STATE OF NEW HAMPSHIRE

SITE EVALUATION COMMITTEE

May 1, 2017 - 1:15 p.m. DAY 6
49 Donovan Street Afternoon Session ONLY
Concord, New Hampshire

{Electronically filed with SEC on 05-08-17}

IN RE: SEC DOCKET NO. 2015-06
Joint Application of Northern Pass Transmission, LLC, and
Public Service Company of New Hampshire d/b/a Eversource Energy for a Certificate
of Site and Facility.
(Hearing on the merits)

PRESENT FOR SUBCOMMITTEE/SITE EVALUATION COMMITTEE:

Chrmn. Martin P. Honigberg Public Utilities Comm.
(Presiding as Presiding Officer)

Dir. Craig Wright, Designee Dept. of Environ. Serv.
Christopher Way, Designee Dept. of Resources & Economic Development
William Oldenburg, Designee Dept. of Transportation
Patricia Weathersby Public Member
Rachel Whitaker Alternate Public Member

ALSO PRESENT FOR THE SEC:

Michael J. Iacopino, Esq., Counsel to the SEC
Iryna Dore, Esq.
(Brennan, Caron, Lenehan & Iacopino)

Pamela G. Monroe, SEC Administrator

(No Appearances Taken)

COURT REPORTER: Steven E. Patnaude, LCR No. 052
<table>
<thead>
<tr>
<th>Index</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITNESS PANEL: KENNETH BOWES (resumed)</td>
<td></td>
</tr>
<tr>
<td>DERRICK BRADSTREET</td>
<td></td>
</tr>
<tr>
<td>LYNN FARRINGTON</td>
<td></td>
</tr>
<tr>
<td>SAMUEL JOHNSON</td>
<td></td>
</tr>
<tr>
<td>JOHN KAYSER</td>
<td></td>
</tr>
<tr>
<td>NATHAN SCOTT</td>
<td></td>
</tr>
</tbody>
</table>

Cross-examination continued by Mr. Pappas 3
CHAN
CHAIRMAN HONIGBERG: Mr. Pappas, you may proceed.

MR. PAPPAS: Thank you.

BY MR. PAPPAS:

Q. Mr. Scott, let me ask you some questions about the underground design.

A. (Scott) Yes, sir.

Q. Now, there are two types of underground design, open trench and trenchless, correct?

A. (Scott) Correct.

Q. Okay. And the open trench is digging a trench along the road to lay the cable in?

A. (Scott) Correct.

Q. And the trenchless is drilling a hole in the ground in order to go underneath an obstacle, correct?

A. (Scott) Correct.

Q. And it's typically under a river or a stream or some other obstacle, is that --

A. (Scott) Correct.

Q. Okay. So, let me start with open trench.

MR. IACOPINO: Can you make that
bigger?

[Atty. Pappas distributing documents.]

[Brief off-the-record discussion ensued.]

BY MR. PAPPAS:

Q. Okay. Mr. Scott, looking at Counsel for the Public Exhibit 199, which I've handed out and is also on the screen, I want to start with the equipment for open trench. Now, obviously, you need a backhoe or a track excavator to dig the trench?

A. (Scott) Correct.

Q. Okay. And then you need as dump truck to haul away the excavation spoils, is that right?

A. (Scott) Correct.

Q. And then you need a concrete truck to deliver concrete backfill or fluidized thermal backfill?

A. (Scott) Correct.

Q. Now, as I understand it, on this Project, the request is to use fluidized thermal backfill within the trench, is that right?

A. (Scott) Correct.
Q. And then there's also the proposal to put a layer of concrete over the cable in order for protection, is that right?
A. (Scott) That's the current design.
Q. Okay.
A. (Scott) The trench cross section is something that could vary slightly as design progresses, so that concrete layer may encase the conduits. It may stay as it is, which is a protective cap layer. The materials will stay the same, but the exact location there may change slightly.
Q. Okay. Okay. All right. And then you need a crane for lifting and placing precast concrete splice vaults. Do you see that?
A. (Scott) Yes. However, we're not using vaults, we're using splice pits. Correct.
Q. Splice what?
A. (Scott) Pits. It's just a terminology thing. We're not doing any vaults. They're all splice pits.
Q. Are they concrete?
A. (Scott) Yes. They're precast.
Q. Concrete?
A. (Scott) They're borderline the same thing,
there's just slight variations.

Q. Okay. Let me do this. All right. Then, the soil compactor to recompact the soil before you put asphalt on it?

A. (Scott) Correct. So, for the trench cross sections for this Project, the concrete and the fluidized thermal backfill would not need compaction.

Q. Right.

A. (Scott) So, it would just be any layers above those, such as the road subbase or DOT required layers that would need compaction.

Q. Okay. Trench boxes to secure the sides of a trench where necessary?

A. (Scott) Trench boxes or other shoring means.

Q. Yes.

A. (Scott) Yes.

Q. And would trench boxes also be used where you're going to put a splice pit, because those are bigger holes?

A. (Scott) It's entirely dependent upon what the contractor has available, whether it's going to be trench boxes or other shoring methods.

Q. But some method to shore the side of the hole?
A. (Scott) Correct.

Q. Okay. And I understand you're not going to use steel plates on this Project?

A. (Scott) That is currently in coordination with the DOT, if and when steel plating will be allowed.

MR. ROTH: Excuse me, Mr. Chairman.

It's difficult to hear Mr. Scott.

CHAIRMAN HONIGBERG: Off the record.

[Brief off-the-record discussion ensued.]

BY MR. PAPPAS:

Q. And then you can see the other equipment listed under "Open Trench". Do you see that?

A. (Scott) Yes.

Q. Okay. Now, I'm interested in the size of this equipment and the footprint or area necessary to do this work. If you look in this Exhibit 199, it says, under "Footprint, "Typically two traffic lanes wide to accommodate side loading of excavation spoils into a dump truck by excavator." Do you see that?

A. (Scott) I see that.
Q. Okay. So, what is shown on the scene now is Counsel for the Public Exhibit 205. And that shows an excavator and a dump truck. Do you see that?

A. (Scott) I see it.

Q. And is that the typical configuration for trench excavation, where you have the excavator next to the dump truck loading the spoils into the dump truck?

A. (Scott) "Typical" is a relative term. If you have space available, that's what you would do to provide the fastest construction means.

Q. Okay.

A. (Scott) If you have space limitations, that dump truck would be in line with the excavator, and the arm would swing around 180 degrees and fill up the dump truck that way.

Q. Okay. So, typically, how much space do the excavators need?

A. (Scott) One travel lane.

Q. Is that ten feet? Twelve feet?

A. (Scott) Ten to twelve feet, yes.

Q. All right. And, typically, how much space does the dump truck need?
Q. All right. Ten to twelve feet, all right. Now, I assume you need to keep a distance between that and a travel lane, at least a couple of feet?
A. (Scott) Ideally.
Q. Okay. So, we're at 12 to 14. Okay.

MR. NEEDLEMAN: So, Mr. Chair, I'm not sure exactly how we're doing this, but, based on Mr. Scott's testimony, I would object to this exhibit as not representative of what we're proposing here.

CHAIRMAN HONIGBERG: Mr. Pappas.

MR. PAPPAS: Well, he testified that, if the space is available, this is the preferred method. And then we went onto say that, in places where there's not space, it will be a different method.

CHAIRMAN HONIGBERG: Yes. I'm not sure what -- what is it you're complaining about, Mr. Needleman?

MR. NEEDLEMAN: I think Mr. Scott was saying that the method we intend to use, where there is one travel lane available, they would
be lined up next to each other, and we wouldn't be blocking the road or closing it.

CHAIRMAN HONIGBERG: I think that is what he said, and I think Mr. Pappas has it, and I think Mr. Scott has it. I don't think that -- to the extent that there's an objection here, it's overruled.

BY MR. PAPPAS:

Q. Okay. So, here is Exhibit 213, which is an indication of a concrete truck pouring concrete into a trench. And you said a moment ago that a concrete truck could pour concrete into the trench, correct?

A. (Scott) Correct.

Q. So, is this the typical arrangement, where the concrete truck is next to the trench and pours concrete into the trench?

A. (Scott) Again, if there's space allowable, --

Q. Okay.

A. (Scott) -- you would prefer to, for construction speed, you'd prefer to line up adjacent to the excavation. If that's not possible, you would have more staging required to get that truck in there more frequently, and
do less open excavation and do in-line again.

Or, you would do a temporary stoppage of
traffic to get that truck in there and pour
concrete.

Q. Okay. So, you would either do this, you would
try to get the concrete truck lined straight up
with the trench, or you do temporary traffic
stoppage to get the truck in, pour the
concrete, and get it out?

A. (Scott) For the space required for that truck
to be located adjacent to the excavation, yes.

Q. Okay. And do concrete trucks typically also
require ten to twelve feet?

A. (Scott) Yes.

Q. All right. And then you'd want another
two-foot buffer as you had with before?

A. (Scott) I don't know that you have another
two-foot buffer required for that. There is no
moving parts on the opposite side of the road.

Q. You wouldn't want the travel lane right
adjacent to the concrete truck, would you?

A. (Scott) It would be no different than driving
to opposite directions on the roadway.

Q. All right. And the concrete arm swings in and
A. (Scott) It swings in one direction, typically.

Q. Yes. Okay.

A. (Johnson) I'll note that -- excuse me -- I'll just note that that type of trenching, where you've sort of stepped it out, is not what is planned on this Project. The Project's going to be neat and use trench boxes so that you're narrowing that lane limit.

A. (Scott) Correct.

Q. Okay. So, on the screen now is Counsel for the Public Exhibit 214. And you can see a crane lifting a splice box or a splice pit off a flatbed truck. Do you see that?

A. (Scott) I do.

Q. And, for this Project, I assume the splice pits will come in, they're prefabricated, and they'll come in on flatbed trucks?

A. (Scott) Yes.

Q. And you'll need a crane to lift them off the flatbed trucks and put them into place?

A. (Scott) That is likely.

Q. And, in order to do that, would you need one space for the flatbed truck and then a separate
space for the crane?

A. (Scott) It's entirely dependent upon the requirements of the precast members themselves and the crane required to lift those members. So, the larger the precast members, the larger the crane required. So, yes, you would typically have a separate truck from the crane.

Q. Okay. So, in order to lift a splice box into place, you need space for the flatbed truck, and then you need space for the crane. Each of those spaces ten to twelve feet in width?

A. (Scott) The crane could be larger than that.

Q. Okay.

A. (Scott) The truck would be that size, yes.

Q. All right. And, so, the crane could be 12 to 14, 14 to 16?

A. (Scott) Yes.

Q. Okay.

A. (Scott) And I would like to point out that, again, it's possible to do this in line with the excavation. However, you would need some temporary stoppage of traffic to be able to swing the arm from the truck 180 degrees into the excavation.
Q. Yes. You wouldn't want people driving under that arm?
A. (Scott) No, sir.
Q. Yes. Okay. What's on the screen now is the Counsel for the Public Exhibit 208. And that indicates a trenching operation with a trench box, is that right?
A. (Scott) Yes.
Q. So, in places where the contractor would need to shore the trench, it could use a trench box such as this?
A. (Scott) That is one of the means, yes.
Q. Yes. And another means would be simply shoring it by wood or some other method?
A. (Scott) Sheeting and shoring, yes.
Q. Yes. Okay. Now, to Mr. Needleman's point, in fairness to your earlier testimony, I also have a picture of what you've described as "in-line trenching", correct?
A. (Scott) Correct.
Q. Okay. And, so, here we see the dump truck and the excavator in line. They're in line together, correct?
A. (Scott) Correct.
Q. Okay. And, in this situation, the excavator has to swing the arm around, dig up soil, and swing it back and dump it in the dump truck, correct?
A. (Scott) Correct.
Q. So, the excavator needs clearance either on the -- I'll call the "shoulder side" or, if there's not sufficient clearance on the shoulder side, the excavator needs clearance on the road side, correct?
A. (Scott) Correct.
Q. And, if the excavator needs clearance on the road side, you would stop traffic while that arm is swinging in the road, correct?
A. (Scott) Correct.
Q. All right. Now, would I be correct that this method is slower than if you can have the dump truck next to the excavator and go right down the line?
A. (Scott) Yes. That's correct.
Q. And this method requires, and you can see, the dump truck to back into the space to receive the spoils, correct?
A. (Scott) Correct.
Q. Would I also be correct, and this method is typically used for shorter distances rather than longer distances?
A. (Scott) I'd say it's site-specific.
Q. Okay. Now, am I correct that the rate of construction expected on Northern Pass is, for the open trench, is anywhere from 20 feet to 100 feet a day?
A. (Scott) Yes.
Q. And that's going to depend on whether or not there's rock or ledge in the ground or whether it's easily dug up soil?
A. (Scott) There's a number of variables. You've listed some of them. Additional variables are depth of installation, whether there's crossing utilities, soil types, rock, as mentioned, yes.
Q. Okay. So, the more of those variables you hit, the slower you go?
A. (Scott) Correct. For the majority, if you're shallow, and there's no obstacles, you'll be going fairly fast, towards the upper range of that number you provided earlier, closer to 100 feet a day.
Q. Okay. Do you know how much feet of trench a
single dump truck can hold, in terms of spoils, typically?

A. (Scott) Not off the top of my head.

Q. Okay.

A. (Scott) John, do you have any idea about that?

A. (Kayser) No.

A. (Scott) No.

Q. No. Okay.

A. (Johnson) Just based on some -- like off the top of my head, that maybe five to 10 feet, on a shallow trench, could fit into one dump truck.

Q. Okay. Thank you.

CHAIRMAN HONIGBERG: Off the record.

[Brief off-the-record discussion ensued.]

BY MR. PAPPAS:

Q. Okay. So, Mr. Scott, what's on the screen is Counsel for the Public's Exhibit 130, Page 7 of Exhibit B, as in "boy". And this lists the sequence of construction for open trench. Do you see that?

A. (Scott) I see it.

Q. Okay. So, first, you have to "Establish
maintenance of traffic controls" clearly, correct?
A. (Scott) Correct.
Q. Okay. Then, where it's says "Stake limits of disturbance", is that to determine where it is you're going to essentially dig in and have equipment?
A. (Scott) Essentially, yes.
Q. Okay. And then you're going to need to -- well, let me back up for a minute. When you stake out limits of disturbance, presumably the goal is to stay within the right-of-way, correct?
A. (Scott) Correct.
Q. It's not to go on any private property?
A. (Scott) Correct.
Q. When you stake --
A. (Scott) And that right-of-way line will be staked as well.
Q. Okay. And, when you stake the limits of disturbance, you're going to mark trees or shrubs that need to be removed?
A. (Scott) Yes.
Q. Okay. Now, there are a number of places along....
the Northern Pass line where trees and shrubs need to be removed in order to install the line, correct?

A. (Scott) Within the right-of-way, yes.

Q. Yes. Okay. And am I correct that the DOT wants the Project to be off the road as much as possible?

A. (Scott) Correct.

Q. So, wherever you can be off the road, and still within the right-of-way, is where -- is the goal for the open trench, correct?

A. (Scott) There's a variation on that. That's definitely what the DOT is requesting. However, we are putting in requests for variance where we know that we would be killing trees.

Q. Yes. That's a hardship request?

A. (Scott) Yes.

Q. But there are a number of places where you do need to take down trees, correct? You don't have much of a choice?

A. (Johnson) I wouldn't say it's prevalent across the installation. For the most part, we will be doing our even off the road, in the ditch...
line, which is where the drainage swales are, which does not have any encumbrances, such as shrubs and/or trees. And I would say that it's more rare than common for us to be removing vegetative growth.

Q. But there are several places along the line where you have to remove vegetative growth, correct?

A. (Johnson) There will be some, yes. I can't quantify the exact number, but it's small in number. I would say, in certain locations of the 60 miles, there's probably less than 30 locations that would require some removal.

Q. Okay. Then, Mr. Scott, the next item is "staking out route alignment, vault locations, HDD areas". Do you see that?

A. (Scott) I see it.

Q. Okay. And then it indicates here "construct underground vaults". Do you see that?

A. (Scott) I do see that. But, again, that's splice pits.

Q. Splice pits. Now, as I understand it, to the extent there's blasting, blasting is going to occur ahead of the open trench, is that the
A. (Scott) If it was required, yes.

Q. Yes. You anticipate, in some places, there's going to be some blasting, don't you?

A. (Scott) I'm not sure of any specific locations where it's required for the underground route. But it's a potential, yes.

Q. Well, your application indicates you anticipate some blasting, does it not?

A. (Johnson) The application reserves the right, if you will. Based on the 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.

Q. Okay. To the extent you need blasting, you're going to try to do that ahead of the open trench?

A. (Johnson) Yes. In some cases, it will be the open trench that finds that piece of rock. If we have identified it ahead, then certainly it would be ahead, yes.

Q. Okay. And then the next item, Mr. Scott, is to
"install duct work - open trench excavation".
Do you see that?
A. (Scott) I do.
Q. Okay. And then it's to "proof the ducts"
A. (Scott) Correct.
Q. Then you pull the cables through the ducts into
the -- in this case, splice pits?
A. (Scott) Yes, sir.
Q. And it's within the splice pits where the
splicing of the cable is going to occur?
A. (Scott) Yes. That's where the cables -- one
joint would be used to splice one cable to the
other in each direction.
Q. Okay.
A. (Scott) Yes. And there being two power cables
for each splice pit, so two joints for four
cables in and out.
Q. Okay. And then do "temporary road repair"?
A. (Scott) Correct.
Q. "Demobilize" the site, meaning take all the
equipment away?
A. (Scott) Yes.
Q. And then go back and do "final road repair"?
A. (Scott) Correct.
Q. Okay.  
A. (Bowes) For that exhibit, I would say there's one activity that would precede all of the others, which would be DigSafe. So, all the underground utilities will be marked.  
Q. Okay. Thank you. So, what's on the screen now is Counsel for the Public's Exhibit 215. And, Mr. Scott, that's an example of either a splice vault or a splice pit, correct?  
A. (Scott) Correct.  
Q. And, as you indicated, they're a prefabricated piece of material?  
A. (Scott) Yes.  
Q. Okay. And, as I understand it, these are roughly 8 feet wide 8 feet in height and 30 feet long?  
A. (Scott) Approximately, yes.  
Q. Okay. And they need a excavation hole greater than 8 feet wide and 30 feet long in order to drop them in, correct?  
A. (Scott) Correct.  
Q. And they certainly need an excavation hole larger, in order to do some bracing. And here you see a trench box. And, so, if a trench box
is going to be used, they're going to have to have an excavation hole even larger, correct?

A. (Scott) Usually, I would estimate about two feet outside the dimensions, from edge of the pit or vault wall to the edge of excavation/edge of shoring.

Q. All right. So, we're talking really 10 by 32 is what you anticipate? Do you anticipate two feet on each side of the splice vaults?

A. (Scott) Twelve by thirty-four (34).

Q. Okay. Twelve by thirty-four (34), okay. Now, the depth of the excavation holes for these splice boxes, they need to be, if the box is 8 feet, and I understand the minimum depth of the trench above the box is 48 inches, or 4 feet, is that correct?

A. (Scott) Depends upon where in the roadway you are. So, the DOT has different depth requirements depending upon where in the road cross section you are.

Q. Okay. What do they vary? From what to what?

A. (Scott) Off the top of my head, I believe 48 inches is ballpark for underneath the roadway. Do you guys have a specific number?
We're still in coordination to finalize that, those design requirements.

Q. Okay.

A. (Johnson) So, in the ditch line, it's 48 inches to the bottom of the ditch.

Q. Uh-huh.

A. (Johnson) So, that would be some sort of strata, and then enough earth to grow grass, if you will.

Q. Yes.

A. (Johnson) Under the roadway, it varies, depending on the type of road, whether it's a Tier 2, a Tier 3, or Tier 4 road. But --

Q. Yes. So, I want to get a sense of the range of how large these excavation holes are for these splice pits. So, it's going to be, what, 16 feet roughly deep there?

A. (Scott) No. Typically, you would be about 10 to 12 feet deep.

Q. Well, the box itself is 8 feet.

A. (Scott) If you look at our drawing set, I'm specifically looking at North C503.

Q. Uh-huh.

A. (Scott) You can see the splice pit dimensions.
The inside height being five feet, eight inches requirement, plus a lid height and a floor height, making that approximately six and a half feet to seven feet, plus your depth of installation. So, 10 to 12 feet depth.

MR. IACOPINO: And, sir, could you tell us what exhibit number that is that you're -- should be on the first page?

WITNESS SCOTT: I'm not sure what the exhibit number is for the drawing set.

MR. IACOPINO: Oh, this was not what he handed you earlier?

WITNESS SCOTT: No. This is the Plan and Profile drawing sets as part of the Application.

MR. IACOPINO: Okay.

BY MR. PAPPAS:

Q. Okay. So, you said "10 to 12 feet deep"?

A. (Scott) Yes.

Q. Okay.

A. (Scott) And, if you want more specifics, you can refer to the profiles in the Plan and Profiles to see the depth of installation.

Q. Okay. Are there any locations where splice
pits need to go under existing utilities?
A. (Scott) No. That will not be occurring.
Q. Okay.
A. (Scott) The ducts going in and out of the splice pits may be going underneath existing utilities. But the splice pit itself will not.
Q. Okay. And, if the ducts have to go under existing utilities, that could lower the level of the splice pit?
A. (Scott) Potentially.
Q. Yes.
A. (Scott) That could also facilitate moving the splice pit to decrease the depth of installation required.
Q. So, let me ask you a question about the fluidized thermal backfill that you mentioned a moment ago. Now, it's my understandings that fluidized thermal backfill is essentially a low-strength concrete?
A. (Scott) Essentially, yes.
Q. Yes.
A. (Scott) It's around 300 PSI concrete.
Q. Okay. And the DOT has required the Project to do some testing of proposed fluidized thermal
backfill, is that right?
A. (Scott) Correct.
Q. So, the DOT construction standard is to reuse
the existing excavated material from the
trench, is that right?
A. (Scott) I believe that's desired.
Q. Yes. And the reason that DOT standard
construction requirements require that is to
limit differential settling, isn't that right?
A. (Scott) That's one of the reasons for that.
Q. Yes.
A. (Scott) However, the DOT also has requirements
for compaction of the materials to meet certain
requirements, 95 percent Proctor density so
that settlement will not occur.
Q. Right. But the reason you want to put back the
soil you took out is it's the same gravel as
the adjacent gravel in the pit, isn't that
correct?
A. (Scott) That's the theory.
Q. Yes. And, so, you want to use the same type of
gravel, so when you compact it, presumably it's
the same compaction as the undisturbed part.
Correct?
A. (Scott) That's the theory.
Q. Yes. Do you disagree with that theory?
A. (Scott) No.
Q. Okay.
A. (Scott) Essentially, it's just, if you're compacting any material to that density, it should essentially not settle.
Q. But, if it's different gravel, it can have different characteristics, for instance, if water or something gets in there, correct?
A. (Scott) Potentially.
Q. All right. So, I understand it, DOT is going to require the Project to see how this fluidized thermal backfill operates through the Winter of 2017?
A. (Scott) Correct.
Q. And, if the DOT approves the testing, it will allow the Project to use it on the underground sections?
A. (Scott) That's my understanding.
Q. But, if the DOT doesn't approve it, you're going to have to use the material that was taken out of the trench when the trench was created, correct?
A. (Scott) Potentially. There's also other fill materials that could be used.

Q. Well, doesn't the DOT standard require you to put back the soil you took out?

A. (Scott) So, that may be a requirement. However, there's also numerous examples where imported materials may be used as well that have similar characteristics of that excavated material, --

Q. Have you asked --

A. (Scott) -- to avoid stockpiling on-site.

Q. Have you asked the DOT to be able to do that?

A. (Scott) I don't believe it's come up yet.

Q. Okay. So, assuming the DOT requires you to follow their standards and put back the soil you took out, the Project's going to have to stockpile that soil somewhere, isn't that right?

A. (Scott) Potentially.

Q. Yes. And, as I understand it, the Project hasn't identified where it would stockpile that soil, has it?

A. (Scott) That's also my understanding.

Q. Okay. So, do you have a sense of how much soil
we're talking about that will require stockpiling?

A. (Scott) Off the top of my head, no.

Q. Okay. But you would agree with me that the Project will have to identify areas along the 60 miles of underground in order to stockpile this material, correct?

A. (Scott) I would agree that the logistics of stockpiling and reuse would definitely be considered and developed.

Q. All right. And that would require dump trucks to take the soil there. It would require excavators to take the soil, put it back in the dump truck, and then bring it back to the site, correct?

A. (Scott) If there is no space to stockpile along the excavation, yes.

Q. No. I'm saying, even if you have to stockpile, you've got to take it to the pile, dump it, that's one place, right?

A. (Scott) So, an alternate method would be to essentially store the material adjacent to the excavation, if the site-specific allocation allowed it.
Q. Are you aware of whether there's enough room to stockpile all this soil along the 60 miles of underground?

A. (Scott) I am not.

Q. Yes.

A. (Scott) And I have not seen a contractor provide the means and methods, as we are currently proposing fluidized thermal backfill.

Q. Yes. But you realize it's a rather tight fit to begin with to get this underground within the right-of-way in many places, is it not?

A. (Scott) I agree that there is not a specific location where I would think that stockpiling adjacent to the trench for a long length of installation is likely to occur.

Q. Yes. So, that means you've got to haul it somewhere and dump it, correct?

A. (Scott) Correct.

Q. Then, you've got to get an excavator, put it back in the dump truck and bring it back and put it back in the trench, correct?

A. (Scott) Correct.

Q. Okay. And, if you're required to do that, that's going to have -- that's going to
increase the number of trips that dump trucks
are going to be driving to and from different
construction sites, correct?

A. (Scott) Agreed. And I definitely think the DOT
should take that into consideration.

Q. Okay. But, today, we can't analyze the impact
that that traffic will have, because we don't
know, first, whether you need to do it, but
also more as importantly, we don't know where
those staging areas will be. So, we don't know
where the trucks will be going to and coming
back, correct?

A. (Scott) Correct.

Q. Okay.

A. (Bowes) There is an alternative to leave the
material in the dump truck itself, and just
cycle it back, after the conduits are placed.
We have to fill the trenches each evening. So,
there may be no need for stockpiling at all.
Just need additional dump trucks.

Q. Uh-huh. And where are you going to put all
those dump trucks full of soil, while we're
putting the conduit in, and then the cable in,
and then you're putting the concrete protection
on top?

A. (Bowes) So, that would be in the location where probably we store the materials.

Q. Yes. Okay. Now, Mr. Scott, if you use the fluidized thermal backfill, you're going to need to source that from concrete batch plants, correct?

A. (Scott) Correct.

Q. And that is going to be additional -- that will be above and beyond the concrete for that protective layer, correct?

A. (Scott) It would be a different mix.

Q. Yes.

A. (Scott) Yes.

Q. Yes. So, for the 60 miles of underground, there will be thousands of concrete deliveries, first, for the FTB, fluidized thermal backfill, correct?

A. (Scott) I can't tell you how many there would be. But there would be numerous deliveries.

Q. And then there would be thousands of concrete delivery trucks for the protective layer of concrete, correct?

A. (Scott) Again, I can't tell you if it's
thousands or hundreds, but, yes, there would be numerous deliveries.

Q. Okay. And today we don't know where those batch plants are located, correct?

A. (Scott) Correct. As mentioned earlier, it's quite feasible that mobile batch plants would be developed.

Q. But we don't know where those mobile batch plants would be located either, do we?

A. (Scott) Not at this time.

Q. So, because we don't know the location of the batch plants that exist, nor the location of the mobile batch plants, we can't assess the impact on traffic from all these concrete trucks coming and going from these batch plants to the 60 miles of underground, correct?

A. (Scott) Not at this time.

Q. All right. So, let me ask you some questions about the trenchless methods. We just went over the open trench. So, I'm going to switch to trenchless methods. And, as I understand it, there are three essential methods for trenchless. The first is horizontal direct drilling, correct?
Q. Which I'll now refer to as "HDD", because it's a whole lot easier.
A. (Scott) That works.
Q. Thanks. And then there's "Jack and Bore"?
A. (Scott) Correct.
Q. And there's something known as known answer "Micro Tunneling", correct?
A. (Scott) Correct.
Q. Okay. And the Project proposes to use mostly HDD, and I believe one Jack and Bore and one Micro Tunnel?
A. (Scott) Yes, sir.
Q. Okay. And the depths of these, because these go under obstacles, is anywhere from 30 feet to 75 feet deep?
A. (Scott) Depending upon the location, yes.
Q. Yes. And, typically, the deeper it goes, the larger the work area is needed?
A. (Scott) That's potentially the case. However, it's site-specific, dependent upon the geotechnical considerations for that specific site.
Q. Okay.
A. (Scott) The depth doesn't necessarily play into that.

Q. Well, let's look back at Counsel for the Public's Exhibit 199, the sheet I passed out. And, if you look under "Trenchless: HDD", there's a list of equipment needed for that. Do you see that?

A. (Scott) I do.

Q. Okay. And then there's a list of the "footprint", do you see that?

A. (Scott) I do.

Q. Okay. And then there's the "rate of construction". And there's a similar listing for "Jack and Bore". Do you see that?

A. (Scott) I do.

Q. Okay.

(By Atty. Roth and Administrator Monroe distributing documents.)

BY MR. PAPPAS:

Q. Mr. Scott, I've passed out Counsel for the Public Exhibit 200, which is contained within Dewberry's report, which is an exhibit, but this is a handy chart that I'm going to refer to from time to time. And, if you look at it,
it lists each of the trenchless operations, and it provides the location, the approximate length of the drilling. They all have two bores, and it shows the maximum depth.

A. (Scott) There's one location with one bore.

Q. Oh, yes. Thank you. I stand corrected.

That's the Micro Tunnel, correct. And then the work areas. Do you see that?

A. (Scott) I do.

Q. Okay. So, for one of these trenchless operations, the sequence of work is, first, to mobilize, which essentially is stake out the area that you need for entry and exit pits and clear it, is that right?

A. (Scott) Yes.

Q. Okay. Prepare your traffic control?

A. (Scott) Yes.

Q. Install the rig necessary to do the drilling?

A. (Scott) Correct.

Q. Then you need a mud handling plant for the drilling fluid?

A. (Scott) Depending upon the technique, yes.

Q. Yes. You need dumpsters to collect cuttings from the drilling?
A. (Scott) Essentially, yes.

Q. And you need sometimes a crane to manipulate the drilling stem, correct?

A. (Scott) Correct.

Q. Okay. So, on the screen is Counsel for the Public's Exhibit 201, which is part of Electrical Consulting Engineers' report. And it shows the basic sequence for HDD drilling. Do you see that?

A. (Scott) I do.

Q. Essentially, I'm not going to go through step-by-step, but essentially what you do is you first, at the entry point, drill a hole all the way to the exit point, correct?

A. (Scott) Yes.

Q. And then that, as you're drilling that, that is pulling out material from the hole that you put in the dumpster and take away?

A. (Scott) Correct. You process it and then take it away.

Q. In order to do that drilling, you have to have drilling mud, correct?

A. (Scott) Yes.

Q. And drilling mud is a combination of water and
bentonite clay and some other additives?

Q. And then, after the tunnel is created, you essentially pull back and keep going back and forth until you get the size that you need, the size of the hole you need, correct?

A. (Scott) If required, yes.

Q. Okay. And this drilling is at very high pressure, correct?

A. (Scott) It's -- well, it depends on your definition of "high pressure". It's higher than the earth pressure --

Q. Yes.

A. (Scott) -- at that location.

Q. And you're familiar with "frac-out"?

A. (Scott) Inadvertent returns, yes.

Q. Yes. And frac-out essentially is, if there are cracks in the soil or fractures that allow the drilling mud to essentially escape and go to the surface, that could be -- that would be a frac-out, right?

A. (Scott) Yes. That would be an inadvertent return. And it's not necessarily a fracture required. It's just a path of least
resistence.
Q. Yes. So, the concern with short-term frac-out of just inadvertent, the concern is that the drilling mud escapes, essentially, and goes onto the surface or somewhere else?
A. (Scott) Yes.
Q. Okay. Now, you need to collect drilling mud at each end of the drilling, correct?
A. (Scott) Yes. Primarily at the sending end.
Q. Okay. And then, once you get the hole to the size required, you essentially insert the casing to hold the conduit, correct?
A. (Scott) You would pull the casing back in. And, in this case, for all of these installations, it's -- the conduit itself is being pulled back in. There is no separate casing.
Q. Okay.
A. (Scott) The only location where casing is considered is for the Micro Tunnel, which is a different technique than what you're showing on the screen.
Q. The conduit itself has -- is self-encased?
A. (Scott) It's -- the conduit is the casing, yes.
Q. Yes. And it's got casing, if you will, around -- I mean, there's several layers to this conduit. And the outside layer is essentially the protective casing?

A. (Scott) There is no separate casing than the conduit itself.

Q. Right.

A. (Scott) The conduit itself would be pulled back into the drill hole. There would not be a separate casing.

Q. Okay. So, after that is pulled back in, you can demobilize the site, correct?

A. (Scott) Once you proofed it, yes.

Q. All right. Okay. Now, if you look back at Exhibit -- Counsel for the Public Exhibit 200, on the far right column it shows the work areas needed for each of the drilling sites. Do you see that?

A. (Scott) I do.

Q. And, so, for instance, the first drilling site in Pittsburg and Clarksville requires an entry pit of 27 feet wide by 400 feet in length. Do you see that?

A. (Scott) I do.
Q. And the exit pit requires 27 feet in width and 1,040 feet in length. Do you see that?
A. (Scott) I do.
Q. And, typically, the exit pit needs to be a little bit longer than the length of the drill, isn't that right?
A. (Scott) So, I'd like to expound on that slightly.
Q. Can you tell me, is that correct?
A. (Scott) So, the exit pit itself, the pit is small compared to the entry area required. It's during casing assembly and pull-back, or, in this case, conduit assembly and pull-back where you need that entire length.
Q. Right.
A. (Scott) So, it's not for the duration of the drill.
Q. I understand. But, in order to install the conduit, you need an area that's larger than the length of the drill, correct?
A. (Scott) Yes.
Q. All right. And that's why, if you look down this list, all of the exit pits are typically a little bit longer than the length of the drill.
that you see, with the exception Jack and Bore and Micro Tunnel, correct? For the HDD?

A. (Scott) Correct.

Q. Okay. Now, would you agree with me that the operation to mobilize, stake out, bring in the equipment, set it up, do the drilling, haul away the spoils, pull it back through, and everything else you need to do, typically, for HDD sites, is anywhere between three to five weeks per site, depending on what you encounter?

A. (Scott) Approximately, yes.

Q. Okay. Now, for Jack and Bore, it's a fairly similar process, is it not?

A. (Scott) It's slightly different. For a Jack and Bore, you don't have entry and exit from grade. You dig a shaft on each side and bore straight across.

Q. Yes. But you're essentially doing the same. You're just basically boring a hole through underneath --

A. (Scott) Well, you're putting the same stuff in the ground. It's just a different method.

Q. Yes. And, for Micro Tunneling, it's a little
bit different. In Micro Tunneling, you create a larger pit at each end, correct?

A. (Scott) Very similar to the Jack and Bore, yes.

Q. And essentially what you do is you -- well, let me do this.

So, what's on the screen is Counsel for the Public's Exhibit 211. Do you see that?

A. (Scott) I do.

Q. And do you recognize that as a piece of equipment for Micro Tunneling?

A. (Scott) I'm not sure if that's specifically a Micro Tunneling boring machine or not. But it's a horizontal boring machine.

Q. Okay. And, as I understand it, you dig a large trench on the entry side, correct?

A. (Scott) Correct.

Q. And you put the boring piece of equipment into the trench?

A. (Scott) Correct.

Q. And the trenches for Micro Tunneling are larger and bigger than for HDD, correct?

A. (Scott) It's not a trench. It's a shaft.

Q. It's a shaft. It's a pretty good size excavation hole, right?
A. (Scott) Yes.

Q. Approximately how big? For instance, let's take the one place you're going to do it in Franconia?

A. (Scott) Hang on one second. It's approximately 20 feet in diameter.

Q. Twenty feet deep?

A. (Scott) In diameter.

Q. In diameter.

A. (Scott) The depth is approximately 30 feet deep.

Q. Okay. And how wide?

A. (Scott) Twenty feet in diameter. It's a circular shaft.

Q. I'm sorry?

A. (Scott) It's a circular shaft, 20 feet in diameter, 30 feet deep, approximately. That's on the receiving side. The sending side is approximately 25 feet in diameter.

Q. Could you repeat that?

A. (Scott) The sending side, the launching side, on the south side of the river, I'm referring to SHEB 013-2 in the Plan and Profile drawing sets. The sending side is about 25 feet in
diameter, and the receiving side is about
20 feet in diameter.

Q. What's on the screen is Applicant's Exhibit
133. And this shows the work area for the one
Micro Tunnel in Franconia. Do you recognize
that?
A. (Scott) I do.

Q. Okay.
A. (Scott) There should be another page to that
that shows the profile as well.

Q. Yes. We're going to get to that. So, if you
look at this, to the left is the intersection,
the road intersection. Do you see that?
A. (Scott) I do.

Q. And it looks like, is that the receiving?
A. (Scott) That is the receiving side, yes.

Q. The receiving pit that looks like to be pretty
close to -- well, it's in the intersection,
correct?
A. (Scott) I guess it depends on your definition
of the "intersection". But it's generally in
that area, yes.

Q. It's in the roadway, isn't it?
A. (Scott) Yes.
Q. Okay. And then the sending pit is on the other side of the river. There's a river there, correct?
A. (Scott) Yes.

Q. And the sending side is clearly in the roadway, correct?
A. (Scott) It's in the roadway and the sidewalk, yes.

Q. Yes. All right. So, the next page is that same area blown up a little bit. Now, unfortunately, I couldn't discern dimensions on this, but it looks like to me --
A. (Scott) There is a scale bar.

Q. I saw the scale. I was kind of looking for the lawyer's shorthand with like a little number to tell me where things are. It looks like to my untrained eye that the sending pit is probably over the centerline of the road. Do you agree with me?
A. (Scott) The pit, itself, no.

Q. No?
A. (Scott) The work area, yes.

Q. The work area. Thank you. And, so, would you agree with me that that would certainly require
at least a lane closure, if not the road
closure?

A. (Scott) I would defer that to Lynn.

Q. All right.

A. I know she has developed specific stuff for
this location.

Q. Okay. Well, I'm going to -- I'm going to go
hold that. I'm going to get there. Okay. So,
this is the one Micro Tunnel for this Project,
correct?

A. (Scott) Correct.

Q. Okay. Let me ask you now some questions about
impacts from the underground, okay?

A. (Scott) Sure.

Q. Mr. Scott, what I'm going to start with is the
Project's permit package to the New Hampshire
Department of Transportation, for the District
1, the underground alignment starting at
Transition Station Number 1. Okay. Do you
have that in front of you?

A. (Scott) I do.

Q. Good. That would be helpful. So, if you turn
to the third page, which we have up on the
screen, you see Transition Station Number 1,
you see that?
A. (Scott) I do.
Q. And then it goes along Beecher Falls Road until it hits Highway Number 3. Do you see that?
A. (Scott) I do.
Q. And then it goes along Route 3, until, it's not really shown on here, but it catches back up with Beechers Falls Road, correct?
A. (Scott) Correct.
Q. And up into Transition Station Number 2?
A. (Scott) Yes.
Q. Okay. Now, you turn to the next page, you can see Transition Station Number 1, and the line coming off of that, and this is running along Beechers Falls Road. Do you see that?
A. (Scott) This is -- yes.
Q. Yes. You can see where it says -- I've highlighted "edge of gravel", you see that, to give you some orientation?
A. (Scott) So, this is not of Beecher's Fall Road. This is the gravel pit.
Q. Ah. The gravel pit coming out of Transition Station Number 1?
A. This is Transition Station Number 2. It goes 2
Q. Oh, yes. You're right. I stand corrected. This is going backwards, yes.
A. (Scott) Yes.
Q. Okay. So, if you turn to --
A. (Bowes) Are you still looking for Transition Station Number 1?
Q. No.
A. (Bowes) Okay.
Q. So, if you look at what's on the screen now, you can see where this runs along Route 3. Do you see that?
A. (Scott) I do.
Q. Okay. And you'll see "edge of payment" highlighted. Do you see that?
A. (Scott) I do.
Q. Okay. And then you see the splice location. Do you see that?
A. (Scott) I do.
Q. Now, it looks like the splice location is just off the edge of pavement. Do you see that on Route 3?
A. (Scott) I do.
Q. Okay. And, for this location, where it's got
the splice box, is that depicting the size of
the -- I guess you call it a "splice pit", is
that depicting the size of the splice pit?
A. (Scott) One moment. That is shown as 30 by 10.
Q. Okay. So, we know --
A. (Scott) It's slightly wider than the splice pit
would be.
Q. But it's smaller than the excavation hole
necessary to install the splice pit, correct?
A. (Scott) Potentially, yes.
Q. Well, you said a moment you worked this out,
it's --
A. (Scott) It's smaller than the 12 feet, yes.
Q. Thank you. So, in this location, the splice
pit excavation hole could go onto the road,
unless you move towards, essentially, the
trees, correct?
A. (Scott) Correct.
Q. And is it my understanding that, where
possible, you're going to try to stay off the
road?
A. (Scott) I do not believe that we are going to
move that location at this time.
Q. Could you say that one more time?
A. (Scott) I don't believe we're moving that splice pit location at this time.

Q. Okay. So, the excavation for this splice pit location is likely to infringe a little bit on the road?

A. (Scott) Yes.

Q. Okay. And, so, when that occurs, I assume there will be a lane closure, because you're not going to let traffic drive along while you have an open pit, correct?

A. (Scott) I believe so.

Q. Okay. Now, here you also see, right past the splice pit location, the start of an HDD drilling. Do you see that?

A. (Scott) I do.

Q. Okay. And this is HDD drilling which is the first one on Exhibit 200. And it indicates that the entrance pit is 27 feet by 400 feet. Do you see that?

A. (Scott) I do.

Q. Okay. So, for this HDD drilling, you're going to also have to have an entrance pit that's going to go onto Route 3, correct? There's not 27 feet in that space.
A. (Scott) Yes. The work space required is shown in detail on the Route 3 009-3, towards the end of that PDF that you've got open.

Q. Right. And that shows that the construction -- the entry pit is going to go onto Route 3, correct?

A. (Scott) Yes. It's right in there, yes.

Q. Yes. So, at this location, in order -- first, let me ask this question. Are you going to do -- is it the intention to do the HDD drilling first, and then install the splice pit?

A. (Scott) It could go either way.

Q. Okay.

A. (Scott) The specific schedule hasn't been developed for that.

Q. All right. Approximately how long does it take to excavate, shore up the excavation hole for the splice pit, drop the splice box in, do what you need to do, and take the shoring out?

A. (Scott) Typically, three to five days.

Q. Okay.

A. (Scott) Working days.

Q. All right. Three to five working days. So,
we'll call it a week. So, if it takes about a
week to do that splice pit. And we indicated
anywhere from three to five weeks to do an HDD
drilling, that section of Route 3 is going to
have a lane closure anywhere from four to five
to six weeks, correct?

A. (Scott) They don't have to be concurrent or
back-to-back. They could occur at different
times.

Q. Well, you're going to need 400 feet for that
entrance pit, correct?

A. (Scott) Correct.

Q. So, you're not going to have workers working
over a pretty large open hole.

A. (Scott) Right. But there's nothing that
particularly says -- we have no schedule
developed that says "you're doing one and then
the other one immediately."

Q. Yes. So, you could do one and come back weeks
later and do the other one?

A. (Scott) Correct.

Q. All right. Nonetheless, you're still going to
need to close the lane while these two things
get done, correct?
A. (Scott) Correct?
Q. Okay. Now, turn to the next page. This page depicts the end of that HDD drilling. Do you see that?
A. (Scott) I do.
Q. Yes. And that is -- looks like it's just off the edge of Route 3. You see that?
A. (Scott) Yes, in the grass area.
Q. Yes. And then it becomes open trench, this horseshoe curve, up along Beechers Falls Road, until it gets to Transition Station Number 2, correct?
A. (Scott) To Transition Station Number 1, yes.
Q. Did I get that backwards? Yes. You're right. No, wait a minute.
MR. IACOPINO: While you're checking that, Mr. Pappas. We're still in CFP Exhibit 177, correct?
MR. PAPPAS: Yes. Correct.
WITNESS JOHNSON: If I may, this alignment actually goes from Number 2 to Number 1 --
MR. PAPPAS: Ah.
WITNESS JOHNSON: -- in the
conception.

MR. PAPPAS: Okay.

WITNESS JOHNSON: When we revise the drawings, we'll change to go back from 1 to 2, --

MR. PAPPAS: One to two.

WITNESS JOHNSON: -- so that everyone is not confused.

MR. PAPPAS: Thank you.

BY MR. PAPPAS:

Q. So, looking back, Mr. Scott, at CFP Exhibit 200, which is the listing of the drilling operations, the exit pit for this HDD drilling is 1,040 feet. Do you see that?

A. (Scott) I see that in the table.

Q. Okay.

A. (Scott) I have not verified that length. But, yes, I see it.

Q. And --

A. (Scott) Oh, yes. That's the work zone. That's not a pit. So, that's the space required to assemble and lay down the bundle that will be put back into the excavation. There's no excavation there.
Q. Okay.
A. (Scott) It's above-grade work only.
Q. Okay. But it's an area needed for work, correct?
A. (Scott) Correct.
Q. Okay. And that area is going to cross Beechers Falls Road, correct?
A. (Scott) Correct.
Q. All right. You look at CFP Exhibit 238, you can see the work area we just referred to crossing Beechers Falls Road along Route 3. Do you see that?
A. (Scott) I do.
Q. Okay. And that's going to be necessary in order to pull the cable back through the hole, correct?
A. (Scott) Potentially, yes.
Q. Well, "potentially", it's going to be necessary, isn't it?
A. (Scott) Something will be required there, yes.
Q. Okay. And, so, while that activity is going, Beechers Falls Road is going to be closed, is it not?
A. (Scott) Potentially.
Q. You're not going to let people drive over that cable, are you?
A. (Scott) So, there's different techniques that could be used, that could be developed during detail design that would maintain traffic over that roadway, which would require putting the installation underneath the roadway across there, to facilitate not shutting down the road. However, that would be driven by traffic control requirements.

Q. So, you're telling me you would put the cable under Beechers Falls Road, so to keep the road open?
A. (Scott) Potentially.

Q. That will require more drilling?
A. (Scott) And I don't want to say the "cable". I'm saying the conduits themselves could potentially be put under there. Or, you could potentially put in a track to pull your conduits through or a casing to pull your conduits through, to maintain traffic over there, if required, if traffic studies result in that being a requirement to maintain traffic. There's means and methods that could
be executed to keep traffic going. But they have not been developed at this time.

Q. If you look at the plans that you submitted DOT as of today, it shows that is a work area across Beechers Falls Road, correct?

A. (Scott) Yes. So, as currently shown, what would likely occur would be the conduit bundles would be assembled to the east of Beechers Fall Road. And, during conduit pull-back itself, it would require shutting down the traffic.

Q. Thank you.

A. (Johnson) So, I will comment that we are working with the DOT on this specific intersection, as one of the many things that we're working with the DOT on, to ensure that, that depending on traffic volume through there, that this road could be maintained. There are several options that we could do here.

Q. Okay. But, just to be clear, as of today, what you've submitted to the SEC requires both lane closures in Route 3, as we discussed earlier, and Beechers Falls Road to be closed to do this operation, correct?

A. (Johnson) As we submitted, that is correct.
Q. Okay.
A. (Johnson) The closure of a lane in Route 3 we'll most likely still maintain. Just the closure of Beechers Fall Road will potentially be addressed.

Q. Okay. Mr. Scott, I want to just review briefly why it is you need the size of the pits on both sides of the HDD drilling, okay?
A. (Scott) Sure.

Q. On the screen is Exhibit -- Counsel for the Public Exhibit 247. Do you see that?
A. (Scott) I do.

Q. Okay. And do you recognize that as an HDD drilling machine?
A. (Scott) I do.

Q. Okay. And that's the type of machine necessary at the entry pit to do one of these HDD drills, correct?
A. (Scott) It's one of the potential types of machines, yes. There's different sizes. That's one of them.

Q. Yes. Okay. And, in addition to this machine, you also need to have storage space for the drilling mix we talked about earlier, correct?
A. (Scott) Yes. You need space for your drill rods, the drilling rig itself, a mini excavator, a steering head, drill fluid plants, and a recycler to reuse your drilling mud, as well as some work trucks.

Q. Yes. And the work trucks would be pumps, you need some pumps to pump in the drilling fluid?

A. (Scott) That's the drill fluid plant, yes.

Q. Okay. And you need dump trucks to haul away stuff?

A. (Scott) Yes.

Q. So, all of this equipment is what requires these entry pits to be, for instance, the one we saw a moment ago, at least 27 feet wide by 400 feet deep, correct?

A. (Scott) Yes. On the entry area side, yes.

Q. Yes. The entry area of these pits require a pretty good size operation for all of this equipment, correct?

A. (Scott) Correct.

Q. Okay. Now, the exit pit isn't quite as big, correct?

A. (Scott) The exit pit is essentially very small during the drilling operation itself. It is
when you're assembling the installation to be pulled back, in this case, the power conduits and the attached 4-inch conduits, you're fusing those conduits together of the length of the bore to pull those back into the drill holes. So, that's the reason for the long length of installation. So, that's not open for the entire -- that's not used for the entire duration of the drilling. It's, once you're getting close to completing the drilling, you assemble the conduits, so you're ready to pull back when the drilling is completed.

Q. Right. But, for each one of these HDD drills, at some point you're going to need a very long exit pit in order to pull this cable through, correct?

A. (Scott) An exit area work space, yes.

Q. Exit area work space. Okay. Thank you. So, Mr. Scott, I'm going to now move to the next section of underground. And this is the permit package submitted to New Hampshire DOT dated November 30, 2016. Do you have that in front of you as well?

A. (Scott) I do.
Q. Good. Okay. To give the Committee some orientation, at Transition Station Number 3 it goes from aboveground back underground, correct?

A. (Scott) Correct.

Q. And Transition Station Number 3 is off of Wizzle Road, in Clarksville? Are you aware of that?

A. (Johnson) It's "Wiswell Road".

Q. "Wiswell". Thank you. Mr. Scott, you're aware of that?

A. (Scott) Yes.

Q. Have you been up there?

A. (Scott) Yes.

Q. Okay. And then it runs for a little bit on Route 145, correct?

A. (Scott) Correct.

Q. And then it goes -- on this map it's shown as "North Hill Road". Do you see that?

A. (Scott) I do.

Q. That's actually not Old -- North Hill Road in that section, is it?

A. (Scott) It's Old County Road.

Q. Right. This is mis -- this map is incorrect
where it says "North Hill Road"?

A. (Scott) Appears there's a typo there, yes.

Q. Yes. That's Old County Road, until it gets to
Cream Poke Road?

A. (Scott) One moment.

Q. Sure.

A. (Scott) It appears to turn into North Hill Road
at about Cream Poke Road, yes.

Q. Yes. And then it goes -- North Hill Road goes
until it meets Bear Rock Road, correct?

A. (Scott) One moment. Correct.

Q. And it goes along Bear Rock Road until
Transition Station Number 4, at Heath Road,
correct?

A. (Scott) One moment. Correct.

Q. Okay. So, the next page shows Transition
Station Number 3, and that is where it first
goes underground, correct, in this area?

A. (Scott) Correct.

Q. And then it goes underground, under some
wetlands, do you see that?

A. (Scott) I do.

Q. Yes. Then it proceeds further underground, and
it has a splice pit location. Do you see that?
A. (Scott) I do.
Q. Now, this splice pit location is not along the road, is it?
A. (Scott) No, sir.
Q. So, in order to -- well, let me ask this question. Is one of the prefabricated concrete splice pits intended for this location?
A. (Scott) Yes, sir.
Q. So, in order to get it there, the Project is going to have to build a road so the flatbed truck can drive up with it, and a crane can drive up and drop it in?
A. (Scott) To do any of this underground trenching activity, an access road would be required, yes.
Q. Okay. In fact, an access road is going to be required for all this trenching activity, correct?
A. (Scott) If it's off the road for this portion that you're currently talking about, yes.
Q. Yes. And this portion that's on the screen is off the road, correct?
A. (Scott) Correct.
Q. Okay. And it continues on through some more
wetlands on the right-hand side. Do you see
that?
A. (Scott) I do.
Q. And then it comes to Highway 145. Do you see
that?
A. (Scott) I do.
Q. And it runs along Highway 145 for a little bit,
until it crosses 145 onto Old County Road. Do
you see that?
A. (Scott) I do.
Q. Okay. Now, once it crosses the road into Old
County Road, there is a splice pit location
shortly after Old County Road, correct?
A. (Scott) Yes, sir.
Q. And that's in the roadway, is it not?
A. (Scott) Primarily, yes.
Q. Yes. And, in fact, if you look at the
underground, once it gets into Old County Road,
it is in the roadway until you see the entrance
to an HDD entry pit, correct?
A. (Scott) Correct.
Q. And, so, you would agree with me that, once
this trench line gets to Old County Road, Old
County Road is going to have to be closed, is
it not?
A. (Scott) Not in its entirety. There are
definitely portions of it that will require
closure.
Q. Okay. Start right here where it intersects
145. Right where it intersects 145, it's going
to be closed, is it not?
A. (Scott) I believe, and I would defer to Lynn to
override me on any of this, but I believe
trenching to -- from 145 to Old County Road
splice pit would not require closure. You
could defer traffic through that north/south
access location. You could also divert traffic
through that same access location during the
splice pit installation. You could trench,
once the splice pit's installed, you could
maintain traffic to the north of the splice pit
location, the trenching location, until you did
HDD activities, which would likely require some
closure. And I would have to refer back to the
work zone requirements for that location. One
moment.

Yes. So, it appears that we will try to
maintain one lane of travel on the north of the
Q. Okay. Go back to that splice box location. Do you know how wide Old County -- the gravel travel lane in that location is?

A. (Scott) One moment. It appears to be just under 20 feet wide.

CHAIRMAN HONIGBERG: Any time you can take a break.

MR. PAPPAS: All right.

BY MR. PAPPAS:

Q. And didn't you tell me a moment ago that the excavation pit for one of these splice pits is 12 to 14 feet?

A. (Scott) I did. And if you'll refer to the Detour 1, intersection of Route 145 and Old County Road, it shows that we're detouring there.

Q. Yes. So, to get back to my original question, there's no room for a car to get by this splice pit when it's being constructed, correct?

A. (Scott) Most likely, no.

Q. Yes. So, at that point, we're going to close Old County Road to put this splice pit in, right?
A. (Scott) Most likely. And traffic would be diverted through that north/south lane there.

MR. PAPPAS: Okay. Thanks. This is a good time.

CHAIRMAN HONIGBERG: All right.

We'll take a break, come back five minutes to 3:00.

(Recess taken at 2:42 p.m. and the hearing resumed at 2:56 p.m.)

CHAIRMAN HONIGBERG: All right. Mr. Pappas, you may proceed.

MR. PAPPAS: Thank you.

BY MR. PAPPAS:

Q. Mr. Scott, let's pick up where we left off, which is that HDD drilling on Old County Road.

A. (Scott) Sounds good.

Q. Looking at Exhibit 200, that's going to be the number "1", in Clarksville, do you see that?

A. (Scott) I do.

Q. Okay. So, the entrance pit is going to be 27 feet by 300 feet. Do you see that?

A. (Scott) I do.

Q. And would you agree with me, if you look at
your map, the entrance to that drilling site is in the roadway?

A. (Scott) I agree that it's in the roadway, as well as off the roadway, yes.

Q. And, if you back up 400 feet, you're going to come pretty darn close to that splice location, if not past it, correct?

A. (Scott) You go past the splice location. I would refer you to the North sheet 001-2 for the work space area in that location.

Q. Okay. All right. So, you would agree with me that, once that drilling begins, and it's going to be three to five weeks, that's going to keep Old County Road closed in that location, correct?

A. (Scott) Again, if you look at the work space area, it appears there's a travel lane to the north of the work space area available.

Q. Okay. All right. The entrance pit is 27 feet wide, correct?

A. (Scott) One moment. It appears to be about 40 feet wide at that location.

Q. Okay. That road is not 40 feet wide, is it?

A. (Scott) And it's not all within the roadway.
It's within the right-of-way. It goes to the edge of right-of-way. Again, I'd refer you to the North 001-2 sheet for the work space area.

Q. Well, if you took a look -- if you take a look at your map, it is up on the screen, your map clearly shows the entrance in the roadway, does it not?

A. (Scott) Yes.

Q. Okay. And that roadway is not 40 feet wide by any means, is it?

A. (Scott) It's not centered over the entrance location.

Q. My question is, that road is not 40 feet wide, is it?

A. (Scott) No.

Q. No. Even if you took -- even if that starts on the edge of the road, that 40-foot entrance pit is going to consume that whole width of the road, is it not?

A. (Scott) Again, please refer to North 001-2 for the work space area.

Q. So, you're telling me that the map that's up on the screen is not accurate?

A. (Scott) I'm telling you that map that you're
looking at is primarily for the open-cut
excavation installation, and all of the
trenchless installation detail is on the sheets
I'm referring you to.

MR. IACOPINO: And, Mr. Scott, where
are those sheets for the Committee's --

WITNESS SCOTT: They're about
[indicating] this far past, in the same set.

MR. OLDENBURG: In what set?

MR. IACOPINO: Tom, do you know if
they're in the same exhibit?

MR. PAPPAS: Yes.

WITNESS SCOTT: The same exhibit,
yes.

MR. PAPPAS: Yes.

MR. IACOPINO: If somebody can refer
us to the page that you're referring to,
Mr. Scott?

WITNESS SCOTT: I can't tell you the
PDF number off the top of my head.

MR. NEEDLEMAN: Mike?

MR. PAPPAS: Tell me the number on
the right-hand corner, down at the bottom.

MR. IACOPINO: You should address the
Chair. I'm sorry.

MR. NEEDLEMAN: It's in Applicants' Exhibit 73.

BY MR. PAPPAS:

Q. Mr. Scott, tell me what the little number is in the bottom right corner?

A. (Scott) "North NRTH 001-2".

Q. That's doesn't help me. Okay.

A. It's in the same North drawing set. It's after the traffic control, directly after all the traffic control drawings.

Q. Mr. Scott, looking at your detail, first of all, there are two drilling holes, correct?

A. (Scott) There's two separate bores.

Q. Right.

A. (Scott) Yes.

Q. And, in fact, we talked about this earlier, there are two separate bores for everywhere but that one location, correct?

A. (Scott) Correct.

Q. Okay. And, if you look at your work area, it does --

MR. WAY: Excuse me, Mr. Chair?

Could we get some clarification exactly where
we're supposed to be right now, in terms of the exhibit?

CHAIRMAN HONIGBERG: I don't know where we're supposed to be.

MR. PAPPAS: Okay. Let me help you.

CHAIRMAN HONIGBERG: Are you looking at the page that you were talking about or are you looking at the page that Mr. Scott was talking about?

MR. PAPPAS: I was looking at the page he's talking about. I want to confirm I'm on that page, and I was going to bring it up on the screen.

CHAIRMAN HONIGBERG: That would be good.

MR. PAPPAS: Okay. That's what I thought.

BY MR. PAPPAS:

Q. So, just so we're on the same page, the detail that, Mr. Scott, you're referring to, does it say "HDD 001 Entry Area Work Space"?

A. (Scott) Yes, sir.

Q. Thank you.

A. (Scott) That's not the right one.
Q. Yes.
A. (Scott) I think it's one sheet back from that.
   There you go.
Q. Yes. So, this is the page you're referring to, correct?
A. (Scott) Correct.
Q. Okay. And, if you look on the left-hand side,
   that's the entry pit work area?
A. (Scott) The entry area work space, yes.
Q. Yes. And you're saying -- you're telling us,
   if you look at that dashed line at the top, see
   that dash line? You see the line I'm referring
   to?
A. (Scott) To edge of road, is that what you're
   referring to?
Q. Yes. Is that the edge of the road?
A. (Scott) Yes.
Q. Okay. And it's your testimony that the space
   between the work area and the edge of road is
   sufficient for a lane of traffic?
A. (Scott) I'm not testifying to whether or not
   there's a lane of traffic width available. I
   would defer to Lynn on that. As I measure it,
   it's measuring at about 8 feet wide, maybe
Q. Okay. So, slightly less than 8 feet is not a lane of traffic, is it?
A. (Scott) Not by project definition. That would need to be modified to maintain traffic there.
Q. Okay. All right. So, Mr. Scott, up on the screen is the end of that first HDD drilling. Do you see that?
A. (Scott) I do.
Q. And then it shows the open trench continuing along Old County Road. Do you see that?
A. (Scott) I do.
Q. And the open trench is shown in the roadway. Do you see that?
A. (Scott) I do.
Q. And earlier you told us that the open trench needs between 12 and 14 feet, or some places up to 16 feet, correct?
A. (Scott) For duct bank work, I believe I said "12 feet", "10 to 12 feet".
Q. Okay. And the road in this area is less than 20 feet wide, correct?
A. (Scott) One moment. I measure it as approximately 22 feet wide at this location.
Q. Okay. And your map is not showing the open trench on the edge of the roadway, it's showing it towards -- off the edge, towards the middle, correct?

A. (Scott) It's showing it towards the edge of the road, but not off of the road. It's not in the middle of the road.

Q. Right. But there is space between where it's showing and the edge of the gravel, correct?

A. (Scott) Correct.

Q. Uh-huh. So, --

A. (Scott) And I do believe we're coordinating with the DOT on the exact location of the trench within this roadway.

Q. Uh-huh. Okay. And continuing on the next page, on Old County Road, it continues to show the open trench along, inside the roadway, correct?

A. (Scott) Correct.

Q. And then continuing on the next page, it continues to show the open trench within the roadway, and you come to a splice pit location. Do you see that?

A. (Scott) I do.
Q. And we indicated that the splice pit location requires a excavation of 12 by 34, correct?
A. (Scott) Yes, sir.
Q. And it requires the bringing in of a flatbed, with the splice pit, and a crane to drop it in the location?
A. (Scott) Yes.
Q. And would you agree with me that, certainly, at this location, there's going to be a need to close the road while that splice pit is -- is excavated and the pit is dropped into the location and backfilled?
A. (Scott) There's a high potential that that would be required, yes.
Q. All right.
A. (Scott) There's a potential it wouldn't be, but there's certainly the high potential that it could be.
Q. Okay.
A. (Scott) Again, that could change, if the DOT asks us to move off the right-of-way in this location. Or, not "the right-of-way", let me restate that. Out of the traveled lane, within the right-of-way.
Q. Okay. If you look at the screen, it's Counsel for the Public's Exhibit 243. Do you see that?
A. (Scott) I do.
Q. And that's a picture of Old County Road. Do you recognize it?
A. (Scott) This seems familiar, yes.
Q. There is not a lot of space off the side of that road, is there?
A. (Scott) There is not.
Q. And, if you're going to go any significant space off the side of the road, you're going to be cutting down trees?
A. (Scott) Definitely impacting trees, yes.
Q. Yes.
A. (Scott) One of reasons that it's shown where it currently is.
Q. Right. One of the reasons you're going down the road is to avoid cutting down the trees, correct?
A. (Scott) Correct.
Q. But, to go -- but, in order to avoid cutting the trees and go down the road, you're going to have to close that road, certainly to get those splice pits in the road, are you not?
A. (Scott) Potentially.
Q. And you're probably going to need to close that road in a fair amount of places even along the open trench, isn't that true?
A. (Scott) There's certainly some locations, yes.
Q. Okay.
A. (Scott) I can't say that Old County Road is specifically one of them. But along the northern alignment, yes. I'm sure we'll get to the sheets where that comes in.
Q. We will. And here we're back on Old County Road, and we come to another splice pit location. Do you see that?
A. (Scott) I do.
Q. And, if you look at the trench leading up to this splice location, it is all the way in the roadway until it gets to the splice location, correct?
A. (Scott) Correct.
Q. And, in fact, the splice -- splice pit location is also in the roadway, is it not?
A. (Scott) It is.
Q. And you would agree with me that, in order to
install that splice pit, you're going to have to close this road?

A. (Scott) I measure the road width there to be approximately 16 feet wide. And, so, there probably is not enough room to maintain traffic during installation of the splice pit.

Q. Okay. And there's probably not enough room to maintain traffic even when you're doing the open trench leading up to it, is there?

A. (Scott) Potentially. For certain portions.

Q. Okay. All right. And continuing down Old County Road, we come to the next splice pit location. Do you see that? It's on the screen.

A. (Scott) I do.

Q. And, again, it's in the middle of the road?

A. (Scott) It is.

Q. And that will require closure of the road at that location?

A. (Scott) Most likely.

Q. Okay. Go two more, go to 115. Continuing on Old County Road, we come to the next splice pit location, also in the middle of the road. Do you see that?
A. (Scott) I don't believe this one's in the middle of the road. But, yes, it's within the roadway.

Q. You'd agree with me that's another location where the road is going to need to be closed to install this splice pit?

A. (Scott) Yes. I measure the width there to be approximately 14 feet wide for the existing gravel road, or the existing roadway. So, most likely the traffic lane would not be maintained.

Q. Yes. So, we have now traveled a bit on Old County Road and come across four or five splice pits. And each one of those locations, it takes about a week to put one of those pits in?

A. (Scott) Yes. It takes approximately a day to a day and a half to do the excavation itself and the shoring, then a day to day and a half to install the splice pit, and then a day or so to remove everything and restore grade.

Q. Okay. So, fair to say that, in order to do all these splice pits, that road is going to need to be closed during those operations?

A. (Scott) Potentially.
Q. And, then, on this page you see another start
of an HDD drill. Do you see that?
A. (Scott) I do.
Q. And that one is number "2" on Exhibit 200. And
that's 702 feet long, with a 21 by 300-foot
entrance pit and a 27 by 718 exit work area.
Do you see that?
A. (Scott) I'm going to have to disagree with the
dimensions that are provided in this Exhibit
200. I'm not measuring anything close to those
on the drawings themselves.
Q. Tell me what you measure for the entrance pit.
A. (Scott) Sure. One moment. It's approximately
32 feet wide, --
Q. Tell me what you measure for the road --
A. (Scott) -- by 280 feet long.
Q. Okay. Tell me what you measure for the road in
that spot.
A. (Scott) Much less than that. Approximately 19
-- or, 18 feet wide.
Q. So, that entrance pit is going to consume that
road, and both sides of it, correct?
A. (Scott) Correct.
Q. And likely require some trees being cut down,
is that right?
A. (Scott) I don't know about "cut down", but
certainly some being trimmed.
Q. Yes. Some trees are at risk, wouldn't you
agree?
A. (Scott) I would not comment on at-risk trees or
not.
Q. Okay. So, the three to five weeks that that
operation is going to take place, it's fair to
say that that road is going to be closed?
A. (Scott) It's a reasonable assumption, yes.
Q. Okay. What I'm showing you now is a few more
pages where the road turned to North Hill Road.
Do you see that?
A. (Scott) I do.
Q. Okay. And this is -- this is a sort of bend in
the road where there is the one Jack and Bore
location, correct?
A. (Scott) Correct.
Q. Okay. Mr. Scott, if you'd take a look at the
screen, this is Counsel for the Public's
Exhibit 130, Map 4 within that exhibit. And it
shows the Jack and Bore on North Hill Road
right near the cemetery. Do you see that?
A. (Scott) I do.
Q. Okay. Go to 4A. So, if you look at the screen now, this is that same location, an aerial view of that Jack and Bore operation. Do you see that?
A. (Scott) I do.
Q. And it shows the work zones on both sides of the brook that the Jack and Bore is going under. Do you see that?
A. (Scott) I do. They appear close to what we're showing, but it doesn't look like they're exactly the same.
Q. Okay. Now, this is an actual view of that road. Do you recognize that?
A. (Scott) I do.
Q. Rather narrow road, would you agree?
A. (Scott) One moment. I measure it as approximately 10 feet wide on one end, and 10 feet wide on the other end as well.
Q. Okay. On the screen now is a proposed work zone for that Jack and Bore site. Do you see that?
A. (Scott) I do.
Q. And would you tell me what you have for the
87

width of that work zone?

A. (Scott) Yes. One moment. Approximately
36 feet wide at the sending side, by
approximately 150 feet, on the sending side.

Q. Okay. So, you agree with me that that 10-foot
wide road, in order to create a 36-foot wide
work zone, going to have to remove some trees?

A. (Scott) Again, I can't comment on tree removal.
I definitely see that on the work space detail
of North 003-2, as opposed to a not-to-scale
markup, shows some impacts to trees. I can't
comment on if they would be removed or just
trimmed.

Q. Okay. Now, we talked earlier about the time
for one of these operations is three to five
weeks, correct?

A. (Scott) Approximately, yes.

Q. So, you agree with me that, during that three
to five week period, this road is going to be
completely closed?

A. (Scott) Yes.

Q. Okay. So, this is North Hill Road past that
Jack and Bore. And, if you look, this map
shows the open trench going down essentially
the middle of the roadway?

A. (Scott) Approximately, yes.

Q. And that roadway in that location is, you can
tell me, but it's probably 10, 12 feet wide?

A. (Scott) One moment. It ranges from about 8 to
10 feet wide.

Q. Okay. And you can do it yourself, but, if you
keep turning the pages on North Hill Road, just
confirm for the committee that the open trench
essentially goes down through, into the road --
in the roadway the entire length of North Hill
Road, until it meets Bear Rock Road?

A. (Scott) Yes. It's within the road -- edge of
road lines for that entire length.

Q. Yes. And there are a couple of splice pit
locations along there?

A. (Scott) Yes.

Q. So, you would agree with me that, during this
trenching operation all the way down North Hill
Road, including the couple splice pit
locations, that road is going to be closed?

A. (Scott) I would have to defer to the contractor
and the traffic management plan, when it's
finalized. But it will definitely require some
Q. Yes. There isn't enough roadway to do those operations and drive a vehicle by, is there?
A. (Scott) Not parallel, during construction, for most of it, no.

Q. Okay. All right. So, what's on the screen now is where the open trench intersects with Bear Rock Road. Do you see that?
A. (Scott) I do.

Q. And, at that -- right when it turns onto Bear Rock Road, there is an HDD start. Do you see that?
A. (Scott) I do.

Q. And, if you look at this map that's on the screen, it's showing the HDD start essentially in the middle of the road. Is that what this is showing?
A. (Scott) Approximately.

Q. And, if we go back to Exhibit 200, it shows the -- this is HDD-4. And it shows the entrance pit, and it's 29 by 300 feet. Now, you're going to give me the plan measurements.
A. (Scott) Yes. That one's off by a foot. That one I measure as 30.
Q. Okay.

A. (Scott) And the exhibit, it goes off the sheet, but I measure to the edge of the sheet approximately 240 feet or so.

Q. Okay.

A. (Scott) So, it's going to be longer than that.

Q. All right. So, you would agree with me that a 30-foot wide entrance pit at this HDD location is going to close that road?

A. (Scott) Most likely.

Q. Okay. And, so, for the three to five weeks it takes that operation, they're going to have to detour cars from going down Bear Rock Road at this location, correct?

A. (Farrington) Yes. That's correct.

Q. Okay. Fair enough. So, if you go to the next page on the screen, it shows the exit for the HDD location, and then right afterwards it shows a splice pit. Do you see that?

A. (Scott) I do.

Q. Okay. And that splice pit is shown as both a little bit off the road, but more on the road, correct?

A. (Scott) I'd say it's hugging the edge of the
Q. And then on to --
A. (Scott) And it's approximately 10 feet from edge of splice pit to the opposite side of the road.

Q. Yes. There's 10 feet left of road?
A. (Scott) Yes.

Q. All right. And, then, if you travel a little past that splice pit, you see the open trench veer into the center of the road, do you not?
A. (Scott) I see it do something close to that on Sheet 131, at the entrance of an HDD.

Q. Well, you got a little bit ahead of me. I was back still on 129.
A. (Scott) Yes. I don't see it going into the center of the road there.

Q. Right in the middle of the page?
A. (Scott) Yes. It's on one side of the road versus in the middle.

Q. All right. Now, how wide is Bear Rock Road?
A. (Scott) Give me a specific location.

Q. How about that --
A. (Scott) I'm not sure it's consistent the entire way.
Q. Sure. How about that location right in the middle of the page on 129?

A. (Scott) Around Station 251 --

[Court reporter interruption.]

BY THE WITNESS:

A. (Scott) Around 251+00. Apologies.

BY MR. PAPPAS:

Q. Yes.

A. (Scott) That I measure as being approximately 18 feet wide.

Q. Okay. So, if we have a splice pit that requires 12 to 14 feet, and it starts on the edge of the road, is that going to consume most of that road?

A. (Scott) Are you talking about the splice location around 249+00?

Q. Correct.

A. (Scott) So, for what we discussed previously, to the edge of the excavation, with the estimated two feet on the outside, you would have 8 feet of travel lane left, without any additional barriers accounted for.

Q. Okay. And 8 feet is less than a typical travel lane, correct?
Q. Okay. Mr. Scott, I'm going to back you up just a minute. Go to the -- in your sheets, the work detail for HDD-4, the entry area, which is the intersection of North Hill Road and Bear Rock Road.

A. (Scott) I'm there.

Q. Okay. Does the work area for that HDD drilling go into -- if you can see, North Hill Road sort of forks that location. Do you see that?

A. (Scott) I do.

Q. And does the work area for that HDD cross into both portions of the North Hill Road fork?

A. (Scott) It appears so. I'll have to ask for revised detail from our trenchless designer for that.

Q. Okay. So, at that location, when the HDD drilling operation is taking place, both of those forks on North Hill Road are going to have to be closed, correct?

A. (Scott) As it's currently shown. One moment please.

Q. Uh-huh.

A. (Scott) So, I believe the work zone is shown
incorrectly there. It doesn't match up with what Ms. Farrington has on her plans. And she got her laydown areas from the designer. So, we'll have to follow up on that.

Q. Okay. So, just to clarify, the work space shown on the plans indicate that both forks of North Hill Road are going to be closed. But Ms. Farrington's traffic controls show something different?

A. (Scott) It appears so, yes. And, based upon the laydown areas at the other locations, I would assume that the laydown area can be revised to maintain that western travel lane.

Q. Okay.

A. (Scott) However, that's not what's currently shown on the plan.

Q. That's not what's shown on the plans, okay.

A. (Farrington) If I may, just for reference, the minimum acceptable travel lane, without traffic in an opposing direction, we assumed it's 10 feet. So, when you're asking if traffic can get by.

Q. Okay. So, you need 10 feet, is what you're saying?
A. (Farrington) Correct.

Q. Thank you. Mr. Scott, what's on the screen now is a section further down on Bear Rock Road. And do you see the splice pit location?

A. (Scott) I do.

Q. And, as shown on these drawings, the splice pit is within the road?

A. (Scott) Correct.

Q. And would you agree with me that, during the installation of this splice pit, there's less than 10 feet of travel lane past it?

A. (Scott) It appears that there's about 10 feet from edge of splice pit to the northern edge of road, which would leave about 8 feet, similar to the previous location we discussed.

Q. Okay. On the screen is Page 136. It shows another splice pit location. Do you see that?

A. (Scott) I do.

Q. And, again, that's shown in the road?

A. (Scott) Yes. It's within the roadway.

Q. And, again, is less than 10 feet travel lane?

A. (Scott) Yes. It's about the same as the last one.

Q. Okay. And then you also see another HDD on
Q. And the entrance pit for this HDD is either 22
or 29 feet, in that vicinity?

A. (Scott) One moment.

Q. Sure.

A. (Scott) Again, I'd refer to North 006-2 --

Q. Uh-huh.

A. (Scott) -- for the detail. Near the entrance
for this entry area work space, it's about
30 feet wide, and, towards the western edge,
it's about 20 feet wide.

Q. Okay. So, that's going to consume the road, is
it not?

A. (Scott) Yes. It appears so.

Q. All right. Okay. Mr. Scott, so as to avoid
belaboring the same point, just to yourself,
flip through along Bear Rock Road and just look
at each location where there is a splice pit,
and just confirm for me that at each location
it's shown in the roadway?

A. (Scott) Yes. They're shown pretty much
consistently on the same general location
within the roadway, hugging the edge of the
travelled lane.

Q. Okay. And you would agree with me that, for each of those locations, there's less than 10 feet of roadway where the splice pit is installed?

A. (Scott) As measured, yes.

Q. Okay. And you don't need to go back and count, but I'll represent to you there are nine splice pit locations along Bear Rock Road. So, would you agree with me that, given the fact that there are nine splice pit locations, that it's a fair bet that they're going to have to close that road while those are being installed?

A. (Scott) I'm going to defer to Ms. Farrington for that.

Q. Uh-huh.

A. (Farrington) Yes. The road will need to be closed at each splice pit location. But we are working with what we're calling a "rolling closure". So, access will be granted from either end of the road up to that location.

Q. But do you know if there are going to be multiple crews on that road?

A. (Farrington) It will have to be determined at a
later time. But, once we develop the
Transportation Management Plan, we will not
allow crews to work simultaneously on either
side of a driveway so as to prevent access to a
home. And that's with the exception on parts
of North Hill Road, which is a Class V summer
road. In that case, it is closed anyway from
December 11th to May 9th. So, we may utilize
that work area to -- work time frame to go in,
since there's no paving.

A. (Johnson) So, if I may clarify. There's an
opportunity for winter construction in some
areas where there's Class V roads that aren't
maintained.

Q. Yes. I got that. But you said "no paving".
A. (Johnson) These are dirt roads. There's no --
Q. Where there's no pavement.
A. (Farrington) Right. New Hampshire DOT
prohibits paving during the cold months,
because it will --
Q. You don't plan on paving up there anyway?
A. (Farrington) No.
Q. No. You threw me off when you said "there's no
paving". All right.
A. (Johnson) So, if I may, there's also two other mitigation techniques that we're looking at, specifically along Bear Rock Road.

Q. I tell you what. Why don't you wait for those for redirect, so I can get through the cross.

A. (Johnson) Okay.

Q. Thanks.

A. (Johnson) That's fine.

Q. And, Mr. Scott, there are three or four HDD drilling locations along Bear Rock Road as well, correct?

A. (Scott) Do you want me to count them?

Q. Why don't you take my word for it.

A. (Scott) Okay. There's definitely locations along Bear Rock Road, yes.

Q. Okay. And, for each of those locations, would you agree with me that it's going to be necessary to close the road while that drilling operation takes place?

A. (Scott) Most likely.

Q. Okay. So, Mr. Scott, on the screen is Page 147 of the same exhibit. And it shows the open trench leaving Bear Rock Road, going up to Transition Station Number 4. Do you see that?
Q. And the next page shows Transition Station Number 4. Do you see that?
A. (Scott) I do.

Q. Mr. Scott, on the screen is Counsel for the Public's Exhibit 241, which is a picture of the location of Transition Number 4. Do you recognize that?
A. (Scott) In general, yes.

Q. Okay. And would you agree with me that, in that area, and certainly in the picture it's showing visible rock ledge?
A. (Scott) I do see rock, yes.

Q. And is it your understanding that there is quite a bit of rock and ledge in that area where Transition Station Number 4 is going to go?
A. (Scott) I didn't have anything to do with the design of Transition Station 4. So, I would defer to Mr. Bradstreet or Mr. Kayser.

Q. Okay. Mr. Kayser or Mr. Bradstreet, do you recall the estimated amount of cubic yards of rock that needs to be removed in this area?
A. (Bradstreet) I don't recall a specific
Q. Okay. But let me --
A. (Johnson) It's approximately 30,000 cubic yards.
Q. You've got a good memory.
A. (Johnson) I do.
Q. Because I was just about to tell you, it's 30,000 cubic yards.
A. (Johnson) If I may, it's not removal. It is the amount of rock that needs to be moved.
Q. Moved.
A. (Johnson) So, as we cut into a ledge, we then move it across and create a flat surface. So, it's not that there will be 30,000 cubic yards of material removed from that site. It will be moved around the site, but in-situ.
Q. Will any of it be removed from the site?
A. (Johnson) Potentially, but I believe it's a very small possibility. And we're talking, of the 30,000, probably less than a thousand.
Q. Okay. How many cubic yards typically fit in a dump truck of rock? About 15?
A. (Johnson) Approximately, yes.
A. (Bradstreet) Yes.
Q. So, if you're going to move up to -- remove up to a thousand dump trucks -- or, a thousand cubic yards of rock, it's a fair amount of dump trucks, is it not?

A. (Johnson) Doing the math, yes.

Q. I don't venture to do the math in my head, let alone --

Is this area going to require some blasting as well?

A. (Johnson) In most probability, but yes.

Q. And, as I understand it, there are some water wells in this area, correct?

A. (Johnson) I believe you're referring to Mr. Thompson's water wells, but --

Q. I am.

A. (Johnson) Yes. And I would say other residents that live in that area have water wells in addition.

Q. Okay. I suspect you're going to hear a little bit about that later on.

A. (Johnson) Uh-huh.

Q. Okay. In fact, I note that Mr. Thompson is going to have the benefit of having both the blasting, the splice pit, and the HDD all in
front of his property. So, he's got plenty to
ask you about.
A. (Johnson) Uh-huh.
Q. Okay. Ms. Farrington, let me ask you some
questions about detours in this area. We just
covered the seven and a half miles of
underground.
A. (Farrington) Yes.
Q. And there are going to be some detours and some
road closures up there, correct?
A. (Farrington) Yes.
Q. Okay. On the screen is one of your detour maps
that shows, to get orientation, if you look on
the right-hand side, the far right side, in
that white box, it shows where 145 and Old
County Road intersect. Do you see that?
A. (Farrington) Yes.
Q. Okay. And what we did is we went with
Mr. Scott down Old County Road, and all the way
down, and this shows, to the far left, Cream
Poke Road. Do you see that?
A. (Farrington) Yes.
Q. And, so, when work is being done on Old County
Road, and we went over with Mr. Scott HDD

{SEC 2015-06}[Day 6/Afternoon Session ONLY]{05-01-17}
drilling and splice pits and open trench that will require road closures, the detour is what you show in yellow, is that right?

A. (Farrington) Yes.

Q. And, so, the detour, to get to where the roads close at the intersection of 145 and Old County Road, around Old County Road work area, to get over to Cream Poke Road, is 2.7 miles, is that right?

A. (Farrington) Correct.

Q. Okay. So, you would anticipate that, during the time when Old County Road is closed, and Old County Road is the section between 145 and Cream Poke Road, that's the detour route people will need to take in order to get to one end to the other end, is that right?

A. (Farrington) Yes, depending on the location of the work zone. So, where the red is currently shown, just for example, if the work zone was there kind of in the middle, and you lived to the north of that, you would not need to take the detour route. You would have full access to your home.

Q. In other words, if you lived to the right of
it, you're saying?

A. (Farrington) Yes.

Q. Yes. But, certainly, everybody along Old County Road at some point is going to have to take that detour?

A. (Farrington) Correct.

Q. Just a matter of where that rolling work zone is?

A. (Farrington) Yes.

Q. And that assumes one work crew, correct? The rolling work zone? In other words, it doesn't assume that they're going to have two work crews on Old County Road at the same time?

A. (Farrington) Right. Correct.

Q. Yes.

A. (Farrington) Yes. I mean, there could be, to make it move more quickly. But we wouldn't allow them to work next to each other, separated on either side of a driveway.

Q. Right. But, if there were two work zones, that would increase the amount of people taking the detour?

A. (Farrington) No. No, because we would only allow work in that location between driveways.
So, the number of people affected would stay the same.

A. (Bowes) Maybe said another way, there could be two crews within that 1,600 foot red strip.

Q. Ah.

A. (Farrington) Thank God.

Q. Okay. Thank you. But, certainly, when there's the HDD going on, and the road is closed for three to five weeks, then that's going to be the detour?

A. (Farrington) Correct.

Q. Okay. All right. So, Ms. Farrington, I'm showing you the next detour map on here. And this shows, do you see Cream Poke Road on the right, it shows where Old County Road turns into North Hill Road. Do you see that?

A. (Farrington) I do.

Q. And it shows North Hill Road along, until it intersects with Bear Rock Road, correct?

A. (Farrington) Correct.

Q. Okay. So, if the detour is on North Hill Road, let's say, for instance, if you look at the very start of North Hill Road, at sort of that little bend down there at the bottom and that...
white square. Do you see that?

A. (Farrington) By Bear Rock Road?

Q. No. North Hill Road.

A. (Farrington) By Old County Road?

Q. Or by Old County Road.

A. (Farrington) Okay. Yes.

Q. And, in that white hatched area, that's the Jack and Bore that we referred to earlier with the photosimulations. Do you remember that?

A. (Farrington) Yes.

Q. Okay. So, for instance, when that Jack and Bore operation is going on for three to five weeks, the detour is going to be Cream Poke Road out to Route 145, and then over to Bear Rock Road, to get back to North Hill Road, correct?

A. (Farrington) If the construction is taking place during the May 10th to December 10th time frame. Otherwise, no detour is needed.

Q. Do you know if anybody lives along North Hill Road? Do you know if there are houses along there?

A. (Farrington) I believe there are structures. I don't know if they're year-round.
Q. There are houses along there, are there not?
A. (Johnson) Yes, there are.
Q. Yes.
A. (Johnson) Yes.
Q. So, whether you're doing this work in the summer or whether you're doing this work in the winter, if someone wants to drive along North Hill Road, and you're doing this work, they're going to have to take the detour, correct? The road is not going to -- doesn't dictate the detour, it's the work, correct?
A. (Farrington) For parts. Parts of North Hill Road are not traversable during the winter months.
Q. You don't think anybody who lives along there, if they've got the necessary vehicle, drives along the road?
A. (Farrington) It certainly didn't look like it when I visited in January. There were no tire tracks. The road just kind of ended.
Q. Okay. How do you think the folks get to their house?
A. (Farrington) From the Bear Rock Road side.
Q. Ah.
A. (Farrington) So, I suppose they are taking the detour. They just don't think of it as a detour at that point.

Q. But, if you're doing the construction during the summer months, the detour as you see here on your yellow line, correct?

A. (Farrington) Yes.

Q. And you've got that at 4.4 miles?

A. (Farrington) Yes.

Q. But, if you have to -- your 4.4 miles doesn't, for instance, let's say the operation is the red, which you have in red rolling, do you see that?

A. (Farrington) Yes.

Q. So, the 4.4 miles doesn't really cover from one part of that red line to the other part, does it?

A. (Farrington) No.

Q. It covers from the intersection of Old County Road and North Hill Road, and Cream Poke Road over to Bear Rock Road and North Hill Road, correct?

A. (Farrington) Correct.

Q. So, if the work zone is where shown on this
map, the detour is more than 4.4 miles, is it not?

A. (Farrington) But that's a distance you were to be traveling anyway. So, for instance, if your home is just to the left of the small red depiction, and you were, rather than going along North Hill Road, you would maybe do a small extra distance on the other side of North Hill Road. But I don't think it adds a considerable length to a particular detour.

Q. So, if my house is to the left of this red work zone, let's say my house is where it says "north", you can see some houses there, can you not?

A. (Farrington) I can.

Q. And, if I'm traveling from Old County Road, I can't go down North Hill Road to get to my house. I've got to go around Cream Poke Road, over to Bear Rock Road, and then in to North Hill Road, correct?

A. (Farrington) Correct.

Q. And that's longer than the 4.4 miles, is it not?

A. (Farrington) Correct.
Q. Yes. So, the 4.4 miles is really just at the start and end of the road. It's not the actual detour for people along the road, is it?
A. (Farrington) Correct.
Q. Okay. So, Ms. Farrington, this is the third detour map in this area.
A. (Farrington) Yes.
Q. And, for orientation, let's -- at the top, where you've got the rolling work zone, that's where North Hill Road intersects with Bear Rock Road?
A. (Farrington) Yes.
Q. And if -- let's say my house is -- well, first, let's see what you have on here. What you have on here is a yellow detour, traveling to the left down into -- you know what the town is down here?
A. (Farrington) Colebrook.
Q. Yes. Down to Colebrook. And then you've got the green coming back along Route 26, East Colebrook Road, back to Bear Rock Road. Do you see that?
A. (Farrington) Yes.
Q. Now, you don't have on here mileage, like the
other two, do you?

A. (Farrington) I do not.

Q. Okay. So, if my house is, let's say, where you see near the rolling red work zone, let's say my house is somewhere where it says where "Rock" or "Road" is. Do you see that?

A. (Farrington) Yes.

Q. Okay. And we saw earlier that, when the HDD operation right at the start of Bear Rock Road, when it comes off North Hill Road, at that HDD location, that road is going to be closed right there, correct?

A. (Farrington) Correct.

Q. So, when that HDD operation is going on and that road is closed, to get to my house I've got to go along the yellow line on Route 145, down into Colebrook. Then, out of Colebrook, take Route 26, to East Colebrook Road, and then up to Bear Rock Road, and around Bear Rock Road to get to my house, correct?

A. (Farrington) Correct.

Q. Do you know how long that is?

A. (Farrington) I do not.

Q. Fair to say that it's more than 5 miles?
A. (Farrington) Yes.
Q. Fair to say it's more than 10 miles?
A. (Farrington) I'm not sure.
Q. Okay. And, as that rolling work zone works its way down Bear Rock Road, towards Heath Road, which is Transition Station Number 4, we saw earlier that there are nine splice pits along that road, correct?
A. (Farrington) I believe so, yes.
Q. Yes. And we saw that, in each instance along those nine splice pits, there's less than a 10-foot travel lane when those splice pits are being installed, isn't that right?
A. (Farrington) Correct.
Q. And, so, as that rolling work zone is working its way down Bear Rock Road, anybody to the right of that rolling work zone is going to have to do that long detour to get to their house, correct?
A. (Farrington) So, this one's a little different, in theory, because Bear Rock Road isn't a through road. So, if you --
Q. Is a what road?
A. (Farrington) It's not like a through street.
thoroughfare. So, if you live to the right of the -- where the red is depicted, 1,600-foot work zone is, chances are you're either coming from the Town of Colebrook, you might be coming up Mohawk Road from the south. So, from those areas, there's no detour route needed. You would go the way you would normally go. It's just, when that detour route shifts, you would take the -- what we're calling the "west access route", where you would have to go into downtown Colebrook, say, if you were coming off Route 26, and up Route 145.

So, it's not -- I mean, we can call it a "detour", I'm not opposed to that. But it's just a little unique, in that we're not routing traffic around from Point A to Point B on an alternative route, we're routing folks from, essentially, the Town of Colebrook to their homes.

Q. But anybody who lives along Bear Rock Road, if they're coming from 145, or if they want to go on North Hill Road or Old County Road, or even Cream Poke Road we saw earlier, they can't take those roads to their house. They have got to
do that long route, a route -- detour around, correct?

A. (Farrington) For a period of time, while the construction is in that area to the left, yes.

That's correct.

Q. Yes. And we saw three or four HDD operations along Bear Rock Road, did we not?

A. (Farrington) We did.

Q. Yes. And each one of those is going to take three to five weeks, correct? That was the testimony?

A. (Farrington) Yes.

Q. Yes. So, if I happen to be on the -- we'll call it "Mr. Thompson's side" of those HDDs, there are going to be a lot of detours for the folks who live on that side while those HDDs are being constructed or even those splice pits are being installed, correct? It could be the better part of an entire construction season.

Could it not?

A. (Farrington) Potentially.

Q. Yes. And, if it took longer than one construction season, those folks are going to be inconvenienced for a second construction
season, would they not?

A. (Farrington) Sure.

Q. Yes. Okay. So, Ms. Farrington, let me continue on with you for a bit. You prepared the traffic control plans, is that right?

A. (Farrington) Yes.

Q. And you did that recently, is that correct?

A. (Farrington) Yes. In November/December of 2016.

Q. Yes. And you developed some site-specific traffic control plans as well, correct?

A. (Farrington) Correct.

Q. And you developed these detour maps that we've looked at?

A. (Farrington) Yes.

Q. And your traffic control plans include such things as warning signs?

A. (Farrington) Yes.

Q. And placing drums or cones within the road?

A. (Farrington) Yes.

Q. And barriers when roads have to be closed?

A. (Farrington) Uh-huh.

Q. And some temporary signals?

A. (Farrington) Yes.
Q. Now, am I correct that temporary signals are going to be used for splice pit locations?

A. (Farrington) Correct.

Q. Okay. Do you know how many splice pit locations there are on the underground route?

A. (Farrington) I'm told 159.

Q. He's got a very good memory. So, we're going to have 159 temporary lights along that route, correct?

A. (Farrington) Yes. Not all at the same time.

A. (Johnson) 159 is for the whole 60 miles, not just up north.

Q. Yes. I gather that, yes. I didn't count -- I didn't count that high when I was dealing with the 7.5.

Now, for road closures --

A. (Johnson) I'm Sorry.

Q. For road closures, Ms. Farrington, I assume you're going to use barrels and barriers, correct, and signs?

A. (Farrington) And barricades, yes.

Q. Yes. Okay. And, for lane closures, are you going to use barriers along the road as well?

A. (Farrington) No, just drums.
Q. Just drums. And is the anticipation to use flaggers or police officers or both?
A. (Farrington) Flaggers.
Q. Okay. And do you know how many --
A. (Farrington) Oh, sorry. We wouldn't require police officers at a location --

[Court reporter interruption.]

BY THE WITNESS:
A. (Farrington) Sorry. If there's a location where an existing traffic signal is not going to be operational for a brief period of time, we would require a police officer.

BY MR. PAPPAS:
Q. Okay. Now, have you determined how many flagging operations you're going to need at the same time?
A. (Farrington) No. That would be dependent on the detailed schedule.
Q. Okay. Now, I understand that you obtained traffic counts from DOT, is that right?
A. (Farrington) Correct.
Q. And you used the average daily traffic to calculate the expected hourly volume on roads with lane closures?
Q. But you cannot accurately predict the impact from a lane closure at any given point in time, can you? You don't have the data necessary to do that?

A. (Farrington) I mean, it's such a -- Why don't you give me a "yes" or "no", and you can explain. But you would agree with me, you cannot accurately predict the impact of a lane closure at any given point in time, correct?

A. (Farrington) Correct. Traffic analysis is much more vague than that. So, just some background, we usually do a peak hour traffic count, and then we run an analysis. But, especially for like traffic signals timing, I mean we're basing our traffic signal timings on that one hour count, and they have to last for three to five years [weeks?]. So, in general, it's not an exact science.

Q. Okay. Now, at these various construction sites that we've seen, whether it is open trench, whether it's splice pit or HDD, there's a lot of construction activity at any given site, correct? You can answer as best you know. If
you want to ask one of the engineers, that's fine. But why don't you let me -- why don't you give me the answer you know.

A. (Farrington) I don't know that I'd consider it "a lot". I mean, it's an excavator and a dump truck, for the most part. It's my impression. I'm not a power engineer.

Q. All right.

CHAIRMAN HONIGBERG: Mr. Pappas, I would remind you, you've got a panel up there.

MR. PAPPAS: I understand.

CHAIRMAN HONIGBERG: And you're directing questions to the panel. You certainly are interested in Ms. Farrington's opinion about this, but there may be someone else up there who has information that would be responsive to your question.

MR. PAPPAS: And I'm happy to have it. But I think it's helpful if she answers "yes" or "no", and then the others can add.

CHAIRMAN HONIGBERG: I understand why you think it would be helpful.

BY MR. PAPPAS:

Q. For instance, in addition to the dump trucks...
and the excavators, you've got concrete trucks coming and going?

A.  (Farrington) Yes.

Q.  You've got flatbed trucks coming with splice pits?

A.  (Farrington) Yes. I guess my line of thinking is, it's all things I've seen. It's not necessarily something exciting that I would gawk at as I drove by. So, that's why I'm saying "no, it's nothing particularly interesting."

Q.  All right. But you would agree with me that at any given site there could be a lot of activity going on with all of this, all these vehicles and equipment?

A.  (Farrington) Sure.

Q.  Okay. Now, we've seen where the Project plans to use a rolling work zone of up to 1,600 feet. Do you yourself have any experience with underground transmission lines that are more than a mile long?

A.  (Farrington) I have helped develop traffic control plans for underground transmission lines that are over a mile long, yes. They
didn't impact over a mile of roadway, though.

Q. Oh. Okay. Well, maybe I should have been more specific. So, you don't have experience with underground transmission lines that impact more than a mile of roadway, is that right?

A. (Farrington) Correct.

Q. Okay. Do you have any experience with transmission projects using HDD drilling?

A. (Farrington) Yes.

Q. And did that experience involve more than five locations?

A. (Farrington) No.

Q. Do you have any experience with road closures in rural areas, such as the seven and a half miles that we've reviewed today?

A. (Farrington) I do not.

Q. Now, in your prefiled testimony that was submitted with the Application dated October 16, 2015, you had opined that "It is anticipated that the traffic management components of the Project will provide appropriate mitigation of the temporary impacts to traffic to ensure that there will be no unreasonable adverse effects on public safety
along the public highways and local streets."
Do you recall that?
A. (Farrington) I do.
Q. Now, at the time you made that opinion, you had not visited the underground section, had you?
A. (Farrington) No, I had not.
Q. And, at the time you rendered that opinion, you had not done the work to come up with the detour plans or the lane closure plans or the road closure plans that we find in these construction drawings, had you?
A. (Farrington) I had not.
Q. At the time you rendered that opinion, do I understand that what you had done is reviewed some plans at that point and attended some meetings with the Project Team?
A. (Farrington) Yes. That's correct.
Q. Okay. And at that time the plans were 30 percent complete?
A. (Farrington) Correct.
Q. And, at the time you rendered that opinion, you hadn't done any traffic control plans, had you?
A. (Farrington) No, I had not.
Q. You hadn't met with any town officials, is that...
Q. You didn't study the 53 HDD locations?
A. (Farrington) No, I had not.
Q. And you didn't have the traffic counts from the DOT?
A. (Farrington) Yes. Those are publicly available.
Q. Okay. You didn't perform a corridor level analysis on the underground route?
A. (Farrington) No.
Q. Would it be fair to say that most of your work on this Project was done after you submitted your prefiled testimony in October of 2015?
A. (Farrington) Yes. That's correct.
Q. Okay. Now, your prefiled testimony you opine that there would be "no unreasonable adverse impact on public safety during construction."
That was your opinion?
A. (Farrington) That is still my opinion, correct.
Q. Yes. And your focus has been on public safety, correct?
A. (Farrington) Correct. And traffic control, safety of the workers.
Q. Yes. You do not render an opinion on whether the Project's impact on traffic will have an adverse impact, correct?

A. (Farrington) I think, so that is to be studied further as part of the Transportation Management Plan. And, at that point, I will have an opinion on it.

Q. Right. So, sitting here today, your opinion relates to safety, but you don't have an opinion today on whether the Project's impact on traffic will have an unreasonable adverse impact, isn't that right?

MR. NEEDLEMAN: I'm going to object to that question. The Applicant doesn't have an obligation to demonstrate unreasonable adverse impacts on traffic.

CHAIRMAN HONIGBERG: Mr. Pappas.

MR. PAPPAS: I think I'm entitled to ask about impacts from the Project. I think that, certainly, the public interest requirement requires the Committee to consider all of the impacts of the Project, whatever they may be. And impact on traffic is certainly one of the impacts.
CHAIRMAN HONIGBERG: Yes. And I think you've asked her about impacts on traffic. But you had a cascading further impact that I'm not even sure what you were referring to.

MR. PAPPAS: All right.

CHAIRMAN HONIGBERG: You assumed an adverse impact on traffic, and then asked about an adverse impact caused by that adverse impact, as I recall. So, I'm not exactly sure what that second one was referring to, and I don't think anybody else is either.

MR. PAPPAS: Okay. Well, thank you. I'll try it again.

BY MR. PAPPAS:

Q. Let me ask you some specific questions. You don't have an opinion on whether or not the Project impact on traffic will impact the tourist industry, do you?

A. (Farrington) I do. I have an opinion that the Transportation Management Plan will be written in such a way that impacts to the tourist industry will be mitigated.

Q. You haven't written that Traffic Management
Plan, have you?

A. (Farrington) No, I have not.

Q. Yes. And, so, sitting here today, you don't have a basis to render an opinion as to whether or not the impact, the construction's impact on traffic will have -- whether it will or will not have an adverse impact on the tourist industry, do you? Don't you need to do the analysis before you can make the opinion?

A. (Farrington) The "tourist industry" is really vague. I have the opinion that the tourist traffic that I, and we, as a project, have the experience to mitigate traffic impacts to tourists traveling through the construction areas.

Q. Nowhere in your written -- in your prefiled testimony does it say that, does it?

A. (Farrington) I believe we talked about seasonal impacts and tourists.

Q. In your prefiled testimony? Do you have it in front of you?

A. (Farrington) I will take a minute and look, if you want me to.

Q. Sure.
(Short pause.)

BY THE WITNESS:

A. (Farrington) I did not specifically discuss
tourism in my prefilled testimony.

BY MR. PAPPAS:

Q. Thank you. So, you haven't done the analysis
to make that determination, have you?

A. (Farrington) No. I believe the purpose of my
prefilled testimony was to outline the procedure
to do the analysis based on the New Hampshire
DOT requirements.

Q. And you don't have an opinion as to whether or
not the Project's impact on traffic will have
an unreasonable adverse impact on the orderly
development of the region, do you?

MR. NEEDLEMAN: Same objection.

That's not the standard.

CHAIRMAN HONIGBERG: Mr. Pappas.

MR. PAPPAS: Well, I think I'm
entitled to ask this witness whether she has an
opinion. She's a traffic expert.

CHAIRMAN HONIGBERG: Yes. I think
the objection is overruled.

MR. PAPPAS: Thank you.
CHAIRMAN HONIGBERG: I think this, having specified the adverse impact he's asking about, she can answer whether -- she can answer that question.

Do you remember the question, Ms. Farrington?

WITNESS FARRINGTON: No, I'm sorry. Can you repeat it?

CHAIRMAN HONIGBERG: See if you can do it again the same way, Mr. Pappas.

MR. PAPPAS: It's going to be a challenge. It's 4:30.

BY MR. PAPPAS:

Q. You do not have an opinion as to whether or not the Project's impact on traffic will have an unreasonably adverse impact on the orderly development of the region, do you?

A. (Farrington) I'm sorry. I'm not sure that I will ever have an opinion on that. I might be missing something there. I don't understand the question.

Q. Okay. So, the answer is, you didn't analyze whether or not the Project's -- from a traffic perspective, you didn't analyze whether or not
the Project would adversely impact the
development of the region where the Project
goes through, did you?
A. (Farrington) No, I did not.
Q. Okay. And, from a traffic perspective, you
didn't analyze whether the Project impact on
traffic, whether that will or will not impact
any businesses along the route, did you?
A. (Farrington) We have considered that in our
Traffic Control Plans, as far as access to the
businesses. As far as traffic passing by
businesses, I would expect an increase due to
construction workers. But no adverse impacts,
no.
A. (Bowes) That is covered in her prefiled.
Q. Okay. Let me ask you, Ms. Farrington, you
didn't analyze whether or not the impacts to
traffic will adversely affect businesses along
the route, did you?
A. (Farrington) No.
Q. Okay. Okay. Ms. Farrington, take a break for
a minute. I'm going to focus my remaining
time, or not my entire remaining time, but I'm
going to shift to either Mr. Kayser or
Mr. Bowes.

We just reviewed the construction in the northern section. And, in particular, the 7.5 miles that are all through local roads, is that correct?

A. (Kayser) Yes.

A. (Bowes) That is all we reviewed, yes.

Q. Yes. We'll get elsewhere. And, so, I had asked you earlier about restoring roads when they intersected the right-of-way. So, I want to ask you some questions about restoring roads along that seven and a half mile section.

Now, we heard Mr. Scott testify that, for a great deal, if not the entire 7.5 miles, the Project will be in the roadway, correct?

A. (Kayser) Yes.

Q. Okay. And do I understand that the Project has committed to restoring those roads to as good or better condition as they were in before the Project started working in the roads?

A. (Kayser) Yes. That is what we have said -- excuse me -- in the prefiled testimony is that we will restore the roads to the condition they are in today or better.
Q. And how is it you intend to do that?
A. (Kayser) Well, there will be temporary restoration of the roads between the time they put the splice pits in, and then pull the cable. The permanent restoration will, as I think Mr. Johnson mentioned earlier, use DOT standards, to the extent practicable. So, they will put the gravel in, grade the roads, and get them back to the normal condition.
A. (Bowes) And, to be more specific, there were several areas that you showed in your photographs that were deeply rutted.
Q. Uh-huh.
A. (Bowes) The idea would be to restore those with a crown on top of the road --
A. (Kayser) Correct.
A. (Bowes) -- and proper drainage to the sides.
Q. Uh-huh. And you're familiar with DOT road requirements for gravel roads, as opposed to paved roads?
A. (Kayser) I am not specifically familiar with them, no.
Q. Mr. Bowes, are you?
A. (Bowes) I would say, a very high level I am,
but not in the details.

Q. Okay. Do you know whether or not they require you to replace the same type of gravel that was removed?

A. (Bowes) I do not.

Q. Okay. Do you know what they require in terms of compaction of the subgrade? Anybody can answer, that's fine.

A. (Kayser) Not specifically.

A. (Scott) I believe it's 95 percent Proctor density.

Q. And is that on gravel roads as well?

A. (Scott) I believe so.

Q. Okay. And is that what the Project intends to do?

A. (Kayser) Yes.

A. (Scott) Yes.

Q. And would I be correct in saying that, if the Project does work in the road, that they would restore the road curb-to-curb, and not just the disturbed area of the road?

A. (Bowes) So, for the gravel roads, definitely.

Q. Uh-huh.

A. (Bowes) I know there are some paved sections
that we'll have to look at in more detail.

Q. Okay. Well, I was going to ask you that next, in terms of I was going to break it down. So, the paved sections, to the extent that you only disturb, let's say, half or more of the road, do you intend to go to repave curb-to-curb or only patch?

A. (Bowes) So, right now, we're proposing to repair or restore the roadway that we are in, so the lane that we're in. As you saw, for some of those roads, we're traversing both lanes. So, it may not be practical just to do one lane. It may be better to do both lanes in the north section.

Q. Uh-huh. Would you agree with me that, where you patch only one lane, that patch has a less life expected -- it reduces the life expectancy of the road, if you only patch a lane, as opposed to go curb-to-curb?

A. (Bowes) I would say that's probably general true.

Q. Yes. And that's because of a number of reasons, including the fact that the patch has an open cut to which water can get in, and
water is a major enemy of roads?

A. (Bowes) I will accept that. It would sealed.

That seem would be sealed though.

Q. Yes. But are you familiar with studies that
have indicated that even sealing it, over time
still degrades the road, because the water
still gets in and it creates further cracking
and heaves and so forth?

A. (Bowes) I have not seen the studies, but I'll
accept that, yes.

Q. All right. So, getting back to commitments, if
a road agent along one of the local public
roads up north wants the Project to pave
curb-to-curb, because they think that patching
won't sufficiently restore the road, earlier
you said that that would be "subject to
discussion". Is that my understanding?

A. (Bowes) So, I'm going to take a pause on the
way you asked the question.

Q. Okay.

A. (Bowes) I'm not sure there are any curbs on
this portion of the road. And, so, when you
say "curb-to-curb", it's --

Q. Good point.
A. (Bowes) We don't plan to put curbs in. That's clear. Would we pave the entire two lanes or lane and a half as the case may be? I think, probably, but I don't want to commit to that today, because I want to see the final design. And then I want to work with each of those towns separately to come up with what the requirements will be.

Q. Okay.

A. (Bowes) But I don't think it's an unreasonable request, if what we see today and with crossing over the lane, and going down the center of the roadway, and putting a bunch of splice vaults in. And it's a very short amount of paved area in the North Country.

Q. Right. And you are correct. I didn't notice any curbs up in the North Country. It's just a common term, "curb-to-curb" among the paving folks.

But I do want to just make sure that I'm clear, and I'm sure the townsfolks want to make sure that I'm clear, that for any area where you disturb the asphalt, the intent is to meet and try to reach an agreement with the town, as
to what paving would satisfy the town for
restoration work. Is that right?
A. (Bowes) Yes.
Q. But you're not willing to commit that in all
instances that will include repaving the entire
road surface no matter how much of it you
disturb?
A. (Bowes) Well, clearly, if we disturb more than
half the roadway, that's an automatic "yes".
Q. But, if you disturb less than half the roadway,
as I understand it, you're willing to discuss
it, but you're not willing -- the Project is
not willing to commit that, in every instance
where it disturbs the paved road, it will
repave the whole roadway?
A. (Bowes) That is correct.
Q. Now, in the area where they're -- start with
gravel roads, do I understand that the
underground cables themselves give off heat?
A. (Kayser) Yes.
Q. Is that your understanding as well?
A. Yes.

{Court reporter interruption to
confirm who responded.}
BY THE WITNESS:

A. (Kayser) Yes, I did.

BY MR. PAPPAS:

Q. All right. Mr. Kayser, I'll stick with you for a minute, so to help Steve out. Am I correct that, in about a three to five foot area outside the cables, the cables give off heat and essentially warm that area?

A. (Kayser) Yes. There was a study completed by ABB. And I don't remember the exact dimensions, but that sounds in the ballpark.

Q. Right.

A. (Bowes) I believe we actually attached it to Mr. Scott's testimony.

Q. You did.

A. (Bowes) He's probably the best person to answer those questions.

Q. He's ducking it down there.

A. (Scott) Yes. It's in my supplemental testimony.

Q. It is.

A. (Scott) Attachment A.

Q. It is. So, Mr. Scott, you get to answer these questions. And the concern is this. Is
whether or not the heat given off from those cables will have an adverse impact on the gravel roads, because it might affect the freezing and thawing. Are you familiar with that concern?

A. (Scott) I am.

Q. Okay. So, without belaboring the point, because it's getting late, why don't you just tell me how the Project intends to avoid that concern?

A. (Scott) Well, I believe that, if you review the Attachment A, this is the design phase of verifying, providing information, that we do not anticipate that it would be causing a thaw above the duct bank, it would not be occurring adjacent to the installation.

As far as post-installation, I'd have to differ to John, Mr. Kayser, to -- as if there is any post-installation inspection to verify.

Q. So, what you're essentially saying is, you don't think it's going to be -- the depth of the cables aren't going to be such that it's going to be a problem. Is that what you're saying?
A. (Scott) Correct.

A. (Bowes) So, I would add as well is that we obviously operate many miles of AC cables, transmission cables that operate at a higher temperature. And we don't see problems with the roadways, either by the thermal characteristics, i.e., melting the ice or not melting the ice on roads. And we don't see any damage to the roadway itself post-construction.

Q. Does that include gravel roads?

A. (Bowes) A small amount of gravel roads, we don't have a lot of experience with it. We have a short section on one of our 345 kV projects in Connecticut, about 2,500 feet. And, again, we don't see a change in that gravel road, and it's been, you know, ten to twelve years now.

Q. Yes.

A. (Bowes) It does not have the same amount of traffic as a public road, though.

Q. And that's in Connecticut, correct?

A. (Bowes) It is.

Q. Fair to say the weather is a little different in Connecticut than it is in the seven and a
half miles in the North Country of New Hampshire?

A. (Bowes) It clearly is different. But, if you look at what that ABB design document goes through, the ambient temperature is a part of it, and the cable will operate at that ambient temperature. So, the ambient temperatures in Connecticut would be hotter, so you would have a more severe case than in a colder temperature environment.

Q. But the frost line is a little deeper up north, correct?

A. (Bowes) It clearly is. But it's not related to this issue.

Q. Well, what are the depths for the buried cable along the seven and a half mile route?

A. (Bowes) Forty to sixty inches.

A. (Scott) One moment. I'd refer you to, since we were working on north most recently, North C-502 for the trench cross section, for the typical trench cross section, which shows a minimum depth of approximately, let's see, approximately 42 inches from grade.

Q. Uh-huh.
A. (Scott) And, with ongoing coordination with the DOT, when underneath roadways, that will most likely be deeper.

Q. And how deep?

A. (Scott) How deep?

Q. Uh-huh.

A. (Scott) That's in coordination.

Q. So, we don't have a -- we have 42 inches minimum, but we don't know how --

A. (Scott) It will be per the profile drawings, after incorporating the DOT comments.

Q. Okay. So that has --

A. (Scott) So, it will be a site-specific location.

Q. Okay. So, it's your view that the heating up of the cable in the road, the earth around the cable is not going to have an adverse impact on the gravel roads from that dissipation of heat?

A. (Bowes) That is my opinion, yes.

Q. And it's based on the ABB study that is attached to Mr. Scott's testimony?

A. (Bowes) And the other two factors, my operating experience in New England with other transmission cables, and the fact that AC cable
is operated at about 20 degrees C hotter
temperature. So, it's a more extreme case.

Q. Okay. Now, once this transmission line is
installed in the road, for future work near the
transmission line, whether it's a homeowner
along the route or a business owner, will they
need -- and they need to go under the line,
will that require any special -- would it have
any special requirements? And this is a 340 --
up north, 320,000 volt line. Will it have any
special requirements because of the size of the
line?

A. (Bowes) The physical size of the line or the
capacity or the --

Q. I think capacity. You don't want to hit it
with a backhoe. So, after it's installed, are
you aware of any requirements that are
necessary for work in and around a 320,000 volt
line?

A. (Bowes) So, I would say "yes"; but it's not
specific to the voltage of the line. It would
be any electrical, gas, water facilities. They
have to go through DigSafe, which is a
requirement in the state.
Q. Yes.
A. (Bowes) We will have a barrier tape installed.
So, if they get close to the cables, before
they actually get to the duct bank, there will
be a safety ribbon.
Q. Uh-huh.
A. (Bowes) And then the third is one of the
reasons we like the thermal fluidized backfill,
because it does provide a means of physical
protection to the conduits as well. And the
last thing would be the conduits themselves.
I'm not going to claim that those have a lot of
strength or capability. But, if you come to a
conduit, it's a pretty good reason to stop and
give pause, if you haven't done the previous
things.
Q. Okay. So, you're not aware of any special
requirements of any contractors, other than the
DigSafe, working in and around these lines?
A. (Bowes) That is correct.
Q. Okay. Anybody else on the panel aware of any?
A. (Johnson) No.
Q. Okay.
A. (Johnson) In my experience, no.
CHAIRMAN HONIGBERG: All right.

We're going to break now. Mr. Pappas represents that he's got -- his next topic is a long topic. So, it doesn't make sense to start that and break it.

So, we will resume tomorrow morning at nine o'clock. I'm hopeful that all of you who are following Mr. Pappas's questioning are crossing topics and questions off your list that he's asked and have been answered by this panel. Certainly, you can explore the issues that he's explored. But extensive repetition of questioning will probably draw an objection and we'll have to get into it at that time.

So, if there's nothing else we need to do this afternoon, we will see you all tomorrow morning at 9:00.

(Whereupon the **Day 6 Afternoon Session** was adjourned at 4:43 p.m., and the hearing to resume on **May 2, 2017**, commencing at 9:00 a.m.)
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
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