but I think it's Kaczkowski.

Q. Let's go with that. And then the materials you reviewed, do you recall what materials you went through to prepare for today's deposition?

A. So most of the materials are listed in

my declaration that I reviewed, but I did review also Mr. Kaczkowski's deposition and his second declaration that I had not reviewed prior. I think that's the only thing. I had looked in some codes, but International Building Code is also in my declaration, so --

Q. Okay. So you went to the International Building Code. Any other codes that you reviewed yesterday?

A. I didn't review them fully, but I did look at some ASTMs as it relates to installation of drywall or gypsum board. And I looked in also that -- I think it's E8 something, it's fire testing ASTM. Just things of that nature related directly to drywall and firewalls.

Q. Okay. Other than Mr. Schroeder, Mr. Levitt, and expert Kaczkowski, did you meet with anyone else to prepare for your deposition today?

A. No, I did not.

Q. Okay. How about for preparing your declaration, which I'll go ahead and give you so you have it in front of you.

A. Thank you.

Q. You're welcome. What documents did you review to prepare for your declaration?

A. Again, the -- they're stated in the declaration, but they're -- I reviewed several exhibits from Simpson and I'm not sure that -- I don't know for certain that they're all in here, but there's no way I could tell you what they are.

Q. Okay.

A. I would recognize them if you presented them.

Q. Uh-huh.

A. Or if they make reference in the deposition then it would be something that I reviewed.

Q. Okay. Okay. In order to prepare the declaration who did you talk with to prepare your declaration?

A. So I had also spoken with John and Steven.

Q. Okay.

A. In that process.

Q. Did you speak with any other experts before preparing your declaration?

A. No, I didn't.

Q. Okay. Did you review any other expert declarations for preparing your declaration?

A. So I -- I had Mr. Kaczkowski's first

declaration.

Q. Uh-huh.

A. I didn't review it thoroughly, but I did have access to that.

Q. Okay. Did you see anything in either of his declarations that you disagreed with?

A. I don't recall having a disagreement, but that doesn't mean that there -- that if you pointed something out that there may be something that I might disagree with.

Q. Okay. So I have handed you -- I forgot to mention it when I handed it to you, but I handed you Exhibit Number 2051.

(Exhibit 2051, Declaration of Paul Tucker.)

Q. (By Ms. Holoubek) Do you recognize this document?

A. I'm going to take this rubber band off.

Q. Yes.

A. Yes. This appears to be a full copy of my declaration.

Q. Okay. And if you turn to page 237, that's your electronic signature on the document; is that correct?

A. Yes.

Q. Okay. And you signed this document on May 27th, 2025; is that correct?

A. Yes.

Q. Okay. What was your process of writing the declaration? Did you write the first draft of your declaration yourself?

MR. SCHROEDER: Objection. I believe that probably goes outside the scope of the federal rules. You may answer questions, but you may not divulge any communications regarding drafts, that type of thing.

A. So I don't know how to -- I don't know how I'm supposed to answer that question. Can I get like a clarification on what I can say or can't say?

Q. (By Ms. Holoubek) Sure. Did you draft the first version of your declaration and then it was modified or were you provided with a document that you then modified?

A. So I did draft a declaration and then there was some editing and back and forth with that document.

Q. Okay. About how much time did you spend preparing the declaration?

A. So I was engaged in late April this year and worked on it continuously from that point

until I turned it in on the 27th of May.

Q. Okay. And you said you worked with Mr. Schroeder and Mr. Levitt on this declaration; is that correct?

A. That is correct.

Q. Did you work with anyone else on this declaration?

A. No.

Q. Okay. Have you worked on other post-grant proceedings in front of the patent office?

A. No, I haven't.

Q. Okay. Have you worked with Columbia Insurance before?

A. No, I haven't.

Q. Okay. So did your relationship with Columbia Insurance start in you mentioned late April 2025; is that correct?

A. Yes.

Q. Okay. Let's head to the beginning of your declaration here. So in paragraph two of your declaration you mentioned that you obtained a bachelor's degree in civil engineering from the University of Tennessee; is that correct?

A. Yes.

Q. And then also a master's in civil engineering from the University of Tennessee in 2001; is that correct?

A. Yes.

Q. Okay. And what is your -- strike that.

In paragraph one you mention you're currently the CEO of Arete Forensics. Am I pronouncing that correctly?

A. Close.

Q. How do you pronounce it?

A. Arete.

Q. Arete. Okay. Can you describe what type of services Arete Forensics provides?

A. Yes. We provide engineering design, consulting, and forensic engineering services.

Q. What do you mean by forensic engineering services?

A. So forensic engineering services involves typically the support of litigated matters, either plaintiff or defense, either one, but doing an investigation to determine cause and origin or we don't determine fault, but we find facts that may support someone else's determination of fault or liability, and then we report those -- report those facts.

Q. Okay. Did your role at Arete --
A. Arete.
Q. -- Arete, has that involved before this matter any experience with firewall assemblies?
A. Yes. From the design side, not -- not from the litigation side. And I have looked at several burned structures that -- doing forensics, but that was not any litigated matters.
Q. Okay. But you have worked on designs of firewall assemblies?
A. Yes.
Q. About how many would you say?
A. Hundreds. Hundreds, yeah.
Q. Okay.
A. If not more.
Q. Okay. And you've been at Arete since 2006; is that correct?
A. Yes.
Q. Okay. And then before that you worked at Pennoni Associates; is that correct?
A. Yes.
Q. What was your role there?
A. At Pennoni Associates I was the office principal and structural engineer.
Q. Okay. What kind of services is Pennoni

Associates providing?

A. I would say all engineering services. Pennoni Associates is in the top 100 E and R firms in the country. So they're multidiscipline, have all -- all forms of engineering that I'm aware of.

I don't know if they have nuclear, you know, but pretty much everything else. And they do a lot of DOT work and they also obviously design buildings and structures. That's what I did for them. And they do have a small forensic department.

Q. Okay. And when you were at Pennoni did your experience at Pennoni involve firewall assemblies?

A. Yes.

Q. Okay. About how many?

A. I don't -- I wouldn't know.

Q. Do you recall in what context?

A. Design.

Q. Design, okay. And then before Pennoni you were a partner at Progressive Engineering Group 2003 to 2005; is that correct?

A. Yes.

Q. Okay. And what was your role as a partner?

A. So I managed the day-to-day operations

of the firm. Very similar to the office principal role I had at Pennoni Associates. And then also was a design structural engineer.

Q. Okay. And did your work at Progressive Engineering Group involve experience with firewall assemblies?

A. Yes.

Q. Okay. And then before that, back to 2000 to 2003 you were at ANS Building Systems; is that correct?

A. Yes.

Q. And what was your role at ANS?

A. So at ANS I was a design engineer and I designed metal buildings.

Q. Metal?

A. Yes.

Q. Okay. Did your role there involve experience with firewall assemblies?

A. No.

Q. Okay. Did you have any firewall assembly experience prior to 2003?

A. Yes. At Construction Systems Group.

Q. Okay. And that's where you were '99 to 2000; is that right?

A. Yes.

Q. Okay. So what was your role at Construction Systems Group?

A. I was a project engineer at Construction Systems Group, and I would inspect buildings mainly and it was more of a forensic engineering job.

Q. Okay. And you had experience with firewall assemblies there?

A. Yes.

Q. Was that more in the forensic side?

A. Yeah, it was more from the inspection side.

Q. Okay. Okay. Prior to working with Construction Systems Group did you have any experience with firewall assemblies?

A. Yes, as a construction worker.

Q. Okay. Can you tell me about your construction worker background?

A. Yes. I was -- started in construction when I was ten, but didn't get paid until I was 14.

Q. Seems unfair.

A. And worked in construction while -- you know, while going to school and from the time I was 14 until I was 20. Then that's when I joined the military.

Q. Okay. Okay. And so what was your experience with firewall assemblies then?

A. I built them, but I was a laborer. I was not like a lead or foreman or anything like that.

Q. Okay. And about what year do you think you first were exposed to firewall assemblies?

A. Probably toward the latter part of my -- I mean, and know what it was, because when I was 14 I didn't --

Q. Sure.

A. -- really know. But having known what I was doing was probably -- was probably 18 or 19. So that would have been '90 or '91.

Q. Okay. Given your experience with firewall assemblies prior to the 2012 time frame, did you ever use joist hangers in firewall assemblies?

A. No.

Q. Never?

A. Never.

Q. So how did you construct firewall assemblies?

A. So I was taught as an engineer do not penetrate a firewall. So that means structurally we

would typically not interfere with that at all. So for load-bearing applications the firewall would go up to the roof assembly. So as long as -- if it was only supporting a roof truss and not floor joist or floor trusses, then obviously we wouldn't penetrate it. The roof truss would sit on top.

Q. Uh-huh.

A. If we had floors, intermediate floors, then we would bear the flooring in the opposite direction of the firewall so that it's parallel --

Q. Uh-huh.

A. -- and so we would run a truss or a joist right beside the firewall as to not penetrate it.

Q. Uh-huh.

A. And then if we had to bear in the same direction as a firewall, we would put either a beam and columns to support the ends of those joists or another wall that's not the firewall.

Q. Uh-huh.

A. Separate assembly.

Q. Okay. If we look at paragraph six on -- I guess paragraph six starts on page five, quickly goes to page six. If we look at a portion of paragraph six on page six, you indicate that when

Simpson Strong-Tie's catalogue didn't have a connector that would perform to your load requirements, you would design your own. How many connectors would you estimate you've designed?

A. Total, I mean, I taught steel connection design.

(Court reporter interruption.)

A. So I've designed thousands of connections. For wood specific, probably hundreds.

Q. (By Ms. Holoubek) You said for wood specific?

A. Yeah, wood specific. And what I mean by that is in an instance modeling, like a Simpson connector-type situation.

Q. Uh-huh. Okay. And did you ever design a joist hanger or the like?

A. I've designed connections that perform that function, but I would use what we refer to as hot-rolled steel as opposed to cold formed steel.

Q. Okay. What's the difference?

A. It has to do with the forming process. In hot-rolled steel there's a billet of hot steel and then it goes through rollers to form it while it's hot. Cold-formed steel is formed into its final shape and it's cold, it's room temperature.

Q. Uh-huh.
A. And so there's different processes in that, but I don't work at -- I don't do milling or stuff. The closest would be at ANS when we built beams, we built them out of plates. And so that's --
Q. Uh-huh.
A. -- but that was all hot rolled -- hot-rolled material as well.
Q. Functionally, once you've built a hanger does it matter whether it was built hot-rolled steel or cold-formed steel?
MR. SCHROEDER: Objection, vague, but you may answer.
A. Functionally, I don't think that it makes a difference on how it functions. Typically a hot rolled -- hot-rolled steel is going to have much higher load capacities than cold formed.
Q. (By Ms. Holoubek) Okay. Is it on an order of magnitude or just --
A. It can be, yes.
Q. Okay. So you mentioned you did design joist hangers of your own; is that correct?
A. Yes.
Q. But you didn't design joist hangers out

of cold-formed steel; is that right?

A. That's correct.

Q. Okay. So the joist hangers you designed were hot-rolled steel?

A. Yes.

Q. Okay. Was it common for engineers like yourself to design and build your own connectors?

A. Yes, I would say it's common. Engineers like many disciplines will go to the path of least resistance. So that's why I said in my declaration that if Simpson didn't have it, then I would go and design my own because obviously if they -- if they had it I was using theirs. If they had it and it met my load requirements.

Q. Uh-huh. Okay. And then what was your process for designing your own?

A. So it's like any -- any structural design. I look at the load path that I need and then I look at the materials that I need to adequately get my load through that path and design something that meets that need.

Q. Do you ever look at connectors that are close but not quite and use that as sort of a baseline for building your own connector?

MR. SCHROEDER: Objection, vague. You

may answer.

A. So with my own connections, again, being that they're hot rolled -- and that doesn't mean they're one piece. I would typically have pieces welded together to form the connection. One is I don't like doing that because it's expensive. But if it's required, it's required. I think I got off your question. Could you restate it again so I can get back on track?

MS. HOLOUBEK: I'm going to look to the court reporter for restating the question.

COURT REPORTER: Question: Do you ever look at connectors that are close but not quite and use that as sort of a baseline for building your own connector?

A. So the -- the American Institute of Steel Construction has a manual that governs steel design, and that's the manual that I'm most familiar with with steel. The American institute of iron and steel or the American Iron and Steel Institute, AISI, controls cold-formed steel design.

And I'm familiar with that and I've used it, but I'm less familiar. I'm not as fluid using that. So AISC, it has what are called prequalified connections, and so much like the

Simpson catalogue you're going to have tables that give you direct loads.

So again, if I can use one of the tables then it makes my job easier. It's less time spent designing a connection so it's cheaper for the client. And it also matches more closely to what the steel fabricators' standards are.

So in that aspect, yes, I mean, I'm going to try to model my design in accordance with standards that -- that are already in place and that aren't necessarily unique that would freak somebody out if they saw it. So in that regard, yes.

Q. (By Ms. Holoubek) Okay. And these standards that you're referring to, most engineers who are designing connectors would be familiar with all of those standards; is that correct?

MR. SCHROEDER: Objection, vague. You may answer.

A. So most is a big word when you're talking about that because we have so many different engineering disciplines. You'd have to be specific as to what type of engineer and then what that engineer's experience is. So that would probably throw out the word most.

Q. (By Ms. Holoubek) Sure.

A. But yes, if you're spending time in that design arena, then you should know those standards.

Q. Okay. And someone designing structural connectors such as you've mentioned would be familiar with the building codes under which those connectors would be installed; is that correct?

A. Okay. So now we're moving to -- from -- your question, the way you stated it, you're moving from an engineer to a designer, and there's a difference.

Q. Oh, okay.

A. So a designer specifically may not know the codes, whereas the engineer's required to know them.

Q. Okay. What are the different roles between a designer and an engineer?

A. A designer is not --

MR. SCHROEDER: Real quick, I'm going to object. I feel like we have strayed from the scope of his declaration. You may answer.

A. Yeah. So a designer could be someone who is proficient in CAD and has kind of an engineering technology background, but is not an engineer intern or a engineer. Although an engineer

and engineer intern can -- would and can design.

Q. (By Ms. Holoubek) Uh-huh. And many engineers who are working in this space of connectors do also design; is that correct?

MR. SCHROEDER: I -- I am going to object that the line of questioning is outside the scope of his declaration. Again, he may answer.

A. Yeah, so -- yes, engineers do perform design.

Q. (By Ms. Holoubek) Okay. And someone with experience using structural connectors, would those be the engineers?

MR. SCHROEDER: Again, objection, scope. You may answer.

A. So when you say using, what do you mean by that?

Q. (By Ms. Holoubek) Incorporating into specs or installing.

A. So an engineer specifying a connector should understand the connector, but that doesn't necessarily mean they've ever even seen one.

Q. Okay. But the engineer specifying the connector, you said they would be familiar with the building codes for the locale in which they're designing; is that correct?

MR. SCHROEDER: Objection, scope. You may answer.

A. They should be.

Q. (By Ms. Holoubek) Okay. And is one of those codes the International Building Code? Is that a commonly known code?

A. Yes. The International Building Code or variations of it are used throughout the United States.

Q. Going back to your experience designing hangers, did you ever design a structural connector that connected two components across a gap?

MR. SCHROEDER: Objection, vague.

A. Yeah, so I'm not sure what that even asks. I'm trying to picture in my mind what you said and I don't --

Q. (By Ms. Holoubek) Sure. So let's say you have two structural members you're trying to connect.

A. Uh-huh.

Q. And there's a space between them. Do you ever -- had you ever designed a structural connector that spanned the space between what you're connecting?

MR. SCHROEDER: Again, I'm going to

object in that it's also -- that's vague and seems to be an incomplete hypothetical, but you may --

A. Yeah, so with steel construction, again, going back to the AISC manual, they all have gaps.

(Court reporter interruption.)

A. There has -- for erection purposes there has to be a gap between the member that you're placing and the member that's there, like a beam to a column. If there was no gap you would not be able to install it.

Q. (By Ms. Holoubek) Why is that?

A. Because two rigid objects can't occupy the same space.

Q. And so you're saying there's -- it wouldn't -- they wouldn't abut, but there would be a gap?

A. Yes. So there's typically -- if you look -- like I said, the prequalified connections, if it's a shear connection and not a moment connection, then typically there's an offset and I believe the standard is typically like a half-inch.

Q. Okay. How long have fire-rated wall assemblies been used in multifamily dwellings?

A. As far as I know, as long as I've been

an engineer. As long as I've been involved in construction.

Q. Okay. So since the early 1990s?

A. Yeah, it's -- to the best of my knowledge as long as I have knowledge.

Q. Okay. Are fire-rated walls ever used in single-family dwellings?

A. Yes.

Q. In what context?

A. Typically if you have an attached garage the code requires that you have a one-hour separation between the garage and the main part of the house, any living structure of the house.

Q. And are fire-rated walls ever used in commercial buildings other than multifamily dwellings?

A. Yes.

Q. And in what general context?

A. So all elevators and stairways have to be protected. So like in this building specifically if you go to the elevator it will have a core. That has to be a separate structural unit from the building itself so that if the buildings were to collapse, you would still see that core standing, and it has to be -- it has to be rated. The same

with the stairs. So you have to protect your exits, your egress.

Q. And prior to 2013 did fire-rated walls use drywall that reached up to the, you know, floor above the truss or the joists?

A. Yes, you could get up to a two-hour rating with drywall, with five-eighths type X drywall.

Q. How would that usually be installed if you have a floor that is assembled and you're putting your drywall up to the bottom of that floor, prior to 2013 how would the drywall have been installed?

A. I'm not sure -- I'm not sure what you're asking really.

Q. Okay. Before 2013 was it common to complete framing to dry-in status before installing drywall?

MR. SCHROEDER: Objection, vague. You may answer.

A. In my experience, yes.

Q. (By Ms. Holoubek) Okay. And that includes firewalls that were built before 2013; is that correct?

A. Yes.

Q. Okay. And in firewalls built before 2013 it was common to use two layers of five-eighths-inch gypsum drywall; is that correct?

A. It would be for a two-hour rated wall. Each layer of five-eighths gives you a one-hour rating, but you wouldn't use two in a one-hour rated wall. You would use one. So -- and a three-hour wall doesn't allow to use three layers of gypsum. You can only go up to two.

Q. Okay. And if you had a truss installed perpendicularly to the wall that needed to be a firewall, how would you install the drywall on that wall prior to 2013?

A. I would have just installed -- again, I wouldn't penetrate it. That's for design. In my memory I don't think I've ever penetrated a firewall with -- with a wood -- you know, a combustible member.

Q. Uh-huh.

A. So it would just be installed as any other wall.

MS. HOLOUBEK: Okay. So I'm going to hand you what's been marked as Exhibit 1031.

(Exhibit 1031, 2012 excerpt from the Architectural Record.)

Q. (By Ms. Holoubek) Do you recognize this document?

A. Yes.

Q. What is this document?

A. This is an excerpt from the Architectural Record, and I believe it was from 2012.

Q. And if you turn to page six, there are two figures on the bottom right side. Do you see that?

A. Yes.

Q. And the figure on the right side is referred to as option B; is that correct?

A. Yes.

Q. The figure shows -- actually, let me find where you have it blown up a little bit in your declaration. I believe it's page 57 of your declaration. Or paragraph 57, I'm sorry. My apologies.

A. That makes a difference.

Q. So paragraph 57, but on page 43 of your declaration, the figure there is a blown-up image of that figure on the option B on page six of the Architectural Record reference, correct?

A. Yes.

Q. So is it okay if we just refer to that figure since it's more easily readable?

A. Yes.

Q. Okay. So this figure is a cross-section; is that correct?

A. Yes. It's a wall section.

Q. Okay. And in this figure it shows two layers of five-eighths-inch type X gypsum; is that correct?

A. So it appears to. It doesn't say it does.

Q. So there's an arrow that says five-eighths-inch type X gypsum and it has an arrow pointing towards the two vertical blue bars; is that correct?

A. Yes.

Q. Okay. And so that represents two layers of what it has labeled there as five-eighths-inch gypsum, correct?

A. We can -- we can assume that --

Q. Okay.

A. -- but it doesn't specifically say that. So if I were drawing this I would have either said two layers or I would have had a double leader pointing to each layer.

Q. Okay.
A. So this is somewhat ambiguous, but I would agree with you that that's their intent.
Q. Okay. And it shows the gypsum behind the truss and around the top cord of the truss; is that correct?
MR. SCHROEDER: Objection, vague. You may answer.
A. So you're asking me about the -- the gypsum that's attached to the stud wall, correct?
Q. (By Ms. Holoubek) Yes, that's correct.
A. And so what -- what the drawing shows is they show it solidly going up to the bottom of the top cord of the truss and then the dotted lines denote that on the opposite side it would continue up past that to the FRT floor sheathing.
Q. Okay. And presumably, since it's a cross-section on the facing side that we also can't see, it would also -- the gypsum would also extend up to the floor sheathing; is that correct?
A. Giving typical structural standards, that would be a valid assumption.
Q. Okay. So in order for the sheathing to reach to the floor above the truss, that sheathing would have to be cut to allow the top cord to cross

it; is that correct?

MR. SCHROEDER: Objection, vague. You may answer.

A. It could be cut or it could be separate pieces that weren't cut -- you know, notched. So I think either one would be able to make that drawing the way it is.

Q. (By Ms. Holoubek) And in that case the top cord of the truss would penetrate the gypsum barrier that is shown by those blue vertical layers; is that correct?

A. Yes.

Q. Okay. And do you see the triangular nailing plate that is attached to the top cord of the truss and the web?

A. Yes.

Q. And so if the top cord is penetrating through the gypsum barrier, that triangular nailing plate would also penetrate through the gypsum -- through the gypsum barrier; is that correct?

A. Yes, as it's shown on this drawing.

Q. Okay. And the floor sheathing sits on top of the truss; is that correct?

A. Yes.

Q. So typically in order for the floor to

be installed the truss has to be installed first; is that correct?

MR. SCHROEDER: Objection, vague. You may answer.

A. You could install it first and I have seen it -- it's called panelized construction where you actually install the -- prior to installing the panel, which would -- this would be a floor panel at that point. So you would have multiple trusses with the flooring installed and then they would lift that and place it on top of the wall as a unit.

Q. (By Ms. Holoubek) Uh-huh.

A. So if it's more of a stick-built operation or piece by piece, then yeah, you would have to install the truss and then install the subfloor on top of it. But if it was a panelized construction, then you would install the flooring on the trusses and then install the panel as a unit.

Q. Okay. Okay. And in order to ensure that the gypsum reached the bottom of the floor the sheathing would be -- sorry, the gypsum would be pushed up against the floor sheathing; is that correct?

MR. SCHROEDER: Objection, vague. You may answer.

A. So I think you're asking that if -- to create the fire separation that they're pushing snugly the gypsum up against the FRT. Yes, that's -- and that's what it appears to show in this drawing.

Q. (By Ms. Holoubek) Okay. And the end result shown in option B here -- actually, I'll scratch that.

So previously you had indicated that you had not seen penetrations in gypsum, but this is an example of a gypsum wall having a penetration prior to 2013; is that correct?

A. So I think --

MR. SCHROEDER: Objection, vague. You may answer.

A. I need to clarify what you said because that's not what I said.

Q. (By Ms. Holoubek) Okay.

A. So I have seen penetrations in firewalls, and I didn't say I hadn't seen that. What I said was I hadn't ever designed for a firewall to be penetrated by the structural members that would be carrying that floor load, which is different than it being penetrated.

So -- so I was taught to not penetrate

it with structure, with the -- with this -- you know, with a joist or hanger or anything like that that would be load-bearing because we wanted to keep that as a separate structural interface.

Q. Okay. So you hadn't personally worked on firewalls with penetrations, but they did exist prior to 2013; is that correct?

MR. SCHROEDER: Objection, vague.

A. Yeah, so I need to parse -- it would be good if you would parse penetrations because a penetration can mean anything. It can be a screw, it can be a conduit, or in this case what this drawing is showing, it can be the top cord of the truss.

So what I had -- and I had not seen or have any experience with in my career was penetrating that firewall with the structure -- with that floor structure. So that's -- that's what's unique for me. I hadn't seen it until I was involved in this case.

Q. (By Ms. Holoubek) Okay. But you would agree that this Architectural Record does have the truss and floor structure penetrating the firewall; is that correct?

A. Yes, it is, and I would have -- and I

don't know that this -- this was ever an actual detail on a drawing or that it was sent to a fire marshal's office anywhere and approved.

So it's a -- an idea that's put in Architectural Record, which there are many ideas that are put in publications that are never brought into any type of reality.

MS. HOLOUBEK: Okay. I'm going to hand you what has been previously marked as Exhibit 1001.

(Exhibit 1001, '339 patent.)

Q. (By Ms. Holoubek) Do you recognize this document?

A. Yes.

Q. And what is Exhibit 1001?

A. This is the submitted patent for '339.

Q. Can you take a look -- it's on page 50, but it's column 1 of the '339 patent.

A. Okay.

Q. Okay. Do you see the section labeled background starting around line 30 of column 1?

A. Yes.

Q. So this particular section talks about the state of the art at the time the '339 patent was filed; is that correct?

A. If you don't mind --

MR. SCHROEDER: Objection, outside the scope of his testimony, but he may answer.

A. So I'm going to take --

Q. (By Ms. Holoubek) Yeah, take a minute to read the background. Sure.

A. I finished reading it.

Q. Okay. So this particular background section of the '339 patent indicates that trusses or joists -- and this is around line 40, trusses or joists must therefore be attached to the wall framing. Do you see that?

A. Yes.

Q. And it says (quote as read):

A cutout for the entire cross-section of the truss leaves a large discontinuity in the fire retardant sheathing.

Is that correct?

A. Yes.

Q. So wouldn't that indicate that it was known to cut penetrations for floor trusses in fire barriers at the time that this '339 application was filed?

MR. SCHROEDER: Objection, form. Objection, mischaracterizes the document and

objection scope.

A. So I can see how you might read that. That's not how I read it.

Q. (By Ms. Holoubek) Okay. How do you read it?

A. So I read it as a warning that you can't do this. Not as it's typically done and that's a thing that's done.

Q. Okay. But you would agree, though, that at least Architectural Record shows a penetration for a truss in a floor -- sorry, in a firewall assembly; is that correct?

A. So going back to page 43 of my declaration looking at option B, you can see that's -- the top cord of that truss is labeled as 2 by 6.

Q. Uh-huh.

A. Actually, that's not -- that's a -- that's blocking that goes this way that's the 2 by 6. So we don't know what the top cord of that truss is. It could be 2 by 4s. It could be 2 by 6s, but we don't know.

So you've got two of those, which is three -- one and a half inches each one, so that's three inches. And then if it is 2 by 4s, then

they're three and a half inches wide. So that would be three times three and a half, which is 10.5 square inches versus if this was the full depth of the truss, which is what it says in the background, the opening would be much, much larger, which this is -- again, it seems to be saying don't do that.

Q. Okay. So the focus of the background you see is if you're -- if you're going to penetrate the cut needs to be smaller; is that correct?

A. Yes, they're trying to limit the penetrations. That's the way I read it.

Q. Okay. Okay. Were there -- are you aware of any joist or truss hangers that were used with firewall assemblies prior to 2013?

A. So if -- if we look back at option A of the Architectural Record it shows a Simpson LBV hanger, and I see the way that's used in there. I had never seen that used in that manner until I saw that drawing.

Q. Okay.

A. And I had never used one in that manner until I saw that drawing. So in my experience in my career, no, I've never seen that used like that and I've never done it personally.

Q. Okay. And then hangers other than the LBV hanger, have you ever seen prior to 2013 hangers other than the LBV used to hang joists along with a firewall assembly?

A. No. And I wouldn't -- I wouldn't do -- I mean, that's -- that's not something I would have done. There's -- there's issues even beyond the penetration part of that that would have prevented me with my experience in doing that.

Q. Uh-huh. Now, we were talking about the penetrations, but with the hanger on the '339 patent that still requires a penetration; is that correct?

A. Yes.

Q. So why doesn't the '339 penetration cause an issue for the fire rating?

MR. SCHROEDER: Objection, vague. You may answer.

A. So again, I had never seen that product, the FWH product, until I was involved in this proceeding.

Q. (By Ms. Holoubek) Uh-huh.

A. And the first thing I thought in -- when I saw it was, one, it's really cool. And two is how is that going to get approved by the fire marshal? Those were my two thoughts. So even

seeing it, that was my question. They're penetrating the firewall. How can that be allowed?

Q. Uh-huh.

A. So of course, then reading through I see that they've got the -- the approval through testing and then that fire marshals were allowing it. So then I -- you know, then I have to change my paradigm of what I've been taught and say, okay, it is possible to get a two-hour rated wall and have a penetration.

Q. Okay.

A. So it was a game changer for me.

Q. Okay. But you said the first time you were exposed to the FWH hanger was this year when you were -- started work on this case; is that right?

A. That's correct.

MS. HOLOUBEK: Okay. I'm going to hand you what's been marked as Exhibit 1034.

(Exhibit 1034, Portions of the 2012 International Building Code.)

Q. (By Ms. Holoubek) Do you recognize Exhibit 1034?

A. Yes. It's portions of the 2012 International Building Code.

Q. And this International Building Code is one of the documents you had reviewed for your declaration; is that correct?

A. Yes.

Q. Okay. Can you turn to page 40? And this is going to be the page 40 at the very bottom. I realize there's a couple of page numbers on here.

A. Yes.

Q. So page 40 refers to a section 714 labeled penetrations; is that correct?

A. Yes.

Q. And under 714.1 it says that (quote as read):

> This section governs materials and methods of construction used to protect through penetrations and membrane penetrations of horizontal assemblies and fire-resistance rated wall assemblies.
>
> Is that correct?

A. Yes.

Q. So section 714 of the 2012 IBC covers the treatment of penetrations through firewall assemblies, correct?

A. Yes.

Q. So it was known at least in 2012 that you could have penetrations on fire-rated wall assemblies; is that correct?

A. So as I stated before, yes, I mean, and I had seen penetrations and knew that penetrations were, again, for ductwork and utilities, electrical, things -- things of that nature.

My teaching and what I taught at the University of Tennessee was you do not penetrate them. They have to be -- it has to maintain its structural independence from the other parts of the building.

So I couldn't -- I can't attach my structure to it and maintain structural independence because, you know -- so I'm penetrating, but I'm also putting a structural load on it. So that -- there was a double -- you know, a double issue.

Q. Okay.

A. At least that's -- again, this is my training. I'm speaking of me specifically. And that's what I then taught in the next generation.

Q. But you would agree that penetrations for pipes and ducts and the like occurred in fire-rated wall assemblies prior to 2013; is that correct?

A. Yes.

Q. Okay. And this section 714 doesn't exclude penetrations by joist hangers; is that correct?

A. So I don't think it excludes penetrations by certain types of -- of things, but the -- where -- where my issue comes from was in the separation of structural elements in the way that not necessarily -- so there -- again, like I said, it's a two-headed monster.

You know, one is the penetration part. Especially if you're talking about like the background section of '339 stated, you know, penetrating with an entire member. So that's -- that's one area. And then the second area is keeping those structural systems independent of one another.

Q. Does section 714 specifically talk about structural penetrations versus other penetrations?

MR. SCHROEDER: Objection, vague. You may answer.

A. No. And where it -- I believe it's in the firewall section that it actually talks about structural independence of the firewalls. And

again, that's -- that's what my teaching and then my teachings to others has been is to keep them structurally independent.

The idea being that if I have a fire in unit A and it -- let's say I've got a one-hour floor -- or not even a rated floor. The idea is that my firewall would be able to remain in place even if unit A were destroyed.

So that limits my connection to it because if I have unit A and I have a joist being supported by the firewall and let's say the far end away from the firewall burns, and so then that joist falls. Now it's going to actually put a moment, a significant moment into my firewall, and it's likely going to breach the system because we didn't maintain structural independence.

Q. (By Ms. Holoubek) So are you saying that joists were never connected to firewalls prior to 2013?

MR. SCHROEDER: Objection, vague. You may answer.

A. So I would point to my prior testimony today when we mentioned this as how -- you asked me how I did it, and I explained how I did it was either I would have a separate structural bearing

member next to the firewall if -- if I had to connect in that direction, not putting the load on the firewall directly, or I would run a member parallel to the firewall, again, keeping that structural separation, and it's difficult. That creates all kinds of problems in design.

Q. (By Ms. Holoubek) So just to clarify because I understand you said you didn't do this.

A. Uh-huh.

Q. Are you saying that joists were never connected to firewalls prior to 2012, 2013 time frame?

MR. SCHROEDER: Objection, vague. You may answer.

A. So I can speak to my experience and what I've seen in my -- in my lifetime, and so I have not seen that and I have not done that, but that doesn't mean that it doesn't exist. There's lots of things that happen that I've not seen happen and that I haven't personally experienced, but I can only tell you what my personal experience is.

Q. (By Ms. Holoubek) Okay. And in your work in forensics you've not seen a joist connected to a firewall assembly?

A. No, I haven't. The thing I think to

keep in mind too is that not every wall is going to be a firewall, and they're clearly marked on the architectural plans when I get them. And then I have a discussion with the architect what are we doing here?

If I have to run structure over there, then it's a long discussion. If I can run it beside, there's likely not going to be a discussion at all. Because I have to keep in mind with my designs it's always economics. I've said many times if there wasn't an economy, there wouldn't be any engineers. We'd just overbuild anything.

Q. Okay. But going back to section 714, when we look on page 41 -- actually, I guess it's even on page 40 there's various sections that talk about through-penetration firestop systems; is that correct?

A. Could you point me exactly where you are? And then give me a sentence to read it?

Q. Sure. So there's a few different places that talk about through penetrations. One is in the first column on page 40, 714.3.1. It's labeled through penetrations.

A. I think you meant .3.1.2 or is it -- no, it's on the left side?

Q. Yes.
A. Okay.
Q. Have you finished reading section 714?
A. No, I'm sorry. I'm a slow reader.
Q. Is it -- is it just the section or are you reading the whole document?
A. No, I was reading -- so section 714.3.1 includes the subsections, so I was reading the subsections of section 714. Is that --
Q. Okay. Yeah, no. Please do.
A. Okay.
Q. Yes. Just making sure you didn't feel like you had to read the whole -- read the whole document.
A. I'm a slow -- I'm a slow reader.
Q. That's fine.
A. Okay.
Q. Okay. So 714.3.1 talks about through penetrations; is that correct?
A. Yes.
Q. And then subsection 714.3.1.2 talks about a through-penetration firestop system; is that correct?
A. Yes.
Q. So you would agree that penetrations

through firewall assemblies were permissible under the code so long as the penetrations were protected by an approved firestop system and could pass testing; is that correct?

A. Yes, and I want to put a caveat as that what I had mentioned before about the structural separation. So yeah. So again, when I read this, I'm reading it with that lens that I'm not going to put my structure through there and create a dependence or -- or a -- a structural dependence in that wall with an unrated part of the building.

Q. But section 714 does not talk about a structural separation; is that correct?

A. No. It's -- it wouldn't be here.

Q. Okay. So as far as section 714 talking about penetrations is concerned, penetrations are permissible as long as it's protected by an approved firestop system and you could pass testing with it; is that correct?

A. Yes.

MR. SCHROEDER: I do want to object, vague, incomplete hypothetical, but you may answer.

A. But -- so we're talking about just the penetration itself, not what that penetration is per se. I mean --

Q. (By Ms. Holoubek) Right, because the code doesn't specify; is that right?

A. Not here it doesn't. The only -- the only specificity is in -- like if you continue on to 714.3.2, the membrane penetrations, and it appears to mainly pertain to electrical conduits and boxes, but again, I'm reading what's here and not what's not here.

Q. Sure. A membrane penetration is different from a through penetration; is that correct?

A. Yeah, so a through penetration by definition would be completely through the wall, whereas a membrane penetration would be through that specific layer of fire protection.

Q. Okay. So as far as the through-penetration firestop system, 714.3.1.2 says that (quote as read):

> Through penetration shall be protected by an approved firestop system, installed as tested in accordance with this ASTM or UL section.

Is that correct?

A. Yes. And you have to -- you have to also remember, this is -- this is not the section

that governs the firewalls themselves, and what's required to have a firewall rating and what's not required to have a firewall rating.

Q. Do you know what -- I'm sorry. Go ahead.

A. This is only -- only discussing these penetrations in a rating, not if they're allowed in certain types of walls or certain -- certain assemblies.

Q. Okay. Looking at 714.3.1.2, what are some common materials for fire-stops?

A. To me probably the most common that I've seen in use is a type of fire caulking typically red in color. And it's easy to apply, it's almost always applied around -- in the annular space around what -- whatever the penetrating object. Rock wall is another one that -- that can be used.

Q. What is rock wall?

A. It's a -- I think it was referred to before as a mineral -- mineral rock or something like that. There's different -- different types, but basically it's like a vulcanized rock that it expands and so it dissipates temperature really quickly through it. So it's similar to what I would

say an actual lava rock is, but it's not natural. It's man made.

Q. Okay. Were those available before 2013?

A. Yes.

Q. Okay. So before 2013 a skilled artisan would have known that sealants like the caulking you mentioned, like this rock wall could be used for fire-stopping systems; is that correct?

A. Yes.

MR. SCHROEDER: Objection, vague and incomplete hypothetical.

A. Yeah.

Q. (By Ms. Holoubek) Before 2013 would a skilled artisan have understood that mineral wool could be used beneath sealants to resist heat transfer?

MR. SCHROEDER: Objection, incomplete hypothetical.

A. Yes, I think so.

Q. (By Ms. Holoubek) Okay.

THE WITNESS: Do you mind if we take -- before the next question, if we take a comfort break?

MS. HOLOUBEK: Sure. That's fine.

That's fine.

(WHEREIN, a recess was taken from 10:53 a.m. to 11:08 a.m.)

Q. (By Ms. Holoubek) Mr. Tucker, during the break did you talk to anyone about the substance of your deposition here?

A. No.

Q. Okay. Before the break we were talking a little bit about mineral wool, and if you can take a look at the '339 patent, Exhibit 1001.

(Court reporter interruption.)

Q. (By Ms. Holoubek) Column 11.

A. What page?

Q. It's page 55.

A. Okay.

Q. And starting at line 51, the '339 patent gives the example of the '339 hanger installed in a wall assembly where, quote (quote as read):

The cavities in the wall were filled with mineral wool insulation.

Do you see that?

A. Yes.

Q. In the 2013 time frame was it common to fill cavities in a firewall assembly with mineral

wool insulation?

MR. SCHROEDER: Objection, outside scope of his direct testimony. He may answer.

A. I can't -- I can't really say. It didn't show up on my drawings. That would be more of the architect's part as to whether that was filled with anything or not. It was my understanding that the two layers of gypsum provided the barrier and then we didn't break that barrier with any type of structural connection.

So -- and then if you go back to the code chapter 7 of IBC where it talks about the annular space around penetrations, what I saw most times was the fire caulk so that's -- again, that's my experience.

Q. (By Ms. Holoubek) Okay. Here you would agree that the '339 hanger did require a penetration in the firewall assembly, correct?

A. Yes.

Q. Okay. So was the mineral wool in -- discussed here in column 11, was that to mitigate the penetration caused by the '339 patent hanger?

MR. SCHROEDER: Objection, scope. Objection, calls for speculation.

A. So what I have to do is look at -- it

would be ASTM E814 is what it says that it was tested to.

Q. (By Ms. Holoubek) Uh-huh.

A. And I'm not -- I don't have that memorized. I've not participated in any of those tests. So that's really beyond my -- my area of expertise.

Q. Okay. So reading the paragraph here that talks about the test of the '339 hanger and the use of mineral wools, you can't tell me today what that -- the mineral wool's purpose in the wall cavity was; is that correct?

A. I know the purpose.

MR. SCHROEDER: Objection, vague. You may answer.

A. I understand the purpose of mineral wool. It is to do what you said. It's to dissipate heat. It's to -- it's a thermal exchanger more or less. But -- but it just cuts down that overall heat getting past, but I don't know -- and I don't know what the assembly was.

I don't know that testing method. I don't know how it was tested. I haven't seen pictures of it, that test or video of that test or anything. So I just can't comment on it. I just

don't know.

Q. (By Ms. Holoubek) So this particular paragraph here in the patent doesn't tell you the information you need to be able to understand that wall assembly; is that correct?

MR. SCHROEDER: Objection, misstates the -- his testimony. Objection, scope.

A. Yeah, that's -- that's not what I was -- you asked about the mineral wool specifically, and as it refers to the testing and what its purpose is and everything. I can't comment because I don't -- that's beyond my area of expertise. But the wall assembly is spelled out.

Q. (By Ms. Holoubek) What about the mineral wool is beyond your area of expertise?

A. I don't know -- I don't know exactly where it is.

Q. It says the cavities in the wall -- and this is at line 57 of column 11 here in the '339 patent says (quote as read):

The cavities in the wall were filled with mineral wool insulation.

Does that not describe for you where the mineral wool is?

A. Yes. What I'm saying is I don't

have -- I've not used mineral wool. I don't know -- I mean, I know what it's for and I understand the purpose of it, but I don't have experience in my career of using it. I can see where it's -- where it is and again, I know its purpose, but I would be speculating as to why it was there, what part it's actually playing beyond what I know.

Q. Okay. And that's because you've not used mineral wool in your firewall assemblies; is that correct?

A. That's correct.

Q. And is that because you have not had such penetrations in your firewall assemblies that you've designed; is that correct?

MR. SCHROEDER: Objection, vague. You may answer.

A. So I've never had this penetration because this is specific to a product, and I've never even -- like I said, I didn't know this product existed. Penetrations that I'm familiar with in the firewalls that I did design and inspect were the vast majority conduits up to one inch or two inch in diameter. And the firestop used was caulk, fire caulk in all those situations.

Q. (By Ms. Holoubek) Okay. And so when

you've inspected walls -- the firewalls you've inspected did not use mineral wool; is that correct?

A. Correct.

Q. Okay. Let's turn to paragraph 25 of your declaration. Okay. In paragraph 25 of your declaration you mentioned that (quote as read):

> Another step of the method is cutting an opening or slot 72 into an exterior edge of the fire retardant sheathing 34.

Do you see that?

A. Yes.

Q. What's the difference between an opening and a slot?

A. So I think a slot is a description -- a description of an opening. Like a type of opening. So not all openings would be slots, but all slots would be openings.

Q. Okay. Like what differentiates a slot from other types of openings?

A. It's height-to-width ratio.

Q. And what about the height-to-width ratio defines a slot?

MR. SCHROEDER: I'm going to object. I believe this is outside the scope of his testimony.

He may, you know -- you may ask, but I will lodge that objection.

MS. HOLOUBEK: Okay. You see that he talks about a slot and an opening in paragraph 25, correct?

MR. SCHROEDER: I do.

MS. HOLOUBEK: Okay.

MR. SCHROEDER: But I don't believe that he tried to define differences between slots and openings.

MS. HOLOUBEK: Okay. I'll maintain the question. I don't know if maybe the court reporter can read it back?

COURT REPORTER: Question: And what about the height-to-width ratio defines a slot?

A. Okay. So this is my opinion is that a slot would be taller than wide and that ratio would have to be substantially different. In other words, it wouldn't be one percent taller than wide.

It might be 500 percent or five-to-one ratio or more to differentiate it from a slot versus like a square opening or a -- or a hole or something else of that nature. Even though those are all openings, a slot in general is -- just has a different length-to-width ratio. That's my

understanding of what a slot is.

(Court reporter interruption.)

Q. (By Ms. Holoubek) And so the figures at the top of page 19 would show figures nine and ten from the '339 patent. What's shown on the left there is a slot; is that correct?

MR. SCHROEDER: Objection, vague.

A. So on page 19, figures 9 and 10 from Exhibit 1001.

Q. (By Ms. Holoubek) Uh-huh.

A. Where the leader is pointing to 72, there's a slot in the top of the drywall.

Q. Okay. So in this depiction, so the figure on the left side is figure 9 and the figure on the right side is figure 10; is that correct? From the patent?

A. I'm going to -- I don't know that. I'd have to look and verify.

Q. Feel free to verify. Sure.

A. Okay. You're correct. The left figure is figure 9 and the right figure is figure 10, from the patent, from '339.

Q. Don't put the patent away yet.

A. Oh, no.

Q. On page 20 of your declaration you have

a depiction of figure 12 from the patent; is that correct?

A. Yes, that's correct.

Q. Okay. So in figure 9 of the '339 patent the drywall is shown mounted on the wall before the hanger has been installed; is that correct?

A. Yes.

Q. And then in figure 10 of the '339 patent --

MR. SCHROEDER: I'm actually going to object to that last line of questioning, but go ahead.

Q. (By Ms. Holoubek) Okay. In figure 10 of the '339 patent the hanger is installed in the assembly of figure 9; is that correct?

MR. SCHROEDER: Objection.

A. Okay.

MR. SCHROEDER: Foundation.

A. I need to clarify.

Q. (By Ms. Holoubek) Okay.

A. Okay. So I said yes to your -- to your question about figure 9 having drywall installed prior to the connector, and I agree that that's what this looks like. I disagree with what I actually

just testified to saying yes, and I'll tell -- so I'm going to explain myself.

So this figure is in my understanding meant to just display basically the drywall and I do this commonly when I draw things and I will say -- although it doesn't say that here, I will say X is omitted for clarity.

And so I won't show something that should be there in the drawing because I'm trying to draw attention to something specific. And in this case they're wanting to draw attention to the drywall, but were I to install the drywall first, it wouldn't be possible for me to install the hanger. This assembly method, the hanger has to be installed first. This is just showing the drywall -- like without the hanger to show the slots.

Q. (By Ms. Holoubek) What is your basis for saying that in this assembly the hanger has to be installed first?

A. It's the method of assembly that actually is spelled out in the patent, but moreover, if I screw the drywall in place first, I'm not going to have space to get my hanger down behind it because the hanger has a back flange that is actually behind the drywall. So if I screwed it all

tight, I would probably damage the drywall getting it in. So you're not -- it just won't work in that -- in that sequence.

Q. So you're saying that someone looking at a hanger like this would understand that the hanger would have to be installed before the drywall if the drywall is to go between the hanger and the wall?

A. So the FWH instructions literally spell that out, and then it's also written in the patent that this is a methodology where the hanger is placed and then the drywall is placed afterwards.

Q. Can I turn your attention to paragraph ten of the '339 patent?

A. Give me a page.

Q. It's page 54.

A. Column 10 did you mean?

Q. Column 10, yes, I'm sorry. Column 10.

A. Yes.

Q. And do you see around line 42 where the patent says (quote as read):

> In one embodiment the slot 72 can be cut using the slot template 82 either before or after the sheathing 34 is mounted to the wall 28.

A. I see that.

Q. Okay. And then do you see it describes the dimensions and then at the -- starting at the very end of line 45 do you see where it says the truss hanger 126 is then positioned against the fire retardant sheathing 34 so that the extension flanges 160 extend through the slot 72?

A. Yes.

Q. And then following that (quote as read):

> In one embodiment the hanger 126 is slid downward into place so that the extension flanges 160 extend through the slot 72.

A. Yes.

Q. Okay. So going back to figure nine, doesn't figure nine illustrate the hanger prior to installation of the hanger -- sorry. Doesn't figure nine illustrate the drywall and wall assembly prior to installation of the hanger?

MR. SCHROEDER: Objection, foundation.

A. Based on what you just read me and what I read myself, then I would agree with you. Now, what I would -- again, I'm going to throw out a caveat, is that can't be fully installed, the

drywall.

So you can have it what we call typically tacked in place. So it's loosely installed so that you could get that hanger behind it. There has to be space between the drywall and the framing to slide that down.

So that means there has to be some amount of play, which if you only used a few screws to hang it, then that would be possible, but it's not -- it wouldn't be in its finished state.

Q. (By Ms. Holoubek) So are you just not familiar with that part of the patent that we just talked about in column 10?

MR. SCHROEDER: I am going to object that I believe this line of questioning has been outside the scope of his direct testimony. He may answer, though.

A. So I read it. I'm sure I've read it. It didn't pop out to me.

Q. (By Ms. Holoubek) Okay.

A. Like -- like you just did.

Q. And in column 7, line 25, essentially lines 25 through about 36.

MR. SCHROEDER: I am going to object that this line of questioning is outside the scope

of his direct testimony. I also believe it might be outside the scope of the entire proceeding, but you may continue.

Q. (By Ms. Holoubek) Actually I can give you a better pin cite here. So 34 through looks like 42. Do you agree that describes the truss hanger being positioned against the fire retardant sheathing and then sliding the hanger down into place?

A. Yes.

Q. Okay. And so in that example the sheathing is on the wall before the hanger is installed; is that correct?

A. Yes.

Q. Okay. So going back to figures nine and ten, figure nine shows the sheathing on the wall prior to the hanger; is that correct?

MR. SCHROEDER: Continue to object to scope. You may answer.

A. Yes. It shows it on the wall and I would again say not fully installed.

Q. (By Ms. Holoubek) Okay. And then figure ten shows the hanger installed in the wall assembly along with the sheathing; is that correct?

A. Yes.

Q. And then figure 12 shows the joist being installed in the assembly of figure ten; is that correct?

MR. SCHROEDER: Objection, vague. Objection, scope.

A. Yes. So what it shows that a truss, a floor truss with -- with the assembly ready to accept it.

Q. (By Ms. Holoubek) Okay. So in that progression of figures nine, ten, and 12, the drywall is installed, then the hanger is installed, and then the floor truss is loaded; is that correct?

MR. SCHROEDER: Objection, scope.

A. So again, I'm going to say the drywall is not installed, but I'm going to use your words, on the wall. It was on the wall.

Q. (By Ms. Holoubek) Okay.

A. Because I think that's a very good way to describe it. So it's on the wall. Then the hanger is installed. Then the assembly is finished, completed being installed, which means the drywall would be finished to be installed if it needed more screws or whatever, and then the truss is coming in.

Q. Okay. Do any of the figures of the '339 patent show the hanger on the wall without the

drywall in place?

MR. SCHROEDER: I'm going to again object to scope.

A. It appears that on the whole the figures illustrate the completed wall assembly. The only one -- there's only a couple figures that you might say show it and it's figure 34. I don't think it's intended to. I think that's just a cutaway, again, for clarity. I think the intention is to show a fully assembled wall construction.

Q. (By Ms. Holoubek) Okay. So you would agree that none of the figures of the '339 patent show the hanger installed on the wall without the drywall in place; is that correct?

MR. SCHROEDER: Objection, scope. You may answer.

A. Like I said, if you look at figure 25 and figure 34, they're -- they're showing the skewable wall hanger and which shows the hanger without drywall around it. There is drywall on the wall, and again, I think that's intended as a cutaway to show more clarity of the hanger itself, but it doesn't have it around it.

Q. (By Ms. Holoubek) Right.

A. But I think the intention is to show a

completed assembly, not a piece or part.

Q. Right. Right. And those figures with the cutaway have the drywall cut away to show detail; is that correct?

A. That's my opinion, yes.

Q. But the drywall, it's inferred that the drywall would be there; is that correct?

A. Yeah, I think the intention is to show a complete assembly, but while showing the complete assembly show how that skewable hanger looks installed on a wall prior to the drywall being there.

Q. Okay. So you'd agree that none of the drawings illustrate the hanger installed with the complete absence of drywall; is that correct?

MR. SCHROEDER: Objection, scope.

A. So I don't see in this specification section one except for like I mentioned, the cutaway. Which can be meant to show it -- show how it looks prior to the drywall being installed.

So basically figure 25 and I think it's 37 -- 30 something, could be 34 could be showing two purposes to show -- show the completed assembly, but also show what that looks like installed prior to the drywall being installed. So I don't know

that's -- you know, but that could be an interpretation.

Q. (By Ms. Holoubek) And in those two figures, 25 and 34, you -- you agree that the drywall is already installed on the wall; is that correct? In the wall assembly?

MR. SCHROEDER: Objection, scope. Objection, vague.

A. So again, there's two hangers shown. One hanger shows the full assembly, the full wall assembly. The other hanger shows a cutaway of the drywall. And again, I don't know if that intent is to show just detail of the hanger because it points to 166, those back flanges, or if it's to show the intent of what it looks like when the hanger is installed with the truss and there is no drywall. So it can -- you can have a drawing showing two -- more than one idea.

Q. (By Ms. Holoubek) If you turn to column 8 on page 53 of the '339 patent. Starting at line 53, that paragraph discusses figures 25 and 39, correct?

A. Yes.

MR. SCHROEDER: Objection, scope.

Q. (By Ms. Holoubek) And in line 53 you

see it says (quote as read):

The floor truss 12 is received in the channel 152 to attach the floor truss to the wall at a skewed angle.

Is that correct?

A. Yes.

MR. SCHROEDER: Objection, scope.

Q. (By Ms. Holoubek) And then if you look on column 3, lines 36 to 39.

A. Can you please repeat that?

Q. Sure. Column 3, lines 36 to 39. This indicates that (quote as read):

Figure 25 is a fragmentary perspective of adjacent floor trusses connected at an angle to a wall having fire retardant sheathing.

Is that correct?

MR. SCHROEDER: Object to scope.

A. Yeah, I don't think that there's -- I mean, I agree it literally says is a fragmentary perspective of an adjacent floor -- of adjacent floor trusses connected at an angle to a wall having fire-retardant sheathing by truss hangers.

Q. (By Ms. Holoubek) Is that what you meant -- oh, I'm sorry.

A. Second embodiment that extend through the sheathing.

Q. Is that what you meant by a cutaway, like the view is cut away but it's referring to the wall having sheathing?

A. No. What I meant by -- so what I read when I say fragmentary perspective is not the cutaway, but it's a portion of the wall. It's a fragment of the total wall.

Q. Oh, I see. Okay. But when you looked at figure 25, the cutaways you were talking about, it's -- the sheathing is on the wall and it's just cut away to show how the connection looks; is that correct?

A. So there's -- I believe there's multiple interpretations of how one can read this, and as to the intent obviously I can't say because I didn't draw it.

Q. Sure.

A. I have drawn drawings like this, but I don't think you can infer a sequence specifically from the drawing alone. And it shows the completed -- on this side -- on the left side of the drawing it shows the complete assembly while the cutaway shows what one can interpret as the

installation of the hanger and the truss prior to the sheathing what that would look like, but neither way can really be said to state, yeah, this is before, this is after. It doesn't really show a sequence.

Q. Okay. Okay.

A. But it shows the full assembly.

Q. Okay. In paragraph 26 of your declaration, we'll go ahead and go to that paragraph. It's on page 19. In paragraph 26 you talk about the inserting step and the moving step; is that correct?

A. We're looking at page 19?

Q. Yes, in paragraph 26. The paragraph is talking about the '339 patent's installing -- oh, I guess it -- and it extends over into page 20, the same paragraph.

A. Okay. And you -- I'm going to have to ask you to repeat your question because I have forgotten.

Q. Sure. Yeah, now that you've read this paragraph. So this paragraph 26 talks about the inserting step and the moving step of the '339 patent; is that correct?

A. Yes.

Q. Between the inserting step and the moving step, which happens first?

MR. SCHROEDER: Objection, scope.

A. So the inserting step happens first and then the moving step happens next.

Q. (By Ms. Holoubek) Could the moving step happen before the inserting step?

MR. SCHROEDER: Objection, scope.

A. It would -- it would be dependent on how you define the moving step. I think the way this is written, the moving step means sliding the drywall up into its final position. That's the way I read it.

Whereas, the inserting step is when it first starts to penetrate -- you're actually getting it behind -- behind the hanger. So that's the inserting it behind it.

And then I think they somewhat are some overlapping, you know, because while -- while you're moving it it's still inserting. But it has to start before -- I think the idea is that the moving is when it's going up into its final position. That's -- that's the way I read it.

Q. (By Ms. Holoubek) Okay. Can you identify where in the specification inserting the

sheathing behind the channel-shaped portion --

(Court reporter interruption.)

Q. (By Ms. Holoubek) -- is described separately from moving the sheathing into place around the extension flanges?

MR. SCHROEDER: Objection, scope.

A. Did you say in the specification section?

Q. (By Ms. Holoubek) Yes.

A. The only thing I see is in column 8 --

Q. Uh-huh.

A. -- it's below line 15 and it talks about moving the sheathing upward into place and it kind of omits the step of inserting. It doesn't discuss that specifically. So it doesn't discuss step one. It goes straight to step -- step two.

Q. Okay. And just for the record, before mentioning that you had kind of read the entirety of the patent up to that point looking for something; is that right?

MR. SCHROEDER: I'm going to continue my objection to scope that I would say has been a continuous objection for about the last 45 minutes.

A. No, I didn't read the entire patent up to that point.

Q. (By Ms. Holoubek) Okay.
A. I skimmed through it.
Q. Skimmed through it, okay.
A. And read sections.
Q. Okay. I see. But you skimmed through the patent looking for that feature, right?
A. Yes.
Q. Okay. We have been -- well, we can go here. Are you good to keep going for a little bit?
A. Yeah. I mean, depends on how -- how long is a little bit.
MR. SCHROEDER: Yeah, I think he's been going for about 50 minutes this round, so --
MS. HOLOUBEK: Okay. Keep going for a short time.
MR. SCHROEDER: Yeah.
MS. HOLOUBEK: Okay.
MR. SCHROEDER: I'm also expecting lunch is probably outside, but I don't know that for certain.
MS. HOLOUBEK: Okay.
Q. (By Ms. Holoubek) Thinking about the inserting step, if you had a cutout in the sheathing, like an opening that was really big and it's bigger than the channel-shaped portion, you can

move the sheathing -- okay.

A. Hold on. I'm trying to visualize what you're saying.

Q. Sure.

A. You might have to repeat that.

Q. So how about -- and maybe we can do it in relationship to a figure. So let's -- let's take a look at figure nine, for example of the -- I'm sorry, figure nine of the '339 patent. It's on page 15.

So element 72 in figure nine shows the slots. What about the hypothetical where instead of the slot you had an opening that's bigger than the channel-shaped portion? If you had an opening that was bigger than a channel-shaped portion, if you slid the drywall up around the hanger it would never actually be inserted behind the channel-shaped portion; is that correct?

MR. SCHROEDER: Objection, scope. Objection, vague. Objection, calls for speculation.

A. If -- we'll call it slot 72 even though it's no longer a slot, right? If the width of slot 72 was increased larger than the channel portion that's the outside part of the hanger that holds the truss itself, you wouldn't have to slide it at all.

You can literally just push it straight on.

Q. (By Ms. Holoubek) Is this assuming that the truss has already been installed in the hanger?

MR. SCHROEDER: I'm going to maintain the objections I had a minute ago.

A. So it would depend -- so you wouldn't -- you wouldn't have to slide it behind anything. You can literally just push it up and slide it right against the wall, push it against the wall. So the truss would fit down in it, but you're bigger than the hanger and of course you got a whole can of worms to go with this big opening.

Q. (By Ms. Holoubek) So in your example at some distance away from the hanger you would stand the drywall up and push it forward. Is that -- up against the frame wall. Is that what you're saying?

A. You could do that, but I mean, you could -- you didn't specify how wide it even is. I mean, we can just make it really wide and then have a giant hole in the firewall. I mean, it's wider than the channel. Yeah, the installation -- sliding installation and all that just falls apart.

Q. Let's assume it's just wider than the

channel-shaped portion. If you are placing it up against the wall you could slide it up, correctly -- or correct?

A. Yeah.

MR. SCHROEDER: Objection, scope.

A. You can -- you could do any manner of installations. It would just depend on the crew and how they wanted to do it.

Q. (By Ms. Holoubek) Okay. And if you slid it up into place, you'd be moving it vis- -vis the extension flanges, but you wouldn't actually be inserting the drywall behind the hanger; is that correct?

MR. SCHROEDER: Objection, scope. Objection, vague. Objection, incomplete hypothetical.

A. It depends. It depends because now you've got such a wide hole that you've got play in the panel. So you slide it up, it could move over several inches in either direction and if it moved over, then it would be behind the channelled portion. If it didn't it would never be behind it because it's bigger than it.

Q. (By Ms. Holoubek) Uh-huh. So if it didn't move over --

A. It depends.

Q. You're saying the drywall, if the drywall didn't move over then it would be moved into place without ever being inserted behind the channel-shaped portion; is that right?

MR. SCHROEDER: Objection, scope. Objection, incomplete hypothetical.

A. Yeah, so if you had a hole in the drywall larger than the -- basically than the hanger, there's no -- it's lost its constriction. So it's like slot. You can move it anywhere. It may or may not be behind there. It just depends. But -- yeah, I think you've -- you've destroyed your firewall at that point.

Q. (By Ms. Holoubek) Okay. Do you think that big of a hole is used with the hanger in the '339 patent?

MR. SCHROEDER: Objection, scope. Objection, vague.

A. It doesn't show it in the specifications a hole that large.

Q. (By Ms. Holoubek) Okay. In paragraph 30 of your declaration. Paragraph 30 of your declaration mentions that the '339 patent repeatedly teaches the importance of minimizing openings or

interruptions in the fire-retardant sheathing; is that correct?

A. Yes.

Q. So does that have anything to do with the previous example that we were talking about --

MR. SCHROEDER: Objection --

Q. (By Ms. Holoubek) -- in terms of the size of the opening?

MR. SCHROEDER: Objection, vague.

A. I don't know what you're asking.

MS. HOLOUBEK: Okay. Okay. Why don't we take -- why don't we go ahead and take a break here.

MR. SCHROEDER: All right.

(WHEREIN, a lunch recess was taken from 12:05 p.m. to 12:47 p.m.)

Q. (By Ms. Holoubek) A couple quick questions since we're just coming back from the break. During the break did you speak to anyone about the subject matter of this deposition?

A. No.

Q. Did you get any feedback from anyone regarding your performance in this deposition?

A. No.

(Exhibit 2158, Installation

instructions for the FWH firewall hanger.)

Q. (By Ms. Holoubek) I'm going to hand you what has previously been marked as Exhibit 2158, and you refer to this exhibit in the document list in your declaration; is that correct?

A. Yes.

Q. Okay. Do you recognize Exhibit 2158?

A. Yes.

Q. What is Exhibit 2158?

A. It's an installation instructions for the FWH firewall hanger.

Q. Okay. And on these installation instructions there are listed six steps; is that correct?

A. Yes.

Q. So step one includes nailing the hanger to the frame wall; is that correct?

A. Yes.

Q. Okay. And in the figure next to step one is shown the back flange of a hanger flush with the top plate of the wall; is that correct?

(Court reporter interruption.)

A. Yeah, it says tight.

Q. (By Ms. Holoubek) Okay.

A. So --

Q. Okay. And then in step two the trusses are dropped into place; is that correct?

A. Yes.

Q. Okay. So then with step three, step three says (quote as read):

There should be a minimum gap of one and 7/16ths inches between the back of the FWH hanger and the face of the stud wall.

Is that correct?

A. Yes.

Q. The figure next to step three shows a hammer used to tap the bottom of the channel-shaped portion kind of towards the -- towards the truss; is that correct?

A. Yes.

Q. And essentially it's by tapping it with a hammer is the metal bending until it is tight to the truss?

A. So what I think --

MR. SCHROEDER: Objection, scope. You may answer.

A. So what I think that's actually showing is when you're putting that truss in it may actually jostle that around. And then --

Q. (By Ms. Holoubek) Sorry, when you say that because the court reporter can't do hand motions.

A. Jostled the hanger -- jostle the hanger or push it out of plane slightly from moving it into place. And so then once the truss is down you're basically just tapping it back to regain the proper spacing. I don't think you're deforming it or changing its shape necessarily.

Q. Okay. When you talk about jostling the hanger, do you mean the channel-shaped portion of the hanger relative to what's tight to the wall?

A. Relative to -- it's the bottom of the hanger just like it shows in the figure next to item three. Just that space in-between could be decreased slightly.

Q. Okay.

A. If it was decreased significantly I would say that probably would have to change the hanger out and put a new hanger in.

Q. Uh-huh. Okay. But that could happen?

A. Oh, yeah. I mean, I've seen --

MR. SCHROEDER: Objection, scope. Objection, speculation.

A. I've seen trusses destroyed on-site and

hangers run over and all kinds of stuff, so --

Q. (By Ms. Holoubek) Okay. But if everything goes smoothly this tapping the hanger will get back to a spacing of a minimum of one and 7/16ths inches, correct?

MR. SCHROEDER: Objection, scope. Objection, speculation.

A. Yes. That's what it says. It says to create a minimum of that gap and then it says that (quote as read):

A gap greater is preferable and does not decrease the carrying capacity of the hanger.

Q. (By Ms. Holoubek) Okay. So for -- strike that. Let me restart.

So the FWH hanger is designed for two layers of five-eighths-inch thick sheathing to be installed in that gap; is that correct?

A. So it's my understanding that you could put one or two.

Q. Okay. If you put two, two layers of five-eighths thick sheathing is equivalent to one and one-quarter inches, right, one and 4/16ths?

A. So if you take the number five-eighths and multiply it by two then you get one and a

quarter. But if you stack two five-eighths pieces of drywall together you will have more than one and a quarter.

Q. Why is that?

A. Because it's imperfect. So it's called five-eighths, but there may be slight variations and also it is susceptible to some temperature enlargement and also some moisture content if the moisture content -- it can actually grow slightly.

It can measure over five-eighths slightly and then when you put them together too, again, you got imperfect surface against another imperfect surface that it's not going to equal that exact number.

Q. Okay.

A. It's going to be larger than that.

Q. Okay. And -- okay. So that's why you have this extra wiggle room in the spacing of the channel-shaped portion to the frame wall?

MR. SCHROEDER: Objection, speculation. Objection, scope.

A. So I'm going to read what it says in the note that's shaded gray under line three (quote as read):

A gap greater than one and 7/16ths is

preferable and does not decrease the load capacity of the hanger. A larger gap makes the installation of the gypsum board easier.

So I think that partially answers your question with the direct verbiage from MiTek without me making an inference or postulating.

Q. (By Ms. Holoubek) I just want to jump down to the figure that's next to step six, which is talking about swinging the gypsum board into place. At least in that figure next to step six it looks like there's a small gap between the front face of the sheathing and the back of the channel-shaped portion of the hanger; is that right?

MR. SCHROEDER: Objection, vague.

A. Okay. I'm sorry. So I was looking at this trying to follow you, but I did not follow the question if you could --

Q. (By Ms. Holoubek) Okay. Sure. You see step six which talks about swing the gypsum board into place?

A. Yeah.

Q. I guess horizontally from that to the -- to the right there are two figures, and I'm talking about the figure on the left, the side-view.

A. Okay.

Q. And so when you look at that side-view figure, the part of the gypsum that is up, you know, inserted up behind the channel-shaped portion, there's a little bit of a gap between the front face of the gypsum and the back of that channel-shaped portion; is that right?

A. Yes.

Q. Okay. So if there can be a gap there, albeit small, and I understand that, you know, we're looking at these relative widths here, but even if it's a few 16ths of an inch, in a fire situation couldn't smoke or fire get in that gap up behind the channel-shaped portion between the drywall and the channel-shaped portion?

A. So one is I want to kind of explain what that left figure shows.

Q. Okay.

A. It shows one piece of drywall.

Q. Okay.

A. Not two.

Q. Okay.

A. So not to misconstrue the space or the gap.

Q. Uh-huh.

A. But -- so it would be possible for smoke or gases because fire produces gasses to get between the firewall barrier and the back of the hanger -- the channel portion of the hanger. I'd say that's a correct statement.

Q. Okay. So why doesn't the penetration where the extension flanges come all the way through the gypsum create an issue for the fire barrier?

MR. SCHROEDER: Objection, calls for speculation.

A. So we talked about the test before and so this passed the test. So we know that. Because there's special restrictions on that test. If you look at the way it's designed with the flanges that actually go against -- tight against the wall.

Q. (By Ms. Holoubek) And just for the record, you're pointing at the back flanges?

A. Yeah. So I'm pointing into the right figure with the circle around it.

Q. Uh-huh.

A. At item number one that literally says tight up to the upper right corner. And those -- those rear flanges that are triangular shaped, almost like a boat anchor, they go down to the bottom of the tip.

If the drywall -- the slot is inserted up and it's small, if gases were to get behind the flange of the channel and then go in the slot it would hit the -- the noncombustible metal.

Q. So for that to work, though, the back flange would have to extend down at least as far as the extension flange; is that right?

MR. SCHROEDER: Objection, calls for speculation.

A. It would hit that part. And the other part, if there was an actual openness, it would be a very, very, very small. But if you go back to what I had stated long ago about not penetrating firewalls, I think that's the importance of the test is to test that assembly to see and -- and then that's -- that brings about its viability.

Q. (By Ms. Holoubek) Uh-huh. But ultimately here there is a penetration, you'd agree, with the FWH hanger and the firewall; is that right?

MR. SCHROEDER: Objection, vague.

A. There --

Q. (By Ms. Holoubek) I -- I can restate.

So when the FWH hanger is installed and the wall assembly is put together, you'd agree that there is a penetration in the drywall caused by the

FWH hanger; is that right?

A. So if you use -- if you use the method that's described in the patent, one of the methods because there's several different installation methods.

Q. Uh-huh.

A. Where the slot is cut in the drywall that is actually larger than the -- the extension portion of the connector.

Q. Uh-huh.

A. Then there would be space between the edge of the drywall inside the slot and the outer edge of the extension of the connector.

Q. Uh-huh.

A. Which is also described in the specification. So it describes it as being a maximum of an eighth of an inch. So there would be a portion where if something came into that, let's call it a cavity, into that cavity, that there would be a backup noncombustible material there.

But it also states in the specification that when you cut it with -- with the -- cut the slot in the drywall it may extend slightly further than the extension part of the connector, which would leave a small slotted penetration that would

not have a backup.

That would be -- I mean, in what I see that would exist. And I think that, again, is where the importance of the testing comes in to see does that small of a amount of area of a hole, does it diminish the ability of the two-hour rated wall, of that whole assembly as it's put together, and the testing says no, it's not, that it does not decrease the efficacy of the wall.

Q. (By Ms. Holoubek) Would you know that it didn't decrease the efficacy of the wall if you didn't run the fire rating test?

MR. SCHROEDER: Objection, speculation.

A. I wouldn't know. That's not something I would be a part of, you know. I can only look at the -- look at the test and say, okay, well, the test passed. Again, when my -- my teaching, what my whole career has taught me is to not penetrate the wall.

So now in light of seeing this hanger and learning about it and the way it's installed and the testing procedures and everything, I would be more comfortable to use it.

I would still have some reservation and have to look at combining structural elements, which

is -- like I said, there's two parts to the thing. And so again, that's all -- that's based on the code official at any given municipality who may see it differently than another municipality.

Q. (By Ms. Holoubek) Uh-huh. You were talking about the slot might be slightly longer than the extension flange; is that correct?

A. Yes.

Q. How is that controlled in the installation process? Like what happens if a rogue installer just cuts a slot that's too long?

MR. SCHROEDER: Objection, speculation. Objection, scope.

A. So -- so I don't know for sure what would happen. I mean, that's the blunt of it is I just don't know.

Q. Uh-huh.

A. I know that there are templates that they sell that you can use to prevent that, but anything can happen especially in the field, and I've seen all kinds of crazy stuff. So I don't know if -- you know, if at that -- at that point you call an engineer, if you call the code official.

You try to smear something over and cover it up because I guarantee you there's

contractors that do that. So I don't know how that's -- that would actually be handled at that point.

Q. (By Ms. Holoubek) Okay. And then in terms of that slot, if it happens to be cut a little wide, is there a way to get fireproofing materials back in that space behind the channel-shaped portion to where the slot is located?

MR. SCHROEDER: Objection, scope. Objection, calls for speculation. You may answer.

A. So I've thought about this because I had the same question. It's a valid question. And again, I don't know that this is in practice and I've never done this. I -- but what I would do, if I felt there was a need to put something in there -- which according to the fire test is not.

But if there is a need, if there's some -- something, I would put a fire-rated drywall mud because it's -- it's malleable enough to get behind there, and I think there might be enough room to get a knife back there and pack it in --

Q. Uh-huh.

A. -- but I don't know that's possible --

Q. Uh-huh.

A. -- that would be my attempt. And I may

fail miserably, but that would be what I would -- what I would attempt to do.

Q. (By Ms. Holoubek) Okay. If we look at page 79 through 80 of your declaration, and I'm looking specifically at paragraph 131. I'll let you get there.

A. Page 79 through 80?

Q. Yes, paragraph 131 spans the two pages.

A. That's great. You always do this where I have to flip the page back and forth.

Q. I didn't write the declaration.

A. It can't be on -- well, it's printed on --

Q. Sure.

A. Double-sided.

Q. I see.

A. I can't sit here and look at the continuation. So paragraph 131.

Q. Paragraph 131. So here on page 79, paragraph 131 of your declaration you say that (quote as read):

> A POSA would not have had a reasonable expectation of success in maintaining the fire resistance of the firewall after cutting openings in the

fire-retardant sheathing.

Is that correct?

A. Yes.

Q. Is it important for the '339 patent claims that the fire rating of the firewall be maintained even with the cuts?

A. So it is important because if the fire rating of the wall -- what I'm talking about the entire wall assembly, including the hanger. If it's not maintained then you know longer have a rated wall, and that's what the testing proved that it was okay.

So the testing says we've tested it and with it installed it meets all the requirements of a two-hour -- two-hour rated wall. So that's -- I mean, that's the result.

Q. Okay. And in this paragraph you're referring to the hangers of Cullen, Yamaguchi, and Robinson; is that correct?

A. Yes.

Q. And you say that those openings would be relatively large cutouts; is that correct?

A. Yes.

Q. Why is the relatively large cutout different from what's shown for the '339 patent

claims?

A. We would have to go back to the International Building Code Chapter 7 again and look at what it calls annular space around the penetration and it minimizes that to one-eighth of an inch.

Q. So understanding that, but if you were cutting the opening close to the legs of say Cullen, why isn't that just like cutting a slot close to the '339 patent hanger?

MR. SCHROEDER: Objection, vague.

A. So you mentioned Cullen.

Q. (By Ms. Holoubek) Yes.

A. Cullen is -- is not -- I mentioned Cullen, but it's not in this diagram.

Q. Okay.

A. Isn't -- I mean, is it maybe on the previous page or --

Q. No, I'm just looking at the sentence in 131 that --

A. Yeah.

Q. -- says (quote as read):

The hangers of Cullen, Yamaguchi, and Robinson to the wall of Bundy each require the hanger to extend through

one or more openings in the fire-retardant sheathing.

A. Right. If you look at these two illustrations, which actually show the top one is Yamaguchi and then the lower one is Robinson, the -- again, if you go back to a penetration described in seven -- in chapter 7, it's like a conduit or a box and that box has a wall that goes back.

So you actually through the -- through the depth of the drywall you have a parallel noncombustible material that goes all the way through the depth of that section with then a maximum of an eighth-inch gap between it that can be filled with fire caulk.

Q. Uh-huh.

A. Where this is a much, much bigger area to fill up, and I don't know -- again, I'm not a fire caulk expert. I don't know what the specifications on those are or how much you can use or any of that data. I don't have any of that and I'm not -- I'm not offering any opinions on that. I'm just purporting the difference.

Q. So you're pointing out the large openings for Yamaguchi and Robinson. Does that mean that Cullen does not require large openings?

A. Cullen, as far as I remember, has two -- two extension portions that come down. They almost look like L's, and -- which would create two slots. So I think Cullen would be slightly different unless you cut the space out between the slot as one, which would be much more similar to the diagrams shown to this -- on page 80.

Q. But for Cullen you could just cut two slots to go around the legs of Cullen; is that correct?

A. You could. The only problem with that is drywall is really brittle, and if you cut two slots close together that tab that's in-between them more often than not gets broken off. Then you leave -- you would leave a hole in-between those two flanges.

Q. For the '339 patent for the extension flanges could you kind of reconfigure the '339 patent hanger so that its extension flanges are wider than kind of like Cullen?

MR. SCHROEDER: Objection, vague and objection, scope. You may answer.

A. So I believe that the patent is not restrictive to whether they're together or not. So it could be configured in that manner. That may

bring about the problem I just mentioned.

Q. (By Ms. Holoubek) Okay. So if the '339 hanger had extension flanges that were spaced apart from each other, to install it you'd have to have two slits; is that correct?

A. Two slits or you'd have to, again, cut out that entire block between the two flanges. And the -- I think the construction feasibility of that would then go back and do what's the space between those two flanges? How much is there? Because you need to have enough drywall to actually keep it in place so it just doesn't snap off.

Q. It could be done, right?

A. Yeah, I think it's possible.

Q. Okay. And so -- similarly for Cullen you could have two slits in a drywall with the drywall kind of coming up in-between the slits; is that correct?

MR. SCHROEDER: Objection, form.

A. So yes, you could slit the drywall so that it -- similar to the way it was pushed up with the '339 patent, pushing up, you could push it up behind that channel portion -- or the two legs of Cullen. My only issue there is, again, how close those slits are and likely would cause that center

section to break off.

Q. (By Ms. Holoubek) But that would be the case in the modified '339 hanger, correct?

A. It depends.

MR. SCHROEDER: Objection, calls for speculation. Calls for hypothetical.

A. So since I don't know what that would look like, it just depends on the closeness of the extension portion of that hanger, of that proposed possible sometime future hanger.

Q. (By Ms. Holoubek) Okay. One of the things we've been talking about in this section is that one-eighth of an inch distance. If we flip back to paragraph 102 of your declaration. I'll get you the page number here in a second. It's on page 67.

A. And 68. You did it to me again.

Q. Yes. Paragraph 102 of your declaration discusses the term close conformance; is that right?

A. Yes.

Q. And then in paragraph 103 you cite to the patent's reference of less than or equal to one-eighths inch; is that correct?

A. Yes.

Q. Does the '339 patent actually describe

that one-eighths inch value as, quote, close conformance?

MR. SCHROEDER: Objection, form.

A. I don't think that the -- that the close conformance I believe is in the claims portion and I think the one-eighth is in the specifications portion so they don't appear together, I believe.

Q. (By Ms. Holoubek) You said you don't think the close conformance appears in the claims portion or did you --

A. No, I said it appears in the claims portion and then the -- the one-eighths inch appears in the specification portion.

Q. Uh-huh.

A. And I can tell you what I think close conformance is is like form fitting would be like a synonym for that. So form fitting. And -- and when I was in the military we did what was called flying map of the earth, which means you're directly over the terrain.

You don't create a lot of distance. It's to hide helicopters. And so that would be another form of close conformance. I think that that form fitting means that your general shape is the general shape with the close proximity to -- to

the shape of the connector.

Q. Uh-huh. So when you're referring here to less than or equal to one-eighths of an inch, are you saying that's indicative of what the patent means as close conformance?

A. I think close conformance is telling you that it's form fitting, and that the specification then gives you the distance of what -- of the close conformity.

Q. Okay. So does that mean that say something that is more than an eighth of an inch away from the flange would not be in close conformance?

A. So as it's described in the specification, and I can tell you why -- I'm going to explain why I think this, but as it's described it says that you don't want the edge of the drywall of the slot to be further -- it can be less than, but not further than one-eighth of an inch from the edge of the extension portion of the hanger on both sides.

So you've got -- you've got a maximum of one-eighth of an inch on one side and at the same time concurrently a maximum of an eighth of an inch on the opposite side in close conformance, meaning

in the general shape of the object.

Q. Uh-huh.

A. I think that, again -- earlier I testified about when you -- when you made the hypothetical about cutting the slot much larger, how the drywall could slide side to side.

Q. Uh-huh.

A. That's possible with that slot too. So if you -- if you were to use a tolerance, which is widely used in steel, is 1/16th of an inch, so if you use the tolerance of 1/16th of an inch of close conformance, in other words on either side of the extension portion, at 1/16th of an inch and 1/16ths of an inch, if it were to slide and be mated or adjacent or next to, touching the flange on one side, that would leave an eighth maximum on the other side.

And I think that's where you're -- they get that eighth-inch maximum, but the intention is to have a slot that's really almost snug to it, but there is -- for insulation purposes and other, there has to be a little bit of distance between the two.

Q. Okay. Do you think that a distance of 3/16ths of an inch, so more than one-eighth would be considered in close conformance?

A. So there's two ways to see that. If you go by the model I just described as to where I think that the one-eighth of an inch comes from, that maximum, because it does say less than or equal to, if -- if your -- if you use the 1/16th to tolerance model from many other construction specifications and -- and tolerances, then that would give you -- again, if you were tight on the one side, a maximum of one-eighth on the other side.

And it could be anything between zero and one-eighth as you had some fluctuation in placement of that slot. If you were to use an eighth -- like a full eighth and a full eighth on each side, like say you cut it that way, then if you push it over you would have a maximum of a quarter inch, but I think that's beyond what they're actually saying they want.

But -- so if -- if a -- if a contractor were to read that and say, oh, that means I need to lay the template -- literally make a template, their own template of the width of the extension portion of the hanger, if they lay that down and then marked an eighth of an inch on each side and cut that, then had some play over, they would end up with a maximum of a quarter inch, which I think would be out of

regulation, but I could see how a contractor would make that mistake.

Q. Okay. Would that --

A. That's more than two times -- that's two times what it says in the specification. 3/16ths would be 50 percent more. So -- a 16th doesn't sound like a lot, but 50 percent is a lot. So when you're looking on orders of magnitude, it's almost -- it's almost the next order up.

I mean, it's another whole space. So in my opinion it's too much, but I'm not MiTek. I can't say what -- what they say. I can just say what I read and how I interpret it.

Q. Do you think someone else reading the specification could interpret it to be the quarter inch like you were referring to?

A. So I don't think they can interpret it to mean that the tolerance is a quarter inch. I think they can make the mistake of thinking I can have an eighth on each side and then unless they were really accurate at getting that board on there, then they would be over an eighth.

Q. Okay.

A. So I think they would lead themselves into not meeting the criteria.

Q. Okay. Because they misinterpreted what was being described in the patent?
A. Yes. Right.
Q. Okay. I actually want to go backwards in your declaration to paragraph 82.
A. It's all on one page.
Q. In paragraph 82 your declaration talks about the phrase opening outwardly; is that correct?
A. Yes.
Q. The opening in the sheathing of the '339 patent is created by cutting into the sheathing from the exterior edge, correct?
A. Yes.
Q. In the last line of paragraph 83 says that (quote as read):

> Another object in the exterior environment can enter the negative space that's created by the opening.

Is that correct?
A. The last line?
Q. The last -- in the last sentence of --
A. We moved from 82 to 83, right?
Q. Yes.
A. Not the last line, but maybe the last sentence.

Q. The last sentence, yes. The last sentence?

A. I looked at the last line and I was like -- okay.

Q. The last sentence of paragraph 83 says that (quote as read):

Another object in the exterior environment can enter the negative space.

A. Yes.

Q. Is that correct?

A. Yes, that's correct.

Q. And when you're talking about entering the negative space, you mean from outside going into the opening; is that correct?

A. Yes.

Q. So given that something is coming into the space from the outside, doesn't that mean the opening opens inwardly as opposed to outwardly?

MR. SCHROEDER: Objection, vague.

A. So I don't think so because the opening is technically in the exterior edge. So it opens to the outside. That's the opening. It's opening to the outside. It's opening outwardly, out of the element.

Now, whether it can accept things in through its outside opening, that doesn't mean it's opening -- it's opening inwardly. It's actually closing because it closes up and stops. It's opening outwardly and closing inwardly.

Q. (By Ms. Holoubek) Okay. In paragraphs 85 through 93 reference other patents and publications that you say use the term opening outwardly; is that correct?

A. One moment, please. Okay. Now, put me on track.

Q. I'm referring to paragraphs 85 through 93.

A. Okay. Yes.

Q. Those paragraphs reference other patents and publications you say use the term opening outwardly; is that correct?

A. Yes.

Q. Did you research whether any other patents and publications use the term opening inwardly?

A. No, I didn't.

Q. Are any of the patents and publications mentioned in paragraphs 85 through 93 identified by the specification of the '339 patent?

A. No.
Q. Turning to paragraph 105 of your declaration, you indicate that (quote as read):
You offer no opinions as to the written description support of any of the claims of the '339 patent.
Is that correct?
A. Yes.
Q. Why do you offer no opinions as to the written description support of the '339 patent claims?
A. Because that was beyond --
MR. SCHROEDER: I want to object to the extent that the answer calls for any communications with counsel, but you may otherwise --
A. So -- so based on that objection, I don't think I can answer the question.
Q. (By Ms. Holoubek) Did you consider the written description support of any of the claims of the '339 patent?
A. I read them.
Q. Did you consider the written description support of any of the claims of the '339 patent?
MR. SCHROEDER: Objection, vague.

A. I don't -- I'm not sure what you mean.
Q. (By Ms. Holoubek) Did you look through the patent specification for written description support for any of the claims of the '339 patent?
MR. SCHROEDER: Objection, vague.
A. I'm still not sure what you're asking. I don't -- I just don't understand the question.
Q. (By Ms. Holoubek) Okay. So paragraph 104 you indicate that (quote as read):
Simpson is arguing certain claims do not have written description support in the '339 patent.
Is that correct?
A. Yeah, so if you read that written description support section I think it outlines what my understanding is.
Q. Did you analyze the claims any further to see whether claim elements did have written description support?
A. I don't -- I mean, I don't have any opinions on that.
Q. I'm not asking if you have an opinion. I'm asking if you looked at the claims to even see if they had written description support?
A. So I read the specification and read

the claims, and I followed through the claims as it pertains to the specification, but I don't -- I mean, that's part -- you know, I read the patent. So I don't really understand what you're saying. If I looked for links between the two?

Q. Correct.

A. Yeah, basically.

Q. So you did look for links between the claims in the specifications?

MR. SCHROEDER: Objection, vague.

A. From the standpoint of reading it and saying, okay, does the description describe what I saw in the -- in the specification.

Q. (By Ms. Holoubek) Okay. But --

A. To that extent.

Q. Okay. But you didn't provide any of those linkages in the opinion; is that correct?

MR. SCHROEDER: Objection, vague.

A. I'm not sure if I did. Having not -- I mean, I've read this, I wrote it, but it's -- I've read so much other stuff I'm not saying there isn't, but I'm not trying to opine on that.

Q. (By Ms. Holoubek) Okay. So you're saying you looked for written description to support the claims?

A. No.
Q. Okay.
A. No, I --
MR. SCHROEDER: Objection, yeah.
A. I'm not saying that. What I'm saying is that I read them both and that the opportunity to see the possibility of a link is there, but I wasn't doing that. That wasn't what I was trying to do. I wasn't looking for that.
Q. (By Ms. Holoubek) Okay.
A. Specifically.
Q. So you did not do that?
A. Correct.
Q. Is that correct? Okay. And then in paragraph 108 you indicate that (quote as read):
You offer no opinions as to whether the term firewall hanger is definite.
Is that correct?
A. Yes.
Q. Did you consider whether the term firewall hanger was definite?
A. No.
Q. Okay. So you read the claims; is that correct?
A. Yes.

Q. Does claim one refer to a firewall hanger?
A. Yes.
Q. Okay. So when you read the term firewall hanger in the claims did you consider whether or not that term was definite or indefinite?
MR. SCHROEDER: Objection, vague.
A. No.
Q. (By Ms. Holoubek) Okay. And then in paragraph 123 you indicate that you had no opinions on the difference between an extension flange and a planer extension plate?
(Court reporter interruption.)
A. In 123?
Q. (By Ms. Holoubek) Yes.
A. Yes, that's correct.
Q. Did you consider what might be the difference between an extension flange and a planer extension plate?
MR. SCHROEDER: Objection, scope. Objection, vague.
A. No, not really.
Q. (By Ms. Holoubek) Okay. Let's turn to paragraph 127. 127 is a long paragraph and I guess actually goes with figures all the way through to

page 78. The portion of paragraph 127 that's on page 77, you refer to the photographs on page 78 of your declaration in the second bullet; is that correct?

A. Yes.

Q. Okay. On page 78 the figures at the top of the page don't show a face-mount hanger -- or sorry, figures at the top of the page do show a face-mount hanger; is that correct?

A. Yes.

Q. Okay. And the hanger in the top set of figures on page 78 does not have a top flange; is that correct?

A. Correct.

Q. So the hangers shown in the images on the top half of page 78 is not the Cullen hanger, for example; is that correct?

A. No, it's not the Cullen hanger.

Q. Okay. And the hanger in those images on the top half of page 78 is not the Yamaguchi hanger; is that correct?

A. That's correct.

Q. And similarly, those images on the top half of page 78 is not the Robinson hanger; is that correct?

A. Correct.

Q. Okay. And does the same go for the second set of images? Specifically the -- the second set of images also doesn't show the Cullen, Yamaguchi, or Robinson hanger; is that correct?

A. That's correct.

(Exhibit 1004, The Cullen hanger.)

Q. (By Ms. Holoubek) Okay. I'm going to hand you what has been marked as Exhibit 1004. Do you recognize Exhibit 1004?

A. Yes.

Q. And what is Exhibit 1004?

A. It's the Cullen hanger.

Q. Okay. A little bit about load paths. Is load path calculation a common task of a construction engineer?

A. So a construction engineer, I would say no. Structural engineer, yes.

Q. Structural engineer, okay. What's the difference between a construction engineer and a structural engineer?

A. Structural engineer is specifically responsible for the design and creation of the loads and the structural stability of a building. A construction engineer is wide ranging.

It can be anyone from a construction manager to a project manager to someone who is doing site calculations for earth movement. It's more in the civil engineer -- well, we're all under the civil engineer brand, but it's more on the general civil side.

Q. Okay. Talking in terms of the declaration and a person of skill in the art, is a load path calculation within the skill set of a person of skill in the art?

MR. SCHROEDER: Objection, scope.

A. So earlier in the deposition I had discussed -- we talked about a designer versus an engineer and how a designer can design and an engineer can design as well, but the engineer is the one that's responsible.

So a designer may not specifically take that into account. They may just be working on geometries and trying to -- trying to create something that looks like it might work, whereas then the engineer wouldn't then take into account the load path specifically.

Q. (By Ms. Holoubek) Okay. So if you turn back to paragraph 23 of your declaration.

A. Okay.

Q. In paragraph 23 it says (quote as read):

I have been informed Columbia has advanced that a person of ordinary skill in the art at this time would be a person who would have an acquired body of knowledge gained through formal education or practical experience providing an equivalent to --

And then it lists several qualifications there. Do you agree with that description of a person of ordinary skill in the art in the 2013 time frame?

A. Yes.

Q. Okay. So with that understanding of a person of skill in the art do you agree that load path calculation is within the skill set of a person of skill in the art as it's been defined here?

A. Yes.

Q. Okay. Are you familiar with the MiTek FWH hanger?

A. To the degree that I've written this declaration and looked at it and physically held one in my hands.

Q. Okay. Are you aware that the FWH --

sorry, the FWH hanger series has different hangers rated for different loads?

A. Yes.

Q. Okay. And wasn't it common in the 2013 time frame for joist hangers to be designed to carry a specific load so that different hangers might have different load ratings?

A. Yes.

Q. Okay. Can you refer to paragraph 152 of your declaration?

A. I'm there.

Q. Okay. In paragraph 152 you raise a concern that Cullen's sidewalls might buckle due to the change in load path if you space the joist space end away from Cullen's backplate; is that correct?

A. Yes.

Q. So kind of alongside of that, can you turn to figure two of the '339 patent? I'd like you to look at that alongside figure one from Cullen. Okay. Both the '339 patent and Cullen have top flanges that attach to the top plate; is that correct?

A. Yes.

Q. And both the '339 patent and Cullen have a back flange that extends down from the

extension flanges and rests against the frame wall; is that correct?

A. Yes.

Q. And both the '339 patent and Cullen hanger have extension flanges that extend from the back flange and through -- through the sheathing; is that right?

MR. SCHROEDER: Objection, form. Objection, misrepresents the document.

Q. (By Ms. Holoubek) Yep. I'll rephrase that.

So both the '339 patent and the Cullen hanger have extension flanges that extend out from the back flange; is that correct?

MR. SCHROEDER: I will repeat that. It's objection, form. Objection, misrepresents the document in Exhibit 1004.

A. So as this Cullen patent is written, it does not provide for that. It provides for the joist to be flush with the back flange, which would be inferred that those are extensions, but that they are truly part of what we might call the channel even though it doesn't have a bottom in it. So that full -- the full flange that extends from the backplate, that full flange is -- is indicated to

support the joist.

Q. (By Ms. Holoubek) Okay.

A. And work with the joist being pushed all -- all the way up to the back.

Q. Okay. My questions are sort of in the absence of a joist, Cullen does have flanges that extend outwardly from the back flange; is that correct?

A. So it's -- it's one unit or one -- one piece, but yeah, it's attached to the back flange. So you have two protruding outwardly plates or L-shaped plates that connect through a bend to the back flange.

Q. Okay. And then in -- while it's not shown in the figure, Cullen does describe having a seat that would be at the bottom of say where the lines 38 and 40 are, the bottom of that channel-shaped portion. You agree that there would be a seat there; is that correct?

MR. SCHROEDER: Objection, vague.

A. So I have -- in my declaration I show a diagram that does show a seat. The one thing that if you look at figure four on page five of Cullen patent, you see the flattened-out connector prior to it being bent -- bent.

Q. (By Ms. Holoubek) Uh-huh.
A. If you look towards the bottom of the page, which would be the extension -- the extended most part of the flange when it's broke down into plane, to -- there's no way to make this and connect those two pieces at the bottom. Not to say you couldn't have the one leg on the right be longer and bend that in to create the -- what did you call it?
Q. Seat.
A. The seat. -- to create a seat. But it wouldn't be connecting to the other side without a weld.
Q. So you could have a weld that would create the seat; is that correct?
A. Possibly. But it's not going to be one -- one piece formed. One formed piece.
Q. And you mentioned if you had a seat you would extend one of these legs on Cullen. You could bend it up and then weld it to the other side?
A. To the other side.
Q. Is that correct?
A. Yes.
Q. Okay. And you agree that Cullen does disclose a seat?
A. Yes.

Q. Between there?
A. Yes.
Q. And so if you are concerned that the Cullen hanger might buckle if you space the joist apart from the back flange, why aren't you equally concerned that the '339 patent flanges might buckle when you space the joist away from the back flange?
MR. SCHROEDER: Objection, foundation. Objection, scope.
A. And now the answer. So it has to do with slenderness of the element and the direction of the load. So the width-to-depth ratio of the extension of '339 patent is much deeper than it is long, and therefore it literally cannot buckle.
Q. (By Ms. Holoubek) You say deeper than it is long. I want to make sure I understand.
A. It's deeper in vertical depth, up and down vertically as it would be hanging than it would be from the truss -- or from its channel plate to the back faceplate that would be firm against the wall.
So that's an inch and a half, inch and 9/16ths or something like that. We can go back and look at that. What does it say right here. One inch and 7/16ths. So roughly an inch and a half

between those two flanges or those two plates, the backplate and the back part of the channel.

But it's seven, eight, nine inches deep. So that prevents it from buckling, that depth. Whereas the Cullen hanger is shallow and long, so it's vulnerable to what's called lateral torsional buckling.

The same could be seen if you've ever seen movie footage of Galloping Gertie, Tacoma Narrows Bridge, due to its slenderness at that point in time bridges were trying to be beautiful and so they made it really thin and sleek, and it buckles because of it.

And they went and retrofitted the Golden Gate Bridge right after that and made the deck much deeper to prevent that buckling. But that was all lateral torsional buckling. It's the same phenomenon that concerns me with the Cullen hanger, but not the '339 hanger.

Q. And the point at which you get concerned is when the vertical length of the extension flange becomes less than the sort of horizontal depth of that -- the space covered by the extension flange?

A. So it's -- so there's multiple

components. The width or the thickness of the material and then the depth to -- depth, I mean vertically, the depth to the length of its protrusion or extension, that ratio could cause a local -- a local buckling.

Q. Okay. So in Cullen if a hanger designer knows how to address load path, I mean, you just mentioned the width of the material or the thickness of the material, can some of that be mitigated by increasing the thickness of the Cullen flanges?

A. Yes.

MR. SCHROEDER: I just want to say objection, calls for an incomplete hypothetical.

A. Okay. But -- but the thickness plays a big part in that. The thickness of the material. So if you use like a quarter-inch material and cut this same piece out, then yeah, it likely would not buckle.

(Exhibit 2133, The DG hanger produced by Simpson Strong-Tie.)

Q. (By Ms. Holoubek) So I'm going to hand you what has been marked as Exhibit 2133. Do you recognize Exhibit 2133?

A. Yes.

Q. What is Exhibit 2133?
A. It is the DG -- is this -- the DG hanger produced by Simpson Strong-Tie.
Q. Okay. And on the front page, I guess page one of 2133 is a picture of the DG hanger with a truss loaded; is that correct?
A. What do you mean with a truss loaded?
Q. With a truss installed on the hanger. Sorry.
A. I thought you meant it had loads on it.
Q. I see.
A. Like a loaded truss.
Q. Understood.
A. Okay. With a truss installed in the hanger, yes.
Q. So -- okay. So the figure on page one is the DG hanger with a truss installed in the hanger; is that correct?
A. Yes.
Q. Okay. And the truss is spaced apart from the framed wall by a distance; is that correct?
A. Yes.
Q. And the combination, I guess, of the -- you have an L-shape that comes off of the black flange; is that correct?

A. Yes.
Q. Okay. And the DG hanger is a commercial product; is that correct?
A. Yes.
Q. So you would agree that it is possible to have a commercial product with an L-shaped hanger and the truss space from the wall without the hanger flanges buckling; is that correct?
MR. SCHROEDER: I'm going to object, vague, incomplete hypothetical.
A. So there are differences in this DG hanger from the Cullen hanger. One is the DG hanger, if you look -- the stop or the backstop on the Cullen hanger is all the way back at the bend where the hangers -- we'll just call it the channel extends from the backplate.
Q. (By Ms. Holoubek) I understand that. In our discussion we were talking about having the hanger nonetheless hold the truss away from the back flange, and so your discussion on paragraph 152, right, refers to the joist hanger moved away from the backplate, correct?
A. It does for that Cullen product.
Q. Right. And so with Cullen you say spacing the end of the joist creates a moment

force -- sorry. Spacing the end of the joist from I believe you say the sill in your declaration, it says it creates a moment force. But similarly, the DG hanger shown here in Exhibit 2133 also spaces the joist or truss in this case away from the wall, correct?

MR. SCHROEDER: I'm going to object to form. Also object to relevance. You may continue.

A. So the way the DG hanger is oriented, and you can see, that extension part of that truss -- or of that hanger, the top of it aligns closely with the flange mount, the top flange mount that nails to the double top plate.

And it creates a couple moment where you have a tension force in the top of that and then a compression force in the bottom that is distributed right back into this same double-top plate.

And that's not the case with the Cullen product because these extensions are down below the double-top plate and there's nothing to restrict this moment force or this other couple. It actually literally just would go back into the wall. So that's -- that's -- when we talk about load paths, that's -- that specifically is an issue.

Q. (By Ms. Holoubek) So is it important that the extension flange have a -- I guess sort of be colinear with the top flange?

MR. SCHROEDER: Objection, hypothetical.

A. It depends. It depends on the loads and it depends on the forming of the product, how it's actually cold formed. And then it also depends on that depth because the distance between the two couples is directly proportional to the size of the tension and compression forces.

So as they are -- as distance between them gets greater, the intensity decreases. So their magnitude decreases with the larger moment arm, which the MiTek hanger has a really large moment arm and the Cullen product has a short moment arm.

Q. (By Ms. Holoubek) Okay. And going back to Cullen, another way to address the moment issues is simply to ensure the load does not exceed the load capacity of the hanger, you know, past its buckling point; is that correct?

A. Yes, and that directly impacts its usability.

Q. Okay. Do you know what total amount of

force applied to Cullen's hanger would make the sidewalls buckle?

A. No.

Q. Do you know the load rating of Cullen's hanger?

A. No.

Q. And do you know what the load rating would be if you space the joist or truss away from the wall in the Cullen hanger?

A. Less than it would be if it was -- if it was installed in accordance with their patent.

Q. But you don't know the exact number; is that correct?

A. No, I don't know the number.

Q. Okay. In paragraph 154 of your declaration, on page 98. Paragraph 154 on page 98, you talk about whether a person of skill in the art would have believed that the joist hanger of Cullen would have been able to maintain the space for sheathing to be installed; is that correct?

A. Yes.

Q. And you base this opinion on statements referenced in the bullet points here on paragraph 154; is that correct?

A. That's some of the basis, but also

bring in my own experience into my opinion.

Q. Okay. You also raise a similar opinion against Yamaguchi based on these employee statements in paragraph 165 of your declaration; is that correct?

A. Yes.

[redacted]

[redacted]

Q. So these bullet points in the paragraph 154 are all quotations discussing the MiTek hanger; is that correct?

A. Yes.

Q. Okay. In paragraphs 162 to 163 of your declaration. Apologies, we're on the front and back of a page again. You state that (quote as read):

> A bend in Yamaguchi's hanger would have to resist the rotational force asserted by the joist.

Is that correct?

MR. SCHROEDER: Can you repeat that question?

COURT REPORTER: Question: You state that (quote as read):

> A bend in Yamaguchi's hanger would have to resist the rotational force asserted by the joist.

Is that correct?

MR. SCHROEDER: I'm going to object to vague, but you may answer.

A. Yes.

Q. (By Ms. Holoubek) Okay. And the bend you're talking about is what is illustrated on page 104 with the arrow for bend; is that correct?

A. Yes.

Q. And that bend is a horizontal bend defined between Yamaguchi's extension portion and the back flange; is that correct?

MR. SCHROEDER: Objection, form.

A. So it's a bend coming at the -- out away from the -- what would be the sill plate shown in Yamaguchi's patent. So it bends away from that.

Q. (By Ms. Holoubek) So in this particular figure that's illustrated here on page 104 it's just the hanger, correct?

A. Yes.

Q. So the bend is between the vertical back flange and then the inclined portion of Yamaguchi; is that correct?

A. Yes. The inclined -- what would be the extension portion.

Q. And in this figure on page 104 shows

these vertical fins coupled to both the back flange and that inclined portion of the extension flange; is that correct?

A. Yes.

MR. SCHROEDER: Objection, form. You already answered.

A. Two fins, yes.

Q. (By Ms. Holoubek) Right. But you'd agree that those are connected in the middle where you have a line; is that correct?

A. It doesn't say it's connected. I assume that they were bypassing each other because there's no way to make that bend without being two separate pieces. And then you bend -- you bent it together it would come -- it would bring the opening together and that's why they show a line. If it wasn't -- if it was connected there would be no line there. It would just be a solid piece. The line indicates that it's two pieces.

(Exhibit 1007, The Yamaguchi connector.)

Q. (By Ms. Holoubek) Okay. I'm going to show you what's been marked as Exhibit 1007. Do you recognize Exhibit 1007?

A. Yes.

Q. Okay. What is Exhibit 1007?
A. The Yamaguchi connector.
Q. Okay. If you turn to page ten. Actually, turn to page five. Ten and five are the translated version of a figure.
A. Page five?
Q. Yes. So page five shows that fin we were talking about in the Yamaguchi hanger without a line, correct?
A. Yes, but that's not possible to make.
Q. When you say it's not possible to make, do you mean out of one sheet of sheet metal or do you mean not possible to make at all?
A. It's not possible to make out of one piece of cold-formed metal.
Q. Okay. But it would be possible with welding, for example; is that correct?
A. Yes, it's possible with welding.
Q. Okay. So the hanger in -- on page five does not show a weld line between -- I guess on that fin, correct?
A. No, it doesn't show a weld line. It's the only -- the only one that does not show that -- I wouldn't call it a weld line. I'd call it a mating line. And you can see on page two, the

figure at the top of the page, you can see how those were two separate pieces. And the same on page four, at the bottom of the page you can see how it's two separate pieces.

Q. When you say you can see how it's two separate pieces, do you mean just simply because it has a line?

A. No. So if you look at the page two at the top, you can see that there is a -- at the bent -- at where the bend occurs in the backplate, if you look over to that vertical section that I'm saying is two pieces, you can see how there's like a piece at that bend that's missing.

So when that's fabricated those are tabs extending from each of -- one is -- one is extending from the inclined extension and the other one is extending from the backplate and they're separated.

And for manufacturing there's a little circular piece that's taken out of the -- the plate that's attached to the back -- the backplate that allows the bend to happen on the plate. And then when that bend happens it brings those two pieces together.

Q. Right. So those two pieces are brought

together and that's what's shown at the bottom of figure four -- or sorry, the bottom of page four; is that correct?

A. Yes.

Q. Okay. And then in figure five on page five, so you have a vertical fin that is coupled both to the back flange and the inclined portion of the extension flange; is that correct?

MR. SCHROEDER: Objection, form. Objection, vague.

A. So in five it doesn't show the line. In my opinion it's been left out of that specific drawing. If you took the hanger from page two and then you literally just moved it over to the assembly of page five, that would be what would appear to be the correct form of that -- of that hanger.

Q. (By Ms. Holoubek) When you look at page five in figure five, it is shown as just talking about that fin now being a solid piece; is that correct?

A. That's what the drawing depicts, but none of the other drawings coordinate with it.

Q. Okay.

A. So one out of all of them. So that's

the one I believe that's a mistake because you can't see the -- on the other side of the -- of the joist you can't see that, so it's only in one spot out of all of these, which I think it's just a mistake.

Q. What is your basis for believing that when those portions come together as they are folded that they would bypass each other and not be joined together as is shown in figure five?

A. Well, so I don't think it shows them joined together. It shows a piece without the line, but again, I think that's a mistake.

Q. What about the other figures leads you to believe that the pieces are just bypassing each other?

A. Well, they don't have to be bypassing. They could be cut so that when it's folded together they just abut, and that's probably what's actually shown is them abutting -- abutting together.

Q. And then figure five, though, does indicate that it is one piece; is that correct?

A. No, I don't believe that. We're just going to disagree on this, but I believe that it's a mistake in the drawing because none of the other drawings show that.

Q. Okay. And you don't think that by

welding two pieces of metal that are abutting that you would end up with the solid piece that's shown in figure five?

MR. SCHROEDER: Objection, asked and answered.

A. Yeah, I did answer that. So I think -- I don't think it would look the same, but yeah, you could end up -- you could weld that. That's a possibility. Still, you're going to have an issue at the -- then the other bend at the bottom.

Q. (By Ms. Holoubek) But if you have these fins that are welded and they are connected to the incline portion in the back flange, wouldn't that help resist any further I guess straightening of the bend that you pointed to in -- on page 104 of your declaration?

A. Yes. On that bend specifically. If that where -- where on 104 you see the blue arrow that says line --

Q. Uh-huh.

A. -- and I'm pointing to the line that's created by basically them being two different pieces, where -- and they coalesce at that point, there's -- the other bend, the problem is that when -- in the configuration that's shown under an

anticipated loading it would still push this back towards the drywall, which would then make it difficult to get that drywall back up in there if at all possible.

Q. Okay.

A. Assuming the weld -- assuming a weld like you are affirming.

Q. Okay. The second bend that you're talking about is not the one that you're pointing to in the figure on page 104; is that correct?

A. No. It's -- so if you look at that object in that profile view we see what I'm going to call parallel colinear lines that make the top flange, the back flange, the inclined extension, and then the back -- the backstop of the channel.

So it would be -- and there's three bends. So the top -- the top bend I would say is a 90-degree bend between the top flange and the back flange. Then you have an obtuse angle created between the back flange and the inclined extension and then another obtuse angle created.

And that third obtuse angle you can see how it's much shallower in depth, the plates that extend beyond that angle, and the one is not even at -- it's a stiffener that you can see is

punched -- punched in it that's clearly shown on page two of Exhibit 1007 and page three -- certainly every drawing.

But basically that's a stiffener, but what it's -- the problem is it's somewhat stiffer, but it's still going to allow deflexion, and so then that -- as opposed to -- this -- the bend pointed out in 104, on page 104 of my declaration, that would open and make a larger obtuse angle, whereas the other bend just by the general configuration, you put a downward force it's going to want to push back towards the wall and close that gap.

MR. SCHROEDER: Just asking, about how much longer is this line of questioning because he's been going for about an hour and a half now?

MS. HOLOUBEK: I didn't notice the time. About to switch over, so we can go ahead and take a break if that makes sense.

(WHEREIN, a recess was taken from 2:18 p.m. to 2:33 p.m.)

Q. (By Ms. Holoubek) Mr. Tucker, during the break did you talk to anyone about the substance of your deposition today?

A. No.

Q. And during the break did you get any

feedback on your performance in the deposition today?

A. No.

Q. Starting at paragraph 167 of your declaration, you address the prior art grounds based on Robinson; is that correct?

A. Yes.

Q. And you would agree that the hanger -- first you would agree that Robinson does show a joist hanger; is that correct?

A. Yes.

Q. And you would agree that the hanger shown in figure two of Robinson, which is illustrated here on page 107 of your declaration, is intended to hold a joist's end spaced away from the wall frame; is that correct?

A. Yes.

Q. If we turn towards the end of your declaration to paragraph 411 on page 231.

A. Dang. I almost hit it perfectly.

Q. This shows a colored and annotated image of Robinson's figure two; is that correct?

A. Yes.

Q. And in this annotated image of figure two you've labeled the top flange and the top flange

edges; is that correct?

A. Yes.

Q. And each of those top flanges has a bottom surface; is that correct?

A. Yes.

Q. And each bottom surface of the top flange shares a corner with what you've labeled as the top flange edges; is that right?

MR. SCHROEDER: Objection, vague.

A. So you lost me on that one.

Q. (By Ms. Holoubek) Okay. You agreed that each top flange has a bottom surface?

A. Uh-huh.

Q. And that bottom surface is adjacent to what you have labeled as the top flange edge; is that correct?

A. So you're asking me -- just so I can clarify myself. So I have flanges.

Q. Uh-huh.

A. And the bottom of the flange, which is part of the total plate, just the bottom side, the bottom face --

Q. Uh-huh.

A. -- and then it comes and turns 90 degrees up to the edge.

Q. Yes.
A. That's what you're talking about?
Q. It is.
A. Both of those do that. Both flanges.
Q. Correct.
A. Yes, they do that.
Q. Okay.
A. Wow. That was long way to get there.
Q. So essentially the -- the top flange intersects -- scratch that.

The bottom surface of the top flange intersects the top flange edge as you have it labeled here; is that correct?

MR. SCHROEDER: Objection, vague.

A. I think as -- as I had restated it, yes.

(Exhibit 1006, The Allan brick tie.)

Q. (By Ms. Holoubek) Okay. I'm going to hand you -- I'm going to hand you what has been marked as Exhibit 1006. Do you recognize Exhibit 1006?
A. Yes.
Q. And what is Exhibit 1006?
A. It's the Allan brick tie.
Q. Okay. And the title of Allan is

masonry veneer wall anchor; is that correct?

A. Yes.

Q. Okay. So looking at column 3, lines 12 to 15.

A. Okay.

Q. So lines 12 to 15 of Allan describe an insulated wall construction W that includes a masonry veneer wall M, building frame member F, and an insulation or plasterboard sheet I. Is that correct?

A. Correct.

Q. And then as described in lines 15 through 17 immediately following that, the insulation layer I shown in Allan is drywall; is that correct?

A. On 15?

Q. So column 3, lines 15 through 17.

A. Yeah, so what it says is plasterboard is also commonly referred to as drywall, and the terms are used interchangeably herein. It doesn't say the insulation layer is drywall. Basically it's saying you can have insulation there or plasterboard, that realistically it could be exterior sheathing as well.

Q. Okay. So when it says plasterboard in

column 3 here, though, that means drywall? They say the terms are used interchangeably; is that correct?

A. Correct. That's what they state.

Q. Okay. And that sheet I, which could be drywall, is as shown in figure one interposed between the building frame member F and the masonry veneer wall M; is that correct?

A. Yes.

Q. Okay. And then if we go back to column 3, lines 17 through 20, Allen's wall construction W includes an anchor A; is that correct?

A. Yes.

Q. Okay. And the anchor A has an anchoring leg ten attached directly to the building frame member F; is that correct?

A. Say that again. A has -- anchor A --

Q. Anchor A has an anchoring leg ten attached?

A. There it is.

Q. Directly to the building frame member F?

A. You're not reading that. You're just stating something?

Q. Right. I mean, it also --

A. Yeah.

Q. Okay.

A. The way you say it, I think you're reading and then I'm trying to follow and I'm not seeing the same thing that you're saying and it's confusing me.

Q. Okay. Okay.

A. So anchor A, then it goes down, says with an anchoring leg ten and outstanding leg 12, which is perpendicular, but they are attached to framing member F. That's the gist, right?

Q. Yes. Is that correct?

A. Yes.

Q. Okay. Okay. And that's what's shown in figure one, correct?

A. Yes.

Q. And in column three if we're looking at paragraph 29, the exact language is (quote as read):

> The anchoring leg ten is intended to be fastened to a corresponding building frame member, whether that building frame member be made of wood such as the building frame member F or steel or concrete.

Is that correct?

A. Yes. Thank you for reading that.

Q. Sure. And then in column 4, lines 6 through 9, Allan describes that if the -- try to -- Allan states (quote as read):

If the edges of the insulation layer or plasterboard sheets are notched to fit around the outstanding leg 12, the insulation layers or plasterboard sheets I may be abutted.

Is that correct?

A. Yes.

Q. So this describes notching drywall to fit around the wall anchors outstanding leg 12; is that correct?

A. Yes.

Q. And then in column 4, lines 10 to 13 it says (quote as read):

Slots may be cut into the insulation layers or plasterboard sheets I through which the outstanding leg is inserted.

Is that correct?

A. Yes.

Q. So that's describing (quote as read):

Cutting a slot into the drywall layer I so that the wall anchor's outstanding leg 12 can be received through the

slot.

Is that correct?

A. Yes.

Q. Okay. And then Allan also describes cutting and installing the drywall after mounting the anchor A to the frame member F; is that correct?

A. Yes.

Q. Then column 4, lines 13 to 14, says (quote as read):

With any of these approaches, minimal energy losing air gaps in the insulation may be achieved.

Is that correct?

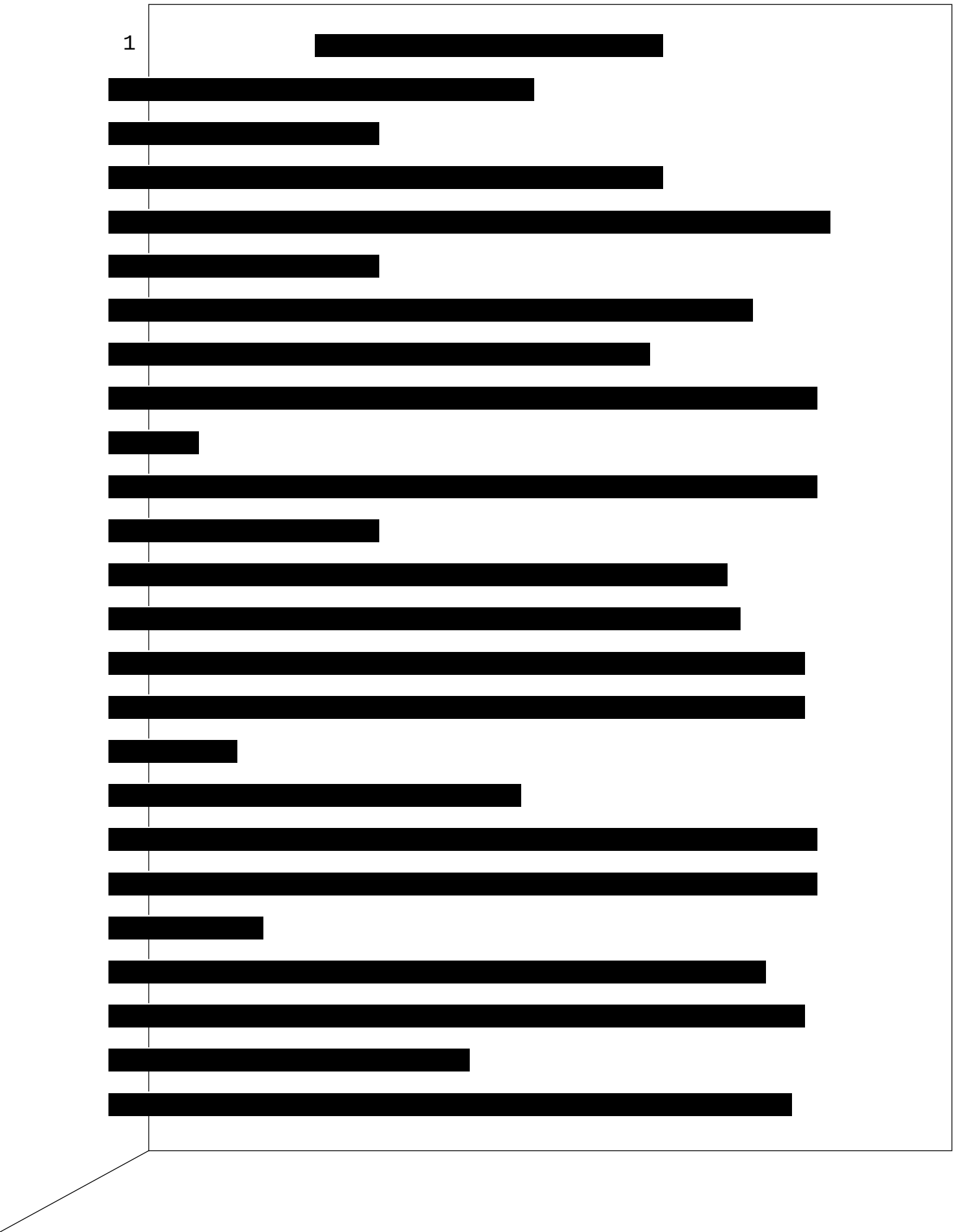
A. Yes.

Q. And so this statement indicates that Allan is looking at minimizing gaps in the insulation; is that correct?

A. Yes.

Q. Okay. On page -- actually, strike that.

[redacted]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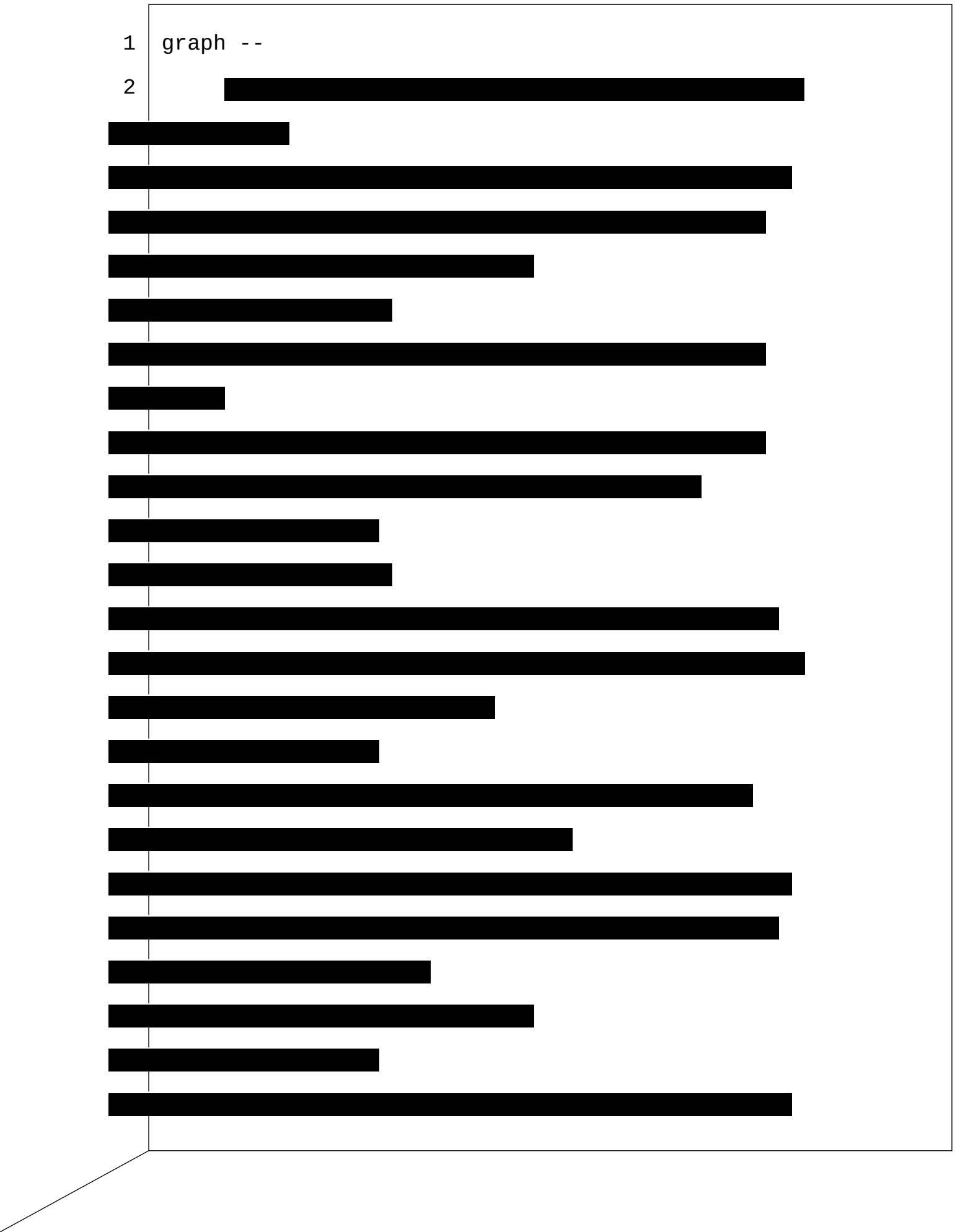
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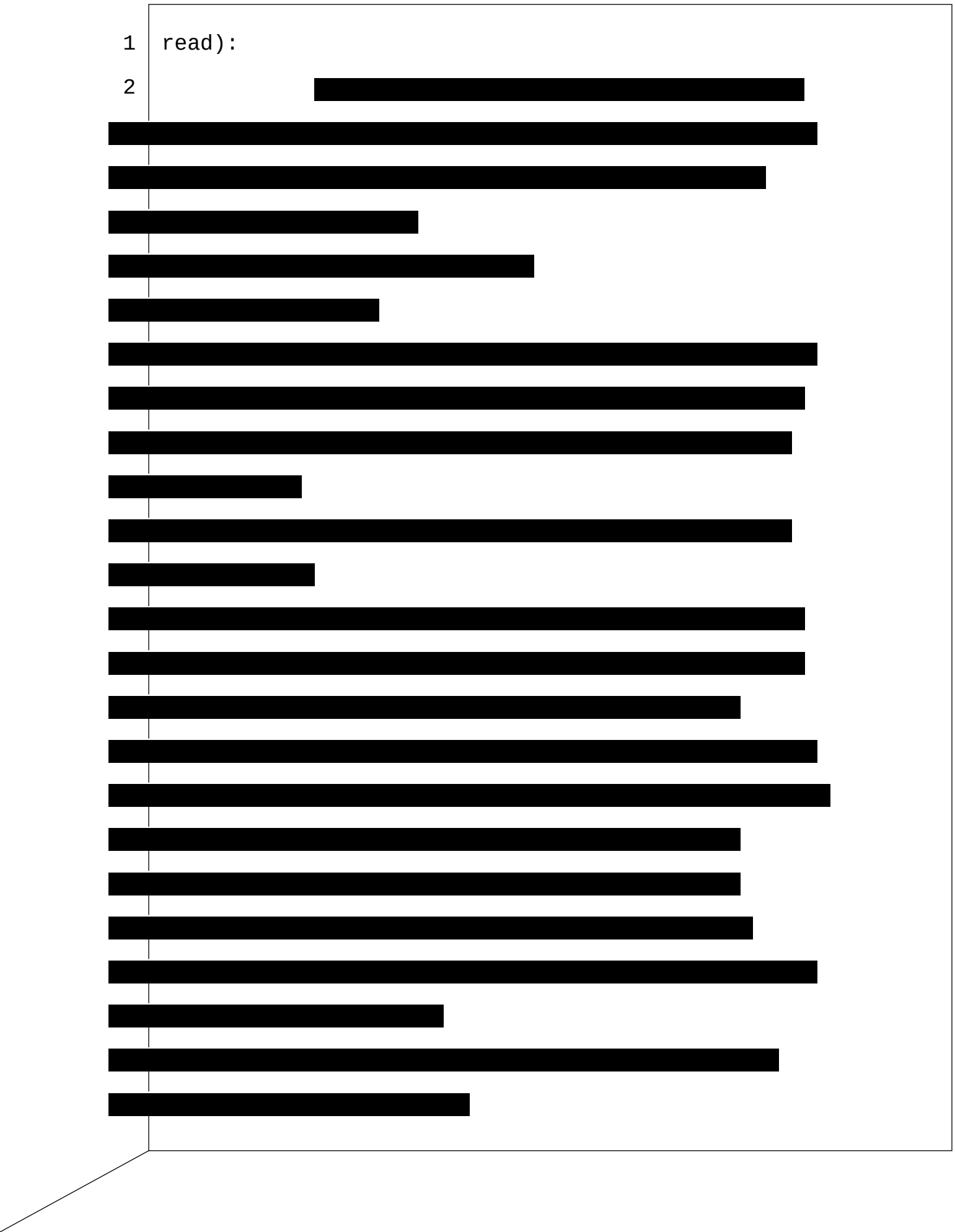
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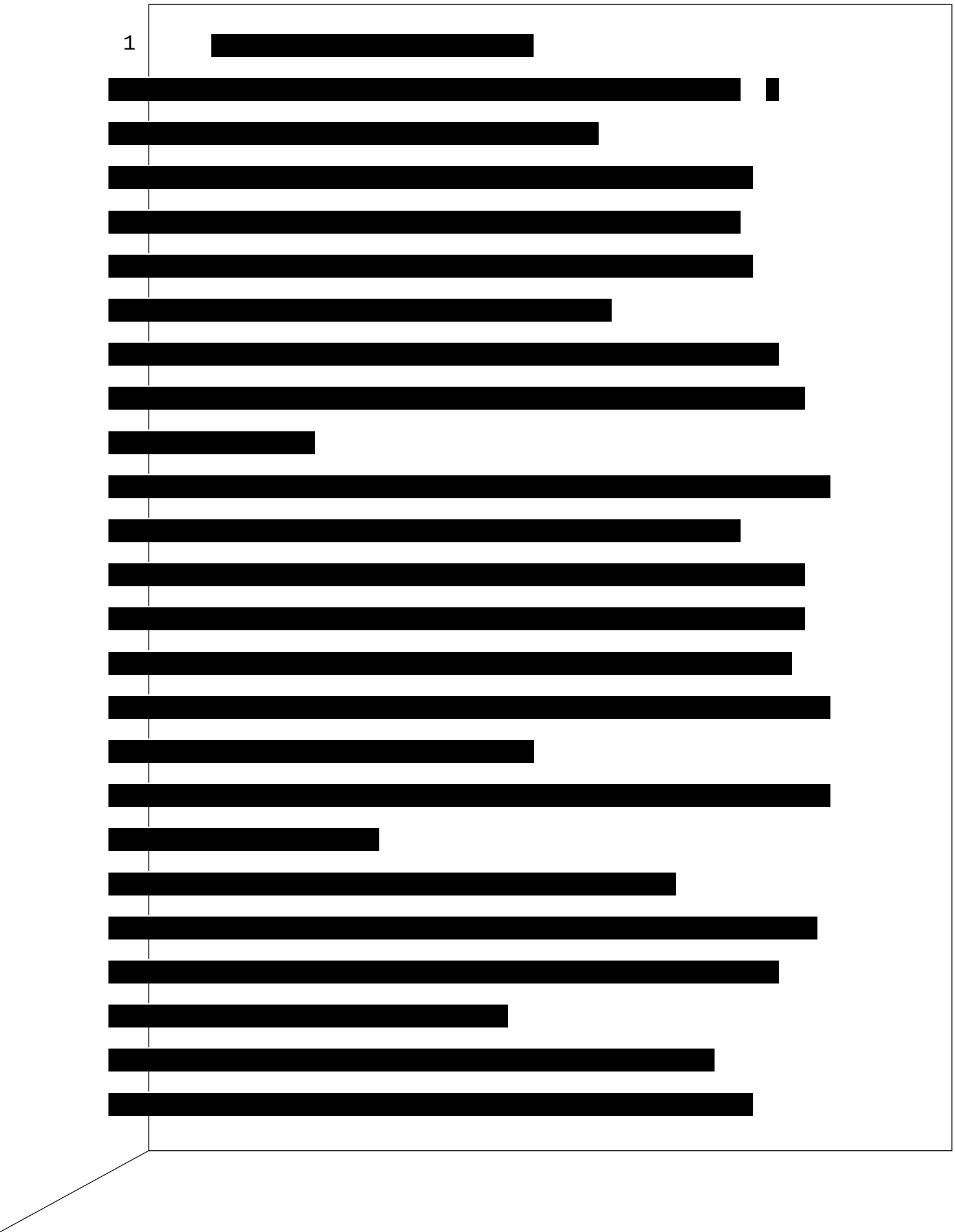
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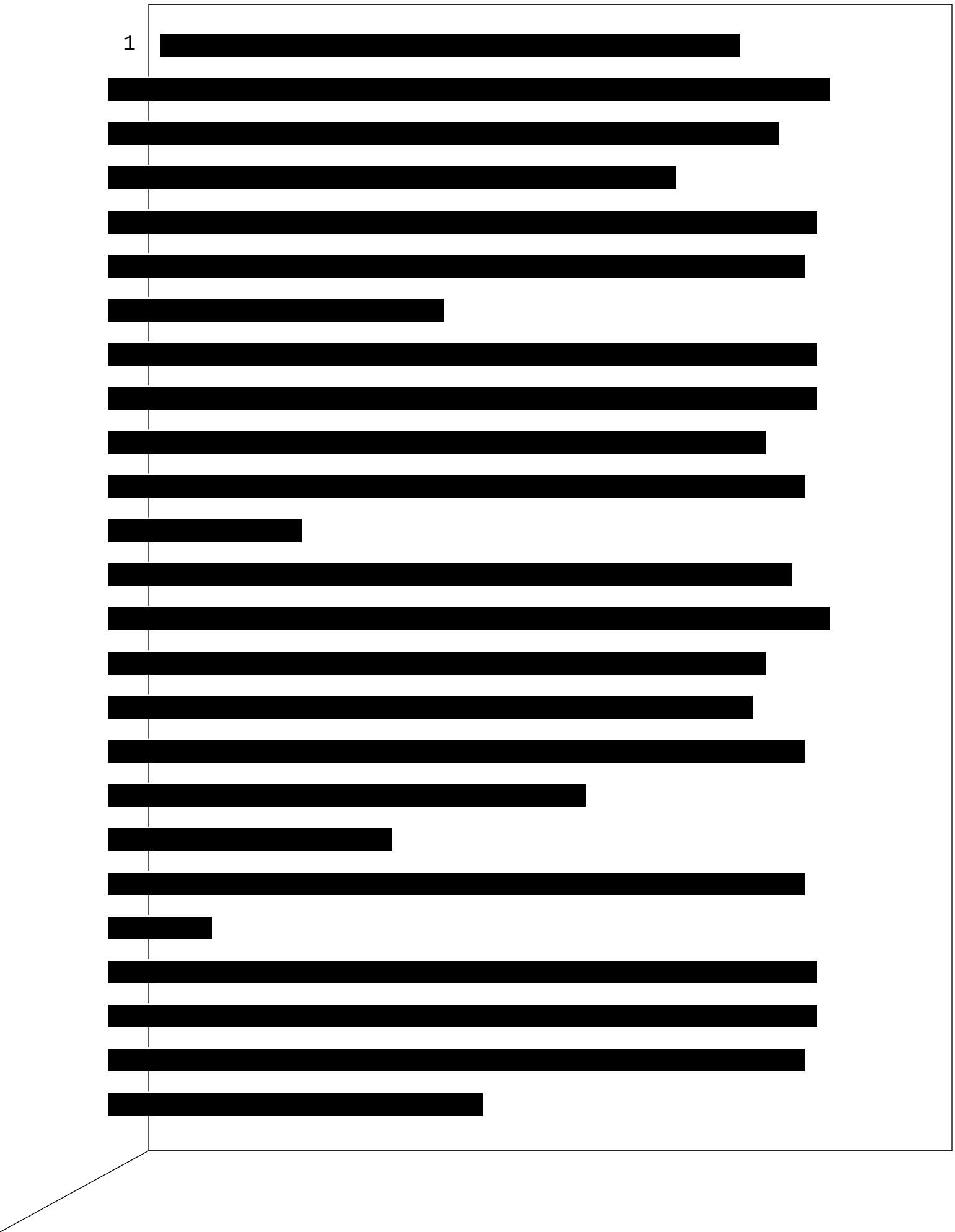
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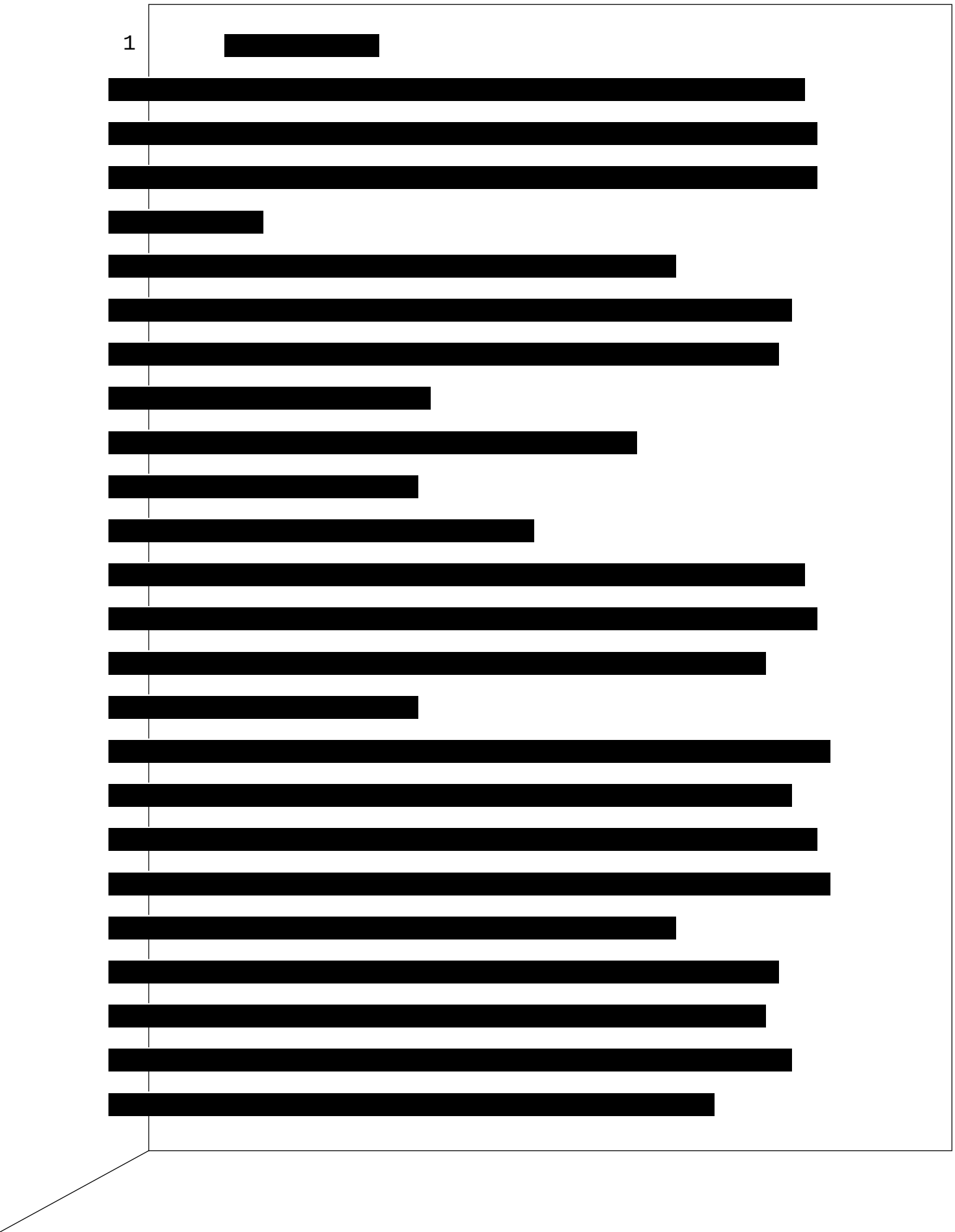
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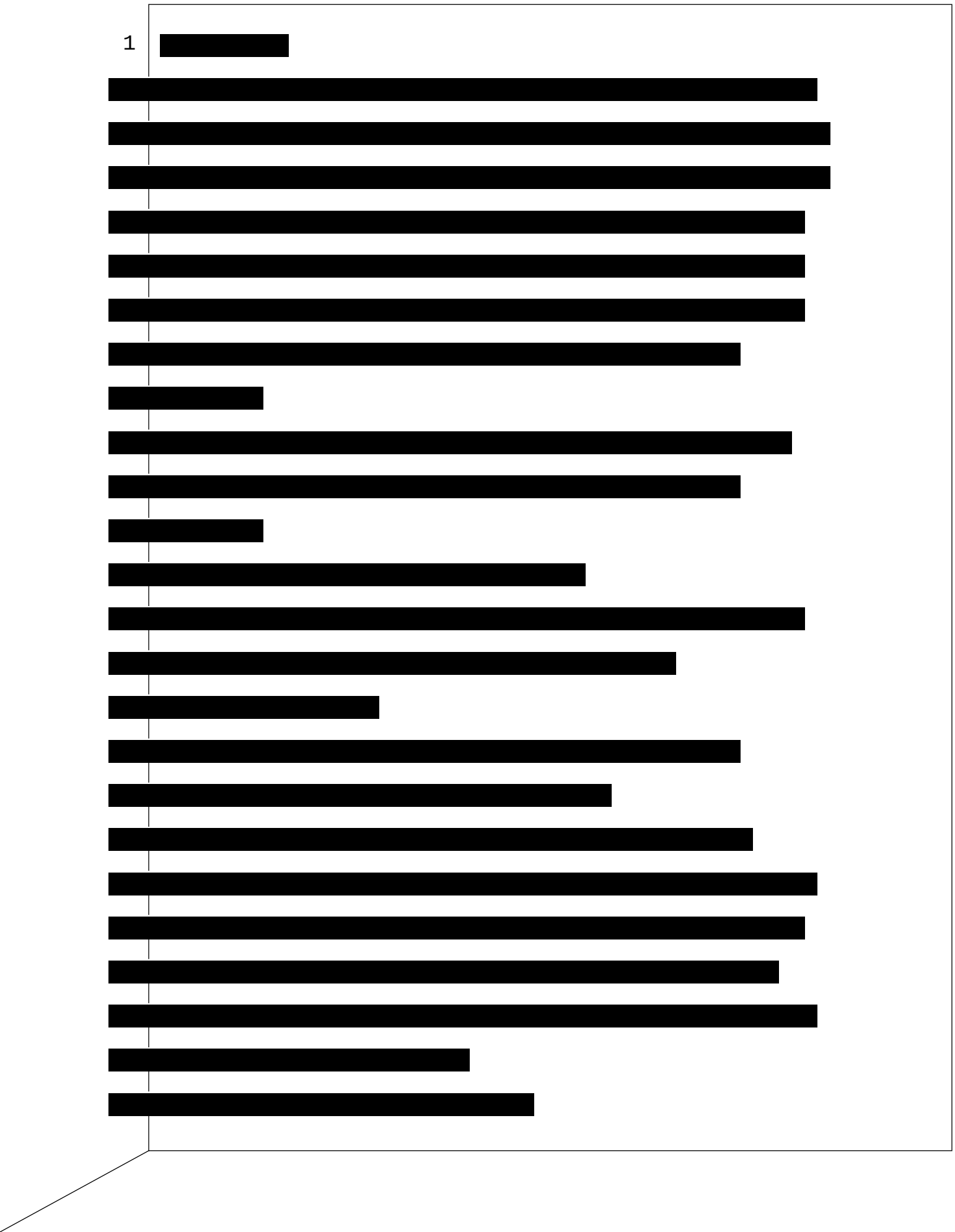
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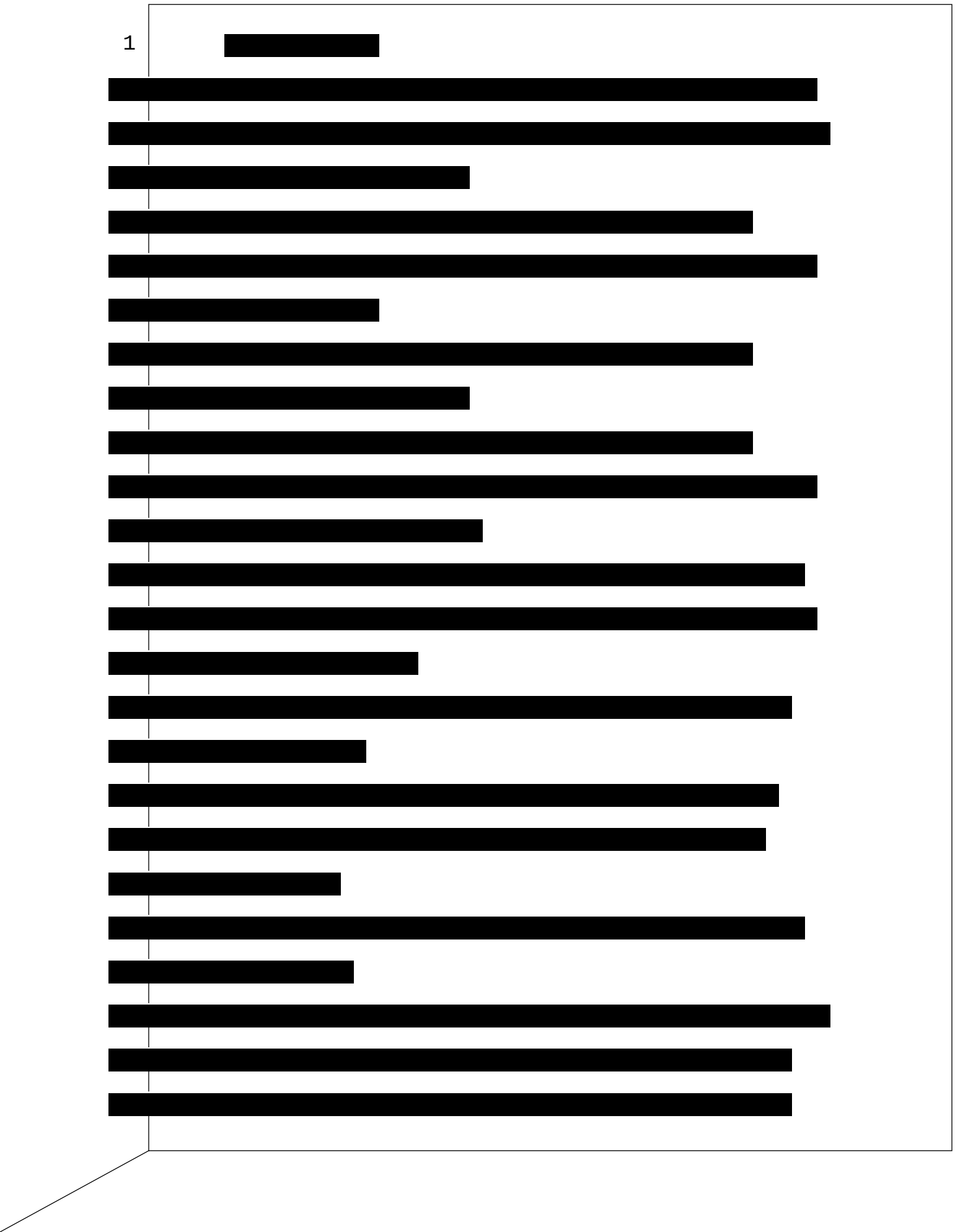
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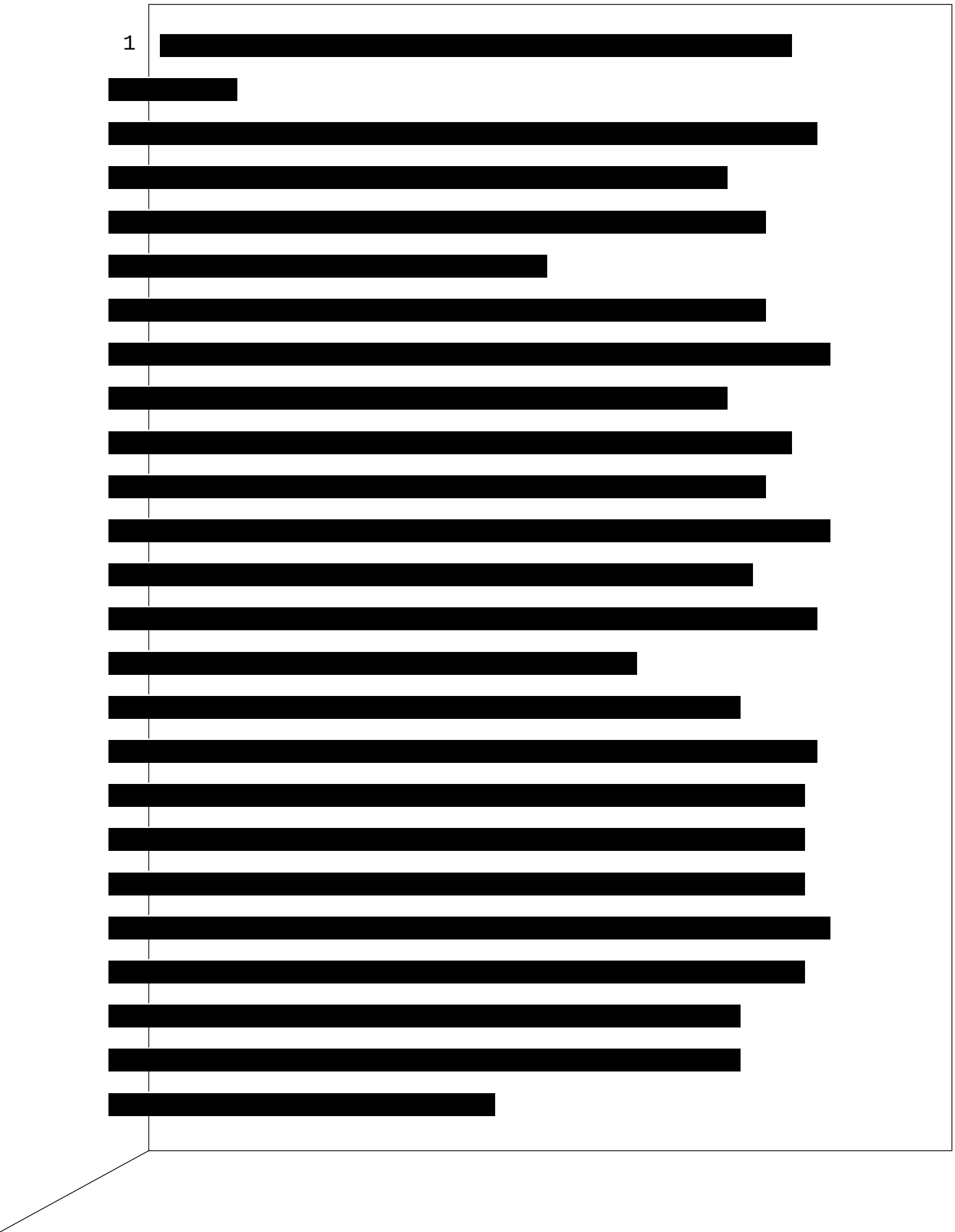
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Q. What's the difference between a design load and a construction level load?

A. So there are loads specific to construction that are different than the building's design requirements. When loads are different, the live loads are different. You have --

(Court reporter interruption.)

A. The -- you may not have all the dead loads. Your occupancy load is different and construction loads sometimes you have certain point loads that you don't have during occupancy. So there are different loads.

Q. (By Ms. Holoubek) So in order to install the hangers before the drywall is attached we're looking at the construction load and not the -- what did you call it, the designed load?

A. Design. Yes, the design load.

Q. Is that correct?

A. Yes.

Q. Okay. One other question about the FWH hanger. How long does it take to cut sheathing around the extension flanges of the FWH hanger?

A. I don't know.

Q. How precise does that cut in the sheathing around the FWH hanger need to be?

MR. SCHROEDER: Objection, calls for speculation.

A. So --

MR. SCHROEDER: Foundation.

A. All I can do is point back to the '339, what it says in the -- within the specifications in the claims. The claims refer to general performance and the specification refers to the eighth-inch around. So that's -- that's extent of what I can testify to.

Q. (By Ms. Holoubek) Okay. Based on your experience in inspecting firewalls, how precise does

a cut around a penetration need to be?

A. So I'm not a fire marshal. So my inspection is a different level inspection than they would do.

Q. What's the difference between your inspection and a fire marshal?

A. Because I'm not looking at it from a -- from a standpoint of fire protection. I'm looking at it from a standpoint of a structural engineering and framing. Those are different.

Q. Are you just looking at it then from the perspective of whether it will hold a load? What's the difference?

A. It's been constructed properly. From the standpoint of following Chapter 7, that's not -- I'm not a code official. That's not my job. Now, if it were a forensic investigation and I noted, hey, there's a jet that was created here because there was no sealing of that, then that's going to be specific to why something occurred or why this area was, but that's a forensic analysis, not a building code official, which you're asking more the question in line with a building code inspection.

Q. So -- I'll withdraw the question. A minute ago when you were talking about construction

level loads and design loads, when looking at a design load you mention the design load is based on the full wall assembly; is that correct?

A. What a design load is based on is the completed structure, a hundred percent complete. That means ready to occupy.

Q. Okay.

A. That's what the design load -- in other words, up until that point the building is not to be considered that it can support those loads. Only in its completed state, and that's the way we design based on that assumption.

Q. So in its completed state if the building includes a fire-resistive wall assembly, that would include the drywall and the hanger and any other fireproofing materials; is that correct?

MR. SCHROEDER: Objection, vague. You can answer.

A. In its completed state it means it's done. It's ready for people to come in, walk in, you got your CO.

Q. (By Ms. Holoubek) So the answer is yes?

A. It would have everything. In a completed state everything is there.

Q. Let's look at page 190 of your declaration. Paragraph 338 you say (quote as read):

Prior to the release of the FWH hanger, there was a patchwork of work-arounds and imperfect solutions by which floor or roof members were connected to wall members requiring a two-hour fire rating.

Do you see that?

A. Yes.

Q. What were some of the work-arounds that you're referring to in this paragraph?

A. Just like I had already mentioned, my personal work-arounds. Creating additional structure to not laden that wall. To change the framing layout. So -- and I'm sure other engineers had other ways of doing this, but that's the way I dealt with it.

Q. But in both of those examples that you mentioned you were trying to avoid connecting the floor/roof members to a wall, correct?

A. So I mentioned the roof members before, that the roof members were different because unless you had a firewall that was required to extend above the roof line, which is sometimes the case, it

depends if it's like a three- or four-hour wall, then -- then all of your members are going parallel to that.

You're not going to load that wall. As it pertains to the two exterior walls, which might be a front and back of the building on a gable, you're going to bear on those walls, but the walls are done. I mean, that's the end of the wall.

There is no firewall going up into that roof -- into that attic space. So your wall is protected all the way up. It stops. Whereas a floor system it doesn't. The floor system the wall continues on up above that floor.

Q. In paragraph 338 mentions floor systems, correct?

A. Yes.

Q. Okay. And it mentions, you know, by which floor or roof, so includes the floor, were connected to wall members requiring a two-hour fire rating; is that correct?

A. Yes.

Q. So what are the work-arounds in a floor system connected to wall members requiring a two-hour fire rating?

A. So not all two-hour firewalls are

wooden. Would you agree with that?

Q. You tell me.

A. Yeah, they're not. So I can have a one-hour rating with concrete or masonry or two hour, three hour, I can use those any way I want.

Q. But you could have a two-hour fire rating with a wood wall, correct?

A. You could, but I didn't.

Q. Okay.

A. In other words, if I had a two-hour wood rating I'm not connecting to that wall, period.

Q. Okay.

A. But I do have two-hour rated walls that are not wood that I would connect to. So --

Q. So in paragraph 338, however, you're talking about work-arounds which floor roof members were connected to wall members requiring a two-hour fire rating; is that correct?

A. Yes. Yeah, my work-arounds do not connect -- the roof I'm fine with connecting, but not the walls -- I mean, not the floors.

Q. Okay. But I'm asking about --

A. Not structurally. Not structurally connection.

Q. Sure. Do you not agree with this

paragraph then, paragraph 338 that there were work-arounds by which floor members were connected to wall members requiring a two-hour fire rating?

A. Yeah, there are work-arounds. Not that I did. I told you my work-arounds.

Q. I understand. So what were the work-arounds that other people used?

A. I can't specifically say what type work-arounds would be used by another engineer that I didn't see, but they exist. I just don't know them.

Q. Okay. In paragraph 339 you say that (quote as read):

> Acceptance of these solutions depended on the whims and interpretations of building inspectors.

Is that correct?

A. Yes.

Q. Does the approval of fire-rated wall assemblies still depend on the approval of building inspectors?

A. It does, and whether you mean the local building official or like the fire marshal. Fire marshals sometimes can be more strict than the local building official, but they have a lot more training

than the local building official in that regard.

Q. Okay. In -- let's turn to paragraph 396 on page 220 of your declaration. In paragraph 396 you have a drawing of a bent hanger; is that correct?

A. Yes.

Q. This drawing shows a backplate and a sidewall of an extension flange connected by a bend; is that correct?

A. Yes.

Q. And is it your position that the bent portions of the metal are not part of the planer surface of the sidewall?

A. Yes.

Q. And is it your position that where two parts of -- sorry. Is it your position where two planer plates are connected by a bend the bend is not part of either of those planer plates?

MR. SCHROEDER: Objection, outside the scope and objection, misstates his testimony. He may answer.

A. So if you look at -- this is not what this drawing is intended to show, but looking at the drawing I'm going to use that as an aid for explanation. So if you look at this drawing that is

directly below paragraph 396.

Q. (By Ms. Holoubek) Uh-huh.

A. It shows a planer plate, de minimis bend, and then another planer plate. And if this drawing were representative of just what we see and not part of some other assembly or anything else, we would call this a bent plate.

So in other words, you'd have a plate and you bend it to create an angle piece. And so each leg of that angle or each of the planer plates are connected to one another because they're one piece.

To say they aren't connected is not -- would not be correct. So in that, the bend itself is connected to the planer plate, but it's not planer. But it is connected and it's a piece of that plate just like the other leg is also a piece of that plate, but they're not planer. They're orthogonal.

Q. So there's part of the bend then that are parts of the sidewall and there's other parts of the bend that are part of the backplate; is that correct?

A. Yes.

Q. Can you identify where that bend

transitions from sidewall to backplate?

MR. SCHROEDER: Objection, outside the scope of his testimony.

A. So again, if we look at just this diagram and then I'm going to also refer you to the diagram on page 221, and you can see there's a 45-degree angled dotted or dashed blue line, and that says (quote as read):

Access that is normal to the surface formed by the bend at the point of intersection with the bend.

So that line would represent the midpoint of the bend. So if we were going to like assert a portion of a bend to another piece, I think the appropriate way would be to bisect it like -- like this 45-degree line is and to apportion half of it to the backplate and half of it to the sidewall.

Q. (By Ms. Holoubek) Got it. And then they would meet at that dividing line?

A. At that joint. Yes, at the center of the angle. Center where that -- where that line shows the blue dashed line.

Q. Okay. And the surfaces of the sidewall and the backplate would meet at that same join line; is that correct?

A. So the surface -- they don't meet there. So if -- it depends on what you're defining backplate and sidewall. If we're defining the backplate as the planer -- that planer plate, then again, it doesn't include the bend. It's attached to the bend, but the plate doesn't include the bend.

Q. Okay. Because I thought you were just telling me a minute ago that the plate did include the bend.

A. You asked me about --

MR. SCHROEDER: I'm going to reiterate objection to scope. You may --

A. So you were asking me about -- about the connection, and so to get from the backplate to the sidewall it's still one piece of material, but when you're talking about the planer plate which composes that flange, we're only talking about the planer section that does not include the bend.

Q. (By Ms. Holoubek) Okay. So when you refer to a planer plate in this figure, it is not including any bent portion; is that correct?

A. Correct. The -- the bent portion could also be like looked at as if these were two separate pieces connected with a weld.

Q. Okay. And that means that also the

surfaces of the sidewall and the backplate don't include the bend between them; is that correct?

A. Yes, the planer portion does not include the bend.

Q. Okay. So you're saying that when two planer surfaces are joined by a bend, the bend is not part of either of those two surfaces?

A. The bend is not planer. It doesn't -- it's a connector, but it's not part of what we're calling that flange piece.

Q. Okay.

A. It's there by default because we had to bend the thing to -- to maintain the one piece and maintain that connection and transfer.

Q. Okay. But it's not actually part of the planer surface?

A. So if -- correct. And if I was looking at that from a structural standpoint I would not include that part of the bend in the calculations.

MS. HOLOUBEK: Okay. I have no further questions. Pass the witness.

MR. SCHROEDER: All right. I would like to probably take about a 15-, 20-minute break to go through my notes.

(WHEREIN, a recess was taken from

3:14 p.m. to 3:47 p.m.)

EXAMINATION

QUESTIONS BY MR. SCHROEDER:

Q. Welcome back on record. Do you remember right before we ended your cross-examination you were being asked about the planer extension plates and whether the bends were part of the planer extension plates?

A. Yes.

Q. If you could, turn to paragraph -- or page 66, paragraphs 97 and 98. If you could read out loud paragraphs 97 and 98?

A. (Quote as read):

I understand Columbia in contrast to Simpson has argued the term planer extension plate includes portions of the bends at the ends of the plate that connect the plate to other elements. POR -- POPR 95. I also understand that in the institution decision the board preliminarily agreed with Simpson and held a planer extension plate does not include bent portions, id 21. I agree with Columbia that in the sheet metal art of the '339 patent and POSA would

understand bends connecting planer plates of the sheet metal construct are formed by the plates and therefore are part of the plates. Sheet metal bends like the one illustrated in figures of the '339 patent are simply a necessary result of forming a piece of sheet metal into the illustrated hanger.

Q. To the extent that your earlier testimony implied that the planer extension plate does not include the bent portions, would that have been a misstatement or are you changing your opinion compared to what you put in your declaration?

A. I think that the plate itself -- the planer plate would be planer, which would not include the bent portion, but it's part of the piece.

Q. All right. If you could go to page 231 of your declaration, and in particular the images in paragraph 411. And in particular probably easier just to look at the image on the left. Do you recall discussing the top flange as being shown?

A. Yes.

Q. And what number would that top flange be if you were to look at the numbering in the

figure?

A. 120.

Q. And that's kind of -- they're shaded blue, correct? Bluish gray?

A. Yeah, gray with the blue edges it looks like.

Q. And do you recall having a discussion about the top flange having the bottom surface?

A. Yes.

Q. And do you see in that drawing there on the left that -- the kind of shaded green and it has 124 pointing to it? Do you see that, kind of a block?

A. Yes.

Q. So that -- so when you were discussing the bottom surface of that top flange, would that bottom surface be exposed where that top flange is meeting that block that's shaded green?

A. No.

Q. If you could go to the '339 patent. I believe it's Exhibit 1001. And in paragraph five, the paragraph starting at line 35, I actually would like you to read that -- the sentence actually starting at line 37 starting with preferably.

A. Okay. So I'm on page 52, column 5?

Q. Correct.
A. Line 37?
Q. Right.
A. (Quote as read):
Preferably, the slot has an area less than or equal to six square inches and the gap between the extension flanges 60 and the edge of the slot 72 is less than or equal to one-eighth inch.
Q. And was this the sentence that you were referring to when you were discussing close conformance earlier?
A. Yes.
Q. And specifically this sentence starts with the word preferably, correct?
A. Yes.
Q. Having seen that word preferably at the start of this sentence, do you interpret that the gap must be equal or less to one-eighth or just that that's a preferable distance?
A. Well, it says preferably, so it would -- reading this, it would have to be preferable.
MR. SCHROEDER: I have no further questions.

MS. HOLOUBEK: Okay. Just about five minutes to figure out if there's a recross.

(WHEREIN, a recess was taken from 3:55 p.m. to 4:01 p.m.)

Q. (By Ms. Holoubek) I do have just a couple questions. In redirect just now we were talking about the portion of column 5 that indicates that the gap between the extension flanges and the edge of the slot is preferably less than or equal to an eighth of an inch. Do you recall that?

A. Yes.

Q. If that gap is not limited to an eighth of an inch, what are the limits of how far away something can get before it's no longer in close conformance?

A. So I would again go back to my earlier testimony and say that if you were to take -- you remember when I explained about cutting it and how one might interpret the eighth of an inch to be an eighth on each side, which it is, installed.

Q. Uh-huh.

A. But if you -- if you were to lay it out, cut it an eighth of an inch and then you push it over, then it would be a quarter of an inch. So that's where I would want to lean to like the max.

but I can't say for certain. But that's the process of thinking.

MS. HOLOUBEK: Okay. No further questions.

MR. SCHROEDER: I have no further questions.

COURT REPORTER: Signature?

MR. SCHROEDER: Yes.

COURT REPORTER: And other than the rough draft and the final, anything else to expedite or normal?

MS. HOLOUBEK: I think we do need expedited final because we have a deadline.

MR. SCHROEDER: She needs it. I do not.

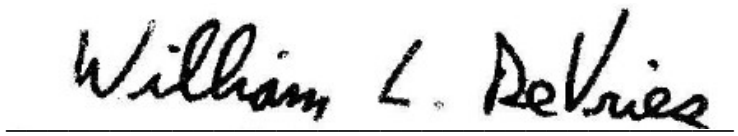
COURT REPORTER: Rough or no?

MR. SCHROEDER: I just need the final whenever the final comes.

(Ending time of the deposition: 4:02 p.m. CT.)

CERTIFICATE OF REPORTER

I, William L. DeVries, a Certified Court Reporter (MO), Registered Diplomate Reporter, and a Certified Realtime Reporter, do hereby certify that the witness whose testimony appears in the foregoing deposition was duly sworn by me pursuant to Section 492.010 RSMo; that the testimony of said witness was taken by me to the best of my ability and thereafter reduced to typewriting under my direction; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken, and further that I am not a relative or employee of any attorney or counsel employed by the parties thereto, nor financially or otherwise interested in the outcome of the action.



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