1	STATE OF NEW HAMPSHIRE
2	SITE EVALUATION COMMITTEE
3	
4	October 24, 2017 - 9:00 a.m. 49 Donovan Street Morning Session ONLY Consend New Hampshine
5	Concord, New Hampshire
6	{Electronically filed with SEC on 11-06-17}
7	IN RE: SEC DOCKET NO. 2015-06
8	Joint Application of Northern Pass Transmission, LLC, and
9	Public Service Company of New Hampshire d/b/a Eversource
L 0	Energy for a Certificate of Site and Facility.
L1	(Hearing on the merits)
L2	PRESENT FOR SUBCOMMITTEE/SITE EVALUATION COMMITTEE:
L 3	Chrmn. Martin P. Honigberg Public Utilities Comm. (Presiding as Presiding Officer)
L 4	Cmsr. Kathryn M. Bailey Public Utilities Comm.
L 5	Dir. Craig Wright, Designee Dept. of Environ. Serv. Christopher Way, Designee Dept. of Business &
L 6	Economic Affairs William Oldenburg, Designee Dept. of Transportation
L 7	Patricia Weathersby Public Member
L 8	
L 9	ALSO PRESENT FOR THE SEC:
20	Iryna Dore, Esq., Counsel for SEC (Brennan, Caron, Lenehan & Iacopino)
22	Pamela G. Monroe, SEC Administrator
23	(No Appearances Taken)
2 4	COURT REPORTER: Steven E. Patnaude, LCR No. 052

1		
2	INDEX	
3		PAGE NO.
4	WITNESS PANEL: ADAM ZYSK (resumed) EARLE (Rusty) BASCOM	
5	DAVID TAYLOR	
6	Cross-examination by Mr. Lakes	4
7	Cross-examination by Mr. Van Houten	4 6
8	Cross-examination by Ms. Menard	66
9	Cross-examination by Mr. Cote	82
10	Cross-examination by Ms. Pastoriza (For Ms. Schibanoff)	90
11	Cross-examination by Ms. Crane	94
12	Cross-examination by Ms. Draper	104
13	oross examination by no. Braper	101
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		

1			
2		EXHIBITS	
3	EXHIBIT NO.	DESCRIPTION PA	AGE NO.
4	APOBP 65	Transcript Page 18 from	17
5		Day 6/Afternoon Session ONLY (05-01-17)	
6	APOBP 66	Transcript Page 21 from Day 6/Afternoon Session ONLY	20
7		(05-01-17)	
8	APOBP 70	Copy of a photograph of large boulder	23
9	1		
10	APOBP 71	Copy of a photograph of large boulder broken up	23
11	APOBP 72	Transcript Page 157 from Day 10/Morning Session ONLY	2 4
12		(05-31-17)	
13	APOBP 67	Page 7 of 10 of Pre-Filed Direct Testimony of David L.	3 6
14		Taylor, Jr.	
15	APOBP 68	Page 8 of 10 of Pre-Filed Direct Testimony of David L.	36
16		Taylor, Jr.	
17	APOBP 69	Page 19 of Written Testimony by Dewberry re: Northern Pass -	38
18		Underground Transmission Lines	
19	APOBP 63	DOT Bureau of Highway Design Conference Report, Page 1	43
20			
21	APOBP 64	DOT Bureau of Highway Design Conference Report, Page 2	43
22	NAPO-BP 58	Photograph of Gale River Motel	90
23	AD-N-ABTR 58	Document of 7 pages, consisting	95
24		of maps, photographs, charts	

PROCEEDING 1 CHAIRMAN HONIGBERG: Good morning, 2 everyone. I'm told this is Day 51. Anything 3 we need to deal with before Mr. Lakes begins 4 5 questioning the panel? 6 [No verbal response.] 7 (Continuation of witness panel of Adam Zysk, Earle (Rusty) 8 Bascom, and David Taylor.) 9 10 CHAIRMAN HONIGBERG: Mr. Lakes, you 11 may proceed. 12 MR. LAKES: Good morning. My name is Carl Lakes. I'm with the Bethlehem to Plymouth 13 14 Underground Abutters. And I have a number of 15 questions for the panel today. Thank you for 16 being here. Appreciate it. And I'll try not 17 to go over a lot of things that we talked about 18 yesterday, but there may be some nuanced things 19 that I'll ask about, and that's why I'm talking 20 about it. 21 BY MR. LAKES: 22 Okay. To begin, Mr. Bascom, in your testimony, 23 you say, with regard to horizontal directional

drilling, that "the Applicant has potentially

5

1 unrealistic expectations for areas requiring 2 the use of HDD from the standpoint of both 3 laydown area and time of construction." How does a laydown area noted in the NPT 4 5 Application vary from your experience with this 6 type of construction? 7 (Bascom) Generally speaking, the footprint for Α 8 the laydown area is larger from the experience I've had with other projects. And I noted a 9 10 discrepancy between what was proposed with the 11 sort of linear laydown utilizing mostly one 12 lane of traffic, as opposed to what I've seen 13 in other projects. 14 Have you had any experience, or anybody on the 15 panel, with a linear laydown of a HDD project 16 at all? 17 (Zysk) Not like what's proposed, no. Α 18 Q So, is this a new untried type of construction? 19 Α (Bascom) I would say my experience is generally 20 with high voltage cables, where the length of 21 the directional drill is on the longer side, so 22 greater than 500 feet. And, in those 23 circumstances, with a larger diameter cable and 24 the resulting size of the conduits used, the

6

1 equipment involved is much larger. In this 2 particular case, the Applicant is intending to 3 install 8-inch conduits individually. So, the 4 size of equipment is more consistent with gas 5 lines, water lines, smaller diameter bore holes. And, as a result, the laydown area 6 7 could be smaller. Even though the actual bore holes for most of 8 the HDD are 18-inch, around which, at least to 9 10 me, I guess, as a layman, sounds fairly big. 11 So, that is an 18-inch bore hole is fairly 12 typical of a smaller type of operation 13 requiring, I guess what you're inferring, 14 smaller equipment? 15 Α (Bascom) That's correct, in general. Normally, 16 the size of the bore hole needs to be, as a 17 minimum, about one and a half times the 18 diameter of the casing or conduit that's going 19 to be installed. 20 Yes. 21 (Bascom) And they're proposing to use, as far 22 as I can tell, an 8-inch conduit. So, 18 to 20 23 inches would be a typical bore hole size to 24 accommodate that size opening or that size

7

1 conduit. 2 Okay. Do you think this layout will easily fit Q into a three rod road? 3 (Bascom) As I indicated in my prepared 4 Α 5 testimony, I felt the laydown area was smaller 6 than I would anticipate for some of the lengths 7 of the drills that they're going to be doing, considering that they're likely to encounter 8 9 rock. 10 But, again, I would defer to, I think, 11 Dewberry, who maybe has some experience with 12 the civil aspect of the directional drilling to 13 maybe respond to that. 14 (Zysk) I think it's more the case they have 15 adjusted the layout, their anticipated layout 16 of their machinery, to work within the area 17 that they have. 18 Q And this will entail moving to the edge of the 19 right-of-way, I would think, as much as 20 possible? 21 (Zysk) Yes. I would expect so. 22 So, in that regard, we can assume, as residents 23 on 116, that this will require the removal of

trees and flattening of the terrain, not only

```
on the side that the rigs will be on, but also across the street, where trying to make more room will allow for traffic to drive off of the pavement so that there's more room. Would you agree with that?

A (Bascom) My understanding is that the space that they are allowed to work within is the
```

that they are allowed to work within is the easement or right-of-way available on a given road. And, to the extent that that area exists or is defined, my understanding is they can utilize that space. I don't know --

Yes. I mean, that's the big argument. It isn't defined and so forth. But I won't get into that right now.

But my basic premise of this is that, in order to do this work, I can only feel, particularly in a three rod road, that the construction area will have to move over the centerline towards the other side of the road, thereby creating a situation where the traffic needs to continue, if they're going to -- or shut down the road, so they're going to have to encroach on the other side of the road and remove vegetation so that traffic can move

```
1
         through that area. Would that be a reasonable
 2
         assertion?
 3
    Α
         (Zysk) I would say, if New Hampshire DOT allows
         them to do that, then, yes, they will.
 4
 5
         I guess all of that remains to be seen. Now,
 6
         with regard to time of construction, the
 7
         Applicant cited "three to five weeks" in the
         earlier hearings, which has now, from what I
 8
         heard yesterday, changed to "four to six
9
10
         weeks", on average. I know there's some other
11
         ones that are bigger, like the microtunnel,
12
         that sort of thing, is a different thing all
```

together. And this is including setup,

drilling, tear-down, etcetera.

13

14

15

16

17

18

19

20

21

22

23

24

So, Mr. Bascom, when I went through your estimates and added them up for the minimum and to the maximum, I saw your estimates were adding up to a minimum of seven weeks to a maximum of thirteen weeks from start to finish. How do you account for the discrepancy of what you say is the time frame, and putting that together with the fact that now we're talking about this end-to-end layout construction plan that is obvious, I think, to even laymen such

```
as me, is going to stretch out the time of doing these projects? So, how can you square that or do you feel that the four to six weeks may be a happy thought, but not really a reality?
```

(Bascom) In my experience with other projects, oriented toward transmission cable installation, the time for the work, including mobilization, actual civil and construction, and demobilization, was much longer than the Applicant indicated in their information. And that was the basis for the statements that I made.

It also assumes that there are no delays, equipment breakdown, other factors, weather, that might impact the timeliness of the construction. And, given the number of directional drills, on average, I would expect that it would be imprudent to assume that every one of those is going to occur without some sort of delay, either from equipment or weather or other factors. And, on that basis, I felt that the time listed for each directional drill was, as a minimum, probably too short.

1 Q Okay. Moving on. Mr. Bascom, yesterday it was 2 stated that the "HDD starting and finishing 3 pits need to be ten feet apart". Why is that? (Bascom) With directional drilling, one of the 4 Α 5 aspects is the alignment and controlling the 6 position of the drill stem, which is the 7 initial pipe that navigates through the ground. And the sensitivity of the tracking equipment 8 is generally on the order of around five feet 9 10 or so. It could be better than that, but 11 that's a good planning design. So, allowing 12 for uncertainty in the directional drill, they 13 would normally want to design with at least 14 five feet, and perhaps a ten-foot separation, 15 to conservatively avoid having one drill interfere with the other. 16 17 So, ten feet is actually at a more ideal for a Q 18 situation such as that? 19 (Bascom) Yes. That's correct. Α 20 Another question. So, the incoming trench 21 that's coming towards these splice pits, I'm a 22 little confused in terms of you've got these 23 two cables next to each other, and then they

{SEC 2015-06} [Day 51/Morning Session ONLY] {10-24-17}

need to split off ten feet. So, is that an

```
1
         individual trench that goes to each pit or each
 2
         area that will eventually take that cable or is
 3
         that all dug out as a big hole that it goes
 4
         through?
         (Bascom) I'm not sure I understand the
 5
 6
         "ten-foot" that you're indicating near the
 7
         splice pits.
         Okay. I guess what I'm saying is, you have a
 8
    Q
         trench, and then you've got the two conduits
9
10
         that will eventually go down each one of those
11
         pipes. And these two conduits are next to each
12
         other in the trench. Then they need to split
13
         off somewhere along the way to get into those
14
         bore holes, right? I was just wondering how
15
         that is done?
16
    Α
         (Bascom) So, I think, to understand your
17
         question, you're indicating that the nominal
18
         trench, where the separation is 18 to 24 inches
19
         between the conduits themselves, --
20
         That's right.
21
         (Bascom) -- and then, on approach to the
22
         directional drill, there's a larger separation?
23
         Is that --
24
         Yes.
```

[WITNESS PANEL: Zysk|Bascom|Taylor]

- 1 Α (Bascom) Am I understanding your question? 2 Q That's what I'm talking about, yes. 3 Α (Bascom) The approach to how that's addressed 4 is the trench is widened to align the conduits 5 individually with each of the bore holes. And 6 there's a transition between the conduit type 7 that might be used for the conventional open-cut trench to that which is used for the 8 9 directional drilling. And the reason for the 10 transition is the type of conduit, in 11 particular, the wall thickness, is larger for 12 the directional drill to accommodate the 13 tensile forces, the pulling forces, as the 14 conduit is pulled into the bore hole.
 - Q Okay. Now, it is my understanding that, at the deepest part of the HDD boring, that they're supposed to be like 20 feet apart from each other. Is that correct or is that -- I've heard that a number of times, I'm just curious on that aspect?

15

16

17

18

19

20

21

22

- A (Bascom) I'm not aware that it's supposed to be 20 feet apart. If you can refer me to a drawing, I might be able to comment.
- 24 Q Yeah, I wish I could. I know I've seen it

14 [WITNESS PANEL: Zysk|Bascom|Taylor] 1 somewhere. And I didn't know -- have any of 2 you gentlemen been exposed to that 3 particular --(Zysk) I believe I noted it, that it was 4 Α 5 mentioned in some of the earlier transcripts. 6 Okay. So, --Q 7 (Zysk) That was their design goal. So, I guess, you know, the point of my question 8 9 is, in a space that's already constrained, say, 10 within a three rod road, and particularly with 11 the starter pit on the shoulder or off of the 12 road, I'm concerned, and I'd like to get your 13 opinion on this, could that underground bore 14 cross into private property?

(Bascom) I would say, given the tolerance of Α the directional drill, it's possible that it would deviate from the alignment that is planned. And, to the extent that the bore alignment is positioned near the edge of the right-of-way, it's possible it could go outside of that perimeter, --

22 There is a --

15

16

17

18

19

20

21

23 (Bascom) -- that barrier.

Thank you. 24 Okay. There actually is a drawing,

Α

and I guess I wish I had it with me today, but there is an actual HDD drawing in Easton where the actual path of the bore does go right under somebody's property. I mean, it's so clear. But, anyway, I just want to bring that up as an issue that needs to be thought about as we move along.

Staying with HDD, NPT has continually stated that they plan on working from 7:00 a.m. to 7:00 p.m. Now, when boring the initial pilot hole, which I understand is actually the most important hole when you actually start an HDD, is it standard procedure to stop and walk away at 7:00 p.m., in the midst of a pilot hole?

(Bascom) It depends on the geology that's involved. In some cases, if the bore hole is expected to be stable, it's possible to interrupt the work and then resume. My understanding is much of the drilling may be done in rock, and that would generally be consistent with a stable environment for a bore hole. And depending on the type of equipment that might be used, they could restart and

[WITNESS PANEL: Zysk|Bascom|Taylor]

```
continue directional drilling to establish that bore hole.
```

- Q But I guess, if it's unstable, and the worker is pushing his pilot bore, 7:00 p.m. comes and there's concerns about this thing collapsing or whatever, what would be your mode of operation at that point or what would be the way to move forward or would you just stop? What makes sense?
- 10 (Bascom) Generally speaking, the riskier part Α 11 of directional drilling as a process is the 12 pull-back of the conduit or the casing. 13 Because, at that point, if they stop, there may 14 be some collapse of the bore hole. And 15 that's -- that part of the operation generally 16 will continue on a continuous basis until they 17 complete the exact entire pull-back. The pilot 18 hole, establishing the pilot hole, may be 19 interrupted, and I've seen that interrupted on 20 some projects. I can't speak specifically to 21 all the locations that are involved with the 22 potential Northern Pass Project.
- 23 Q Okay.

3

4

5

6

7

8

9

24 A (Bascom) But it is possible you can stop and

```
1
         resume work on a shift basis.
 2
    Q
         So, with a blanket -- a blanket statement that
 3
         "these machines will be operational between
 4
         7:00 a.m. and 7:00 p.m", really, it's not
 5
         possible, is it? I guess, if you threaded the
 6
         needle perfectly every second of the way. But,
 7
         you know, we're talking, what, 59 HDD bores,
         which is unprecedented anywhere in this
 8
9
         country, I would think that there's going to be
10
         times when they're going to work past 7:00
11
         p.m., is that correct?
12
         (Bascom) I would say it's possible.
13
         (Zysk) They have noted that every single HDD
14
         location will have -- the contractor will
15
         analyze it and will come up with a specific
16
         work plan for that location. And I'm sure that
17
         they will determine at that point whether they
18
         need to go longer than a 12-hour shift.
19
         Yes. I get it. But I'm just telling you what
    Q
20
         we've been told.
21
         (Zysk) Understood.
22
         Okay. Mr. Taylor, --
23
                   MR. LAKES: Can you please put on the
24
         ELMO, Bruce, number 65?
```

[WITNESS PANEL: Zysk|Bascom|Taylor]

```
BY MR. LAKES:
 1
         This is a copy from Applicants' Construction
 2
 3
         panel testimony, Day 6, May 17th [May 1st?],
 4
         Page 18, question from Mr. Pappas to Nathan
 5
         Scott. And, so, this regards testimony with
         regard to "staking a construction site". And
 6
 7
         we'll start with, at the top, "Okay. Then,
         where it says "Stake limits of disturbance", is
 8
9
         that to determine where it is going" -- I'm
10
         sorry, "where it is you're going to essentially
11
         dig and have equipment?" Let me say that
         again, I was disjunct on that. "Then, where it
12
13
         says "Stake limits of disturbance", is that to
         determine where it is you're going to
14
15
         essentially dig and have equipment?" And
16
         Mr. Scott, for the Construction panel, says
17
         "Essentially, yes."
18
              "Okay. Then, you're going to need to --
19
         well, let me back up for a minute. When you
20
         stake out limits of disturbance, presumably the
21
         goal is to stay within the right-of-way,
         correct?" "Scott: Correct."
22
23
              "It's not to go on any private property?"
24
         "Scott: Correct."
```

```
1
               "So, when you stake --", and then Scott
 2
         interrupts:
                      "And that right-of-way line will
 3
         be staked as well."
              So, I want to talk about that a little
 4
 5
         bit. So, it appears the intention, on any
 6
         construction site, is to stake the ground
 7
         delineating the line between private property
         and the ROW. Do you agree?
 8
9
         (Taylor) That's typically done, yes.
10
         Would you agree that there could be a problem
11
         performing construction activity on a state
12
         road right-of-way, such as 116, where many
13
         portions are three rods wide, which is around
14
         49 feet, and smaller portions are two rods
15
         wide, which is 32 feet, and, even on a four
16
         road -- four rod road, which is 66, where
17
         boundaries on both sides are undetermined?
18
    Α
         (Taylor) That's correct. It would definitely
19
         be more of a challenge if the road right-of-way
20
         is narrower than currently shown on the
21
         Applicant's plans.
22
         So, Mr. Taylor, would you, if you were in
23
         charge of a project, allow the staking of a
24
         construction site if the ROW boundaries were
```

[WITNESS PANEL: Zysk|Bascom|Taylor] 1 not firmly established? 2 Α (Taylor) I would say the answer is "no", mainly 3 because we wouldn't get to the point of construction stake-out relative to property 4 5 rights, unless someone on our team or an agency 6 had determined that that is, in fact, the 7 limits of the property right. 8 MR. LAKES: Okay. Let's put the next 9 thing on, Bruce, number 66. 10 BY MR. LAKES: 11 This is a copy from the Applicants' 12 Construction panel testimony, Day 6, on 13 May 1st. The question again is from Mr. Pappas 14 to Nathan Scott. 15 And we'll start with "Yes. You anticipate 16 in some places there's going to be some 17 blasting, don't you?" Scott says: "I'm not 18 sure of any specific locations where it's required for the underground route. But it's a 19 potential, yes." 20 21 "Well, your Application indicates you 22 anticipate some blasting, does it not?" The 23 Application reserves -- and this is the answer:

"The Application reserves" -- and this is from

Mr. Johnson, I'm sorry: "The Application reserves the right, if you will. Based on geotechnical results that we got back, we found that there was little to no rock in the area that we plan to install. So, it would be on a case-by-case or emergency basis. But it has not been pre-identified in specific locations."

I want to talk a little bit about that as well. This is where it gets a little tricky with me trying to put some things on the screen.

So, with the underground alignment in a state of flux, in order to meet DOT regulations and/or to avoid issues along the route, and/or to get exceptions from DOT where there are no other alternatives, the statement "we found little or no rock in the area we plan to install", may this not be accurate now, because the plans are changing as we speak?

(Taylor) Yes and no. I would assume that his statement is based on the exact boring locations from their geotechnical work. So, if a boring is done, say, every thousand feet or two thousand feet, by way of example, they

wouldn't know what's in between. 1 2 Q Right. 3 (Taylor) The other side of that is, if they have changed the alignment, and they did have a 4 5 boring in an area on the exact previous 6 alignment, then they wouldn't generally know if 7 rock, let's say, is on the other side of the road. 8 9 So, certainly, this statement about there 10 "being little or no rock", I also extended that 11 in terms of the trench information. So, the 12 geotechnical boring, you know, as far as the 13 trench goes, is, well, number one, it appears 14 to be nonexistent, because they picked out 15 areas that they're talking about doing the HDD. 16 And, actually, to be able to determine what's 17 going to be in all these trenches is kind of 18 like finding a needle in a haystack. I mean, is that --19 20 (Taylor) If you're referring to rock, the 21 answer to that would be yes. 22 Boulders, things like that? 23 (Taylor) Yes. Α

{SEC 2015-06} [Day 51/Morning Session ONLY] {10-24-17}

MR. LAKES:

I need to bring up the

```
1
         Apple TV at this time. All right. Has
 2
         anything come up yet? Oh, there it is. I
 3
         didn't even though it was there. All right.
    BY MR. LAKES:
 4
         On the screen is Exhibit Number APOBP 70.
 5
 6
         you see here is a very large boulder that was
 7
         recently excavated next to Route 116 at the
         mouth of the new Gibson Road. The same area
 8
9
         that Kris Pastoriza was talking about
10
         yesterday, in terms of putting a vault on the
11
         other side of the road. And this is kind of
12
         like a -- it's like an iceberg, because there's
13
         a huge portion of it below the ground as well.
14
              And the next picture I'm going to show
         you -- this works pretty good. This is the
15
16
         boulder that was there that is broken up.
17
              And the only point I want to make, you
18
         know, to the panel and to the Commission here,
19
         is that I live about a quarter of a mile away
20
         from that boulder. It took a week for them to
21
         break that boulder apart.
22
                   CHAIRMAN HONIGBERG: Mr. Lakes, this
23
         is your time to ask questions of the panel.
24
                               Yes.
                                      I'll just make --
                   MR. LAKES:
```

[WITNESS PANEL: Zysk|Bascom|Taylor]

1 yes. Well, okay. 2 BY MR. LAKES: So, would it surprise you gentlemen that this 3 boulder took an excessive amount of time --4 5 well, to me it was excessive, because I had to 6 listen to it every day for a better portion of 7 five days or so with a giant backhoe with a 8 hammer on it smashing the thing, every day, for like eight hours a day. 9 10 So, would it surprise you gentlemen that 11 they may find similar things, similar boulders, 12 while they're doing trenching along the road, off the road, along the 52-mile route? 13 14 (Taylor) No. I wouldn't be surprised by that. 15 So, when you hit a thing like this, slows down 16 production, I would think, and efficiency? 17 Α (Taylor) It does. 18 Q Extends the operation, costs more money? 19 (Taylor) That's correct. Α 20 Etcetera, etcetera. 21 MR. LAKES: So, if you could, Bruce, 22 put up number 72. So, this is a slight 23 digression.

Do you need the CHAIRMAN HONIGBERG: {SEC 2015-06} [Day 51/Morning Session ONLY] {10-24-17}

```
1
         ELMO back?
                   MR. AHERN: We need the ELMO back.
 2
 3
                   MR. LAKES: Oh, I'm sorry. I don't
 4
         need the ELMO anymore. Thank you.
 5
                   CHAIRMAN HONIGBERG: No. You need
 6
         the ELMO.
 7
                   MR. AHERN: You need the ELMO, not --
                   MR. LAKES: I don't need the Apple
 8
9
         TV. Yes, I'm all set. I need the ELMO, I'm
10
         sorry. This juggling act is tough.
11
    BY MR. LAKES:
12
         So, this goes to -- this exhibit is an
13
         exchange, again, in May with Mr. Bowes, who was
14
         on the Construction panel for Eversource. And
15
         I'm asking the question actually: "If tree
16
         removal is necessary on the trench side of the
17
         road, will landowners be brought into the
18
         process before removal?" Mr. Bowes answers:
19
         "Yes. Again, we have not identified any tree
20
         removals that are necessary."
21
              So, in May, the Northern Pass didn't --
22
         was saying that they didn't see any trees that
23
         had to be removed. Do you agree with that?
24
         (Taylor) I don't agree with that statement.
```

```
1
    Q
         So, when Mr. Johnson says, with almost the same
 2
         certainty, that "we found that there was little
 3
         to no rock in the areas we plan to install the
         trench", now, this is a 62-mile [52-mile?]
 4
 5
         underground trenching/digging/splice vault
 6
         operation in the Granite State. Do you think
 7
         this is a reasonable assessment, based on
         drilling a few geotechnical bore holes?
 8
9
                   MR. NEEDLEMAN: Objection. Where did
10
         Mr. Johnson say "there was little to no rock"?
11
                   MR. LAKES: I just showed you the --
         his testimony on -- put up the earlier one,
12
13
         Bruce.
14
                   CHAIRMAN HONIGBERG: I believe you
15
         had Mr. Scott's testimony up earlier.
16
                   MR. LAKES: Yes. It was Scott and
17
         Johnson.
                   Do we have it up there? I can't
18
         tell.
19
                   MR. AHERN: Yes, it's right there.
20
                   MR. LAKES: Yes. It's right there.
         And what's the number on that one, Bruce?
21
22
                               It's 80 -- or, 66.
                   MR. AHERN:
23
                   MR. LAKES:
                               66. Where it says the
24
         answer -- "Well, your application indicates you
```

```
1
         anticipate some blasting?" was the question.
 2
         Mr. Johnson says: "The Application reserves
 3
         the right, if you will. Based on the
         geotechnical results that we got back, we found
 4
 5
         that there was little to no rock in the area
 6
         that we plan to install."
 7
                   MR. NEEDLEMAN: So, based on the
         geotechnical results?
 8
 9
                   MR. LAKES: Right.
10
                   MR. NEEDLEMAN: Okay.
11
                   MR. LAKES: I'm going to move on.
12
                   CHAIRMAN HONIGBERG: Wait. You have
13
         a pending question. I assume you want them to
14
         answer the pending question?
15
                   MR. LAKES:
                               Thank you. I think the
16
         question was answered earlier, in terms of the
17
         "needle in the haystack", and the fact that
         there will be boulders and other obstructions
18
19
         found along the way, which I believe Mr. Taylor
20
         answered in the affirmative.
21
                   WITNESS TAYLOR: Correct. I wouldn't
22
         be surprised if you found rock or boulders
23
         along the route.
24
                               Right.
                   MR. LAKES:
                                        Thank you.
```

[WITNESS PANEL: Zysk|Bascom|Taylor] BY MR. LAKES: 1 Okay. Mr. Taylor, in the questioning of Nathan 2 Q 3 Scott by Mr. Pappas during the hearings, and I'm not putting up any exhibits for this, 4 5 during the hearings there was a line of 6 discussion regarding splice vaults and the size 7 of the hole. And I just want to get confirmation on that. 8 At the time, Mr. Scott had said that the 9 10 hole for the splice box is going to be "12 feet wide by 34 feet long, 10 to 12 feet deep". And 11 12 I wish I had listened more closely yesterday, 13 but I heard differently yesterday. It sounded 14 like the hole was going to be bigger. Can you 15 answer that? 16 Α (Taylor) I seem to recall his testimony 17 indicating an additional two feet on either

- side --
- 19 Okay.

- 20 (Taylor) -- of the design size of the splice 21 pit, which would put that component around 12 22 feet, and then the linear component around 38 23 feet.
- 24 Okay. I think what it is is he originally said

[WITNESS PANEL: Zysk|Bascom|Taylor]

```
1
         "12 feet". So, if he's adding two feet to
 2
         this, we're talking "14 feet". But I guess
 3
         we're just playing with semantics with numbers,
 4
         because, whichever way it goes, it still works
 5
         with the point I need to make.
              The vast majority of the 159 vaults --
 6
 7
                   CHAIRMAN HONIGBERG: Slow down. Slow
         down.
 8
9
                   MR. LAKES:
                                I'm sorry.
10
    BY MR. LAKES:
11
         The vast majority of the 159 vaults, I believe
12
         around 130 will be off the pavement. So, Route
13
         16 has a number of areas where it's three rods
14
         wide, roughly 49 feet. So, if we take it from
15
         the centerline over, it's about twenty four and
16
         a half feet. Do you agree with that?
17
         (Taylor) I do.
    Α
18
    Q
         So, the pavement itself is about 12 feet, 12
         and a half feet wide, from the center, leaving
19
20
         roughly another 12 and a half feet or 12
21
         feet -- roughly 12 feet, let's say, for a vault
22
         to be placed. How is it possible to site a
23
         vault completely off the road in a two or three
24
         rod road outside the pavement? That's my
```

```
1
         question.
         (Taylor) Well, it would seem, mathematically,
 2
    Α
 3
         for a two rod wide right-of-way, it doesn't
         seem like it would work at all. And, for a
 4
 5
         three rod road, it would really come down to
 6
         how the road is placed within the right-of-way.
 7
         If it's centered, as you just indicated, --
         Yes.
 8
    Q
         (Taylor) -- highly unlikely. If it's not
9
10
         centered, then it's possible.
11
         But the flip-side is correct as well, that, if
    Q
12
         it's centered on the other side of the road,
13
         that you'll even have less space. And, yes,
14
         sure, a lot of this is based on "where is the
15
         centerline of that road?" That's really where
16
         some of these matters come into play. Because
17
         you could have the larger boundary on the
18
         opposite side of the road, that's -- is that
19
         correct?
20
         (Taylor) That is correct.
21
         And not knowing the exact ROW boundary, as we
22
         just discussed, that would be an additional
23
         barrier?
24
         (Taylor) Correct.
```

Q As had been noted yesterday, the panel is quite aware that NPT is in consultation with DOT to meet the Utility Accommodation Manual to the best extent possible, or receive waivers where it cannot.

When you, I'm just asking the group at this point, were analyzing the route and construction detail, did you believe that the underground alignment, as stated by the Applicant, was within legally established rights-of-way?

- A (Taylor) I would say, yes, because we had no reason to believe, at the time of our review, that the right-of-way shown was not accurate.
- So, if you didn't know, would you have probably -- would you have made that an issue of discussion in your -- in the presentations that you did, if you knew that there weren't surveys that meet proper standards to the DOT?
- A (Zysk) Yes.

Q Looking at your resumés, it appears that all of you have extensive experience with large construction projects. Have any of you been involved with projects that were so heavily

32

1 reengineered and required multiple waivers two 2 years into the approval process? 3 Α (Zysk) I was involved in that small project in Boston about fifteen years ago, that was 4 5 constantly being redesigned due to political 6 decisions throughout the process. We also had 7 to make some reasonably major design changes 8 due to changes in construction, things that happened during construction that weren't 9 10 anticipated, etcetera. 11 Yes. So, if you have to go back fifteen years, 12 I'm assuming it doesn't happen too often, on 13 this scale and magnitude? Sure, things change, 14 but your opinion, your thoughts? 15 Α (Zysk) Maybe not to this magnitude, but even 16 small projects experience changes. 17 Q Uh-huh. 18 (Zysk) We're in the process of finishing a 19 project right now. We had to stop, once we 20 started, and make some changes. 21 Sure. Let me ask you, Mr. Taylor, would you 22 have advised a client to move forward with an 23 application, if you knew large portions, in 24 this case, the underground portion, did not

1 meet and directly violated the DOT Utility 2 Accommodation Manual? (Taylor) We would not advise a client to 3 Α 4 violate any regulation. That being said, as a 5 part of the overall strategy and compilation of 6 a project, if we deemed it appropriate, 7 relative to the regulations, to ask for a waiver or an exemption, we would certainly do 8 9 that. 10 So, at what point in the process would you do Q 11 that? 12 (Taylor) Typically, for what I would call the 13 "entitlement", which is what I view this stage 14 of the Project. That gets flushed out, be it a 15 waiver, a variance, exception, whatever term 16 you put to it. 17 Would you have advised a client to move forward 18 with an application with ROW boundaries that 19 were in dispute over the course of 62 [52?] 20 miles? 21 (Taylor) Hard to say what I would have advised 22 to a client on this particular project. But I 23 think, as I had indicated yesterday, it's not 24 uncommon to move the early stages of a project

[WITNESS PANEL: Zysk|Bascom|Taylor]

```
1
         along when some data is still being figured
 2
               And I think yesterday I had said around
 3
         the 30 percent stage of a project, certainly
         for a linear project, we typically know a
 4
 5
         significant amount about the property rights.
 6
         And, so, if, in your scenario, we were below 30
 7
         percent or at 30 percent, engaging the
         entitlement process would not be uncommon, but
 8
 9
         we would do so with open eyes, and that would
10
         just be disclosed throughout the course of the
11
         entitlement process.
12
         So, can I kind of bring that into perspective,
    Q
13
         where you're saying that many of these things
14
         that are still in flux today and not
15
         understood, really should have been part of the
16
         initial Application?
17
         (Taylor) If the Applicant knew that the
18
         right-of-way wasn't correct, then, sure, I
19
         would expect some level of disclosure with
20
         that.
21
         Yesterday, in questioning from Ms. Manzelli,
22
         you mentioned a case where the parties got
23
         together to find agreement on a boundary
24
         dispute, I think, was that you, Mr. Taylor?
```

```
1
         I'm not sure. Apparently, there was one parcel
 2
         of land, and the landowner was brought into the
 3
         dispute, and they settled it. It was that kind
         of -- did I summarize that okay?
 4
 5
         (Taylor) Generally speaking. I recall it
 6
         having to do with prescriptive rights, and
 7
         whether abutters to a property, where
 8
         prescriptive rights are in question, --
9
         Yes.
    Q
10
         (Taylor) -- have a say in the matter.
    Α
11
         And what caught my mind or my eye is that, you
    Q
12
         know, you talked about one landowner, and we're
13
         talking about hundreds having the same issues
14
         up and down the route. So, would you think
15
         that this is probably a thousand times, 10,000
16
         times more problematical than the situation you
17
         may have talked about yesterday?
18
    Α
         (Taylor) Well, I don't know if it's 10,000
19
         times more, but --
20
         Well, I'm a bad mathematician.
21
         (Taylor) Understood. To the extent that,
22
         relative to the conversation yesterday,
23
         prescriptive rights are in play, if that's the
24
         case along the entire route, then, absolutely,
```

1 it would be a greater magnitude than my example 2 yesterday. 3 Do you think that, two years after the Q Application acceptance, with these issues still 4 5 unresolved for landowners is the best way to do 6 business? 7 (Taylor) I don't characterize this process as a Α 8 "good" or "bad" way to do business. If it's being fully flushed out at this point, which it 9 10 appears that's the case, then this is when it 11 will get resolved. Which appears to be towards 12 the end of this process and around 60 percent 13 design according to the Applicant. 14 Thank you. 15 MR. LAKES: I want to move on to 16 Exhibit Number -- and this is you, Bruce -- 67. 17 Sorry for my bumbling. I'll try to get this 18 moving. 19 BY MR. LAKES: 20 So, the question was, to you, this is your 21 testimony, Mr. Taylor, "Were there aspects of 22 the underground construction that you were not 23 able to assess?" And you said "Yes. 24 Applicants' submission did not include

1 sufficient information on the following items 2 for us to assess their impact associated with 3 construction of the underground segment: location and size of additional laydown areas 4 5 and staging areas that would be required; the 6 location for the placement of excavation 7 spoils; the location of concrete batch plants; the need for temporary easements; utility 8 designating and test pit data, particularly for 9 10 the more urban and commercial areas; 11 geotechnical boring along the entire 12 underground route; the protection of cultural 13 resources identified in Easton; detailed 14 traffic control plans with construction 15 sequencing; and detailed erosion and 16 sedimentation control plans and sequencing." 17 So, these you did not have a chance to 18 review, because apparently they weren't there, 19 is that correct? 20 (Taylor) Yes. That's correct. In your professional expertise, is this level 21 22 of detail usually included earlier rather than 23 later in the process? 24 (Taylor) Some of this is, I would say, at 60

```
[WITNESS PANEL: Zysk|Bascom|Taylor]
 1
         percent or slightly thereafter, and some of it
 2
         is in the 30 to 60 percent range.
 3
         Okay. Moving along. And I'll try to get
    Q
         through this even quicker, because some of it
 4
 5
         was touched upon yesterday.
 6
                   MR. LAKES: Bruce, and this is for
 7
         Mr. Taylor, please put up the APOBP 69. Do I
 8
         have that right? Yeah. Almost to the end
9
         here.
10
    BY MR. LAKES:
11
         As you stated yesterday, Mr. Taylor, you
12
         estimated the number of cement trucks and dump
13
         trucks needed for the underground portion at
14
         "19,653", is that correct?
15
    Α
         (Taylor) That's correct.
16
         Now, and did you include in that that $7,500 --
17
         7,500 loads up in Coos County of that -- that
18
         big ledge they're going to rip out of there.
19
         (Taylor) No. That wasn't a part of this
    Α
20
         computational exercise.
21
         Okay. So, does that number include mud
22
         extraction trucks, deliveries of water for
```

{SEC 2015-06} [Day 51/Morning Session ONLY] {10-24-17}

drilling, logging trucks, chipper trucks?

(Taylor) No, it does not.

23

```
1
    Q
         Does this include cranes and flatbeds carrying
 2
         backhoes, drilling rigs, bobcats, generators,
 3
         dumpsters?
 4
    Α
         (Taylor) No.
 5
         Does this include steel plate trucks, pipe
 6
         trucks, splice vault trucks, cable reel trucks,
 7
         paving trucks, paving equipment, and even
         pickup trucks?
 8
9
         (Taylor) No.
    Α
10
         And, as was mentioned yesterday, the trench is
    Q
11
         going to be deeper. So, one would figure that
12
         it's deep enough, between six and seven feet,
13
         so it's going to be half again as much in terms
14
         of truckloads. So, this would probably add
15
         another 10,000 trucks to that number.
16
              Did you do any width calculations on that,
17
         on this Project, the width of the trench, I
18
         mean?
19
         (Taylor) What do you mean by "width
    Α
20
         calculations"?
         Well, I guess what I'm saying is, initially,
21
22
         from my understanding, the width of the trench
23
         was narrower than the 5 foot wide that is now
```

Because, as you go deeper, the

24

proposed.

```
1
         trench has to get wider. I think that's pretty
 2
         much a standard sort of procedure with regard
 3
         to that.
 4
              So, with the trench being wider than it
 5
         was initially, I'm thinking that's going to be
         even more truckloads of cement and dirt?
 6
 7
         (Taylor) That's a reasonable expectation.
    Α
         So, when you put all of this together, I'm
 8
9
         estimating that we're talking probably in the
10
         neighborhood of 40 to 45,000 trucks traversing
11
         our roads over the course of two years. And,
12
         from what I just stated, is that possible?
13
         (Taylor) It's possible.
14
         Will this activity add a lot of noise, dust,
15
         dirt, air pollution, traffic congestion, extend
16
         the time of completion, directly affect
17
         tourists and businesses?
18
                   MR. NEEDLEMAN: Objection. All of
19
         that was included and should have been included
20
         in the testimony.
21
                   CHAIRMAN HONIGBERG: I think, having
22
         gone this far, I'm going to overrule the
23
         objection. Let him answer.
24
    BY THE WITNESS:
```

[WITNESS PANEL: Zysk|Bascom|Taylor] 1 Α (Taylor) The short answer is "yes". And I would refer you to our report and our direct 2 3 written testimony, which I think elaborates on each of those. 4 BY MR. LAKES: 5 Yes. With the DOT requiring more trenching and 6 7 vaults off of the pavement, will there be increased visual impacts to the scenic nature 8 of these roads? 9 10 MR. NEEDLEMAN: Objection. Beyond 11 the scope of their testimony. 12 CHAIRMAN HONIGBERG: Yes. These 13 aren't the visual experts. 14 MR. LAKES: I know. But I know that 15 Mr. Taylor, in his testimony, and I don't have 16 it with me, but I remember reading it, and he 17 did mention "scenic" issues. Is that correct?

WITNESS TAYLOR: In our report, in a

few areas, we mentioned where trenching went outside of the roadbed, where it would be either in a hillside or there was some vegetation. We note that that vegetation would be cleared. There would be additional grading.

And that would create a visual impact due to

18

19

20

21

22

23

1 the trenching. BY MR. LAKES: 2 3 Okay. Are you aware -- well, maybe I'll skip 4 this question. Let's -- and we'll move on to 5 the last one. 6 And this is for Mr. Zysk. In your 7 testimony, you discussed "flowable thermal 8 backfill", also known as "FTB", as a "viable 9 and perhaps enhanced material that may be more 10 thermally stable for dissipation of heat around the cable, and perhaps more stable with regard 11 12 to heaving in the winter months". Is this 13 correct, as a general summary? 14 (Zysk) It doesn't sound exactly like what I 15 said, but I did discuss "heaving" and some of 16 the physical properties, yes. 17 Can I assume, from what you had written, is 18 that you weren't opposed to it or you didn't 19 find anything that made you --20 (Zysk) Correct. 21 Okay. So, would you classify flowable thermal 22 backfill as a porous material or more of a 23 solid block; one acting as a French drain, the 24 other blocking or repelling water?

1 Α (Zysk) All concrete-based materials are 2 somewhat porous. It's not like gravel, where 3 the water will just flow through it. The water will infiltrate it, but it will tend to move 4 5 around it more than it will move through it. 6 MR. LAKES: Okay. Bruce, can you put 7 up Number 63? BY MR. LAKES: 8 9 And this is a State of New Hampshire Department 10 of Transportation Bureau of Highway Design 11 Conference Report. And I want to go to the second page of that, which is Number 64. And, 12 13 if you go down where I put little marks there, 14 this was during a discussion between Eversource 15 and the DOT. And it says here that "FTB is [a] 16 water permeable, similar to DOT gravels, does 17 not create water dams, and behaves as a "French 18 drain" in poor soils." So, my first question, you know, and I did 19

So, my first question, you know, and I did go through some of the geotechnical material, which is overwhelming, I see a lot of this thing about "poor soils". So, here we are introducing something that is not a poor soil, it's a manmade product.

{SEC 2015-06} [Day 51/Morning Session ONLY] {10-24-17}

20

21

22

23

44

1 So, Mr. Zysk, what does a "French drain" 2 mean to you, in terms of I guess the way laymen 3 speak of "French drain"? 4 Α (Zysk) "French drain" is typically a small 5 diameter pipe used to remove water from around 6 a foundation. 7 But, if you're describing this as a "French 8 drain", is that kind of -- are they likening it to a similar fashion? 9 10 (Zysk) I would say yes. Α 11 So, yesterday Ms. Pastoriza noted that 12 hydrocarbons were detected at the corner of 13 Route 116 and Route 112. Is my situation -- it 14 is my understanding that the same situation 15 exists at the corner of Route 18 and Route 116. 16 Could a trench, with FTB, acting as a French 17 drain, spread contaminants along the road and 18 increase the area of contamination? 19 (Zysk) If there are known hydrocarbons in those Α 20 areas, I would expect that, if they were going 21 to excavate in those areas, then the soil that 22 has the hydrocarbons in it would either have to 23 be treated or removed and disposed according to

{SEC 2015-06} [Day 51/Morning Session ONLY] {10-24-17}

all regulations, and then clean material be put

45 [WITNESS PANEL: Zysk|Bascom|Taylor] back in the trench. 1 So, are we just talking the trench here or are 2 Q we talking about a total area remediation so 3 that materials cannot flow into that French 4 5 drain? 6 (Zysk) That would be up to your DES. I can't 7 answer that question. 8 MR. LAKES: Okay. I have no further 9 questions. 10 CHAIRMAN HONIGBERG: I don't see Lara 11 Saffo here. Is she here? 12 [No indication given.] CHAIRMAN HONIGBERG: All right. 13 14 Mr. Van Houten. 15 MR. VAN HOUTEN: Good morning, 16 everybody. 17 (Multiple parties indicating "good morning", including the 18 witnesses and Subcommittee 19 20 members.) 21 MR. VAN HOUTEN: I'm going to try and 22 get two images up on the screen here. My

are for any of you. You can decide who will

questions -- good morning, panel. My questions

{SEC 2015-06} [Day 51/Morning Session ONLY] {10-24-17}

23

1 answer the question.

- 2 BY MR. VAN HOUTEN:
- Q What we have here on the screen is Map Number

 76 from the Project, showing where the overhead

 line approaches Route 302 and the transition

6 station, where it goes underground.

Did you visit the location of the proposed transition station?

- 9 A (Taylor) Yes. I've been there several times.
- 10 Q Okay. Did you notice anything unusual about the topography there?
- 12 A (Taylor) I noticed that it drops off rather
 13 quickly from not too far off of the road.
- 14 Q Right. So, if you were going to build a road
 15 there, would you probably fill most of that in?
- 16 A (Taylor) Yes.
- 17 Q Okay. Is it your understanding that this would
- be the access point for construction of the
- overhead north of Route 302?
- 20 A (Taylor) It can be.
- 21 A (Zysk) This is certainly one location, yes.
- 22 Q Do you know of others?
- 23 A (Zysk) I can see another road toward the left
- 24 side of the map.

1 Q That's a private road. 2 Α (Zysk) Okay. That is not indicated as such. 3 But, okay. 4 Q Okay. So, I was told by Project 5 representatives that, and I think it's in the 6 Application, that access points to the overhead 7 construction will be from public roads? (Zysk) Yes. Correct. 8 Α Okay. Do you know the extent of the area 9 Q 10 served by this access point? 11 (Taylor) I do not. 12 And added to that is, and how many towers are 13 proposed to be built using this as an access 14 point? 15 I'll go to my other image here. This is 16 just a satellite from fairly high up showing 17 the area in question. Where the cursor is, you 18 can see the pond and where the existing 19 corridor intersects Route 302. From there, it proceeds to roughly 116, you can see it. And 20 21 Route 116 there is running adjacent to the 22 Ammonoosuc River. Between Route 302 and where 23 the cursor now is there is no public road. So,

that is about four miles. There's something

```
1
         like 30 towers proposed to be built there.
 2
         And, from what I understand from the Applicant,
 3
         they plan to build all of that using this one
         point here on 302 as the access.
 4
 5
              Would you do it that way?
 6
                    MR. NEEDLEMAN: Objection, Mr. Chair.
 7
         This is just generic testimony related to the
         overhead portion. There's nothing new here,
 8
 9
         nothing has changed.
10
                   MR. VAN HOUTEN: Okay.
11
                    CHAIRMAN HONIGBERG: Mr. Van Houten.
12
                    MR. VAN HOUTEN: Fine.
13
    BY MR. VAN HOUTEN:
14
         Is there a road there now?
15
    Α
         (Taylor) Are you referring to 302?
16
    Q
         No. The corridor?
17
         (Taylor) I wouldn't characterize there being a
18
         road there. But, within their corridor, --
19
    Q
         Right.
20
         (Taylor) -- I would assume that they can and do
21
         travel it for maintenance and operations
22
         currently.
23
         The only thing that they have done there, in my
24
         several years, twelve years, in that location
```

```
1
         is every few years John C. Brown --
 2
                   MR. NEEDLEMAN: Objection.
 3
                   CHAIRMAN HONIGBERG: Mr. Van Houten,
 4
         you're testifying right now. What is it you
 5
         want to know from them?
 6
                   MR. VAN HOUTEN: Oh. Okay. I want
 7
         them to describe the road that would need to be
         built to accommodate the equipment and heavy
 8
         trucks needed for this construction.
9
10
                   CHAIRMAN HONIGBERG: That's an awful
11
         lot like what they testified about in their
12
         prefiled testimony about this construction job.
13
                   MR. VAN HOUTEN: Right. Well, --
14
                   CHAIRMAN HONIGBERG: Is there
15
         something specific about it?
16
                   MR. VAN HOUTEN: Yes. This is a
17
         little different. Because you have a proposal
18
         to build something like 30 towers along a
19
         four-mile stretch accessed with one road.
                                                     That
20
         indicates to me that you're going to need a
         road that's big enough to have all of this
21
22
         equipment passing each other. If you were
23
         building one or two towers, you would just need
24
         a road wide enough for a crane to get in there,
```

```
1
         do its thing, and come back.
 2
                   If you're building that many towers,
 3
         in a fairly short order of time, you're going
         to need to accommodate all of this traffic, and
 4
 5
         I believe that indicates a much bigger road.
                   CHAIRMAN HONIGBERG: Yes. I
 6
 7
         understand that. And I'm not sure that -- I
         actually think that they, if they wanted to
 8
         offer an opinion on that, it would have been
9
10
         part of their prefiled testimony.
11
                   But, if you want to ask a question
12
         about whether it can be done the way it's
13
         proposed, given the topography and the existing
         roads, since I think you've already said that
14
15
         they do go onto the line, the Company does go
16
         onto the line to maintain it, maybe you should
17
         ask them that and we'll see what happens.
18
                   Let me try it. Can it be built, as
19
         it's proposed, using the existing access points
20
         that are currently in place?
21
                   WITNESS TAYLOR: I see no reason why
22
         it couldn't.
23
                   CHAIRMAN HONIGBERG: So, Mr. Van
24
         Houten, in light of that, do you want to ask
```

51 [WITNESS PANEL: Zysk|Bascom|Taylor] them anything further? 1 2 MR. VAN HOUTEN: Not about that. BY MR. VAN HOUTEN: 3 4 How would such a road be constructed through 5 wetlands? 6 MR. NEEDLEMAN: Same objection. 7 CHAIRMAN HONIGBERG: Yes. Such a what road? I'm not even sure I understand the 8 9 question. 10 MR. VAN HOUTEN: Well, the road we 11 were just talking about, a big road to allow 12 heavy equipment to go through a wetland. CHAIRMAN HONIGBERG: That's too 13 14 generic. 15 MR. VAN HOUTEN: Okay. 16 CHAIRMAN HONIGBERG: That's too 17

generic.

20

21

22

23

18 MR. VAN HOUTEN: That's fine. That's 19 fine. No problem.

> CHAIRMAN HONIGBERG: Don't give up so Are you asking about the area that's on

screen currently?

MR. VAN HOUTEN: Yes. Just that.

24 CHAIRMAN HONIGBERG: All right. And

1 they have just testified that the Project could 2 be built using the existing roads. 3 MR. VAN HOUTEN: There are no existing roads. 4 5 CHAIRMAN HONIGBERG: Existing access 6 points. Because they're currently able to get 7 on the line now, somehow. MR. VAN HOUTEN: There is an access 8 They're driving a skidder on it. You 9 point. 10 can't drive a 4-wheel drive pickup truck 11 through it. So, you need to build a road where there is no road now. That was just my point. 12 13 There's no road there now. They're going to 14 need to build a road. 15 CHAIRMAN HONIGBERG: That's your 16 opinion. They have just said that the Project 17 can be built using the existing access in this 18 area. So, if you have questions for them about 19 that, --MR. VAN HOUTEN: Well, I just asked 20 21 them if they have visited that, and they said 22 "no". I have visited it. So, they're saying 23 it can be built with existing roads, I'm saying 24 it can't. And, so, we'll leave it there.

```
1
         We're just going to leave it there.
                   CHAIRMAN HONIGBERG: Yes. We're not
 2
 3
         going to -- you're not going to argue with
 4
         them.
 5
                   MR. VAN HOUTEN:
                                    No.
 6
                   CHAIRMAN HONIGBERG: So, move on.
 7
    BY MR. VAN HOUTEN:
 8
         Well, we'll see where we get with this one.
9
         Did you know that the Applicant claims that the
10
         roads would be removed after construction, and
11
         aside from the immediate area near the towers,
12
         the land would be restored to its prior state?
13
         (Zysk) That's what they have stated, yes.
14
         Okay. Can you give me a rough estimate of how
15
         much it costs to build a road like this per
16
         mile? Very rough, I mean?
17
    Α
         (Zysk) No.
18
    Q
         Okay. Do you think it would cost about the
19
         same amount to remove it and restore?
20
         (Zysk) I guess it depends on what goes into
21
         restoring it. To remove gravel that's been
22
         placed, probably not a whole lot of money,
23
         relative to the construction. What goes into
24
         the final restoration, whether there are
```

[WITNESS PANEL: Zysk|Bascom|Taylor]

- 1 plantings, whether there's --
- 2 Q Right.
- 3 A (Zysk) -- whatever, that could add up
- 4 substantially, and it depends what's required
- 5 for them to do.
- 6 Q So, if it costs \$1,000 per mile to build one of
- 7 these roads, it would be reasonable to say --
- 8 or, would you agree that it might cost \$800 a
- 9 mile to remove and restore?
- 10 A (Zysk) It could.
- 11 Q It could be 500?
- 12 A (Zysk) It could.
- 13 Q Okay. Were would the used road material go?
- 14 A (Zysk) That's up to them. Whatever their
- contractors choose to do with it.
- 16 Q Okay. Do you agree that it's possible that a
- new road of this magnitude, in a location where
- 18 there is now none, could be an attractive
- nuisance for joyriders and bring about a change
- of use of the land?
- 21 A (Zysk) I believe that's been covered in
- 22 multiple testimonies and descriptions.
- 23 Q Okay. I haven't been here, so. Is it
- customary to seek a landowner's permission

```
55
              [WITNESS PANEL: Zysk|Bascom|Taylor]
 1
         before building a road on their land?
 2
          (Zysk) If you're building on somebody's
    Α
 3
         property, yes.
         Okay. Is it my impression that staging areas
 4
    Q
 5
         will not be sited on the existing corridor, is
 6
         this correct?
 7
         (Zysk) I'm sorry, say again?
         It is my impression that staging areas will not
 8
9
         be sited on the existing corridor, is this
10
         correct?
11
          (Zysk) They have indicated what their
    Α
12
         parameters for staging area is. Previously --
13
         Right.
14
          (Zysk) -- used parcels of acceptable size and
15
         whatnot.
16
    Q
         In the area, okay. Can you tell me where the
17
         staging areas that would serve construction of
18
         this overhead portion would be?
19
          (Taylor) We can't.
    Α
20
         You can't, okay.
21
          (Taylor) No.
    Α
```

{SEC 2015-06} [Day 51/Morning Session ONLY] {10-24-17}

there will be a separate -- another staging

And the same goes for the underground portion,

area for that, and you don't know where those

22

23

[WITNESS PANEL: Zysk|Bascom|Taylor]

```
1
         would be either, do you?
         (Taylor) The Applicant hasn't indicated staging
 2
    Α
 3
         or storage areas beyond what's currently in
         their Application. And I think our testimony
 4
 5
         and report has indicated, without that
 6
         information from the Applicant, we wouldn't be
 7
         able to speak to it.
 8
         Right. Okay. Thanks. So, you sort of -- you
    Q
9
         quickly noticed on the map that there was
10
         possibly another alternate access. So, is it
11
         possible that construction engineers would seek
12
         alternate access points across private property
         between 302 and the Ammonoosuc River?
13
14
         (Zysk) Certainly possible.
15
         If alternate access roads were to be built to
16
         enable the Project, would the SEC have any
17
         jurisdiction over this?
         (Taylor) I think that's up to the SEC and what
18
    Α
19
         their final order may be.
20
         Okay. But you don't have any experience that
21
         leads you to offer an opinion on that?
22
         (No verbal response).
23
         Okay. Okay. So, new roads could bring about a
24
         change of use if alternate access routes were
```

1 established for the purposes of construction 2 from the Brook Road, the Blaney Road --3 [Court reporter interruption.] 4 MR. VAN HOUTEN: Sorry. 5 BY MR. VAN HOUTEN: 6 If alternative access routes were established 7 for the purposes of construction from the Brook Road, Blaney Road, Cherry Valley Road, or 8 9 Prospect Streets, those are all adjacent to the 10 corridor there, within a half mile in general. 11 What impacts would you predict on the residents 12 of these areas or on the roads? 13 (Taylor) Impacts from what? 14 Well, let's say that access road is build from 15 Cherry Valley, say it's two miles from Route 16 302, they find a great access point where they 17 can put a staging area, and get in, back and 18 forth. What impact would the construction 19 activity have on residents in the area? 20 (Taylor) I would say it would, based on those 21 assumptions, it would be similar to what we 22 have outlined in our report and testimony; 23 noise, dust, construction traffic, etcetera. 24 All right. Any light? Okay.

[WITNESS PANEL: Zysk|Bascom|Taylor]

- A (Taylor) It's possible.
- 2 Q Do you know if any of the proposed towers would
- 3 be illuminated?
- 4 A (Taylor) I'm not aware of any illuminated
- 5 towers.

- 6 Q Not required, okay. All references I have seen
- 7 to tower height have been qualified as
- 8 "proposed". Is there any guarantee that
- 9 further engineering won't result in increased
- 10 height of the towers that are proposed there
- 11 now?
- 12 A (Taylor) I don't know.
- 13 Q Okay. So, --
- 14 | A (Zysk) Based on the testimony I read, I believe
- they discussed potential variances of up to
- maybe five feet up or down from what's
- proposed. But I got the sense that the tower
- heights that are set are pretty much agreed
- 19 upon.
- 20 Q Okay. So, I've pointed out that we have a
- four-mile corridor here that might be accessed
- from that one point. Can you give me a rough
- estimate of how long construction between Route
- 302 and the Ammonoosuc River would take?

```
[WITNESS PANEL: Zysk|Bascom|Taylor]
```

```
1
    Α
          (Taylor) I don't know that we can go give you
 2
         that answer. That's really going to be
 3
         dependent on their contractor, their staging,
 4
         and how they choose to move along the line.
 5
    Q
         Okay. Did you review the plans for underground
 6
         construction on Route 302, between Miller Pond
         and I-93?
 7
         (Taylor) Yes. I've viewed the underground
 8
    Α
9
         plans.
10
         All right. Can you give me an idea of road and
    Q
11
         lane closure duration?
12
         (Taylor) For -- is there a specific area or a
    Α
13
         specific map that you're referring to?
14
         Between -- it's right there, between Route 302
15
         and Route 18, where it turns. Just that little
16
         stretch there, between the transition station
17
         and Route 18.
18
    Α
         (Taylor) I don't recall the plan specifically.
19
         But, generally speaking, they have maintenance
         and traffic details that allow for one lane of
20
21
         closure, which could happen in this case.
22
         would assume that it would, yes.
23
         Okay. So, probably for one construction
24
         season?
```

[WITNESS PANEL: Zysk|Bascom|Taylor]

```
1
    Α
          (Taylor) Sure. That sounds reasonable.
 2
    Q
         Okay.
 3
    Α
         (Taylor) If not less.
 4
         All right.
    Q
 5
         (Bascom) And I believe the Applicant's
 6
         information most recently indicated they may
 7
         proceed 100 feet a day. So, based upon the
 8
         length of that segment, you could determine how
         long that section would take to construct.
9
10
         Okay. Great. Thank you. Do you know that
    Q
```

- this is part of a major commercial route between Portland, Maine, and Montreal, average traffic of 6,000 vehicles a day?
- 14 A (Zysk) In general, yes.

11

12

13

18

19

20

21

22

23

- Do you have any idea of what impact a lane closure might have on the school bus schedule serving the Profile High School?
 - A (Zysk) Immediately, no. They do need to develop specific traffic plans for each region or each location. I assume that they will take school bus times into account.
 - Q Right. Is it possible that, during those times, they might be able to open it back up to two lanes?

1 A (Zysk) That would be dependent on the work

2 that's going on at that time.

Q How would partial closure of Route 302 affect access to the overhead construction zone that we've just pointed out here, from 302 to the Ammonoosuc River, that whole stretch in there?

A (Zysk) Expand upon what you mean by "affected".

Q Well, there are basically three ways to get to that spot. One is coming toward the east, on Route 302, which may be closed some time, and one is going west on 302 from town, and the other one is coming up the Brook Road from the Littleton area, which is the one that goes here?

A (Bascom) The amount of time would depend on the construction sequencing, which may or may not be happening at the same, you know, scheduled work season. So, for example, the underground segment might be constructed during one work season, and the overhead line segment might be done during another season potentially.

Q Okay. Right.

A (Bascom) So, the sequencing of the work would affect the amount of time and traffic and road

closures and so forth. 1 It sure would. But it would -- it seems like 2 Q 3 this, if that was one of the parameters, that 4 this might extend the construction time of the 5 Project. 6 If I read the Application correctly, this 7 is also the proposed location of Transition 8 Station Number 5. Would staging and laydown 9 areas also be required for the construction of 10 this transition station? 11 (Zysk) They will clear an area for the Α 12 transition station. I assume that they will 13 work within that cleared area. 14 Okay. 15 (Zysk) I don't believe they have identified 16 additional laydown area above and beyond what 17 they've indicated as the footprint of the transition station. 18 19 Thanks. And do you have any idea how long it Q 20 should take to build this transition station? 21 (Zysk) I do not. 22 And I assume that there would also be traffic 23 going back and forth to this location to enable 24 construction of the station?

```
1
    Α
         (Zysk) Yes.
 2
         So, that traffic also is put on top of the two
    Q
 3
         other traffic problems we already are looking
         at. Am I right?
 4
 5
         (Zysk) Yes.
 6
         Do you know that the lot that abuts the
    Q
 7
         proposed transition station is the site of a
 8
         proposed Hilton Hotel?
         (Zysk) I was not aware of that, no.
9
10
         Do you know that the developer of this hotel
    Q
11
         was horrified when he heard of the proposed
12
         Northern Pass going right next to his lot, and
13
         that he is trying to work out an alternative to
14
         having the transition station being located
15
         right there? Did you know that there has been
16
         public discussion of relocating that transition
17
         station?
18
                   MR. NEEDLEMAN: Objection. Misstates
19
         the record.
20
                   CHAIRMAN HONIGBERG: You want to
21
         object to the first question or the second
22
         question? Or both?
23
                   MR. NEEDLEMAN: Well, the first, to
24
         start.
```

1 CHAIRMAN HONIGBERG: Yes. The first 2 is a real problem.

3 MR. VAN HOUTEN: The first question being?

CHAIRMAN HONIGBERG: Something about what somebody said. The second one, the last question you asked was "are you aware of discussion about that?"

MR. VAN HOUTEN: Yes.

CHAIRMAN HONIGBERG: That question you can ask. The second question you asked in your last statement.

MR. VAN HOUTEN: Okay. All right.

BY MR. VAN HOUTEN:

5

6

7

8

9

10

11

12

14

15

16

- Q Are you aware that there is discussion of relocating the Transition Station Number 5?
- 17 A (Zysk) We've heard nothing regarding that.
- 18 Q Is it reasonable to expect that the Site
 19 Evaluation Committee and the public would have
 20 an opportunity for review of any such plans?
- 21 A (Zysk) I would expect they would, yes. You're 22 talking plans to relocate the transition --
- 23 Q Yes.
- 24 A (Zysk) Yes.

```
1
    Q
         Do you mean to say that any such plans should
 2
         be submitted before any decision is made by the
 3
         Site Evaluation Committee about this?
 4
    Α
         (Bascom) I think the procedures of the Site
 5
         Evaluation Committee would apply. And I would
 6
         say we're probably not privy to the details of
 7
         those rules and requirements.
                Thank you. Is it fair to say that the
 8
    Q
         Okay.
         combination of four large construction
9
10
         projects, the perfect storm, might put an
11
         unreasonable burden on the New Hampshire
12
         citizens and visitors who live and use -- that
13
         live in and use this area?
14
         (Zysk) If everything were to occur all at the
15
         same time, that's quite possible.
16
                   MR. VAN HOUTEN: Thank you. I have
17
         no further questions.
18
                   CHAIRMAN HONIGBERG: All right.
19
         We're going to take a ten-minute break. Off
20
         the record.
21
                         (Recess taken at 10:22 a.m. and
22
                         hearing resumed at 10:36 a.m.)
23
                   CHAIRMAN HONIGBERG: All right.
                                                     Ms.
24
         Menard, are you ready to go?
```

[WITNESS PANEL: Zysk|Bascom|Taylor]

1 MS. MENARD: Yes. Thank you. Good 2 morning. 3 WITNESS BASCOM: Good morning. 4 MS. MENARD: Good morning, gentlemen. 5 My name is Jeanne Menard, and I'm from the 6 Deerfield Abutters. And I have some 7 construction questions for you. And I have one follow-up question about noise from another 8 9 member of our group, Jo Anne Bradbury. And 10 then Bob has some construction sequencing 11 questions. 12 BY MS. MENARD: 13 Even though the Applicant indicates that the 14 Project can be designed in a 100-foot 15 right-of-way, it's unclear how it will be 16 constructed in a 100-foot right-of-way that has 17 a 15-foot tree buffer. So, I'd like to introduce exhibit labeled Deerfield Abutter 18 19 152, has information regarding right-of-way 20 width needed for Northern Pass Transmission. And this is a data request that came from the 21

MS. MENARD: What is your question? Oh, thank you.

{SEC 2015-06} [Day 51/Morning Session ONLY] {10-24-17}

PUC Staff in --

22

23

BY MS. MENARD:

Q So, this is a data request that came from the PUC Staff in Docket Number DE 15-464, and that has to do with the NPT lease. And it was responded to by Eversource engineer Robert Andrew.

Would you agree that the question asked what is the minimum right-of-way width that would be needed to accommodate a 115 kV line, that's the G146 line, and Northern Pass Transmission? Would you agree that that's the question, the nature of this inquiry?

- A (Zysk) That's what it appears to be, yes.
- Q And it's because the answer states "the necessary right-of-way widths are 150 feet or 200 feet", I'd like to ask you some clarifying questions. And I'll represent to you that, in the western part of Deerfield, the right-of-way is 150 feet, and that, once you hit Deerfield Center area and then move to the east towards the substation, the right-of-way is 200 feet, and it's comprised of two 100-foot easements.

So, I understand from earlier testimony that the National Electric Safety Codes deals

```
1
         with the industry clearances of electrical
         conductors. Is there a standard that deals
 2
 3
         with industry setbacks for structures from the
 4
         edge of a right-of-way?
 5
         (Bascom) My area of expertise is underground
 6
         cables, but I'm not aware of one specifically
 7
         related to clearances for overhead lines in the
         right-of-way width.
 8
         So, all the standards are regulating what
 9
10
         happens with the wires, wires to wires or wires
11
         to edge of right-of-way?
12
         (Bascom) Generally speaking, wires, in terms of
13
         clearance to the ground and adjacent wires, as
14
         well as approach distances for trained and
15
         untrained workers in the vicinity of those
16
         lines.
17
         Do those standards have a name?
18
         (Bascom) Again, it's not my area of expertise.
19
         So, I can't speak to overhead line design.
20
         Okay. Anyone on the panel?
21
         (Taylor) No.
22
         Okay. So, I'd like to take a look at
23
         Applicant's Exhibit 68117, and this is Sheet
```

{SEC 2015-06} [Day 51/Morning Session ONLY] {10-24-17}

179, from my sister-in-law's property, 65

```
1
         Nottingham Road. So, if you look at the two
 2
         structures, and maybe Bob would be willing to
 3
         point to Structure 3132-304. This is a
         135-foot lattice tower. And also Pole Number
 4
 5
         3132, which is 305, that's a 120-foot lattice
 6
         structure. Do you have an opinion as to what a
 7
         typical setback for a 345 kV structure, like
         the Northern Pass towers, would be from the
 8
9
         edge of the right-of-way? What do you
10
         typically see in design plans?
         (Zysk) I'm not intimately familiar with setback
11
    Α
12
         requirements for this sort of thing. I know
13
         they typically try to center a single line in
14
         the right-of-way. But they -- I'm sure they
15
         have set these according to the required
16
         separation distances. And different voltages
17
         have different setback -- or, different
18
         separation distances requirements.
19
         So, just to clarify, your earlier statement was
20
         that "typically, lines are put in the middle of
21
         the right-of-way", as evidenced by the first
22
         easement has the existing kV line is sitting
23
         right in the middle of the 100-foot
24
         right-of-way. And then the second 100-foot
```

```
1
         right-of-way similarly has the structures
 2
         sitting in the middle of the right-of-way,
 3
         correct?
 4
         (Zysk) Yes.
    Α
 5
         Thank you. Mr. Johnson testified on June 1st
 6
         of this year, on Page 62, Line 11, that the
 7
         bases are -- the bases of the towers are 30
         feet from post to post. Do you have an
 8
9
         opinion, in terms of does that, the size of the
10
         tower base, does that sound right to you, in
11
         terms of 30 by 30? Is that something typical
12
         that you would see for these types of
13
         structures?
14
         (Zysk) It's reasonable, yes.
15
         Okay. Thank you. So, I'd like to take a look
16
         at Applicant's Exhibit 67708. And this is from
17
         the Alteration of Terrain plans from the DES.
18
         This is Sheet Number 340. Can you confirm for
19
         me whether or not the crane pads for poles
20
         3132-304 and 305 are located in the 15-foot
21
         tree buffer zone? Which is -- the tree buffer
22
         zone is on the south side of the right-of-way.
23
         And I may not have made that clear for you when
24
         I'm referring to the 15-foot tree buffer.
                                                     Dο
```

1 you need clarification as to where that is 2 located? 3 Α (Taylor) Yes, please. These maps are oriented correctly north to 4 Q 5 south. And, on the southern edge of my family's property, from the pond that you can 6 7 see in this exhibit, to the -- heading east, there's a 15-foot vegetative buffer. 8 9 So, does -- my question to you 10 specifically is, does it appear to you that the 11 crane pads are sited right on the edge of the 12 right-of-way? 13 (Taylor) Yes. 14 Thank you. So, even though the maps are the 15 most current SEC submission, the plans would 16 require clearing the buffer in order to 17 construct as designed. Would you agree with 18 that? 19 (Taylor) That's correct. Α 20 Near pole 304, and this is the pole that is 21 right on the -- right nearest the pond, there's 22 a knob of ledge. So, if this is true, and 23 Northern Pass had to blast to construct the 24 crane pad or in any way construct the tower,

```
1
         what would blasting do to a mature tree buffer?
 2
    Α
         (Taylor) Well, if you were blasting and
 3
         disturbing where the trees sit, the root zone,
         they wouldn't survive.
 4
 5
    Q
         Are blasting protocols near ponds clearly
 6
         identified in the Application?
 7
         (Taylor) I'm not aware of any location where
    Α
 8
         blasting is called out on the plans.
9
         I'm sorry, I didn't understand the last part?
10
         (Taylor) I'm not aware of any location on the
    Α
11
         plans where blasting is specifically called
12
         out.
13
         Okay.
14
         (Zysk) Other than a couple of the transition
15
         stations.
16
    Q
         What would happen if, in order to dig -- in
17
         order to construct this tower, and we actually
18
         have the elevation plan, if that would help
19
         better. Why don't we put that up. I don't
20
         know if that will provide enough information
21
         for you. The very last page, Bob, of that
22
         whole set.
23
              So, the question is, in order -- you can
24
         see that there's some elevation, and so they're
```

```
1
         dealing with elevation, as well as ledge.
                                                     And,
 2
         in order to set the poles for this tower, if
 3
         they did have to blast, where -- obvious -- you
 4
         say that the plans don't call for it. So, that
 5
         would not be a surprise to a landowner that, if
 6
         there is blasting on this Project, it's been
 7
         identified, and I don't have to worry about
         blasting, if it's not called out, as you say?
 8
         (Taylor) I wouldn't characterize my statement
9
    Α
10
         that way. I indicated I'm not aware on the
11
         plans specifically where blasting is called out
12
         relative to the overhead transmission line, to
13
         clarify. But I believe the Applicant has
14
         testified previously that they would, as they
15
         identify where blasting is needed, they would
16
         prepare, essentially, a blasting plan and
17
         review pre and post conditions as appropriate.
18
    Q
         And when would those plans generally be
19
         created? Would they be in existence now or is
20
         each project different, so they may not be
21
         created right now?
22
         (Taylor) I would say each project can be
23
         different. And I'm not aware that they have
24
         been prepared, the blasting plan, at this time.
```

```
1
    Q
         Okay.
                Thank you. I'd like to look at Sheet
 2
         179, this is Applicants 68116. And this came
 3
         from the supplemental map set from August. And
         the highlighted yellow line is something that I
 4
 5
         estimated and put in, just to represent the
 6
         middle of the right-of-way. So, it's intended
 7
         on being, if you can visualize and imagine,
         that it's the 100-foot easement boundary
 8
9
         between the two rights-of-way. And, from the
10
         detail that is in the bottom of the -- below
11
         the towers, you can see that the relocated 115
         kV line is going to be placed at 78 feet 6
12
13
         inches from the edge of the right-of-way.
14
         Would you agree with that, if you just add up
15
         to two numbers down at the bottom?
16
    Α
         (Taylor) I'll accept that.
17
         Okay. And, if the conductor arm reaches out 10
18
         feet, then that puts the conductor at 11 feet 6
19
         inches from the edge of the 100-foot easement.
20
         Does that sound about right?
         (Taylor) I'll accept that.
21
22
         So, my question is, clearly, that conductor has
23
         plenty of room between that, the relocated pole
24
         and the existing pole that is sitting to the
```

```
1
         right in the northern easement, correct?
         there's no conductor concerns here at all.
 2
 3
         Would you agree with that?
         (Taylor) That's correct.
 4
    Α
 5
    Q
         So, specifically, what I was hoping you could
 6
         answer is, is 11-foot 6 sufficient clearance so
 7
         that it's not going to impede across or in any
         way cross that imaginary 100-foot line?
 8
9
                   MR. NEEDLEMAN: Objection, Mr. Chair.
10
         There's nothing new or different here. Nothing
11
         has changed. This is just adding to existing
12
         testimony.
                   CHAIRMAN HONIGBERG: Ms. Menard.
13
14
                   MS. MENARD: May I ask Mr. Needleman
15
         to repeat the reason for his objection?
16
                   CHAIRMAN HONIGBERG: Sure. He'd be
17
         happy to.
18
                   MS. MENARD: My hearing is not the
19
         best.
                So, I would appreciate you repeating.
20
                   MR. NEEDLEMAN: Sorry. I was saying
21
         that there is nothing new or different here.
22
         All of this information was available to the
23
         witnesses at the time that they prepared all
24
         their testimony. And, if they wanted to speak
```

to this, they could have and should have.

MS. MENARD: I'm not sure that the witnesses would have knowledge of specific landowner concerns. And clearances, one of the big pending issues here is "does Northern Pass Transmission fit into this right-of-way?" And it seems to me that that's a very -- it might be, it may not be, but it might be a pretty basic question that they could answer, and I can let this question go.

I'm not sure, though, that the first part of what you said helps you. But can you restate the question for me please? I'm not asking you to rephrase it. I just have lost what the specific question was, because I'm not sure that the argument you made fit the question.

MS. MENARD: Okay. My specific question is, whether 11 feet 6 inches is a standard clearance for a 115 kV line to not be encroaching, if you will, or crossing a boundary? And we don't have a bridge or a row of trees or anything outside the specific boundary, but we do have a deed boundary. We

```
1
         have a boundary that --
 2
                   CHAIRMAN HONIGBERG: I just want the
 3
         question.
                   MS. MENARD: So, is 11 feet --
 4
 5
                   CHAIRMAN HONIGBERG: I just want the
 6
         question.
 7
                   MS. MENARD: Thank you. Is 11 feet 6
         inches sufficient clearance for this conductor
 8
         to fit in the 100-foot easement?
9
10
                   CHAIRMAN HONIGBERG: Overruled. You
11
         can answer.
12
    BY THE WITNESS:
13
         (Taylor) I don't know, is the short answer.
14
         did not review the electrical overhead design
15
         specifically as a part of our Construction
16
         panel review.
17
    BY MS. MENARD:
18
    Q
         Okay. Thank you. I didn't realize that. So,
19
         Mr. Quinlan referred to this line, the Northern
20
         Pass Transmission, and he was using this as a
21
         characterization more for a visual, not in any
22
         way technical. So, before there's any
23
         objections, I just wanted to put that out
24
         there.
```

```
1
              But it's a nice way to think about this
 2
         question that I'm about to ask you. Could
 3
         these towers be reconfigured, and this is a
 4
         follow-up actually to Mr. Van Houten's
 5
         question, could these towers be reconfigured,
 6
         once they are constructed, to add more
 7
         conductors? So, if you look at this schematic,
         is there anything apparent that would cause one
 8
 9
         to think that, you know, another line could
10
         come in in five years or ten years or whenever,
11
         on this structure?
12
         (Bascom) Generally speaking, the electrical
13
         design in the permitted space would be
14
         something that would have to be evaluated as a
15
         separate process. So, based upon the layout
16
         that's been offered as a conceptual
17
         configuration would require further evaluation.
18
         And I don't think that we can speak to
19
         specifically modifications that might -- might
20
         or might not be offered in the future.
21
         Do you see -- I mean, is one of the features of
22
         this style of structure is it that it can be
23
         modified easily, without having to do a
24
         complete line rebuild?
```

[WITNESS PANEL: Zysk|Bascom|Taylor] 1 Α (Bascom) As I mentioned, you know, my 2 background specifically is not related to 3 overhead line design. But I don't know that we 4 can speak to how this proposed conceptual 5 layout could or could not be modified. So, I think the answer is, we just don't know. 6 7 Okay. Thank you. Are the 345 kV towers, are 8 they taller than they need to be as far as horizontal clearances? 9 10 (Taylor) Again, I would state that we don't Α 11 know, because we have not reviewed the 12 electrical design specifically about the 13 overhead, which is where I think that answer 14 would reside. 15 Okay. Thank you. So, that's all the questions 16 that I have. But I do have a question about 17 noise. And just to take a look at Applicants 18 68113. This is a section of Deerfield in the 19 center that a lot of us are familiar with. 20 And, with respect to construction noise, do you 21 agree that construction noise may be 22 problematic for residents of Sherburne Woods, 23 in Deerfield? And this is a senior housing

{SEC 2015-06} [Day 51/Morning Session ONLY] {10-24-17}

community, where the proposed 345 kV line will

24

```
1
         be extremely close to the housing development.
 2
                   MR. NEEDLEMAN: Objection, Mr. Chair.
 3
         Exactly the sort of testimony that was already
         addressed on this issue and could have and
 4
 5
         should have been addressed.
 6
                   CHAIRMAN HONIGBERG: Ms. Menard.
 7
    BY MS. MENARD:
         What about fumes and smells from diesel-powered
 8
9
         equipment near the homes for twelve hours a
10
         day, six days a week, do you see that as being
11
         an issue?
12
                   MR. NEEDLEMAN: Same objection.
                   CHAIRMAN HONIGBERG: Ms. Menard.
13
14
                   MS. MENARD: Well, if it has been
15
         addressed in their previous testimony, I think
16
         that --
17
                   CHAIRMAN HONIGBERG: Well, it may not
18
         have been. The objection is that, if this was
         an opinion that these witnesses had, Counsel
19
20
         for the Public was free to have them offer it,
         and, for whatever reason, chose not to.
21
22
                   MS. MENARD: Their opinion was
23
         offered yesterday, and that's actually what
24
         prompted the question. So, --
```

```
1
                   CHAIRMAN HONIGBERG: Do you have a
 2
         question that's following up or seeking to
 3
         clarify something that they said yesterday?
                   MS. MENARD: No. Just in terms of
 4
 5
         the level of activity and the density of
 6
         housing in this area, would they have an
 7
         opinion as to whether that is -- would noise
         and fumes would be a concern to that
 8
9
         development? That was the question. So,
10
         that's --
11
                   CHAIRMAN HONIGBERG: I didn't quite
12
         hear the question that way. But it sounds like
13
         what you're doing is following up on questions
14
         I think Ms. Pacik asked, about what would
15
         happen in Concord, is that --
16
                   MS. MENARD: Correct. That is
17
         correct.
18
                   CHAIRMAN HONIGBERG: All right.
                                                     You
19
         can ask that.
20
    BY MS. MENARD:
21
         Do you have an opinion, gentlemen, regarding
22
         noise?
23
         (Zysk) There will certainly be -- to clarify it
24
         as a concern, again, as I discussed yesterday,
```

```
1
         it's relative. But, given the proximity of
 2
         those residences to the proposed work, I'm sure
 3
         they will experience increased noise levels,
 4
         potentially some dust. Diesel fumes, maybe,
 5
         depending on which way the wind's blowing.
 6
                   MS. MENARD: Thank you. That's all I
 7
         have.
                   CHAIRMAN HONIGBERG: I understand,
 8
9
         Mr. Cote, you have a few additional questions?
10
                   MR. COTE: Yes. And I'll work from
11
         back there.
12
                   CHAIRMAN HONIGBERG: Wherever you
13
         want.
14
                   MR. COTE: Good morning. Bob Cote,
15
         with the Deerfield Abutters. And I have -- my
16
         questions are follow-ups to testimony from
17
         Mr. Bowes.
18
    BY MR. COTE:
19
         But, just to give you a little bit of
20
         background, it's going to be relating to
21
         construction in wetland areas. And, in
22
         particular, I'm using this one in Deerfield,
23
         and I know there are several others. So, the
24
         questions, I think, are -- apply along the
```

1 whole route of the Project. It's just that I'm 2 a little more familiar with this area than 3 others. 4 So, this is the transcript of Day 12, and 5 it was Mr. Bowes. And the topic was 6 construction sequencing in a wetland area. So, 7 for this project, there's multiple stages of activity that need to occur. The existing 115 8 kV line needs to be -- the new line needs to be 9 10 built, then the existing line needs to be 11 deconstructed, and then the new 345 kV line 12 installed. So, the discussion with Mr. Bowes 13 was over what kind of a time frame that work 14 would take place. So, you see the highlight 15 here is the question. And the response was 16 "two construction seasons possibly".

So, what I'm asking you is, in your experience in a wetland area, is that about what you would expect?

A (Zysk) And a little more specific, as far as duration of construction or --

17

18

19

20

21

22

23

24

Q Well, I guess the question is really, how long of a time period do you think would be expected for construction activity to be taking place in

[WITNESS PANEL: Zysk|Bascom|Taylor]

an area like this? So, the concern is the disturbance to the wetlands. And it seems like it would make a difference whether the work were all completed in 30 to 60 days, or whether that wetland is going to be disturbed for, or any wetland, is going to be disturbed for maybe a two-year time frame, if it starts at the beginning of one construction season and then ends at the end of the next.

So, can you visualize the multiple activities that are taking place and, you know, based on your experience, offer an opinion of how long it would take to do that work?

- A (Zysk) The testimony that was issued, "between 30 and 60 day time frame", is not unreasonable to construct a foundation and a tower in a wetland like this.
- Q But the point was, over the whole transition of the Project, from building the new 115 kV line, deconstructing the existing one [115?] kV line, and then restructuring the 345, the new

 Northern Pass line, that whole entire sequence of activities you think would take place in 30 to 60 days?

```
1
                   MR. NEEDLEMAN: Objection. It's not
 2
         clear to me that the testimony represented all
 3
         of that. It may have. I just don't think that
         it's clear.
 4
 5
                   CHAIRMAN HONIGBERG: Mr. Cote.
                   MR. COTE: I do believe that the
 6
 7
         testimony did say that. We can bring it back
 8
         up.
9
                   You can see here in the middle,
10
         first, they do say "30 to 60 days total
11
         construction time". But, then, on the next
12
         page, they do say that the actual time frame
         "could be up to two construction seasons".
13
14
                   CHAIRMAN HONIGBERG: Mr. Needleman.
                   MR. NEEDLEMAN: Well, I think that
15
16
         was my point. It wasn't limited to "30 to 60
17
         days".
18
                   CHAIRMAN HONIGBERG: Mr. Cote, you
19
         want to try and rephrase the question.
20
    BY MR. COTE:
21
         Well, do you agree that two construction
22
         seasons is a possibility for the activity at a
23
         wetland like this?
24
         (Zysk) It's certainly possible. Based on how
```

```
1
         they -- how they stage the work. The "30 to 60
 2
         days" is total impact, work days at a specific
 3
         site. But, as explained in the testimony, it
 4
         won't be all at one time. They will be working
 5
         in several phases through the area, being to --
 6
         to build things, to demo, certain other items,
 7
         and then to bring the lines in.
         There was an additional discussion during that
 8
    Q
         testimony about summer versus winter work in a
9
10
         wetland. Do you -- and I'm not sure that we
11
         received a definitive answer as to when the
12
         work would actually take place. Do you have an
13
         opinion on what would be the preferred time
14
         frame for the work to take place in a wetland?
15
    Α
         (Zysk) There are several factors that go into
16
         that. One would be the size of the wetland.
17
         The concept of working on them during the
18
         winter, when they're frozen solid, to decrease
19
         the impact to the wetland is certainly --
20
         certainly seems to be a good idea, if allowed.
21
         A larger wetland may not completely freeze to
22
         the point where it can sustain -- or, to
23
         accommodate the large vehicles that may be
24
         required. So, they may be forced to work in a
```

1 different season.

Q The part of the testimony, part of that discussion with Mr. Bowes, dealt with the question of a beaver lodge, which you can see right about in the center of this image, which is pretty close to one of the proposed locations for the relocated 115 kV line. It would be right in the construction pad.

From your experience with construction activities, when would a decision be made about how to deal with a feature like that, relative to the construction work?

I can show you a different exhibit that relates to that. And this is from the transcript of Day 12 with Mr. Bowes. And you can see in the center, the question was "when would a decision be made about reconfiguring the work in that area?" And the response was "Probably right during the construction phase."

Would you say that's an appropriate time frame to decide when to manage the beaver population in that area?

A (Zysk) Sometimes that depends on I would call "local knowledge". If a beaver habitat is

constructed during the year, and then is

destroyed during the winter, either by storms

or other methods, that would probably be a

construction thing. If it's something that's

been there long term, it probably should be

6 addressed during the design phase, if it's

7 going to be an impact to the design.

Α

And, in your experience, I mean, I assume that environmental consultants would be involved, but who would make the final decision? I mean, with consideration of constructability and practicality, would the -- do the environmental consultants have the final say or is it the contractor who has the final say about how this, a situation like this, would be managed?

this, a situation like this, would be managed?

(Zysk) If it falls within -- in my experience,

if it falls within a right-of-way of a public

road, typically, the DOT and the environmental

staff within the DOT would have that decision.

If it's outside of a public road right-of-way,

then, typically, maybe your DES, your

environmental people for the state would have

that determination.

Q This is my last question. In your experience,

```
1
         what measures would be typically applied to
 2
         minimize wetland impacts due to the multiple
 3
         stages of construction in areas like this?
 4
         specifically, for example, if there were
 5
         matting, temporary matting put down, would you
 6
         expect that, if there's going to be a six-month
 7
         lapse in construction between one phase and the
         next of the Project, that that matting would be
 8
 9
         removed between phases of construction?
10
         (Zysk) That's driven by the permit
11
         requirements, but -- and also potentially the
12
         size, and maybe -- I know wetland are sometimes
13
         classified by quality of wetland, depending on
14
         that. But, if it was going to be a long-term
15
         duration where there was going to be no
16
         activity through there, I would expect the mats
17
         would be removed.
18
    Q
         Have you encountered a project like -- with a
19
         scenario like this before, where there's
20
         repeated work or repeated multiple stages in a
21
         wetland and that you can like direct these?
22
         there a standard protocol?
23
         (Zysk) Not that I'm aware of.
    Α
24
                               Okay.
                   MR. COTE:
                                      Thank you.
                                                  I have
```

```
1
         no further questions.
                   CHAIRMAN HONIGBERG: I don't see
 2
 3
         Ms. Schibanoff here, although I'm told that Ms.
         Pastoriza is in a position to ask
 4
 5
         Ms. Schibanoff's questions for her. Is there
 6
         any objection to that?
 7
                   I see some shaking heads. That's
         always encouraging.
 8
                   MR. COTE: Dawn, okay, thank you.
9
                                                       Wе
10
         want to keep Apple TV on. Thank you.
11
                   MS. PASTORIZA: So, I'm asking -- is
12
         that on?
13
                   CHAIRMAN HONIGBERG: Barely.
14
                   MS. PASTORIZA: I'm asking questions
15
         for Susan Schibanoff, who's in the Non-Abutters
16
         Group for the Central portion.
17
    BY MS. PASTORIZA:
         This is NAPO-BP Number 58. This is the Gale
18
    Q
19
         River Motel, on Route 18, in Franconia. If you
20
         assume that the distance between the maple tree
21
         on the right and maple tree on the left, and
22
         the sign on the right is 35 feet, that the
23
         maple tree is 7 feet off the pavement, and the
24
         entry hatch to the septic system is 9 feet off
```

```
1
         the pavement, how would trenching be done
         through this section?
 2
 3
    Α
         (Taylor) So, one thing that comes to mind is,
         one, making sure that the septic is located and
 4
 5
         shown on the plans, and that can be done
 6
         through a form of designating, locate it in the
 7
         field, field survey it. That jumps out. I'm
 8
         trying to get my orientation. So, the previous
         picture, we would be looking to the left, is
9
10
         that correct, on this image?
11
    0
         Yup.
12
         (Taylor) Okay. So, your question was "how
         would this be constructed, the open trench?"
13
         Within the limitations of that 35 feet.
14
15
    Α
         (Taylor) Sure. Well, as it's currently laid
16
         out, and the Applicants indicated they can and
17
         will use any space within the right-of-way, I
18
         would presume that, relative to the maple tree,
19
         they would construct right along and past it,
20
         and to the extent that there was roots in
21
         there, that would be impacted.
22
              Relative to the septic, you've indicated
23
         it's about 9 feet away for the hatch. I'm not
24
         clear as whether that would be the septic field
```

[WITNESS PANEL: Zysk|Bascom|Taylor]

```
1
         itself up that close, or just the septic hatch
 2
         and box.
                   So, it's possible that there could be
 3
         room and separation between the existing septic
 4
         and the trench.
 5
              But I would go back to my original
 6
         statement of, if it's that close, probably it's
 7
         warranted to more field investigation.
         So, would the tree need to be removed?
 8
9
         (Taylor) Hard to say, given that size tree.
10
         I've seen trees that are very close to open
11
         trench, and they do just fine. And I've seen
12
         other trees that are further away than that.
                                                        Ι
13
         think it has to do, based on my experience,
14
         with where the structural root zones of the
15
         tree are, and then how much of the critical
16
         root zone would be impacted as the trenching
17
         operation goes by.
18
    Q
         And, if you assume the 35 feet or maybe even a
19
         two rod width here, in regards to trench
20
         placement, could a 15-foot area over the trench
         be kept clear of growth, as the Applicant has
21
22
         stated is necessary, without trespassing on
23
         private property with that clearing?
24
         (Taylor) I'm not sure I fully understand the
```

1 question with your assumptions. 2 Q The Applicant has stated that 15 feet over the 3 trench needs to be kept clear of growth, because that -- the roots could work their way 4 5 down and interfere with the integrity of the 6 cables. 7 So, the question is, given where the trench would be, in the two-rod right-of-way, 8 9 could you keep 15 feet over it clear without 10 going outside the right-of-way? 11 (Taylor) Based on the alignment that I see Α 12 here, I would say it's certainly possible. 13 And can you explain why the granite monument in 14 this diagram was not held? 15 Α (Taylor) I couldn't speak to that. 16 Q And might an HDD be used in this area? 17 Α (Taylor) One isn't shown, but certainly an 18 option. So, this is a letter from the owner of the Gale 19 20 River Motel, to Northern Pass, after a site 21 visit. If you accept that Northern Pass did 22 not know of the existence of the septic tank at 23 this location until the property owner reached

out to Northern Pass last week, would it have

24

94

```
1
         been a good idea for Northern Pass to contact
 2
         all property owners to find out about the
 3
         existence of such underground obstructions,
 4
         such as Mr. Johnson's septic system, before
 5
         they planned the underground route?
 6
         (Taylor) That seems like a reasonable --
 7
         reasonable approach.
 8
                   MS. PASTORIZA: That's all.
                                                 Thank
9
         you.
10
                   CHAIRMAN HONIGBERG: Ms. Crane.
11
                   MS. CRANE: Okay. Am I on? In every
12
         way, okay. Well, no, maybe not. I am
13
         Charlotte Crane. I am a member of the Ashland
14
         to Deerfield Non-Abutters. And I have a few
15
         specific questions for you.
16
    BY MS. CRANE:
17
         And I guess I'll start with, do any of you
18
         recall any mention of the particular problems
19
         that might be presented when trenching or
20
         transition stations or towers are proximate to
21
         active railroad tracks?
22
         (Taylor) Are you referring to just general
23
         testimony by the Applicant?
24
         Anything that you -- anything that was brought
```

```
[WITNESS PANEL: Zysk|Bascom|Taylor]
 1
         to your attention in the course of your
 2
         preparation, for your reports or for your
 3
         testimony today?
 4
    Α
         (Taylor) Sure. So, relative to our report, we
 5
         did observe railroads in proximity to some of
 6
         the -- certainly, the underground location.
 7
         Okay. So, the map that I believe we are all
    0
 8
         looking at, which is Page 1 of what will be
         marked as "Ashland to Deerfield Non-Abutters
9
         58" [AD-N-ABTR 58], I believe, are you familiar
10
11
         with this stretch of Route 3? It is where the
12
         underground portion ends and Transition Station
         6 will be located?
13
14
         (Taylor) Yes.
15
    Α
         (Zysk) Yes.
16
         Okay. And this is that same view, or roughly
17
         the same view, from Google Earth, the aerial
18
         photograph. And do you see where on this,
19
         which is Page 2 of what will be Exhibit 58,
20
         where John Jenness Road crosses the Daniel
21
         Webster Highway, otherwise known as "Route 3"?
22
         (Taylor) Yes.
    Α
23
         And are you familiar with where the Transition
```

{SEC 2015-06} [Day 51/Morning Session ONLY] {10-24-17}

Station Number 6 is going to be located?

24

[WITNESS PANEL: Zysk|Bascom|Taylor]

```
1
    Α
          (Taylor) Yes.
 2
    Q
         And roughly where on this map or on this
 3
         picture?
         (Taylor) If I have my orientation correct, it
 4
    Α
 5
         would be south of the intersection of John
 6
         Jenness Road and Route 3, in the area, I
 7
         believe it's somewhat of an open area within
         that wedge, leading up to where the grove of
 8
9
         trees are located.
10
         Okay. And does the yellow marked on this Page
11
         3 suggest that same area? This is from the
12
         Bridgewater town tax maps.
13
         (Zysk) Appears to be the same general area,
14
         yes.
15
         It appears to be the same general area.
                                                   And
16
         can you tell me what the relationship between
17
         the property highlighted as "Tax Lot 19" on
18
         this particular map is, to what is marked, at
19
         least as we can see it, "Boston Maine" on this?
20
         (Taylor) Sure. The area labeled as "Boston
21
         Maine", which is immediately adjacent to the
22
         highlighted yellow area, is where there are
         railroad tracks, if I recall correctly.
23
```

{SEC 2015-06} [Day 51/Morning Session ONLY] {10-24-17}

Okay. And is it customary to notify adjacent

24

[WITNESS PANEL: Zysk|Bascom|Taylor]

```
1
         property owners, when doing things like
 2
         building transition stations, in your
 3
         experience? Whether they're railroads, whether
         they're anything, is it customary? Is it
 4
 5
         required to --
 6
         (Zysk) It's customary to notify the abutters,
 7
         yes.
 8
         Okay. And are you aware, with respect to this
    Q
9
         particular Project, whether it would be
10
         required?
11
         (Zysk) I'm not aware of any requirement of
12
         that.
13
         Okay. Are you aware of who now owns the
14
         property identified on this tax map as the
         "Boston & Maine Railroad"?
15
16
    Α
         (Zysk) Who owns the railroad property?
17
         Uh-huh.
    Q
         (Zysk) No, we're not.
18
19
         Okay. And this is an excerpt from the "New
    Q
20
         Hampshire State Rail Plan" that was prepared in
21
                It is Page 33. It is describing the
         2001.
22
         Concord-to-Lincoln line. Will you accept that
23
         this document is what I purport it to be?
24
         (Taylor) I'll accept that.
```

```
1
    Q
         And, if you could begin reading -- well, I'll
         read for you, because it's kind of -- but let
 2
 3
         me know if I'm reading to fast or you
 4
         disagree -- what I'm saying disagrees with what
 5
         you can read.
 6
               "The Concord-Lincoln line, which runs the
 7
         73 miles" --
                    CHAIRMAN HONIGBERG: Slow down a
 8
9
         little.
10
                   MS. CRANE:
                                Thank you.
11
    BY MS. CRANE:
12
         -- "between Concord and Lincoln is owned by the
13
         State of New Hampshire. Two tourist services
14
         and one freight railroad operate over this
15
         line.
                The tourist services, both operated by
16
         Plymouth & Lincoln Railroad, are the Hobo
17
         Railroad operating out of Lincoln and the
18
         Winnipesaukee Scenic Railroad operating out of
19
         Meredith."
20
              Is that consistent with what the text
21
         seems to say here?
22
         (Taylor) It is.
23
         Thank you. And this is -- unfortunately, I
24
         don't have all of the identification for this,
```

```
1
         but it purports to be "Northern Pass
 2
         Transmission Development Site Abutters
 3
         Notification List". And can you find the cells
 4
         that relate to Transition Station 6, which is
 5
         labeled "TS6" here?
 6
         (Zysk) Yes.
    Α
 7
         And can you find the third row there?
         (Zysk) Yes.
 8
    Α
         And what does it say?
9
10
         (Zysk) Let's see. "5804.02", "Boscawen & Maine
11
         Railroad", "Off Route 3", in "Bridgewater",
12
         "Map 202, "Block 11", mailing address "High
13
         Street - Iron Horse Park, North Billerica,
14
         Mass", zip code "01862".
15
         And, if you were advising a construction
16
         project, and these two documents had come to
17
         your attention, would you urge the contractor
18
         you were advising to proceed or not, based --
19
                   MR. NEEDLEMAN: Objection. I didn't
20
         know you weren't finished.
21
                   CHAIRMAN HONIGBERG: Yes. It sounded
22
         like you had more to say. Finish the question.
23
    BY MS. CRANE:
24
         -- based on the information contained in these
```

```
1
         last two documents?
                   CHAIRMAN HONIGBERG:
 2
                                        Now,
 3
         Mr. Needleman.
 4
                   MR. NEEDLEMAN: Now I'm objecting.
 5
         Everything up to this point has just been
         recitation of facts. She's now asking for an
 6
 7
         opinion that could have and should have been
         given, since there's no new information here.
 8
                   CHAIRMAN HONIGBERG: Ms. Crane.
 9
10
                   MS. CRANE: If the Committee isn't
         interested in new information that relates to
11
12
         the State not having been notified, my next
13
         question was, given this chart, would it
14
         surprise you that the person that I talked to
15
         at the Department of Transportation Rails
16
         Division was unaware that there was any
17
         involvement of the property over which he is
18
         responsible for planning, with respect to the
19
         Northern Pass Project?
20
                   MR. NEEDLEMAN: And it would be the
21
         same objection.
22
                   CHAIRMAN HONIGBERG: Ms. Crane.
23
                   MS. CRANE: This information may have
24
         always have been there. But I assure you that
```

```
1
         it has not been easy to put together the puzzle
 2
                And, therefore, this is new to me as of
 3
         last week. I don't know whether it's new to
         the Committee. I don't know whether it's new
 4
 5
         to Northern Pass's own experts, given that at
 6
         the time that this chart was prepared, the
 7
         ownership was not accurately described.
                   CHAIRMAN HONIGBERG: Right now you're
 8
9
         talking to Counsel for the Public's experts on
10
         construction. And I'm -- still not entirely
11
         clear to me what it is you want to know from
         them. Do they have -- would they have advised
12
13
         a client to go forward if they had seen a
14
         document like this?
15
                   MS. CRANE: These two documents
16
         together, yes.
17
                   CHAIRMAN HONIGBERG: These two
18
```

documents. I'll allow them to answer that.

BY THE WITNESS:

19

20

21

22

23

(Taylor) Sure. Based on the two documents that you've shown, there's nothing there that would lead me to believe we would advise a client to not move forward.

24 BY MS. CRANE:

```
1
    Q
         So, the lack of notification to the abutting
 2
         owner would not trouble you?
 3
    Α
         (Taylor) I'm not saying that. But, based on
         these two documents, I don't have enough
 4
 5
         information to glean where the mailing address
                     It's not atypical, when we see tax
 6
         came from.
 7
         map information, and the mailing address to be
         separate from who, one or many levels down of
 8
9
         the ownership may be versus who's using it, and
10
         who may be listed in documents.
         Yes. We're all lacking information here.
11
    0
12
         Thank you. I do have one more line of
13
```

questions.

14

15

16

17

18

19

20

21

22

23

24

This is the same track a few miles north, Daniel Webster Highway/Route 3 is depicted, and the Pemigewasset River and the railroad tracks. And this is a view, I am afraid I can't identify specifically which footage this is, this was taken from the railroad as it went by. Do you see any particular challenges to laying the underground line along this section of Route 3, given the proximity of those railroad tracks and the topography here? (Taylor) Sure. May I ask, where is this along

103 [WITNESS PANEL: Zysk|Bascom|Taylor] 1 the route, if you know? This is immediately south of Plymouth. 2 Q 3 Α (Taylor) Okay. This looks familiar to me. I 4 believe I've walked this area, along the tracks 5 and this particular retaining wall. 6 So, to answer your question, if the 7 construction were towards the side of the railroad tracks, the guardrail, and the 8 9 retaining wall, there would have to be some 10 sensitivity to the construction of that 11 retaining wall and its disposition. I'll say I 12 believe there is an exemption that was put in 13 for this area, which proposes the underground 14 line to be located on the opposite side of 15 this, the right-of-way. 16 Q Where it's nice and flat, according to this 17 picture? 18 (Taylor) I wouldn't characterize that as

"flat". 19

20 You would characterize it how then?

21

22

24

(Taylor) There's some steep topography as you get outside the travel lanes.

23 MS. CRANE: That's all my questions.

CHAIRMAN HONIGBERG: Ms. Draper.

[WITNESS PANEL: Zysk|Bascom|Taylor]

```
1
                   MS. DRAPER: Well, good morning.
 2
         Gretchen Draper. And this is Max Stamp on the
 3
         ELMO. And we are two of the representatives
 4
         from the Pemigewasset River Local Advisory
 5
         Committee. And today we'd like to talk quite a
 6
         bit about "best management practices", which
 7
         you've addressed in your prefiled testimony and
         your supplemental testimony.
 8
    BY MS. DRAPER:
9
10
         I'd like to start with asking you about what
11
         New Hampshire-based manual -- construction
12
         manuals did you review when you were preparing
13
         this report?
14
         (Zysk) I don't remember the exact title off the
         top of my head, but there are several manuals
15
16
         in the -- I want to say, maybe it's the New
17
         Hampshire Storm Water Manual, there were
18
         several manuals.
19
         Uh-huh. Yes. I was thinking of the Storm
    Q
20
         Water Pollution Prevention Plan Draft, also
21
         there's a Best Management Practices Manual for
22
         Utility Maintenance, that comes from New
```

 $\{SEC\ 2015-06\}\ [Day\ 51/Morning\ Session\ ONLY]\ \{10-24-17\}$

Hampshire DRED.

(Zysk) Uh-huh.

23

24

[WITNESS PANEL: Zysk|Bascom|Taylor]

- 1 Q And then there's the New Hampshire Storm Water
- 3 A (Zysk) Right.

Manual.

2

- 4 Q Those seem to be the three. Is there anything
- 5 else you reviewed that you would add to that or
- does that pretty much cover it?
- 7 A (Zysk) As far as state manuals. We've also
- 8 reviewed, obviously, the Applicants' plans and
- 9 documentation.
- 10 Q Yes. Right. And do they have a document that
- goes to best management practices?
- 12 A (Zysk) One of the permit -- several of the
- permit applications describe them in detail.
- 14 Q Right. Okay. Thank you. Now, I think we'll
- 15 start with the best management practices. And
- just to let you know what it looks like here.
- And, then, on the next page, it talks about
- 18 that this -- what the purpose of this manual
- is. Are you familiar with this? Does this
- 20 look -- is it familiar?
- 21 A (Zysk) Somewhat.
- 22 Q Somewhat, okay.
- 23 A (Zysk) I'm not as familiar with this one as the
- DOT manuals.

1 Q Okay. All right. The DOT. Well, this one 2 we're interested in because mainly, as you read 3 there, the purpose of this manual is really more for maintenance than it is for 4 5 construction. It's not intended to be used 6 for, you know, new access roads, permanent 7 crossing of streams, new construction of utility assets, etcetera. And I guess, when 8 9 you see something like this, what limitations 10 do you see in terms of a construction -- a 11 construction team using this manual? 12 (Zysk) It has a very specific application. Α 13 Right. And, so, you wouldn't expect to have it 14 around a construction site during construction, 15 you would expect it to be around afterwards? 16 Α (Zysk) In part. Without being familiar with 17 the manual, there are potentially some -- some 18 of the information inside could be applied to 19 construction. 20 Sure. 21 (Zysk) But it would obviously require something 22 above and beyond just this. 23 Above and beyond. All right. Now, what Q

{SEC 2015-06} [Day 51/Morning Session ONLY] {10-24-17}

construction guides do you tend to use in your

24

[WITNESS PANEL: Zysk|Bascom|Taylor]

```
1
         own work?
                    Is it state-oriented or is it
 2
         job-oriented?
 3
    Α
         (Zysk) A lot of my work is for public agencies,
         the state. So, I use state manuals. A lot
 4
 5
         of -- some of the municipalities require the
 6
         use of the same state manuals, some of the
 7
         larger ones, cities, have their own. So, we
 8
         tend to -- we would use those.
 9
         Okay. And what about Mr. Taylor, Mr. Bascom,
10
         do you use this kind of manual -- what kind of
11
         manuals do you rely upon for best management
12
         practices?
13
         (Taylor) Similar to Mr. Zysk's response.
14
         Uh-huh.
15
         (Taylor) To the extent that they're applicable,
16
         the state level, county, or city.
17
         Okay. Mr. Bascom?
    Q
18
         (Bascom) Generally, for electrical design
19
         issues, the standards and guides are more
20
         national-oriented documents, such as the
         Institute of Electrical -- Electronic
21
22
         Engineers, the Association of Edison
23
         Illuminating Companies, and also some
24
         international standards by the International
```

```
1
         Electrotechnic Commission, IEC, and the
 2
         technical organization CIGRÉ.
 3
         Okay. Thank you. All right. Now, we're going
    Q
         to turn to there's a Burns & McDonnell
 4
 5
         October 2015 Storm Water Pollution Prevention
 6
         Plan, it's a draft. Did you refer to -- did
 7
         you see this plan at all that came through?
         (Zysk) I believe so, yes.
 8
    Α
         And here I'd like to -- this is Pemi 10.
9
10
         That's the exhibit. I'd like to draw your
11
         attention to the "Sediment to Storm Water"
12
                That's something we're very concerned
         area.
13
         about. And would someone read that highlighted
14
         sentence there. It starts with "Sufficient".
15
         Anybody. You could fight over it. Draw
16
         straws.
17
         (Zysk) "Sufficient and appropriate BMPs will be
18
         installed and maintained where necessary, when
         surface water is located within 50 feet of the
19
```

installed and maintained where necessary, when surface water is located within 50 feet of the Project activity and where there is a lack of natural vegetated buffer."

20

21

22

23

24

Q Right. And we're interested in your interpretation of that sentence, if you were working under those conditions. How would you

109

[WITNESS PANEL: Zysk|Bascom|Taylor]

```
1
         interpret that?
         (Zysk) I would interpretate it literally.
 2
    Α
 3
         the distance to surface water is within 50
         feet, or fifty feet or less of where I was
 4
 5
         proposing to do work, I would have to install
 6
         some sufficient and appropriate BMPs.
 7
         Uh-huh.
 8
         (Zysk) Or, where there was a lack of a natural
         vegetated buffer.
9
10
         All right. And do you feel that the 50 feet
    Q
11
         from a water body is adequate usually?
12
         (Zysk) If sufficient and appropriate BMPs are
    Α
13
         installed, yes.
14
         Could you give me an example of a sufficient
15
         BMP in that situation?
16
    Α
         (Zysk) There are too many variables to be
17
         specific.
18
    Q
         Okay. All right. Well, let me, if the -- Ms.
19
         Crane showed you the picture of the retaining
20
         wall, and then there's -- this is on Route 3
21
         that you had visited, the Pemigewasset is, of
22
         course, right -- it goes right down to the
         Pemigewasset. What kind of BMP would you have
23
```

{SEC 2015-06} [Day 51/Morning Session ONLY] {10-24-17}

if you were working in that area?

24

110

[WITNESS PANEL: Zysk|Bascom|Taylor]

```
1 A (Zysk) Again, it depends where in the area I
2 was working.
```

- Q Okay. When might be the 50 feet not be appropriate?
- 5 A (Zysk) I'm not sure I follow you.
- 6 Q Well, I would -- if you're going to take it
 7 literally, and you're in the field with a
 8 construction team, is there something that
 9 would happen that you would say "okay, this
 10 isn't going to work", and who would decide
 11 that? Or is it just always going to be 50
 12 feet?

I wonder if you have any flexibility?

Maybe that would help you.

- A (Zysk) There's always -- well, if you've set an absolute minimum of 50 feet, then that's what applies.
- 18 Q Okay.

3

4

15

16

17

21

22

23

24

- 19 A (Zysk) You can always install BMPs when it's
 20 farther than fifty feet.
 - Q Okay. Thank you. Let's see. Okay. We're thinking in terms of the Pemigewasset watershed. Is it fair to say that our watershed, which is like a thousand square

```
1
         miles of area, with lots of steep slopes, lots
 2
         of water, is it fair to say that we have sort
 3
         of that setting for some severe storm water
         events? This is just a general question.
 4
 5
         could happen.
 6
         (Zysk) The severity of a storm water event is
 7
         irrelevant to the size of the watershed.
 8
         Right. Well, --
    Q
         (Zysk) So, if you get what's classified as a
9
10
         "100 year storm", and they happen with some
11
         frequency, yes.
12
         Uh-huh. Okay. And with that, of course, we're
    Q
13
         concerned about erosion and storm water, you
14
         know, the sediment coming in. And I think, Mr.
15
         Zysk, yes, you were talking about when BMPs
16
         should be started in the construction process.
17
         Do you remember that?
18
    Α
         (Zysk) Yes.
19
         Yes. Could you tell us a little bit about it?
    Q
20
                   MR. NEEDLEMAN: Objection, Mr. Chair.
21
         It sounds like we're talking about very generic
         testimony that could have been addressed.
22
23
                   CHAIRMAN HONIGBERG: It really is,
24
         Ms. Draper. It's all very generic testimony.
```

```
1
         What is it you want to know from these
 2
         gentlemen that is related to something that's
 3
         happened recently, some new information?
         Something?
 4
 5
                   MS. DRAPER: Okay. Well, I quess
 6
         what I'm concerned about are the BMPs that are
 7
         not written, the BMPs that are not
         site-specific --
 8
                   CHAIRMAN HONIGBERG: And are any of
 9
10
         these BMPs new, that have come up in something
11
         after they filed their prefiled testimony?
12
                   MS. DRAPER: That's part of my --
13
         that's one of my questions, too. So, is there
14
         anything new in the situation? I'm interested
15
         with the timing as well. Because one of the
16
         things that came through in the testimony was
17
         that these BMPs really need to start now,
18
         before the construction. And that there were
19
         concerns about monitoring that needed to go on.
20
         Those are the kinds of things that I'm
21
         interested in.
22
                   CHAIRMAN HONIGBERG: This all sounds
23
         like things that are in their prefiled
24
         testimony --
```

```
1
                   MS. DRAPER: Uh-huh.
                   CHAIRMAN HONIGBERG: -- or could have
 2
 3
         been in their prefiled testimony.
 4
                   MS. DRAPER: All right. And part of
 5
         my question is, have they seen any BMPs for
         specific locations, because that was one of
 6
 7
         their concerns?
 8
                   CHAIRMAN HONIGBERG: Okay.
                                                That
9
         sounds like a great question.
10
                   MS. DRAPER: Okay. There's a
11
         question. Okay.
12
    BY MS. DRAPER:
13
         And is there anything new on site-specific
14
         BMPs?
15
         (Zysk) I believe our testimony was that there
16
         are certain locations where the line style that
17
         they used indicated a BMP application. But, as
18
         to what that was, it was not made clear.
19
         Right. And when would you expect that to be
    Q
20
         made clear?
21
         (Zysk) Probably, that's a site-specific thing.
22
         So, it could be well past the halfway point of
23
         their construction document development, as to
24
         develop what site-specific BMPs they're going
```

1 to use. 2 And you had also said that there's the Q Uh-huh. 3 minimum requirement of 90 days from the time that say a project could be permitted, to the 4 5 reviewing documents for the construction, that 6 there's a 90-day minimum time, and it might not 7 be sufficient to provide the detailed review of 8 documents required for a project of this 9 magnitude. Do you still believe that? Page 7, 10 Line 24. 11 (Zysk) I mean, I don't --12 No, I'm just wondering. We're looking at the 13 time frame. So, I'm picturing this Project. 14 Now, if it were permitted, and then suddenly 15 there's 90 days before everybody needs to get 16 BMPs, you know, best management practices in, 17 site-specific, New Hampshire DES will be loaded 18 with things. So, are you concerned that the 90 19 days is not enough time or have you changed --20 changed your mind on that? 21 (Zysk) I have not changed my mind on that. 22 Thank you. All right. Well, we're 23 going to get down to one of the things, okay, 24 we have -- the best management practice manuals

```
1
         that we've seen are about 11 to 12 years old,
 2
         with a couple of revisions. And, so, I'm
 3
         wondering if environmental best management
         practices have a shelf life?
 4
 5
         (Zysk) I know there's continually being
         research done at various locations, both -- I
 6
 7
         think UNH has a large testing facility
 8
         associated with it. Other states do as well.
9
         Uh-huh.
10
         (Zysk) The details that are included in these
11
         manuals were all adopted by most of the New
12
         England states around about the same time, and
13
         not a lot has changed in the interim. So, I
14
         don't know that they have a shelf life. If
15
         they're effective, they keep being used.
16
    Q
         All right. Okay. And I guess what we're
17
         concerned about, what about the map, Mr. -- no,
18
         your map there with the -- we're looking in
19
         this area now, even just this year in Grafton
20
         County, we've had two major weather events.
21
         One took place in Plymouth, where it was
22
         flooded, and 30 cars were floating in the
23
         parking lot. And then, in July, there was
24
         another one where there were port-a-potties
```

floating down the Pemi. So, this is what we're concerned about. You know, these are the kind -- there's changes, and we are interested in this map here.

This is actually Exhibit Pemi 5. It was

This is actually Exhibit Pemi 5. It was done by the National Climate Assessment. And we're looking at, you know, the change in very heavy precipitation, and it looks like our area gets the jackpot.

So, I guess what I'm concerned about is, if there are these kinds of weather patterns coming to our area, we've seen them, they're kind of here, what happens to the BMPs? How quickly do we readjust them to meet the kinds of difficulties we're seeing?

MR. NEEDLEMAN: Mr. Chair, I think I'm going to object. This sounds like very generic testimony.

CHAIRMAN HONIGBERG: Is rain a problem, heavy rains? Changes in weather patterns?

WITNESS ZYSK: A heavy rain, by itself, depending on the duration of it, could be a problem. But a long -- long-term climate

1 change, which I think what you're kind of 2 alluding to, is probably not going to -- even 3 though this is a potentially two- to three-year construction project, it's not going to affect 4 5 it, I think, along the lines that what you're 6 thinking. 7 An individual heavy event will -they will have to revisit their BMPs, make sure 8 they're still functioning the way they're 9 10 supposed to, make sure they're still in place. 11 But an overall long-term change in 12 precipitation has very little impact on this. BY MS. DRAPER: 13 14 All right. What happens when cars are flooded, 15 and I'm thinking of oil and gas going into the 16 river, that's just considered like a one-time 17 event, and clean it up and move on? 18 MR. NEEDLEMAN: Objection. 19 BY THE WITNESS: 20 (Zysk) That's beyond the realm of the 21 construction project. 22 BY MS. DRAPER: Yes. And I am thinking about the construction 23

{SEC 2015-06} [Day 51/Morning Session ONLY] {10-24-17}

project. I'm thinking about the open trenches.

24

I'm thinking about Sugar Hill where the road collapsed, and they're going to be building trenches. That's what I'm thinking about.

And I'm also -- I have one final question.

Yesterday, Mr. Ahern brought up Japanese

knotweed, and nobody knew what it was, is that

true?

- A (Zysk) I think we decided it was an invasive species.
- Yes. It's an invasive species. And I think this would be something -- I'm wondering, and we're all very concerned about invasive species here in New Hampshire, and especially on the right-of-way. I'm wondering, when the construction teams dig up the dirt, do all the excavation, how do they search or how do they decide there are no invasive species, especially something like Japanese knotweed, which is prevalent in this area? How do they determine that?
- A (Zysk) I believe there would have to be indication of it before they started construction. That would be identified in their environmental submittals, and possibly on

119

[WITNESS PANEL: Zysk|Bascom|Taylor]

```
1
         follow-up by the DES or by the State, to be
 2
         aware that it's there and to take appropriate
 3
         measures.
 4
         Okay. What would be appropriate measures for
    Q
 5
         something like that? You know, the trucks come
 6
         in, they're getting ready to dig, there's
 7
         knotweed, what would they do?
8
         (Zysk) I think, as I described yesterday, they
    Α
         would have to remove -- probably remove the
9
10
         living weed as it is, and then potentially the
11
         soil or excavated material that it was in may
12
         not be able to be replaced.
13
         Uh-huh.
14
         (Zysk) Or it would have to be treated with an
15
         herbicide before it was put back in the ground.
16
         That would be a decision by DOT or DES.
17
         Uh-huh. And would using the herbicides take an
18
         exception or a permit or something special like
19
         that?
20
         (Zysk) If it was -- that's something that I
21
         can't answer. If it was a potentially
22
         sensitive area, I would expect so.
23
         Uh-huh. Okay.
24
         (Zysk) Not always.
```

```
1
                   MS. DRAPER:
                                All right. Let's see.
 2
         I think -- all right. Thank you very much.
 3
                   CHAIRMAN HONIGBERG: And the only
         other applicant I have on my list is Mr. Raff.
 4
 5
         Is there any other group, before you go,
         Mr. Raff, before you say anything, is there any
 6
 7
         other intervenor group that has questions for
         this panel?
 8
9
                         [No verbal response.]
10
                   CHAIRMAN HONIGBERG: Now, Mr. Raff.
11
                   MR. RAFF: The IBEW doesn't have any
         questions for this panel. Thank you.
12
13
                   CHAIRMAN HONIGBERG: All right.
         Mr. Needleman -- just off the record.
14
15
             [Off-the-record discussion ensued.]
16
                   CHAIRMAN HONIGBERG: Back on the
17
         record.
                  We're going to break for lunch, and we
18
         will resume shortly after one o'clock.
19
                         (Lunch recess taken at 11:56
20
                         a.m. and concludes Day 51
                         Morning Session. The hearing
21
22
                         continues under separate cover
23
                         in the transcript noted as
24
                         Day 51 Afternoon Session ONLY.)
```

1

2

3

5

4

6

7 8

9

10

11

12 13

14

15

16

17

18

19 20

21

22

23

24

CERTIFICATE

I, Steven. E. Patnaude, a Licensed Shorthand Court Reporter, do hereby certify that the foregoing is a true and accurate transcript of my stenographic notes of these proceedings taken at the place and on the date hereinbefore set forth, to the best of my skill and ability under the conditions present at the time.

I further certify that I am neither attorney or counsel for, nor related to or employed by any of the parties to the action; and further, that I am not a relative or employee of any attorney or counsel employed in this case, nor am I financially interested in this action.

> Steven E. Patnaude, LCR Licensed Court Reporter N.H. LCR No. 52 (RSA 310-A:173)

BY MR. COTE: [2] 82/17 85/19 **BY MR. LAKES:** [13] 4/20 17/24 20/9 23/3 24/1 25/10 27/24 29/9 36/18 38/9 41/4 42/1 43/7 BY MR. VAN HOUTEN: [6] 46/1 48/12 51/2 53/6 57/4 64/13 **BY MS. CRANE:** [4] 94/15 98/10 99/22 101/23 **BY MS. DRAPER:** [4] 104/8 113/11 117/12 117/21 BY MS. MENARD: [5] 66/11 66/24 77/16 80/6 81/19 BY MS. PASTORIZA: [1] 90/16 **CHAIRMAN HONIGBERG:** [71] 4/1 4/9 23/21 24/23 25/4 26/13 27/11 29/6 40/20 41/11 45/9 45/12

48/10 49/2 49/9 49/13 50/5 50/22 51/6 51/12 51/15 51/19 51/23 52/4 52/14 53/1 53/5 63/19 63/24 64/4 64/9 65/17 65/22 75/12 75/15 76/10 77/1 77/4 77/9 80/5 80/12 80/16 80/24 81/10 81/17 82/7 82/11 85/4 85/13 85/17 90/1 90/12 94/9 98/7 99/20 100/1 100/8 100/21 101/7 101/16 103/23 111/22 112/8 112/21 113/1 113/7 116/18 120/2 120/9 120/12 120/15 MR. AHERN: [4] 25/1 25/6 26/18 26/21 **MR. COTE: [5]** 82/9 82/13 85/5 89/23 90/8 MR. LAKES: [22] 4/11 17/22 20/7 22/23 23/23 24/20 25/2 25/7 26/10 26/15 26/19 26/22

27/8 27/10 27/14 27/23 29/8 36/14 38/5 41/13 43/5 45/7 MR. **NEEDLEMAN:** [22] 26/8 27/6 27/9 40/17 41/9 48/5 49/1 51/5 63/17 63/22 75/8 75/19 80/1 80/11 84/24 85/14 99/18 100/3 100/19 111/19 116/15 117/17 MR. RAFF: [1] 120/10 MR. VAN **HOUTEN:** [21] 45/14 45/20 48/9 48/11 49/5 49/12 49/15 51/1 51/9 51/14 51/17 51/22 52/2 52/7 52/19 53/4 57/3 64/2 64/8 64/12 65/15 **MS. CRANE:** [6] 94/10 98/9 100/9 100/22 101/14 103/22 **MS. DRAPER: [7]** 103/24 112/4 112/11 112/24

81/3 81/15 82/5 MS. PASTORIZA: [3] 90/10 90/13 94/7 WITNESS BASCOM: [1] 66/2 WITNESS TAYLOR: [3] 27/20 41/17 50/20 WITNESS ZYSK: [1] 116/21 \$ 100 [2] 60/7 111/10 100-foot [9] 66/14 66/16 67/22 69/23 69/24 74/8 74/19 75/8 77/9 104 [1] 2/12 10:36 [1] 65/21 10:36 [1] 65/22 11 [4] 70/6 77/4 99/12 115/1 11 feet [3] 74/18 76/19 77/7 11-06-17 [1] 1/6 11-foot [1] 75/6 112 [1] 44/13 115 [7] 67/9 74/11 76/20 83/8 84/19 84/20 87/7 116 [7] 7/23 19/12 23/7 44/13 44/15 47/20 47/21 11:56 [1] 120/19 14 [1] 29/2 15 [2] 93/2 93/9 15-464 [1] 67/3 15-foot [5] 66/17 70/20 70/24 71/8 92/20 150 [2] 67/15 67/19 152 [1] 66/19 157 [1] 3/11 159 [2] 29/6 29/11 16 [1] 29/13 17 [5] 1/6 3/4 3/5 3/7 3/12 179 [2] 68/24 74/2 17th [1] 18/3 18 [8] 3/4 6/22 12/18 18/4 44/15 59/15 59/17 90/19 18-inch [2] 6/9 6/11 19 [2] 3/17 96/17 19,653 [1] 38/14 1st [3] 18/3 20/13 70/5	MS. DRAPER: [3] 113/3 113/9 119/24 MS. MENARD: [14] 65/24 66/3 66/22 75/13 75/17 76/1 76/17 77/3 77/6 80/13 80/21 81/3 81/15 82/5 MS. PASTORIZA: [3] 90/10 90/13 94/7 WITNESS BASCOM: [1] 66/2 WITNESS TAYLOR: [3] 27/20 41/17 50/20 WITNESS ZYSK: [1] 116/21 \$ \$1,000 [1] 54/6 \$7,500 [1] 38/16 \$800 [1] 54/8	100 [2] 60/7 111/10 100-foot [9] 66/14 66/16 67/22 69/23 69/24 74/8 74/19 75/8 77/9 104 [1] 2/12 10:22 [1] 65/21 10:36 [1] 65/22 11 [4] 70/6 77/4 99/12 115/1 11 feet [3] 74/18 76/19 77/7 11-06-17 [1] 1/6 11-foot [1] 75/6 112 [1] 44/13 115 [7] 67/9 74/11 76/20 83/8 84/19 84/20 87/7 116 [7] 7/23 19/12 23/7 44/13 44/15 47/20 47/21	15-464 [1] 67/3 15-foot [5] 66/17 70/20 70/24 71/8 92/20 150 [2] 67/15 67/19 152 [1] 66/19 157 [1] 3/11 159 [2] 29/6 29/11 16 [1] 29/13 17 [5] 1/6 3/4 3/5 3/7 3/12 179 [2] 68/24 74/2 17th [1] 18/3 18 [8] 3/4 6/22 12/18 18/4 44/15 59/15 59/17 90/19 18-inch [2] 6/9 6/11 19 [2] 3/17 96/17 19,653 [1] 38/14 1st [3] 18/3 20/13
--	--	---	--

7	36/23 52/6 56/7	106/22 106/23
70 [2] 3/8 23/5	60/23 119/12	absolute [1] 110/16
71 [1] 3/9	about [78] 4/17	absolutely [1]
72 [2] 3/11 24/22	4/19 4/20 6/17 9/23	35/24
73 [1] 98/7	13/2 15/6 16/5 19/4	ABTR [2] 3/23
76 [1] 46/4	21/8 22/9 22/15	95/10
78 [1] 74/12	23/9 23/19 29/15	abuts [1] 63/6
7:00 [7] 15/9 15/10	29/18 32/4 34/5	Abutter [1] 66/18
15/14 16/4 17/4	35/12 35/13 35/17	abutters [9] 4/14
17/4 17/10	43/22 45/3 46/10	35/7 66/6 82/15
	47/24 49/11 49/12	90/15 94/14 95/9
8	49/15 50/12 51/2	97/6 99/2
8-inch [2] 6/3 6/22	51/11 51/21 52/18	abutting [1] 102/1
80 [1] 26/22	53/18 54/19 56/23	accept [5] 74/16
82 [1] 2/9	64/5 64/8 65/3 66/8	74/21 93/21 97/22
9	73/7 74/20 78/1	97/24
90 [5] 2/10 3/22	78/2 79/12 79/16	acceptable [1]
114/3 114/15	80/8 81/14 83/18	55/14
114/3 114/15	86/9 87/5 87/10	acceptance [1] 36/4
	87/17 88/14 91/23	access [18] 46/18
90-day [1] 114/6	94/2 104/6 104/10	47/6 47/10 47/13
93 [1] 59/7	105/17 107/9	48/4 50/19 52/5
94 [1] 2/11	108/13 111/13	52/8 52/17 56/10
95 [1] 3/23	111/15 111/19	56/12 56/15 56/24
9:00 [1] 1/3	111/21 112/6	57/6 57/14 57/16
$ \mathbf{A} $	112/19 115/1	61/4 106/6
a.m [6] 1/3 15/9	115/12 115/17	accessed [2] 49/19
17/4 65/21 65/22	115/17 116/2	58/21
120/20	116/10 117/23	accommodate [6]
A:173 [1] 121/19	117/24 118/1 118/3	6/24 13/12 49/8
ability [1] 121/8	118/12	50/4 67/9 86/23
able [7] 13/23 22/16	above [3] 62/16	Accommodation [2]
		31/3 33/2

A according [4] 36/13 44/23 69/15 103/16 account [2] 9/20 60/21 accurate [3] 21/18 31/14 121/5 accurately [1] 101/7 across [3] 8/2 56/12 75/7 act [1] 25/10 acting [2] 42/23 44/16 action [2] 121/12 121/15 active [1] 94/21 **activities** [3] **84/11** 84/23 87/10 activity [9] 19/11 40/14 57/19 81/5 83/8 83/24 85/22 89/16 108/20 actual [5] 6/8 10/9 15/2 15/3 85/12 actually [12] 11/17 14/24 15/11 15/12 22/16 25/15 50/8 72/17 78/4 80/23 86/12 116/5 AD [2] 3/23 95/10 AD-N-ABTR [2]

3/23 95/10 ADAM [2] 2/4 4/8 add [6] 39/14 40/14 aerial [1] 95/17 54/3 74/14 78/6 105/5 added [2] 9/16 47/12 adding [3] 9/18 29/1 75/11 additional [7] 28/17 30/22 37/4 41/23 62/16 82/9 86/8 address [3] 99/12 102/5 102/7 addressed [7] 13/3 80/4 80/5 80/15 88/6 104/7 111/22 adequate [1] 109/11 adjacent [5] 47/21 57/9 68/13 96/21 96/24 adjusted [1] 7/15 Administrator [1] 1/21 adopted [1] 115/11 advise [2] 33/3 101/22 advised [4] 32/22 33/17 33/21 101/12 advising [2] 99/15

99/18 **Advisory** [1] 104/4 **Affairs** [1] 1/16 affect [4] 40/16 61/3 61/24 117/4 **affected** [1] **61/7** affirmative [1] 27/20 afraid [1] 102/17 after [5] 36/3 53/10 93/20 112/11 120/18 Afternoon [3] 3/4 3/6 120/24 afterwards [1] 106/15 again [11] 7/10 18/12 20/13 25/13 25/19 39/13 55/7 68/18 79/10 81/24 110/1 agencies [1] 107/3 agency [1] 20/5 ago [1] 32/4 agree [15] 8/5 19/8 19/10 25/23 25/24 29/16 54/8 54/16 67/7 67/11 71/17 74/14 75/3 79/21 85/21 agreed [1] 58/18

|--|

\mathbf{A}
answer [15] 41/1
45/7 46/1 59/2
67/14 75/6 76/9
77/11 77/13 79/6
79/13 86/11 101/18
103/6 119/21
answered [2] 27/16
27/20 page [1] 25/19
answers [1] 25/18 anticipate [4] 7/6
20/15 20/22 27/1
anticipated [2] 7/15
32/10
any [45] 5/14 14/1
18/23 19/5 20/18
25/19 25/22 28/4
31/23 33/4 39/16
45/24 56/16 56/20
57/24 58/2 58/4
58/8 60/15 62/19
64/20 65/1 65/2
71/24 72/7 72/10
75/7 77/21 77/22
84/6 90/6 91/17
94/17 94/18 97/11
100/16 102/20
110/13 112/9 113/5
120/5 120/6 120/11
121/11 121/13
anybody [2] 5/14
108/15
1

anymore [1] 25/4 Anyone [1] 68/20 anything [14] 4/3 23/2 42/19 46/10 51/1 76/23 78/8 94/24 94/24 97/4 105/4 112/14 113/13 120/6 anyway [1] 15/5 anywhere [1] 17/8 apart [4] 11/3 13/17 13/22 23/21 APOBP [12] 3/4 3/6 3/8 3/9 3/11 3/13 3/15 3/17 3/19 3/20 23/5 38/7 apparent [1] **78/8** apparently [2] 35/1 37/18 appear [1] 71/10 Appearances [1] 1/23 appears [8] 19/5 22/13 31/21 36/10 36/11 67/13 96/13 96/15 90/10 applicable [1] 107/15 applicant [17] 4/24 approaches [1] 6/2 9/7 10/11 31/10

34/17 36/13 48/2 53/9 56/2 56/6 66/13 73/13 92/21 93/2 94/23 120/4 **Applicant's [4]** 19/21 60/5 68/23 70/16 Applicants [3] 74/2 79/17 91/16 Applicants' [4] 18/2 20/11 36/24 105/8 application [18] 1/8 5/5 20/21 20/23 20/24 21/1 26/24 27/2 32/23 33/18 34/16 36/4 47/6 56/4 62/6 72/6 106/12 113/17 applications [1] 105/13 applied [2] 89/1 106/18 applies [1] 110/17 apply [2] 65/5 82/24 Apple [3] 23/1 25/8 appreciate [2] 4/16 75/19 approach [4] 12/21 13/3 68/14 94/7 46/5

appropriate [9] 33/6 73/17 87/20 108/17 109/6 109/12 110/4 119/2 119/4 approval [1] 32/2 are [93] 6/9 8/7 9/11 10/14 12/11 16/21 19/13 19/14 19/17 21/15 21/19 25/20 34/14 35/8 35/23 42/3 43/1 43/22 44/8 44/19 45/2 45/2 45/24 47/12 48/15 50/20 51/21 52/3 53/24 57/9 58/10 58/18 58/18 61/8 63/3 64/7 64/15 65/24 67/15 68/9 69/20 70/7 70/7 70/20 71/4 71/11 71/14 72/5 78/6 79/7 79/7 79/19 82/16 82/23 82/24 84/11 86/15 89/12 92/10 92/12 92/15 94/20 94/22 95/7 95/10 95/23 96/9 96/22 97/8 97/13 98/16 104/3 104/15 105/19

106/17 107/19 109/12 109/16 112/6 112/6 112/7 112/9 112/20 112/23 113/16 114/18 115/1 115/10 116/2 116/3 116/11 117/14 118/17 area [64] 5/3 5/4 5/8 6/6 7/5 7/16 8/9 8/18 9/1 12/2 21/4 21/17 22/5 23/8 27/5 44/18 45/3 47/9 47/17 51/21 52/18 53/11 55/12 55/16 55/24 57/17 57/19 59/12 61/13 62/11 62/13 62/16 65/13 67/20 68/5 68/18 81/6 83/2 83/6 83/18 84/1 86/5 87/18 87/22 92/20 93/16 96/6 96/7 96/11 96/13 96/15 96/20 96/22 103/4 103/13 108/12 109/24 110/1 111/1 115/19 116/8 116/12 118/19 119/22 areas [18] 5/1 22/15 43/17 44/7 44/16

26/3 29/13 37/4 37/5 37/10 41/19 44/20 44/21 55/4 55/8 55/17 56/3 57/12 62/9 82/21 89/3 aren't [1] 41/13 argue [1] 53/3 **argument** [2] 8/12 76/17 arm [1] 74/17 around [14] 6/9 11/9 19/13 28/21 28/22 29/12 34/2 36/12 42/10 43/5 44/5 106/14 106/15 115/12 as [107] 1/13 5/12 6/6 6/10 6/16 6/21 6/22 7/4 7/19 7/19 7/22 10/1 10/24 11/18 12/3 13/13 15/5 15/6 16/11 19/3 19/12 21/8 21/19 22/12 22/12 23/13 30/7 30/11 30/21 31/1 31/9 33/4 33/23 36/7 38/11 39/10 39/13 39/24 42/8 42/8 42/13 42/22 42/23

as... [61] 47/2 47/13 48/4 50/18 58/7 62/17 68/13 68/14 69/6 69/21 71/1 71/17 73/1 73/1 73/8 73/14 73/17 77/15 77/20 78/14 78/16 79/1 79/8 79/8 80/10 81/7 81/24 81/24 83/20 83/20 86/3 86/11 91/15 91/24 92/16 92/21 94/4 95/9 95/21 96/17 96/19 96/20 97/14 101/2 102/19 103/18 103/21 105/7 105/7 105/23 105/23 106/2 107/20 111/9 112/15 113/17 113/23 115/8 119/8 119/10 120/23 **Ashland** [2] 94/13 95/9 aside [1] 53/11 ask [14] 4/19 23/23 32/21 33/7 50/11 50/17 50/24 64/11 67/16 75/14 78/2 81/19 90/4 102/24 asked [5] 52/20

64/7 64/11 67/7 81/14 asking [9] 25/15 31/6 51/21 76/14 83/17 90/11 90/14 100/6 104/10 aspect [2] 7/12 13/20 aspects [2] 11/5 36/21 assertion [1] 9/2 assess [2] 36/23 37/2 assessment [2] 26/7 116/6 assets [1] 106/8 associated [2] 37/2 115/8 **Association** [1] 107/22 assume [13] 7/22 10/19 21/20 27/13 42/17 48/20 59/22 60/20 62/12 62/22 88/8 90/20 92/18 assumes [1] 10/14 assuming [1] 32/12 assumptions [2] 57/21 93/1 assure [1] 100/24 attention [3] 95/1 99/17 108/11

attorney [2] 121/10 121/13 **attractive** [1] **54/18** atypical [1] 102/6 August [1] 74/3 available [2] 8/8 75/22 average [3] 9/10 10/18 60/12 avoid [2] 11/15 21/14 aware [17] 13/21 31/2 42/3 58/4 63/9 64/7 64/15 68/6 72/7 72/10 73/10 73/23 89/23 97/8 97/11 97/13 119/2 away [4] 15/14 23/19 91/23 92/12 awful [1] 49/10 B

back [18] 16/12 16/17 18/19 21/3 25/1 25/2 27/4 32/11 45/1 50/1 57/17 60/23 62/23 82/11 85/7 92/5 119/15 120/16 backfill [2] 42/8 42/22 background [2] 79/2 82/20

В
backhoe [1] 24/7
backhoes [1] 39/2
bad [2] 35/20 36/8
Bailey [1] 1/14
Barely [1] 90/13
barrier [2] 14/23
30/23
BASCOM [38] 2/4
4/9 4/22 5/7 5/19
6/15 6/21 7/4 8/6
9/15 10/6 11/1 11/4
11/19 12/5 12/16
12/21 13/1 13/3
13/21 14/15 14/23
15/16 16/10 16/24 17/12 60/5 61/15
61/23 65/4 68/5
68/12 68/18 78/12
79/1 107/9 107/17
107/18
base [1] 70/10
based [20] 21/2
21/21 26/7 27/3
27/7 30/14 43/1
57/20 58/14 60/7
78/15 84/12 85/24
92/13 93/11 99/18
99/24 101/20 102/3
104/11
bases [2] 70/7 70/7
basic [2] 8/15 76/9

basically [1] 61/8 basis [5] 10/12 10/22 16/16 17/1 21/6 batch [1] 37/7 be [219] beaver [3] 87/4 87/21 87/24 because [22] 16/13 20/3 21/18 22/14 23/12 24/5 29/4 30/16 31/12 37/18 38/4 39/24 49/17 52/6 67/14 76/16 79/11 93/4 98/2 106/2 112/15 113/6 been [29] 14/2 17/20 21/7 31/1 31/23 34/15 40/19 46/9 50/9 53/21 54/21 54/23 58/7 63/15 73/6 73/24 78/16 80/5 80/14 80/18 88/5 94/1 100/5 100/7 100/12 100/24 101/1 111/22 113/3 before [13] 4/4 25/18 55/1 65/2 77/22 89/19 94/4 112/18 114/15 118/22 119/15

120/5 120/6 begin [2] 4/22 98/1 beginning [1] 84/8 begins [1] 4/4 behaves [1] 43/17 being [16] 4/16 22/10 32/5 33/4 34/1 36/9 40/4 48/17 63/14 64/4 74/7 80/10 86/5 106/16 115/5 115/15 believe [23] 14/4 26/14 27/19 29/11 31/8 31/13 50/5 54/21 58/14 60/5 62/15 73/13 85/6 95/7 95/10 96/7 101/22 103/4 103/12 108/8 113/15 114/9 118/21 below [3] 23/13 34/6 74/10 best [12] 31/4 36/5 75/19 104/6 104/21 105/11 105/15 107/11 114/16 114/24 115/3 121/7 **Bethlehem** [1] 4/13 better [3] 11/10 24/6 72/19

B	block [2] 42/23	63/22 98/15 115/6
between [25] 5/10	99/12	bottom [2] 74/10
12/19 13/6 17/3	blocking [1] 42/24	74/15
19/7 22/1 39/12	blowing [1] 82/5	boulder [7] 3/8
43/14 47/22 56/13	BMP [3] 109/15	3/10 23/6 23/16
58/23 59/6 59/14	109/23 113/17	23/20 23/21 24/4
59/14 59/16 60/12	BMPs [15] 108/17	boulders [4] 22/22
74/9 74/23 84/14	109/6 109/12	24/11 27/18 27/22
89/7 89/9 90/20	110/19 111/15	boundaries [3]
92/3 96/16 98/12	112/6 112/7 112/10	19/17 19/24 33/18
beyond [6] 41/10	112/17 113/5	boundary [8] 30/17
56/3 62/16 106/22	113/14 113/24	30/21 34/23 74/8
106/23 117/20	114/16 116/13	76/22 76/24 76/24
big [7] 6/10 8/12	117/8	77/1
12/3 38/18 49/21	Bob [4] 66/10 69/2	Bowes [7] 25/13
51/11 76/5	72/21 82/14	25/18 82/17 83/5
bigger [3] 9/11	bobcats [1] 39/2	83/12 87/3 87/15
28/14 50/5	body [1] 109/11	box [2] 28/10 92/2
Billerica [1] 99/13	bore [17] 6/5 6/8	BP [2] 3/22 90/18
bit [5] 19/5 21/8	6/11 6/16 6/23	Bradbury [1] 66/9
82/19 104/6 111/19	12/14 13/5 13/14	break [3] 23/21
Blaney [2] 57/2	14/13 14/18 15/3	65/19 120/17
57/8	15/17 15/22 16/2	breakdown [1]
blanket [2] 17/2	16/4 16/14 26/8	10/15
17/2	bores [1] 17/7	Brennan [1] 1/20
blast [2] 71/23 73/3	boring [7] 13/16	bridge [1] 76/22
blasting [14] 20/17	15/10 21/21 21/23	Bridgewater [2]
20/22 27/1 72/1	22/5 22/12 37/11	96/12 99/11
72/2 72/5 72/8	Boscawen [1] 99/10	bring [7] 15/5
72/11 73/6 73/8	Boston [4] 32/4	22/24 34/12 54/19
73/11 73/15 73/16	96/19 96/20 97/15	56/23 85/7 86/7
73/24	both [5] 5/2 19/17	broken [2] 3/10
, 0, 2 1		
L	1	<u> </u>

B broken... [1] 23/16 Brook [3] 57/2 57/7 61/12 brought [4] 25/17 35/2 94/24 118/5 Brown [1] 49/1 Bruce [8] 17/24 20/9 24/21 26/13 26/21 36/16 38/6 43/6 buffer [9] 66/17 70/21 70/21 70/24 71/8 71/16 72/1 108/21 109/9 build [10] 46/14 48/3 49/18 52/11 52/14 53/15 54/6 57/14 62/20 86/6 building [7] 49/23 50/2 55/1 55/2 84/19 97/2 118/2 built [9] 47/13 48/1 49/8 50/18 52/2 52/17 52/23 56/15 83/10 bumbling [1] 36/17 burden [1] 65/11 Bureau [3] 3/19 3/20 43/10 Burns [1] 108/4 bus [2] 60/16 60/21

business [3] 1/15 36/6 36/8 businesses [1] 40/17

C

cable [5] 5/23 10/7 12/2 39/6 42/11 cables [4] 5/20 11/23 68/6 93/6 calculations [2] 39/16 39/20 call [3] 33/12 73/4 87/23 called [4] 72/8 72/11 73/8 73/11 came [6] 66/21 67/2 74/2 102/6 108/7 112/16 can [61] 6/22 7/22 8/10 8/16 8/24 10/2 13/22 16/24 17/23 28/14 34/12 42/17 43/6 45/24 46/20 46/23 47/18 47/20 48/20 50/12 50/18 52/17 52/23 53/14 55/16 57/17 58/22 59/1 59/10 64/11 66/14 70/18 71/6 72/23 73/22 74/7 74/11 76/10 76/13 77/11 78/18 78/22

79/4 81/19 84/10 85/7 85/9 86/22 87/4 87/13 87/16 89/21 91/5 91/16 93/13 96/16 96/19 98/5 99/3 99/7 110/19 can't [10] 16/20 26/17 45/6 52/10 52/24 55/19 55/20 68/19 102/17 119/21 cannot [2] 31/5 45/4 Carl [1] 4/13 Caron [1] 1/20 carrying [1] 39/1 cars [2] 115/22 117/14 case [10] 6/2 7/14 21/6 21/6 32/24 34/22 35/24 36/10 59/21 121/14 case-by-case [1] 21/6 cases [1] 15/17 casing [2] 6/18 16/12 caught [1] 35/11 cause [1] 78/8 cells [1] 99/3 cement [2] 38/12

C	114/
cement [1] 40/6	114/2
center [6] 29/19	chang
67/20 69/13 79/19	32/8
87/5 87/16	116/3
centered [3] 30/7	chang
30/10 30/12	chara
centerline [3] 8/19	77/2
29/15 30/15	chara
Central [1] 90/16	36/7
certain [2] 86/6	103/1
113/16	charg
certainly [12] 22/9	Char
33/8 34/3 46/21	chart
56/14 81/23 85/24	101/0
86/19 86/20 93/12	chart
93/17 95/6	Cher
certainty [1] 26/2	57/15
Certificate [1] 1/10	chipp
certify [2] 121/4	choos 59/4
121/10	chose
Chair [5] 48/6 75/9	Chris
80/2 111/20 116/16	1/15
challenge [1] 19/19	Chrn
challenges [1]	CIG
102/20	circu
chance [1] 37/17	5/23
change [6] 32/13	cited
54/19 56/24 116/7	cities
117/1 117/11	citize
changed [8] 9/9	city [
22/4 48/9 75/11	city [

19 114/20 21 115/13 ges [6] 32/7 32/16 32/20 3 116/20 ging [1] 21/19 21 acterize [5] 48/17 73/9 18 103/20 ge [1] 19/23 t [2] 100/13 6 ts [1] 3/23 ry [2] 57/8 5 per [1] 38/23 se [2] 54/15 e [1] 80/21 stopher [1] nn [1] 1/13 **RÉ** [1] 108/2 mstances [1] [1] 9/7 [1] 107/7 ens [1] 65/12 1] 107/16

civil [2] 7/12 10/9 claims [1] 53/9 clarification [1] 71/1 clarify [4] 69/19 73/13 81/3 81/23 acterization [1] clarifying [1] 67/16 **classified** [2] 89/13 111/9 classify [1] 42/21 clean [2] 44/24 117/17 lotte [1] 94/13 clear [12] 15/4 62/11 70/23 85/2 85/4 91/24 92/21 93/3 93/9 101/11 113/18 113/20 clearance [4] **68/13** 75/6 76/20 77/8 clearances [4] 68/1 68/7 76/4 79/9 cleared [2] 41/23 62/13 clearing [2] 71/16 92/23 clearly [2] 72/5 74/22 client [6] 32/22 33/3 33/17 33/22 101/13 101/22 climate [2] 116/6 116/24

Conduits [2] 12/19 13/4 Conference [3] 3/19 3/21 43/11 configuration [1] 78/17 confirm [1] 70/18 confirmation [1] 28/8 confused [1] 11/22 congestion [1] 40/15 conservatively [1] 11/15 consideration [1] 88/11 considered [1] 117/16 considering [1] 7/8 consistent [3] 6/4 15/22 98/20	51/4 61/19 66/16 78/6 88/1 91/13 construction [90] 5/3 5/6 5/18 8/18 9/6 9/23 10/9 10/17 18/2 18/6 18/16 19/6 19/11 19/24 20/4 20/12 25/14 31/8 31/23 32/8 32/9 36/22 37/3 37/14 46/18 47/7 49/9 49/12 53/10 53/23 55/17 56/11 57/1 57/7 57/18 57/23 58/23 59/6 59/23 61/4 61/16 62/4 62/9 62/24 65/9 66/7 66/10 77/15 79/20 79/21 82/21 83/6 83/16 83/21 83/24 84/8 85/11 85/13 85/21 87/8 87/0 87/12	113/23 114/5 117/4 117/21 117/23 118/15 118/23 consultants [2] 88/9 88/13 consultation [1] 31/2 contact [1] 94/1 contained [1] 99/24 contaminants [1] 44/17 contamination [1] 44/18 continually [2] 15/8 115/5 Continuation [1] 4/7 continue [3] 8/21 16/1 16/16 continues [1] 120/22 continuous [1]
40/15 conservatively [1] 11/15 consideration [1] 88/11 considered [1] 117/16 considering [1] 7/8 consistent [3] 6/4	57/1 57/7 57/18 57/23 58/23 59/6 59/23 61/4 61/16 62/4 62/9 62/24 65/9 66/7 66/10 77/15 79/20 79/21 82/21 83/6 83/16 83/21 83/24 84/8	continually [2] 15/8 115/5 Continuation [1] 4/7 continue [3] 8/21 16/1 16/16 continues [1] 120/22

C
conventional [1]
13/7
conversation [1]
35/22
Coos [1] 38/17
copy [4] 3/8 3/9
18/2 20/11
corner [2] 44/12
44/15
correct [33] 6/15
11/19 13/18 17/11
18/22 18/22 18/24
19/18 24/19 27/21 30/11 30/19 30/20
30/24 34/18 37/19
37/20 38/14 38/15
41/17 42/13 42/20
47/8 55/6 55/10
70/3 71/19 75/1
75/4 81/16 81/17
91/10 96/4
correctly [3] 62/6
71/4 96/23
corridor [7] 47/19
48/16 48/18 55/5
55/9 57/10 58/21
cost [2] 53/18 54/8
costs [3] 24/18
53/15 54/6
Cote [5] 2/9 82/9
82/14 85/5 85/18

could [45] 6/7 11/10 13/24 14/13 14/20 15/24 19/10 24/21 30/17 44/16 52/1 54/3 54/10 54/11 54/12 54/18 56/23 59/21 60/8 75/5 76/1 76/9 78/2 78/5 78/9 79/5 79/5 80/4 85/13 92/2 92/20 93/4 93/9 98/1 100/7 106/18 108/15 109/14 111/5 111/19 111/22 113/2 113/22 114/4 116/23 couldn't [2] 50/22 93/15 **counsel** [5] 1/20 80/19 101/9 121/11 121/14 country [1] 17/9 county [3] 38/17 107/16 115/20 couple [2] 72/14 115/2 course [6] 33/19 34/10 40/11 95/1 109/22 111/12 COURT [4] 1/24 57/3 121/4 121/18

cover [2] 105/6 120/22 covered [1] 54/21 Craig [1] 1/15 crane [10] 2/11 49/24 70/19 71/11 71/24 94/10 94/13 100/9 100/22 109/19 cranes [1] 39/1 create [2] 41/24 43/17 created [2] 73/19 73/21 **creating [1] 8/20** critical [1] 92/15 cross [9] 2/6 2/7 2/8 2/9 2/10 2/11 2/12 14/14 75/8 **Cross-examination** [7] 2/6 2/7 2/8 2/9 2/10 2/11 2/12 crosses [1] 95/20 crossing [2] 76/21 106/7 cultural [1] 37/12 **curious** [1] 13/19 current [1] 71/15 **currently [7] 19/20** 48/22 50/20 51/22 52/6 56/3 91/15 cursor [2] 47/17

Cursor [1] 47/23 customary [4] 54/24 96/24 97/4 97/6 cut [1] 13/8 D d/b/a [1] 1/9 dams [1] 43/17 Daniel [2] 95/20 102/15 data [4] 34/1 37/9 66/21 67/2 date [1] 121/7 DAVID [4] 2/5 3/13 3/15 4/9 Dawn [1] 90/9 day [19] 1/3 3/4 3/6 3/11 4/3 18/3 20/12 24/6 24/8 24/9 60/7 60/13 80/10 83/4 84/15 87/15 114/6 120/20 120/24 days [11] 24/7 80/10 84/4 84/24	deemed [1] 33/6 deep [2] 28/11 39/12 deeper [2] 39/11 39/24 deepest [1] 13/16 Deerfield [10] 66/6 66/18 67/18 67/19 79/18 79/23 82/15 82/22 94/14 95/9	delineating [1] 19/7 deliveries [1] 38/22 demo [1] 86/6 demobilization [1] 10/10 density [1] 81/5 Department [2] 43/9 100/15 depend [1] 61/15 dependent [2] 59/3 61/1 depending [4] 15/23 82/5 89/13 116/23 depends [5] 15/16 53/20 54/4 87/23 110/1 depicted [1] 102/15 Dept [3] 1/15 1/15 1/16 DES [6] 45/6 70/17 88/21 114/17 119/1 119/16 describe [2] 49/7 105/13
3/15 4/9 Dawn [1] 90/9 day [19] 1/3 3/4 3/6 3/11 4/3 18/3 20/12 24/6 24/8 24/9 60/7 60/13 80/10 83/4 84/15 87/15 114/6 120/20 120/24 days [11] 24/7	deemed [1] 33/6 deep [2] 28/11 39/12 deeper [2] 39/11 39/24 deepest [1] 13/16 Deerfield [10] 66/6 66/18 67/18 67/19 79/18 79/23 82/15	53/20 54/4 87/23 110/1 depicted [1] 102/15 Dept [3] 1/15 1/15 1/16 DES [6] 45/6 70/17 88/21 114/17 119/1 119/16 describe [2] 49/7 105/13 described [2] 101/7 119/8 describing [2] 44/7 97/21

D	
design [18] 3/19	
3/20 11/11 11/13	
14/7 28/20 32/7	
36/13 43/10 68/19	
69/10 77/14 78/13	
79/3 79/12 88/6	
88/7 107/18	
designating [2]	
37/9 91/6	
designed [2] 66/14	
71/17	
Designee [3] 1/15	
1/15 1/16	
destroyed [1] 88/2	
detail [4] 31/8	
37/22 74/10 105/13	
detailed [3] 37/13	
37/15 114/7	
details [3] 59/20	
65/6 115/10	
detected [1] 44/12	
determination [1]	
88/23	
determine [6]	
17/17 18/9 18/14	
22/16 60/8 118/20	
determined [1]	
20/6	
develop [2] 60/19	
113/24	
developer [1] 63/10	

development [4]
80/1 81/9 99/2
113/23
deviate [1] 14/17
Dewberry [2] 3/17
7/11
diagram [1] 93/14
diameter [4] 5/23
6/5 6/18 44/5
did [26] 22/4 26/9
31/8 31/18 32/24
35/4 36/24 37/17
38/16 39/16 41/17
42/15 43/19 46/7
46/10 53/9 59/5
63/15 73/3 77/14
85/7 93/21 95/5
104/12 108/6 108/6
didn't [10] 14/1
23/3 25/21 25/22
31/15 42/18 72/9
77/18 81/11 99/19
diesel [2] 80/8 82/4
diesel-powered [1]
80/8
difference [1] 84/3
different [11] 9/12
49/17 69/16 69/17
69/17 73/20 73/23
75/10 75/21 87/1
87/13
different setback
[1] 69/17

differently [1] 28/13 difficulties [1] 116/15 dig [5] 18/11 18/15 72/16 118/15 119/6 digging [1] 26/5 digression [1] 24/23 Dir [1] 1/15 direct [4] 3/13 3/15 41/2 89/21 directional [13] 4/23 5/21 7/12 10/18 10/23 11/4 11/12 12/22 13/9 13/12 14/16 16/1 16/11 directly [2] 33/1 40/16 dirt [3] 40/6 40/15 118/15 **disagree** [1] 98/4 disagrees [1] 98/4 disclosed [1] 34/10 **disclosure** [1] **34/19** discrepancy [2] 5/10 9/20 discuss [1] 42/15 **discussed [4] 30/22** 42/7 58/15 81/24 discussion [10]

D	46/22 47/9 47/11	1
discussion [10]	48/5 48/20 50/1	d
28/6 31/17 43/14	50/15 50/24 53/18	9
63/16 64/8 64/15	54/5 54/15 54/16	
83/12 86/8 87/3	56/1 58/2 60/10	
120/15	60/15 60/18 62/19	1
disjunct [1] 18/12	62/21 63/6 63/10	d
disposed [1] 44/23	65/1 67/4 68/17	
disposition [1]	69/6 69/9 70/8	3
103/11	70/24 72/1 76/24	4
dispute [3] 33/19	78/21 78/23 79/16	7
34/24 35/3	79/20 80/10 81/1	
dissipation [1]	81/21 83/23 84/13	9
42/10	85/6 85/10 85/12	
distance [2] 90/20	85/21 86/10 86/12	d
109/3	88/12 92/11 92/13	
distances [3] 68/14	94/17 95/18 101/12	d
69/16 69/18	102/12 102/20	
disturbance [4]	105/10 106/10	9
18/8 18/13 18/20	106/24 107/10	d
84/2	107/11 109/5	4
disturbed [2] 84/5	109/10 111/17	
84/6	114/9 115/8 116/14	4
disturbing [1] 72/3	118/15 118/16	5
Division [1] 100/16	118/16 118/19	5
do [92] 7/2 8/16 9/4	119/7 121/4	
9/20 10/3 19/8	DOCKET [2] 1/7	
24/24 25/23 26/6	67/3	
26/17 29/16 29/17	document [5] 3/23	
33/8 33/10 34/9	97/23 101/14	9
35/6 36/3 36/5 36/8	105/10 113/23]
38/7 39/16 39/19	documentation [1]]

105/9 documents [10] 99/16 100/1 101/15 101/18 101/20 102/4 102/10 107/20 114/5 114/8 does [21] 5/4 15/3 20/22 24/17 38/21 38/24 39/1 39/5 43/16 44/1 50/15 70/9 70/10 71/9 71/10 74/20 76/5 96/10 99/9 105/6 105/19 doesn't [4] 30/3 32/12 42/14 120/11 doing [6] 7/7 10/2 22/15 24/12 81/13 97/1 don't [35] 8/11 20/17 25/3 25/8 25/24 35/18 36/7 41/15 45/10 51/20 55/24 56/20 58/12 59/1 59/18 62/15 72/19 72/19 73/4 73/7 76/22 77/13 78/18 79/3 79/6 79/10 85/3 90/2 98/24 101/3 101/4 102/4 104/14 114/11 115/14

D done [11] 12/15 15/21 19/9 21/23 48/23 50/12 61/21 91/1 91/5 115/6 116/6 **Donovan** [1] 1/4 Dore [1] 1/20 DOT [16] 3/19 3/20 9/3 21/13 21/15 31/2 31/19 33/1 41/6 43/15 43/16 88/18 88/19 105/24 106/1 119/16 down [18] 8/22 9/14 12/10 24/15 29/7 29/8 30/5 35/14 43/13 58/16 74/15 89/5 93/5 98/8 102/8 109/22 114/23 116/1 draft [2] 104/20 108/6 drain [8] 42/23 43/18 44/1 44/3 44/4 44/8 44/17 45/5 **Draper [4] 2/12** 103/24 104/2 111/24 draw [2] 108/10 108/15

drawing [3] 13/23 14/24 15/2 DRED [1] 104/23 drill [8] 5/21 10/23 11/6 11/12 11/15 12/22 13/12 14/16 drilling [11] 4/24 7/12 9/14 11/4 13/9 15/20 16/1 16/11 26/8 38/23 39/2 drills [2] 7/7 10/18 drive [3] 8/3 52/10 **52/10** driven [1] 89/10 driving [1] 52/9 drops [1] 46/12 due [4] 32/5 32/8 41/24 89/2 dug [1] 12/3 dump [1] 38/12 **dumpsters** [1] 39/3 duration [4] 59/11 83/21 89/15 116/23 during [14] 28/3 28/5 32/9 43/14 60/22 61/19 61/21 86/8 86/17 87/19 88/1 88/2 88/6 106/14 dust [3] 40/14 57/23 82/4

\mathbf{E}

each [14] 10/23 11/23 12/1 12/1 12/10 12/11 13/5 13/17 41/4 49/22 60/19 60/20 73/20 73/22 EARLE [2] 2/4 4/8 earlier [8] 9/8 14/5 26/12 26/15 27/16 37/22 67/23 69/19 early [1] 33/24 Earth [1] 95/17 **easement** [6] 8/8 69/22 74/8 74/19 75/1 77/9 **easements** [2] 37/8 67/22 easily [2] 7/2 78/23 east [3] 61/9 67/20 71/7 **Easton [2] 15/2** 37/13 easy [1] 101/1 **Economic** [1] 1/16 edge [9] 7/18 14/19 68/4 68/11 69/9 71/5 71/11 74/13 74/19 **Edison [1] 107/22** effective [1] 115/15 **efficiency** [1] **24/16**

F	e
eight [1] 24/9	e
either [6] 10/21	e
28/17 41/21 44/22	,
56/1 88/2	e
elaborates [1] 41/3	
Electric [1] 67/24	e
electrical [6] 68/1	
77/14 78/12 79/12	e F
107/18 107/21	
Electronic [1]	e
107/21	e
Electronically [1]	e
1/6	•
Electrotechnic [1]	e
108/1	_
elevation [3] 72/18	F
72/24 73/1	e
ELMO [8] 17/24	e
25/1 25/2 25/4 25/6	4
25/7 25/9 104/3	-
else [1] 105/5	e
emergency [1] 21/6	e
employed [2]	e
121/11 121/14	•
employee [1]	e
121/13	e
enable [2] 56/16	
62/23	e
encounter [1] 7/8	F
encountered [1]	e
89/18	

encouraging [1] 90/8 encroach [1] 8/23 encroaching [1] 76/21 end [5] 9/23 9/23 36/12 38/8 84/9 end-to-end [1] 9/23 ends [2] 84/9 95/12 Energy [1] 1/10 engaging [1] 34/7 engineer [1] 67/5 engineering [1] 58/9 engineers [2] 56/11 essentially [4] 107/22 England [1] 115/12 enhanced [1] **42/9** enough [6] 39/12 49/21 49/24 72/20 102/4 114/19 ensued [1] 120/15 entail [1] 7/18 entire [4] 16/17 35/24 37/11 84/22 entirely [1] 101/10 entitlement [3] 33/13 34/8 34/11 entry [1] 90/24 Environ [1] 1/15 environment [1] 15/22

environmental [6] 88/9 88/12 88/18 88/22 115/3 118/24 equipment [14] 6/1 6/4 6/14 10/15 10/21 11/8 15/23 18/11 18/15 39/7 49/8 49/22 51/12 80/9 erosion [2] 37/15 111/13 especially [2] 118/13 118/18 Esq [1] 1/20 18/10 18/15 18/17 73/16 **establish** [1] 16/1 established [4] 20/1 31/10 57/1 57/6 establishing [1] 16/18 estimate [2] 53/14 58/23 **estimated** [2] 38/12 74/5 **estimates** [2] 9/16 9/17 estimating [1] 40/9 etcetera [6] 9/14 24/20 24/20 32/10 57/23 106/8

80/3 examination [7] 2/6 2/7 2/8 2/9 2/10 2/11 2/12 example [5] 21/24	exhibits existence 93/22 94 existing
examination [7] 2/6 2/7 2/8 2/9 2/10 2/11 2/12	93/22 94
2/11 2/12	
	ovicting
Javamnja [5] 21/24	
	50/13 50
36/1 61/18 89/4	52/4 52/
	52/23 5
excavate [1] 44/21	69/22 74
excavated [2] 23/7	83/8 83/
119/11	92/3
excavation [2] 37/6	exists [2
118/16	Expand
exception [2] 33/15	expect [
119/18	10/18 34
exceptions [1]	64/18 6
21/15	89/6 89/
excerpt [1] 97/19	106/15
excessive [2] 24/4	119/22
24/5	expectat
exchange [1] 25/13	40/7
exemption [2] 33/8	expectat
103/12	expected
exercise [1] 38/20	83/23
exhibit [12] 3/3	experier
23/5 25/12 36/16	5/8 5/14
66/18 68/23 70/16	10/6 31/
71/7 87/13 95/19	56/20 82
108/10 116/5	84/12 8'
Exhibit 67708 [1]	88/16 88
70/16	97/3
Exhibit 68117 [1]	expertis
	excavated [2] 23/7 119/11 excavation [2] 37/6 118/16 exception [2] 33/15 119/18 exceptions [1] 21/15 excerpt [1] 97/19 excessive [2] 24/4 24/5 exchange [1] 25/13 exemption [2] 33/8 103/12 exercise [1] 38/20 exhibit [12] 3/3 23/5 25/12 36/16 66/18 68/23 70/16 71/7 87/13 95/19 108/10 116/5 Exhibit 67708 [1] 70/16

s [1] 28/4 ce [3] 73/19 4/3 [17] 47/18 50/19 52/2 2/5 52/17 5/5 55/9 4/24 75/11 3/10 84/20 2] 8/9 44/15 1 [1] 61/7 [13] 7/21 **34/19 44/20** 4/21 83/19 /16 106/13 113/19 tion [1] tions [1] 5/1 d [2] 15/18 nce [18] 5/5 4 5/19 7/11 /22 32/16 2/3 83/18 37/9 88/8 8/24 92/13 se [3] 37/21

E	fairly [4] 6/10 6/11	74/18 76/19 77/4
expertise [2] 68/5	47/16 50/3	77/7 90/22 90/23
68/18	falls [2] 88/16 88/17	90/24 91/14 91/23
experts [3] 41/13	familiar [10] 69/11	92/18 93/2 93/9
101/5 101/9	79/19 83/2 95/10	108/19 109/4 109/4
explain [1] 93/13	95/23 103/3 105/19	109/10 110/3
explain [1] 93/13 explained [1] 86/3	105/20 105/23	110/12 110/16
explained [1] 80/3 exposed [1] 14/2	106/16	110/20
	family's [1] 71/6	felt [2] 7/5 10/22
extend [2] 40/15 62/4	far [7] 6/21 22/12	few [6] 26/8 41/19
	40/22 46/13 79/8	49/1 82/9 94/14
extended [1] 22/10	83/20 105/7	102/14
Extends [1] 24/18	farther [1] 110/20	field [5] 91/7 91/7
extensive [1] 31/22	fashion [1] 44/9	91/24 92/7 110/7
extent [7] 8/9 14/18	fast [2] 51/21 98/3	fifteen [2] 32/4
31/4 35/21 47/9	feature [1] 87/11	32/11
91/20 107/15	features [1] 78/21	fifty [2] 109/4
extraction [1]	feel [3] 8/16 10/3	110/20
38/22	109/10	fight [1] 108/15
extremely [1] 80/1	feet [58] 5/22 11/3	figure [1] 39/11
eye [1] 35/11	11/9 11/14 11/17	figured [1] 34/1
eyes [1] 34/9	11/24 13/17 13/22	filed [4] 1/6 3/13
\mathbf{F}	19/14 19/15 21/23	3/15 112/11
facility [2] 1/10	21/24 28/10 28/11	fill [1] 46/15
115/7	28/11 28/17 28/22	final [6] 53/24
fact [3] 9/22 20/6	28/23 29/1 29/1	56/19 88/10 88/13
27/17	29/2 29/14 29/16	88/14 118/4
factors [3] 10/15	29/18 29/19 29/20	financially [1]
10/22 86/15	29/21 29/21 39/12	121/14
facts [1] 100/6	58/16 60/7 67/15	find [7] 24/11 34/23
fair [3] 65/8 110/23		42/19 57/16 94/2
111/2	70/8 74/12 74/18	99/3 99/7
	 -	-

flow [2] 43/3 45/4 flowable [2] 42/7		Finding [1] 22/18 fine [4] 48/12 51/18 51/19 92/11 finish [2] 9/19 99/22 finished [1] 99/20 finishing [2] 11/2 32/18 firmly [1] 20/1 first [8] 43/19 63/21 63/23 64/1 64/3 69/21 76/12 85/10 fit [4] 7/2 76/6 76/17 77/9 five [6] 9/7 11/9 11/14 24/7 58/16 78/10 flat [2] 103/16 103/19 flatbeds [1] 39/1 flattening [1] 7/24 flexibility [1] 110/13 flip [1] 30/11 flip-side [1] 30/11 floating [2] 115/22 116/1 flooded [2] 115/22 117/14 flow [2] 43/3 45/4 flowable [2] 42/7	flux [2] 21/13 34/14 follow [5] 66/8 78/4 82/16 110/5 119/1 follow-up [3] 66/8 78/4 119/1 follow-ups [1] 82/16 following [3] 37/1 81/2 81/13 foot [20] 11/14 12/6 39/23 66/14 66/16 66/17 67/22 69/4 69/5 69/23 69/24 70/20 70/24 71/8 74/8 74/19 75/6 75/8 77/9 92/20 footage [1] 102/18 footprint [2] 5/7 62/17 forced [1] 86/24 forces [2] 13/13 13/13 foregoing [1] 121/4 form [1] 91/6 forth [5] 8/13 57/18 62/1 62/23 121/7 forward [5] 16/8 32/22 33/17 101/13	84/16 four [9] 9/9 10/3 19/15 19/16 29/15 47/24 49/19 58/21 65/9 four-mile [2] 49/19 58/21 frame [8] 9/21 83/13 84/7 84/15 85/12 86/14 87/21 114/13 Franconia [1] 90/19 free [1] 80/20 freeze [1] 86/21 freight [1] 98/14 French [8] 42/23 43/17 44/1 44/3 44/4 44/7 44/16 45/4 frequency [1] 111/11 frozen [1] 86/18 FTB [3] 42/8 43/15 44/16 fully [2] 36/9 92/24 fumes [3] 80/8 81/8
---	--	---	---	---

F	21/3 21/22 22/12	92/5 101/13 112/19
functioning [1]	26/8 27/4 27/8	120/5
117/9	37/11 43/20	goal [2] 14/7 18/21
further [9] 45/8	get [22] 8/13 12/13	goes [13] 12/1 12/3
51/1 58/9 65/17	14/12 17/19 20/3	22/13 25/12 29/4
78/17 90/1 92/12	21/15 28/7 36/11	46/6 53/20 53/23
121/10 121/12	36/17 38/3 40/1	55/22 61/13 92/17
future [1] 78/20	45/22 49/24 52/6	105/11 109/22
	53/8 57/17 61/8	going [61] 6/18 7/7
G	91/8 103/22 111/9	8/21 8/22 10/1
G146 [1] 67/10	114/15 114/23	10/20 17/9 17/10
Gale [3] 3/22 90/18	gets [3] 21/9 33/14	18/9 18/10 18/14
93/19	116/9	18/18 20/16 22/17
gas [2] 6/4 117/15	getting [1] 119/6	23/14 27/11 28/10
general [8] 6/15	giant [1] 24/7	28/14 38/18 39/11
42/13 57/10 60/14	Gibson [1] 23/8	39/13 40/5 40/22
94/22 96/13 96/15	give [7] 51/20 53/14	44/20 45/21 46/14
111/4	58/22 59/1 59/10	49/20 50/3 52/13
generally [13] 5/7	82/19 109/14	53/1 53/3 53/3 59/2
5/19 11/9 15/21	given [12] 8/8 10/17	61/2 61/11 62/23
16/10 16/15 22/6	14/15 45/12 50/13	63/12 65/19 74/12
35/5 59/19 68/12	82/1 92/9 93/7	75/7 82/20 84/5
73/18 78/12 107/18	100/8 100/13 101/5	84/6 88/7 89/6
generators [1] 39/2	102/22	89/14 89/15 93/10
generic [6] 48/7	glean [1] 102/5	95/24 108/3 110/6
51/14 51/17 111/21	go [24] 4/17 12/10	110/10 110/11
111/24 116/18	14/20 15/3 17/18	113/24 114/23
gentlemen [6] 14/2	18/23 32/11 39/24	116/17 117/2 117/4
24/3 24/10 66/4	43/11 43/13 43/20	117/15 118/2
81/21 112/2	47/15 50/15 50/15	120/17
geology [1] 15/16	51/12 54/13 59/1	gone [1] 40/22
geotechnical [8]	65/24 76/10 86/15	good [15] 4/2 4/12
6 [-]		9 L J

\mathbf{G}	8
good [13] 11/11 23/15 36/8 45/15	
45/18 45/23 66/1	
66/3 66/4 82/14	
86/20 94/1 104/1	
Google [1] 95/17	
got [6] 11/22 12/9	8
21/3 27/4 34/22	
58/17	
grading [1] 41/23	l
Grafton [1] 115/19]
granite [2] 26/6	
93/13	
gravel [2] 43/2	
53/21	
gravels [1] 43/16	
great [3] 57/16	
60/10 113/9	
greater [2] 5/22	
36/1 Great also are [1], 10.4/2]
Gretchen [1] 104/2	
ground [5] 11/7 19/6 23/13 68/13	
119/15	
group [5] 31/6 66/9	
90/16 120/5 120/7	
grove [1] 96/8	
growth [2] 92/21	
93/3	
guarantee [1] 58/8	
guardrail [1] 103/8	

guess [18] 6/10 6/13 happen [7] 32/12 9/5 12/8 14/8 15/1 59/21 72/16 81/15 16/3 17/5 29/2 110/9 111/5 111/1 happened [2] 32/9 83/22 94/17 106/8 112/5 115/16 happening [1] 116/10 61/17 guides [2] 106/24 happens [4] 50/17 107/19 68/10 116/13

H

habitat [1] 87/24 had [24] 5/9 5/14 15/1 20/6 24/5 25/23 26/15 28/9 28/12 31/1 31/12 32/6 32/19 33/23 34/2 42/17 71/23 80/19 99/16 99/22 101/13 109/21 114/2 115/20 half [6] 6/17 **29**/16 29/19 29/20 39/13 57/10 halfway [1] 113/22 hammer [1] 24/8 **HAMPSHIRE** [14] 1/1 1/4 1/9 9/3 43/9 65/11 97/20 98/13 104/11 104/17 104/23 105/1 114/17 118/13 Hampshire-based [1] 104/11

59/21 72/16 81/15 110/9 111/5 111/10 happened [2] 32/9 112/3 happening [1] 61/17 happens [4] 50/17 68/10 116/13 117/14 happy [2] 10/4 75/17 Hard [2] 33/21 92/9 has [33] 4/24 7/11 9/8 15/8 21/6 23/1 29/13 40/1 44/22 48/9 56/5 63/15 66/10 66/16 66/19 67/4 69/22 70/1 73/13 74/22 75/11 80/14 88/14 92/13 92/21 93/2 100/5 101/1 106/12 115/7 115/13 117/12 120/7 hasn't [1] 56/2 hatch [3] 90/24 91/23 92/1 have [138] haven't [1] 54/23 having [7] 11/15 35/6 35/13 40/21

\mathbf{H}
having [3] 63/14
78/23 100/12
haystack [2] 22/18
27/17
HDD [12] 5/2 5/15
6/9 11/2 13/16 15/2
15/8 15/13 17/7
17/13 22/15 93/16
he [6] 28/24 41/16
63/11 63/13 77/20
100/17
He'd [1] 75/16
he's [1] 29/1
head [1] 104/15 heading [1] 71/7
heads [1] 90/7
hear [1] 81/12
heard [5] 9/9 13/19
28/13 63/11 64/17
hearing [4] 1/11
65/22 75/18 120/21
hearings [3] 9/8
28/3 28/5
heat [1] 42/10
heavily [1] 31/24
heaving [2] 42/12
42/15
heavy [6] 49/8
51/12 116/8 116/20
116/22 117/7
height [2] 58/7
1

58/10	
heights [1] 58/18	
held [1] 93/14	
help [2] 72/18	
110/14	
helps [1] 76/13	
her [1] 90/5	
herbicide [1]	
119/15	
herbicides [1]	
119/17	
here [38] 4/16 23/0	6
23/18 38/9 43/15	
43/22 45/2 45/11	
45/11 45/22 46/3	
47/15 48/4 48/8	
54/23 58/21 61/5	
61/14 75/2 75/10	
75/21 76/5 83/15	
85/9 90/3 92/19	
93/12 98/21 99/5	
100/8 101/2 102/11	
102/23 105/16	
108/9 116/4 116/13	3
118/13	
hereby [1] 121/4	
hereinbefore [1]	
121/7	
high [4] 5/20 47/10	6
60/17 99/12	
highlight [1] 83/14	ļ
highlighted [4]	

74/4 96/17 96/22 108/13 highly [1] 30/9 Highway [5] 3/19 3/20 43/10 95/21 102/15 Highway/Route [1] 102/15 Hill [1] 118/1 hillside [1] 41/21 Hilton [1] 63/8 6 him [1] 40/23 his [7] 16/4 21/20 26/12 28/16 41/15 63/12 75/15 hit [2] 24/15 67/19 Hobo [1] 98/16 hole [17] 6/11 6/16 6/23 12/3 13/14 15/11 15/12 15/15 15/17 15/23 16/2 16/14 16/18 16/18 28/7 28/10 28/14 8 holes [5] 6/6 6/8 12/14 13/5 26/8 homes [1] 80/9 **Honigberg** [1] 1/13 hoping [1] 75/5 horizontal [2] 4/23 79/9 horrified [1] 63/11 Horse [1] 99/13

H hotel [2] 63/8 63/10 I'd [9] 14/12 66/17 hour [1] 17/18 hours [2] 24/9 80/9 housing [3] 79/23 80/1 81/6 Houten [5] 2/7 45/14 48/11 49/3 50/24 Houten's [1] 78/4 how [32] 5/3 9/20 10/2 12/14 13/3 29/22 30/6 47/12 51/4 53/14 58/23 59/4 60/8 61/3 62/19 66/15 79/4 83/22 84/13 85/24 86/1 87/11 88/14 91/1 91/12 92/15 103/20 108/24 116/13 118/16 118/16 118/19 huge [1] 23/13 huh [13] 32/17 97/17 104/19 104/24 107/14 109/7 111/12 113/1 114/2 115/9 119/13 119/17 119/23 hundreds [1] 35/13 hydrocarbons [3] 44/12 44/19 44/22

67/16 68/22 70/15 74/1 104/10 108/9 108/10 I'll [16] 4/16 4/19 23/24 36/17 38/3 42/3 47/15 67/17 74/16 74/21 82/10 94/17 97/24 98/1 101/18 103/11 I'm [88] 4/3 4/13 4/19 11/21 12/5 12/8 13/2 13/19 13/21 14/12 17/16 17/19 18/9 20/17 21/1 23/14 25/3 25/9 25/9 25/15 27/11 28/4 29/9 31/6 32/12 35/1 35/20 39/21 40/5 40/8 40/22 45/21 50/7 51/8 52/23 55/7 58/4 66/5 68/6 69/11 69/14 70/24 72/7 72/9 72/10 73/10 73/23 76/2 76/12 76/14 76/16 78/2 82/2 82/22 83/1 83/17 86/10 89/23 90/3 90/11 90/14 91/7 91/23

92/24 97/11 98/3 98/4 100/4 101/10 102/3 104/1 105/23 110/5 112/6 112/14 112/20 114/12 114/13 115/2 116/10 116/17 117/15 117/24 118/1 118/3 118/4 118/11 118/14 I've [11] 5/9 5/12 13/18 13/24 16/19 46/9 58/20 59/8 92/10 92/11 103/4 I-93 [1] 59/7 **Iacopino** [1] 1/20 **IBEW** [1] 120/11 iceberg [1] 23/12 idea [5] 59/10 60/15 62/19 86/20 94/1 ideal [1] 11/17 identification [1] 98/24 identified [8] 21/7 25/19 37/13 62/15 72/6 73/7 97/14 118/23 identify [2] 73/15 102/18 IEC [1] 108/1 illuminated [2] 58/3 58/4

	Illuminating [1] 107/23 image [3] 47/15 87/5 91/10 images [1] 45/22 imaginary [1] 75/8 imagine [1] 74/7 immediate [1] 53/11 immediately [3] 60/18 96/21 103/2 impact [9] 10/16 37/2 41/24 57/18 60/15 86/2 86/19 88/7 117/12 impacted [2] 91/21 92/16 impacts [4] 41/8 57/11 57/13 89/2 impede [1] 75/7 important [1] 15/12 impression [2] 55/4 55/8 imprudent [1] 10/19 inch [4] 6/3 6/9 6/11 6/22 inches [6] 6/23 12/18 74/13 74/19 76/19 77/8	include [5] 36/24 38/16 38/21 39/1 39/5 included [4] 37/22 40/19 40/19 115/10 including [3] 9/13 10/8 45/18 incoming [1] 11/20 increase [1] 44/18 increased [3] 41/8 58/9 82/3 indicated [14] 7/4 10/11 30/7 33/23 47/2 55/11 56/2 56/5 60/6 62/17 73/10 91/16 91/22 113/17 indicates [5] 20/21 26/24 49/20 50/5 66/13 indicating [4] 12/6 12/17 28/17 45/17 indication [2] 45/12 118/22 individual [2] 12/1 117/7 individually [2] 6/3 13/5 industry [2] 68/1 68/3 inferring [1] 6/13 infiltrate [1] 43/4	intended [2] 74/6 106/5 intending [1] 6/2
--	--	--	---

interpret [1] 109/1 interpretate [1] 109/2 interpretation [1] 108/23	involved [6] 6/1 15/17 16/21 31/24 32/3 88/9 involvement [1] 100/17 Iron [1] 99/13 irrelevant [1] 111/7 Iryna [1] 1/20 is [358] isn't [4] 8/13 93/17 100/10 110/10 issue [4] 15/6 31/16 80/4 80/11 issued [1] 84/14 issues [6] 21/14 35/13 36/4 41/17 76/5 107/19 it [247] it's [78] 7/14 13/21 14/16 14/20 15/4 15/18 16/3 17/4 17/12 18/23 20/18 20/19 23/12 26/19 26/20 26/22 29/13 29/15 30/7 30/9 30/10 30/12 33/23 35/18 36/8 39/12 39/13 40/13 43/2 43/24 47/5 50/12 50/19 54/16 57/15 58/1 59/14 66/15 67/14 67/22 68/18	96/7 97/6 98/2 101/3 101/4 102/6 103/16 104/16 106/5 108/6 110/19
--	--	--

Johnson... [5] 26/1 26/10 26/17 27/2 70/5 Johnson's [1] 94/4 Joint [1] 1/8 joyriders [1] **54/19** Jr [2] 3/14 3/16 juggling [1] 25/10 July [1] 115/23 jumps [1] 91/7 June [1] 70/5 jurisdiction [1] 56/17 just [54] 12/14 13/19 15/5 16/8 17/19 23/24 26/11 28/7 29/3 30/7 30/22 31/6 34/10 40/12 43/3 45/2 47/16 48/7 49/23 51/11 51/23 52/1 52/12 52/16 52/20 53/1 59/15 61/5 69/19 74/5 74/14 75/11 76/15 77/2 77/5 77/23 79/6 79/17 81/4 82/19 83/1 85/3 92/1 92/11 94/22 100/5 105/16 106/22 110/11 111/4

114/12 115/19 117/16 120/14

K

Kathryn [1] 1/14 keep [3] 90/10 93/9 115/15 kept [2] 92/21 93/3 kind [13] 22/17 23/11 34/12 35/3 44/8 83/13 98/2 107/10 107/10 109/23 116/3 116/13 117/1 kinds [3] 112/20 116/11 116/14 knew [4] 31/18 32/23 34/17 118/6 knob [1] 71/22 knotweed [3] 118/6 118/18 119/7 know [58] 8/11 9/10 13/24 14/1 14/8 17/7 22/1 22/6 22/12 23/18 31/15 34/4 35/12 35/18 41/14 41/14 43/19 46/22 47/9 49/5 53/9 55/24 58/2 58/12 59/1 60/10 61/17 63/6 63/10 63/15 69/12 72/20 77/13 78/9 79/1

79/3 79/6 79/11 82/23 84/11 89/12 93/22 98/3 99/20 101/3 101/4 101/11 103/1 105/16 106/6 111/14 112/1 114/16 115/5 115/14 116/2 116/7 119/5 knowing [1] 30/21 knowledge [2] 76/3 87/24 known [3] 42/8 44/19 95/21 Kris [1] 23/9 kV [12] 67/9 69/7 69/22 74/12 76/20 79/7 79/24 83/9 83/11 84/19 84/20 87/7

L

labeled [3] 66/18 96/20 99/5 lack [3] 102/1 108/20 109/8 lacking [1] 102/11 laid [1] 91/15 Lakes [5] 2/6 4/4 4/10 4/13 23/22 land [4] 35/2 53/12 54/20 55/1 landowner [4] 35/2

L landowner [3] 35/12 73/5 76/4 landowner's [1] 54/24 landowners [2] 25/17 36/5 lane [4] 5/12 59/11 59/20 60/15 lanes [2] 60/24 103/22 lapse [1] 89/7 Lara [1] 45/10 large [8] 3/8 3/9 23/6 31/22 32/23 65/9 86/23 115/7 larger [8] 5/8 5/23 6/1 12/22 13/11 30/17 86/21 107/7 last [9] 42/5 64/6 64/12 72/9 72/21 88/24 93/24 100/1 101/3 later [1] 37/23 lattice [2] 69/4 69/5 law's [1] 68/24 laydown [10] 5/3 5/4 5/8 5/11 5/15	laymen [2] 9/24 44/2 layout [6] 7/2 7/15 7/15 9/23 78/15 79/5 LCR [3] 1/24 121/17 121/18 lead [1] 101/22 leading [1] 96/8 leads [1] 56/21 lease [1] 67/4 least [3] 6/9 11/13 96/19 leave [2] 52/24 53/1 leaving [1] 29/19 ledge [3] 38/18 71/22 73/1 left [3] 46/23 90/21 91/9 legally [1] 31/10 Lenehan [1] 1/20 length [2] 5/20 60/8 lengths [1] 7/6 less [3] 30/13 60/3 109/4 let [9] 18/11 18/19 32/21 40/23 50/18 76/10 98/2 105/16	24/9 24/15 28/14 30/4 42/14 43/2 48/1 49/11 49/18 53/15 62/2 66/17 67/16 68/22 69/7 70/15 74/1 81/12 84/1 84/2 84/17
6/1 12/22 13/11 30/17 86/21 107/7 last [9] 42/5 64/6 64/12 72/9 72/21 88/24 93/24 100/1 101/3 later [1] 37/23 lattice [2] 69/4 69/5 law's [1] 68/24	91/9 legally [1] 31/10 Lenehan [1] 1/20 length [2] 5/20 60/8 lengths [1] 7/6 less [3] 30/13 60/3 109/4 let [9] 18/11 18/19 32/21 40/23 50/18 76/10 98/2 105/16 109/18	67/16 68/22 69/7 70/15 74/1 81/12 84/1 84/2 84/17 85/23 87/11 88/15 89/3 89/18 89/19 89/21 94/6 97/1 99/22 101/14 104/5 104/10 105/16 106/9 108/9 108/10 110/24 111/21 112/23 113/9 116/8
62/16 laying [1] 102/20 layman [1] 6/10	let's [8] 20/8 22/7 29/21 42/4 57/14 99/10 110/21 120/1	116/17 117/16 118/18 119/5 119/18

\mathbf{L}
likely [1] 7/8
likening [1] 44/8
limitations [2]
91/14 106/9
limited [1] 85/16
limits [4] 18/8
18/13 18/20 20/7
Lincoln [5] 97/22
98/6 98/12 98/16
98/17
line [41] 19/2 19/7
28/5 46/5 50/15
50/16 52/7 59/4 61/20 67/9 67/10
68/19 69/13 69/22
70/6 73/12 74/4
74/12 75/8 76/20
77/19 78/9 78/24
79/3 79/24 83/9
83/9 83/10 83/11
84/19 84/20 84/22
87/7 97/22 98/6
98/15 102/12
102/21 103/14
113/16 114/10
Line 11 [1] 70/6
linear [4] 5/11 5/15
28/22 34/4
lines [8] 3/18 6/5
6/5 68/7 68/16
69/20 86/7 117/5

list [2] 99/3 120/4 listed [2] 10/23 102/10 listen [1] 24/6 listened [1] 28/12 literally [2] 109/2 110/7 little [19] 11/22 19/4 21/4 21/8 21/9 21/17 22/10 26/2 26/10 27/5 43/13 49/17 59/15 82/19 83/2 83/20 98/9 111/19 117/12 **Littleton** [1] 61/13 live [3] 23/19 65/12 longer [3] 5/21 65/13 living [1] 119/10 LLC [1] 1/8 loaded [1] 114/17 loads [1] 38/17 local [2] 87/24 104/4 locate [1] 91/6 located [9] 63/14 70/20 71/2 91/4 95/13 95/24 96/9 103/14 108/19 location [16] 17/14 17/16 37/4 37/6 37/7 46/7 46/21 48/24 54/17 60/20

62/7 62/23 72/7 72/10 93/23 95/6 locations [8] 16/21 20/18 21/7 21/22 87/7 113/6 113/16 115/6 lodge [1] 87/4 logging [1] 38/23 long [11] 28/11 58/23 60/9 62/19 83/22 84/13 88/5 89/14 116/24 116/24 117/11 long-term [3] 89/14 116/24 117/11 10/10 17/18 look [7] 68/22 69/1 70/15 74/1 78/7 79/17 105/20 looking [7] 31/21 63/3 91/9 95/8 114/12 115/18 116/7 looks [3] 103/3 105/16 116/8 lost [1] 76/15 lot [14] 4/17 30/14 40/14 43/21 49/11 53/22 63/6 63/12 79/19 96/17 107/3 107/4 115/13

L lot [1] 115/23 lots [2] 111/1 111/1 lunch [2] 120/17 120/19 M machinery [1] 7/16 machines [1] 17/3 made [10] 10/13 31/16 42/19 65/2 70/23 76/17 87/10 87/17 113/18 113/20 magnitude [5] 32/13 32/15 36/1 54/17 114/9 mailing [3] 99/12 102/5 102/7 Maine [5] 60/12 96/19 96/21 97/15	majority [2] 29/6 29/11 make [10] 8/2 23/17 23/24 29/5 32/7 32/20 84/3 88/10 117/8 117/10 makes [1] 16/8 making [1] 91/4 manage [1] 87/21 managed [1] 88/15 management [8] 104/6 104/21 105/11 105/15 107/11 114/16 114/24 115/3 manmade [1] 43/24 manual [11] 31/3 33/2 104/11 104/17 104/21 105/2 105/18 106/3 106/11 106/17	42/22 43/20 44/24
87/17 113/18	105/11 105/15	marks [1] 43/13
113/20	107/11 114/16	Martin [1] 1/13
magnitude [5]	114/24 115/3	Mass [1] 99/14
32/13 32/15 36/1	manmade [1] 43/24	material [6] 42/9
54/17 114/9	manual [11] 31/3	42/22 43/20 44/24
mailing [3] 99/12	33/2 104/11 104/17	54/13 119/11
102/5 102/7	104/21 105/2	materials [2] 43/1
Maine [5] 60/12	105/18 106/3	45/4

M
maximum [1]
9/19
may [36] 4/11 4/18
10/4 15/20 16/13
16/18 18/3 18/3
20/13 21/18 24/11
25/13 25/21 35/17
42/9 56/19 60/6
61/10 61/16 61/16
70/23 73/20 75/14
76/8 76/11 79/21
80/17 85/3 86/21
86/23 86/24 100/23
102/9 102/10
102/24 119/11
May 1st [1] 20/13
maybe [15] 7/11
7/13 32/15 42/3
50/16 58/16 69/2
82/4 84/6 88/21
89/12 92/18 94/12
104/16 110/14 MaDannall [1]
McDonnell [1] 108/4
me [28] 6/10 10/1
13/22 15/1 18/11
18/19 21/10 24/5
32/21 41/16 49/20
50/18 53/14 55/16
58/22 59/10 70/19
76/7 76/14 85/2
, or , or i our

96/16 98/3 101/2 101/11 101/22 103/3 109/14 109/18 mean [13] 8/12 15/4 22/18 39/18 39/19 44/2 53/16 61/7 65/1 78/21 88/8 88/10 114/11 measures [3] 89/1 119/3 119/4 meet [5] 21/13 31/3 31/19 33/1 116/14 member [3] 1/17 66/9 94/13 members [1] 45/20 **Menard [6] 2/8** 65/24 66/5 75/13 80/6 80/13 mention [2] 41/17 94/18 **mentioned** [5] 14/5 34/22 39/10 41/19 79/1 Meredith [1] 98/19 merits [1] 1/11 methods [1] 88/3 microtunnel [1] 9/11 middle [5] 69/20 69/23 70/2 74/6 85/9

midst [1] 15/14 might [21] 10/16 13/7 13/23 15/24 54/8 58/21 60/16 60/23 61/19 61/20 62/4 65/10 76/7 76/8 78/19 78/19 78/20 93/16 94/19 110/3 114/6 mile [10] 23/19 24/13 26/4 26/4 49/19 53/16 54/6 54/9 57/10 58/21 miles [6] 33/20 47/24 57/15 98/7 102/14 111/1 Miller [1] 59/6 mind [4] 35/11 91/3 114/20 114/21 minimize [1] 89/2 minimum [8] 6/17 9/16 9/18 10/24 67/8 110/16 114/3 114/6 minute [2] 18/19 65/19 **Misstates** [1] 63/18 mobilization [1] 10/9 mode [1] 16/6 modifications [1] 78/19

M	90/19 93/20	87/15 94/4 100/3
modified [2] 78/23	mouth [1] 23/8	111/20 118/5 120/4
79/5	move [17] 8/18 8/24	120/6 120/10
money [2] 24/18	15/6 16/7 27/11	120/14
53/22	32/22 33/17 33/24	Mr. Ahern [1]
monitoring [1]	36/15 42/4 43/4	118/5
112/19	43/5 53/6 59/4	Mr. Bowes [7]
Monroe [1] 1/21	67/20 101/23	25/13 25/18 82/17
month [1] 89/6	117/17	83/5 83/12 87/3
months [1] 42/12	moving [4] 7/18	87/15
Montreal [1] 60/12	11/1 36/18 38/3	Mr. Chair [4] 48/6
monument [1]	Mr [24] 2/6 2/7 2/9	75/9 80/2 111/20
93/13	4/22 9/15 11/1	Mr. Cote [3] 82/9
more [26] 6/4 7/14	17/22 18/4 20/13	85/5 85/18
8/2 8/4 11/17 19/19	28/2 28/3 32/21	Mr. Johnson [5]
24/18 28/12 35/16	34/24 38/7 41/15	21/1 26/1 26/10
35/19 37/10 40/6	42/6 44/1 107/9	27/2 70/5
41/6 42/9 42/11	107/9 107/13	Mr. Johnson's [1]
42/22 43/5 77/21	107/17 111/14	94/4
78/6 83/2 83/20	115/17 116/16	Mr. Lakes [3] 4/4
92/7 99/22 102/12	Mr. [44] 4/4 4/10	4/10 23/22
106/4 107/19	18/16 19/22 21/1	Mr. Needleman [4]
morning [13] 1/4	23/22 25/13 25/18	75/14 85/14 100/3
3/11 4/2 4/12 45/15	26/1 26/10 26/15	120/14
45/18 45/23 66/2	27/2 27/19 28/9	Mr. Quinlan [1]
66/3 66/4 82/14	36/21 38/11 45/14	77/19
104/1 120/21	48/6 48/11 49/3	Mr. Raff [3] 120/4
most [6] 6/8 15/12	50/23 70/5 75/9	120/6 120/10
46/15 60/6 71/15	75/14 77/19 78/4	Mr. Scott [2] 18/16
115/11	80/2 82/9 82/17	28/9
mostly [1] 5/11	83/5 83/12 85/5	Mr. Scott's [1]
Motel [3] 3/22	85/14 85/18 87/3	26/15
<u> </u>	1	1

\mathbf{M}
Mr. Taylor [4]
19/22 27/19 36/21
38/11
Mr. Van [5] 45/14
48/11 49/3 50/23
78/4
Ms [13] 2/8 2/10
2/10 2/11 2/12
34/21 44/11 65/23
75/13 80/6 80/13
90/3 109/18
Ms. [8] 81/14 90/3
90/5 94/10 100/9
100/22 103/24
111/24 Ma Crana [2]
Ms. Crane [3] 94/10 100/9 100/22
Ms. Draper [2]
103/24 111/24
Ms. Pacik [1] 81/14
Ms. Schibanoff [1]
90/3
Ms. Schibanoff's
[1] 90/5
much [12] 6/1 7/19
10/10 15/20 39/13
40/2 50/5 53/15
58/18 92/15 105/6
120/2
mud [1] 38/21
multiple [7] 32/1

45/17 54/22 83/7 84/10 89/2 89/20 municipalities [1] 107/5 my [56] 4/12 5/19 7/4 8/6 8/10 8/15 10/6 13/15 14/8 15/19 29/24 35/11 35/11 36/1 36/17 39/22 43/19 44/13 44/14 45/22 45/23 47/15 48/23 52/12 55/4 55/8 66/5 68/5 68/18 68/24 71/5 71/9 73/9 74/22 75/18 76/18 79/1 82/15 85/16 88/16 88/24 91/8 92/5 92/13 96/4 100/12 103/23 104/15 107/3 112/12 112/13 113/5 114/21 120/4 121/5 121/7 my situation [1] 44/13 N

N.H [1] 121/18 name [3] 4/12 66/5 68/17 NAPO [2] 3/22 90/18

NAPO-BP [2] 3/22 90/18 narrower [2] 19/20 39/23 Nathan [3] 18/4 20/14 28/2 national [3] 67/24 107/20 116/6 national-oriented [1] 107/20 natural [2] 108/21 109/8 nature [2] 41/8 67/12 navigates [1] 11/7 near [6] 12/6 14/19 53/11 71/20 72/5 80/9 nearest [1] 71/21 necessary [5] 25/16 25/20 67/15 92/22 108/18 need [28] 4/4 11/3 11/24 12/12 17/18 18/18 22/24 24/24 25/2 25/4 25/5 25/7 25/8 25/9 29/5 37/8 49/7 49/20 49/23 50/4 52/11 52/14 60/18 71/1 79/8 83/8 92/8 112/17 needed [6] 38/13

N 85/11 89/8 100/12 none [1] 54/18 105/17 nonexistent [1] needed... [5] 49/9 nice [2] 78/1 103/16 22/14 66/20 67/9 73/15 no [55] 1/7 1/23 normally [2] 6/15 112/19 1/24 2/3 3/3 3/3 4/6 11/13 needle [3] 17/6 north [4] 46/19 5/17 10/14 20/2 22/18 27/17 71/4 99/13 102/14 21/4 21/15 21/17 Needleman [4] 21/20 22/10 24/14 northern [20] 1/8 75/14 85/14 100/3 25/5 26/3 26/10 3/17 16/22 25/21 120/14 27/5 31/12 38/19 63/12 66/20 67/10 needs [8] 6/16 8/21 38/24 39/4 39/9 69/8 71/23 75/1 15/6 83/9 83/9 45/8 45/12 47/23 76/5 77/19 84/22 83/10 93/3 114/15 48/16 50/21 51/19 93/20 93/21 93/24 neighborhood [1] 52/3 52/12 52/13 94/1 99/1 100/19 40/10 52/22 53/5 53/17 101/5 neither [1] 121/10 55/21 56/22 60/18 not [116] 4/16 5/17 new [37] 1/1 1/4 1/9 63/9 65/17 68/21 7/24 10/4 12/5 5/18 9/3 23/8 43/9 75/2 81/4 89/15 13/21 17/4 18/23 48/8 54/17 56/23 90/1 94/12 97/18 20/1 20/17 20/22 65/11 75/10 75/21 100/8 114/12 21/7 21/18 25/7 83/9 83/11 84/19 115/17 118/17 25/19 28/4 30/9 84/21 97/19 98/13 120/9 121/18 30/21 31/14 32/15 100/8 100/11 101/2 nobody [1] 118/6 32/24 33/3 33/23 101/3 101/4 104/11 noise [9] 40/14 34/8 34/14 35/1 104/16 104/22 57/23 66/8 79/17 36/22 36/24 37/17 105/1 106/6 106/7 79/20 79/21 81/7 38/24 43/2 43/17 112/3 112/10 81/22 82/3 43/23 46/13 47/2 112/14 113/13 nominal [1] 12/17 47/11 50/7 51/2 114/17 115/11 Non [3] 90/15 94/14 51/8 53/2 53/3 118/13 95/9 53/22 55/5 55/8 next [11] 11/23 Non-Abutters [3] 58/4 58/6 60/3 12/11 20/8 23/7 61/16 62/21 63/9 90/15 94/14 95/9 23/14 63/12 84/9

N not... [66] 65/6 68/6 68/18 69/11 70/19 70/23 72/7 72/10 73/5 73/8 73/10 73/20 73/23 75/7 75/18 76/2 76/8 76/12 76/14 76/16 76/20 77/14 77/21 78/20 79/2 79/5 79/11 80/17 80/21 84/15 85/1 86/10 86/21 89/23 91/23 92/24 93/14 93/22 94/12 97/11 97/18 99/18 100/12 101/1 101/7 101/10 101/23 102/2 102/3 102/6 105/23 106/5 110/3 110/5 112/7 112/7 113/18 114/6 114/19 114/21 115/13 117/2 117/4 119/12 119/24 121/13 note [1] 41/22 noted [7] 5/4 5/9 14/4 17/13 31/1 44/11 120/23 notes [1] 121/6 nothing [7] 48/8 48/9 64/17 75/10

75/10 75/21 101/21 notice [1] 46/10 noticed [2] 46/12 56/9 notification [2] 99/3 102/1 notified [1] 100/12 notify [2] 96/24 97/6 Nottingham [1] 69/1 now [33] 8/14 9/5 9/8 9/22 13/15 15/10 21/18 26/4 32/19 38/16 39/23 47/23 48/14 49/4 52/7 52/12 52/13 54/18 58/11 73/19 73/21 97/13 100/2 100/4 100/6 101/8 105/14 106/23 108/3 112/17 114/14 115/19 120/10 NPT [4] 5/4 15/8 31/2 67/4 nuanced [1] 4/18 nuisance [1] 54/19 number [24] 4/14 10/17 13/19 17/24 20/9 22/13 23/5 24/22 26/21 29/13

36/16 38/12 38/21 39/15 43/7 43/12 46/3 62/8 64/16 67/3 69/4 70/18 90/18 95/24 numbers [2] 29/3 74/15

\mathbf{O}

o'clock [1] 120/18 object [2] 63/21 116/17 objecting [1] 100/4 objection [19] 26/9 40/18 40/23 41/10 48/6 49/2 51/6 63/18 75/9 75/15 80/2 80/12 80/18 85/1 90/6 99/19 100/21 111/20 117/18 objections [1] 77/23 observe [1] 95/5 obstructions [2] 27/18 94/3 obvious [2] 9/24 73/3 obviously [2] 105/8 106/21 occur [3] 10/20 65/14 83/8 **October [2] 1/3**

O
October [1] 108/5
October 2015 [1]
108/5
off [17] 8/3 11/24
12/13 14/11 24/13
29/12 29/23 41/7
46/12 46/13 65/19
90/23 90/24 99/11
104/14 120/14
120/15
Off-the-record [1]
120/15 - 66 [4] 50/0 56/21
offer [4] 50/9 56/21
80/20 84/12
offered [3] 78/16 78/20 80/23
Officer [1] 1/13
often [1] 32/12
Oh [4] 23/2 25/3
49/6 66/24
oil [1] 117/15
okay [102] 4/22 7/2
11/1 12/8 13/15
14/6 14/24 16/23
17/22 18/7 18/18
20/8 24/1 27/10
28/2 28/19 28/24
35/4 38/3 38/21
42/3 42/21 43/6
45/8 46/10 46/17
47/2 47/3 47/4 47/9

48/10 49/6 51/15 53/14 53/18 54/13 54/16 54/23 55/4 55/16 55/20 56/8 56/20 56/23 56/23 57/24 58/6 58/13 58/20 59/5 59/23 60/2 60/10 61/22 62/14 64/13 65/8 68/20 68/22 70/15 72/13 74/1 74/17 76/18 77/18 79/7 79/15 89/24 90/9 91/12 94/11 94/12 95/7 95/16 96/10 96/24 97/8 97/13 97/19 103/3 105/14 105/22 106/1 107/9 107/17 108/3 109/18 110/3 110/9 110/18 110/21 110/21 111/12 112/5 113/8 113/10 113/11 114/22 114/23 115/16 119/4 119/23 old [1] 115/1 Oldenburg [1] 1/16 60/23 91/13 92/10 once [3] 32/19 67/19 78/6 one [60] 5/11 6/17 10/20 11/4 11/15

12/10 22/13 26/12 26/21 35/1 35/12 39/11 42/5 42/23 46/21 48/3 49/19 49/23 53/8 54/6 58/22 59/20 59/23 61/9 61/11 61/12 61/13 61/19 62/3 64/6 66/7 68/6 76/4 78/8 78/21 82/22 84/8 84/20 86/4 86/16 87/6 89/7 91/3 91/4 93/17 98/14 102/8 102/12 105/12 105/23 106/1 112/13 112/15 113/6 114/23 115/21 115/24 117/16 118/4 120/18 one-time [1] 117/16 ones [2] 9/11 107/7 only [10] 1/4 3/4 3/6 3/11 7/24 8/16 23/17 48/23 120/3 120/24 open [7] 13/8 34/9 96/7 117/24 open-cut [1] 13/8 opening [1] 6/24 operate [1] 98/14

ented [5] 10/7 /4 107/1 107/2 7/20 ginal [1] 92/5 ginally [1] 28/24 er [31] 5/9 5/13 19 8/23 9/10 10/6 /15 10/22 11/16 /23 12/12 13/18 /16 22/3 22/7 /11 27/18 30/12 /24 47/15 49/22 /12 63/3 72/14 /6 88/3 92/12 5/8 120/4 120/5 0/7 ers [3] 46/22 /23 83/3
7/20 ginal [1] 92/5 ginally [1] 28/24 er [31] 5/9 5/13 19 8/23 9/10 10/6 /15 10/22 11/16 /23 12/12 13/18 /16 22/3 22/7 /11 27/18 30/12 /24 47/15 49/22 /12 63/3 72/14 /6 88/3 92/12 5/8 120/4 120/5 0/7 ers [3] 46/22
ginal [1] 92/5 ginally [1] 28/24 er [31] 5/9 5/13 19 8/23 9/10 10/6 /15 10/22 11/16 /23 12/12 13/18 /16 22/3 22/7 /11 27/18 30/12 /24 47/15 49/22 /12 63/3 72/14 /6 88/3 92/12 5/8 120/4 120/5 0/7 ers [3] 46/22
ginally [1] 28/24 er [31] 5/9 5/13 19 8/23 9/10 10/6 /15 10/22 11/16 /23 12/12 13/18 /16 22/3 22/7 /11 27/18 30/12 /24 47/15 49/22 /12 63/3 72/14 /6 88/3 92/12 5/8 120/4 120/5 0/7 ers [3] 46/22
ner [31] 5/9 5/13 19 8/23 9/10 10/6 /15 10/22 11/16 /23 12/12 13/18 /16 22/3 22/7 /11 27/18 30/12 /24 47/15 49/22 /12 63/3 72/14 /6 88/3 92/12 5/8 120/4 120/5 0/7 ners [3] 46/22
19 8/23 9/10 10/6 /15 10/22 11/16 /23 12/12 13/18 /16 22/3 22/7 /11 27/18 30/12 /24 47/15 49/22 /12 63/3 72/14 /6 88/3 92/12 5/8 120/4 120/5 0/7 ners [3] 46/22
/15 10/22 11/16 /23 12/12 13/18 /16 22/3 22/7 /11 27/18 30/12 /24 47/15 49/22 /12 63/3 72/14 /6 88/3 92/12 5/8 120/4 120/5 0/7 ners [3] 46/22
/23 12/12 13/18 /16 22/3 22/7 /11 27/18 30/12 /24 47/15 49/22 /12 63/3 72/14 /6 88/3 92/12 5/8 120/4 120/5 0/7 ners [3] 46/22
/16 22/3 22/7 /11 27/18 30/12 /24 47/15 49/22 /12 63/3 72/14 /6 88/3 92/12 5/8 120/4 120/5 0/7 ners [3] 46/22
/11 27/18 30/12 /24 47/15 49/22 /12 63/3 72/14 /6 88/3 92/12 5/8 120/4 120/5 0/7 ners [3] 46/22
/24 47/15 49/22 /12 63/3 72/14 /6 88/3 92/12 5/8 120/4 120/5 0/7 ners [3] 46/22
/12 63/3 72/14 /6 88/3 92/12 5/8 120/4 120/5 0/7 ners [3] 46/22
/6 88/3 92/12 5/8 120/4 120/5 0/7 ners [3] 46/22
5/8 120/4 120/5 0/7 ners [3] 46/22
0/7 ners [3] 46/22
ners [3] 46/22
/23 83/3
erwise [1] 95/21
r [15] 20/5 31/13
/11 41/2 41/2
/18 56/4 57/22
/9 77/15 95/4
0/23 113/15
6/8 116/12
t [24] 10/1 12/3
/20 20/4 22/14
/14 34/2 36/9
/18 58/20 61/5
/13 72/8 72/12
/8 73/11 74/17
/23 91/7 91/16

93/24 94/2 98/17 98/18 outlined [1] 57/22 outside [7] 14/20 lly [1] 28/24 29/24 41/20 76/23 88/20 93/10 103/22 over [14] 4/17 8/18 29/15 33/19 40/11 56/17 83/13 84/18 92/20 93/2 93/9 98/14 100/17 108/15 overall [2] 33/5 117/11 overhead [13] 46/4 46/19 47/6 48/8 55/18 61/4 61/20 68/7 68/19 73/12 ise [1] 95/21 77/14 79/3 79/13 [] 20/5 31/13 overrule [1] 40/22 Overruled [1] 77/10 overwhelming [1] 43/21 own [3] 101/5 107/1 107/7 owned [1] 98/12 owner [3] 93/19 93/23 102/2 owners [2] 94/2 97/1 ownership [2]

O parcel [1] 35/1 23/9 44/11 90/4 parcels [1] 55/14 path [1] 15/3 ownership... [2] Park [1] 99/13 **Patnaude** [3] 1/24 101/7 102/9 parking [1] 115/23 121/3 121/17 owns [2] 97/13 part [17] 13/16 **Patricia** [1] 1/17 97/16 16/10 16/15 33/5 patterns [2] 116/11 P 34/15 38/19 50/10 116/21 p.m [5] 15/10 15/14 **pavement** [7] 8/4 60/11 67/18 72/9 16/4 17/4 17/11 76/12 77/15 87/2 29/12 29/18 29/24 Pacik [1] 81/14 87/2 106/16 112/12 41/7 90/23 91/1 pad [2] 71/24 87/8 113/4 paving [2] 39/7 pads [2] 70/19 partial [1] 61/3 39/7 71/11 particular [10] 6/2 Pemi [3] 108/9 page [21] 2/3 3/3 116/1 116/5 13/11 14/3 33/22 3/4 3/6 3/11 3/13 82/22 94/18 96/18 Pemigewasset [5] 3/15 3/17 3/19 3/21 97/9 102/20 103/5 102/16 104/4 18/4 43/12 70/6 particularly [3] 109/21 109/23 72/21 85/12 95/8 8/17 14/10 37/9 110/22 pending [3] 27/13 95/19 96/10 97/21 parties [3] 34/22 105/17 114/9 45/17 121/12 27/14 76/5 pages [1] 3/23 people [1] 88/22 Pass [18] 1/8 3/17 Pamela [1] 1/21 per [2] 53/15 54/6 16/22 25/21 63/12 panel [17] 2/4 4/5 percent [6] 34/3 66/20 67/10 69/8 4/7 4/15 5/15 18/3 34/7 34/7 36/12 71/23 76/5 77/20 18/16 20/12 23/18 84/22 93/20 93/21 38/1 38/2 perfect [1] 65/10 23/23 25/14 31/1 93/24 94/1 99/1 45/23 68/20 77/16 perfectly [1] 17/6 100/19 120/8 120/12 Pass's [1] 101/5 performing [1] Pappas [3] 18/4 19/11 passing [1] 49/22 20/13 28/3 past [3] 17/10 91/19 perhaps [3] 11/14 parameters [2] 113/22 42/9 42/11 55/12 62/3 perimeter [1] 14/21 **Pastoriza** [4] 2/10

Period [1] 83/23 permanent [1] 106/6 permeable [1] 43/16 permission [1] 54/24 permit [4] 89/10 105/12 105/13 119/18 permitted [3] 78/13 114/4 114/14 person [1] 100/14 perspective [1] 34/12 phase [3] 87/19 88/6 89/7 phases [2] 86/5 89/9 photograph [4] 3/8 3/9 3/22 95/18 photographs [1] 3/23 physical [1] 42/16 picked [1] 22/14 pickup [2] 39/8 52/10 picture [5] 23/14 91/9 96/3 103/17 109/19 picturing [1]	114/13 pilot [5] 15/11 15/14 16/4 16/17 16/18 pipe [3] 11/7 39/5 44/5 pipes [1] 12/11 pit [4] 12/1 14/11 28/21 37/9 pits [3] 11/3 11/21 12/7 place [10] 50/20 83/14 83/24 84/11 84/23 86/12 86/14 115/21 117/10 121/6 placed [4] 29/22 30/6 53/22 74/12 placement [2] 37/6 92/20 places [1] 20/16 plan [16] 9/23 15/9 17/16 21/5 21/17 26/3 27/6 48/3 59/18 72/18 73/16 73/24 97/20 104/20 108/6 108/7 planned [2] 14/18 94/5 planning [2] 11/11 100/18 plans [20] 19/21	21/19 37/14 37/16 59/5 59/9 60/19 64/20 64/22 65/1 69/10 70/17 71/15 72/8 72/11 73/4 73/11 73/18 91/5 105/8 plantings [1] 54/1 plants [1] 37/7 plate [1] 39/5 play [2] 30/16 35/23 playing [1] 29/3 please [4] 17/23 38/7 71/3 76/14 plenty [1] 74/23 Plymouth [4] 4/13 98/16 103/2 115/21 point [24] 14/8 16/7 16/13 17/17 20/3 23/17 29/5 31/7 33/10 36/9 46/18 47/10 47/14 48/4 52/9 52/12 57/16 58/22 69/3 84/18 85/16 86/22 100/5 113/22 pointed [2] 58/20 61/5 points [4] 47/6 50/19 52/6 56/12 pole [5] 69/4 71/20

P	possible [21] 7/20	21/7
pole [3] 71/20	14/16 14/20 15/18	precipitation [2]
74/23 74/24	16/24 17/5 17/12	116/8 117/12
poles [2] 70/19 73/2	29/22 30/10 31/4	predict [1] 57/11
political [1] 32/5	40/12 40/13 54/16	preferred [1] 86/13
pollution [3] 40/15	56/11 56/14 58/1	prefiled [6] 49/12
104/20 108/5	60/22 65/15 85/24	50/10 104/7 112/11
pond [4] 47/18 59/6	92/2 93/12	112/23 113/3
71/6 71/21	possibly [3] 56/10	premise [1] 8/15
ponds [1] 72/5	83/16 118/24	preparation [1]
poor [3] 43/18	post [3] 70/8 70/8	95/2
43/22 43/23	73/17	prepare [1] 73/16
population [1]	potential [3] 16/22	prepared [5] 7/4
87/22	20/20 58/15	73/24 75/23 97/20
porous [2] 42/22	potentially [8] 4/24	101/6
43/2	61/21 82/4 89/11	preparing [1]
port [1] 115/24	106/17 117/3	104/12
port-a-potties [1]	119/10 119/21	prescriptive [3]
115/24	potties [1] 115/24	35/6 35/8 35/23
portion [9] 23/13	powered [1] 80/8	present [3] 1/12
24/6 32/24 38/13	practicality [1]	1/19 121/8
48/8 55/18 55/22	88/12	presentations [1]
90/16 95/12	practice [1] 114/24	31/17
portions [3] 19/13	practices [7] 104/6	presented [1] 94/19
19/14 32/23	104/21 105/11	Presiding [2] 1/13
Portland [1] 60/12	105/15 107/12	1/13
position [2] 11/6	114/16 115/4	presumably [1]
90/4	pre [4] 3/13 3/15	18/20
positioned [1]	21/7 73/17	presume [1] 91/18
14/19	Pre-Filed [2] 3/13	pretty [6] 23/15
possibility [1]	3/15	40/1 58/18 76/8
85/22	pre-identified [1]	87/6 105/6

P	procedures [1] 65/4	
prevalent [1]	proceed [3] 4/11	16/20 31/23 31/24
118/19	60/7 99/18	32/16 65/10
Prevention [2]	proceedings [1]	prompted [1] 80/24
104/20 108/5	121/6	proper [1] 31/19
previous [3] 22/5	proceeds [1] 47/20	properties [1]
80/15 91/8	process [13] 16/11	42/16
previously [2]	25/18 32/2 32/6	property [20] 14/14
55/12 73/14	32/18 33/10 34/8	15/4 18/23 19/7
prior [1] 53/12	34/11 36/7 36/12	20/4 20/7 34/5 35/7
private [6] 14/14	37/23 78/15 111/16	55/3 56/12 68/24
18/23 19/7 47/1	product [1] 43/24	71/6 92/23 93/23
56/12 92/23	production [1]	94/2 96/17 97/1
privy [1] 65/6	24/16	97/14 97/16 100/17
probably [16]	professional [1]	proposal [1] 49/17
10/24 31/16 35/15	37/21	proposed [20] 5/10
39/14 40/9 46/15	Profile [1] 60/17	5/17 39/24 46/7
53/22 59/23 65/6	project [37] 5/15	47/13 48/1 50/13
87/19 88/3 88/5	16/22 19/23 32/3	50/19 58/2 58/8
92/6 113/21 117/2	32/19 33/6 33/14	58/10 58/17 62/7
119/9	33/22 33/24 34/3	63/7 63/8 63/11
problem [5] 19/10	34/4 39/17 46/4	79/4 79/24 82/2
51/19 64/2 116/20	47/4 52/1 52/16	87/6
116/24	56/16 62/5 66/14	proposes [1] 103/13
problematic [1]	73/6 73/20 73/22	proposing [2] 6/21
79/22	83/1 83/7 84/19	109/5
	89/8 89/18 97/9	Prospect [1] 57/9
problematical [1]	99/16 100/19	protection [1]
35/16	108/20 114/4 114/8	37/12
problems [2] 63/3	114/13 117/4	protocol [1] 89/22
94/18	117/21 117/24	protocols [1] 72/5
procedure [2]	projects [9] 5/9	provide [2] 72/20
15/13 40/2	1	

P
provide [1] 114/7
proximate [1]
94/20
proximity [3] 82/1 95/5 102/22
public [12] 1/9 1/13
1/14 1/17 47/7
47/23 63/16 64/19
80/20 88/17 88/20
107/3
Public's [1] 101/9 PUC [2] 66/22 67/3
pull [2] 16/12 16/17
pull-back [2] 16/12
16/17
pulled [1] 13/14
pulling [1] 13/13
purport [1] 97/23
purports [1] 99/1 purpose [2] 105/18
106/3
purposes [2] 57/1
57/7
pushing [1] 16/4
put [23] 17/23 20/8
21/10 24/22 26/12 28/21 33/16 38/7
40/8 43/6 43/13
44/24 57/17 63/2
65/10 69/20 72/19
74/5 77/23 89/5

101/1 103/12 119/15 puts [1] 74/18 putting [3] 9/21 23/10 28/4 puzzle [1] 101/1

Q

qualified [1] **58/7** quality [1] 89/13 quarter [1] 23/19 question [66] 11/20 12/17 13/1 14/8 18/4 20/13 25/15 27/1 27/13 27/14 27/16 30/1 35/8 36/20 42/4 43/19 45/7 46/1 47/17 50/11 51/9 63/21 63/22 64/3 64/7 64/10 64/11 66/8 66/23 67/7 67/12 71/9 72/23 74/22 76/9 76/10 76/14 76/16 76/17 76/19 77/3 77/6 78/2 78/5 79/16 80/24 81/2 81/9 81/12 83/15 83/22 85/19 87/4 87/16 88/24 91/12 93/1 93/7 99/22 100/13 103/6 111/4 113/5 113/9 113/11

118/4 questioning [3] 4/5 28/2 34/21 **questions** [24] 4/15 23/23 45/9 45/23 45/23 52/18 65/17 66/7 66/11 67/17 79/15 81/13 82/9 82/16 82/24 90/1 90/5 90/14 94/15 102/13 103/23 112/13 120/7 120/12 quicker [1] 38/4 quickly [3] 46/13 56/9 116/14 **Quinlan** [1] 77/19 quite [4] 31/1 65/15 81/11 104/5

R

Raff [3] 120/4
120/6 120/10
Rail [1] 97/20
railroad [13] 94/21
96/23 97/15 97/16
98/14 98/16 98/17
98/18 99/11 102/16
102/19 102/22
103/8
railroads [2] 95/5
97/3
Rails [1] 100/15

represent [2] 67/17 74/5 respond [7 respons [7 7 7/1 100/18 restart [1] 110/15 required [11] 20/19 97/5 97/10 114/8 restored [2] 97/5 97/10 114/8 restored [2] 97/11 114/3 resulting restructured [1] 114/3 resulting 11 42/24 rephrase [2] 76/15 research [1] 115/6 rese	[1] 7/13 d [1] 67/5 d [1] 67/5 [6] 4/6 /15 87/18 20/9 ole [1] d [1] 5/24 d [1] 53/19 f [1] 53/21 dring [1] f [4] 103/5 f [4] 103/5
report [9] 3/19 3/21 41/2 41/18 43/11 residences [1] 82/2 resumés [[4] 103/5

R review [9] 31/13 37/18 59/5 64/20 73/17 77/14 77/16 104/12 114/7 reviewed [3] 79/11 105/5 105/8 **reviewing** [1] 114/5 **revisions** [1] 115/2 revisit [1] 117/8 right [113] 7/19 8/8 8/14 12/14 12/20 14/20 15/3 18/21 19/2 19/12 19/19 20/7 21/2 22/2 23/1 23/3 26/19 26/20 27/3 27/9 27/24 30/3 30/6 31/14 32/19 34/18 38/8 45/13 46/14 48/19 49/4 49/13 51/24 54/2 55/13 56/8 57/24 59/10 59/14 60/4 60/22 61/22 63/4 63/12 63/15 64/13 65/18 65/23 66/15 66/16 66/19 67/8 67/15 67/18 67/21 68/4 68/8 68/11 69/9 69/14 69/21 69/23 69/24 70/1 70/2 70/10

70/22 71/11 71/12 71/21 71/21 73/21 74/6 74/13 74/20 75/1 76/6 81/18 87/5 87/8 87/19 88/17 88/20 90/21 90/22 91/17 91/19 93/8 93/10 101/8 103/15 105/3 105/10 105/14 106/1 106/13 106/23 108/3 108/22 109/10 109/18 109/22 109/22 111/8 113/4 113/19 114/22 115/16 117/14 118/14 120/1 120/2 120/13 right-of-way [39] 7/19 8/8 14/20 18/21 19/2 19/12 19/19 30/3 30/6 31/14 34/18 66/15 66/16 66/19 67/8 67/15 67/18 67/21 68/4 68/8 68/11 69/9 69/14 69/21 69/24 70/1 70/2 70/22 71/12 74/6 74/13 76/6 88/17 88/20 91/17 93/8

93/10 103/15 118/14 rights [7] 20/5 31/11 34/5 35/6 35/8 35/23 74/9 rights-of-way [2] 31/11 74/9 rigs [2] 8/1 39/2 rip [1] 38/18 riskier [1] 16/10 river [10] 3/22 47/22 56/13 58/24 61/6 90/19 93/20 102/16 104/4 117/16 road [65] 7/3 8/9 8/17 8/19 8/22 8/23 14/10 14/12 19/12 19/16 19/16 19/19 22/8 23/8 23/11 24/12 24/13 25/17 29/23 29/24 30/5 30/6 30/12 30/15 30/18 44/17 46/13 46/14 46/23 47/1 47/23 48/14 48/18 49/7 49/19 49/21 49/24 50/5 51/4 51/8 51/10 51/11 52/11 52/12 52/13 52/14 53/15 54/13 54/17 55/1 57/2

R
road [14] 57/2
57/8 57/8 57/8
57/14 59/10 61/12
61/24 69/1 88/18
88/20 95/20 96/6
118/1
roadbed [1] 41/20
roads [13] 40/11
41/9 47/7 50/14
52/2 52/4 52/23
53/10 54/7 56/15
56/23 57/12 106/6
Robert [1] 67/5
rock [11] 7/9 15/21
21/4 21/17 22/7
22/10 22/20 26/3
26/10 27/5 27/22
rod [9] 7/3 8/17
14/10 19/16 29/24 30/3 30/5 92/19
93/8
rods [3] 19/13
19/14 29/13
room [4] 8/3 8/4
74/23 92/3
root [3] 72/3 92/14
92/16
roots [2] 91/20 93/4
rough [3] 53/14
53/16 58/22
roughly [6] 29/14

29/20 29/21 47/20
95/16 96/2
route [39] 20/19
21/14 23/7 24/13
27/23 29/12 31/7
35/14 35/24 37/12
44/13 44/13 44/15
44/15 46/5 46/19
47/19 47/21 47/22
57/15 58/23 59/6
59/14 59/15 59/17
60/11 61/3 61/10
83/1 90/19 94/5
95/11 95/21 96/6
99/11 102/15
102/22 103/1
109/20
routes [2] 56/24
57/6
row [6] 19/8 19/24
30/21 33/18 76/22
99/7
RSA [1] 121/19
rules [1] 65/7
running [1] 47/21
runs [1] 98/6
Rusty [2] 2/4 4/8
S
Safety [1] 67/24
Saffo [1] 45/11
said [13] 28/9 28/24
33/4 34/2 36/23

42/15 50/14 52/16 52/21 64/6 76/13 81/3 114/2 same [19] 23/8 26/1 35/13 44/14 51/6 53/19 55/22 61/17 65/15 80/12 95/16 95/17 96/11 96/13 96/15 100/21 102/14 107/6 115/12 satellite [1] 47/16 saw [1] 9/17 say [47] 4/23 5/19 9/3 9/21 14/9 14/15 17/12 18/11 20/2 21/23 22/7 26/10 29/21 31/12 33/21 35/10 37/24 44/10 54/7 55/7 57/14 57/15 57/20 65/1 65/6 65/8 73/4 73/8 73/22 85/7 85/10 85/12 87/20 88/13 88/14 92/9 93/12 98/21 99/9 99/22 103/11 104/16 110/9 110/23 111/2 114/4 120/6 saying [9] 12/8 25/22 34/13 39/21 52/22 52/23 75/20

S	84/8 87/1	seeking [1] 81/2
saying [2] 98/4 102/3 says [8] 18/8 18/13 18/16 20/17 26/1 26/23 27/2 43/15 scale [1] 32/13 scenario [2] 34/6 89/19 scenic [3] 41/8 41/17 98/18 schedule [1] 60/16 scheduled [1] 61/17 schematic [1] 78/7 Schibanoff [3] 2/10 90/3 90/15 Schibanoff's [1] 90/5 school [3] 60/16 60/17 60/21 scope [1] 41/11 Scott [10] 18/5 18/16 18/22 18/24 19/1 20/14 20/17 26/16 28/3 28/9 Scott's [1] 26/15	seasons [3] 83/16 85/13 85/22 SEC [8] 1/6 1/7 1/19 1/20 1/21 56/16 56/18 71/15 second [6] 17/6 43/12 63/21 64/6 64/11 69/24 section [4] 60/9 79/18 91/2 102/21 sediment [2] 108/11 111/14 Sediment to [1] 108/11 sedimentation [1] 37/16 see [34] 23/6 25/22 43/21 45/10 46/23 47/18 47/20 50/17 50/21 53/8 69/10 70/12 71/7 72/24 74/11 78/21 80/10 83/14 85/9 87/4 87/16 90/2 90/7 93/11 95/18 96/19	seem [4] 28/16 30/2 30/4 105/4 seems [6] 62/2 76/7 84/2 86/20 94/6 98/21 seen [11] 5/12 9/5 13/24 16/19 58/6 92/10 92/11 101/13 113/5 115/1 116/12 segment [4] 37/3 60/8 61/19 61/20 semantics [1] 29/3 senior [1] 79/23 sense [2] 16/9 58/17 sensitive [1] 119/22 sensitivity [2] 11/8 103/10 sentence [2] 108/14 108/23 separate [4] 55/23 78/15 102/8 120/22 separation [6] 11/14 12/18 12/22 69/16 69/18 92/3 septic [8] 90/24
scope [1] 41/11	50/21 53/8 69/10	separate [4] 55/23
Scott [10] 18/5	70/12 71/7 72/24	78/15 102/8 120/22
18/16 18/22 18/24	74/11 78/21 80/10	separation [6]
19/1 20/14 20/17	83/14 85/9 87/4	11/14 12/18 12/22
26/16 28/3 28/9	87/16 90/2 90/7	69/16 69/18 92/3
51/22	110/21 120/1	94/4
search [1] 118/16	seeing [1] 116/15	sequence [1] 84/22
season [6] 59/24	seek [2] 54/24	sequencing [6]
61/18 61/20 61/21	56/11	37/15 37/16 61/16

	sequencing [3] 61/23 66/10 83/6 Serv [1] 1/15 serve [1] 55/17 served [1] 47/10 Service [1] 1/9 services [2] 98/13 98/15 serving [1] 60/17 Session [6] 1/4 3/4 3/6 3/11 120/21 120/24 set [8] 25/9 58/18 69/15 72/22 73/2 74/3 110/15 121/7 setback [3] 69/7 69/11 69/17 setbacks [1] 68/3 setting [1] 111/3 settled [1] 35/3 setup [1] 9/13 seven [2] 9/18 39/12 several [8] 46/9 48/24 82/23 86/5 86/15 104/15 104/18 105/12	She's [1] 100/6 Sheet [3] 68/23 70/18 74/1 shelf [2] 115/4 115/14 Sherburne [1] 79/22 shift [2] 17/1 17/18 short [4] 10/24 41/1 50/3 77/13 Shorthand [1] 121/3 shortly [1] 120/18 should [10] 34/15 40/19 50/16 62/20 65/1 76/1 80/5 88/5 100/7 111/16 shoulder [1] 14/11 show [2] 23/14 87/13 showed [2] 26/11 109/19 showing [2] 46/4 47/16 shown [5] 19/20 31/14 91/5 93/17 101/21 shut [1] 8/22	similarly [1] 70/1 since [2] 50/14 100/8 single [2] 17/13 69/13 sister [1] 68/24 sister-in-law's [1] 68/24 sit [1] 72/3 site [20] 1/2 1/10 1/12 18/6 19/6 19/24 29/22 63/7 64/18 65/3 65/4 86/3 93/20 99/2 106/14 112/8 113/13 113/21 113/24 114/17 site-specific [5] 112/8 113/13 113/21 113/24
	104/18 105/12	shut [1] 8/22	113/21 113/24
	severe [1] 111/3	side [16] 5/21 8/1	114/17
	severity [1] 111/6	8/19 8/23 22/3 22/7	sited [3] 55/5 55/9
	shaking [1] 90/7	23/11 25/16 28/18	71/11

Sitting [2] 70/2 74/24 situation [8] 8/20 11/18 35/16 44/13 44/14 88/15 109/15 112/14 six [5] 9/9 10/3 39/12 80/10 89/6 six-month [1] 89/6 size [15] 5/24 6/4 6/16 6/23 6/24 6/24 28/6 28/20 37/4 55/14 70/9 86/16 89/12 92/9 111/7 skidder [1] 52/9 skill [1] 121/8 skip [1] 42/3 slight [1] 24/22 slightly [1] 38/1 slopes [1] 111/1 Slow [3] 29/7 29/7 98/8 slows [1] 24/15 small [3] 32/3 32/16 44/4 smaller [6] 6/5 6/7 6/12 6/14 7/5 19/14 smashing [1] 24/8	108/13 something [22] 43/23 47/24 49/15	108/12 110/8 112/2 112/4 112/10 118/11 118/18 119/5 119/18 119/20 sometimes [2] 87/23 89/12 somewhat [4] 43/2 96/7 105/21 105/22 somewhere [2] 12/13 14/1 sorry [10] 18/10 21/1 25/3 25/10 29/9 36/17 55/7 57/4 72/9 75/20 sort [8] 5/11 9/12 10/21 40/2 56/8 69/12 80/3 111/2 sound [3] 42/14 70/10 74/20 sounded [2] 28/13 99/21 sounds [7] 6/10 60/1 81/12 111/21 112/22 113/9 116/17 south [4] 70/22 71/5 96/5 103/2 southern [1] 71/5
44/4	108/13	south [4] 70/22
smaller [6] 6/5 6/7	something [22]	71/5 96/5 103/2

speak [9] 16/20 21/19 44/3 56/7 68/19 75/24 78/18 79/4 93/15 speaking [6] 5/7 16/10 35/5 59/19 68/12 78/12 special [1] 119/18 species [4] 118/9 118/10 118/12 118/17 specific [22] 17/15 20/18 21/7 49/15 59/12 59/13 60/19 76/3 76/16 76/18 76/23 83/20 86/2 94/15 106/12 109/17 112/8 113/6 113/13 113/21 113/24 114/17 specifically [13] 16/20 59/18 68/6 71/10 72/11 73/11 75/5 77/15 78/19 79/2 79/12 89/4 102/18 splice [7] 11/21 12/7 26/5 28/6 28/10 28/20 39/6 split [2] 11/24	[4] 15/18 42/10 42/11 3] 66/22 67/3 [3] 33/13 34/3 [4] 33/24 [9/3 89/20] [g [10] 37/5 [5/8 55/12] 55/23 56/2 [59/3 62/8] [6] 18/8 18/13 [19/1 19/6] [1] 19/3 [g [2] 18/6 [1] 104/2 [1] 19/3 [2] 18/6 [1] 104/2 [3] [2] 18/6 [4] [5] 15/13 [6] [5] 15/13 [6] [5] 31/19 [6] [5] 31/19	state [18] 1/1 19/11 21/13 26/6 43/9 53/12 79/10 88/22 97/20 98/13 100/12 105/7 107/1 107/4 107/4 107/6 107/16 119/1 state-oriented [1] 107/1 stated [8] 11/2 15/9 31/9 38/11 40/12 53/13 92/22 93/2 statement [9] 17/2 21/16 21/21 22/9 25/24 64/12 69/19 73/9 92/6 statements [1] 10/12

S	streams [1] 106/7	107/20
station [12] 62/10	street [3] 1/4 8/2	suddenly [1]
62/12 62/18 62/20	99/13	114/14
62/24 63/7 63/14	Streets [1] 57/9	sufficient [9] 37/1
63/17 64/16 95/12	stretch [5] 10/1	75/6 77/8 108/14
95/24 99/4	49/19 59/16 61/6	108/17 109/6
stations [3] 72/15	95/11	109/12 109/14
94/20 97/2	structural [1] 92/14	114/7
stay [1] 18/21	structure [5] 69/3	Sugar [1] 118/1
Staying [1] 15/8	69/6 69/7 78/11	suggest [1] 96/11
steel [1] 39/5	78/22	summarize [1] 35/4
steer [1] 39/3 steep [2] 103/21	structures [4] 68/3	summary [1] 42/13
111/1	69/2 70/1 70/13	summer [1] 86/9
stem [1] 11/6	style [2] 78/22	supplemental [2]
stenographic [1]	113/16	74/3 104/8
121/5	SUBCOMMITTEE	supposed [3] 13/17
Steven [3] 1/24	[2] 1/12 45/19	13/21 117/10
121/3 121/17	SUBCOMMITTEE	sure [30] 12/5
still [8] 29/4 34/1	/SITE [1] 1/12	17/16 20/18 30/14
34/14 36/4 101/10	submission [2]	32/13 32/21 34/18
114/9 117/9 117/10	36/24 71/15	35/1 50/7 51/8 60/1
stop [5] 15/13 16/8	submittals [1]	62/2 69/14 75/16
16/13 16/24 32/19	118/24	76/2 76/12 76/16
storage [1] 56/3	submitted [1] 65/2	82/2 86/10 91/4
storage [1] 55/3 storm [10] 65/10	substantially [1]	91/15 92/24 95/4
104/17 104/19	54/4	96/20 101/20
105/1 108/5 108/11	substation [1]	102/24 106/20
111/3 111/6 111/10	67/21	110/5 117/8 117/10
111/3 111/0 111/10	such [11] 9/24	surface [2] 108/19
storms [1] 88/2	11/18 19/12 47/2	109/3
strategy [1] 33/5	51/4 51/7 64/20	surprise [4] 24/3
straws [1] 108/16	65/1 94/3 94/4	24/10 73/5 100/14
2 3		

S	45/3 51/11 64/22	59/8 59/12 59/18
	101/9 111/15	60/1 60/3 68/21
surprised [2] 24/14 27/22	111/21	71/3 71/13 71/19
	talks [1] 105/17	72/2 72/7 72/10
survey [1] 91/7	taller [1] 79/8	73/9 73/22 74/16
surveys [1] 31/19	tank [1] 93/22	74/21 75/4 77/13
survive [1] 72/4	tax [4] 96/12 96/17	79/10 91/3 91/12
Susan [1] 90/15	97/14 102/6	91/15 92/9 92/24
sustain [1] 86/22	TAYLOR [117] 2/5	
system [2] 90/24	3/14 3/16 4/9 17/22	94/6 94/22 95/4
94/4	19/9 19/18 19/22	95/14 95/22 96/1
\mathbf{T}	20/2 21/20 22/3	96/4 96/20 97/24
take [18] 12/2	22/20 22/23 24/14	98/22 101/20 102/3
29/14 58/24 60/9	24/17 24/19 25/24	102/24 103/3
60/20 62/20 65/19	27/19 28/2 28/16	103/18 103/21
68/22 70/15 79/17	28/20 29/17 30/2	107/9 107/13
83/14 84/13 84/23	30/9 30/20 30/24	107/15
86/12 86/14 110/6	31/12 32/21 33/3	team [3] 20/5
119/2 119/17	33/12 33/21 34/17	106/11 110/8
taken [5] 1/23	34/24 35/5 35/10	teams [1] 118/15
65/21 102/19	35/18 35/21 36/7	tear [1] 9/14
120/19 121/6	36/21 37/20 37/24	tear-down [1] 9/14
taking [2] 83/24	38/7 38/11 38/15	technical [2] 77/22
84/11	38/19 38/24 39/4	108/2
talk [3] 19/4 21/8	39/9 39/19 40/7	tell [5] 6/22 26/18
104/5	40/13 41/1 41/15	55/16 96/16 111/19
talked [4] 4/17	46/9 46/12 46/16	telling [1] 17/19
35/12 35/17 100/14	46/20 47/11 48/15	temporary [2] 37/8
talking [16] 4/19	48/17 48/20 55/19	89/5
9/22 13/2 17/7	55/21 56/2 56/18	ten [7] 11/3 11/14
22/15 23/9 29/2	57/13 57/20 58/1	11/17 11/24 12/6
35/13 40/9 45/2	58/4 58/12 59/1	65/19 78/10
		<u> </u>

T	67/23 75/12 75/24	Thanks [2] 56/8
ten-foot [2] 11/14	80/3 80/15 82/16	62/19
12/6	84/14 85/2 85/7	that [560]
ten-minute [1]	86/3 86/9 87/2	that's [73] 4/19
65/19	94/23 95/3 104/7	6/15 6/18 8/12
tend [3] 43/4	104/8 111/22	11/11 11/19 11/21
106/24 107/8	111/24 112/11	12/20 13/2 13/3
tensile [1] 13/13	112/16 112/24	14/9 15/16 16/15
term [5] 33/15 88/5	113/3 113/15	19/9 19/18 24/19
89/14 116/24	116/18	29/24 30/15 30/18
117/11	testing [1] 115/7	35/23 36/10 37/20
terms [12] 11/22	text [1] 98/20	38/15 40/1 40/5
22/11 23/10 27/16	than [18] 5/22 7/6	40/7 47/1 49/10
39/13 44/2 68/12	10/10 11/10 17/18	49/21 51/13 51/16
70/9 70/11 81/4	19/20 35/16 36/1	51/18 51/18 51/21
106/10 110/22	37/22 39/23 40/4	52/15 53/13 53/21
terrain [2] 7/24	43/5 72/14 79/8	54/14 54/21 56/18
70/17	83/2 92/12 106/4	59/2 61/2 65/15
test [1] 37/9	110/20	67/10 67/11 67/13
testified [4] 49/11	thank [33] 4/15	69/5 71/19 75/4
52/1 70/5 73/14	14/24 25/4 27/15	76/7 78/16 79/15
testifying [1] 49/4	27/24 36/14 60/10	80/23 81/2 81/10
testimonies [1]	65/8 65/16 66/1	82/6 87/20 88/4
54/22	66/24 70/5 70/15	89/10 90/7 94/8
testimony [47] 3/13	71/14 74/1 77/7	103/23 108/10
3/15 3/17 4/22 7/5	77/18 79/7 79/15	108/12 110/16
18/3 18/5 20/12	82/6 89/24 90/9	112/2 112/12
26/12 26/15 28/16	90/10 94/8 98/10	112/13 113/21
36/21 40/20 41/3	98/23 102/12	117/16 117/20
41/11 41/15 42/7	105/14 108/3	118/3 119/20
48/7 49/12 50/10	110/21 114/22	their [29] 7/15 7/16
56/4 57/22 58/14	120/2 120/12	10/11 14/7 21/22
30/4 3//4/2 30/14		

T their [24] 37/2 41/11 48/18 49/11 50/10 54/14 55/1 55/11 56/4 56/19 59/3 59/3 75/24 80/15 80/22 93/4	105/1 105/17 109/20 110/16 114/14 115/23 119/10 there [116] 4/18 10/14 14/22 14/24 15/2 16/13 19/10	90/5 91/20 91/21 92/2 96/22 99/7 100/16 100/24 101/21 103/9 103/12 104/15 104/17 105/4 106/3 106/17 108/14
107/7 112/11 112/23 113/3 113/7 113/23 117/8 118/24 them [20] 9/4 9/16 23/20 27/13 49/5 49/7 50/17 51/1 52/18 52/21 53/4 54/5 54/14 80/20 86/17 101/12 101/18 105/13 116/12 116/14 themselves [1] 12/19 then [39] 9/4 11/23 12/9 12/12 12/21 15/19 18/7 18/12 18/18 19/1 22/6 28/22 30/10 34/18 35/24 36/10 44/21 44/24 66/10 67/20 69/24 74/18 83/10 83/11 84/8 84/21 85/11 86/7 88/1 88/21 92/15 103/20	21/4 21/15 22/9 23/2 23/3 23/16 26/2 26/10 26/17 26/19 26/20 27/5 27/18 28/5 31/18 35/1 36/21 37/18 38/18 41/7 41/21 41/23 43/13 44/19 46/9 46/11 46/15 47/19 47/21 47/23 48/1 48/14 48/14 48/17 48/18 48/23 49/14 49/24 52/3 52/8 52/12 52/13 52/24 53/1 53/24 54/18 55/23 56/9 57/10 58/8 58/10 59/12 59/14 59/16 61/6 61/8 62/22 63/15 63/15 64/15 68/2 73/6 75/21 77/24 78/8 81/23 82/11 82/23 86/8 86/15 88/5 89/4 89/15 89/16 89/22	108/20 109/8 109/16 110/8 112/13 112/18 113/13 113/15 115/18 115/23 115/24 116/11 118/17 118/21 119/2 120/5 120/6 there's [36] 8/4 9/10 12/22 13/6 16/5 17/9 20/16 23/12 47/24 48/8 52/13 54/1 71/8 71/21 72/24 75/2 75/10 77/22 83/7 89/6 89/19 100/8 101/21 103/21 104/21 105/1 108/4 109/20 110/15 113/10 114/2 114/6 114/15 115/5 116/3 119/6 thereafter [1] 38/1 thereby [1] 8/20 therefore [1] 101/2

T thermal [2] 42/7 42/21 thermally [1] 42/10 these [33] 10/2 11/21 11/22 12/11 17/3 22/17 30/16 34/13 36/4 37/17 41/9 41/12 54/7 57/12 69/15 70/12 71/4 78/3 78/5 80/19 89/21 99/16 99/24 101/15 101/17 102/4 112/1 112/10 112/17 115/10 116/2 116/11 121/6 they [100] 7/14 7/17 8/7 8/10 9/4 11/12 11/23 12/12 15/9 15/24 16/13 16/16 17/13 17/17 17/17 21/24 22/3 22/4 22/6 22/14 24/11 25/22 35/3 37/18 44/8 44/20 48/3 48/20 48/23 49/11 50/8 50/8 50/15 52/1 52/16 52/21 52/21 53/13 55/11 57/16 57/16 58/15 59/4 59/19

60/6 60/18 60/20 60/23 62/11 62/12 62/15 64/21 69/13 69/14 69/14 72/4 73/3 73/14 73/14 73/15 73/19 73/20 73/23 75/23 75/24 76/1 76/9 78/6 79/8 79/8 81/3 81/6 82/3 85/10 85/12 86/1 86/1 86/4 86/24 91/16 91/19 92/11 94/5 101/12 101/12 101/13 105/10 111/10 112/11 113/5 113/17 115/14 115/15 117/8 118/16 118/16 118/19 118/22 119/7 119/8 they're [27] 6/21 7/7 7/8 8/21 8/22 13/16 17/10 22/15 24/12 38/18 52/6 52/9 52/13 52/22 72/24 86/18 97/3 97/4 107/15 113/24 115/15 116/12 117/9 117/9 117/10 118/2 119/6 they've [1] 62/17 thickness [1] 13/11

thing [13] 9/12 9/12 16/5 20/9 24/8 24/15 43/22 48/23 50/1 69/12 88/4 91/3 113/21 things [15] 4/17 4/18 21/10 22/22 24/11 32/8 32/13 34/13 86/6 97/1 112/16 112/20 112/23 114/18 114/23 think [49] 7/2 7/10 7/14 7/19 9/24 12/16 17/9 24/16 26/6 27/15 28/24 33/23 34/2 34/24 35/14 36/3 40/1 40/21 41/3 47/5 50/8 50/14 53/18 56/4 56/18 65/4 78/1 78/9 78/18 79/6 79/13 80/15 81/14 82/24 83/23 84/23 85/3 85/15 92/13 105/14 111/14 115/7 116/16 117/1 117/5 118/8 118/10 119/8 120/2 thinking [9] 40/5 104/19 110/22

101/1 101/16 told [4] 4/3 17/20 47/4 90/3 tolerance [1] 14/15 too [7] 10/24 32/12 46/13 51/13 51/16 109/16 112/13 took [3] 23/20 24/4 115/21 top [3] 18/7 63/2 104/15 topic [1] 83/5 topography [4] 46/11 50/13 102/23 103/21 total [3] 45/3 85/10 86/2 touched [1] 38/5 tough [1] 25/10 tourist [2] 98/13 98/15 6 tourists [1] 40/17 9 toward [3] 10/7 46/23 61/9 towards [5] 8/19 11/21 36/11 67/20 103/7 tower [8] 58/7 58/17 69/4 70/10 71/24 72/17 73/2 84/16 towers [16] 47/12

T	
towers [15] 48/1	t
49/18 49/23 50/2	-
53/11 58/2 58/5	(
58/10 69/8 70/7]
74/11 78/3 78/5	
79/7 94/20	t
town [2] 61/11	L.
96/12	t
track [1] 102/14	2
tracking [1] 11/8	t
tracks [6] 94/21	_
96/23 102/16	t
102/23 103/4 103/8	1
traffic [15] 5/12 8/3 8/20 8/24 37/14	,
40/15 50/4 57/23	(
59/20 60/13 60/19	(
61/24 62/22 63/2	(
63/3	t
trained [1] 68/14	,
transcript [7] 3/4	-
3/6 3/11 83/4 87/15	t
120/23 121/5	-
transcripts [1] 14/5	
transition [22] 13/6	
13/10 46/5 46/8	4
59/16 62/7 62/10	
62/12 62/18 62/20	4
63/7 63/14 63/16	
64/16 64/22 72/14]
84/18 94/20 95/12	}
İ	l

95/23 97/2 99/4 ransmission [9] 1/8 3/18 10/7 66/20 67/11 73/12 76/6 77/20 99/2 **Fransportation** [3] 1/16 43/10 100/15 ravel [2] 48/21 103/22 raversing [1] 40/10 treated [2] 44/23 119/14 ree [14] 25/15 25/19 66/17 70/21 70/21 70/24 72/1 90/20 90/21 90/23 91/18 92/8 92/9 92/15 rees [7] 7/24 25/22 72/3 76/23 92/10 92/12 96/9 rench [26] 11/20 12/1 12/9 12/12 12/18 13/4 13/8 22/11 22/13 25/16 26/4 39/10 39/17 39/22 40/1 40/4 44/16 45/1 45/2 91/13 92/4 92/11 92/19 92/20 93/3 93/8

trenches [3] 22/17 117/24 118/3 trenching [8] 24/12 26/5 41/6 41/19 42/1 91/1 92/16 94/19 trenching/digging/s plice [1] 26/5 trespassing [1] 92/22 tricky [1] 21/9 trouble [1] 102/2 truck [1] 52/10 truckloads [2] 39/14 40/6 trucks [15] 38/12 38/13 38/22 38/23 38/23 39/5 39/6 39/6 39/6 39/7 39/8 39/15 40/10 49/9 119/5 true [3] 71/22 118/7 121/5 try [7] 4/16 36/17 38/3 45/21 50/18 69/13 85/19 trying [4] 8/2 21/10 63/13 91/8 TS6 [1] 99/5 turn [1] 108/4 turns [1] 59/15 TV [3] 23/1 25/9

T U Uh [13] 32/17 97/17 TV... [1] 90/10 twelve [2] 48/24 104/19 104/24 80/9 107/14 109/7 twenty [1] 29/15 111/12 113/1 114/2 two [37] 11/23 12/9 115/9 119/13 119/17 119/23 12/11 19/14 21/24 Uh-huh [13] 32/17 28/17 29/1 29/23 30/3 32/1 36/3 97/17 104/19 40/11 45/22 49/23 104/24 107/14 109/7 111/12 113/1 57/15 60/24 63/2 67/22 69/1 74/9 114/2 115/9 119/13 74/15 83/16 84/7 119/17 119/23 unaware [1] 100/16 unfortunately [1] 85/13 85/21 92/19 uncertainty [1] 93/8 98/13 99/16 100/1 101/15 11/12 unclear [1] 66/15 101/17 101/20 102/4 104/3 115/20 uncommon [2] 33/24 34/8 117/3 two-rod [1] 93/8 under [4] 15/3 two-year [1] 84/7 108/24 120/22 type [6] 5/6 5/18 121/8 6/12 13/6 13/10 underground [24] 15/23 3/18 4/14 14/13 types [1] 70/12 20/19 21/12 26/5 typical [4] 6/12 31/9 32/24 36/22 6/23 69/7 70/11 37/3 37/12 38/13 46/6 55/22 59/5 typically [10] 19/9 33/12 34/4 44/4 59/8 61/18 68/5 69/10 69/13 69/20 94/3 94/5 95/6 95/12 102/21 88/18 88/21 89/1 103/13

understand [10] 12/5 12/16 15/11 48/2 50/7 51/8 67/23 72/9 82/8 92/24 understanding [8] 8/6 8/10 13/1 13/15 15/20 39/22 44/14 46/17 understood [3] 17/21 34/15 35/21 undetermined [1] 19/17 98/23 UNH [1] 115/7 unless [1] 20/5 unlikely [1] 30/9 unprecedented [1] 17/8 unrealistic [1] 5/1 unreasonable [2] 65/11 84/15 unresolved [1] 36/5 unstable [1] 16/3 until [2] 16/16 93/23 untrained [1] 68/15 untried [1] 5/18 unusual [1] 46/10 up [45] 3/10 9/16 9/18 15/5 17/15

106/5 113/17 115/15 using [10] 47/13 48/3 50/19 52/2 52/17 77/20 82/22 102/9 106/11 119/17 usually [2] 37/22 109/11 **Utilities [2] 1/13** 1/14 utility [5] 31/3 33/1 very [14] 23/6 37/8 104/22 106/8 utilize [1] 8/11 utilizing [1] **5/11** \mathbf{V} Valley [2] 57/8 57/15 Van [6] 2/7 45/14 48/11 49/3 50/23 **78/4** variables [1] 109/16 variance [1] 33/15 variances [1] 58/15 various [1] 115/6 vary [1] 5/5

vegetated [2] 108/21 109/9 vegetation [3] 8/24 41/22 41/22 vegetative [1] 71/8 vehicles [2] 60/13 86/23 verbal [3] 4/6 56/22 120/9 versus [2] 86/9 102/9 53/16 72/21 76/7 92/10 106/12 108/12 111/21 111/24 116/7 116/17 117/12 118/12 120/2 viable [1] 42/8 vicinity [1] 68/15 view [4] 33/13 95/16 95/17 102/17 viewed [1] 59/8 violate [1] 33/4 violated [1] 33/1 visit [2] 46/7 93/21 visited [3] 52/21 52/22 109/21 visitors [1] 65/12 visual [4] 41/8 41/13 41/24 77/21 **visualize** [2] 74/7

V visualize [1] 84/10 voltage [1] 5/20 voltages [1] 69/16 W	14/7 18/12 21/4 23/3 23/6 23/9 23/16 24/5 25/13 25/22 26/2 26/10 26/16 27/1 27/5 27/16 28/5 28/14 31/10 31/14 32/3	118/8 119/11 119/15 119/20 119/21 wasn't [3] 34/18 38/19 85/16 water [20] 6/5 38/22 42/24 43/3
Wait [1] 27/12	32/4 34/24 35/1	43/3 43/16 43/17
waiver [2] 33/8	35/2 35/3 36/20	44/5 104/17 104/20
33/15	38/5 39/10 39/23	105/1 108/5 108/11
waivers [2] 31/4	40/5 40/19 41/21	108/19 109/3
32/1	43/14 47/4 52/12	109/11 111/2 111/3
walk [1] 15/13	56/9 62/3 63/9	111/6 111/13
walked [1] 103/4	63/11 64/7 67/4	watershed [3]
wall [5] 13/11	69/19 75/5 75/20	110/23 110/24
103/5 103/9 103/11	75/22 76/16 77/20	111/7
109/20	80/3 80/18 80/20	way [63] 1/15 7/19
want [22] 11/13	80/22 81/9 83/5	8/8 12/13 14/20
15/5 19/4 21/8	83/5 83/13 83/15	16/7 17/6 18/21
23/17 27/13 28/7	84/14 84/18 85/16	19/2 19/12 19/19
36/15 43/11 49/5	86/8 87/16 87/18	21/24 27/19 29/4
49/6 50/11 50/24	89/14 89/15 91/12	30/3 30/6 31/11
63/20 77/2 77/5	91/20 93/14 94/24	31/14 34/18 36/5
82/13 85/19 90/10	97/20 100/13	36/8 44/2 48/5
101/11 104/16	100/16 100/16	50/12 66/15 66/16
112/1	100/10 100/10	66/19 67/8 67/15
wanted [3] 50/8	103/12 104/19	67/18 67/21 68/4
75/24 77/23	109/4 109/8 110/2	68/8 68/11 69/9
warranted [1] 92/7	112/16 113/6	69/14 69/21 69/24
was [103] 5/10 7/5	113/15 113/18	70/1 70/2 70/22
10/10 10/12 10/24	113/18 115/21	71/12 71/24 73/10
11/1 12/14 14/4	115/23 116/5 118/6	74/6 74/9 74/13

\mathbf{W}
way [16] 75/8
76/6 77/22 78/1
81/12 82/5 88/17
88/20 91/17 93/4
93/8 93/10 94/12
103/15 117/9
118/14
ways [1] 61/8
we [74] 4/4 4/17
7/22 15/6 20/3 21/3
21/3 21/5 21/16
21/17 21/19 25/2
25/19 26/2 26/3
26/17 27/4 27/4
27/6 29/14 30/21
31/12 32/6 32/19
32/19 33/3 33/6
33/8 34/4 34/6 34/9
41/19 41/22 43/22
45/2 45/3 46/3
51/10 53/8 55/19
56/6 57/21 58/20
59/1 63/3 72/17
72/19 76/22 76/24
76/24 77/13 78/18
79/3 79/6 79/10
79/11 85/7 86/10
90/9 91/9 95/4 95/7
96/19 101/22 102/6
104/3 107/7 107/8 111/2 114/24 116/3
111/4 114/44 110/3

116/14 118/8 120/17 we'd [1] 104/5 42/4 50/17 52/24 53/8 105/14 we're [29] 9/22 17/7 29/2 29/3 32/18 35/12 40/9 53/1 53/2 65/6 65/19 97/18 102/11 106/2 108/3 108/12 108/22 110/21 111/12 111/21 114/12 114/22 115/16 115/18 116/1 116/7 116/15 118/12 120/17 we've [7] 17/20 61/5 64/17 105/7 115/1 115/20 116/12 weather [5] 10/15 10/21 115/20 116/11 116/20 Weathersby [1] 1/17 Webster [2] 95/21 102/15 wedge [1] 96/8 weed [1] 119/10 week [4] 23/20

80/10 93/24 101/3 weeks [5] 9/7 9/10 9/18 9/19 10/3 we'll [7] 18/7 20/15 | well [45] 18/19 19/3 20/21 21/9 22/13 23/13 24/1 24/5 26/24 30/2 30/11 35/18 35/20 39/21 42/3 49/13 51/10 52/20 53/8 57/14 61/8 63/23 68/14 72/2 73/1 76/11 80/14 80/17 83/22 85/15 85/21 91/15 94/12 98/1 104/1 106/1 109/18 110/6 110/15 111/8 112/5 112/15 113/22 114/22 115/8 went [3] 9/15 41/19 102/19 were [35] 9/17 19/22 19/24 31/7 31/24 33/19 34/6 36/21 36/22 44/12 44/20 46/14 49/22 51/11 54/13 56/15 56/24 57/6 65/14 72/2 84/4 89/4 99/15 99/18 103/7 104/12 104/17 108/23 109/24

\mathbf{W}
were [6] 111/15
112/18 114/14
115/11 115/22
115/24
weren't [5] 31/18
32/9 37/18 42/18
99/20
west [1] 61/11
western [1] 67/18
wetland [17] 51/12 82/21 83/6 83/18
84/5 84/6 84/17
85/23 86/10 86/14
86/16 86/19 86/21
89/2 89/12 89/13
89/21
wetlands [2] 51/5
84/2
what [99] 5/10 5/12
6/13 9/8 9/20 12/8
13/2 16/6 16/7 16/8
17/7 17/19 23/5
28/24 33/10 33/12
33/13 33/21 35/11
39/19 39/21 40/12
42/14 42/17 44/1
46/3 48/2 49/4
49/11 50/17 51/8
53/13 53/20 53/23
55/11 56/18 57/11
57/13 57/18 57/21

60/15 61/7 62/16 64/6 66/23 67/8 67/13 68/9 69/6 69/9 72/1 72/16 75/5 76/13 76/15 80/8 80/23 81/13 81/14 83/13 83/17 83/19 86/13 89/1 95/8 95/19 96/16 96/18 97/23 98/4 98/4 98/20 99/9 101/11 104/10 105/16 105/18 106/9 106/23 107/9 107/10 109/23 110/16 112/1 112/6 113/18 113/24 115/16 115/17 116/1 116/10 116/13 117/1 117/5 117/14 118/3 118/6 119/4 119/7 what's [8] 5/17 22/1 22/16 26/21 54/4 56/3 58/16 111/9 whatever [5] 16/6 33/15 54/3 54/14 80/21 whatnot [1] 55/15 wheel [1] 52/10 when [32] 9/15

15/10 15/12 17/10 18/19 19/1 24/15 26/1 31/6 34/1 36/10 40/8 63/11 70/23 73/18 86/11 86/18 87/10 87/16 87/21 94/19 97/1 102/6 104/12 106/8 108/18 110/3 110/19 111/15 113/19 117/14 118/14 whenever [1] 78/10 where [73] 5/20 8/2 8/20 12/18 15/2 18/8 18/9 18/10 18/12 18/14 19/12 19/16 20/18 21/9 21/15 26/9 26/23 29/13 30/14 30/15 31/4 34/13 34/22 35/7 41/19 41/20 43/2 43/13 46/4 46/6 47/17 47/18 47/22 52/11 53/8 54/17 55/16 55/24 57/16 59/15 71/1 72/3 72/7 72/11 73/3 73/11 73/15 79/13 79/24 86/22 89/15 89/19 92/14 93/7 95/11 95/18

$ \mathbf{W} $
where [17] 95/20
95/23 96/2 96/8
96/22 102/5 102/24
103/16 108/18
108/20 109/4 109/8
110/1 113/16
115/21 115/24
118/1
Wherever [1] 82/12
whether [16] 17/17
35/7 50/12 53/24
54/1 70/19 76/19
81/7 84/3 84/4
91/24 97/3 97/3
97/9 101/3 101/4
which [39] 6/9 9/8
11/6 13/8 15/11
17/8 19/13 19/15
19/16 27/19 28/21 33/13 36/9 36/11
41/3 43/12 43/21
59/21 61/10 61/13
61/16 69/5 70/21
79/13 82/5 87/4
87/5 95/8 95/19
96/21 98/6 99/4
100/17 102/18
103/13 104/6
110/24 117/1
118/19
whichever [1] 29/4
T. Control of the con

while [1] 24/12 who [11] 7/11 25/13 45/24 65/12 88/10 88/14 97/13 97/16 102/8 102/10 110/10 who's [2] 90/15 102/9 whole [6] 53/22 61/6 72/22 83/1 84/18 84/22 why [5] 4/19 11/3 50/21 72/19 93/13 wide [8] 19/13 19/15 28/11 29/14 29/19 30/3 39/23 49/24 widened [1] 13/4 wider [2] 40/1 40/4 width [8] 39/16 39/17 39/19 39/22 66/20 67/8 68/8 92/19 widths [1] 67/15 will [53] 7/2 7/18 7/23 8/1 8/3 8/18 9/4 12/2 12/10 16/16 17/3 17/14 17/14 17/15 17/17 19/2 21/2 25/17 27/3 27/18 29/12 36/11 40/14 41/7

43/3 43/4 43/4 43/5 45/24 47/7 55/5 55/8 55/23 60/20 62/11 62/12 66/15 72/20 76/21 79/24 81/23 82/3 86/4 91/17 95/8 95/13 95/19 97/22 108/17 114/17 117/7 117/8 120/18 William [1] 1/16 willing [1] 69/2 wind's [1] 82/5 Winnipesaukee [1] 98/18 winter [4] 42/12 86/9 86/18 88/2 wires [6] 68/10 68/10 68/10 68/10 68/12 68/13 wish [3] 13/24 15/1 28/12 within [17] 7/16 8/7 14/10 18/21 30/6 31/10 48/18 57/10 62/13 88/16 88/17 88/19 91/14 91/17 96/7 108/19 109/3 without [6] 10/20 56/5 78/23 92/22 93/9 106/16 witness [6] 2/4 4/7

W witness... [4] 40/24 77/12 101/19 117/19 witnesses [4] 45/19 75/23 76/3 80/19 won't [3] 8/13 58/9 86/4 wonder [1] 110/13 wondering [5] 12/14 114/12 115/3 118/11 118/14 Woods [1] 79/22 work [35] 7/16 8/7 8/16 10/8 15/19 17/1 17/10 17/16 21/22 30/4 61/1 61/18 61/19 61/23 62/13 63/13 82/2 82/10 83/13 84/3 84/13 86/1 86/2 86/9 86/12 86/14 86/24 87/12 87/18 89/20 93/4 107/1 107/3 109/5 110/10 worker [1] 16/3 workers [1] 68/15 working [6] 15/9 86/4 86/17 108/24 109/24 110/2 works [2] 23/15 29/4

worry [1] 73/7
would [213]
wouldn't [11] 20/3
22/1 22/6 24/14
27/21 48/17 56/6
72/4 73/9 103/18
106/13
Wright [1] 1/15
written [4] 3/17
41/3 42/17 112/7

Y

Yeah [2] 13/24 38/8 year [6] 70/6 84/7 88/1 111/10 115/19 117/3 years [11] 32/2 32/4 32/11 36/3 40/11 48/24 48/24 49/1 78/10 78/10 115/1 vellow [3] 74/4 96/10 96/22 yes [84] 6/20 7/21 8/12 9/4 11/19 12/24 13/2 17/19 18/17 19/9 20/15 20/20 21/20 22/21 22/23 23/24 24/1 25/9 25/19 26/16 26/19 26/20 30/8 30/13 31/12 31/20 32/11 35/9 36/23 37/20 41/1 41/6

41/12 42/16 44/10 46/9 46/16 46/21 47/8 49/16 50/6 51/7 51/23 53/2 53/13 55/3 59/8 59/22 60/14 63/1 63/5 64/1 64/9 64/21 64/23 64/24 66/1 67/13 70/4 70/14 71/3 71/13 82/10 95/14 95/15 95/22 96/1 96/14 97/7 99/6 99/8 99/21 101/16 102/11 104/19 105/10 108/8 109/13 111/11 111/15 111/18 111/19 117/23 118/10 yesterday [22] 4/18 9/9 11/1 23/10 28/12 28/13 31/1 33/23 34/2 34/21 35/17 35/22 36/2 38/5 38/11 39/10 44/11 80/23 81/3 81/24 118/5 119/8 yet [1] 23/2 you [347] you'll [1] 30/13 you're [23] 6/13

Y you're... [22] 12/6 12/17 18/10 18/14 18/18 22/20 34/13 44/7 49/4 49/20 50/2 50/3 53/3 55/2 59/13 64/21 81/13 101/8 110/6 110/7 117/1 117/5 you've [7] 11/22 12/9 50/14 91/22 101/21 104/7 110/15 your [48] 4/22 5/5 9/15 9/17 12/16 13/1 14/12 16/6 20/21 23/23 26/24 31/17 31/21 32/14 32/14 34/6 36/20 37/21 42/6 45/6 46/17 52/15 64/12 66/23 69/19 83/17 84/12 87/9 88/8 88/21 88/21 88/24 91/12 93/1 95/1 95/1 95/2 95/2 97/2 99/17 103/6 104/7 104/8 106/24 108/10 108/22 114/20 115/18 Yup [1] 91/11

Z zip [1] 99/14 zone [5] 61/4 70/21 70/22 72/3 92/16 zones [1] 92/14 ZYSK [116] 2/4 4/8 5/17 7/14 7/21 9/3 14/4 14/7 17/13 17/21 31/20 32/3 32/15 32/18 42/6 42/14 42/20 43/1 44/1 44/4 44/10 44/19 45/6 46/21 46/23 47/2 47/8 53/13 53/17 53/20 54/3 54/10 54/12 54/14 54/21 55/2 55/7 55/11 55/14 56/14 58/14 60/14 60/18 61/1 61/7 62/11 62/15 62/21 63/1 63/5 63/9 64/17 64/21 64/24 65/14 67/13 69/11 70/4 70/14 72/14 81/23 83/20 84/14 85/24 86/15 87/23 88/16 89/10 89/23 95/15 96/13 97/6 97/11 97/16 97/18 99/6 99/8 99/10 104/14 104/24

105/3 105/7 105/12 105/21 105/23 106/12 106/16 106/21 107/3 108/8 108/17 109/2 109/8 109/12 109/16 110/1 110/5 110/15 110/19 111/6 111/9 111/15 111/18 113/15 113/21 114/11 114/21 115/5 115/10 117/20 118/8 118/21 119/8 119/14 119/20 119/24 Zysk's [1] 107/13