

The following is the PDF of an official transcript. Official transcripts may only be filed in CM/ECF by the Official Court Reporter and will be restricted in CM/ECF for a period of 90 days. You may cite to a portion of the attached transcript by the docket entry number, referencing page and line number, only after the Court Reporter has filed the official transcript; however, you are prohibited from attaching a full or partial transcript to any document filed with the Court.

1 IN THE UNITED STATES DISTRICT COURT
2 FOR THE NORTHERN DISTRICT OF GEORGIA
3 ATLANTA DIVISION

4 DONNA CURLING, ET AL., :
5 :
6 PLAINTIFFS, :
7 vs. : DOCKET NUMBER
8 : 1:17-CV-2989-AT
9 BRAD RAFFENSPERGER, ET AL., :
10 :
11 DEFENDANTS. :

12 **TRANSCRIPT OF BENCH TRIAL - VOLUME 12 PROCEEDINGS**

13 **BEFORE THE HONORABLE AMY TOTENBERG**

14 **UNITED STATES DISTRICT SENIOR JUDGE**

15 **JANUARY 25, 2024**

16
17
18
19
20
21 ***MECHANICAL STENOGRAPHY OF PROCEEDINGS AND COMPUTER-AIDED***

22 ***TRANSCRIPT PRODUCED BY:***

23 ***OFFICIAL COURT REPORTER:*** ***SHANNON R. WELCH, RMR, CRR***
24 ***2394 UNITED STATES COURTHOUSE***
25 ***75 TED TURNER DRIVE, SOUTHWEST***
ATLANTA, GEORGIA 30303
(404) 215-1383

A P P E A R A N C E S O F C O U N S E L

**FOR THE PLAINTIFFS DONNA CURLING, DONNA PRICE, JEFFREY
SCHOENBERG:**

DAVID D. CROSS
MARY KAISER
RAMSEY W. FISHER
MATTHAEUS MARTINO-WEINHARDT
BEN CAMPBELL
AARON SCHEINMAN
MORRISON & FOERSTER, LLP

HALSEY KNAPP
ADAM SPARKS
KREVOLIN & HORST

CHRISTIAN ANDREU-VON EUW
THE BUSINESS LITIGATION GROUP

**FOR THE PLAINTIFFS COALITION FOR GOOD GOVERNANCE, LAURA DIGGES,
WILLIAM DIGGES, III, AND MEGAN MISSETT:**

BRUCE P. BROWN
BRUCE P. BROWN LAW

ROBERT A. MCGUIRE III
ROBERT MCGUIRE LAW FIRM

**FOR THE PLAINTIFFS LAURA DIGGES, WILLIAM DIGGES, III, MEGAN
MISSETT, AND RICARDO DAVIS:**

CARY ICHTER
ICHTER DAVIS

ON BEHALF OF RICARDO DAVIS:

DAVID E. OLES, SR.
LAW OFFICE OF DAVID E. OLES

(...CONT'D...)

(...CONT'D...)

FOR THE STATE OF GEORGIA DEFENDANTS:

VINCENT RUSSO
JOSH BELINFANTE
JAVIER PICO-PRATS
EDWARD BEDARD
DANIELLE HERNANDEZ
ROBBINS ROSS ALLOY BELINFANTE LITTLEFIELD, LLC

BRYAN TYSON
BRYAN JACOUTOT
DIANE LAROSS
DANIEL H. WEIGEL
DONALD P. BOYLE, JR.
TAYLOR ENGLISH DUMA

I N D E X T O P R O C E E D I N G S

THE DEFENDANTS' CASE (Continued)

<u>WITNESS</u>	<u>PAGE</u>
MICHAEL BARNES	
Direct Examination	
By Mr. Tyson	8
Cross-Examination	
By Mr. Fisher	74
Cross-Examination	
By Mr. Brown	117
Cross-Examination	
By Mr. Oles	127
Examination	
By The Court	131
Recross-Examination	
By Mr. Brown	134
Recross-Examination	
By Mr. Fisher	134
Redirect Examination	
By Mr. Tyson	135
Reexamination	
By The Court	135
BENJAMIN ADIDA PH.D.	
Direct Examination	
By Mr. Miller	137
Cross-Examination	
By Mr. McGuire	204
Cross-Examination	
By Mr. Cross	242
Cross-Examination	
By Mr. Oles	264
Redirect Examination	
By Mr. Miller	267
Recross-Examination	
By Mr. Cross	274
Examination	
By The Court	279
	* * *
CERTIFICATE	297

P R O C E E D I N G S

(Atlanta, Fulton County, Georgia; January 25, 2024.)

THE COURT: Good morning. Have a seat.

All right. Is this Groundhog Day or getting close?

MR. TYSON: Your Honor, we have discussed on our side it might be fitting for us to conclude the trial on Groundhog Day, if we can reach that point.

MR. McGUIRE: Except in the movie he got better at things every day.

THE COURT: That is an interesting observation.

Well, it is a classic. So apropos of Groundhog Day, just as a story not -- having nothing to do with the case. This does not need to be on the record.

(A discussion ensued off the record.)

THE COURT: Now that I've distracted you, and answered anew Mr. Oles' question about how did I get to be this way and am I leaving any time soon, which was not what his question was. I will just share that with you.

Okay. So you had a little bit more; is that right, Mr. Cross? Were you through?

MR. CROSS: I was done.

THE COURT: It was the fact that your co-counsel had some questions.

MR. McGUIRE: We did have some questions for Mr. Evans, but he is I think gone until this afternoon.

1 THE COURT: Gone. So he is gone, and so we're
2 starting with --

3 MR. TYSON: We're starting with Michael Barnes, Your
4 Honor. But I think we had one quick scheduling update we
5 wanted to share with the Court. Mr. Miller had.

6 MR. MILLER: Your Honor, I went through yesterday
7 kind of what we were anticipating.

8 THE COURT: Can you get a little closer to the mic?
9 I'm sorry. It wasn't on. Now you're fine.

10 **(There was a brief pause in the proceedings.)**

11 MR. MILLER: I apologize. I have one quick
12 scheduling update. I had to leave a little early yesterday for
13 some child care obligations. But I understand things went a
14 little late.

15 And so just to update the Court as to where we were,
16 with Dr. Gilbert's schedule, we will be calling him on Monday
17 instead of Friday, just with timing. We didn't want him to be
18 flying over here and stuck here and not end up testifying.

19 And today we will have Dr. Adida. Following,
20 depending on timing with that, we will either have Joseph Kirk
21 or if Mr. Evans is available Mr. Evans to come back and finish,
22 to finish the day.

23 THE COURT: Okay. And when we next talk about
24 things, maybe we could talk about Friday. Because, you know
25 I'm prepared to go all Friday. But if you're running out of

1 witnesses, that is another matter I would like to -- because of
2 these things I would like to know.

3 And then just for us to sort of identify very
4 roughly, knowing everything seems to take at least a third
5 longer than anyone thought, where we are on the schedule.
6 But ...

7 MR. CROSS: Your Honor, could we get some clarity on
8 Friday just so our folks can plan? Should we expect Sterling
9 on Friday now, or is he still next week?

10 MR. MILLER: I mean, I think, frankly, how today goes
11 is going to give us a real good indication as to what we're
12 doing Friday. With Your Honor's schedule --

13 THE COURT: Well, I just said I could -- I mean, I'm
14 prepared to -- I just have got to get us through this. So that
15 is why I am --

16 MR. MILLER: Absolutely. I think, frankly, by today
17 at lunch, David, we will have some clarity on that, judging
18 where we are.

19 THE COURT: Okay. That is fine.

20 **THE DEFENDANT'S CASE (Continued).**

21 MR. TYSON: So with that, Your Honor, we would call
22 Michael Barnes to the stand.

23 THE COURT: Okay.

24 MS. KAISER: Your Honor, just quickly, while
25 Mr. Barnes comes up. We have a small housekeeping matter with

1 a motion that we filed yesterday. We realized that we forgot
2 to attach to one of the exhibits, the verifications to the
3 interrogatories that were attached.

4 If I may approach and just provide you a copy of the
5 verification.

6 THE COURT: Sure.

7 Did you end up filing the motion? You gave me --

8 MS. KAISER: We're filing it this morning.

9 THE COURT: All right. Fine.

10 MS. KAISER: Thank you.

11 THE COURT: Morning, Mr. Barnes.

12 COURTROOM DEPUTY CLERK: Please raise your right
13 hand.

14 **(Witness sworn)**

15 COURTROOM DEPUTY CLERK: Please have a seat.

16 State your name and spell your complete name for the
17 record, please.

18 THE WITNESS: My name is Michael Barnes.

19 M-I-C-H-A-E-L, B-A-R-N-E-S.

20 Whereupon,

21 MICHAEL BARNES,

22 after having been first duly sworn, testified as follows:

23 DIRECT EXAMINATION

24 BY MR. TYSON:

25 Q. Good morning, Mr. Barnes. We appreciate you making the

1 trip back down on a rainy morning.

2 I know you've testified previously. But could you just
3 briefly recap your experience working in Georgia elections.

4 **A.** I have been working in some capacity with Georgia
5 elections since I believe June of 2001.

6 **Q.** And what is your current role?

7 **A.** I am the deputy director of election systems.

8 **Q.** Mr. Barnes, what I would like to begin with today is just
9 walk through each component of the Dominion system and
10 understand some pieces of that.

11 Can you briefly explain for the Court the functions that
12 an election management server carries out in the Dominion
13 system?

14 **A.** Certainly. And I will try to use the same verbiage
15 throughout. But I have a tendency -- I'll switch, but I'll do
16 my best to use the same words.

17 Election management server is a computer, a CPU. Each
18 county has one of these. And the election management server is
19 used to hold what we call an elections project.

20 Elections project contains information pertaining to an
21 individual election, precincts, districts, ballot combinations,
22 polling places, stuff of that manner.

23 The election management server in the county location
24 houses the election project for that jurisdiction. And then
25 the election management server is the CPU that is used to

1 create the various pieces of election media that are used to
2 transfer election information from the election project to the
3 apparatus used in the election, be it the voting devices or the
4 tabulators.

5 **Q.** So we'll get into some of this in a little bit. But how
6 is information loaded on to an EMS by a county?

7 **A.** It is directly loaded. The EMS server is not connected to
8 anything in the outside world. So in order to load information
9 to the election management server, a file has to be physically
10 loaded on to that device.

11 **Q.** Next, what functions does the central count scanner carry
12 out?

13 **A.** The central count scanner -- we commonly refer to it as
14 the ICC -- is a ballot scanner. It is a -- actually, it is a
15 document scanner that is connected to a computer. The computer
16 we reference as the ICC work station.

17 The ICC work station, this particular computer, is
18 directly connected to the election management computer,
19 election management server in the county elections office. And
20 the ICC work station contains the ICC application.

21 This application is used to run the document scanner, the
22 ICC scanner. And it directs the scanner, gives it election
23 information that the scanner then uses to scan ballots, collect
24 information, and report information back to the ICC application
25 housed on the ICC work station.

1 **Q.** And same question as the EMS. How is information about
2 each election loaded on to an ICC?

3 **A.** The ICC, because it is directly connected to the election
4 management computer, has -- or the election management server,
5 the ICC work station has access to the file directory that is
6 on the election management server. There are particular files
7 in the election management project that pertain to the ICC. It
8 is its definition files.

9 Those files are -- at the ICC work station are copied from
10 the election management server file directory and transferred
11 to the ICC work station. They are then -- they are then
12 configured, set up properly on the ICC work station so that the
13 ICC application can access those files, interpret those files
14 and provide information to the ICC scanner on how to function.

15 **Q.** Next, let's talk about the ICX, the ballot-marking device.
16 What functions does the ICX carry out?

17 **A.** The ICX -- ImageCast X is what it is called -- what the
18 acronym stands for -- that is our ballot-marking device. The
19 ICX is primarily the device that voters in the State of Georgia
20 interact with when they go to a polling place. This is the
21 device that the voter will insert a voter access card in in
22 order to access their particular ballot for that.

23 Information to the ballot-marking device has to be loaded
24 into the ballot-marking device individually. That information
25 is created from the election management server. The election

1 management server creates a file, a BMD tabulator file, that is
2 transferred to the BMD through the use of a jump drive.

3 **Q.** And then what information is on a voter card that the
4 voter takes from the check-in unit over to the BMD?

5 **A.** When the voter arrives at the polling location, they have
6 to go through a check-in line so they find -- so that the poll
7 worker may find the voter in the list of eligible voters.

8 When they find the voter in our Poll Pad, our electronic
9 pollbook, once the voter has acknowledged that that is their
10 record and acknowledged through signature that that is the
11 right individual -- and in a primary would request -- the poll
12 worker -- a Democratic or Republican or nonpartisan ballot --
13 then the Poll Pad will create a voter access card.

14 Contained on the voter access card is a signature key
15 pertaining to the election and a ballot activation code.

16 **Q.** And then I know we've used different voting systems in
17 Georgia over time.

18 Does information about how a voter votes stay on the BMD
19 after the voter has voted?

20 **A.** It does not. The BMD is a ballot-marking device. It is
21 not a tabulating unit. It does not collect results.

22 The only thing that the BMD keeps record of, from a
23 tabulation standpoint, is how many individual ballots it has
24 printed out. It does maintain a log of activities that
25 indicates that a voter access card was inserted and that a

1 ballot was printed. But it does not contain any information in
2 relation to what was selected by the voter.

3 **Q.** Let's move next to the precinct scanner or the ICP.

4 What functions does a precinct scanner carry out?

5 **A.** The precinct scanner is the device in the polling place
6 that actually tabulates the ballot. It collects information
7 from the ballot. It collects the votes selected by that voter
8 showing the voter's intent.

9 It also creates a digital image of the ballot. The
10 digital image of the ballot contains the front page of the
11 ballot. It contains the back page of the ballots like -- it is
12 like a document scan showing you what was on the ballot.

13 And then, finally, there's a third page that the ICC adds
14 into the record, and it is called an audit log or audit --
15 audit record. And it is showing how the scanner interpreted
16 the previous two pages.

17 It shows that this particular tabulator was used at this
18 point in time. And then it shows contest A and the selection
19 made, contest B, selection made. It is showing how the scanner
20 has interpreted the preceding two pages.

21 **Q.** And does that audit page that is attached to whatever
22 ballot is scanned -- is that created by both the ICC and the
23 ICP?

24 **A.** It is.

25 **Q.** Do you know if ballot images, including the audit page,

1 are public records after an election?

2 **A.** Ballot images can be requested under the Open Records Act,
3 yes.

4 **Q.** Mr. Barnes, what part of the government holds EMS, ICC,
5 BMD, and ICPs that are used in elections in Georgia?

6 **A.** The election equipment is housed and maintained by the
7 county elections office.

8 **Q.** So I would like to move next to election project files
9 that you referenced.

10 Does your office build election project files for use in
11 Georgia elections?

12 **A.** We do.

13 **Q.** And if you could just explain to the Court what is
14 included in an election project file.

15 **A.** Okay. An election project file if -- in some essence is a
16 database. It contains a tremendous amount of information
17 pertaining to the jurisdiction that is executing the election.
18 It contains information about the political districts. And the
19 information it contains is what political districts are
20 residing in that jurisdiction.

21 It starts at the Congressional level. Goes through the
22 State house, State senate, county commission districts, school
23 board districts; if there is a municipality in the county,
24 those municipalities, those municipal wards, municipal school
25 boards, could be fire board districts.

1 So that is sort of the starting point in the election
2 project files establishing what political districts are in the
3 jurisdiction.

4 The next item of information that is in the election
5 project file are the precincts. And precincts are not
6 necessarily polling places. We commonly think of a precinct as
7 where we go to vote, but a precinct is actually a division of
8 voters.

9 But within each jurisdiction there are a certain number of
10 precincts to which voters are assigned. And then within those
11 individual precincts there may be subdivisions of those voters.

12 The county may have chosen that within this particular
13 precinct within, we'll say, a thousand voters, that based upon
14 their residencies and district lines, that half of the voters
15 are in county commission District 1 and the other are in county
16 commission District 2.

17 All other districts in that precinct, they are the same.
18 But because half of the voters live in county commission
19 District 1 versus county commission District 2, that is going
20 to create a different district combination within that
21 precinct.

22 That district combination difference can lead to their
23 being a different ballot style available within the precinct,
24 one for voters in county commission District 1 versus one for
25 people in county commission District 2.

1 So that is what we call precincts and precinct portions
2 within the structure of the elections project.

3 Once we have the districts, the precincts and the precinct
4 portions established within a project file, we can then begin
5 adding the contests. Contests are what you see on the ballot.
6 The race for probate judge, the race for sheriff. Those are
7 individual contests that have to be added to the elections
8 project.

9 Projects -- the contests get added in on top of the
10 districts and precincts and precinct portions and that will
11 generate a skeleton of a ballot.

12 But it is by far not done yet.

13 The next thing we need are the candidates. And there will
14 be a qualifying time that comes into place. Candidates will
15 qualify, and that information is then provided to my office and
16 to my staff, and then we will go in and put in the candidate
17 names.

18 That will then lead to a ballot structure being more
19 filled in. But now we've got to add what is called headers.
20 That is another portion of the item that is in the project
21 file. This is the instructions. The title of the election,
22 the date of the election, information that a voter needs in
23 order to move through the ballot.

24 Then we finally have a ballot -- a finalized ballot that
25 we can begin proofing. Other items that have to be added in to

1 the election project file are the physical polling places --
2 the polling place, what precincts are assigned to those polling
3 places, and then finally how much equipment is going to be
4 assigned to those individual polling places.

5 All of this information is what is maintained and built
6 into an elections project.

7 **Q.** Let's talk a little bit more about the building of an
8 election project. I think you've talked about the pieces that
9 you need to be able to build it.

10 Does the building of election projects happen in your
11 office?

12 **A.** It does.

13 **Q.** And I'm assuming you have some kind of security for your
14 office?

15 **A.** We do.

16 **Q.** Does the building of ballots in your office take place on
17 internet-connected computers?

18 **A.** It does not.

19 **Q.** How many computers do you have on your desk?

20 **A.** I have two different computers on my desk.

21 **Q.** Okay. Does anyone today build ballots for Georgia
22 elections outside of your office?

23 **A.** They do not.

24 **Q.** And does the Secretary's office conduct background checks
25 on individuals before they are allowed to build ballots?

1 **A.** They are.

2 **Q.** Is the Secretary's office currently relying on any vendors
3 for the building of ballots in Georgia elections?

4 **A.** We are not.

5 **Q.** So, Mr. Barnes, you referenced you had two computers on
6 your desk.

7 What steps do you take if you need to move information
8 from the ballot-building system to your other computer on your
9 desk?

10 **A.** Well, we do have to move information from the
11 ballot-building environment to another computer for
12 distribution to counties during the ballot-proofing process.

13 When we need to move those files, which are predominantly
14 PDF files and Excel spreadsheets, for proofing purposes, we
15 will take a formatted -- cleanly formatted USB drive.

16 And we actually have little formatting devices in our
17 office that we use when we purchase brand-new jump drives. We
18 unbox those jump drives, take them to this little box that is
19 not connected to anything but an outlet, an AC outlet. And it
20 performs a formatting task.

21 And that clears out the drive, gets rid of anything that
22 may possibly be there. Gets it formatted. And then that drive
23 is then inserted into our election system.

24 And what we have are election work stations. The election
25 work station doesn't actually house any of the applications.

1 It is a portal into our ballot-building system. So once the
2 jump drive is inserted into that work station, it still is not
3 touching our voting system environment. It has to be enabled
4 through the virtual machine.

5 Once it is there, we are then able to transfer the file on
6 to the USB drive. The USB drive is then ejected from the
7 system and transferred over to an SOS maintained device for
8 distribution of information to the counties.

9 **Q.** And to be clear, when you are talking about distribution
10 of information from that process using the USB drives, are you
11 ever distributing election project files that way?

12 **A.** We are not. We are -- in this process we are distributing
13 PDF files of ballots, of proofing ballots, and of Excel sheets
14 that pertain to what precincts are in a jurisdiction, what
15 polling places, what tabulators are being built into the
16 election project, information that an election official needs
17 to be able to review and proof while we're building their
18 election project.

19 **Q.** So let's keep moving through the sequence then. You've
20 talked about the different things in the ballot-building
21 process. You talked about the office, getting this information
22 to counties.

23 What is involved with the county proofing the files that
24 you send that are different from the election project?

25 **A.** The county will review the elections -- the ballot images.

1 Counties know what they are expecting to see on a ballot. They
2 know what contest they are expecting to see. They are knowing
3 what candidates.

4 They also are expecting to see particular precincts being
5 listed at the top of the ballot for particular styles. And
6 they are wanting to see that we have accounted for all the
7 precincts that are in the jurisdiction. They are wanting to
8 make sure that we have set up the right amount of equipment to
9 be used in the election.

10 So these are things that we are commonly distributing to
11 the county. They review, and they will provide corrections to
12 us in writing, or they will provide approval to us saying that
13 we do have the project correct and that it is ready for
14 finalization.

15 **Q.** And then what is the timeline for the process as you
16 prepare for an election for each of these steps?

17 **A.** The timelines are variable. We have just concluded the --
18 building the project files for all 159 counties for the
19 presidential preference primary that is scheduled for
20 March 12th here in Georgia.

21 We began building those projects on December --
22 approximately December 19th, and it is now January 25th, I
23 believe. So it was basically a four-week-plus period of
24 collecting information, building information, proofing
25 information.

1 And this was a minor election. What I mean by minor
2 election is only in relation to how many contests are on the
3 ballot. In most instances it is two ballot styles within a
4 jurisdiction. It is a Republican ballot for president and a
5 Democratic ballot for president. So this was not something
6 that the jurisdictions themselves had to spend a tremendous
7 amount of time proofing the individual ballots.

8 We were also in the midst of some redistricting that was
9 brought about by the -- a special session in the General
10 Assembly. And that can create hiccups. When I say hiccups,
11 that can just interrupt the timeline where a county -- their
12 precincts and their precinct portions are in flux.

13 And when we're building a project file, we don't want
14 there to be flux. We want there to be a solid state so that we
15 know that the right ballot will be provided to the individual
16 voter.

17 **Q.** And does the ballot that you and your office is building
18 have to be built in the same version of Dominion software as is
19 being run on the equipment in the counties?

20 **A.** It does.

21 **Q.** So let's say we've gotten to this point. The counties
22 signed off on their proof. It is time to, I guess you said,
23 finalize the project.

24 What all gets included in terms of ballots inside the
25 election project when your office finalizes it?

1 **A.** Well, when we finalize or complete the elections project,
2 there won't be just a single -- there won't just be a single
3 ballot in the project file. Because we use different methods
4 of voting in the State, we have to make sure there is a ballot
5 for each one of those methods and that those ballots are equal
6 to one another. They have the same content.

7 But we have to build an audio ballot for every individual
8 ballot. We have to build the optical scan ballot, which is
9 what you see for mail-out absentee use in the State of Georgia.
10 Those also serve as provisional ballots.

11 We have to build a ballot that is seen on the BMD touch
12 screen. And we have to build a ballot printout that is needed
13 for the BMD printer.

14 The BMD basically has two items. It has the ballot that
15 you see on-screen, and it has a ballot that is the official
16 ballot that is printed out containing the selections made by
17 the voter.

18 **Q.** And so all four of those different types of ballots are
19 then included -- are they then included in an election project?

20 **A.** Yes. Once -- once the completion of those building
21 aspects are in place, before we produce a file that is then
22 sent to the jurisdiction, we will make sure that the BMD is
23 showing that ballot properly.

24 So we will create a BMD jump drive for the jurisdiction
25 using our system, insert that into a BMD in our office, and

1 then we go through a proofing phase on the BMD to verify that
2 the races are showing as they should in the order that they
3 should, that the candidates are displayed as they should, that
4 the touch response of the individual candidates is as it should
5 be.

6 And then we produce ballots from those BMDs to validate
7 that the printed ballot from the BMD is equaling the selections
8 made by the tester in the testing phase. Those ballots are
9 then looked at to confirm that we have the right dates on them,
10 the right jurisdiction, the right name of the ballot.

11 And then once that test has been completed and passed,
12 then we go through a finalization phase where the project --
13 the individual passwords for that project are assigned and the
14 project file is then encapsulated in a password-protected
15 folder. And then that password-protected folder containing the
16 election project is then burned to a CD.

17 **Q.** So let me -- before we move on from that testing phase you
18 referenced, is that a different test than logic and accuracy
19 testing?

20 **A.** It is a different test. What we are doing at this point
21 in time is just validating that the BMD is loading properly
22 with information from the project and that the BMD is showing
23 the proper information. We are not conducting a test of the
24 equipment in our office. We are testing the project file to
25 making sure that it is complete and ready for distribution.

1 **Q.** So now let's talk about -- you began to talk about this a
2 little bit -- how the information then gets from your office to
3 the counties.

4 Can you walk the Court through the steps that are
5 necessary to prepare the file for delivery for the county and
6 then how the project file gets delivered to the county election
7 officials?

8 **A.** Right. Once we have completed all our inspection of the
9 file, it is then produced. It is an election project file.
10 And the way the system operates, the election project file is a
11 zipped file. And then a signature key is also provided with
12 that signature -- with that zip file. You can't open the zip
13 file without the provided signature file.

14 But those two items are then encapsulated in a
15 password-protected folder. That password-protected folder with
16 its contents is then burned to a CD. In some cases, we have to
17 burn it to a DVD because of the size of the file.

18 Once that media has been produced, we double-check to make
19 sure that the contents are accessible because we
20 double-check -- make sure the right password was applied and
21 that we know what that password was so that we can provide it
22 to the county when time comes.

23 **Q.** And can I ask, is that a unique password for each county?

24 **A.** Yes. Yes. The encapsulation -- what we call an
25 extraction code is unique for each individual county.

1 Once the package is set up, we'll again validate that
2 everything is as it should be on the CD or DVD. Then that is
3 packaged in what is -- best way to reference it is it looks
4 like an old bank bag. It is a canvas bag with a lock -- with a
5 keyed lock on it.

6 And there is one of these bags for every individual
7 county. We have -- and the Secretary of State's office, we
8 have the master key for those bags. But each individual county
9 has a specific key that works in their county for their bag.

10 Inside the CD is --

11 THE COURT: Let me stop you there for a second.

12 We've had a discussion of the key in a preceding
13 piece of testimony. Are we talking about an actual physical
14 key? Are we talking about -- I just want to make sure we're
15 talking about the same key we discussed in your colleague's
16 testimony yesterday.

17 BY MR. TYSON:

18 **Q.** Mr. Barnes, is there a difference in a key that is used, a
19 security key on a scanner and the key that you are talking
20 about, for these particular canvas bags?

21 **A.** Yes.

22 **Q.** And what is that difference?

23 **A.** The key that is associated to these canvas bags looks like
24 a key that you would use to unlock a door. Because it is
25 physically placed into a lock to lock and unlock the bag.

1 Once the CD or DVD is placed inside the bag, the bag is
2 zipped up closed and then sealed with the key and clock to --
3 zipper locked into the lock.

4 Then the bag is placed in a package for delivery to the
5 individual jurisdiction.

6 **Q.** And is using CDs or DVDs different than what the
7 Secretary's office has done previously for the delivery of
8 election project files?

9 **A.** It is.

10 **Q.** And --

11 **A.** And actually -- it actually is a return to this. In
12 preceding systems, we used CDs to transfer files to counties
13 and we have now returned back to using CDs.

14 **Q.** And is the CDs and DVD that you use write-once media?

15 **A.** They are.

16 **Q.** And when did the State begin using write-once media for
17 the distribution of election projects?

18 **A.** For these projects, we began using -- we converted back to
19 the DVDs at the end of '23, I believe.

20 THE COURT: Okay. I have another just -- it is just
21 the use of the word.

22 Earlier you said -- the witness said, once we
23 completed all our inspection of the file, it is then produced.
24 It is an election project file in the way the system operates.
25 The election project file is a zipped file, and then a

1 signature key is also provided with the signature with that zip
2 file. You can't open the zip file without the provided
3 signature file.

4 So again, it is just another variation of the same
5 question I have. What are we talking about?

6 MR. TYSON: Certainly, Your Honor. I think we may be
7 able to answer it by what a county has to do to access once
8 they receive their canvas bag.

9 BY MR. TYSON:

10 **Q.** Mr. Barnes, could you just walk through for the Court,
11 when a county receives their canvas bag from the State with the
12 election project file, what are the steps they have to follow
13 to access the information that is contained on that CD or DVD.

14 **A.** Okay. There's multiple steps that they have to go
15 through. But they will receive the bag. When the package is
16 delivered to the election supervisor's office, they will remove
17 the bag from the packaging. They will take their physical key,
18 insert it into the bag, unlock the bag.

19 **Q.** Into the physical lock on the bag?

20 **A.** The physical lock. The physical key into the physical
21 lock. Unlock the bag and remove the media. The CD is then
22 removed and inserted into the election management computer.

23 What the user would see -- if the CD drive opens and shows
24 a directory of files present on the CD, it will find a single
25 zipped folder. At this time, the county can then double click

1 on that compressed folder.

2 **Q.** Can I pause you there for a second? Is the single zipped
3 folder you're referring to that they would see an encrypted
4 file?

5 **A.** It is a password-protected file.

6 **Q.** Okay.

7 **A.** When you double click on that compressed folder, you will
8 then see a single folder. What the county then has to do is
9 select that folder and either copy that folder or drag that
10 folder over to the election management computer.

11 In the process of moving that folder, the county will then
12 be prompted for a password. The password that the county needs
13 is an extraction code. The county has to call our office
14 directly to obtain that extraction code.

15 Counties are provided with a list of passwords for the
16 election in question through the -- through a Secretary of
17 State controlled FTP location where counties log in to obtain
18 that listing of passwords for that given election.

19 Also included on that password sheet is a CES access code.
20 The county will call my office, CES, and talk with their
21 election project coordinator, the person that builds their
22 election project. And then the county provides the appropriate
23 access code to the election project coordinator.

24 Once the project coordinator confirms that code, they then
25 provide the extraction code that the county needs to complete

1 the movement of the file from the CD to the election management
2 computer.

3 **Q.** Can I pause you there just to be sure?

4 You mentioned an FTP site. Are any election projects ever
5 placed on the FTP site?

6 **A.** They are not.

7 **Q.** Okay. And so is the information on the FTP site unique to
8 each county for their access code?

9 **A.** Yes.

10 **Q.** And so when a county official wants to open the election
11 project -- I think I have heard you say we have to use a
12 physical key on the bag, place the CD in, have logged in and
13 gotten an access code from the FTP site and then call your
14 office to get an additional code?

15 **A.** Correct.

16 **Q.** Okay.

17 **A.** Once the county has completed moving the file from the CD,
18 the CD is then removed from the election management computer
19 and that CD is retained by the county. This is their original
20 backup copy of their election project for this particular
21 election.

22 Now, back to the election management server. All they
23 have done is moved the file to the server. The file has not
24 been loaded into the election management application as of yet.

25 If the election supervisor were to open up the folder that

1 has been moved from the CD to the election management computer,
2 they will find two files in that folder. One file is a -- is
3 the data itself. It is a zipped folder. It contains all of
4 the election project information. With that is a project
5 signature key. It is a SHA file. It is a generated key.

6 When the county opens up one of the applications in the
7 Democracy Suite, which is what we use in Georgia, they have to
8 open up what is called election event designer. That is the
9 application that is used to interact with the election project.

10 They have to open up -- and we use an acronym. They have
11 to open up EED. When they open up EED, they go through a
12 process of restoring the project file into the application.

13 If that SHA file is not present in that folder, it will
14 not load. It has to be there.

15 The application looks for the zip file along with the SHA
16 file, and it will then transfer information from the zip file
17 into the application within EED for the county to then interact
18 with.

19 MR. TYSON: So, Your Honor, does that answer your
20 questions as far as the various keys and passwords that are
21 used?

22 THE COURT: Well, I think probably it gives me a
23 beginning point.

24 Thank you.

25

1 BY MR. TYSON:

2 Q. So, Mr. Barnes, moving along in our sequence here, our
3 county has now successfully loaded this election project into
4 their EMS system; is that right?

5 A. Correct.

6 Q. And to be clear, this is a process -- is this a process
7 that has to be followed for each election?

8 A. It is.

9 Q. How then does the county take the information in the EMS
10 from the election project and apply that information to the
11 other components of the election system?

12 A. The county has to build various pieces of media that are
13 used to transfer information from the election -- from the
14 project file residing on the election management server to the
15 various components of the voting system.

16 For example, for the ICP, the scanner that is used in the
17 polling places, information has to be created from the election
18 management computer from the election project and transferred
19 to the ICP. That is done using two CompactFlash cards.

20 The election supervisor has to physically create two
21 individual CompactFlash cards for each individual ICP being
22 used in the election.

23 They also have to create for the ICP a security key, a
24 physical key.

25 Q. So let me pause you there.

1 The security key for the ICP that you are referring to,
2 could you explain to the Court what that key looks like.

3 **A.** The best way that I can explain it, it looks like a very
4 large size watch battery, is the best I can give an example of.
5 People refer to it as an iButton. But it is a little small
6 key, a little circular key. And it contains a passcode on it
7 that pertains to the election project for that county.

8 And in order to load the information from the CompactFlash
9 card into the ICP, you have to have that security key. The two
10 CompactFlash cards will be inserted into the ICP. The ICP will
11 then -- when it is turned on, will go through a boot phase.
12 And then it will prompt the user for the insertion of the
13 security key.

14 The security key is then placed into the ICP. It does not
15 have to retain -- it does not have to remain in the ICP. It is
16 placed -- it is placed into the ICP to activate a prompt for
17 the poll worker or elections office worker to then key in the
18 appropriate eight-digit -- eight-digit code to then access
19 information on the ICP.

20 THE COURT: So this is one that just uses the county
21 code?

22 THE WITNESS: This -- this -- yes, Your Honor, is
23 that each individual county, each individual project file has
24 an eight-digit code associated to that election project for the
25 county for that individual election project.

1 THE COURT: But it is the county's code? It doesn't
2 vary?

3 THE WITNESS: It does not vary. The eight-digit code
4 varies from election to election.

5 THE COURT: I understand that. But they get a
6 different one for each election, but this is the same -- if I'm
7 in Annabelle's -- Annabelle County, I'm always using the same
8 code for that election?

9 THE WITNESS: Yes, Your Honor. If you are in a
10 county, you are using the same code in that county for this
11 operation.

12 THE COURT: Okay.

13 BY MR. TYSON:

14 **Q.** So, Mr. Barnes, you have explained the ICP component here.
15 Do you know if counties will reuse the CompactFlash cards
16 that go into those ICPs?

17 **A.** They will.

18 **Q.** And are you aware of the cost of those CompactFlash cards?

19 **A.** The CompactFlash cards that Dominion recommends to us in
20 use are the same style of CompactFlash cards that Dominion
21 provides. And they are the same CompactFlash cards that
22 Dominion used with the ICP when it went through federal
23 testing.

24 I'm not absolutely 100 percent certain what the current
25 price of those cards are or what Dominion is charging for that

1 card. I believe it is between 150 to maybe \$250 per card. But
2 I may be incorrect.

3 **Q.** So, Mr. Barnes, we talked about the ICP. How does
4 information get from the EMS to the BMDs?

5 **A.** It is a similar process. But not the same. The elections
6 office will have to create election media. But instead of
7 CompactFlash cards, they have to create a USB drive.

8 The USB drive contain -- will be -- placed on to the USB
9 file is the BMD tabulator file. The BMD tabulator file
10 contains all the ballot images for that jurisdiction for that
11 election.

12 And in association with the USB drive, they also have to
13 create a poll worker card from the elections project. When a
14 county then moves to the BMD, they have to -- and also they
15 have to create a technician card. I failed to state that.

16 The county has to -- in order to load the BMD, they have
17 to insert a technician card with a corresponding eight-digit
18 code. Once that has been established --

19 THE COURT: Again, that is the county code?

20 THE WITNESS: Yes, Your Honor, it is the county code.

21 Once the technician page has been entered into, then
22 the county is able to load the election information from the
23 USB into the BMD device.

24 Once they have completed that loading process, they
25 remove the technician card. And now they will insert the poll

1 worker card. Once the poll worker card is inserted and the
2 eight-digit code for the county is entered into, the BMD will
3 then react and begin decrypting the file.

4 It goes through a very short decryption phase, a
5 loading phase, where the poll worker or the county operator, if
6 they are getting the system loaded, will then select from a
7 drop-down menu the tabulator they are wishing the load, the
8 information they are wishing to load.

9 Once that is selected, then the information is loaded
10 into the system. The poll is not in an open state. It is
11 still in a closed state at this manner.

12 The user could then open the polls if they were
13 wishing to begin testing of the device. But that completes the
14 loading of the information.

15 The USB drive that was used to transfer the
16 information can now be removed.

17 BY MR. TYSON:

18 **Q.** And is all of the information about each election project
19 placed on to each ICP in a county?

20 **A.** No. The ICPs are the ballot-scanning devices. So on
21 election day, we have a number of polling locations in a
22 jurisdiction. The ICP in those polling locations are only --
23 are only loaded with the ballots pertaining to that polling
24 location -- whatever ballots are associated to that precinct.

25 Now, for advanced voting, that is a different environment.

1 For advanced voting, the ICP may have all of the county ballot
2 styles, again depending upon the size of the project.

3 If it is a small county like Banks County, Georgia, that
4 may only have two or three ballot styles, then for advanced
5 voting, all three of those or four of those ballot styles will
6 be available during advanced voting because we don't know who
7 is going to come in and vote.

8 But on election day in Banks County, then they may have
9 four polling locations. Each one of those individual polling
10 locations will only have the ballots associated to that polling
11 location configured to their ICPs.

12 **Q.** And when a county has completed all the different
13 processes we have talked about loading all the election media
14 on to the BMDs and the ICPs, are they then at a point where
15 they can conduct pre-election logic and accuracy testing?

16 **A.** They have loaded the information to the ICPs and to the
17 BMDs. They can begin part of their logic and accuracy testing.
18 They are also going to need a component from their Poll Pad,
19 their electronic pollbook.

20 The election file that powers the electronic poll book
21 needed to be loaded because that is the method for creating a
22 voter access card to validate working with the devices.

23 **Q.** And I know we've talked a little bit about the eight-digit
24 code for each county.

25 Are you familiar with a part of the Dominion equipment

1 about unifying tabulator security keys?

2 **A.** I am.

3 **Q.** And does Georgia unify tabulator security keys?

4 **A.** We use the same security key in each individual county.
5 We made a decision when we transferred to the Dominion system
6 to -- in a best effort to make sure that poll workers and
7 election officials were successful in executing the election.

8 So we established the fact that we would change the
9 passcodes for each individual election. But we would allow the
10 county to use a single passcode for poll worker keys in use of
11 that election.

12 **Q.** So, Mr. Barnes, we have talked about a lot of different
13 systems. After an election is concluded, is information from
14 county systems then placed back into the ballot-building system
15 that is the isolated system in your office?

16 **A.** It is not.

17 **Q.** So is it -- does information then flow in one direction
18 from the ballot-building system to the county EMSs?

19 **A.** Yes.

20 **Q.** Mr. Barnes, you recall that your office replaced Coffee
21 County's election management server in spring, summer of 2021?

22 **A.** I do.

23 **Q.** Did Dominion try to assist your office with logging into
24 or accessing that server?

25 **A.** They did.

1 Q. Was Dominion able to access the Coffee County server in
2 your office?

3 A. They were not.

4 Q. Mr. Barnes, in your role, do you receive reports from
5 counties about problems they have with Dominion voting
6 equipment?

7 A. I do.

8 Q. Are you aware of any reports that involve a machine
9 malfunctioning as opposed to a human error?

10 A. I have had reports from counties of where a BMD is no
11 longer recognizing a voter access card when it is inserted. I
12 have had counties call outlining that the -- the BMD is no
13 longer able to communicate to the printer.

14 I have heard of those type of errors, yes.

15 Q. And what is a county supposed to do if it has an error
16 like that?

17 A. Any type of functional error. If it is during an
18 election, we tell the county immediately to turn their device
19 off, seal the device. There is no need to try to, you know,
20 correct that device at this point. There are other devices
21 that can be used in the polling place.

22 If it is a device during testing, during logic and
23 accuracy testing, pre-election testing, then we're going to
24 advise the county again, probably best not to use that device
25 for the upcoming election.

1 Any device in which they have a malfunction, meaning that
2 it is not operating, then we would recommend that they submit
3 an RMA, which is a repair to manufacturer submission with the
4 vendor, and then make sure that that device is transferred to
5 the vendor for repair.

6 **Q.** So in this case, the vendor would be Dominion? The county
7 would ship the BMD back to Dominion?

8 **A.** That is correct.

9 **Q.** And when you referenced malfunctions earlier, are you
10 aware of any reports of malfunctions related to a BMD
11 incorrectly marking a ballot?

12 **A.** I have not been made aware of one.

13 **Q.** This may be a self-evident question, but do humans make
14 mistakes in the administration of elections?

15 **A.** Yes.

16 **Q.** Are you aware of an incident involving a county commission
17 race in DeKalb County 2022 and the Dominion equipment?

18 **A.** I am.

19 **Q.** Can you just explain to the Court what happened in that
20 incident?

21 **A.** I believe this is in relation to -- I believe it was
22 county commission District 2 election in 2022. And it was -- a
23 lot of different things happened that caused the issue in which
24 we found ourselves in.

25 The original project file for DeKalb County was built.

1 And the county commission District 2 race, I believe, had -- I
2 believe it was a special election for county commission
3 District 2 -- had four qualified candidates that had qualified
4 for the race.

5 The election project was built by -- was built by my
6 office, proofed and approved by DeKalb County with that
7 configuration of four candidates.

8 That project file was then delivered to DeKalb County.
9 DeKalb County loaded that file to their election management
10 server, created media, and began testing that media and testing
11 the system for the election.

12 Not soon after or not too long after they began building
13 that media, one of the four candidates withdrew from the
14 contest. And I believe it was the second candidate listed on
15 the ballot.

16 DeKalb County, at that point in time, made the decision
17 that they were going to go ahead and notate in their election
18 project file that the candidate was going to be placed into
19 what is called a disabled status. It is that if a voter [sic]
20 withdraws, you put them into a disabled status so that when it
21 comes time to produce election results at the end of the
22 election you don't count votes for the withdrawn candidate.

23 They placed the candidate into the disabled state. They
24 then made their way to advanced voting. They had gone through
25 logic and accuracy testing, had tested the equipment that they

1 were distributing for advanced voting. They still had other
2 equipment to test and get ready for the election. But they
3 were continuing that work.

4 On the first day of advanced voting, it was discovered
5 that there was an error in the ballot display on the BMD for
6 the Republican primary ballot. The Republican primary ballot
7 had multiple Republican party questions. I believe it was the
8 second question on the Republican party ballot that the
9 question was in the ballot, there was a yes/no option for the
10 voter, but the physical text of the question was not being
11 displayed as it should be.

12 When DeKalb County notified our office of this, then we
13 walked DeKalb County through the process of correcting that.
14 To correct that issue in the election project, the county had
15 to go back a particular phase in the election project to
16 correct the mistake.

17 Once that correction in the BMD display was corrected,
18 DeKalb County then had to create new election media to be
19 installed on to the BMD devices to display the Republican
20 question properly.

21 What was failed to be remembered at this time was that the
22 county commission District 2 race, that the second candidate
23 had been moved to a disabled state. Because that candidate had
24 been moved to a disabled state, when the new election media was
25 generated for the BMDs to correct the Republican ballot issue,

1 it created a new contest for county commission District 2 that
2 no longer contained four candidates but contained three
3 candidates.

4 And the three candidates it contained were the first
5 candidate, the third candidate, and the fourth candidate. It
6 had bypassed the second candidate.

7 DeKalb County then installed the BMD image information on
8 to their BMD devices. They still were in the process of
9 testing equipment, loading equipment, getting it ready for
10 election.

11 The ICP tabulators had been created. The media for the
12 ICP tabulators had been created. And the tabulating
13 information on the ICPs was set for four candidates; one, two,
14 three, and four.

15 When election night came and the ballots had been produced
16 by the BMDs that had three candidates, they had been put
17 through scanners that were expecting four candidates. When the
18 tapes began printing out from the tabulators at the end of the
19 day, the tabulator tape would show four candidates. But it was
20 only showing votes being registered for the three -- the top
21 three candidates listed on the tabulated tape.

22 Because there was a discrepancy between the ballot image
23 containing three candidates and the scanner expecting to see
24 four candidates in that contest, it was not giving us an
25 accurate indication of votes received by the individual

1 candidates.

2 **Q.** So would you categorize that DeKalb 2022 incident as a
3 machine malfunction or as human error?

4 **A.** I would categorize it as human error. It is that there
5 was a step missed in the process. And that missing of the step
6 then cascaded into other issues that were -- that created
7 impact.

8 **Q.** Do you know if DeKalb County was able to determine the
9 correct vote count for that race?

10 **A.** They were able to go back to the physical ballot itself
11 and determine the intent of the voter at that time.

12 **Q.** And that was from the human readable portion?

13 **A.** It was.

14 **Q.** Do you recall hearing about issues with Dominion equipment
15 in Spalding County in 2021?

16 **A.** I remember the elections board, I believe it was, reached
17 out to the --

18 THE COURT: Could you stop for a second.

19 When you are saying the human readable portion of the
20 ballot, what do you mean?

21 THE WITNESS: I mean the selections that were -- we
22 could not scan the ballot and get an accurate result because
23 the scanning of the ballot, the four candidates versus three
24 candidates, those -- the information couldn't -- couldn't flow
25 in properly.

1 So the county had to go to the portion of the ballot
2 below the QR code from the BMD printed ballot where it says
3 county commission district and then selection of this candidate
4 was made. They had to do a physical count.

5 THE COURT: What was scanned? What was scanned on
6 the -- they are looking at the physical scanning?

7 THE WITNESS: No. They physically held the ballot in
8 their hand and had to count it and say that this was a vote
9 for --

10 THE COURT: I understand that.

11 So you had a physical copy of the ballot. But it is
12 not -- that was a hand-marked. That was what the computer
13 generated. That is why I'm a little bit --

14 THE WITNESS: The BMD will produce the selections
15 made. The selections available to the BMD had three candidates
16 listed. When the BMD printed, it would show the vote of one of
17 those three candidates. And not one of the -- not any further
18 for the fourth because that BMD did not contain a fourth
19 candidate. The BMD only contained three candidates.

20 The ICP scanner that is used to tabulate the votes
21 was expecting the ballot to have a result for four candidates.
22 So it would take -- the BMD sees the first candidate, in
23 essence, as candidate one. And there is a vote for candidate
24 one. The scanner says here is the contest. Here is candidate
25 one. Oh, that is a vote for candidate one.

1 The scanner, candidate two in the second position was
2 candidate two out of four.

3 On the BMD, candidate two that the BMD was displaying
4 was actually candidate three in relation to the ICP's logic.
5 But when the BMD was transferring its information into the
6 scanner for tabulation purposes, it was routing the vote for
7 its second candidate selection to the second candidate position
8 on the ICP. But the second candidate on the ICP was a
9 withdrawn candidate. Not the candidate that was displayed by
10 the BMD.

11 So for the county to properly tabulate the results,
12 they had to go to the physical BMD ballot and look at the name
13 that had been printed out by the BMD because it was going to be
14 one of those four -- one of those three candidates listed.

15 THE COURT: All -- I think I have that. I guess --
16 but you keep on referring to it as a hand ballot. And I don't
17 understand why it is deemed a hand ballot.

18 THE WITNESS: I apologize. I'm just referring to it
19 as they had to physically hold it in their hand. It was a BMD
20 printed-out ballot, yes, Your Honor.

21 THE COURT: With BMD marks?

22 THE WITNESS: But in order to count it, they had to
23 hold the ballot in their hand and tabulate it.

24 THE COURT: All right.

25 MR. TYSON: Thank you, Your Honor.

1 BY MR. TYSON:

2 Q. Mr. Barnes, do you recall -- actually, one more question
3 on that point.

4 Did the QR code and the human readable portion of those
5 DeKalb ballots match?

6 A. Yes.

7 Q. It was just a matter of interpreting --

8 MR. FISHER: Objection, Your Honor. I move to strike
9 that. He can't possibly know whether they, in fact, matched.

10 MR. TYSON: May I lay some foundation on that, Your
11 Honor?

12 THE COURT: Yes.

13 BY MR. TYSON:

14 Q. Mr. Barnes, do you have a way of determining if the human
15 readable and QR code portions of those ballots matched?

16 A. The only way that I would know to be able to go back to
17 that would be to go back to the original project file that was
18 originally built that had the four candidates listed.

19 If the BMD produced a ballot that contained the four
20 candidates or the BMD had the four candidates and produced a
21 ballot, then the original project file would be able to load a
22 scanner, scan the ballot, and you could put one ballot through
23 and correlate what is on the ballot versus what the tabulator
24 tabulates.

25 If the BMD contained only three candidates, then you have

1 to go to a project file that has only the three candidates
2 enabled, create media from it, load it into a device, and then
3 put the ballot through the device and correlate again content
4 of the ballot versus what the tabulator has interpreted.

5 **Q.** Thank you.

6 Moving to Spalding County, are you aware of an incident
7 involving Dominion equipment in Spalding County in 2021?

8 **A.** I'm -- I'm aware that their elections board reached out to
9 the Secretary of State's office. I believe it was after they
10 had made a decision to sever ties with the previous election
11 supervisor in Spalding County.

12 And the board came in to the office and did not like what
13 they saw and reached out to the Secretary of State's office to
14 see if we may come and look at the election server, do another
15 acceptance test of the server.

16 **Q.** And what did the Secretary's office do in response to that
17 request?

18 **A.** My recollection is we did travel to Spalding County to
19 perform an acceptance test on the device.

20 **Q.** Do you recall if the election management server was
21 replaced?

22 **A.** I believe through discussion with the elections board in
23 Spalding County and with the Secretary of State's general
24 counsel that a decision was finally made to provide Spalding
25 County with a new election management server.

1 Q. Mr. Barnes, does the current version of Democracy Suite
2 used by Georgia allow BMDs to create ballots that do not have
3 QR codes?

4 A. It does not.

5 Q. Have you studied what would be necessary for Georgia to
6 eliminate QR codes and print full-face ballots from the BMDs?

7 A. We would have to have a change to the applications that we
8 use in the state of Georgia. We would have to transition to a
9 new set of applications.

10 Q. Okay. And do you know what the process is for installing
11 new applications on Georgia voting equipment?

12 MR. FISHER: Objection, Your Honor, to the extent
13 that this actually calls for this witness to testify about the
14 computer science aspect of installing a new software update.

15 He has already testified in this trial that he is not
16 a computer science expert. Doesn't -- I can pass up the
17 transcript from the last hearing about -- from last week about
18 this.

19 So I don't know if that is where he is going with
20 this. But I just want to flag that before we get any further.

21 MR. TYSON: And to be clear, Your Honor, Mr. Barnes
22 is an operations manager of these devices. So I'm asking
23 operationally, not from a computer science perspective.

24 THE COURT: All right. With that clarification, he
25 may proceed unless he --

1 MR. TYSON: Maybe I can ask it this way, Your Honor.

2 BY MR. TYSON:

3 Q. Mr. Barnes, from an operational perspective, what steps
4 would be necessary to install additional software or upgrades
5 on Dominion voting equipment?

6 A. In order to transition our current voting system into a
7 new set of applications, the way it has been explained to me by
8 the vendor and demonstrated --

9 MR. FISHER: Objection, Your Honor. That is hearsay.

10 MR. TYSON: He is about to explain and demonstrate
11 it. He has done this, as I think he can testify, Your Honor.

12 MR. FISHER: If he has watched -- I mean, he just
13 said the way it was explained to me by the vendor. He is about
14 to testify about hearsay.

15 THE COURT: Well, you may proceed. But I'm going to
16 strike it if it is -- just ends up being I'm repeating what I
17 heard.

18 MR. TYSON: Yes, ma'am.

19 BY MR. TYSON:

20 Q. Mr. Barnes, have you engaged and your staff engaged in a
21 process of testing upgrades to Georgia Dominion equipment?

22 A. We have.

23 Q. What steps did you follow and your staff follow to install
24 upgrades on Georgia Dominion voting equipment?

25 A. Dominion voting came to our office and sat down with a

1 member of my staff, and I was also in the room as they were
2 working through this process, and began the process of
3 rebuilding an election server, an election management server,
4 in order to house the updated applications.

5 The Dominion personnel and my staff went through the steps
6 of resetting the BIOS on the election management computer. And
7 the BIOS is sort of the system configuration in which operating
8 system resides.

9 MR. FISHER: Objection, Your Honor. He's getting
10 into computer science.

11 MR. TYSON: Your Honor, I think he can testify about
12 what each piece does to his understanding. We're not asking
13 for computer science expert testimony here. We're asking for
14 the steps involved.

15 THE COURT: And you're talking BIOS? You are talking
16 B-I-O-S not B-I-A-S?

17 THE WITNESS: B-I-O-S. Yes, Your Honor.

18 THE COURT: What does it stand for?

19 THE WITNESS: I cannot tell you that.

20 MR. FISHER: I think that is -- this is a back door
21 for expert testimony about what --

22 THE COURT: I don't think it is a back door. But it
23 may be worthless. But that is something different. But I
24 don't --

25 MR. FISHER: Your Honor --

1 THE COURT: I'm going to allow him to proceed. But I
2 mean, I can't understand it if you can't tell me what the terms
3 are that you are using.

4 MR. FISHER: Your Honor, if I may. If he can't tell
5 you what the terms are, his only foundation for this is what
6 other people told him. It is not his personal knowledge about
7 what the steps actually were and his understanding of what they
8 were.

9 THE COURT: Were you engaged in the steps yourself?

10 THE WITNESS: I did not press the keys myself. But I
11 watched the person press the keys.

12 THE COURT: Well, I can watch people do a lot of
13 things on the computer with keys and it doesn't mean I
14 understand what is going on.

15 And so I'm not sure -- were you -- I'm trying to
16 understand what your level of engagement in this rebuilding,
17 this process of putting in the new applications and assembling
18 them were.

19 What was your role? Were you just looking at what
20 they are doing?

21 THE WITNESS: Your Honor, I was watching the process
22 so that I could educate the people to which I report to in
23 regards to what effort was going to be needed to go through
24 this process of updating the voting system to a new version of
25 the application.

1 THE COURT: All right. So you tell us, if you would,
2 unless this is a distortion of what you're seeking, what you
3 actually were -- what did you record that you were or what did
4 you observe that -- so that you could report that to your --
5 what the bottom line of what -- how much work this would
6 involve, the money, et cetera. I'm not sure the money was part
7 of that discussion. But whatever you observed.

8 MR. FISHER: Your Honor, just before he answers, I
9 just want to renew our objection from yesterday.

10 THE COURT: You will -- you know, maybe at the end
11 I'm striking the whole thing.

12 MR. FISHER: Fair enough.

13 THE COURT: But I'm going to allow him to say what he
14 observed. It may not be very valuable or -- go ahead.

15 BY MR. TYSON:

16 **Q.** So, Mr. Barnes, you can explain what you advised --

17 THE COURT: No. What did he observe?

18 MR. TYSON: Sorry. Okay.

19 THE COURT: I mean, that is -- I mean, I don't know
20 that there is a foundation for anything he advised or what
21 happened at the moment from -- the way the testimony has come
22 out about this.

23 MR. TYSON: Certainly, Your Honor.

24 BY MR. TYSON:

25 **Q.** Mr. Barnes, can you explain what you observed about the

1 steps necessary to install upgraded Dominion applications?

2 **A.** What I observed and what I asked questions of the vendor
3 and of my staff was, what was preceding? What are you doing?
4 What am I seeing?

5 And what was expressed to me by the vendor was that the
6 first step was to --

7 MR. FISHER: Your Honor.

8 MR. TYSON: Your Honor, please let him testify.

9 THE COURT: I'm going to let him testify. I'm going
10 to see if there is a basis for anything here. All right.

11 MR. FISHER: Okay.

12 THE COURT: Because it is not just not helpful.

13 Go ahead.

14 I hear and understand your objection. It is noted.
15 I haven't really ultimately ruled on it because I've said let
16 me hear it. I don't have a jury here. It is not going to
17 contaminate anyone.

18 BY MR. TYSON:

19 **Q.** Mr. Barnes, if you could continue with the steps.

20 **A.** That the first step was to make sure that the proper BIOS
21 settings were established in the election management server.
22 At this level it is a CPU.

23 THE COURT: All right. But you didn't know what that
24 meant because you didn't know what the BIOS setting was, you
25 said.

1 THE WITNESS: I do understand that the BIOS is a
2 level on which -- is a configuration on a computer that has to
3 be enabled in order for an operating system to be installed.

4 THE COURT: All right.

5 BY MR. TYSON:

6 **Q.** After the BIOS configuration, what had to occur --
7 actually, let's do this. Let's talk about the ballot-marking
8 devices specifically instead of the server.

9 What steps did you observe were necessary to install
10 upgraded Dominion applications on the BMDs?

11 **A.** Okay. On the BMDs, what I witnessed a Dominion technician
12 along with a member of my staff is first -- and what was
13 iterated to me by those performing it, was a flash of the BIOS
14 on the BMD.

15 Once that process of flashing the BIOS, as it was
16 explained to me, was completed, a new operating system was then
17 installed on the BMD. At the completion of the operating
18 system being installed on the BMD, then a new application was
19 installed on the BMD.

20 And once that third step was completed, the BMD was ready
21 to then receive an elections file from the new application set.

22 **Q.** How many pieces of media were used for this process?

23 **A.** My recollection is there were three individual USB drives
24 used in this process.

25 **Q.** And do you have an estimate on the total time to do this

1 process on one BMD?

2 **A.** I believe I looked at the clock and it was approximately
3 20 minutes from beginning to end.

4 **Q.** Can you explain the steps required to install updated
5 Dominion applications on the ICP?

6 **A.** On an ICP requires the application being replaced on to a
7 CompactFlash drive and then a specific type of iButton, not the
8 iButton used in correlation with an individual election, but a
9 specific type of iButton.

10 The machine would be powered on with the memory card
11 inserted. The iButton key would be placed in. And then the
12 ICP would go through a booting process where it would load the
13 updated application. And that process took also about
14 20 minutes.

15 **Q.** Do you recall the time necessary to install updated
16 applications on the EMS?

17 **A.** The amount of time that it took to configure the EMS
18 was -- I believe the staff and vendor worked on it between four
19 to five hours.

20 **Q.** Do you have an understanding of whether every component
21 would have to be upgraded in order for the new application to
22 be used?

23 **A.** It is my understanding that the election management
24 computer placed into the county would have to go through that
25 process that I witnessed, that all of the BMDs in a county

1 would have to go through that process and all of the ICPs would
2 have to go through that process.

3 **Q.** In addition to that process, do you have an understanding
4 of whether additional equipment would have to be purchased to
5 generate full-face ballots from the BMDs?

6 **A.** The printer that we currently have has -- does not have
7 the capacity to produce an 18-inch ballot. It doesn't have a
8 tray that can hold an 18-inch ballot length.

9 Because we have a number of elections that result in an
10 18-inch ballot being produced, we would have to expend to
11 get -- to get new printers that have a larger print tray to
12 contain the paper.

13 **Q.** Do you recall approximately how many new printers would
14 have to be purchased?

15 **A.** I would assume it would be one for every BMD that is in
16 use in the State, which would be over 32,000.

17 **Q.** Would any changes in training, to your knowledge, be
18 required if Georgia used full-face ballots printed from BMDs?

19 **A.** I don't think there would be a tremendous amount of
20 training from a poll worker perspective. They would have to be
21 able to learn how to expand the tray. Is that -- the printer
22 that I have seen.

23 The poll worker, when you are delivering it, the tray
24 doesn't automatically fit in at that expended -- that extended
25 length. It would have to be -- the poll worker would have to

1 basically break it apart and build it back together.

2 So that is probably the one additional training item that
3 would have to be placed on to a poll worker is to familiarize them
4 with that tray and properly setting it up.

5 **Q.** Since the 2020 election, has the Secretary's office taken
6 any steps to determine if Dominion equipment in counties is
7 functioning as intended?

8 **A.** We have been performing a health check in all 159 counties
9 since -- since last summer. So I believe we began in June of
10 '23.

11 **Q.** And what steps are involved with the health check?

12 **A.** Involved in the health checks were members of my office
13 visiting each county elections office in the State and arriving
14 and doing an acceptance test again of the election management
15 computer.

16 And part of that test is we would run a hash validation of
17 the applications housed on the election management computer.
18 The hash validation is a comparison tool that is used to create
19 a hash signature of the election management applications on the
20 server and compare it against the hash signature of those
21 applications that was provided to the State from the
22 EAC-certified testing laboratory.

23 **Q.** And to be clear, is the hash validation you are referring
24 to the self-reported hash from the BMD?

25 **MR. FISHER:** Your Honor, just briefly. I just want

1 to have a standing objection to this entire line of questioning
2 on the same grounds that we discussed today about his lack of
3 personal knowledge over computer science. The fact that
4 foundation for this appears to be hearsay.

5 And in addition, also our objection yesterday about
6 5.17 and any new mitigations that weren't disclosed in the
7 discovery. Just a standing objection to this line of
8 questioning. I understand the Court's ruling.

9 THE COURT: Thank you.

10 I don't think you have established the foundation for
11 his discussing the hash validation.

12 MR. TYSON: Happy to move on from that, Your Honor.

13 THE COURT: All right.

14 MR. TYSON: Your Honor, if I could consult briefly
15 with my co-counsel. I may be near the end of my questions.

16 **(There was a brief pause in the proceedings.)**

17 BY MR. TYSON:

18 **Q.** Mr. Barnes, I'm not asking you what a hash is or anything
19 related to that.

20 Are you aware that Dominion equipment will display a hash
21 on the BMD?

22 **A.** Yes.

23 **Q.** Did the health checks that you referred to rely on that
24 hash or some other tool?

25 **A.** It did not rely on the hash displayed by the BMD.

1 **Q.** Mr. Barnes, I know you have worked in elections for a long
2 time. And we're grateful for that.

3 Are you proud of the work you have done for Georgia in
4 elections?

5 **A.** I am.

6 **Q.** Do you share with other people what you do for a living?

7 **A.** I don't anymore.

8 **Q.** And why is that?

9 **A.** Elections in our current environment has become much more
10 of a lightning rod of discussion.

11 I grew up always wanting to work for the government. I
12 grew up in a family that worked for the federal government.
13 Both my parents worked 30 years. And I was -- you know, I felt
14 like to some extent I was sort of walking in their footpaths to
15 work for the government and was excited when I started working
16 in the elections environment in 2001, because what I was doing
17 was impacting every single Georgia voter.

18 And the number of voters in this State have grown almost
19 exponentially. And I was very proud that what I was working on
20 they were interacting with.

21 I never bring up with people now what I do because the
22 outcomes of elections are now things that get people divided.
23 And I've had people standing outside my window in my office
24 screaming and blaming me for the outcomes.

25 And I know that is not the case. But when I meet friends

1 now, I don't tell them what I do. I don't -- I don't talk with
2 my eight-year-old little girl about what I do. She knows that
3 Daddy works for the State. But she doesn't know what her daddy
4 does.

5 **Q.** Mr. Barnes, are you personally confident that the outcomes
6 of Georgia elections correctly reflect the intent of the
7 voters?

8 **A.** I am confident of that.

9 MR. TYSON: Thank you, Your Honor. I don't have
10 further questions at this time.

11 THE COURT: Okay. We're going to take a five-minute
12 break, and then we'll resume.

13 COURTROOM SECURITY OFFICER: All rise.

14 **(A brief break was taken at 11:34 AM.)**

15 THE COURT: Have a seat. Now, for a day that was
16 60 degrees, albeit rainy, it is cold in here.

17 Harry, do we have any warmth at all? I know you
18 don't feel it. Harry is the warmest -- is warm-blooded.

19 **(There was a brief pause in the proceedings.)**

20 THE COURT: All right. So I listened to the
21 testimony. And here is my thoughts about -- just in terms of
22 saving time and what you are going to -- counsel is going to
23 zero in on cross-examination, is that I think that the --
24 Mr. Barnes properly could discuss how long it took from his
25 observation to have implemented -- install the software.

1 And, you know, I don't -- he saw it once. I don't
2 know whether that time frame, of course, would be something
3 different if people were doing it not in a demonstration mode
4 or if they were highly skilled and know exactly what they were
5 doing and had done it multiple times. I have just no
6 information as to that. But he observed it as to his
7 observation the time it was in front of him that one time. The
8 time -- that is all right.

9 I think he -- his testimony reflected sufficient --
10 not sufficient information for him to be reporting on all of
11 the steps or what was going on, other than just simply the time
12 frame. I take note that he observed it. That is a fact. And
13 that he was a part of this.

14 Then I think that with respect to the health checks,
15 I don't think that the witness has reflected sufficient
16 knowledge to be talking about the -- anything other than the
17 fact that he knew hash evaluations were supposedly being made
18 but not to explain it. So it is not really valuable to the
19 Court to go into that. You know, the fact of his awareness is
20 one thing, but it doesn't really -- it is not helpful to the
21 Court as provided.

22 The other concern about the testimony regarding the
23 health checks is that there was -- despite the two 2022
24 requests by plaintiffs to update responses and to provide
25 information about any further developments in response to the

1 interrogatory answers, and in particular -- and the software
2 and what was happening in the counties, no information
3 regarding the health checks was provided.

4 So I'm loathe to go very deeply into -- to give much
5 attention to the so-called health checks. And I don't really
6 know that we have, as it is, competent evidence as to what
7 happened during a health check.

8 If there is something in particular, because I think
9 you-all asked questions about Spalding County earlier, then --
10 and you want to get into Spalding County, then we're going to
11 open it relative to Spalding County.

12 But I don't know that we know anything about the
13 qualifications of the people who were going out to do the
14 health checks, what the processes were, or anything else like
15 that.

16 So it is sort of -- and I'm -- it is not helpful to
17 the Court to know so-called health checks were -- if we don't
18 know more. And maybe there is an instance of going to a county
19 where we find that out and you can introduce it properly
20 because of what discovery you may have shared. I don't know.

21 But relative to this witness' testimony as to the
22 health checks, I'm not sure I could go beyond allowing other
23 than the fact that he says that there were health checks --
24 there was some type of checks being done. But I really
25 don't -- with 185 counties I don't really know what -- we have

1 no data about it. No information about it. It doesn't really
2 help me reach any conclusions one way.

3 MR. TYSON: Your Honor, if I could make two responses
4 on that.

5 First, as to the interrogatory, I was not as deep
6 into that yesterday as Mr. Belinfante was. But my
7 understanding was the interrogatory asked specifically about
8 mitigations related to Dr. Halderman's report. The health
9 checks were carried out. I don't think there is any testimony
10 they were in response to the report. So I'm not sure they
11 would have been responsive.

12 THE COURT: Well, it was a little broader than that.
13 I think I have it tabbed. And I understand what you are
14 saying, but ...

15 MR. TYSON: The other request I was going to make,
16 Your Honor --

17 THE COURT: Go ahead.

18 MR. TYSON: -- was if I could be permitted, before
19 Mr. Fisher begins his cross, to lay some foundation on the
20 health checks. If that is the Court's ruling on those, I think
21 Mr. Barnes could provide some foundation regarding some of
22 those questions that you had, if I could be permitted to do
23 that.

24 THE COURT: Well, let me look at what the
25 interrogatory -- where it is. I guess I gave it back to you.

1 Interrogatory Number 27 does -- is referencing
2 Dr. Halderman but it does by -- the nature of it is broader.
3 It says identify and describe with specificity all measures
4 taken to investigate, evaluate, remedy, mitigate, or otherwise
5 address each of the security vulnerabilities and problems with
6 the current election system identified in Dr. J. Alex
7 Halderman's declarations, reports, and testimony in this
8 matter.

9 And then there is correspondence that asks about --
10 do you have the correspondence here too?

11 So the letter was from Mr. Cross to you, Mr. Tyson,
12 and your colleagues on November 15, 2022, asking for a
13 supplement. And among other things says, given we received
14 your discovery responses and document productions last year,
15 apart from some additional documents from the Secretary's
16 office recently regarding certain investigations, and given
17 developments since we received those, such as the Coffee County
18 breach coming to light, the CISA advisories, multiple
19 elections, the upcoming audits, your clients must have
20 additional information and documents responsive to our request.

21 And I think it would be a very crabbed reading of the
22 original interrogatory request to say that the information
23 relevant to vulnerabilities or identified by Dr. Halderman,
24 which are the basis of the CISA advisory, aren't -- and all
25 that happened was -- in that connection wouldn't be relevant to

1 here and would have been relevant disclosures.

2 So I mean, I'm not -- your request had been you
3 wanted the witness to tell us more about the -- what happened
4 on the health -- the so-called health checks. And the problem
5 is, is about -- I mean, they haven't -- as I understand it, you
6 haven't provided any information regarding the health checks
7 that would have to be related to some of the -- inherently
8 related to some of the concerns about vulnerabilities.

9 MR. TYSON: So, Your Honor, from our perspective,
10 another sequence of events was there wasn't a discovery dispute
11 about these interrogatories. This was not one that was revised
12 by the plaintiffs. We will be fully responding in writing to
13 the motion that they have made here.

14 So we would request maybe we could do conditional
15 testimony like yesterday until you have been able to rule on
16 our response and have the full record. Obviously the
17 plaintiffs had this motion prepared and drafted, and we will be
18 responding in writing as well.

19 MR. FISHER: Your Honor --

20 THE COURT: Yes.

21 MR. FISHER: -- may I just respond briefly?

22 In addition to the interrogatory and the doc request,
23 they have an obligation under Rule 26 to disclose the witnesses
24 and the documents that they are going to rely on to establish
25 their defense.

1 It is no secret that the reason they want testimony
2 about this is to support a defense about mitigation. If they
3 were going to do that, they needed to disclose it separate and
4 apart from the interrogatories under Rule 26.

5 And in addition to the issue of whether this was
6 produced in discovery, this witness can't talk about what hash
7 testing means for mitigation. He can't even --

8 THE COURT: I understand that. I have already ruled
9 on that.

10 MR. FISHER: So I'm not sure what additional
11 foundation he can lay at this point.

12 And, you know, I would suggest that we should proceed
13 with cross-examination. They can submit their motion. If the
14 Court decides that he -- they can lay additional foundation
15 that might be relevant for the Court, then we can consider it
16 then. But he was up here for an hour and a half.

17 MR. TYSON: And, Your Honor, just to be clear, the
18 additional foundation I was referring to related to your
19 questions about who was conducting the health checks, those
20 types of issues, not the specifics of hash validation.

21 Also, as the Court may recall, we had a discovery
22 conference regarding some of these interrogatories on
23 October 7, 2021, that also I think would be helpful context
24 here.

25 Again, we understand the Court's ruling regarding the

1 hash validation issue. But I think the Court had additional
2 questions you referenced regarding who was carrying these tests
3 out, where they were being done, those types of things that
4 Mr. Barnes may be able to explain.

5 And that would be our request for additional
6 foundation.

7 THE COURT: I understand your request. But the thing
8 about is that -- I'll let him identify who. But I don't think
9 he has reflected enough technical knowledge, frankly, in this
10 capacity to be telling me much more than that.

11 And I have nothing describing the length of time, how
12 they were done. And they haven't received any of that
13 information. Because even if you didn't like their
14 interrogatory answer, I mean all of that would be relevant
15 for -- no doubt there are other interrogatories, and I will let
16 you-all separately discuss that, you know, what else you
17 think -- the plaintiffs believe would have elicited that.

18 But, I mean, you have a duty, no matter what, to
19 update without -- if they hadn't written you a letter anyway.
20 So -- so I think that that is the concern. And, you know, we
21 can go on and on on this.

22 I think he -- I'll allow him to say who the team was,
23 and I think at this point -- that point I'm -- unless there is
24 something else jumps up -- and I will certainly consider it if
25 you want to point me to it over lunch, but I think right now

1 I'm going to let him proceed as he is.

2 You can point me to whatever you want as to the 2021
3 conference or any other thing that you think you did
4 supplement. And the plaintiffs can reflect anything else also
5 during lunchtime that I can look at. So I just -- I won't
6 excuse the witness one way or the other.

7 MR. TYSON: Thank you, Your Honor.

8 THE COURT: I mean, you could -- we could stop now,
9 if you want, and you can all do that. Or you can start at
10 least proceeding with his testimony.

11 MR. FISHER: Could I have a moment to --

12 THE COURT: Sure.

13 **(There was a brief pause in the proceedings.)**

14 MR. CROSS: Your Honor, just to cut to the chase, if
15 Mr. Tyson wants to try to lay more foundation, that is fine.

16 THE COURT: All right.

17 Oh, he's going to go first?

18 MR. FISHER: Yes.

19 THE COURT: All right. That's fine.

20 MR. TYSON: Thank you, Your Honor.

21 BY MR. TYSON:

22 **Q.** Mr. Barnes, thank you for your patience as we sorted that
23 out.

24 Do you know which individuals were involved in carrying
25 out health checks that you referenced?

1 **A.** I do.

2 **Q.** And who are those people?

3 **A.** They are members of my staff. My people that report to
4 me. Chris Bellew who is my senior election systems specialist.
5 Mr. Richard Lago, and his last name is spelled L-A-G-O, who
6 works with Chris in the same capacity.

7 Also members of my election project coordinators have been
8 in counties assisting Chris and Richard. The three people that
9 have visited counties in addition to Chris and Richard are
10 Samantha Smallwood, Pratik Patel, and Brianna Hoke.

11 **Q.** Are there individuals who are not members of your staff
12 who have participated in the health checks?

13 **A.** We had a member of our office that worked when we first
14 began who is no longer a member of my office. He chose an
15 opportunity elsewhere. His name was Kendall -- I'm trying to
16 remember his last name. It is eluding me right now.

17 **Q.** Mr. Barnes, I'm not asking you for the technical details
18 of what happens in a health check.

19 THE COURT: Could you just qualify -- indicate what
20 the qualifications of these other people were, what their job
21 titles were.

22 THE WITNESS: I'm sorry?

23 THE COURT: You did it for Mr. --

24 MR. TYSON: Mr. Bellew.

25 THE COURT: -- Bellew, but --

1 THE WITNESS: Richard Lago, his title is election
2 systems specialist.

3 THE COURT: What is his background?

4 THE WITNESS: His background, I believe he has a
5 bachelor's degree in computer science, I believe, from Kennesaw
6 State University.

7 Then the people that were also assisting are also
8 full-time members of my office. Samantha Smallwood, she has a
9 bachelor's degree from the University of Georgia. Pratik Patel
10 also with a bachelor's degree from the University of Georgia.
11 Brianna Hoke, I am -- I cannot think right now where her
12 educational background is connected to.

13 THE COURT: What is their BA in?

14 THE WITNESS: I don't know their specific BAs. I
15 believe Samantha's was political science. I am not -- I do not
16 recall on Mr. Patel's.

17 THE COURT: So were they working in a technical
18 capacity when they were part of your health team in terms of
19 computer?

20 THE WITNESS: They were executing tasks. We had a
21 set of tasks, of operations to perform in the process, and they
22 had been educated on those tasks and then asked to perform
23 those tasks in the individual counties.

24 THE COURT: Okay. Go ahead.

25 MR. TYSON: Mr. Barnes --

1 THE COURT: That is the same for Mr. Bellew and
2 Mr. Lago?

3 THE WITNESS: Excuse me?

4 THE COURT: That is -- so for all five of them?

5 THE WITNESS: All five of them, yes.

6 THE COURT: Were they all doing the same tasks?

7 THE WITNESS: Yes. Well, Mr. Bellew and Mr. Lago,
8 they were the ones that were doing the tasks on the election
9 management computers. They will also -- depending upon the
10 size of the county, will do the tasks on the BMDs and the ICPs.
11 Ms. Smallwood, Ms. Hoke, Mr. Patel primarily were working in
12 executing the tasks on the BMDs and the ICPs.

13 THE COURT: Okay.

14 BY MR. TYSON:

15 **Q.** Mr. Barnes, without get into the technical details of
16 those tasks, was your office responsible for designing the
17 tasks that are carried out in the health checks?

18 **A.** My office was involved in developing a plan and a set of
19 steps that we felt would be useful in providing some level of
20 confidence that the voting system that was installed and in use
21 in the counties was what should be there.

22 **Q.** Did you or your office consult with any State vendors
23 regarding the design of the health checks?

24 **A.** We -- one of the tools that we developed -- once it was
25 developed, we submitted that tool to Pro V&V in Huntsville,

1 Alabama.

2 Pro V&V is an EAC-certified voting system testing
3 laboratory. And we had them review that tool. We informed
4 them what the tool was being used for. And then they replied
5 response to us indicating that they had reviewed the tool and
6 found that it was --

7 THE COURT: All right. Stop right there. I think
8 there is an objection.

9 MR. FISHER: Yes. This isn't foundation. This is a
10 whole new line of questioning. He has already answered who was
11 involved. That was the Court's question. I think we're done.

12 MR. TYSON: And --

13 THE COURT: All right. I am going to strike the
14 discussion of -- at this point of Pro V&V because it doesn't
15 really -- that is a whole other wing of presentation that
16 wasn't even reflected in any way in the direct examination.

17 MR. TYSON: And, Your Honor, I only had one
18 additional question for Mr. Barnes.

19 THE COURT: Okay. Go ahead.

20 BY MR. TYSON:

21 **Q.** Mr. Barnes, again without getting into the technical
22 details, what was the list of tasks that your office was
23 carrying out when it conducted a health check?

24 **A.** The list of tasks were to pull at random BMD devices from
25 the county's inventory, to pull at random ICP units from

1 random, the application on the ICP and the application on the
2 BMD were to be extracted from the device, and then a hash
3 comparison was to be ran on those extracted applications.

4 The election management computer and acceptance test was
5 to be performed where an elections project test project was
6 loaded and validate that the server was working.

7 And then we also performed the -- they were tasked with
8 performing a hash comparison.

9 MR. FISHER: Your Honor --

10 MR. TYSON: Thank you, Mr. Barnes.

11 MR. FISHER: -- move to strike that answer on the
12 same grounds. There is no foundation.

13 MR. TYSON: And, Your Honor, to be clear, these
14 additional questions were allowed on Mr. Barnes' direct after
15 the Court's ruling that there was a lack of foundation
16 regarding what the health checks were.

17 I believe each question established who had carried
18 them out, who designed the health checks, what the tests -- the
19 tasks were that then laid the foundation for the prior
20 questions regarding those checks.

21 So we think they are admissible and appropriate under
22 the circumstances.

23 MR. FISHER: And just to respond to that, the last
24 question about the list of tasks, there was no foundation for
25 how he learned what that list of tasks was. And it appears,

1 based on what he said, that the only foundation for it would be
2 hearsay. So move to strike on the same grounds.

3 THE COURT: Who designed the tasks?

4 THE WITNESS: I did.

5 THE COURT: Okay.

6 MR. TYSON: Thank you, Mr. Barnes.

7 THE COURT: Do you have a piece of paper that
8 reflects that -- those tasks?

9 MR. FISHER: My first question.

10 THE COURT: Sorry.

11 MR. FISHER: Stole my thunder.

12 THE WITNESS: I believe we do have that written out,
13 yes, ma'am.

14 THE COURT: All right. Well, if you could supply it.
15 See if somebody can send it to counsel over lunch.

16 MR. TYSON: Certainly, Your Honor.

17 THE COURT: Again, you're welcome to go as far as you
18 want to go and we can stop if there is information you are
19 going to need.

20 MR. FISHER: Thank you, Your Honor.

21 CROSS-EXAMINATION

22 BY MR. FISHER:

23 Q. Good afternoon, Mr. Barnes.

24 A. Good afternoon.

25 Q. I'm Ramsey Fisher. I'm an attorney for the plaintiffs.

1 It is good to meet you.

2 **A.** Nice to meet you, sir.

3 **Q.** You just referenced a list of tasks that you designed;
4 correct?

5 **A.** Yes, sir.

6 **Q.** Did you write that list of tasks down?

7 **A.** My recollection is I worked with my staff to outline a
8 list of tasks that we were going to execute as part of the
9 process, yes, sir.

10 **Q.** So there is a list of tasks written down --

11 **A.** I do believe that it was written out because we had to
12 train the individuals in my office on what we wanted them to
13 do. So yes, I do believe that exists.

14 **Q.** Great.

15 Anybody from the Secretary of State's office ever ask you
16 to provide that list?

17 **A.** The list of tasks? I know that we have had discussions in
18 my office with members of the Secretary of State's office. I
19 don't recall them asking for the list of tasks. But they may
20 have.

21 **Q.** Okay. I believe earlier you said it took 20 minutes to
22 install 5.17, is that right, on a BMD?

23 **A.** I believe what I outlined -- I don't believe I said 5.17.
24 I believe what I outlined is that the installation of a
25 flashing of the BIOS, an installation of an updated operating

1 system, and then an installation of an updated application
2 would take -- it took, in that instance, 20 minutes.

3 And we have done it multiple times since then. And it is
4 still a process of 20 minutes from beginning to end.

5 **Q.** Okay.

6 THE COURT: I'm sorry. 20 minutes for each of those
7 tasks or 20 minutes in total?

8 THE WITNESS: 20 minutes in total, Your Honor.

9 THE COURT: Okay.

10 BY MR. FISHER:

11 **Q.** Dominion told you what it was they were installing on the
12 BMD; correct?

13 **A.** Dominion showed us what they were installing on the BMD.
14 We took BMDs that were present in our office that were in a
15 five-point -- the current version 5.5.10.32 application status.
16 And then they performed the upgrade process to transition to
17 the 5.17 application version.

18 **Q.** But you don't have a degree in computer science, sir;
19 right?

20 **A.** I do not.

21 **Q.** Okay. You can't speak to how malware works; right?

22 **A.** I cannot.

23 **Q.** Okay. As director of CES, you have no responsibility for
24 cybersecurity; right?

25 **A.** That is correct.

1 Q. Okay. You are not the person responsible for determining
2 what security measures need to be taken to protect the election
3 system; isn't that right?

4 A. Correct.

5 Q. You're not involved in that at all; right?

6 A. In my job with the elections office, it is my job to
7 understand the applications that the State uses, to educate the
8 people that I report to on how the operations work, and then
9 provide ideas and recommendations on ways that we can enhance
10 the use of that system.

11 Q. Okay. Not my question.

12 You're not involved in discussions about what security
13 measures need to be taken to protect the election system?
14 Isn't that what you told this Court two weeks ago?

15 A. My recollection of what I told the Court is -- yes, the
16 answer to your question is yes.

17 Q. Thank you.

18 So when you mentioned the list of various things that were
19 installed on a BMD that took 20 minutes, you don't have
20 personal knowledge about what those things are? That comes
21 from Dominion; right?

22 A. We are relying on the vendor to understand their product
23 and educate us on how we would go about updating our existing
24 hardware to use any new applications that they may introduce
25 and make available to the State.

1 MR. FISHER: Your Honor, at this point I just want to
2 clarify the ruling from earlier. You said that the witness
3 could testify and that you would accept his testimony that it
4 took 20 minutes to install 5.17.

5 I think the proper scope of the ruling is that he can
6 testify that it took 20 minutes to install something. But
7 anything beyond that is hearsay. His knowledge of what it was
8 that was installed is hearsay. So that should be struck.

9 MR. TYSON: And, Your Honor, I think it is clear we
10 have allowed hearsay to explain conduct. We have allowed
11 hearsay for notice of different things. I think there is a
12 variety -- I think there is a lot of things that go here to
13 5.17.

14 In addition, the plaintiffs solicited a lot of
15 testimony yesterday from Mr. Evans regarding 5.17, as I recall
16 it. So I think Mr. Barnes could say appropriately it was his
17 understanding that 5.17 was what was being installed when he
18 witnessed that.

19 MR. FISHER: The only basis for what was being
20 installed -- what Mr. Evans said is totally irrelevant. The
21 only basis of what is being installed for the purpose of
22 accepting this witness' testimony is what came from Dominion.

23 THE COURT: Yes. I understand that. But you have
24 many ways of getting at this issue of -- including just simply
25 asking more questions about it. But I mean, they had a purpose

1 for what they were doing. He may not be able to be precise in
2 any fashion or reliable as to all the dimensions of what they
3 were testing. But it is -- but there was a purpose of the
4 meeting and getting together. And it doesn't mean that he was
5 ignorant of what the purpose was and what he thought.

6 Now, it doesn't mean that he's got the details right
7 or that he really tracked that. But I think with that I have
8 given you enough that you can explore that, what he understood
9 and on what basis. And if it is just -- you know, even what
10 the purpose of the conference was and why Dominion was there.
11 I mean, that is -- what I said was completely hearsay was
12 anything he was trying to explain about it.

13 MR. TYSON: And, Your Honor, I believe yesterday or
14 in the motion filed today the plaintiffs' position was that
15 version 5.17 is a fact of no consequence, as I recall for their
16 case. So again, I'm not quite sure --

17 MR. FISHER: If we're going to get into that, I would
18 ask that the witness be excused.

19 THE COURT: That is just going to confuse me at this
20 point.

21 You put the witness up. So he is entitled to
22 cross-examine.

23 I have given you enough direction that I think you
24 should be able to proceed. I have given enough outline as to
25 what -- you know, he has -- it is his understanding of what

1 the -- what they were doing. It doesn't mean he has any
2 knowledge of the details. But as a whole.

3 MR. FISHER: Thank you, Your Honor.

4 THE COURT: So you can ask him that or not or you can
5 just live with whatever I have already tried to clarify with my
6 own questions.

7 MR. FISHER: Thank you.

8 BY MR. FISHER:

9 Q. Sir, have you read the CISA advisory concerning the ICX?

10 A. I have.

11 Q. Okay. Have you read Dr. Halderman's report?

12 A. I have not read all of Dr. Halderman's report.

13 Q. You didn't offer -- strike that.

14 Do you know if 5.17 runs on Android?

15 A. It is my understanding that it does run on Android, yes,
16 sir.

17 Q. Do you know what version?

18 A. I do not recall what version.

19 Q. Okay. Do you know that version is 8.1? Does that ring
20 any bells?

21 A. I can't say that it does.

22 Q. Okay. Do you know that at the time of testing the current
23 version of Android was version 13 not 8.1?

24 MR. TYSON: Your Honor, I'll object here for assuming
25 facts not in evidence. I don't think there is any facts --

1 MR. CROSS: It is in evidence. I mean --

2 MR. TYSON: -- regarding the version of Android that
3 is current. I'm happy to be corrected on that.

4 THE COURT: So he's happy to be corrected. So why
5 don't -- you want to give me what the correction is?

6 MR. CROSS: We're going to grab it, Your Honor.

7 Go ahead. We can come back to it.

8 BY MR. FISHER:

9 Q. Mr. Barnes, you testified this morning about the process
10 for building a ballot definition file.

11 Do you remember that?

12 A. Yes.

13 Q. Okay. And I think what you said is that there's two
14 computers on your desk; is that right?

15 A. That is correct.

16 Q. Okay. One of those computers you used to build the ballot
17 definition file; correct?

18 A. Correct.

19 Q. Okay. And you move files from that computer to the other
20 computer; true?

21 A. That is correct.

22 Q. Okay. And that other computer, that one is connected to
23 the internet, isn't it?

24 A. It is.

25 Q. Okay. Now, I think you testified that you don't -- that

1 CES does not depend on Dominion for building ballot definition
2 files; is that true?

3 **A.** We do not currently.

4 **Q.** Okay. You handle that yourselves?

5 **A.** We do.

6 **Q.** But isn't it true that Dominion builds ballot definition
7 files for municipalities -- or for municipal elections?

8 **A.** They do.

9 **Q.** Okay. So the counties rely on Dominion to build those
10 files for municipal elections?

11 **A.** If the county is involved in a municipal election, then
12 the county elections office works with CES, my office, to have
13 the election project file built and distributed to them.

14 If the county is not involved in the municipal election
15 and the municipality chooses to use BMD equipment, ICPs, then
16 the municipality contracts with Dominion for the ballot-build
17 process.

18 **Q.** Okay. So in that situation, the county's relying on
19 Dominion to build a ballot definition file; correct?

20 **A.** The county is not relying. The municipality is relying.

21 **Q.** Excuse me.

22 The municipality is relying on Dominion to build the
23 election definition file; correct?

24 **A.** Yes.

25 **Q.** Okay. You also testified this morning about the key that

1 you need to access the ICP tabulator.

2 Do you recall that?

3 **A.** I do.

4 **Q.** Okay. And I think you referred to it as the iButton;
5 right?

6 **A.** I described it as an iButton, yes.

7 **Q.** Sir, have you ever Googled how easy it is to hack an
8 iButton?

9 **A.** I have not.

10 MR. FISHER: Tony, can you pull up the iButton video?

11 Can we have access, Mr. Martin?

12 Thank you.

13 Go ahead and play.

14 MR. TYSON: Your Honor, is this a demonstrative?

15 MR. FISHER: It is a demonstrative.

16 **(Playing of the videotape.)**

17 BY MR. FISHER:

18 **Q.** Have you ever seen that video?

19 **A.** I have not.

20 MR. FISHER: You can take it down.

21 BY MR. FISHER:

22 **Q.** You testified this morning about the 2020 election in
23 DeKalb County?

24 **A.** I believe I was referencing a 2022 election in DeKalb
25 County.

1 Q. '22. Excuse me.

2 And I think you said that there was human error involved
3 in that election; isn't that right?

4 A. I did.

5 Q. Someone just missed a step?

6 A. Someone took a step. And then when they had to correct a
7 mistake, they forgot that they had taken that previous step.

8 Q. So you would agree with me that humans can make errors of
9 all kinds in elections; right?

10 A. Yes.

11 Q. Okay. They can leave passwords to the server on a Post-it
12 note, can't they?

13 A. They certainly can.

14 Q. Okay. They can forget to tell people that they need to
15 review the human readable portion of their ballot before they
16 submit it; right?

17 A. They can.

18 MR. FISHER: One moment, Your Honor.

19 **(There was a brief pause in the proceedings.)**

20 BY MR. FISHER:

21 Q. Sir, do you remember this morning you testified about
22 replacing the EMS in Coffee County?

23 A. Yes, sir.

24 Q. Okay.

25 MR. FISHER: Your Honor, permission to approach?

1 THE COURT: All right.

2 MR. FISHER: Tony, can you pull up 145?

3 THE COURT: Thank you.

4 BY MR. FISHER:

5 Q. All right. I'm showing you what is marked Curling
6 Plaintiffs' Exhibit 145.

7 Do you see that, sir?

8 A. Yes, I do.

9 Q. Okay. This is already in evidence.

10 If you turn to the second page, you'll see an email from
11 James Barnes to Chris Harvey.

12 Do you see that?

13 A. I do.

14 Q. Okay. And the date on that is May 7, 2021?

15 A. Yes.

16 Q. Okay. Mr. Barnes writes to Mr. Harvey -- he says the
17 Dominion email today pertaining to Cyber Ninjas was alarming to
18 me.

19 Do you see that?

20 A. I do.

21 Q. Okay. When I took over at the Coffee County office, the
22 attached business card was at the base of Misty Hayes' computer
23 monitor. I thought nothing of it until I heard about the
24 situation in Arizona with the DOJ.

25 Do you see that?

1 **A.** I do.

2 **Q.** Okay. And Mr. Harvey then responds to that email on
3 Tuesday, May 11th.

4 Do you see that?

5 **A.** I do.

6 **Q.** Okay. And he brings into the email Frances Watson and
7 you; right?

8 **A.** Yes.

9 **Q.** Who is Frances Watson?

10 **A.** Frances was the head of the investigation division for the
11 Secretary of State's office at the time.

12 **Q.** Okay. So when you received this email --

13 MR. FISHER: Scroll down to read the bottom one.

14 THE WITNESS: I seem to recall that I did. But I'm
15 not 100 percent certain.

16 BY MR. FISHER:

17 **Q.** Okay. You see the reference to Cyber Ninjas. Did you
18 Google what Cyber Ninjas was?

19 **A.** By that point in time I believe we had heard what Cyber
20 Ninjas was.

21 **Q.** Did you hear that they're -- this mentions a situation in
22 Arizona with the DOJ. Did you do any research to figure out
23 what that was?

24 **A.** I was aware of them being involved in Arizona. What they
25 were doing, how they were participating in it, I could not

1 speak to.

2 MR. FISHER: Your Honor, permission to approach?

3 THE COURT: All right.

4 BY MR. FISHER:

5 Q. Mr. Barnes, what I handed you is an article titled Arizona
6 GOP Led Election Audit by Cyber Ninjas Probed by Judge.

7 Do you see that?

8 A. I do.

9 Q. Do you see the date on that?

10 A. I do.

11 Q. April 23rd, 2021?

12 A. That's what it states.

13 Q. Okay. It is before this email from James Barnes; right?

14 A. Yes.

15 Q. Okay.

16 MR. FISHER: Your Honor, we offer this as Exhibit 612
17 not for the truth.

18 MR. TYSON: Your Honor, I'll object. The witness
19 hasn't testified that he has seen this or knew about this. I
20 don't see what the possible relevance could be if it is not
21 offered for its truth. Because as a newspaper article, it
22 would be hearsay. So I'm not sure how there is relevance
23 otherwise.

24 MR. FISHER: The relevance is just to show what this
25 email was referring to about Cyber Ninjas. The situation in

1 Arizona.

2 THE COURT: He has already acknowledged some degree
3 of knowledge -- some understanding in the May 11th memorandum
4 as well as -- obviously flags it too. So I just think that
5 this is --

6 MR. FISHER: That's fine, Your Honor.

7 THE COURT: -- not helpful. So I'm not going to
8 admit it.

9 MR. FISHER: Permission to approach with a different
10 one?

11 Can I approach, Your Honor?

12 THE COURT: Yes.

13 Is it another newspaper article?

14 MR. FISHER: No, not a newspaper article.

15 THE COURT: All right.

16 MR. FISHER: Tony, can you pull up 191?

17 BY MR. FISHER:

18 Q. Sir, what I handed to you is a document from the
19 U.S. Department of Justice; right?

20 A. That's what it states, yes.

21 Q. Okay. And the date on it is May 11, 2021?

22 THE COURT: It is May 5th.

23 BY MR. FISHER:

24 Q. Sorry. May 5th, 2021?

25 A. Yes, that is correct. May 5th.

1 MR. FISHER: Your Honor, we offer this as a public
2 record.

3 MR. TYSON: Your Honor, the objections we noted in
4 the pretrial order to this involve authentication. There is no
5 foundation that Mr. Barnes ever saw this.

6 And again on relevance, Mr. Barnes has testified he
7 knew what Cyber Ninjas was. And unless this is for the truth
8 of everything contained in here, I don't think that it is going
9 to be of any value to the Court. It is hearsay on that grounds
10 as well.

11 MR. FISHER: That is why we offered it as a public
12 record. But I'll ask the first question.

13 BY MR. FISHER:

14 **Q.** Mr. Barnes, have you ever seen this?

15 **A.** I have not.

16 MR. FISHER: We still offer it as a public record,
17 Your Honor.

18 MR. TYSON: And we make the same objections, Your
19 Honor.

20 THE COURT: Well, I don't think we need to admit it
21 because you have already a Justice Department advisory in the
22 record regarding these concerns and CISA -- and didn't CISA or
23 the EAC flag this? I mean, I think that is what happened
24 before. I mean, that is what trigger -- partly Mr. Harvey was
25 concerned. There were two things happening and you-all

1 introduced that. There was either a Justice Department or
2 somebody else's warning. And he also got this letter from --

3 MR. FISHER: That's fine, Your Honor.

4 THE COURT: -- from James Barnes.

5 MR. FISHER: I'll get at this a different way.

6 THE COURT: All right. Thank you.

7 Harry, let me just give these back to you before
8 I ...

9 BY MR. FISHER:

10 **Q.** Mr. Barnes, let me just ask you this: In May 2021, were
11 you aware that President Trump had called Secretary
12 Raffensperger and asked him to find votes to flip election
13 results?

14 **A.** Yes. By that date we had heard of that, yes.

15 **Q.** Okay. And were you aware that Cyber Ninjas was associated
16 with the Trump campaign with respect to those efforts?

17 **A.** That I do not know.

18 **Q.** Okay. You never Googled to find out; right?

19 **A.** Counselor, in May of 2021, we were all living through the
20 waves that were responding from the 2020 election. My task and
21 job in May of 2021 was trying to execute the job as I
22 understood it to be. I was not doing a lot of pulling up on
23 the Trump stuff because I had had people outside my door
24 banging with those signs and I was just trying to stay engaged
25 with making sure elections were being executed.

1 **Q.** I appreciate that, sir.

2 I guess my question is: Given that context, when you saw
3 this email referencing Cyber Ninjas in a situation in Arizona
4 and the DOJ, that didn't ring any alarm bells for you?

5 **A.** My recollection of when I saw this first email from
6 Director Harvey is -- and I may be getting off on my dates.
7 But my recollection was we have already collected the server
8 that was in Coffee County and have possession of it. So I was
9 thankful for that, that we had what had been in Coffee County.
10 That is my recollection.

11 THE COURT: And this is when you saw the May 11th
12 memo from Mr. Harvey?

13 THE WITNESS: When I saw the email from Mr. Harvey,
14 yes, Your Honor.

15 And I may have my dates of when we collected that
16 server off. But that is my recollection.

17 BY MR. FISHER:

18 **Q.** Well, let's see if we can clarify those dates.

19 You recall testifying here last week or two weeks ago?

20 **A.** Yes, sir, I do.

21 **Q.** Okay. Do you remember whether you said that you replaced
22 the ICC and EMS in Coffee County in June of 2021?

23 **A.** I remember saying that. But I will speak and say my
24 recollection of events in relation to Coffee County have become
25 confusing in relation to the timeline.

1 When I think of timeline with elections, I am always
2 thinking in relation to the next scheduled election. In an
3 odd-numbered year in elections, we have elections scheduled in
4 March. We have elections scheduled in June, September, and
5 November.

6 My recollection of Coffee County transpiring events is I
7 cannot remember if we prepared an election project file for
8 Coffee County for a March election or for a June election.

9 **Q.** Sir, let me stop you right there.

10 **(There was a brief pause in the proceedings.)**

11 MR. FISHER: Tony, can you pull up Exhibit 130?

12 BY MR. FISHER:

13 **Q.** Sir, do you recognize this document?

14 It is on your screen right there.

15 **A.** I'm sorry.

16 Yes.

17 **Q.** What is the date on this document?

18 **A.** It is dated June 8, 2021.

19 **Q.** Okay.

20 MR. FISHER: Go to the second page, Tony. Third
21 page.

22 BY MR. FISHER:

23 **Q.** Do you see the thing there that says computer name?

24 Do you see that, sir?

25 **A.** Yes.

1 Q. What does it say right next to it?

2 A. EMS server.

3 Q. All right. What is the date underneath that?

4 A. June 8, 2021.

5 Q. Does that refresh your recollection?

6 A. That would indicate that was the date that we had
7 installed the new server in Coffee County.

8 Q. Okay.

9 MR. FISHER: So let's go back to PX 145.

10 BY MR. FISHER:

11 Q. So just to clarify, looking at this document on the right
12 here --

13 MR. FISHER: That is a little too zoomed in.

14 Thanks.

15 BY MR. FISHER:

16 Q. Is it your testimony that you didn't have -- you don't
17 know if you had the EMS server that you replaced in Coffee
18 County before June 8, 2021?

19 A. We have had circumstances in the past where we will have
20 collected an election management server in the county and not
21 have one ready to replace it with.

22 And that may have been the case here. I do not recall if
23 we collected one and replaced on the same date or if we
24 collected one and then replaced at a later date.

25 With it being an odd-numbered year election, they may not

1 have had a scheduled election until after -- in September or
2 November. May not have had one in June. I can't recall that
3 fact.

4 **Q.** Sir, you would have replaced the EMS and the ICC at the
5 same time; right?

6 **A.** We would have replaced the election management computer if
7 the election management computer is what we had taken
8 possession of.

9 The ICC, my recollection is we did collect both the ICC
10 and the EMS and bring it back to Coffee County. My
11 recollection of what specific date and failure on my office of
12 not having the proper chain of custody form filled out from
13 when we took possession of that device, I can't speak to
14 exactly which particular day that was.

15 I do know that we did install an election management
16 server, based on this paperwork, on June 8th of 2021.

17 **Q.** And it is your testimony that you could have installed
18 this election management server on June 8th without having
19 collected and replaced it? That could have happened after?

20 **A.** We -- this is record of us placing a box in Coffee County.
21 If we collected a box from Coffee County at a prior date, I do
22 not have that record. If we collected the box on this date in
23 Coffee County, I unfortunately don't have that record.

24 The record I have is of the acceptance test of the box
25 that was placed in Coffee County on June 8th.

1 THE COURT: So this doesn't reflect -- I'm really, at
2 this juncture, totally confused by the testimony, frankly.
3 Because one of the things you said they did, though you didn't
4 know anything about how hash value testing -- what exactly
5 what -- what happened with it -- could this just be a record of
6 the hash value testing while they were there?

7 THE WITNESS: When we -- Your Honor, when we are
8 installing a new server into a county, we perform what is
9 called an acceptance test. This document is generated through
10 that acceptance test procedure.

11 THE COURT: All right. I'm sorry if I confused that
12 further.

13 So you don't know where the computer was, though, at
14 this point? I mean, was it -- whether it was -- whether you
15 did that in Atlanta on the machine that you had taken -- that
16 you may have taken possession of or if you did it in Coffee
17 County?

18 THE WITNESS: We were -- this computer that we have
19 record of the 6th -- the June 8th, that is a record of the
20 computer that was being placed in Coffee County at that date
21 and time. I don't have a record indicating the date that the
22 computer that we pulled from Coffee County -- on what date that
23 was. It may have been on the same date. However, my
24 recollection indicates, in my mind, that we had picked it up
25 previous to that. However, I could be incorrect.

1 MR. FISHER: All right. Let's just go back to
2 PX 145.

3 You can take the other one down, Tony.

4 Thanks.

5 BY MR. FISHER:

6 Q. Okay. In the response from Chris Harvey he says it might
7 be prudent to see if there has been any contact between the
8 person on the card and anyone in your office and/or if they had
9 any access to any of your equipment.

10 Do you see that?

11 A. It is at the top of the second page?

12 Q. Yes.

13 It is also on your screen if that is easier.

14 A. I'm sorry.

15 I do see that.

16 Q. Okay. And then he says I have let our Investigations
17 Division and CES know; right?

18 A. Yes. That is what it states.

19 Q. And the Investigations Division, that is led by Frances
20 Watson?

21 A. That's correct.

22 Q. And CES, that is referring to you; right?

23 A. That is, yes.

24 Q. Okay. And then he says, and they might follow up with
25 you; right?

1 **A.** Yes.

2 **Q.** Well, did you follow up with him, sir?

3 **A.** I remember talking to Director Harvey about this email
4 over the phone. And my honest recollection of what the next
5 steps we took -- again, my recollection is, is we had the
6 server from Coffee County that we had already picked up and
7 relayed to him that, well, they don't have a server in place
8 right now. We've got to get them a new one before they have
9 their next election.

10 **Q.** But his question or what he says in this email is that it
11 would be prudent to see if there had been any -- I'm skipping
12 ahead -- access to any of your equipment; right?

13 **A.** I believe that is what he is telling Mr. Barnes, yes.

14 **Q.** Okay. Now, the equipment is State owned; right?

15 **A.** That is correct.

16 **Q.** Okay. The proper procedure is for you to examine that
17 equipment to see whether it can be used in future elections;
18 right?

19 **A.** If -- our procedure if -- if a machine is malfunctioning
20 or is sent off for repair, before it can be introduced back
21 into the county's use, it goes through an acceptance testing
22 procedure that is done by our office.

23 If there is reason -- if a local county has reason to
24 believe something has transpired, then they can ask our county
25 [sic] to come and perform that same examination.

1 Q. Okay. But my question is: What steps did you take, if
2 any, to determine if there was access to the equipment in
3 Coffee County?

4 A. I left that in the hands of the investigations staff and
5 with Director Harvey. I was waiting for Director Harvey to
6 tell me what he wished us to do.

7 Q. You didn't say in this -- you didn't respond to this email
8 saying that the Secretary already has the EMS in Coffee County,
9 right, or the EMS from Coffee County, right?

10 A. I did not send an email with that information in it. I
11 did not.

12 Q. You didn't think that was important to share?

13 A. Again, my recollection, at this point in time, is I'm
14 unclear of whether we already had it or we did not have it.

15 Q. Right.

16 A. So I could not respond. If we didn't have it, I would not
17 have responded. If we did have it, I feel like I made a phone
18 call to Dr. Harvey -- to Mr. Harvey to let him know here is
19 what we know about Coffee County.

20 Q. Here is what we know about Coffee County?

21 A. Meaning like we -- we had been notified by Coffee County
22 that they had -- they did not have the ability to be able to
23 sign in to their server.

24 So we made a visit to Coffee County to inspect the server
25 to see if, in fact, they were unable to access the server, if

1 they were unable to access the server using the passwords that
2 they should have. And then at that time we took possession of
3 the server and brought it back to Atlanta.

4 **Q.** And you are saying today you don't know whether that was
5 before the date of this email or after?

6 **A.** I honestly do not recall whether it was before or after.

7 **Q.** You said that you left the investigation as to whether
8 there was access to the equipment to the Investigations
9 Division and to Mr. Harvey; right?

10 **A.** That is what I just said, yes.

11 **Q.** Would it surprise you to learn that Ms. Watson testified
12 here in court that you and her were operating on simultaneous
13 tracks to determine if there was unauthorized access to the
14 EMS?

15 **A.** What do you mean?

16 **Q.** Meaning, Ms. Watson was reaching out or was having her
17 team reach out to determine if there was contact between Cyber
18 Ninjas and people at Coffee County?

19 **A.** Uh-huh (affirmative).

20 **Q.** But she was leaving it to your team to investigate whether
21 the equipment had been accessed.

22 MR. TYSON: And, Your Honor, I'll just object. I may
23 be incorrect again on this point. But I'm not recalling
24 Ms. Watson being that specific about what she expected of
25 Director Barnes and his staff.

1 MR. FISHER: I can find a transcript if you would
2 like, Your Honor.

3 THE COURT: Well, you can find it over -- when we
4 take a break but -- unless you have it immediately available.

5 But, otherwise, I do expressly recall that she said
6 we were on simultaneous tracks investigating.

7 And you don't appear to have recalled anything about
8 on a track of investigating?

9 THE WITNESS: Your Honor, my recollection of when
10 this email was sent to me from Director Harvey is we -- I was
11 waiting to hear from him on what additional steps he wanted us
12 to take.

13 THE COURT: I see.

14 BY MR. FISHER:

15 **Q.** Sir, are you saying that Ms. Watson is just wrong? You
16 weren't operating on simultaneous tracks?

17 **A.** I can't speak to what Ms. Watson was saying. I'm just
18 saying from what I was acting on and under the direction of my
19 director.

20 THE COURT: Well, he didn't direct you to do nothing,
21 did he?

22 THE WITNESS: The recollection that I have for the
23 discussion that I had with Director Harvey at the time was the
24 elections office had sent us an email saying there was a
25 business card on their desk that related to Cyber Ninjas. We

1 had no idea of how that business card came to be, whether it is
2 they had visited or not. We didn't know.

3 And we did not have any knowledge at that point in
4 time that would lead us to believe that there had been a
5 problem other than we did know, I believe at the time, that the
6 server that they had in place they were unable to access.

7 We believed that that was due to the preceding
8 election supervisor being fired and removed from her position.
9 So we assumed and thought that the password had been changed by
10 her.

11 When we went to the location to find the server --
12 and I apologize to not knowing the specific date that we took
13 possession of that server -- we attempted to log into that
14 server, were unable to. And then I directed staff to bring
15 that server back to Atlanta out of an abundance of caution.

16 THE COURT: I think we just need to get some dates in
17 here. Because it is really -- you know, we've got -- you do
18 know the dates in fact, don't you? Isn't it in the record what
19 the dates were?

20 MR. TYSON: Yes.

21 THE COURT: So whether it is refreshing his
22 recollection or challenging his recollection, whatever it is,
23 we've spent enough time on this so that -- I'm not saying it is
24 not relevant because you may need to confront him with what the
25 real facts are so that he can explain his testimony. But I

1 think at this juncture the witness himself is going in enough
2 circles that I can't -- it is not helpful to me either.

3 MR. CROSS: Your Honor, I think we need to pause, let
4 the witness step out, and address this.

5 THE COURT: All right.

6 I excuse you for a moment and don't talk with anyone
7 else regarding your testimony that we're just addressing right
8 now. Thank you.

9 **(The witness exited the courtroom.)**

10 MR. TYSON: Your Honor --

11 MR. CROSS: Your Honor, if I could. This is why we
12 needed to pause. We have had years of extensive discovery on
13 this. This is the first time anyone has ever said that the EMS
14 server was taken before May 11th.

15 This is a trial -- this is a hearing transcript
16 before Your Honor on April 7. And you asked --

17 THE COURT: April 7 --

18 MR. CROSS: April 7 of 2022. And you asked
19 specifically, is there anything that is in written form or even
20 if there is not an investigation form -- investigative form
21 about Coffee County from the State that the State might provide
22 me so I can just understand whether there was anything
23 memorialized at the time that the program files or computers
24 were taken or server were taken?

25 And this was at a time when we were trying to figure

1 out was the EMS server taken, why was it taken and when.

2 And you asked them to provide documentary evidence.

3 Mr. Tyson said we'll check with the State. And then
4 they provided the exhibit -- was it 130? 130 that Mr. Ramsey
5 pulled up.

6 Mr. Germany provided a sworn declaration to the
7 Court.

8 THE COURT: I'm sorry. Which one is 130?

9 MR. CROSS: Exhibit 130 is that June 8th hash test --
10 or not a hash test. It is an acceptance test.

11 THE COURT: Acceptance test. All right.

12 MR. CROSS: Mr. Germany, in a sworn declaration on
13 December 14 of '22, responded further to Your Honor's directive
14 and said, the only documents we have regarding the replacement
15 of the Coffee County EMS are the acceptance testing documents
16 that have already been produced.

17 MR. TYSON: Your Honor, if it would --

18 MR. CROSS: Hang on, Bryan.

19 MR. TYSON: I'm going to try to shortcut this for
20 you, but ...

21 MR. CROSS: Gabe Sterling testified on October 12th
22 as a 30(b)(6) witness when we asked him about this
23 specifically.

24 THE COURT: October 12th of 20 --

25 MR. CROSS: 2022. Yes. Thank you, Your Honor.

1 As I understand it, they came down -- they being
2 CES -- on June 8th, confirmed that the EMS server was
3 inaccessible, indicating it was still there. And they replaced
4 both that day.

5 That is binding testimony.

6 And again, the way this trial is unfolding, this is
7 the first we've ever heard this, just like we heard
8 yesterday --

9 THE COURT: All right.

10 MR. TYSON: Your Honor, if I could.

11 THE COURT: Yes.

12 MR. TYSON: We do not dispute that the server was
13 picked up and replaced on June the 8th of 2021.

14 Mr. Barnes' testimony on this point from his first
15 answer was he couldn't remember the dates. That was his
16 first -- very first thing. I think he's gotten turned around
17 in his testimony regarding what happened and what sequence from
18 an event almost three years ago.

19 But from our perspective -- and I think what Your
20 Honor said is exactly right. If he could have his recollection
21 refreshed by what is in the record, I expect that he would
22 agree that it was picked up and replaced on June the 8th.

23 So we're not trying to ambush anybody here. I think
24 Mr. Barnes said he was unsure. He got confused of the
25 sequence. And so this is not -- this is not a change in any of

1 our positions in this case.

2 MR. CROSS: I think the way to proceed, Your Honor,
3 is we tried that. Right? Ramsey showed him the only
4 documentary evidence they told Your Honor that they have. And
5 he said, no, my memory is still that I wasn't --

6 THE COURT: He was -- he was bouncing all over the
7 place.

8 MR. TYSON: Right.

9 MR. CROSS: That's true. But the reason it matters
10 is -- his defense of why he wasn't concerned about the May 11
11 warning, his defense was, well, because we had already taken
12 the server.

13 THE COURT: I heard that.

14 MR. CROSS: So that matters as to whether it is
15 before or after. If we can get a stipulation from the State
16 that what they have represented is accurate from Mr. Sterling,
17 that both of those were swapped out on June the 8th, then I
18 think that can be presented to him as an undisputed fact and
19 maybe that will help him recall and we can proceed that way.

20 That is why I thought we could pause and just try to
21 figure out a way to help him get the facts right.

22 MR. TYSON: So, Your Honor, we don't dispute and I'm
23 happy to stipulate the server was picked up and replaced on
24 June the 8th.

25 Mr. Bellew I believe is the one who did that, who did

1 the replacement. I mean, obviously he was not allowed to be a
2 witness in this proceeding. But I think if that's -- if that
3 would be sufficient, that is fine. We're not contesting that
4 point of that date.

5 THE COURT: Well, then why don't you just state the
6 stipulation on the record when he comes back. And then you can
7 ask him regarding -- about the letter in connection -- the
8 course of proceedings and the fact that he -- what he did or
9 didn't do in response to Mr. Harvey's communication.

10 MR. TYSON: We view the 30(b)(6) testimony as binding
11 on that point, Your Honor, as well.

12 THE COURT: I think it is. But you can just
13 reference it also in the stipulation.

14 And then when you have finished talking to him about
15 Mr. -- his action or inaction in response to Mr. Harvey's
16 letter, and then we'll take a break. But let's finish this
17 round because I don't want the earth to shift underneath me any
18 further.

19 MR. TYSON: So bring Mr. Barnes back in, Your Honor?

20 THE COURT: All right.

21 MR. TYSON: Your Honor, as Mr. Barnes is coming back
22 to the stand, Mr. Fisher suggested, and with your permission,
23 I'll just state on the record what the 30(b)(6) testimony is.

24 THE COURT: That's fine.

25 So, Mr. Barnes, trying to move this forward so we

1 don't go back and forth about the time frame much more, because
2 I think the record is sufficient to establish what the time
3 frame was and what happened relative to the two servers. I'm
4 going to let the State's counsel read the relevant testimony
5 from the -- the witness on behalf of the system and the
6 Secretary of State's office -- his testimony about this.

7 This is binding upon the Secretary of State's office
8 and you in turn, unless you are convinced that this was wrong
9 and then you can raise that with your -- your counsel at
10 lunchtime.

11 MR. TYSON: So, Mr. Barnes, as the Judge referenced,
12 there was a deposition of the Secretary of State's office
13 regarding the actions and picking up the server.

14 The testimony was that Mr. Bellew drove down there on
15 June the 8th, attempted to get in with a password and could not
16 get in. Then a later reference in that same deposition that
17 the server was changed out, picked up, and replaced on
18 June the 8th.

19 THE WITNESS: I will -- I will hold to that dateline.

20 THE COURT: So in other words, if I understand it
21 correctly, they both took the old -- well, you just take it --
22 go ahead from there. I don't want to even add any other
23 interpretation of anything.

24 BY MR. FISHER:

25 Q. Just so we have the dates right, just to be clear, on

1 June 8th, you replaced the EMS and the ICC at Coffee County and
2 then you installed a new one and ran -- then ran the acceptance
3 testing and that is what we saw?

4 **A.** Right. What we saw was record of the acceptance test run
5 on the server that was put in place on June the 8th.

6 **Q.** Okay. Same date that you replaced the current server?

7 **A.** That appears to be the same date that we took possession
8 of that server, yes.

9 **Q.** Okay. All right. Let's go back to 145. That is the
10 email we were looking at.

11 MR. FISHER: Tony, can you pull that up?

12 THE WITNESS: Yes.

13 BY MR. FISHER:

14 **Q.** Okay. So you received this email --

15 MR. FISHER: Go to the second page, Tony.

16 Thanks.

17 BY MR. FISHER:

18 **Q.** You received this email on May 11th; right?

19 **A.** That is the date, yes.

20 **Q.** Okay. And in June you replaced the EMS and the ICC;
21 correct?

22 **A.** That is what the record shows, yes.

23 **Q.** Okay. And your testimony about why is because the
24 passwords -- they couldn't find the right passwords, couldn't
25 access it?

1 **A.** When the technician was on-site -- each county has a
2 specific password that is assigned to their election management
3 system. When we arrived on-site to -- with using that password
4 we were unable to gain entry into the server.

5 **Q.** And it never occurred to you that maybe the reason for
6 that was that there was unauthorized access to the server?

7 **A.** The -- I don't recall what our -- we knew the absolute was
8 we were unable to get in. Why this password had been changed,
9 by whom it had been changed, we didn't know. We did not have a
10 clue, did not know why. So took possession of the server.
11 Replaced it with a new server.

12 We arrived in the county with a new server. Because we
13 had called the county and said, hey, let's -- you know, because
14 they had called us I think separate and apart from this email,
15 because Mr. Barnes had been made the new director and he was
16 trying to sign in to his server. And he was unable to do so.

17 So we gave them the appropriate password and he was still
18 unsuccessful. So a trip was scheduled.

19 **Q.** Okay. You arrived in Coffee County on June 8th; right?

20 **A.** Team arrived on June 8th, yes.

21 **Q.** Okay. You examined the -- you had to replace the current
22 server and the ICC; right?

23 **A.** We did.

24 **Q.** Okay. Less than a month earlier you received an email
25 from the elections director, Chris Harvey, saying it would be

1 prudent to see if there had been any contact between the person
2 on the card and anyone in your office and/or if they had any
3 access to any of your equipment; right? Less than a month
4 earlier?

5 **A.** That is what the email states.

6 **Q.** And it never occurred to you, when you were there on that
7 day, on June 8th, to do anything to follow up on what
8 Mr. Harvey said in this email?

9 **A.** When my team was on-site, what they came back and reported
10 to me was that the office appeared to be being maintained
11 properly.

12 THE COURT: That's not responsive to the question
13 posed by counsel.

14 Would you ask the question again.

15 Listen carefully to the question.

16 BY MR. FISHER:

17 **Q.** It never occurred to you, when you were replacing the EMS
18 and the ICC, to do anything to follow up to see if there had
19 been unauthorized access to either less than a month after you
20 received an email from Chris Harvey suggesting that it would be
21 a prudent idea to do so?

22 **A.** I felt we were taking the appropriate steps in response to
23 them unable to access their server, taking possession and
24 placing a new one. I did not take any other steps than that.

25 THE COURT: Is that a good resting point?

1 MR. FISHER: Just one more point, Your Honor.

2 Tony, can we pull up the transcript?

3 BY MR. FISHER:

4 Q. Mr. Barnes, when we were talking earlier about what
5 Ms. Watson testified to about the simultaneous tracks of this
6 investigation you see here, question: So it wouldn't surprise
7 you to learn that the State has not produced any documents or
8 witnesses that say there was anything done --

9 MR. CROSS: Slow down.

10 BY MR. FISHER:

11 Q. -- any documents or any witnesses that say there was
12 anything done to investigate this further after you responded
13 to Ms. Jones saying, thanks?

14 Answer: I know that there was multiple -- there was a
15 simultaneous track with Michael Barnes following up with the
16 machines. So as far as that result, I'm not familiar with
17 that.

18 Question: And when you say there was a simultaneous track
19 of Michael Barnes following up with the machines, what do you
20 mean?

21 Answer: That he was -- was to look into the server to
22 make sure if there was any unauthorized access to the machine.

23 Your testimony today is that the only steps you took were
24 to just replace the server and put in a new one; right?

25 A. We replaced the server. We brought the server back to

1 Atlanta to our office. We did attempt to access the server at
2 that time to see if we could get into the server. We were
3 unable to get into the server.

4 The server was then placed into the secured room to be
5 retained for the next steps. I did report that back to
6 Director Harvey. And that is where we stopped.

7 **Q.** Okay. Let me ask you this: Do you think she's wrong?
8 Was there a simultaneous track?

9 **A.** I believe that Ms. Frances was talking about the steps
10 that she took in relation to investigating the procedure and
11 she was making reference to the actions that we had taken to
12 take possession of the EMS server and bring it back to Atlanta
13 and replace it with a new one.

14 THE COURT: All right. Let me just ask a follow-up
15 question.

16 Did your team ever do any testing for malware?

17 THE WITNESS: Your Honor, we could not access the
18 computer. We would turn on the computer. The passwords that
19 we had were unable to get into the computer. We did not take
20 any other steps than that but to retain the computer and let
21 Director Harvey know that we attempted to get into the
22 computer, unable to do it and it was retained.

23 THE COURT: And is there a document that reflects
24 that, that you couldn't -- couldn't do the testing that was
25 requested?

1 THE WITNESS: I do not recall writing a document to
2 provide to him.

3 THE COURT: Okay.

4 All right. Let's take a break at this time. It is
5 basically 1:00. Let's -- is 45 minutes enough for all of you?

6 Please don't discuss your testimony with anyone else.
7 Thank you very much. We'll see you after 45 minutes.

8 COURTROOM SECURITY OFFICER: All rise. Court stands
9 in recess.

10 **(A lunch break was taken.)**

11 THE COURT: Welcome back, Mr. Barnes.

12 BY MR. FISHER:

13 **Q.** I want to talk to you a little bit about election night.

14 When the counties pull results off the EMS and it's
15 submitted to the ENR, the ENR is a system on the internet;
16 correct?

17 **A.** Correct.

18 MR. TYSON: And, Your Honor, I'll just object here.
19 I don't believe there were any questions on direct regarding
20 election night reporting and that system, so we are going
21 beyond the scope.

22 MR. FISHER: He walked through the process of voting
23 from start to finish.

24 THE COURT: I'm sorry?

25 MR. FISHER: He walked through the process of voting

1 from start to finish, how the materials get to the county, how
2 they are brought back from the county. And this is my only
3 question on the subject.

4 THE COURT: Go ahead.

5 BY MR. FISHER:

6 Q. Mr. Barnes, did anybody from the Secretary of State's
7 office ever ask you to provide any information about potential
8 unauthorized access to election equipment?

9 A. Repeat your question.

10 Q. Sure thing.

11 Did anybody from the Secretary of State's office ever ask
12 you to provide any information about potential unauthorized
13 access to election equipment?

14 A. I do not recall.

15 Q. Mr. Barnes, you were testifying earlier about the
16 replacement of the Coffee County EMS and ICC. I just want to
17 make sure I have this right.

18 You didn't do anything beyond trying what you thought were
19 the existing passwords to gain access to the EMS and the ICC
20 that you retrieved from Coffee County; correct?

21 A. Correct.

22 Q. Now, in fact, the ICC password had not changed; county
23 officials had access to that; right?

24 MR. TYSON: Objection, Your Honor. There were no
25 questions in direct about the ICC. In addition, I believe this

1 topic was fully explored when Mr. Barnes testified earlier in
2 the case.

3 MR. FISHER: Your Honor, during direct, there were
4 questions about replacing the Coffee County election equipment.
5 I mean, he replaced both the ICC and the EMS. We asked him
6 questions about this earlier. There was no objection to it.

7 I'm just following up on his testimony about how he
8 gained access and what he attempted to do to gain access to
9 both the EMS and the ICC.

10 THE COURT: I'll allow it. Just move on, though.

11 So do you need to ask your question again?

12 BY MR. FISHER:

13 Q. Isn't it true that James Barnes had access to the ICC?

14 A. I believe what my team that went to Coffee County reported
15 back to me, that the ICC work station, that the system was
16 still signed in, that they were able to see the ICC
17 application, they were able to see the directories, but that is
18 all they could do.

19 Q. So the ICC password was functional, was it not?

20 A. The ICC had been logged in to. They did not at that time,
21 to my knowledge, log out and attempt to log back in to see if
22 that password had or had not been altered.

23 Q. Would it -- okay.

24 And when you brought the ICC and the EMS back and you
25 attempted to gain access to it, did you try Googling to figure

1 out if there was a way to reset a password on this system -- on
2 either system, the EMS or the ICC?

3 **A.** My recollection is that we did try to see if there was
4 something that we could Google that could give us direction to
5 try to obtain access without the password. We did not find
6 anything in our search efforts.

7 **Q.** Did you ask Fortalice for help?

8 **A.** No.

9 **Q.** Did you ask Merritt Beaver for help?

10 **A.** I don't recall if I spoke with Merritt Beaver about it or
11 not.

12 **Q.** Did you ask David Hamilton for help?

13 **A.** David, no.

14 **Q.** Did you ask Dominion for help?

15 **A.** At a later date and time when Dominion was on-site, they
16 attempted to log in to the server. But I believe at the time,
17 I did not reach out to Dominion.

18 **Q.** Are you aware that the State retained an expert -- a
19 forensic expert to take a forensic image of the EMS that was
20 taken from Coffee County?

21 MR. TYSON: And, Your Honor, I'll just object as
22 beyond the scope, and we've trod this ground very well, I feel
23 like, but --

24 MR. FISHER: I have, like, three more questions about
25 this.

1 THE COURT: Ask the three questions about this and
2 then move on, please.

3 BY MR. FISHER:

4 Q. Are you aware?

5 A. I am aware that a forensic individual was retained by the
6 State.

7 Q. Are you aware of any attempt to make a forensic copy of
8 the EMS and ICC to gain access to it that way?

9 A. I do not know what steps the individual took.

10 Q. Okay. So your testimony today is despite everything you
11 knew about the Cyber Ninjas and Coffee County at the time when
12 you retrieved the EMS and the ICC, you didn't do anything more
13 than try what you thought were the existing passwords and then
14 put it in a closet and walk away?

15 A. That's correct.

16 MR. FISHER: Nothing further, Your Honor.

17 THE COURT: Thank you.

18 Mr. Brown, are you seeking to ask some questions?

19 MR. BROWN: Yes.

20 THE COURT: All right.

21 MR. BROWN: Thank you, Your Honor.

22 CROSS-EXAMINATION

23 BY MR. BROWN:

24 Q. Mr. Barnes, good to see you again.

25 A. Good to see you again, Counselor.

1 Q. At the beginning of your testimony today, you described a
2 detailed process by which your office at CES builds the
3 ballots.

4 Are you with me?

5 A. Yes, sir.

6 Q. And you described a number of steps from sort of mapping
7 out the different jurisdictions to getting all of this
8 information and then putting it together into your elections
9 package and sending that to the counties for their review.

10 Are you with me?

11 A. Yes.

12 Q. And that is all a very detailed process that takes a lot
13 of time, and you have to be very careful doing it; correct?

14 A. Correct.

15 Q. And if -- but let me ask you this: If the State's
16 equipment configuration were changed so that you had one
17 ballot-marking device in every polling location and in-person
18 voters presumptively used hand-marked paper ballots, wouldn't
19 that entire ballot-building process be exactly the same?

20 A. The ballot-building process in that scenario, if only a
21 single BMD were in place and the State used the optical scan
22 ballot that is available within the system, the exact same
23 process would be in place, the same timelines would be in
24 place.

25 Q. Thank you.

1 But if you made that change and eliminated maybe 2,700
2 BMDs, if you made that change from active use, you would spend
3 a lot less time in logic and accuracy testing, wouldn't you?

4 MR. TYSON: And I would just object to the extent
5 that this calls for -- I'm sorry -- for a legal conclusion
6 about which entity conducts logic and accuracy testing.

7 THE COURT: Well, I don't -- just for purposes of
8 describing the entire challenge of running an election, and you
9 are still deputy director of elections, would it make an impact
10 in your -- of the entire implementation of the normal
11 election -- normal elections like in a general election,
12 whether it is for the senate or for the president's race or,
13 obviously, a combination of all of those, that you would not --
14 that you would be only using one or two BMDs per polling place
15 so that you could -- so you could provide disability access of
16 any variety and were using hand ballots otherwise?

17 I think that is the question.

18 MR. BROWN: Yeah. No, he answered that it would be
19 about the same; right?

20 THE WITNESS: The building of the election project
21 would be unchanged. The timeline would be unchanged.

22 THE COURT: The timeline would have been unchanged.

23 What about the requirement -- is there a State
24 requirement for -- in terms of the Secretary of State's office
25 for logic and accuracy testing?

1 THE WITNESS: The logic and accuracy testing, of
2 course, is something -- is a pre-election exercise. If the
3 number of BMDs is reduced, that would have an impact on how
4 much time a county may have to undertake to execute logic and
5 accuracy.

6 BY MR. BROWN:

7 **Q.** I may have misspoken. This is just to correct the mistake
8 that I made.

9 There is about 30,000 BMDs in use today in Georgia; is
10 that right?

11 **A.** Throughout the State, yes, sir.

12 **Q.** And of those, about 2,700 to 3,000 are used for voters
13 needing assistance?

14 **A.** I believe that is correct.

15 **Q.** Okay. You testified about the difficulty in changing or
16 upgrading -- if it is considered an upgrade -- to full-face
17 ballots.

18 Are you with me?

19 **A.** Yes.

20 **Q.** And you described that as a complicated process that also
21 involved difficult changes to the printers and such?

22 **A.** Correct.

23 **Q.** What would be the benefit of changing to a full-face
24 ballot? What is the purpose of doing that, in your view?

25 **A.** The -- what the full-face ballot that the Dominion system

1 would produce would generate an optical scan formatted ballot
2 once the BMD had completed its task of selecting the choices of
3 the voter.

4 **Q.** But in your view, at least at this time, it is not a
5 practical alternative?

6 **A.** Well, with our current system as it currently exists, we
7 don't have that option within it.

8 **Q.** You testified about what happens to a malfunctioning
9 machine.

10 Are you with me?

11 **A.** Yes.

12 **Q.** And I believe that the example that you gave was not a
13 machine that was hacked or anything, just wasn't working;
14 right?

15 **A.** Uh-huh (affirmative).

16 **Q.** What happens to the votes on that machine or the votes
17 that were generated by that machine if it is later taken out of
18 service?

19 **A.** Well, again, the BMD doesn't generate votes. It collects
20 information from a voter and then relays that information onto
21 the printed ballot that the BMD produces through the printer.

22 The logs stay intact within the system. There is a log of
23 activities of what took place within the BMD when it was turned
24 on, when it was turned off, when a voter access card was
25 inserted.

1 So there are date-stamped logs indicating the activity
2 that took place on the BMD. The machine is powered off. The
3 logs are still available. When you turn the machine back on,
4 those logs would still be there.

5 **Q.** Right. But what I was getting at, though, is that if you
6 took a machine out of service because it was malfunctioning,
7 there would be no effort to go back and check the votes that
8 that BMD had already generated through printing ballots; right?

9 **A.** The votes -- the ballots that had been generated by that
10 device at that time, I suspect, will have already been put
11 through the scanner and ballot images collected and information
12 extracted from that ballot. The ballot would then be in the
13 ballot box. And because the ballot itself does not have any
14 identifier, it could not be pulled directly from the ballot
15 box.

16 **Q.** So if you found malware late in the day, for example,
17 there would be no way to go back and correct -- if that is the
18 right word -- the votes that had already been cast on that
19 BMD -- on that BMD; right?

20 **A.** The ballots have been scanned by the device. I don't know
21 what steps would be made if that were the case, but I assume
22 that some steps would be made to -- to hold anything that may
23 have been collected at that point in time for further
24 investigation if it was deemed necessary.

25 **Q.** Okay. On that topic, I want to switch to the DeKalb

1 example that you testified about.

2 You testified that the human readable portion of those
3 ballots matched the QR code.

4 Are you with me?

5 **A.** Yes.

6 **Q.** Are you sure that is the case?

7 **A.** I believe what I mentioned to the Court is that the way
8 you would validate that is taking the original project file
9 that had the candidates in a four environment, and if the
10 ballot came from a BMD with a four environment, do a comparison
11 against the original. If the ballot came from a three
12 environment, you would compare it against the project file that
13 had that contest in a three environment.

14 **Q.** Okay. But the proof would be on the AuditMark trade name;
15 right? AuditMark record that is contained within the file for
16 each ballot; correct?

17 **A.** The AuditMark record indicates how the tabulator
18 indicated -- how the tabulator interpreted that ballot.

19 **Q.** How the tabulator read the QR code?

20 **A.** How -- exactly.

21 **Q.** Okay. So -- and we could go find those in DeKalb County
22 if we wanted to; right?

23 **A.** Uh-huh (affirmative).

24 **Q.** You need to say yes. Sorry.

25 **A.** Yes, sir.

1 Q. Okay. But explain this to me.

2 Sort of physically, I vote in DeKalb County in this race,
3 and I get my BMD-generated ballot.

4 It has got a QR code on it that is correct; right?

5 And human readable that is correct --

6 A. (Witness nods head affirmatively.)

7 Q. -- and then I feed that into the scanner?

8 How are the results incorrect if both the QR code and the
9 human readable are correct and the same?

10 A. The scanner is not looking for a ballot layout of three.
11 The scanner is looking for a ballot layout of four. It expects
12 that contest to have a candidate position one, a candidate
13 position two, a candidate position three, and a candidate
14 position four. The BMD, however, has a candidate position one,
15 two, and three. The BMD-generated ballot and the BMD screen
16 has candidate position one, two, and three.

17 The ballot that becomes generated from the BMD is going to
18 have one of those three candidates that was displayed by the
19 BMD present if the voter had selected it. You'll see the name,
20 but what is going to be recorded from the QR code is the
21 position on the ballot.

22 Q. Right. So the QR code has information in it incorrect --
23 it is just -- that is correct? The information is in the wrong
24 place?

25 A. The QR code has information pertaining to the project file

1 from which it came from. It is still married to the BMD with
2 the three candidates.

3 **Q.** QR code does the wrong thing; right?

4 **A.** The QR code is relating what information it displayed on
5 the ballot on the screen and correlating that to the selection
6 made from that same screen.

7 **Q.** Let me ask it this way: Have you heard of QR code
8 readers?

9 **A.** I have.

10 **Q.** If you took one of those ballots and took them to a QR
11 code reader before casting it, would it show the correct or
12 incorrect candidates?

13 **A.** The QR code reader would show if it had the ability to
14 read --

15 **Q.** Correct or incorrect?

16 **A.** It would show -- it would show candidate position one,
17 two, or three had been selected.

18 **Q.** Okay. I lost you on there.

19 Would it be correct or incorrect? Would it -- would it
20 match the human readable text?

21 **A.** Yes, it would match the human readable text on the ballot
22 that it is connected to.

23 **Q.** So it would match the human readable text, but when put
24 into the scanner, it would still generate the wrong result;
25 correct?

1 **A.** It would place the result in the wrong associated
2 candidate because the scanner is not looking at a
3 three-candidate contest, the scanner is expecting a
4 four-candidate contest.

5 **Q.** Sort of like being in the right pew but the wrong church;
6 correct?

7 I'll move on.

8 You testified at the end of your testimony on direct about
9 sort of the personal impact that working in elections and your
10 family working in public service for so long and what impact
11 the current environment has had upon you personally and your
12 relationship with your work.

13 Are you with me?

14 **A.** Yes.

15 **Q.** Wouldn't it be better for you personally to have a system
16 that was easily confirmed as being reliable and not subject to
17 malicious attack for the next election?

18 MR. TYSON: And I'll just object, Your Honor, to the
19 extent that assumes that a system other than the BMD system
20 meets the qualifications that Mr. Brown has specified.

21 BY MR. BROWN:

22 **Q.** With that prompting, can you answer?

23 **A.** Unfortunately, Counselor, the environment in which we live
24 now, if we change systems, the outcome of the election will
25 probably still have people upset.

1 MR. BROWN: Thank you for your service. Thank you
2 for today, sir.

3 THE COURT: Mr. Oles.

4 MR. OLES: Yes, Judge, just a couple of brief
5 questions.

6 THE COURT: Go ahead.

7 CROSS-EXAMINATION

8 BY MR. OLES:

9 Q. Hello again, Mr. Barnes.

10 A. Hello, sir.

11 Q. I just have a couple of questions, and I know you probably
12 feel like you are getting beaten to death on these things, but
13 I just want to follow up on one or two things.

14 You were just talking about the issue of the alignment
15 between the -- what comes out of the BMD and what goes into the
16 scanner, and obviously, in relation to the 2022 DeKalb County
17 Commissioner District 2 race where the error occurred which you
18 had described as human error earlier today.

19 Just couple of brief things.

20 Now, it was your office that originally built that ballot;
21 correct?

22 A. That's correct.

23 Q. Okay. And logic and accuracy testing was run, but it
24 didn't detect it; correct?

25 A. Logic and accuracy testing had been executed by DeKalb

1 County, and during their checks, they had failed to catch the
2 fact that the Republican ballot was not showing properly. Why
3 they did not catch that, I do not know.

4 **Q.** Got it. Okay.

5 And yet when the -- when the race was run, after those
6 things occurred, the winning candidate -- what was ultimately
7 determined to be the winning candidate, Michelle Long Spears,
8 got no votes in the original election?

9 **A.** That is my recollection, yes, sir.

10 **Q.** And that may have stayed that way except for the fact that
11 she just knew that she and her husband at least voted for her;
12 right, and that is how that came to light?

13 **A.** My recollection is that things were coming to light the
14 night of that made people go, wait, this doesn't look right.

15 That may have come from the candidate themselves and her
16 family. I don't know. But I do recall that the night of that
17 we were notified that something -- something did not seem to be
18 working properly.

19 **Q.** Okay. And at the end of it all, there was an accurate
20 result that was obtained, but it was obtained by looking at
21 that paper ballot, wasn't it?

22 **A.** Yes, sir. We were glad we had the paper ballot.

23 **Q.** Now, and finally, the potential for this kind of a
24 machine-related error between the scanner and the voter is
25 always going to be present as long as we have a ballot-marking

1 device-type system; correct?

2 **A.** A scanner is dependent upon the ballot, whether it is a
3 BMD ballot or an optical scan ballot, to be processed and
4 programmed properly.

5 **Q.** Thank you.

6 Another question about -- back to this memory card erasure
7 issue. And I believe you were asked earlier about an email
8 that you had written to Bibb County authorizing -- authorizing
9 the reuse of tabulator CompactFlash cards within a period of
10 less than 30 days, it appears.

11 Do you recall that?

12 **A.** I believe I have spoken to Bibb County about that, yes,
13 sir.

14 **Q.** Okay. Now, you would agree with me that the ability of an
15 audit to be performed on an electronic system of this nature is
16 crucial; correct?

17 **A.** I would state that it is important to run audits after an
18 election, yes, sir.

19 **Q.** And on those scanner memory cards, they contain ballot
20 images, cast vote records, and audit logs; is that right?

21 **A.** That's correct.

22 **Q.** Okay. And without them, it would be impossible for
23 someone to determine whether or not there had been some kind of
24 an alteration or access to that information in between;
25 correct?

1 **A.** The CompactFlash card at the end of the election and the
2 contents of the CompactFlash card are uploaded into the
3 election management system as part of the results tallying
4 process. And the county is -- is to upload the results file,
5 the ballot images, and the logs. So those -- that information
6 that retains on the card is to be uploaded into the election
7 management system as part of the upload process so that it
8 could be accessed and reviewed if necessary.

9 **Q.** Right. But if someone were to have accessed that
10 information while it was still on the card, if the card was
11 overwritten, you would never be able to look at it; correct?

12 **A.** The -- after the transfer of information from the card
13 over into the election system, if the information is then
14 removed from the card, yes, you can't go back to the card and
15 look at something that is no longer there.

16 **Q.** Thank you.

17 And would you agree with me -- and I'm not asking you for
18 a legal opinion. I'm not being a lawyer.

19 But it is your understanding that election records have to
20 be kept for a certain minimum period of time; correct?

21 **A.** Yes, sir. There are differing standards for differing
22 information, but yes, election records are to be retained for
23 certain periods of time.

24 **Q.** And do you understand that it is either 22 months or
25 24 months?

1 **A.** I believe there is a statute pertaining to those things,
2 yes, sir.

3 Q. All right. And 30 days is not compliant with either one,
4 is it?

5 MR. TYSON: Your Honor, I'll object here. I think
6 now we've strayed into calling for a legal conclusion.

7 MR. OLES: Sure. I'm done, Judge. Thank you.

8 THE COURT: Thank you.

9 MR. TYSON: And, Your Honor, I have no further
10 questions for Mr. Barnes. I appreciate his time today.

11 THE COURT: I have just one question. Hopefully, it
12 is just one.

13 | EXAMINATION

14 | BY THE COURT:

15 Q. You indicated earlier in your testimony that -- that the
16 State representatives visited the Spalding County election
17 office and tested their EMS, apparently based on concerns
18 voiced by Spalding County; is that right? Do you remember
19 that?

20 **A.** Yes, Your Honor.

21 Q. Can you tell the Court why the server was subsequently
22 replaced?

23 **A.** Say it again, please.

24 | **Q.** I understand that the server was subsequently replaced.

25 | **A.** Yes.

1 **Q.** Can you tell me why -- the reasons why it was replaced?

2 **A.** Your Honor, my recollection of our office visit to
3 Spalding County, when my technician first arrived in Spalding
4 County to perform the acceptance test, the member of the
5 Spalding County elections board that had requested it was not
6 available at the time, so the election supervisor then asked
7 that our team come back at a later date to perform, which we
8 did.

9 My team came back. We then notified our general counsel,
10 you know, that we had been to Spalding County, but we did not
11 perform the acceptance test, but that we would schedule a trip
12 to return.

13 I believe before we had made that return trip to perform
14 the acceptance test that the Spalding County board had reached
15 out to our general counsel and made the request that instead of
16 testing the server could they -- could we potentially replace
17 the server.

18 And I believe through discussion with the Secretary of
19 State's general counsel and Spalding County, the decision was
20 then made that we would take a new election management server
21 to Spalding County and install it.

22 **Q.** So what was your understanding of what were the issues
23 that Spalding was having that triggered this request?

24 **A.** I can't speak to an issue that Spalding County was having
25 other than they had recently replaced their election

1 supervisor, and I recall that the board's -- the Spalding
2 County board was concerned about us performing an acceptance
3 test on the election management computer, feeling that we might
4 damage information that had been retained on the device.

5 So instead of performing that action, we -- the Secretary
6 of State's office and Spalding County agreed that we would
7 replace the server.

8 **Q.** All right. So then the -- was it your office that took
9 possession of the -- of the original computer or the --

10 **A.** I will have to -- if possession was taken, yes, ma'am, it
11 was taken and it was brought back to our office and placed into
12 our secure environment.

13 I'm -- I can't really remember right now whether we did
14 take possession of that one or if it was left in the retention
15 of Spalding County.

16 **Q.** Well, did you ever -- do you know whether or not anyone
17 from your agency then went -- or the department went and
18 conducted some type of testing to determine if there was
19 anything wrong with the computer, even if you had replaced it?

20 **A.** Again, Your Honor, my recollection of those events after
21 putting in the new server, I don't recall.

22 THE COURT: Any other questions occasioned by mine?

23 MR. BROWN: Your Honor, I have one question that is,
24 in part, prompted by the Spalding County issue.

25 THE COURT: All right.

1 RECROSS-EXAMINATION

2 BY MR. BROWN:

3 **Q.** Mr. Barnes, your office replaced the EMS server in
4 Treutlen County after you learned that Misty Hayes had been
5 employed by Treutlen County after the Coffee County incident;
6 right?

7 **A.** Yes.

8 **Q.** Okay. And what did you do with that EMS server?

9 **A.** That server, sir, is currently sitting within our office
10 in our secured room.

11 **Q.** I take it at the time you didn't have any way of
12 communicating to counties about some method of not hiring
13 election directors who were involved in the kind of things that
14 Ms. Hampton was involved in?

15 **A.** An action of a communication like that would be handled by
16 the state elections director, not myself.

17 **Q.** And how did you find out about the Treutlen County issue?
18 Was it from the SEB?

19 **A.** I can't remember if it was from the SEB or potentially
20 from the GBI.

21 **Q.** Okay. Thank you, sir.

22 MR. FISHER: Your Honor, I have one question on that
23 topic.

24 RECROSS-EXAMINATION

25

1 BY MR. FISHER:

2 **Q.** Sir, is it your testimony that you were not aware that
3 election officials in Spalding County were seeking to have
4 SullivanStrickler take forensic images of their election
5 equipment?

6 **A.** You are correct that the -- I believe the discussions that
7 was going on between Spalding County and the SOS general
8 counsel was pertaining to Spalding County's desire to collect a
9 forensic image of that particular server, and discussion was
10 held between general counsel for the Secretary of State's
11 office and Spalding County, and a new election server was
12 provided to Spalding County.

13 **Q.** But specifically, were you aware that the firm that was
14 going to make this forensic image was SullivanStrickler?

15 **A.** I was not aware of the firm, no, sir.

16 MR. TYSON: And I just have one question, Your Honor.

17 REDIRECT EXAMINATION

18 BY MR. TYSON:

19 **Q.** Mr. Barnes, does the Secretary of State hire county
20 elections directors in Georgia?

21 **A.** We do not hire the county elections directors that are in
22 place in each 159 counties.

23 MR. TYSON: Thank you.

24 REEXAMINATION

25

1 BY THE COURT:

2 **Q.** I understand in combination with the Spalding County issue
3 as well as the Coffee County one, typically if the State takes
4 possession of one of its supplied computers, does it routinely
5 basically just put it into storage and not check whether there
6 is something that has gone astray, whether from malware or some
7 other reason?

8 **A.** The vast majority of the CPUs, the election management
9 computers that we end up taking possession of, are simply CPUs
10 that no longer work, they would no longer boot up. Those are
11 the majority that we take.

12 And in relation to Spalding County, I do not recall there
13 an instance where there was an indication that the server had
14 not performed properly.

15 There was question about the individual that was
16 responsible for maintaining the office.

17 THE COURT: May this witness be excused?

18 MR. TYSON: Yes, Your Honor.

19 THE COURT: Thank you very much, sir.

20 MR. MILLER: Your Honor, before the State calls its
21 next witness, I just wanted to note, we talked earlier about
22 some logistical issues.

23 We're calling Dr. Adida next. I do not anticipate
24 his testimony going terribly long. The one caveat is he will
25 need to finish today to get back to Boston for a personal

1 commitment with his son.

2 THE COURT: All right.

3 MR. MILLER: I don't think that will be a challenge,
4 but I just wanted to raise it.

5 THE COURT: When is the last plane of the day, given
6 what happens in this room?

7 MR. MILLER: Right. Right.

8 Your Honor, the State will call Dr. Ben Adida.

9 **(Witness sworn)**

10 COURTROOM DEPUTY CLERK: Please have a seat.

11 State your name and spell your full name for the
12 record, please.

13 THE WITNESS: My full name is Benjamin Adida,
14 B-E-N-J-A-M-I-N, A-D-I-D-A.

15 Whereupon,

16 BENJAMIN ADIDA PH.D.,

17 after having been first duly sworn, testified as follows:

18 DIRECT EXAMINATION

19 BY MR. MILLER:

20 **Q.** Dr. Adida, good afternoon. Thank you for joining us.

21 **A.** It is good to be here.

22 And the last plane is at 10:30 tonight, so hopefully we
23 have plenty of time.

24 THE COURT: I had that thought, but I didn't know
25 what -- I don't think we're going to need that late.

1 MR. MILLER: I was hesitant for him to volunteer that
2 because you may keep us.

3 BY MR. MILLER:

4 **Q.** Dr. Adida, can you describe to the Court your current
5 employment?

6 **A.** Yes. I am the executive director of VotingWorks.
7 VotingWorks is a 501(c)(3) nonprofit. We are a vendor of
8 election technology.

9 I can say more if you would like, but that is -- I lead
10 the organization, and I cofounded it.

11 **Q.** And so in terms of -- I think you said develop election
12 and a vendor of election technology.

13 Can you describe the types of election technology you are
14 referring to?

15 **A.** Yeah. There are two main things that we do. One is we
16 make voting machines, voting tabulators, and the other one is
17 we make post election audit -- risk-limiting audit software,
18 and those are the two pillars of work that we do at
19 VotingWorks.

20 **Q.** And, Dr. Adida, how many jurisdictions does VotingWorks
21 work with, roughly speaking?

22 **A.** Yeah. On the voting machine side, we work currently in
23 the State of Mississippi with five counties, and we have just
24 been certified in the State of New Hampshire for precinct
25 tabulators.

1 And on the audit side, we work more broadly. We work
2 with -- I was just counting this morning to make sure I got the
3 number right -- nine states, including the State of Georgia and
4 a number of other states.

5 And I'm happy to try to list from memory if you would
6 like. But they definitely include Michigan and Pennsylvania
7 and Virginia. At least those states, yeah.

8 **Q.** Okay. Now, out of those other states that you discussed,
9 other than Georgia -- you said that was in audit space; right?

10 **A.** That is in audit space; correct.

11 **Q.** Out of those other states, how many of those are doing
12 statewide risk-limiting audits?

13 **A.** Yes. So out of the nine states that we work with -- I
14 think for context, it is worth mentioning there are ten states
15 in the country that do risk-limiting audits. We work with
16 every state that does risk-limiting audits except Colorado
17 because Colorado was the first and they have their own
18 homegrown system.

19 Of the states that we work with, in the coming year, out
20 of the nine, five including Georgia will run statewide
21 risk-limiting audits. Georgia was among the first four years
22 ago. It was fewer than five, far fewer than five.

23 **Q.** And with respect to VotingWorks work more generally, is
24 VotingWorks supported by any governmental entities?

25 **A.** So specifically with respect to what we're talking about,

1 we had a contract that has successfully completed with CISA
2 part of the Department of Homeland Security to develop the Arlo
3 software that is used for post election audits. So they were a
4 major funder of that effort, especially in preparation for the
5 2020 elections.

6 And, of course, we have other government contracts for
7 machines and audits, but that is the main one I think that is
8 worth bringing up.

9 **Q.** Dr. Adida, you talked about your relationship with the
10 Georgia Secretary of State.

11 When did that relationship begin, and for what purpose?

12 **A.** Yeah. So in 2019, 2020 -- I forget if it was on the cusp
13 or so -- we were engaged by the State of Georgia to help them
14 implement their first risk-limiting audits, and so we helped
15 them run pilots in three different counties and implement the
16 statewide risk-limiting audit of 2020.

17 So we have been engaged -- VotingWorks has been engaged
18 since late 2019 with the State of Georgia to help run
19 risk-limiting audits for the State of Georgia.

20 **Q.** And, Dr. Adida, I know you were with us once before via
21 Zoom back during 2020.

22 **A.** This is much better.

23 **Q.** I agree.

24 But in terms of your testimony here today and before, are
25 you being compensated for your testimony?

1 **A.** I am not being specifically compensated for my testimony
2 other than the travel expenses for today.

3 **Q.** Okay. And have you been specially retained as part of --
4 as a testifying expert in this case?

5 **A.** I have been asked if I would testify to the work that
6 VotingWorks does for Georgia in risk-limiting audits, and that
7 is the extent of what I am here for.

8 **Q.** Okay. And can you describe to the Court your educational
9 background?

10 **A.** Sure. I have bachelor's, master's, and Ph.D. from MIT in
11 computer science. Specifically, my master's and my Ph.D. are
12 focused on computer security, and specifically my Ph.D. is
13 focused on election security received from the Cryptography and
14 Information Security Division at MIT.

15 After that, I betrayed my alma mater and went up the river
16 to Harvard and got a post doc there, also working on election
17 systems where I went from theory to practice and started
18 building a voting system based on modern cryptographic
19 techniques.

20 And after that post doc -- should I pause there, or should
21 I keep going?

22 Okay. After that post doc, I was on the faculty at
23 Harvard Medical School working on the security and privacy of
24 genomic data in health records, and after a few years of that,
25 I left academia and went into nonprofits and industry.

1 Q. Okay. So about when did you leave academia?

2 A. I left academia in -- let me make sure I get that right --
3 in 2011.

4 Q. And so following academia -- strike that.

5 Following your academic studies, what kind of employment
6 positions have you held?

7 A. Yeah. I have held various engineering software and
8 product roles as a senior software engineer and eventually as a
9 director and a VP of engineering at Mozilla, the company that
10 makes Firefox and is also a nonprofit; at Square, the payments
11 company that I noticed is used downstairs in the cafeteria; and
12 at Clever, an education technology that secures data for
13 children in the K-12 environment.

14 Q. And would I be correct to understand that all of those
15 areas kind of have some focus on data or information security?

16 A. I'm really passionate and focused my career on using
17 technology to protect people, data privacy, data security, and
18 how to take all the theory I learned in my academic time and
19 make it practical in the real world.

20 Q. And so about just timeline-wise, you began VotingWorks in
21 2018.

22 Did I hear that correctly?

23 A. At the very end of 2018, yeah, that's correct.

24 Q. And during this time, whether with VotingWorks or before,
25 have you been continuing to work in the voting technology that

1 you touched on during your graduate studies?

2 **A.** Yeah. And, in fact, it predates my graduate studies. As
3 a late undergraduate, I helped build the voting system for MIT
4 Undergraduate Student Government, and that was 1998. And I
5 haven't really stopped being involved in voting technology
6 since then. So I was involved in it, of course, through my
7 master's work and my Ph.D. work and my post doc work.

8 In my post doc work, I created a voting system that is
9 used by a number of nonprofits and academic institutions for
10 things like hiring decisions and promotion decisions and all
11 sorts of organizations and their private elections. I created
12 that in 2008, and I have continued to run the system as a free
13 service for the last -- oh, my God, is that 15 years now --
14 16 years. 16 years. And I think, last I counted, about
15 4 million votes have been cast on it in that time.

16 And I've -- voting is just such a fascinating -- it hits
17 all the things that I care about. It is using technology to
18 protect individuals. It is democracy. It is public service.
19 It is really cool cryptography and security.

20 And so I have been involved in it since 1998, one way or
21 another, even when my day job was not election-focused.

22 **Q.** Okay. And have you authored any papers or publications
23 regarding -- relating to voting technology or election
24 auditing?

25 **A.** I have not done publications on election auditing

1 specifically, but I have done a number of peer-reviewed
2 publications in my graduate work, in my post doc work on voting
3 systems, on voting security.

4 And after I left academia, I didn't focus so much on
5 publications, but I have given a number of talks and
6 presentations at various conferences.

7 In 2020, I was on a panel with Dr. Halderman and a couple
8 of other folks whose name I don't remember, but who was also
9 involved in voting. I have generally been in a number of -- I
10 have given a number of presentations on voting technology, most
11 recently one at Georgia Tech in one of the security classes
12 there where I was an invited speaker to talk about voting
13 security in the real world.

14 **Q.** And I am going to show you one document here.

15 MR. MILLER: Your Honor, may I approach?

16 THE COURT: Yes.

17 BY MR. MILLER:

18 **Q.** Dr. Adida, I've handed you what is marked as Defendants'
19 Trial Exhibit 1244.

20 Do you recognize that document?

21 **A.** Yes, I do. It looks like a copy of my LinkedIn.

22 **Q.** And I understand you have been out of academia for some
23 time.

24 Do you keep a formal CV as typical in the academic world?

25 **A.** I do not. I am lucky enough to be cofounder, and so I

1 picked myself to lead VotingWorks, and so I haven't had to keep
2 up a resumé for a while, which is a nice benefit of that.

3 **Q.** And if you wouldn't mind just flipping through there real
4 quick and see if this appears to be accurate to you.

5 **A.** Yes, it looks accurate to me.

6 MR. MILLER: Your Honor, at this time we would like
7 to tender Dr. Adida as an expert witness in the field of
8 election auditing, their implementation and relation to
9 election systems security.

10 MR. McGUIRE: Sorry. Could you repeat those fields
11 again.

12 MR. MILLER: Yeah. In the field of election
13 auditing, their implementation, and their relation to election
14 systems security.

15 MR. McGUIRE: As far as election auditing and their
16 implementation, we would have no objection. But the relation
17 to election security, we would object to that on the grounds
18 that we've had a couple of declarations from Dr. -- I believe
19 it is, Dr. Adida?

20 THE WITNESS: It is.

21 MR. McGUIRE: We've had a couple of declarations from
22 Dr. Adida in the case, and we had testimony in September of
23 2020 from him. And the only thing that was covered in those
24 three I guess you call them disclosures of what his opinions
25 are was election auditing, specifically RLA auditing and

1 implementation.

2 So anything beyond that is going to be outside the
3 scope of what has been disclosed to us, and we would object to
4 it.

5 MR. MILLER: Your Honor, let me be clear. The
6 statement of the fields there was in relation to how -- the
7 field of election auditing and their relation to election
8 security. So the point here being Dr. Adida has been disclosed
9 an auditing expert. The relation of how audits fit into
10 election system security is particularly at issue. And
11 specifically in the declarations that Mr. McGuire has
12 referenced here, it specifically talks about kind of the point
13 of doing an audit.

14 I'm happy to admit these declarations and walk
15 through them.

16 THE COURT: Why don't you offer it to me first.

17 MR. MILLER: Sure. Your Honor, to be clear, this
18 exhibit from our exhibit list is Exhibit 62. It has got a
19 different -- another of Dr. Gilbert's declarations with it.
20 We're not intending to admit the Gilbert portion of it at this
21 juncture.

22 THE COURT: Well, I don't have the document -- the
23 exhibits organized this way.

24 MR. MILLER: I understand.

25 THE COURT: Thank you.

1 MR. CROSS: Your Honor, could we get citations in the
2 declarations on what they are relying on just so we can --

3 MR. MILLER: Yeah, sure. That is -- here, let me
4 hand one up to Your Honor first.

5 THE COURT: Just for the benefit of my -- at least
6 for my law clerks, this was -- this appears at Doc 834-2?

7 MR. MILLER: Yes, Your Honor.

8 Both of these -- so you have two declarations with
9 you there. Both of them were filed into the record right
10 around the time of the 2020 preliminary injunction.

11 THE COURT: That was the first one. The second one,
12 just for the record, is Doc 912-1. And for 912-1, there is a
13 supplemental affidavit also.

14 MR. MILLER: Your Honor, I'll begin by pointing with
15 respect to the first declaration to Paragraph 12 in respect to
16 protecting against malfunctions or hacks. I'll continue going
17 on to 13 where he references USENIX presentations on those same
18 topics.

19 USENIX is U-S-E-N-I-X. I do not know what that
20 abbreviation means, but --

21 And, Your Honor, with respect to the -- frankly, the
22 point of risk-limiting audits is with respect to security of
23 the tabulation and the accuracy of the outcome of the election.

24 To be clear, I'm not offering Dr. Adida beyond the
25 scope of that interrelation between risk-limiting audits and

1 security.

2 MR. McGUIRE: Your Honor, it sounds like he is
3 referring to security in a very superficial sense in the sense
4 of just, this is why we do audits, to verify outcomes.

5 And if it remains at that depth, then I don't think
6 we would have an objection as long as it is within the scope of
7 what he has already given in declarations.

8 MR. CROSS: Well, let me just add, Your Honor,
9 because we should be clear, when they are talking about voting
10 security -- and we could voir dire if we had to, but I think it
11 is obvious on its face.

12 Dr. Adida is talking about the security of the
13 scanner. And if you look at Paragraphs 12 and 13, you can see
14 this.

15 THE COURT: 12 and 13 of the 834-2 or --

16 MR. CROSS: Yes, Your Honor, 834-2.

17 If you look at Paragraph 13, what he says is in the
18 second sentence, every RLA VotingWorks has helped conduct uses
19 the human readable text, not the QR code, as the measure of
20 voter intent.

21 And he also in his declarations has a helpful analogy
22 where he talks about you have different locks. And on the
23 BMDs, he says there's debate on how strong it is. Is it a
24 strong lock or a medium lock?

25 But there is a separate issue you have to address of,

1 have you left the back window open? And that is the scanner.
2 And so he says we can debate BMDs, but we've got to close the
3 window on the scanners. And he talks about how an RLA does
4 that. Perfectly fair for him to talk about.

5 But the security of the scanners are not at issue in
6 this case. I know they have talked a lot about it.

7 THE COURT: Well, he can -- I mean, he can talk some
8 about it, but --

9 MR. CROSS: As long as it is clear he is talking
10 about the security of the scanners, I have no objection. But
11 he can't talk about security of an election system at large or
12 the BMDs and the printers.

13 MR. MILLER: Your Honor, in relation to the
14 discussion here, what Mr. McGuire stated is my only point of
15 the system security as how it interrelates with why you do a
16 risk-limiting audit. I'm not going to testify for him.

17 THE COURT: I'll allow you to proceed. And if we end
18 up in a little bit of a hole, I am sure able counsel will flag
19 that and we can take a break.

20 MR. MILLER: Thank you, Your Honor.

21 THE COURT: And I -- but how long do you think the
22 testimony will be?

23 MR. MILLER: I don't believe we're going to go very
24 long, Your Honor. Lawyers are pretty difficult at estimating
25 their own time, but I would expect we'll be done in an hour and

1 a half or so, maybe an hour.

2 THE COURT: That's fine. I'm not trying to -- I'm
3 thinking about taking a three-minute break right now.

4 MR. MILLER: Oh, yes. That would be perfectly fine
5 if you prefer.

6 THE COURT: I just don't want to begin and then as
7 soon as I begin in 25 minutes saying I need to break then. All
8 right?

9 MR. MILLER: Understood.

10 THE COURT: Since it is almost ten of 3:00, let's
11 just take a few minutes and come right back.

12 COURTROOM SECURITY OFFICER: All rise. Court is in
13 recess.

14 **(A brief break was taken at 2:51 PM.)**

15 MR. MILLER: Your Honor, I'm not sure if I did this
16 before. I would like to move to admit 1244, the profile from
17 earlier.

18 MR. McGUIRE: We do not object to that. It is his
19 CV.

20 MR. CROSS: No objection.

21 THE COURT: All right. It is admitted.

22 BY MR. MILLER:

23 **Q.** All right. Dr. Adida, can you describe to me generally
24 what a risk-limiting audit is?

25 **A.** Absolutely. A risk-limiting audit is a pretty amazing

1 statistical procedure that allows us to check that if you take
2 a set of ballots that have -- if you take a set of ballots and
3 you have put them through a scanner and the scanner has given
4 you an outcome, it allows you to check without relying on the
5 security of the scanner that that is the right outcome based on
6 the ballots that were put through the scanner.

7 And obviously, the simplest way to do that is just count
8 all those ballots by hand, right, just look at all of them.
9 That is what, you know, computer scientists would call the base
10 case of the risk-limiting audit.

11 Obviously, that is not really helpful because the whole
12 point of using scanners is to go quickly, right, so to scan
13 to -- to get the results quickly. If you're then counting all
14 the ballots, you're not going so quickly after all.

15 So a risk-limiting audit uses statistics and sampling so
16 that by looking at a subset of those ballots you can gain
17 confidence that the scanner did produce the right outcome.

18 **Q.** And the form of -- or strike that.

19 These risk-limiting audits, as you describe, are those
20 applicable to elections conducted on both ballot-marking
21 devices and hand-marked paper ballots?

22 **A.** So risk-limiting audits are -- the answer is yes. And
23 risk-limiting audits are designed to be carried out on any
24 voting system that has a voter verifiable paper ballot. So a
25 paper ballot that the voter can look at and verify themselves.

1 And then that paper is scanned. A risk-limiting audit can be
2 carried out on that.

3 So, for example -- I will slow down. I just sped up, I
4 realized. Sorry.

5 A risk-limiting audit cannot be carried out on a DRE
6 system, for example, the non-paper voting systems of yore
7 because there is no paper ballots that you can base your audit
8 on. But any system that has a voter verifiable paper ballot
9 can and should be tested with an RLA.

10 **Q.** And, Dr. Adida, what kind of issues do those or can these
11 RLAs detect?

12 **A.** It is a great question.

13 The reason the RLA is so powerful is that it is looking
14 for any discrepancy between the set of paper ballots and the
15 outcome that was produced. Whether those are misconfigurations
16 of the scanner, whether those are -- it is dust on the scanner,
17 or the scanner is starting to malfunction, or there was a
18 malicious attack on that, it can detect all of those issues.

19 And all it is doing is it is comparing the human readable
20 part of the ballot to the outcome and statistically telling you
21 with high confidence the right outcome was declared.

22 Hopefully, it can also tell you the wrong outcome was
23 declared, and then you have to escalate and figure out what
24 happened there. But in the happy case, it tells you the
25 right -- the outcome was confirmed.

1 **Q.** And do you have a sense of how prevalent the conduct of
2 risk-limiting audits are in jurisdictions in the United States?

3 **A.** We do, and that is because VotingWorks is involved with
4 almost all of them. There have always been -- or there have
5 long been post election audits. And so some way to look at the
6 behavior of the scanner afterwards and to look at the
7 tabulation process and check that it was done correctly.

8 But the RLA is the first approach that is statistically
9 validated with proof. So before, it was kind of, well, let's
10 check a few ballots and see how it goes, and that looks about
11 right.

12 The RLA formalizes that. That only happened in 2008, I
13 think. And the first statewide RLA was carried out by Colorado
14 in 2017, so it took awhile to operationalize that. And 2020
15 was the first year that any state other than Colorado carried
16 out a statewide risk-limiting audit, and that was Georgia.

17 And since then, the practice has grown slowly but surely
18 to the point that we expect ten states to carry out
19 risk-limiting audits -- not all of them statewide, but still
20 ten states to carry out those audits in this general election
21 in November.

22 **Q.** Okay. As far as out of the 50 states in our union as far
23 as conducting statewide risk-limiting audits, you mentioned
24 Georgia and who else?

25 **A.** So in 2024 in the coming election, we expect Michigan,

1 Pennsylvania, Virginia, Rhode Island, Georgia, and Colorado to
2 be the six states that carry out statewide risk-limiting
3 audits.

4 **Q.** Okay. And prior to '24? So let's say '22 or earlier.

5 **A.** Yeah. I don't remember where the line was in '22. In
6 2020, if my memory is correct, it was only Colorado and
7 Georgia.

8 **Q.** Okay. As far as a statewide?

9 **A.** As far as statewide, yes. There were other pilots going
10 on smaller scale.

11 I think it is worth noting that Colorado is an
12 all-vote-by-mail state, and Georgia, of course, is not. And so
13 conducting a statewide -- conducting an RLA in an
14 all-vote-by-mail setting is a lot easier than conducting an RLA
15 when you have in-person voting into the mix. And so Georgia
16 was the first state to do a statewide RLA in a mixed
17 mail/in-person setting.

18 **Q.** And you mentioned the type of devices being used.
19 Obviously, we're here in this litigation regarding the
20 ballot-marking devices in Georgia. But I heard you mention
21 Pennsylvania.

22 Do you have an understanding of the type of equipment that
23 is utilized in Pennsylvania?

24 **A.** I have some understanding of it, yes.

25 So Pennsylvania makes equipment decisions by county, not

1 at the state level, and so it varies from county to county.
2 And some counties use primarily hand-marked paper ballots, and
3 some counties have all BMDs.

4 **Q.** And based on your experience in running and conducting
5 risk-limiting audits, would, in Pennsylvania, for example, the
6 use of counties with ballot-marking devices discount the value
7 of a risk-limiting audit?

8 **A.** In my opinion, it does not. It is a voter verifiable
9 paper ballot. And as long as the risk-limiting audit is
10 carried out on the human readable portion of the ballot, which
11 is how it is always carried out when we help, then I think it
12 is a valid and really important audit to run.

13 **Q.** And let's go back to just kind of at high level, you
14 mentioned a variety of risk-limiting audits.

15 Could you kind of walk through those varieties with us.

16 **A.** Yes, I can. And this is the kind of stuff that can get a
17 little boring, so I'm going to try to keep it light and
18 interesting, so -- which is a tall order.

19 The question around risk-limiting audits where I initially
20 hand-waved is, how do you select the -- how do you sample the
21 ballots, and what are you comparing?

22 And there are three major flavors of risk-limiting audits,
23 ballot polling on one end; at the other, end ballot comparison;
24 and in the middle, batch comparison.

25 And I'm going to try to give you a two-line explanation of

1 each one.

2 Ballot polling audits can be run on just about any
3 paper-based voting system as long as you have an inventory of
4 your ballots, and you know I have this many batches and this
5 many ballots per batch. You can run the ballot polling
6 approach. It is the simplest approach.

7 Roughly, it is like running an exit poll on the ballots.
8 You are just sampling a bunch of ballots, and you look at what
9 the outcome is, and then you plug it into a statistical
10 formula, compare it to the outcome, and you get your confidence
11 level.

12 It is the easiest to run. It is statistically less
13 powerful than the others. What that means is you have to look
14 at more ballots to get to a certain level of confidence. So
15 easy, but more expensive in terms of time and investment.

16 At the other extreme, you have ballot comparison. That is
17 a kind of audit that can be done when you have a voting system
18 that allows you to uniquely identify every single ballot in the
19 digital record, meaning you can look at the digital record of
20 the ballots and you can say, aha, this line in the spreadsheet
21 is Line 12785. I can go find that individual paper ballot that
22 corresponds to that line in a spreadsheet.

23 To do that, you need a voting system that can imprint
24 numbers, like identifying numbers on the ballot after it has
25 been scanned. Because if you have an identifier on the ballot

1 before it is scanned, you have ballot secrecy problems. You
2 could potentially coerce people because they can see what their
3 ballot number is before it goes through the scanner.

4 And in practice at VotingWorks, we have only seen ballot
5 comparison audits doable in all-vote-by-mail states because
6 when all the ballots come in centrally, that is when you can
7 put them through a big scanner and imprint those numbers as
8 they go through.

9 When you add in-person voting into the mix, we don't have
10 reliable technology that allows us to do this imprinting, and
11 so this kind of one-to-one matching between the paper ballot
12 and its digital record is not something we can do. There are
13 some approaches that have been suggested about maintaining the
14 order of the ballots so you know that it is like Ballot 57 in
15 Stack 13. But that requires making sure that you never shuffle
16 the ballots by mistake when you are taking them out of the
17 precinct scanner. In practice, it never happens.

18 So ballot comparison is the most statistically powerful
19 because you're doing this one-to-one match, which means you
20 have to look at the fewest number of ballots to get that
21 confidence. It is super cool. But in practice, when you are
22 voting in person in a state like Georgia, I don't know how to
23 make it work.

24 So actually, at VotingWorks, with the help of partners at
25 Verified Voting and others, we were able to operationalize a

1 middle ground that is called batch comparison audits. And
2 batch comparison audits let you compare the counts of batches.
3 So if you have a batch of 100 ballots that has been labeled as
4 Batch Number 1755 and you have records -- you have digital
5 records that give you the tally for that Batch 1755, you can do
6 a one-to-one comparison of batches instead of a one-to-one
7 comparison of ballots.

8 That does not require imprinting on ballots. It just
9 requires you maintaining batches of ballots together and having
10 a tally for those batches. And that is still more challenging
11 than the easy ballot polling audit I mentioned, but it is a lot
12 more attractable with more training and with more process
13 preparation.

14 So right now, wherever possible -- one more thing to add.
15 In terms of statistical power, it is not quite as powerful as
16 for ballot comparison theoretical ideal, but it is very close.
17 It allows you to do an audit with far fewer ballots than the
18 ballot polling.

19 So just to summarize three kinds, ballot polling, really
20 easy, but you've got to look at lot of ballots. On the other
21 end, ballot comparison, one-to-one comparison of ballots, but
22 in practice, really only doable in vote-by-mail states. And in
23 the middle ground, more ballots than ballot comparison, far
24 fewer than ballot polling, you are comparing batches.

25 And that, in our minds at VotingWorks, given our

1 experience, is the sort of best in class practical audit you
2 can run today.

3 **Q.** Okay. And you mentioned the ballot comparison being
4 unique or more easily implemented in a vote-by-mail state.

5 But just to be clear, what you are referring to there is
6 that central return of the ballots rather than because those
7 ballots are marked by hand; right?

8 **A.** It is a really good clarification.

9 Yes. In addition to -- it is a much easier plan if the
10 ballots are returned to the county to do ballot comparison. It
11 might still be doable if they are returned. I don't even know
12 whether that makes it to the municipality. I don't even know
13 how that would make sense.

14 But the big complication for ballot comparison is when you
15 have in-person voting. That is where it is really hard to do
16 the one-to-one matching without also violating voter secrecy,
17 which you really don't want to do.

18 **Q.** Okay.

19 THE COURT: So are you primarily relying on the --
20 what you've done to review ballots sent to the county rather
21 than those done in person?

22 THE WITNESS: I'm sorry. Could you repeat that
23 question?

24 THE COURT: So I guess I'm just -- want
25 clarification.

1 So are you, in fact, using -- relying principally on
2 a comparison of the batches sent to the county?

3 THE WITNESS: Oh, I understand your question, Your
4 Honor.

5 In a batch comparison audit, we audit everything, the
6 mail ballots and the in-person ballots. It is just that the
7 in-person ballots don't need to be imprinted with a unique
8 identifier, they can just be left in batches, and so that is
9 why they can be part of the batch comparison audit. So we test
10 all the ballots, and we do it in batches.

11 THE COURT: All right.

12 BY MR. MILLER:

13 **Q.** As I understand it, the vote-by-mail jurisdictions, you
14 essentially have far fewer ultimate receiving points of
15 ballots; is that accurate?

16 **A.** That is it. And again, it is the individual
17 identification of ballots that is much easier in that context.

18 **Q.** Right. Okay.

19 **A.** If I can add one clarification, the software we produce,
20 Arlo, which is open source and which we use in nine states to
21 run audits, is capable of running all three flavors of audits.

22 So when I testified in 2020, that wasn't the case yet. It
23 was still early days for the tool. Now it can run all the
24 types of audits. It just depends on the voting system and the
25 voting style. You know, it can't resolve the fact that ballot

1 comparison is hard to do in a non-vote-by-mail state.

2 **Q.** Okay. And you mentioned Arlo.

3 Can you explain that software to me and where it fits into
4 the picture here?

5 **A.** Yeah, absolutely.

6 So when you run a risk-limiting audit -- and I can go into
7 the why, but I'll just tell you the goal. The goal is to run
8 the audit once for the state across all of its counties or all
9 of its jurisdictions if it is not a county-based voting system,
10 and to do that -- but the ballots are stored at the county
11 level.

12 So take Georgia, for example. You want to run the audit
13 at the State level, one sampling of ballots across all of the
14 State's ballots, but the paper is stored at the county level.
15 So you now have this coordination dance between the State and
16 the counties where the State needs to have the inventory of all
17 the ballots, do the sampling, and then dispatch requests to all
18 the counties saying, okay, go look at this batch, go look at
19 that batch, go look at this, and then report back to us.

20 And that work flow of auditing requires some software
21 coordination and implementation of the statistical formulas,
22 and that is what Arlo does. Arlo is software that helps the
23 State and the counties coordinate this dance of submitting
24 ballot inventories, sampling, dispatching out the requests to
25 go fetch batches, and then reporting that data back in and

1 finally declaring whether the audit has succeeded or failed.

2 **Q.** And you talked about the interrelation, that sort of
3 collections.

4 Just walk me through step by step, the county begins with
5 what step with Arlo?

6 **A.** Yes. When a county -- I'm going to keep using Georgia as
7 an example.

8 When a county begins the audit process, they first catalog
9 all of their ballots. They make an inventory of all the
10 ballots they have and specifically how they are organized in
11 batches, and they submit that information via Arlo to the
12 State.

13 So now the State has -- you can think of them as
14 spreadsheets -- one spreadsheet from every county that just
15 lists batches of ballots that they have. I have Ballot Batch
16 A-62. It contains 257 ballots. It is stored in the third
17 shelf of, you know, all of that.

18 It is just literally an inventory of all your ballots.
19 All that gets accumulated at the State, and as the county, once
20 you submit that, you're then waiting for the audit to begin.
21 So the State does its thing. There is a dice rolling ceremony
22 to do a random number selection to make sure it is actually
23 random. Usually, that is filmed so people can see it happen.

24 And so as a county, I'm waiting for that to happen. And
25 then I request -- sorry, I don't request. I receive a dispatch

1 from the State via Arlo that says, okay, please go look at
2 these batches and re-count them for the contest that we're
3 auditing.

4 And so then as the county election director, with my team,
5 I go and fetch those batches that were requested. I take them
6 off the shelf. And the best practice that I -- my
7 understanding is Georgia follows is to do this all in view of
8 the public so that there are people who can watch the ballots
9 being brought in, being counted, and then those tallies being
10 entered into tally sheets, and then those tally sheets being
11 entered into the Arlo tool and uploaded back to the State.

12 So that is what each county does. It does an inventory of
13 ballots, submits it to the State, waits for orders from the
14 State about which batches to go -- from that inventory to go
15 look at, looks at those batches, counts them in view of the
16 public, and submits those numbers back to the State.

17 **Q.** And so, Dr. Adida, let's go back to -- the sort of the
18 beginning of your work with the State of Georgia.

19 Can you describe your involvement in the initial
20 implementation of RLAs in Georgia?

21 **A.** Yeah. In our experience, when a state begins implementing
22 risk-limiting audits, like any other audit, it reveals
23 imperfections in the human process of running an election. So
24 you might realize as a county, oh, I don't have an exact ballot
25 inventory. Actually, I don't -- I know roughly how many

1 ballots are in every batch, but I don't know exactly how much
2 ballots I have in every batch.

3 So we start by running pilots, which is non-legally
4 binding, just let's go through the motions of the audit and see
5 where things might break.

6 And in 2019 or early 2020, that is what we were doing in
7 Georgia. We helped three counties -- I forget which ones --
8 but we ran three different pilots to identify all of these
9 little areas, all these little snags of, okay, you have to do a
10 better job of inventorying your ballots here. You have to
11 learn how to use the spreadsheet tool over there. You have to
12 give log-in credentials to this number of people so they can
13 enter the data.

14 And after that is all -- all those kinks are figured out,
15 then there can be a manual written for the State that adapts
16 the RLA process to the State's specific election procedures,
17 and then you can train everybody, and then you can run the
18 audit.

19 So at the beginning in Georgia, we were helping the State
20 figure this out. I believe -- I was not the one involved in
21 this, but I believe we also advised the State on how to build
22 their rules around how to run an audit, things like always look
23 at the human readable portion of the ballot, things like the
24 public observation of the audit, that kind of thing.

25 Q. To that point, I'm going to show you State Election Board

1 Rule 183-1-15.04.

2 MR. MILLER: Jim, if you could help me pull that up
3 here.

4 THE COURT: Before you dive in, let me make sure I
5 understand something about the way you were describing batches.

6 What -- I don't know that I really understand
7 precisely how the batch is put together.

8 THE WITNESS: Yeah. That's a really good question
9 and a question that many people forget to ask. You are right
10 on.

11 So in some cases, a batch is literally all of the
12 ballots that went through one precinct scanner. So in a
13 location -- in a voting location, you might have two, three,
14 four, five individual tabulators, and then ballots go through
15 each one and they get stored in the ballot box that is attached
16 to it. In many situations, that is a batch; right? So it
17 could be a thousand ballots; right?

18 In other situations, a batch could be an early voting
19 batch, so there is a scanner used for early voting, and that
20 scanner is one batch.

21 And then another situation is processing vote-by-mail
22 ballots where generally in that case the batches get to be
23 smaller. So they will put like 100 or 200 ballots through the
24 scanner of those vote-by-mail ballots, put a rubber band around
25 it, put a label on it, stash it away. That is a batch.

1 So there are different kinds of batches with slightly
2 different sizes, depending on where they come from. But the
3 idea of a batch is a set of ballots where you can get the
4 subtotals for that batch. That is critical. Where you can
5 say, well, for this batch, there were X number of votes for
6 Trump and Y number of votes for Biden, for example.

7 THE COURT: So how many batches do you typically do
8 in Georgia?

9 THE WITNESS: That is a really good question.

10 I don't have that number off the top of my head, but
11 estimating it, it is 5 million votes, roughly, in Georgia. And
12 the batches will go from 100 to a thousand. So, you know, that
13 is probably on the order of like 10- to 30,000 batches across
14 the State.

15 THE COURT: Okay. I'll let you go on, and I'm sure
16 there will be many other questions.

17 But I guess if you are in a -- let's just say you're
18 in a place half the size of Atlanta and you say we are going to
19 go to -- what do you do to diversify the socioeconomic and
20 racial and ethnic characteristics of the ballots you are
21 pulling?

22 THE WITNESS: Yeah, that's a really good question.

23 So the raw math of it, the statistical approach is
24 you ignore all those parameters. That is the original formula
25 from Professor Stark. Just apply the random formula. Pick

1 those ballots. And because you are doing it randomly, you are
2 going to get the statistical strength of the outcome no matter
3 what you do.

4 But in perception, you are 100 percent correct that
5 that can look bad. Because in some counties, there literally
6 would be no batches selected; right? Especially a small county
7 in Georgia, zero batches might be selected.

8 So in the State of Georgia, one of the things that
9 the State asked us to do is to turn up the volume on the
10 auditing, and in addition to the batches mandated by the random
11 selection, to create a minimum of two batches per county or
12 two percent, whichever is greater.

13 So they -- we were instructed to update our tool to
14 do further auditing than what the math was calling for, for
15 exactly the reason you're mentioning, which is to make sure
16 that there were at least in every county some number of ballots
17 audited.

18 BY MR. MILLER:

19 **Q.** And, Dr. Adida, you talked about the statistical formula.
20 My understanding is that is going to depend on the margin
21 of the election; correct?

22 **A.** Exactly right. So -- and this is very intuitive. It is a
23 very -- if it is a very tight race, if the voting system is
24 telling you, for example, that it's a .3 percent margin, for
25 example, like in 2020, you are going to have to look at more

1 batches to confirm that. If the system is telling you it is a
2 20 percent margin, right, 60 to 40, you don't need to look at
3 that many batches to confirm that. It is going to be obvious
4 in the data.

5 So how close the contest is tells you how many ballots to
6 look at.

7 **Q.** And then the only variation here in Georgia related to
8 that is that those -- that batch pull to ensure the county
9 participation, there is a slight change.

10 Do I understand that?

11 **A.** Yeah. What I was mentioning to Your Honor is that in the
12 way the process worked -- and this is something the State asked
13 us to do. I can't remember if it was in '23 or in '22.

14 But in any case, it is now active in the system in Arlo
15 for all future audits in Georgia, that first the system will do
16 the random selection following the math, right, that has been
17 peer-reviewed and that we did not invent, that we were simply
18 using at VotingWorks. And then once that is done, go through
19 every county and kind of top off that county if there is not
20 enough votes being audited in that one. So we're doing at
21 least the work of the random audit and then some.

22 **Q.** Okay.

23 **MR. MILLER:** And, Jim, I'll ask you to pull that back
24 up real quick.

25

1 BY MR. MILLER:

2 Q. I want to show you -- you mentioned the auditing rule here
3 in Georgia. I want to show you on the screen here what is
4 State Election Board 183-1-15.04.

5 Do you see that in front of you?

6 A. I do see it.

7 Q. And the main thing I want to ask -- I am not going to ask
8 you to read the whole thing line by line, but I want to talk
9 about a few things that you brought out.

10 You know, one of the issues you raised was in terms of
11 being open to the public and transparency; right?

12 A. Yes.

13 Q. Okay.

14 A. Absolutely.

15 Q. And is that reflected here in the rule in terms of
16 conducting the audit?

17 A. I think it is, but let me check.

18 Q. I'll direct you over to Subpart 2, 1.

19 A. Yeah. There we go. I was looking lower down.

20 Yeah, the audit shall be open to the view of the public
21 and press.

22 And that is a really critical distinction in that clause,
23 which is everybody should be able to see it, but the handling
24 of the ballots is still something that should be done by
25 qualified designated individuals.

1 So, for example, when VotingWorks helps out with audits,
2 including in the 2020 audit, we provide instructions, guidance,
3 training, but we never touch the ballots. We let the counties
4 do that themselves.

5 **Q.** Okay. If we go here to the first page on the left side of
6 the screen, do you see the preparing for the audit?

7 And I want to ask you about in, I guess, part 1, 1 with
8 respect to the audit being conducted following November general
9 elections in even-numbered years.

10 Do you see that?

11 **A.** I do see that.

12 **Q.** Okay. So something that has been discussed with respect
13 to risk-limiting audits is sort of the frequency in this.

14 Do you have an understanding of how often Georgia conducts
15 it on a statewide basis?

16 **A.** My understanding is they do at least this and then some.
17 I don't have the latest numbers, but I know that there's -- you
18 know, in 2020, it was the first risk-limiting audit that
19 Georgia had ever run, and it was the most challenging one by
20 far that I have ever seen.

21 But since then, the State and the local election officials
22 have gotten accustomed to it, and so there's a hunger for it,
23 there is a desire to do it, and there is momentum to do it
24 more.

25 And my sense is -- and I can't give you exact numbers. My

1 sense is that they are doing more than strict minimum required
2 here in the -- I can -- if that's helpful, I can go
3 double-check that and get you that hard data later.

4 **Q.** Okay. And I think we'll hear some more of that later
5 today.

6 With respect to 2020, you mentioned just kind of the
7 uniqueness of the audit in 2020.

8 **A.** Yes.

9 **Q.** Can you talk about that?

10 **A.** Right. So I just explained the three flavors of audits,
11 the ballot polling, the batch -- batch comparison, and the
12 ballot comparison. In 2020, the only audit that we were ready
13 to run was ballot polling, and the only audit that Georgia was
14 ready to run was ballot polling, which, as I mentioned, is
15 really easy to run, but is not as statistically powerful as the
16 others, so it requires looking at a lot of ballots.

17 And specific -- so bring yourself back to the
18 November 2020 middle of the pandemic, Biden unexpectedly wins
19 Georgia by .3 percent, Secretary of State chooses the
20 presidential contest as he is allowed to do. He gets to choose
21 the contest to audit as per the rule. We crunch the numbers
22 and say, hey, .3 percent on a ballot polling audit requires
23 looking at 1.7 million ballots. Are you sure you want to do
24 that?

25 And they -- the State said yes. And we said, well, look,

1 logistically, once you are randomly selecting 1.7 million
2 ballots out of 5 million, you might as well count them all. It
3 is actually going to be easier and less error-prone to count
4 them all.

5 And they agreed, and we then basically carried out the
6 same process of a risk-limiting audit just tuned to look at
7 every ballot instead of look at just a subset of them.

8 I can say a lot more. I'll pause here. Let me know where
9 you want me to go with it.

10 **Q.** So am I correct in understanding that it was not then
11 necessarily subject to a risk limit because you're counting all
12 the ballots?

13 **A.** So the 1.7 million, there is a little detail I forgot to
14 mention. The sample size depends on the tightness of the
15 contest and the confidence that you want to reach; right? So
16 the tighter the contest, the more ballots you have to look at.
17 The more confidence you want, the more ballots you have to look
18 at.

19 The 1.7 million was for a ten percent risk limit, which I
20 can never say it as precisely as Professor Stark does, but I'll
21 try. It is the maximum chance that an incorrect result will
22 fail to be corrected; right?

23 So if the scanners performed poorly, got the wrong result,
24 a ten percent risk limit means that through the process of
25 auditing, in the worst-case scenario, there is at most a

1 ten percent chance that we will fail to detect that problem.

2 When you go and look at all of the ballots, and I think --
3 I believe this is something that Professor Stark has said
4 himself -- that is the base case of the risk-limiting audit,
5 that is a zero percent risk limit audit because you are just
6 looking at all of them. So it is not statistics anymore. It's
7 you looked at all of them. So there is no risk left.

8 **Q.** And talking about the 2020 election leads me kind of into
9 a similar gear in terms of selection of the contest to audit.
10 And we see on the State Election Board rule here a set of
11 factors that are guiding the selection.

12 What is your understanding of kind of where those factors
13 come from, or what is the purpose of considering those items
14 when you are selecting the race to audit?

15 **A.** My understanding of that -- and I could be wrong. I
16 haven't had discussions with the Secretary's office on this
17 front.

18 But my read of it is that it is supposed to give the
19 Secretary leeway to make a judgment call of what would be the
20 most confidence-building audit; right? So, for example, after
21 the surprising result in 2020, I mean, we had gamed out a lot
22 of scenarios at VotingWorks in 2020 for Georgia. We had not
23 gamed out a Biden win by a tight margin like this.

24 So as soon as we saw that that was happening, we started
25 thinking, okay, surely the Secretary will pick the senatorial

1 contest that has a higher margin. Like, picking this
2 presidential contest when the margin is so tight feels like
3 such a huge challenge. And, of course, the Secretary picked
4 the presidential contest.

5 And so my read of the situation is he thought that was
6 where confidence needed to be built, and thus he chose that
7 contest even though it was monumentally harder to run that
8 audit than it would to have been a different one.

9 MR. CROSS: Your Honor, I just object to the extent
10 he is speaking for the Secretary of State. He should speak for
11 himself.

12 MR. MILLER: And I'll just correct myself because I
13 think Dr. Adida might have misunderstood my question
14 transitioning over which was in relation to the factors
15 relative to determining an election to audit, not a specific
16 election in 2020, but --

17 THE COURT: Well, I note both of the comments, so
18 maybe you want to rephrase your question.

19 And I will note that the -- Mr. Cross' objection also
20 is sustained because he is talking about the Secretary's
21 thinking might be very interesting. It might be, but that is
22 something different.

23 BY MR. MILLER:

24 Q. Dr. Adida, my question is kind of focused -- kind of got
25 to it in a different way about, you know, scenarios.

1 But with respect to deciding which contest to audit in any
2 given election, I see some factors listed out here about the
3 closeness and the scope of the race.

4 You know, what is kind of the purpose of those sort of
5 factors in being considered?

6 **A.** My read of it is that it is meant to find the contest --
7 to give the Secretary the leeway to pick a contest that will
8 bolster confidence in the outcome of the election. That is my
9 read of it.

10 **Q.** Okay. And so leading up to in preparation for the 2020
11 election, did VotingWorks participate or help put on any
12 training of local election officials for this?

13 **A.** Yes. Generally, that is what we do with states that we
14 on-board into risk-limiting audits. We provide training,
15 including live training, video training -- in 2020, it was all
16 video training, obviously -- training materials, training
17 video, including a training video featuring my two children
18 because those are the only two actors I could come up with on
19 one week's notice during the pandemic. I'm told it is one of
20 the more popular training videos in the State of Georgia.

21 So yeah, we do a lot of this training, and my kids are
22 very proud. They have shown it in school and all of that.

23 **Q.** You talked about the switch between moving from the ballot
24 polling to the batch comparison audit.

25 **A.** Yes.

1 Q. What is -- I guess, what was the thought process behind
2 the switch, and what was the -- what is the benefit of the
3 switch?

4 A. Yeah. In 2020, batch comparison audits were an idea.
5 They were not defined with statistical -- precise statistical
6 formulas or processes yet. It was just this emerging
7 realization from folks, not just at VotingWorks, but other
8 organizations that work on audits, that ballot polling was
9 limited and also hard to explain.

10 In fact, I think, Your Honor, I think I tried to explain
11 it in 2020, and I think I failed dramatically to get that
12 across. Hopefully, I did a better job today.

13 So hard to explain and not statistically powerful, while
14 ballot comparison was impractical to implement in many states.
15 And so in 2020, it was just an idea. There was no way we could
16 implement just an idea. Like, operationalizing an audit takes
17 a lot of work and a lot of preparation and a lot of process
18 definition. We did that work with a number of partners,
19 including partners at Verified Voting to make sure that we were
20 figuring this process out correctly. It wasn't just a
21 VotingWorks idea.

22 And we started running batch audits, and then we
23 implemented that process into the Arlo software and ran the
24 first batch audit in 2022, if I remember correctly.

25 MR. CROSS: Your Honor, sorry. Just object on

1 relevance grounds. I might be mistaken, but I think the audits
2 he's talking about were under a different legal regime, and so
3 I would just ask for foundation on how what he is talking about
4 applies to what would happen today because the audit rules
5 changed in material respects.

6 THE COURT: After 2020?

7 MR. CROSS: I don't remember what year it changed.
8 It is certainly after 2020. 2023. He is talking about 2020
9 and 2022. So whatever he did then, they may be able to show
10 it, but they need to lay the foundation for relevance.

11 BY MR. MILLER:

12 **Q.** To be clear, we're talking about transition over.

13 And I think, Dr. Adida, you testified that had begun in
14 2022?

15 **A.** They began in '22, and that is now the standard kind of
16 audit that we run in Georgia, which is easier to explain --

17 THE COURT: The batch comparison --

18 THE WITNESS: The batch comparison audit, exactly
19 right, yeah.

20 THE COURT: And do any of the -- I think the -- part
21 of the objection was that what we have in front of us is a 2020
22 State regulation, but you are now doing something different.

23 THE WITNESS: Well, we --

24 THE COURT: Is there a different -- I got the notion
25 from you that -- from counsel that there was a -- is there new

1 revised regulation, to your knowledge?

2 MR. MILLER: Your Honor, I'm talking through kind of
3 the process here, how we got to where we are.

4 THE COURT: Go ahead. Go ahead.

5 MR. MILLER: Of course, I'm not going to offer a
6 legal opinion from Dr. Adida here either, but --

7 THE COURT: Okay.

8 MR. MILLER: You can take it back down, Jim.

9 BY MR. MILLER:

10 **Q.** But in terms of process from 2020 to 2022, so you talk
11 about a shift from ballot polling -- yeah, ballot polling to
12 batch comparison; right?

13 **A.** Correct. A couple of things -- so why? Why would we do
14 such a thing?

15 Both of them are risk-limiting audits. They both fit the
16 definition that is in the document that you had just shown me.
17 The batch comparison is easier to perform, easier to explain,
18 and easier -- and more powerful in terms of its outcome because
19 you have to look at fewer ballots. However, there is a little
20 bit more preparatory work that counties have to do to be really
21 good about their ballot inventory, even better than with ballot
22 polling.

23 And so that preparation work was between 2020 and 2022 on
24 our end on the software side and on the process side in the
25 counties in Georgia. Because, as I mentioned, running an audit

1 highlights all of the little things you do in the very
2 complicated process of elections that you could do better.

3 And by 2022, Georgia had improved the number of these
4 ballot management processes and was able to run the ballot --
5 the batch comparison audit, which they are now able to do on a
6 regular basis and which is that much easier to explain. You
7 are saying, look at that batch. The machine said it was X
8 number of votes for Biden and Y number of votes for Trump.
9 Let's go count it and confirm.

10 Very straightforward to explain and for people to
11 understand that that is giving you evidence in the scanner in
12 the tabulation process.

13 So that is why that move is useful. Easier to explain,
14 public trust is a critical part of audits, more powerful
15 statistically, you can run it a lot more quickly. For example,
16 1.7 million ballots was the number of ballots that we looked
17 at. Actually, we looked at all of them, but the formula told
18 us to look at in 2020. Had we had the ability to run batch
19 audits in 2020, we would have had to look at, I think, fewer
20 than 200,000 ballots, which is a completely different ballgame
21 and a lot faster and easier to do.

22 So that is why that is what we do going forward in
23 Georgia. Every election administrator hates to think about a
24 tight margin election, but let's say there is another tight
25 margin election. Georgia will be that much better prepared to

1 audit it quickly and efficiently thanks to these improvements
2 in the process.

3 **Q.** So now moving forward now into 2024, now staring down the
4 barrel of an election coming --

5 **A.** Right.

6 **Q.** -- you know, VotingWorks continued to assist with
7 Georgia's risk-limiting audits; right?

8 **A.** Correct.

9 **Q.** And your understanding going forward into 2024, has
10 anything additionally changed beyond what you have already
11 described?

12 **A.** Two things have changed.

13 One is the one I mentioned when, Your Honor, you asked me
14 a question about, you know, sampling the heterogeneity across
15 the State, so that is a change that has been made to make sure
16 that every county participates.

17 And by the way, it is kind of a blind -- it is a
18 double-blind thing where the counties don't know if their
19 batches have been selected for the RLA portion or for the
20 top-off. Right. On purpose, you want --

21 THE COURT: The top-off?

22 THE WITNESS: This is where we go through every
23 county and make sure that at least two batches from every
24 county are being audited. So there is like a minimum for the
25 RLA and then extra auditing to make sure everybody is

1 participating. So that is an important improvement for 2024.

2 And then there is another improvement that is super
3 in the technical weeds. I'm going to try to give you a
4 high-level idea. The goal of an RLA to be very transparent
5 with the public about how the audit runs, and the State wanted
6 to be particularly transparent about that, so they asked us to
7 add a feature whereby before the audit begins, the inventories
8 are published using a hash function that summarizes them in one
9 hash -- one stream of 40 characters. I can explain if you
10 would like.

11 What it basically means is it locks in, it kind of
12 commits the State to saying these -- these are the data we're
13 auditing, we can't be messing with it internally later because
14 at the very end we're going to reveal everything that was
15 needed to show that it circles back to the starting data that
16 we had.

17 It is an extra bit of transparency that we hadn't
18 built into the tool. And we brainstormed with them on how to
19 do that, and we implemented that, and we're starting to build
20 that into the tool, hopefully in time to implemented in 2024.

21 Fun fact, the way it was implemented last time is
22 Gabe Sterling Tweeted out the 40 characters before the audit
23 started and said, hold us accountable, here they are, in the
24 Tweets that people can check later.

25

1 BY MR. MILLER:

2 Q. So we talked about these -- the statewide risk-limiting
3 audit.

4 Separate and apart from that, do you have any
5 understanding if local jurisdictions in Georgia are also
6 conducting additional audits?

7 A. Yeah. And I may get some of these details right, but I
8 think it is Bartow County that regularly holds additional
9 audits, sometimes counting all of their ballots. I think I got
10 the county right. And that is the only one I know of.

11 Q. I'll forgive you on this one. Bartow, not Bartow.

12 A. Bartow. I apologize. I saw your face. I was like, I
13 must have mispronounced it.

14 Q. You were close.

15 So, you know, I want to shift gears a little bit as to why
16 the risk-limiting audit matters. You talked before about
17 confidence in the election.

18 How does that help build confidence?

19 A. Yeah. So the central principle of election security that
20 RLAs connect to is software independence, is the idea that
21 there isn't a piece of software in the system that we are
22 trusting blindly to help us run our elections.

23 There is two pillars to software independence. RLA is one
24 of those two pillars. Specifically, it is the pillar that
25 says, once we have ballots that represent the will of the

1 voters, the tallying process is checked in a way that no longer
2 depends on software.

3 So software independence is a central principle. There
4 are two pillars to software independence. RLA is one of those
5 two pillars, and it is critical. Every state should be running
6 it. It is the recommendation of every major professional
7 organization that is involved in voting. And yeah, it is
8 critical.

9 Q. And --

10 THE COURT: What is the other one, in your mind?

11 THE WITNESS: I'm sorry?

12 THE COURT: What is the second one?

13 THE WITNESS: Oh, the second principle is voter
14 verifiable paper ballots, paper ballots that the voter can look
15 at and say, yes, those are my choices. Whether they mark them
16 by hand or whether it was produced by a computer, that is
17 critical.

18 If you have those two pillars, one where the
19 production of the ballots is where the ballots can be verified
20 directly by the voter and the tabulation is checked by a
21 risk-limiting audit, then you can tolerate a whole number of
22 security failures across the board and still come out with a
23 valid election result.

24 MR. CROSS: Your Honor, can we get a citation where
25 he offered this opinion that the voting system in Georgia is

1 software-independent?

2 And that is also not within the scope of his audit
3 expertise. I think it is beyond the scope of both the report
4 and his expertise.

5 MR. MILLER: Your Honor, I think he is objecting to
6 your question.

7 MR. CROSS: I'm sorry?

8 MR. MILLER: I think he is objecting to your question
9 right now, I guess.

10 MR. CROSS: I'm objecting to the answer.

11 THE COURT: No. I think he is objecting to his
12 offering an opinion about that. To the extent --

13 MR. MILLER: I'll go back to the 2020 preliminary
14 injunction hearing to start with, which is testimony. But
15 throughout the declaration here, the purpose of the declaration
16 that was disclosed early on is about, what is the purpose of a
17 risk-limiting audit in a system where the plaintiffs' expert
18 says it is essentially worthless?

19 You know, here, Georgia is doing all this work, has
20 taken these steps. Dr. Adida talks before about --

21 MR. CROSS: Your Honor, I apologize to interrupt, but
22 we have a witness on the stand. The question is very simple.
23 What is the paragraph number he is relying on --

24 MR. MILLER: The one you just pulled up earlier.

25 MR. CROSS: So then, Your Honor --

1 THE COURT: Which --

2 MR. MILLER: The one we talked about, QR code mishaps
3 was directly referenced in one that you had pointed there
4 earlier.

5 MR. CROSS: Right. There is no -- I mean, let me
6 make sure I didn't miss it. You are saying paragraphs --

7 THE COURT: Are we talking about 834-2, the
8 declaration there, or are we talking about a different one?

9 MR. MILLER: There are two declarations.

10 THE COURT: I know there are, and I'm just asking
11 which one --

12 MR. MILLER: I was just saying as the first example,
13 the paragraph that Mr. Cross' tech pulled up specifically
14 talked about QR code mishaps, and the preceding paragraph,
15 Paragraph 12 talks about RLAs and how they protect against any
16 malfunction or hack of the QR code on ballots produced by
17 ballot-marking devices.

18 MR. CROSS: There's no mention of software
19 independence in here, Your Honor. And this is exactly why we
20 raised the scope objection on the expertise, because we worried
21 that this is where they were headed.

22 THE COURT: Well --

23 MR. CROSS: He cannot offer a computer science
24 opinion that the system is software-independent. That has
25 never been offered before.

1 THE COURT: Are you offering that?

2 MR. MILLER: I'm not offering that opinion. I'm not
3 giving any opinions in this case.

4 But, Your Honor, I think the issue here is if the --
5 I understand Mr. Cross' objection of why he wants to object on
6 this basis. And if the issue of striking Dr. Adida's
7 terminology of software independence, that is fine, but also --

8 THE COURT: All right. Why don't we just do that?

9 MR. CROSS: It is the entire opinion.

10 MR. MILLER: But I also want to be clear as to when
11 we move forward, you know, what Dr. Adida is going to talk
12 about here is his opinion that the first time he raises it is
13 in August of 2020, that at least one of the benefits of the
14 risk-limiting audits is protecting against the malfunction or
15 hack of a QR code.

16 So if that is going to continue raising objections,
17 then we can stop here, but I am not going to waste the Court's
18 time over whether we can talk about software independence right
19 now.

20 MR. CROSS: I have no objection to him talking about
21 Paragraphs 12 and 13. We'll cross-examine on that. We're
22 ready to do that. But software independence is a particular
23 scientific standard that he has not addressed, and it looks
24 like we're agreed that that is not coming in.

25 MR. MILLER: That sounds like an appropriate topic

1 for cross-examination to get forward on Paragraphs 12 and 13,
2 Your Honor.

3 THE COURT: I'll let you proceed, but I would direct
4 counsel as well as -- since you are saying you're not offering
5 him -- the witness for purposes of discussing software
6 independence, I don't see why -- and I understand the witness
7 is used to talking more freely and not in the context of the
8 Court, but let's just stay away from that to the extent
9 feasible.

10 MR. MILLER: I understand, Your Honor.

11 I want to be clear on one respect, is that this
12 software independence issue kind of rolls up into why a
13 risk-limiting audit can be used. I'm not here to ask Dr. Adida
14 directly about, you know, go into detail as to what is
15 software-independent and what is not.

16 But I believe Dr. Stark would -- I think he testified
17 just the other day that the system is not software-independent.

18 MR. CROSS: Your Honor, we have a witness on the
19 stand.

20 MR. MILLER: We can excuse him. That's fine.

21 MR. CROSS: He's making representations about
22 software --

23 THE COURT: Why don't we excuse the witness to go
24 outside if we're going to continue this conversation.

25 **(The witness exited the courtroom.)**

1 MR. CROSS: Your Honor, I thought we were agreed that
2 he was not going to testify about software independence. If
3 we're agreed on that, it is very simple.

4 But then Mr. Miller started making representations
5 about what software independence is and how it relates to
6 auditing.

7 So we can't have that in front of the witness. If
8 we're agreed he's not going to talk about software independence
9 and offer that opinion, then this is very simple and we just
10 move on.

11 MR. MILLER: Your Honor, my only hesitation is, Your
12 Honor, to the extent that software independence is just wrapped
13 up as a, you know, baseline of having a risk-limiting audit,
14 you can't have a risk-limiting audit on a system that does not
15 exhibit software independence. I'm not going to ask the
16 witness further questions about, what does software
17 independence mean, what systems are software-independent, how
18 strongly are they software-independent?

19 I'm not going down that path, Your Honor. That is my
20 only hesitation because I don't want to have that stipulation
21 in the record that then comes up in some other scenario.

22 THE COURT: Let me hear also --

23 MR. MCGUIRE: I was just going to add, I think the
24 concern from our side would simply be that software
25 independence is sort of a term of art and it implies something

1 more than the superficial justification for audits that I
2 understood he was going to get into.

3 And so we would join the objection. To the extent
4 that we're going to start talking in technical terms about
5 something, if he wants to colloquially speak about why we do
6 audits, he can do that. I think we agreed to that at the
7 beginning.

8 But to the extent we're starting to use expert
9 terminology, that becomes problematic for us because it hasn't
10 been disclosed.

11 MR. CROSS: And I would just add, Your Honor, that if
12 Mr. Miller is right that software independence is the baseline
13 for RLAs, well, then we need to revisit the admissibility of
14 his testimony because he had an opportunity to address that
15 standard, and he has never addressed that standard. And they
16 are now saying that is the standard that is --

17 THE COURT: Well, he obviously discusses underlying
18 issues on this in Paragraph 12 of Document 834-2. He says, one
19 important benefit of RLAs is that they protect against any
20 malfunction or hack of the QR code on ballots produced by
21 ballot-marking devices.

22 And then he goes on from that, and then he says a
23 successful RLA thus provides strong evidence that if there were
24 QR code mismatches, they did not affect the outcome of the
25 election.

1 I don't think that that actually addresses
2 independence, but it does -- you know, it is close. It is an
3 adjacent issue, and it really goes to the RLA, maybe the
4 reliability of the RLA methodology or -- and that is something
5 you can cross-examine.

6 MR. CROSS: Agreed.

7 THE COURT: And since you agree on that, then I just
8 would encourage -- strongly encourage Mr. Miller to try to
9 avoid sort of inadvertently lighting a fire here about being --
10 asking about -- or encouraging him in any way to talk about
11 software independence. Or I can just tell him right now is
12 that we are not discussing software independence. We will be
13 discussing your opinions as articulated in your -- previously
14 in your affidavits, or -- I don't know what he gave in his
15 deposition, frankly, at this juncture.

16 MR. MILLER: Interestingly, the plaintiffs chose not
17 to depose him, but the -- Your Honor's description of that
18 is -- that is -- that was my only hesitation to not just say
19 that is fine because I'm not going to ask him more questions
20 about what does that mean, what are you doing with it?

21 Truly, it was not something I was even intending to
22 bring out today, but nonetheless --

23 THE COURT: Well, do you have any objection to my
24 instructing the witness in that way?

25 MR. MILLER: I think that would be fine, Your Honor.

1 I think the -- I think that would be fine, Your Honor.

2 THE COURT: And do plaintiffs' counsel have any
3 objection?

4 MR. MCGUIRE: No, Your Honor.

5 MR. MILLER: Your Honor, my only concern would be --
6 I think, as Your Honor raised, as long as he is allowed to
7 fully talk about the opinions that he's brought out in his
8 declaration and the prior testimony before this Court, that is
9 fine.

10 MR. CROSS: Your Honor, the one other objection I
11 will raise since he is not here and we have been trying to get
12 a lot of latitude is -- Mr. Miller just raised on the issue of
13 why we didn't depose him -- he has not provided any testimony
14 in this case since September of 2020. We have given latitude.
15 He's talked about a lot of things since September 2020. He's
16 talked about --

17 THE COURT: Well, you could have taken his
18 deposition.

19 MR. CROSS: We could have, but we had no reason to
20 because he wasn't -- the only thing he was allowed to talk
21 about -- we have heard this from them; right?

22 The only thing he is allowed to talk about is what is
23 in his declarations. He has gone way beyond his declarations.
24 Because his declarations, as a matter of physics, could not
25 concern anything after September of 2020. He has testified

1 mostly today on events after 2020.

2 Again, we're trying to let them build their record,
3 so we haven't objected, but we're reaching a point where it is
4 really unfair. Because we didn't depose him because our view
5 was, oh, he is stuck -- he is stuck in the past of four years
6 ago. He is bound to the limit of that.

7 Now we're hearing a whole bunch of stuff that they
8 should have put an expert report on, Your Honor. So I just
9 want to register the objection, and Your Honor can take it
10 conditionally.

11 MR. MILLER: May I note three things here, Your
12 Honor?

13 First of all, as Dr. Adida testified earlier, he has
14 not been specifically retained for litigation. He's an
15 existing vendor of the State who has expertise in the field.
16 He doesn't fit the definition of a retained or specially
17 employed to provide expert testimony in this case.

18 Nonetheless, he has provided declarations in this
19 case, and that is the requirement of Rule 26(a)(2)(B) as far as
20 requiring reports. Nonetheless, he has provided these
21 declarations at the time that under the scheduling order of the
22 Court, they were due.

23 As Your Honor will recall, on July 1 of 2021, was
24 plaintiffs' expert report deadline. The defendants had 14 days
25 to respond to these expert reports in July of that year. At

1 that time, Dr. Stark provided no additional declaration, no
2 statement, no nothing. The Coalition plaintiffs at that time,
3 who he was responding to on risk-limiting audits, just simply
4 re-served the prior declarations. Dr. Adida did the same
5 thing.

6 So, you know, at this point, that is why the
7 declarations didn't, you know, update in that fashion, because
8 there was nothing to respond to.

9 Finally, Your Honor, with respect to Dr. Adida's
10 testimony, you know, there's somewhat of a factual element to
11 it here insofar as he is with the implementation of the audits
12 in Georgia through his company VotingWorks. He is not some
13 arm's length, you know, separate expert that is coming in out
14 of nowhere, so he is obviously going to have some current
15 factual knowledge.

16 And, in fact, I think yesterday, the plaintiffs were
17 bringing out in Mr. Evans' testimony with respect to other
18 aspects of Dr. Adida has talked about with the State, worked
19 with them on completely separate from the litigation that I'm
20 not intending to get into on direct, but that nonetheless they
21 have been aware of.

22 THE COURT: So he is not testifying in an expert
23 capacity, you are saying?

24 MR. MILLER: No, Your Honor. What I'm saying is that
25 he is testifying in an expert capacity, but he does not fit

1 under 26(a)(2)(B); rather, he falls under the next category of
2 26(a)(2)(C), I believe. I don't have my rule book with me
3 here.

4 But experts -- he falls under the category of
5 26(a)(2)(C), which is with respect to those that did not
6 provide a written report. Nonetheless, he has provided
7 declarations in this case, but a different type of expert
8 testimony.

9 And I'll point the Court to a recent Eleventh Circuit
10 case that talks about the distinction between these types of
11 expert witnesses, and that is *Cedant v. United States*, 75 F.4th
12 1314 at 1325 through 1326. That was a case where there was a
13 dispute over an expert that did not provide a written report.
14 The Eleventh Circuit held that one was not required because it
15 was not specially retained for purposes of the litigation. But
16 nonetheless, Your Honor, it really shouldn't be an issue here
17 because he has provided these written declarations.

18 But to circle back to the beginning, Your Honor, my
19 only concern, I don't want to limit his ability to discuss the
20 substance of his opinion as particularly reflected in the
21 paragraphs of his declarations that we read earlier.

22 MR. CROSS: Your Honor, just briefly, you dealt with
23 the first argument that he is not a retained expert on the
24 MITRE report. They made that argument there. There is
25 extensive case law we cite in the Eleventh Circuit. It is an

1 end run around the expert rules. Whether he is retained or
2 not, if you are going to put in expert testimony, you have to
3 have a report.

4 They recognize that. They put in the declarations in
5 2020. As they have argued with our experts, you are bound by
6 that. You have got to live within the four corners of that.
7 We have let a lot of testimony in already.

8 My only point was to preserve the objection, let him
9 testify, you can take it conditionally. We're not even asking
10 him to stop. You can take it conditionally and then decide
11 whether it was appropriate in light of the expert disclosures.

12 The last two points, Your Honor, we all agreed on a
13 supplemental expert deadline in November of 2022. They chose
14 not to put in any supplemental expert reports then.

15 The last point, Mr. Miller says that the Coalition
16 only put in their old declarations for Dr. Stark in the summer
17 of 2021. It is not accurate. They put in a lengthy
18 declaration in 2022 which was the subject of motions practice,
19 you might recall.

20 So again, I don't think we need to discuss it more
21 because all we're saying is, take it conditionally, our
22 objection is preserved, and you'll do with it what you choose
23 on a fact-finding basis and a legal basis.

24 MR. MILLER: And, Your Honor, I'll briefly respond on
25 just one quick point here with respect to first the Dr. Stark

1 supplemental declaration in the spring of 2022, which was
2 amended such that he could copy and paste Duncan Buell's
3 opinions into his prior declaration, and also, the report that
4 the plaintiffs have objected as being irrelevant when Mr. Oles
5 has sought to present it in this case, that is that report.
6 The second report was ostensibly regarding Coffee County.
7 Dr. Stark spent one paragraph talking about Coffee County, so
8 that is the only thing that I want to say.

9 THE COURT: He obviously maintained very short
10 testimony yesterday compared to everybody else virtually. So
11 whatever the concerns are, he was very narrow in reality, but
12 anyway --

13 MR. MILLER: And, Your Honor, to be clear, I'm just
14 about done with Dr. Adida as well.

15 THE COURT: All right.

16 MR. McGUIRE: Your Honor, just from Coalition
17 plaintiffs' side, just to preserve our position, we are fine
18 with taking it conditionally. But, you know, we would just
19 note that we lost Duncan Buell because he disclosed late, and,
20 you know, he disclosed a long time ago compared to what we're
21 getting to today for the first time. We haven't gotten
22 anything from Dr. Adida since long ago, four years ago.

23 THE COURT: Well, I understand. In the pretrial
24 order, the Secretary of State's office counsel said that,
25 quote, a summary of Dr. Adida's opinions are found in his

1 declarations and hearing testimony.

2 But, I mean, that is why we're trying to avoid
3 talking about software independence.

4 MR. MILLER: I'm not trying to extend beyond that,
5 truthfully.

6 **(The witness re-entered the courtroom.)**

7 THE COURT: All right. Mr. Adida, I wanted to just
8 talk to you for a moment about your affidavits and your
9 testimony. I would direct you that you have -- I know you have
10 a variety of opinions and are well-studied in this area.

11 But I advise you that you are not to discuss the
12 issue of software independence because the prior affidavits or
13 declarations did not address that. It is not within the scope
14 of what is expected or authorized here.

15 So I realize that there are very -- a variety of
16 benefits of RLA that you would like to talk about, but I
17 counsel you to be careful about going beyond -- you have
18 already kind of touched on this, and I probably will not allow
19 that part of the testimony, but just be very careful about
20 that.

21 THE WITNESS: Okay.

22 THE COURT: I have no reason you would necessarily
23 know, but this is not a -- basically, there is not a free scope
24 of opinions here that you can really offer.

25 THE WITNESS: I completely understand, and I'm sorry.

1 I was trying to keep it scoped.

2 THE COURT: Yes. I'm not chastising you. I'm just
3 trying to deal with all of the very highly structured
4 choreograph of dealing with people who have offered some form
5 of expert testimony and -- or a specialist and all of the
6 requirements under the -- applicable requirements of that.
7 Thank you.

8 THE WITNESS: Can I ask a clarifying question?

9 THE COURT: Yes.

10 THE WITNESS: If I cannot discuss the concept, can I
11 discuss the parts of RLAs that pertain to the concept without
12 using the word and without touching on anything else?

13 I just want to make sure I'm doing it right and
14 explaining the security of RLAs.

15 THE COURT: Well, I think the issue here is not one
16 of trying to persuade the Court of the -- one way or the other
17 of benefits of RLA. I think that is what you have to take into
18 consideration.

19 What I understand -- and I might be wrong -- but the
20 State -- the Secretary of State's office through counsel is
21 offering your testimony more for basically trying to
22 demonstrate all that they have taken appropriate measures to
23 ensure the security and integrity of the voting system.

24 Is that a proper description?

25 MR. MILLER: Sure. Yes, Your Honor.

1 THE COURT: But it doesn't mean that -- as an
2 enthusiast for this, it doesn't mean that you can just start
3 opining more broadly about this. And I think what we got into
4 that stopped us was that you had begun down that vein. You
5 might not have realized it.

6 MR. MILLER: And, Dr. Adida, I can assure you, you
7 will hear an objection if you go down that path.

8 THE WITNESS: I'll go slow and wait for the
9 objection. Sounds good.

10 BY MR. MILLER:

11 **Q.** All right. So, Dr. Adida, when you left, we were kind of
12 walking through where Georgia had been, where it was in terms
13 of the types of audits it was implementing, and so forth.

14 **A.** Right.

15 **Q.** You know, there is a question in this case regarding
16 verifiability of ballots.

17 Why is that important to a risk-limiting audit?

18 **A.** So you want to run a risk-limiting audit on paper ballots
19 where you can state with confidence that they represent the
20 will of the voter. And so that is why you want the paper
21 ballots to be verifiable before you put them into an RLA.

22 For example, a counter-example would be a paper ballot
23 that the voter never gets to see. Say it was printed in the
24 back of the voting machine and dropped into a box and the voter
25 never got to see it. You could run an RLA on that, but it

1 would not be meaningful because the voter never got to see the
2 paper ballot.

3 **Q.** And with respect to verifying ballots, I know you're
4 familiar with the testimony of Dr. Stark and to some extent
5 less familiar with respect to Dr. Halderman.

6 But your -- the verifiability with respect to the ballots
7 used in Georgia, do you have an opinion as to whether those
8 ballots are verifiable such that they can be audited?

9 **A.** The Georgia BMD ballots?

10 **Q.** Yes.

11 **A.** They contain human readable text, and the RLA procedure is
12 to check the human readable text, so it is my belief that they
13 are verifiable.

14 **Q.** And with respect to -- you know, honing in on that
15 verifiability, you are familiar with two basic kind of alleged
16 hacks of a ballot-marking device, one which may flip the
17 voter's printed text and QR code, one which will flip only one
18 but not the other; right?

19 **A.** Right. Yes.

20 You are referring to Alex Halderman's attacks. Yes, I'm
21 familiar with them. Yes.

22 **Q.** And where do risk-limiting audits fit in with respect to
23 those different types of attacks?

24 **A.** Right. So I think of this in a very simple way.

25 Obviously, the voter cannot verify the QR code. Hard enough to

1 even point your iPhone at it; right? But cannot verify the QR
2 code. The voter can verify the text.

3 If a hack of the BMD modifies the -- flips the QR code to
4 be different than what the voter intended but leaves the text
5 unchanged, the count of the tabulators will be wrong because
6 they are reading the QR code, and the risk-limiting audit which
7 is looking at the human readable text will catch that
8 discrepancy. That is critical.

9 So an RLA catches the hack where the QR code was flipped
10 but the human readable text was left alone.

11 **Q.** Now, we've heard testimony, you know, throughout that --
12 strike that.

13 Of course, the audit can only catch such a hack when it is
14 auditing that race; right?

15 **A.** Correct.

16 **Q.** Okay. And -- but, you know, in terms of the audits that
17 VotingWorks implements and the audits implemented in other
18 states, am I correct in understanding that auditing every
19 single election on a given ballot is not the norm?

20 **A.** You are entirely correct. The only state that has the
21 capability of auditing multiple contests in any reasonable way
22 is Colorado because it can use the batch comparison method
23 which is more efficient, which allows you to check multiple
24 contests sufficiently.

25 If you have in-person voting like Georgia does, the limits

1 of the science of risk-limiting audits is such that you cannot
2 efficiently check every contest.

3 We're working on that. Like, there is research on that to
4 try to make it more efficient and find batch comparison audits
5 that allow you to check multiple contests.

6 But I want to be clear that that is the case, you know,
7 for all voting systems across the U.S. There are no states
8 other than Colorado that is really pushing the envelope that
9 are auditing more than one or two contests in an election,
10 irrespective of the voting system they use.

11 **Q.** Okay. Let me ask you this: You have reviewed Dr. Stark's
12 testimony in this case; right?

13 **A.** I have.

14 **Q.** Okay. And if Dr. Stark essentially testified earlier
15 about auditing of the BMD-based elections, you know, do nothing
16 to increase confidence in the outcome, do you disagree with
17 that?

18 **A.** I disagree with that.

19 **Q.** And why?

20 **A.** I want to preface what I'm about to say by saying that
21 Professor Stark has defined and initiated RLAs, created them,
22 and that maybe is the most significant advance in election
23 security over the last 20 years. That is incredible.

24 And with all respect that goes with that, I think he sees
25 this in too black and white a way, either the ballot is fully

1 verified by every voter, or it is not verified at all.

2 And I don't think in practice it works that way. I think
3 most voters are able to verify their ballots in Georgia, and
4 thus an RLA of those ballots is worthwhile and meaningful.

5 **Q.** And Dr. Stark testified that in his view, every election
6 on every ballot essentially must be audited.

7 Is that -- do you agree or disagree with that opinion?

8 **A.** If it were possible to do pragmatically, it would be a
9 great thing to do, of course. I don't think it is with the
10 current technology we have.

11 **Q.** And I want to talk a little bit about your audit processes
12 to get back from earlier with respect to -- let me phrase it
13 this way: Can you describe to me the importance of maintaining
14 the sort of integrity of the manifest that you talked about
15 earlier?

16 THE COURT: Of the manifest?

17 MR. MILLER: The ballot manifest and the --

18 THE WITNESS: I also call it the ballot inventory,
19 but both names apply, ballot manifest or ballot inventory.

20 Can you say more about maintaining the integrity of
21 the --

22 BY MR. MILLER:

23 **Q.** Well, probably phrase this better with respect to the
24 ballots that are reflected in the ballot manifest.

25 You know, when VotingWorks helps implement these systems,

1 these risk-limiting audit systems, how do they describe to
2 their partners the importance of maintaining chain of custody,
3 for example, and keeping track of the paper?

4 **A.** Yeah. This is an area where I think all the experts,
5 including Dr. Stark and I, agree on. Like, you have to have a
6 clear process that maintains a clear ballot chain of custody, a
7 clear way of identifying batches and the inventory of your
8 ballots. And we train states and counties on this as part of
9 our RLA training. It is an integral part of it. It is a
10 necessity to run a proper RLA.

11 Again, in practice, no one is perfect. No county anywhere
12 in the country does this perfectly. One of the immense
13 benefits of the audits is not just to build confidence in the
14 results. It is that it nudges counties and states to keep
15 improving their process and make the elections more and more
16 solid every single year because the audit calls out those
17 little imperfections and then you get better.

18 MR. MILLER: No further questions, Your Honor -- or,
19 well, I will reserve time for a redirect --

20 THE COURT: Obviously, you will.

21 MR. MILLER: -- if we're going to be technical.

22 CROSS-EXAMINATION

23 BY MR. MCGUIRE:

24 **Q.** Good afternoon, Dr. Adida.

25 **A.** Good afternoon.

1 Q. My name is Robert McGuire, and I represent Coalition for
2 Good Governance, which is one of the plaintiffs in the lawsuit.

3 A. Good to meet you.

4 Q. Thank you for coming.

5 Now, Professor Philip Stark invented the RLA process;
6 correct?

7 A. He did.

8 Q. And you yourself did not take part in inventing it?

9 A. Absolutely not. I'm aware of it. When he invented it, I
10 learned about it a few years later.

11 Q. And that process relies upon equations that Professor
12 Stark developed?

13 A. Statistical formulas are formulas that he developed, yes.

14 Well, there's a lot of prior work before that that he
15 based his work on, like any academic, of course. But the
16 specifics of the RLA, he developed, yes.

17 Q. Okay. I think you anticipated my next question, which is
18 that the RLA process is statistical in nature.

19 A. By definition, yeah, although in its extreme, the base
20 case I mentioned, you know, you sample all the ballots. It is
21 no longer statistical. It is definitive. Yeah.

22 Q. And you are confident that you fully understand the
23 statistics that underlie the RLA process?

24 A. I understand some of them, but I defer to Professor Stark
25 on the details of why those formulas work. That is not my

1 specialty.

2 My specialty is implementation and deployment of this kind
3 of stuff. Yeah.

4 **Q.** And you have a number of impressive degrees, but none of
5 those degrees from MIT are in statistics?

6 **A.** I do not have any degrees in statistics. I did take a
7 graduate course in statistics, but I would never claim that
8 that comes anywhere close to Professor Stark's knowledge of
9 statistics.

10 **Q.** And your company VotingWorks has commercialized the RLA
11 process, yes?

12 **A.** We are a nonprofit, so I would question that word a little
13 bit in the sense that we have built software that is actually
14 free and open source that anyone can download and use.

15 What we have done is provided support of the software and
16 the process to states who want to use it. But there is at
17 least one state -- I think it is North Carolina -- that has
18 downloaded the software and is using it on their own, and we
19 have no commercial relationship with them.

20 **Q.** And the software, I think you said, was called Arlo?

21 **A.** Arlo, A-R-L-O. You can blame me for the name. I like
22 cutesy names, and I thought it was phonetically like RLA and it
23 was cute, so that is, you know --

24 THE COURT: All right. So the commercial part of
25 your operation is the provision of support for the software?

1 THE WITNESS: Support and hosting of the software;
2 correct, yeah.

3 BY MR. MCGUIRE:

4 **Q.** And so Arlo is completely open source, but do you have any
5 kind of proprietary version of it that you are continuing to
6 develop?

7 **A.** No. Everything we developed for Arlo is immediately
8 published as open source.

9 **Q.** Purely open source?

10 **A.** Yes.

11 **Q.** And does Arlo implement any methods that are not Professor
12 Stark's methods?

13 **A.** Well, I don't know the exact answer to that. I don't know
14 exactly to whom to credit batch comparison audits. I think
15 some of them are due to Mark Lindeman, who is a longtime
16 collaborator of Professor Stark. And then the kind of topping
17 off of audits that I talked about previously, that is not --
18 that is not from Professor Stark. That is a sort of an add-on
19 gravy, if you will, on top of the Professor Stark mashed
20 potatoes, I guess.

21 **Q.** Now, RLAs -- let's just make sure we're talking about the
22 same purpose here.

23 So RLAs, as I understand it, ensure the correctness of an
24 election's reported outcome; is that fair?

25 **A.** It is so hard to get this right, so I -- I'll try to be

1 very precise.

2 RLA's ensure that the tabulation process reported the
3 proper outcome. For example, an RLA cannot do anything about a
4 precinct where voters were disenfranchised, for example, which
5 would be an improper outcome, but has nothing to do with an
6 RLA.

7 **Q.** So they don't ensure that any individual voter had his or
8 her vote counted; correct?

9 **A.** That is a really subtle statistical question. Let me
10 think about that one for a second. Sorry.

11 Actually, that is an easier question to answer than I
12 thought. Correct, because in particular, an RLA does not
13 confirm the exact tally, an RLA just tells you that the
14 right -- the person with the most votes won. But whether it
15 was by 1,000 votes or by 1,200 votes, the RLA doesn't care.

16 So to answer your question, one of those votes that you
17 care about could be in that margin that doesn't matter, so the
18 RLA would not go to the level of each individual voter.

19 **Q.** So an RLA won't assure that the QR code and the human
20 readable text on any particular individual's ballot actually
21 match, will it?

22 **A.** Well, it is complicated. It will not directly make that
23 comparison, but it will indirectly confirm that if QR codes
24 were modified on a BMD ballot and enough of them are modified
25 to affect the outcome, then it would detect that situation.

1 Q. But that would be a collective modification.

2 You are talking about an aggregated modification there
3 that you are detecting, not any individual voter's ballot not
4 counting?

5 A. Yeah. So this is where it gets a little bit philosophical
6 about how elections work; right?

7 Because let's say the margin is one vote in an election.
8 Then the process of an RLA would immediately escalate to
9 checking every ballot and thus would check every single
10 individual vote. The only time that it doesn't check every
11 individual vote is if it doesn't actually matter to the
12 outcome; right?

13 So if one voter -- let's say only one voter is cheated in
14 the entire election, but the margin is 200 votes, you know, the
15 RLA won't catch that. But then again, it wouldn't matter if it
16 caught it or not.

17 Q. It wouldn't matter to the outcome?

18 A. It would not matter to the outcome. I mean, again, I
19 think the rest is philosophical. Does it matter to the voter
20 if -- I don't know. I don't know how to answer that one.
21 Yeah.

22 THE COURT: But just go back for a second. I mean,
23 you start -- you started by responding that RLA does not
24 confirm the vote tally, just confirms who got the most votes.

25 THE WITNESS: That's correct, yes. And that is by

1 definition of Professor Stark's process.

2 THE COURT: What if it is, though -- if the RLA
3 methodology is assuming as its predicate that every single QR
4 code is correct?

5 THE WITNESS: So the RLA methodology completely
6 ignores the QR code and goes straight to the human readable
7 text on the ballot, and so if QR codes were corrupted enough to
8 affect the outcome, the RLA would identify the problem and then
9 further forensics would identify the mismatch of QR codes, if
10 that makes sense.

11 The power of the RLA, the thing that makes that
12 invention so incredibly genius is that whether it is a bad QR
13 code or a bad scanner or dirt on the scanner or God knows what,
14 if there is a mismatch between the human readable portion of
15 the ballot and the outcome, the RLA will catch it, whatever the
16 cause of that mismatch is.

17 THE COURT: I think we're going a little bit like
18 this, but I'm going to leave it to counsel to explore.

19 BY MR. MCGUIRE:

20 Q. Dr. Adida, as I understand it, an RLA gives you a limit of
21 risks like, say, five or ten percent?

22 A. Correct.

23 Q. And that is a percentage likelihood that the audit has not
24 identified the wrong outcome?

25 A. It is like a complicated triple negative. I can never say

1 it as well as Professor Stark. But it is in the case that the
2 wrong outcome was declared by the machinery, it caps --

3 **Q.** I wanted to interrupt you here because I want to just hone
4 in on that.

5 So you are saying in case the total -- and we're talking
6 about the total determined by scanning and tabulating the QR
7 codes; correct?

8 **A.** Yeah. I mean, it is independent of whether it is a QR
9 code or a bubble ballot, but yes, it is the outcome of the
10 tabulators.

11 **Q.** Okay. In case that -- I'm sorry. Please continue.

12 In case that is not correct, then what does the risk limit
13 help you --

14 **A.** Right. So if the tabulation yields a result that is
15 incorrect based on the ballots, then the audit process has, at
16 most, the chance of the risk limit of not catching that
17 problem, if that makes sense.

18 So the lower the risk limit, the better your audits, if --
19 the more confidence you can have in your audit.

20 **Q.** So we're using the RLA to check whether the tabulation of
21 a sample of the human readable text disproves to a certain risk
22 limit the tabulation of the QR code outcome?

23 **A.** Roughly, yes. Roughly speaking, yes.

24 **Q.** And when we're doing that, we're making the assumption,
25 aren't we, that what is on the human readable text is what the

1 voter did on the touch screen of a BMD?

2 **A.** I wouldn't say that is what we're assuming. What we're
3 assuming is that -- sorry. Let me think through what you just
4 said again just to make sure I say it right.

5 We're assuming that some process gave us that confidence,
6 yes, that what is on the paper ballot is what the voter
7 intended.

8 **Q.** We'll come back to it, but just so I -- we're on the same
9 page, the process you have in mind is the voter looking at the
10 human readable text --

11 **A.** Right. I'm trying very carefully to stay within my lane,
12 and so that is why I'm using fewer words. But I'm happy to
13 answer any question, yeah.

14 **Q.** But -- and we will move on and I'll come back to it --

15 **A.** Yeah.

16 **Q.** -- but what I think it sounds like we're agreed on is that
17 under your understanding of why the human readable text is
18 reliable as a source record for the risk-limiting audit, that
19 is because the human voter has effectively ratified it by
20 looking at it and confirming that that is what they meant to
21 do?

22 **A.** I would almost -- I would tweak that with, enough voters
23 have done it.

24 **Q.** So is it fair to say as a general matter that RLAs operate
25 at the level of the election's outcome and not at the level of

1 the individual voter's ballot?

2 **A.** Again, I feel like that is a bit of a philosophical point.
3 Because in the extreme case of an outcome that is decided by
4 one vote, then it really does get down to that one vote. So it
5 really comes down to when the margin is larger than one vote,
6 and one vote being flipped wouldn't change anything, it is kind
7 of like if a tree fell in the woods and nobody was there to
8 hear, did it happen?

9 Like, I don't know how to answer that. To me, it is more
10 philosophical. But what is not philosophical, what is
11 scientific is that if the margin is one vote, the risk-limiting
12 audit process will catch it.

13 **Q.** Okay. And it is not very common for the margin to be one
14 vote in an election; right?

15 **A.** That is a terrible situation, yes. You don't want that,
16 yes.

17 **Q.** Now, is it also true that the RLA only operates at the
18 level of the outcome for the particular contest that is the
19 subject of the RLA?

20 **A.** Correct. The RLA focuses on a subset of contests; usually
21 one, sometimes two.

22 **Q.** And if we conduct an RLA for one contest on the ballot,
23 the result of that RLA says nothing about the correctness of
24 the outcomes for any of the other contests in that same
25 election; correct?

1 **A.** Well, this is a -- this is the difference between the
2 mathematician's viewpoint and the practitioner's viewpoint. In
3 the mathematician's viewpoint, the theoretical viewpoint, all
4 of these things are independent, but looking at one contest
5 tells you nothing about the others.

6 In the practitioner's viewpoint, if you have confidence
7 that the machine counted one contest -- say the presidential
8 contest well, then I would say the probability that it counted
9 the others well is higher.

10 Is it the same level? Maybe not. But in practice, they
11 are usually linked.

12 **Q.** Why would you assume the probability of an error on one
13 contest affects the probability of an error on a different
14 contest?

15 **A.** Because a lot of the issues that can come up with a
16 scanner have to do with configuration errors or dirt on the
17 scanner or things like that where usually these events are
18 not -- are not independent, as a statistician would say; right?
19 I know I'm not an expert in statistics, but I know enough to
20 say that. Like, they are correlated to some degree.

21 **Q.** And is that -- is that an assumption that ignores the fact
22 that people who program malware may target particular contests?

23 **A.** So in the malware case, you could see malware targeting
24 one contest and not another, in which case you would have more
25 independence. Again, as a practitioner thinking about how

1 somebody would attack ballots and how an RLA would defend
2 against that, usually, an attacker with malware is going to
3 target the top of the ticket. They are not going to target dog
4 catcher. It is a big investment for not a big outcome. So it
5 still seems to me that you're getting a lot of confidence from
6 auditing the top contest.

7 One thing I want to call out just for clarity on that,
8 even taking your assumption at 100 percent without questioning
9 it, the question you raise about RLAs only looking at one
10 contest is true, whatever type of voting system you use,
11 hand-marked paper or BMD. There are no states other than
12 Colorado that RLA more than one contest.

13 So, you know, malware in the scanner that targets a
14 contest that is not checked by an RLA, the key thing that
15 matters -- I'm going to tread carefully here to try to stay in
16 my lane.

17 The key thing that matters is that even if you don't run
18 the RLA on all the contests, you could. There is an indelible
19 record there, and you could do it later if questions arise. It
20 is not like you lost your opportunity once you picked one
21 contest, you can't do the next one; right?

22 And that is an important property of these tests and these
23 indelible voter records is that you could go back and do more
24 if you really wanted to.

25 **Q.** And you are saying you could do more because you have the

1 paper?

2 **A.** Because you have the paper; correct.

3 **Q.** And you trust the paper?

4 **A.** Yes.

5 **Q.** Okay. And it is true, isn't it, yes or no, that Georgia
6 law requires only one contest to be audited in an election?

7 **A.** I'm not a lawyer, and I haven't kept up, but I believe
8 that is the minimum indeed, yes.

9 **Q.** Now, you said that RLAs look at the human readable text
10 portion of a BMD ballot; right?

11 **A.** That's correct.

12 **Q.** So if the human text is wrong, the voter will spot it?

13 **A.** That is -- that is what I believe, yes. Not every voter,
14 but most voters would, yes.

15 **Q.** And if the human text reflects what the voter intended,
16 but the QR code is wrong, your theory is that that will come
17 out in the outcome -- that will come out as a disparity in the
18 outcome?

19 **A.** In the RLA, yeah. To be clear, if enough QR codes are
20 switched; right? If, like, one of them is switched and the
21 margin is a thousand -- I don't want to be glib -- but the
22 process usually doesn't care about that. No election process
23 cares about that.

24 **Q.** Now, if the QR code on a BMD ballot is actually right in
25 terms of what the voter meant to do and the human readable text

1 is actually wrong, then your RLA would take a correct result
2 and call it a wrong result?

3 **A.** That is indeed the case. But I don't know what would lead
4 to that since the voter is not looking at the QR code, they are
5 looking at the text.

6 **Q.** Now, you're familiar with the recent election in
7 Northampton, Pennsylvania, where --

8 **A.** I am, yes, absolutely.

9 **Q.** Well, let me finish my question.

10 **A.** Oh, sorry. Yeah, yeah.

11 **Q.** There were errors in the human readable text on the
12 ballot; correct?

13 **A.** There were.

14 **Q.** And that did get spotted; right?

15 **A.** It did.

16 **Q.** But votes had already been cast before that error got
17 spotted; right?

18 **A.** Yes. My understanding was that a number of reports came
19 in -- and we know this because we work with Pennsylvania on
20 audits, so we have a good relationship with the folks there.
21 That polls opened at 7:00, and the county had reports from
22 multiple precincts by 7:15. So it was caught extremely
23 quickly.

24 On a down-ballot contest on -- I guess I'll say this on
25 the record -- on one of the BMDs that has probably one of the

1 worst ballots for voter verification on the market.

2 So being very direct about this, our team saw this and we
3 discussed it a lot. And we said, whoa, I guess we have the
4 first real world confirmation that voters are really checking
5 their ballots, which is really hard evidence to come by in a
6 real election.

7 **Q.** Now, if that election had been conducted on hand-marked
8 paper ballots instead of machine-marked ballots, then that
9 error never could have arisen; correct?

10 **A.** That particular kind of error would not have arisen;
11 others could have, yeah.

12 **Q.** And in a hand-marked paper ballot election, you don't need
13 to alert voters to review their ballots to identify any machine
14 malfunctions; right?

15 **A.** You don't need to -- you don't need to alert them to do
16 that, but you do have to tell them to be careful about how they
17 mark their ballots, careful about making sure they are filling
18 in the right bubble, careful about not crossing out a candidate
19 and then potentially filling in a nearby bubble.

20 So it is a different set of issues that you have to tell
21 them about. You are correct. But they are hand-marked paper
22 ballot-specific issues to tell them about.

23 **Q.** And now I want to talk about the legal consequences of a
24 risk-limiting audit finding that the result reported is wrong.

25 If an RLA shows a reported outcome is wrong, that would

1 need to have a legal consequence to actually limit the risk of
2 certifying the wrong outcome; correct?

3 MR. MILLER: Your Honor, we're talking here about
4 asking about legal consequences twice in the questions. I want
5 to raise an objection as to calling for a legal conclusion from
6 Dr. Adida. He has got other qualifications, but he is not a
7 lawyer.

8 MR. MCGUIRE: Well, Your Honor, I'm just trying to
9 contextualize his explanation of the value of these audits
10 because we heard from Professor Stark that without a legal
11 consequence, they don't limit risk.

12 I just want to get his view on that since he is
13 saying that they are useful for eliminating risk.

14 THE COURT: They are useful for what?

15 MR. MCGUIRE: They're useful for eliminating risk, he
16 seems to be saying, but they're obviously --

17 THE COURT: Well, just ask it just straightforwardly
18 then.

19 BY MR. MCGUIRE:

20 Q. So if --

21 THE COURT: As much as feasible that is.

22 MR. MCGUIRE: As much as feasible. I'll try.

23 BY MR. MCGUIRE:

24 Q. So if a risk-limiting audit finds that reported outcome is
25 wrong and there is nothing that happens as a result, does that

1 limit risk?

2 **A.** No. At the same time, it seems unimaginable to me that we
3 would just stop there and say, okay, yeah, great, the audit
4 failed, let's move on with our lives.

5 I don't know the status of all the states that are running
6 RLAs and whether they trigger legal consequences. My sense
7 about what would likely happen --

8 I'm going out on a limb here, so, Your Honor, if you want
9 to stop me, let me know.

10 THE COURT: Well, are you just speculating at this
11 juncture what would likely happen?

12 THE WITNESS: Speculating based on what I have seen
13 with our customers and with the states, but I can stop if you
14 would prefer me to stop.

15 MR. MILLER: Your Honor, I would just note that
16 Mr. McGuire had specifically asked for this opinion. The
17 expert, of course, can base his opinion on reliable methods and
18 understandings used in the field. Dr. Adida is talking about
19 based off of his experience in the other states and how they
20 are handled there.

21 I'm not exactly sure where Mr. McGuire is going with
22 this, but --

23 THE COURT: I'll allow him, but we've had a lot of --
24 we're not -- he is an expert, but not an expert, you said, in
25 the same way as some of the other experts who are testifying,

1 so that -- but I'm going to allow the question, and we'll see
2 if it elicits anything that is useful.

3 BY MR. MCGUIRE:

4 Q. Well, rather than have you speculate, let me just sort of
5 maybe narrow it down.

6 A. Okay.

7 Q. You would imagine if an audit revealed that a reported
8 outcome was wrong that people in the race would probably
9 contest it; right?

10 A. That is where I was going, that there would be contesting,
11 there would be a hearing in front of a judge, there would be a
12 re-count ordered. Like something -- something would happen is
13 what I think would happen.

14 Q. That would just be a fight, right, between two parties?

15 A. Probably.

16 Q. Is that the ideal outcome of a risk-limiting audit finding
17 that the result was wrong?

18 A. I truly honest -- so when I started VotingWorks at the end
19 of 2018, I was invited to give a talk at the end of an MIT
20 conference on risk-limiting audits. And the topic of my talk
21 was, have we thought about what happens when an RLA fails?

22 And I spent that talk saying, like, have you really
23 thought about it? Because as long as the RLAs succeed,
24 everybody is happy. But one day an RLA will fail, and what do
25 we do?

1 And I think what you're asking is like, it is a really
2 difficult question because it will inherently cause a fight. I
3 don't know that we know exactly what the right way to handle it
4 is. But I think if we simply said, well, an RLA should then
5 escalate to a hand-count should then overturn the result,
6 everything is okay. People will fight that too; right?
7 Because there was a declared result and then an audit that led
8 to questioning that result and whatnot.

9 So truly honestly having thought about it and having
10 personally generated a conversation about what do you do when
11 an RLA fails, I think it is a really hard answer to give.

12 Of course, in the end, I want the legitimate winner to
13 win. Of course I want that. And the human process to get
14 there is messy, I think, in the case of a tabulator
15 malfunctioning and an audit catching it.

16 **Q.** And you said earlier that public trust is a critical part
17 of audits; right?

18 **A.** I completely believe that, yes.

19 **Q.** And allowing elections to be resolved by contests may not
20 be the most conducive way to get public trust out of an audit?

21 **A.** Yes, I agree.

22 **Q.** I would like to shift gears and talk a little bit more
23 about the trustworthiness of BMD ballots.

24 **A.** Okay.

25 **Q.** Just to recap, you agree that a valid RLA requires a

1 trustworthy underlying record of voter intent?

2 **A.** Yes.

3 **Q.** And you believe that the human readable portion of BMD
4 printouts is a trustworthy underlying record of voter intent
5 that can be used in a valid RLA?

6 **A.** I think there are some processes and protocols to put in
7 place, some of which were highlighted by Dr. Halderman's paper
8 on BMD verifiability. And I think when those processes are put
9 in place, then yes, I think that BMD ballots are a trustworthy
10 source of voter intent.

11 **Q.** And you agree that voter intent is the ground truth of the
12 auditing process?

13 **A.** It has to be.

14 **Q.** And you disagree with Dr. Stark on this point about the
15 trustworthiness of BMD paper ballots?

16 **A.** Yeah. I would make the claim that the data and the
17 research disagrees with his points.

18 **Q.** And you mentioned the Halderman and Bernhard, I believe,
19 paper from the --

20 **A.** That is the paper I have in mind, yes.

21 **Q.** Now, you disagree with his reading of that paper as simply
22 dealing with the theoretical possibility of nudging people to
23 look at their ballots?

24 **A.** I don't think I understand the question.

25 Can you repeat it?

1 **Q.** Do you understand that Professor Stark's understanding of
2 that paper is that it essentially confirms that there is a
3 theoretical possibility of making more people look at their
4 ballots if you nudge them?

5 **A.** Right. So to be specific, that paper -- and I get some of
6 the numbers wrong. But that paper states, in an experimental
7 setting in an election where people know they are in an
8 experiment and they don't care about the outcome, obviously,
9 because it is an experiment, if you do nothing, if you just
10 send them to the machine and prompt them not at all and give no
11 instructions, then a shockingly small number, seven or
12 eight percent, I think, check their ballot and notice the
13 error.

14 The paper also states that if you give voters a slate and
15 say, these are candidates you should be voting for, and you
16 prompt them appropriately to check their ballots, 85 percent of
17 them detect the problem on the BMD ballots.

18 So really, the question comes down to, do you think the
19 experimental setting here maps to a real election, or which
20 version of the experimental setting matches a real election?

21 And I think that is a valid debate. It has been a valid
22 debate. My opinion is, when people vote in a real election,
23 they care. It is much more akin to them having a slate even if
24 they don't have that slate in front of them because they really
25 care if they are voting for Biden or Trump. They're not really

1 going to forget that in a real election. And that's been my
2 take, my understanding, my interpretation of it.

3 **Q.** Are you aware of the Georgia Secretary of State's study
4 that he commissioned that shows in a real election somewhere
5 only around half of people looked?

6 **A.** I did see that. I think if half people look, if
7 50 percent of people look -- and, in fact, if you look at the
8 Halderman-Bernhard paper and you look at their numbers and the
9 curves they draw, if 50 percent of voters checked their
10 ballots, things are pretty good because they are going to catch
11 errors and it is going to escalate really fast.

12 And to use the Northampton example you brought up, I mean,
13 they catch it really quickly; right?

14 So if it is only 50 percent -- I put only in quotation
15 marks -- malfunctioning BMDs are going to get caught very
16 quickly.

17 **Q.** And that is assuming the error is in human readable text;
18 right?

19 **A.** Correct. The voters cannot catch an error that is in the
20 QR code. That is what the RLAs will catch.

21 **Q.** And you are aware Dr. Stark's opinion is that virtually
22 every voter has to check for that verification step to add any
23 reliability?

24 **A.** I am aware. And with all the respect in the world I have
25 for Professor Stark, which is very high, I think that is not a

1 pragmatic viewpoint. I think it is not an all-or-nothing
2 world.

3 **Q.** And there is more than just looking; right? You have to
4 be good at spotting things when you look in order for this to
5 lend reliability to the paper printout?

6 **A.** No. I think the data from the Halderman-Bernhard paper
7 shows that 85 percent of people can do it on an election that
8 they were just told on how to vote and not something they have
9 any emotional attachment to, so no, I don't I think it is very
10 hard.

11 THE COURT: But I thought that it was quite the
12 contrary, that they didn't do it.

13 THE WITNESS: So the paper presents -- has like a
14 whole slew of interventions to try to mimic real world voting.
15 When they don't do any intervention, it is a very low
16 percentage, which I think is the number that Professor
17 Halderman quoted.

18 But if you look at what happens when you prompt
19 voters to look at their ballot, you have signs, you have poll
20 worker directions, and you give them a slate of, like, here is
21 who you should be voting for, the number goes up to 85 percent.

22 And there's other studies that I don't have on the
23 tip of my tongue, so maybe I won't introduce them, that -- I'll
24 just stick to the Halderman one. The way I read that paper is,
25 when a voter cares, they can do it. When they care about the

1 outcome, I mean, they can do it.

2 And in an experimental setting where it is a fake
3 election, it is nobody they care about, yeah, they won't --
4 they won't do it. But if they care, they will see if it says
5 Trump or Biden.

6 MR. CROSS: Your Honor, I'll just object and move to
7 strike that. He can't speak to whether voters care, and
8 frankly, the implication that a voter doesn't care about the
9 outcome -- well, you can infer what you want, but he is
10 speculating.

11 THE WITNESS: I was just talking about the
12 experimental setting. Sorry.

13 THE COURT: Is there an objection?

14 MR. MILLER: No, Your Honor, not an objection. I was
15 going to respond if necessary, but --

16 MR. CROSS: And with his clarification that -- the
17 objection is withdrawn.

18 THE COURT: I mean, I'll give whatever weight it
19 deserves from zero to 100.

20 BY MR. MCGUIRE:

21 Q. So --

22 THE COURT: His assessment.

23 BY MR. MCGUIRE:

24 Q. So, Dr. Adida, when a voter interacts with a BMD, right,
25 in the process in Georgia --

1 **A.** Yeah.

2 **Q.** -- they physically interact with the touch screen?

3 **A.** Yes.

4 **Q.** And then at the end of making choices, they confirm their
5 choices on the review screen and print the ballot?

6 **A.** That's correct.

7 **Q.** And then they are meant to review the ballot physically
8 before they put it in the scanner?

9 **A.** That's correct.

10 **Q.** Okay. At what point in that process does the voter
11 express their intent, in your opinion?

12 **A.** I think they express their intent when they put the ballot
13 through the scanner.

14 **Q.** So not when they are choosing things on the touch screen?

15 **A.** Voters can make mistakes through the process on touch
16 screens especially. We've certainly seen it in the development
17 of our own machines at VotingWorks and all the testing we have
18 done. It is really easy to make a mistake. The review screen
19 helps prompt you. But in the final moment, you know, until the
20 voters put their ballot through the scanner, they haven't
21 voted; right.

22 **Q.** Does that answer change if a voter actually doesn't look
23 before they put it in the scanner?

24 **A.** And so your question is, for voters who don't check the
25 ballot, at what point do they express their intent?

1 Q. Right.

2 A. I don't know how to answer that question. That is a good
3 question. Yeah.

4 Q. Would you agree that a ballot that isn't reviewed at all
5 by a voter is not trustworthy for purposes of an RLA?

6 A. No. That is too definitive a statement. I think that if
7 enough voters check their ballots, then statistically you get
8 higher confidence that the BMD is behaving properly, and that
9 can carry over to the voters who don't. That is what the
10 curves in the Halderman-Bernhard paper show, which is that if
11 you get to 50 percent-plus voters checking their ballots, a
12 chance that a BMD would get away with cheating drops
13 precipitously.

14 And so the -- just like an RLA doesn't check every ballot
15 but gives you confidence about the outcome, you don't need
16 every voter to check their ballot to get confidence that the
17 BMD is working properly.

18 Q. So it seems like you're equating the option to review your
19 selections with actually reviewing your selections?

20 A. I am -- no, I don't think I'm equating them. I'm just
21 stating the fact that if a portion of the ballots are checked,
22 then the others can be -- can be trusted.

23 Q. And does your understanding of how voter intent is
24 expressed at the review stage -- does that take into account
25 voters who may have cognitive or memory difficulties or might

1 find it challenging to actually conduct that review?

2 **A.** So you are tapping into a broader question that is the
3 internal struggle of voting systems, which is how you help
4 voters with any level of disability in casting a ballot that is
5 trustworthy. And that is a super hard question.

6 I think this is an area where as much as I have
7 differences with Professor Stark, there was something he said
8 in his testimony where I agree. It is like there are some
9 unresolved research questions as to how you guarantee voter
10 intent for voters with disabilities. That is really hard, and
11 I hope we can, over time, do better.

12 For what it is worth, the U.S. does it better than many
13 other countries, but I think we can do better still.

14 **Q.** Now, VotingWorks, your company, it does sell a voting
15 system; is that right?

16 **A.** We do sell voting systems; correct.

17 **Q.** And is that voting system a ballot-marking device system?

18 **A.** It includes a ballot-marking device, but it also includes
19 hand-marked paper ballots and precinct tabulators, and, in
20 fact, most all of our counties now use hand-marked paper
21 ballots plus a BMD.

22 **Q.** And is that a BMD for accessibility purposes?

23 **A.** It is -- usually, we say it is for whoever wants to use
24 it. Sometimes there's voters who have arthritis and don't
25 really want to fill in 40 bubbles.

1 Do you count that as disability? Maybe. Maybe it is just
2 they prefer to use a touch screen.

3 **Q.** And so it is true, isn't it, that you always recommend to
4 your customers to use hand-marked paper ballots plus one BMD as
5 their voting system?

6 **A.** Do I recommend that? You know, what I have discovered
7 from five years of building systems and election tech is that I
8 can make some recommendations, but usually, I do what the
9 customer wants us to do.

10 So I think it would be correct to say that the trend
11 today, there are plenty -- most of the counties we work with
12 prefer the hand-marked paper ballot plus BMD. And the driving
13 reason is usually cost. It is usually cheaper. But that is
14 about -- the rest would -- saying more would be speculation, I
15 think, on my part.

16 **Q.** Isn't it true that you always recommend it that way?

17 **A.** That I always recommend it?

18 **Q.** Yes.

19 **A.** It is true that -- it is true that if somebody asks me, if
20 you could design your perfect voting system, what would it be,
21 pragmatically, right, like within the realm of what is
22 possible?

23 I would personally recommend hand-marked paper ballot and
24 a BMD. I would be concerned about the failure mode that we've
25 seen in this model, which is that the BMD usually gets ignored,

1 not properly maintained, and voters with disabilities, as
2 usual, don't get a real opportunity to vote.

3 But in this imaginary world where I get to rule the world,
4 I would try to find a way to solve that. That is what I would
5 do.

6 There are places where I completely understand a different
7 choice. We have a very strong relationship with LA County and
8 the clerk, Dean Logan there. LA County has about the same
9 number of voters as the State of Georgia, and they use BMDs for
10 all. And the reason they use BMDs for all is for logistics of
11 managing the hundreds of ballot styles and the 12 languages
12 that they have to support in LA County.

13 And if I were Dean Logan, I would probably do the same
14 thing he did and pick BMDs for all.

15 **Q.** So Mr. Miller earlier showed you an SEB rule from 2020.
16 Do you recall that?

17 **A.** I do, yeah.

18 **Q.** And you helped to draft that rule; correct?

19 **A.** Yeah. I was personally not involved, and so I'm
20 forgetting exactly the degree to which we helped, but I do
21 believe we helped mostly in connecting Georgia with, I think,
22 folks in Rhode Island who had been thinking about this and who
23 had started thinking about their rules. That is my memory of
24 it.

25 **Q.** And that rule empowered the Secretary of State to select

1 one race for a statewide audit; right?

2 **A.** Yeah, I don't remember at all whether we had anything to
3 do with part of the rule.

4 **Q.** Okay. Now, the legislature here in Georgia last year
5 passed a new audit law that only requires -- that requires --
6 that removes the Secretary from that process.

7 Would you consider that to be an improvement or a -- or
8 would that be going backwards?

9 **A.** I honestly don't know. I somehow did not know that.

10 Who is responsible for it now?

11 **Q.** Would you be surprised to learn that each county gets to
12 choose which race to audit every year?

13 **A.** I would have to think about how that works. That is --
14 yeah. I don't know. I don't have a -- I am surprised I didn't
15 know that.

16 **Q.** You said that you had perceived that there was a hunger
17 for audits among local election officials out there.

18 **A.** Not everybody, but definitely some, yes.

19 **Q.** Would you be surprised to learn that the Secretary of
20 State could not get 22 counties to participate in an audit of
21 the 2022 U.S. Senate runoff election?

22 **A.** So -- no, I'm not surprised.

23 **Q.** Does that impact the validity of any risk-limiting audit
24 conducted on just, say, 159 minus 22 counties?

25 **A.** Oh, for sure. It is not as good an audit if counties

1 don't participate. We have seen this in other states.
2 Pennsylvania took a little while to convince all of its
3 counties to participate in the audit, which is why I think the
4 compulsory in nature of the Georgia rule is really important.

5 And look, there is no bad players here. The counties are
6 just overwhelmed with work. And if you tell them, hey, this is
7 optional, and they don't have enough staff, they don't have
8 enough money -- I'm not saying that is the case. I'm just
9 saying there are many reasons why they might say no.

10 So I'm not surprised, and I do think it is good to be
11 compulsory.

12 **Q.** So is it fair to say that your view of voters checking the
13 BMD ballot printouts is an important thing for voters to do?

14 **A.** Yes.

15 **Q.** Is it fair to say that it is a critical thing for voters
16 to do?

17 **A.** It is critical for a minimum number of voters to do it.

18 **Q.** Because that is what makes the system reliable, in your
19 view?

20 **A.** Yes.

21 **Q.** And if voters skipped in significant numbers, you would
22 agree that that makes the system less reliable and RLAs less
23 valid?

24 **A.** Well, the RLAs are still valuable no matter what, in that
25 they are checking the scanner; right? So there are many ways

1 in which somebody could attack an election. And let's say they
2 find it hard to attack the BMDs; instead, they attack the
3 scanners. So I would still say run the RLA, but if we're in a
4 world where no voters are checking their ballots -- which I
5 think is artificial, but let's -- for the sake of argument,
6 let's say that is the world we were in.

7 Sure, the power of the RLA would be significantly reduced.
8 You know, it doesn't mean the BMDs were hacked; right? Like,
9 most of the time, things are working just fine. It is just we
10 wouldn't have as much confidence that we could have caught a
11 problem if the problem occurred.

12 **Q.** And so your confidence in outcome of elections in that
13 case is really reliant on the participation of the voters in
14 this effort of checking their printouts before they cast the
15 ballots?

16 **A.** Yes.

17 **Q.** And you would agree that verifying the printouts is a
18 pretty big responsibility to place on voters if it is going to
19 have that kind of effect?

20 **A.** No. I think it is fairly straightforward for voters to
21 check at least the major contests, you know, top two or three.

22 **Q.** When a voter reviews their BMD printout, they are doing it
23 to ensure their own vote is accurately captured; right?

24 **A.** That is what they can do. Yeah, that is all they can do.
25 Yeah.

1 Q. But it seems like you are also saying that they are
2 playing a larger role in making sure that the outcome can be
3 reliably tested?

4 A. Yes. I think it is a beautiful property of democratic
5 systems that the more conscientious voters are helping protect
6 the less conscientious ones, but ultimately, we all get a vote.

7 Q. And you're making voters in that sense -- in some sense
8 responsible for the correct functioning of the voting system,
9 aren't you?

10 A. No more than with any other system. I mean, we are on a
11 hand-marked paper ballot. We're asking voters to know how to
12 fill in bubbles, and I can tell you as somebody who has written
13 software to read bubble ballots, voters can get very creative
14 with how they fill bubbles. And teaching voters, like, you
15 have to fill the whole bubble just like the SATs, just like
16 everything else, don't circle names, don't do all this stuff --
17 like, there's an imposition there too. There is also -- sorry.

18 THE COURT: Okay. I think we can move on. I don't
19 think I'm cutting you off given the nature of the question and
20 the answer, so --

21 BY MR. MCGUIRE:

22 Q. So just to summarize, you are aware that Georgia law
23 requires -- actually requires voters to check their ballots
24 before they cast them into the scanner; right?

25 MR. MILLER: Objection, Your Honor.

1 THE COURT: I don't know why he would know that one
2 way or the other.

3 BY MR. MCGUIRE:

4 **Q.** Are you aware of that?

5 **A.** No. I was not aware that it requires voters to do that.
6 I admit that I don't pay attention to that part of -- to that
7 part as much. Yeah.

8 **Q.** In your view, though, that kind of requirement would be
9 justified given the significance of voter review of their
10 ballots?

11 **A.** I think the most effective thing that the State can do --
12 from my understanding is that they are doing it, but feel free
13 to tell me if they are not -- is to teach poll workers and
14 teach folks at the precincts to encourage voters to check their
15 ballot, to have signage to check their ballot, to remind them
16 of that importance. That is the most effective thing as per
17 Professor Halderman's research.

18 **Q.** So just to recap, audits don't protect individual voter's
19 ballots; correct?

20 **A.** I think -- I think I wasn't able to answer the -- they do
21 if the individual voter is decisive for an election.

22 **Q.** And that is the *Edge* case; right?

23 **A.** Yes. But I don't really know what -- the reason I keep
24 struggling with this question that you ask me is because I
25 don't really know what it means.

1 I don't really agree with the claim that a voter's vote
2 was not protected because we didn't check that single vote, but
3 ultimately, it wouldn't have changed the outcome. I feel fine
4 about that, you know, as -- I think I care that if my vote were
5 decisive, yeah, I definitely want to make sure it gets counted.
6 But whether the winner wins by 1,200 or 1,199 votes, I don't
7 think I care.

8 **Q.** And you would agree that audits -- risk-limiting audits
9 can protect election outcomes in the sense of ensuring that
10 they are correct?

11 **A.** Yes.

12 **Q.** And to be able to ensure that we have correct outcomes,
13 you would agree that the records being looked at by the
14 risk-limiting audit have to be trustworthy indications of voter
15 intent?

16 **A.** Let me put a little -- almost. 80 percent. I think an
17 RLA still is helpful in checking the scanner which is where an
18 attack could be, even if somehow nobody checked their ballots
19 but no attacks were happening on the BMDs.

20 But I agree 80 percent with what you said. It is
21 important that the ballots that an RLA runs on, that we have
22 some basis for believing that they represent the will of the
23 voters.

24 **Q.** And your view presumes that the BMD printouts that are
25 cast into the scanners are trustworthy at the moment they are

1 cast into the scanner; is that --

2 **A.** That enough of them -- yes. Sorry.

3 MR. MILLER: Your Honor, I think these questions he's
4 regarding are all asked and answered.

5 THE COURT: Well, I'm going to let him answer this,
6 and then we're going to go on unless there is something else.

7 THE WITNESS: If you can restate question. I got
8 lost a little bit.

9 BY MR. MCGUIRE:

10 **Q.** Yeah, I just -- I mean, you -- it is your view that BMD
11 ballots are trustworthy at the moment they are cast into the
12 scanner because voters have reviewed them and can review them
13 and are, in fact, are required to review them?

14 **A.** It is my view that if you implement the process correctly,
15 which is you remind voters, you have educational campaigns, and
16 then you have a BMD process by which they get to handle the
17 ballot and move it to the scanner themselves, for example, then
18 yes, if do you those things right, then the BMD ballots -- that
19 enough voters will have checked the BMD ballots to make that
20 set of ballots trustworthy.

21 **Q.** And last question, you would agree that making in-person
22 voters responsible in that way for the -- ensuring the accuracy
23 of the machines and the validity of the election and the public
24 confidence of their neighbors and fellow voters, you believe
25 that is a pretty big burden to place on in-person voters;

1 right?

2 **A.** I do not.

3 MR. MILLER: Objection, Your Honor. First of all,
4 each subpart of that question was asked and answered. That is
5 a pretty extensive compound there.

6 But to the extent that he is asking for a legal
7 conclusion on the burden, I would also note that as well.

8 MR. MCGUIRE: I only know the burden in the
9 colloquial sense, Your Honor.

10 BY MR. MCGUIRE:

11 **Q.** But can you answer the question?

12 **A.** Do you mind repeating the question?

13 Just making sure I get it right.

14 THE COURT: There is a lot of compound dimensions of
15 it, so why don't you try to simplify it.

16 MR. MCGUIRE: Okay.

17 BY MR. MCGUIRE:

18 **Q.** You would agree that we're asking in-person voters to
19 verify their ballots; correct?

20 **A.** Yes.

21 **Q.** We're doing it in part because we want them to be able
22 check that their own votes are correct on those ballots; right?

23 **A.** Yes.

24 **Q.** We're doing it because the whole system benefits when
25 voters look at their ballots and verify that they're correct;

1 correct?

2 **A.** When enough of the voters do, yes.

3 **Q.** And you would agree that when voters do all that, it helps
4 spot errors in the machines?

5 **A.** Yes, but also errors they may have made themselves on the
6 machines; right. Yeah.

7 **Q.** Sure. But part of it is, it helps voters -- voters are
8 kind of conscripted into making sure the machines are working
9 properly; right?

10 **A.** I think -- no, I don't quite agree with that
11 characterization because I think the way it would happen in
12 practice is not a bunch of voters go, oh, the machine screwed
13 up, oh, the machine screwed up. And then we keep doing that.

14 What happens is more like Northampton. You get a couple
15 of reports and their alarm bell rings and we start figuring
16 what the heck is wrong with the machines; right?

17 So you are doing it as a safety check. And if a couple of
18 voters catch it, it is then no longer on the voters to figure
19 it out. Then there is an investigation.

20 So I wouldn't quite agree with your characterization.

21 **Q.** So last question.

22 If you think about a 90-year-old grandmother who wants to
23 vote in person --

24 **A.** Yes.

25 **Q.** -- and maybe can't see very well --

1 **A.** Yeah.

2 **Q.** -- maybe doesn't have the best memory, you don't think
3 that asking that voter to verify their ballot after voting on a
4 touch screen and then reviewing it on a touch screen -- you
5 think -- you don't think asking her to review it again at that
6 point is a burden on her?

7 **A.** I think asking her to fill out 40 bubbles in ten-point
8 font on a ballot is a pretty big burden too. I think it is
9 hard when you are -- it is hard to figure out how to do right
10 by voters with disabilities, which includes almost all of us as
11 we age. Right?

12 So it is hard. It is differently hard on a BMD than on a
13 hand-marked paper ballot.

14 MR. McGUIRE: Your Honor, if I could just have a
15 second just to double-check.

16 THE COURT: All right.

17 **(There was a brief pause in the proceedings.)**

18 MR. McGUIRE: So no further questions on cross for
19 Coalition plaintiffs.

20 **(A brief break was taken at 5:06 PM.)**

21 MR. CROSS: Ready, Your Honor?

22 THE COURT: Yes.

23 CROSS-EXAMINATION

24 BY MR. CROSS:

25 **Q.** Good afternoon, Dr. Adida.

1 **A.** Good afternoon.

2 **Q.** David Cross. I represent the Curling plaintiffs. I don't
3 think we have met before.

4 **A.** I think only on Zoom and Twitter.

5 **Q.** Good to be in the real world.

6 THE COURT: And Twitter too. It could have been a
7 different David Cross because we have a David Cross taking a
8 whole other course of action in this world in Georgia, so there
9 is a lot of confusion.

10 MR. CROSS: It might have been me. We'll see if we
11 get there.

12 BY MR. CROSS:

13 **Q.** Do you have your declarations in front of you?

14 **A.** I do not have my declarations in front of me, no.

15 **Q.** Dr. Adida, we'll get to your declaration in a moment.

16 Let me just ask: You were asked a question on direct
17 testimony if you are being compensated by the State for your
18 testimony.

19 Do you recall that?

20 **A.** Yes, I do recall that.

21 **Q.** And did I hear you said no?

22 **A.** Correct.

23 **Q.** All right. But you are compensated by the State in the
24 ordinary course of your work; right?

25 **A.** VotingWorks is compensated for our work with the State of

1 Georgia, yes.

2 **Q.** You know approximately about how much VotingWorks has made
3 from the Georgia Secretary of State in the last four years,
4 say?

5 **A.** No, but I can get back to you. I think our yearly
6 contract for support and hosting and training and all of that
7 is, I think, on the order of \$120,000, but I am not the one who
8 negotiates those contracts.

9 **Q.** Okay. And fair to say it is important to you to keep your
10 work going with the Georgia Secretary of State continuing to
11 use your service for audits; right, sir?

12 **A.** I think it is important for election integrity that
13 Georgia continue to do our RLAs, and as long as they want to
14 have us help them do that, we're happy to do that.

15 **Q.** Right. Fair to say you hope it is you that keeps doing
16 it?

17 **A.** Sure, but it is okay if it is not me.

18 **Q.** Okay. You mentioned a list of states that you are doing
19 RLA work for.

20 Did I get the list right that Georgia is the only state
21 where you're providing RLA services that requires in-person
22 voting on BMDs as the primary form of voting statewide?

23 **A.** For statewide, yes, but there are other states where
24 counties do all BMDs, like Pennsylvania, some counties.

25 **Q.** Right. Are you aware there are only seven counties in the

1 entire country outside of Georgia that used the BMDs -- the ICX
2 as primary in-person voting?

3 **A.** I don't have the numbers in my head about the Dominion
4 market share exactly, no.

5 THE COURT: You say only seven counties?

6 MR. CROSS: Seven counties.

7 THE WITNESS: You are talking about specifically the
8 Dominion BMD?

9 BY MR. CROSS:

10 **Q.** The ICX.

11 **A.** Got you. Yes.

12 **Q.** Now, I believe you said on direct if the voter never sees
13 a ballot, it is not voter verified.

14 That is kind of logical; right?

15 **A.** Yes. If the voter doesn't have a chance to see the
16 ballot, that is not voter verifiable.

17 **Q.** Well, hang on. Now you are saying something different.

18 Is it that they don't have a chance to see it, or they
19 didn't see it?

20 **A.** If --

21 MR. MILLER: Your Honor, objection. I'm watching the
22 transcript here. Maybe something is off, but I think he asked
23 about voter verifiable, the witness answered voter verifiable.

24 So if we're repeating this, I don't want to inject
25 testimony of counsel right here.

1 BY MR. CROSS:

2 Q. I can ask it again.

3 I thought what you said on direct -- because I wrote it
4 down -- if the voter never sees a ballot, it is not voter
5 verified; right?

6 A. Well, I don't -- not voter verified.

7 Okay. So this is the -- this is the debate between voter
8 verifiable and voter verified.

9 Q. Right. I'm just -- we are agreed that if a voter doesn't
10 see the ballot, it is not voter verified? They can't verify
11 something they didn't see?

12 A. Sure. If the voter doesn't see the ballot, they did not
13 verify the ballot. I agree with that statement.

14 Q. Now, you're familiar with the Georgia voter verification
15 study that the Secretary of State commissioned in 2020 that was
16 performed by the University of Georgia?

17 A. I don't know the details, but I am aware of it and I heard
18 some of the details in your colleagues' questions.

19 MR. CROSS: May we approach and provide a copy of the
20 exhibit? This is going to be Exhibit Curling Plaintiffs' 51.

21 MR. MILLER: Your Honor, I know Your Honor has been
22 policing this throughout, but I just note an objection as to
23 cumulativeness. I understood our order at the pretrial
24 conference was this kind of multiple levels of cross being
25 non-cumulative. I think he has already testified about all of

1 this.

2 MR. CROSS: Mr. McGuire and I split it up so that I
3 was going to cover this specifically. I think he just asked if
4 he was aware of it.

5 It won't be cumulative, Your Honor.

6 BY MR. CROSS:

7 Q. All right. Sorry.

8 THE COURT: Proceed.

9 BY MR. CROSS:

10 Q. Dr. Adida, have you seen Exhibit 51 before?

11 A. I may have. I don't remember it.

12 Q. But you're familiar with the study and the results that
13 came out of it; right?

14 A. No. I mean, I have some vague memories of it, but I did
15 not personally review this study.

16 Q. So for the testimony you have offered the Court in this
17 case, you didn't even consider the study that was performed by
18 the Secretary of State in an actual election?

19 MR. MILLER: Objection, Your Honor. Asked and
20 answered.

21 MR. CROSS: He's not answered.

22 THE COURT: I don't think it was.

23 MR. MILLER: He just said that he had not reviewed
24 this. You asked it four times --

25

1 BY MR. CROSS:

2 Q. Is there a stipulation that he has never considered this
3 for his opinions?

4 A. I have -- for my opinion on RLAs?

5 Q. For any opinion you have offered in this case, it is fair
6 to say you did not consider this study because you just said
7 you are not really familiar with it; right, sir?

8 A. Sure.

9 Q. I think --

10 A. I did not consider this study, sure.

11 Q. All right.

12 A. I considered many others.

13 Q. Sure. But this is the only one that's actually conducted
14 in an actual election in Georgia; right, sir?

15 A. I don't know, but I'll take your word for it.

16 Q. You don't even know that much about it, that it was
17 conducted in an actual election in Georgia at --

18 A. I don't know about every study ever conducted. I don't.

19 Q. Fair enough.

20 The only study that you're aware of that was conducted in
21 an actual election in Georgia is Exhibit 51 commissioned by the
22 Secretary for whom you work as an audit vendor; right, sir?

23 A. In Georgia in an actual election, yes, I think that is the
24 only one I'm aware of. Yes.

25 Q. And to be not quite so specific, the only study you're

1 aware of that studied voter review of a ballot in an actual
2 election anywhere in the United States is this one; right, sir?

3 THE COURT: Which one?

4 MR. CROSS: Exhibit 51.

5 THE WITNESS: No. There are other studies that I
6 have seen, but I can't remember which ones they are that had to
7 do with timing verifications of how long people checked ballots
8 and things like that. That was not in Georgia, but --

9 BY MR. CROSS:

10 **Q.** But you can't -- sorry.

11 **A.** I can't recall them at the moment, no, I can't.

12 THE COURT: What was the number of the other exhibit
13 you referenced that -- in your question?

14 MR. CROSS: Exhibit 51, just this exhibit.

15 THE COURT: I have 51, but you said he referenced
16 another exhibit or you did as well when you said the Secretary
17 of State's --

18 MR. CROSS: Oh, I misspoke. I'm only talking about
19 Exhibit 51, so maybe I misspoke.

20 THE COURT: All right.

21 MR. CROSS: Sorry.

22 BY MR. CROSS:

23 **Q.** All right. Just briefly on this to see if this affects
24 your opinions you're offering, if you look at the first page of
25 the study, Exhibit 51, if you come to the end of the second

1 paragraph -- and if it helps you, it is also on the screen in
2 front of you. Whatever is easier for you, Dr. Adida.

3 The last sentence says, for these reasons, our study was
4 delayed until the 2020 general election.

5 Do you see that?

6 **A.** I do see that.

7 **Q.** Okay. And are you aware that this was conducted during
8 the general election in November of 2020? You just don't know
9 one way or the other?

10 **A.** Sorry. I don't know what you're asking me.

11 I haven't read the study, so I don't know much about it
12 other than what your colleague mentioned in the previous line
13 of questioning.

14 **Q.** All right. Come to Page 2.

15 **A.** Oh, I apologize. There is another place where I've heard
16 of it, which is reviewing testimony by other folks in this
17 trial.

18 **Q.** Okay. Come to Page 2, if you would, please.

19 Do you see at the top there's three categories for voters
20 reviewing their ballots in this election?

21 The first is brief glance.

22 Do you see that?

23 **A.** I do.

24 **Q.** That is less than one second; right?

25 **A.** Yes, I see that.

1 Q. Short time is one to five seconds; right?

2 A. I see that.

3 Q. Long time is more than five seconds; right?

4 A. Sure.

5 Q. Okay. So keep those in mind, and then flip to Page 3, if
6 you would, and we'll get to the meat of it.

7 Do you see Table 1 at the bottom where it summarizes voter
8 behavior observed at the voting booth?

9 A. I do see that table.

10 Q. So 20 percent of voters in an actual election in Georgia,
11 general election in 2020, did not review their ballots at all.

12 Do you see that?

13 A. I see that, but I contest the statement you are making.

14 Q. You disagree with the study you have never seen before?

15 A. I -- that is not what I said. What I mean is that a study
16 can only tell you what they observed.

17 And so the study observed that 20 percent of the voters
18 did not check their ballots. But were they watching them the
19 entire step of the way? I would be happy to read the study in
20 detail and look at their protocol, but I think it is really
21 important to -- in a study like this to know that they can only
22 tell you the floor of how much people looked at their ballots.
23 They may be looking at it on their way to the scanner in ways
24 that the study might not pick up.

25 But I'm still willing to go -- let's say you are right.

1 Let's say that it is 20 percent did not check.

2 **Q.** Okay. It actually describes it, and you're welcome to
3 read it on your own time.

4 All right. 20 percent did not check; 31.3 percent, only a
5 brief glance, which is less than one second.

6 Do you see that?

7 **A.** I do see that.

8 **Q.** 29.9 percent short time, which is one to five seconds.

9 Do you see that?

10 **A.** I do see that.

11 **Q.** Okay. So over half of voters, according to the
12 Secretary's own study, either did not look at their ballot at
13 all or spent less than one second.

14 Do you see that?

15 **A.** I do see that.

16 **Q.** And more than 80 percent of voters, according to the
17 Secretary's own study, spent less than five seconds looking at
18 the ballot.

19 Do you see that?

20 **A.** I do see that.

21 **Q.** And that is not something you considered for your
22 opinions; right?

23 **A.** I didn't understand that question. I didn't hear the last
24 part.

25 **Q.** I will withdraw it. Let me ask a better question.

1 You agree, right, that -- you agree that for an RLA to be
2 proper and effective, the voter must verify the text of their
3 ballot; right?

4 **A.** Enough voters must.

5 **Q.** Well, grab your declaration from -- your first declaration
6 from August 28th of 2020. Grab that if you would please, sir.

7 **A.** Sure.

8 MR. MILLER: Your Honor, I'll just again note my
9 objection as to cumulativeness. I think nearly the entirety of
10 Mr. McGuire's examination was on this verifiability question.

11 THE COURT: Well, I mean, I think that they -- it
12 should have been condensed, I agree. I think it is an
13 important study at the same time, and I'm going to allow him to
14 do it.

15 But I would just -- Counsel --

16 MR. CROSS: Understood.

17 THE COURT: Plaintiffs' counsel that -- you know, to
18 avoid this in the future.

19 MR. CROSS: Yes, Your Honor.

20 THE COURT: There was just no reason to have spent
21 the time that -- for both of you when this study is probably
22 the most important issue.

23 MR. CROSS: Understood.

24 BY MR. CROSS:

25 **Q.** Dr. Adida, turn to Paragraph 4, if you would, in your

1 first declaration, August 28th of 2020.

2 **A.** I see it.

3 **Q.** If you come to the last -- the last sentence of that
4 paragraph, do you see that you explain the role of the RLA is
5 to ensure that paper ballots that have been verified by the
6 voter are properly counted as the voter saw them?

7 Those are your words; right, sir?

8 **A.** They are.

9 **Q.** And if you come to Paragraph 12, please. Again, in
10 describing -- here, as we have heard during the course of this
11 trial, you're talking not just about verifying -- well, strike
12 that.

13 In Paragraph 12, if you come to the second sentence, you
14 emphasize, when conducting an RLA, as long as voters verify the
15 text.

16 Those are your words; right, sir?

17 **A.** They are.

18 **Q.** Is it your -- are you offering an opinion in this case
19 that -- is it your belief that voters, in general, can verify a
20 BMD ballot printed in Georgia in an election in person, every
21 aspect of it?

22 **A.** Can you say more about every aspect of it?

23 **Q.** Well, let's make it concrete.

24 MR. CROSS: Can you pull up the slides, Tony?

25 Keep going. Yeah. Okay.

1 MR. MILLER: Your Honor, once again, this is the
2 entirety of the cross.

3 MR. CROSS: There were no questions on this.

4 I'm going to be quick, Your Honor. I apologize that
5 things did not work out in the way that we had thought.

6 BY MR. CROSS:

7 Q. All right. Dr. Adida, Exhibit 385 here, do you see that
8 this is an official ballot from Fayette County from May 19 of
9 2020?

10 A. I do see that.

11 Q. Have you ever seen this ballot before?

12 A. This particular ballot, or this style of ballot?

13 Q. Have you seen this ballot?

14 A. This ballot, I don't think so.

15 Q. But you have seen ballots like this in Georgia; right?

16 A. Sure. I personally haven't seen them in Georgia, but I
17 know the ballot styles of various vendors, and I have seen this
18 style.

19 Q. So if you look here, do you see all the different
20 contests? And in the middle, do you see there are six
21 different questions?

22 A. Yes.

23 Q. And when the ballot prints, the only thing that is
24 indicated is just a generic reference to six different
25 questions and an answer of yes.

1 Do you see that?

2 **A.** I do see that.

3 **Q.** Now, certainly, you agree that a voter voting a ballot
4 like this could have some yeses and some noes, unlike the one
5 that is easier here; right?

6 **A.** Sure.

7 **Q.** And do I understand correctly that you're offering an
8 opinion to this Court that you think voters in general,
9 including voters of advanced age who we have heard from as
10 plaintiffs in this case, can reliably remember what every
11 single one of those questions is in determining whether the
12 answer there of yes or no is accurate when they go and review
13 it? Is that an opinion you are offering?

14 **A.** Not quite. What I would say is if you had asked me
15 six months ago, I would say this is probably an area where BMDs
16 are weaker than hand-marked paper ballots. When you go to a
17 down-ballot contest and it is a yes/no question, will the voter
18 remember which one is yes and which one is no? I would have to
19 say begrudgingly, yeah, that is probably a place where it is
20 weaker.

21 At the same time, I would say a realistic attacker would
22 never target one of these yes/no questions without targeting a
23 more important contest. That would have been my opinion
24 six months ago.

25 In the aftermath of Northampton, Pennsylvania, which was a

1 yes/no contest far down the ballot which voters noticed almost
2 immediately, I am even more confident that voters can check
3 ballots. And I think the ballot in the ES&S machines in
4 Northampton are no better and probably worse in terms of
5 readability than this one.

6 **Q.** That wasn't my question.

7 My question was, are you offering an opinion to the Court
8 that voters in general, including the ones we heard from in
9 this case who testified themselves that they cannot reliably
10 remember things like this and check it -- are you offering an
11 opinion that that is wrong that, that you know better than the
12 voters?

13 MR. MILLER: Judge, I'm sorry. I'm going to object
14 to that as argumentative.

15 THE COURT: I think it is. You know better than the
16 voters.

17 MR. CROSS: Sorry. Fair enough.

18 THE COURT: I don't think it is helpful to the Court.

19 BY MR. CROSS:

20 **Q.** Are you offering an opinion in this case that you believe
21 voters in general, including those of advanced age who profess
22 to having memory problems, that they can verify a ballot like
23 this? Just yes or no, is that an opinion you're offering?

24 **A.** No, but that is a bundle of different --

25 **Q.** Let me -- you mentioned Northampton. You anticipated

1 where I was going to go.

2 In Northampton, what happened was that the -- every single
3 ballot that came out of the machine was affected; right?

4 **A.** Right.

5 **Q.** Okay.

6 **A.** Well, I think -- I don't know that for sure, but certainly
7 a lot of them, yeah.

8 **Q.** Right. And are you aware that Dr. Halderman has testified
9 that malware could be designed to change every ten, every
10 fifty, every hundred, every thousand votes; right?

11 **A.** Of course, yes.

12 **Q.** And so in a world where we have voters who more than half
13 the time, as we see in Georgia, are not looking at their
14 ballots at all, were spending less than one second, do you
15 still maintain that where a ballot may be affected, may be
16 changed only, say, one in 500 times or one in 100 times, are
17 you offering an opinion you think that is likely to get caught?

18 **A.** You're asking questions that make it impossible for me to
19 give an answer that represents my opinion. If it is one in
20 500, that means at most, you could sway a .1 percent,
21 .2 percent margin in an election, and you're talking about a
22 down-ballot contest that needs to be that close for that kind
23 of BMD to have an impact, and then you are assuming that
24 50 percent of voters checking won't be enough.

25 But, you know, in a realistic situation, if you're -- an

1 attacker is trying to swing an election and they are only
2 modifying one out of a thousand ballots, they are making a
3 really big assumption about how tight that contest is going to
4 be, and they should become a pollster. They would be really
5 good as a pollster if they knew that.

6 In a realistic setting, maybe an attacker would try to
7 modify one, two, three percent of the vote, which -- and if
8 50 percent of voters are checking, that means half to
9 one percent of voters are calling out a problem with the BMDs.
10 You would get a Northampton situation. Within 15 minutes,
11 people would call out a problem.

12 So I think you can look at a situation where an attacker
13 is trying to swing a minute number of votes in a down-ballot
14 contest and qualify that as a realistic attack. I don't think
15 it is realistic.

16 **Q.** Do you know how many BMDs there are in the state?

17 **A.** I heard this morning, I think, around 32,000.

18 **Q.** So if only one BMD -- if one only one vote was affected on
19 each BMD in an election, that would be 30,000 votes?

20 **A.** Sure. Yeah.

21 **Q.** And the difference in the November 2020 presidential race,
22 was that around 11,000 votes? Does that sound about right?

23 **A.** I should know this number very well because we were part
24 of the audit. And I think you are right. It's about 11,000
25 votes, yeah.

1 Q. Almost done here, Dr. Adida.

2 A. Can I add something?

3 You are assuming an attacker that prepares such a narrow
4 attack knows that that is going to impact the outcome. So they
5 would invest all this time and money and take a huge risk of
6 getting arrested and prosecuted to only swing 30,000 votes.
7 They would have to know ahead of time that that would make a
8 difference. That is not logical. That wouldn't happen.

9 THE COURT: I don't think that you provided a
10 foundation for that assessment. And I don't -- I mean, it is
11 late, so I am not being critical of you of that. You offered
12 it. I'm just saying that is just -- I don't see any basis in
13 the testimony that you have offered about that, but you've said
14 it. That is fine. It is part of the record.

15 MR. MILLER: And, Your Honor, I'll be truthful. I
16 objected awhile back that we were getting cumulative here and
17 repeating the same thing we were just talking about.

18 THE COURT: Right. Well, I think he is about to end.

19 MR. CROSS: I'm almost done.

20 BY MR. CROSS:

21 Q. You anticipated where I was going again. You're very good
22 at this, Dr. Adida.

23 Do you understand that -- let me ask it this way: In
24 reaching -- in formulating the opinions you have offered this
25 Court, did you consider that bad actors actually may want an

1 election manipulation to be detected and caught, that that
2 would be their objective?

3 **A.** So you're imagining a scenario where they want to cause
4 disruption? Is that what you mean?

5 **Q.** Yeah. Gabe Sterling, for example, testified in the trial
6 that that is certainly -- that the Secretary's office
7 recognizes that could be an objective because it would cause
8 chaos deliberately, and they wouldn't be able potentially to
9 certify an election result.

10 Did you consider that in formulating your opinions?

11 **A.** Well, I always consider that because denial of service
12 attacks or -- which is kind of what this is, right, just sowing
13 disruption more than actually affecting the outcome is a common
14 attack vector. This would be the most inefficient way of
15 causing disruption. It would be an extremely expensive way to
16 do it.

17 You know, people are worried in the election security --

18 THE COURT: Sorry.

19 THE WITNESS: I should stop.

20 THE COURT: Yeah.

21 And, of course, Mr. Miller, if you would like to ask
22 him any follow-up questions, you are welcome to do it.

23 How many more questions do you have, though? That's
24 it?

25 MR. CROSS: Just one.

1 THE COURT: One?

2 MR. CROSS: Yep. One topic, but it is short. It
3 could very well be one question.

4 I'm trying. I'm trying. I'm trying.

5 MR. MILLER: I tried to stop it earlier.

6 MR. CROSS: I'm going to be quick.

7 THE COURT: I have a question or two too, so I'm sure
8 that they might have a response to some questions.

9 MR. CROSS: I'm almost done.

10 BY MR. CROSS:

11 Q. Dr. Adida, do you agree that it is important for voters to
12 have accurate information, just yes or no?

13 A. Of course, I agree.

14 Q. All right.

15 MR. CROSS: Can we just pull up Tab 9 real quick?

16 And then I'm done.

17 THE COURT: Better be because I'm not going to allow
18 you anything more because you also -- remember, your --

19 THE WITNESS: I was wondering if you would ever get
20 to my Tweets.

21 BY MR. CROSS:

22 Q. So just briefly, this is a Tweet that you put up on
23 October 1st, 2022, saying, so in late 2020 and early 2021,
24 unauthorized individuals gained access to voting equipment for
25 a few hours in Coffee County.

1 Do you see that?

2 **A.** I do see that.

3 **Q.** Fair to say that you understand it was a lot more than a
4 few hours; right?

5 **A.** I don't. This was from -- I was reading public reports,
6 and that was what I read from it. I could have read it wrong.

7 **Q.** But you understand now it was a lot more than a few hours,
8 or you --

9 **A.** I'll take your word for it. I haven't actually gone in
10 depth to see how long they had with the machines.

11 **Q.** Got it.

12 So in formulating your opinions in this case, the breaches
13 in Coffee County were not something you familiarized yourself
14 with; is that fair?

15 **A.** I think I'm fairly familiar with them. I wouldn't say
16 that -- I think I'm fairly familiar with them. I don't know
17 everything about the breaches.

18 **Q.** Okay.

19 MR. CROSS: Your Honor, we would offer into evidence
20 Exhibit 51, the study that was commissioned by the Secretary of
21 State's office.

22 MR. MILLER: I thought we were talking about the
23 Tweets.

24 Your Honor, I don't think we have got any objection
25 for this coming in except that the substance may be some

1 hearsay, but I think for the purpose, it is fine.

2 MR. CROSS: Thank you, Your Honor.

3 THE COURT: All right. It is admitted.

4 I hate to say it, but we have got -- before we --
5 come on up, Mr. Oles.

6 MR. OLES: Two questions.

7 THE COURT: Two questions. That's marvelous.

8 MR. OLES: I'm going to be very quick.

9 CROSS-EXAMINATION

10 BY MR. OLES:

11 **Q.** Good afternoon, Dr. Adida.

12 I don't think we've met. My name is David Oles, and I
13 represent Plaintiff Ricardo Davis in this suit.

14 **A.** It's good to meet you.

15 **Q.** I have just one or two questions as follow-up to what you
16 were asked earlier.

17 Previously today, you were asked questions about the fact
18 that this -- the whole RLA system relies upon the paper and the
19 fact that there -- if -- if -- you were asked questions about,
20 if the voter does not check, does that affect the reliability
21 of your RLA?

22 That is not what I'm asking. My question is a related
23 question.

24 What about this situation? The BMD -- the voter standing
25 at the BMD expects to see certain things on it. They come in.

1 They want to vote for candidate X. They get to the voting
2 booth, and candidate X is not on the BMD because something has
3 gone wrong either in the programming or setting up the election
4 project. And they either don't vote or they vote for candidate
5 Y, and they carry their piece of paper, and then they feed that
6 in.

7 Under this system that you have described, that RLA is
8 never going to detect that, is it?

9 **A.** That is true. That would be the case whatever voting
10 system you use, hand-marked paper ballot included.

11 **Q.** But in a hand-marked paper ballot, that person would at
12 least be able to take that -- they would fill it out; correct
13 and --

14 **A.** Yes.

15 **Q.** -- if they are -- okay.

16 **A.** But the candidate could be missing from a programming
17 error the same way; right? Like on that ballot.

18 **Q.** Okay. Understood.

19 **A.** The example where this happens is in primaries. People
20 think they are registered for one party, but then they are not;
21 they are registered for the other. And they get the other
22 ballot and they fill it out and they go, I really thought Trump
23 was going to be on this ballot. And I'm like, well, but you've
24 got a Democratic ballot. And they have already cast their
25 ballot, so it does happen that way.

1 Q. You agree with me that the RLA would not catch the problem
2 that I described?

3 A. I agree with you.

4 Q. All right. Thank you.

5 Second question has to do with Arlo system.

6 Are you aware currently that counties cannot see the
7 results that are put into Arlo, that only the State can see
8 those results?

9 A. Can you say more about which results you're talking about?

10 Q. The results of the risk-limiting audits that are entered
11 directly into the Arlo system that is opaque to the counties.

12 Are you aware of that?

13 A. Do you mean -- it really depends on what you mean by
14 results.

15 Do you mean the outcome of the audit, or do you mean --

16 Q. Yes.

17 A. -- like whether the audit succeeded or not?

18 Q. Yes.

19 A. I don't think that is true. There is a report that Arlo
20 produces at the end of the audit that includes all the
21 information, and usually in states we work with, that report is
22 published for everyone to see, counties and the public.

23 Q. Okay. So you think that information then is fed to the
24 counties?

25 A. Well, I think it is in the examples we have. It is on the

1 public web.

2 MR. OLES: Okay. Thank you. I have nothing further,
3 Judge.

4 MR. MILLER: Just a couple of follow-up questions,
5 Your Honor.

6 REDIRECT EXAMINATION

7 BY MR. MILLER:

8 Q. Dr. Adida, you were asked a series of questions on your
9 first cross-examination regarding ensuring that any individual
10 voter's vote was counted and whether or not an RLA can detect
11 that.

12 Do you recall that?

13 A. I do.

14 Q. Are you aware that under the Georgia Constitution, ballot
15 secrecy is provided as a means for voters under the
16 Constitution?

17 A. I didn't know that specifically, but it is not surprising.
18 It is a very important concept.

19 Q. And this may be a stupid question that the lawyer doesn't
20 know the answer to but somebody with experience in the election
21 community does.

22 But how would you ensure an individual voter's vote is
23 counted as cast while preserving ballot secrecy?

24 A. This is the central conflict -- conflict is the wrong
25 word -- tension is the right word -- in the requirements of an

1 election, the individual verifiability and the ballot secrecy.
2 And it is, as you -- it is not a stupid question at all. It is
3 the most fundamental question about elections, that tension
4 exists, giving voters assurance that their vote was recorded
5 properly without giving them the ability to sell their vote or
6 to be coerced into voting in a certain way is really hard,
7 really hard, and not resolved by classic voting systems.

8 It is the subject of my Ph.D. dissertation, but that is
9 not current voting systems, that's future.

10 **Q.** And, Dr. Adida, you were asked, I think, on both of your
11 cross-examinations a series of questions regarding Northampton,
12 Pennsylvania.

13 Do you recall that?

14 **A.** I do.

15 **Q.** And you testified in response to both of those series of
16 cross-examination questions that this particular type of BMD
17 was one of the worst for verifiability.

18 Do you recall that?

19 **A.** It is a personal opinion, but yes. Yes.

20 **Q.** And why is that, in your opinion?

21 **A.** Because the ballot is smaller than a full sheet of paper,
22 and as much as barcodes and QR codes, I think, are necessary,
23 the way they are positioned at the top is overwhelming, and
24 then the font is very small.

25 So all of that adds up to making it hard for the voter to

1 check the printed text, yeah.

2 **Q.** And that particular ES&S machine is it a ballot the voter
3 handles or --

4 **A.** In this case, yes, it is a ballot that -- there was -- I
5 had to double-check this because I was unsure about this
6 myself.

7 In Northampton, it is a ballot the voter handles. There
8 are other models of the ExpressVote where the voter doesn't
9 even get to handle the ballot. But in Northampton, they do and
10 they put it in the scanner is -- I believe. That is to the
11 best of my knowledge.

12 **Q.** Okay. And so in that scenario, your testimony regarding
13 Northampton is on a -- let me back up.

14 You've talked about the low interest nature of that
15 particular election in Northampton.

16 Do you recall that?

17 **A.** Low interest, you said?

18 **Q.** Low voter interest nature.

19 **A.** Oh, I don't think I said that explicitly, but I would
20 agree that it is a lower interest election than, say, a federal
21 election, yeah.

22 **Q.** So down ballot and on the worst -- one of the worst BMDs
23 for verifiability; right?

24 **A.** I agree with that statement, yes.

25 **Q.** Even in that scenario, voters recognized the issue; right?

1 **A.** Very quickly. I was surprised. In my conversations with
2 my team, we were surprised at how quickly they did see it on a
3 down-ballot contest.

4 **Q.** Okay. You were asked a question about the 90-year-old
5 grandma being able to verify her vote on a BMD; right?

6 **A.** Yes.

7 **Q.** Would that be the same issue on a hand-marked paper
8 ballot?

9 **A.** Well, first, it would be the same issue for a 90-year-old
10 grandpa. I think we need to be egalitarian here. It is
11 important. It is not just grandma that has trouble with it.

12 Sorry. I have --

13 THE COURT: I think you already testified about that.
14 He raised that himself independently.

15 BY MR. MILLER:

16 **Q.** You stated that the -- there would be -- let me back up.

17 In response to questions about utilization of BMDs and how
18 to ensure trustworthiness of disabled voters' votes, do you
19 recall that?

20 **A.** Yes.

21 **Q.** And I think you said something along the lines of, it is a
22 very difficult question.

23 **A.** It is a difficult question, yes.

24 MR. CROSS: Your Honor, this is beyond the scope. No
25 one asked any questions about disabled voters. This could have

1 been covered on direct.

2 MR. MILLER: Rob did.

3 THE COURT: I think he did.

4 MR. CROSS: Oh, sorry.

5 THE COURT: He did.

6 MR. CROSS: Sorry, Carey.

7 MR. MILLER: It is all right.

8 BY MR. MILLER:

9 **Q.** So my question here being, in a hand-marked paper ballot
10 system with one BMD available in the polling place, would that
11 same hard question still arise?

12 **A.** Yeah. So if you talk to people who spent a lot of time on
13 voters with disabilities, which I do spend a lot of time
14 talking to advocates for voters with disabilities, they are
15 really concerned about the world where there is one BMD in what
16 they call -- say it is one BMD in a corner gathering dust.

17 THE COURT: Okay. I mean --

18 MR. MILLER: Your Honor, respectfully, I think the
19 testimony was elicited in the cross-examination.

20 THE COURT: That is fine. Go ahead.

21 THE WITNESS: There were --

22 THE COURT: Try not to just offer thirdhand -- what
23 you are offering the Court is thirdhand. If you want to say.
24 I have studied this, I have met with people.

25 THE WITNESS: Okay. Okay. I can do that.

1 THE COURT: But you are just telling me what somebody
2 has said in the most generic terms.

3 THE WITNESS: I appreciate that. Yeah. So let me
4 focus it on what I know directly.

5 So as we design voting systems in VotingWorks, in
6 that design process we have considered the various modes, all
7 BMDs, precinct scan with one BMD. And in the design process,
8 we consult with accessibility experts, and their top concern
9 about the model with one BMD in the corner and most voters
10 voting on hand-marked paper ballots is that poll workers tend
11 to not be trained on the machine that only a small percentage
12 of voters use. And as a result, the machine is sometimes
13 literally gathering dust in the corner unopened with poll
14 workers hoping they don't have to turn it on, and thus often,
15 again, in the direct opinion of voters of disability advocates
16 who I have spoken to and thus disenfranchising a number of
17 voters with disabilities.

18 BY MR. MILLER:

19 **Q.** And I believe when -- this was in response to the same
20 disability question. You testified that it was messy to get
21 there to that decision and hard to say the way -- the best way
22 to resolve the trustworthiness of the disabled voters on those
23 machines.

24 Do you recall that?

25 **A.** I do recall that, yes.

1 Q. Would you agree with me that that is why these kind of
2 questions are matters for policymakers?

3 A. I think they are really important for policymakers, yes.
4 They are the ones who -- I mean, ultimately, they are ones who
5 have to make those decisions. The technologists, we can do our
6 best to offer options. Then the policy decision is not ours to
7 make.

8 Q. And one -- couple of last questions. I think this was
9 attempting to explore the attempted bias of you.

10 VotingWorks makes BMDs?

11 A. We do make BMDs, in addition as part of our complete
12 voting system. We also have a hand-marked paper ballot system.

13 Q. And with the Dominion machines that are at issue in this
14 case, VotingWorks is a competitor of --

15 A. 100 percent, yeah. In fact, we're competing with them in
16 New Hampshire right now.

17 Q. So fair to say you are here offering opinions supporting
18 the system and the audits run on them --

19 **(There was a brief pause in the proceedings.)**

20 THE COURT: It was leading and --

21 MR. MILLER: I'll rephrase.

22 BY MR. MILLER:

23 Q. Dr. Adida, why would you offer the opinions you're here
24 offering to support a competitor?

25 A. I'm going to try to keep this short.

1 When election deniers started attacking Dominion after
2 2020, it was very tempting as a competitor to pile on and use
3 that as a means to promote our system that we thought -- we
4 think we have really good reasons to promote our system. It is
5 open source. It is more secure.

6 I'll put that aside. But, you know, when you are selling
7 something and trying to convince somebody, it is really
8 tempting to trash the competitor. And we had a big
9 conversation within our team. We said, we're not going to do
10 that, we're not going to play into election deniers' hands,
11 we're not going to reduce the trust that people have in
12 elections for the sake of benefiting our machines. And
13 wherever we think that we are defending truth in elections,
14 even if that benefits a competitor, we're going to do it.

15 MR. MILLER: Thank you for your testimony, Dr. Adida.

16 THE WITNESS: You're welcome.

17 MR. CROSS: Your Honor, may I ask literally one
18 question?

19 THE COURT: If it is literally one because I have a
20 few questions.

21 MR. CROSS: One question. Just one.

22 RE CROSS-EXAMINATION

23 BY MR. CROSS:

24 **Q.** Dr. Adida, you were asked a number of questions about BMDs
25 and disabilities. I just want to be clear.

1 When a county asks your organization what you recommend as
2 a voting system, it is always hand-marked paper ballots and one
3 BMD, yes or no? Yes or no?

4 **A.** No.

5 **Q.** Okay. Let's pull up Tab -- let's pull up the Tweet.

6 MR. MILLER: This entire series is what we spent on
7 the first cross. There was no subsequent reopening for this
8 issue. This is what the first cross-examination -- actually,
9 I'm sorry -- the second cross-examination, not Rob's, David's,
10 you know, went down for 45 minutes.

11 MR. CROSS: He brought up disabilities, painted a --
12 I've got Eleventh Circuit case law on this. We have looked --
13 painted a misimpression for the Court about what this man
14 recommends and why it is unfair to people with disabilities.
15 We're just going to show you a Tweet, and then we are done.

16 MR. MILLER: Your Honor, I would like to know what I
17 painted an unfair impression about what he recommends. That
18 was not a recommendation.

19 THE COURT: Well, what happened was that he discussed
20 then some -- with some degree of substance after being asked
21 about BMDs for people with disabilities. Then he went -- in
22 response to your questions went and at some length and
23 discussed the dis- -- you know, why it is so adverse to
24 recommend anything where there was any -- where you would only
25 have one machine to service the disability community and why

1 they were so -- they didn't -- that the disability advocates
2 did not support this, and it was all in response to a question
3 of yours.

4 I don't like what you've done here, though. I'm
5 going to let you do it, but don't do this again. This has got
6 to end where we're going back and forth. You-all could have
7 organized this so we weren't spending this amount of hours, and
8 you could have also -- and you sort of put yourself in this
9 position. It is only because it is a bench trial that we let
10 some things go like this.

11 But I don't like it, and, you know, we'll never
12 finish. We'll be here for three weeks to come if this
13 continues. You've got to sort of try to narrow yourselves and
14 discipline yourself a little bit about this.

15 MR. CROSS: And I apologize, Your Honor. I think
16 this is the first time it has happened, and it was a
17 misunderstanding between us. But this is the last thing.

18 MR. MILLER: Your Honor, with respect to the exhibit,
19 I would respectfully move under completeness. He is obviously
20 responding here to a lawyer. I'm curious which lawyer it is.

21 THE COURT: What do you mean which lawyer that he is
22 responding to?

23 MR. MILLER: I'm moving for completeness on this
24 exhibit. You know, he is responding to a lawyer, you see in
25 the second paragraph there in this Tweet. I would like to see

1 which lawyer it is and what that lawyer had to say.

2 THE COURT: Do you know what lawyer it is?

3 THE WITNESS: I don't remember in this thread. I
4 have a suspicion of who it is, but I'm not sure.

5 THE COURT: So your comment is the first sentence and
6 this lawyer's comment is below and you're responding to this?

7 THE WITNESS: Sorry?

8 MR. CROSS: I can help out.

9 BY MR. CROSS:

10 **Q.** It was me.

11 Do you remember that?

12 **A.** I wasn't sure if it was you or somebody else. I didn't
13 want to make the accusation.

14 MR. MILLER: In that case, he has the full Tweet
15 thread. Put it up.

16 MR. CROSS: I'm happy to put anything you want.

17 MR. MILER: Go ahead.

18 THE WITNESS: Can I help clarify?

19 I was trying --

20 BY MR. CROSS:

21 **Q.** I have one question, Dr. Adida, is this: Did you write --

22 **A.** Of course I did.

23 **Q.** -- when a county asks what we recommend, it is always
24 hand-marked paper ballots plus one BMD?

25 Did you write that?

1 **A.** Of course I did.

2 MR. CROSS: I have no further questions.

3 THE WITNESS: Can I clarify, though?

4 THE COURT: Yes, you can.

5 THE WITNESS: I was pretty angry with you in that
6 Tweet thread. You accused me a little bit like you did at the
7 beginning of questioning that I'm testifying here in exchange
8 for compensation. That was what this Tweet thread was about.

9 And, you know, I gave up a lot of money to start
10 VotingWorks and work on voting. It is painful to be accused of
11 corruption, which is what you did.

12 So I was angry in that thread. I made a statement
13 here that is 99 percent correct in the Tweet. And here on the
14 stand under oath, I'm trying to be very precise about
15 everything.

16 So the exceptions about when we recommend hand-marked
17 paper ballot plus one BMD is earlier in our work in Mississippi
18 where we started recommending all BMDs as a transition from
19 DREs, and the second case is in a place like LA County where
20 the logistics of the county really do kind of make sense for
21 all BMDs.

22 But if the statement you want to make is to say that
23 almost all the time I recommend hand-marked paper ballots plus
24 one BMD, that is correct. I was just trying to be very precise
25 in this answer here.

1 And I admit that you had me rattled in that Twitter
2 thread, and now I get to pay for it by having it up in district
3 court.

4 MR. CROSS: Given the characterization, we have no
5 objection to the entire thread being submitted.

6 THE WITNESS: Thank you.

7 | EXAMINATION

8 BY THE COURT:

9 | **Q.** Just a few things.

10 Are you still working for the State of Georgia or the
11 Secretary of State's office?

12 **A.** Yes. VotingWorks is still engaged, and we're helping them
13 prepare for the November RLA.

14 Q. Okay. Secondly, about just -- you just mentioned
15 Los Angeles. And I know you're very familiar with the data,
16 and I just -- for clarification and fullness, I wanted you --
17 you do recognize that the vast percentage of the people voting
18 in Los Angeles in recent elections have been by mail or not by
19 in-person; is that right?

20 **A.** This is true. As California moved to mailing a ballot to
21 everybody, there is a lot more. But for completeness, the
22 decision to move to all BMDs was made long before that
23 happened.

24 Q. Well, that is true. But in terms of citing the -- I think
25 one has to consider the context in terms of what you are --

1 **A.** Totally fair, Your Honor. Yes. Yes.

2 **Q.** How much time did you spend, yourself, in Georgia actually
3 observing people casting ballots?

4 **A.** Me personally?

5 **Q.** That's right.

6 **A.** I have not spent time in Georgia. I have my team members
7 who have done a lot of it, but I personally have not done it.

8 **Q.** And have they collected data themselves on your behalf
9 about the amount of what they have observed in terms of poll
10 workers confirming with individual voters that they have
11 actually looked at their ballot or encouraged them there to --
12 them to do that?

13 **A.** I should clarify because I think I was little vague in my
14 previous answer.

15 Most of the work that my team has done in Georgia is in
16 the audit phase, so not as much observation of election day and
17 vote casting.

18 So to your latest answer, no, we don't have a lot of data
19 on that directly in VotingWorks.

20 **Q.** So I think it is just relevant to what -- you know, what
21 is the information we have about -- available to us and the
22 State regarding, A, the care that people -- citizens take or
23 don't take in filling out -- in reviewing an electronic ballot?
24 And B, are they hindered in it because of the way it prints
25 out? And C, whether there is in reality any -- anything other

1 than signs on -- saying, you know, review your ballot whether
2 any -- whether it is actually routine at all for a ballot --
3 for poll workers to be encouraging to -- voters to go back and
4 make sure that they have looked at their ballot?

5 **A.** So I can't speak to all of it, but I'll try to speak to
6 the things I know directly about.

7 In the course of helping Georgia run RLAs, I have regular
8 conversations with -- my team does and I personally do with
9 State election officials in Georgia about -- and they sometimes
10 ask for advice.

11 And after the Matt Bernhard-Alex Halderman paper about BMD
12 verifiability, we had some conversations around, oh, here are
13 some things you can do to encourage ballot verification.

14 I know the State was interested. I seem to remember that
15 there was some public education campaign about this that
16 happened in Georgia. I could be misremembering, but there were
17 definitely conversations about taking the research and applying
18 it as pragmatically as possible.

19 **Q.** Was that the last you knew of it?

20 I'm just talking about Georgia at this point --

21 **A.** No, of course.

22 **Q.** -- because I just didn't know what the -- you know, we
23 have this study that was done by UGA on behalf of the
24 Secretary's office, and that was -- we have the report dated
25 January 22nd, 2021.

1 And I just -- I was just trying to get to the bottom of
2 what you were relying on in determining that -- that the real
3 ballots here use and the nature of the printout that is given
4 to individuals afterwards was something that really actually
5 was going to be -- would trigger substantial compliance --
6 substantial review and meaningful review on the part of voters.

7 **A.** Right. The way I formed my opinion about this is I look
8 at the Bernhard-Halderman paper which tracks what percentage of
9 voters would need to check their ballot to get to a certain
10 degree of confidence.

11 **Q.** Right. But I'm asking you -- I understood your testimony
12 about that.

13 **A.** Right.

14 **Q.** I'm just trying to talk about reality. That is why I was
15 asking you, you know, not just a hypothetical election that
16 they were looking at, which has its value.

17 **A.** Right.

18 **Q.** We have some real voter observations from the UGA study,
19 and I'm just trying to find out, did you -- have you anything
20 else in terms of actually looking about how it ended up playing
21 out in Georgia? Have you -- you have testified about this, but
22 have you --

23 **A.** Right.

24 **Q.** -- you and your colleagues assembled some amount of data
25 or something that you can say to me about the way the ballot

1 prints out?

2 Because I don't even know, frankly, whether you
3 individually have looked at how the ballot prints out.

4 **A.** I do know the Dominion system, even if I haven't witnessed
5 it, it was the same system that was used in the California
6 county where I lived for a while a few years ago.

7 So I do know how it works, and I do know -- in fact, it
8 functions very similarly to one of our BMDS where you use a
9 touch screen and it comes out of an HP printer and then you
10 carry it over to the scanner.

11 **Q.** No, I think what I'm trying get at is not just that you
12 carry it over or how it works.

13 I'm talking about -- I mean, I think you were being asked
14 about this printout with it that said yes, yes, yes, we
15 discussed that.

16 And that happens in a number of different -- in contexts
17 about propositions --

18 **A.** Right.

19 **Q.** -- and it does not, in fact, look like the ballot they --
20 a voter has reviewed on the BMD system itself.

21 Do you recognize that?

22 **A.** Oh, you mean the paper doesn't map to exactly the screen
23 they saw?

24 **Q.** Right.

25 **A.** That's true. Usually, the screen has bigger font and

1 things like that.

2 Q. Well, it has more information. It has more candidates.

3 A. Yes. And it has more warnings about, you know, if you
4 forgot to vote for all three things. Yeah, absolutely.

5 I think you're trying to ask me -- or I think you're
6 asking me -- sorry. I'm trying to understand that what is --
7 how much do I know about Georgia specifically, and how much I
8 do know directly about the use of BMDs in Georgia?

9 Q. Well, I mean, I recognize Georgia is not unique, but it is
10 unique in its -- other than South Carolina in the statewide use
11 of this.

12 A. I agree.

13 Q. And I'm really just trying to get at some of the
14 assertions you made about -- the foundation for your
15 determination that it is -- that voters have -- that seeing the
16 ballot that is printed, that they are going to be -- you're
17 saying we can rely on this because they have looked at it?

18 A. Right.

19 Q. When it looks differently than what they saw on the -- in
20 the --

21 A. In the screen? On the screen?

22 Q. -- actually in the electronic machine?

23 A. Right. So how do I form my opinion on this?

24 My opinion on this --

25 Q. That doesn't even deal with the question of whether data

1 has been changed.

2 **A.** I agree. I understand.

3 My opinion on this comes from the combination of research
4 papers Alex Halderman and Matt Bernhard's, my strong belief
5 that in practice you can never rely on 100 percent of voters
6 doing anything. So what is the threshold at which we can start
7 to trust this?

8 And then, you know, I hadn't seen the numbers from the UGA
9 study. But just reading them now, if we just take them at face
10 value that 50 percent of the voters spent at least three or
11 four seconds, whatever that threshold was, if you plug that
12 into the numbers of the Alex Halderman and Matt Bernhard paper,
13 you come out with pretty good odds that things are going well.
14 Otherwise, you would be seeing a lot of complaints from voters
15 and spoiled ballots and things like that.

16 That is really how I formed my opinion on it. Some of it
17 is a little bit based also on my experience testing our BMDs
18 with voters. That was not in Georgia, though, so it is -- but
19 every BMD has this mismatch that you talk about where the
20 screen presents it one way and the paper has to condense it a
21 little more so it all fits on one page.

22 **Q.** I gather what your testimony, though, is it has nothing --
23 it really doesn't address the issue of malware?

24 **A.** I think it does. I think it does in the sense that the
25 final safety net of a good voting system is one where even if

1 the computers were infected with malware, we would have a way
2 to detect and recover. And it doesn't specifically look at
3 malware, it just says malware, misconfigurations, anything.
4 And the two safety nets are, one, the voter checking their
5 ballot, and two, the RLA checking the tabulation.

6 And --

7 **Q.** But where does the QR code come into this? I guess that
8 is the thing is that you're checking -- you are doing an RLA
9 on -- typically, on one race.

10 **A.** Yeah.

11 **Q.** And under the new Georgia law, also counties can pick
12 whatever race they want --

13 **A.** That's right.

14 **Q.** -- and whatever method they want too?

15 **A.** Okay.

16 **Q.** Nothing as worked up as yours. Whatever method they want,
17 at least the law says. Whether that will end up being a way it
18 is interpreted is another matter.

19 **A.** I think I understand why the State wanted to meet with me
20 to talk about this new rule now. I'm just starting to
21 understand it.

22 **Q.** But anyway, so it is really --

23 **A.** What is the QR code?

24 **Q.** -- a question of: You can verify the RLA, assuming
25 everything works and there is some disputes, but --

1 **A.** Right.

2 **Q.** -- you're verifying an election --

3 **A.** Right.

4 **Q.** -- and -- but you feel confident that is enough to tell us
5 what happens, for instance, in a down -- a down-ballot -- and I
6 don't mean just all the way down, I mean other --

7 **A.** Three or four.

8 **Q.** -- other positions that are -- the attorney general rather
9 than the governor.

10 **A.** Totally. So I want to not open up a whole new thing, so
11 I'm going to try to just express an opinion and then I can
12 answer any additional questions you might have.

13 **Q.** All right.

14 **A.** It is my strong belief, based on my knowledge, that if we
15 tell voters to check the human readable text and then we run
16 RLAs on a set of contests that the security properties between
17 hand-marked paper ballots and BMD ballots are roughly the same
18 in that scenario because if there are contests where you don't
19 run RLAs -- sorry, there is one more point -- and the QR code
20 doesn't matter -- it is super scary, it is in your face, and I
21 wish Dominion had designed a ballot where it wasn't so in your
22 face and so scary.

23 But from a technical perspective, it matters not at all if
24 voters check the text and if you run RLAs. If you don't run --
25 there are going to be contests where you don't run RLAs.

1 Q. But most of them you are not running -- when you have a
2 general election --

3 A. Right.

4 Q. -- most of the races are -- there are lots of races.

5 A. And in those contests where you don't run RLAs, the
6 opportunity for mischief to affect the outcome, in my
7 opinion -- and again, I can go very deep on this, but I'll stop
8 here -- is the same with hand-marked paper ballot and with
9 BMDs, QR code or no QR code.

10 Q. All right. Thank you.

11 THE COURT: May this witness be excused?

12 MR. MCGUIRE: We have nothing further.

13 THE COURT: Counsel? All right.

14 Thank you very much.

15 THE WITNESS: Thank you.

16 THE COURT: Safe travels.

17 So how are we proceeding tomorrow? I canceled my
18 appointment, so --

19 MR. TYSON: So, Your Honor, I believe --

20 THE COURT: -- I'll just get a little antsy. But
21 that is all right. I want to keep us moving.

22 MR. TYSON: Thank you, Your Honor.

23 I believe tomorrow we will begin with Mr. Evans
24 completing his testimony.

25 THE COURT: All right.

1 MR. TYSON: After that, I believe we'll move to
2 Mr. Kirk, the elections director from Bartow County, followed
3 by Mr. Davis, and then Ms. Marks if there is time on that.

4 THE COURT: Okay.

5 MS. KAISER: Your Honor, I'll be very brief. I know
6 we're running late.

7 We do have one issue we wanted to raise about
8 Mr. Kirk.

9 THE COURT: Could you just wait a second. I want to
10 just look at what you just said -- what Mr. Tyson just said.

11 Go ahead.

12 MS. KAISER: Thank you, Your Honor.

13 I think, you know, this concern was highlighted for
14 us today as well with Mr. Adida's testimony. Mr. Kirk has
15 never been disclosed in discovery as someone who the defendants
16 intend to rely on at trial. He was not named in their initial
17 disclosures. He has not provided a declaration in this case.
18 He was deposed one time in July 2019 during the DRE phase of
19 the case, and his testimony was related to the DREs, not the
20 BMDs, which had not even been procured from Dominion at that
21 time, Your Honor.

22 And so we have frankly no notice whatsoever about
23 what Mr. Kirk is going to be testifying about tomorrow. We'll
24 be hearing it for the first time on the stand. And, you know,
25 we think Rule 37(c)(1) is pretty clear on this. If a party

1 fails to provide -- identify a witness, they may not use them
2 at trial.

3 THE COURT: So did they not identify him in the
4 trial?

5 MS. KAISER: No.

6 MR. MILLER: May I address this?

7 THE COURT: Yeah.

8 MR. MILLER: I went back and looked at this after
9 Ms. Kaiser raised it. She's correct. Mr. Kirk was deposed.
10 It is quite a lengthy deposition that I spent time in the
11 Bartow County courthouse until they kicked us out because it
12 closed.

13 THE COURT: But it was during the DRE phase of the
14 case?

15 MR. MILLER: I'm sorry?

16 THE COURT: But it was during the DRE phase of the
17 case?

18 MR. MILLER: He was specifically selected to be
19 deposed by Coalition plaintiffs because he was a pilot BMD
20 county. And he is also listed on --

21 THE COURT: What was the date of the deposition?

22 I'm sorry.

23 What was the date of the deposition?

24 MR. MILLER: July 11, 2019.

25 MR. CROSS: The pilots were ordered in August, Your

1 Honor.

2 MR. MILLER: You can review his transcript --

3 MS. KAISER: And I have reviewed his transcript, Your
4 Honor. He said that he had been selected to do a BMD pilot.
5 He had no idea what the pilot was going to be. He hadn't heard
6 from the Secretary of the State about the pilot. He didn't
7 know what the equipment was because it had not been procured
8 yet. And he had no input in the RFP process.

9 MR. MILLER: Your Honor, if I can address the
10 disclosure issue because I think that's the only basis to limit
11 it.

12 At Document 433, which is the only initial
13 disclosures in this case that were filed in the DRE phase,
14 State Defendants' disclosures listed as individuals having
15 knowledge pertinent to the case to include any party identified
16 by plaintiffs or another party.

17 Coalition plaintiffs, in turn, at Docket Number 448
18 specifically identified Mr. Kirk in their initials disclosures
19 as having knowledge regarding election administration and
20 feasibility -- I'm sorry -- election administration and
21 security and feasibility of paper ballots.

22 There is no real dispute here. We've got a county
23 election official who has been disclosed, frankly, by the
24 co-plaintiffs, who has been deposed and who is going to be one
25 that has to carry out whatever relief that this Court orders.

1 THE COURT: But why didn't you disclose him as a
2 witness for purposes of the -- on the pretrial?

3 MR. MILLER: We did. He is on our --

4 THE COURT: That's what I -- I thought she said you
5 had not.

6 MS. KAISER: Your Honor, he was included in the PPO
7 as a may call witness, not as a will call witness. And Your
8 Honor may recall, the list of may calls was quite extensive.

9 MR. MILLER: Your Honor, I will note one thing
10 briefly.

11 THE COURT: He can testify. I mean, I think --
12 listen, it is part of their case, and you -- somebody in your
13 group had to recognize the name. I certainly would have
14 entertained a complaint about this at an earlier time, but not
15 now.

16 And I understand there was a profound difference
17 between what he would have been testifying about in July before
18 we had a trial in 2019 and that he likely had been -- that as
19 best I could recall, under the circumstances, he was going to
20 be testifying they were going to be a group who were -- of
21 individuals running local elections who were picked to be doing
22 a trial of the -- not of the DR -- of the new Dominion system
23 or some other system because the obligation to do testing of
24 hand-marked paper ballots only happened after that.

25 So I understand your concern, but I think it is late.

1 I mean, I think you could have frankly gone and looked at the
2 list, and even if it was after the pretrial, have raised this
3 at an earlier point.

4 MR. CROSS: Your Honor, one explanation. We did --
5 we did not raise it. I went back and looked. But the reason
6 was this: He was deposed, and what we expected was he was
7 testifying on -- I think my memory is he talked about things
8 like hand-marked paper ballots, the day-to-day running of an
9 election administration.

10 We didn't learn until, I think it was yesterday, they
11 are going to have him talk about BMDs. There is stuff he could
12 testify to, and that is fine if they want to have him talk
13 about anything within the scope of his deposition, but it
14 shouldn't be BMDs.

15 MR. MILLER: Your Honor, if I could list out the
16 anticipated subjects of the testimony from his pretrial order
17 list.

18 THE COURT: I can't hear you and neither can --

19 MR. MILLER: I'm sorry.

20 THE COURT: Just come up here.

21 MR. MILLER: Your Honor, it lists in the pretrial
22 order Mr. Kirk being listed as a may call in his anticipated
23 testimony concerning election administration, balloting and
24 voting process for in-person and absentee voters, election
25 preparations and physical security of the equipment, audits and

1 implementation of the relief plaintiffs seek.

2 Your Honor --

3 MR. CROSS: No mention of BMDs.

4 MS. KAISER: Which does not say BMDs, Your Honor.

5 MR. MILLER: This is the pretrial order, Your Honor.

6 THE COURT: I respectfully disagree with plaintiffs'
7 counsel about that. I don't -- I mean, all of that is
8 implicit. What he is talking about in elections and the cases
9 about BMDs, it is embraced within it. I mean, it would have
10 been preferable for sure. I don't appreciate their adding him
11 in the fact that in the sense of that -- if they hadn't
12 identified him earlier, but there is not a question that he
13 was -- wasn't identified earlier.

14 MS. KAISER: Your Honor, he has not been identified
15 in this phase of the case. We don't dispute that he -- that he
16 was deposed in the DRE phase of the case. He was not on an
17 initial disclosure as Mr. --

18 THE COURT: He basically -- they should have added an
19 additional disclosure --

20 MS. KAISER: Excuse me, Your Honor.

21 THE COURT: And I agree. But, you know, I'm not
22 prepared to say no to them because it is not so hard for
23 you-all to figure out what -- to get prepared. I would say he
24 should not testify tomorrow, though, because that will give you
25 more time to figure out -- if there is something you need, it

1 will give you the weekend, and I will give you that, but -- so
2 we're, anyway, running on empty as it is. If we ended up early
3 on Friday, that is all right.

4 MR. MILLER: Your Honor, to be clear, we've initially
5 expected Mr. Kirk to testify, I think, yesterday and got slowed
6 up which were raised -- I'm sorry -- today. I mentioned
7 yesterday when I went through the list. He is actually here
8 right now. We thought we were going to get done a little
9 earlier. He is just waiting out traffic at this point. It is
10 too late now.

11 THE COURT: I'm sorry. He can testify, but Monday.

12 MR. MILLER: Okay.

13 MR. CROSS: Your Honor, just to keep things moving,
14 we'll go forward tomorrow, we'll be ready, we'll make it work
15 because we don't want to slow things down.

16 MR. MILLER: Truthfully, I don't expect it to be
17 long.

18 THE COURT: All right. That is fine.

19 MR. CROSS: We appreciate the accommodation, Your
20 Honor.

21 THE COURT: Would you give us an update tomorrow
22 about where we are with Mr. Persinger?

23 MR. TYSON: Yes, Your Honor. I spoke to
24 Mr. Persinger this afternoon, and I need to speak with
25 Mr. Cross about the update I have for him, so I'll do that

1 after we conclude today.

2 THE COURT: You'll talk to him?

3 MR. TYSON: Yes, Your Honor.

4 THE COURT: Then you'll let me know tomorrow?

5 Thank you, everybody.

6 MR. CROSS: Thank you, Your Honor.

7 THE COURT: We'll see you tomorrow.

8 (The proceedings were thereby adjourned at 6:26
9 PM.)

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

C E R T I F I C A T E

UNITED STATES OF AMERICA

NORTHERN DISTRICT OF GEORGIA

I, SHANNON R. WELCH, RMR, CRR, Official Court Reporter of the United States District Court, for the Northern District of Georgia, Atlanta Division, do hereby certify that the foregoing 296 pages constitute a true transcript of proceedings had before the said Court, held in the City of Atlanta, Georgia, in the matter therein stated.

In testimony whereof, I hereunto set my hand on this, the 25th day of January, 2024.



SHANNON R. WELCH, RMR, CRR
OFFICIAL COURT REPORTER
UNITED STATES DISTRICT COURT

UNITED STATES DISTRICT COURT
OFFICIAL CERTIFIED TRANSCRIPT

<p>BY MR. BROWN: [4] 117/23 120/6 126/21 134/2</p> <p>BY MR. CROSS: [18] 242/24 243/12 245/9 246/1 247/6 247/9 247/25 249/9 249/22 253/24 255/6 257/19 260/20 262/10 262/21 274/23 277/9 277/20</p> <p>BY MR. FISHER: [32] 74/22 76/10 80/8 81/8 83/17 83/21 84/20 85/4 86/16 87/4 88/17 88/23 89/13 90/9 91/17 92/12 92/22 93/10 93/15 96/5 100/14 107/24 108/13 108/17 110/16 111/3 111/10 113/12 114/5 115/12 117/3 134/25</p> <p>BY MR. MCGUIRE: [13] 204/23 207/3 210/19 219/19 219/23 221/3 227/20 227/23 236/21 237/3 239/9 240/10 240/17</p> <p>BY MR. MILLER: [18] 137/19 138/3 144/17 150/22 160/12 167/18 168/25 174/23 177/11 178/9 181/25 199/10 203/22 267/7 270/15 271/8 272/18 273/22</p> <p>BY MR. OLES: [2] 127/8 264/10</p> <p>BY MR. TYSON: [19] 8/24 25/17 27/9 30/25 33/13 35/17 46/1 46/13 49/2 49/19 52/15 52/24 53/18 54/5 58/17 68/21 71/14 72/20 135/18</p> <p>BY THE COURT: [3] 131/14 135/25 279/8</p> <p>COURTROOM DEPUTY CLERK: [3] 8/12 8/15 137/10</p> <p>COURTROOM SECURITY OFFICER: [3] 60/13 113/8 150/12</p> <p>MR. BROWN: [5] 117/19 117/21 119/18 127/1 133/23</p> <p>MR. CROSS: [86] 5/21 7/7 68/14 81/1 81/6 102/3 102/11 102/18 103/9 103/12 103/18 103/21 103/25 105/2 105/9 105/14 111/9 147/1 148/8 148/16 149/9 150/20 174/9 176/25 177/7 183/24 184/7 184/10 184/21 184/25 185/5 185/18 185/23 186/9 186/20 187/18 187/21 188/1 189/11 190/6 191/10 191/19 194/22 227/6 227/16 242/21 243/10 245/6 246/19 247/2 247/21 249/4 249/14 249/18 249/21 253/16 253/19 253/23 254/24 255/3 257/17 260/19 261/25 262/2 262/6 262/9 262/15 263/19 264/2 270/24 271/4 271/6 274/17 274/21 275/11 276/15 277/8 277/16 278/2 279/4 290/25 293/4 294/3 295/13 295/19 296/6</p> <p>MR. FISHER: [64] 46/8 48/12 49/9 49/12 50/9 50/20 50/25 51/4 52/8 52/12 53/7 53/11 57/25 65/19 65/21 66/10 68/11 68/18 72/9 73/9 73/11 73/23 74/9 74/11 74/20 78/1 78/19 79/17 80/3 80/7 83/10 83/15 83/20 84/18 84/25 85/2 86/13 87/2 87/16 87/24 88/6 88/9 88/14 88/16 89/1 89/11 89/16 90/3 90/5 92/11 92/20 93/9 93/13 96/1 100/1 108/11 108/15 111/1 113/22 113/25 115/3 116/24 117/16 134/22</p> <p>MR. MCGUIRE: [18] 5/8 5/24 145/10 145/15 145/21 148/2 150/18 188/23 191/4 196/16 219/8 219/15 219/22 240/8 240/16 242/14 242/18 288/12</p>	<p>MR. MILLER: [1] 277/17</p> <p>MR. MILLER: [98] 6/6 6/11 7/10 7/16 136/20 137/3 137/7 138/1 144/15 145/6 145/12 146/5 146/17 146/24 147/3 147/7 147/14 149/13 149/20 149/23 150/4 150/9 150/15 165/2 168/23 174/12 178/2 178/5 178/8 184/5 184/8 184/13 184/24 185/2 185/9 185/12 186/2 186/10 186/25 187/10 187/20 188/11 190/16 190/25 191/5 192/11 193/24 195/24 196/13 197/4 198/25 199/6 203/17 204/18 204/21 219/3 220/15 227/14 236/25 239/3 240/3 245/21 246/21 247/19 247/23 253/8 255/1 257/13 260/15 262/5 263/22 267/4 271/2 271/7 271/18 273/21 274/15 275/6 275/16 276/18 276/23 277/14 290/6 290/8 290/15 290/18 290/24 291/2 291/9 292/3 292/9 293/15 293/19 293/21 294/5 295/4 295/12 295/16</p> <p>MR. OLES: [5] 127/4 131/7 264/6 264/8 267/2</p> <p>MR. TYSON: [69] 5/5 6/3 7/21 27/6 30/19 45/25 46/10 48/21 49/1 49/10 49/18 50/11 52/18 52/23 53/8 58/12 58/14 60/9 63/3 63/15 63/18 65/9 66/17 68/7 68/20 69/24 70/25 72/12 72/17 73/10 73/13 74/6 74/16 78/9 79/13 80/24 81/2 83/14 87/18 89/3 89/18 99/22 101/20 102/10 103/17 103/19 104/10 104/12 105/8 105/22 106/10 106/19 106/21 107/11 113/18 114/24 116/21 119/4 126/18 131/5 131/9 135/16 135/23 136/18 288/19 288/22 289/1 295/23 296/3</p> <p>MS. KAISER: [11] 7/24 8/8 8/10 289/5 289/12 290/5 291/3 292/6 294/4 294/14 294/20</p> <p>THE COURT: [282] 5/3 5/10 5/15 5/22 6/1 6/8 6/23 7/13 7/19 7/23 8/6 8/9 8/11 25/11 26/20 30/22 32/20 33/1 33/5 33/12 34/19 43/18 44/5 44/10 45/15 45/21 45/24 46/12 48/24 49/15 50/15 50/18 50/22 51/1 51/9 51/12 52/1 52/10 52/13 52/17 52/19 53/9 53/12 53/23 54/4 58/9 58/13 60/11 60/15 60/20 63/12 63/17 63/24 65/20 66/8 67/7 68/8 68/12 68/16 68/19 69/19 69/23 69/25 70/3 70/13 70/17 70/24 71/1 71/4 71/6 71/13 72/7 72/13 72/19 74/3 74/5 74/7 74/10 74/14 74/17 76/6 76/9 78/23 79/19 80/4 81/4 85/1 85/3 87/3 88/2 88/7 88/12 88/15 88/22 89/20 90/4 90/6 91/11 95/1 95/11 100/3 100/13 100/20 101/16 101/21 102/5 102/17 103/8 103/11 103/24 104/9 104/11 105/6 105/13 106/5 106/12 106/20 106/24 107/20 110/12 110/25 112/14 112/23 113/3 113/11 113/24 114/4 115/10 117/1 117/17 117/20 119/7 119/22 127/3 127/6 131/8 131/11 133/22 133/25 136/17 136/19 137/2 137/5 137/24 144/16 146/16 146/22 146/25 147/5 147/11 148/15 149/7 149/17 149/21 150/2 150/6 150/10 150/21 159/19 159/24 160/11 165/4 166/7 166/15 174/17 177/6 177/17 177/20</p>	<p>177/24 178/4 178/7 180/21 183/10 183/12 184/11 185/1 185/7 185/10 185/22 186/1 186/8 187/3 187/23 188/22 189/17 190/7 190/23 191/2 191/17 193/22 196/9 196/15 196/23 197/7 197/22 198/2 198/9 198/15 199/1 203/16 204/20 206/24 209/22 210/2 210/17 219/14 219/17 219/21 220/10 220/23 226/11 227/13 227/18 227/22 236/18 237/1 239/5 240/14 242/16 242/22 243/6 245/5 247/8 247/22 249/3 249/12 249/15 249/20 253/11 253/17 253/20 257/15 257/18 260/9 260/18 261/18 261/20 262/1 262/7 262/17 264/3 264/7 270/13 271/3 271/5 271/17 271/20 271/22 272/1 273/20 274/19 275/19 276/21 277/2 277/5 278/4 288/11 288/13 288/16 288/20 288/25 289/4 289/9 290/3 290/7 290/13 290/16 290/21 292/1 292/4 292/11 293/18 293/20 294/6 294/18 294/21 295/11 295/18 295/21 296/2 296/4 296/7</p> <p>THE WITNESS: [78] 8/18 32/22 33/3 33/9 34/20 43/21 44/7 44/14 45/18 45/22 50/17 50/19 51/10 51/21 54/1 69/22 70/1 70/4 70/14 70/20 71/3 71/5 71/7 74/4 74/12 76/8 86/14 91/13 95/7 95/18 100/9 100/22 107/19 108/12 112/17 113/1 119/20 120/1 137/13 145/20 159/22 160/3 165/8 166/9 166/22 177/18 177/23 180/22 183/11 183/13 197/21 197/25 198/8 198/10 199/8 203/18 207/1 209/25 210/5 220/12 226/13 227/11 239/7 245/7 249/5 261/19 262/19 271/21 271/25 272/3 274/16 277/3 277/7 277/18 278/3 278/5 279/6 288/15</p> <p>\$</p> <p>\$120,000 [1] 244/7</p> <p>\$250 [1] 34/1</p> <p>'</p> <p>'22 [6] 84/1 103/13 154/4 154/5 168/13 177/15</p> <p>'22 or [1] 154/4</p> <p>'23 [3] 26/19 57/10 168/13</p> <p>'24 [1] 154/4</p> <p>-</p> <p>-- if [1] 204/21</p> <p>.</p> <p>...CONT'D [2] 2/25 3/1</p> <p>.1 [1] 258/20</p> <p>.1 percent [1] 258/20</p> <p>.2 [1] 258/21</p> <p>.2 percent [1] 258/21</p> <p>.3 [3] 167/24 171/19 171/22</p> <p>.3 percent [3] 167/24 171/19 171/22</p> <p>1</p> <p>1,000 [1] 208/15</p> <p>1,199 [1] 238/6</p> <p>1,200 [2] 208/15 238/6</p> <p>1.7 million [5] 171/23 172/1 172/13 172/19 179/16</p> <p>10 [1] 166/13</p>
--	---	--

<p>1</p> <p>100 [5] 158/3 165/23 166/12 227/19 258/16</p> <p>100 percent [6] 33/24 86/15 167/4 215/8 273/15 285/5</p> <p>10:30 [1] 137/22</p> <p>11 [3] 88/21 105/10 290/24</p> <p>11,000 [2] 259/22 259/24</p> <p>11:34 [1] 60/14</p> <p>11th [5] 86/3 88/3 91/11 102/14 108/18</p> <p>12 [12] 1/10 142/13 147/15 148/13 148/15 185/15 186/21 187/1 189/18 232/11 254/9 254/13</p> <p>1244 [2] 144/19 150/16</p> <p>12785 [1] 156/21</p> <p>12th [3] 20/20 103/21 103/24</p> <p>13 [8] 80/23 147/17 148/13 148/15 148/17 157/15 186/21 187/1</p> <p>130 [5] 92/11 103/4 103/4 103/8 103/9</p> <p>1314 [1] 194/12</p> <p>1325 [1] 194/12</p> <p>1326 [1] 194/12</p> <p>1383 [1] 1/25</p> <p>14 [1] 103/13</p> <p>14 days [1] 192/24</p> <p>145 [5] 85/2 85/6 93/9 96/2 108/9</p> <p>15 [1] 64/12</p> <p>15 minutes [1] 259/10</p> <p>15 years [1] 143/13</p> <p>15.04 [2] 165/1 169/4</p> <p>150 [1] 34/1</p> <p>159 [4] 20/18 57/8 135/22 233/24</p> <p>16 years [2] 143/14 143/14</p> <p>1755 [2] 158/4 158/5</p> <p>18-inch [3] 56/7 56/8 56/10</p> <p>183-1-15.04 [1] 169/4</p> <p>185 [1] 62/25</p> <p>19 [1] 255/8</p> <p>191 [1] 88/16</p> <p>1998 [2] 143/4 143/20</p> <p>19th [1] 20/22</p> <p>1:00 [1] 113/5</p> <p>1:17-CV-2989-AT [1] 1/6</p> <p>1st [1] 262/23</p>	<p>174/16 175/10 175/15 176/4 176/11 176/15 177/6 177/8 177/8 177/21 178/10 178/23 179/18 179/19 184/13 186/13 191/14 191/15 191/25 192/1 195/5 232/15 246/15 250/4 250/8 251/11 253/6 254/1 255/9 259/21 262/23 274/2</p> <p>2021 [22] 37/21 43/15 47/7 66/23 68/2 85/14 87/11 88/21 88/24 90/10 90/19 90/21 91/22 92/18 93/4 93/18 94/16 104/13 192/23 195/17 262/23 281/25</p> <p>2022 [20] 39/17 39/22 43/2 61/23 64/12 83/24 102/18 103/25 127/16 176/24 177/9 177/14 178/10 178/23 179/3 195/13 195/18 196/1 233/21 262/23</p> <p>2023 [1] 177/8</p> <p>2024 [8] 1/13 5/2 153/25 180/3 180/9 181/1 181/20 297/13</p> <p>215-1383 [1] 1/25</p> <p>22 [2] 233/20 233/24</p> <p>22 months [1] 130/24</p> <p>22nd [1] 281/25</p> <p>2394 [1] 1/24</p> <p>23rd [1] 87/11</p> <p>24 months [1] 130/25</p> <p>25 [2] 1/13 5/2</p> <p>25 minutes [1] 150/7</p> <p>257 [1] 162/16</p> <p>25th [2] 20/22 297/13</p> <p>26 [6] 65/23 66/4 192/19 194/1 194/2 194/5</p> <p>27 [1] 64/1</p> <p>28th [2] 253/6 254/1</p> <p>29.9 percent [1] 252/8</p> <p>296 [1] 297/9</p> <p>2:51 [1] 150/14</p>	<p>500 [2] 258/16 258/20</p> <p>501 [1] 138/7</p> <p>51 [9] 246/20 247/10 248/21 249/4 249/14 249/15 249/19 249/25 263/20</p> <p>57 [1] 157/14</p> <p>5:06 [1] 242/20</p> <p>5th [3] 88/22 88/24 88/25</p>
<p>2</p> <p>2,700 [2] 119/1 120/12</p> <p>20 [1] 103/24</p> <p>20 minutes [11] 55/3 55/14 75/21 76/2 76/4 76/6 76/7 76/8 77/19 78/4 78/6</p> <p>20 percent [5] 168/2 251/10 251/17 252/1 252/4</p> <p>20 years [1] 202/23</p> <p>200 [2] 165/23 209/14</p> <p>200,000 [1] 179/20</p> <p>2001 [2] 9/5 59/16</p> <p>2008 [2] 143/12 153/12</p> <p>2011 [1] 142/3</p> <p>2017 [1] 153/14</p> <p>2018 [3] 142/21 142/23 221/19</p> <p>2019 [6] 140/12 140/18 164/6 289/18 290/24 292/18</p> <p>2020 [56] 57/5 83/22 90/20 140/5 140/12 140/16 140/21 144/7 145/23 147/10 153/14 154/6 160/22 164/6 167/25 170/2 170/18 171/6 171/7 171/12 171/18 173/8 173/21 173/22</p>	<p>3</p> <p>3,000 [1] 120/12</p> <p>30 [3] 103/22 106/10 106/23</p> <p>30 days [2] 129/10 131/3</p> <p>30 years [1] 59/13</p> <p>30,000 [4] 120/9 166/13 259/19 260/6</p> <p>30303 [1] 1/25</p> <p>31.3 percent [1] 252/4</p> <p>32,000 [2] 56/16 259/17</p> <p>37 [1] 289/25</p> <p>385 [1] 255/7</p> <p>3:00 [1] 150/10</p> <p>4</p> <p>4 million [1] 143/15</p> <p>40 [5] 168/2 181/9 181/22 230/25 242/7</p> <p>404 [1] 1/25</p> <p>433 [1] 291/12</p> <p>448 [1] 291/17</p> <p>45 minutes [3] 113/5 113/7 275/10</p>	<p>6</p> <p>60 [1] 168/2</p> <p>60 degrees [1] 60/16</p> <p>612 [1] 87/16</p> <p>62 [2] 146/18 162/16</p> <p>6:26 [1] 296/8</p> <p>6th [1] 95/19</p>
	<p>5</p> <p>5 million [2] 166/11 172/2</p> <p>5.17 [9] 58/6 75/22 75/23 78/4 78/13 78/15 78/17 79/15 80/14</p> <p>5.17 application [1] 76/17</p> <p>5.5.10.32 [1] 76/15</p> <p>50 [1] 153/22</p> <p>50 percent [6] 225/7 225/9 225/14 258/24 259/8 285/10</p> <p>50 percent-plus [1] 229/11</p>	<p>7</p> <p>75 [2] 1/24 194/11</p> <p>7:00 [1] 217/21</p> <p>7:15 [1] 217/22</p> <p>8</p> <p>8.1 [2] 80/19 80/23</p> <p>80 percent [3] 238/16 238/20 252/16</p> <p>834-2 [4] 147/6 148/15 148/16 185/7</p> <p>85 percent [3] 224/16 226/7 226/21</p> <p>8th [17] 94/16 94/18 94/25 95/19 103/9 104/2 104/13 104/22 105/17 105/24 107/15 107/18 108/1 108/5 109/19 109/20 110/7</p> <p>9</p> <p>90 [1] 1/4</p> <p>90-year-old [3] 241/22 270/4 270/9</p> <p>912-1 [2] 147/12 147/12</p> <p>99 percent [1] 278/13</p> <p>A</p> <p>AARON [1] 2/7</p> <p>abbreviation [1] 147/20</p> <p>ability [6] 98/22 125/13 129/14 179/18 194/19 268/5</p> <p>able [33] 17/9 19/5 19/17 27/7 34/22 38/1 38/13 43/8 43/10 46/16 46/21 56/21 65/15 67/4 79/1 79/24 98/22 115/16 115/17 130/11 149/18 157/25 169/23 177/9 179/4 179/5 203/3 237/20 238/12 240/21 261/8 265/12 270/5</p> <p>about [337]</p> <p>absentee [2] 22/9 293/24</p> <p>absolute [1] 109/7</p> <p>absolutely [8] 7/16 33/24 150/25 161/5 169/14 205/9 217/8 284/4</p> <p>abundance [1] 101/15</p> <p>AC [1] 18/19</p> <p>academia [6] 141/25 142/1 142/2 142/4 144/4 144/22</p> <p>academic [5] 142/5 142/18 143/9 144/24 205/15</p> <p>accept [1] 78/3</p> <p>acceptance [17] 47/15 47/19 57/14 73/4 94/24 95/9 95/10 97/21 103/10 103/11 103/15 108/2 108/4 132/4 132/11 132/14 133/2</p> <p>accepting [1] 78/22</p> <p>access [49] 11/5 11/13 11/21 11/22 12/13 12/14 12/25 27/7 27/13 28/19 28/23 29/8 29/13 32/18 36/22 38/1</p>

<p>A</p> <p>access... [33] 38/11 83/1 83/11 96/9 97/12 98/2 98/25 99/1 99/8 99/13 101/6 108/25 109/6 110/3 110/19 110/23 111/22 112/1 112/17 114/8 114/13 114/19 114/23 115/8 115/8 115/13 115/25 116/5 117/8 119/15 121/24 129/24 262/24</p> <p>accessed [3] 99/21 130/8 130/9</p> <p>accessibility [2] 230/22 272/8</p> <p>accessible [1] 24/19</p> <p>accessing [1] 37/24</p> <p>accommodation [1] 295/19</p> <p>according [2] 252/11 252/16</p> <p>account [1] 229/24</p> <p>accountable [1] 181/23</p> <p>accounted [1] 20/6</p> <p>accumulated [1] 162/19</p> <p>accuracy [14] 23/18 36/15 36/17 38/23 40/25 119/3 119/6 119/25 120/1 120/5 127/23 127/25 147/23 239/22</p> <p>accurate [10] 42/25 43/22 105/16 128/19 145/4 145/5 160/15 195/17 256/12 262/12</p> <p>accurately [1] 235/23</p> <p>accusation [1] 277/13</p> <p>accused [2] 278/6 278/10</p> <p>accustomed [1] 170/22</p> <p>acknowledged [3] 12/9 12/10 88/2</p> <p>acronym [2] 11/18 30/10</p> <p>across [7] 161/8 161/13 166/13 176/12 180/14 183/22 202/7</p> <p>Act [1] 14/2</p> <p>acting [1] 100/18</p> <p>action [4] 106/15 133/5 134/15 243/8</p> <p>actions [2] 107/13 112/11</p> <p>activate [1] 32/16</p> <p>activation [1] 12/15</p> <p>active [2] 119/2 168/14</p> <p>activities [2] 12/24 121/23</p> <p>activity [1] 122/1</p> <p>actors [2] 175/18 260/25</p> <p>actual [8] 25/13 247/18 248/14 248/17 248/21 248/23 249/1 251/10</p> <p>actually [43] 10/14 13/6 15/7 18/16 18/25 26/11 26/11 45/4 46/2 48/13 51/7 52/3 54/7 157/24 162/22 163/25 172/3 179/17 190/1 206/13 208/11 208/20 209/11 216/24 217/1 219/1 228/22 229/19 230/1 236/23 248/13 252/2 260/25 261/13 263/9 275/8 280/2 280/11 281/2 282/4 282/20 284/22 295/7</p> <p>ADAM [1] 2/9</p> <p>adapts [1] 164/15</p> <p>add [12] 16/19 107/22 148/8 157/9 158/14 160/19 181/7 188/23 189/11 207/18 225/22 260/2</p> <p>add-on [1] 207/18</p> <p>added [4] 16/7 16/9 16/25 294/18</p> <p>adding [2] 16/5 294/10</p> <p>addition [10] 56/3 58/5 65/22 66/5 69/9 78/14 114/25 159/9 167/10 273/11</p> <p>additional [19] 29/14 49/4 56/4 57/2 64/15 64/20 66/10 66/14 66/18 67/1 67/5 72/18 73/14 100/11 182/6 182/8 193/1 287/12 294/19</p>	<p>additionally [1] 180/10</p> <p>address [8] 64/5 102/4 148/25 189/14 197/13 285/23 290/6 291/9</p> <p>addressed [2] 186/23 189/15</p> <p>addresses [1] 190/1</p> <p>addressing [1] 102/7</p> <p>adds [2] 13/13 268/25</p> <p>ADIDA [58] 4/15 6/19 136/23 137/8 137/13 137/16 137/20 138/4 138/20 140/9 140/20 144/18 145/7 145/19 145/22 146/8 147/24 148/12 150/23 152/10 163/17 167/19 174/13 174/24 177/13 178/6 184/20 186/11 187/13 192/13 193/4 193/18 196/14 196/22 197/7 199/6 199/11 204/24 210/20 219/6 220/18 227/24 242/25 243/15 247/10 250/2 253/25 255/7 260/1 260/22 262/11 264/11 267/8 268/10 273/23 274/15 274/24 277/21</p> <p>Adida's [4] 186/6 193/9 196/25 289/14</p> <p>adjacent [1] 190/3</p> <p>adjourned [1] 296/8</p> <p>administration [5] 39/14 291/19 291/20 293/9 293/23</p> <p>administrator [1] 179/23</p> <p>admissibility [1] 189/13</p> <p>admissible [1] 73/21</p> <p>admit [7] 88/8 89/20 146/14 146/20 150/16 237/6 279/1</p> <p>admitted [2] 150/21 264/3</p> <p>advance [1] 202/22</p> <p>advanced [9] 35/25 36/1 36/4 36/6 40/24 41/1 41/4 256/9 257/21</p> <p>adverse [1] 275/23</p> <p>advice [1] 281/10</p> <p>advise [2] 38/24 197/11</p> <p>advised [3] 52/16 52/20 164/21</p> <p>advisories [1] 64/18</p> <p>advisory [3] 64/24 80/9 89/21</p> <p>advocates [3] 271/14 272/15 276/1</p> <p>affect [5] 189/24 208/25 210/8 264/20 288/6</p> <p>affected [3] 258/3 258/15 259/18</p> <p>affecting [1] 261/13</p> <p>affects [2] 214/13 249/23</p> <p>affidavit [1] 147/13</p> <p>affidavits [3] 190/14 197/8 197/12</p> <p>affirmative [3] 99/19 121/15 123/23</p> <p>affirmatively [1] 124/6</p> <p>after [47] 1/6 8/22 12/19 14/1 37/13 40/12 40/12 47/9 54/6 73/14 94/1 94/19 99/5 99/6 105/15 110/19 111/12 113/7 128/5 129/17 130/12 133/20 134/4 134/5 137/17 141/15 141/20 141/22 141/24 144/4 151/14 156/24 164/14 173/20 177/6 177/8 191/25 192/1 242/3 274/1 275/20 281/11 289/1 290/8 292/24 293/2 296/1</p> <p>aftermath [1] 256/25</p> <p>afternoon [10] 5/25 74/23 74/24 137/20 204/24 204/25 242/25 243/1 264/11 295/24</p> <p>afterwards [2] 153/6 282/4</p> <p>again [43] 25/1 27/4 34/19 36/2 38/24 47/3 57/14 66/25 72/21 74/17 79/16 89/6 97/5 98/13 99/23 104/6 110/14 115/11 117/24 117/25 121/19 127/9 131/23 133/20 145/11 160/16 192/2</p>	<p>195/20 204/11 209/15 209/18 212/4 213/2 214/25 242/5 246/2 253/8 254/9 255/1 260/21 272/15 276/5 288/7</p> <p>against [8] 57/20 123/11 123/12 147/16 185/15 186/14 189/19 215/2</p> <p>age [3] 242/11 256/9 257/21</p> <p>agency [1] 133/17</p> <p>aggregated [1] 209/2</p> <p>ago [11] 77/14 91/19 104/18 139/22 192/6 196/20 196/22 196/22 256/15 256/24 283/6</p> <p>agree [39] 84/8 104/22 129/14 130/17 140/23 190/7 203/7 204/5 222/21 222/25 223/11 229/4 230/8 234/22 235/17 238/1 238/8 238/13 238/20 239/21 240/18 241/3 241/10 241/20 246/13 253/1 253/1 253/12 256/3 262/11 262/13 266/1 266/3 269/20 269/24 273/1 284/12 285/2 294/21</p> <p>agreed [11] 133/6 172/5 186/24 188/1 188/3 188/8 189/6 190/6 195/12 212/16 246/9</p> <p>aha [1] 156/20</p> <p>ahead [18] 40/17 52/14 53/13 63/17 70/24 72/19 81/7 83/13 97/12 107/22 114/4 127/6 178/4 178/4 260/7 271/20 277/17 289/11</p> <p>AIDED [1] 1/21</p> <p>akin [1] 224/23</p> <p>AL [2] 1/4 1/6</p> <p>Alabama [1] 72/1</p> <p>alarm [2] 91/4 241/15</p> <p>alarming [1] 85/17</p> <p>albeit [1] 60/16</p> <p>alert [2] 218/13 218/15</p> <p>Alex [5] 64/6 200/20 281/11 285/4 285/12</p> <p>alignment [1] 127/14</p> <p>all [221] 5/4 6/25 8/9 15/17 17/5 20/6 20/18 21/24 22/18 24/8 26/23 29/22 30/3 34/10 35/18 36/1 36/5 36/12 36/13 45/15 45/24 48/24 52/1 53/10 53/23 54/4 55/25 56/1 57/8 58/13 60/13 60/17 60/20 61/8 61/10 62/9 64/3 64/24 67/14 67/16 68/9 68/16 68/19 71/4 71/5 71/6 72/7 72/13 74/14 77/5 79/2 80/12 84/9 85/1 85/5 87/3 88/15 89/25 90/6 90/19 93/3 95/11 96/1 102/5 103/11 104/9 105/6 106/20 108/9 112/14 113/4 113/5 113/8 115/18 117/20 118/7 118/12 119/13 128/19 131/3 133/8 133/25 137/2 142/14 142/18 143/10 143/17 150/7 150/12 150/21 150/23 151/8 151/8 151/13 151/14 152/18 152/19 153/4 153/19 154/12 154/14 155/3 157/5 157/6 160/10 160/11 160/21 160/23 161/8 161/8 161/13 161/16 161/17 162/9 162/9 162/17 162/18 162/19 163/7 164/8 164/9 164/14 164/14 165/11 166/24 168/15 172/2 172/4 172/11 173/2 173/6 173/7 175/15 175/22 179/1 179/17 182/9 184/19 186/8 192/13 195/12 195/21 196/15 197/7 198/3 198/5 198/22 199/11 202/7 202/24 203/1 204/4 205/20 206/24 214/3 215/18 220/5 224/10 225/24 226/1 228/17 229/4 230/20 232/10 232/10 232/14 233/2 234/2 235/24</p>
--	--	---

<p>A</p> <p>all... [52] 236/6 236/16 239/4 240/3 241/3 242/10 242/16 243/23 244/6 244/24 246/25 247/7 248/11 249/20 249/23 250/14 251/11 252/4 252/13 255/7 255/19 258/14 260/5 262/14 264/3 266/4 266/20 268/2 268/25 271/7 272/6 276/2 276/6 278/18 278/21 278/23 279/22 281/2 281/5 284/4 285/21 287/6 287/13 287/23 288/10 288/13 288/21 288/25 294/7 294/23 295/3 295/18</p> <p>alleged [1] 200/15</p> <p>allow [13] 37/9 48/2 51/1 52/13 67/22 115/10 149/17 197/18 202/5 220/23 221/1 253/13 262/17</p> <p>allowed [9] 17/25 73/14 78/10 78/10 106/1 171/20 191/6 191/20 191/22</p> <p>allowing [2] 62/22 222/19</p> <p>allows [6] 151/1 151/4 156/18 157/10 158/17 201/23</p> <p>ALLOY [1] 3/6</p> <p>alma [1] 141/15</p> <p>almost [12] 59/18 104/18 150/10 153/4 212/22 238/16 242/10 257/1 260/1 260/19 262/9 278/23</p> <p>alone [1] 201/10</p> <p>along [4] 30/15 31/2 54/12 270/21</p> <p>already [24] 48/15 66/8 72/10 80/5 85/9 88/2 89/21 91/7 97/6 98/8 98/14 103/16 105/11 122/8 122/10 122/18 148/7 180/10 195/7 197/18 217/16 246/25 265/24 270/13</p> <p>also [59] 13/9 20/4 21/8 22/10 24/11 27/1 28/19 31/23 34/12 34/14 36/18 50/1 55/13 58/5 66/21 66/23 68/4 69/7 70/7 70/7 70/10 71/9 73/7 82/25 90/2 96/13 106/13 120/20 141/16 142/10 144/8 147/13 148/21 152/22 159/16 164/21 174/19 176/9 182/5 184/2 186/7 186/10 188/22 196/3 203/18 213/17 224/14 230/18 236/1 236/17 240/7 241/5 250/1 262/18 273/12 276/8 285/17 286/11 290/20</p> <p>alteration [1] 129/24</p> <p>altered [1] 115/22</p> <p>alternative [1] 121/5</p> <p>although [1] 205/19</p> <p>always [13] 33/7 59/11 92/1 128/25 153/4 155/11 164/22 231/3 231/16 231/17 261/11 275/2 277/23</p> <p>am [32] 5/17 7/15 9/7 37/2 39/18 53/4 59/5 60/8 60/14 70/11 70/15 72/13 92/1 117/5 138/6 141/1 141/7 144/14 144/25 149/18 169/7 172/10 186/17 201/18 217/8 225/24 229/20 233/14 244/7 246/17 257/2 260/11</p> <p>amazing [1] 150/25</p> <p>ambush [1] 104/23</p> <p>amended [1] 196/2</p> <p>AMERICA [1] 297/3</p> <p>among [3] 64/13 139/21 233/17</p> <p>amount [8] 14/16 20/8 21/7 55/17 56/19 276/7 280/9 282/24</p> <p>AMY [1] 1/11</p> <p>analogy [1] 148/21</p> <p>ANDREU [1] 2/10</p>	<p>ANDREU-VON [1] 2/10</p> <p>Android [4] 80/14 80/15 80/23 81/2</p> <p>anew [1] 5/16</p> <p>Angeles [2] 279/15 279/18</p> <p>angry [2] 278/5 278/12</p> <p>Annabelle [1] 33/7</p> <p>Annabelle's [1] 33/7</p> <p>another [20] 7/1 16/20 18/11 22/6 26/20 27/4 47/14 65/10 88/13 129/6 143/21 146/19 165/21 179/24 181/2 214/24 249/16 250/15 286/18 291/16</p> <p>answer [32] 27/7 30/19 67/14 73/11 77/16 104/15 111/14 111/21 126/22 151/22 184/10 207/13 208/11 208/16 209/20 212/13 213/9 222/11 228/22 229/2 236/20 237/20 239/5 240/11 255/25 256/12 258/19 267/20 278/25 280/14 280/18 287/12</p> <p>answered [8] 5/16 72/10 119/18 239/4 240/4 245/23 247/20 247/21</p> <p>answers [2] 52/8 62/1</p> <p>anticipate [1] 136/23</p> <p>anticipated [5] 205/17 257/25 260/21 293/16 293/22</p> <p>anticipating [1] 6/7</p> <p>antsy [1] 288/20</p> <p>any [109] 1/8 5/17 13/1 18/2 18/25 29/4 38/8 38/17 39/1 39/10 44/17 48/20 56/17 57/6 58/6 60/17 61/25 63/2 63/9 65/6 67/12 68/3 71/22 72/16 77/24 79/2 80/1 80/20 80/25 86/22 89/9 91/4 96/7 96/9 96/9 97/11 97/12 98/2 101/3 104/25 106/17 107/22 110/1 110/2 110/3 110/24 111/7 111/11 111/11 111/22 112/16 112/20 113/19 114/7 114/12 117/7 119/16 122/13 133/22 134/11 139/24 143/22 151/23 152/8 152/14 153/15 156/2 163/22 168/14 175/1 175/11 177/20 182/4 185/15 186/3 189/19 190/10 190/23 191/2 191/13 195/14 201/21 205/15 206/6 207/4 207/11 208/7 208/20 209/3 212/13 213/24 218/13 225/22 226/9 226/15 230/4 233/23 236/10 248/5 260/12 261/22 263/24 267/9 270/25 275/24 280/25 281/2 287/12 291/15</p> <p>anybody [4] 75/15 104/23 114/6 114/11</p> <p>anymore [2] 59/7 173/6</p> <p>anyone [10] 7/5 17/21 53/17 96/8 102/6 102/13 110/2 113/6 133/16 206/14</p> <p>anything [44] 10/8 18/19 18/21 52/20 53/10 58/18 61/16 62/12 62/14 68/4 78/7 79/12 95/4 100/7 102/19 102/22 107/23 110/7 110/18 111/8 111/12 114/18 116/6 117/12 121/13 122/22 133/19 146/2 180/10 191/25 196/22 198/12 208/3 213/6 221/2 233/2 262/18 275/24 277/16 280/25 282/19 285/6 286/3 293/13</p> <p>anyway [4] 67/19 196/12 286/22 295/2</p> <p>anywhere [3] 204/11 206/8 249/2</p> <p>apart [5] 57/1 64/15 66/4 109/14 182/4</p> <p>apologize [8] 6/11 45/18 101/12 182/12 184/21 250/15 255/4 276/15</p> <p>apparatus [1] 10/3</p> <p>apparently [1] 131/17</p>	<p>appear [1] 100/7</p> <p>appeared [1] 110/10</p> <p>appears [6] 58/4 73/25 108/7 129/10 145/4 147/6</p> <p>applicable [2] 151/20 198/6</p> <p>application [21] 10/20 10/21 10/24 11/13 29/24 30/9 30/12 30/15 30/17 51/25 54/18 54/21 55/6 55/13 55/21 73/1 73/1 76/1 76/15 76/17 115/17</p> <p>applications [18] 18/25 30/6 48/7 48/9 48/11 49/7 50/4 51/17 53/1 54/10 55/5 55/16 57/17 57/19 57/21 73/3 77/7 77/24</p> <p>applied [1] 24/20</p> <p>applies [1] 177/4</p> <p>apply [3] 31/10 166/25 203/19</p> <p>applying [1] 281/17</p> <p>appointment [1] 288/18</p> <p>appreciate [6] 8/25 91/1 131/10 272/3 294/10 295/19</p> <p>approach [11] 8/4 84/25 87/2 88/9 88/11 144/15 153/8 156/6 156/6 166/23 246/19</p> <p>approaches [1] 157/13</p> <p>appropriate [8] 28/22 32/18 73/21 109/17 110/22 186/25 195/11 198/22</p> <p>appropriately [2] 78/16 224/16</p> <p>approval [1] 20/12</p> <p>approved [1] 40/6</p> <p>approximately [4] 20/22 55/2 56/13 244/2</p> <p>April [4] 87/11 102/16 102/17 102/18</p> <p>April 23rd [1] 87/11</p> <p>April 7 [3] 102/16 102/17 102/18</p> <p>apropos [1] 5/11</p> <p>are [423]</p> <p>area [4] 197/10 204/4 230/6 256/15</p> <p>areas [2] 142/15 164/9</p> <p>aren't [3] 64/24 211/25 236/9</p> <p>argued [1] 195/5</p> <p>argument [3] 194/23 194/24 235/5</p> <p>argumentative [1] 257/14</p> <p>arise [2] 215/19 271/11</p> <p>arisen [2] 218/9 218/10</p> <p>Arizona [6] 85/24 86/22 86/24 87/5 88/1 91/3</p> <p>Arlo [20] 140/2 160/20 161/2 161/22 161/22 162/5 162/11 163/1 163/11 168/14 176/23 206/20 206/21 207/4 207/7 207/11 266/5 266/7 266/11 266/19</p> <p>arm's [1] 193/13</p> <p>around [10] 104/16 147/10 155/19 164/22 165/24 195/1 225/5 259/17 259/22 281/12</p> <p>arrested [1] 260/6</p> <p>arrived [5] 109/3 109/12 109/19 109/20 132/3</p> <p>arrives [1] 12/5</p> <p>arriving [1] 57/13</p> <p>art [1] 188/25</p> <p>arthritis [1] 230/24</p> <p>article [4] 87/5 87/21 88/13 88/14</p> <p>articulated [1] 190/13</p> <p>artificial [1] 235/5</p> <p>as [252] 5/12 6/15 7/11 8/22 10/13 10/16 11/1 15/6 20/15 21/18 22/10 23/2 23/3 23/4 25/2 29/24 30/20 30/20 32/5</p>
--	--	--

<p>A</p> <p>as... [233] 38/9 41/11 43/2 43/3 43/4 44/23 45/16 45/19 49/11 50/1 54/15 57/7 61/6 61/6 61/21 62/6 62/6 62/21 63/5 63/5 63/6 64/17 65/5 65/18 66/21 68/1 68/2 68/22 74/17 74/17 75/8 76/23 78/15 79/2 79/15 79/24 80/2 83/4 83/6 87/16 87/21 88/4 88/4 89/1 89/10 89/11 89/16 90/21 99/7 103/22 104/1 105/14 105/18 106/10 106/11 106/21 107/11 111/16 111/16 116/21 120/20 121/6 126/16 127/18 128/25 128/25 130/3 130/7 136/3 136/3 137/17 141/3 141/4 142/8 142/8 143/2 143/12 144/18 144/24 145/7 145/15 145/15 148/6 148/6 148/19 149/9 149/9 149/15 150/6 150/7 151/19 153/22 153/22 153/22 153/23 154/8 154/8 154/9 154/9 155/9 155/9 156/3 156/3 157/7 158/3 158/15 158/15 160/13 162/6 162/13 162/19 162/24 163/4 163/24 171/14 171/15 171/15 171/20 171/21 172/2 172/20 172/20 173/24 173/24 178/25 182/15 185/12 186/10 187/4 187/4 187/14 188/13 190/13 191/6 191/6 191/6 191/24 192/13 192/19 192/19 192/23 193/11 194/20 195/5 196/4 196/14 199/1 200/7 204/8 207/8 207/23 210/3 210/20 211/1 211/1 212/18 212/24 214/18 214/25 216/17 219/5 219/21 219/21 219/22 219/22 219/25 220/25 221/23 221/23 223/21 230/6 230/6 230/9 231/1 231/4 232/1 232/9 233/25 235/10 236/12 237/7 237/16 238/4 240/7 241/17 242/10 244/13 244/13 244/22 245/2 246/22 248/22 249/16 253/9 254/6 254/10 254/14 254/14 256/9 257/14 258/13 259/5 259/14 264/15 267/15 267/23 268/2 268/22 268/22 272/5 272/12 273/11 274/2 274/3 275/1 278/18 279/20 280/16 281/18 281/18 286/16 286/16 289/14 289/15 291/14 291/19 292/1 292/7 292/7 292/18 293/22 294/17 295/2</p> <p>aside [1] 274/6</p> <p>ask [44] 24/23 49/1 75/15 79/18 80/4 89/12 90/10 97/24 106/7 110/14 112/7 112/14 114/7 114/11 115/11 116/7 116/9 116/12 116/14 117/1 117/18 118/15 125/7 165/9 168/23 169/7 169/7 170/7 177/3 187/13 188/15 190/19 198/8 202/11 219/17 237/24 243/16 246/2 252/25 260/23 261/21 274/17 281/10 284/5</p> <p>asked [36] 53/2 62/9 63/7 70/22 90/12 102/16 102/18 103/2 103/22 115/5 129/7 132/6 141/5 167/9 168/12 180/13 181/6 220/16 239/4 240/4 243/16 245/22 247/3 247/19 247/24 256/14 264/16 264/17 264/19 267/8 268/10 270/4 270/25 274/24 275/20 283/13</p> <p>asking [26] 48/22 50/12 50/13 58/18 64/12 69/17 75/19 78/25 130/17 185/10 190/10 195/9 219/4 222/1 236/11 240/6 240/18 242/3 242/5 242/7 250/10 258/18 264/22 282/11 282/15 284/6</p> <p>asks [4] 64/9 231/19 275/1 277/23</p>	<p>aspect [3] 48/14 254/21 254/22</p> <p>aspects [2] 22/21 193/18</p> <p>assembled [1] 282/24</p> <p>assembling [1] 51/17</p> <p>Assembly [1] 21/10</p> <p>assertions [1] 284/14</p> <p>assessment [2] 227/22 260/10</p> <p>assigned [5] 15/10 17/2 17/4 23/13 109/2</p> <p>assist [2] 37/23 180/6</p> <p>assistance [1] 120/13</p> <p>assisting [2] 69/8 70/7</p> <p>associated [6] 25/23 32/24 35/24 36/10 90/15 126/1</p> <p>association [1] 34/12</p> <p>assume [3] 56/15 122/21 214/12</p> <p>assumed [1] 101/9</p> <p>assumes [1] 126/19</p> <p>assuming [10] 17/13 80/24 210/3 212/2 212/3 212/5 225/17 258/23 260/3 286/24</p> <p>assumption [4] 211/24 214/21 215/8 259/3</p> <p>assurance [1] 268/4</p> <p>assure [2] 199/6 208/19</p> <p>astray [1] 136/6</p> <p>ATLANTA [11] 1/2 1/25 5/2 95/15 99/3 101/15 112/1 112/12 166/18 297/8 297/10</p> <p>attach [1] 8/2</p> <p>attached [5] 1/4 8/3 13/21 85/22 165/15</p> <p>attaching [1] 1/7</p> <p>attachment [1] 226/9</p> <p>attack [10] 126/17 152/18 215/1 235/1 235/2 235/2 238/18 259/14 260/4 261/14</p> <p>attacker [6] 215/2 256/21 259/1 259/6 259/12 260/3</p> <p>attacking [1] 274/1</p> <p>attacks [4] 200/20 200/23 238/19 261/12</p> <p>attempt [3] 112/1 115/21 117/7</p> <p>attempted [7] 101/13 107/15 112/21 115/8 115/25 116/16 273/9</p> <p>attempting [1] 273/9</p> <p>attention [2] 62/5 237/6</p> <p>attorney [2] 74/25 287/8</p> <p>attractable [1] 158/12</p> <p>audio [1] 22/7</p> <p>audit [120] 13/14 13/14 13/15 13/21 13/25 87/6 129/15 129/20 138/17 138/17 139/1 139/9 139/10 140/16 146/13 149/16 150/24 150/25 151/10 151/15 152/1 152/5 152/7 153/16 155/7 155/9 155/12 156/17 158/11 158/17 159/1 160/5 160/5 160/9 161/6 161/8 161/12 162/1 162/8 162/20 163/22 164/4 164/18 164/22 164/24 168/21 169/16 169/20 170/2 170/6 170/8 170/18 171/7 171/12 171/13 171/21 171/22 172/6 173/4 173/5 173/9 173/14 173/20 174/8 174/15 175/1 175/24 176/16 176/24 177/4 177/16 177/18 178/25 179/5 180/1 181/5 181/7 181/22 182/3 182/16 183/21 184/2 184/17 187/13 188/13 188/14 199/17 199/18 201/6 201/13 203/11 204/1 204/16</p>	<p>210/23 211/15 211/19 212/18 213/12 218/24 219/24 220/3 221/7 221/16 222/7 222/15 222/20 233/1 233/5 233/12 233/20 233/23 233/25 234/3 238/14 248/22 259/24 266/15 266/17 266/20 280/16</p> <p>audited [6] 167/17 168/20 180/24 200/8 203/6 216/6</p> <p>auditing [25] 143/24 143/25 145/8 145/13 145/15 145/25 145/25 146/7 146/9 161/20 163/3 167/10 167/14 169/2 172/25 180/25 181/13 188/6 201/14 201/18 201/21 202/9 202/15 215/6 223/12</p> <p>AuditMark [3] 123/14 123/15 123/17</p> <p>audits [78] 64/19 129/17 139/12 139/15 139/16 139/21 140/3 140/7 140/14 140/19 141/6 146/9 147/22 147/25 148/4 151/19 151/22 151/23 153/2 153/5 153/19 153/20 153/23 154/3 155/5 155/14 155/19 155/22 156/2 157/5 158/1 158/2 160/21 160/21 160/24 163/22 168/15 170/1 170/13 171/10 175/14 176/4 176/8 176/22 177/1 178/15 179/14 179/19 180/7 182/6 182/9 186/14 189/1 189/6 193/3 193/11 199/13 200/22 201/16 201/17 202/1 202/4 204/13 207/14 207/17 211/18 217/20 219/9 221/20 222/17 233/17 237/18 238/8 238/8 244/11 266/10 273/18 293/25</p> <p>August [4] 186/13 253/6 254/1 290/25</p> <p>August 28th [2] 253/6 254/1</p> <p>authentication [1] 89/4</p> <p>authored [1] 143/22</p> <p>authorized [1] 197/14</p> <p>authorizing [2] 129/8 129/8</p> <p>automatically [1] 56/24</p> <p>available [11] 6/21 15/23 36/6 44/15 77/25 100/4 118/22 122/3 132/6 271/10 280/21</p> <p>avoid [3] 190/9 197/2 253/18</p> <p>aware [37] 33/18 38/8 39/10 39/12 39/16 47/6 47/8 58/20 86/24 90/11 90/15 116/18 117/4 117/5 117/7 135/2 135/13 135/15 193/21 205/9 225/3 225/21 225/24 236/22 237/4 237/5 244/25 246/17 247/4 248/20 248/24 249/1 250/7 258/8 266/6 266/12 267/14</p> <p>awareness [1] 61/19</p> <p>away [4] 117/14 165/25 187/8 229/12</p> <p>awhile [2] 153/14 260/16</p> <p>B</p> <p>B-A-R-N-E-S [1] 8/19</p> <p>B-E-N-J-A-M-I-N [1] 137/14</p> <p>B-I-O-S [2] 50/16 50/17</p> <p>BA [1] 70/13</p> <p>bachelor's [4] 70/5 70/9 70/10 141/10</p> <p>back [77] 6/21 9/1 10/24 13/11 26/13 26/18 29/22 37/14 39/7 41/15 43/10 46/16 46/17 50/20 50/22 57/1 63/25 81/7 90/7 93/9 94/10 96/1 97/20 99/3 101/15 106/6 106/19 106/21 107/1 108/9 110/9 111/25 112/5 112/12 113/11 114/2 115/15 115/21 115/24 122/3 122/7 122/17 129/6 130/14 132/7 132/9 133/11 136/25 140/21 149/1</p>
---	--	--

<p>B</p> <p>back... [27] 150/11 155/13 161/19 161/25 163/11 163/16 163/17 168/23 171/17 178/8 181/15 184/13 194/18 199/24 203/12 209/22 212/8 212/14 215/23 244/5 260/16 269/13 270/16 276/6 281/3 290/8 293/5</p> <p>background [5] 17/24 70/3 70/4 70/12 141/9</p> <p>backup [1] 29/20</p> <p>backwards [1] 233/8</p> <p>bad [5] 167/5 210/12 210/13 234/5 260/25</p> <p>bag [16] 25/4 25/4 25/9 25/25 26/1 26/1 26/4 27/8 27/11 27/15 27/17 27/18 27/18 27/19 27/21 29/12</p> <p>bags [4] 25/6 25/8 25/20 25/23</p> <p>ballgame [1] 179/20</p> <p>ballot [312]</p> <p>Ballot 57 [1] 157/14</p> <p>ballot-build [1] 82/16</p> <p>ballot-building [8] 18/8 18/11 19/1 19/20 37/14 37/18 118/19 118/20</p> <p>ballot-marking [16] 11/15 11/18 11/23 11/24 12/20 54/7 118/17 128/25 151/20 154/20 155/6 185/17 189/21 200/16 230/17 230/18</p> <p>ballot-proofing [1] 18/12</p> <p>ballot-scanning [1] 35/20</p> <p>ballot-specific [1] 218/22</p> <p>balloting [1] 293/23</p> <p>ballots [193] 10/23 12/23 13/11 17/16 17/21 17/25 18/3 19/13 19/13 21/7 21/24 22/5 22/10 22/18 23/6 23/8 35/23 35/24 36/10 42/15 46/5 46/15 48/2 48/6 56/5 56/18 118/3 118/18 119/16 120/17 122/8 122/9 122/20 123/3 125/10 151/2 151/2 151/6 151/8 151/14 151/16 151/21 152/7 152/14 153/10 155/2 155/21 156/4 156/5 156/7 156/8 156/14 156/20 157/6 157/14 157/16 157/20 158/3 158/7 158/8 158/9 158/17 158/20 158/21 158/23 159/6 159/7 159/10 159/20 160/6 160/6 160/7 160/10 160/15 160/17 161/10 161/13 161/14 161/17 162/9 162/10 162/15 162/16 162/18 163/8 163/13 164/1 164/2 164/10 165/12 165/14 165/17 165/22 165/23 165/24 166/3 166/20 167/1 167/16 168/5 169/24 170/3 171/16 171/23 172/2 172/12 172/16 172/17 173/2 178/19 179/16 179/16 179/20 182/9 182/25 183/14 183/14 183/19 183/19 185/16 189/20 199/16 199/18 199/21 200/3 200/6 200/8 200/9 203/3 203/4 203/24 204/8 205/20 211/15 215/1 218/1 218/5 218/8 218/8 218/13 218/17 222/23 223/9 223/15 223/23 224/4 224/16 224/17 225/10 229/7 229/11 229/21 230/19 230/21 231/4 235/4 235/15 236/13 236/23 237/10 237/19 238/18 238/21 239/11 239/18 239/19 239/20 240/19 240/22 240/25 249/7 250/20 251/11 251/18 251/22 254/5 255/15 256/16 257/3 258/14 259/2 272/10 275/2 277/24 278/23 280/3 282/3 285/15 287/17 287/17</p>	<p>291/21 292/24 293/8</p> <p>band [1] 165/24</p> <p>banging [1] 90/24</p> <p>bank [1] 25/4</p> <p>Banks [2] 36/3 36/8</p> <p>barcodes [1] 268/22</p> <p>BARNES [75] 4/4 6/3 7/22 7/25 8/11 8/18 8/21 8/25 9/8 14/4 18/5 25/18 27/10 31/2 33/14 34/3 37/12 37/20 38/4 46/2 46/14 48/1 48/21 49/3 49/20 52/16 52/25 53/19 58/18 59/1 60/5 60/24 63/21 67/4 68/22 69/17 70/25 71/15 72/18 72/21 73/10 74/6 74/23 78/16 81/9 85/11 85/16 87/5 87/13 89/5 89/6 89/14 90/4 90/10 97/13 99/25 104/24 106/19 106/21 106/25 107/11 109/15 111/4 111/15 111/19 113/11 114/6 114/15 115/1 115/13 117/24 127/9 131/10 134/3 135/19</p> <p>Barnes' [2] 73/14 104/14</p> <p>barrel [1] 180/4</p> <p>Bartow [6] 182/8 182/11 182/11 182/12 289/2 290/11</p> <p>BA's [1] 70/14</p> <p>base [6] 85/22 151/9 152/7 173/4 205/19 220/17</p> <p>based [16] 15/13 74/1 94/16 131/17 141/18 151/5 155/4 156/3 161/9 202/15 205/15 211/15 220/12 220/19 285/17 287/14</p> <p>baseline [2] 188/13 189/12</p> <p>bash [1] 178/12</p> <p>basic [1] 200/15</p> <p>basically [10] 20/23 22/14 57/1 113/5 136/5 172/5 181/11 197/23 198/21 294/18</p> <p>basis [13] 53/10 64/24 78/19 78/21 79/9 170/15 179/6 186/6 195/23 195/23 238/22 260/12 291/10</p> <p>batch [40] 155/24 156/5 158/1 158/2 158/3 158/4 158/5 160/5 160/9 161/18 161/19 162/15 164/1 164/2 165/7 165/11 165/16 165/18 165/19 165/20 165/25 166/3 166/4 166/5 168/8 171/11 171/11 175/24 176/4 176/22 176/24 177/17 177/18 178/17 179/5 179/7 179/18 201/22 202/4 207/14</p> <p>Batch 1755 [1] 158/5</p> <p>batches [31] 156/4 158/2 158/6 158/9 158/10 158/24 160/2 160/8 160/10 161/25 162/11 162/15 163/2 163/5 163/14 163/15 165/5 165/22 166/1 166/7 166/12 166/13 167/6 167/7 167/10 167/11 168/1 168/3 180/19 180/23 204/7</p> <p>battery [1] 32/4</p> <p>be [347]</p> <p>beaten [1] 127/12</p> <p>beautiful [1] 236/4</p> <p>Beaver [2] 116/9 116/10</p> <p>because [133] 6/24 7/1 11/3 15/18 22/3 24/17 24/19 25/24 36/6 36/21 41/23 42/22 43/22 44/18 45/13 53/12 53/15 53/24 56/9 59/16 59/21 62/8 62/20 67/13 72/14 75/11 87/21 89/21 90/23 95/3 101/17 101/24 105/11 106/17 107/1 108/23 109/12 109/13 109/15 122/6 122/13 126/2 138/2</p>	<p>139/17 148/9 151/11 152/7 153/3 156/25 157/2 157/5 157/19 159/6 167/1 167/5 172/11 173/5 174/12 174/20 175/18 177/4 178/18 178/25 181/13 185/20 188/20 189/9 189/14 190/19 191/20 191/24 192/4 192/4 193/7 194/14 194/17 195/21 196/19 197/12 200/1 201/5 201/22 204/16 208/12 209/7 211/3 212/19 213/3 214/15 215/25 216/2 217/19 219/10 221/23 222/2 222/7 224/9 224/24 225/10 234/18 237/24 238/2 239/12 240/21 240/24 241/11 243/7 246/3 248/6 259/23 261/7 261/11 262/17 262/18 265/2 268/21 269/5 274/19 276/9 280/13 280/24 281/22 283/2 284/17 287/18 290/11 290/19 291/7 291/10 292/23 294/22 294/24 295/15</p> <p>become [3] 59/9 91/24 259/4</p> <p>becomes [2] 124/17 189/9</p> <p>BEDARD [1] 3/5</p> <p>been [106] 8/22 9/4 23/11 24/18 29/24 30/1 34/18 34/21 39/12 41/23 41/24 42/11 42/12 42/15 42/16 45/13 49/7 57/8 63/11 65/1 65/2 65/15 69/7 70/22 91/9 93/22 95/23 96/7 97/11 98/21 99/21 101/4 101/9 103/16 109/8 109/9 109/15 110/1 110/19 115/20 115/22 119/22 122/9 122/10 122/18 122/20 122/23 125/17 127/25 129/23 132/10 133/4 134/4 137/17 138/24 140/17 140/17 141/3 141/5 142/25 143/15 143/20 144/9 144/22 146/3 146/8 153/4 153/5 156/25 157/13 158/3 168/16 170/12 174/8 180/15 180/19 185/25 189/10 191/11 192/14 193/21 199/12 217/16 218/7 224/21 225/1 232/22 243/6 243/10 246/21 253/12 254/5 256/23 271/1 279/18 285/1 289/15 289/20 291/4 291/7 291/23 291/24 292/17 292/18 294/10 294/14</p> <p>before [51] 1/11 17/25 22/21 23/17 48/20 52/8 63/18 84/15 87/13 89/24 90/7 93/18 97/8 97/20 99/5 99/6 102/14 102/16 105/15 125/11 132/13 136/20 140/20 140/24 142/24 150/16 153/9 157/1 157/3 165/4 181/7 181/22 182/16 184/20 185/25 191/8 199/21 205/14 217/16 228/8 228/23 235/14 236/24 243/3 247/10 251/14 255/11 264/4 279/22 292/17 297/10</p> <p>began [11] 20/21 24/1 26/18 40/10 40/12 42/18 50/2 57/9 69/14 142/20 177/15</p> <p>begin [13] 9/8 16/4 16/25 26/16 35/3 35/13 36/17 140/11 147/14 150/6 150/7 162/20 288/23</p> <p>beginning [9] 30/23 55/3 76/4 118/1 163/18 164/19 189/7 194/18 278/7</p> <p>begins [5] 63/19 162/4 162/8 163/21 181/7</p> <p>begrudgingly [1] 256/19</p> <p>begun [2] 177/13 199/4</p> <p>behalf [4] 2/22 107/5 280/8 281/23</p> <p>behaving [1] 229/8</p> <p>behavior [2] 153/6 251/8</p> <p>behind [1] 176/1</p> <p>being [60] 15/23 16/18 19/15 20/4</p>
---	--	--

<p>B</p> <p>being... [56] 21/19 31/21 41/10 42/20 49/16 54/18 55/6 56/10 61/17 62/24 67/3 72/4 78/17 78/19 78/21 86/24 90/25 93/25 95/20 99/24 101/8 104/1 110/10 126/5 126/16 130/18 140/25 141/1 143/5 146/8 154/18 159/3 163/9 163/9 163/9 163/10 168/20 169/11 170/8 175/5 180/24 190/9 196/4 213/6 218/2 238/13 243/17 246/24 260/11 270/5 271/9 275/20 279/5 283/13 286/17 293/22</p> <p>belief [4] 200/12 254/19 285/4 287/14</p> <p>believe [71] 9/5 20/23 26/19 34/1 39/21 39/21 40/1 40/2 40/14 41/7 43/16 47/9 47/22 55/2 55/18 57/9 67/17 70/4 70/5 70/15 73/17 74/12 75/11 75/13 75/21 75/23 75/23 75/24 79/13 83/24 86/19 97/13 97/24 101/4 101/5 105/25 112/9 113/19 114/25 115/14 116/16 120/14 121/12 123/7 129/7 129/12 131/1 132/13 132/18 135/6 145/18 149/23 164/20 164/21 173/3 187/16 194/2 216/7 216/13 222/18 223/3 223/18 232/21 239/24 245/12 257/20 269/10 272/19 288/19 288/23 289/1</p> <p>believed [1] 101/7</p> <p>believing [1] 238/22</p> <p>BELINFANTE [3] 3/4 3/6 63/6</p> <p>bell [1] 241/15</p> <p>Bellew [7] 69/4 69/24 69/25 71/1 71/7 105/25 107/14</p> <p>bells [2] 80/20 91/4</p> <p>below [2] 44/2 277/6</p> <p>BEN [2] 2/6 137/8</p> <p>bench [2] 1/10 276/9</p> <p>benefit [5] 120/23 145/2 147/5 176/2 189/19</p> <p>benefiting [1] 274/12</p> <p>benefits [6] 186/13 197/16 198/17 204/13 240/24 274/14</p> <p>BENJAMIN [3] 4/15 137/13 137/16</p> <p>Bernhard [7] 223/18 225/8 226/6 229/10 281/11 282/8 285/12</p> <p>Bernhard's [1] 285/4</p> <p>Bernhard-Alex [1] 281/11</p> <p>Bernhard-Haldeman [1] 282/8</p> <p>best [13] 9/16 25/3 32/3 32/4 37/6 38/24 159/1 163/6 242/2 269/11 272/21 273/6 292/19</p> <p>betrayed [1] 141/15</p> <p>better [19] 5/8 126/15 140/22 164/10 176/12 178/21 179/2 179/25 203/23 204/17 211/18 230/11 230/12 230/13 252/25 257/4 257/11 257/15 262/17</p> <p>between [25] 34/1 42/22 55/18 96/7 99/17 110/1 127/15 128/24 129/24 135/7 135/10 147/25 152/14 157/11 161/15 175/23 178/23 194/10 210/14 214/1 221/14 246/7 276/17 287/16 292/17</p> <p>beyond [13] 62/22 78/7 113/21 114/18 116/22 146/2 147/24 180/10 184/3 191/23 197/4 197/17 270/24</p> <p>bias [1] 273/9</p> <p>Bibb [2] 129/8 129/12</p> <p>Biden [6] 166/6 171/18 173/23 179/8</p>	<p>224/25 227/5</p> <p>big [9] 157/7 159/14 215/4 215/4 235/18 239/25 242/8 259/3 274/8</p> <p>bigger [1] 283/25</p> <p>binding [4] 104/5 106/10 107/7 164/4</p> <p>BIOS [10] 50/6 50/7 50/15 53/20 53/24 54/1 54/6 54/13 54/15 75/25</p> <p>bit [21] 5/19 10/5 17/7 24/2 36/23 44/13 113/13 149/18 178/20 181/17 182/15 203/11 206/13 209/5 210/17 213/2 222/22 239/8 276/14 278/6 285/17</p> <p>black [1] 202/25</p> <p>blame [1] 206/21</p> <p>blaming [1] 59/24</p> <p>blind [2] 180/17 180/18</p> <p>blindly [1] 182/22</p> <p>blooded [1] 60/18</p> <p>BMD [144] 12/1 12/2 12/4 12/18 12/20 12/22 14/5 22/11 22/13 22/14 22/22 22/24 22/25 23/1 23/7 23/21 23/22 34/9 34/9 34/14 34/16 34/23 35/2 38/10 38/12 39/7 39/10 41/5 41/17 41/19 42/7 42/8 44/2 44/14 44/15 44/16 44/18 44/19 44/22 45/3 45/3 45/5 45/10 45/12 45/13 45/19 45/21 46/19 46/20 46/25 54/14 54/17 54/18 54/19 54/20 55/1 56/15 57/24 58/21 58/25 72/24 73/2 75/22 76/12 76/13 77/19 82/15 118/21 121/2 121/19 121/21 121/23 122/2 122/8 122/19 122/19 123/10 124/3 124/14 124/15 124/15 124/17 124/19 125/1 126/19 127/15 129/3 200/9 201/3 202/15 208/24 212/1 215/11 216/10 216/24 222/23 223/3 223/8 223/9 223/15 224/17 227/24 229/8 229/12 229/17 230/21 230/22 231/4 231/12 231/24 231/25 234/13 235/22 238/24 239/10 239/16 239/18 239/19 242/12 245/8 254/20 258/23 259/18 259/19 264/24 264/25 265/2 268/16 270/5 271/10 271/15 271/16 272/7 272/9 275/3 277/24 278/17 278/24 281/11 283/20 285/19 287/17 290/19 291/4</p> <p>BMD-based [1] 202/15</p> <p>BMD-generated [2] 124/3 124/15</p> <p>BMDs [58] 23/6 34/4 36/14 36/17 41/25 42/16 48/2 48/6 54/10 54/11 55/25 56/5 56/18 71/10 71/12 76/14 119/2 119/14 120/3 120/9 148/23 149/2 149/12 155/3 217/25 225/15 232/9 232/10 232/14 235/2 235/8 238/19 244/22 244/24 245/1 256/15 259/9 259/16 269/22 270/17 272/7 273/10 273/11 274/24 275/21 278/18 278/21 279/22 283/8 284/8 285/17 288/9 289/20 293/11 293/14 294/3 294/4 294/9</p> <p>board [14] 14/23 14/25 43/16 47/8 47/12 47/22 132/5 132/14 133/2 164/25 169/4 173/10 175/14 183/22</p> <p>board's [1] 133/1</p> <p>boards [1] 14/25</p> <p>bolster [1] 175/8</p> <p>book [2] 36/20 194/2</p> <p>boot [2] 32/11 136/10</p> <p>booth [2] 251/8 265/2</p> <p>booting [1] 55/12</p> <p>boring [1] 155/17</p>	<p>Boston [1] 136/25</p> <p>both [20] 13/22 59/13 94/9 104/4 105/17 107/21 115/5 115/9 124/8 147/8 147/9 151/20 174/17 178/15 178/15 184/3 203/19 253/21 268/10 268/15</p> <p>bottom [4] 52/5 86/13 251/7 282/1</p> <p>bouncing [1] 105/6</p> <p>bound [2] 192/6 195/5</p> <p>box [9] 18/18 94/20 94/21 94/22 94/24 122/13 122/15 165/15 199/24</p> <p>BOYLE [1] 3/9</p> <p>BRAD [1] 1/6</p> <p>brainstormed [1] 181/18</p> <p>brand [1] 18/17</p> <p>brand-new [1] 18/17</p> <p>breach [1] 64/18</p> <p>breaches [2] 263/12 263/17</p> <p>break [13] 57/1 60/12 60/14 100/4 106/16 113/4 113/10 149/19 150/3 150/7 150/14 164/5 242/20</p> <p>Brianna [2] 69/10 70/11</p> <p>brief [16] 6/10 58/16 60/14 60/19 68/13 84/19 92/10 127/4 127/19 150/14 242/17 242/20 250/21 252/5 273/19 289/5</p> <p>briefly [10] 9/3 9/11 57/25 58/14 65/21 194/22 195/24 249/23 262/22 292/10</p> <p>bring [7] 59/21 94/10 101/14 106/19 112/12 171/17 190/22</p> <p>bringing [2] 140/8 193/17</p> <p>brings [1] 86/6</p> <p>broader [3] 63/12 64/2 230/2</p> <p>broadly [2] 139/1 199/3</p> <p>brought [11] 21/9 99/3 111/25 114/2 115/24 133/11 163/9 169/9 191/7 225/12 275/11</p> <p>BROWN [6] 2/15 2/15 4/8 4/11 117/18 126/20</p> <p>BRUCE [2] 2/15 2/15</p> <p>BRYAN [3] 3/7 3/7 103/18</p> <p>bubble [5] 211/9 218/18 218/19 236/13 236/15</p> <p>bubbles [4] 230/25 236/12 236/14 242/7</p> <p>Buell [1] 196/19</p> <p>Buell's [1] 196/2</p> <p>build [21] 14/10 17/9 17/21 17/25 22/7 22/8 22/11 22/12 31/12 57/1 81/16 82/9 82/16 82/19 82/22 143/3 164/21 181/19 182/18 192/2 204/13</p> <p>building [26] 17/7 17/10 17/16 18/3 18/8 18/11 19/1 19/17 19/20 20/18 20/21 20/24 21/13 21/17 22/20 37/14 37/18 40/12 81/10 82/1 118/19 118/20 119/20 141/18 173/20 231/7</p> <p>builds [3] 28/21 82/6 118/2</p> <p>built [12] 17/5 19/15 21/18 39/25 40/5 40/5 46/18 82/13 127/20 174/6 181/18 206/13</p> <p>bunch [3] 156/8 192/7 241/12</p> <p>bundle [1] 257/24</p> <p>burden [5] 239/25 240/7 240/8 242/6 242/8</p> <p>burn [1] 24/17</p> <p>burned [2] 23/16 24/16</p> <p>business [4] 2/11 85/22 100/25 101/1</p> <p>bypassed [1] 42/6</p>
---	--	--

C**California [2]** 279/20 283/5**call [21]** 7/21 9/19 16/1 24/24 28/13
28/20 29/13 38/12 98/18 137/8 145/24
151/9 173/19 203/18 215/7 217/2
259/11 271/16 292/7 292/7 293/22
called [14] 11/17 13/14 16/19 30/8
40/19 62/5 62/17 65/4 90/11 95/9
109/13 109/14 158/1 206/20**calling [6]** 6/16 131/6 136/23 167/14
219/5 259/9**calls [5]** 48/13 119/5 136/20 204/16
292/8**came [15]** 42/15 47/12 49/25 78/22
101/1 104/1 110/9 123/10 123/11 125/1
128/12 132/9 217/18 247/13 258/3**campaign [2]** 90/16 281/15**campaigns [1]** 239/15**CAMPBELL [1]** 2/6**can [236]** 5/7 6/8 7/8 9/11 11/13 14/2
15/22 16/4 16/25 21/10 21/11 24/4
24/21 24/23 27/25 28/2 29/3 32/3 32/4
35/16 36/15 36/17 38/21 39/19 48/16
49/1 49/11 50/11 51/12 52/16 52/25
55/4 56/8 62/19 66/11 66/13 66/14
66/15 67/21 68/2 68/4 68/5 68/9 68/9
74/15 74/18 77/9 78/5 79/8 80/4 80/4
81/7 83/10 83/11 83/20 84/8 84/11
84/13 84/14 84/17 85/2 88/11 88/16
91/18 92/11 96/3 97/17 97/20 97/24
100/1 100/3 101/25 102/22 105/15
105/18 105/19 106/6 106/12 107/9
108/11 111/2 126/22 131/21 132/1
138/4 138/9 138/13 141/8 147/2 148/13
149/2 149/7 149/7 149/19 150/23
151/16 151/25 152/1 152/7 152/9
152/10 152/18 152/22 155/16 155/16
156/2 156/5 156/17 156/19 156/20
156/21 156/23 157/2 157/6 157/12
158/5 159/2 160/8 160/9 160/19 160/23
161/3 161/6 162/13 162/23 163/8
163/19 164/12 164/15 164/17 164/17
166/3 166/4 167/5 171/2 171/2 171/9
172/8 172/20 178/8 179/15 181/9
181/24 183/14 183/19 183/21 183/24
186/17 186/18 187/13 187/20 189/6
190/5 190/11 192/9 195/9 195/10
197/24 198/8 198/10 199/2 199/6
199/19 200/8 201/2 201/13 201/22
203/13 203/20 206/14 206/21 210/25
211/19 214/15 220/13 220/17 223/5
223/25 226/7 226/25 227/1 227/9
228/15 229/9 229/22 229/22 230/11
230/13 231/8 235/24 235/24 236/2
236/12 236/13 236/18 237/11 238/9
239/7 239/12 240/11 244/5 246/2
251/16 251/21 254/19 254/22 254/24
256/10 257/2 257/22 259/12 260/2
262/15 266/7 266/9 267/10 271/25
273/5 277/8 277/18 278/3 278/4 281/13
282/25 284/17 285/5 285/6 286/11
286/24 287/11 288/7 291/2 291/9
292/11 293/18 295/11**can't [36]** 24/12 27/2 46/9 51/2 51/2
51/4 66/6 66/7 76/21 80/21 84/12 94/2
94/13 100/17 102/2 130/14 132/24
133/13 134/19 149/11 160/25 168/13170/25 181/13 188/7 188/14 215/21
227/7 241/25 246/10 249/6 249/10
249/11 249/11 281/5 293/18**canceled [1]** 288/17**candidate [45]** 16/16 40/14 40/18
40/22 40/23 41/22 41/23 42/5 42/5 42/5
42/6 44/3 44/19 44/22 44/23 44/23
44/24 44/25 45/1 45/2 45/3 45/4 45/7
45/7 45/8 45/9 45/9 124/12 124/12
124/13 124/13 124/14 124/16 125/16
126/2 126/3 126/4 128/6 128/7 128/15
218/18 265/1 265/2 265/4 265/16**candidate three [1]** 45/4**candidate two [3]** 45/1 45/2 45/3**candidates [37]** 16/13 16/14 20/3 23/3
23/4 40/3 40/7 40/13 42/2 42/3 42/4
42/13 42/16 42/17 42/19 42/21 42/23
42/24 43/1 43/23 43/24 44/15 44/17
44/19 44/21 45/14 46/18 46/20 46/20
46/25 47/1 123/9 124/18 125/2 125/12
224/15 284/2**cannot [14]** 50/19 70/11 76/22 92/7
152/5 185/23 198/10 200/25 201/1
202/1 208/3 225/19 257/9 266/6**canvas [5]** 25/4 25/20 25/23 27/8 27/11**capability [1]** 201/21**capable [1]** 160/21**capacity [7]** 9/4 56/7 67/10 69/6 70/18
193/23 193/25**caps [1]** 211/2**captured [1]** 235/23**card [32]** 11/21 12/3 12/13 12/14 12/25
32/9 34/1 34/1 34/13 34/15 34/17 34/25
35/1 35/1 36/22 38/11 55/10 85/22 96/8
100/25 101/1 110/2 121/24 129/6 130/1
130/2 130/6 130/10 130/10 130/12
130/14 130/14**cards [12]** 31/19 31/21 32/10 33/15
33/18 33/19 33/20 33/21 33/25 34/7
129/9 129/19**care [16]** 6/13 143/17 208/15 208/17
216/22 224/8 224/23 224/25 226/25
227/3 227/4 227/7 227/8 238/4 238/7
280/22**career [1]** 142/16**careful [6]** 118/13 197/17 197/19
218/16 218/17 218/18**carefully [3]** 110/15 212/11 215/15**cares [2]** 216/23 226/25**Carey [1]** 271/6**Carolina [2]** 206/17 284/10**carried [11]** 63/9 71/17 73/17 151/23
152/2 152/5 153/13 153/15 155/10
155/11 172/5**carries [1]** 9/12**carry [11]** 10/11 11/16 13/4 153/18
153/20 154/2 229/9 265/5 283/10
283/12 291/25**carrying [3]** 67/2 68/24 72/23**CARY [1]** 2/20**cascaded [1]** 43/6**case [68]** 4/2 5/12 7/20 39/6 59/25
79/16 93/22 105/1 115/2 122/21 123/6
141/4 145/22 149/6 151/10 152/24
160/22 165/22 168/14 172/25 173/4
186/3 191/14 192/17 192/19 194/7
194/10 194/12 194/25 196/5 199/15
202/6 202/12 205/20 211/1 211/5211/11 211/12 213/3 214/23 214/24
217/3 222/14 234/8 235/13 237/22
247/17 248/5 254/18 256/10 257/9
257/20 263/12 265/9 269/4 273/14
275/12 277/14 278/19 289/17 289/19
290/14 290/17 291/13 291/15 292/12
294/15 294/16**cases [3]** 24/16 165/11 294/8**cast [11]** 122/18 129/20 143/15 217/16
235/14 236/24 238/25 239/1 239/11
265/24 267/23**casting [4]** 125/11 230/4 280/3 280/17**catalog [1]** 162/8**catch [13]** 128/1 128/3 201/7 201/13
209/15 210/15 213/12 225/10 225/13
225/19 225/20 241/18 266/1**catcher [1]** 215/4**catches [1]** 201/9**catching [2]** 211/16 222/15**categories [1]** 250/19**categorize [2]** 43/2 43/4**category [2]** 194/1 194/4**caught [6]** 209/16 217/22 225/15
235/10 258/17 261/1**cause [4]** 210/16 222/2 261/3 261/7**caused [1]** 39/23**causing [1]** 261/15**caution [1]** 101/15**caveat [1]** 136/24**CD [15]** 23/16 24/16 25/2 25/10 26/1
27/13 27/21 27/23 27/24 29/1 29/12
29/17 29/18 29/19 30/1**CDs [4]** 26/6 26/12 26/13 26/14**Cedant [1]** 194/11**central [6]** 10/11 10/13 159/6 182/19
183/3 267/24**centrally [1]** 157/6**ceremony [1]** 162/21**certain [11]** 15/9 33/24 64/16 86/15
130/20 130/23 156/14 211/21 264/25
268/6 282/9**certainly [12]** 9/14 27/6 52/23 67/24
74/16 84/13 177/8 228/16 256/3 258/6
261/6 292/13**certified [3]** 57/22 72/2 138/24**certify [2]** 261/9 297/8**certifying [1]** 219/2**CES [9]** 28/19 28/20 76/23 82/1 82/12
96/17 96/22 104/2 118/2**cetera [1]** 52/6**chain [3]** 94/12 204/2 204/6**challenge [3]** 119/8 137/3 174/3**challenging [4]** 101/22 158/10 170/19
230/1**chance [6]** 172/21 173/1 211/16
229/12 245/15 245/18**change [11]** 37/8 48/7 104/25 119/1
119/2 126/24 168/9 180/15 213/6
228/22 258/9**changed [13]** 101/9 107/17 109/8109/9 114/22 118/16 177/5 177/7
180/10 180/12 238/3 258/16 285/1**changes [2]** 56/17 120/21**changing [2]** 120/15 120/23**chaos [1]** 261/8**characteristics [1]** 166/20**characterization [3]** 241/11 241/20
279/4

<p>C</p> <p>characters [2] 181/9 181/22</p> <p>charging [1] 33/25</p> <p>chase [1] 68/14</p> <p>chastising [1] 198/2</p> <p>cheaper [1] 231/13</p> <p>cheated [1] 209/13</p> <p>cheating [1] 229/12</p> <p>check [52] 12/4 12/6 24/18 24/20 57/8 57/11 62/7 69/18 72/23 103/3 122/7 136/5 151/1 151/4 153/7 153/10 169/17 171/3 181/24 200/12 201/23 202/2 202/5 209/9 209/10 211/20 224/12 224/16 225/22 228/24 229/7 229/14 229/16 235/21 236/23 237/14 237/15 238/2 240/22 241/17 242/15 251/18 252/1 252/4 257/2 257/10 264/20 269/1 269/5 282/9 287/15 287/24</p> <p>check-in [2] 12/4 12/6</p> <p>checked [8] 183/1 183/20 215/14 225/9 229/21 238/18 239/19 249/7</p> <p>checking [13] 209/9 218/4 229/11 234/12 234/25 235/4 235/14 238/17 258/24 259/8 286/4 286/5 286/8</p> <p>checks [25] 17/24 57/12 58/23 61/14 61/23 62/3 62/5 62/14 62/17 62/22 62/23 62/24 63/9 63/20 65/4 65/6 66/19 68/25 69/12 71/17 71/23 73/16 73/18 73/20 128/1</p> <p>child [1] 6/13</p> <p>children [2] 142/13 175/17</p> <p>choice [1] 232/7</p> <p>choices [4] 121/2 183/15 228/4 228/5</p> <p>choose [3] 171/20 195/22 233/12</p> <p>chooses [2] 82/15 171/19</p> <p>choosing [1] 228/14</p> <p>choreograph [1] 198/4</p> <p>chose [4] 69/14 174/6 190/16 195/13</p> <p>chosen [1] 15/12</p> <p>Chris [8] 69/4 69/6 69/8 69/9 85/11 96/6 109/25 110/20</p> <p>CHRISTIAN [1] 2/10</p> <p>church [1] 126/5</p> <p>circle [2] 194/18 236/16</p> <p>circles [2] 102/2 181/15</p> <p>Circuit [4] 194/9 194/14 194/25 275/12</p> <p>circular [1] 32/6</p> <p>circumstances [3] 73/22 93/19 292/19</p> <p>CISA [6] 64/18 64/24 80/9 89/22 89/22 140/1</p> <p>citation [1] 183/24</p> <p>citations [1] 147/1</p> <p>cite [2] 1/4 194/25</p> <p>citing [1] 279/24</p> <p>citizens [1] 280/22</p> <p>City [1] 297/10</p> <p>claim [3] 206/7 223/16 238/1</p> <p>clarification [6] 48/24 159/8 159/25 160/19 227/16 279/16</p> <p>clarify [7] 78/2 80/5 91/18 93/11 277/18 278/3 280/13</p> <p>clarifying [1] 198/8</p> <p>clarity [3] 7/7 7/17 215/7</p> <p>class [1] 159/1</p> <p>classes [1] 144/11</p> <p>classic [2] 5/11 268/7</p> <p>clause [1] 169/22</p>	<p>cleanly [1] 18/15</p> <p>clear [26] 19/9 31/6 48/21 57/23 66/17 73/13 78/9 107/25 146/5 146/17 147/24 148/9 149/9 159/5 177/12 186/10 187/11 196/13 202/6 204/6 204/6 204/7 216/19 274/25 289/25 295/4</p> <p>clears [1] 18/21</p> <p>clerk [1] 232/8</p> <p>clerks [1] 147/6</p> <p>Clever [1] 142/12</p> <p>click [2] 27/25 28/7</p> <p>clients [1] 64/19</p> <p>clock [2] 26/2 55/2</p> <p>close [8] 5/4 149/2 158/16 168/5 182/14 190/2 206/8 258/22</p> <p>closed [3] 26/2 35/11 290/12</p> <p>closeness [1] 175/3</p> <p>closer [1] 6/8</p> <p>closet [1] 117/14</p> <p>clue [1] 109/10</p> <p>CM [2] 1/2 1/3</p> <p>CM/ECF [2] 1/2 1/3</p> <p>co [3] 5/22 58/15 291/24</p> <p>co-counsel [2] 5/22 58/15</p> <p>co-plaintiffs [1] 291/24</p> <p>COALITION [8] 2/13 193/2 195/15 196/16 205/1 242/19 290/19 291/17</p> <p>code [66] 12/15 24/25 28/13 28/14 28/19 28/23 28/24 28/25 29/8 29/13 29/14 32/18 32/21 32/24 33/1 33/3 33/8 33/10 34/18 34/19 34/20 35/2 36/24 44/2 46/4 46/15 123/3 123/19 124/4 124/8 124/20 124/22 124/25 125/3 125/4 125/7 125/11 125/13 148/19 185/2 185/14 185/16 186/15 189/20 189/24 200/17 200/25 201/2 201/3 201/6 201/9 208/19 210/4 210/6 210/13 211/9 211/22 216/16 216/24 217/4 225/20 286/7 286/23 287/19 288/9 288/9</p> <p>codes [8] 48/3 48/6 208/23 210/7 210/9 211/7 216/19 268/22</p> <p>coerce [1] 157/2</p> <p>coerced [1] 268/6</p> <p>Coffee [46] 37/20 38/1 64/17 84/22 85/21 91/8 91/9 91/22 91/24 92/6 92/8 93/7 93/17 94/10 94/20 94/21 94/23 94/25 95/16 95/20 95/22 97/6 98/3 98/8 98/9 98/19 98/20 98/21 98/24 99/18 102/21 103/15 108/1 109/19 114/16 114/20 115/4 115/14 116/20 117/11 134/5 136/3 196/6 196/7 262/25 263/13</p> <p>cofounded [1] 138/10</p> <p>cofounder [1] 144/25</p> <p>cognitive [1] 229/25</p> <p>cold [1] 60/16</p> <p>collaborator [1] 207/16</p> <p>colleague [1] 250/12</p> <p>colleague's [1] 25/15</p> <p>colleagues [2] 64/12 282/24</p> <p>colleagues' [1] 246/18</p> <p>collect [4] 10/23 12/21 94/9 135/8</p> <p>collected [11] 91/7 91/15 93/20 93/23 93/24 94/19 94/21 94/22 122/11 122/23 280/8</p> <p>collecting [1] 20/24</p> <p>collections [1] 162/3</p> <p>collective [1] 209/1</p>	<p>collects [3] 13/6 13/7 121/19</p> <p>colloquial [1] 240/9</p> <p>colloquially [1] 189/5</p> <p>Colorado [10] 139/16 139/17 153/13 153/15 154/1 154/6 154/11 201/22 202/8 215/12</p> <p>combination [5] 15/20 15/22 119/13 136/2 285/3</p> <p>combinations [1] 9/21</p> <p>come [32] 6/21 36/7 47/14 52/21 81/7 97/25 128/15 132/7 150/11 157/6 166/2 173/13 175/18 183/22 212/8 212/14 214/15 216/16 216/17 218/5 249/25 250/14 250/18 254/3 254/9 254/13 264/5 264/25 276/12 285/13 286/7 293/20</p> <p>comes [13] 7/25 16/14 24/22 40/21 77/20 106/6 127/15 188/21 206/8 213/5 224/18 283/9 285/3</p> <p>coming [10] 64/18 106/21 128/13 139/19 153/25 180/4 186/24 193/13 205/4 263/25</p> <p>comment [2] 277/5 277/6</p> <p>comments [1] 174/17</p> <p>commercial [2] 206/19 206/24</p> <p>commercialized [1] 206/10</p> <p>commission [14] 14/22 15/15 15/16 15/18 15/19 15/24 15/25 39/16 39/22 40/1 40/2 41/22 42/1 44/3</p> <p>commissioned [4] 225/4 246/15 248/21 263/20</p> <p>Commissioner [1] 127/17</p> <p>commitment [1] 137/1</p> <p>commits [1] 181/12</p> <p>common [2] 213/13 261/13</p> <p>commonly [3] 10/13 15/6 20/10</p> <p>communicate [1] 38/13</p> <p>communicating [1] 134/12</p> <p>communication [2] 106/9 134/15</p> <p>community [2] 267/21 275/25</p> <p>CompactFlash [14] 31/19 31/21 32/8 32/10 33/15 33/18 33/19 33/20 33/21 34/7 55/7 129/9 130/1 130/2</p> <p>company [5] 142/9 142/11 193/12 206/10 230/14</p> <p>compare [4] 57/20 123/12 156/10 158/2</p> <p>compared [2] 196/10 196/20</p> <p>comparing [3] 152/19 155/21 158/24</p> <p>comparison [38] 57/18 73/3 73/8 123/10 155/23 155/24 156/16 157/5 157/18 158/1 158/2 158/6 158/7 158/16 158/21 158/21 158/23 159/3 159/10 159/14 160/2 160/5 160/9 161/1 171/11 171/12 175/24 176/4 176/14 177/17 177/18 178/12 178/17 179/5 201/22 202/4 207/14 208/23</p> <p>compensated [5] 140/25 141/1 243/17 243/23 243/25</p> <p>compensation [1] 278/8</p> <p>competent [1] 62/6</p> <p>competing [1] 273/15</p> <p>competitor [5] 273/14 273/24 274/2 274/8 274/14</p> <p>complaint [1] 292/14</p> <p>complaints [1] 285/14</p> <p>complete [5] 8/16 22/1 23/25 28/25 273/11</p>
--	---	--

<p>C</p> <p>completed [10] 23/11 24/8 26/23 29/17 34/24 36/12 54/16 54/20 121/2 140/1</p> <p>completely [8] 79/11 179/20 193/19 197/25 207/4 210/5 222/18 232/6</p> <p>completeness [3] 276/19 276/23 279/21</p> <p>completes [1] 35/13</p> <p>completing [1] 288/24</p> <p>completion [2] 22/20 54/17</p> <p>compliance [1] 282/5</p> <p>compliant [1] 131/3</p> <p>complicated [4] 120/20 179/2 208/22 210/25</p> <p>complication [1] 159/14</p> <p>component [4] 9/9 33/14 36/18 55/20</p> <p>components [2] 31/11 31/15</p> <p>compound [2] 240/5 240/14</p> <p>compressed [2] 28/1 28/7</p> <p>compulsory [2] 234/4 234/11</p> <p>computer [56] 1/21 9/17 10/15 10/15 10/17 10/18 11/4 18/8 18/11 27/22 28/10 29/2 29/18 30/1 31/18 44/12 48/14 48/16 48/23 50/6 50/10 50/13 51/13 54/2 55/24 57/15 57/17 58/3 70/5 70/19 73/4 76/18 81/19 81/20 81/22 85/22 92/23 94/6 94/7 95/13 95/18 95/20 95/22 112/18 112/18 112/19 112/20 112/22 133/3 133/9 133/19 141/11 141/12 151/9 183/16 185/23</p> <p>COMPUTER-AIDED [1] 1/21</p> <p>computers [11] 17/17 17/19 17/20 18/5 71/9 81/14 81/16 102/23 136/4 136/9 286/1</p> <p>concept [3] 198/10 198/11 267/18</p> <p>concern [9] 61/22 67/20 188/24 191/5 191/25 194/19 272/8 289/13 292/25</p> <p>concerned [5] 89/25 105/10 133/2 231/24 271/15</p> <p>concerning [2] 80/9 293/23</p> <p>concerns [4] 65/8 89/22 131/17 196/11</p> <p>conclude [2] 5/6 296/1</p> <p>concluded [2] 20/17 37/13</p> <p>conclusion [4] 119/5 131/6 219/5 240/7</p> <p>conclusions [1] 63/2</p> <p>concrete [1] 254/23</p> <p>condense [1] 285/20</p> <p>condensed [1] 253/12</p> <p>conditional [1] 65/14</p> <p>conditionally [5] 192/10 195/9 195/10 195/21 196/18</p> <p>conductive [1] 222/20</p> <p>conduct [7] 17/24 36/15 78/10 148/18 153/1 213/22 230/1</p> <p>conducted [11] 72/23 133/18 151/20 170/8 218/7 233/24 248/13 248/17 248/18 248/20 250/7</p> <p>conducting [10] 23/23 66/19 153/23 154/13 154/13 154/14 155/4 169/16 182/6 254/14</p> <p>conducts [2] 119/6 170/14</p> <p>conference [5] 66/22 68/3 79/10 221/20 246/24</p> <p>conferences [1] 144/6</p> <p>confidence [27] 71/20 151/17 152/21 156/10 156/14 157/21 172/15 172/17</p>	<p>173/20 174/6 175/8 182/17 182/18 199/19 202/16 204/13 211/19 212/5 214/6 215/5 229/8 229/15 229/16 235/10 235/12 239/24 282/10</p> <p>confidence-building [1] 173/20</p> <p>confident [5] 60/5 60/8 205/22 257/2 287/4</p> <p>configuration [6] 40/7 50/7 54/2 54/6 118/16 214/16</p> <p>configure [1] 55/17</p> <p>configured [2] 11/12 36/11</p> <p>confirm [8] 23/9 168/1 168/3 179/9 208/13 208/23 209/24 228/4</p> <p>confirmation [1] 218/4</p> <p>confirmed [3] 104/2 126/16 152/25</p> <p>confirming [2] 212/20 280/10</p> <p>confirms [3] 28/24 209/24 224/2</p> <p>conflict [2] 267/24 267/24</p> <p>confront [1] 101/24</p> <p>confuse [1] 79/19</p> <p>confused [3] 95/2 95/11 104/24</p> <p>confusing [1] 91/25</p> <p>confusion [1] 243/9</p> <p>Congressional [1] 14/21</p> <p>connect [1] 182/20</p> <p>connected [9] 10/7 10/15 10/18 11/3 17/17 18/19 70/12 81/22 125/22</p> <p>connecting [1] 232/21</p> <p>connection [2] 64/25 106/7</p> <p>conscientious [2] 236/5 236/6</p> <p>conscripted [1] 241/8</p> <p>consequence [3] 79/15 219/1 219/11</p> <p>consequences [3] 218/23 219/4 220/6</p> <p>consider [10] 66/15 67/24 233/7 247/17 248/6 248/10 260/25 261/10 261/11 279/25</p> <p>consideration [1] 198/18</p> <p>considered [6] 120/16 175/5 248/2 248/12 252/21 272/6</p> <p>considering [1] 173/13</p> <p>constitute [1] 297/9</p> <p>Constitution [2] 267/14 267/16</p> <p>consult [3] 58/14 71/22 272/8</p> <p>contact [3] 96/7 99/17 110/1</p> <p>contain [6] 13/1 34/8 44/18 56/12 129/19 200/11</p> <p>contained [10] 12/14 27/13 42/2 42/2 42/4 44/19 46/19 46/25 89/8 123/15</p> <p>containing [3] 22/16 23/15 42/23</p> <p>contains [11] 9/20 10/20 13/10 13/11 14/16 14/18 14/19 30/3 32/6 34/10 162/16</p> <p>contaminate [1] 53/17</p> <p>content [2] 22/6 47/3</p> <p>contents [3] 24/16 24/19 130/2</p> <p>content [50] 13/18 13/19 20/2 40/14 42/1 42/24 44/24 123/13 124/12 126/3 126/4 163/2 168/5 171/20 171/21 172/15 172/16 173/9 174/1 174/2 174/4 174/7 175/1 175/6 175/7 202/2 213/18 213/22 214/4 214/7 214/8 214/13 214/14 214/24 215/6 215/10 215/12 215/14 215/21 216/6 217/24 221/9 251/13 256/17 256/23 257/1 258/22 259/3 259/14 270/3</p> <p>contesting [2] 106/3 221/10</p> <p>contests [20] 16/5 16/5 16/7 16/9 21/2 201/21 201/24 202/5 202/9 213/20</p>	<p>213/24 214/22 215/18 222/19 235/21 255/20 287/16 287/18 287/25 288/5</p> <p>context [6] 66/23 91/2 139/14 160/17 187/7 279/25</p> <p>contexts [1] 283/16</p> <p>contextualize [1] 219/9</p> <p>continue [6] 53/19 147/16 186/16 187/24 211/11 244/13</p> <p>continued [4] 4/2 7/20 143/12 180/6</p> <p>continues [1] 276/13</p> <p>continuing [4] 41/3 142/25 207/5 244/10</p> <p>contract [2] 140/1 244/6</p> <p>contracts [3] 82/16 140/6 244/8</p> <p>contrary [1] 226/12</p> <p>controlled [1] 28/17</p> <p>conversation [3] 187/24 222/10 274/9</p> <p>conversations [4] 270/1 281/8 281/12 281/17</p> <p>converted [1] 26/18</p> <p>convince [2] 234/2 274/7</p> <p>convinced [1] 107/8</p> <p>cool [2] 143/19 157/21</p> <p>coordinate [1] 161/23</p> <p>coordination [2] 161/15 161/21</p> <p>coordinator [3] 28/21 28/23 28/24</p> <p>coordinators [1] 69/7</p> <p>copied [1] 11/9</p> <p>copy [8] 8/4 28/9 29/20 44/11 117/7 144/21 196/2 246/19</p> <p>corner [3] 271/16 272/9 272/13</p> <p>corners [1] 195/6</p> <p>correct [105] 20/13 29/15 31/5 38/20 39/8 41/14 41/16 41/25 43/9 75/4 76/12 76/25 77/4 81/15 81/17 81/18 81/21 82/19 82/23 84/6 88/25 96/21 97/15 108/21 113/16 113/17 114/20 114/21 117/15 118/13 118/14 120/7 120/14 120/22 122/17 123/16 124/4 124/5 124/9 124/23 125/11 125/15 125/19 125/25 126/6 127/21 127/22 127/24 129/1 129/16 129/21 129/25 130/11 130/20 135/6 139/10 142/14 142/23 154/6 167/4 167/21 172/10 174/12 178/13 180/8 201/15 201/18 201/20 205/6 207/2 208/8 208/12 209/25 210/4 210/22 211/7 211/12 213/20 213/25 216/2 216/11 217/1 217/12 218/9 218/21 219/2 225/19 228/6 228/9 230/16 231/10 232/18 236/8 237/19 238/10 238/12 240/19 240/22 240/25 241/1 243/22 265/12 278/13 278/24 290/9</p> <p>corrected [4] 41/17 81/3 81/4 172/22</p> <p>correcting [1] 41/13</p> <p>correction [2] 41/17 81/5</p> <p>corrections [1] 20/11</p> <p>correctly [8] 60/6 107/21 142/22 153/7 176/20 176/24 239/14 256/7</p> <p>correctness [2] 207/23 213/23</p> <p>correlate [2] 46/23 47/3</p> <p>correlated [1] 214/20</p> <p>correlating [1] 125/5</p> <p>correlation [1] 55/8</p> <p>correspondence [2] 64/9 64/10</p> <p>corresponding [1] 34/17</p> <p>corresponds [1] 156/22</p> <p>corrupted [1] 210/7</p>
---	---	--

C

corruption [1] 278/11
cost [2] 33/18 231/13
could [103] 6/24 7/7 7/13 9/2 14/13 14/25 27/10 32/2 35/12 43/18 43/22 46/22 51/22 52/4 53/19 58/14 60/24 62/22 63/3 63/18 63/21 63/22 65/14 68/8 68/8 68/11 69/19 74/14 78/3 78/16 86/25 87/20 94/17 94/19 95/5 95/25 98/16 102/11 104/10 104/20 105/20 107/15 112/2 112/17 115/18 116/4 116/4 119/15 119/15 122/14 123/21 130/8 132/16 132/16 145/10 147/1 148/10 155/15 157/2 159/22 165/2 165/17 165/18 173/15 175/18 176/15 179/2 191/17 191/19 191/24 196/2 199/25 208/17 214/23 215/18 215/19 215/23 215/25 218/9 218/11 231/20 233/20 235/1 235/10 238/18 242/14 243/6 256/4 258/9 258/20 261/7 262/3 263/6 265/16 270/25 276/6 276/8 281/16 289/9 292/19 293/1 293/11 293/15
couldn't [7] 43/24 43/24 104/15 108/24 108/24 112/24 112/24
counsel [26] 5/22 47/24 58/15 60/22 74/15 107/4 107/9 110/13 132/9 132/15 132/19 135/8 135/10 149/18 177/25 187/4 191/2 196/24 197/17 198/20 210/18 245/25 253/15 253/17 288/13 294/7
Counselor [3] 90/19 117/25 126/23
count [16] 10/11 10/13 40/22 43/9 44/4 44/8 45/22 151/7 163/2 172/2 172/3 179/9 201/5 221/12 222/5 231/1
counted [9] 143/14 163/9 208/8 214/7 214/8 238/5 254/6 267/10 267/23
counter [1] 199/22
counter-example [1] 199/22
counties [62] 18/12 19/8 19/22 20/1 20/18 21/19 21/21 24/3 26/12 28/15 28/17 33/15 38/5 38/10 38/12 57/6 57/8 62/2 62/25 69/8 69/9 70/23 71/21 82/9 113/14 118/9 134/12 135/22 138/23 140/15 155/2 155/3 155/6 161/8 161/16 161/18 161/23 164/7 167/5 170/3 178/20 178/25 180/18 204/8 204/14 230/20 231/11 233/20 233/24 233/25 234/3 234/5 244/24 244/24 244/25 245/5 245/6 266/6 266/11 266/22 266/24 286/11
counting [5] 139/2 151/13 172/11 182/9 209/4
countries [1] 230/13
country [3] 139/15 204/12 245/1
counts [2] 158/2 163/15
county [250] 5/2 9/18 9/23 10/6 10/19 14/7 14/22 14/23 15/12 15/15 15/15 15/18 15/19 15/24 15/25 19/23 19/25 20/11 21/11 24/5 24/6 24/22 24/23 24/25 25/7 25/8 25/9 27/7 27/11 27/25 28/8 28/11 28/12 28/13 28/20 28/22 28/25 29/8 29/10 29/17 29/19 30/6 30/17 31/3 31/9 31/12 32/7 32/20 32/23 32/25 33/7 33/10 33/10 34/14 34/16 34/19 34/20 34/22 35/2 35/5 35/19 36/1 36/3 36/3 36/8 36/12 36/24 37/4 37/10

37/14 37/18 38/1 38/15 38/18 38/24 39/6 39/16 39/17 39/22 39/25 40/1 40/2 40/6 40/8 40/9 40/16 41/12 41/13 41/14 41/18 41/22 42/1 42/7 43/8 43/15 44/1 44/3 45/11 47/6 47/7 47/11 47/18 47/23 47/25 55/24 55/25 57/13 62/9 62/10 62/11 62/18 64/17 71/10 82/11 82/12 82/14 82/20 83/23 83/25 84/22 85/21 91/8 91/9 91/22 91/24 92/6 92/8 93/7 93/18 93/20 94/10 94/20 94/21 94/23 94/25 95/8 95/17 95/20 95/22 97/6 97/23 97/24 98/3 98/8 98/9 98/19 98/20 98/21 98/24 99/18 102/21 103/15 108/1 109/1 109/12 109/13 109/19 114/1 114/2 114/16 114/20 114/22 115/4 115/14 116/20 117/11 120/4 123/21 124/2 127/16 128/1 129/8 129/12 130/4 131/16 131/18 132/3 132/4 132/5 132/10 132/14 132/19 132/21 132/24 133/2 133/6 133/15 133/24 134/4 134/5 134/5 134/17 135/3 135/7 135/11 135/12 135/19 135/21 136/2 136/3 136/12 154/25 155/1 155/1 159/10 159/20 160/2 161/9 161/10 161/14 162/4 162/6 162/8 162/14 162/19 162/24 163/4 163/12 163/24 167/6 167/11 167/16 168/8 168/19 168/19 180/16 180/23 180/24 182/8 182/10 196/6 196/7 204/11 217/21 232/7 232/8 232/12 233/11 255/8 262/25 263/13 275/1 277/23 278/19 278/20 283/6 289/2 290/11 290/20 291/22
county's [6] 33/1 37/21 72/25 82/18 97/21 135/8
county-based [1] 161/9
couple [11] 127/4 127/11 127/19 144/7 145/18 145/21 178/13 241/14 241/17 267/4 273/8
course [25] 61/2 106/8 120/2 140/6 143/6 154/12 174/3 178/5 201/13 203/9 205/15 206/7 220/17 222/12 222/13 243/8 243/24 254/10 258/11 261/21 262/13 277/22 278/1 281/7 281/21
court [53] 1/3 1/6 1/9 1/1 1/23 4/10 4/14 4/22 6/5 6/15 9/11 14/13 24/4 27/10 32/2 39/19 61/19 61/21 62/17 66/14 66/15 66/21 67/1 77/14 77/15 89/9 99/12 103/7 113/8 123/7 131/21 138/4 141/8 150/12 187/8 191/8 192/22 194/9 198/16 247/16 256/8 257/7 257/18 260/25 271/23 275/13 279/3 291/25 297/6 297/7 297/10 297/17 297/17
Court's [6] 58/8 63/20 66/25 72/11 73/15 186/17
courthouse [2] 1/24 290/11
courtroom [3] 102/9 187/25 197/6
cover [1] 247/3
covered [2] 145/23 271/1
CPU [3] 9/17 9/25 53/22
CPUs [2] 136/8 136/9
crabbed [1] 64/21
create [16] 10/1 12/13 15/20 21/10 22/24 31/20 31/23 34/6 34/7 34/13 34/15 41/18 47/2 48/2 57/18 167/11
created [11] 11/25 13/22 31/17 40/10 42/1 42/11 42/12 43/6 143/8 143/11 202/21

creates [2] 12/1 13/9
creating [1] 36/21
creative [1] 236/13
credentials [1] 164/12
credit [1] 207/14
critical [11] 166/4 169/22 179/14 183/5 183/8 183/17 201/8 222/16 234/15 234/17 260/11
cross [38] 2/4 4/6 4/7 4/8 4/17 4/18 4/18 4/19 4/21 5/20 60/23 63/19 64/11 66/13 74/21 79/22 117/22 127/7 186/21 187/1 190/5 204/22 242/18 242/23 243/2 243/7 243/7 246/24 255/2 264/9 267/9 268/11 268/16 271/19 275/7 275/8 275/9 295/25
Cross' [3] 174/19 185/13 186/5
cross-examination [20] 4/6 4/7 4/8 4/17 4/18 4/19 60/23 66/13 74/21 117/22 127/7 187/1 204/22 242/23 264/9 267/9 268/16 271/19 275/8 275/9
cross-examinations [1] 268/11
cross-examine [3] 79/22 186/21 190/5
crossing [1] 218/18
CRR [3] 1/23 297/6 297/16
crucial [1] 129/16
crunch [1] 171/21
cryptographic [1] 141/18
cryptography [2] 141/13 143/19
cumulative [3] 246/25 247/5 260/16
cumulativeness [2] 246/23 253/9
curious [1] 276/20
CURLING [5] 1/4 2/2 85/5 243/2 246/20
current [17] 9/6 33/24 48/1 49/6 59/9 64/6 76/15 80/22 81/3 108/6 109/21 121/6 126/11 138/4 193/14 203/10 268/9
currently [7] 18/2 56/6 82/3 121/6 134/9 138/22 266/6
curves [2] 225/9 229/10
cusp [1] 140/12
custody [3] 94/12 204/2 204/6
customer [1] 231/9
customers [2] 220/13 231/4
cut [1] 68/14
cute [1] 206/23
cutesy [1] 206/22
cutting [1] 236/19
CV [3] 1/6 144/24 150/19
Cyber [12] 85/17 86/17 86/18 86/19 87/6 87/25 89/7 90/15 91/3 99/17 100/25 117/11
cybersecurity [1] 76/24

D

daddy [2] 60/3 60/3
damage [1] 133/4
dance [2] 161/15 161/23
DANIEL [1] 3/8
DANIELLE [1] 3/5
data [20] 30/3 63/1 141/24 142/12 142/15 142/17 142/17 161/25 164/13 168/4 171/3 181/12 181/15 223/16 226/6 279/15 280/8 280/18 282/24 284/25
database [1] 14/16
date [28] 16/22 85/14 87/9 88/21 90/14 92/17 93/3 93/6 93/23 93/24 94/11

<p>D</p> <p>date... [17] 94/21 94/22 95/20 95/21 95/22 95/23 99/5 101/12 106/4 108/6 108/7 108/19 116/15 122/1 132/7 290/21 290/23</p> <p>date-stamped [1] 122/1</p> <p>dated [2] 92/18 281/24</p> <p>dateline [1] 107/19</p> <p>dates [9] 23/9 91/6 91/15 91/18 101/16 101/18 101/19 104/15 107/25</p> <p>DAVID [10] 2/4 2/23 2/24 7/17 116/12 116/13 243/2 243/7 243/7 264/12</p> <p>David's [1] 275/9</p> <p>DAVIS [5] 2/19 2/21 2/22 264/13 289/3</p> <p>day [22] 5/4 5/7 5/9 5/11 6/22 35/21 36/8 41/4 42/19 60/15 94/14 104/4 110/7 122/16 137/5 143/21 187/17 221/24 280/16 293/8 293/8 297/13</p> <p>days [5] 1/4 129/10 131/3 160/23 192/24</p> <p>deadline [2] 192/24 195/13</p> <p>deal [2] 198/3 284/25</p> <p>dealing [2] 198/4 223/22</p> <p>dealt [1] 194/22</p> <p>Dean [2] 232/8 232/13</p> <p>death [1] 127/12</p> <p>debate [5] 148/23 149/2 224/21 224/22 246/7</p> <p>December [3] 20/21 20/22 103/13</p> <p>December 14 [1] 103/13</p> <p>decide [1] 195/10</p> <p>decided [1] 213/3</p> <p>decides [1] 66/14</p> <p>deciding [1] 175/1</p> <p>decision [8] 37/5 40/16 47/10 47/24 132/19 272/21 273/6 279/22</p> <p>decisions [4] 143/10 143/10 154/25 273/5</p> <p>decisive [2] 237/21 238/5</p> <p>declaration [16] 103/6 103/12 147/15 184/15 184/15 185/8 191/8 193/1 195/18 196/1 196/3 243/15 253/5 253/5 254/1 289/17</p> <p>declarations [27] 64/7 145/18 145/21 146/11 146/14 146/19 147/2 147/8 148/7 148/21 185/9 191/23 191/23 191/24 192/18 192/21 193/4 193/7 194/7 194/17 194/21 195/4 195/16 197/1 197/13 243/13 243/14</p> <p>declared [4] 152/21 152/23 211/2 222/7</p> <p>declaring [1] 162/1</p> <p>decrypting [1] 35/3</p> <p>decryption [1] 35/4</p> <p>deemed [2] 45/17 122/24</p> <p>deep [2] 63/5 288/7</p> <p>deeply [1] 62/4</p> <p>defend [1] 215/1</p> <p>DEFENDANT'S [1] 7/20</p> <p>defendants [4] 1/7 3/2 192/24 289/15</p> <p>DEFENDANTS' [3] 4/2 144/18 291/14</p> <p>defending [1] 274/13</p> <p>defense [4] 65/25 66/2 105/10 105/11</p> <p>defer [1] 205/24</p> <p>defined [2] 176/5 202/21</p> <p>definitely [4] 139/6 233/18 238/5 281/17</p>	<p>definition [12] 11/8 81/10 81/17 82/1 82/6 82/19 82/23 176/18 178/16 192/16 205/19 210/1</p> <p>definitive [2] 205/21 229/6</p> <p>degree [9] 70/5 70/9 70/10 76/18 88/2 214/20 232/20 275/20 282/10</p> <p>degrees [4] 60/16 206/4 206/5 206/6</p> <p>DeKalb [20] 39/17 39/25 40/6 40/8 40/9 40/16 41/12 41/13 41/18 42/7 43/2 43/8 46/5 83/23 83/24 122/25 123/21 124/2 127/16 127/25</p> <p>delayed [1] 250/4</p> <p>deliberately [1] 261/8</p> <p>delivered [3] 24/6 27/16 40/8</p> <p>delivering [1] 56/23</p> <p>delivery [3] 24/5 26/4 26/7</p> <p>democracy [3] 30/7 48/1 143/18</p> <p>democratic [4] 12/12 21/5 236/4 265/24</p> <p>demonstrate [2] 49/10 198/22</p> <p>demonstrated [1] 49/8</p> <p>demonstration [1] 61/3</p> <p>demonstrative [2] 83/14 83/15</p> <p>denial [1] 261/11</p> <p>deniers [1] 274/1</p> <p>deniers' [1] 274/10</p> <p>department [5] 88/19 89/21 90/1 133/17 140/2</p> <p>depend [2] 82/1 167/20</p> <p>dependent [1] 129/2</p> <p>depending [4] 6/20 36/2 71/9 166/2</p> <p>depends [4] 160/24 172/14 183/2 266/13</p> <p>deployment [1] 206/2</p> <p>depose [3] 190/17 191/13 192/4</p> <p>deposed [6] 289/18 290/9 290/19 291/24 293/6 294/16</p> <p>deposition [8] 107/12 107/16 190/15 191/18 290/10 290/21 290/23 293/13</p> <p>depth [2] 148/5 263/10</p> <p>deputy [2] 9/7 119/9</p> <p>describe [9] 64/3 138/4 138/13 141/8 150/23 151/19 163/19 203/13 204/1</p> <p>described [8] 83/6 118/1 118/6 120/20 127/18 180/11 265/7 266/2</p> <p>describes [1] 252/2</p> <p>describing [4] 67/11 119/8 165/5 254/10</p> <p>description [2] 190/17 198/24</p> <p>deserves [1] 227/19</p> <p>design [5] 71/23 231/20 272/5 272/6 272/7</p> <p>designated [1] 169/25</p> <p>designed [6] 73/18 74/3 75/3 151/23 258/9 287/21</p> <p>designer [1] 30/8</p> <p>designing [1] 71/16</p> <p>desire [2] 135/8 170/23</p> <p>desk [6] 17/19 17/20 18/6 18/9 81/14 100/25</p> <p>despite [2] 61/23 117/10</p> <p>detail [3] 172/13 187/14 251/20</p> <p>detailed [2] 118/2 118/12</p> <p>details [9] 69/17 71/15 72/22 79/6 80/2 182/7 205/25 246/17 246/18</p> <p>detect [9] 127/24 152/11 152/18 173/1 208/25 224/17 265/8 267/10 286/2</p> <p>detected [1] 261/1</p>	<p>detecting [1] 209/3</p> <p>determination [1] 284/15</p> <p>determine [8] 43/8 43/11 57/6 98/2 99/13 99/17 129/23 133/18</p> <p>determined [2] 128/7 211/6</p> <p>determining [5] 46/14 77/1 174/15 256/11 282/2</p> <p>develop [3] 138/11 140/2 207/6</p> <p>developed [6] 71/24 71/25 205/12 205/13 205/16 207/7</p> <p>developing [1] 71/18</p> <p>development [1] 228/16</p> <p>developments [2] 61/25 64/17</p> <p>device [32] 10/10 11/15 11/18 11/19 11/21 11/23 11/24 12/20 13/5 19/7 34/23 35/13 38/18 38/19 38/20 38/22 38/24 39/1 39/4 47/2 47/3 47/19 73/2 94/13 118/17 122/10 122/20 129/1 133/4 200/16 230/17 230/18</p> <p>device-type [1] 129/1</p> <p>devices [16] 10/3 18/16 35/20 36/22 38/20 41/19 42/8 48/22 54/8 72/24 151/21 154/18 154/20 155/6 185/17 189/21</p> <p>DIANE [1] 3/8</p> <p>dice [1] 162/21</p> <p>did [131] 5/16 5/24 8/7 26/16 37/23 37/25 44/18 46/4 47/12 47/16 47/18 49/23 51/10 52/3 52/3 52/17 54/9 58/23 58/25 68/3 69/23 71/22 74/4 75/6 84/4 86/14 86/17 86/21 86/22 94/9 94/15 95/3 95/15 95/16 97/2 98/1 98/10 98/11 98/14 98/17 98/22 100/21 101/3 101/5 105/25 105/25 106/8 109/9 109/10 109/23 110/24 112/1 112/5 112/16 112/19 114/6 114/11 115/20 115/25 116/3 116/5 116/7 116/9 116/12 116/14 116/17 128/3 128/17 132/8 132/10 133/13 133/16 134/8 134/17 140/11 142/1 142/22 150/15 151/17 168/17 175/11 176/12 176/18 177/9 189/24 193/4 194/5 194/13 197/13 205/7 205/8 206/6 212/1 213/8 217/14 217/15 225/6 232/14 233/9 243/21 244/20 246/12 247/14 248/6 248/10 249/16 251/11 251/18 252/1 252/4 252/12 255/5 260/25 261/10 270/2 271/2 271/3 271/5 276/2 277/21 277/22 277/25 278/1 278/6 278/11 280/2 282/19 290/3 292/3 293/4 293/5</p> <p>didn't [42] 6/17 53/23 53/24 67/13 80/13 89/22 91/4 93/16 95/3 98/7 98/7 98/12 98/16 100/20 101/2 106/9 109/9 114/18 117/12 127/24 134/11 137/24 144/4 185/6 191/13 192/4 193/7 226/12 233/14 238/2 245/19 246/11 247/17 252/23 252/23 267/17 276/1 277/12 281/22 291/6 292/1 293/10</p> <p>difference [7] 15/22 25/18 25/22 214/1 259/21 260/8 292/16</p> <p>differences [1] 230/7</p> <p>different [49] 12/16 15/20 15/23 17/20 19/20 19/24 22/3 22/18 23/18 23/20 26/6 33/6 35/25 36/12 37/12 39/23 50/23 61/3 78/11 88/9 90/5 118/7 140/15 146/19 148/22 164/8 166/1 166/2 174/8 174/22 174/25 177/2 177/22 177/24 179/20 185/8 194/7</p>
--	--	--

<p>D</p> <p>different... [12] 200/23 201/4 214/13 218/20 232/6 243/7 245/17 255/19 255/21 255/24 257/24 283/16</p> <p>differently [2] 242/12 284/19</p> <p>differing [2] 130/21 130/21</p> <p>difficult [5] 120/21 149/24 222/2 270/22 270/23</p> <p>difficulties [1] 229/25</p> <p>difficulty [1] 120/15</p> <p>DIGGES [4] 2/13 2/13 2/18 2/18</p> <p>digit [7] 32/18 32/18 32/24 33/3 34/17 35/2 36/23</p> <p>digital [6] 13/9 13/10 156/19 156/19 157/12 158/4</p> <p>dimensions [2] 79/2 240/14</p> <p>dire [1] 148/10</p> <p>direct [21] 4/5 4/16 8/23 72/16 73/14 100/20 113/19 114/25 115/3 126/8 137/18 169/18 187/3 193/20 197/9 218/2 243/16 245/12 246/3 271/1 272/15</p> <p>directed [1] 101/14</p> <p>direction [4] 37/17 79/23 100/18 116/4</p> <p>directions [1] 226/20</p> <p>directive [1] 103/13</p> <p>directly [14] 10/7 10/18 11/3 28/14 122/14 183/20 185/3 187/14 208/22 266/11 272/4 280/19 281/6 284/8</p> <p>director [20] 9/7 76/23 91/6 97/3 98/5 98/5 99/25 100/10 100/19 100/23 109/15 109/25 112/6 112/21 119/9 134/16 138/6 142/9 163/4 289/2</p> <p>directories [1] 115/17</p> <p>directors [3] 134/13 135/20 135/21</p> <p>directory [3] 11/5 11/10 27/24</p> <p>directs [1] 10/22</p> <p>dirt [2] 210/13 214/16</p> <p>dis [1] 275/23</p> <p>disabilities [10] 230/10 232/1 242/10 271/13 271/14 272/17 274/25 275/11 275/14 275/21</p> <p>disability [7] 119/15 230/4 231/1 272/15 272/20 275/25 276/1</p> <p>disabled [8] 40/19 40/20 40/23 41/23 41/24 270/18 270/25 272/22</p> <p>disagree [7] 202/16 202/18 203/7 223/14 223/21 251/14 294/6</p> <p>disagrees [1] 223/17</p> <p>discipline [1] 276/14</p> <p>disclose [3] 65/23 66/3 292/1</p> <p>disclosed [9] 58/6 146/3 146/8 184/16 189/10 196/19 196/20 289/15 291/23</p> <p>disclosure [3] 291/10 294/17 294/19</p> <p>disclosures [7] 65/1 145/24 195/11 289/17 291/13 291/14 291/18</p> <p>discount [1] 155/6</p> <p>discovered [2] 41/4 231/6</p> <p>discovery [8] 58/7 62/20 64/14 65/10 66/6 66/21 102/12 289/15</p> <p>discrepancy [3] 42/22 152/14 201/8</p> <p>discuss [8] 60/24 67/16 113/6 194/19 195/20 197/11 198/10 198/11</p> <p>discussed [9] 5/5 25/15 58/2 139/8 170/12 218/3 275/19 275/23 283/15</p> <p>discusses [1] 189/17</p> <p>discussing [4] 58/11 187/5 190/12</p>	<p>190/13</p> <p>discussion [10] 5/14 25/12 47/22 52/7 59/10 72/14 100/23 132/18 135/9 149/14</p> <p>discussions [4] 75/17 77/12 135/6 173/16</p> <p>disenfranchised [1] 208/4</p> <p>disenfranchising [1] 272/16</p> <p>disparity [1] 216/17</p> <p>dispatch [2] 161/17 162/25</p> <p>dispatching [1] 161/24</p> <p>display [4] 41/5 41/17 41/19 58/20</p> <p>displayed [6] 23/3 41/11 45/9 58/25 124/18 125/4</p> <p>displaying [1] 45/3</p> <p>disproves [1] 211/21</p> <p>dispute [6] 65/10 104/12 105/22 194/13 291/22 294/15</p> <p>disputes [1] 286/25</p> <p>disruption [3] 261/4 261/13 261/15</p> <p>dissertation [1] 268/8</p> <p>distinction [2] 169/22 194/10</p> <p>distortion [1] 52/2</p> <p>distracted [1] 5/15</p> <p>distributed [1] 82/13</p> <p>distributing [4] 19/11 19/12 20/10 41/1</p> <p>distribution [5] 18/12 19/8 19/9 23/25 26/17</p> <p>district [24] 1/1 1/1 1/12 15/14 15/15 15/16 15/19 15/19 15/20 15/22 15/24 15/25 39/22 40/1 40/3 41/22 42/1 44/3 127/17 279/2 297/4 297/7 297/7 297/17</p> <p>District 1 [2] 15/15 15/19</p> <p>District 2 [8] 15/16 15/19 15/25 39/22 40/1 41/22 42/1 127/17</p> <p>districts [10] 9/21 14/18 14/19 14/22 14/23 14/25 15/2 15/17 16/3 16/10</p> <p>dive [1] 165/4</p> <p>diversify [1] 166/19</p> <p>divided [1] 59/22</p> <p>division [8] 1/2 15/7 86/10 96/17 96/19 99/9 141/14 297/8</p> <p>do [359]</p> <p>doable [3] 157/5 158/22 159/11</p> <p>doc [9] 65/22 141/16 141/20 141/22 143/7 143/8 144/2 147/6 147/12</p> <p>docket [3] 1/5 1/5 291/17</p> <p>Docket Number 448 [1] 291/17</p> <p>document [18] 1/8 10/15 10/21 13/12 64/14 88/18 92/13 92/17 93/11 95/9 112/23 113/1 144/14 144/20 146/22 178/16 189/18 291/12</p> <p>Document 433 [1] 291/12</p> <p>Document 834-2 [1] 189/18</p> <p>documentary [2] 103/2 105/4</p> <p>documents [7] 64/15 64/20 65/24 103/14 103/15 111/7 111/11</p> <p>does [89] 5/13 10/11 11/16 12/18 12/20 12/21 12/24 13/1 13/4 13/21 14/10 17/10 17/12 17/16 17/18 17/21 17/24 21/17 21/20 30/19 31/9 32/14 32/15 33/3 34/3 37/3 37/17 48/1 48/4 50/12 50/18 56/6 60/4 64/1 64/2 80/15 80/19 80/21 82/1 93/1 93/5 122/13 125/3 135/19 136/4 138/20 139/16 141/6 149/3 155/8 158/8 161/22 162/21 163/12 163/12 172/20 182/18 188/14 188/16 190/2 190/20 193/25 201/25</p>	<p>204/12 207/11 208/12 209/19 209/23 211/12 213/4 219/25 228/10 228/22 229/23 229/24 230/12 230/14 233/23 259/22 264/20 264/20 265/25 267/21 281/8 283/19 285/24 285/24 286/7 294/4</p> <p>doesn't [39] 18/25 33/1 48/16 51/13 56/7 56/24 60/3 61/20 63/1 72/14 79/4 79/6 80/1 95/1 121/19 128/14 192/16 199/1 199/2 208/15 208/17 209/10 209/11 216/22 227/8 228/22 229/14 235/8 242/2 245/15 246/9 246/12 267/19 269/8 283/22 284/25 285/23 286/2 287/20</p> <p>dog [1] 215/3</p> <p>doing [40] 7/12 23/20 51/20 53/3 57/14 59/16 61/3 61/5 71/6 71/8 79/1 80/1 86/25 90/22 118/13 120/24 139/11 146/13 152/19 157/19 164/6 167/1 168/20 171/1 177/22 184/19 190/20 198/13 211/24 235/22 237/12 240/21 240/24 241/13 241/17 244/15 244/18 285/6 286/8 292/21</p> <p>DOJ [3] 85/24 86/22 91/4</p> <p>Dominion [52] 9/9 9/12 21/18 33/19 33/20 33/22 33/25 36/25 37/5 37/23 38/1 38/5 39/6 39/7 39/17 43/14 47/7 49/5 49/21 49/24 49/25 50/5 53/1 54/10 54/11 55/5 57/6 58/20 76/11 76/13 77/21 78/22 79/10 82/1 82/6 82/9 82/16 82/19 82/22 85/17 116/14 116/15 116/17 120/25 245/3 245/8 273/13 274/1 283/4 287/21 289/20 292/22</p> <p>don't [195] 21/13 36/6 40/22 45/16 48/19 50/22 50/24 52/19 53/16 56/19 58/10 59/7 60/1 60/1 60/1 60/9 60/18 61/1 61/1 61/15 62/5 62/12 62/17 62/20 62/25 62/25 63/9 67/8 70/14 75/19 75/23 76/18 77/19 80/25 81/5 81/25 87/20 89/8 89/20 93/16 94/23 95/13 95/21 97/7 99/4 100/7 101/18 102/6 105/22 106/5 106/17 107/1 107/22 109/7 113/6 113/19 116/10 119/7 121/7 122/20 128/16 133/21 137/3 137/25 144/8 146/16 146/22 148/5 149/23 150/6 154/5 157/9 157/22 159/11 159/12 159/17 160/7 162/25 163/24 163/25 164/1 165/6 166/10 168/2 170/17 177/7 180/18 186/8 187/6 187/23 188/20 190/1 190/14 194/2 194/19 195/20 203/2 203/9 207/13 207/13 208/7 209/20 209/20 213/9 213/15 215/17 216/21 217/3 218/12 218/15 218/15 219/11 220/5 222/3 223/24 224/8 224/24 226/9 226/15 226/22 228/24 229/2 229/9 229/15 229/20 230/24 232/2 233/2 233/9 233/14 233/14 234/1 234/7 234/7 236/16 236/16 236/18 237/1 237/6 237/18 237/23 237/25 238/1 238/6 240/15 241/10 242/2 242/5 243/2 245/3 245/18 245/24 246/6 246/17 247/11 247/22 248/15 248/16 248/18 248/18 250/8 250/10 250/11 255/14 257/18 258/6 259/14 260/9 260/10 260/12 263/5 263/16 263/24 264/12 265/4 266/19 269/19 272/14 276/4 276/5 276/11 277/3 280/18 280/23 283/2</p>
---	--	---

<p>D</p> <p>don't... [10] 287/6 287/18 287/24 287/25 288/5 294/7 294/10 294/15 295/15 295/16</p> <p>DONALD [1] 3/9</p> <p>done [41] 5/21 16/12 26/7 29/23 31/19 49/11 59/3 61/5 62/24 67/3 67/12 72/11 76/3 97/22 111/8 111/12 131/7 143/25 144/1 149/25 153/7 156/17 159/20 159/21 168/18 169/24 196/14 206/15 212/23 228/18 260/1 260/19 262/9 262/16 275/15 276/4 280/7 280/7 280/15 281/23 295/8</p> <p>DONNA [3] 1/4 2/2 2/2</p> <p>door [4] 25/24 50/20 50/22 90/23</p> <p>double [8] 24/18 24/20 27/25 28/7 171/3 180/18 242/15 269/5</p> <p>double-blind [1] 180/18</p> <p>double-check [5] 24/18 24/20 171/3 242/15 269/5</p> <p>doubt [1] 67/15</p> <p>down [35] 9/1 35/7 49/25 75/6 75/10 83/20 86/13 96/3 104/1 107/14 111/9 152/3 169/19 178/8 180/3 188/19 199/4 199/7 213/4 213/5 217/24 221/5 224/18 246/4 256/17 257/1 258/22 259/13 269/22 270/3 275/10 287/5 287/5 287/6 295/15</p> <p>down-ballot [6] 217/24 256/17 258/22 259/13 270/3 287/5</p> <p>download [1] 206/14</p> <p>downloaded [1] 206/18</p> <p>downstairs [1] 142/11</p> <p>Dr [2] 145/18 292/22</p> <p>Dr. [82] 6/16 6/19 63/8 64/2 64/6 64/23 80/11 80/12 98/18 136/23 137/8 137/20 138/4 138/20 140/9 140/20 144/7 144/18 145/7 145/19 145/22 146/8 146/19 147/24 148/12 150/23 152/10 163/17 167/19 174/13 174/24 177/13 178/6 184/20 186/6 186/11 187/13 187/16 192/13 193/1 193/4 193/9 193/18 195/16 195/25 196/7 196/14 196/22 196/25 199/6 199/11 200/4 200/5 202/11 202/14 203/5 204/5 204/24 210/20 219/6 220/18 223/7 223/14 225/21 227/24 242/25 243/15 247/10 250/2 253/25 255/7 258/8 260/1 260/22 262/11 264/11 267/8 268/10 273/23 274/15 274/24 277/21</p> <p>Dr. Adida [53] 6/19 136/23 137/20 138/4 138/20 140/9 140/20 144/18 145/7 145/19 145/22 146/8 147/24 148/12 150/23 152/10 163/17 167/19 174/13 174/24 177/13 178/6 184/20 186/11 187/13 192/13 193/4 193/18 196/14 196/22 199/6 199/11 204/24 210/20 219/6 220/18 227/24 242/25 243/15 247/10 250/2 253/25 255/7 260/1 260/22 262/11 264/11 267/8 268/10 273/23 274/15 274/24 277/21</p> <p>Dr. Adida's [3] 186/6 193/9 196/25</p> <p>Dr. Ben [1] 137/8</p> <p>Dr. Gilbert's [2] 6/16 146/19</p> <p>Dr. Halderman [5] 64/2 64/23 144/7 200/5 258/8</p> <p>Dr. Halderman's [4] 63/8 80/11 80/12</p>	<p>223/7</p> <p>Dr. Harvey [1] 98/18</p> <p>Dr. J [1] 64/6</p> <p>Dr. Stark [10] 187/16 193/1 195/16 195/25 196/7 200/4 202/14 203/5 204/5 223/14</p> <p>Dr. Stark's [2] 202/11 225/21</p> <p>draft [1] 232/18</p> <p>drafted [1] 65/17</p> <p>drag [1] 28/9</p> <p>dramatically [1] 176/11</p> <p>draw [1] 225/9</p> <p>DRE [6] 152/5 289/18 290/13 290/16 291/13 294/16</p> <p>DREs [2] 278/19 289/19</p> <p>drive [15] 1/24 12/2 18/15 18/21 18/22 19/2 19/6 19/6 22/24 27/23 34/7 34/8 34/12 35/15 55/7</p> <p>drives [4] 18/17 18/18 19/10 54/23</p> <p>driving [1] 231/12</p> <p>drop [1] 35/7</p> <p>drop-down [1] 35/7</p> <p>dropped [1] 199/24</p> <p>drops [1] 229/12</p> <p>drove [1] 107/14</p> <p>due [3] 101/7 192/22 207/15</p> <p>duly [2] 8/22 137/17</p> <p>DUMA [1] 3/9</p> <p>Duncan [2] 196/2 196/19</p> <p>during [18] 18/12 36/6 38/17 38/22 38/22 62/7 68/5 115/3 128/1 140/21 142/24 143/1 175/19 250/7 254/10 289/18 290/13 290/16</p> <p>dust [3] 152/16 271/16 272/13</p> <p>duty [1] 67/18</p> <p>DVD [5] 24/17 25/2 26/1 26/14 27/13</p> <p>DVDs [2] 26/6 26/19</p> <p>E</p> <p>EAC [3] 57/22 72/2 89/23</p> <p>EAC-certified [2] 57/22 72/2</p> <p>each [36] 9/9 9/17 11/2 15/9 20/16 22/5 24/23 24/25 25/8 29/8 31/7 31/21 32/23 32/23 33/6 35/18 35/19 36/9 36/24 37/4 37/9 50/12 57/13 64/5 73/17 76/6 109/1 123/16 135/22 156/1 163/12 165/15 208/18 233/11 240/4 259/19</p> <p>earlier [34] 26/22 39/9 62/9 75/21 78/2 109/24 110/4 111/4 114/15 115/1 115/6 127/18 129/7 131/15 136/21 150/17 154/4 184/24 185/4 192/13 194/21 202/14 203/12 203/15 222/16 232/15 262/5 264/16 278/17 292/14 293/3 294/12 294/13 295/9</p> <p>early [8] 6/12 160/23 164/6 165/18 165/19 184/16 262/23 295/2</p> <p>earth [1] 106/17</p> <p>easier [15] 96/13 154/14 159/9 160/17 172/3 177/16 178/17 178/17 178/18 179/6 179/13 179/21 208/11 250/2 256/5</p> <p>easiest [1] 156/12</p> <p>easily [2] 126/16 159/4</p> <p>easy [6] 83/7 156/15 158/11 158/20 171/15 228/18</p> <p>ECF [2] 1/2 1/3</p> <p>Edge [1] 237/22</p> <p>educate [3] 51/22 77/7 77/23</p>	<p>educated [1] 70/22</p> <p>education [2] 142/12 281/15</p> <p>educational [3] 70/12 141/8 239/15</p> <p>EDWARD [1] 3/5</p> <p>EED [3] 30/11 30/11 30/17</p> <p>effect [1] 235/19</p> <p>effective [3] 237/11 237/16 253/2</p> <p>effectively [1] 212/19</p> <p>efficient [2] 201/23 202/4</p> <p>efficiently [2] 180/1 202/2</p> <p>effort [5] 37/6 51/23 122/7 140/4 235/14</p> <p>efforts [2] 90/16 116/6</p> <p>egalitarian [1] 270/10</p> <p>eight [9] 32/18 32/18 32/24 33/3 34/17 35/2 36/23 60/2 224/12</p> <p>eight percent [1] 224/12</p> <p>eight-digit [7] 32/18 32/18 32/24 33/3 34/17 35/2 36/23</p> <p>eight-year-old [1] 60/2</p> <p>either [13] 6/20 28/9 90/1 102/2 110/19 116/2 130/24 131/3 178/6 202/25 252/12 265/3 265/4</p> <p>ejected [1] 19/6</p> <p>election [325]</p> <p>election's [2] 207/24 212/25</p> <p>election-focused [1] 143/21</p> <p>elections [72] 9/3 9/5 9/19 9/20 10/19 14/5 14/7 14/11 16/2 16/7 17/6 17/22 18/3 19/25 22/1 32/17 34/5 34/13 39/14 43/16 47/8 47/22 54/21 56/9 57/13 59/1 59/4 59/9 59/16 59/22 60/6 64/19 73/5 77/6 82/7 82/10 82/12 84/9 90/25 92/1 92/3 92/3 92/4 97/17 100/24 109/25 118/8 119/9 119/11 126/9 132/5 134/16 135/20 135/21 140/5 143/11 151/20 170/9 179/2 182/22 202/15 204/15 209/6 222/19 235/12 268/3 274/12 274/13 279/18 289/2 292/21 294/8</p> <p>electronic [6] 12/8 36/19 36/20 129/15 280/23 284/22</p> <p>element [1] 193/10</p> <p>Eleventh [4] 194/9 194/14 194/25 275/12</p> <p>elicited [2] 67/17 271/19</p> <p>elicits [1] 221/2</p> <p>eligible [1] 12/7</p> <p>eliminate [1] 48/6</p> <p>eliminated [1] 119/1</p> <p>eliminating [2] 219/13 219/15</p> <p>else [13] 62/14 67/16 67/24 68/4 102/7 113/6 153/24 196/10 198/12 236/16 239/6 277/12 282/20</p> <p>else's [1] 90/2</p> <p>elsewhere [1] 69/15</p> <p>eluding [1] 69/16</p> <p>email [26] 85/10 85/17 86/2 86/6 86/12 87/13 87/25 91/3 91/5 91/13 97/3 97/10 98/7 98/10 99/5 100/10 100/24 108/10 108/14 108/18 109/14 109/24 110/5 110/8 110/20 129/7</p> <p>embraced [1] 294/9</p> <p>emerging [1] 176/6</p> <p>emotional [1] 226/9</p> <p>emphasize [1] 254/14</p> <p>employed [2] 134/5 192/17</p> <p>employment [2] 138/5 142/5</p> <p>empowered [1] 232/25</p>
--	--	---

<p>E</p> <p>empty [1] 295/2</p> <p>EMS [39] 10/6 10/7 11/1 14/4 31/4 31/9 34/4 55/16 55/17 84/22 91/22 93/2 93/17 94/4 94/10 98/8 98/9 99/14 102/13 103/1 103/15 104/2 108/1 108/20 110/17 112/12 113/14 114/16 114/19 115/5 115/9 115/24 116/2 116/19 117/8 117/12 131/17 134/3 134/8</p> <p>EMSs [1] 37/18</p> <p>enabled [3] 19/3 47/2 54/3</p> <p>encapsulated [2] 23/14 24/14</p> <p>encapsulation [1] 24/24</p> <p>encourage [4] 190/8 190/8 237/14 281/13</p> <p>encouraged [1] 280/11</p> <p>encouraging [2] 190/10 281/3</p> <p>encrypted [1] 28/3</p> <p>end [30] 6/18 8/7 26/19 40/21 42/18 52/10 55/3 58/15 76/4 126/8 128/19 130/1 136/9 142/23 149/17 155/23 155/23 158/21 178/24 181/14 195/1 221/18 221/19 222/12 228/4 249/25 260/18 266/20 276/6 286/17</p> <p>ended [2] 282/20 295/2</p> <p>ends [1] 49/16</p> <p>engaged [8] 49/20 49/20 51/9 90/24 140/13 140/17 140/17 279/12</p> <p>engagement [1] 51/16</p> <p>engineer [1] 142/8</p> <p>engineering [2] 142/7 142/9</p> <p>ENGLISH [1] 3/9</p> <p>enhance [1] 77/9</p> <p>enough [27] 52/12 67/9 79/8 79/23 79/24 101/23 102/1 113/5 144/25 168/20 200/25 208/24 210/7 212/22 214/19 216/19 229/7 234/7 234/8 239/2 239/19 241/2 248/19 253/4 257/17 258/24 287/4</p> <p>ENR [2] 113/15 113/15</p> <p>ensued [1] 5/14</p> <p>ensure [10] 168/8 198/23 207/23 208/2 208/7 235/23 238/12 254/5 267/22 270/18</p> <p>ensuring [3] 238/9 239/22 267/9</p> <p>enter [1] 164/13</p> <p>entered [6] 34/21 35/2 163/10 163/11 197/6 266/10</p> <p>entertained [1] 292/14</p> <p>enthusiast [1] 199/2</p> <p>entire [10] 58/1 118/19 119/8 119/10 186/9 209/14 245/1 251/19 275/6 279/5</p> <p>entirely [1] 201/20</p> <p>entirety [2] 253/9 255/2</p> <p>entities [1] 139/24</p> <p>entitled [1] 79/21</p> <p>entity [1] 119/6</p> <p>entry [2] 1/5 109/4</p> <p>envelope [1] 202/8</p> <p>environment [13] 18/11 19/3 35/25 59/9 59/16 123/9 123/10 123/12 123/13 126/11 126/23 133/12 142/13</p> <p>equal [1] 22/5</p> <p>equaling [1] 23/7</p> <p>equating [2] 229/18 229/20</p> <p>equations [1] 205/11</p>	<p>equipment [40] 14/6 17/3 20/8 21/19 23/24 36/25 38/6 39/17 40/25 41/2 42/9 42/9 43/14 47/7 48/11 49/5 49/21 49/24 56/4 57/6 58/20 82/15 96/9 97/12 97/14 97/17 98/2 99/8 99/21 110/3 114/8 114/13 115/4 118/16 135/5 154/22 154/25 262/24 291/7 293/25</p> <p>erasure [1] 129/6</p> <p>error [20] 38/9 38/15 38/17 41/5 43/3 43/4 84/2 127/17 127/18 128/24 172/3 214/12 214/13 217/16 218/9 218/10 224/13 225/17 225/19 265/17</p> <p>error-prone [1] 172/3</p> <p>errors [7] 38/14 84/8 214/16 217/11 225/11 241/4 241/5</p> <p>ES [2] 257/3 269/2</p> <p>escalate [4] 152/23 209/8 222/5 225/11</p> <p>especially [3] 140/4 167/6 228/16</p> <p>essence [2] 14/15 44/23</p> <p>essentially [5] 160/14 184/18 202/14 203/6 224/2</p> <p>establish [2] 65/24 107/2</p> <p>established [6] 16/4 34/18 37/8 53/21 58/10 73/17</p> <p>establishing [1] 15/2</p> <p>estimate [1] 54/25</p> <p>estimating [2] 149/24 166/11</p> <p>et [3] 1/4 1/6 52/6</p> <p>et cetera [1] 52/6</p> <p>ethnic [1] 166/20</p> <p>EUW [1] 2/10</p> <p>evaluate [1] 64/4</p> <p>evaluations [1] 61/17</p> <p>Evans [6] 5/25 6/21 6/21 78/15 78/20 288/23</p> <p>Evans' [1] 193/17</p> <p>even [32] 66/7 67/13 72/16 79/9 102/19 107/22 133/19 143/21 159/11 159/12 170/9 174/7 178/21 190/21 195/9 201/1 215/8 215/17 224/23 238/18 247/17 248/16 257/2 269/9 269/25 274/14 283/2 283/4 284/25 285/25 289/20 293/2</p> <p>even-numbered [1] 170/9</p> <p>event [2] 30/8 104/18</p> <p>events [6] 65/10 91/24 92/6 133/20 192/1 214/17</p> <p>eventually [1] 142/8</p> <p>ever [18] 19/11 29/4 75/15 83/7 83/18 89/5 89/14 102/13 104/7 112/16 114/7 114/11 133/16 170/19 170/20 248/18 255/11 262/19</p> <p>every [47] 5/9 22/7 25/6 55/20 56/15 59/17 118/17 139/16 148/18 156/18 162/14 164/1 164/2 167/16 168/19 172/7 179/23 180/16 180/22 180/23 183/5 183/6 201/18 202/2 203/1 203/5 203/6 204/16 209/9 209/9 209/10 210/3 216/13 225/22 229/14 229/16 233/12 248/18 254/20 254/22 256/10 258/2 258/9 258/9 258/10 258/10 285/19</p> <p>everybody [8] 164/17 169/23 180/25 196/10 221/24 233/18 279/21 296/5</p> <p>everyone [1] 266/22</p> <p>everything [12] 7/4 25/2 89/8 117/10 160/5 181/14 207/7 222/6 236/16 263/17 278/15 286/25</p> <p>evidence [10] 62/6 80/25 81/1 85/9</p>	<p>103/2 105/4 179/11 189/23 218/5 263/19</p> <p>evident [1] 39/13</p> <p>exact [5] 118/22 163/24 170/25 207/13 208/13</p> <p>exactly [17] 61/4 94/14 95/4 104/20 118/19 123/20 164/1 167/15 167/22 177/18 185/19 207/14 220/21 222/3 232/20 245/4 283/22</p> <p>examination [41] 4/5 4/6 4/7 4/8 4/9 4/10 4/11 4/12 4/16 4/17 4/18 4/19 4/20 4/21 4/22 8/23 60/23 66/13 72/16 74/21 97/25 117/22 127/7 131/13 134/1 134/24 135/17 137/18 187/1 204/22 242/23 253/10 264/9 267/6 267/9 268/16 271/19 274/22 275/8 275/9 279/7</p> <p>examinations [1] 268/11</p> <p>examine [4] 79/22 97/16 186/21 190/5</p> <p>examined [1] 109/21</p> <p>example [26] 31/16 32/4 121/12 122/16 123/1 152/3 152/6 155/5 161/12 162/7 166/6 167/24 167/25 170/1 173/20 179/15 185/12 199/22 199/22 204/3 208/3 208/4 225/12 239/17 261/5 265/19</p> <p>examples [1] 266/25</p> <p>Excel [2] 18/14 19/13</p> <p>except [4] 5/8 128/10 139/16 263/25</p> <p>exceptions [1] 278/16</p> <p>exchange [1] 278/7</p> <p>excited [1] 59/15</p> <p>excuse [8] 68/6 71/3 82/21 84/1 102/6 187/20 187/23 294/20</p> <p>excused [3] 79/18 136/17 288/11</p> <p>execute [3] 75/8 90/21 120/4</p> <p>executed [2] 90/25 127/25</p> <p>executing [4] 14/17 37/7 70/20 71/12</p> <p>executive [1] 138/6</p> <p>exercise [1] 120/2</p> <p>exhibit [25] 85/6 87/16 92/11 103/4 103/9 144/19 146/18 146/18 146/18 188/15 246/20 246/20 247/10 248/21 249/4 249/12 249/14 249/14 249/16 249/19 249/25 255/7 263/20 276/18 276/24</p> <p>Exhibit 1244 [1] 144/19</p> <p>Exhibit 130 [2] 92/11 103/9</p> <p>Exhibit 145 [1] 85/6</p> <p>Exhibit 385 [1] 255/7</p> <p>Exhibit 51 [7] 247/10 248/21 249/4 249/14 249/19 249/25 263/20</p> <p>Exhibit 612 [1] 87/16</p> <p>Exhibit 62 [1] 146/18</p> <p>Exhibit Curling [1] 246/20</p> <p>exhibits [2] 8/2 146/23</p> <p>existing [4] 77/23 114/19 117/13 192/15</p> <p>exists [3] 75/13 121/6 268/4</p> <p>exit [1] 156/7</p> <p>exited [2] 102/9 187/25</p> <p>expand [1] 56/21</p> <p>expect [6] 7/8 104/21 149/25 153/18 153/25 295/16</p> <p>expected [4] 99/24 197/14 293/6 295/5</p> <p>expecting [7] 20/1 20/2 20/4 42/17 42/23 44/21 126/3</p> <p>expects [2] 124/11 264/25</p>
--	---	---

<p>E</p> <p>expend [1] 56/10</p> <p>expended [1] 56/24</p> <p>expenses [1] 141/2</p> <p>expensive [2] 156/15 261/15</p> <p>experience [7] 9/3 155/4 159/1 163/21 220/19 267/20 285/17</p> <p>experiment [2] 224/8 224/9</p> <p>experimental [5] 224/6 224/19 224/20 227/2 227/12</p> <p>expert [31] 48/16 50/13 50/21 116/18 116/19 141/4 145/7 146/9 184/17 189/8 192/8 192/17 192/24 192/25 193/13 193/22 193/25 194/7 194/11 194/13 194/23 195/1 195/2 195/11 195/13 195/14 198/5 214/19 220/17 220/24 220/24</p> <p>expertise [4] 184/3 184/4 185/20 192/15</p> <p>experts [5] 194/4 195/5 204/4 220/25 272/8</p> <p>explain [26] 9/11 14/13 32/2 32/3 39/19 49/10 52/16 52/25 55/4 61/18 67/4 78/10 79/12 101/25 124/1 161/3 176/9 176/10 176/13 177/16 178/17 179/6 179/10 179/13 181/9 254/4</p> <p>explained [5] 33/14 49/7 49/13 54/16 171/10</p> <p>explaining [1] 198/14</p> <p>explanation [3] 155/25 219/9 293/4</p> <p>explicitly [1] 269/19</p> <p>explore [3] 79/8 210/18 273/9</p> <p>explored [1] 115/1</p> <p>exponentially [1] 59/19</p> <p>express [4] 228/11 228/12 228/25 287/11</p> <p>expressed [2] 53/5 229/24</p> <p>expressly [1] 100/5</p> <p>ExpressVote [1] 269/8</p> <p>extend [1] 197/4</p> <p>extended [1] 56/24</p> <p>extensive [4] 102/12 194/25 240/5 292/8</p> <p>extent [13] 48/12 59/14 119/4 126/19 141/7 174/9 184/12 187/8 188/12 189/3 189/8 200/4 240/6</p> <p>extra [2] 180/25 181/17</p> <p>extracted [3] 73/2 73/3 122/12</p> <p>extraction [4] 24/25 28/13 28/14 28/25</p> <p>extreme [3] 156/16 205/19 213/3</p> <p>extremely [2] 217/22 261/15</p>	<p>facts [4] 80/25 80/25 101/25 105/21</p> <p>factual [2] 193/10 193/15</p> <p>faculty [1] 141/22</p> <p>fail [3] 172/22 173/1 221/24</p> <p>failed [6] 34/15 41/21 128/1 162/1 176/11 220/4</p> <p>fails [3] 221/21 222/11 290/1</p> <p>failure [2] 94/11 231/24</p> <p>failures [1] 183/22</p> <p>fair [15] 52/12 149/4 207/24 212/24 234/12 234/15 244/9 244/15 248/5 248/19 257/17 263/3 263/14 273/17 280/1</p> <p>fairly [3] 235/20 263/15 263/16</p> <p>fake [1] 227/2</p> <p>falls [2] 194/1 194/4</p> <p>familiar [13] 36/25 111/16 200/4 200/5 200/15 200/21 217/6 246/14 247/12 248/7 263/15 263/16 279/15</p> <p>familiarize [1] 57/3</p> <p>familiarized [1] 263/13</p> <p>family [3] 59/12 126/10 128/16</p> <p>far [16] 16/12 30/20 74/17 111/16 139/22 145/15 153/22 153/22 154/8 154/9 158/17 158/23 160/14 170/20 192/19 257/1</p> <p>fascinating [1] 143/16</p> <p>fashion [2] 79/2 193/7</p> <p>fast [1] 225/11</p> <p>faster [1] 179/21</p> <p>Fayette [1] 255/8</p> <p>feasibility [2] 291/20 291/21</p> <p>feasible [3] 187/9 219/21 219/22</p> <p>feature [1] 181/7</p> <p>featuring [1] 175/17</p> <p>fed [1] 266/23</p> <p>federal [3] 33/22 59/12 269/20</p> <p>feed [2] 124/7 265/5</p> <p>feel [8] 60/18 98/17 116/22 127/12 213/2 237/12 238/3 287/4</p> <p>feeling [1] 133/3</p> <p>feels [1] 174/2</p> <p>fell [1] 213/7</p> <p>fellow [1] 239/24</p> <p>felt [3] 59/13 71/19 110/22</p> <p>fetch [2] 161/25 163/5</p> <p>few [11] 141/24 150/11 153/10 169/9 205/10 262/25 263/4 263/7 274/20 279/9 283/6</p> <p>fewer [8] 139/22 139/22 158/17 158/24 160/14 178/19 179/19 212/12</p> <p>fewest [1] 157/20</p> <p>field [5] 145/7 145/12 146/7 192/15 220/18</p> <p>fields [2] 145/10 146/6</p> <p>fifty [1] 258/10</p> <p>fight [3] 221/14 222/2 222/6</p> <p>figure [10] 86/22 102/25 105/21 115/25 152/23 164/20 241/18 242/9 294/23 294/25</p> <p>figured [1] 164/14</p> <p>figuring [2] 176/20 241/15</p> <p>file [74] 10/9 11/5 11/10 12/1 12/1 14/14 14/15 15/5 16/4 16/21 17/1 19/5 21/13 22/3 22/21 23/14 23/24 24/5 24/6 24/9 24/9 24/10 24/11 24/12 24/13 24/13 24/17 26/23 26/24 26/25 26/25 27/2 27/2 27/3 27/12 28/4 28/5 29/1</p>	<p>29/17 29/23 29/23 30/2 30/5 30/12 30/13 30/15 30/16 30/16 31/14 32/23 34/9 34/9 34/9 35/3 36/20 39/25 40/8 40/9 40/18 46/17 46/21 47/1 54/21 81/10 81/17 82/13 82/19 82/23 92/7 123/8 123/12 123/15 124/25 130/4</p> <p>filed [7] 1/2 1/6 1/8 8/1 79/14 147/9 291/13</p> <p>files [23] 11/6 11/8 11/9 11/13 11/13 14/8 14/10 15/2 18/13 18/14 19/11 19/13 19/23 20/18 26/8 26/12 27/24 30/2 81/19 82/2 82/7 82/10 102/23</p> <p>filing [2] 8/7 8/8</p> <p>fill [7] 230/25 236/12 236/14 236/15 242/7 265/12 265/22</p> <p>filled [2] 16/19 94/12</p> <p>filling [3] 218/17 218/19 280/23</p> <p>filmed [1] 162/23</p> <p>final [2] 228/19 285/25</p> <p>finalization [2] 20/14 23/12</p> <p>finalize [2] 21/23 22/1</p> <p>finalized [1] 16/24</p> <p>finalizes [1] 21/25</p> <p>finally [7] 13/13 16/24 17/3 47/24 128/23 162/1 193/9</p> <p>find [22] 12/6 12/7 12/8 27/24 30/2 62/19 90/12 90/18 100/1 100/3 101/11 108/24 116/5 123/21 134/17 156/21 175/6 202/4 230/1 232/4 235/2 282/19</p> <p>finding [3] 195/23 218/24 221/16</p> <p>finds [1] 219/24</p> <p>fine [25] 6/9 7/19 8/9 68/15 68/19 88/6 90/3 106/3 106/24 150/2 150/4 186/7 187/20 190/19 190/25 191/1 191/9 196/17 235/9 238/3 260/14 264/1 271/20 293/12 295/18</p> <p>finish [8] 6/21 6/22 106/16 113/23 114/1 136/25 217/9 276/12</p> <p>finished [1] 106/14</p> <p>fire [2] 14/25 190/9</p> <p>fired [1] 101/8</p> <p>Firefox [1] 142/10</p> <p>firm [3] 2/17 135/13 135/15</p> <p>first [55] 8/22 41/4 42/4 44/22 53/6 53/20 54/12 63/5 68/17 69/13 74/9 89/12 91/5 102/13 104/7 104/14 104/16 104/16 132/3 137/17 139/17 139/21 140/14 146/16 147/4 147/11 147/15 153/8 153/13 153/15 154/16 162/8 168/15 170/5 170/18 176/24 185/12 186/12 192/13 194/23 195/25 196/21 218/4 240/3 249/24 250/21 253/5 254/1 267/9 270/9 275/7 275/8 276/16 277/5 289/24</p> <p>FISHER [6] 2/5 4/7 4/12 63/19 74/25 106/22</p> <p>fit [6] 56/24 146/9 178/15 192/16 193/25 200/22</p> <p>fits [2] 161/3 285/21</p> <p>fitting [1] 5/6</p> <p>five [16] 55/19 60/11 71/4 71/5 76/15 138/23 139/20 139/22 139/22 165/14 210/21 231/7 251/1 251/3 252/8 252/17</p> <p>five hours [1] 55/19</p> <p>five seconds [4] 251/1 251/3 252/8 252/17</p> <p>five years [1] 231/7</p> <p>five-minute [1] 60/11</p>
<p>F</p> <p>F.4th [1] 194/11</p> <p>face [11] 48/6 56/5 56/18 120/16 120/23 120/25 148/11 182/12 285/9 287/20 287/22</p> <p>fact [35] 5/22 37/8 46/9 58/3 61/12 61/17 61/19 62/23 79/15 94/3 98/25 101/18 105/18 106/8 114/22 128/2 128/10 143/2 160/1 160/25 176/10 181/21 193/16 195/23 214/21 225/7 229/21 230/20 239/13 264/17 264/19 273/15 283/7 283/19 294/11</p> <p>fact-finding [1] 195/23</p> <p>factors [5] 173/11 173/12 174/14 175/2 175/5</p>		

<p>F</p> <p>five-point [1] 76/15</p> <p>flag [3] 48/20 89/23 149/18</p> <p>flags [1] 88/4</p> <p>flash [1] 54/13</p> <p>flashing [2] 54/15 75/25</p> <p>flavors [3] 155/22 160/21 171/10</p> <p>flip [4] 90/12 200/16 200/17 251/5</p> <p>flipped [2] 201/9 213/6</p> <p>flipping [1] 145/3</p> <p>flips [1] 201/3</p> <p>floor [1] 251/22</p> <p>flow [3] 37/17 43/24 161/20</p> <p>flux [2] 21/12 21/14</p> <p>flying [1] 6/18</p> <p>focus [3] 142/15 144/4 272/4</p> <p>focused [5] 141/12 141/13 142/16 143/21 174/24</p> <p>focuses [1] 213/20</p> <p>FOERSTER [1] 2/7</p> <p>folder [17] 23/15 23/15 24/15 24/15 27/25 28/1 28/3 28/7 28/8 28/9 28/9 28/10 28/11 29/25 30/2 30/3 30/13</p> <p>folks [7] 7/8 144/8 176/7 217/20 232/22 237/14 250/16</p> <p>follow [12] 27/12 49/23 49/23 96/24 97/2 110/7 110/18 112/14 127/13 261/22 264/15 267/4</p> <p>follow-up [4] 112/14 261/22 264/15 267/4</p> <p>followed [2] 31/7 289/2</p> <p>following [9] 1/1 6/19 111/15 111/19 115/7 142/4 142/5 168/16 170/8</p> <p>follows [3] 8/22 137/17 163/7</p> <p>font [3] 242/8 268/24 283/25</p> <p>footpaths [1] 59/14</p> <p>foregoing [1] 297/8</p> <p>forensic [7] 116/19 116/19 117/5 117/7 135/4 135/9 135/14</p> <p>forensics [1] 210/9</p> <p>forget [5] 84/14 140/12 164/7 165/9 225/1</p> <p>forgetting [1] 232/20</p> <p>forgive [1] 182/11</p> <p>forgot [4] 8/1 84/7 172/13 284/4</p> <p>form [8] 94/12 102/19 102/20 102/20 151/18 198/4 244/22 284/23</p> <p>formal [1] 144/24</p> <p>formalizes [1] 153/12</p> <p>formatted [4] 18/15 18/15 18/22 121/1</p> <p>formatting [2] 18/16 18/20</p> <p>formed [2] 282/7 285/16</p> <p>formula [5] 156/10 166/24 166/25 167/19 179/17</p> <p>formulas [5] 161/21 176/6 205/13 205/13 205/25</p> <p>formulating [3] 260/24 261/10 263/12</p> <p>Fortalice [1] 116/7</p> <p>forth [3] 107/1 199/13 276/6</p> <p>forward [7] 106/25 179/22 180/3 180/9 186/11 187/1 295/14</p> <p>found [4] 39/24 72/6 122/16 196/25</p> <p>foundation [23] 46/10 51/5 52/20 58/4 58/10 63/19 63/21 66/11 66/14 66/18 67/6 68/15 72/9 73/12 73/15 73/19 73/24 74/1 89/5 177/3 177/10 260/10 284/14</p>	<p>four [35] 20/23 22/18 36/5 36/9 40/3 40/7 40/13 42/2 42/13 42/14 42/17 42/19 42/24 43/23 44/21 45/2 45/14 46/18 46/19 46/20 55/18 123/9 123/10 124/11 124/14 126/4 139/21 165/14 192/5 195/6 196/22 244/3 247/24 285/11 287/7</p> <p>four seconds [1] 285/11</p> <p>four years [4] 139/21 192/5 196/22 244/3</p> <p>four-candidate [1] 126/4</p> <p>four-week-plus [1] 20/23</p> <p>fourth [3] 42/5 44/18 44/18</p> <p>frame [4] 61/2 61/12 107/1 107/3</p> <p>Frances [5] 86/6 86/9 86/10 96/19 112/9</p> <p>frankly [11] 7/10 7/16 67/9 95/2 147/21 190/15 227/8 283/2 289/22 291/23 293/1</p> <p>free [4] 143/12 197/23 206/14 237/12</p> <p>freely [1] 187/7</p> <p>frequency [1] 170/13</p> <p>Friday [7] 6/17 6/24 6/25 7/8 7/9 7/12 295/3</p> <p>friends [1] 59/25</p> <p>front [11] 13/10 61/7 169/5 173/17 177/21 188/7 221/11 224/24 243/13 243/14 250/2</p> <p>FTP [5] 28/17 29/4 29/5 29/7 29/13</p> <p>full [13] 1/8 48/6 56/5 56/18 65/16 70/8 120/16 120/23 120/25 137/11 137/13 268/21 277/14</p> <p>full-face [6] 48/6 56/5 56/18 120/16 120/23 120/25</p> <p>full-time [1] 70/8</p> <p>fullness [1] 279/16</p> <p>fully [5] 65/12 115/1 191/7 202/25 205/22</p> <p>Fulton [1] 5/2</p> <p>Fun [1] 181/21</p> <p>function [2] 11/14 181/8</p> <p>functional [2] 38/17 115/19</p> <p>functioning [2] 57/7 236/8</p> <p>functions [5] 9/11 10/11 11/16 13/4 283/8</p> <p>fundamental [1] 268/3</p> <p>funder [1] 140/4</p> <p>further [19] 44/17 48/20 60/10 61/25 95/12 103/13 106/18 111/12 117/16 122/23 131/9 167/14 188/16 204/18 210/9 242/18 267/2 278/2 288/12</p> <p>future [4] 97/17 168/15 253/18 268/9</p> <p>G</p> <p>Gabe [3] 103/21 181/22 261/5</p> <p>gain [6] 109/4 114/19 115/8 115/25 117/8 151/16</p> <p>gained [2] 115/8 262/24</p> <p>gamed [2] 173/21 173/23</p> <p>gather [1] 285/22</p> <p>gathering [2] 271/16 272/13</p> <p>gave [7] 8/7 63/25 109/17 121/12 190/14 212/5 278/9</p> <p>GBI [1] 134/20</p> <p>gear [1] 173/9</p> <p>gears [2] 182/15 222/22</p> <p>general [20] 21/9 47/23 119/11 132/9 132/15 132/19 135/7 135/10 153/20</p>	<p>170/8 212/24 250/4 250/8 251/11 254/19 256/8 257/8 257/21 287/8 288/2</p> <p>generally [5] 139/23 144/9 150/23 165/22 175/13</p> <p>generate [5] 16/11 56/5 121/1 121/19 125/24</p> <p>generated [11] 30/5 41/25 44/13 95/9 121/17 122/8 122/9 124/3 124/15 124/17 222/10</p> <p>generic [2] 255/24 272/2</p> <p>genius [1] 210/12</p> <p>genomic [1] 141/24</p> <p>GEORGIA [128] 1/1 1/25 3/2 5/2 9/3 9/4 11/19 12/17 14/5 14/11 17/21 18/3 20/20 22/9 30/7 36/3 37/3 48/2 48/5 48/8 48/11 49/21 49/24 56/18 59/3 59/17 60/6 70/9 70/10 120/9 135/20 139/3 139/9 139/20 139/21 140/10 140/13 140/18 140/19 141/6 144/11 153/16 153/24 154/1 154/7 154/12 154/15 154/20 157/22 161/12 162/6 163/7 163/18 163/20 164/7 164/19 166/8 166/11 167/7 167/8 168/7 168/15 169/3 170/14 170/19 171/13 171/19 173/22 175/20 177/16 178/25 179/3 179/23 179/25 182/5 183/25 184/19 193/12 199/12 200/7 200/9 201/25 203/3 216/5 225/3 227/25 232/9 232/21 233/4 234/4 236/22 243/8 244/1 244/3 244/10 244/13 244/20 245/1 246/14 246/16 248/14 248/17 248/21 248/23 249/8 251/10 254/20 255/15 255/16 258/13 267/14 279/10 280/2 280/6 280/15 281/7 281/9 281/16 281/20 282/21 284/7 284/8 284/9 285/18 286/11 297/4 297/8 297/10</p> <p>Georgia's [1] 180/7</p> <p>Germany [2] 103/6 103/12</p> <p>get [94] 5/16 6/8 7/7 7/14 10/5 16/9 29/14 33/5 34/4 41/2 43/22 48/20 56/11 56/11 59/22 62/10 71/15 79/17 90/5 97/8 101/16 105/15 105/21 107/15 107/16 109/8 112/2 112/3 112/19 112/21 114/1 124/3 136/25 142/2 147/1 151/13 155/16 156/10 156/14 157/20 165/15 165/22 166/3 167/2 171/3 176/11 182/7 183/24 187/1 189/2 191/11 193/20 203/12 204/17 207/25 213/4 217/14 219/12 222/13 222/20 224/5 225/15 229/7 229/11 229/12 229/16 232/2 232/3 233/20 236/6 236/13 239/16 240/13 241/14 243/11 243/15 244/5 244/20 251/6 258/17 259/10 262/19 265/1 265/21 269/9 272/20 279/2 282/1 282/9 283/11 284/13 288/20 294/23 295/8</p> <p>gets [12] 18/21 18/22 21/24 24/2 24/6 162/19 171/20 199/23 209/5 231/25 233/11 238/5</p> <p>getting [16] 5/4 19/21 35/6 42/9 50/9 72/21 78/24 79/4 91/6 118/7 122/5 127/12 196/21 215/5 260/6 260/16</p> <p>Gilbert [1] 146/20</p> <p>Gilbert's [2] 6/16 146/19</p> <p>girl [1] 60/2</p> <p>give [24] 7/11 32/4 62/4 81/5 90/7 116/4 155/25 158/5 164/12 170/25 173/18 175/7 181/3 221/19 222/11</p>
---	--	---

<p>G</p> <p>give... [9] 224/10 224/14 226/20 227/18 258/19 294/24 295/1 295/1 295/21</p> <p>given [20] 28/18 64/13 64/16 79/8 79/23 79/24 91/2 137/5 144/5 144/10 148/7 151/3 158/25 175/2 191/14 201/19 236/19 237/9 279/4 282/3</p> <p>gives [4] 10/22 30/22 210/20 229/15</p> <p>giving [5] 42/24 179/11 186/3 268/4 268/5</p> <p>glad [1] 128/22</p> <p>glance [2] 250/21 252/5</p> <p>glib [1] 216/21</p> <p>go [106] 6/25 11/20 12/6 15/7 16/16 23/1 23/12 27/14 30/11 32/11 33/16 40/17 41/15 43/10 44/1 45/12 46/16 46/17 47/1 51/23 52/14 53/13 55/12 55/24 56/1 56/2 61/19 62/4 62/22 63/17 67/21 68/17 70/24 72/19 74/17 74/18 77/23 78/12 81/7 83/13 92/20 93/9 96/1 107/1 107/22 108/9 108/15 114/4 122/7 122/17 123/21 127/6 128/14 130/14 149/23 151/12 155/13 156/21 157/8 161/6 161/18 161/18 161/19 161/25 163/1 163/5 163/14 163/14 163/17 164/4 165/14 166/12 166/15 166/19 168/18 169/19 170/5 171/2 172/9 173/2 178/4 178/4 179/9 180/22 184/13 187/14 187/23 199/7 199/8 208/18 209/22 215/23 239/6 241/12 251/25 256/12 256/16 258/1 265/22 271/20 276/10 277/17 281/3 288/7 289/11 295/14</p> <p>goal [3] 161/7 161/7 181/4</p> <p>God [2] 143/13 210/13</p> <p>goes [12] 7/10 14/21 35/4 97/21 127/15 153/10 157/3 189/22 190/3 202/24 210/6 226/21</p> <p>going [143] 7/11 15/19 17/3 36/7 36/18 38/23 40/17 40/18 45/13 48/19 49/15 51/1 51/14 51/23 52/13 53/9 53/9 53/16 60/11 60/22 60/22 61/11 62/10 62/13 62/18 63/15 65/24 66/3 68/1 68/17 72/13 74/19 75/8 79/17 79/19 81/6 88/7 89/8 102/1 103/19 107/4 113/20 124/17 124/20 128/25 135/7 135/14 136/24 137/25 141/21 144/14 146/2 147/16 149/16 149/23 151/14 154/9 155/17 155/25 162/6 164/25 166/18 167/2 167/20 167/25 168/3 169/7 172/3 178/5 179/22 180/9 181/3 181/14 186/11 186/16 186/17 187/24 188/2 188/8 188/15 188/19 188/23 189/2 189/4 190/19 193/14 195/2 197/17 204/21 210/17 210/18 215/2 215/3 215/15 220/8 220/21 221/1 221/10 225/1 225/10 225/11 225/15 227/15 233/8 235/18 239/5 239/6 244/10 246/20 247/3 253/13 254/25 255/4 257/13 258/1 259/3 260/4 260/21 262/6 262/17 264/8 265/8 265/23 273/25 274/9 274/10 274/11 274/14 275/15 276/5 276/6 282/5 284/16 285/13 287/11 287/25 289/23 291/5 291/24 292/19 292/20 293/11 295/8</p> <p>gone [9] 5/25 6/1 6/1 40/24 136/6 191/23 263/9 265/3 293/1</p>	<p>good [38] 2/13 5/3 7/11 8/25 74/23 74/24 75/1 110/25 117/24 117/25 137/20 137/21 159/8 165/8 166/9 166/22 178/21 199/9 204/24 204/25 205/2 205/3 217/20 225/10 226/4 229/2 233/25 234/10 242/25 243/1 243/5 259/5 260/21 264/11 264/14 274/4 285/13 285/25</p> <p>Google [2] 86/18 116/4</p> <p>Googled [2] 83/7 90/18</p> <p>Googling [1] 115/25</p> <p>GOP [1] 87/6</p> <p>got [39] 5/8 7/14 16/19 79/6 90/2 97/8 101/17 104/24 124/4 128/4 128/8 139/2 141/16 146/18 149/2 158/20 172/23 174/24 177/24 178/3 182/9 195/6 199/3 199/25 200/1 209/24 217/16 219/6 239/7 245/11 263/11 263/24 264/4 265/24 275/12 276/5 276/13 291/22 295/5</p> <p>gotten [5] 21/21 29/13 104/16 170/22 196/21</p> <p>GOVERNANCE [2] 2/13 205/2</p> <p>government [6] 14/4 59/11 59/12 59/15 140/6 143/4</p> <p>governmental [1] 139/24</p> <p>governor [1] 287/9</p> <p>grab [3] 81/6 253/5 253/6</p> <p>graduate [4] 143/1 143/2 144/2 206/7</p> <p>grandma [2] 270/5 270/11</p> <p>grandmother [1] 241/22</p> <p>grandpa [1] 270/10</p> <p>grateful [1] 59/2</p> <p>gravy [1] 207/19</p> <p>great [4] 75/14 152/12 203/9 220/3</p> <p>greater [1] 167/12</p> <p>grew [2] 59/11 59/12</p> <p>ground [4] 116/22 158/1 158/23 223/11</p> <p>Groundhog [3] 5/4 5/6 5/11</p> <p>grounds [6] 58/2 73/12 74/2 89/9 145/17 177/1</p> <p>group [3] 2/11 292/13 292/20</p> <p>grown [2] 59/18 153/17</p> <p>guarantee [1] 230/9</p> <p>guess [14] 21/22 45/15 63/25 91/2 145/24 159/24 166/17 170/7 176/1 184/9 207/20 217/24 218/3 286/7</p> <p>guidance [1] 170/2</p> <p>guiding [1] 173/11</p> <p>H</p> <p>hack [7] 83/7 185/16 186/15 189/20 201/3 201/9 201/13</p> <p>hacked [2] 121/13 235/8</p> <p>hacks [2] 147/16 200/16</p> <p>had [189] 5/19 5/22 6/4 6/5 6/12 18/5 21/6 25/12 38/10 38/12 40/1 40/3 40/3 40/24 40/25 41/1 41/7 41/14 41/18 41/23 41/23 42/6 42/11 42/12 42/15 42/16 42/16 44/1 44/4 44/8 44/11 44/15 45/12 45/13 45/19 45/22 46/18 46/20 47/10 54/6 59/23 61/5 63/22 65/2 65/17 66/21 67/1 69/13 70/20 70/22 72/3 72/5 72/17 73/17 75/11 75/17 78/25 84/6 84/7 86/19 90/11 90/14 90/23 90/23 91/9 91/9 93/6 93/17 93/19 94/1 94/2 94/7 95/15 95/24 96/8 97/5 97/6 97/11</p>	<p>98/14 98/21 98/22 99/21 100/23 100/24 101/1 101/2 101/4 101/6 101/9 102/12 105/11 109/8 109/9 109/13 109/14 109/15 109/21 110/1 110/2 110/18 112/11 112/19 114/22 114/23 115/13 115/20 115/22 115/22 118/16 121/2 122/8 122/9 122/18 123/9 123/13 124/19 125/13 125/17 126/11 127/18 127/25 128/1 128/22 129/8 129/23 132/5 132/10 132/13 132/14 132/25 133/4 133/19 134/4 136/13 137/24 140/1 145/1 145/18 145/21 145/22 148/10 170/19 173/16 173/21 173/22 177/13 178/16 179/3 179/18 179/18 179/19 181/16 185/3 189/14 191/19 192/24 199/4 199/12 208/7 217/16 217/21 218/7 220/16 220/23 232/22 232/23 233/2 233/16 247/23 249/6 255/5 256/14 263/10 269/5 274/8 277/1 279/1 281/12 287/21 289/20 291/4 291/5 291/7 291/8 292/5 292/13 292/18 292/18 297/9</p> <p>hadn't [5] 67/19 181/17 285/8 291/5 294/11</p> <p>Halderman [15] 64/2 64/23 144/7 200/5 223/18 225/8 226/6 226/17 226/24 229/10 258/8 281/11 282/8 285/4 285/12</p> <p>Halderman's [7] 63/8 64/7 80/11 80/12 200/20 223/7 237/17</p> <p>Halderman-Bernhard [3] 225/8 226/6 229/10</p> <p>half [10] 15/14 15/18 66/16 150/1 166/18 225/5 225/6 252/11 258/12 259/8</p> <p>HALSEY [1] 2/8</p> <p>Hamilton [1] 116/12</p> <p>Hampshire [2] 138/24 273/16</p> <p>Hampton [1] 134/14</p> <p>hand [44] 8/13 44/8 44/12 45/16 45/17 45/19 45/23 118/18 119/16 147/4 151/8 151/21 155/2 155/20 159/7 183/16 215/11 218/7 218/12 218/21 222/5 230/19 230/20 231/4 231/12 231/23 236/11 242/13 256/16 265/10 265/11 270/7 271/9 272/10 273/12 275/2 277/24 278/16 278/23 287/17 288/8 292/24 293/8 297/12</p> <p>hand-count [1] 222/5</p> <p>hand-marked [30] 44/12 118/18 151/21 155/2 215/11 218/7 218/12 218/21 230/19 230/20 231/4 231/12 231/23 236/11 242/13 256/16 265/10 265/11 270/7 271/9 272/10 273/12 275/2 277/24 278/16 278/23 287/17 288/8 292/24 293/8</p> <p>hand-waved [1] 155/20</p> <p>handed [3] 87/5 88/18 144/18</p> <p>handle [4] 82/4 222/3 239/16 269/9</p> <p>handled [2] 134/15 220/20</p> <p>handles [2] 269/3 269/7</p> <p>handling [1] 169/23</p> <p>hands [2] 98/4 274/10</p> <p>hang [2] 103/18 245/17</p> <p>happen [12] 17/10 162/23 162/24 177/4 213/8 220/7 220/11 221/12 221/13 241/11 260/8 265/25</p> <p>happened [19] 39/19 39/23 52/21 62/7</p>
---	--	--

<p>H</p> <p>happened... [15] 64/25 65/3 89/23 94/19 95/5 104/17 107/3 152/24 153/12 258/2 275/19 276/16 279/23 281/16 292/24</p> <p>happening [4] 62/2 89/25 173/24 238/19</p> <p>happens [12] 69/18 121/8 121/16 137/6 157/17 219/25 221/21 226/18 241/14 265/19 283/16 287/5</p> <p>happy [12] 58/12 81/3 81/4 105/23 139/5 146/14 152/24 212/12 221/24 244/14 251/19 277/16</p> <p>hard [23] 159/15 161/1 171/3 176/9 176/13 200/25 207/25 218/5 222/11 226/10 230/5 230/10 235/2 242/9 242/9 242/12 242/12 268/6 268/7 268/25 271/11 272/21 294/22</p> <p>harder [1] 174/7</p> <p>hardware [1] 77/24</p> <p>Harry [3] 60/17 60/18 90/7</p> <p>Harvard [2] 141/16 141/23</p> <p>Harvey [21] 85/11 85/16 86/2 89/24 91/6 91/12 91/13 96/6 97/3 98/5 98/5 98/18 98/18 99/9 100/10 100/23 109/25 110/8 110/20 112/6 112/21</p> <p>Harvey's [2] 106/9 106/15</p> <p>has [156] 1/6 9/18 10/9 11/4 11/5 11/23 12/9 12/19 12/23 13/20 19/3 22/14 22/14 22/15 23/11 24/18 25/9 26/7 27/7 28/8 28/13 29/17 29/23 30/1 30/14 31/3 31/7 31/12 31/17 31/20 32/23 34/16 34/18 34/21 36/12 38/15 47/1 47/4 48/15 49/7 49/11 49/12 52/21 54/2 56/6 57/5 59/9 61/15 67/9 70/4 70/8 72/10 79/25 80/1 87/19 88/2 89/6 96/7 97/23 97/24 98/8 102/13 109/1 111/7 124/4 124/14 124/16 124/22 124/25 126/11 126/20 136/6 140/1 140/17 146/3 146/8 146/11 146/18 148/7 148/18 148/21 151/3 151/24 152/8 153/17 156/24 158/3 162/1 162/13 168/16 170/12 173/3 174/1 180/9 180/15 184/19 185/24 186/23 189/15 191/13 191/23 191/25 192/13 192/15 192/18 192/20 193/18 194/6 194/17 196/5 201/20 202/21 206/10 206/17 208/5 210/23 211/15 212/19 217/25 219/6 223/13 224/21 225/22 226/13 232/8 236/12 244/2 246/21 246/25 248/2 258/8 265/2 266/5 270/11 272/2 276/5 276/16 277/14 279/25 280/15 282/16 283/20 283/25 284/2 284/2 284/3 285/1 285/19 285/20 285/22 289/14 289/17 291/23 291/24 291/25 294/14</p> <p>hash [23] 57/16 57/18 57/19 57/20 57/23 57/24 58/11 58/18 58/20 58/24 58/25 61/17 66/6 66/20 67/1 73/2 73/8 95/4 95/6 103/9 103/10 181/8 181/9</p> <p>hasn't [2] 87/19 189/9</p> <p>hate [1] 264/4</p> <p>hates [1] 179/23</p> <p>have [547]</p> <p>haven't [15] 53/15 65/5 65/6 67/12 143/5 145/1 173/16 192/3 196/21 216/7 228/20 250/11 255/16 263/9 283/4</p> <p>having [17] 5/12 8/22 94/12 94/18</p>	<p>99/16 132/23 132/24 137/17 158/9 188/13 222/9 222/9 224/23 257/22 279/2 291/14 291/19</p> <p>Hayes [1] 134/4</p> <p>Hayes' [1] 85/22</p> <p>he [240] 5/8 5/25 6/1 7/9 46/9 48/15 48/15 48/19 48/24 48/25 49/10 49/11 49/11 49/12 49/12 49/13 50/11 51/4 52/8 52/13 52/17 52/20 61/1 61/6 61/9 61/12 61/13 61/17 62/23 66/7 66/11 66/14 66/16 67/9 67/22 68/1 69/14 70/4 72/10 73/25 74/1 78/5 78/17 79/1 79/4 79/5 79/7 79/8 79/12 79/21 79/25 80/1 85/16 86/6 87/19 88/2 89/6 90/2 96/6 96/16 96/24 97/10 97/13 98/6 100/11 100/20 100/21 101/25 104/15 104/20 104/21 104/24 104/24 105/5 105/6 105/6 105/10 106/1 106/6 106/8 106/8 109/15 109/16 109/17 111/21 113/22 113/25 115/5 115/7 115/8 119/18 136/24 147/17 148/2 148/7 148/17 148/21 148/22 148/23 149/2 149/3 149/7 149/7 149/9 149/11 171/20 171/20 174/5 174/6 174/10 174/10 174/20 177/3 177/8 177/9 183/25 184/5 184/8 184/11 184/23 185/23 186/5 186/12 186/23 187/16 188/2 189/2 189/5 189/6 189/14 189/15 189/17 189/18 189/22 189/22 190/14 191/6 191/11 191/13 191/20 191/20 191/22 191/23 191/25 192/5 192/5 192/6 192/13 192/16 192/18 192/20 193/3 193/11 193/12 193/14 193/22 193/25 193/25 194/1 194/4 194/6 194/17 194/23 195/1 196/2 196/9 196/11 196/19 196/20 202/24 205/7 205/9 205/13 205/14 205/16 219/6 219/6 219/12 219/15 220/24 225/4 227/7 227/9 230/7 232/14 237/1 240/6 245/22 246/25 247/3 247/4 247/23 247/23 248/2 249/15 260/18 270/14 271/3 271/5 275/11 275/17 275/19 275/21 276/19 276/21 276/24 277/14 289/16 289/17 289/18 290/18 290/19 290/20 291/4 291/4 291/5 291/5 291/6 291/8 292/3 292/6 292/11 292/17 292/18 292/19 293/6 293/6 293/7 293/11 294/8 294/12 294/14 294/15 294/15 294/16 294/18 294/23 295/7 295/9 295/11</p> <p>he's [14] 50/9 68/17 79/6 81/4 104/16 177/2 187/21 188/8 191/7 191/15 191/15 192/14 239/3 247/21</p> <p>head [4] 86/10 124/6 166/10 245/3</p> <p>headed [1] 185/21</p> <p>headers [1] 16/19</p> <p>health [29] 57/8 57/11 57/12 58/23 61/14 61/23 62/3 62/5 62/7 62/14 62/17 62/22 62/23 63/8 63/20 65/4 65/4 65/6 66/19 68/25 69/12 69/18 70/18 71/17 71/23 72/23 73/16 73/18 141/24</p> <p>hear [12] 53/14 53/16 86/21 100/11 142/22 171/4 188/22 199/7 213/8 243/21 252/23 293/18</p> <p>heard [21] 29/11 38/14 49/17 85/23 86/19 90/14 104/7 104/7 105/13 125/7 154/20 191/21 201/11 219/10 246/17 250/15 254/10 256/9 257/8 259/17 291/5</p>	<p>hearing [8] 43/14 48/17 102/15 184/14 192/7 197/1 221/11 289/24</p> <p>hearsay [12] 49/9 49/14 58/4 74/2 78/7 78/8 78/10 78/11 79/11 87/22 89/9 264/1</p> <p>heck [1] 241/16</p> <p>held [6] 44/7 135/10 142/6 142/7 194/14 297/10</p> <p>Hello [2] 127/9 127/10</p> <p>help [20] 63/2 105/19 105/21 116/7 116/9 116/12 116/14 140/13 140/18 155/11 157/24 165/2 175/11 182/18 182/22 211/13 230/3 244/14 277/8 277/18</p> <p>helped [7] 140/14 143/3 148/18 164/7 232/18 232/20 232/21</p> <p>helpful [11] 53/12 61/20 62/16 66/23 88/7 102/2 148/21 151/11 171/2 238/17 257/18</p> <p>helping [4] 164/19 236/5 279/12 281/7</p> <p>helps [7] 161/22 170/1 203/25 228/19 241/3 241/7 250/1</p> <p>her [14] 60/3 70/11 99/12 99/16 101/8 101/10 128/11 128/11 128/15 208/8 242/5 242/6 242/7 270/5</p> <p>here [106] 6/18 6/18 20/20 31/2 33/14 44/24 44/24 50/13 53/10 53/16 60/16 60/21 64/10 65/1 65/13 66/16 66/24 78/12 80/24 89/8 91/19 93/12 93/22 98/18 98/20 99/12 101/17 104/23 111/6 113/18 131/5 137/21 140/24 141/7 144/14 146/8 146/12 147/3 149/14 154/19 161/4 164/10 165/3 168/7 169/2 169/3 169/15 170/5 171/2 172/8 173/10 175/2 178/3 178/6 181/23 184/15 184/19 185/19 186/4 186/12 186/17 187/13 190/9 191/11 192/11 193/11 194/3 194/16 195/25 197/14 197/24 198/15 207/22 211/3 215/15 219/3 220/8 224/19 226/20 233/4 234/5 245/22 245/25 254/10 255/7 255/19 256/5 260/1 260/16 270/10 271/9 273/17 273/23 276/4 276/12 276/20 278/7 278/13 278/13 278/25 281/12 282/3 288/8 291/22 293/20 295/7</p> <p>hereby [1] 297/8</p> <p>hereunto [1] 297/12</p> <p>HERNANDEZ [1] 3/5</p> <p>hesitant [1] 138/1</p> <p>hesitation [3] 188/11 188/20 190/18</p> <p>heterogeneity [1] 180/14</p> <p>hey [3] 109/13 171/22 234/6</p> <p>hiccups [2] 21/10 21/10</p> <p>high [4] 152/21 155/13 181/4 225/25</p> <p>high-level [1] 181/4</p> <p>higher [3] 174/1 214/9 229/8</p> <p>highlighted [2] 223/7 289/13</p> <p>highlights [1] 179/1</p> <p>highly [2] 61/4 198/3</p> <p>him [55] 6/16 6/17 51/1 51/6 52/13 53/8 53/9 61/7 61/10 67/8 67/22 68/1 80/4 90/12 97/2 97/7 98/18 100/11 101/24 103/22 105/3 105/18 105/19 105/21 106/7 106/14 113/2 115/5 138/1 145/23 149/4 149/16 186/20 187/5 187/20 190/10 190/11 190/17 190/19 191/13 192/4 195/8 195/10 220/23 239/5 253/13 261/22 290/3 292/1</p>
--	--	---

<p>H</p> <p>him... [6] 293/11 293/12 294/10 294/12 295/25 296/2</p> <p>himself [4] 102/1 173/4 174/11 270/14</p> <p>hindered [1] 280/24</p> <p>hire [2] 135/19 135/21</p> <p>hiring [2] 134/12 143/10</p> <p>his [81] 5/17 50/12 51/5 51/6 51/7 58/2 58/11 60/24 61/6 61/9 61/19 63/19 68/10 69/5 69/15 69/16 70/1 70/3 70/4 78/3 78/7 78/16 79/25 97/10 99/25 101/21 101/22 101/25 104/14 104/15 104/17 104/20 105/10 105/11 106/15 107/6 109/16 115/7 131/10 136/24 137/1 145/24 148/21 150/18 184/2 184/4 184/11 186/12 189/14 190/14 191/7 191/17 191/23 191/23 191/24 193/12 194/19 194/20 194/21 196/3 196/25 203/5 205/15 208/7 219/9 219/12 220/17 220/19 223/17 223/21 227/16 227/22 230/8 248/3 288/24 289/19 291/2 291/3 293/13 293/16 293/22</p> <p>hits [1] 143/16</p> <p>Hoke [3] 69/10 70/11 71/11</p> <p>hold [7] 9/19 45/19 45/23 56/8 107/19 122/22 181/23</p> <p>holds [2] 14/4 182/8</p> <p>hole [1] 149/18</p> <p>homegrown [1] 139/18</p> <p>Homeland [1] 140/2</p> <p>hone [1] 211/3</p> <p>honest [2] 97/4 221/18</p> <p>honestly [3] 99/6 222/9 233/9</p> <p>honing [1] 200/14</p> <p>Honor [222] 5/5 6/4 6/6 7/7 7/21 7/24 27/6 30/19 32/22 33/9 34/20 45/20 45/25 46/8 46/11 48/12 48/21 49/1 49/9 49/11 50/9 50/11 50/17 50/25 51/4 51/21 52/8 52/23 53/7 53/8 57/25 58/12 58/14 60/9 63/3 63/16 65/9 65/19 66/17 68/7 68/14 68/20 72/17 73/9 73/13 74/16 74/20 76/8 78/1 78/9 79/13 80/3 80/24 81/6 83/14 84/18 84/25 87/2 87/16 87/18 88/6 88/11 89/1 89/3 89/17 89/19 90/3 91/14 95/7 99/22 100/2 100/9 102/3 102/10 102/11 102/16 103/17 103/25 104/10 104/20 105/2 105/4 105/22 106/11 106/19 106/21 111/1 112/17 113/18 114/24 115/3 116/21 117/16 117/21 126/18 131/5 131/9 131/20 132/2 133/20 133/23 134/22 135/16 136/18 136/20 137/8 144/15 145/6 146/5 146/17 147/1 147/4 147/7 147/14 147/21 148/2 148/8 148/16 149/13 149/20 149/24 150/15 160/4 168/11 174/9 176/10 176/25 178/2 180/13 183/24 184/5 184/21 184/25 185/19 186/4 187/2 187/10 187/18 188/1 188/11 188/12 188/19 189/11 190/25 191/1 191/4 191/5 191/6 191/10 192/8 192/9 192/12 192/23 193/9 193/24 194/16 194/18 194/22 195/12 195/24 196/13 196/16 198/25 204/18 219/3 219/8 220/8 220/15 227/6 227/14 236/25 239/3 240/3 240/9 242/14 242/21 245/21 246/21 246/21</p>	<p>247/5 247/19 253/8 253/19 255/1 255/4 260/15 263/19 263/24 264/2 267/5 270/24 271/18 274/17 275/16 276/15 276/18 280/1 288/19 288/22 289/5 289/12 289/21 291/1 291/4 291/9 292/6 292/8 292/9 293/4 293/15 293/21 294/2 294/4 294/5 294/14 294/20 295/4 295/13 295/20 295/23 296/3 296/6</p> <p>Honor's [3] 7/12 103/13 190/17</p> <p>HONORABLE [1] 1/11</p> <p>hope [2] 230/11 244/15</p> <p>hopefully [5] 131/11 137/22 152/22 176/12 181/20</p> <p>hoping [1] 272/14</p> <p>HORST [1] 2/9</p> <p>hosting [2] 207/1 244/6</p> <p>hour [3] 66/16 149/25 150/1</p> <p>hours [5] 55/19 262/25 263/4 263/7 276/7</p> <p>house [3] 14/22 18/25 50/4</p> <p>housed [3] 10/25 14/6 57/17</p> <p>housekeeping [1] 7/25</p> <p>houses [1] 9/24</p> <p>how [114] 5/16 7/10 10/5 11/1 11/14 12/18 12/23 13/15 13/19 17/3 17/19 21/2 24/2 24/6 31/9 34/3 52/5 54/22 56/13 56/21 60/24 67/11 73/25 76/21 77/8 77/23 83/7 86/25 87/22 95/4 101/1 114/1 114/1 115/7 120/3 123/17 123/18 123/19 123/20 124/8 128/12 134/17 138/20 139/11 142/18 146/6 146/9 148/23 149/3 149/15 149/21 153/1 153/10 155/11 155/20 155/20 157/22 159/13 162/10 163/25 164/1 164/11 164/21 164/22 165/7 166/7 168/5 168/5 170/14 177/3 178/3 181/5 181/18 182/18 185/15 188/5 188/17 204/1 209/6 209/20 213/9 214/25 215/1 218/16 220/19 226/8 229/2 229/23 230/3 230/9 233/13 236/11 236/14 242/9 244/2 249/7 251/22 259/3 259/16 261/23 263/10 267/22 270/2 270/17 280/2 282/20 283/3 283/7 283/12 284/7 284/7 284/23 285/16 288/17</p> <p>however [5] 1/7 95/23 95/25 124/14 178/19</p> <p>HP [1] 283/9</p> <p>huge [2] 174/3 260/5</p> <p>huh [3] 99/19 121/15 123/23</p> <p>human [42] 38/9 43/3 43/4 43/12 43/19 46/4 46/14 84/2 84/15 123/2 124/5 124/9 125/20 125/21 125/23 127/18 148/19 152/19 155/10 163/23 164/23 200/11 200/12 201/7 201/10 208/19 210/6 210/14 211/21 211/25 212/10 212/17 212/19 216/9 216/12 216/15 216/25 217/11 222/13 223/3 225/17 287/15</p> <p>humans [2] 39/13 84/8</p> <p>hundred [1] 258/10</p> <p>hundreds [1] 232/11</p> <p>hunger [2] 170/22 233/16</p> <p>Huntsville [1] 71/25</p> <p>husband [1] 128/11</p> <p>hypothetical [1] 282/15</p>	<p>87/18 89/12 90/5 99/22 106/23 113/18 115/10 116/21 126/7 126/18 131/5 147/14 147/16 149/17 161/7 166/15 168/23 169/18 172/8 172/20 174/12 182/11 184/13 187/3 194/9 195/24 199/8 207/25 212/14 217/24 219/22 220/23 226/23 227/6 227/18 248/15 253/8 260/15 263/9 273/21 274/6 281/5 288/7 288/20 289/5 295/25</p> <p>I'm [176] 6/9 6/25 7/13 17/13 33/6 33/7 33/24 44/13 45/18 47/8 47/8 48/22 49/15 49/16 51/1 51/15 51/15 52/6 52/11 52/13 53/9 53/9 58/18 62/4 62/16 62/22 63/10 65/2 66/10 67/23 68/1 69/15 69/17 69/22 74/25 74/25 76/6 79/16 81/3 85/5 86/14 87/22 88/7 92/15 95/1 95/11 96/14 97/11 98/13 99/23 100/17 101/23 103/8 103/19 105/22 107/3 111/16 113/24 115/7 119/5 130/17 130/18 131/7 133/13 139/5 142/16 146/14 147/24 149/16 150/2 150/2 150/15 155/17 155/25 159/22 159/24 162/6 162/24 164/25 166/15 175/19 178/2 178/5 181/3 183/11 184/7 184/10 185/10 186/2 186/2 187/13 188/15 188/19 190/19 193/19 193/24 196/13 197/4 197/25 198/2 198/2 198/13 200/20 202/20 205/9 210/18 211/11 212/11 212/12 212/12 214/19 215/15 216/7 219/8 220/8 220/21 221/1 229/20 229/20 232/19 233/22 234/8 234/8 234/10 236/19 239/5 245/21 246/9 248/24 249/18 251/25 253/13 255/4 257/13 257/13 260/12 260/19 262/4 262/4 262/4 262/6 262/7 262/9 262/16 262/17 263/15 263/16 264/8 264/22 265/23 273/25 275/9 276/4 276/20 276/23 277/4 277/16 278/7 278/14 281/20 282/11 282/14 282/19 283/11 283/13 284/6 284/13 286/20 287/11 290/15 290/22 291/20 293/19 294/21 295/6 295/11</p> <p>I've [7] 5/15 53/15 59/23 143/16 144/18 250/15 275/12</p> <p>iButton [9] 32/5 55/7 55/8 55/9 55/11 83/4 83/6 83/8 83/10</p> <p>ICC [43] 10/14 10/16 10/17 10/20 10/20 10/22 10/24 10/25 11/2 11/3 11/5 11/7 11/9 11/11 11/12 11/13 11/14 13/13 13/22 14/4 91/22 94/4 94/9 94/9 108/1 108/20 109/22 110/18 114/16 114/19 114/22 114/25 115/5 115/9 115/13 115/15 115/16 115/19 115/20 115/24 116/2 117/8 117/12</p> <p>ICHTER [2] 2/20 2/21</p> <p>ICP [31] 13/3 13/23 31/16 31/19 31/21 31/23 32/1 32/9 32/10 32/10 32/14 32/15 32/16 32/19 33/14 33/22 34/3 35/19 35/22 36/1 42/11 42/12 44/20 45/8 45/8 55/5 55/6 55/12 72/25 73/1 83/1</p> <p>ICP's [1] 45/4</p> <p>ICPs [11] 14/5 33/16 35/20 36/11 36/14 36/16 42/13 56/1 71/10 71/12 82/15</p> <p>ICX [7] 11/15 11/16 11/17 11/19 80/9 245/1 245/10</p> <p>idea [10] 101/1 110/21 166/3 176/4 176/15 176/16 176/21 181/4 182/20</p>
---	---	--

<p>I</p> <p>idea... [1] 291/5</p> <p>ideal [2] 158/16 221/16</p> <p>ideas [1] 77/9</p> <p>identification [1] 160/17</p> <p>identified [8] 64/6 64/23 210/24 291/15 291/18 294/12 294/13 294/14</p> <p>identifier [3] 122/14 156/25 160/8</p> <p>identify [10] 7/3 64/3 67/8 156/18 164/8 210/8 210/9 218/13 290/1 290/3</p> <p>identifying [2] 156/24 204/7</p> <p>ignorant [1] 79/5</p> <p>ignore [1] 166/24</p> <p>ignored [1] 231/25</p> <p>ignores [2] 210/6 214/21</p> <p>III [3] 2/13 2/16 2/18</p> <p>image [7] 13/9 13/10 42/7 42/22 116/19 135/9 135/14</p> <p>ImageCast [1] 11/17</p> <p>images [8] 13/25 14/2 19/25 34/10 122/11 129/20 130/5 135/4</p> <p>imaginary [1] 232/3</p> <p>imagine [1] 221/7</p> <p>imagining [1] 261/3</p> <p>immediately [5] 38/18 100/4 207/7 209/8 257/2</p> <p>immense [1] 204/12</p> <p>impact [8] 43/7 119/9 120/3 126/9 126/10 233/23 258/23 260/4</p> <p>impacting [1] 59/17</p> <p>imperfections [2] 163/23 204/17</p> <p>implement [7] 140/14 140/15 176/14 176/16 203/25 207/11 239/14</p> <p>implementation [10] 119/10 145/8 145/13 145/16 146/1 161/21 163/20 193/11 206/2 294/1</p> <p>implemented [7] 60/25 159/4 176/23 181/19 181/20 181/21 201/17</p> <p>implementing [2] 163/21 199/13</p> <p>implements [1] 201/17</p> <p>implication [1] 227/8</p> <p>implicit [1] 294/8</p> <p>implies [1] 188/25</p> <p>importance [3] 203/13 204/2 237/16</p> <p>important [20] 98/12 129/17 155/12 181/1 189/19 199/17 215/22 234/4 234/13 238/21 244/9 244/12 251/21 253/13 253/22 256/23 262/11 267/18 270/11 273/3</p> <p>imposition [1] 236/17</p> <p>impossible [2] 129/22 258/18</p> <p>impractical [1] 176/14</p> <p>impression [1] 275/17</p> <p>impressive [1] 206/4</p> <p>imprint [2] 156/23 157/7</p> <p>imprinted [1] 160/7</p> <p>imprinting [2] 157/10 158/8</p> <p>improper [1] 208/5</p> <p>improved [1] 179/3</p> <p>improvement [3] 181/1 181/2 233/7</p> <p>improvements [1] 180/1</p> <p>improving [1] 204/15</p> <p>inaccessible [1] 104/3</p> <p>inaction [1] 106/15</p> <p>inadvertently [1] 190/9</p> <p>inch [3] 56/7 56/8 56/10</p> <p>incident [5] 39/16 39/20 43/2 47/6</p>	<p>134/5</p> <p>include [2] 139/6 291/15</p> <p>included [7] 14/14 21/24 22/19 22/19 28/19 265/10 292/6</p> <p>includes [4] 230/18 230/18 242/10 266/20</p> <p>including [12] 13/25 78/24 139/3 139/20 170/2 175/15 175/17 176/19 204/5 256/9 257/8 257/21</p> <p>incorrect [10] 34/2 95/25 99/23 124/8 124/22 125/12 125/15 125/19 172/21 211/15</p> <p>incorrectly [1] 39/11</p> <p>increase [1] 202/16</p> <p>incredible [1] 202/23</p> <p>incredibly [1] 210/12</p> <p>indeed [2] 216/8 217/3</p> <p>indelible [2] 215/18 215/23</p> <p>independence [24] 182/20 182/23 183/3 183/4 185/19 186/7 186/18 186/22 187/6 187/12 188/2 188/5 188/8 188/12 188/15 188/17 188/25 189/12 190/2 190/11 190/12 197/3 197/12 214/25</p> <p>independent [9] 184/1 185/24 187/15 187/17 188/17 188/18 211/8 214/4 214/18</p> <p>independently [1] 270/14</p> <p>indicate [2] 69/19 93/6</p> <p>indicated [3] 123/18 131/15 255/24</p> <p>indicates [3] 12/25 95/24 123/17</p> <p>indicating [4] 72/5 95/21 104/3 122/1</p> <p>indication [3] 7/11 42/25 136/13</p> <p>indications [1] 238/14</p> <p>indirectly [1] 208/23</p> <p>individual [45] 9/21 12/11 12/23 15/11 16/7 17/4 21/7 21/15 22/7 23/4 23/13 24/25 25/6 25/8 26/5 31/21 31/21 32/23 32/23 32/25 36/9 37/4 37/9 42/25 54/23 55/8 70/23 117/5 117/9 136/15 156/21 160/16 165/14 208/7 208/18 209/3 209/10 209/11 213/1 237/18 237/21 267/9 267/22 268/1 280/10</p> <p>individual's [1] 208/20</p> <p>individually [2] 11/24 283/3</p> <p>individuals [10] 17/25 68/24 69/11 75/12 143/18 169/25 262/24 282/4 291/14 292/21</p> <p>industry [1] 141/25</p> <p>inefficient [1] 261/14</p> <p>infected [1] 286/1</p> <p>infer [1] 227/9</p> <p>information [94] 9/20 10/2 10/6 10/8 10/23 10/24 10/24 11/1 11/14 11/23 11/24 12/3 12/18 13/1 13/6 14/16 14/18 14/19 15/4 16/15 16/22 17/5 18/7 18/10 19/8 19/10 19/16 19/21 20/24 20/24 20/25 23/22 23/23 24/2 27/13 29/7 30/4 30/16 31/9 31/10 31/13 31/17 32/8 32/19 34/4 34/22 35/8 35/9 35/14 35/16 35/18 36/16 37/13 37/17 42/7 42/13 43/24 45/5 61/6 61/10 61/25 62/2 63/1 64/20 64/22 65/6 67/13 74/18 98/10 114/7 114/12 118/8 121/20 121/20 122/11 124/22 124/23 124/25 125/4 129/24 130/5 130/10 130/12 130/13 130/22 133/4 141/14 142/15 162/11 262/12 266/21 266/23 280/21 284/2</p>	<p>informed [1] 72/3</p> <p>inherently [2] 65/7 222/2</p> <p>initial [4] 163/19 289/16 291/12 294/17</p> <p>initially [2] 155/19 295/4</p> <p>initials [1] 291/18</p> <p>initiated [1] 202/21</p> <p>inject [1] 245/24</p> <p>injunction [2] 147/10 184/14</p> <p>input [1] 291/8</p> <p>insert [5] 11/21 22/25 27/18 34/17 34/25</p> <p>inserted [9] 12/25 18/23 19/2 27/22 32/10 35/1 38/11 55/11 121/25</p> <p>insertion [1] 32/12</p> <p>inside [3] 21/24 25/10 26/1</p> <p>insofar [1] 193/11</p> <p>inspect [1] 98/24</p> <p>inspection [2] 24/8 26/23</p> <p>install [12] 49/4 49/23 53/1 54/9 55/4 55/15 60/25 75/22 78/4 78/6 94/15 132/21</p> <p>installation [3] 75/24 75/25 76/1</p> <p>installed [15] 41/19 42/7 54/3 54/17 54/18 54/19 71/20 77/19 78/8 78/17 78/20 78/21 93/7 94/17 108/2</p> <p>installing [5] 48/10 48/14 76/11 76/13 95/8</p> <p>instance [4] 62/18 76/2 136/13 287/5</p> <p>instances [1] 21/3</p> <p>instead [9] 6/17 34/6 54/8 132/15 133/5 158/6 172/7 218/8 235/2</p> <p>institutions [1] 143/9</p> <p>instructed [1] 167/13</p> <p>instructing [1] 190/24</p> <p>instructions [3] 16/21 170/2 224/11</p> <p>intact [1] 121/22</p> <p>integral [1] 204/9</p> <p>integrity [4] 198/23 203/14 203/20 244/12</p> <p>intend [1] 289/16</p> <p>intended [4] 57/7 201/4 212/7 216/15</p> <p>intending [3] 146/20 190/21 193/20</p> <p>intent [14] 13/8 43/11 60/6 148/20 223/1 223/4 223/10 223/11 228/11 228/12 228/25 229/23 230/10 238/15</p> <p>interact [4] 11/20 30/9 30/17 228/2</p> <p>interacting [1] 59/20</p> <p>interacts [1] 227/24</p> <p>interest [4] 269/14 269/17 269/18 269/20</p> <p>interested [1] 281/14</p> <p>interesting [3] 5/10 155/18 174/21</p> <p>Interestingly [1] 190/16</p> <p>internal [1] 230/3</p> <p>internally [1] 181/13</p> <p>internet [3] 17/17 81/23 113/15</p> <p>internet-connected [1] 17/17</p> <p>interpret [1] 11/13</p> <p>interpretation [2] 107/23 225/2</p> <p>interpreted [5] 13/15 13/20 47/4 123/18 286/18</p> <p>interpreting [1] 46/7</p> <p>interrelates [1] 149/15</p> <p>interrelation [2] 147/25 162/2</p> <p>interrogatories [5] 8/3 65/11 66/4 66/22 67/15</p> <p>interrogatory [8] 62/1 63/5 63/7 63/25 64/1 64/22 65/22 67/14</p>
--	--	--

<p>I</p> <p>Interrogatory Number 27 [1] 64/1</p> <p>interrupt [3] 21/11 184/21 211/3</p> <p>intervention [1] 226/15</p> <p>interventions [1] 226/14</p> <p>introduce [3] 62/19 77/24 226/23</p> <p>introduced [2] 90/1 97/20</p> <p>intuitive [1] 167/22</p> <p>invent [1] 168/17</p> <p>invented [2] 205/5 205/9</p> <p>inventing [1] 205/8</p> <p>invention [1] 210/12</p> <p>inventories [2] 161/24 181/7</p> <p>inventory [12] 72/25 156/3 161/16 162/9 162/18 163/12 163/14 163/25 178/21 203/18 203/19 204/7</p> <p>inventorying [1] 164/10</p> <p>invest [1] 260/5</p> <p>investigate [3] 64/4 99/20 111/12</p> <p>investigating [3] 100/6 100/8 112/10</p> <p>investigation [6] 86/10 99/7 102/20 111/6 122/24 241/19</p> <p>investigations [5] 64/16 96/16 96/19 98/4 99/8</p> <p>investigative [1] 102/20</p> <p>investment [2] 156/15 215/4</p> <p>invited [2] 144/12 221/19</p> <p>involve [3] 38/8 52/6 89/4</p> <p>involved [24] 19/23 50/14 57/11 57/12 68/24 71/18 72/11 77/5 77/12 82/11 82/14 84/2 86/24 120/21 134/13 134/14 143/5 143/6 143/20 144/9 153/3 164/20 183/7 232/19</p> <p>involvement [1] 163/19</p> <p>involving [2] 39/16 47/7</p> <p>iPhone [1] 201/1</p> <p>irrelevant [2] 78/20 196/4</p> <p>irrespective [1] 202/10</p> <p>is [1444]</p> <p>Island [2] 154/1 232/22</p> <p>isn't [13] 72/9 77/3 77/14 81/23 82/6 84/3 101/18 115/13 182/21 216/5 229/4 231/3 231/16</p> <p>isolated [1] 37/15</p> <p>issue [32] 39/23 41/14 41/25 66/5 67/1 78/24 127/14 129/7 132/24 133/24 134/17 136/2 146/10 148/25 149/5 186/4 186/6 187/12 190/3 191/12 194/16 197/12 198/15 253/22 269/25 270/7 270/9 273/13 275/8 285/23 289/7 291/10</p> <p>issues [12] 43/6 43/14 66/20 132/22 136/22 152/10 152/18 169/10 189/18 214/15 218/20 218/22</p> <p>it [1073]</p> <p>it's [5] 113/14 167/24 173/6 259/24 264/14</p> <p>item [3] 15/4 16/20 57/2</p> <p>items [4] 16/25 22/14 24/14 173/13</p> <p>iterated [1] 54/13</p> <p>its [19] 11/8 24/16 45/5 45/7 87/21 121/2 136/4 136/20 148/11 157/12 161/8 161/9 162/21 178/18 205/19 210/3 234/2 282/16 284/10</p> <p>itself [4] 30/3 43/10 122/13 283/20</p> <p>J</p> <p>JACOUTOT [1] 3/7</p>	<p>James [4] 85/11 87/13 90/4 115/13</p> <p>JANUARY [5] 1/13 5/2 20/22 281/25 297/13</p> <p>January 22nd [1] 281/25</p> <p>January 25th [1] 20/22</p> <p>JAVIER [1] 3/4</p> <p>JEFFREY [1] 2/2</p> <p>Jim [3] 165/2 168/23 178/8</p> <p>job [8] 69/20 77/6 77/6 90/21 90/21 143/21 164/10 176/12</p> <p>join [1] 189/3</p> <p>joining [1] 137/20</p> <p>Jones [1] 111/13</p> <p>Joseph [1] 6/20</p> <p>JOSH [1] 3/4</p> <p>JR [1] 3/9</p> <p>judge [9] 1/12 16/6 87/6 107/11 127/4 131/7 221/11 257/13 267/3</p> <p>judging [1] 7/17</p> <p>judgment [1] 173/19</p> <p>July [5] 192/23 192/25 289/18 290/24 292/17</p> <p>July 1 [1] 192/23</p> <p>July 11 [1] 290/24</p> <p>July 2019 [1] 289/18</p> <p>jump [5] 12/2 18/17 18/18 19/2 22/24</p> <p>jumps [1] 67/24</p> <p>juncture [5] 95/2 102/1 146/21 190/15 220/11</p> <p>June [27] 9/5 57/9 91/22 92/4 92/8 92/18 93/4 93/18 94/2 94/16 94/18 94/25 95/19 103/9 104/2 104/13 104/22 105/17 105/24 107/15 107/18 108/1 108/5 108/20 109/19 109/20 110/7</p> <p>June 8 [3] 92/18 93/4 93/18</p> <p>June 8th [9] 94/16 94/18 94/25 103/9 104/2 108/1 109/19 109/20 110/7</p> <p>jurisdiction [14] 9/24 14/17 14/20 15/3 15/9 19/14 20/7 21/4 22/22 22/24 23/10 26/5 34/10 35/22</p> <p>jurisdictions [7] 21/6 118/7 138/20 153/2 160/13 161/9 182/5</p> <p>jury [1] 53/16</p> <p>just [279] 5/12 5/18 6/15 6/17 7/3 7/8 7/13 7/14 7/24 8/4 9/2 9/8 14/13 20/17 21/11 22/2 22/2 23/21 25/14 26/20 26/20 27/4 27/10 29/3 32/20 39/19 45/18 46/7 48/20 49/12 49/16 51/19 52/8 52/9 53/12 57/25 57/25 58/7 60/21 61/5 61/11 65/21 66/17 68/5 68/14 69/19 73/23 75/3 78/1 78/24 79/9 79/19 80/5 84/5 87/24 88/4 90/7 90/10 90/24 93/11 95/5 96/1 99/10 99/22 100/15 100/17 101/16 102/7 102/22 104/7 105/20 106/5 106/12 106/23 107/21 107/25 107/25 111/1 111/24 112/14 113/18 114/16 115/7 115/10 116/21 119/4 119/7 120/7 121/13 124/23 126/18 127/4 127/11 127/13 127/14 127/19 128/11 131/11 131/12 135/16 136/5 136/21 137/4 138/23 139/2 142/20 143/16 145/3 147/2 147/5 147/12 148/4 148/8 150/6 150/11 151/7 151/8 152/3 155/13 156/2 156/8 158/8 158/19 159/5 159/24 160/6 160/8 160/24 161/7 162/4 162/14 162/18 164/4 166/17 166/25 171/6 171/10 172/6 172/7 173/5 174/9 174/12 176/6</p>	<p>176/7 176/15 176/16 176/20 176/25 177/3 178/16 184/24 185/10 185/12 186/8 187/8 187/17 188/9 188/12 188/23 189/11 190/7 190/11 190/18 191/12 192/8 193/3 194/22 195/25 196/13 196/16 196/17 196/18 197/7 197/19 198/2 198/13 199/2 204/13 207/21 208/13 209/22 209/24 211/3 212/3 212/4 212/8 215/7 219/8 219/12 219/17 219/17 220/3 220/10 220/15 221/4 221/14 222/25 224/9 226/3 226/8 226/24 227/6 227/11 229/14 229/20 231/1 233/24 234/6 234/8 235/9 235/9 236/15 236/15 236/22 237/18 239/10 240/13 242/14 242/15 243/16 246/9 246/22 247/3 247/23 248/6 249/14 249/23 250/8 253/8 253/15 253/20 254/11 255/24 257/23 260/12 260/12 260/17 261/12 261/25 262/12 262/15 262/22 264/15 267/4 270/11 271/22 272/1 274/21 274/25 275/15 278/24 279/9 279/14 279/14 279/16 280/20 281/20 281/22 282/1 282/1 282/14 282/15 282/19 283/11 284/13 285/9 285/9 286/3 286/20 287/6 287/11 288/20 289/9 289/10 289/10 289/10 293/20 295/9 295/13</p> <p>Justice [3] 88/19 89/21 90/1</p> <p>justification [1] 189/1</p> <p>justified [1] 237/9</p> <p>K</p> <p>K-12 [1] 142/13</p> <p>KAISER [2] 2/5 290/9</p> <p>keep [18] 19/19 45/16 138/2 141/21 144/24 145/1 155/17 162/6 198/1 204/14 237/23 241/13 244/9 251/5 254/25 273/25 288/21 295/13</p> <p>keeping [1] 204/3</p> <p>keeps [2] 12/22 244/15</p> <p>Kendall [1] 69/15</p> <p>Kennesaw [1] 70/5</p> <p>kept [2] 130/20 216/7</p> <p>key [34] 12/14 24/11 25/8 25/9 25/12 25/14 25/15 25/18 25/19 25/19 25/23 25/24 26/2 27/1 27/17 27/20 29/12 30/5 30/5 31/23 31/24 32/1 32/2 32/6 32/6 32/9 32/13 32/14 32/17 37/4 55/11 82/25 215/14 215/17</p> <p>keyed [1] 25/5</p> <p>keys [7] 30/20 37/1 37/3 37/10 51/10 51/11 51/13</p> <p>kicked [1] 290/11</p> <p>kids [1] 175/21</p> <p>kind [45] 6/7 17/13 128/23 129/23 134/13 142/5 142/15 146/12 152/10 153/9 155/13 155/15 155/16 156/17 157/11 164/24 168/19 171/6 173/8 173/12 174/24 174/24 175/4 177/15 178/2 180/17 181/11 187/12 197/18 199/11 200/15 206/2 207/5 207/16 213/6 218/10 235/19 237/8 241/8 245/14 246/24 258/22 261/12 273/1 278/20</p> <p>kinds [3] 84/9 158/19 166/1</p> <p>kinks [1] 164/14</p> <p>Kirk [9] 6/20 289/2 289/8 289/14 289/23 290/9 291/18 293/22 295/5</p>
---	---	--

<p>K</p> <p>KNAPP [1] 2/8</p> <p>knew [8] 61/17 87/19 89/7 109/7 117/11 128/11 259/5 281/19</p> <p>know [214] 6/24 7/2 9/2 12/16 13/25 20/1 20/2 21/15 24/21 33/15 36/6 36/23 38/19 43/8 46/9 46/16 48/10 48/19 52/10 52/19 53/23 53/24 59/1 59/13 59/25 60/3 60/17 61/1 61/2 61/4 61/19 62/6 62/12 62/12 62/17 62/18 62/20 62/25 66/12 67/16 67/20 68/24 70/14 75/17 79/9 79/25 80/14 80/17 80/19 80/22 90/17 93/17 94/15 95/4 95/13 96/17 98/18 98/19 98/20 99/4 101/2 101/5 101/17 101/18 109/9 109/10 109/13 111/14 112/21 117/9 122/20 127/11 128/3 128/16 132/10 133/16 137/24 140/20 147/19 149/6 151/9 156/4 157/14 157/22 159/11 159/12 160/25 162/17 163/25 164/1 165/6 166/12 169/10 170/17 170/18 172/8 174/25 175/4 180/6 180/14 180/18 182/10 182/15 184/19 185/10 186/11 187/14 188/13 190/2 190/14 193/6 193/7 193/10 193/13 196/18 196/20 197/9 197/23 199/15 200/3 200/14 201/11 201/16 202/6 202/15 203/25 205/20 206/23 207/13 207/13 209/14 209/20 209/20 213/9 214/19 214/19 215/13 217/3 217/19 220/5 220/9 222/3 222/3 224/7 228/19 229/2 231/6 233/9 233/9 233/14 233/15 235/8 235/21 236/11 237/1 237/1 237/23 237/25 238/4 240/8 244/2 246/17 246/21 248/15 248/16 248/18 250/8 250/10 250/11 251/21 253/17 255/17 257/11 257/15 258/6 258/25 259/16 259/23 260/7 261/17 263/16 267/17 267/20 272/4 274/6 275/10 275/16 275/23 276/11 276/24 277/2 278/9 279/15 280/20 281/1 281/6 281/14 281/22 281/22 282/15 283/2 283/4 283/7 283/7 284/3 284/7 284/8 285/8 289/5 289/13 289/24 291/7 294/21 296/4</p> <p>knowing [3] 7/4 20/2 101/12</p> <p>knowledge [18] 51/6 56/17 58/3 61/16 67/9 77/20 78/7 80/2 88/3 101/3 115/21 178/1 193/15 206/8 269/11 287/14 291/15 291/19</p> <p>knows [3] 60/2 210/13 260/4</p> <p>KREVOLIN [1] 2/9</p>	<p>69/16 73/23 91/19 137/5 137/22 143/13 143/14 181/21 195/12 195/15 202/23 233/4 239/21 241/21 244/3 250/3 252/23 254/3 254/3 273/8 276/17 281/19</p> <p>late [11] 6/14 122/16 137/25 140/18 143/3 196/19 260/11 262/23 289/6 292/25 295/10</p> <p>later [11] 93/24 107/16 116/15 121/17 132/7 171/3 171/4 181/13 181/24 205/10 215/19</p> <p>latest [2] 170/17 280/18</p> <p>latitude [2] 191/12 191/14</p> <p>LAURA [2] 2/13 2/18</p> <p>law [11] 2/15 2/17 2/24 147/6 194/25 216/6 233/5 236/22 275/12 286/11 286/17</p> <p>lawsuit [1] 205/2</p> <p>lawyer [11] 130/18 216/7 219/7 267/19 276/20 276/20 276/21 276/24 277/1 277/1 277/2</p> <p>lawyer's [1] 277/6</p> <p>Lawyers [1] 149/24</p> <p>lay [6] 46/10 63/19 66/11 66/14 68/15 177/10</p> <p>layout [2] 124/10 124/11</p> <p>lead [6] 15/22 16/18 101/4 138/9 145/1 217/3</p> <p>leading [2] 175/10 273/20</p> <p>leads [1] 173/8</p> <p>learn [7] 56/21 99/11 111/7 164/11 233/11 233/19 293/10</p> <p>learned [4] 73/25 134/4 142/18 205/10</p> <p>least [16] 7/4 68/10 121/4 128/11 139/7 147/5 167/16 168/21 170/16 180/23 186/13 206/17 235/21 265/12 285/10 286/17</p> <p>leave [4] 6/12 84/11 142/1 210/18</p> <p>leaves [1] 201/4</p> <p>leaving [2] 5/17 99/20</p> <p>led [3] 87/6 96/19 222/7</p> <p>leeway [2] 173/19 175/7</p> <p>left [12] 98/4 99/7 133/14 141/25 142/2 144/4 149/1 160/8 170/5 173/7 199/11 201/10</p> <p>legal [13] 119/5 130/18 131/6 177/2 178/6 195/23 218/23 219/1 219/4 219/5 219/10 220/6 240/6</p> <p>legally [1] 164/3</p> <p>legislature [1] 233/4</p> <p>legitimate [1] 222/12</p> <p>lend [1] 226/5</p> <p>length [5] 56/8 56/25 67/11 193/13 275/22</p> <p>lengthy [2] 195/17 290/10</p> <p>less [16] 109/24 110/3 110/19 119/3 129/10 156/12 172/3 200/5 234/22 234/22 236/6 250/24 252/5 252/13 252/17 258/14</p> <p>let [57] 23/17 25/11 31/25 53/8 53/9 53/15 63/24 67/8 67/15 68/1 90/7 90/10 92/9 96/16 98/18 102/3 107/4 112/7 112/14 112/20 118/15 125/7 142/2 146/5 147/3 148/8 158/2 165/4 166/15 169/17 170/3 172/8 185/5 187/3 188/22 192/2 195/7 195/8 202/11 203/12 208/9 212/3 217/9 220/9 221/4 238/16 239/5 243/16 252/25 257/25 260/23 269/13</p>	<p>270/16 272/3 276/5 276/9 296/4</p> <p>let's [38] 11/15 13/3 17/7 19/19 21/21 24/1 54/7 54/7 91/18 93/9 96/1 106/16 108/9 109/13 113/4 113/5 150/10 153/9 154/4 155/13 163/17 164/4 166/17 179/9 179/24 187/8 207/21 209/7 209/13 220/4 235/1 235/5 235/6 251/25 252/1 254/23 275/5 275/5</p> <p>letter [5] 64/11 67/19 90/2 106/7 106/16</p> <p>level [19] 14/21 51/16 53/22 54/2 71/19 155/1 155/13 156/11 156/14 161/11 161/13 161/14 181/4 208/18 212/25 212/25 213/18 214/10 230/4</p> <p>levels [1] 246/24</p> <p>light [5] 64/18 128/12 128/13 155/17 195/11</p> <p>lighting [1] 190/9</p> <p>lightning [1] 59/10</p> <p>like [110] 7/1 7/2 9/8 13/11 13/12 14/8 25/4 25/23 32/2 32/3 36/3 38/16 47/12 59/14 62/14 65/15 67/13 98/17 98/21 100/2 104/7 116/23 116/24 119/11 126/5 127/12 134/15 138/9 139/6 143/10 144/21 145/6 148/2 150/16 156/7 156/24 157/14 157/22 163/22 164/22 164/23 165/23 166/13 167/25 173/23 174/1 174/2 176/16 180/24 181/10 182/12 186/24 186/25 197/16 201/25 202/3 204/5 205/15 206/21 206/22 210/17 210/21 210/25 212/16 213/2 213/7 213/9 214/17 214/20 215/20 216/20 221/12 221/22 222/1 222/22 226/13 226/20 229/14 229/18 230/8 231/21 235/8 236/1 236/14 236/15 236/15 236/17 241/14 244/24 249/8 251/21 255/15 256/4 257/10 257/22 261/21 265/17 265/23 266/17 275/16 276/4 276/10 276/11 276/25 278/6 278/19 283/19 284/1 285/15 293/8</p> <p>likelihood [1] 210/23</p> <p>likely [4] 220/7 220/11 258/17 292/18</p> <p>limb [1] 220/8</p> <p>limit [15] 172/11 172/19 172/24 173/5 192/6 194/19 210/20 211/12 211/16 211/18 211/22 219/1 219/11 220/1 291/10</p> <p>limited [1] 176/9</p> <p>limiting [66] 138/17 139/12 139/15 139/16 139/21 140/14 140/16 140/19 141/6 147/22 147/25 149/16 150/24 150/25 151/10 151/15 151/19 151/22 151/23 152/1 152/5 153/2 153/16 153/19 153/23 154/2 155/5 155/7 155/9 155/14 155/19 155/22 161/6 163/22 170/13 170/18 172/6 173/4 175/14 178/15 180/7 182/2 182/16 183/21 184/17 186/14 187/13 188/13 188/14 193/3 199/17 199/18 200/22 201/6 202/1 204/1 212/18 213/11 218/24 219/24 221/16 221/20 233/23 238/8 238/14 266/10</p> <p>limits [1] 201/25</p> <p>Lindeman [1] 207/15</p> <p>line [14] 1/6 12/6 52/5 58/1 58/7 72/10 154/5 155/25 156/20 156/21 156/22 169/8 169/8 250/12</p>
<p>L</p> <p>L-A-G-O [1] 69/5</p> <p>LA [4] 232/7 232/8 232/12 278/19</p> <p>label [1] 165/25</p> <p>labeled [1] 158/3</p> <p>laboratory [2] 57/22 72/3</p> <p>lack [2] 58/2 73/15</p> <p>Lago [4] 69/5 70/1 71/2 71/7</p> <p>laid [1] 73/19</p> <p>lane [2] 212/11 215/16</p> <p>languages [1] 232/11</p> <p>large [2] 32/4 149/11</p> <p>larger [3] 56/11 213/5 236/2</p> <p>LAROSS [1] 3/8</p> <p>last [27] 48/17 48/17 57/9 64/14 69/5</p>		

<p>L</p> <p>Line 12785 [1] 156/21</p> <p>lines [2] 15/14 270/21</p> <p>linked [1] 214/11</p> <p>LinkedIn [1] 144/21</p> <p>list [23] 12/7 28/15 72/22 72/24 73/24 73/25 75/3 75/6 75/8 75/10 75/16 75/17 75/19 77/18 139/5 146/18 244/18 244/20 292/8 293/2 293/15 293/17 295/7</p> <p>listed [10] 20/5 40/14 42/21 44/16 45/14 46/18 175/2 290/20 291/14 293/22</p> <p>listen [2] 110/15 292/12</p> <p>listened [1] 60/20</p> <p>listing [1] 28/18</p> <p>lists [2] 162/15 293/21</p> <p>literally [6] 162/18 165/11 167/5 272/13 274/17 274/19</p> <p>litigation [5] 2/11 154/19 192/14 193/19 194/15</p> <p>little [41] 5/19 6/8 6/12 6/14 10/5 17/7 18/16 18/18 24/2 32/5 32/6 36/23 44/13 60/2 63/12 93/13 113/13 149/18 155/17 164/9 164/9 172/13 178/19 179/1 182/15 203/11 204/17 206/12 209/5 210/17 222/22 234/2 238/16 239/8 276/14 278/6 280/13 285/17 285/21 288/20 295/8</p> <p>LITTLEFIELD [1] 3/6</p> <p>live [5] 15/18 80/5 126/23 175/15 195/6</p> <p>lived [1] 283/6</p> <p>lives [1] 220/4</p> <p>living [2] 59/6 90/19</p> <p>LLC [1] 3/6</p> <p>LLP [1] 2/7</p> <p>load [10] 10/8 30/14 32/8 34/16 34/22 35/7 35/8 46/21 47/2 55/12</p> <p>loaded [14] 10/6 10/7 10/10 11/2 11/23 29/24 31/3 35/6 35/9 35/23 36/16 36/21 40/9 73/6</p> <p>loading [6] 23/21 34/24 35/5 35/14 36/13 42/9</p> <p>loathe [1] 62/4</p> <p>local [6] 97/23 170/21 175/12 182/5 233/17 292/21</p> <p>location [9] 9/23 12/5 28/17 35/24 36/11 101/11 118/17 165/13 165/13</p> <p>locations [4] 35/21 35/22 36/9 36/10</p> <p>lock [10] 25/4 25/5 25/25 25/25 26/3 27/19 27/20 27/21 148/24 148/24</p> <p>locked [1] 26/3</p> <p>locks [2] 148/22 181/11</p> <p>log [9] 12/24 13/14 28/17 101/13 115/21 115/21 116/16 121/22 164/12</p> <p>log-in [1] 164/12</p> <p>Logan [2] 232/8 232/13</p> <p>logged [2] 29/12 115/20</p> <p>logging [1] 37/23</p> <p>logic [13] 23/18 36/15 36/17 38/22 40/25 45/4 119/3 119/6 119/25 120/1 120/4 127/23 127/25</p> <p>logical [2] 245/14 260/8</p> <p>logistical [1] 136/22</p> <p>logistically [1] 172/1</p> <p>logistics [2] 232/10 278/20</p> <p>logs [6] 121/22 122/1 122/3 122/4</p>	<p>129/20 130/5</p> <p>long [25] 40/12 59/1 60/24 126/10 128/7 128/25 136/24 148/6 149/9 149/21 149/24 153/5 155/9 156/3 191/6 196/20 196/22 221/23 244/13 249/7 251/3 254/14 263/10 279/22 295/17</p> <p>longer [11] 7/5 38/11 38/13 42/2 69/14 130/15 136/10 136/10 183/1 205/21 241/18</p> <p>longtime [1] 207/15</p> <p>look [62] 45/12 47/14 63/24 68/5 111/21 128/14 130/11 130/15 148/13 148/17 151/8 151/25 153/5 153/6 156/8 156/13 156/19 157/20 158/20 161/18 161/18 161/19 163/1 163/15 164/22 167/5 167/25 168/2 168/6 171/25 172/6 172/7 172/16 172/17 173/2 178/19 179/7 179/18 179/19 183/14 216/9 223/23 224/3 225/6 225/7 225/7 225/8 226/4 226/18 226/19 228/22 234/5 240/25 249/24 251/20 252/12 255/19 259/12 282/7 283/19 286/2 289/10</p> <p>looked [16] 23/9 55/2 173/7 179/16 179/17 225/5 238/13 251/22 275/12 280/11 281/4 283/3 284/17 290/8 293/1 293/5</p> <p>looking [27] 44/6 51/19 93/11 108/10 124/10 124/11 126/2 128/20 151/16 152/13 169/19 171/16 171/23 173/6 201/7 212/9 212/20 214/4 215/9 217/4 217/5 226/3 251/23 252/17 258/13 282/16 282/20</p> <p>looks [11] 25/3 25/23 30/15 32/2 32/3 144/21 145/5 153/10 163/15 186/23 284/19</p> <p>Los [2] 279/15 279/18</p> <p>Los Angeles [2] 279/15 279/18</p> <p>lost [4] 125/18 196/19 215/20 239/8</p> <p>lot [41] 37/12 39/23 51/12 78/12 78/14 90/22 118/12 119/3 149/6 154/14 158/11 158/20 171/16 172/8 173/21 175/21 176/17 176/17 176/17 179/15 179/21 191/12 191/15 195/7 205/14 214/15 215/5 218/3 220/23 240/14 243/9 258/7 263/3 263/7 271/12 271/13 278/9 279/21 280/7 280/18 285/14</p> <p>lots [1] 288/4</p> <p>low [4] 226/15 269/14 269/17 269/18</p> <p>lower [3] 169/19 211/18 269/20</p> <p>lucky [1] 144/25</p> <p>lunch [4] 7/17 67/25 74/15 113/10</p> <p>lunchtime [2] 68/5 107/10</p> <p>M</p> <p>M-I-C-H-A-E-L [1] 8/19</p> <p>ma'am [3] 49/18 74/13 133/10</p> <p>machine [30] 19/4 38/8 43/3 55/10 95/15 97/19 111/22 121/9 121/13 121/16 121/17 122/2 122/3 122/6 128/24 138/22 179/7 199/24 214/7 218/8 218/13 224/10 241/12 241/13 258/3 269/2 272/11 272/12 275/25 284/22</p> <p>machine-marked [1] 218/8</p> <p>machine-related [1] 128/24</p> <p>machinery [1] 211/2</p> <p>machines [15] 111/16 111/19 138/16 140/7 228/17 239/23 241/4 241/6 241/8</p>	<p>241/16 257/3 263/10 272/23 273/13 274/12</p> <p>made [34] 13/19 13/19 22/16 23/8 37/5 39/12 40/16 40/24 44/4 44/15 47/10 47/24 61/17 65/13 98/17 98/24 109/15 119/1 119/2 120/8 122/21 122/22 125/6 128/14 132/13 132/15 132/20 180/15 194/24 241/5 244/2 278/12 279/22 284/14</p> <p>mail [13] 22/9 154/12 154/14 154/17 157/5 158/22 159/4 160/6 160/13 161/1 165/21 165/24 279/18</p> <p>mail-out [1] 22/9</p> <p>mailing [1] 279/20</p> <p>main [3] 138/15 140/7 169/7</p> <p>maintain [2] 12/24 258/15</p> <p>maintained [6] 14/6 17/5 19/7 110/10 196/9 232/1</p> <p>maintaining [6] 136/16 157/13 158/9 203/13 203/20 204/2</p> <p>maintains [1] 204/6</p> <p>major [4] 140/4 155/22 183/6 235/21</p> <p>majority [2] 136/8 136/11</p> <p>make [59] 20/8 22/4 22/22 24/18 24/20 25/14 37/6 39/4 39/13 53/20 63/3 63/15 77/25 89/18 111/22 114/17 117/7 119/9 135/14 138/16 138/17 139/2 142/2 142/19 157/23 159/13 162/9 162/22 165/4 167/15 173/19 176/19 180/15 180/23 180/25 185/6 198/13 202/4 204/15 207/21 208/22 212/4 223/16 228/15 228/18 231/8 238/5 239/19 254/23 258/18 260/7 273/5 273/7 273/11 277/13 278/20 278/22 281/4 295/14</p> <p>maker [1] 84/8</p> <p>makes [9] 142/10 154/25 159/12 210/10 210/11 211/17 234/18 234/22 273/10</p> <p>making [19] 8/25 23/25 90/25 112/11 157/15 187/21 188/4 211/24 218/17 224/3 228/4 236/2 236/7 239/21 240/13 241/8 251/13 259/2 268/25</p> <p>malfunction [6] 39/1 43/3 152/17 185/16 186/14 189/20</p> <p>malfunctioning [6] 38/9 97/19 121/8 122/6 222/15 225/15</p> <p>malfunctions [4] 39/9 39/10 147/16 218/14</p> <p>malicious [2] 126/17 152/18</p> <p>malware [14] 76/21 112/16 122/16 136/6 214/22 214/23 214/23 215/2 215/13 258/9 285/23 286/1 286/3 286/3</p> <p>man [1] 275/13</p> <p>management [49] 9/12 9/17 9/18 9/23 9/25 10/9 10/18 10/19 11/4 11/4 11/6 11/7 11/10 11/25 12/1 27/22 28/10 29/1 29/18 29/22 29/24 30/1 31/14 31/18 37/21 40/9 47/20 47/25 50/3 50/6 53/21 55/23 57/14 57/17 57/19 71/9 73/4 93/20 94/6 94/7 94/15 94/18 109/2 130/3 130/7 132/20 133/3 136/8 179/4</p> <p>manager [1] 48/22</p> <p>managing [1] 232/11</p> <p>mandated [1] 167/10</p> <p>manifest [5] 203/14 203/16 203/17 203/19 203/24</p> <p>manipulation [1] 261/1</p>
--	--	---

<p>M</p> <p>manner [2] 9/22 35/11</p> <p>manual [1] 164/15</p> <p>manufacturer [1] 39/3</p> <p>many [24] 12/23 17/19 21/2 54/22 56/13 78/24 138/20 139/11 156/4 156/5 163/25 165/9 165/16 166/7 166/16 168/3 168/5 176/14 230/12 234/9 234/25 248/12 259/16 261/23</p> <p>map [1] 283/22</p> <p>mapping [1] 118/6</p> <p>maps [1] 224/19</p> <p>March [3] 20/20 92/4 92/8</p> <p>March 12th [1] 20/20</p> <p>margin [16] 167/20 167/24 168/2 173/23 174/1 174/2 179/24 179/25 208/17 209/7 209/14 213/5 213/11 213/13 216/21 258/21</p> <p>mark [3] 183/15 207/15 218/17</p> <p>marked [34] 44/12 85/5 118/18 144/18 151/21 155/2 159/7 215/11 218/7 218/8 218/12 218/21 230/19 230/20 231/4 231/12 231/23 236/11 242/13 256/16 265/10 265/11 270/7 271/9 272/10 273/12 275/2 277/24 278/16 278/23 287/17 288/8 292/24 293/8</p> <p>market [2] 218/1 245/4</p> <p>marking [17] 11/15 11/18 11/23 11/24 12/20 39/11 54/7 118/17 128/25 151/20 154/20 155/6 185/17 189/21 200/16 230/17 230/18</p> <p>marks [3] 45/21 225/15 289/3</p> <p>married [1] 125/1</p> <p>Martin [1] 83/11</p> <p>MARTINO [1] 2/6</p> <p>MARTINO-WEINHARDT [1] 2/6</p> <p>marvelous [1] 264/7</p> <p>MARY [1] 2/5</p> <p>mashed [1] 207/19</p> <p>master [1] 25/8</p> <p>master's [3] 141/10 141/11 143/7</p> <p>match [6] 46/5 125/20 125/21 125/23 157/19 208/21</p> <p>matched [3] 46/9 46/15 123/3</p> <p>matches [1] 224/20</p> <p>matching [2] 157/11 159/16</p> <p>mater [1] 141/15</p> <p>material [1] 177/5</p> <p>materials [2] 114/1 175/16</p> <p>math [3] 166/23 167/14 168/16</p> <p>mathematician's [2] 214/2 214/3</p> <p>Matt [3] 281/11 285/4 285/12</p> <p>matter [18] 7/1 7/25 46/7 64/8 67/18 167/2 191/24 208/17 209/11 209/15 209/17 209/18 209/19 212/24 234/24 286/18 287/20 297/11</p> <p>matters [7] 105/9 105/14 182/16 215/15 215/17 273/2 287/23</p> <p>MATTHAEUS [1] 2/6</p> <p>maximum [1] 172/21</p> <p>may [84] 1/2 1/4 8/4 12/7 15/11 15/12 18/22 27/6 34/2 36/1 36/4 36/8 39/13 46/10 47/14 48/25 49/15 50/23 51/4 52/14 58/15 62/20 65/21 66/21 67/4 75/19 77/24 79/1 85/14 86/3 88/3 88/21 88/22 88/24 88/25 90/10 90/19 90/21 91/6 91/11 91/15 93/22 93/25 94/2</p>	<p>95/16 95/23 99/22 101/24 102/14 105/10 108/18 120/4 120/7 122/22 128/10 128/15 136/17 138/2 144/15 177/9 182/7 192/11 200/16 214/22 222/19 229/25 241/5 246/19 247/11 251/23 255/8 258/15 258/15 260/25 263/25 267/19 274/17 288/11 290/1 290/6 292/7 292/8 292/8 293/22</p> <p>May 11 [2] 88/21 105/10</p> <p>May 11th [5] 86/3 88/3 91/11 102/14 108/18</p> <p>May 19 [1] 255/8</p> <p>May 2021 [1] 90/10</p> <p>May 5th [3] 88/22 88/24 88/25</p> <p>May 7 [1] 85/14</p> <p>maybe [23] 6/24 34/1 49/1 52/10 62/18 65/14 105/19 109/5 119/1 150/1 174/18 190/3 202/22 214/10 221/5 226/23 231/1 231/1 241/25 242/2 245/22 249/19 259/6</p> <p>McGUIRE [9] 2/16 2/17 4/17 146/11 149/14 205/1 220/16 220/21 247/2</p> <p>McGuire's [1] 253/10</p> <p>me [115] 8/7 23/17 25/11 30/22 31/25 49/7 49/13 51/2 53/5 53/16 54/13 54/16 59/24 63/2 63/24 67/10 67/25 68/2 69/4 69/16 71/3 79/19 81/5 82/21 84/1 84/8 85/18 90/7 90/10 92/9 98/6 100/10 102/2 102/22 106/17 110/10 112/7 112/14 115/15 118/4 118/10 118/15 120/18 121/10 123/4 124/1 125/7 126/13 129/14 130/17 132/1 142/2 145/5 146/5 146/16 147/3 148/8 150/23 161/3 162/4 165/2 165/4 169/17 172/8 172/9 173/8 178/16 180/13 185/5 188/22 194/2 202/11 203/12 203/13 206/21 208/9 212/3 213/9 215/5 217/9 220/2 220/9 220/9 220/14 221/4 231/19 237/13 237/24 238/16 243/10 243/14 243/16 244/17 250/10 252/25 256/14 257/25 258/18 260/23 266/1 269/13 270/16 272/1 272/3 273/1 277/10 278/6 279/1 280/4 282/25 284/5 284/6 286/19 294/20 296/4</p> <p>mean [66] 7/10 7/13 21/1 43/20 43/21 49/12 51/2 51/13 52/19 52/19 65/2 65/5 67/14 67/18 68/8 78/25 79/4 79/6 79/11 80/1 81/1 89/23 89/24 95/14 99/15 106/1 111/20 115/5 149/7 173/21 185/5 188/17 190/20 197/2 199/1 199/2 209/18 209/22 211/8 225/12 227/1 227/18 235/8 236/10 239/10 247/14 251/15 253/11 260/10 261/4 266/13 266/13 266/15 266/15 271/17 273/4 276/21 283/13 283/22 284/9 287/6 287/6 292/11 293/1 294/7 294/9</p> <p>meaning [4] 39/1 98/21 99/16 156/19</p> <p>meaningful [3] 200/1 203/4 282/6</p> <p>means [11] 66/7 147/20 156/13 157/19 172/24 181/11 237/25 258/20 259/8 267/15 274/3</p> <p>meant [5] 53/24 175/6 212/20 216/25 228/7</p> <p>measure [1] 148/19</p> <p>measures [4] 64/3 77/2 77/13 198/22</p> <p>meat [1] 251/6</p> <p>MECHANICAL [1] 1/21</p> <p>media [16] 10/1 24/18 26/14 26/16</p>	<p>27/21 31/12 34/6 36/13 40/10 40/10 40/13 41/18 41/24 42/11 47/2 54/22</p> <p>Medical [1] 141/23</p> <p>medium [1] 148/24</p> <p>meet [6] 59/25 75/1 75/2 205/3 264/14 286/19</p> <p>meeting [1] 79/4</p> <p>meets [1] 126/20</p> <p>MEGAN [2] 2/13 2/18</p> <p>member [5] 50/1 54/12 69/13 69/14 132/4</p> <p>members [7] 57/12 69/3 69/7 69/11 70/8 75/18 280/6</p> <p>memo [1] 91/12</p> <p>memorandum [1] 88/3</p> <p>memorialized [1] 102/23</p> <p>memories [1] 247/14</p> <p>memory [11] 55/10 105/5 129/6 129/19 139/5 154/6 229/25 232/23 242/2 257/22 293/7</p> <p>mention [4] 154/20 172/14 185/18 294/3</p> <p>mentioned [21] 29/4 77/18 123/7 153/23 154/18 155/14 158/11 159/3 161/2 169/2 171/6 171/14 178/25 180/13 205/20 223/18 244/18 250/12 257/25 279/14 295/6</p> <p>mentioning [3] 139/14 167/15 168/11</p> <p>mentions [1] 86/21</p> <p>menu [1] 35/7</p> <p>Merritt [2] 116/9 116/10</p> <p>messing [1] 181/13</p> <p>messy [2] 222/14 272/20</p> <p>met [3] 243/3 264/12 271/24</p> <p>method [5] 36/21 134/12 201/22 286/14 286/16</p> <p>methodology [3] 190/4 210/3 210/5</p> <p>methods [5] 22/3 22/5 207/11 207/12 220/17</p> <p>mic [1] 6/8</p> <p>MICHAEL [7] 4/4 6/3 7/22 8/18 8/21 111/15 111/19</p> <p>Michelle [1] 128/7</p> <p>Michigan [2] 139/6 153/25</p> <p>middle [5] 155/24 158/1 158/23 171/18 255/20</p> <p>midst [1] 21/8</p> <p>might [25] 5/6 66/15 96/6 96/24 102/21 133/3 159/11 163/24 164/5 165/13 167/7 172/2 174/13 174/21 174/21 177/1 195/19 198/19 199/5 229/25 234/9 243/10 251/24 262/8 287/12</p> <p>Miller [10] 4/16 4/20 6/5 188/4 189/12 190/8 191/12 195/15 232/15 261/21</p> <p>million [8] 143/15 166/11 171/23 172/1 172/2 172/13 172/19 179/16</p> <p>mimic [1] 226/14</p> <p>mind [7] 95/24 145/3 183/10 212/9 223/20 240/12 251/5</p> <p>minds [1] 158/25</p> <p>mine [1] 133/22</p> <p>minimum [6] 130/20 167/11 171/1 180/24 216/8 234/17</p> <p>minor [2] 21/1 21/1</p> <p>minus [1] 233/24</p> <p>minute [3] 60/11 150/3 259/13</p> <p>minutes [17] 55/3 55/14 75/21 76/2 76/4 76/6 76/7 76/8 77/19 78/4 78/6</p>
---	---	---

M

minutes... [6] 113/5 113/7 150/7 150/11 259/10 275/10
mischievous [1] 288/6
misconfigurations [2] 152/15 286/3
mishaps [2] 185/2 185/14
misimpression [1] 275/13
mismatch [4] 210/9 210/14 210/16 285/19
mismatches [1] 189/24
mispronounced [1] 182/13
misremembering [1] 281/16
miss [1] 185/6
missed [2] 43/5 84/5
MISSETT [2] 2/13 2/19
missing [2] 43/5 265/16
Mississippi [2] 138/23 278/17
misspoke [2] 249/18 249/19
misspoken [1] 120/7
mistake [5] 41/16 84/7 120/7 157/16 228/18
mistaken [1] 177/1
mistakes [2] 39/14 228/15
Misty [2] 85/22 134/4
misunderstanding [1] 276/17
misunderstood [1] 174/13
MIT [5] 141/10 141/14 143/3 206/5 221/19
mitigate [1] 64/4
mitigation [2] 66/2 66/7
mitigations [2] 58/6 63/8
MITRE [1] 194/24
mix [2] 154/15 157/9
mixed [1] 154/16
mode [2] 61/3 231/24
model [2] 231/25 272/9
models [1] 269/8
modern [1] 141/18
modes [1] 272/6
modification [2] 209/1 209/2
modified [2] 208/24 208/24
modifies [1] 201/3
modify [1] 259/7
modifying [1] 259/2
moment [10] 52/21 68/11 84/18 102/6 197/8 228/19 238/25 239/11 243/15 249/11
momentum [1] 170/23
Monday [2] 6/16 295/11
money [5] 52/6 52/6 234/8 260/5 278/9
monitor [1] 85/23
month [3] 109/24 110/3 110/19
months [4] 130/24 130/25 256/15 256/24
monumentally [1] 174/7
more [85] 5/19 16/18 17/7 46/2 59/9 62/18 65/3 67/10 68/15 78/25 107/1 111/1 116/24 117/12 138/9 139/1 139/23 156/14 156/15 158/10 158/12 158/12 158/12 158/14 158/23 159/4 167/25 170/24 171/1 171/4 172/8 172/16 172/17 172/17 175/20 178/18 178/20 179/14 179/15 187/7 189/1 190/19 195/20 198/21 199/3 201/23 202/4 202/9 203/20 204/15 204/15 211/19 213/9 214/24 215/12 215/23 215/25 222/22 224/3 224/23 226/3

231/14 236/5 236/10 241/14 251/3 252/16 254/22 256/23 257/2 258/12 261/13 261/23 262/18 263/3 263/7 266/9 274/5 279/21 284/2 284/2 284/3 285/21 287/19 294/25
morning [11] 5/3 8/8 8/11 8/25 9/1 81/9 82/25 83/22 84/21 139/2 259/17
MORRISON [1] 2/7
most [27] 21/3 144/10 157/18 170/19 172/25 173/20 202/22 203/3 208/14 209/24 211/16 216/14 222/20 230/20 231/11 235/9 237/11 237/16 253/22 258/20 261/14 268/3 272/2 272/9 280/15 288/1 288/4
mostly [2] 192/1 232/21
motion [6] 8/1 8/7 65/13 65/17 66/13 79/14
motions [2] 164/4 195/18
move [28] 13/3 14/8 16/23 18/7 18/10 18/13 23/17 46/8 58/12 73/11 74/2 81/19 106/25 115/10 117/2 126/7 150/16 179/13 186/11 188/10 212/14 220/4 227/6 236/18 239/17 276/19 279/22 289/1
moved [5] 29/23 30/1 41/23 41/24 279/20
movement [1] 29/1
moves [1] 34/14
movie [1] 5/8
moving [10] 19/19 28/11 29/17 31/2 47/6 175/23 180/3 276/23 288/21 295/13
Mozilla [1] 142/9
Mr [16] 4/6 4/7 4/8 4/9 4/11 4/12 4/13 4/16 4/17 4/18 4/19 4/20 4/21 69/23 106/15 294/17
Mr. [143] 5/16 5/20 5/25 6/5 6/21 6/21 7/25 8/11 8/25 9/8 14/4 18/5 25/18 27/10 31/2 33/14 34/3 37/12 37/20 38/4 46/2 46/14 48/1 48/21 49/3 49/20 52/16 52/25 53/19 58/18 59/1 60/5 60/24 63/6 63/19 63/21 64/11 64/11 67/4 68/15 68/22 69/5 69/17 69/24 70/16 70/25 71/1 71/2 71/7 71/7 71/11 71/15 72/18 72/21 73/10 73/14 74/6 74/23 78/15 78/16 78/20 81/9 83/11 85/16 85/16 86/2 87/5 89/5 89/6 89/14 89/24 90/10 91/12 91/13 97/13 98/18 99/9 103/3 103/4 103/6 103/12 104/14 104/24 105/16 105/25 106/9 106/15 106/19 106/21 106/22 106/25 107/11 107/14 109/15 110/8 111/4 113/11 114/6 114/15 115/1 117/18 117/24 126/20 127/3 127/9 131/10 134/3 135/19 146/11 149/14 174/19 185/13 186/5 188/4 189/12 190/8 191/12 193/17 195/15 196/4 197/7 220/16 220/21 232/15 247/2 253/10 261/21 264/5 288/23 289/2 289/3 289/8 289/10 289/14 289/14 289/23 290/9 291/18 293/22 295/5 295/22 295/24 295/25
Mr. Adida [1] 197/7
Mr. Adida's [1] 289/14
Mr. Barnes [63] 7/25 8/11 8/25 9/8 14/4 18/5 25/18 27/10 31/2 33/14 34/3 37/12 37/20 38/4 46/2 46/14 48/1 48/21 49/3 49/20 52/16 52/25 53/19 58/18 59/1 60/5 60/24 63/21 67/4 68/22 69/17

70/25 71/15 72/18 72/21 73/10 74/6 74/23 78/16 81/9 85/16 87/5 89/5 89/6 89/14 90/10 97/13 104/24 106/19 106/21 106/25 107/11 109/15 111/4 113/11 114/6 114/15 115/1 117/24 127/9 131/10 134/3 135/19
Mr. Barnes [2] 73/14 104/14
Mr. Belinfante [1] 63/6
Mr. Bellew [5] 69/24 71/1 71/7 105/25 107/14
Mr. Brown [2] 117/18 126/20
Mr. Cross [3] 5/20 64/11 295/25
Mr. Cross' [3] 174/19 185/13 186/5
Mr. Davis [1] 289/3
Mr. Evans [6] 5/25 6/21 6/21 78/15 78/20 288/23
Mr. Evans' [1] 193/17
Mr. Fisher [2] 63/19 106/22
Mr. Germany [2] 103/6 103/12
Mr. Harvey [8] 85/16 86/2 89/24 91/12 91/13 98/18 99/9 110/8
Mr. Harvey's [2] 106/9 106/15
Mr. Kirk [8] 289/2 289/8 289/14 289/23 290/9 291/18 293/22 295/5
Mr. Lago [2] 71/2 71/7
Mr. Martin [1] 83/11
Mr. McGuire [5] 146/11 149/14 220/16 220/21 247/2
Mr. McGuire's [1] 253/10
Mr. Miller [8] 6/5 188/4 189/12 190/8 191/12 195/15 232/15 261/21
Mr. Oles [3] 127/3 196/4 264/5
Mr. Oles' [1] 5/16
Mr. Patel [1] 71/11
Mr. Patel's [1] 70/16
Mr. Persinger [2] 295/22 295/24
Mr. Ramsey [1] 103/4
Mr. Richard [1] 69/5
Mr. Sterling [1] 105/16
Mr. Tyson [4] 64/11 68/15 103/3 289/10
Ms. [13] 71/11 71/11 99/11 99/16 99/24 100/15 100/17 111/5 111/13 112/9 134/14 289/3 290/9
Ms. Frances [1] 112/9
Ms. Hampton [1] 134/14
Ms. Hoke [1] 71/11
Ms. Jones [1] 111/13
Ms. Kaiser [1] 290/9
Ms. Marks [1] 289/3
Ms. Smallwood [1] 71/11
Ms. Watson [6] 99/11 99/16 99/24 100/15 100/17 111/5
much [32] 17/3 52/5 59/9 62/4 67/10 107/1 113/7 120/4 136/19 140/22 144/4 159/9 160/17 164/1 179/6 179/25 219/21 219/22 224/23 230/6 235/10 237/7 244/2 248/16 250/11 251/22 268/22 280/2 280/16 284/7 284/7 288/14
multiple [11] 27/14 41/7 61/5 64/18 76/3 111/14 201/21 201/23 202/5 217/22 246/24
municipal [6] 14/24 14/24 82/7 82/10 82/11 82/14
municipalities [2] 14/24 82/7
municipality [6] 14/23 82/15 82/16 82/20 82/22 159/12

<p>M</p> <p>must [5] 64/19 182/13 203/6 253/2 253/4</p> <p>my [180] 8/18 9/16 16/15 16/16 17/20 28/20 40/5 47/18 50/1 50/5 53/3 54/12 54/23 55/23 57/12 58/15 58/15 59/13 59/23 59/23 60/2 60/21 63/6 69/3 69/3 69/4 69/7 69/14 70/8 71/18 74/9 74/11 75/7 75/7 75/12 75/18 77/6 77/6 77/11 77/15 80/5 80/15 82/12 90/20 90/23 91/2 91/5 91/6 91/7 91/10 91/15 91/16 91/23 92/6 94/9 94/10 94/11 95/23 95/24 97/4 97/5 98/1 98/13 100/9 100/18 105/5 110/9 114/2 115/14 115/21 116/3 124/3 128/9 128/13 132/2 132/3 132/9 133/20 137/13 141/1 141/11 141/11 141/12 141/15 142/16 142/18 143/2 143/6 143/7 143/7 143/8 143/13 143/21 144/2 144/2 144/21 147/5 147/6 149/14 154/6 155/8 163/4 163/6 166/10 167/20 170/16 170/25 170/25 173/15 173/18 174/5 174/13 174/24 175/6 175/8 175/17 175/21 183/15 188/11 188/19 190/18 190/23 191/5 194/2 194/18 195/8 200/12 205/1 205/17 205/25 206/2 212/11 215/16 217/9 217/18 220/6 221/20 224/22 225/1 225/2 225/2 226/23 231/15 232/23 237/12 238/4 239/14 243/14 245/3 248/4 253/8 256/23 257/6 257/7 258/19 262/20 264/12 264/22 268/8 269/11 270/1 270/2 271/9 280/6 280/13 280/15 281/8 282/7 284/23 284/24 285/3 285/4 285/16 285/17 287/14 287/14 288/6 288/17 293/7 297/12</p> <p>myself [5] 51/10 134/16 145/1 174/12 269/6</p>	<p>negative [1] 210/25</p> <p>negotiates [1] 244/8</p> <p>neighbors [1] 239/24</p> <p>neither [1] 293/18</p> <p>net [1] 285/25</p> <p>nets [1] 286/4</p> <p>never [27] 59/21 90/18 109/5 110/6 110/17 130/11 157/15 157/17 170/3 172/20 185/25 189/15 199/23 199/25 200/1 206/7 210/25 218/9 245/12 246/4 248/2 251/14 256/22 265/8 276/11 285/5 289/15</p> <p>new [41] 18/17 41/18 41/24 42/1 47/25 48/9 48/11 48/14 49/7 51/17 51/24 54/16 54/18 54/21 55/21 56/11 56/13 58/6 72/10 77/24 93/7 95/8 97/8 108/2 109/11 109/12 109/15 110/24 111/24 112/13 132/20 133/21 135/11 138/24 177/25 233/5 273/16 286/11 286/20 287/10 292/22</p> <p>newspaper [3] 87/21 88/13 88/14</p> <p>next [19] 6/23 7/9 10/11 11/15 13/3 14/8 15/4 16/13 92/2 93/1 97/4 97/9 112/5 126/17 136/21 136/23 194/1 205/17 215/21</p> <p>nice [2] 75/2 145/2</p> <p>night [5] 42/15 113/13 113/20 128/14 128/16</p> <p>nine [4] 139/3 139/13 139/20 160/20</p> <p>Ninjas [12] 85/17 86/17 86/18 86/20 87/6 87/25 89/7 90/15 91/3 99/18 100/25 117/11</p> <p>no [122] 35/20 38/10 38/12 38/19 41/9 42/2 44/7 52/17 61/5 62/2 63/1 63/1 66/1 67/15 67/18 69/14 73/12 73/24 76/23 79/15 88/14 89/4 101/1 105/5 114/24 115/6 116/8 116/13 119/18 122/7 122/17 128/8 130/15 131/9 135/15 136/10 136/10 145/16 149/10 150/20 152/7 167/2 167/6 173/7 176/15 183/1 184/11 185/5 185/18 186/20 191/4 191/19 193/1 193/1 193/2 193/24 197/22 202/7 204/11 204/11 204/18 205/21 206/19 207/7 215/11 216/5 216/22 220/2 224/10 226/6 226/9 227/14 229/6 229/20 233/22 234/5 234/9 234/24 235/4 235/20 236/10 237/5 238/19 241/10 241/18 242/18 243/14 243/21 244/5 245/4 247/14 249/5 249/11 253/20 255/3 256/12 256/17 256/18 256/22 257/1 257/4 257/23 257/24 262/12 270/24 275/3 275/3 275/4 275/7 278/2 279/4 280/18 281/21 283/11 288/9 289/22 290/5 291/5 291/8 291/22 294/3 294/22</p> <p>nobody [3] 213/7 227/3 238/18</p> <p>nods [1] 124/6</p> <p>noes [1] 256/4</p> <p>non [4] 152/6 161/1 164/3 246/25</p> <p>non-cumulative [1] 246/25</p> <p>non-legally [1] 164/3</p> <p>non-paper [1] 152/6</p> <p>none [1] 206/4</p> <p>nonetheless [6] 190/22 192/18 192/20 193/20 194/6 194/16</p> <p>nonpartisan [1] 12/12</p> <p>nonprofit [3] 138/7 142/10 206/12</p> <p>nonprofits [2] 141/25 143/9</p>	<p>norm [1] 201/19</p> <p>normal [2] 119/10 119/11</p> <p>North [1] 206/17</p> <p>North Carolina [1] 206/17</p> <p>Northampton [13] 217/7 225/12 241/14 256/25 257/4 257/25 258/2 259/10 268/11 269/7 269/9 269/13 269/15</p> <p>NORTHERN [3] 1/1 297/4 297/7</p> <p>not [424]</p> <p>notate [1] 40/17</p> <p>note [12] 61/12 84/12 136/21 174/17 174/19 192/11 196/19 220/15 240/7 246/22 253/8 292/9</p> <p>noted [2] 53/14 89/3</p> <p>nothing [18] 5/12 67/11 85/23 100/20 117/16 193/2 193/8 202/15 208/5 213/23 214/5 219/25 224/9 226/1 267/2 285/22 286/16 288/12</p> <p>notice [4] 78/11 175/19 224/12 289/22</p> <p>noticed [2] 142/11 257/1</p> <p>notified [4] 41/12 98/21 128/17 132/9</p> <p>noting [1] 154/11</p> <p>notion [1] 177/24</p> <p>November [10] 64/12 92/5 94/2 153/21 170/8 171/18 195/13 250/8 259/21 279/13</p> <p>November 15 [1] 64/12</p> <p>November 2020 [2] 171/18 259/21</p> <p>now [77] 5/15 6/9 7/9 16/19 20/22 24/1 26/13 29/22 31/3 34/25 35/16 35/25 59/21 59/22 60/1 60/15 67/25 68/8 69/16 70/11 79/6 81/25 97/8 97/14 102/8 114/22 126/24 127/20 128/23 129/14 131/6 133/13 139/8 143/13 150/3 158/14 160/23 161/15 162/13 168/14 177/15 177/22 179/5 180/3 180/3 180/3 184/9 186/19 189/16 190/11 192/7 201/11 205/5 207/21 213/17 216/9 216/24 217/6 218/7 218/23 223/21 230/14 230/20 233/4 233/10 245/12 245/17 246/14 256/3 263/7 273/16 279/2 285/9 286/20 292/15 295/8 295/10</p> <p>nowhere [1] 193/14</p> <p>nudge [1] 224/4</p> <p>nudges [1] 204/14</p> <p>nudging [1] 223/22</p> <p>number [47] 1/5 1/6 1/5 15/9 35/21 56/9 59/18 64/1 118/6 120/3 139/3 139/4 143/9 144/1 144/5 144/9 144/10 157/3 157/20 158/4 162/22 164/12 166/5 166/6 166/10 167/16 176/18 179/3 179/8 179/8 179/16 183/21 184/23 206/4 217/18 224/11 226/16 226/21 232/9 234/17 249/12 259/13 259/23 272/16 274/24 283/16 291/17</p> <p>Number 1755 [1] 158/4</p> <p>numbered [3] 92/3 93/25 170/9</p> <p>numbers [13] 156/24 156/24 157/7 163/16 170/17 170/25 171/21 224/6 225/8 234/21 245/3 285/8 285/12</p>
<p>N</p> <p>name [19] 8/16 8/16 8/18 23/10 45/12 69/5 69/15 69/16 92/23 123/14 124/19 137/11 137/11 137/13 144/8 205/1 206/21 264/12 292/13</p> <p>named [1] 289/16</p> <p>names [4] 16/17 203/19 206/22 236/16</p> <p>narrow [4] 196/11 221/5 260/3 276/13</p> <p>nature [8] 64/2 129/15 205/18 234/4 236/19 269/14 269/18 282/3</p> <p>near [1] 58/15</p> <p>nearby [1] 218/19</p> <p>nearly [1] 253/9</p> <p>necessarily [3] 15/6 172/11 197/22</p> <p>necessary [10] 24/5 48/5 49/4 53/1 54/9 55/15 122/24 130/8 227/15 268/22</p> <p>necessity [1] 204/10</p> <p>need [36] 5/13 16/13 17/9 18/7 18/13 36/18 38/19 74/19 77/2 77/13 83/1 84/14 89/20 101/16 101/24 102/3 115/11 123/24 136/25 137/25 150/7 156/23 160/7 168/2 177/10 189/13 195/20 218/12 218/15 218/15 219/1 229/15 270/10 282/9 294/25 295/24</p> <p>needed [7] 22/12 36/21 51/23 66/3 102/12 174/6 181/15</p> <p>needing [1] 120/13</p> <p>needs [6] 16/22 19/16 28/12 28/25 161/16 258/22</p>		<p>O</p> <p>oath [1] 278/14</p> <p>object [16] 80/24 87/18 99/22 113/18 116/21 119/4 126/18 131/5 145/17 146/3 150/18 174/9 176/25 186/5 227/6</p>

<p>O</p> <p>object... [1] 257/13</p> <p>objected [3] 192/3 196/4 260/16</p> <p>objecting [4] 184/5 184/8 184/10 184/11</p> <p>objection [42] 46/8 48/12 49/9 50/9 52/9 53/14 58/1 58/5 58/7 72/8 114/24 115/6 145/16 148/6 149/10 150/20 174/19 177/21 185/20 186/5 186/20 189/3 190/23 191/3 191/10 192/9 195/8 195/22 199/7 199/9 219/5 227/13 227/14 227/17 236/25 240/3 245/21 246/22 247/19 253/9 263/24 279/5</p> <p>objections [3] 89/3 89/18 186/16</p> <p>objective [2] 261/2 261/7</p> <p>obligation [2] 65/23 292/23</p> <p>obligations [1] 6/13</p> <p>observation [5] 5/10 60/25 61/7 164/24 280/16</p> <p>observations [1] 282/18</p> <p>observe [3] 52/4 52/17 54/9</p> <p>observed [10] 52/7 52/14 52/25 53/2 61/6 61/12 251/8 251/16 251/17 280/9</p> <p>observing [1] 280/3</p> <p>obtain [3] 28/14 28/17 116/5</p> <p>obtained [2] 128/20 128/20</p> <p>obvious [2] 148/11 168/3</p> <p>obviously [17] 65/16 88/4 106/1 119/13 127/16 151/7 151/11 154/19 175/16 189/17 193/14 196/9 200/25 204/20 219/16 224/8 276/19</p> <p>occasioned [1] 133/22</p> <p>occur [1] 54/6</p> <p>occurred [6] 109/5 110/6 110/17 127/17 128/6 235/11</p> <p>October [4] 66/23 103/21 103/24 262/23</p> <p>October 12th [2] 103/21 103/24</p> <p>October 1st [1] 262/23</p> <p>October 7 [1] 66/23</p> <p>odd [2] 92/3 93/25</p> <p>odd-numbered [2] 92/3 93/25</p> <p>odds [1] 285/13</p> <p>off [18] 5/14 21/22 38/19 91/6 91/16 97/20 113/14 121/24 122/2 163/6 166/10 168/19 180/20 180/21 207/17 220/19 236/19 245/22</p> <p>offer [13] 80/13 87/16 89/1 89/16 146/16 178/5 185/23 188/9 197/24 263/19 271/22 273/6 273/23</p> <p>offered [10] 87/21 89/11 183/25 185/25 198/4 247/16 248/5 260/11 260/13 260/24</p> <p>offering [18] 147/24 184/12 186/1 186/2 187/4 198/21 249/24 254/18 256/7 256/13 257/7 257/10 257/20 257/23 258/17 271/23 273/17 273/24</p> <p>office [90] 2/24 10/19 14/7 14/10 16/15 17/11 17/14 17/16 17/22 17/24 18/2 18/17 19/21 21/17 21/25 22/25 23/24 24/2 25/7 26/7 27/16 28/13 28/20 29/14 32/17 34/6 37/15 37/20 37/23 38/2 40/6 41/12 47/9 47/12 47/13 47/16 49/25 57/5 57/12 57/13 59/23 64/16 69/13 69/14 70/8 71/16 71/18 71/22 72/22 75/12 75/15 75/18 75/18 76/14 77/6 82/12 82/12 85/21 86/11 94/11 96/8</p>	<p>97/22 100/24 107/6 107/7 107/12 110/2 110/10 112/1 114/7 114/11 118/2 119/24 127/20 131/17 132/2 133/6 133/8 133/11 134/3 134/9 135/11 136/16 173/16 196/24 198/20 261/6 263/21 279/11 281/24</p> <p>official [12] 1/1 1/2 1/3 1/7 1/23 19/16 22/15 29/10 255/8 291/23 297/6 297/17</p> <p>officials [8] 24/7 37/7 114/23 135/3 170/21 175/12 233/17 281/9</p> <p>often [2] 170/14 272/14</p> <p>oh [18] 44/25 68/17 143/13 150/4 160/3 163/24 183/13 192/5 217/10 233/25 241/12 241/13 249/18 250/15 269/19 271/4 281/12 283/22</p> <p>okay [158] 5/19 6/23 7/19 7/23 14/15 17/21 26/20 27/14 28/6 29/7 29/16 33/12 48/10 52/18 53/11 54/11 60/11 70/24 71/13 72/19 74/5 75/21 76/5 76/9 76/21 76/23 77/1 77/11 80/11 80/19 80/22 81/13 81/16 81/19 81/22 81/25 82/4 82/9 82/18 82/25 83/4 84/11 84/14 84/24 85/9 85/14 85/16 85/21 86/2 86/6 86/12 86/17 87/13 87/15 88/21 90/15 90/18 91/21 92/19 93/8 96/6 96/16 96/24 97/14 97/16 98/1 108/6 108/9 108/14 108/20 108/23 109/19 109/21 109/24 112/7 113/3 115/23 117/10 120/15 122/25 123/14 123/21 124/1 125/18 127/23 128/4 128/19 129/14 129/22 134/8 134/21 139/8 141/3 141/8 141/22 142/1 143/22 153/22 154/4 154/8 159/3 159/18 160/18 161/2 161/18 163/1 164/9 166/15 168/22 169/13 170/5 170/12 171/4 173/25 175/10 178/7 197/21 201/16 202/11 202/14 205/17 211/11 213/13 216/5 220/3 221/6 222/6 222/24 228/10 233/4 236/18 240/16 244/9 244/17 244/18 246/7 250/7 250/18 251/5 252/2 252/11 254/25 258/5 263/18 265/15 265/18 266/23 267/2 269/12 270/4 271/17 271/25 271/25 275/5 279/14 286/15 289/4 295/12</p> <p>old [7] 25/4 60/2 107/21 195/16 241/22 270/4 270/9</p> <p>OLEs [8] 2/23 2/24 4/9 4/19 127/3 196/4 264/5 264/12</p> <p>Oles' [1] 5/16</p> <p>once [36] 12/9 16/3 19/1 19/5 22/20 22/20 23/11 24/8 24/18 25/1 26/1 26/14 26/16 26/22 27/7 28/24 29/17 34/18 34/21 34/24 35/1 35/9 41/17 54/15 54/20 61/1 71/24 121/2 140/20 161/8 162/19 168/18 172/1 182/25 215/20 255/1</p> <p>one [245] 6/4 6/11 8/2 9/18 15/24 15/24 22/5 22/6 25/6 30/2 30/6 32/20 33/6 36/9 37/17 39/12 40/13 42/13 44/16 44/17 44/23 44/24 44/25 44/25 45/14 45/14 46/2 46/22 55/1 56/15 57/2 61/7 61/20 63/2 65/11 68/6 71/24 72/17 81/16 81/22 84/18 86/13 88/10 93/21 93/23 93/24 94/2 95/3 96/3 97/8 103/8 105/25 108/2 110/24 111/1 111/24 112/13 118/16 119/14 124/12 124/14 124/16 124/18 125/10 125/16 127/13 131/3 131/11 131/12 133/14 133/23</p>	<p>134/22 135/16 136/3 136/4 136/24 138/15 138/16 140/7 143/20 144/11 144/11 144/14 147/4 147/11 147/11 155/23 156/1 157/11 157/11 157/19 157/19 158/6 158/6 158/6 158/6 158/14 158/21 158/21 159/16 159/16 160/19 161/13 162/14 164/20 165/12 165/15 165/20 167/8 168/20 169/10 170/19 174/8 175/19 175/19 180/13 180/13 181/8 181/9 182/10 182/11 182/23 183/4 183/10 183/12 183/18 184/24 185/2 185/3 185/8 185/11 186/13 187/11 189/18 191/10 194/14 195/25 196/7 198/15 198/16 200/16 200/17 200/17 202/9 204/11 204/12 205/2 206/17 208/10 208/16 209/7 209/13 209/13 209/20 213/4 213/4 213/5 213/6 213/11 213/13 213/21 213/22 214/4 214/7 214/12 214/24 215/7 215/9 215/12 215/20 215/21 216/6 216/20 217/25 217/25 221/24 226/24 231/4 233/1 237/1 244/7 248/13 248/24 249/2 249/3 250/9 250/24 251/1 252/5 252/8 252/13 256/4 256/11 256/18 256/18 256/22 257/5 258/14 258/16 258/16 258/19 259/2 259/7 259/9 259/18 259/18 259/18 261/25 262/1 262/2 262/3 264/15 265/20 268/17 269/22 270/25 271/10 271/15 271/16 272/7 272/9 273/8 274/17 274/19 274/21 274/21 275/2 275/25 277/21 277/24 278/17 278/24 279/25 283/8 285/20 285/21 285/25 286/4 286/9 287/19 289/7 289/18 291/24 292/9 293/4</p> <p>one percent [1] 259/9</p> <p>ones [7] 71/8 164/7 236/6 249/6 257/8 273/4 273/4</p> <p>only [83] 1/2 1/6 12/22 21/2 35/22 35/23 36/4 36/10 42/20 44/19 46/16 46/25 47/1 51/5 72/17 74/1 78/19 78/21 103/14 105/3 111/23 114/2 118/20 119/14 145/23 149/14 153/12 154/6 157/4 158/22 168/7 171/12 171/13 175/18 182/10 188/11 188/20 190/18 191/5 191/20 191/22 194/19 195/8 195/16 196/8 200/17 201/13 201/20 209/10 209/13 213/17 215/9 216/6 225/5 225/14 225/14 233/5 240/8 243/4 244/20 244/25 245/5 248/13 248/20 248/24 248/25 249/18 251/16 251/21 252/4 255/23 258/16 259/1 259/18 259/18 260/6 266/7 272/11 275/24 276/9 291/10 291/12 292/24</p> <p>opaque [1] 266/11</p> <p>open [22] 14/2 24/12 27/2 29/10 29/25 30/8 30/10 30/11 30/11 35/10 35/12 62/11 149/1 160/20 169/11 169/20 206/14 207/4 207/8 207/9 274/5 287/10</p> <p>opened [1] 217/21</p> <p>opens [2] 27/23 30/6</p> <p>operate [1] 212/24</p> <p>operates [3] 24/10 26/24 213/17</p> <p>operating [8] 39/2 50/7 54/3 54/16 54/17 75/25 99/12 100/16</p> <p>operation [2] 33/11 206/25</p> <p>operational [1] 49/3</p> <p>operationalize [2] 153/14 157/25</p> <p>operationalizing [1] 176/16</p>
---	---	---

O

operationally [1] 48/23
operations [3] 48/22 70/21 77/8
operator [1] 35/5
opining [1] 199/3
opinion [40] 130/18 155/8 178/6
 183/25 184/12 185/24 186/2 186/9
 186/12 188/9 194/20 200/7 203/7
 220/16 220/17 224/22 225/21 228/11
 248/4 248/5 254/18 256/8 256/13
 256/23 257/7 257/11 257/20 257/23
 258/17 258/19 268/19 268/20 272/15
 282/7 284/23 284/24 285/3 285/16
 287/11 288/7
opinions [16] 145/24 186/3 190/13
 191/7 196/3 196/25 197/10 197/24
 248/3 249/24 252/22 260/24 261/10
 263/12 273/17 273/23
opportunity [5] 69/15 189/14 215/20
 232/2 288/6
opposed [1] 38/9
optical [4] 22/8 118/21 121/1 129/3
option [3] 41/9 121/7 229/18
optional [1] 234/7
options [1] 273/6
order [23] 10/8 11/22 16/23 23/2 32/8
 34/16 45/22 49/6 50/4 54/3 55/21 89/4
 155/18 157/14 166/13 192/21 196/24
 226/4 244/7 246/23 293/16 293/22
 294/5
ordered [2] 221/12 290/25
orders [2] 163/13 291/25
ordinary [1] 243/24
organization [3] 138/10 183/7 275/1
organizations [2] 143/11 176/8
organized [3] 146/23 162/10 276/7
original [10] 29/19 39/25 46/17 46/21
 64/22 123/8 123/11 128/8 133/9 166/24
originally [2] 46/18 127/20
ostensibly [1] 196/6
other [85] 15/15 15/17 16/25 18/8
 31/11 38/20 41/1 43/6 51/6 58/24 59/6
 61/11 61/16 61/22 62/22 63/15 64/13
 67/15 68/3 68/6 69/20 72/15 81/19
 81/22 96/3 101/5 107/20 107/22 110/24
 112/20 126/19 132/25 133/22 136/7
 138/16 139/4 139/8 139/9 139/11 140/6
 141/2 144/8 153/15 154/9 155/23
 156/16 158/20 163/22 165/18 166/16
 176/7 183/10 187/17 188/21 191/10
 193/17 198/16 200/18 201/17 202/8
 213/24 215/11 219/6 220/19 220/25
 226/22 230/13 234/1 236/10 237/2
 243/8 244/23 249/5 249/12 250/9
 250/12 250/16 265/21 265/21 269/8
 280/25 284/10 287/6 287/8 292/23
others [8] 156/13 157/25 171/16 214/5
 214/9 218/11 229/22 248/12
otherwise [5] 64/4 87/23 100/5 119/16
 285/14
our [82] 5/5 7/8 11/18 12/8 12/8 18/16
 18/23 19/1 19/3 22/25 22/25 23/24 24/8
 26/23 28/13 31/2 31/2 41/12 49/6 49/25
 52/9 58/5 59/9 64/20 65/9 65/16 67/5
 69/13 76/14 77/23 96/16 97/19 97/22
 97/24 104/19 105/1 109/7 112/1 116/6
 121/6 132/2 132/7 132/9 132/15 133/11

133/12 134/9 134/10 146/18 153/22
 158/25 158/25 163/21 167/13 178/24
 182/22 188/24 192/4 195/5 195/21
 196/17 204/9 218/2 220/4 220/13
 228/17 230/20 243/25 244/5 244/13
 246/23 250/3 273/5 273/11 274/3 274/4
 274/9 274/12 278/17 283/8 285/17
 292/3
ours [1] 273/6
ourselves [1] 39/24
out [117] 6/25 9/12 10/12 11/16 12/24
 13/4 18/21 22/9 22/16 42/18 43/17 45/2
 45/13 45/20 47/8 47/13 52/22 62/13
 62/19 63/9 67/3 68/23 68/25 71/17
 72/23 73/18 74/12 75/11 86/22 90/18
 94/12 99/16 99/17 101/15 102/4 103/1
 105/17 105/21 107/17 115/21 116/1
 116/17 118/7 121/17 122/6 127/15
 132/15 134/17 139/8 139/11 139/13
 139/19 144/22 151/23 152/2 152/5
 152/23 153/13 153/16 153/18 153/20
 153/22 154/2 155/10 155/11 157/16
 161/24 164/14 164/20 169/9 170/1
 172/2 172/5 173/21 173/23 175/2
 176/20 181/22 183/22 190/22 191/7
 193/13 193/17 204/16 215/7 216/17
 216/17 218/18 220/8 222/20 233/17
 241/19 242/7 242/9 247/13 255/5 258/3
 259/2 259/9 259/11 265/12 265/22
 277/8 280/23 280/25 282/19 282/21
 283/1 283/3 283/9 285/13 290/11
 291/25 293/15 294/23 294/25 295/9
outcome [52] 126/24 147/23 151/4
 151/5 151/17 152/15 152/20 152/21
 152/22 152/25 156/9 156/10 167/2
 175/8 178/18 189/24 202/16 207/24
 208/3 208/5 208/25 209/12 209/17
 209/18 210/8 210/15 210/24 211/2
 211/9 211/22 212/25 213/3 213/18
 215/4 216/17 216/18 218/25 219/2
 219/24 221/8 221/16 224/8 227/1 227/9
 229/15 235/12 236/2 238/3 260/4
 261/13 266/15 288/6
outcomes [7] 59/22 59/24 60/5 148/4
 213/24 238/9 238/12
outlet [2] 18/19 18/19
outline [2] 75/7 79/24
outlined [2] 75/23 75/24
outlining [1] 38/12
outside [7] 10/8 17/22 59/23 90/23
 146/2 187/24 245/1
over [26] 6/18 12/4 12/17 19/7 28/10
 56/16 58/3 67/25 74/15 85/21 97/4
 100/3 105/6 130/13 164/11 169/18
 174/14 177/12 186/18 194/13 202/23
 229/9 230/11 252/11 283/10 283/12
overturn [1] 222/5
overwhelmed [1] 234/6
overwhelming [1] 268/23
overwritten [1] 130/11
own [10] 80/6 139/17 149/25 206/18
 228/17 235/23 240/22 252/3 252/12
 252/17
owned [1] 97/14

P

package [4] 25/1 26/4 27/15 118/9
packaged [1] 25/3

packaging [1] 27/17
Pad [3] 12/8 12/13 36/18
page [20] 1/5 4/3 13/10 13/11 13/13
 13/21 13/25 34/21 85/10 92/20 92/21
 96/11 108/15 170/5 212/9 249/24
 250/14 250/18 251/5 285/21
Page 2 [2] 250/14 250/18
Page 3 [1] 251/5
pages [3] 13/16 13/20 297/9
painful [1] 278/10
painted [3] 275/11 275/13 275/17
pandemic [2] 171/18 175/19
panel [1] 144/7
paper [81] 56/12 74/7 118/18 128/21
 128/22 151/21 151/24 151/25 152/1
 152/6 152/7 152/8 152/14 155/2 155/9
 156/3 156/21 157/11 161/14 183/14
 183/14 199/18 199/20 199/22 200/2
 204/3 212/6 215/11 216/1 216/2 216/3
 218/8 218/12 218/21 223/7 223/15
 223/19 223/20 223/21 224/2 224/5
 224/6 224/14 225/8 226/5 226/6 226/13
 226/24 229/10 230/19 230/20 231/4
 231/12 231/23 236/11 242/13 254/5
 256/16 264/18 265/5 265/10 265/11
 268/21 270/7 271/9 272/10 273/12
 275/2 277/24 278/17 278/23 281/11
 282/8 283/22 285/12 285/20 287/17
 288/8 291/21 292/24 293/8
paper-based [1] 156/3
papers [2] 143/22 285/4
paperwork [1] 94/16
paragraph [14] 147/15 148/17 184/23
 185/13 185/14 185/15 189/18 196/7
 250/1 253/25 254/4 254/9 254/13
 276/25
Paragraph 12 [5] 147/15 185/15
 189/18 254/9 254/13
Paragraph 13 [1] 148/17
Paragraph 4 [1] 253/25
paragraphs [5] 148/13 185/6 186/21
 187/1 194/21
Paragraphs 12 [3] 148/13 186/21
 187/1
parameters [1] 166/24
parents [1] 59/13
part [36] 14/4 36/17 36/25 52/6 57/16
 61/13 70/18 75/8 130/3 130/7 133/24
 140/2 141/3 152/20 160/9 170/7 177/20
 179/14 197/19 204/8 204/9 205/8
 206/24 222/16 231/15 233/3 237/6
 237/7 240/21 241/7 252/24 259/23
 260/14 273/11 282/6 292/12
partial [1] 1/8
participate [4] 175/11 233/20 234/1
 234/3
participated [1] 69/12
participates [1] 180/16
participating [2] 86/25 181/1
participation [2] 168/9 235/13
particular [24] 10/17 11/6 11/22 13/17
 15/12 20/4 20/5 25/20 29/20 41/15 62/1
 62/8 94/14 135/9 186/22 208/12 208/20
 213/18 214/22 218/10 255/12 268/16
 269/2 269/15
particularly [3] 146/10 181/6 194/20
parties [1] 221/14
partly [1] 89/24

<p>P</p> <p>partners [4] 157/24 176/18 176/19 204/2</p> <p>parts [1] 198/11</p> <p>party [6] 41/7 41/8 265/20 289/25 291/15 291/16</p> <p>pass [1] 48/16</p> <p>passcode [2] 32/6 37/10</p> <p>passcodes [1] 37/9</p> <p>passed [2] 23/11 233/5</p> <p>passionate [1] 142/16</p> <p>password [22] 23/14 23/15 24/15 24/15 24/20 24/21 24/23 28/5 28/12 28/12 28/19 101/9 107/15 109/2 109/3 109/8 109/17 114/22 115/19 115/22 116/1 116/5</p> <p>password-protected [5] 23/14 23/15 24/15 24/15 28/5</p> <p>passwords [11] 23/13 28/15 28/18 30/20 84/11 99/1 108/24 108/24 112/18 114/19 117/13</p> <p>past [2] 93/19 192/5</p> <p>paste [1] 196/2</p> <p>Patel [3] 69/10 70/9 71/11</p> <p>Patel's [1] 70/16</p> <p>path [2] 188/19 199/7</p> <p>patience [1] 68/22</p> <p>pause [16] 6/10 28/2 29/3 31/25 58/16 60/19 68/13 84/19 92/10 102/3 102/12 105/20 141/20 172/8 242/17 273/19</p> <p>pay [2] 237/6 279/2</p> <p>payments [1] 142/10</p> <p>PDF [3] 1/1 18/14 19/13</p> <p>peer [2] 144/1 168/17</p> <p>peer-reviewed [2] 144/1 168/17</p> <p>Pennsylvania [12] 139/6 154/1 154/21 154/23 154/25 155/5 217/7 217/19 234/2 244/24 256/25 268/12</p> <p>people [55] 15/25 32/5 51/6 51/12 51/22 59/6 59/21 59/22 59/23 61/3 62/13 69/2 69/3 69/8 69/20 70/7 77/8 84/14 90/23 99/18 126/25 128/14 142/17 157/2 162/23 163/8 164/12 165/9 179/10 181/24 198/4 214/22 221/8 222/6 223/22 224/3 224/7 224/22 225/5 225/6 225/7 226/7 249/7 251/22 259/11 261/17 265/19 271/12 271/24 274/11 275/14 275/21 279/17 280/3 280/22</p> <p>per [6] 34/1 119/14 156/5 167/11 171/21 237/16</p> <p>perceived [1] 233/16</p> <p>percent [41] 33/24 86/15 167/4 167/12 167/24 168/2 171/19 171/22 172/19 172/24 173/1 173/5 210/21 215/8 224/12 224/16 225/7 225/9 225/14 226/7 226/21 229/11 238/16 238/20 251/10 251/17 252/1 252/4 252/4 252/8 252/16 258/20 258/21 258/24 259/7 259/8 259/9 273/15 278/13 285/5 285/10</p> <p>percentage [5] 210/23 226/16 272/11 279/17 282/8</p> <p>perception [1] 167/4</p> <p>perfect [2] 204/11 231/20</p> <p>perfectly [3] 149/4 150/4 204/12</p> <p>perform [10] 47/19 70/21 70/22 95/8</p>	<p>97/25 132/4 132/7 132/11 132/13 178/17</p> <p>performed [8] 73/5 73/7 76/16 129/15 136/14 172/23 246/16 247/17</p> <p>performing [5] 54/13 57/8 73/8 133/2 133/5</p> <p>performs [1] 18/20</p> <p>period [4] 1/4 20/23 129/9 130/20</p> <p>periods [1] 130/23</p> <p>permission [4] 84/25 87/2 88/9 106/22</p> <p>permitted [2] 63/18 63/22</p> <p>Persinger [2] 295/22 295/24</p> <p>person [26] 28/21 51/11 77/1 96/8 110/1 118/17 154/15 154/17 157/9 157/22 159/15 159/21 160/6 160/7 201/25 208/14 239/21 239/25 240/18 241/23 244/21 245/2 254/20 265/11 279/19 293/24</p> <p>personal [6] 51/6 58/3 77/20 126/9 136/25 268/19</p> <p>personally [11] 60/5 126/11 126/15 222/10 231/23 232/19 247/15 255/16 280/4 280/7 281/8</p> <p>personnel [1] 50/5</p> <p>perspective [6] 48/23 49/3 56/20 65/9 104/19 287/23</p> <p>persuade [1] 198/16</p> <p>pertain [3] 11/7 19/14 198/11</p> <p>pertaining [8] 9/20 12/15 14/17 35/23 85/17 124/25 131/1 135/8</p> <p>pertains [1] 32/7</p> <p>pertinent [1] 291/15</p> <p>pew [1] 126/5</p> <p>PH.D [7] 4/15 137/16 141/10 141/11 141/12 143/7 268/8</p> <p>phase [15] 23/1 23/8 23/12 23/17 32/11 35/4 35/5 41/15 280/16 289/18 290/13 290/16 291/13 294/15 294/16</p> <p>Philip [1] 205/5</p> <p>philosophical [5] 209/5 209/19 213/2 213/10 213/10</p> <p>phone [2] 97/4 98/17</p> <p>phonetically [1] 206/22</p> <p>phrase [2] 203/12 203/23</p> <p>physical [16] 17/1 25/13 27/17 27/19 27/20 27/20 27/20 29/12 31/24 41/10 43/10 44/4 44/6 44/11 45/12 293/25</p> <p>physically [8] 10/9 25/25 31/20 44/7 45/19 124/2 228/2 228/7</p> <p>physics [1] 191/24</p> <p>pick [6] 166/25 173/25 175/7 232/14 251/24 286/11</p> <p>picked [10] 95/24 97/6 104/13 104/22 105/23 107/17 145/1 174/3 215/20 292/21</p> <p>picking [2] 107/13 174/1</p> <p>PICO [1] 3/4</p> <p>PICO-PRATS [1] 3/4</p> <p>picture [1] 161/4</p> <p>piece [5] 25/13 50/12 74/7 182/21 265/5</p> <p>pieces [5] 9/10 10/1 17/8 31/12 54/22</p> <p>pile [1] 274/2</p> <p>pillar [1] 182/24</p> <p>pillars [6] 138/18 182/23 182/24 183/4 183/5 183/18</p> <p>pilot [4] 290/19 291/4 291/5 291/6</p> <p>pilots [5] 140/15 154/9 164/3 164/8</p>	<p>290/25</p> <p>place [30] 11/20 13/5 16/14 17/2 17/16 22/21 29/12 38/21 97/7 101/6 105/7 108/5 118/21 118/23 118/24 119/14 121/23 122/2 124/24 126/1 135/22 166/18 223/7 223/9 235/18 239/25 250/15 256/19 271/10 278/19</p> <p>placed [19] 25/25 26/1 26/4 29/5 32/14 32/16 32/16 34/8 35/19 37/14 40/18 40/23 55/11 55/24 57/3 94/25 95/20 112/4 133/11</p> <p>places [8] 9/22 15/6 17/1 17/3 17/4 19/15 31/17 232/6</p> <p>placing [2] 94/20 110/24</p> <p>Plaintiff [1] 264/13</p> <p>plaintiffs [24] 1/5 2/2 2/13 2/18 61/24 65/12 65/17 67/17 68/4 74/25 78/14 190/16 193/2 193/16 196/4 205/2 242/19 243/2 256/10 290/19 291/16 291/17 291/24 294/1</p> <p>plaintiffs' [9] 79/14 85/6 184/17 191/2 192/24 196/17 246/20 253/17 294/6</p> <p>plan [3] 7/8 71/18 159/9</p> <p>plane [2] 137/5 137/22</p> <p>play [2] 83/13 274/10</p> <p>players [1] 234/5</p> <p>playing [3] 83/16 236/2 282/20</p> <p>please [14] 8/12 8/15 8/17 53/8 113/6 117/2 131/23 137/10 137/12 163/1 211/11 250/18 253/6 254/9</p> <p>plenty [2] 137/23 231/11</p> <p>plug [2] 156/9 285/11</p> <p>plus [8] 20/23 229/11 230/21 231/4 231/12 277/24 278/17 278/23</p> <p>PM [3] 150/14 242/20 296/9</p> <p>point [54] 5/7 13/18 15/1 21/21 23/20 30/23 36/14 38/20 40/16 46/3 66/11 67/23 67/23 67/25 68/2 72/14 76/15 78/1 79/20 86/19 95/14 98/13 99/23 101/3 104/14 106/4 106/11 110/25 111/1 122/23 146/8 146/12 147/22 149/14 151/12 153/18 164/25 192/3 193/6 194/9 195/8 195/15 195/25 201/1 213/2 223/14 228/10 228/25 242/6 242/7 281/20 287/19 293/3 295/9</p> <p>pointed [1] 185/3</p> <p>pointing [1] 147/14</p> <p>points [3] 160/14 195/12 223/17</p> <p>policing [1] 246/22</p> <p>policy [1] 273/6</p> <p>policymakers [2] 273/2 273/3</p> <p>political [4] 14/18 14/19 15/2 70/15</p> <p>poll [25] 12/6 12/8 12/11 12/13 32/17 34/13 34/25 35/1 35/5 35/10 36/18 36/20 37/6 37/10 56/20 56/23 56/25 57/3 156/7 226/19 237/13 272/10 272/13 280/9 281/3</p> <p>pollbook [2] 12/9 36/19</p> <p>polling [37] 9/22 11/20 12/5 13/5 15/6 17/1 17/2 17/2 17/4 19/15 31/17 35/21 35/22 35/23 36/9 36/9 36/10 38/21 118/17 119/14 155/23 156/2 156/5 158/11 158/18 158/19 158/24 171/11 171/13 171/14 171/22 175/24 176/8 178/11 178/11 178/22 271/10</p> <p>polls [2] 35/12 217/21</p> <p>pollster [2] 259/4 259/5</p> <p>poorly [1] 172/23</p>
---	--	---

<p>P</p> <p>popular [1] 175/20</p> <p>portal [1] 19/1</p> <p>portion [16] 1/4 16/20 43/12 43/19 44/1 46/4 84/15 123/2 146/20 155/10 164/23 180/19 210/14 216/10 223/3 229/21</p> <p>portions [5] 16/1 16/4 16/10 21/12 46/15</p> <p>posed [1] 110/13</p> <p>position [14] 45/1 45/7 79/14 101/8 124/12 124/13 124/13 124/14 124/14 124/16 124/21 125/16 196/17 276/9</p> <p>positioned [1] 268/23</p> <p>positions [3] 105/1 142/6 287/8</p> <p>possession [15] 91/8 94/8 94/13 95/16 99/2 101/13 108/7 109/10 110/23 112/12 133/9 133/10 133/14 136/4 136/9</p> <p>possibility [2] 223/22 224/3</p> <p>possible [5] 87/20 158/14 203/8 231/22 281/18</p> <p>possibly [2] 18/22 46/9</p> <p>post [10] 84/11 138/17 140/3 141/16 141/20 141/22 143/7 143/8 144/2 153/5</p> <p>Post-it [1] 84/11</p> <p>potatoes [1] 207/20</p> <p>potential [3] 114/7 114/12 128/23</p> <p>potentially [5] 132/16 134/19 157/2 218/19 261/8</p> <p>power [3] 158/15 210/11 235/7</p> <p>powered [2] 55/10 122/2</p> <p>powerful [8] 152/13 156/13 157/18 158/15 171/15 176/13 178/18 179/14</p> <p>powers [1] 36/20</p> <p>PPO [1] 292/6</p> <p>practical [3] 121/5 142/19 159/1</p> <p>practice [13] 141/17 153/17 157/4 157/17 157/21 158/22 163/6 195/18 203/2 204/11 214/10 241/12 285/5</p> <p>practitioner [1] 214/25</p> <p>practitioner's [2] 214/2 214/6</p> <p>pragmatic [1] 226/1</p> <p>pragmatically [3] 203/8 231/21 281/18</p> <p>Pratik [2] 69/10 70/9</p> <p>PRATS [1] 3/4</p> <p>pre [3] 36/15 38/23 120/2</p> <p>pre-election [3] 36/15 38/23 120/2</p> <p>preceding [6] 13/20 25/12 26/12 53/3 101/7 185/14</p> <p>precinct [20] 13/3 13/4 13/5 15/6 15/7 15/13 15/17 15/21 15/23 16/1 16/3 16/10 21/12 35/24 138/24 157/17 165/12 208/4 230/19 272/7</p> <p>precincts [15] 9/21 15/5 15/5 15/10 15/11 16/1 16/3 16/10 17/2 19/14 20/4 20/7 21/12 217/22 237/14</p> <p>precipitously [1] 229/13</p> <p>precise [5] 79/1 176/5 208/1 278/14 278/24</p> <p>precisely [2] 165/7 172/20</p> <p>predates [1] 143/2</p> <p>predicate [1] 210/3</p> <p>predominantly [1] 18/13</p> <p>preface [1] 202/20</p> <p>prefer [4] 150/5 220/14 231/2 231/12</p> <p>preferable [1] 294/10</p>	<p>preference [1] 20/19</p> <p>preliminary [2] 147/10 184/13</p> <p>preparation [5] 140/4 158/13 175/10 176/17 178/23</p> <p>preparations [1] 293/25</p> <p>preparatory [1] 178/20</p> <p>prepare [3] 20/16 24/5 279/13</p> <p>prepared [7] 6/25 7/14 65/17 92/7 179/25 294/22 294/23</p> <p>prepares [1] 260/3</p> <p>preparing [1] 170/6</p> <p>present [6] 27/24 30/13 76/14 124/19 128/25 196/5</p> <p>presentation [1] 72/15</p> <p>presentations [3] 144/6 144/10 147/17</p> <p>presented [1] 105/18</p> <p>presents [2] 226/13 285/20</p> <p>preserve [2] 195/8 196/17</p> <p>preserved [1] 195/22</p> <p>preserving [1] 267/23</p> <p>president [3] 21/4 21/5 90/11</p> <p>President Trump [1] 90/11</p> <p>president's [1] 119/12</p> <p>presidential [6] 20/19 171/20 174/2 174/4 214/7 259/21</p> <p>press [3] 51/10 51/11 169/21</p> <p>presumes [1] 238/24</p> <p>presumptively [1] 118/18</p> <p>pretrial [8] 89/4 196/23 246/23 292/2 293/2 293/16 293/21 294/5</p> <p>pretty [10] 149/24 150/25 225/10 235/18 239/25 240/5 242/8 278/5 285/13 289/25</p> <p>prevalent [1] 153/1</p> <p>previous [6] 13/16 47/10 84/7 95/25 250/12 280/14</p> <p>previously [5] 9/2 26/7 190/13 207/17 264/17</p> <p>price [2] 2/2 33/25</p> <p>primaries [1] 265/19</p> <p>primarily [4] 11/19 71/11 155/2 159/19</p> <p>primary [6] 12/11 20/19 41/6 41/6 244/22 245/2</p> <p>principally [1] 160/1</p> <p>principle [3] 182/19 183/3 183/13</p> <p>print [3] 48/6 56/11 228/5</p> <p>printed [15] 12/24 13/1 22/16 23/7 44/2 44/16 45/13 45/20 56/18 121/21 199/23 200/17 254/20 269/1 284/16</p> <p>printed-out [1] 45/20</p> <p>printer [6] 22/13 38/13 56/6 56/21 121/21 283/9</p> <p>printers [4] 56/11 56/13 120/21 149/12</p> <p>printing [2] 42/18 122/8</p> <p>printout [5] 22/12 226/5 235/22 282/3 283/14</p> <p>printouts [5] 223/4 234/13 235/14 235/17 238/24</p> <p>prints [4] 255/23 280/24 283/1 283/3</p> <p>prior [8] 73/19 94/21 154/4 191/8 193/4 196/3 197/12 205/14</p> <p>privacy [2] 141/23 142/17</p> <p>private [1] 143/11</p> <p>Pro [3] 71/25 72/2 72/14</p> <p>probability [3] 214/8 214/12 214/13</p> <p>probably [16] 30/22 38/24 57/2 126/25 127/11 166/13 197/18 203/23 217/25 221/8 221/15 232/13 253/21 256/15</p>	<p>256/19 257/4</p> <p>probate [1] 16/6</p> <p>Probed [1] 87/6</p> <p>problem [11] 65/4 101/5 173/1 210/8 211/17 224/17 235/11 235/11 259/9 259/11 266/1</p> <p>problematic [1] 189/9</p> <p>problems [4] 38/5 64/5 157/1 257/22</p> <p>procedure [7] 95/10 97/16 97/19 97/22 112/10 151/1 200/11</p> <p>procedures [1] 164/16</p> <p>proceed [11] 48/25 49/15 51/1 66/12 68/1 79/24 105/2 105/19 149/17 187/3 247/8</p> <p>proceeding [3] 68/10 106/2 288/17</p> <p>proceedings [13] 1/10 1/21 6/10 58/16 60/19 68/13 84/19 92/10 106/8 242/17 273/19 296/8 297/9</p> <p>process [95] 18/12 19/10 19/12 19/21 20/15 28/11 30/12 31/6 31/6 34/5 34/24 41/13 42/8 43/5 48/10 49/21 50/2 50/2 51/17 51/21 51/24 54/15 54/22 54/24 55/1 55/12 55/13 55/25 56/1 56/2 56/3 70/21 75/9 76/4 76/16 81/9 82/17 113/22 113/25 118/2 118/12 118/19 118/20 118/23 120/20 130/4 130/7 153/7 158/12 162/8 163/23 164/16 168/12 172/6 172/24 176/1 176/17 176/20 176/23 178/3 178/10 178/24 179/2 179/12 180/2 183/1 204/6 204/15 205/5 205/11 205/18 205/23 206/11 206/16 208/2 209/8 210/1 211/15 212/5 212/9 213/12 216/22 216/22 222/13 223/12 227/25 228/10 228/15 233/6 239/14 239/16 272/6 272/7 291/8 293/24</p> <p>processed [1] 129/3</p> <p>processes [7] 36/13 62/14 176/6 179/4 203/11 223/6 223/8</p> <p>processing [1] 165/21</p> <p>procured [2] 289/20 291/7</p> <p>produce [8] 22/21 23/6 40/21 44/14 56/7 121/1 151/17 160/19</p> <p>produced [15] 1/22 24/9 24/18 26/23 42/15 46/19 46/20 56/10 66/6 103/16 111/7 152/15 183/16 185/16 189/20</p> <p>produces [2] 121/21 266/20</p> <p>product [2] 77/22 142/8</p> <p>production [1] 183/19</p> <p>productions [1] 64/14</p> <p>profess [1] 257/21</p> <p>professional [1] 183/6</p> <p>Professor [20] 166/25 172/20 173/3 202/21 205/5 205/11 205/24 206/8 207/11 207/16 207/18 207/19 210/1 211/1 219/10 224/1 225/25 226/16 230/7 237/17</p> <p>profile [1] 150/16</p> <p>profound [1] 292/16</p> <p>program [2] 102/23 214/22</p> <p>programmed [1] 129/4</p> <p>programming [2] 265/3 265/16</p> <p>prohibited [1] 1/7</p> <p>project [83] 9/19 9/20 9/24 10/2 11/7 14/8 14/10 14/14 14/15 15/2 15/5 16/2 16/4 16/8 16/20 17/1 17/6 17/8 19/11 19/16 19/18 19/24 20/13 20/18 21/13 21/23 21/25 22/1 22/3 22/19 23/12</p>
--	---	--

<p>P</p> <p>project... [52] 23/13 23/14 23/16 23/22 23/24 24/6 24/9 24/10 26/8 26/24 26/25 27/12 28/21 28/22 28/23 28/24 29/11 29/20 30/4 30/4 30/9 30/12 31/3 31/10 31/14 31/18 32/7 32/23 32/24 32/25 34/13 35/18 36/2 39/25 40/5 40/8 40/18 41/14 41/15 46/17 46/21 47/1 69/7 73/5 73/5 82/13 92/7 119/20 123/8 123/12 124/25 265/4</p> <p>projects [6] 16/9 17/10 20/21 26/17 26/18 29/4</p> <p>promote [2] 274/3 274/4</p> <p>promotion [1] 143/10</p> <p>prompt [6] 32/12 32/16 224/10 224/16 226/18 228/19</p> <p>prompted [2] 28/12 133/24</p> <p>prompting [1] 126/22</p> <p>prone [1] 172/3</p> <p>proof [4] 19/17 21/22 123/14 153/9</p> <p>proofed [1] 40/6</p> <p>proofing [8] 16/25 18/12 18/14 19/13 19/23 20/24 21/7 23/1</p> <p>proper [9] 23/23 53/20 78/5 94/12 97/16 198/24 204/10 208/3 253/2</p> <p>properly [20] 11/12 22/23 23/21 41/20 43/25 45/11 57/4 60/24 62/19 110/11 128/2 128/18 129/4 136/14 229/8 229/17 232/1 241/9 254/6 268/5</p> <p>properties [1] 287/16</p> <p>property [2] 215/22 236/4</p> <p>propositions [1] 283/17</p> <p>proprietary [1] 207/5</p> <p>prosecuted [1] 260/6</p> <p>protect [9] 77/2 77/13 142/17 143/18 185/15 189/19 236/5 237/18 238/9</p> <p>protected [6] 23/14 23/15 24/15 24/15 28/5 238/2</p> <p>protecting [2] 147/16 186/14</p> <p>protocol [1] 251/20</p> <p>protocols [1] 223/6</p> <p>proud [3] 59/3 59/19 175/22</p> <p>provide [24] 8/4 11/14 20/11 20/12 24/21 28/25 47/24 61/24 63/21 75/16 77/9 102/21 103/2 113/2 114/7 114/12 119/15 170/2 175/14 192/17 194/6 194/13 246/19 290/1</p> <p>provided [24] 16/15 21/15 24/11 24/13 27/1 27/2 28/15 57/21 61/21 62/3 65/6 103/4 103/6 135/12 191/13 192/18 192/20 193/1 194/6 194/17 206/15 260/9 267/15 289/17</p> <p>provides [3] 28/22 33/21 189/23</p> <p>providing [2] 71/19 244/21</p> <p>provision [1] 206/25</p> <p>provisional [1] 22/10</p> <p>prudent [4] 96/7 97/11 110/1 110/21</p> <p>public [20] 14/1 89/1 89/11 89/16 126/10 143/18 163/8 163/16 164/24 169/11 169/20 179/14 181/5 222/16 222/20 239/23 263/5 266/22 267/1 281/15</p> <p>publications [4] 143/22 143/25 144/2 144/5</p> <p>published [3] 181/8 207/8 266/22</p> <p>pull [16] 72/24 72/25 83/10 85/2 88/16 92/11 108/11 111/2 113/14 165/2 168/8</p>	<p>168/23 254/24 262/15 275/5 275/5</p> <p>pulled [5] 95/22 103/5 122/14 184/24 185/13</p> <p>pulling [2] 90/22 166/21</p> <p>purchase [1] 18/17</p> <p>purchased [2] 56/4 56/14</p> <p>Purely [1] 207/9</p> <p>purpose [14] 78/21 78/25 79/3 79/5 79/10 120/24 140/11 173/13 175/4 180/20 184/15 184/16 207/22 264/1</p> <p>purposes [8] 18/14 45/6 119/7 187/5 194/15 229/5 230/22 292/2</p> <p>pushing [1] 202/8</p> <p>put [42] 16/16 40/20 42/16 46/22 47/3 79/21 108/5 111/24 117/14 122/10 125/23 136/5 151/3 151/6 157/7 165/7 165/23 165/24 165/25 175/11 192/8 195/2 195/4 195/14 195/16 195/17 199/21 223/6 223/8 225/14 228/8 228/12 228/20 228/23 238/16 262/22 266/7 269/10 274/6 276/8 277/15 277/16</p> <p>putting [3] 51/17 118/8 133/21</p> <p>PX [2] 93/9 96/2</p> <p>PX 145 [1] 96/2</p> <p>Q</p> <p>QR [51] 44/2 46/4 46/15 48/3 48/6 123/3 123/19 124/4 124/8 124/20 124/22 124/25 125/3 125/4 125/7 125/10 125/13 148/19 185/2 185/14 185/16 186/15 189/20 189/24 200/17 200/25 201/1 201/3 201/6 201/9 208/19 208/23 210/3 210/6 210/7 210/9 210/12 211/6 211/8 211/22 216/16 216/19 216/24 217/4 225/20 268/22 286/7 286/23 287/19 288/9 288/9</p> <p>qualifications [4] 62/13 69/20 126/20 219/6</p> <p>qualified [3] 40/3 40/3 169/25</p> <p>qualify [3] 16/15 69/19 259/14</p> <p>qualifying [1] 16/14</p> <p>question [109] 5/16 5/18 11/1 27/5 28/16 39/13 41/8 41/9 41/10 41/20 46/2 72/11 72/18 73/17 73/24 74/9 77/11 77/16 89/12 91/2 97/10 98/1 110/12 110/14 110/15 111/6 111/18 112/15 114/3 114/9 115/11 119/17 129/6 131/11 133/23 134/22 135/16 136/15 152/12 155/19 159/23 160/3 165/8 165/9 166/9 166/22 174/13 174/18 174/24 180/14 184/6 184/8 184/22 198/8 199/15 205/17 206/12 208/9 208/11 208/16 212/13 215/9 217/9 221/1 222/2 223/24 224/18 228/24 229/2 229/3 230/2 230/5 236/19 237/24 239/7 239/21 240/4 240/11 240/12 241/21 243/16 249/13 252/23 252/25 253/10 256/17 257/6 257/7 262/3 262/7 264/22 264/23 266/5 267/19 268/2 268/3 270/4 270/22 270/23 271/9 271/11 272/20 274/18 274/21 276/2 277/21 284/25 286/24 294/12</p> <p>questioning [7] 58/1 58/8 72/10 215/8 222/8 250/13 278/7</p> <p>questions [63] 5/23 5/24 30/20 41/7 53/2 58/15 60/10 62/9 63/22 66/19 67/2 73/14 73/20 78/25 80/6 113/19 114/25</p>	<p>115/4 115/6 116/24 117/1 117/18 127/5 127/11 131/10 133/22 166/16 188/16 190/19 204/18 215/19 219/4 230/9 239/3 242/18 246/18 255/3 255/21 255/25 256/11 256/22 258/18 261/22 261/23 262/8 264/6 264/7 264/15 264/17 264/19 267/4 267/8 268/11 268/16 270/17 270/25 273/2 273/8 274/20 274/24 275/22 278/2 287/12</p> <p>quick [9] 6/4 6/11 145/4 168/24 195/25 255/4 262/6 262/15 264/8</p> <p>quickly [11] 7/24 151/12 151/13 151/14 179/15 180/1 217/23 225/13 225/16 270/1 270/2</p> <p>quite [9] 79/16 158/15 226/11 241/10 241/20 248/25 256/14 290/10 292/8</p> <p>quotation [1] 225/14</p> <p>quote [1] 196/25</p> <p>quoted [1] 226/17</p> <p>R</p> <p>race [21] 16/6 16/6 39/17 40/1 40/4 41/22 43/9 119/12 124/2 127/17 128/5 167/23 173/14 175/3 201/14 221/8 233/1 233/12 259/21 286/9 286/12</p> <p>races [3] 23/2 288/4 288/4</p> <p>racial [1] 166/20</p> <p>RAFFENSPERGER [2] 1/6 90/12</p> <p>rainy [2] 9/1 60/16</p> <p>raise [8] 8/12 107/9 137/4 191/11 215/9 219/5 289/7 293/5</p> <p>raised [8] 169/10 185/20 191/6 191/12 270/14 290/9 293/2 295/6</p> <p>raises [1] 186/12</p> <p>raising [1] 186/16</p> <p>RAMSEY [4] 2/5 74/25 103/4 105/3</p> <p>ran [5] 73/3 108/2 108/2 164/8 176/23</p> <p>random [9] 72/24 72/25 73/1 162/22 162/23 166/25 167/10 168/16 168/21</p> <p>randomly [2] 167/1 172/1</p> <p>rather [5] 159/6 159/20 194/1 221/4 287/8</p> <p>ratified [1] 212/19</p> <p>rattled [1] 279/1</p> <p>raw [1] 166/23</p> <p>re [4] 163/2 193/4 197/6 221/12</p> <p>re-count [2] 163/2 221/12</p> <p>re-entered [1] 197/6</p> <p>re-served [1] 193/4</p> <p>reach [5] 5/7 63/2 99/17 116/17 172/15</p> <p>reached [4] 43/16 47/8 47/13 132/14</p> <p>reaching [3] 99/16 192/3 260/24</p> <p>react [1] 35/3</p> <p>read [20] 80/9 80/11 80/12 86/13 107/4 123/19 125/14 169/8 173/18 174/5 175/6 175/9 194/21 226/24 236/13 250/11 251/19 252/3 263/6 263/6</p> <p>readability [1] 257/5</p> <p>readable [32] 43/12 43/19 46/4 46/15 84/15 123/2 124/5 124/9 125/20 125/21 125/23 148/19 152/19 155/10 164/23 200/11 200/12 201/7 201/10 208/20 210/6 210/14 211/21 211/25 212/10 212/17 216/9 216/25 217/11 223/3 225/17 287/15</p> <p>reader [2] 125/11 125/13</p> <p>readers [1] 125/8</p> <p>reading [5] 64/21 201/6 223/21 263/5</p>
---	---	--

<p>R</p> <p>reading... [1] 285/9</p> <p>ready [11] 20/13 23/25 41/2 42/9 54/20 93/21 171/12 171/14 186/22 242/21 295/14</p> <p>real [20] 7/11 101/25 142/19 144/13 145/3 168/24 218/4 218/6 224/19 224/20 224/22 225/1 225/4 226/14 232/2 243/5 262/15 282/2 282/18 291/22</p> <p>realistic [5] 256/21 258/25 259/6 259/14 259/15</p> <p>reality [3] 196/11 280/25 282/14</p> <p>realization [1] 176/7</p> <p>realize [2] 163/24 197/15</p> <p>realized [3] 8/1 152/4 199/5</p> <p>really [74] 53/15 61/18 61/20 62/5 62/24 62/25 63/1 72/15 79/7 95/1 101/17 133/13 142/16 143/5 143/19 151/11 155/12 158/19 158/22 159/8 159/15 159/17 165/6 165/8 166/9 166/22 169/22 171/15 178/20 190/3 192/4 194/16 197/24 202/8 208/9 213/4 213/5 215/24 218/4 218/5 221/22 222/1 222/11 224/18 224/24 224/25 225/11 225/13 228/18 230/10 230/25 234/4 235/13 237/23 237/25 238/1 248/7 251/20 259/3 259/4 265/22 266/13 268/6 268/7 271/15 273/3 274/4 274/7 278/20 282/4 284/13 285/16 285/23 286/22</p> <p>realm [1] 231/21</p> <p>reason [15] 66/1 97/23 97/23 105/9 109/5 136/7 152/13 167/15 191/19 197/22 231/13 232/10 237/23 253/20 293/5</p> <p>reasonable [1] 201/21</p> <p>reasons [4] 132/1 234/9 250/3 274/4</p> <p>rebuilding [2] 50/3 51/16</p> <p>recall [44] 37/20 43/14 46/2 47/20 55/15 56/13 66/21 70/16 75/19 78/15 79/15 80/18 83/2 86/14 91/19 93/22 94/2 99/6 100/5 105/19 109/7 113/1 114/14 116/10 128/16 129/11 133/1 133/21 136/12 192/23 195/19 232/16 243/19 243/20 249/11 267/12 268/13 268/18 269/16 270/19 272/24 272/25 292/8 292/19</p> <p>recalled [1] 100/7</p> <p>recalling [1] 99/23</p> <p>recap [3] 9/3 222/25 237/18</p> <p>receive [5] 27/8 27/15 38/4 54/21 162/25</p> <p>received [10] 42/25 64/13 64/17 67/12 86/12 108/14 108/18 109/24 110/20 141/13</p> <p>receives [1] 27/11</p> <p>receiving [1] 160/14</p> <p>recent [3] 194/9 217/6 279/18</p> <p>recently [3] 64/16 132/25 144/11</p> <p>recess [2] 113/9 150/13</p> <p>recognize [7] 92/13 144/20 195/4 279/17 283/21 284/9 292/13</p> <p>recognized [1] 269/25</p> <p>recognizes [1] 261/7</p> <p>recognizing [1] 38/11</p> <p>recollection [27] 47/18 54/23 75/7</p>	<p>77/15 91/5 91/7 91/10 91/16 91/24 92/6 93/5 94/9 94/11 95/24 97/4 97/5 98/13 100/9 100/22 101/22 101/22 104/20 116/3 128/9 128/13 132/2 133/20</p> <p>recommend [11] 39/2 231/3 231/6 231/16 231/17 231/23 275/1 275/24 277/23 278/16 278/23</p> <p>recommendation [2] 183/6 275/18</p> <p>recommendations [2] 77/9 231/8</p> <p>recommending [1] 278/18</p> <p>recommends [3] 33/19 275/14 275/17</p> <p>record [44] 5/13 5/14 8/17 12/10 12/22 13/14 13/15 52/3 65/16 89/2 89/12 89/16 89/22 94/20 94/22 94/23 94/24 95/5 95/19 95/19 95/21 101/18 104/21 106/6 106/23 107/2 108/4 108/22 123/15 123/17 137/12 147/9 147/12 156/19 156/19 157/12 188/21 192/2 212/18 215/19 217/25 223/1 223/4 260/14</p> <p>recorded [2] 124/20 268/4</p> <p>records [10] 14/1 14/2 129/20 130/19 130/22 141/24 158/4 158/5 215/23 238/13</p> <p>recover [1] 286/2</p> <p>Recross [6] 4/10 4/11 4/21 134/1 134/24 274/22</p> <p>Recross-Examination [6] 4/10 4/11 4/21 134/1 134/24 274/22</p> <p>redirect [5] 4/12 4/20 135/17 204/19 267/6</p> <p>redistricting [1] 21/8</p> <p>reduce [1] 274/11</p> <p>reduced [2] 120/3 235/7</p> <p>Reexamination [2] 4/13 135/24</p> <p>refer [2] 10/13 32/5</p> <p>reference [7] 10/16 25/3 86/17 106/13 107/16 112/11 255/24</p> <p>referenced [12] 14/9 18/5 23/18 39/9 67/2 68/25 75/3 107/11 146/12 185/3 249/13 249/15</p> <p>references [1] 147/17</p> <p>referencing [4] 1/5 64/1 83/24 91/3</p> <p>referred [2] 58/23 83/4</p> <p>referring [12] 28/3 32/1 45/16 45/18 57/23 66/18 87/25 96/22 138/14 148/3 159/5 200/20</p> <p>reflect [3] 60/6 68/4 95/1</p> <p>reflected [7] 61/9 61/15 67/9 72/16 169/15 194/20 203/24</p> <p>reflects [3] 74/8 112/23 216/15</p> <p>refresh [1] 93/5</p> <p>refreshed [1] 104/21</p> <p>refreshing [1] 101/21</p> <p>regarding [30] 61/22 62/3 63/21 64/16 65/6 66/22 66/25 67/2 71/23 73/16 73/20 78/15 81/2 89/22 102/7 103/14 104/17 106/7 107/13 113/19 143/23 154/19 196/6 199/15 239/4 267/9 268/11 269/12 280/22 291/19</p> <p>regards [1] 51/23</p> <p>regime [1] 177/2</p> <p>register [1] 192/9</p> <p>registered [3] 42/20 265/20 265/21</p> <p>regular [2] 179/6 281/7</p> <p>regularly [1] 182/8</p> <p>regulation [2] 177/22 178/1</p> <p>related [11] 39/10 58/19 63/8 65/7 65/8</p>	<p>66/18 100/25 128/24 168/7 264/22 289/19</p> <p>relates [1] 188/5</p> <p>relating [2] 125/4 143/23</p> <p>relation [18] 13/2 21/2 39/21 45/4 91/24 91/25 92/2 112/10 127/16 136/12 145/8 145/13 145/16 146/6 146/7 146/9 149/13 174/14</p> <p>relationship [6] 126/12 140/9 140/11 206/19 217/20 232/7</p> <p>relative [4] 62/11 62/21 107/3 174/15</p> <p>relayed [1] 97/7</p> <p>relays [1] 121/20</p> <p>relevance [6] 87/20 87/22 87/24 89/6 177/1 177/10</p> <p>relevant [8] 64/23 64/25 65/1 66/15 67/14 101/24 107/4 280/20</p> <p>reliability [4] 190/4 225/23 226/5 264/20</p> <p>reliable [7] 79/2 126/16 157/10 212/18 220/17 234/18 234/22</p> <p>reliably [3] 236/3 256/10 257/9</p> <p>reliant [1] 235/13</p> <p>relief [2] 291/25 294/1</p> <p>relies [2] 205/11 264/18</p> <p>rely [7] 58/23 58/25 65/24 82/9 284/17 285/5 289/16</p> <p>relying [12] 18/2 77/22 82/18 82/20 82/20 82/22 147/2 151/4 159/19 160/1 184/23 282/2</p> <p>remain [1] 32/15</p> <p>remains [1] 148/5</p> <p>remedy [1] 64/4</p> <p>remember [27] 43/16 69/16 81/11 84/21 91/21 91/23 92/7 97/3 104/15 131/18 133/13 134/19 144/8 154/5 168/13 176/24 177/7 233/2 247/11 249/6 256/10 256/18 257/10 262/18 277/3 277/11 281/14</p> <p>remembered [1] 41/21</p> <p>remind [2] 237/15 239/15</p> <p>remove [3] 27/16 27/21 34/25</p> <p>removed [5] 27/22 29/18 35/16 101/8 130/14</p> <p>removes [1] 233/6</p> <p>renew [1] 52/9</p> <p>reopening [1] 275/7</p> <p>repair [3] 39/3 39/5 97/20</p> <p>repeat [4] 114/9 145/10 159/22 223/25</p> <p>repeating [4] 49/16 240/12 245/24 260/17</p> <p>rephrase [2] 174/18 273/21</p> <p>replace [6] 93/21 109/21 111/24 112/13 132/16 133/7</p> <p>replaced [27] 37/20 47/21 55/6 91/21 93/17 93/23 93/24 94/4 94/6 94/19 104/3 104/13 104/22 105/23 107/17 108/1 108/6 108/20 109/11 111/25 115/5 131/22 131/24 132/1 132/25 133/19 134/3</p> <p>replacement [3] 103/14 106/1 114/16</p> <p>replacing [3] 84/22 110/17 115/4</p> <p>replied [1] 72/4</p> <p>report [24] 10/24 51/22 52/4 63/8 63/10 69/3 77/8 80/11 80/12 112/5 161/19 184/3 192/8 192/24 194/6 194/13 194/24 195/3 196/3 196/5 196/6 266/19 266/21 281/24</p>
--	--	--

<p>R</p> <p>reported [9] 57/24 110/9 115/14 207/24 208/2 218/24 218/25 219/24 221/7</p> <p>Reporter [5] 1/3 1/6 1/23 297/6 297/17</p> <p>reporting [3] 61/10 113/20 161/25</p> <p>reports [12] 38/4 38/8 38/10 39/10 64/7 192/20 192/25 195/14 217/18 217/21 241/15 263/5</p> <p>represent [6] 182/25 199/19 205/1 238/22 243/2 264/13</p> <p>representations [2] 187/21 188/4</p> <p>representatives [1] 131/16</p> <p>represented [1] 105/16</p> <p>represents [1] 258/19</p> <p>Republican [9] 12/12 21/4 41/6 41/6 41/7 41/8 41/19 41/25 128/2</p> <p>request [14] 12/11 47/17 63/15 64/20 64/22 65/2 65/14 65/22 67/5 67/7 132/15 132/23 162/25 162/25</p> <p>requested [4] 14/2 112/25 132/5 163/5</p> <p>requests [3] 61/24 161/17 161/24</p> <p>require [1] 158/8</p> <p>required [5] 55/4 56/18 171/1 194/14 239/13</p> <p>requirement [4] 119/23 119/24 192/19 237/8</p> <p>requirements [3] 198/6 198/6 267/25</p> <p>requires [14] 55/6 157/15 158/9 161/20 171/16 171/22 216/6 222/25 233/5 233/5 236/23 236/23 237/5 244/21</p> <p>requiring [1] 192/20</p> <p>research [7] 86/22 202/3 223/17 230/9 237/17 281/17 285/3</p> <p>reserve [1] 204/19</p> <p>reset [1] 116/1</p> <p>resetting [1] 50/6</p> <p>residencies [1] 15/14</p> <p>resides [1] 50/8</p> <p>residing [2] 14/20 31/14</p> <p>resolve [2] 160/25 272/22</p> <p>resolved [2] 222/19 268/7</p> <p>respect [27] 61/14 90/16 139/23 139/25 147/15 147/15 147/21 147/22 170/8 170/12 171/6 175/1 187/11 193/9 193/17 194/5 195/25 200/3 200/5 200/6 200/14 200/22 202/24 203/12 203/23 225/24 276/18</p> <p>respectfully [2] 271/18 294/6</p> <p>respectively [1] 276/19</p> <p>respects [1] 177/5</p> <p>respond [8] 65/21 73/23 98/7 98/16 192/25 193/8 195/24 227/15</p> <p>responded [3] 98/17 103/13 111/12</p> <p>responding [9] 65/12 65/18 90/20 193/3 209/23 276/20 276/22 276/24 277/6</p> <p>responds [1] 86/2</p> <p>response [16] 23/4 47/16 61/25 63/10 65/16 72/5 96/6 106/9 106/15 110/22 262/8 268/15 270/17 272/19 275/22 276/2</p> <p>responses [3] 61/24 63/3 64/14</p> <p>responsibility [2] 76/23 235/18</p> <p>responsible [6] 71/16 77/1 136/16 233/10 236/8 239/22</p> <p>responsive [3] 63/11 64/20 110/12</p>	<p>rest [2] 209/19 231/14</p> <p>restate [1] 239/7</p> <p>resting [1] 110/25</p> <p>restoring [1] 30/12</p> <p>restricted [1] 1/3</p> <p>result [23] 43/22 44/21 56/9 111/16 125/24 126/1 128/20 172/21 172/23 173/21 183/23 211/14 213/23 217/1 217/2 218/24 219/25 221/17 222/5 222/7 222/8 261/9 272/12</p> <p>results [16] 12/21 40/21 45/11 90/13 113/14 124/8 130/3 130/4 151/13 204/14 247/12 266/7 266/8 266/9 266/10 266/14</p> <p>resume [1] 60/12</p> <p>resumè [1] 145/2</p> <p>retain [2] 32/15 112/20</p> <p>retained [13] 29/19 112/5 112/22 116/18 117/5 130/22 133/4 141/3 192/14 192/16 194/15 194/23 195/1</p> <p>retains [1] 130/6</p> <p>retention [1] 133/14</p> <p>retrieved [2] 114/20 117/12</p> <p>return [4] 26/11 132/12 132/13 159/6</p> <p>returned [3] 26/13 159/10 159/11</p> <p>reuse [2] 33/15 129/9</p> <p>reveal [1] 181/14</p> <p>revealed [1] 221/7</p> <p>reveals [1] 163/22</p> <p>review [26] 19/17 19/25 20/11 72/3 84/15 118/9 159/20 218/13 228/5 228/7 228/18 229/18 229/24 230/1 237/9 239/12 239/13 242/5 247/15 249/1 251/11 256/12 281/1 282/6 282/6 291/2</p> <p>reviewed [10] 72/5 130/8 144/1 168/17 202/11 229/4 239/12 247/23 283/20 291/3</p> <p>reviewing [5] 229/19 242/4 250/16 250/20 280/23</p> <p>reviews [1] 235/22</p> <p>revised [2] 65/11 178/1</p> <p>revisit [1] 189/13</p> <p>RFP [1] 291/8</p> <p>Rhode [2] 154/1 232/22</p> <p>RICHARD [3] 2/19 2/22 264/13</p> <p>Richard [4] 69/5 69/8 69/9 70/1</p> <p>rid [1] 18/21</p> <p>right [301]</p> <p>ring [2] 80/19 91/4</p> <p>rings [1] 241/15</p> <p>rise [3] 60/13 113/8 150/12</p> <p>risk [81] 138/17 139/12 139/15 139/16 139/21 140/14 140/16 140/19 141/6 147/22 147/25 149/16 150/24 150/25 151/10 151/15 151/19 151/22 151/23 152/1 152/5 153/2 153/16 153/19 153/23 154/2 155/5 155/7 155/9 155/14 155/19 155/22 161/6 163/22 170/13 170/18 172/6 172/11 172/19 172/24 173/4 173/5 173/7 175/14 178/15 180/7 182/2 182/16 183/21 184/17 186/14 187/13 188/13 188/14 193/3 199/17 199/18 200/22 201/6 202/1 204/1 211/12 211/16 211/18 211/21 212/18 213/11 218/24 219/1 219/11 219/13 219/15 219/24 220/1 221/16 221/20 233/23 238/8 238/14 260/5 266/10</p> <p>risk-limiting [66] 138/17 139/12</p>	<p>139/15 139/16 139/21 140/14 140/16 140/19 141/6 147/22 147/25 149/16 150/24 150/25 151/10 151/15 151/19 151/22 151/23 152/1 152/5 153/2 153/16 153/19 153/23 154/2 155/5 155/7 155/9 155/14 155/19 155/22 161/6 163/22 170/13 170/18 172/6 173/4 175/14 178/15 180/7 182/2 182/16 183/21 184/17 186/14 187/13 188/13 188/14 193/3 199/17 199/18 200/22 201/6 202/1 204/1 212/18 213/11 218/24 219/24 221/16 221/20 233/23 238/8 238/14 266/10</p> <p>risks [1] 210/21</p> <p>river [1] 141/15</p> <p>RLA [90] 145/25 148/18 149/3 152/9 152/13 153/8 153/12 153/13 154/13 154/14 154/16 164/16 180/19 180/25 181/4 182/23 183/4 189/23 190/3 190/4 197/16 198/17 199/21 199/25 200/11 201/9 203/4 204/9 204/10 205/5 205/16 205/18 205/23 206/10 206/22 208/3 208/6 208/12 208/13 208/15 208/18 208/19 209/8 209/15 209/23 210/2 210/5 210/8 210/11 210/15 210/20 211/20 213/17 213/19 213/20 213/22 213/23 215/1 215/12 215/14 215/18 216/19 217/1 218/25 221/21 221/24 222/4 222/11 222/25 223/5 229/5 229/14 235/3 235/7 238/17 238/21 244/19 244/21 253/1 254/4 254/14 264/18 264/21 265/7 266/1 267/10 279/13 286/5 286/8 286/24</p> <p>RLAs [28] 152/11 163/20 182/20 185/15 189/13 189/19 198/11 198/14 202/21 207/21 207/23 208/2 212/24 215/9 216/9 220/6 221/23 225/20 234/22 234/24 244/13 248/4 281/7 287/16 287/19 287/24 287/25 288/5</p> <p>RMA [1] 39/3</p> <p>RMR [3] 1/23 297/6 297/16</p> <p>Rob [1] 271/2</p> <p>Rob's [1] 275/9</p> <p>ROBBINS [1] 3/6</p> <p>ROBERT [3] 2/16 2/17 205/1</p> <p>rod [1] 59/10</p> <p>role [5] 9/6 38/4 51/19 236/2 254/4</p> <p>roles [1] 142/8</p> <p>rolling [1] 162/21</p> <p>rolls [1] 187/12</p> <p>room [4] 50/1 112/4 134/10 137/6</p> <p>ROSS [1] 3/6</p> <p>roughly [8] 7/4 138/21 156/7 163/25 166/11 211/23 211/23 287/17</p> <p>round [1] 106/17</p> <p>routine [1] 281/2</p> <p>routinely [1] 136/4</p> <p>routing [1] 45/6</p> <p>rubber [1] 165/24</p> <p>rule [18] 65/15 65/23 66/4 165/1 169/2 169/15 171/21 173/10 192/19 194/2 232/3 232/15 232/18 232/25 233/3 234/4 286/20 289/25</p> <p>Rule 183-1-15.04 [1] 165/1</p> <p>Rule 26 [3] 65/23 66/4 192/19</p> <p>Rule 37 [1] 289/25</p> <p>ruled [2] 53/15 66/8</p> <p>rules [4] 164/22 177/4 195/1 232/23</p>
---	--	---

<p>R</p> <p>ruling [6] 58/8 63/20 66/25 73/15 78/2 78/5</p> <p>run [48] 10/21 21/19 57/16 80/15 108/4 127/23 128/5 129/17 139/20 140/15 140/18 143/12 155/12 156/2 156/5 156/12 159/2 160/21 160/23 161/6 161/7 161/12 164/17 164/22 170/19 171/13 171/14 171/15 174/7 177/16 179/4 179/15 179/18 182/22 195/1 199/18 199/25 204/10 215/17 235/3 273/18 281/7 287/15 287/19 287/24 287/24 287/25 288/5</p> <p>running [16] 6/25 119/8 155/4 156/7 160/21 163/23 164/3 176/22 178/25 183/5 220/5 288/1 289/6 292/21 293/8 295/2</p> <p>runoff [1] 233/21</p> <p>runs [3] 80/14 181/5 238/21</p> <p>RUSSO [1] 3/3</p>	<p>202/20 203/20 209/7 209/13 210/21 210/25 212/2 212/4 212/24 214/7 214/8 214/18 214/20 217/24 220/3 224/15 230/23 231/10 233/24 234/9 234/12 234/15 235/1 235/3 235/6 244/4 244/9 244/15 245/5 248/6 251/25 252/1 254/22 256/14 256/15 256/19 256/21 258/16 263/3 263/15 264/4 266/9 269/20 271/16 271/23 272/21 273/17 277/1 278/22 282/25 294/4 294/22 294/23</p> <p>saying [39] 20/12 43/19 63/14 91/23 98/8 99/4 100/15 100/17 100/18 100/24 101/23 109/25 111/13 150/7 161/18 179/7 181/12 185/6 185/12 187/4 189/16 193/23 193/24 195/21 202/20 211/5 215/25 219/13 219/16 221/22 231/14 234/8 234/9 236/1 245/17 260/12 262/23 281/1 284/17</p> <p>says [25] 44/2 44/24 62/23 64/3 64/13 85/16 92/23 96/6 96/16 96/24 97/10 148/17 148/23 149/2 163/1 182/25 184/18 189/18 189/22 195/15 213/23 227/4 250/3 286/3 286/17</p> <p>scale [1] 154/10</p> <p>scan [10] 10/23 13/12 22/8 43/22 46/22 118/21 121/1 129/3 151/12 272/7</p> <p>scanned [7] 13/22 44/5 44/5 122/20 152/1 156/25 157/1</p> <p>scanner [70] 10/11 10/13 10/14 10/15 10/21 10/22 10/22 10/23 11/14 13/3 13/4 13/5 13/15 13/19 25/19 31/16 42/23 44/20 44/24 45/1 45/6 46/22 122/11 124/7 124/10 124/11 125/24 126/2 126/3 127/16 128/24 129/2 129/19 148/13 149/1 151/3 151/3 151/5 151/6 151/17 152/16 152/16 152/17 153/6 157/3 157/7 157/17 165/12 165/19 165/20 165/24 179/11 210/13 210/13 214/16 214/17 215/13 228/8 228/13 228/20 228/23 234/25 236/24 238/17 239/1 239/12 239/17 251/23 269/10 283/10</p> <p>scanners [8] 42/17 149/3 149/5 149/10 151/12 172/23 235/3 238/25</p> <p>scanning [4] 35/20 43/23 44/6 211/6</p> <p>scary [2] 287/20 287/22</p> <p>scenario [7] 118/20 172/25 188/21 261/3 269/12 269/25 287/18</p> <p>scenarios [2] 173/22 174/25</p> <p>schedule [4] 6/16 7/5 7/12 132/11</p> <p>scheduled [6] 20/19 92/2 92/3 92/4 94/1 109/18</p> <p>scheduling [3] 6/4 6/12 192/21</p> <p>SCHEINMAN [1] 2/7</p> <p>SCHOENBERG [1] 2/3</p> <p>school [4] 14/22 14/24 141/23 175/22</p> <p>science [12] 48/14 48/16 48/23 50/10 50/13 58/3 70/5 70/15 76/18 141/11 185/23 202/1</p> <p>scientific [2] 186/23 213/11</p> <p>scientists [1] 151/9</p> <p>scope [14] 78/5 113/21 116/22 146/3 147/25 148/6 175/3 184/2 184/3 185/20 197/13 197/23 270/24 293/13</p> <p>scoped [1] 198/1</p> <p>screaming [1] 59/24</p> <p>screen [24] 22/12 22/15 92/14 96/13</p>	<p>124/15 125/5 125/6 169/3 170/6 212/1 228/2 228/5 228/14 228/18 231/2 242/4 242/4 250/1 283/9 283/22 283/25 284/21 284/21 285/20</p> <p>screens [1] 228/16</p> <p>screwed [2] 241/12 241/13</p> <p>Scroll [1] 86/13</p> <p>seal [1] 38/19</p> <p>sealed [1] 26/2</p> <p>search [1] 116/6</p> <p>seat [4] 5/3 8/15 60/15 137/10</p> <p>SEB [3] 134/18 134/19 232/15</p> <p>second [34] 25/11 28/2 40/14 41/8 41/22 42/6 43/18 45/1 45/7 45/7 45/8 85/10 92/20 96/11 108/15 147/11 148/18 183/12 183/13 196/6 208/10 209/22 242/15 249/25 250/24 252/5 252/13 254/13 258/14 266/5 275/9 276/25 278/19 289/9</p> <p>Secondly [1] 279/14</p> <p>seconds [5] 251/1 251/3 252/8 252/17 285/11</p> <p>secrecy [5] 157/1 159/16 267/15 267/23 268/1</p> <p>secret [1] 66/1</p> <p>Secretary [42] 25/7 28/16 47/9 47/13 47/23 75/15 75/18 86/11 90/11 98/8 107/6 107/7 107/12 114/6 114/11 119/24 132/18 133/5 135/10 135/19 140/10 171/19 173/19 173/25 174/3 174/10 175/7 196/24 198/20 225/3 232/25 233/6 233/19 244/3 244/10 246/15 247/18 248/22 249/16 263/20 279/11 291/6</p> <p>Secretary's [12] 17/24 18/2 26/7 47/16 57/5 64/15 173/16 174/20 252/12 252/17 261/6 281/24</p> <p>secure [2] 133/12 274/5</p> <p>secured [2] 112/4 134/10</p> <p>secures [1] 142/12</p> <p>security [48] 17/13 25/19 31/23 32/1 32/9 32/13 32/14 37/1 37/3 37/4 64/5 77/2 77/12 140/2 141/12 141/13 141/14 141/23 142/15 142/17 143/19 144/3 144/11 144/13 145/9 145/14 145/17 146/8 146/10 147/22 148/1 148/3 148/10 148/12 149/5 149/10 149/11 149/15 151/5 182/19 183/22 198/14 198/23 202/23 261/17 287/16 291/21 293/25</p> <p>see [116] 16/5 20/1 20/2 20/4 20/6 22/9 22/15 27/23 28/3 28/8 42/23 47/14 53/10 74/15 85/7 85/10 85/12 85/19 85/25 86/4 86/17 87/7 87/9 87/20 91/18 92/23 92/24 96/7 96/10 96/15 97/11 97/17 98/25 100/13 110/1 110/18 111/6 112/2 113/7 115/16 115/17 115/21 116/3 117/24 117/25 124/19 145/4 148/13 153/10 157/2 162/23 164/4 169/5 169/6 169/23 170/6 170/10 170/11 173/10 175/2 187/6 199/23 199/25 200/1 214/23 221/1 225/6 227/4 241/25 243/10 245/15 245/18 245/19 246/10 246/11 246/12 249/23 250/5 250/6 250/19 250/22 250/25 251/2 251/7 251/9 251/12 251/13 252/6 252/7 252/9 252/10 252/14 252/15 252/19 252/20 254/2 254/4 255/7 255/10</p>
--	---	---

<p>S</p> <p>see... [17] 255/19 255/20 256/1 256/2 258/13 260/12 263/1 263/2 263/10 264/25 266/6 266/7 266/22 270/2 276/24 276/25 296/7</p> <p>seeing [3] 53/4 284/15 285/14</p> <p>seek [1] 294/1</p> <p>seeking [3] 52/2 117/18 135/3</p> <p>seem [3] 86/14 128/17 281/14</p> <p>seems [6] 7/4 215/5 219/16 220/2 229/18 236/1</p> <p>seen [20] 22/11 56/22 83/18 87/19 89/14 157/4 170/20 220/12 228/16 231/25 234/1 247/10 249/6 251/14 255/11 255/13 255/15 255/16 255/17 285/8</p> <p>sees [4] 44/22 202/24 245/12 246/4</p> <p>select [4] 28/9 35/6 155/20 232/25</p> <p>selected [10] 13/2 13/7 35/9 124/19 125/17 167/6 167/7 180/19 290/18 291/4</p> <p>selecting [3] 121/2 172/1 173/14</p> <p>selection [10] 13/18 13/19 44/3 45/7 125/5 162/22 167/11 168/16 173/9 173/11</p> <p>selections [7] 22/16 23/7 43/21 44/14 44/15 229/19 229/19</p> <p>self [2] 39/13 57/24</p> <p>self-evident [1] 39/13</p> <p>self-reported [1] 57/24</p> <p>sell [3] 230/14 230/16 268/5</p> <p>selling [1] 274/6</p> <p>senate [3] 14/22 119/12 233/21</p> <p>senatorial [1] 173/25</p> <p>send [4] 19/24 74/15 98/10 224/10</p> <p>sending [1] 118/9</p> <p>senior [3] 1/12 69/4 142/8</p> <p>sense [17] 148/3 148/3 153/1 159/13 170/25 171/1 206/13 210/10 211/17 220/6 236/7 236/7 238/9 240/9 278/20 285/24 294/11</p> <p>sent [6] 22/22 97/20 100/10 100/24 159/20 160/2</p> <p>sentence [5] 148/18 250/3 254/3 254/13 277/5</p> <p>separate [6] 66/3 109/14 148/25 182/4 193/13 193/19</p> <p>separately [1] 67/16</p> <p>September [6] 92/4 94/1 145/22 191/14 191/15 191/25</p> <p>September 2020 [1] 191/15</p> <p>sequence [5] 19/19 31/2 65/10 104/17 104/25</p> <p>series [4] 267/8 268/11 268/15 275/6</p> <p>serve [1] 22/10</p> <p>served [1] 193/4</p> <p>server [95] 9/12 9/17 9/18 9/23 9/25 10/7 10/9 10/19 11/4 11/6 11/10 11/25 12/1 29/22 29/23 31/14 37/21 37/24 38/1 40/10 47/14 47/15 47/20 47/25 50/3 50/3 53/21 54/8 57/20 73/6 84/11 91/7 91/16 93/2 93/7 93/17 93/20 94/16 94/18 95/8 97/6 97/7 98/23 98/24 98/25 99/1 99/3 101/6 101/11 101/13 101/14 101/15 102/14 102/24 103/1 104/2 104/12 105/12 105/23 107/13 107/17 108/5 108/6 108/8 109/4 109/6 109/10</p>	<p>109/11 109/12 109/16 109/22 110/23 111/21 111/24 111/25 111/25 112/1 112/2 112/3 112/4 112/12 116/16 131/21 131/24 132/16 132/17 132/20 133/7 133/21 134/3 134/8 134/9 135/9 135/11 136/13</p> <p>servers [1] 107/3</p> <p>service [9] 121/18 122/6 126/10 127/1 143/13 143/18 244/11 261/11 275/25</p> <p>services [1] 244/21</p> <p>session [1] 21/9</p> <p>set [18] 11/12 20/8 25/1 42/13 48/9 49/7 54/21 70/21 71/18 151/2 151/2 152/14 166/3 173/10 218/20 239/20 287/16 297/12</p> <p>setting [11] 53/24 57/4 154/14 154/17 224/7 224/19 224/20 227/2 227/12 259/6 265/3</p> <p>settings [1] 53/21</p> <p>seven [4] 224/11 244/25 245/5 245/6</p> <p>sever [1] 47/10</p> <p>SHA [3] 30/5 30/13 30/15</p> <p>shall [1] 169/20</p> <p>SHANNON [3] 1/23 297/6 297/16</p> <p>share [5] 5/18 6/5 59/6 98/12 245/4</p> <p>shared [1] 62/20</p> <p>she [11] 60/2 60/3 70/8 99/20 99/24 100/5 112/10 112/11 128/11 128/11 292/4</p> <p>she's [2] 112/7 290/9</p> <p>sheet [2] 28/19 268/21</p> <p>sheets [3] 19/13 163/10 163/10</p> <p>shelf [2] 162/17 163/6</p> <p>sheriff [1] 16/6</p> <p>shift [4] 106/17 178/11 182/15 222/22</p> <p>ship [1] 39/7</p> <p>shockingly [1] 224/11</p> <p>short [6] 35/4 196/9 251/1 252/8 262/2 273/25</p> <p>shortcut [1] 103/19</p> <p>should [32] 7/8 23/2 23/3 23/3 23/4 25/2 41/11 66/12 71/21 78/8 79/24 99/2 141/20 141/20 148/9 152/9 169/23 169/24 174/10 183/5 192/8 222/4 222/5 224/15 226/21 253/12 259/4 259/23 261/19 280/13 294/18 294/24</p> <p>shouldn't [2] 194/16 293/14</p> <p>show [15] 42/19 44/16 87/24 125/11 125/13 125/16 125/16 144/14 164/25 169/2 169/3 177/9 181/15 229/10 275/15</p> <p>showed [3] 76/13 105/3 232/15</p> <p>showing [10] 13/8 13/12 13/15 13/19 22/23 23/2 23/22 42/20 85/5 128/2</p> <p>shown [2] 175/22 178/16</p> <p>shows [7] 13/17 13/18 27/23 108/22 218/25 225/4 226/7</p> <p>shuffle [1] 157/15</p> <p>sic [2] 40/19 97/25</p> <p>side [8] 5/5 138/22 139/1 170/5 178/24 178/24 188/24 196/17</p> <p>sign [2] 98/23 109/16</p> <p>signage [1] 237/15</p> <p>signature [11] 12/10 12/14 24/11 24/12 24/13 27/1 27/1 27/3 30/5 57/19 57/20</p> <p>signed [2] 21/22 115/16</p> <p>significance [1] 237/9</p> <p>significant [2] 202/22 234/21</p>	<p>significantly [1] 235/7</p> <p>signs [3] 90/24 226/19 281/1</p> <p>similar [2] 34/5 173/9</p> <p>similarly [1] 283/8</p> <p>simple [4] 184/22 188/3 188/9 200/24</p> <p>simplest [2] 151/7 156/6</p> <p>simplify [1] 240/15</p> <p>simply [8] 61/11 78/24 136/9 168/17 188/24 193/3 222/4 223/21</p> <p>simultaneous [7] 99/12 100/6 100/16 111/5 111/15 111/18 112/8</p> <p>since [20] 9/5 57/5 57/9 57/9 64/17 76/3 140/18 143/6 143/20 150/10 153/17 170/21 187/4 190/7 191/11 191/14 191/15 196/22 217/4 219/12</p> <p>single [16] 22/2 22/2 27/24 28/2 28/8 37/10 59/17 118/21 156/18 201/19 204/16 209/9 210/3 238/2 256/11 258/2</p> <p>sir [43] 75/2 75/5 75/9 76/18 80/9 80/16 83/7 84/21 84/23 85/7 88/18 91/1 91/20 92/9 92/13 92/24 94/4 97/2 100/15 118/5 120/11 123/25 127/2 127/10 128/9 128/22 129/13 129/18 130/21 131/2 134/9 134/21 135/2 135/15 136/19 244/11 248/7 248/14 248/22 249/2 253/6 254/7 254/16</p> <p>site [8] 29/4 29/5 29/7 29/13 109/1 109/3 110/9 116/15</p> <p>sitting [1] 134/9</p> <p>situation [13] 82/18 85/24 86/21 87/25 91/3 165/21 174/5 208/25 213/15 258/25 259/10 259/12 264/24</p> <p>situations [2] 165/16 165/18</p> <p>six [5] 154/2 255/20 255/24 256/15 256/24</p> <p>six months [2] 256/15 256/24</p> <p>size [6] 24/17 32/4 36/2 71/10 166/18 172/14</p> <p>sizes [1] 166/2</p> <p>skeleton [1] 16/11</p> <p>skilled [1] 61/4</p> <p>skipped [1] 234/21</p> <p>skipping [1] 97/11</p> <p>slate [4] 224/14 224/23 224/24 226/20</p> <p>slew [1] 226/14</p> <p>slides [1] 254/24</p> <p>slight [1] 168/9</p> <p>slightly [1] 166/1</p> <p>slow [4] 111/9 152/3 199/8 295/15</p> <p>slowed [1] 295/5</p> <p>slowly [1] 153/17</p> <p>small [7] 7/25 32/5 36/3 167/6 224/11 268/24 272/11</p> <p>smaller [3] 154/10 165/23 268/21</p> <p>Smallwood [3] 69/10 70/8 71/11</p> <p>snags [1] 164/9</p> <p>so [419]</p> <p>so-called [3] 62/5 62/17 65/4</p> <p>socioeconomic [1] 166/19</p> <p>software [53] 21/18 48/14 49/4 60/25 62/1 138/17 140/3 142/7 142/8 160/19 161/3 161/20 161/22 176/23 178/24 182/20 182/21 182/23 183/2 183/3 183/4 184/1 185/18 185/24 186/7 186/18 186/22 187/5 187/12 187/15 187/17 187/22 188/2 188/5 188/8 188/12 188/15 188/16 188/17 188/18 188/24 189/12 190/11 190/12 197/3</p>
---	--	---

<p>S</p> <p>software... [8] 197/12 206/13 206/15 206/18 206/20 206/25 207/1 236/13</p> <p>software-independent [6] 184/1 185/24 187/15 187/17 188/17 188/18</p> <p>solicited [1] 78/14</p> <p>solid [2] 21/14 204/16</p> <p>solve [1] 232/4</p> <p>some [89] 5/23 5/24 6/13 7/7 7/17 9/4 9/10 10/5 14/15 17/13 21/8 24/16 46/10 58/24 59/14 62/24 63/19 63/21 63/21 64/15 65/7 65/8 66/22 71/19 88/2 88/3 101/16 117/18 122/22 129/23 133/18 134/12 136/6 136/22 142/15 144/22 149/7 153/5 154/24 155/2 155/3 157/13 161/20 165/11 167/5 167/16 168/21 170/16 171/4 175/2 182/7 188/21 193/12 193/14 198/4 200/4 205/24 207/15 212/5 214/20 220/25 223/6 223/7 224/5 230/8 231/8 233/18 236/7 238/22 244/24 246/18 247/14 256/4 256/4 262/8 263/25 275/20 275/20 275/22 276/10 281/12 281/13 281/15 282/18 282/24 284/13 285/16 286/25 292/23</p> <p>somebody [11] 74/15 90/2 215/1 231/19 235/1 236/12 267/20 272/1 274/7 277/12 292/12</p> <p>somehow [2] 233/9 238/18</p> <p>someone [5] 84/5 84/6 129/23 130/9 289/15</p> <p>something [42] 21/5 50/23 61/2 62/8 67/24 78/6 97/24 116/4 120/2 128/17 128/17 130/15 136/6 157/12 165/5 168/12 169/24 170/12 173/3 174/22 177/22 188/25 189/5 190/4 190/21 221/12 221/12 226/8 230/7 239/6 245/17 245/22 246/11 252/21 260/2 263/13 265/2 270/21 274/7 282/4 282/25 294/25</p> <p>sometimes [5] 182/9 213/21 230/24 272/12 281/9</p> <p>somewhat [1] 193/10</p> <p>somewhere [1] 225/4</p> <p>son [1] 137/1</p> <p>soon [4] 5/17 40/12 150/7 173/24</p> <p>sorry [48] 6/9 52/18 69/22 74/10 76/6 88/24 92/15 95/11 96/14 103/8 113/24 119/5 123/24 145/10 152/4 159/22 162/25 176/25 183/11 184/7 197/25 208/10 211/11 212/3 217/10 227/12 236/17 239/2 247/7 249/10 249/21 250/10 257/13 257/17 261/18 270/12 271/4 271/6 275/9 277/7 284/6 287/19 290/15 290/22 291/20 293/19 295/6 295/11</p> <p>sort [21] 7/3 15/1 50/7 59/14 62/16 118/6 124/2 126/5 126/9 159/1 162/2 163/17 170/13 175/4 188/25 190/9 203/14 207/18 221/4 276/8 276/13</p> <p>sorted [1] 68/22</p> <p>sorts [1] 143/11</p> <p>SOS [2] 19/7 135/7</p> <p>sought [1] 196/5</p> <p>sound [1] 259/22</p> <p>sounds [4] 148/2 186/25 199/9 212/16</p> <p>source [8] 160/20 206/14 207/4 207/8</p>	<p>207/9 212/18 223/10 274/5</p> <p>South [1] 284/10</p> <p>South Carolina [1] 284/10</p> <p>SOUTHWEST [1] 1/24</p> <p>sowing [1] 261/12</p> <p>space [2] 139/9 139/10</p> <p>Spalding [32] 43/15 47/6 47/7 47/11 47/18 47/23 47/24 62/9 62/10 62/11 131/16 131/18 132/3 132/3 132/5 132/10 132/14 132/19 132/21 132/23 132/24 133/1 133/6 133/15 133/24 135/3 135/7 135/8 135/11 135/12 136/2 136/12</p> <p>SPARKS [1] 2/9</p> <p>speak [12] 76/21 87/1 91/23 94/13 100/17 132/24 174/10 189/5 227/7 281/5 281/5 295/24</p> <p>speaker [1] 144/12</p> <p>speaking [3] 138/21 174/10 211/23</p> <p>Spears [1] 128/7</p> <p>special [2] 21/9 40/2</p> <p>specialist [3] 69/4 70/2 198/5</p> <p>specialty [3] 141/3 192/16 194/15</p> <p>specialty [2] 206/1 206/2</p> <p>specific [14] 25/9 55/7 55/9 70/14 94/11 99/24 101/12 109/2 164/16 171/17 174/15 218/22 224/5 248/25</p> <p>specifically [25] 54/8 63/7 102/19 103/23 135/13 139/25 141/1 141/11 141/12 144/1 145/25 146/11 146/12 162/10 182/24 185/13 192/14 220/16 245/7 247/3 267/17 284/7 286/2 290/18 291/18</p> <p>specificity [1] 64/3</p> <p>specifics [2] 66/20 205/16</p> <p>specified [1] 126/20</p> <p>speculate [1] 221/4</p> <p>speculating [3] 220/10 220/12 227/10</p> <p>speculation [1] 231/14</p> <p>sped [1] 152/3</p> <p>spell [2] 8/16 137/11</p> <p>spelled [1] 69/5</p> <p>spend [4] 21/6 119/2 271/13 280/2</p> <p>spending [2] 258/14 276/7</p> <p>spent [11] 101/23 196/7 221/22 252/13 252/17 253/20 271/12 275/6 280/6 285/10 290/10</p> <p>split [1] 247/2</p> <p>spoiled [1] 285/15</p> <p>spoke [2] 116/10 295/23</p> <p>spoken [2] 129/12 272/16</p> <p>spot [2] 216/12 241/4</p> <p>spotted [2] 217/14 217/17</p> <p>spotting [1] 226/4</p> <p>spreadsheet [4] 156/20 156/22 162/14 164/11</p> <p>spreadsheets [2] 18/14 162/14</p> <p>spring [2] 37/21 196/1</p> <p>Square [1] 142/10</p> <p>SR [1] 2/23</p> <p>Stack [1] 157/15</p> <p>Stack 13 [1] 157/15</p> <p>staff [15] 16/16 49/20 49/23 50/1 50/5 53/3 54/12 55/18 69/3 69/11 75/7 98/4 99/25 101/14 234/7</p> <p>stage [1] 229/24</p> <p>stamped [1] 122/1</p> <p>stand [7] 7/22 50/18 106/22 184/22</p>	<p>187/19 278/14 289/24</p> <p>standard [5] 177/15 186/23 189/15 189/15 189/16</p> <p>standards [1] 130/21</p> <p>standing [4] 58/1 58/7 59/23 264/24</p> <p>standpoint [1] 12/23</p> <p>stands [2] 11/18 113/8</p> <p>staring [1] 180/3</p> <p>Stark [24] 166/25 172/20 173/3 187/16 193/1 195/16 195/25 196/7 200/4 202/14 202/21 203/5 204/5 205/5 205/12 205/24 207/16 207/18 207/19 211/1 219/10 223/14 225/25 230/7</p> <p>Stark's [6] 202/11 206/8 207/12 210/1 224/1 225/21</p> <p>start [11] 68/9 113/23 114/1 164/3 184/14 189/4 199/2 209/23 241/15 278/9 285/6</p> <p>started [11] 59/15 141/17 173/24 176/22 181/23 188/4 209/23 221/18 232/23 274/1 278/18</p> <p>starting [8] 6/2 6/3 15/1 152/17 181/15 181/19 189/8 286/20</p> <p>starts [1] 14/21</p> <p>stash [1] 165/25</p> <p>state [126] 3/2 8/16 11/19 14/22 14/22 21/14 22/4 22/9 26/16 27/11 28/17 34/15 35/10 35/11 40/23 41/23 41/24 48/8 56/16 57/13 57/21 59/18 60/3 70/6 71/22 77/7 77/25 97/14 102/21 102/21 103/3 105/15 106/5 106/23 111/7 116/18 117/6 118/21 119/23 120/11 129/17 131/16 134/16 135/19 136/3 136/20 137/8 137/11 138/23 138/24 139/3 139/16 140/10 140/13 140/18 140/19 153/15 154/12 154/16 155/1 157/22 159/4 161/1 161/8 161/13 161/15 161/16 161/23 162/12 162/13 162/19 162/21 163/1 163/11 163/13 163/14 163/16 163/18 163/21 164/15 164/19 164/21 164/25 166/14 167/8 167/9 168/12 169/4 170/21 171/19 171/25 173/10 174/10 175/20 177/22 180/15 181/5 181/12 183/5 192/15 193/18 198/20 199/19 201/20 206/17 232/9 232/25 233/20 237/11 243/17 243/23 243/25 244/3 244/10 244/20 246/15 247/18 259/16 266/7 279/10 280/22 281/9 281/14 286/19 291/6 291/14</p> <p>State's [26] 25/7 47/9 47/13 47/23 75/15 75/18 86/11 107/4 107/6 107/7 107/12 114/6 114/11 118/15 119/24 132/19 133/6 135/10 161/14 164/16 196/24 198/20 225/3 249/17 263/21 279/11</p> <p>State's counsel [1] 107/4</p> <p>stated [3] 149/14 270/16 297/11</p> <p>statement [8] 146/6 193/2 229/6 246/13 251/13 269/24 278/12 278/22</p> <p>states [45] 1/1 1/12 1/24 87/12 88/20 96/18 110/5 139/3 139/4 139/7 139/8 139/11 139/13 139/14 139/19 153/2 153/18 153/20 153/22 154/2 157/5 158/22 160/20 175/13 176/14 194/11 201/18 202/7 204/8 204/14 206/16 215/11 220/5 220/13 220/19 224/6 224/14 234/1 244/18 244/23 249/2</p>
--	--	---

<p>S</p> <p>states... [4] 266/21 297/3 297/7 297/17</p> <p>statewide [18] 139/12 139/20 140/16 153/13 153/16 153/19 153/23 154/2 154/8 154/9 154/13 154/16 170/15 182/2 233/1 244/22 244/23 284/10</p> <p>stating [1] 229/21</p> <p>station [11] 10/16 10/17 10/20 10/25 11/5 11/9 11/11 11/12 18/25 19/2 115/15</p> <p>stations [1] 18/24</p> <p>statistical [13] 151/1 156/9 158/15 161/21 166/23 167/2 167/19 176/5 176/5 205/13 205/18 205/21 208/9</p> <p>statistically [8] 152/20 153/8 156/12 157/18 171/15 176/13 179/15 229/7</p> <p>statistician [1] 214/18</p> <p>statistics [8] 151/15 173/6 205/23 206/5 206/6 206/7 206/9 214/19</p> <p>status [4] 40/19 40/20 76/15 220/5</p> <p>statute [1] 131/1</p> <p>stay [6] 12/18 90/24 121/22 187/8 212/11 215/15</p> <p>stayed [1] 128/10</p> <p>STENOGRAPHY [1] 1/21</p> <p>step [14] 43/5 43/5 53/6 53/20 54/20 84/5 84/6 84/7 102/4 162/4 162/4 162/5 225/22 251/19</p> <p>steps [33] 18/7 20/16 24/4 27/12 27/14 49/3 49/23 50/5 50/14 51/7 51/9 53/1 53/19 54/9 55/4 57/6 57/11 61/11 71/19 97/5 98/1 100/11 110/22 110/24 111/23 112/5 112/9 112/20 117/9 118/6 122/21 122/22 184/20</p> <p>Sterling [5] 7/8 103/21 105/16 181/22 261/5</p> <p>stick [1] 226/24</p> <p>still [34] 7/9 19/2 35/11 41/1 42/8 76/4 89/16 104/3 105/5 109/17 115/16 119/9 122/3 122/4 125/1 125/24 126/25 130/10 153/19 158/10 159/11 160/23 169/24 183/22 215/5 230/13 234/24 235/3 238/17 251/25 258/15 271/11 279/10 279/12</p> <p>stipulate [1] 105/23</p> <p>stipulation [5] 105/15 106/6 106/13 188/20 248/2</p> <p>Stole [1] 74/11</p> <p>stop [15] 25/11 43/18 68/8 72/7 74/18 92/9 186/17 195/10 220/3 220/9 220/13 220/14 261/19 262/5 288/7</p> <p>stopped [3] 112/6 143/5 199/4</p> <p>storage [1] 136/5</p> <p>stored [4] 161/10 161/14 162/16 165/15</p> <p>story [1] 5/12</p> <p>straight [1] 210/6</p> <p>straightforward [2] 179/10 235/20</p> <p>straightforwardly [1] 219/17</p> <p>strayed [1] 131/6</p> <p>stream [1] 181/9</p> <p>strength [1] 167/2</p> <p>strict [1] 171/1</p> <p>strike [11] 46/8 49/16 72/13 73/11 74/2 80/13 142/4 151/18 201/12 227/7 254/11</p> <p>striking [2] 52/11 186/6</p>	<p>strong [6] 148/23 148/24 189/23 232/7 285/4 287/14</p> <p>strongly [2] 188/18 190/8</p> <p>struck [1] 78/8</p> <p>structure [2] 16/2 16/18</p> <p>structured [1] 198/3</p> <p>struggle [1] 230/3</p> <p>struggling [1] 237/24</p> <p>stuck [3] 6/18 192/5 192/5</p> <p>Student [1] 143/4</p> <p>studied [4] 48/5 197/10 249/1 271/24</p> <p>studies [5] 142/5 143/1 143/2 226/22 249/5</p> <p>study [27] 225/3 246/15 247/12 247/15 247/17 248/6 248/10 248/18 248/20 248/25 249/25 250/3 250/11 251/14 251/15 251/17 251/19 251/21 251/24 252/12 252/17 253/13 253/21 263/20 281/23 282/18 285/9</p> <p>stuff [7] 9/22 90/23 155/16 192/7 206/3 236/16 293/11</p> <p>stupid [2] 267/19 268/2</p> <p>style [5] 15/23 33/20 160/25 255/12 255/18</p> <p>styles [7] 20/5 21/3 36/2 36/4 36/5 232/11 255/17</p> <p>subdivisions [1] 15/11</p> <p>subject [6] 114/3 126/16 172/11 195/18 213/19 268/8</p> <p>subjects [1] 293/16</p> <p>submission [1] 39/3</p> <p>submit [5] 39/2 66/13 84/16 162/11 162/20</p> <p>submits [2] 163/13 163/16</p> <p>submitted [3] 71/25 113/15 279/5</p> <p>submitting [1] 161/23</p> <p>subpart [2] 169/18 240/4</p> <p>Subpart 2 [1] 169/18</p> <p>subsequent [1] 275/7</p> <p>subsequently [2] 131/21 131/24</p> <p>subset [3] 151/16 172/7 213/20</p> <p>substance [3] 194/20 263/25 275/20</p> <p>substantial [2] 282/5 282/6</p> <p>subtle [1] 208/9</p> <p>subtotals [1] 166/4</p> <p>succeed [1] 221/23</p> <p>succeeded [2] 162/1 266/17</p> <p>successful [2] 37/7 189/23</p> <p>successfully [2] 31/3 140/1</p> <p>such [10] 64/17 120/21 143/16 174/3 178/14 196/2 200/8 201/13 202/1 260/3</p> <p>sufficient [5] 61/9 61/10 61/15 106/3 107/2</p> <p>sufficiently [1] 201/24</p> <p>suggest [1] 66/12</p> <p>suggested [2] 106/22 157/13</p> <p>suggesting [1] 110/20</p> <p>suit [1] 264/13</p> <p>Suite [2] 30/7 48/1</p> <p>SullivanStrickler [2] 135/4 135/14</p> <p>summarize [2] 158/19 236/22</p> <p>summarizes [2] 181/8 251/7</p> <p>summary [1] 196/25</p> <p>summer [3] 37/21 57/9 195/16</p> <p>super [4] 157/21 181/2 230/5 287/20</p> <p>superficial [2] 148/3 189/1</p> <p>supervisor [6] 29/25 31/20 47/11 101/8 132/6 133/1</p>	<p>supervisor's [1] 27/16</p> <p>supplement [2] 64/13 68/4</p> <p>supplemental [4] 147/13 195/13 195/14 196/1</p> <p>supplied [1] 136/4</p> <p>supply [1] 74/14</p> <p>support [8] 66/2 206/15 206/25 207/1 232/12 244/6 273/24 276/2</p> <p>supported [1] 139/24</p> <p>supporting [1] 273/17</p> <p>supposed [2] 38/15 173/18</p> <p>supposedly [1] 61/17</p> <p>sure [73] 8/6 20/8 22/4 22/22 23/25 24/19 24/20 25/14 29/3 37/6 39/4 51/15 52/6 53/20 62/22 63/10 66/10 68/12 79/16 87/22 90/25 111/22 114/10 114/17 123/6 131/7 139/2 141/10 142/2 146/17 147/3 149/18 150/15 157/15 162/22 165/4 166/15 167/15 171/23 176/19 180/15 180/23 180/25 185/6 198/13 198/25 207/21 212/4 218/17 220/21 233/25 235/7 236/2 238/5 240/13 241/7 241/8 244/17 246/12 248/8 248/10 248/13 251/4 253/7 255/16 256/6 258/6 259/20 262/7 277/4 277/12 281/4 294/10</p> <p>surely [2] 153/17 173/25</p> <p>surprise [2] 99/11 111/6</p> <p>surprised [7] 233/11 233/14 233/19 233/22 234/10 270/1 270/2</p> <p>surprising [2] 173/21 267/17</p> <p>suspect [1] 122/10</p> <p>suspicion [1] 277/4</p> <p>sustained [1] 174/20</p> <p>swapped [1] 105/17</p> <p>sway [1] 258/20</p> <p>swing [3] 259/1 259/13 260/6</p> <p>switch [5] 9/15 122/25 175/23 176/2 176/3</p> <p>switched [2] 216/20 216/20</p> <p>sworn [6] 8/14 8/22 103/6 103/12 137/9 137/17</p> <p>system [110] 9/9 9/13 18/8 18/23 19/1 19/3 19/7 22/25 24/10 26/24 31/4 31/11 31/15 35/6 35/10 37/5 37/14 37/15 37/18 40/11 49/6 50/7 50/8 51/24 54/3 54/16 54/18 64/6 71/20 72/2 76/1 77/3 77/10 77/13 107/5 109/3 113/15 113/20 115/15 116/1 116/2 118/22 120/25 121/6 121/22 126/15 126/19 126/19 129/1 129/15 130/3 130/7 130/13 139/18 141/18 143/3 143/8 143/12 146/10 149/11 149/15 151/24 152/6 152/8 156/3 156/17 156/23 160/24 161/9 167/23 168/1 168/14 168/15 182/21 183/25 184/17 185/24 187/17 188/14 198/23 202/10 215/10 230/15 230/17 230/17 231/5 231/20 234/18 234/22 236/8 236/10 240/24 264/18 265/7 265/10 266/5 266/11 271/10 273/12 273/12 273/18 274/3 274/4 275/2 283/4 283/5 283/20 285/25 292/22 292/23</p> <p>systems [24] 9/7 12/16 26/12 37/13 37/14 69/4 70/2 126/24 141/17 144/3 145/9 145/14 152/6 188/17 202/7 203/25 204/1 230/3 230/16 231/7 236/5 268/7 268/9 272/5</p>
---	--	---

<p>T</p> <p>Tab [2] 262/15 275/5</p> <p>Tab 9 [1] 262/15</p> <p>tabbed [1] 63/13</p> <p>table [2] 251/7 251/9</p> <p>Table 1 [1] 251/7</p> <p>tabulate [3] 44/20 45/11 45/23</p> <p>tabulated [1] 42/21</p> <p>tabulates [2] 13/6 46/24</p> <p>tabulating [3] 12/21 42/12 211/6</p> <p>tabulation [11] 12/23 45/6 147/23 153/7 179/12 183/20 208/2 211/14 211/20 211/22 286/5</p> <p>tabulator [16] 12/1 13/17 34/9 34/9 35/7 37/1 37/3 42/19 46/23 47/4 83/1 123/17 123/18 123/19 129/9 222/14</p> <p>tabulators [11] 10/4 19/15 42/11 42/12 42/18 138/16 138/25 165/14 201/5 211/10 230/19</p> <p>take [53] 7/4 17/16 18/7 18/15 18/18 27/17 31/9 44/22 60/11 61/12 76/2 83/20 96/3 98/1 100/4 100/12 106/16 107/21 110/24 112/12 112/19 113/4 116/19 132/20 133/14 134/11 135/4 136/11 142/18 149/19 150/11 151/1 151/2 161/12 163/5 178/8 192/9 195/9 195/10 195/21 198/17 205/8 206/6 217/1 225/2 229/24 248/15 260/5 263/9 265/12 280/22 280/23 285/9</p> <p>taken [26] 57/5 60/14 64/4 77/2 77/13 84/7 94/7 95/15 95/16 102/14 102/24 102/24 103/1 103/1 105/11 112/11 113/10 116/20 121/17 133/10 133/11 150/14 184/20 191/17 198/22 242/20</p> <p>takes [4] 12/4 118/12 136/3 176/16</p> <p>taking [10] 110/22 110/23 123/8 136/9 150/3 157/16 196/18 215/8 243/7 281/17</p> <p>talk [41] 6/23 6/24 11/15 17/7 24/1 24/1 28/20 54/7 60/1 66/6 102/6 113/13 144/12 149/4 149/7 149/11 169/8 171/9 178/10 186/11 186/18 188/8 190/10 191/7 191/20 191/22 197/8 197/16 203/11 218/23 221/19 221/20 221/22 222/22 271/12 282/14 285/19 286/20 293/11 293/12 296/2</p> <p>talked [24] 17/8 19/20 19/21 34/3 36/13 36/23 37/12 136/21 140/9 149/6 162/2 167/19 175/23 182/2 182/16 185/2 185/14 191/15 191/16 193/18 203/14 207/17 269/14 293/7</p> <p>talking [49] 19/9 25/13 25/14 25/15 25/19 27/5 50/15 50/15 61/16 97/3 106/14 111/4 112/9 127/14 139/25 148/9 148/12 149/9 173/8 174/20 177/2 177/3 177/8 177/12 178/2 185/7 185/8 186/20 187/7 189/4 196/7 197/3 207/21 209/2 211/5 219/3 220/18 227/11 245/7 249/18 254/11 258/21 260/17 263/22 266/9 271/14 281/20 283/13 294/8</p> <p>talks [7] 144/5 146/12 148/22 149/3 184/20 185/15 194/10</p> <p>tall [1] 155/18</p> <p>tallies [1] 163/9</p> <p>tally [6] 158/5 158/10 163/10 163/10 208/13 209/24</p> <p>tallying [2] 130/3 183/1</p>	<p>tape [2] 42/19 42/21</p> <p>tapes [1] 42/18</p> <p>tapping [1] 230/2</p> <p>target [4] 214/22 215/3 215/3 256/22</p> <p>targeting [2] 214/23 256/22</p> <p>targets [1] 215/13</p> <p>task [3] 18/20 90/20 121/2</p> <p>tasked [1] 73/7</p> <p>tasks [24] 70/20 70/21 70/22 70/23 71/6 71/8 71/10 71/12 71/16 71/17 72/22 72/24 73/19 73/24 73/25 74/3 74/8 75/3 75/6 75/8 75/10 75/17 75/19 76/7</p> <p>TAYLOR [1] 3/9</p> <p>teach [2] 237/13 237/14</p> <p>teaching [1] 236/14</p> <p>team [17] 67/22 70/18 99/17 99/20 109/20 110/9 112/16 115/14 132/7 132/9 163/4 218/2 270/2 274/9 280/6 280/15 281/8</p> <p>tech [3] 144/11 185/13 231/7</p> <p>technical [9] 67/9 69/17 70/17 71/15 72/21 181/3 189/4 204/21 287/23</p> <p>technician [7] 34/15 34/17 34/21 34/25 54/11 109/1 132/3</p> <p>techniques [1] 141/19</p> <p>technologists [1] 273/5</p> <p>technology [12] 138/8 138/12 138/13 142/12 142/17 142/25 143/5 143/17 143/23 144/10 157/10 203/10</p> <p>TED [1] 1/24</p> <p>tell [24] 38/18 50/19 51/2 51/4 52/1 60/1 65/3 84/14 98/6 131/21 132/1 152/22 161/7 190/11 218/16 218/20 218/22 234/6 236/12 237/13 251/16 251/22 287/4 287/15</p> <p>telling [6] 67/10 97/13 152/20 167/24 168/1 272/1</p> <p>tells [4] 152/24 168/5 208/13 214/5</p> <p>tempting [2] 274/2 274/8</p> <p>ten [10] 139/14 150/10 153/18 153/20 172/19 172/24 173/1 210/21 242/7 258/9</p> <p>ten percent [4] 172/19 172/24 173/1 210/21</p> <p>ten-point [1] 242/7</p> <p>tend [1] 272/10</p> <p>tendency [1] 9/15</p> <p>tender [1] 145/7</p> <p>tension [2] 267/25 268/3</p> <p>term [1] 188/25</p> <p>terminology [2] 186/7 189/9</p> <p>terms [25] 21/24 51/2 51/5 60/21 70/18 119/24 138/11 140/24 156/15 158/15 169/10 169/15 173/9 178/10 178/18 189/4 199/12 201/16 216/25 257/4 272/2 279/24 279/25 280/9 282/20</p> <p>terrible [1] 213/15</p> <p>terribly [1] 136/24</p> <p>test [24] 23/11 23/18 23/20 23/23 41/2 47/15 47/19 57/14 57/16 73/4 73/5 94/24 95/9 95/10 103/9 103/10 103/10 103/11 108/4 132/4 132/11 132/14 133/3 160/9</p> <p>tested [4] 40/25 131/17 152/9 236/3</p> <p>tester [1] 23/8</p> <p>testified [35] 8/22 9/2 48/15 81/9 81/25 82/25 83/22 84/21 87/19 89/6 99/11</p>	<p>103/21 111/5 115/1 120/15 121/8 123/1 123/2 126/8 137/17 160/22 177/13 187/16 191/25 192/13 202/14 203/5 246/25 257/9 258/8 261/5 268/15 270/13 272/20 282/21</p> <p>testify [17] 48/13 49/11 49/14 50/11 53/8 53/9 78/3 78/6 141/5 149/16 188/2 195/9 292/11 293/12 294/24 295/5 295/11</p> <p>testifying [12] 6/18 91/19 114/15 141/4 193/22 193/25 220/25 278/7 289/23 292/17 292/20 293/7</p> <p>testimony [82] 25/13 25/16 50/13 50/21 52/21 60/21 61/9 61/22 62/21 63/9 64/7 65/15 66/1 68/10 78/3 78/15 78/22 93/16 94/17 95/2 101/25 102/7 104/5 104/14 104/17 106/10 106/23 107/4 107/6 107/14 108/23 111/23 113/6 115/7 117/10 118/1 126/8 131/15 135/2 136/24 140/24 140/25 141/1 145/22 149/22 184/14 189/14 191/8 191/13 192/17 193/10 193/17 194/8 195/2 195/7 196/10 197/1 197/9 197/19 198/5 198/21 200/4 201/11 202/12 230/8 243/17 243/18 245/25 247/16 250/16 260/13 269/12 271/19 274/15 282/11 285/22 288/24 289/14 289/19 293/16 293/23 297/12</p> <p>testing [39] 23/8 23/17 23/19 23/24 33/23 35/13 36/15 36/17 38/22 38/23 38/23 40/10 40/10 40/25 42/9 49/21 57/22 66/7 72/2 79/3 80/22 95/4 95/6 97/21 103/15 108/3 112/16 112/24 119/3 119/6 119/25 120/1 127/23 127/25 132/16 133/18 228/17 285/17 292/23</p> <p>tests [3] 67/2 73/18 215/22</p> <p>text [30] 41/10 125/20 125/21 125/23 148/19 200/11 200/12 200/17 201/2 201/4 201/7 201/10 208/20 210/7 211/21 211/25 212/10 212/17 216/9 216/12 216/15 216/25 217/5 217/11 225/17 253/2 254/15 269/1 287/15 287/24</p> <p>than [71] 7/5 23/18 26/6 61/11 61/16 62/23 63/12 67/10 101/5 109/24 110/3 110/19 110/24 112/20 117/13 126/19 129/10 132/25 139/9 139/22 139/22 141/2 153/15 154/14 156/13 158/11 158/17 158/23 158/24 159/6 159/21 167/14 171/1 174/8 178/21 179/20 189/1 201/4 202/8 202/9 208/11 213/5 215/11 215/12 221/4 226/3 230/12 236/10 242/12 250/12 250/24 251/3 252/5 252/13 252/16 252/17 256/16 257/5 257/11 257/15 258/12 258/14 261/13 263/3 263/7 268/21 269/20 281/1 284/10 284/19 287/9</p> <p>thank [50] 8/10 30/24 45/25 47/5 58/9 60/9 68/7 68/20 68/22 73/10 74/6 74/20 77/17 80/3 80/7 83/12 85/3 90/6 102/8 103/25 113/7 117/17 117/21 118/25 127/1 127/1 129/5 130/16 131/7 131/8 134/21 135/23 136/19 137/20 146/25 149/20 198/7 205/4 264/2 266/4 267/2 274/15 279/6 288/10 288/14 288/15 288/22 289/12 296/5 296/6</p> <p>thankful [1] 91/9</p>
--	---	---

<p>T</p> <p>thanks [5] 93/14 96/4 108/16 111/13 180/1</p> <p>that [2019]</p> <p>that's [33] 68/19 87/12 88/6 88/20 90/3 96/21 105/9 106/2 106/24 110/12 117/15 127/22 129/21 142/23 150/2 165/8 166/22 171/2 187/20 209/25 216/11 225/1 228/6 228/9 248/13 261/23 264/7 268/9 280/5 283/25 286/13 291/10 292/4</p> <p>their [131] 11/22 12/9 15/14 15/22 19/17 21/11 21/12 21/22 25/9 25/9 27/8 27/11 27/17 28/20 28/21 29/8 29/19 29/20 31/4 36/11 36/17 36/18 36/19 38/18 40/9 40/17 40/24 42/8 44/8 45/19 45/23 47/8 59/14 65/25 66/13 67/13 69/20 70/13 70/14 77/22 79/15 84/15 97/9 98/23 100/25 109/2 110/23 118/9 128/1 131/17 132/25 135/4 139/17 140/14 143/11 145/8 145/13 145/13 145/15 146/7 149/25 157/2 162/9 164/22 178/21 180/18 182/9 192/2 195/16 203/3 204/2 204/15 206/18 218/5 218/13 218/17 223/23 224/3 224/12 224/16 225/8 225/9 226/19 228/4 228/11 228/12 228/20 228/25 229/7 229/11 229/16 231/5 232/23 235/4 235/14 235/22 235/23 236/23 237/9 237/14 237/15 238/18 239/24 240/19 240/22 240/25 241/15 242/3 250/20 251/11 251/18 251/20 251/22 251/23 252/12 253/2 258/13 261/2 265/5 265/24 268/4 268/5 272/8 280/11 281/4 282/9 286/4 289/16 291/18 292/12 294/10</p> <p>them [98] 18/18 23/9 40/20 51/18 57/3 60/1 71/4 71/5 72/3 72/4 73/18 75/12 75/19 82/13 86/24 97/8 103/2 109/17 110/23 125/10 129/22 140/13 140/15 145/24 146/15 147/9 151/3 151/8 153/4 153/19 157/7 157/16 162/13 163/2 163/5 163/15 172/2 172/4 172/7 173/6 173/7 178/15 179/17 181/8 181/18 183/15 191/21 192/2 193/19 199/21 200/21 202/21 205/24 206/19 207/15 208/24 216/20 218/15 218/16 218/21 218/22 224/4 224/10 224/10 224/16 224/17 224/23 224/24 226/20 226/23 229/20 234/6 236/24 237/15 239/2 239/12 239/12 239/13 240/21 244/14 249/11 251/18 254/6 255/16 258/7 263/15 263/16 268/5 273/15 273/18 279/12 280/11 280/12 285/9 285/9 288/1 290/1 294/22</p> <p>themselves [8] 21/6 128/15 151/25 170/4 239/17 241/5 257/9 280/8</p> <p>then [235] 7/3 9/24 10/23 11/11 11/11 12/3 12/13 12/16 13/13 13/18 15/10 16/4 16/15 16/16 16/18 16/24 17/3 18/22 18/23 19/5 19/6 19/19 20/15 22/19 22/19 22/21 23/1 23/6 23/9 23/11 23/12 23/14 23/15 23/16 24/2 24/6 24/9 24/11 24/14 24/16 25/2 26/2 26/4 26/23 26/25 27/21 27/25 28/8 28/8 28/11 28/22 28/24 29/13 29/18 30/16 30/17 31/9 32/11 32/12 32/14 32/17 32/18</p>	<p>34/14 34/21 35/3 35/6 35/9 35/12 36/4 36/8 36/14 37/14 37/17 38/23 39/2 39/4 40/8 40/24 41/12 41/18 42/7 43/6 44/3 46/21 46/25 47/2 54/16 54/18 54/21 55/7 55/11 60/12 61/14 62/9 62/10 64/9 66/15 66/16 70/7 70/22 72/4 73/2 73/7 73/19 76/1 76/3 76/16 77/8 82/11 82/15 84/6 86/2 93/24 96/16 96/24 97/24 99/2 101/14 103/3 105/17 106/5 106/6 106/14 106/16 107/9 107/16 108/2 108/2 112/4 117/2 117/13 118/8 121/20 122/12 124/7 130/13 132/6 132/9 132/20 133/8 133/17 143/6 148/5 150/6 150/7 151/13 152/1 152/23 153/17 155/11 156/9 161/17 161/19 161/25 162/20 162/25 163/4 163/9 163/10 164/15 164/17 164/17 165/14 165/21 168/7 168/18 168/21 170/16 170/21 172/5 172/10 176/22 177/9 180/25 181/2 183/21 184/25 186/17 188/4 188/9 188/21 189/13 189/22 189/22 190/7 195/10 195/14 204/17 207/16 208/25 209/8 209/15 210/8 211/12 211/15 213/4 214/8 217/1 218/8 218/19 219/18 222/4 222/5 222/7 223/9 224/11 228/4 228/7 229/7 229/22 239/6 239/16 239/17 239/18 241/13 241/18 241/19 242/4 251/5 258/23 262/16 265/5 265/20 266/23 268/24 273/6 275/15 275/20 275/21 283/9 285/8 287/11 287/15 289/3 296/4</p> <p>theoretical [4] 158/16 214/3 223/22 224/3</p> <p>theory [3] 141/17 142/18 216/16</p> <p>there [263] 6/10 11/6 14/23 15/9 15/11 16/13 18/22 19/5 21/14 21/14 22/2 22/2 22/4 25/6 25/11 25/18 28/2 29/3 30/14 31/25 38/19 38/20 41/5 41/9 42/22 43/4 44/23 52/20 53/10 54/23 56/19 58/16 60/19 61/23 62/8 62/18 62/23 62/24 63/9 64/9 65/10 67/15 67/23 68/13 69/11 71/21 72/7 72/8 73/12 73/15 73/24 74/18 75/10 78/11 78/12 79/3 79/10 80/25 84/2 84/19 87/22 89/4 89/25 90/1 92/9 92/10 92/14 92/23 95/6 96/7 97/11 97/23 98/2 99/8 99/13 99/17 100/24 101/4 102/19 102/20 102/22 104/3 107/12 107/14 107/22 109/6 110/1 110/6 110/18 111/8 111/11 111/14 111/14 111/18 111/22 112/8 112/23 113/19 114/24 115/3 115/6 116/1 116/3 119/23 120/9 121/22 122/1 122/4 122/7 122/17 125/18 128/19 129/23 130/15 130/21 131/1 133/18 136/5 136/12 136/13 136/15 138/15 139/14 141/16 141/20 144/12 145/3 146/6 147/9 147/12 148/25 152/7 152/17 152/24 153/4 153/4 154/9 155/22 157/12 159/5 162/21 163/8 164/11 164/15 165/19 166/1 166/5 166/16 167/5 167/16 168/9 168/19 169/19 170/23 170/23 172/13 172/25 173/7 176/15 177/24 177/25 177/25 178/19 179/24 180/24 181/2 182/21 182/23 183/3 185/3 185/5 185/8 185/9 185/10 189/23 193/8 194/12 194/24 194/24 197/15 197/23 199/15 202/3 202/7 206/16 209/2 210/14 213/7</p>	<p>215/11 215/18 215/19 217/11 217/13 217/20 219/25 220/3 220/20 221/10 221/11 221/11 222/7 222/14 223/6 224/2 226/3 227/13 230/7 230/8 231/11 232/6 232/8 233/16 233/17 234/5 234/9 234/25 236/17 236/17 239/6 240/5 240/14 241/19 242/17 243/8 243/11 244/23 244/25 248/2 249/5 250/15 253/20 255/3 255/20 256/12 259/16 264/19 266/19 269/4 269/7 270/16 271/15 271/21 272/21 273/19 275/7 275/24 276/25 279/21 280/11 280/25 281/15 281/16 286/25 287/18 287/19 287/25 288/4 289/3 291/22 292/16 293/11 294/12 294/25</p> <p>there's [13] 13/13 27/14 81/13 148/23 170/17 170/22 185/18 193/10 205/14 226/22 230/24 236/17 250/19</p> <p>thereby [1] 296/8</p> <p>therein [1] 297/11</p> <p>these [47] 7/2 9/18 20/10 20/16 25/6 25/20 25/23 26/18 48/22 65/11 66/22 67/2 69/20 73/13 89/22 90/7 127/12 146/14 147/8 151/19 152/10 163/2 164/8 164/9 179/3 180/1 181/12 181/12 182/2 182/7 184/20 192/20 192/25 194/10 194/17 203/25 204/1 214/4 214/17 215/22 215/22 219/9 224/15 239/3 250/3 256/22 273/1</p> <p>they [394]</p> <p>they're [5] 86/21 219/15 219/16 224/25 240/25</p> <p>thing [38] 12/22 16/13 52/11 61/20 67/7 68/3 92/23 104/16 114/10 125/3 145/23 158/14 162/21 164/24 169/7 169/8 178/14 180/18 191/20 191/22 193/5 196/8 203/9 210/11 215/7 215/14 215/17 232/14 234/13 234/15 237/11 237/16 255/23 260/17 276/17 286/8 287/10 292/9</p> <p>things [59] 5/9 6/13 6/24 7/2 19/20 20/10 39/23 51/13 59/22 64/13 67/3 77/18 77/20 78/11 78/12 89/25 95/3 127/12 127/13 127/19 128/6 128/13 131/1 134/13 138/15 143/10 143/17 164/5 164/22 164/23 167/8 169/9 178/13 179/1 180/12 191/15 192/11 214/4 214/17 225/10 226/4 228/14 235/9 239/18 249/8 255/5 257/10 264/25 276/10 279/9 281/6 281/13 284/1 284/4 285/13 285/15 293/7 295/13 295/15</p> <p>think [249] 5/25 6/4 7/10 7/16 15/6 17/8 27/6 29/11 30/22 45/15 49/11 50/11 50/20 50/22 56/19 58/10 60/23 61/9 61/14 61/15 62/8 63/9 63/13 63/20 64/21 66/23 67/1 67/8 67/17 67/20 67/22 67/23 67/25 68/3 70/11 72/7 72/11 73/21 78/5 78/9 78/11 78/12 78/16 79/7 79/23 80/25 81/13 81/25 83/4 84/2 88/4 89/8 89/20 89/23 92/1 98/12 101/16 102/1 102/3 104/16 104/19 104/23 105/2 105/18 106/2 106/12 107/2 109/14 112/7 119/17 131/5 137/3 137/25 138/11 139/14 140/7 143/14 148/5 148/10 149/21 153/13 154/11 155/11 162/13 169/17 171/4 173/2 174/13 176/10 176/10</p>
--	--	--

<p>T</p> <p>think... [159] 176/11 177/1 177/13 177/20 179/19 179/23 182/8 182/9 184/3 184/5 184/8 184/11 186/4 187/16 188/23 189/6 190/1 190/25 191/1 191/1 191/6 193/16 195/20 198/15 198/17 199/3 200/24 202/24 203/2 203/2 203/9 204/4 205/17 206/17 206/20 207/14 208/10 209/19 210/17 212/3 212/16 221/13 222/1 222/4 222/11 222/14 223/6 223/8 223/9 223/24 224/12 224/18 224/21 225/6 225/25 226/1 226/6 226/9 226/16 228/12 229/6 229/20 230/6 230/13 231/10 231/15 232/21 233/13 234/3 234/10 235/5 235/20 236/4 236/18 236/19 237/11 237/20 237/20 238/4 238/7 238/16 239/3 241/10 241/11 241/22 242/2 242/5 242/5 242/7 242/8 243/3 243/4 244/5 244/7 244/12 245/22 246/25 247/3 247/22 248/9 248/23 251/20 253/9 253/11 253/12 255/14 256/8 257/3 257/15 257/18 258/6 258/17 259/12 259/14 259/17 259/24 260/9 260/18 263/15 263/16 263/24 264/1 264/12 265/20 266/19 266/23 266/25 268/10 268/22 269/19 270/10 270/13 270/21 271/3 271/18 273/3 273/8 274/4 274/13 276/15 279/24 280/13 280/20 283/11 283/13 284/5 284/5 285/24 285/24 286/19 289/13 289/25 291/10 292/11 292/25 293/1 293/7 293/10 295/5</p> <p>thinking [7] 92/2 150/3 173/25 174/21 214/25 232/22 232/23</p> <p>third [6] 7/4 13/13 42/5 54/20 92/20 162/16</p> <p>thirdhand [2] 271/22 271/23</p> <p>this [437]</p> <p>those [133] 11/9 11/13 11/13 14/24 14/24 15/10 15/11 16/6 17/2 17/4 18/13 18/18 20/21 22/5 22/5 22/10 22/18 22/20 23/6 23/8 24/14 25/8 33/16 33/18 33/25 35/22 36/5 36/5 36/9 38/14 43/24 44/17 45/14 45/14 46/4 46/15 54/13 57/20 63/20 63/22 64/17 66/19 67/3 69/2 70/22 70/23 71/16 73/3 73/20 74/8 76/6 77/20 81/16 82/9 90/16 90/24 91/18 105/17 119/13 120/12 122/4 123/2 123/21 124/18 125/10 128/5 129/19 130/5 131/1 133/20 136/10 138/18 139/7 139/8 139/11 139/11 142/14 145/10 145/23 147/17 151/8 151/16 151/19 152/10 152/15 152/16 152/18 153/20 155/15 157/7 158/10 159/6 159/21 163/5 163/9 163/10 163/15 163/16 164/14 165/24 166/24 167/1 168/8 173/12 173/13 175/4 175/18 182/24 183/4 183/15 183/18 194/5 200/7 200/23 203/4 204/16 205/25 206/5 208/16 223/8 239/18 240/22 244/8 251/5 254/7 254/16 256/11 257/21 266/8 268/15 272/22 273/5 288/5</p> <p>though [13] 95/3 95/13 115/10 122/5 174/7 210/2 237/8 261/23 276/4 278/3 285/18 285/22 294/24</p>	<p>thought [24] 7/5 79/5 85/23 101/9 105/20 114/18 117/13 137/24 174/5 176/1 188/1 206/22 208/12 221/21 221/23 222/9 226/11 246/3 255/5 263/22 265/22 274/3 292/4 295/8</p> <p>thoughts [1] 60/21</p> <p>thousand [6] 15/13 165/17 166/12 216/21 258/10 259/2</p> <p>thread [7] 277/3 277/15 278/6 278/8 278/12 279/2 279/5</p> <p>three [50] 36/4 36/5 42/2 42/4 42/14 42/16 42/20 42/21 42/23 43/23 44/15 44/17 44/19 45/4 45/14 46/25 47/1 54/23 69/8 104/18 116/24 117/1 123/11 123/13 124/10 124/13 124/15 124/16 124/18 125/2 125/17 126/3 140/15 145/24 150/3 155/22 158/19 160/21 164/7 164/8 165/13 171/10 192/11 235/21 250/19 259/7 276/12 284/4 285/10 287/7</p> <p>three weeks [1] 276/12</p> <p>three years [1] 104/18</p> <p>three-candidate [1] 126/3</p> <p>three-minute [1] 150/3</p> <p>threshold [2] 285/6 285/11</p> <p>through [71] 5/20 6/6 7/14 9/9 12/2 12/6 12/10 14/21 16/23 19/4 19/19 23/1 23/12 24/4 27/10 27/15 28/16 28/16 30/11 32/11 33/22 35/4 40/24 41/13 42/17 46/22 47/3 47/22 50/2 50/5 51/23 55/12 55/24 56/1 56/2 90/19 95/9 97/21 113/22 113/25 121/21 122/8 122/11 132/18 143/6 145/3 146/15 151/3 151/6 155/15 157/3 157/7 157/8 162/4 164/4 165/12 165/14 165/23 168/18 172/24 178/2 180/22 193/12 194/12 198/20 199/12 212/3 228/13 228/15 228/20 295/7</p> <p>throughout [5] 9/15 120/11 184/15 201/11 246/22</p> <p>thunder [1] 74/11</p> <p>thus [6] 174/6 189/23 203/4 209/9 272/14 272/16</p> <p>ticket [1] 215/3</p> <p>ties [1] 47/10</p> <p>tight [6] 167/23 173/23 174/2 179/24 179/24 259/3</p> <p>tighter [1] 172/16</p> <p>tightness [1] 172/14</p> <p>time [105] 5/17 12/17 13/18 16/14 21/7 21/22 23/21 24/22 27/25 40/16 40/21 41/21 43/11 54/25 55/15 55/17 59/2 60/10 60/22 61/2 61/7 61/7 61/8 61/11 67/11 70/8 80/22 86/11 86/19 94/5 95/21 98/13 99/2 100/23 101/4 101/5 101/23 102/13 102/23 102/25 107/1 107/2 112/2 113/4 115/20 116/15 116/16 117/11 118/13 119/3 120/4 121/4 122/10 122/23 130/20 130/23 131/10 132/6 134/11 137/23 142/18 142/24 143/15 144/23 145/6 147/10 149/25 156/15 181/20 181/21 186/12 186/18 192/21 193/1 193/2 196/20 196/21 204/19 209/10 220/2 230/11 235/9 251/1 251/3 252/3 252/8 253/13 253/21 256/21 258/13 260/5 260/7 271/12 271/13 276/16 278/23 280/2 280/6 289/3 289/18 289/21 289/24</p>	<p>290/10 292/14 294/25</p> <p>timeline [7] 20/15 21/11 91/25 92/1 119/21 119/22 142/20</p> <p>timeline-wise [1] 142/20</p> <p>timelines [2] 20/17 118/23</p> <p>times [5] 61/5 76/3 247/24 258/16 258/16</p> <p>timing [3] 6/17 6/20 249/7</p> <p>tip [1] 226/23</p> <p>title [2] 16/21 70/1</p> <p>titled [1] 87/5</p> <p>titles [1] 69/21</p> <p>today [31] 6/19 7/10 7/16 9/8 17/21 58/2 79/14 85/17 99/4 111/23 117/10 118/1 120/9 127/2 127/18 131/10 136/25 140/24 141/2 159/2 171/5 176/12 177/4 190/22 192/1 196/21 231/11 264/17 289/14 295/6 296/1</p> <p>together [5] 57/1 79/4 118/8 158/9 165/7</p> <p>told [8] 51/6 76/11 77/14 77/15 105/4 175/19 179/17 226/8</p> <p>tolerate [1] 183/21</p> <p>tomorrow [8] 288/17 288/23 289/23 294/24 295/14 295/21 296/4 296/7</p> <p>tongue [1] 226/23</p> <p>tonight [1] 137/22</p> <p>Tony [10] 83/10 85/2 88/16 92/11 92/20 96/3 108/11 108/15 111/2 254/24</p> <p>too [13] 40/12 64/10 88/4 93/13 202/25 222/6 229/6 236/17 242/8 243/6 262/7 286/14 295/10</p> <p>took [29] 55/13 55/17 60/24 75/21 76/2 76/14 77/19 78/4 78/6 84/6 85/21 94/13 97/5 99/2 101/12 107/21 108/7 109/10 111/23 112/10 117/9 121/23 122/2 122/6 125/10 125/10 133/8 153/14 234/2</p> <p>tool [12] 57/18 58/24 71/25 72/3 72/4 72/5 160/23 163/11 164/11 167/13 181/18 181/20</p> <p>tools [1] 71/24</p> <p>top [15] 16/9 20/5 42/20 96/11 166/10 168/19 180/20 180/21 207/19 215/3 215/6 235/21 250/19 268/23 272/8</p> <p>top-off [2] 180/20 180/21</p> <p>topic [6] 115/1 122/25 134/23 186/25 221/20 262/2</p> <p>topics [1] 147/18</p> <p>topping [1] 207/16</p> <p>total [5] 54/25 76/7 76/8 211/5 211/6</p> <p>totally [4] 78/20 95/2 280/1 287/10</p> <p>TOTENBERG [1] 1/11</p> <p>touch [11] 22/11 23/4 170/3 212/1 228/2 228/14 228/15 231/2 242/4 242/4 283/9</p> <p>touched [2] 143/1 197/18</p> <p>touching [2] 19/3 198/12</p> <p>track [5] 100/8 111/15 111/18 112/8 204/3</p> <p>tracked [1] 79/7</p> <p>tracks [5] 99/13 100/6 100/16 111/5 282/8</p> <p>trade [1] 123/14</p> <p>traffic [1] 295/9</p> <p>train [3] 75/12 164/17 204/8</p> <p>trained [1] 272/11</p> <p>training [17] 56/17 56/20 57/2 158/12</p>
--	--	--

<p>T</p> <p>training... [13] 170/3 175/12 175/14 175/15 175/15 175/16 175/16 175/16 175/17 175/20 175/21 204/9 244/6</p> <p>transcript [14] 1/1 1/5 1/7 1/8 1/10 1/22 48/17 100/1 102/15 111/2 245/22 291/2 291/3 297/9</p> <p>transcripts [1] 1/2</p> <p>transfer [7] 10/2 19/5 26/12 30/16 31/13 35/15 130/12</p> <p>transferred [6] 11/10 12/2 19/7 31/18 37/5 39/4</p> <p>transferring [1] 45/5</p> <p>transition [5] 48/8 49/6 76/16 177/12 278/18</p> <p>transitioning [1] 174/14</p> <p>transparency [2] 169/11 181/17</p> <p>transparent [2] 181/4 181/6</p> <p>transpired [1] 97/24</p> <p>transpiring [1] 92/6</p> <p>trash [1] 274/8</p> <p>travel [2] 47/18 141/2</p> <p>travels [1] 288/16</p> <p>tray [5] 56/8 56/11 56/21 56/23 57/4</p> <p>tread [1] 215/15</p> <p>tree [1] 213/7</p> <p>tremendous [3] 14/16 21/6 56/19</p> <p>trend [1] 231/10</p> <p>Treutlen [3] 134/4 134/5 134/17</p> <p>trial [15] 1/10 5/6 48/15 102/15 104/6 144/19 250/17 254/11 261/5 276/9 289/16 290/2 290/4 292/18 292/22</p> <p>tried [4] 80/5 105/3 176/10 262/5</p> <p>trigger [3] 89/24 220/6 282/5</p> <p>triggered [1] 132/23</p> <p>trip [4] 9/1 109/18 132/11 132/13</p> <p>triple [1] 210/25</p> <p>trod [1] 116/22</p> <p>trouble [1] 270/11</p> <p>true [18] 81/20 82/2 82/6 105/9 115/13 213/17 215/10 216/5 231/3 231/16 231/19 231/19 265/9 266/19 279/20 279/24 283/25 297/9</p> <p>truly [3] 190/21 221/18 222/9</p> <p>Trump [8] 90/11 90/16 90/23 166/6 179/8 224/25 227/5 265/22</p> <p>trust [6] 179/14 216/3 222/16 222/20 274/11 285/7</p> <p>trusted [1] 229/22</p> <p>trusting [1] 182/22</p> <p>trustworthiness [4] 222/23 223/15 270/18 272/22</p> <p>trustworthy [9] 223/1 223/4 223/9 229/5 230/5 238/14 238/25 239/11 239/20</p> <p>truth [5] 87/17 87/21 89/7 223/11 274/13</p> <p>truthful [1] 260/15</p> <p>truthfully [2] 197/5 295/16</p> <p>try [29] 9/14 37/23 38/19 68/15 103/19 105/20 115/25 116/3 116/5 117/13 139/5 155/17 155/25 172/21 181/3 190/8 202/4 207/25 215/15 219/22 226/14 232/4 240/15 259/6 271/22 273/25 276/13 281/5 287/11</p> <p>trying [37] 51/15 69/15 79/12 90/21 90/24 102/25 104/23 106/25 109/16</p>	<p>114/18 150/2 191/11 192/2 197/2 197/4 198/1 198/3 198/16 198/21 212/11 219/8 259/1 259/13 262/4 262/4 262/4 274/7 277/19 278/14 278/24 282/1 282/14 282/19 283/11 284/5 284/6 284/13</p> <p>Tuesday [1] 86/3</p> <p>tuned [1] 172/6</p> <p>turn [9] 38/18 85/10 107/8 112/18 122/3 167/9 253/25 272/14 291/17</p> <p>turned [4] 32/11 104/16 121/23 121/24</p> <p>TURNER [1] 1/24</p> <p>tweak [1] 212/22</p> <p>Tweet [8] 262/22 275/5 275/15 276/25 277/14 278/6 278/8 278/13</p> <p>Tweeted [1] 181/22</p> <p>Tweets [3] 181/24 262/20 263/23</p> <p>twice [1] 219/4</p> <p>Twitter [3] 243/4 243/6 279/1</p> <p>two [59] 13/16 13/20 17/20 18/5 21/3 22/14 24/14 30/2 31/19 31/20 32/9 36/4 42/13 45/1 45/2 45/3 61/23 63/3 77/14 81/13 89/25 91/19 107/3 119/14 124/13 124/15 124/16 125/17 127/13 138/15 138/18 147/8 155/25 165/13 167/11 167/12 175/17 175/18 180/12 180/23 182/23 182/24 183/4 183/5 183/18 185/9 195/12 200/15 202/9 213/21 221/14 235/21 259/7 262/7 264/6 264/7 264/15 286/4 286/5</p> <p>two percent [1] 167/12</p> <p>two weeks [2] 77/14 91/19</p> <p>two-line [1] 155/25</p> <p>type [12] 38/14 38/17 55/7 55/9 62/24 129/1 133/18 154/18 154/22 194/7 215/10 268/16</p> <p>types [8] 22/18 66/20 67/3 138/13 160/24 194/10 199/13 200/23</p> <p>typical [1] 144/24</p> <p>typically [3] 136/3 166/7 286/9</p> <p>TYSON [7] 3/7 4/6 4/13 64/11 68/15 103/3 289/10</p> <p>U</p> <p>U-S-E-N-I-X [1] 147/19</p> <p>U.S [3] 202/7 230/12 233/21</p> <p>U.S. [1] 88/19</p> <p>U.S. Department [1] 88/19</p> <p>UGA [3] 281/23 282/18 285/8</p> <p>Uh [3] 99/19 121/15 123/23</p> <p>Uh-huh [3] 99/19 121/15 123/23</p> <p>ultimate [1] 160/14</p> <p>ultimately [5] 53/15 128/6 236/6 238/3 273/4</p> <p>unable [11] 98/25 99/1 101/6 101/14 109/4 109/8 109/16 110/23 112/3 112/19 112/22</p> <p>unauthorized [7] 99/13 109/6 110/19 111/22 114/8 114/12 262/24</p> <p>unbox [1] 18/18</p> <p>unchanged [4] 119/21 119/21 119/22 201/5</p> <p>unclear [1] 98/14</p> <p>under [19] 14/2 65/23 66/4 73/21 100/18 177/2 192/21 194/1 194/1 194/4 198/6 212/17 265/7 267/14 267/15 276/19 278/14 286/11 292/19</p> <p>undergraduate [2] 143/3 143/4</p>	<p>underlie [1] 205/23</p> <p>underlying [3] 189/17 223/1 223/4</p> <p>underneath [2] 93/3 106/17</p> <p>understand [58] 6/13 9/10 33/5 44/10 45/17 51/2 51/14 51/16 53/14 54/1 58/8 63/13 65/5 66/8 66/25 67/7 77/7 77/22 78/23 102/22 104/1 107/20 130/24 131/24 136/2 142/14 144/22 146/24 160/3 160/13 165/5 165/6 168/10 179/11 186/5 187/6 187/10 196/23 197/25 198/19 205/22 205/24 207/23 210/20 223/24 224/1 232/6 252/23 256/7 260/23 263/3 263/7 284/6 285/2 286/19 286/21 292/16 292/25</p> <p>understanding [30] 50/12 51/7 55/20 55/23 56/3 63/7 78/17 79/25 80/15 88/3 130/19 132/22 154/22 154/24 163/7 167/20 170/14 170/16 172/10 173/12 173/15 180/9 182/5 201/18 212/17 217/18 224/1 225/2 229/23 237/12</p> <p>understandings [1] 220/18</p> <p>understood [9] 79/8 90/22 150/9 189/2 246/23 253/16 253/23 265/18 282/11</p> <p>undertake [1] 120/4</p> <p>undisputed [1] 105/18</p> <p>unexpectedly [1] 171/18</p> <p>unfair [3] 192/4 275/14 275/17</p> <p>unfolding [1] 104/6</p> <p>unfortunately [2] 94/23 126/23</p> <p>unify [1] 37/3</p> <p>unifying [1] 37/1</p> <p>unimaginable [1] 220/2</p> <p>union [1] 153/22</p> <p>unique [7] 24/23 24/25 29/7 159/4 160/7 284/9 284/10</p> <p>uniquely [1] 156/18</p> <p>uniqueness [1] 171/7</p> <p>unit [2] 12/4 12/21</p> <p>UNITED [9] 1/1 1/12 1/24 153/2 194/11 249/2 297/3 297/7 297/17</p> <p>units [1] 72/25</p> <p>University [4] 70/6 70/9 70/10 246/16</p> <p>unless [7] 48/25 52/2 67/23 89/7 100/4 107/8 239/6</p> <p>unlike [1] 256/4</p> <p>unlock [4] 25/24 25/25 27/18 27/21</p> <p>unopened [1] 272/13</p> <p>unresolved [1] 230/9</p> <p>unsuccessful [1] 109/18</p> <p>unsure [2] 104/24 269/5</p> <p>until [8] 5/25 65/15 85/23 94/1 228/19 250/4 290/11 293/10</p> <p>up [96] 6/18 7/25 8/7 11/12 20/8 25/1 26/2 29/25 30/6 30/8 30/10 30/11 30/11 48/16 49/16 57/4 59/11 59/12 59/21 66/16 67/24 79/21 83/10 85/2 88/16 90/22 92/11 95/24 96/24 97/2 97/6 103/5 104/13 104/22 105/23 107/13 107/17 108/11 110/7 110/18 111/2 111/15 111/19 112/14 115/7 127/13 136/9 136/10 140/8 141/15 145/2 147/4 149/18 152/3 165/2 167/9 168/24 175/10 175/18 184/24 185/13 187/12 188/13 188/21 214/15 216/7 225/12 226/21 241/13 241/13 247/2 251/24 254/24 261/22 262/15 262/22 264/5 264/15 265/3 267/4 268/25 269/13 270/16 275/5 275/5 275/11 277/15</p>
--	---	--

<p>U</p> <p>up... [9] 278/9 279/2 282/20 286/16 286/17 287/10 293/20 295/2 295/6</p> <p>upcoming [2] 38/25 64/19</p> <p>update [10] 6/4 6/12 6/15 48/14 61/24 67/19 167/13 193/7 295/21 295/25</p> <p>updated [6] 50/4 55/4 55/13 55/15 75/25 76/1</p> <p>updating [2] 51/24 77/23</p> <p>upgrade [2] 76/16 120/16</p> <p>upgraded [3] 53/1 54/10 55/21</p> <p>upgrades [3] 49/4 49/21 49/24</p> <p>upgrading [1] 120/16</p> <p>upload [2] 130/4 130/7</p> <p>uploaded [3] 130/2 130/6 163/11</p> <p>upon [8] 15/13 36/2 71/9 107/7 126/11 129/2 205/11 264/18</p> <p>upset [1] 126/25</p> <p>us [49] 5/6 7/3 7/11 7/14 20/12 20/12 33/19 42/24 52/1 65/3 72/5 76/13 77/23 94/20 98/6 100/11 100/24 101/4 109/14 116/4 133/2 137/20 138/2 140/20 146/3 151/1 155/15 157/10 161/19 167/9 168/13 177/21 179/18 181/6 181/23 182/22 189/9 199/4 212/5 231/9 242/10 244/14 276/17 280/21 287/4 288/21 289/14 290/11 295/21</p> <p>USB [11] 18/15 19/6 19/6 19/10 34/7 34/8 34/8 34/12 34/23 35/15 54/23</p> <p>use [53] 9/14 9/16 12/2 14/10 18/17 22/3 22/9 25/24 26/14 26/21 29/11 30/7 30/10 33/20 37/4 37/10 37/10 38/24 48/8 56/16 71/20 77/10 77/24 82/15 97/21 119/2 120/9 155/2 155/6 160/20 164/11 189/8 201/22 202/10 206/14 206/16 215/10 225/12 230/20 230/23 231/2 231/4 232/9 232/10 244/11 265/10 272/12 274/2 282/3 283/8 284/8 284/10 290/1</p> <p>used [45] 9/19 9/25 10/1 10/3 10/21 12/16 13/17 14/5 20/9 25/18 26/12 30/9 30/21 31/13 31/16 31/22 33/22 35/15 38/21 44/20 48/2 54/22 54/24 55/8 55/22 56/18 57/18 72/4 81/16 97/17 118/18 118/21 120/12 140/3 142/11 143/9 154/18 165/19 187/7 187/13 200/7 220/18 223/5 245/1 283/5</p> <p>useful [6] 71/19 179/13 219/13 219/14 219/15 221/2</p> <p>USENIX [2] 147/17 147/19</p> <p>user [3] 27/23 32/12 35/12</p> <p>uses [5] 10/23 32/20 77/7 148/18 151/15</p> <p>using [25] 19/10 22/25 26/6 26/13 26/16 26/18 31/19 33/7 33/10 51/3 99/1 109/3 119/14 119/16 142/16 143/17 151/12 160/1 162/6 168/18 181/8 198/12 206/18 211/20 212/12</p> <p>usual [1] 232/2</p> <p>usually [13] 162/23 213/20 214/11 214/17 215/2 216/22 230/23 231/8 231/13 231/13 231/25 266/21 283/25</p> <p>utilization [1] 270/17</p> <p>utilized [1] 154/23</p> <p>V</p> <p>vague [2] 247/14 280/13</p>	<p>valid [7] 155/12 183/23 222/25 223/5 224/21 224/21 234/23</p> <p>validate [5] 23/6 25/1 36/22 73/6 123/8</p> <p>validated [1] 153/9</p> <p>validating [1] 23/21</p> <p>validation [6] 57/16 57/18 57/23 58/11 66/20 67/1</p> <p>validity [2] 233/23 239/23</p> <p>valuable [3] 52/14 61/18 234/24</p> <p>value [7] 89/9 95/4 95/6 155/6 219/9 282/16 285/10</p> <p>variable [1] 20/17</p> <p>variation [2] 27/4 168/7</p> <p>varies [2] 33/4 155/1</p> <p>varieties [1] 155/15</p> <p>variety [5] 78/12 119/16 155/14 197/10 197/15</p> <p>various [9] 10/1 30/20 31/12 31/15 77/18 142/7 144/6 255/17 272/6</p> <p>vary [2] 33/2 33/3</p> <p>vast [2] 136/8 279/17</p> <p>vector [1] 261/14</p> <p>vein [1] 199/4</p> <p>vendor [13] 39/4 39/5 39/6 49/8 49/13 53/2 53/5 55/18 77/22 138/7 138/12 192/15 248/22</p> <p>vendors [3] 18/2 71/22 255/17</p> <p>verbiage [1] 9/14</p> <p>verifiability [9] 199/16 200/6 200/15 223/8 253/10 268/1 268/17 269/23 281/12</p> <p>verifiable [11] 151/24 152/8 155/8 183/14 199/21 200/8 200/13 245/16 245/23 245/23 246/8</p> <p>verification [5] 8/5 218/1 225/22 246/14 281/13</p> <p>verifications [2] 8/2 249/7</p> <p>verified [11] 157/25 176/19 183/19 203/1 203/1 245/13 246/5 246/6 246/8 246/10 254/5</p> <p>verify [18] 23/1 148/4 151/25 200/25 201/1 201/2 203/3 240/19 240/25 242/3 246/10 246/13 253/2 254/14 254/19 257/22 270/5 286/24</p> <p>verifying [4] 200/3 235/17 254/11 287/2</p> <p>version [14] 21/18 48/1 51/24 76/15 76/17 79/15 80/17 80/18 80/19 80/23 80/23 81/2 207/5 224/20</p> <p>versus [5] 15/19 15/24 43/23 46/23 47/4</p> <p>very [62] 7/3 32/3 35/4 52/14 59/19 62/4 64/21 104/16 113/7 116/22 118/12 118/13 136/19 142/23 148/3 149/23 158/16 167/22 167/23 167/23 174/21 175/22 179/1 179/10 181/4 181/14 184/22 188/3 188/9 196/9 196/11 197/15 197/19 198/3 200/24 208/1 212/11 213/13 218/2 225/15 225/25 226/9 226/15 232/7 236/13 241/25 259/23 260/21 262/3 264/8 267/18 268/24 270/1 270/22 274/2 278/14 278/24 279/15 283/8 288/7 288/14 289/5</p> <p>via [3] 140/20 162/11 163/1</p> <p>video [6] 83/10 83/18 175/15 175/16 175/17 175/17</p> <p>videos [1] 175/20</p>	<p>videotape [1] 83/16</p> <p>view [15] 106/10 120/24 121/4 163/7 163/15 169/20 192/4 203/5 219/12 234/12 234/19 237/8 238/24 239/10 239/14</p> <p>viewpoint [6] 214/2 214/2 214/3 214/3 214/6 226/1</p> <p>VINCENT [1] 3/3</p> <p>violating [1] 159/16</p> <p>Virginia [2] 139/7 154/1</p> <p>virtual [1] 19/4</p> <p>virtually [2] 196/10 225/21</p> <p>visit [2] 98/24 132/2</p> <p>visited [3] 69/9 101/2 131/16</p> <p>visiting [1] 57/13</p> <p>voiced [1] 131/18</p> <p>voir [1] 148/10</p> <p>volume [2] 1/10 167/9</p> <p>volunteer [1] 138/1</p> <p>VON [1] 2/10</p> <p>vote [51] 15/7 36/7 43/9 44/8 44/16 44/23 44/25 45/6 124/2 129/20 154/12 154/14 157/5 158/22 159/4 160/13 161/1 165/21 165/24 208/8 209/7 209/10 209/11 209/24 213/4 213/4 213/5 213/6 213/11 213/14 224/22 226/8 232/2 235/23 236/6 238/1 238/2 238/4 241/23 259/7 259/18 265/1 265/4 265/4 267/10 267/22 268/4 268/5 270/5 280/17 284/4</p> <p>voted [3] 12/19 128/11 228/21</p> <p>voter [113] 11/21 11/21 12/3 12/4 12/5 12/7 12/8 12/9 12/13 12/14 12/18 12/19 12/25 13/2 13/7 16/22 21/16 22/17 36/22 38/11 40/19 41/10 43/11 59/17 121/3 121/20 121/24 124/19 128/24 148/20 151/24 151/25 152/8 155/8 159/16 183/13 183/14 183/20 199/20 199/23 199/24 200/1 200/25 201/2 201/4 203/1 208/7 208/18 209/13 209/13 209/19 212/1 212/6 212/9 212/19 215/23 216/12 216/13 216/15 216/25 217/4 218/1 223/1 223/4 223/10 223/11 225/22 226/25 227/8 227/24 228/10 228/22 229/5 229/16 229/23 230/9 235/22 237/9 237/21 238/14 242/3 245/12 245/13 245/15 245/16 245/23 245/23 246/4 246/4 246/6 246/7 246/8 246/9 246/10 246/12 246/14 249/1 251/7 253/2 254/6 254/6 256/3 256/17 264/20 264/24 268/25 269/2 269/7 269/8 269/18 282/18 283/20 286/4</p> <p>voter's [8] 13/8 200/17 209/3 213/1 237/18 238/1 267/10 267/22</p> <p>voters [115] 11/19 12/7 15/8 15/10 15/11 15/13 15/14 15/18 15/24 59/18 60/7 118/18 120/12 183/1 203/3 208/4 212/22 216/14 218/4 218/13 224/14 225/9 225/19 226/19 227/7 228/15 228/20 228/24 229/7 229/9 229/11 229/25 230/4 230/10 230/24 232/1 232/9 234/12 234/13 234/15 234/17 234/21 235/4 235/13 235/18 235/20 236/5 236/7 236/11 236/13 236/14 236/23 237/5 237/14 238/23 239/12 239/15 239/19 239/22 239/24 239/25 240/18 240/25 241/2 241/3 241/7 241/7</p>
--	--	---

<p>V</p> <p>voters... [48] 241/12 241/18 241/18 242/10 250/19 251/10 251/17 252/11 252/16 253/4 254/14 254/19 256/8 256/9 257/1 257/2 257/8 257/12 257/16 257/21 258/12 258/24 259/8 259/9 262/11 267/15 268/4 269/25 270/25 271/13 271/14 272/9 272/12 272/15 272/17 272/22 280/10 281/3 282/6 282/9 284/15 285/5 285/10 285/14 285/18 287/15 287/24 293/24</p> <p>voters' [1] 270/18</p> <p>votes [37] 12/18 13/7 40/22 42/20 42/25 44/20 90/12 121/16 121/16 121/19 122/7 122/9 122/18 128/8 143/15 166/5 166/6 166/11 168/20 179/8 179/8 208/14 208/15 208/15 208/16 209/14 209/24 217/16 238/6 240/22 258/10 259/13 259/19 259/22 259/25 260/6 270/18</p> <p>voting [96] 10/3 12/16 19/3 22/4 31/15 35/25 36/1 36/5 36/6 38/5 40/24 41/1 41/4 48/11 49/5 49/6 49/24 49/25 51/24 71/20 72/2 113/22 113/25 138/16 138/16 138/22 141/18 142/25 143/3 143/5 143/8 143/16 143/23 144/2 144/3 144/9 144/10 144/12 148/9 151/24 152/6 154/15 156/3 156/17 156/23 157/9 157/22 157/25 159/15 160/24 160/25 161/9 165/13 165/18 165/19 167/23 176/19 183/7 183/25 198/23 199/24 201/25 202/7 202/10 215/10 224/15 224/25 226/14 226/21 230/3 230/14 230/16 230/17 231/5 231/20 236/8 242/3 244/22 244/22 245/2 251/8 256/3 262/24 265/1 265/9 268/6 268/7 268/9 272/5 272/10 273/12 275/2 278/10 279/17 285/25 293/24</p> <p>VotingWorks [38] 138/6 138/7 138/19 138/20 139/23 139/24 140/17 141/6 142/20 142/24 145/1 148/18 153/3 157/4 157/24 158/25 168/18 170/1 173/22 175/11 176/7 176/21 180/6 193/12 201/17 203/25 206/10 221/18 228/17 230/14 243/25 244/2 272/5 273/10 273/14 278/10 279/12 280/19</p> <p>VP [1] 142/9</p> <p>vs [1] 1/5</p> <p>vulnerabilities [3] 64/5 64/23 65/8</p>	<p>198/13 199/18 199/20 202/6 202/20 203/11 206/16 211/3 213/15 215/7 216/21 218/23 219/4 219/12 220/8 222/12 222/13 227/9 230/25 238/5 240/21 244/13 245/24 260/25 261/3 265/1 271/23 274/25 277/13 277/16 278/22 286/12 286/14 286/16 287/10 288/21 289/9 293/12 295/15</p> <p>wanted [14] 6/5 65/3 75/12 100/11 123/22 136/21 137/4 181/5 197/7 211/3 215/24 279/16 286/19 289/7</p> <p>wanting [3] 20/6 20/7 59/11</p> <p>wants [7] 29/10 68/15 186/5 189/5 230/23 231/9 241/22</p> <p>wards [1] 14/24</p> <p>warm [1] 60/18</p> <p>warm-blooded [1] 60/18</p> <p>warmest [1] 60/18</p> <p>warmth [1] 60/17</p> <p>warning [2] 90/2 105/11</p> <p>warnings [1] 284/3</p> <p>was [544]</p> <p>wasn't [15] 6/9 65/10 72/16 105/5 105/10 121/13 128/21 160/22 176/20 191/20 237/20 257/6 277/12 287/21 294/13</p> <p>waste [1] 186/17</p> <p>watch [3] 32/4 51/12 163/8</p> <p>watched [2] 49/12 51/11</p> <p>watching [3] 51/21 245/21 251/18</p> <p>Watson [9] 86/6 86/9 96/20 99/11 99/16 99/24 100/15 100/17 111/5</p> <p>waved [1] 155/20</p> <p>waves [1] 90/20</p> <p>way [78] 5/17 19/11 24/10 25/3 26/24 32/3 40/24 46/14 46/16 49/1 49/7 49/13 52/21 63/2 68/6 72/16 90/5 104/6 105/2 105/19 105/21 116/1 117/8 122/17 123/7 125/7 128/10 134/11 143/20 146/23 151/7 153/5 165/5 168/12 174/25 176/15 180/17 181/21 183/1 190/10 190/24 191/23 198/16 200/24 201/21 202/25 203/2 203/13 204/7 220/25 222/3 222/20 226/24 231/16 232/4 237/2 239/22 241/11 250/9 251/19 251/23 255/5 260/23 261/14 261/15 265/17 265/25 268/6 268/23 272/21 272/21 280/24 282/7 282/25 285/20 286/1 286/17 287/6</p> <p>ways [4] 77/9 78/24 234/25 251/23</p> <p>we [586]</p> <p>we'll [23] 10/5 15/13 25/1 60/12 103/3 106/16 113/7 149/25 171/4 186/21 212/8 221/1 243/10 243/15 251/6 276/11 276/12 289/1 289/23 295/14 295/14 295/14 296/7</p> <p>we're [78] 6/1 6/3 7/11 8/8 19/17 21/13 25/14 38/23 50/12 50/13 59/2 60/11 62/10 72/11 79/17 81/6 102/7 104/23 106/3 136/23 137/25 139/25 146/20 149/23 154/19 163/2 168/20 177/12 181/12 181/14 181/19 186/21 186/24 187/24 188/3 188/8 189/4 189/8 192/2 192/3 192/7 195/9 195/21 196/20 197/2 202/3 204/21 207/21 210/17 211/5 211/20 211/24 211/24 212/2 212/2 212/5 212/8 212/16 219/3 220/24 235/3 236/11 239/6 240/18 240/21 240/24</p>	<p>244/14 245/24 273/15 274/9 274/10 274/11 274/14 275/15 276/6 279/12 289/6 295/2</p> <p>we've [21] 12/16 16/19 21/21 25/12 36/23 97/8 101/17 101/23 104/7 116/22 131/6 145/18 145/21 149/2 201/11 220/23 228/16 231/24 264/12 291/22 295/4</p> <p>weaker [2] 256/16 256/20</p> <p>web [1] 267/1</p> <p>weeds [1] 181/3</p> <p>week [4] 7/9 20/23 48/17 91/19</p> <p>week's [1] 175/19</p> <p>weekend [1] 295/1</p> <p>weeks [3] 77/14 91/19 276/12</p> <p>WEIGEL [1] 3/8</p> <p>weight [1] 227/18</p> <p>WEINHARDT [1] 2/6</p> <p>WELCH [3] 1/23 297/6 297/16</p> <p>welcome [5] 74/17 113/11 252/2 261/22 274/16</p> <p>well [90] 5/11 7/13 18/10 22/1 30/22 49/15 51/12 63/12 63/24 65/18 71/7 74/14 88/4 89/10 89/20 91/18 97/2 97/7 100/3 100/20 105/11 106/5 106/11 107/21 116/22 119/7 121/6 121/19 133/16 136/3 146/22 148/8 149/7 153/9 166/5 171/25 172/2 174/17 177/23 185/22 187/4 189/13 189/17 190/23 191/17 196/14 196/23 197/10 198/15 203/23 204/19 205/14 207/13 208/22 211/1 214/1 214/8 214/9 217/9 219/8 219/17 220/10 221/4 222/4 227/9 234/24 239/5 240/7 241/25 245/17 246/6 249/16 253/5 253/11 254/11 254/23 258/6 259/23 260/18 261/11 262/3 265/23 266/25 270/9 275/19 279/24 284/2 284/9 285/13 289/14</p> <p>well-studied [1] 197/10</p> <p>went [18] 6/6 6/13 33/22 50/5 101/11 115/14 133/17 133/17 141/15 141/17 141/25 165/12 275/10 275/21 275/22 290/8 293/5 295/7</p> <p>were [199] 5/20 6/7 6/15 8/3 21/8 29/25 35/12 37/7 38/3 40/17 41/1 41/3 42/4 42/8 42/17 43/6 43/10 43/21 50/1 51/7 51/8 51/9 51/15 51/18 51/19 52/3 52/3 53/21 54/9 54/22 54/23 57/12 59/20 61/3 61/4 61/4 61/17 62/13 62/14 62/17 62/23 63/9 63/10 66/3 67/3 67/12 68/24 69/20 69/21 70/7 70/17 70/18 70/20 71/6 71/8 71/8 71/11 72/24 73/2 73/7 73/14 73/16 73/19 75/8 76/11 76/13 76/14 76/14 77/18 79/1 79/3 80/1 86/25 86/25 89/25 90/10 90/15 90/19 90/20 90/25 95/6 95/18 98/25 99/1 99/12 100/6 101/6 101/14 101/19 102/24 102/24 102/25 105/17 108/10 109/4 109/8 110/6 110/17 110/22 111/4 111/23 112/2 112/19 113/19 114/15 114/18 114/24 115/3 115/16 115/17 117/13 118/16 118/21 119/16 121/17 122/21 127/14 128/13 128/17 128/22 129/7 130/9 132/22 134/13 135/2 135/3 135/13 140/3 140/13 140/20 147/9 151/6 154/9 157/25 163/5 164/6 164/19 165/5 166/5 167/13 167/16 168/17 171/12 176/4 176/5 176/19 177/2</p>
--	--	--

<p>W</p> <p>were... [52] 182/14 185/21 188/1 189/23 192/22 193/16 199/11 203/8 208/4 208/24 210/7 217/11 217/13 223/7 226/8 232/13 235/6 235/8 238/4 238/19 243/16 251/18 255/3 258/14 259/23 260/16 260/17 263/13 263/22 264/16 264/17 264/19 267/8 268/10 270/2 270/4 271/21 274/24 276/1 281/16 282/2 282/16 283/13 286/1 290/25 291/13 292/20 292/20 292/21 295/6 295/8 296/8</p> <p>weren't [3] 58/6 100/16 276/7</p> <p>what [439]</p> <p>whatever [18] 13/21 35/24 52/7 68/2 80/5 101/22 177/9 196/11 210/15 215/10 227/18 250/2 265/9 285/11 286/12 286/14 286/16 291/25</p> <p>whatnot [1] 222/8</p> <p>whatsoever [1] 289/22</p> <p>when [147] 6/23 11/20 12/5 12/8 18/13 18/17 19/9 21/10 21/13 21/25 22/1 24/22 26/16 27/11 27/15 28/7 29/10 30/6 30/11 32/11 33/22 34/13 36/12 37/5 38/11 39/9 40/20 41/12 41/24 42/15 42/17 43/19 44/16 45/5 56/23 59/15 59/25 69/13 70/18 72/23 77/18 78/17 84/6 85/21 86/12 91/2 91/5 91/11 91/13 91/15 92/1 94/13 95/7 95/7 100/3 100/9 101/11 102/25 103/1 103/22 106/6 106/14 109/1 109/3 110/6 110/9 110/17 111/4 111/18 113/14 115/1 115/24 116/15 117/11 121/23 121/24 121/24 122/3 125/23 128/5 128/5 132/3 137/5 140/11 142/1 143/21 148/9 154/15 155/11 156/17 157/6 157/6 157/9 157/16 157/21 159/14 160/22 161/6 162/6 162/8 163/21 170/1 173/2 173/14 174/2 180/13 186/10 196/4 199/11 201/13 203/25 205/9 211/24 213/5 221/18 221/21 222/10 223/8 224/22 226/4 226/15 226/18 226/25 226/25 227/24 228/12 228/14 235/22 240/24 241/2 241/3 242/9 249/16 253/21 254/14 255/23 256/12 256/16 272/19 274/1 274/6 275/1 277/23 278/16 284/19 288/1 295/7</p> <p>where [100] 6/15 7/5 7/18 15/7 21/11 23/12 28/17 35/5 36/14 38/10 44/2 48/19 55/12 62/19 63/25 67/3 70/11 73/5 93/19 95/13 112/6 127/17 136/13 141/17 144/12 147/17 148/22 154/5 155/19 159/15 161/3 161/16 164/5 165/22 166/2 166/3 166/4 172/8 173/12 174/6 178/3 180/18 180/22 183/18 183/19 183/24 184/17 185/21 192/3 194/12 199/12 199/12 199/19 200/22 201/9 204/4 208/4 209/5 214/17 217/7 220/21 221/10 224/7 227/2 230/6 230/8 232/3 232/6 235/4 238/17 244/21 244/23 250/15 251/7 256/15 256/19 258/1 258/12 258/15 259/12 260/21 261/3 265/19 269/8 271/15 275/24 275/24 276/6 278/18 278/19 283/6 283/8 285/19 285/25 286/7 287/18 287/21 287/25 288/5 295/22</p> <p>whereby [1] 181/7</p>	<p>whereof [1] 297/12</p> <p>Whereupon [2] 8/20 137/15</p> <p>wherever [2] 158/14 274/13</p> <p>whether [53] 46/9 55/20 56/4 61/2 66/5 91/21 95/14 95/14 97/17 98/14 99/4 99/6 99/7 99/20 101/1 101/21 102/22 105/14 119/12 129/2 129/23 133/13 133/16 136/5 136/6 142/24 152/15 152/16 159/12 162/1 183/15 183/16 186/18 195/1 195/11 200/7 208/14 210/12 211/8 211/20 220/6 227/7 233/2 238/6 256/11 266/17 267/10 280/25 281/1 281/2 283/2 284/25 286/17</p> <p>which [98] 5/17 15/10 18/13 22/8 30/7 39/1 39/3 39/23 50/7 51/22 54/2 56/16 64/24 68/24 94/14 103/8 118/2 119/6 125/1 126/23 127/17 132/7 145/2 155/10 155/18 157/19 159/17 160/20 160/20 163/14 164/3 164/7 167/15 169/23 171/14 172/19 174/14 175/1 177/16 179/5 179/6 179/20 184/14 185/1 185/11 194/5 195/18 196/1 200/16 200/17 201/6 201/23 201/23 205/2 205/17 208/4 214/24 218/5 223/7 224/19 225/25 226/16 229/10 230/3 231/25 232/20 233/12 234/3 235/1 235/4 238/17 239/15 239/16 242/10 249/3 249/6 250/16 252/5 252/8 256/18 256/18 256/25 257/1 259/7 261/12 266/9 271/13 276/20 276/21 277/1 278/11 282/8 282/16 285/6 289/20 291/12 294/4 295/6</p> <p>whichever [1] 167/12</p> <p>while [9] 7/24 19/17 95/6 130/10 145/2 176/13 234/2 267/23 283/6</p> <p>white [1] 202/25</p> <p>who [58] 36/6 62/13 66/19 67/2 67/8 67/22 69/2 69/4 69/5 69/11 69/12 69/14 72/10 73/17 73/18 74/3 86/9 105/25 105/25 134/13 144/8 153/24 163/8 192/15 193/3 198/4 206/16 207/15 209/24 214/22 220/25 226/21 228/24 229/9 229/25 230/24 232/22 232/22 233/10 236/12 241/22 244/7 256/9 257/9 257/21 258/12 271/12 272/16 273/4 273/4 277/4 280/7 289/15 291/23 291/24 291/24 292/20 292/21</p> <p>whoa [1] 218/3</p> <p>whoever [1] 230/23</p> <p>whole [14] 52/11 72/10 72/15 80/2 151/11 169/8 183/21 192/7 226/14 236/15 240/24 243/8 264/18 287/10</p> <p>whom [3] 109/9 207/14 248/22</p> <p>whose [1] 144/8</p> <p>why [59] 7/15 44/13 45/17 59/8 79/10 81/4 89/11 102/11 103/1 105/10 105/20 106/5 108/23 109/8 109/10 128/2 131/21 132/1 132/1 146/16 148/4 149/15 160/9 161/7 178/13 178/13 179/13 179/22 182/15 185/19 186/5 186/8 187/6 187/12 187/23 189/5 191/13 193/6 197/2 199/17 199/20 202/19 205/25 212/12 212/17 214/12 234/3 234/9 237/1 240/15 268/20 273/1 273/23 275/14 275/23 275/25 282/14 286/19 292/1</p> <p>will [116] 1/3 5/18 6/16 6/19 6/20 7/17 9/14 11/21 12/13 16/10 16/13 16/14</p>	<p>16/16 16/18 18/15 19/25 20/11 20/12 21/15 22/22 22/24 27/15 27/16 27/17 27/24 28/7 28/11 28/20 30/2 30/13 30/16 32/10 32/10 32/11 32/12 33/15 33/17 34/6 34/8 34/25 35/2 35/6 36/5 36/10 44/14 52/10 58/20 65/12 65/17 67/15 67/24 71/9 71/10 91/23 93/19 105/19 107/19 107/19 122/10 126/24 133/10 136/24 137/3 137/8 139/20 149/18 149/22 152/3 165/23 166/12 166/16 168/15 172/21 173/1 173/25 174/19 175/7 179/25 182/25 190/12 191/11 192/23 197/18 199/7 199/20 200/17 201/5 201/7 204/19 204/20 207/19 208/21 208/22 208/23 210/15 212/14 213/12 216/12 216/16 216/17 221/24 222/2 222/6 225/20 227/4 238/22 239/19 252/25 256/17 286/17 288/23 292/7 292/9 294/24 295/1 295/1</p> <p>WILLIAM [2] 2/13 2/18</p> <p>willing [1] 251/25</p> <p>win [2] 173/23 222/13</p> <p>window [3] 59/23 149/1 149/3</p> <p>wing [1] 72/15</p> <p>winner [2] 222/12 238/6</p> <p>winning [2] 128/6 128/7</p> <p>wins [2] 171/18 238/6</p> <p>wise [1] 142/20</p> <p>wish [1] 287/21</p> <p>wished [1] 98/6</p> <p>wishing [3] 35/7 35/8 35/13</p> <p>withdraw [1] 252/25</p> <p>withdrawn [3] 40/22 45/9 227/17</p> <p>withdraws [1] 40/20</p> <p>withdrew [1] 40/13</p> <p>within [27] 15/9 15/10 15/12 15/13 15/20 15/23 16/2 16/4 21/3 30/17 118/22 121/7 121/22 121/23 123/15 129/9 134/9 148/6 184/2 195/6 197/13 212/11 231/21 259/10 274/9 293/13 294/9</p> <p>without [16] 24/13 27/2 67/19 71/15 72/21 94/18 116/5 129/22 151/4 159/16 198/11 198/12 215/8 219/10 256/22 268/5</p> <p>witness [39] 4/3 8/14 26/22 48/13 61/15 65/3 66/6 68/6 78/2 79/18 79/21 87/18 102/1 102/4 102/9 103/22 106/2 107/5 124/6 136/17 136/21 137/9 145/7 184/22 187/5 187/6 187/18 187/23 187/25 188/7 188/16 190/24 197/6 245/23 288/11 290/1 292/2 292/7 292/7</p> <p>witness' [2] 62/21 78/22</p> <p>witnessed [4] 54/11 55/25 78/18 283/4</p> <p>witnesses [5] 7/1 65/23 111/8 111/11 194/11</p> <p>won [1] 208/14</p> <p>won't [10] 22/2 22/2 68/5 208/19 209/15 226/23 227/3 227/4 247/5 258/24</p> <p>wondering [1] 262/19</p> <p>woods [1] 213/7</p> <p>word [8] 26/21 122/18 198/12 206/12 248/15 263/9 267/25 267/25</p> <p>words [5] 9/16 107/20 212/12 254/7 254/16</p> <p>work [65] 10/16 10/17 10/20 10/25 11/5 11/9 11/11 11/12 18/24 18/25 19/2</p>
---	---	---

<p>W</p> <p>work... [54] 41/3 52/5 59/3 59/11 59/15 77/8 115/15 126/12 136/10 138/18 138/21 138/22 139/1 139/1 139/13 139/15 139/19 139/23 141/5 142/25 143/7 143/7 143/7 143/8 144/2 144/2 157/23 161/20 163/18 168/21 176/8 176/17 176/18 178/20 178/23 184/19 205/14 205/15 205/25 209/6 217/19 231/11 234/6 243/24 243/25 244/10 244/19 248/22 255/5 266/21 278/10 278/17 280/15 295/14</p> <p>worked [9] 55/18 59/1 59/12 59/13 69/13 75/7 168/12 193/18 286/16</p> <p>worker [14] 12/7 12/12 32/17 32/17 34/13 35/1 35/1 35/5 37/10 56/20 56/23 56/25 57/3 226/20</p> <p>workers [6] 37/6 237/13 272/10 272/14 280/10 281/3</p> <p>working [20] 9/3 9/4 36/22 50/2 59/15 59/19 70/17 71/11 73/6 121/13 126/9 126/10 128/18 141/16 141/23 202/3 229/17 235/9 241/8 279/10</p> <p>works [10] 25/9 60/3 69/6 76/21 82/12 203/2 233/13 283/7 283/12 286/25</p> <p>world [16] 10/8 142/19 144/13 144/24 218/4 225/24 226/2 226/14 232/3 232/3 235/4 235/6 243/5 243/8 258/12 271/15</p> <p>worried [2] 185/20 261/17</p> <p>worse [1] 257/4</p> <p>worst [5] 172/25 218/1 268/17 269/22 269/22</p> <p>worst-case [1] 172/25</p> <p>worth [4] 139/14 140/8 154/11 230/12</p> <p>worthless [2] 50/23 184/18</p> <p>worthwhile [1] 203/4</p> <p>would [288] 7/1 7/2 7/21 9/8 12/11 14/8 25/24 27/23 28/3 37/8 37/9 39/2 39/6 39/7 42/19 43/2 43/4 44/16 44/22 46/16 46/17 46/21 48/5 48/7 48/8 49/4 52/1 52/5 55/10 55/11 55/12 55/12 55/21 55/24 56/1 56/1 56/4 56/10 56/13 56/15 56/15 56/16 56/17 56/19 56/20 56/25 56/25 57/3 57/16 61/2 63/11 64/21 65/1 65/7 65/14 66/12 66/23 67/5 67/14 67/17 71/19 74/1 76/2 77/23 78/3 79/17 84/8 87/22 93/6 94/4 94/6 97/11 98/16 99/11 100/1 101/4 103/17 104/21 106/3 109/25 110/14 110/20 112/18 115/23 118/23 118/23 119/2 119/4 119/9 119/13 119/14 119/18 119/21 119/21 119/22 120/3 120/23 121/1 121/1 122/4 122/7 122/12 122/17 122/21 122/22 123/8 123/12 123/14 125/11 125/13 125/16 125/16 125/19 125/19 125/19 125/21 125/23 125/24 126/1 129/14 129/17 129/22 130/11 130/17 132/11 132/20 133/6 134/15 136/10 138/9 139/5 141/5 142/14 145/6 145/16 145/17 146/3 148/6 149/25 150/4 150/16 151/9 155/5 159/13 167/6 173/19 174/8 177/3 177/4 178/13 179/19 181/10 187/3 187/16 188/24 189/3 189/11 190/8 190/25 191/1 191/5 196/18 197/9 197/16 197/22 199/22 200/1 203/8 206/7 206/12 208/5 208/18 208/25 209/1 209/8 209/9 209/18 210/8</p>	<p>210/9 212/22 212/22 214/8 214/12 214/18 214/24 215/1 215/1 216/14 217/1 217/3 218/10 218/25 220/3 220/7 220/11 220/14 220/15 221/7 221/8 221/10 221/11 221/11 221/12 221/13 221/14 222/22 223/16 229/4 229/12 231/10 231/14 231/14 231/20 231/23 231/24 232/4 232/4 232/13 233/7 233/8 233/11 233/13 233/19 234/21 235/3 235/7 235/17 237/1 237/8 238/8 238/13 239/21 240/7 240/18 241/3 241/11 250/18 251/6 251/19 253/6 253/15 253/25 256/14 256/15 256/18 256/21 256/21 256/23 259/4 259/6 259/10 259/11 259/19 260/5 260/7 260/7 261/2 261/7 261/14 261/15 261/21 262/19 263/19 265/9 265/11 265/12 266/1 267/22 269/19 270/7 270/9 270/16 271/10 273/1 273/23 275/16 275/24 276/19 276/25 282/5 282/9 285/14 286/1 292/13 292/17 294/9 294/23 295/21</p> <p>wouldn't [16] 64/25 111/6 118/18 119/3 126/15 145/3 209/15 209/17 212/2 213/6 235/10 238/3 241/20 260/8 261/8 263/15</p> <p>wrapped [1] 188/12</p> <p>write [5] 26/14 26/16 75/6 277/21 277/25</p> <p>write-once [2] 26/14 26/16</p> <p>writes [1] 85/16</p> <p>writing [4] 20/12 65/12 65/18 113/1</p> <p>written [11] 67/19 74/12 75/10 75/11 102/19 129/8 164/15 194/6 194/13 194/17 236/12</p> <p>wrong [32] 100/15 107/8 112/7 124/23 125/3 125/24 126/1 126/5 133/19 152/22 172/23 173/15 198/19 201/5 210/24 211/2 216/12 216/16 217/1 217/2 218/24 218/25 219/2 219/25 221/8 221/17 224/6 241/16 257/11 263/6 265/3 267/24</p> <p>wrote [1] 246/3</p> <hr/> <p>Y</p> <p>yeah [70] 119/18 138/15 138/22 139/7 140/12 142/7 142/23 143/2 145/12 147/3 154/5 161/5 163/21 165/8 166/22 168/11 169/19 169/20 175/21 176/4 177/19 178/11 182/7 182/19 183/7 204/4 205/19 205/21 206/3 207/2 209/5 209/21 211/8 212/13 212/15 216/19 217/10 217/10 218/11 220/3 223/16 227/3 228/1 229/3 232/17 232/19 233/2 233/14 235/24 235/25 237/7 238/5 239/10 241/6 242/1 254/25 256/19 258/7 259/20 259/25 261/5 261/20 269/1 269/21 271/12 272/3 273/15 284/4 286/10 290/7</p> <p>year [14] 60/2 64/14 92/3 93/25 139/19 153/15 177/7 192/25 204/16 233/4 233/12 241/22 270/4 270/9</p> <p>yearly [1] 244/5</p> <p>years [16] 59/13 102/12 104/18 139/21 141/24 143/13 143/14 143/14 170/9 192/5 196/22 202/23 205/10 231/7 244/3 283/6</p> <p>Yep [1] 262/2</p>	<p>yes [199] 14/3 22/20 24/24 24/24 25/21 29/9 32/22 33/9 34/20 37/19 38/14 39/15 41/9 45/20 46/6 46/12 49/18 50/17 58/22 65/20 68/18 71/5 71/7 72/9 74/13 75/5 75/9 75/13 77/15 77/16 78/23 80/15 81/12 82/24 83/6 84/10 84/23 85/8 85/15 86/8 87/14 88/12 88/20 88/25 90/14 90/14 91/14 91/20 92/16 92/25 96/12 96/18 96/23 97/1 97/13 99/10 101/20 103/25 104/11 108/8 108/12 108/19 108/22 109/20 117/19 118/5 118/11 120/11 120/19 121/11 123/5 123/24 123/25 125/21 126/14 127/4 128/9 128/22 129/12 129/18 130/14 130/21 130/22 131/2 131/20 131/25 133/10 134/7 136/18 138/6 139/13 144/16 144/21 145/5 147/7 148/16 150/4 151/22 154/9 154/24 155/16 159/9 162/6 169/12 171/8 171/25 175/13 175/25 183/15 198/2 198/9 198/25 200/10 200/19 200/20 200/21 205/13 205/16 206/11 207/10 209/25 211/9 211/23 211/23 212/6 213/15 213/16 216/4 216/5 216/8 216/13 216/14 217/8 217/18 222/18 222/21 223/2 223/9 223/20 228/3 231/18 233/18 234/14 234/20 235/16 236/4 237/23 238/11 239/2 239/18 240/20 240/23 241/2 241/5 241/24 242/22 243/20 244/1 244/23 245/11 245/15 248/23 248/24 250/25 253/19 255/22 255/25 256/12 256/17 256/18 256/22 257/1 257/23 258/11 262/12 265/14 266/16 266/18 268/19 268/19 269/4 269/24 270/6 270/20 270/23 272/25 273/3 275/3 275/3 278/4 279/12 280/1 280/1 283/14 283/14 283/14 284/3 295/23 296/3</p> <p>yes/no [4] 41/9 256/17 256/22 257/1</p> <p>yeses [1] 256/4</p> <p>yesterday [16] 6/6 6/12 8/1 25/16 52/9 58/5 63/6 65/15 78/15 79/13 104/8 193/16 196/10 293/10 295/5 295/7</p> <p>yet [6] 16/12 29/24 128/5 160/22 176/6 291/8</p> <p>yields [1] 211/14</p> <p>yore [1] 152/6</p> <p>you [1233]</p> <p>you'll [5] 85/10 124/19 195/22 296/2 296/4</p> <p>you're [48] 6/9 6/25 28/3 50/15 52/2 74/17 77/5 77/12 151/13 151/14 157/19 162/20 166/17 167/15 172/11 187/4 200/3 215/5 217/6 222/1 229/18 236/7 244/21 246/14 247/12 248/20 248/25 249/24 250/10 252/2 254/11 256/7 257/23 258/18 258/21 258/25 260/21 261/3 266/9 273/23 274/16 277/6 279/15 284/5 284/5 284/16 286/8 287/2</p> <p>you've [10] 9/2 17/8 19/19 158/20 159/20 260/13 265/23 269/14 276/4 276/13</p> <p>you-all [5] 62/9 67/16 89/25 276/6 294/23</p> <p>your [418]</p> <p>yours [2] 276/3 286/16</p> <p>yourself [7] 51/9 171/17 205/8 263/13 276/8 276/14 280/2</p>
---	--	---

Y**yourselves [2]** 82/4 276/13**Z****zero [4]** 60/23 167/7 173/5 227/19**zero percent [1]** 173/5**zip [6]** 24/12 24/12 27/1 27/2 30/15
30/16**zipped [6]** 24/11 26/2 26/25 27/25 28/2
30/3**zipper [1]** 26/3**Zoom [2]** 140/21 243/4**zoomed [1]** 93/13