STATE OF NEW HAMPSHIRE
SITE EVALUATION

October 24 2017 - 1:13 p.m. DAY 51
49 Donovan Street AFTERNOON Session ONLY
Concord, New Hampshire

{Electronically filed with SEC on 11-8-17}

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 (Presiding as Presiding Officer)	Public Utilities Comm.
Cmsr. Kathryn M. Bailey	Public Utilities Comm.
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 Dandeneau	Alternate Public Member

ALSO PRESENT FOR THE SEC:
Iryna Dore, Esq., Counsel to the SEC
(Brennan, Caron, Lenehan & Iacopino)

Pamela G. Monroe, SEC Administrator

(No Appearances Taken)

COURT REPORTER: Susan J. Robidas, NH LCR No. 44

I N D E X

WITNESS PANEL: EARLE "RUSTY" BASCOM, III
ADAM ZYSK
DAVID TAYLOR, JR.

I N D E X (CONT'D)

I N D E X

P R O C E E D I N G

(Resumed at 1:13 p.m.)

CHAIRMAN HONIGBERG: Mr. Needleman, you ready to go?

MR. NEEDLEMAN: I am.

CHAIRMAN HONIGBERG: You may proceed.

MR. NEEDLEMAN: Thank you.

CROSS-EXAMINATION

BY MR. NEEDLEMAN:

Q. Gentlemen, my name is Barry Needleman. I represent the Applicant in this matter. I think I've met you all in person or by phone. I think, Mr. Taylor and Mr. Zysk, I'll start with you. Probably get you a little bit later, Mr. Bascom, but feel free to jump in if you have some information.

So, Mr. Taylor, Counsel for the Public's Exhibit 129 is your prefiled testimony and overhead report. Just a couple of preliminary questions about your background.

I'm correct that you're not a licensed engineer; is that right?

A. (Taylor) That's correct.
Q. You have a degree in landscape architecture and a master's in real estate; correct?
A. (Taylor) That's correct.
Q. And I understand that your role at Dewberry is often to serve as project manager or project director; is that correct?
A. (Taylor) That's correct.
Q. And you haven't worked on any electric transmission line projects over 230 kV; is that right?
A. (Taylor) That's right.
Q. And the longest segment of underground electric transmission that you've worked on is 3-1/2 miles of 69 kV; correct?
A. (Taylor) For a line that has been constructed, that's correct.
Q. And I understand you haven't worked on any DC projects; is that correct?
A. That's correct.
Q. Mr. Zysk, you are an engineer; is that right?
A. (Zysk) I am.
Q. But you're not licensed in New Hampshire; is that correct?

A. (Zysk) Not yet. I'm sorry. Not yet.
Q. And according to your prefiled testimony, you're generally responsible for project management, transportation and civil site design, traffic engineering, et cetera.; is that correct?
A. (Zysk) Generally, yes.
Q. And you've worked on one DC project, and that was a 28 kV underground line; is that right?
A. (Zysk) Yes.
Q. And with respect to the purpose of your testimony, am I correct that when you each undertook your work here, prior to doing so you didn't review RSA 162-H, which is the New Hampshire siting statute?
A. (Taylor) That's correct.
Q. And you also didn't review the SEC rules; correct?
A. (Taylor) That's correct.
Q. And I also understand you didn't review any prior SEC decisions to determine how construction panels were handled in other cases with respect to technical and managerial capability; is that right?

A. (Taylor) That's correct.
Q. And I understand that you're generally familiar with the requirement that an Applicant at the SEC show that it has the technical and managerial capability to construct and operate a project; is that right?
A. (Taylor) That's correct.
Q. And you were retained by Counsel for the Public to review the NPT Application and to identify short- and long-term construction impacts; correct?
A. (Taylor) That's correct.
Q. So you aren't here today offering any opinion about whether the Applicants have the technical and managerial capability to construct and operate the Project; am I right?
A. (Taylor) That's correct.
Q. And at the tech session, we asked you if you were offering any opinions regarding the maintenance and operation of the line, and you said that you didn't recall identifying any issues in the work you did associated

with that; correct?
A. (Taylor) That's correct.
Q. Mr. Taylor, on Page 3 of your testimony, actually, the overhead report, you said, quote -- you said that your job was review and technical analysis of the NPT Application as necessary to determine soundness of design and determine impacts of construction on New Hampshire communities and natural resources. Does that sound familiar?
A. (Taylor) That does.
Q. And if at any point I'm quoting material to you and you'd like to see it, let me know and I'll put it up.
So you didn't do any analysis of the overhead portion of the line with respect to making determinations about whether it's consistent with all national electric safety codes, did you?
A. (Taylor) No, I did not.
Q. And you have no actual assessment of the soundness of the overhead design; is that right?
A. (Taylor) We didn't review the overhead

design --
Q. So you're offering no --
A. (Taylor) -- electrically.
Q. Sorry. So you're offering no opinions on those issues; is that correct?
A. (Taylor) That's correct.
Q. Yesterday, when you were being questioned by Ms. Manzelli, she tried to ask you questions about tower collapse, and she wasn't permitted to do so, and so she made an offer of proof. In looking at your report, there isn't anything in there anywhere that talks about the risks associated with fall zone and tower collapse; is that right?
A. (Taylor) That's correct.
Q. So as a consequence, you are offering no opinions about those issues; is that correct?
A. (Taylor) That's correct.
Q. You filed your original prefiled testimony on November 15, 2016; right?
A. (Taylor) That sounds correct.
Q. And then you filed underground prefiled testimony together with Mr. Zysk on December 30, 2016?

A. (Taylor) That's correct.
Q. On March 1st, 2017, the New Hampshire Department of Environmental Services issued its final decision and proposed permit conditions. Sound right?
A. (Taylor) That sounds correct.
Q. And your original report and prefiled testimony of which I just sited were drafted without having had the benefit of reviewing those conditions; correct?
A. (Taylor) That's correct.
Q. And at the tech session which occurred on March 24, 2017, you told me you still hadn't done any assessment of those DES conditions in comparison to what the Applicants proposed. Do you recall that?
A. (Taylor) I do.
Q. And so as a consequence at that time, you couldn't offer an opinion about whether the DES conditions addressed environmental concerns in the underground portion of the Project; correct?
A. (Taylor) That's correct.
Q. And then, Mr. Zysk, you filed your

supplemental prefiled testimony on April 17th, 2017; is that right?

A. (Zysk) That sounds correct, yes.

Q. So I take it that you have now had an opportunity in the course of preparing that testimony to examine those DES permit conditions.

A. (Zysk) I did review them, yes.

Q. And I want to look at your prefiled testimony. And I'll refer you to the sections. I'm looking at Page 5, Lines 13 and 14. Do you have that testimony in front of you?

A. (Zysk) I do not. If you could put that up, that would be appreciated.

Q. Sure. It's on Page 5, Lines 13 and 14.

A. (Zysk) Yes.

Q. And your opinion there was that there are several wetland permit conditions which may be difficult to completely enforce or have the potential to lead to long-term impacts; is that right?

A. (Zysk) Yes.

Q. And I assume what you mean is this relates to

your analysis of the DES wetlands permit.
A. (Zysk) Yes.
Q. And so the conditions in particular I think you called out are listed there: 31, 37, 38, 39, 54, 55 and 70; is that right?
A. (Zysk) Yes.
Q. So out of the 77 conditions in that permit, you only had concerns about 7 of them; is that correct?
A. (Zysk) In this case, yes.
Q. And I understand, Mr. Zysk, that with respect to your prior experience with DES, you told me, I think, that you've worked on three alteration of terrain permits and a couple of smaller wetland permit projects; is that right?
A. (Zysk) Correct. Yes.
Q. And Mr. Taylor, my understanding is you have no experience working with New Hampshire DES on wetland permits; is that right?
A. (Taylor) That's correct.
Q. So, Mr. Zysk, when you offer your opinions about these seven permit conditions, is it your contention that, regarding those

conditions, DES got that wrong?
A. (Zysk) I don't believe they got it wrong. It was my understanding, after reviewing the content of the condition, it seemed like, as I noted, it would be difficult to enforce, based on whether it being too -- a bit on the generic side or just a very encompassing condition.
Q. Would you agree with me that the conditions you saw in the wetlands permit are fairly standard conditions for similar types of construction projects?
A. (Zysk) A lot of them are similar. Some of them were specific to this project.
Q. And I would also venture to say that you've probably been required on other projects you've worked on to comply with similar types of conditions; is that right?
A. (Zysk) Yes.
Q. And would you agree that if the Applicants don't comply with the conditions in these permits for any reason, they could be subject to some type of enforcement action?
A. (Zysk) I would agree with that, yes.

Q. And do you have any reason to believe that the Applicants or their contractors would not comply with these permit conditions?
A. (Zysk) I have no reason to believe they would not.
Q. Also in your prefiled testimony, on Page 7, Lines 12 to 15, you made mention of something that Ms. Draper asked you about this morning that had to do with a 90-day requirement for certain other submittals. Do you recall that?
A. (Zysk) Correct.
Q. And I think in particular you said that you had some concern about plans being submitted only 90 days prior to construction. Do you recall that?
A. (Zysk) I do.
Q. Is it your contention that that time frame is atypical?
A. (Zysk) No.
Q. In fact, would it surprise you to learn that in a recent SEC case, the Antrim Wind docket, the New Hampshire Department of Environmental Services required similar types of submittals

up to 90 days prior to construction?
A. (Zysk) I would expect that's a standard condition.
Q. In the Antrim Wind docket, Permit Condition No. 18 of the Alteration of Terrain permit required submission of an SPCC plan for review and approval at least 90 days prior to construction. Would you say that's a typical and acceptable condition?
A. (Zysk) I'm not familiar with that project, but it would sound reasonable.
Q. Condition No. 19 required submission of a plan to prevent water-quality violations for review and approval by the agency also 90 days prior to construction. Same question.
A. (Zysk) Okay.
Q. Typical requirement?
A. (Zysk) Yes.
Q. So when you did your work here, did you consider other types of circumstances like this where DES had taken actions?
A. (Zysk) In general, yes.
Q. But you didn't consider other SEC cases, did you?

A. (Zysk) Not specifically, no.
Q. Do you think, in retrospect, it might have been informative for you to do so?
A. (Zysk) I don't believe so, no.
Q. So you don't think it would have been necessary for you to see how the permitting agencies handled other SEC matters? That wouldn't have helped you?
A. (Zysk) I don't believe the 90-day requirement is specific to an SEC project. I'm sure it's an across-the-board requirement for any applications to the DES. And that was my concern, is that the volume of projects I expect are being submitted, similar to other areas of where I work, that the DES does not have the capacity to fully and thoroughly review all the documents that they've requested within that 90-day period.
Q. Oh, so your concern is really a resource concern at DES.
A. (Zysk) Yes.
Q. And if DES believes they have the resources to adequately do that job, would you second-guess that?

A. (Zysk) If they have those resources, then that's great.
Q. And that would address your concerns.
A. (Zysk) That would address my concern about their ability to review them in a timely process. The other concerns that they are enforceable or partially enforceable or may not be enforceable have no bearing on the review time.
Q. And do you think that DES would have included conditions in its final permits if it wasn't confident that they wouldn't [sic] be able to enforce those conditions?
A. (Zysk) I believe that DES issued conditions without consideration of whether the Applicant had the ability to meet them or not. That's the Applicant's responsibility to meet those conditions.
Q. I'm not quite sure you answered my question. Let me try again.
We certainly agree it's the Applicant's obligation to meet the conditions. My question to you was: Do you believe that DES, as the permitting authority, would have

included conditions in its permit that it didn't believe could be complied with?

A. (Zysk) They can issue the conditions that they issue. I would expect that they assume they can be complied with.

Q. Thank you.

Mr. Taylor, in your prefiled testimony on Page 3 -- Page 2, Lines 3 through 16, you list potential impacts that the Project may have on communities and natural resources. Do you recall that?

A. (Taylor) I do.

Q. And some of the impacts you talk about are, for example, clearing of the right-of-way. And would you agree with me that right-of-way clearing is standard for an electric transmission line project?

A. (Taylor) Generally speaking, yes.

Q. You also mentioned concerns like increased traffic, increased noise, dust and dirt, potential damage to roads, soil erosion, sediment runoff if BMPs are not properly utilized, construction in wetlands and water bodies causing adverse effects absent proper

conditions. Would you agree with me that all of these things are also common to transmission line projects and to large construction projects in general?

A. (Taylor) Generally speaking, yes.

Q. And you indicated that these impacts that we just went through from your November 2016 prefiled testimony at the tech session would be the same types of impacts that you have experienced on other large projects you've worked on; is that right?

A. (Taylor) That's correct.

Q. And then the other impact you talked about was construction in the pine barrens in Concord and potential impacts on the Karner blue butterfly. Do you recall?

A. (Taylor) I do.

Q. My understanding is that when you noted that, it was just a general observation and that you're not an environmental expert and that you haven't been specifically retained here to assess that issue. Is that fair?

A. (Taylor) That's correct.

Q. And so you're not offering any opinions about

the approaches that the regulatory agencies have taken with respect to managing the Karner blue or mitigation associated with that; correct?

A. (Taylor) That's correct.

Q. You mentioned wetlands on that list, but I think we've already talked about that.

Let me ask you about soil erosion. On Page 2, Line 11, you say, quote, "Construction of the transmission towers will cause soil erosion and sediment runoff if Best Management Practices are not properly utilized and monitored," close quote. Do you recall saying that?

A. (Taylor) I do.

Q. And you now understand that the Applicants have received an alteration of terrain permit, a wetland permit and shoreland permit; right?

A. (Taylor) Correct.

Q. And with respect to all of those permits, Best Management Practices are built into them; is that correct?

A. (Taylor) That's my understanding.

Q. And the Best Management Practices are often the result of an iterative process between the permittee and the permitting agencies; fair to say?
A. (Taylor) They can be.
Q. And the Applicant is also committed to getting a general construction permit prior to commencement of construction; is that right?
A. (Taylor) That's my understanding.
Q. So if the Applicant complies with all of these permits which include those BMPs, then is it fair to say that erosion with respect to this project will be properly managed?
A. (Taylor) Not necessarily.
Q. So how is it that the Applicant could comply with all of those permit conditions and there would still be a problem with erosion?
A. (Taylor) I think there's a nuance there, as I understood your question. Obtaining the permit would define the practices that they would need to follow. My statement that it doesn't necessarily mean sediment and erosion wouldn't occur has to do with how the

construction is handled in the field and the BMPs, for example, are maintained.
Q. So, in other words, the Applicants are going to have to comply with the permits and the BMPs.
A. (Taylor) That's correct.
Q. So if the Applicant does in fact do what they're supposed to do and complies with those permits, then we can agree that erosion would be adequately controlled.
A. (Taylor) That's what I would expect.
Q. Okay. Let me ask you about access roads, Mr. Taylor. On Page 2, Lines 22 through 24, you said at the time you filed this testimony that you couldn't evaluate, fully evaluate access roads. Do you recall that?
A. (Taylor) I do.
Q. And that was in November of 2016; correct?
A. (Taylor) Correct.
Q. And DES has now issued specific permit approvals with conditions that directly address access roads; is that right?
A. (Taylor) That's my understanding.
Q. And I take it you've had an opportunity to

review all those conditions as they relate to access roads?
A. (Taylor) I've read a number of documents. I don't recall all the conditions as I sit here.
Q. Well, I want to call your attention to Wetland Permit Condition No. 37, which requires that all temporary access roads installed along the 192-mile project not otherwise authorized by DES shall be removed and areas shall be restored to their pre-construction condition upon completion. Do you recall that condition?
A. (Taylor) Generally speaking, yes.
Q. And would you agree with me that if all the temporary roads are restored, except for those otherwise authorized, that those impacts would only be temporary?
A. (Taylor) It's highly likely that they would temporary.
Q. And you're aware that, unless identified as permanent, the Applicant actually has committed to restoring all those temporary roads; is that right?

A. (Taylor) That's my understanding.
Q. I also want to call your attention to Alteration of Terrain Permit Condition No. 9. The permittee in this case is required by DES to identify off-right-of-way access roads not currently identified for review prior to their construction if DES permit requirements are triggered. Do you recall that condition?
A. (Taylor) Generally speaking.
Q. As part of the Application for a Certificate of Site and Facility, were you aware that Applicants have requested that the SEC delegate authority to DES for the review and approval of additional temporary access rights-of-way, to the extent they're necessary?
A. (Taylor) Yes, I believe we mentioned that in our report.
Q. And the Applicants requested the same delegation for DES approval of permanent roads; is that right?
A. (Taylor) That's correct.
Q. I think you were asked questions about laydown and staging areas. I want to talk

about that for a minute. You address those in your prefiled testimony at Pages 4 and 5. Like access roads, you said you were unable to fully assess the impacts of these areas; is that correct?

A. (Taylor) That's correct.

Q. Is it your understanding that all of these areas will be previously disturbed sites?

A. (Taylor) I recall testimony to that effect, but I don't recall seeing where the locations are, so I can't confirm that that will be the case.

Q. And I think you told me at the tech session that in previous projects you had worked on elsewhere, you didn't necessarily know where all the laydown and staging areas were at that point in the process; is that correct?

A. (Taylor) Correct.

Q. I want to call your attention to DES Wetland Permit Condition No. 22. That condition specifically requires DES to review and approve additional laydown areas. Do you recall that?

A. (Taylor) General speaking.

Q. So, to the extent that they haven't already been identified, the Applicants have asked the SEC to delegate review and approval to DES; correct?
A. (Taylor) That's my understanding.
Q. Are you aware that in another recent transmission line project, the Merrimack Valley Reliability Project, the Applicants in that case requested and received the same type of delegation?
A. (Taylor) I was not aware of that.
Q. So if such areas are previously disturbed, have no archeological sensitivity, and are permitted and approved as necessary by DES, I assume that would address your concerns about impacts in these areas?
A. (Taylor) Not necessarily. Our charge at this point is to review impacts as we understand them to the Application. By default, if that approval was deferred, and even if those conditions were met, not knowing where that site is located, we wouldn't be able to advise the SEC on what the potential impacts are.

Q. Do you have concerns about the ability of the Department of Environmental Services to adequately evaluate those impacts like they were charged to do in the Merrimack Valley project?
A. (Taylor) No, I don't.
Q. And with respect to traffic impacts in those areas, if any traffic associated with those areas was included in a Traffic Management Plan that had to be approved by the New Hampshire Department of Transportation, would that satisfy concerns of yours?
A. (Taylor) Again, I would say the same thing applies. Our charge is to identify what the impacts are at this point. A Traffic Management Plan that we haven't seen, that would potentially be approved at a later date, even though it's approved by DOT or others, still would preclude us from indicating what potential impacts would be available.
Q. And I take it you would have no concerns about DOT's ability to assess and approve those impacts?

A. (Taylor) No, I wouldn't.
Q. You're aware that the Project is going to submit for approval a Traffic Management Plan to DOT; correct?
A. (Taylor) Correct.
Q. And I think you're probably also aware that traffic control plans have already been submitted?
A. (Taylor) That's my understanding.
Q. And is it your understanding DOT is going to work with the Applicant to finalize those plans?
A. (Taylor) I believe that's what's been testified by the Applicant.
Q. And my understanding is that you haven't identified any concerns about the management of traffic for this project that you don't believe can be adequately addressed by the DOT permitting process; is that right?
A. (Taylor) I don't think we've made that statement.
Q. Do you believe there are any traffic concerns that cannot been adequately addressed by the DOT permitting process?

A. (Taylor) I don't know what may be put before them.
Q. As you sit here today, can you think of any?
A. (Taylor) Not as I sit here, no.
Q. Okay. In your prefiled testimony, you talk about concerns related to potential road damage. Do you recall that?
A. (Taylor) I do.
Q. And I think you told me at the technical session that any construction project has the potential to damage roads; is that right?
A. (Taylor) That's correct.
Q. And I take it you're aware of the fact that the Applicants have committed to restoring roads to their pre-construction status or better in their prefiled testimony?
A. (Taylor) That's correct.
Q. And I take it you're also aware that the Applicants reaffirmed that commitment under cross-examination during the course of these proceedings?
A. (Taylor) Yes, I'm aware.
Q. And you were asked a little bit yesterday about MOUs. I don't know whether you've had

the opportunity to look at any of the executed MOUs. But are you aware that the Applicant in those circumstances has also made commitments about of road repair and restoration?

A. (Taylor) I recall some testimony.

Q. You were asked about construction noise. And there is some information in your testimony, Mr. Taylor, your prefiled testimony on Page 6, about construction noise. When you were doing your work for this project or at any time afterward, did you review the draft or the final Environmental Impact Statement?

A. (Taylor) As it relates to?

Q. Northern Pass.

A. (Taylor) As it relates to the noise impact?

Q. Yes.

A. (Taylor) Yes, I recall some documents related to that.

Q. Did you have an opportunity to read what the final Environmental Impact Statement said about construction noise?

A. (Taylor) I'm sure I did. I don't recall it as I sit here.

Q. And actually, these may be better questions for Mr. Zysk. I recall you speaking about noise. But either one of you can answer.

In the final Environmental Impact Statement, on Page 2-67, it found that all construction activities would be short-term and that Applicant-proposed measures would be expected to keep noise below U.S. Department of Transportation guidelines. Were you familiar with that conclusion?

A. (Zysk) Generally, yes.

Q. Do you disagree with it?

A. (Zysk) In general, no.

Q. And also in the final Environmental Impact Statement, on Page 4-56, it concluded, quote, "With the application of APMs" -- which are Applicant-proposed measures -- "such as the implementation of a blasting plan, coordination with community officials, and utilization of the construction equipment manufacturer stock sound-muffling devices, the noise levels would be expected to fall below U.S. DOT guidelines." Were you familiar with that conclusion?

A. (Zysk) Generally, yes.
Q. Do you agree with it?
A. (Zysk) There's a lot of "ifs" in there. If they were all actually incorporated, then I'm sure it's fine.
Q. Did you have an opportunity to review Doug Bell's conclusions regarding construction noise?
A. (Zysk) I did not.
Q. And you haven't done any of your own sound-specific analysis for this project, have you?
A. (Zysk) That was not part of our scope.
Q. And is it correct that all of the construction equipment that's going to be used here and the noise produced by that equipment is fairly typical for construction projects of this nature?
A. (Taylor) I would say yes.
A. (Zysk) Yeah, in general.
Q. Are any of you aware that one of Counsel for the Public's witnesses, their visual witness, suggested that the use of, quote, "paint or product such as Natina steel should be

considered at specific locations"? Did any of you know that?
A. (Zysk) I have not reviewed documentation from other Counsel for the Public witnesses in general.
Q. Mr. Taylor?
A. (Taylor) I'm not aware of that, no.
Q. Have either of you heard of a Natina finish?
A. (Zysk) Not specifically, but I'm aware of paint.
Q. Mr. Taylor?
A. (Taylor) No.
Q. Were you aware that when the Applicant's witness, Ken Bowes, put in his supplemental prefiled testimony, he did speak about this issue of Natina finish?
A. (Taylor) I don't recall it specifically as I sit here, no.
Q. All right. So then, not having recalled it, you would have no basis to opine one way or the other on what Mr. Bowes's opinions were regarding Natina finish.
A. (Taylor) That's correct.
Q. Have either of you ever had experience with

Natina finish in the northeast United States?
A. (Taylor) I have not.
A. (Zysk) Not being overly familiar with it, I can't say "Yes" or "No."
Q. Okay. I want to turn now to your underground testimony. You filed a separate set of prefiled testimony on December 30th that related just to the underground portion of the Project. Do you recall that?
A. (Taylor) I do.
Q. All right. And those were CFP Exhibits 130 and 132. And as described in Exhibit 130, the purpose of that testimony was to address, quote, "short-term and long-term impacts on New Hampshire's communities and natural resources from the construction and maintenance of the underground portion of the proposed Northern Pass Project." Sound right?
A. (Taylor) It does.
Q. And at the technical session you told me that you weren't offering an opinion about whether of any of these impacts were unreasonable; is that correct?

A. (Taylor) That's correct.
Q. And same question for the underground portion as the overhead portion: You aren't offering any opinions here as to whether the Applicants have the technical or managerial capability to construct and operate; is that correct?
A. (Taylor) That's correct.
Q. On Page 2, Lines 4 through 21 of that prefiled testimony, Mr. Taylor, you discuss impacts of the Project from underground construction. And at the tech session you stated that many of these construction impacts are consistent with what you've seen in other projects; is that right?
A. (Taylor) That's correct.
Q. And one of the things that you note in your list is the possible need for temporary easements. Do you recall that?
A. (Taylor) I do.
Q. And I take it that you're aware that it's the Applicant's position that it does not need any temporary easements to accomplish this construction?

A. (Taylor) That's my understanding.
Q. And did you have the opportunity to review the draft DOT -- or the DOT permit that was issued in this matter?
A. (Taylor) I believe I've reviewed that document, yes.
Q. So I want to remind you of Condition 10 in that DOT permit, which only granted approval for work to be done in the right-of-way. And DOT said, quote, "The Department cannot and does not grant permission to enter upon or use any privately-owned land," close quote. Do you remember that?
A. (Taylor) Sounds familiar.
Q. And are you aware that the Applicants did not seek an exception to that requirement?
A. (Taylor) I'll accept that as true.
Q. So if that's the case, is it fair to say that the Applicants fully intend to comply with that requirement?
A. (Taylor) I can't speak for the Applicants.
Q. Are you familiar with the use of bentonite slurry?
A. (Taylor) Generally at a high level.

Q. How about you, Mr. Zysk?
A. (Zysk) Yes.
Q. This may be a place for you to chime in, too, Mr. Bascom. We'll see. I'll ask you some questions later about it.
It's a naturally-occurring clay; is that right?
A. (Zysk) Yes.
Q. And it's fair to say that it's commonly used in drilling applications, like water wells and HDDs that we've heard so much about here?
A. (Zysk) Yes, it is.
Q. In fact, Dewberry has used bentonite slurry on its projects; right?
A. (Zysk) Yes, we have.
Q. So I want to call up Applicant's 364. This is an article that we took off the Dewberry web page. Are either of you familiar with this article?
A. (Taylor) I am not.
A. (Zysk) Not specifically.
Q. This is talking about the drilling of a 2500-foot water main project 12 feet below a 6-lane interstate highway project. Do you

see that description?
A. (Zysk) Yes.
Q. And it says there at the end of that first paragraph that it was 7 feet below an unusually high water table and through extremely unstable geotechnical conditions, all without the use of excavation. Do you see that?
A. (Zysk) Yes.
Q. I'll give you a chance to glance at the rest of this, but then I want to move to the paragraph below it. Just let me know when you're ready.
MR. PAPPAS: Mr. Chairman, while they're reading that, I have an objection. I don't believe in their testimony they talked about bentonite, and I don't believe it has come up with this panel. So I think it's outside the scope of direct and therefore outside the scope of cross.
CHAIRMAN HONIGBERG: Mr. Needleman.
MR. NEEDLEMAN: We've heard extensively about the use of bentonite slurry

and drilling muds in this project. We've heard extensively about HDDs. This panel is being offered specifically to talk about HDDs, and I think we've heard it's not possible to do an HDD without some sort of lubricant, which is typically bentonite slurry. So I can't imagine that they couldn't speak to this.

CHAIRMAN HONIGBERG: Overruled. They can answer.

BY MR. NEEDLEMAN:

Q. Have you had a chance to look at the rest of this?

A. (Zysk) Yes.

MR. NEEDLEMAN: Let me flip then, Dawn, to the next line down.

BY MR. NEEDLEMAN:

Q. It says as the machine made its way under the interstate, slurry had to constantly be pumped to its head in order to match the pressure exerted by the soil and the water from above. Do you see that?

A. (Zysk) Yes.

Q. My question is pretty straightforward here. This sounds to me like your firm touting its

success using bentonite slurry in a long directional drill in a very unstable environment; correct?

A. (Zysk) I would agree with that.

Q. Are you aware of any environments along the Northern Pass route, based on the information available to you, that are as unstable as the environment described in this article?

A. (Zysk) Not specifically along the entire route.

Q. So would it be fair to conclude that, if a firm like Dewberry was capable of successfully accomplishing a directional drill with the use of bentonite slurry in an unstable environment like this, that the Applicant would be capable of successfully accomplishing its drills in more stable environments?

MR. PAPPAS: Objection. Calls for speculation.

CHAIRMAN HONIGBERG: Mr. Needleman.

MR. NEEDLEMAN: I'm not sure there's anything speculative about it. Again,

we're talking about directional drills, and this clearly shows what they were capable of doing in a difficult environment.

CHAIRMAN HONIGBERG: Overruled. You can answer.

A. (Zysk) I can only speak for Dewberry, that we were successful with this project. Whether the Applicant is or will be, I cannot say.

Q. Okay. Let me call up Applicants 159.

Mr. Zysk, we've heard about fluidized thermal backfill. And I believe it's discussed in your prefiled testimony in Exhibit 133; is that correct?

A. (Zysk) I believe so, yes.

Q. I don't know whether you've had -- this was an exhibit introduced earlier. It's the American Association of State and Highway Transportation Officials document on the use of fly ash. Have you ever seen this document before?

A. (Zysk) I have not.

Q. It talks about 46 state DOTs using fly ash as part of fluidized thermal backfill. Does that number surprise you?

A. (Zysk) No.
Q. Would you agree with me that the use of FTB is standard for highway construction projects in the United States?
A. (Zysk) It's a regularly used product. It's not often used in highway construction. It's more common to utility construction, based on my experience.
Q. And I assume that you've been involved with projects that have also used FTB; is that right?
A. (Zysk) I have.
Q. In your prefiled testimony, you discuss heat dissipation with respect to FTB; is that right?
A. (Zysk) I believe so, yes.
Q. On Page 2, Line 21, you found that with respect to FTB, it is, quote, "reasonably unlikely that the heat output of the cables will create substantial, long-term damage to the roadway pavement structure of Tier 2, 3 and 4 highways"; is that right?
A. (Zysk) Yes.
Q. And are you aware that the Applicants have

conducted field tests of FTB?
A. (Zysk) With regards to what?
Q. With regards to the use of the material on this project.
A. (Zysk) I understand there have been some tests done. I have not seen the reports or the results of those tests.
Q. Were you aware that on June 19th of this year, the Department of Transportation approved the use of FTB for this project, subject to certain conditions?
A. (Zysk) I am aware of that, yes.
Q. And I think you said earlier that, with respect to use in this project, you have no concerns about FTB; is that right?
A. (Zysk) For the application for which it's proposed, I do not have any objections.
Q. Okay. Mr. Pappas yesterday was asking you some questions about work zones as they relate to HDD areas. And I think his questions were premised on a generic work zone 30 feet wide and 300 feet long. Do you recall some of those questions?
A. (Taylor) I do.

Q. And I think it was you, Mr. Taylor, that said you thought several road closures associated with particular exception requests, like 180, 182 and 184, might be necessary in places like Bear Rock Road, for example. Do you recall that?
A. (Taylor) I do.
Q. And Mr. Pappas, I think, asked you to review Applicant's Exhibit 227, which is a diagram of HDD construction methods that was presented to the New Hampshire DOT. Do you recall that?
A. (Taylor) I recall the exhibit.
Q. And that exhibit included material about the Applicant's ability to customize the size of these HDD work zones. Do you recall seeing that when you reviewed the exhibit?
A. (Taylor) I do.
Q. And you're aware that the Applicants have stated that they can reduce the width of these HDD work zones to accommodate tighter spaces like Bear Rock Road?
A. (Taylor) Yes, I'm aware of that.
Q. And are you aware that the Applicants have

testified about being able to utilize, quote, "in-line construction methods" in places like that?

A. (Taylor) Yes, I am.

MR. NEEDLEMAN: So I want to call up Applicant's 227. And Dawn, if you could put up Page 83364.

BY MR. NEEDLEMAN:

Q. So when we talk about in-line HDD drilling, these photographs are representative of that approach; is that right?

A. (Taylor) I would agree.

Q. And my understanding is that what these photographs represent is maybe a slightly less typical orientation of the drilling equipment, so it's all in a continuous straight line to accommodate a narrow area; is that right?

A. (Taylor) I would agree.

Q. And so are you aware that if the Applicant used this type of in-line construction in places like Bear Rock Road, it's the Applicant's position that it wouldn't have to close the road?

A. (Bascom) I think we're aware of that statement and understanding. On Applicant's Page 83361 there's an illustration of the in-line configuration I think you're referencing.
Q. Hmm-hmm.
A. (Bascom) I wonder if we maybe could take a look at that as well?
Q. Sure.
MR. NEEDLEMAN: Dawn, want to go to 83361?
A. (Bascom) Now, this configuration does appear to use more than one lane width, if I'm interpreting it correctly. It also does not appear to show the movement of equipment in that configuration. It's a static figure, obviously, where you'd be swinging cranes or manipulating a drill stem, for example, to do directional drilling, which would potentially extend beyond the limits of a traffic lane.
Q. And what's the label on this page, Mr. Bascom? What's it called?
A. (Bascom) "Typical HDD work zone."
Q. Right. So this would not be an example of

the customized work zone I was talking about a moment ago; correct?

A. (Bascom) It is correct, but it does not illustrate an example of the customized work zone that is referenced.

Q. It illustrates one example; right?

A. (Bascom) Well, if this is typical, then it wouldn't be an in-line work zone, is my understanding.

Q. So is it your testimony that it would not be possible for the Applicant to utilize an in-line HDD work zone occupying a single lane?

A. (Bascom) If the movement of equipment is going to extend beyond the single lane, I would represent that it may not be an accurate depiction.

Q. And are you aware that it remains the Applicant's position today that it will be able to use that approach on Bear Rock Road and the other roads that were mentioned yesterday so that it will not close any of those roads?

A. (Bascom) I'm aware that's your position, yes.

Q. Okay. We also looked at work zones, and one in particular was a sample zone that was 30 feet by 300 feet long. Am I correct, Mr. Taylor, that an entire work zone won't necessarily be occupied all of the time or necessarily have activity occurring in it all of the time?

A. (Taylor) That's possible.

Q. In fact, isn't it true that, just like with the construction pad areas in the overhead section of the Project, the Applicant has over-permitted these work zones, so the whole zone may not even be used at all?

A. (Taylor) I'm not aware that that's the case.

MR. NEEDLEMAN: Let me call up again Applicant's Exhibit 227. And Dawn, let's go to Page 83369.

BY MR. NEEDLEMAN:

Q. So I want you to look at that picture there for a minute. Do you note all the plating in the distance?

A. (Taylor) I see the plating.

Q. And you see that there's a driveway with the plating in front of it?

A. (Taylor) Yes.
Q. And the driveway is not blocked; is that correct?
A. (Taylor) It does not appear to be blocked.
Q. And the caption says, "Driveways: Use steel plates to allow pipe to be pulled under without disrupting traffic"; is that right?
A. (Taylor) That is what it states.
Q. So were you familiar with the fact that pipe can be pulled under and through conduit with the steel plating remaining in place?
A. (Taylor) Yes.
Q. So am I correct, then, just because a plan shows a work zone in front of a driveway for four to six weeks, it doesn't mean that the homeowner will not have access? Is that correct?
A. (Taylor) That's correct.
Q. In fact --
A. (Bascom) Sir, there would be potential interruptions because the initial trench has to be excavated before the plates can be installed. So there would be interruptions from time to time.

Q. Sure. So there would be that short-term period of time; is that correct?
A. (Bascom) There would be an interruption. I'm not sure of the duration.
Q. So, Mr. Bascom, were you aware of the fact that the Applicant has committed to giving homeowners access to their driveways at all times?
A. (Bascom) I'm aware that that has been described, yes.
Q. And this issue was also raised with respect to access to businesses. And are you aware that the Applicant has made a commitment to ensure access to businesses in the same manner?
A. (Bascom) I'm aware of that.
A. (Zysk) I wanted to touch on one point. You first started with a 30-by-300-foot work zone. And based on my understanding of the way the HDD processes work, once that equipment is moved in place, that work zone will probably, likely be active or in use the whole time. And to move some of that equipment around is time-consuming. So

unless it was set up the first time around to allow access to occur, then there's a good chance that access would not be available in the 300-foot work zones where the drilling originates from. What you're talking about in this picture that you brought up is the other side where the pull-back occurs. That's a different story.

Q. And Mr. Zysk, have you done any analysis to determine whether there are HDD drill areas in front of those locations that would block access in the manner you're talking about?

A. (Zysk) I believe we noted several yesterday.

Q. And are you familiar with the fact that DOT, when those types of conditions have been encountered, has denied exceptions in some circumstances and required the Applicant to reconfigure the work zone to ensure access?

A. (Zysk) I have not seen any wording regarding configuration of work zones. I've seen wording regarding locations of entry and exit pits.

A. (Bascom) Our understanding is that any exceptions that were rejected were also

withdrawn, so the ultimate outcome of each of those is not yet determined.

Q. Let me ask you a little bit more about plating.

Yesterday, Mr. Thompson went through an exercise where he asked you to envision putting -- lifting up the plating in the morning and then putting it down at the end of the day, and he envisioned about 45 minutes for each exercise. Do you recall that?

A. (Zysk) I do.

Q. Is it your understanding that DOT has now allowed the use of plating?

A. (Zysk) Yes, they have.

Q. Were you aware of the fact that, prior to the use of plating, DOT's default position on the trenching was that it would need to be filled every day and then dug out the next day?

A. (Zysk) I was not specifically aware of that, but I have seen that requirement in other circumstances.

Q. So that's actually not an uncommon requirement, is it?

A. (Zysk) That's correct.
Q. And by DOT approving the use of plating, in fact, would you agree with me that it's going to dramatically speed up construction because they're not going to have to fill in and dig out the trench?
A. (Zysk) I don't know that I'd use the word "dramatically." It would increase -- it would allow a little bit faster productivity, yes.
A. (Bascom) I think the main modification to using steel plating is it allows the construction company to have more trench open at a given time, but not necessarily accelerate the construction process.
Q. Mr. Pappas asked you yesterday about Transition Station No. 4. And I believe you stated that you had estimated about 75,000 cubic yards of material would need to be removed from that station; is that right?
A. (Taylor) That's correct.
Q. And are you aware of the fact that the Applicants calculated that approximately 30,000 cubic yards of ledge would have to be

removed from that area?
A. (Taylor) I recall that testimony.
Q. So when you say 75,000 cubic yards of material, are you accounting for about 30,000 yards of ledge and about 45,000 yards of overburden? Did you distinguish in that manner?
A. (Taylor) We didn't distinguish. It's simply a gross volume of material.
Q. Okay. And I think you said that it would take up to 7500 trucks to remove that amount?
A. (Taylor) That's correct.
Q. And I assume that that's premised on each truck carrying 10 tons of material?
A. (Taylor) No. Approximately 10 cubic yards on average of material.
Q. I'm sorry, 10 cubic yards of material. That's the premise.
A. (Taylor) That's correct.
Q. Were you aware that Mr. Johnson testified that overburden from the site might be moved to uplands on the same site?
A. (Taylor) I don't recall that, but I'll accept it.

Q. So if that were the case, then that would reduce the amount of material that needed to be trucked off the site; is that right?
A. (Taylor) Yes. However, I'll point out that the limit of disturbance shown on the documents that we were able to review do not show a spoil location.
Q. Are you aware that the area of disturbance on that site is between three and four acres?
A. (Taylor) That sounds about right.
Q. And are you aware that the total site that the Applicant owns is in the neighborhood of 50 acres?
A. (Taylor) I'm not aware of their land, the land that they own.
Q. Were you aware that the Applicant also owns an adjacent site that's 170 acres?
A. (Taylor) I don't recall that, no.
Q. So it's certainly reasonable to conclude that they could dispose of some of those materials on the site or the adjacent site?
A. (Taylor) That's possible.
Q. And that would limit or reduce the number of truckloads that you calculated?

A. (Taylor) No. The truckload amount would stay the same. That volume is what needs to be removed from the LOD of the transition station so that it can be constructed for the plans that we reviewed.
Q. Understood it would stay the same. But trucks would be moving on site or to an adjacent site and not to a remote location over the local roads; is that correct?
A. (Taylor) Under this scenario, that's correct.
Q. And I think you said the capacity is, the capacity of the trucks is 10 to 15 cubic yards; is that right?
A. (Taylor) We assumed an average of 10 cubic yards.
Q. But you can use trucks up to 15 cubic yards; is that right?
A. (Taylor) That's my understanding, yeah.
Q. And the ability of the truck to carry an amount depends on the configuration of the material. So, loose rock, there may be more space left in the truck; whereas, consolidated overburden, all the space could be filled. Is that right?

A. (Taylor) I'll accept that.
Q. So it's somewhere between 10 and 15 yards per truckload; is that right?
A. (Taylor) If you're using the larger trucks, that could be the case.
Q. So, given all of these factors, Mr. Johnson, in his testimony, said that he expected it was more in the neighborhood of 5,000 truckloads that would need to be moved offsite. Is that a reasonable estimate in your view?
A. (Taylor) Those aren't the numbers that we came up with. Again, we had calculated around 75,000 gross yards needed to be removed, and our assessment was, on average, about 10 cubic yards per truckload.
Q. Mr. Zysk, yesterday Attorney Pacik was asking you questions about MOUs that have been executed between the Applicants and host communities. Do you recall that?
A. (Zysk) I do.
MR. NEEDLEMAN: Could we put up Applicant's 208, please.
BY MR. NEEDLEMAN:

Q. This is the executed MOU with the Town of Thornton. Did you say you had had an opportunity to look at this?
A. (Zysk) I had not.
MR. NEEDLEMAN: All right. Dawn, if you could blow up the fourth, fifth and sixth "Whereas" clauses.
BY MR. NEEDLEMAN:
Q. So I'd ask you, Mr. Zysk, to take a moment to look at this. That first clause talks about the Town and NPT desiring to construct the project in a particular manner and avoid, minimize and mitigate impacts; correct?
A. (Zysk) That's what it says, yes.
Q. Second clause says, "Whereas, it is in the best interest of the Town and NPT to maintain an open line of communications regarding the construction of the Project in order to achieve common goals and establish consistent practices in furtherance of such goals"; correct?
A. (Zysk) Yes.
Q. And then the next "Whereas" clause says that the Town desires that NPT comply with the

following provisions regarding construction and operation of the Project facilities. Do you see that?

A. (Zysk) I do.

Q. Am I correct that in the course of the work that you do, you've encountered situations where clients you work for have tried to work out similar types of agreements with communities that you're working in?

A. (Zysk) I've had a few of these, not a lot.

Q. Do you think that the Project working with towns to reach agreements like this is a good thing?

A. (Zysk) Absolutely.

Q. And is that because, to the extent possible, it's beneficial to resolve issues to the mutual satisfaction of both parties?

A. (Zysk) Yes.

Q. Do you believe that the town officials negotiating these MOUs have the best interest of their citizens in mind?

A. (Zysk) I have no idea.

Q. Do you think that towns are competent to assess what's important to them?

A. (Zysk) I have no idea.

MS. PACIK: I'm going to object. Sorry. Over here. It calls for speculation. He's asking the witness to assume what officials are thinking and what they're doing, and I don't think there's any basis for the witness to opine on that.

CHAIRMAN HONIGBERG: Mr. Needleman.

MR. NEEDLEMAN: I don't think there's anything speculative about it. He's testified that he's had some experience, and he was capable of answering extensive questions yesterday about these MOUs.

CHAIRMAN HONIGBERG: Overruled. You can answer.

A. (Zysk) I'm not familiar with the capabilities of the individual municipalities in this situation, of their ability to assess or not assess.

BY MR. NEEDLEMAN:

Q. You'd certainly disagree with me that, if they choose to, a town could consult counsel and members of its communities to ascertain

whether their interests are being sufficiently protected?

A. (Zysk) They certainly could do that.

Q. And you understand that each town is free to enter into an MOU or not with Northern Pass; it's entirely their choice?

A. (Zysk) That's my understanding, yes.

Q. And you understand if a town and the Project can't agree on terms, the town doesn't have to sign anything; right?

A. (Zysk) I'm unfamiliar with what the agreement is, whether they're verbal or written otherwise.

Q. Would it surprise you to learn that several towns have decided not to pursue MOUs with the Project?

A. (Zysk) I'm not surprised. Not at all.

MR. NEEDLEMAN: Dawn, can you go to the final page of this document?

BY MR. NEEDLEMAN:

Q. So this is the signature box for this MOU. It's signed by John Paul Hilliard, as chair. I assume that's chair of the Board of Selectmen of the Town of Thornton. Do you

see that?
A. (Zysk) I do.
Q. When Ms. Pacik asked you yesterday if these MOUs addressed your concerns and you said no, just to be clear, you're not trying to substitute your judgment for the judgment of Mr. Paul Hilliard in Thornton on issues like this; is that correct?
A. (Zysk) I'm not.
Q. And you're also not trying to substitute your judgment for any other town or entity that signs an MOU with the Project; is that correct?
A. (Zysk) I am not.
Q. Yesterday, when Mr. Thompson was questioning all of you, he asked you about cranes and lifts associated with the splice vaults. Do you recall that?
A. (Zysk) We do.
Q. And Mr. Thompson had a drawing that illustrated a vault, a crane and then the hole all in line with each other. Do you recall that?
A. (Zysk) Correct.

Q. And he envisioned a situation where the crane would lift the vault, swing it around 180 degrees and then drop it into the receiving hole. Do you recall that?
A. (Zysk) I do.
Q. All right. Are you aware that the Project is not necessarily intending to move splice vaults as single entities, but actually to do it in pieces?
A. (Zysk) I understood that's a possibility.
Q. So, to the extent that they were doing that, that would affect the lifts and the size of the cranes; is that correct?
A. (Zysk) Without seeing any details of the vaults, I could not say.
A. (Bascom) Mr. Needleman, could we take a look at Applicant 227, Page 83375?
Q. I'm not sure what it is, but we can pull it up.

MR. NEEDLEMAN: Dawn.

MS. GAGNON: What page number?

MR. NEEDLEMAN: That's the DOT provision.

WITNESS BASCOM: 83375.

BY MR. NEEDLEMAN:
Q. Okay.
A. (Bascom) The photo on the right appears to illustrate a crane consistent with the one that was being offered by Mr. Johnson [sic] yesterday, and it does appear to show the placement of half of a vault. And behind the crane it looks like there's a truck that is being used to perhaps deliver the vault.
Q. Yup. So that --
A. (Bascom) So if that's being offered as representative of what Northern Pass is intending to do, that would be the basis for assessing that that is the approach that might be used.
Q. So let's keep that up there. That's helpful, actually. So that's certainly one approach, right, as Mr. Thompson described, swinging it around; correct?
A. (Bascom) Yes, as I understand it.
Q. Are you any of you familiar another approach where the crane would be located as in that picture, the hole would be located where it is, and then the splice vault would be

located in-line on the other side of the hole? Have any of you seen that done before?

A. (Bascom) It's possible. But I believe this crane also represents the size of the outriggers and the amount of swing that the crane would be required to maintain to move the vault in that space. And I think perhaps --

Q. Understood. But it's clear that this is simply meant to be a representative example and not the actual and only way that they're going to do this; correct?

A. (Bascom) It was presented as evidence of the approach that might be used, so I assumed it might be appropriate for what the Applicant is intending to do.

Q. Are you aware, Mr. Bascom, that the Applicant actually is intending to use the in-line approach I just described, where the vault is on the other side of the hole and it's lifted and put in without swinging the crane around?

A. (Bascom) I didn't see an illustration that demonstrated that configuration with the large crane setting a vault.

Q. And there's another configuration where you could pull the vault up next to the hole, lift it off of a truck and put it into the hole; is that correct?
A. (Bascom) As I understand it, that would also block a lane of traffic, though, which is what the Applicant has indicated would not happen.
Q. Well, it would block the lane of traffic for some short period of time, whatever it took to move that into the hole; is that correct?
A. (Bascom) From my experience, when they're setting a vault of this size, the setup time and configuration can be a full work shift. So that would be longer than a short period of time. But I'm not sure what you're referencing in terms of "short period of time."
Q. So we do agree, though, that with respect to the way Mr. Thompson described how those vaults would be moved, that was not the only way it could be done; right?
A. (Bascom) I agree it's not the only way it could be moved.

Q. Okay. Mr. Bascom, you performed an electrical assessment of the Project; is that right?
A. (Bascom) Yes.
Q. And you generally offered an opinion as to whether the Project as designed is electrically feasible; is that right?
A. (Bascom) Yes.
Q. And your testimony, which is CFP Exhibit 135, on Page 2, Lines 24 to 29, your opinion is that generally as proposed, the Project is feasible; is that correct?
A. (Bascom) From an electrical design and capacity limit, yes.
Q. And on Page 1, Line 28, and over to Page 2, you also discuss the general design of the underground section of the Project, including trenchless methods to install the transmission line underneath rivers, bridges and other areas along the route; is that right?
A. (Bascom) Yes.
Q. My understanding is that you were not present when the construction panel, Northern Pass

construction panel, testified at any point; is that right?

A. (Bascom) I was not present during the testifying. I was present during the information session.

Q. Did you have the opportunity to read all of the transcripts with respect to their testimony?

A. (Bascom) I did familiarize myself with the transcripts.

Q. Okay. On Page 3, Line 12 of your testimony, you discuss certain route constraints in the underground section. Do you recall that?

(Witness reviews document.)

A. (Bascom) I recall that, yes.

Q. And then you discussed specific constraints along the Project route in more depth in your report starting on Page 23. Do you recall that?

A. (Bascom) Yes.

Q. And on Page 23, you specifically conclude, quote, "Electrically, there do not appear to be any technical issues that would prohibit the installation of the cable system." Is

that correct?
A. (Bascom) Yes.
Q. So, assuming the Applicants carefully manage the construction of the Project, including construction equipment, access, laydown areas and material delivery, I take it you have no reason to conclude that the Applicants can't construct the Project safely and as proposed; is that right?
A. (Bascom) I agree, yes.
Q. And then on Page 3, Line 12 of your testimony, Mr. Bascom, you raised four issues related to construction. Do you recall that?
A. (Bascom) I do.
Q. Just quickly, one was unrealistic rates of construction due to subsurface ground material; the second was unrealistic rates of construction due to traffic control and ability to maintain various kinds of access; the third was potential impacts to business and residents in areas with limited parking; and the fourth was routing options appear to offer limited ability to remain in the public rights-of-way and still perform the civil

work; correct?
A. (Bascom) Yes, that's my conclusion.
Q. I want to look at each of those quickly.
With respect to construction rates and subsurface materials, I think you confirmed for me at the tech session that you didn't prepare any specific construction rate calculations; is that right?
A. (Bascom) I did not. My assertion was based upon anecdotal information from projects that I've been involved with.
Q. And you also didn't calculate any specific construction rates for particular locations along the Project route; is that right?
A. (Bascom) I did not.
Q. So I think, as you said, you're just relying on your general experience; is that correct?
A. (Bascom) That's correct.
Q. With respect to the second category, construction rates due to traffic, you reference on Page 3, Line 19, that there may be unrealistic rates of construction due to traffic issues; right?
A. (Bascom) Yes.

Q. Now, you're not a traffic engineer; is that correct?
A. (Bascom) I am not.
Q. And my understanding is you don't have any experience dealing with the creation of traffic control plans; is that right?
A. (Bascom) I do not, other than to give input to experts in those areas.
Q. Did you assess the traffic control counts that Ms. Frazier reviewed in this matter?
A. (Bascom) I did not.
Q. And you haven't done any specific analysis of this particular project in relation to those types of issues; is that right?
A. (Bascom) That's correct. I have not.
Q. So again, this is just a general observation about an issue that could arise if traffic is not effectively managed; is that right?
A. (Bascom) Yes.
Q. Also related to traffic, you raised concerns about access to emergency services in several places in your report. Do you recall that?
A. (Bascom) Yes.
Q. And did you have the opportunity to review

Lynn Farrington's, now Lynn Frazier's, supplemental prefiled testimony on these issues?

A. (Bascom) I did not.

Q. So you weren't aware that she actually spoke to those specific issues?

A. (Bascom) I did not -- I'm not aware of that.

Q. And I guess you probably also weren't aware that when she was here, she testified about these issues?

A. (Bascom) That's correct.

Q. Your third category was impacts to businesses and residents. That was on Page 3, Lines 23 and 24. And again, my understanding is that you're relying simply on past observations when discussing these types of impacts; is that correct?

A. (Bascom) Yes.

Q. You didn't do any type of specific studies.

A. (Bascom) No, I did not.

Q. You don't have specific experience designing or implementing methods to mitigate such impacts; is that right?

A. (Bascom) I've provided input in design

studies, but nothing I think the way you're referencing.

Q. And then that final category was work areas and private property. And on Page 3, Line 25, you said, quote, "Some routing options appear to offer limited ability to remain in the public rights-of-way and still perform the civil work." Do you recall that?

A. (Bascom) Yes.

Q. And you haven't identified any specific areas where the Applicants can't stay in the right-of-way; is that correct?

A. (Bascom) That's true.

Q. And you heard earlier and understand that the DOT permit requires the Applicants to stay within the right-of-way; is that correct?

A. (Bascom) That's my understanding.

Q. And you understand the Applicant isn't seeking any exceptions to that; is that right?

A. (Bascom) I understand that any exceptions that haven't been resolved have been withdrawn.

Q. We discussed earlier that your main objective

in reviewing the Application was to determine electrical feasibility; right?
A. (Bascom) Yes.
Q. And you evaluated the rating of the proposed underground cable to be used?
A. (Bascom) Yes.
Q. And in your report on Page 22, you said, "Based on this evaluation, there appears to be viable cable sizes available to meet, in general, the stated power transfer requirements listed in documents provided by the Applicants"; is that correct?
A. (Bascom) Yes.
Q. And you also evaluated the physical cable installation criteria; is that right?
A. (Bascom) Yes.
Q. And on Page 22 you said, quote, "No damage to the cable would be anticipated based on the Applicant's drawings"; correct?
A. (Bascom) Yes, that's correct.
Q. And then you also looked at the conduit size; is that correct?
A. (Bascom) I did.
Q. And again on Page 22 you said, "Conduit size

is anticipated to be of adequate size to accommodate the expected size of the power cables listed in the table above, provided that due diligence is used during the installation of the conduit system with appropriate connections of conduit joints, compliance with minimum cable bending radii and successful certification of the conduits by passing a suitable mandrel"; correct?

A. (Bascom) Yes.

Q. And then, just coming back to you on bentonite and inadvertent releases, at the technical session you told me you did have prior experience with inadvertent returns; is that correct?

A. (Bascom) That is correct.

Q. And I think at the tech session you said that, in your experience, inadvertent returns generally occur because there are deviations from a planned approach; is that right?

A. (Bascom) That is one cause of inadvertent returns, yes.

Q. What's another cause?

A. (Bascom) Unknown aspects of the Project, for

example, or sometimes equipment failure.
Q. So there is an element of inadvertent returns that can be managed through following a preapproved plan, and then there's an element that I guess you're saying is purely random.
A. (Bascom) I wouldn't say random. But yes, obviously a better design and more thorough plan would generally lead to better results.
Q. And so I guess you'd agree with me that it's good practice to conduct pre-drilling investigations at each location to determine potential for inadvertent returns?
A. (Bascom) Yes.
Q. And generally, this is a concern for a civil construction team; right?
A. (Bascom) Yes, it is.
Q. And would you agree with me that when doing an HDD, it's appropriate to have an inadvertent return policy in case something unexpected occurs?
A. (Bascom) Yes.
Q. Have you reviewed the Applicant's proposed inadvertent return policy?
A. (Bascom) I did.

Q. And are you aware that the policy has to be approved by DES prior to the Applicant commencing construction?
A. (Bascom) I was not specifically aware of that, but it seems logical.
Q. When doing an HDD, would you expect that the contractors would follow an approved protocol?
A. (Bascom) Yes.
Q. And if they did that, would it be consistent with what you've seen elsewhere with industry standards regarding management of inadvertent returns?
A. (Bascom) Can you rephrase your question?
Q. Yeah. If they followed the approved protocol, would that be consistent with industry standards with respect to how you've seen this issue managed elsewhere?
A. (Bascom) Yes. If they follow a protocol that's been approved, it would seem reasonable that they would have better success and be able to proceed with the process.
MR. NEEDLEMAN: Okay. Thank you.

I'm all set, Mr. Chair.

CHAIRMAN HONIGBERG: Anyone on the Committee ready to rock and roll with this group? Mr. Oldenburg?

(Discussion off the record.)

CHAIRMAN HONIGBERG: We're not going to start with Mr. Oldenburg. We're going to start with Mr. Wright.

QUESTIONS BY SUBCOMMITTEE MEMBERS AND SEC COUNSEL:

QUESTIONS BY DIR. WRIGHT:

Q. Craig Wright from the Department of Environmental Services. Yesterday, I think it was you, Mr. Bascom, we had a picture up, and I think we saw it again today of a typical HDD in-line operation.

A. (Bascom) Yes.

Q. And one of the components was a frac tank. What's the purpose of that tank?

A. (Bascom) It can serve two purposes. One is if there's not a local source of water, which is a component necessary for directional drilling, it can be a source of the water, like a water tanker, for example. It can also be a storage facility for the byproducts

of directional drilling, the bentonite mud slurry that's recovered, so that it can be transported away from the site, because normally it cannot be disposed at the location where construction happens.

Q. Okay. That's what I was going to ask. My assumption was that eventually there's a waste product that needs to be disposed of.

A. (Bascom) Yes.

Q. And how is that normally handled?

A. (Bascom) It depends on the local requirements. And I'm honestly not that familiar with what would be required here. But there is some processing to dewater the material; for example, separate out the water from the solid components so that it can be dried and then more easily disposed of as clean fill or some type of fill material.

Q. Okay. It could end up in a landfill or something like that possibly?

A. (Bascom) Yes, potentially.

Q. Okay. But it would be a regulated waste at that point.

A. (Bascom) My understanding, it would be

regulated or unregulated. I don't know the details. It depends on the jurisdiction.

Q. Okay. My understanding is that DOT has determined that the top 24 to 36 inches in the trenches needs to be filled with gravel material or something along those lines; is that correct?

A. (Zysk) That's correct, yes.

Q. And so below that would be the fluidized thermal backfill.

A. (Zysk) Yes.

Q. And ABB provided a study of how that material would dissipate the heat?

A. (Zysk) Yes.

Q. Would that top 24 or 36 inches have any impact on that ABB analysis?

A. (Bascom) It potentially would have an impact. Normally in the design process for a power cable, the volume of material that's immediately around the conduits would be adjusted to allow for the heat to escape from the power cables and avoid having the cables exceed a maximum temperature that would normally damage the cable otherwise.

Q. So at this point, do we know if anybody's gone back and looked at that issue?
A. (Bascom) It would be the Applicant's responsibility to select the cable size that would meet the requirements of their project in consideration of the volume of material they're allowed to put around the conduits and any fill material that might be required above the conduits.
Q. Okay. I'm just trying to understand the sequence of events when you have a trench open and you bring in this fluidized thermal backfill. Now, that needs some sort of setup period; is that correct?
A. (Bascom) Yes.
Q. How long is that? I'm just trying to again understand the sequence of events and how long a trench would be --
A. (Bascom) Fluidized thermal backfill is normally just an engineered concrete that has good heat-transfer properties. And the extent to which there's cement in the material controls the compression strength, which is hardness of the material. The

amount of time to set up is normally a work shift; so, on the order of, you know, six to eight hours. So, generally the sequence of events would be, once the conduits are placed in the trench and the FTB is poured into the trench, the construction would probably involve plating the trench until the next work shift and then backfilling with the bedding layers that would be necessary to satisfy the Department of Transportation, you know, gravel and so forth.

Q. Okay. You mentioned plating. Are plates anchored, or are they free-floating on the surface of the roadway?

A. (Bascom) Normally they're very heavy, so they're generally used in areas where the asphalt on a road surface is sawcut, and the friction between the plate and the asphalt is sufficient with the weight of the plates so that they don't move too much. But they can be anchored with asphalt, I guess --

A. (Zysk) It varies from place to place. A lot of times they're just placed over the trench. But depending on the volume potentially of

the road that they're in, they may be -- the contractor may have to put a little bevel of asphalt to reduce the bump, as it were, and make the transition onto the plate a little bit better.

Q. Okay. So there's no risk of the plates sliding or anything like that --

A. (Zysk) No.

Q. -- and the trench opening up.

A. (Bascom) Generally minimum risk.

MR. WAY: Mr. Wright, one quick question.

QUESTIONS BY MR. WAY:

Q. For the plates, are there weight limits for the plates? You have them at the entrance of driveways.

A. (Zysk) These are inch-thick steel plates. There's usually unlimited -- the average traffic that would travel on any given road will be accommodated by the plate.

MR. WAY: All right. Thank you.

QUESTIONS BY DIR. WRIGHT (CONT'D):

Q. We had some discussion yesterday regarding the town MOUs and idling trucks. In the

MOUs, as prepared by the Applicant, it indicates that trucks may idle for 30 to 60 minutes before the beginning of a construction day at 7 a.m. Is that a reasonable period of time, in your opinion?

A. (Bascom) Some of the equipment is diesel engines, and especially in colder climates they may idle them for an extended period of time. Some of the concrete trucks are normally idling on site or in preparation to go to a site to deliver materials, so they're ready to go.

A. (Zysk) It is time-of-year-dependent.

Q. I was going to guess that it was air temperature more than anything.

A. (Zysk) Yeah. In the summertime, maybe 10 to 15 minutes, tops, and then they're ready to go.

Q. And in the colder climates, is 60 minutes a reasonable amount of time for a truck to need to idle to get up to temperature?

A. (Zysk) Sixty seems a bit much, but the 30 minutes is not out of the realm.

Q. Okay. There was some discussion today about

the DES permit conditions and some of the concerns -- taking away the time constraints, the 90 days' filing, and assuming DES has the resources to evaluate those plans, do you have any other concerns related to those DES conditions? Did DES miss something, in your opinion?

A. (Zysk) I'd have to review the conditions. But as I read them, I think based on the, I want to say the size and the scope and the type of project, the conditions were worded such that they appeared that they might be difficult to enforce. And I'd have to review the specific conditions I mentioned, and I don't have that. I thought I had it with me, but I do not today.

Q. So you would have some specific recommendations for -- I mean, this Committee has the ability to make some changes, obviously. I mean, those are DES --

A. (Zysk) I would certainly welcome some discussion on it, sure.

Q. I think, Mr. Taylor or Mr. Zysk, you indicated you witnessed the setting of splice

vaults in previous work that you've done?
A. (Taylor) That's correct.
Q. Is there anything particular about this case that is different than what you've experienced personally in your professional career?
A. (Taylor) Only to the extent that there's been dialogue about, particularly this afternoon, everything being generally linear and characterized as "in one lane." While I believe that can certainly be done, my experience is that one to two lanes is generally needed at some point in time. A lot of it's dependent upon the terrain, what's around where the splice pit may go. That affects the size of the crane and also, as noted today, how many pieces the splice pit comes in. I think today, and in previous testimony, it's been that it will come in two. And some of the exhibits and pictures we saw earlier showed what I would characterize as a bottom half and a top half. So if there were three pieces, that changes our looking at how it might be done. But

from what I have seen, generally speaking, it's usually a top and a bottom half and/or a lid.

Q. And have you witnessed a linear setting of a vault as has been suggested here by the Applicant?

A. (Taylor) Not completely linear. I've seen it where there's a splice vault going in and a lifting mechanism was behind where the vault is and then a truck coming up besides. So, one of the three examples. Then I've also seen when the crane is actually not quite perpendicular, but -- in fact, it's in our report. There's a photo we show where the crane is adjacent to where the pit is going in, almost perpendicular to it, and it's reaching for the vault and swinging it out into, say the linear path of the line that the vault would be placed in.

Q. Okay. I think Mr. Thompson yesterday was alluding to whether you'd ever run into a situation where you had a cable buried, and what I assumed he was referring to, in a very northern climate, very cold temperatures.

And I think you were looking for examples.

Is there anything unique about an extremely cold climate such as northern New Hampshire that would have an impact on the ability to successfully bury and operate a cable?

A. (Bascom) I think the reference to Mr. Thompson's comments were related to a cold climate with a heat-producing cable, in which case it's warming the ground in the vicinity of the cable. And, you know, cables are used in really a lot of parts of the world. Canada, obviously. Not too much in New Hampshire at this point for transmission cable. But certainly upstate New York and Minnesota, Michigan. So, I mean, there's a history of cables being installed in those environments.

The specific issue I think Mr. Thompson was raising was installing cables that are producing heat under gravel or dirt roadways. And there's probably limited experience with that type of installation environment.

DIR. WRIGHT: Okay. I think I'm

all set, Mr. Chair.

CHAIRMAN HONIGBERG: All right. Let's take a 10-minute break. It's now 2:35 p.

(Recess was taken at 2:35 p.m. and the hearing resumed at 2:54 p.m.)

CHAIRMAN HONIGBERG: Mr. Oldenburg.

MR. OLDENBURG: Thank you, Mr. Chairman.

QUESTIONS BY MR. OLDENBURG:

Q. Good afternoon, gentlemen. Just for point of reference, my name's Bill Oldenburg, and I work for the Department of Transportation. A lot of the questions that I have Mr. Needleman just covered and Mr. Wright just covered. So as I pause and try to skip questions, please forgive me for the long pause. Also, I had a lot of lead-up questions about what you were asked to do and resume information that Mr. Needleman asked, so I'm just going to jump into the middle of sort of my questioning.

Now, if I understand right, just for clarification, Mr. Bascom, you had mentioned

that you were hired to review the underground only; right? You didn't review any of the electrical overhead.

A. (Bascom) That's correct. I only looked at the underground electrical component and related activities.

Q. And in reading your report, there was a statement in there that I put up on the screen. Could you explain that statement?

A. (Bascom) Yes. It's just providing background. The power cable itself is an electrical component, so it requires electrical engineering. The cable rating and heat-transfer mechanism away from the cable's generally in the discipline of mechanical engineering. And the fact that the materials that are around the cables in the trench and the way the trench is excavated and configured impacts the cable rating and the design, that's generally a civil engineering activity. So I was pointing out that it combines the three disciplines of engineering in the design of a cable system.

Q. And by "cable system," you mean the whole

component of the underground.
A. (Bascom) The whole component. The trench, the conduits, the cables that are installed in the conduits, the splices, the vaults, et cetera.
Q. So I see the civil engineering portion. Did you have someone from a mechanical engineering viewpoint review your report, or did you just use your experience?
A. (Bascom) The mechanical engineering component of what I did was the ampacity, the cable rating, which involves evaluating thermal conduction of heat away from the conductor through the various layers of the cable through the soil and out to the ambient soil environment. So that's generally a mechanical engineering activity from the standpoint of the type of engineering that's applied.
Q. Okay. All right. So, moving on to the actual project itself. From a highway standpoint, or highway and bridge standpoint, I think you have a lot of highway, bridge experience, civil engineering experience.

Would you classify this type of contract as like a "design build contract"? Maybe a little reference. So --

A. (Zysk) It's not a classic design build, but they have brought a contractor in, early in the process, to help them develop the final documents. So there's a different terminology that has come up in the last few years, but I wouldn't call it --

A. (Bascom) It would normally be characterized as "engineering, procuring, construction." So they're doing engineering design themselves; they're procuring the materials and the construction services, and they're constructing, building the Project.

Q. So one of the advantages to that is you have a contractor who's actually going to build the project in to discuss the design. So some of these things that we see going on with the design changes can be that contractor input saying, no, it's easier to build if you put it here, easier to install, takes a shorter period of time if you move it to here. Is that some of the advantages of

this type of contract?
A. (Bascom) In a classic EPC-type contract, that entire package is usually identified and presented to a customer. So, for example, if I wanted to buy a cable system, I might request an EPC bid, in which case different groups would assemble a team that do all those activities and then present me comparative bids that I would evaluate and select one. This is sort of a private development activity, so this developer has assembled all those components themselves and are now just trying to get approval within, you know, the community and the agencies that regulate that activity.
Q. Okay. The company doing the final design plans, PAR Electric, is a subsidiary of Quanta, the contractor; correct? So, basically, the contractor, PAR Electric, is doing the design, and I have to believe that some of these design changes have to do with their construction knowledge. Or not?
A. (Bascom) It generally would. In a very high-level example, let's say the State of

New Hampshire wanted to buy a high-voltage DC cable system and was soliciting a bid for that package. It would normally include all the activities up to commissioning so that you then could evaluate that package and maybe compare it to others. So, in essence, I think the Site Evaluation Committee is sort of the customer evaluating the proposed package.

Q. Okay. Now, next up on the screen is a slide from basically the Applicant's presentation to the DOT. I think you've seen this before. This is the page on what Quanta services are. And I would just point out the reference to The Engineering News Record. So, I mean, if you're a financial person, you would read The Wall Street Times. If you're an engineering groupie, you read The Engineering News Record.

A. (Zysk) Correct.

Q. So the fact that they're a number one-rated firm, that means, you know, by money, by income, by ratings, they're the number one firm in the country when it comes to overall

specialty contractors, utility specialty contractors and electrical specialty contractor. This is what they do is build these lines; right? This is basically right in their wheelhouse. This is their forte. So they know exactly what they're doing. Is that fair statement?

A. (Zysk) I would think so, being No. 1, yes.

Q. Okay. So, down a few bullets is the Top Five in horizontal directional drilling. I'm not sure in what "Top Five" is, but they also have directional drilling capabilities. So one of their subsidiaries I have to believe does the HDD drilling.

A. (Bascom) Quanta as a company has acquired various companies throughout the years, one of which is this company, Mears. And they are the directional drilling contractor that have been involved with some of the larger high-voltage transmission cable projects, in the United States at least.

Q. Okay. So one of the things we heard about the HDD drilling was testimony about the soil and the rock and everything else. These

drills go through anything; right? So if they hit muck, if they hit clay, if they hit solid granite, if they hit boulders, they drill through all of that; correct?

A. (Bascom) Not necessarily. In particular, boulders or large cobbles are difficult for some of the drilling equipment to pass through. If you can kind of visualize drilling through marshmallow and you hit something very hard, the drilling equipment would tend to try to go around that rather than bite into it. And that presents a particular challenge for directional drilling. And it's not to say that even a very qualified contractor wouldn't also run into equipment failures or challenges, because in any engineering project there may not be a complete understanding of all the conditions. You know, we do make decisions on incomplete information.

Q. So in the case of like a boulder, instead of going and drilling through the boulder, it might get deflected off to the side.

A. (Zysk) That's correct.

A. (Bascom) That's correct. And if the drilling contractor has knowledge of that, that would translate to risk, and maybe translate to infeasibility if they were aware of it.

Q. So one of the questions -- or some of the questions you heard earlier was a change in production rate. Originally, several months ago when the construction panel was first up, we heard a production rate of somewhere between like 20 and 100 feet a day for the trenching operation, and now we're hearing more in the 300-foot-a-day range. You know, some of -- I think some of the questions Mr. Needleman just asked was the plating, the use of the plating in some of that production.

Does it make sense, from what you've heard, from you've seen since the original October date, that the production rate of 300 feet per day is realistic?

A. (Bascom) In my opinion it can vary. And it really depends on how extensively they have knowledge of the geology along the route. You know, New Hampshire is known as the "Granite State," and there is prevalence of

ledge and rock and some very shallow areas. Like the town of Plymouth, I understand, many of the utilities are installed shallower than 3-1/2 feet because of the difficulty excavating deeper than that. So I would just anticipate that in the course of doing construction, it's likely that they would encounter a higher incidence of rock. And I am aware of some projects where that has significantly slowed down the production rate. And so that was, in terms of my testimony, was anecdotal information, but my experience on cable projects.

Q. Because one of the statements that's been made is the project time line that's been laid out is they're going to build it in two years. So that's two seasons. And the production rate is the production rate, and that means how many crews are going to be required to do the trenching, splice vaults and everything within two years. And that number of crews directly relates to the number of work zones along the route and traffic impacts, et cetera. That's a fair

assessment; correct?
A. (Zysk) Yes, that's correct.
Q. So in your testimony, one of the issues you had with the Project was the traffic impacts that the Project would have. And this is just one of the exhibits you showed, which was the detour route in the North Country, in the Pittsburg, Clarksville, Stewartstown area. Is this the same detour route that's proposed by the Applicant?
A. (Taylor) It is. This is just a composite of what they had shown over many sheets to provide clarity.
Q. So you basically used their detour route, analyzed it. And you didn't improve upon it or come up with suggestions.
A. (Taylor) No. This was merely to convey to you specifically the data across many sheets in one.
Q. Okay. Would you agree that in reviewing the information you had, that the traffic volumes in this section of the state are pretty low?
A. (Zysk) They are.
Q. And the proposed road closure is going to be

an inconvenience, but it's not going to relatively cause huge traffic backups and congestion and things like that; correct?

A. (Zysk) I don't anticipate it causing huge backups. However, if you live on that road, you're going to be pretty upset.

Q. Very inconvenienced, yes.

A. (Zysk) Yes.

Q. Previously you were shown the DOT Traffic Control Committee determination memo. Looks something like this. It showed that the project was found to be significant. I don't know if you had the opportunity to read what the guidance and direction portion of that memo says, so this is a blow-up of it. And I'll give you a few minutes to actually read through it.

But what I'm looking for is, if you read this, do you see any show-stoppers that are going to cause a problem with the Applicant being able to meet any of these requirements from a traffic management plan development? I would just add, forgive the engineer's misspellings and poor grammar.

(Witness reviews document.)

A. (Zysk) "Show stoppers," as you call them, I would say no. To add in, potentially pedestrians, bicycles, in addition to maintain those on roads where there are no sidewalks, narrow lanes, in addition to maintaining vehicle traffic, could pose a bit of a burden for the Applicant.

Q. Well, I think pedestrians are mentioned, because in Franconia there are sidewalks along the side of the road.

A. (Zysk) Okay.

Q. And if there's -- by ADA requirements, if you close a sidewalk, you have to find an alternate pedestrian route.

A. (Zysk) Understood. I was thinking more of 116, of when I traveled along there, there are numerous bicyclists in addition to the vehicles. Seems to be a pretty popular bike route.

Q. Okay. All right. Now, a lot of -- there's been a lot of discussion about traffic management plans and the DOT requirements. And I would just -- this is the policy that

the DOT has, sort of the cover. I don't know if you've read it or not. But right in the very beginning, in the introduction, it talks about that this isn't really a DOT requirement. This is part of the federal law that requires us, requires the DOT to have this policy. And, you know, halfway through it says the rule, which is this federal rule that applies to all states and local governments that receive federal aid, highway funds -- so have you run across this? It might be called something different, but I'm sure, working in other states, you've run across requirements to have traffic management plans and traffic control plans.

A. (Zysk) Every state has at least one of these. Some have them broken up into multiple documents.

Q. So this isn't unique to New Hampshire.

A. (Zysk) No.

Q. Concerning traffic control, have you -- did you discuss any of the traffic control requirements with anybody at the DOT of what would be required? Any discussions with the

DOT on what their thoughts were with traffic control?

A. (Zysk) Not for traffic, no.

Q. With concerns about the Utility Accommodation Manual and the exception requests, you've reviewed them; correct?

A. (Zysk) A fair number of them, sure.

Q. So on the screen is one. Just as an example, is it safe to say that there's been a contention that -- and there's a number of them, and I know that they've been submitted. They're all listed on the web site. There's like -- the numbers go up to 180, but there's not 180 of them because numbers are skipped. But there's a huge number. But aren't some of them truly, I don't want to -- no-brainers type of -- this one is an example. It's HDD drilling. The exemption type that they're requesting, there's three of them. One is that the pit's was in the pavement and that the other is the HDD drill alignment passing under the pavement. So, even though there's no disruption to the pavement, because the line is being drilled under the pavement,

they have to get an exception request for that.

A. (Zysk) Correct.

Q. Correct?

A. (Zysk) Yes.

Q. So, isn't it a fair assumption that if there's 40 -- and I can't remember the exact number -- 45 HDD drilling sites, that most of them pass under the pavement, so they're going to need an exemption request just because they're drilling under the pavement?

A. (Zysk) Based on the requirements of the Utility Accommodation Manual, yes. Yes.

Q. Okay. So some of these exception requests are more complicated or complex than others. Is that a fair assessment?

A. (Zysk) Sure. Yeah.

Q. This was just another example of the same type of exemption request. I won't belabor the issue.

Mr. Thompson, when he questioned you, showed you this picture he had, which is CS 129. It's his truck sitting on a bridge, which I think, if I have it right, is

Creampoke Road over Bishop Brook. He talked a lot about cranes and heavy equipment and how you're going to actually build the project or detour traffic around in this area.

The thing I'd point out is you see the sign at the end of the guard rail, the E-2? Do you know what that means?

A. (Zysk) That has to do with the capacity of the bridge. Brenden Alexander, who was here yesterday, is more knowledgeable about that than I am.

Q. So that bridge is weight-restricted; correct?

A. (Zysk) Correct.

Q. There's information sheets out there that an E-2 designation excludes all combination and single-unit certified vehicles from crossing a specific bridge. So it's basically weight-restricted; correct?

A. (Zysk) Yes.

Q. I don't know if you can speak for Mr. Alexander or not. But was a review done of the weight-restricted bridges or the "red-listed" bridges along the entire route

to see where they were?
A. (Zysk) Yes.
Q. So would any of those -- I don't know if this one does. But do any of the others restrict the Applicant's use of those roads and some of the equipment?
A. (Zysk) Potentially. If I recall correctly, we found one red-listed bridge directly on the route as proposed. There were numerous ones adjacent to the route, which, depending how they choose to access the work zones and how they manage or how they propose to get equipment there, could come into play.
Q. All right. Okay. I'm going to jump around a little bit.
A. (Zysk) Jump around.
Q. So I think it was Mr. Pappas who showed you this copy of Applicant's Exhibit 223, and specifically in the area of the barn. And if I heard you correct, when Mr. Pappas asked you about going across the road to avoid the barn and the impacts, you said that this would require construction to take longer and would impact traffic more; correct?

A. (Taylor) That was the assessment. Correct.
Q. But you weren't implying that the Applicant should go straight, impact the barn, to lessen traffic impact and construction time, were you?
A. (Taylor) No. Our response to that was merely to point out that it would take longer for a number of reasons: One, it's a longer route by default than just going straight. Going around the barn certainly makes sense. But also from a traffic control standpoint, instead of there being a closure, a one-lane closure in, say, a static area in front of the barn, you would now need it on both sides of the road in an alternating fashion. That was really what we were trying to get across.
Q. But isn't it a fair assessment to say that to do this line and to avoid things like the barn on one side of the road -- and I think you saw pictures of up near the Gale River Motel -- that there's issues on both sides of the road, that the line inevitably is going to have to cross from one side of the road to the other to avoid some of those impacts?

A. (Zysk) Oh, I fully expect it will, yes. Or maybe less deviations in areas of ledge or trees as identified in other areas.
Q. So it's really how they manage the traffic control during those road -- from crossing from one side of the road to the other.
A. (Bascom) I think part of the issue, in regards to this diagram, was that it was offered as a means to address where there might be structures or, you know, trees, anything that might be close to the edge of the right-of-way and not being able to excavate and create a trench immediately adjacent to that edge of the right-of-way. And the Applicant proposed this as a means of avoiding some of those constrained areas. And in response to that, I think Dewberry was responding to the fact that, you know, what would that do in terms of comparing a straight route versus one where you need to alternate additional travel lanes in the construction process.
Q. I don't really remember it being presented that way, but I'm not going to testify for

the Applicant. So I will move on.

CMSR. BAILEY: Can I ask a follow-up?

MR. OLDENBURG: Sure.

QUESTIONS BY CMSR. BAILEY:

Q. I heard you say this yesterday and again today, I believe you. But you said they would have to close -- to go around the barn, they would have to close the lane on the left-hand side of the picture for a while, and then they'd have to close the lane on the right and then close the lane on the left again just to do that one piece around the barn. Couldn't they do both trenches to the center line on the left-hand side at the same time and only close it once?

A. (Taylor) They could. In this example where it's graphically they're close together, that would certainly make sense. If this situation were a crossing, let's say 2,000 feet apart, then it probably wouldn't make sense to run the scenario that you just mentioned. But it's certainly an option.

Q. And do you think there are locations where

the crossing is going to be 2,000 feet?
A. (Taylor) That was just an example. I'd have to go back and look at the -- I don't recall from all the exemption requests.
But to go back to your original question, if they're close together, say within the 1600-foot zone that they indicated would be their maximum, then it probably would make sense to do both at one time.
Q. Okay. Thank you.
A. (Zysk) I would note, too, that if it was a short, longitudinal direction crossing, when they get to the point of installing the cables in the trench, crossing both lanes of traffic would indicate to me that it would require a road closure for some length of time to lay them in the trench. I don't think they'd be pulling them through the trench. This is just a --
A. (Bascom) The installation process would involve installing the conduits, backfilling, and at least temporarily restoring the road surface condition. The cable pulling would occur at manholes probably remote from these

areas, or at least not shown on the diagram. So the impact during cable pulling would be --

A. (Zysk) Then the conduit installation --

Q. (Bascom) Yeah. It's the civil part that would involve the lane closures, not the cable pulling.

QUESTIONS BY MR. OLDENBURG (CONT'D):

Q. So that sort of leads me into my next question. Some of these operations I think are inherently going to require a road closure of some sort. Could be short-term off-loading of equipment. So you're bringing in an excavator on a flatbed. You got to get the flatbed off -- there's not enough room on the side of the road.

So another example we've seen pictures of is the cranes lifting the splice vaults. If that's -- would you envision that being lifted right next to moving traffic? Or would you envision that, while that was being picked off the flatbed and put into place, that you would close traffic, just in case?

A. (Bascom) It would depend. But if the swing

was above a travel lane, I think definitely the lane would be closed during that process. And that's something that's not necessarily illustrated on some of the diagrams. If, for example, they were to swing the splice vault over the shoulder, if there were space to do that, it's possible that they could set it without closing a traffic lane. So it could happen either way, depending on the size of the equipment and the footprint of the equipment that might be required.

Q. Okay. All right. From the information you reviewed pertaining to the HDD drilling, can you estimate how much one of the typical HDD drilling operations might cost, ballpark?

A. (Bascom) This is something that -- I'm not an estimator. But on the order of $500 to $1,000 per linear foot is a typical, potential cost. And it could be higher depending on the soil conditions.

Q. And some of these could be in the millions? Million dollars maybe?

A. (Bascom) Probably on the upper end. I would think below that, but in the hundred thousand

dollar range, and several hundred thousand dollar range for some of the longer directional drills.

Q. So this is Counsel for the Public 550, which is a copy of an exemption request. And I realize this one might have been withdrawn. But just for -- it was there. I think it was presented in another part of the testimony.

But the real question is: In this part, this is a section up north. Let me go back to the previous slide.

So it's in Stewartstown on Bear Rock Road. It's one of the very narrow roads that was in question. This is an HDD drilling site, and the sole purpose is to avoid a 36-inch culvert. Does it seem reasonable to spend that much money to -- and I'm not really sure the reason why an HDD drilling site is required to avoid or to go simply under a 36-inch pipe. That pipe just doesn't seem very large to me to require that operation. Is there anything you could offer to help me understand why this would be required?

A. (Bascom) The only thing I could potentially see is that perhaps the surface conditions are such that conventional trenching or more conventional trenching might be undesirable from the standpoint of the type of soil or some aspect of the construction, or interference with features along that section of the route where directional drilling would avoid disturbing those areas. But I can't speak to the nature of why the Applicant selected certain areas for directional drilling and not in others except for some select location where there's an obvious obstacle.

Q. So your thought is it might not be the 36-inch pipe, it might be something else?

A. (Zysk) It could be a combination of factors.

Q. All right. That's fair enough. So, based on that answer, I will skip my next question.

So, one of the concerns that you had was damage to the roadways. And Mr. Needleman covered that. But to sort of piggyback on that, did you see it stated anywhere, or have you seen any requests for the Northern Pass

Project to request the use of oversize or overweight vehicles?

A. (Zysk) Not to my recollection.

Q. So, in this state, if you're transporting an oversize or overweight vehicle, you need a permit to do that. You haven't seen anywhere that they're going to request that. So your assumption is that all the loads -- all the vehicles being used would be legal loads?

A. (Zysk) Yes.

Q. So if they're legal loads, technically they shouldn't impact -- just driving on roads shouldn't impact or damage the roadway system for all --

A. (Zysk) Just getting to and from a location, I would expect not.

Q. Okay. I think it was Mr. Needleman and their testimony -- I think the construction panel's testimony said that any road that was damaged due to construction would be fixed. So you're aware of that as well?

A. (Zysk) Yes.

Q. Okay. So one of the other issues you brought up was concerns with construction activities

related to the soil erosion and sediment control for the Project; correct?

A. (Zysk) In the overhead areas primarily.

Q. So when I asked during my questioning of the construction panel originally, I had brought up this sort of assumption that you see on the screen. And it dealt with the length of the access roads required, the number of towers, the time frame involved, and then an assumption of if you just simply do the math, it says that they have to do 1100 feet of access roads. You see all the rest of the calculations.

So at the time this might have been the case, it might have switched around a little bit based upon plans, but I haven't -- or changes in the plans, but I haven't seen it. So if they have to build 1100 feet of access road per day, and there's multiple crews doing that, the idea, from what I've heard, is that there's going to be environmental monitors. There's going to be BMP crews sent out ahead of the construction to put in, you know, erosion and sediment control. There's

a whole series of things that are going to happen to avoid soil erosion and sediment issues.

So is your concern that you haven't seen enough details or some of the BMPs are lacking? Could you sort of -- I've read the report, but I sort of don't have a clear handle on your concern and how they could address your concerns.

A. (Zysk) It was primarily due to the incomplete nature of the plans, as I think I described this morning. There were locations where they used a line style that was a generic BMP type of thing. But as to the type of BMP proposed, or types in any given location, there was no detail of that. They listed a number of potential applications, all of which have their pluses and minuses and appropriate application points. But as to what was being proposed where, there was no detail of that. And there were a lot of locations where there will be BMPs required where there was none shown. And I assume that was partly due to the preliminary nature

of the plans, but that's what we had to work with.

Q. And the plans you were reviewing were the --

A. (Zysk) Very first iteration, yes.

Q. We talked about the Karner blue butterfly, so I won't cover that again.

This was Counsel for the Public's Exhibit 555, which is the Gale River Crossing. And this was shown as a microtunneling operation. Did you review this as a microtunneling operation?

A. (Zysk) Yes.

Q. Okay. Were you aware that in the latest construction panel, as Mr. Thompson called it, "the reunion," bringing back the construction panel recently, that the location was being revisited as a possible HDD site?

A. (Zysk) I did note that in some of the later testimony, that there was just consideration to do some more investigation, detailed investigation at this location.

Q. But you don't have any information to offer an opinion whether that's a good idea or bad

idea?

A. (Bascom) I would just offer that microtunneling or pipe-jacking generally would permit being shallow or below the stream, or, you know, the river that's here, from the standpoint of managing that construction area. With directional drilling, the setback, the amount of distance you need to be back from where you start and end the directional drill, is a greater challenge because there's a limit on how quickly you can change elevation vertically. Particularly in your diagram, the left side, to get back up to street level for the normal trench would potentially be a greater challenge from projects that I've seen using directional drilling. And so pipe-jacking or microtunneling might be a more logical approach to compress the work areas on either side of the project, or this particular location.

Q. So, with HDD drilling, the further down you go, that is the further out the drill rig and the receiving pit have to be; right?

A. (Zysk) In general, yes.
Q. Simple math.
A. (Bascom) My understanding is the entry and exit angle for most directional drills is on the order of 8 to 25 degrees. And conservatively, they would want to be a certain distance below the bottom of the river to minimize the possibility of unintended returns or sometimes "frack-out." So to be down 20 or potentially 30 feet below that water bottom, the setback for directional drilling would have to be greater. And in particular, to get back on their main route on the left side of your diagram that's on display, they're going to need that same amount of space to come back up; so the setback would be greater. And, you know, in looking at this, it seems like a more logical application for either pipe-jacking or microtunneling.
Q. All right. This you've seen obviously before as part of your report. I had some questions with regard to the red cross-hatched areas. Those are the work limits; correct? But

that's -- and this is identified as a jack and bore location. Is that still the case?

A. (Taylor) That's correct. And the red areas are the work areas the Applicant had shown associated with each side of the jack and bore.

Q. So if it's a jack and bore, there's a jacking pit and a receiving pit; correct?

A. (Zysk) Yes.

Q. That's typically how that works. So in the photo simulation that's shown here, I'm assuming the excavator and dump truck are -- this shows digging the jacking pit. And then is the sheet piling that you see there, that's usually driven in and formed for walls of the pit; correct?

A. (Zysk) Yes.

Q. So that the hydraulic ram that pushes the pipe is up against that sheet piling; is that correct?

A. (Zysk) Sometimes. Other times they drive additional sheeting into the base of the pit and anchor it to those -- or not sheeting, but H piles they would anchor to the bottom

of the pit and use the H piles as the resistance.

Q. So when they drive the piles in, they don't use an excavator. They use basically a pile driver; correct?

A. (Zysk) Whatever. Vibrator or some method.

Q. Or a vibrator. So is there vibration concerns being so close to, like, that house?

A. (Zysk) I would expect so, yes. This would require like a pre-construction survey of the condition of the property.

Q. So they do vibration monitoring, in effect --

A. Right.

Q. -- prior to construction?

A. Right.

Q. So this is the photo simulation that Dewberry did for Downtown Plymouth; correct?

A. (Taylor) Correct.

Q. And we've heard a great deal about impacts with the businesses and everything else that could come about because of the construction. But one of the things that Mr. Bowes had testified on, on Day 3, which was during the route selection testimony, was that going

down Main Street wasn't Northern Pass's first choice, that they had actually identified three other alternatives. And so this is Mr. Bowes's testimony where I asked him about, you know, why are you going down Main Street in Plymouth, basically. And he said, "We looked at three other alternative routes with Downtown Plymouth and towards the river." And basically, if you read on to the end, he basically says the talks broke down with the Town of Plymouth, so they basically were forced to go down Route 3 because it's under state jurisdiction and not the town.

So, to avoid impacts to the Downtown Plymouth area, it seems like their first choice, which was to avoid going Downtown Plymouth, was the better option; wouldn't you agree? I mean, if you had to go down one place you wouldn't want to be, it'd be Downtown Plymouth, down Main Street, wouldn't you think?

A. (Bascom) I mean, there's a lot of factors that could play into that. One certainly would be perhaps a simpler traffic control

plan or disturbances to residences as opposed to commercial businesses, which may or may not have greater benefit. And so those were probably all factors that they evaluated. And I don't think any of us can speak to why Plymouth decided not to agree or, you know, allow other alternatives. So the Applicant was required to stay within the confines of where an approval process was available to them, which would have been on a state road, as I understand it.

Q. All right. You talked previously about this in-line trenching, the "train," the exhibit that you see. Actually, I think we covered this already, so I'm going to skip that one because it dealt with the plating.

But in the same presentation you saw the splice pitting -- or the splice box enclosure installation. This is the whole set of pictures that were submitted in that presentation. None of those are directly in or adjacent to a roadway, are they?

A. (Bascom) It doesn't appear to be that way. Although, if you can go back, on the left

side there, they're showing a shoring box. It's possible that has the pavement removed and the pavement cut on the left and perhaps a sidewalk or pavement on the right. So that could be in the travel lane. It's not clear.

Q. Doesn't look like the road is open, though; right?

A. (Bascom) That's correct.

Q. So in the original construction panel testimony, when asked about digging a 10-foot-deep hole directly adjacent to a travel lane, Ms. Farrington stated that a concrete barrier would be needed. Have you seen any details that would represent the use of concrete barriers to protect the traveling public from falling in or driving into an open pit like that?

A. (Zysk) Not to this date I have not.

Q. If that was required, would that complicate -- if a jersey barrier was needed to protect the traffic, wouldn't that complicate the traffic control plans?

A. (Bascom) It would certainly occupy some of the space available for the traffic control

plan, as well as I guess the time to set it in place.

A. (Zysk) Yeah, you would have to account for the footprint of the barrier in the available space to maintain your lane of traffic if you were to do that, in addition to the width required for the excavation.

Q. All right. So they'd have to -- things that would have to be considered would be like delivering the concrete barrier, which usually comes on like a flatbed. You need a crane or some sort of small excavator to place it. You'd need traffic impact attenuators, correct, to protect the ends?

A. (Zysk) Yes.

Q. And if it's left at night, you would need --

A. (Bascom) Temporary lighting.

Q. -- temporary lighting. And then if it's one-way alternating traffic, we'd need temporary signals; correct?

A. (Zysk) Yes, or at least someone there, call it a flagger, around the clock, yes.

Q. So this is sort of my last series of questions. A great deal's been made about

the completeness of the Application and the plans that were submitted. And it was stated that the plans that were submitted were about a 30-percent stage. Is that your assessment, a fair assessment of the plan completeness that you've seen as part of the Application?

A. (Taylor) Sure. The initial plans we reviewed I would say were around 30 percent. What we typically see at 30 percent is generally the horizontal location, property rights and survey taken into account, things of that nature. And then between 30 and 60 percent is where you get into horizontal and vertical alignment. In this particular case, the 30-percent plants did have a vertical component to it, but as we have seen as more information has become available, the vertical and the horizontal being considered together, I think that's what's causing some of the changes that we've seen.

Q. So in your experience on other projects, it's not uncommon for an Applicant to submit 30-percent plans with an application?

A. (Taylor) I can't speak for what the SEC

typically sees. But for entitlement-level documents, somewhere between 30 and 60 is what I have typically seen; so, some level of horizontal and vertical. And I would say that in areas where there's what I would consider heavier existing underground utilities, more in the way of utility designating, which is the painting of the utilities that we called out in our report I would expect to see, so that the horizontal and at least consideration to how the vertical is done, is done with a little bit more information.

Q. Okay. But it wouldn't be uncommon for you to see changes. I mean, if you're only at 50-percent complete and you have 50 percent more to go, it wouldn't be uncommon or unheard of to see changes made in the design.

A. (Taylor) That's correct. Also what we see is, typically at 60 percent, the full 60-percent plans would have horizontal and vertical. It would have Level D, C, B, and A surveying, which gets into test pitting and the utility designating. And particularly

for underground routes where you have existing infrastructure, that oftentimes becomes a very key factor in that.

Q. So as a project works towards final design plans, it isn't unheard of to see changes like in the right-of-way that's shown. I mean, we've heard a lot of testimony about the incompleteness of the right-of-way. I'm trying to judge whether or not that's a problem.

A. (Zysk) I would offer not to the extent that the changes are being required here. There may be one or two locations where the right-of-way may need to be adjusted based on later information that comes forward. But I think the amount of right-of-way that is still undetermined or not satisfactory to the DOT's outlook is more than I would expect.

A. (Bascom) It's probably fair to say that in alignment selection, where it's space-constrained or space-critical, the level of detail is usually greater.

A. (Zysk) Yes, I would agree.

A. (Bascom) And I think my experience is

normally more in an urban setting where that is important. But there's usually a much higher detail of utilities. Having said that, in many areas along the route, it's generally a rural area, so the extent of underground utilities is probably more limited. So the extent that that would be necessary for the bulk of the route is probably less, with some exceptions like, for example, Downtown Plymouth as an example.

Q. Originally the plan was to put the line under the pavement, so the right-of-way location might not have been such a great concern. Now the idea is to move it out towards the right-of-way, and towards the right-of-way location is a big concern; correct?

A. (Bascom) Yes, definitely, because it impacts, you know, private property, potentially. One example we heard today was somebody's septic tank might be close to the boundary or in an area where reasonably the Applicant might have thought they could put the alignment. And until some of those designations and call-outs and soft digs have been done to

explore the critical areas, that remains uncertain as to where that's -- if that's a viable alignment.

Q. So with the plans the way they are and your experience on other projects, is it uncommon to see like the splice box changes, locations being changed on a project?

A. (Zysk) I wouldn't expect that to be uncommon, no.

Q. What about --

A. (Bascom) I was just going to offer, in some cases there might be an effort to eliminate some splice boxes if there was perceived the ability to maybe pull cable a longer distance -- for example, a different location to site a splice box. It would be prudent to maybe try and do that. It would both make the construction simpler and also probably less cost for that immediate area. And I don't know if there's an effort or plan to do that. In some cases, that would involve getting an additional approval because it's a change. So the initial design might go forward even though there could be some

optimization that otherwise could occur.
Q. So is it a fair assessment to say that if you don't know exactly where the splice boxes are and you don't know exactly where the line is, it's hard to develop traffic control plans?
A. (Zysk) I would say yes.
Q. So it's not uncommon that the final traffic control plans haven't been developed yet because the line design hasn't been done? Or would you typically expect to see more information?
A. (Taylor) We'd prepare similar type plans. It's really at the 60-percent level that full traffic control plans and sequencing is -- "pen is put to paper," so to speak. Consideration is given heavily to the traffic control between 30 and 60 percent is my experience, even though it might not be shown.
Q. All right. So, given the plans the way they are, or the way they were submitted, it isn't unheard of to have like the exception requests through the Utility Accommodation Manual being requested at this time; correct?

A. (Zysk) That doesn't -- no, I don't think that's unreasonable. Now that they've given a first cut on where their line is going to be and made some adjustments, they realize that they need waivers. So, yeah, now would be an appropriate time to apply for that.

MR. OLDENBURG: I think that's all the questions I had.

CHAIRMAN HONIGBERG: Commissioner Bailey.

QUESTIONS BY CMSR. BAILEY:

Q. Good afternoon. I think I just have one area of follow-up that I would like to ask you about.

Do you remember, and I don't know who said this yesterday, but when you were talking about the plates, you said that generally the plates were 4 feet by 8 feet, but that they come in larger sizes if available and if they can get them to the site.

A. (Zysk) Yes.

Q. Was that you, Mr. Zysk?

A. (Zysk) Yes.

Q. Okay.
A. (Zysk) They come in many sizes for applications for covering trenches. Four by eight is a common size.
Q. But the splice box pits are 12 by 24; right?
A. (Zysk) They're 12 by 34.
Q. Okay. Four-by-eight plates aren't going to fit --
A. (Zysk) I don't believe they plan to cover the splice pits with steel plates. This is for just the regular trench.
Q. Okay. So what will they do when the splice pits are open?
A. (Zysk) Those will have the barriers around them that Mr. Oldenburg referred to, and they will remain a work zone until both pieces of the splice pit -- the splice box are put in place and then the pit is backfilled.

CMSR. BAILEY: Okay. Thank you.

CHAIRMAN HONIGBERG: Ms. Weathersby.

QUESTIONS BY MS. WEATHERSBY:
Q. Good afternoon, gentlemen. A few follow-up questions.

In response to a question from Mr. Oldenburg, you indicated there was a red-list bridge along the route. Could you tell me where that's located?

A. (Zysk) I don't have that information with me. If Mr. Alexander were here, he could answer that. I do not have that.

Q. Am I correct that a red-list bridge typically would have certain weight limit, a reduced weight limit?

A. (Zysk) Correct.

Q. And do you know if the vehicles proposed to be used exceed that weight limit?

A. (Zysk) Potentially.

Q. Do you know if the Applicant has any plans to address the red-list bridge issue?

A. (Zysk) I'm unaware of any plans at this time.

Q. When you were just discussing microtunneling versus HDD, it just occurred to me, and I'm just wondering: Would microtunneling in general be a better option for the places where HDD is proposed for this project, particularly in areas where the space constraints -- it sounded like if it's a

smaller work area, there's less disturbance, et cetera. So I'm wondering about your opinion whether more microtunneling would be beneficial instead of HDD.

A. (Bascom) It really depends on the locations and the construction methods that would be permissible in a certain area. There are advantages to both techniques. And there are some situations where perhaps the length of the horizontal directional drilling could be reduced, and that might be a design element that would be pursued later. The size of the conduit that's being installed is relatively small, with individual cables in each conduit, as opposed to larger casing where both cables would be in the same casing. By having it be smaller, the size of the equipment and the length that might be necessary to traverse an obstacle could be reduced potentially. So those are factors that I would think would be evaluated. Given that the Applicants have submitted between a 30- and 60-percent design, but not a hundred-percent design, I would anticipate

that there might be some changes potentially in the civil design that could include alternative methods in some of those areas. So it is possible, to answer your question.

Q. So you would anticipate the Applicant sort of analyzing that choice as part of maybe a mitigation method or an alternative approach?

A. (Bascom) Yes, I would. It would affect, for example, the footprint of the equipment that's being used in areas where maybe some of these bridges are constrained by weight limits. It might involve bringing smaller equipment to the site. And I don't know to what extent all these locations have been evaluated. And that could be part of their ongoing process which at this point I'm not aware of. But those are factors that typically would be associated with the design of an underground alignment.

A. (Zysk) I would offer two things. One is the space requirement. The microtunnel that is currently shown on the plans, the sending pit, the launching pit, as it were, is some 30 feet in diameter, and then they would

require some additional workspace around that. So their work zone goes from 30 feet by 300 to maybe 35-plus by 300 as one. And then the microtunnel duration, if you'll recall, was projected to be 8 to 12 weeks, with an additional several weeks at either end to make the connection from the regular surface trench down to the pit depth. So it would be longer at each location versus a 4- to 6- to 7-week HDD process.

Q. Okay. Thank you.

When you were discussing with Mr. Oldenburg about the HDD drill going in and hitting the boulder and it kind of deflecting a bit, what happens? What does the Project do then when it doesn't seem to want to go through the boulder or the ledge but instead deflect?

A. (Bascom) Sometimes, in some cases, they may have to seek an alternate drill path, a variance on their plan. The process during the drilling is the equipment can be essentially reversed, and then they can try and steer in a different direction to avoid

an obstacle like that if it's an unknown obstacle. So there are techniques that can be done in the field. But that adds time because it's an unplanned event and, you know, it's something that might be addressed in the field. But there are construction strategies during construction that would seek to do that. In advance, the number of borings and the locations of the borings helps to identify those potential obstacles.

One of the difficulties with directional drilling is that, by doing borings themselves to understand the conditions, it also introduces channels through which unintended returns can occur. So the strategy when you're doing geotechnical borings is to offset by a certain distance so that you're not along your expected drill path. And by virtue of that, you could miss the obstacle or identifying the obstacle that you're trying to avoid. So there is some uncertainty associated with that work, and that's part of the due diligence of the design process.

Q. So if it hit, you know, a sizable piece of ledge, for example, that it couldn't just take a 2-foot detour and go around, do they have to change the route considerably, or are there different drill bits that could perhaps penetrate through? What would happen if something was very sizable?

A. (Bascom) It depends. If it's ledge, which is just a solid mass of rock, from a drilling standpoint, that's actually somewhat desirable because it's a very stable, consistent drilling medium. Where the directional drilling runs into more challenges is where there's more variable conditions; so, soil to rock, back to soil and so forth. And the types of drilling heads like you describe are tailored to certain types of conditions. The boulders are suggested to be a large mass of rock and another type of material. So if you're drilling through a granular backfill material, a soil, and you encounter the rock, the drill head might not be the appropriate tool for getting through that boulder. And

simply the nature of the roundness of a boulder, actually having the equipment bite into the boulder and be able to penetrate it can be a challenge.

QUESTIONS BY MR. WAY:

Q. And just one follow-up on that. With regards to boulders and trenches, the intent would be to take care of the boulder right in the trench and break it up at that point. Do you envision boulders being brought out of the trench?

A. (Bascom) If the nature of that installation section is to use directional drilling, the intent is not to create an excavation from the surface. You're trying to go through the obstacle. So if a boulder is encountered with directional drilling, the intent would be to try and steer around it by either going to either side, above or below. And the drilling contractor would attempt to do that I think in the process.

If a boulder was encountered in an open-cut trench, the intent would probably be to cut it, blast it or some other way of

demolishing it and then removing it from the active trench so that the conduits could be laid and the backfill material could be introduced.

Q. Doing it right in the active trench.

A. (Bascom) Right in the active trench for open-cut trenching, yes.

Q. Thank you.

BY MS. WEATHERSBY (CONT'D):

Q. You also expressed concern regarding heat in the Tier 5 and 6 roads because of the trench not being deep. Sounded like because it was not deep enough. Is there a depth at which that problem would go away?

A. (Bascom) Generally speaking, there will be some elevation in the temperature around the cables at any depth. But as the cables are installed deeper, the likelihood of that occurring is diminished. In the typical installation depth offered by the Applicant for the open-cut trenching, it appears as though there could be some increase in temperature directly above the cables. And the impact on that, particularly under a soil

or gravel road, is something that I think Adam evaluated.

A. (Zysk) Yeah. Based on the reports that we've seen, I couldn't tell you a set depth at which it would not be a concern. However, the deeper the cable is, the more distance it has to dissipate heat before it reaches the surface, the road surface.

Q. Right. But you're not able to say the magic number is 6 feet or --

A. (Zysk) Not at this point, no.

Q. Okay.

A. (Bascom) We weren't tasked with evaluating a design on behalf of the Applicant that would alleviate that concern. Our main goal is to assess the configuration that they evaluated. And we confirmed that and generally agree with what they've prepared. And it does show a minor, but measurable increase in temperature if the cables are operated for an extended period of time at their full capacity.

Q. All right. Yesterday we were talking about McAllaster Road and where Northern Pass

proposes work areas of 25 feet and 27-foot-wide work zones by 300 feet. And we kind of talked around it but never got the conclusion. I'm wondering if, in your opinion, the 25-foot and 27-foot-width work zones by 300 feet long, are those realistic-sized work zones?

A. (Zysk) I think they're possible. More room is better. But if the Applicant has indicated that a 25-foot zone is acceptable for that work area, I will accept that.

QUESTIONS BY MR. WAY:

Q. And so on that roadway, that proposed work zone, when you make that statement, are you taking into account the activity that we're talking about that would come down McAllaster Road -- so, in other words, the type of trucks that would be using that road? Or is it generally that 25 feet is a good space?

A. (Zysk) The 25-feet space is tight based on the typical work zones that they have shown. And they may have to reorient some of their machinery and their equipment a little bit differently to make that zone work. And how

the zone is configured in relation to the available roadway would determine whether the road could still accommodate the vehicles that are on the road, that use that road.

Q. All right. Thank you.

BY MS. WEATHERSBY (CONT'D):

Q. Just a few kind of general questions about your experience with other projects.

Is it safe for me to assume that you presently or formerly have been involved with transmission line projects which are presently under construction?

A. (Taylor) That's correct.

A. (Zysk) Yes.

Q. And do you know if on any of those projects whether they've experienced a shortage of qualified workers to work the Project?

A. (Taylor) I can speak from the civil side. I wouldn't be able to say whether they're qualified or not, but the general word I hear in the market is that there are not enough. There's a shortage of help is what I have been hearing for quite some time.

A. (Bascom) And for the electrical component,

the personnel that do the splicing and termination of the cable and the general handling of the cable are fairly specialized contractors, and there is a constraint on that resource in general as well in the industry.

Q. Do you think the shortage of those types of workers which you've just described is exacerbated at all by the hurricanes we've experienced lately and increased infrastructure projects that are necessary? Or is that just --

A. (Bascom) It would depend. As an example, unrelated to this project, I have done some transmission cable design work on projects in Puerto Rico. And obviously there's a strong effort right now to do restoration work there. So the personnel that might be involved, you know, potentially would be in that type of activity. The type of cable that's being offered, the high-voltage DC cable, the splicers that would do the assembly of the splices and the terminations are likely to come from the manufacturer.

And given the volume of cable that's associated with this project, there might be an effort to train additional personnel to support that. But that's an unknown as far as I'm concerned at this point. But it is possible.

Q. And do you have any similar concerns concerning the availability of materials, you know, conductors, cables, towers? Are those, in your experience, plentiful? Are there any problems with shortages?

A. (Bascom) I can't speak to the overhead components because that's not my area of expertise.

The cable itself would be manufactured in stages and batches, essentially. From the standpoint of the installation contractor, they would not want all that material arriving at one time because it wouldn't all be installed at one time. So they would stage the construction and then stagger presumably the installation of electrical components. And that includes the supply of those materials in a staggered fashion as

well, at least that's what I would anticipate. That is common to most large projects where the materials are arriving as they can be installed. And from the standpoint of the developer or the installer, it minimizes the laydown area for the electrical components at least.

Q. Mr. Zysk or Mr. Taylor, do you have anything to add?

A. (Taylor) I haven't noticed anything relative to the civil materials for a job like this.

A. (Zysk) Yeah, and as far as the tower components, typically if you had very large structural members, there are only certain times of the year when the mills produce those. But for the components that make up these towers, it's a much smaller stock in general. Unless they were to order them all at once, as Rusty described, they would spread them out, the delivery. So I would assume that, based on the information I have, they could accommodate the supply.

Q. Okay. Thanks.

Mr. Bascom, you had spoken in your

prefiled testimony concerning I think what you termed "unrealistic rates of construction." So I'm just going to try to pin you gentlemen down on what might be more realistic.

For the HDD drilling, what would you consider a more realistic time estimate for HDD?

A. (Bascom) From my experience on some projects, if the construction activity does not happen without delays, which can be associated with weather, equipment failure, equipment unavailability, the duration can be much longer than planned. I am aware of a project in a different state, entirely different conditions, but the planning time for the construction was on the order of 45 days for the directional drilling, and it took 4-1/2 months because of some equipment issues and difficulty in the process. Given the volume of the number of directional drill applications that the Applicant has suggested, it seems unrealistic that all of them will go flawlessly. And given the

duration and time that I've typically seen with mobilization and demobilization at each site, and the actual drilling process itself, I think in some cases the three to five weeks or four to six weeks may be too short a duration.

I didn't quite answer your question in terms of what would be more realistic. But as an example, the bridge where they might do pipe-jacking, and they've estimated maybe up to 12 weeks, that might be realistic for some of the longer drills. On the other side, there could be a possibly of optimizing and shortening some of the directional drills. As we described earlier, there was a relatively small obstacle with a long directional drill associated with it. That could also reduce the amount of time involved and also maybe reduce the footprint and the equipment. And some of the smaller drills are commonly applied for gas lines, water lines and other types of installations, and they're more plentiful in the industry. So there's a possibility that some of those

could be happening in parallel or happening more quickly. That's my general experience. I didn't really answer your question.

Q. Okay. Do you feel as though -- I believe the Applicant has said that the trenchless -- sorry -- the open trenching would proceed at a rate of 300 feet a day. And did I hear you say that you think between 10 feet and 100 feet a day per crew is more realistic?

A. (Bascom) I'm aware of one project where there was a lot of rock encountered. It was a project that was constructed in Connecticut. And I heard anecdotally that the construction rate was taking -- well, the construction duration was taking three to four times longer than anticipated because they encountered a lot of rock.

I understand that the Applicant has identified that there's minimal rock at the typical cable depth, and I have not formed an opinion if that is an accurate representation. But I am aware that New Hampshire is the "Granite State," so there is rock in some areas. And I would anticipate

that that would slow down some of the production in certain areas, both from the standpoint of maybe the time that they were allowed to do work, because excavating through rock tends to be audibly more noisy, and the equipment involved is larger. So that could put constraints on how quickly they could construct and maybe the duration of their construction hours. So those factors together influence my statement that I thought they might be unrealistically suggesting the construction rate at 300 feet per day.

Q. So it sounds like, at this point in time with what we know about the geotechnical conditions, it's really difficult to make an estimate. Is that fair to say?

A. (Bascom) That's true, and so my comments are somewhat speculative. But based on a general knowledge of the route and the location, if the excavation was in another area that I knew was all sand or granular material, I probably wouldn't challenge 300 feet per day on a given crew.

Q. Okay. I believe the Applicants also estimated cable pulling takes about four days per enclosure. Does that sound correct to you?

A. (Bascom) Yes, I thought that was a fair representation. Perhaps slightly more time for mobilization, demobilization at each site. But yes, I think that was fair.

Q. And cable splicing taking approximately five days per enclosure?

A. (Bascom) I believe probably for the act of splicing activity, that's a fair representation. Perhaps a day on either end of that, so up to seven days just setting up equipment and maybe removing some of the equipment that's specialized for each splice location.

Q. And the actual splice enclosure itself can be installed in roughly a week? Would that be accurate?

A. (Bascom) I think that's fair, including all the activities associated with it.

I will add that the excavation for a splice enclosure obviously requires digging.

So if they encounter rock or some hard materials where they're going to install the splice enclosure, that could also extend the amount of time that they're working in a given area.

Q. Do you have an estimate for the underground portions, of the total time to construct the Project?

A. (Bascom) I haven't assessed that. No, I'm sorry.

Q. Have any of you been involved in projects where the area studied for a federal permit, such as an EIS, is different than the width of the right-of-way that's available for the construction of a utility, that you can recall?

A. (Taylor) I don't believe I've been involved in one.

A. (Zysk) Can't say that I have, no.

Q. Mr. Bascom, in your opinion, is it better engineering to install an underground transmission line above or below municipal facilities such as water lines, sewer lines, et cetera?

A. (Bascom) "Better" is a relative term. The underground line, if it's installed in conduits, it's unlikely that an operator of that line would need to get back to the cable at a given location other than at the splice vaults. So if the cables are located below other utilities that direct access is necessary or might be necessary, I think it would be advantageous from a planning standpoint to put the high-voltage cables below the other utilities.

Q. A few questions about weather, the effects of days of heavy rains. There was testimony concerning the soils adhering to the vehicles and getting onto the roads. But what other effects might heavy rains have on underground construction?

A. (Bascom) The excavation process, especially for open-cut trenching, involves creating a channel in the ground. And the extent to which you can work in that channel and be productive requires removing the water and keeping it dry. So if it's raining or there's consistent rain, there's a dewatering

effort to remove water from the trench. And depending on local requirements, that can be such that you're just discharging water onto the surface remotely, or if there's a constraint or perceived contaminant, it might require storing it in the frac tanks and hauling it away. But it adds time because the dewatering has to be configured. Well points might have to be installed to keep the trench dry for that work. Or work could be suspended for a period of time until the rain passes, possibly.

Q. And are you able to put in the slurry mix when it's raining, or would that affect its --

A. (Bascom) Properties?

Q. -- structural integrity?

A. (Bascom) I think in general it can be installed. It would depend on a case-by-case basis and if the structural components of that material were a factor in maybe satisfying DOT requirements.

Q. How about for the above-ground portion? Heavy rains have an effect that you can think

of?

A. (Zysk) Well, similarly, installing the foundations for the overhead towers are similar to -- you're digging a hole. So the placing of the reinforcing and the concrete would probably not be -- would not be advanced during a heavy rainstorm. Delivering materials to the site, stockpiling them, moving them, maybe some ground installation or some ground assembly under some temporary cover or something like that may be allowed to proceed. I doubt they'd want to bring a crane in and start hoisting up big pieces of metal if it was a lightning storm or something along those lines.

A. (Bascom) And to the extent they might use helicopters to set towers or also string conductor, weather, just like with any kind of craft, would limit the opportunities with that type of equipment.

Q. Sure. Moving into winter.

Mr. Zysk, I think you testified about snow removal, needing extra personnel for traffic control. But I'm wondering for the

above-ground portion, if there's heavy snows, what about the construction? I mean, are they able to plow the access roads, or are the cranes and the concrete trucks and all of that able to maneuver the access roads?

A. (Zysk) They wouldn't plow the roads, per se. They may run a plow vehicle with a blade up an inch or two or three so they don't disrupt all the gravel. They can do some clearing of the road. And then it's up to the contractor, whether his vehicles are -- or whether the conditions are safe to allow passage of the larger vehicles.

Q. So we heard testimony that --

A. (Bascom) I was just going to offer the extent to which the ground freezes also can make construction easier sometimes in colder weather because the vehicles can travel over the frozen ground.

Q. Right. And that's where I was going. Because we talked about maybe having a lot of wetland work, work that may impact a wetland, be done in winter under frozen conditions. But if there's 4 feet of snow on top, I'm

just wondering if that -- I guess what I'm hearing is it's possible. It just might take a longer time to get the road --

A. (Zysk) Correct.

Q. -- in such a condition that the vehicles can get down.

A. (Zysk) Correct.

Q. And can concrete set? Or the mix, I guess it's concrete, that you'd use for the pads, can that set in subzero or below zero conditions?

A. (Zysk) Yes. They could add what they call "add mixtures" to the concrete to allow it to cure in colder weather. They can provide temporary cover with heaters. There's a number of things they can do to allow that to happen.

A. (Bascom) And concrete, when it cures, it's an exothermic reaction, so it actually generates some degree of heat on its own. And then, as Mr. Zysk said, you can introduce materials that either artificially make it warm or artificially accelerate or increase the heating so that it can still successfully set

in cold climates.

Q. And so for the underground, you don't anticipate -- that wouldn't be a problem with the fluidized thermal backfill either then?

A. (Bascom) I generally wouldn't anticipate.

One factor that could be considered in the winter months with underground construction is the use of steel plates and snow plows. That's usually a difficult combination. So that would be a factor in terms of the extent the trench is left open, the extent to which work might be done during winter months for the underground portions.

Q. And I'm guessing with today's technology, the vehicles, the excavation vehicles are able to dig through frozen ground to dig the trench?

A. (Bascom) It's possible. It's not a technology issue necessarily. But certainly digging through frozen soil is more difficult than unfrozen soil. Digging through rock in colder temperatures, from the standpoint of the workers, is probably less convenient. But I don't know that that would be impacted by temperature.

Q. Okay. What about, does temperature affect, say, the flexibility of the cable and it's ability to maneuver through these splice pits and HDD tunnels and --

A. (Bascom) Generally speaking, most high-voltage cable suppliers would discourage installation of the cable when the cable itself is below about 40 degrees Fahrenheit, but below freezing, you know, 32. They would prefer that the cable be above that temperature to ensure that there's good flexibility. There are some strategies for installing cable below freezing temperatures, preheating the cable reels themselves in an enclosure, for example, that would allow that to continue potentially during winter months if they needed to do that.

Q. Okay.

QUESTIONS BY MS. DANDENEAU:

Q. What do you think the likelihood of winter construction for the underground portions of the Project would be?

A. (Bascom) It's difficult to say. Obviously, just normal vehicle traffic is impeded by

snow and cold weather. So that exacerbates normal vehicle traffic, which would probably increase the difficulties in areas where traffic control is configured, regardless of the type of traffic control. I can't speak to specifically how it would impact it. But they potentially would suspend portions of the work during the winter, especially the more severe winter months, if that was a factor.

Q. All right. Thank you.

A. (Zysk) You and I are probably going to say the same thing. Many DOTs, especially in New England, the ones I'm familiar with, have moratoriums on winter work, usually from beginning mid-December through the middle of March, beginning of April, depending on location, that you just can't do it unless it's a emergency anyway. And I don't know how DOT would treat this project as opposed to a bridge project or a road reconstruction project. But there's a good chance that the same moratorium would be applied to this work.

Q. And are you talking about a road ban in that case, the moratorium?
A. (Zysk) Underground work in a state roadway.
Q. Oh, all right. Thank you.
A. (Zysk) And Bill could probably --
MR. OLDENBURG: If I could, I think the requirement by the DOT was April 15th through November 15th was the -- nothing beyond that.
A. (Zysk) There you go.
MS. DANDENEAU: Thank you. I did have the April to November time frame in mind, so I was curious about the questioning for working in colder temperatures.
BY MS. WEATHERSBY (CONT'D):
Q. Thank you. That's helpful.
Couple more questions as we move into mud season. So, say it's May up north, still occasional freezing, the roads are a little bit muddy. I'm picturing a splice pit -- a splice vault with a manhole cover and soils are changing around it. Does that present an area of concern, or is that something that can be worked with?

A. (Bascom) Generally speaking, if the splice vault is underneath pavement, at that point there might be full restoration of the road in the vicinity; the stability of the area around the vault is probably not a factor. In the north country where there are dirt roads and gravel roads, it's just like any other activity along those types of roads; if it's muddy or slippery, navigating in a vehicle is a challenge. And this equipment, some of it's fairly heavy, would need to be transported to the site for installation. So, to the extent that any normal construction activity would be complicated by muddy or dirty roads, it would apply equally to the construction of the trench, as well as the installation of the power cables.

Q. Okay. But the manhole cover at the surface -- the cover down below on the splice vault, and if someone wanted to access it, they would then dig? Or does the manhole -- we talked about chimneys and different techniques.

A. (Bascom) Right. Normally the chimney is

accessible all the time. I think there's some discussion of perhaps covering the chimneys or making them relatively shallow below, you know, a cover of soil of some type. But they would be at known locations. And during the work, they would be exposed and really intentionally prevented from having dirt and soil and materials get into the vault, because the splicing process requires a very clean environment, low humidity environment, low dust and dirt environment. So there would be an effort by the installation contractor to configure that in such a way that it would be suitable for installing the splices.

Q. Sure. But after construction's done, years from now, that entry to the splice vault is not at the surface; is that correct?

A. (Bascom) It may not be.

A. (Zysk) That's our understanding. There's going to be no surface.

Q. In the projects that you said -- backing up now. In the projects that you said you were aware of that you worked on, that are being

constructed presently, do you know if any of those are using non-specular conductors, obviously above ground, or is it more typical in projects you're used to, to use reflective conductors?

A. (Bascom) I would say the members of this panel probably cannot address that question. Just the nature of our technical backgrounds.

Q. Fair enough.

I think you've made at least two suggestions to the Committee, directly or indirectly: One, that the Applicant provide specified lead times for information to be submitted to DOT and DES, kicked around I think not less than 90 days; and the second was that an independent monitor be appointed to follow construction activity. Am I correct that those are two suggestions you might have for the Committee?

A. (Taylor) I think that's a fair assessment.

Q. Do you have any other suggestions for us that could help ensure, if this project is built, it's done properly?

A. (Bascom) I guess I would offer a detailed

remediation for stakeholders that are impacted along the route to apply for restitution or, you know, address any issues that happen that affect some aspect of their activities, whether it's employment, personal property, you know, land rights, that those types of activities, accessibility, and have that addressed in a way that, you know, it's fair to the developers, but also to the people applying for that restitution, whatever that may be, and to have that structured in such a way that it's not too onerous for the people involved, because they're generally going to be individuals as opposed to a large corporation.

QUESTIONS BY MR. WAY:

Q. And on that point, the restitution that you might suggest, are you familiar with some of the restitution ideas that have been put forth already?

A. (Bascom) I haven't been involved with some of the, I guess economic consideration. That's not my area of expertise. But I was just responding to the question about a suggestion

to make the Project more --
Q. All right. And my question after that would be, if there was any improvements that you would make to the process that has already been proposed, but --
A. (Bascom) Not to the process, no.
Q. Thank you.
BY MS. WEATHERSBY (CONT'D):
Q. Mr. Taylor, any further suggestions you might have for the Committee?
A. (Taylor) I don't have any as I sit here, but I'd be happy to give that some further thought after today's panel meeting.
A. (Zysk) I guess one of the things that has come up over and over again is the right-of-way issue. And I would like to suggest that you'd want to see a complete, accepted right-of-way plan set with associated documentation and that the design works within those parameters going forward.
Q. Speaking of a survey?
A. (Zysk) Yes. And as required by New Hampshire DOT, that they want to see something that meets all the requirements and states the

rights-of-way to the best of everyone's knowledge.

Q. Thank you, gentlemen. I have nothing further.

CHAIRMAN HONIGBERG: Mr. Way.

QUESTIONS BY MR. WAY:

Q. Good afternoon.

A. Good afternoon.

Q. The good news is just about every one of my questions have been answered, so this is good. There are just a few things where I'm a little rough around the edge, maybe need some clarification, just make sure that I'm hearing what I'm hearing.

Mr. Bascom, when you were talking about eliminating, the potential of eliminating the splice vault, at what point does that occur? It almost sounded like you were saying that could be something during the operation that might be realized?

A. (Bascom) Generally, no, because the location of the splice vaults would be part of the, I guess, approval and permitting process. But in the Applicant's efforts to move from, say

30-percent to 60-, 90-percent design, it seemed as though it would be prudent to consider where they might be able to make pulling sections longer, which would probably make the Project less expensive to construct and perhaps easier to permit. And from a standpoint of reliability, generally the accessories, the splices and the terminations associated with power cables are the less reliable component. The cable itself tends to be more reliable.

By virtue of eliminating splices, in theory you can make the cable system more reliable. The factor that weighs against doing an optimization is that there's obviously been a lengthy application process, and assuming there is approval at some point, to make deviations or changes to the application process would extend the time to get approval or maybe go forward with the construction. So that would weigh against making changes once they reach a certain point in the design.

Q. And if you put all that aside for the moment,

looking at the Project as proposed, do you see the opportunity for extending or eliminating splice vaults?

A. (Bascom) My general impression is, yes, I think that there's been some conservative approach to the number of splice vaults involved, the typical length being around 2,000 feet, which is conservative, but it allows for unknowns and variable conditions that maybe aren't fully developed or evaluated. It would not be uncommon to pull a transmission cable 3,000 feet, for example. So, perhaps a third of the splice vaults might be eliminated in some cases. There are multiple locations where there's directional drilling, and because of some changes in the types of conduits used for a directional drilled section versus an open-cut trench, that could also impact wanting to have a splice and a vault at that location to make the transition. So there is some optimization I think possible, but the process may not permit that going forward.

Q. If the process was able to, it probably would

be easier to eliminate a splice vault than to add one; would you agree?

A. (Bascom) I would agree.

Q. In terms of plating, and we've gone over the plating quite a bit. But the idea being the Applicant had said that no business or home will not have access to their property. I think the point that you were trying to make when we were looking at that picture was that, if there is a plate going into a driveway or a parking lot, at some point you have to do something that causes the plate to be in that location.

A. (Bascom) That was my point, yes.

Q. All right. So, considering what we're talking about in these locations, how much of a disturbance is that? Is that a day? Is that two days?

A. (Bascom) My anticipation would be, in the normal process, if they were doing construction on a street, for example, where there's houses, there would be a notification, you know, we'll be working in your area for a few hours, and probably the

specific time that they're working in front of that driveway is going to be relatively limited. And I have seen situations where, you know, the homeowner or the business has to gain access and a plate is put into place to let them pass, and then once they're out of that driveway or back in the driveway, the work resumes. So there are functional ways to address that. It might be more of a challenge in business locations where consistent access is necessary to keep the business open.

Q. Okay. Ms. Pastoriza raised the issue of a septic system, I think it was nine feet off the right-of-way in the vicinity of the Gale River Motel. Did you see any information as you were doing your research that gave you any indications of septic systems near the right-of-way, some where leach fields may have encroached on the right-of-way? Do you have any idea of systems that might be impacted?

A. (Bascom) I personally haven't. I think folks from Dewberry maybe made a greater assessment

of the surveying and the drawings, so they can speak to that.

A. (Taylor) Yeah, I don't recall seeing those items called out along the underground route on the plans.

A. (Zysk) I don't either.

Q. See that as a potential?

A. (Taylor) It certainly could be. I mean, that's one example. But it wouldn't surprise me, if there were a long underground route, given how long it is, a well or a septic field that was built sometime ago is close to the right-of-way. Certainly a possibly.

Q. Possibly even encroaching upon it?

A. (Taylor) From what we have seen, yes, that's certainly possible.

Q. When the work zone ends at 7:00, I would imagine then everything's put away. I think we've talked about this before. Underground portion. What's left there? In the staging area, laydown area, what is physically left at the site?

A. (Bascom) It would depend on the circumstance. But, for example, during trenching, there

might be an excavator left at the site. There might be an air compressor for some of the types of tools that could be used, other equipment. There would probably be some form of barricade. And if requirements were such that it had to be illuminated in some way, you know, lighting equipment. And probably safety fencing. And it would depend on the extent to which the area is actively being constructed. There might be a small crane, forklift, skid-steer, numerous types of equipment that could be available. There might be a truck that stores steel plating. If not the entire length of trench that could be open is actually open, they would normally store that nearby because it would eventually be needed or they would be taking plates off to resume work the next day. There might also be some material stored nearby, for example, conduit or conduit spacers, depending on the proximity to a staging area, that could be nearby or not nearby. So, material and equipment certainly.

Q. I have to imagine one of the questions that

will come up is in terms of lighting. You mentioned there could be lighting at the site. I'm assuming that's for security reasons?

A. (Bascom) It could be for security reasons. Certainly I think it would be addressed with traffic issues, just to make sure the area is illuminated. Maybe you'd have reflectors. I think that would depend on the DOT requirements, which I'm not immediately familiar with. If there's valuable material there, there is potential for security lighting. And they might even have law enforcement or a security service that has active personnel at the site if it's a critical operation or if there's need to have certain equipment there that can't be taken off site immediately.

Q. You answered my next question, and that was: In your past experience, what has had to be done for security purposes? Do you see security issues here?

A. (Bascom) You know, I would say generally throughout the state of New Hampshire

security is probably not the same level of concern that it might be in some of the areas I've worked with, for example, like Washington, D.C., with the folks from Dewberry. But, you know, there's material there that's valuable. There's tools that are both valuable and potentially could be vandalized in certain circumstances. So security might be needed for any of those aspects. I wouldn't normally anticipate a significant issue. The presence of a police car on site is usually a fairly good deterrent for most of what I consider safety issues.

Q. I'm thinking more after hours, though, not during the day. And with such a --

MR. WAY: One second, Bill.

Q. -- with such a high-profile project or emotional project, are there security concerns?

A. (Bascom) I would say it's possible.

A. (Taylor) I would say, just as a matter of course, whether it's the emotional aspect of the Project as Rusty mentioned, there's

valuable equipment and materials there. For projects that we have where the staging areas are housing a fair amount of value, it's not uncommon for there to be a security officer, not a police officer, but a private firm, someone who's just in the area, be staged there for some period during the nighttime hours.

MR. WAY: Bill, did you want to follow up?

QUESTIONS BY MR. OLDENBURG:

Q. Yeah, just a clarification. In the original question talking about the equipment to be left on site, were you talking that would be at the staging areas or left like adjacent to the trench or the splice vault?

A. (Bascom) Potentially both. But I was thinking more of the simple construction activity. For example, as the Applicants have offered, they have a linear configuration for some of the equipment. It would be more practical perhaps to just leave that in place rather than reconfigure each day, if practical and if permissible, so they

that they could resume work more expeditiously the next morning or the next work shift. So I would anticipate that once the equipment is configured in a manner that's productive, to the extent possible they would try to leave it in that configuration during work interruptions.

Q. So, adjacent to the roadway under traffic?

A. (Bascom) Potentially. I mean, the construction activity suggests that at a minimum a lane of traffic may be closed. I don't know that it's been presented that it would be closed only during work hours. So, in other words, it might remain closed during non-work hours in some cases.

Q. Okay. Thank you.

QUESTIONS BY MR. WAY (CONT'D):

Q. And last question, so I'm clear. End work at 7:00. And is that -- that's not counting what has to be done to basically lock down for the day, my understanding. Is that your understanding or --

A. (Bascom) Not necessarily. Depending on the work requirements, if work is to end at 7:00,

and the requirements are, for example, no activity after 7:00 --

Q. You're gone.

A. (Bascom) -- then they would potentially be gone or close to being finished for the day.

Q. So if you had to button up your site at the end of the day, how much time are we talking to do that? I was thinking about the fencing and the lighting that you mentioned as well. How much time are you talking?

A. (Bascom) I would generally estimate an hour to an hour and a half. For example, setting steel plating after you've removed the excavation equipment above the trench to secure it if the site is going to be closed and made a travel lane again, the steel plating would be set in place prior to removing equipment from the site. If there's jersey barriers in place, they would probably be left or configured in a way to protect the site from vehicle access, you know, people potentially crashing into the area. So all that would be factored into the amount of time and preparation required before work

ends for the day.

Q. Okay. Thank you very much.

CHAIRMAN HONIGBERG: Ms. Dandeneau.

MS. DANDENEAU: I don't have any further questions.

CHAIRMAN HONIGBERG: I don't have any questions for the panel. Anybody else? Mr. Oldenburg?

MR. OLDENBURG: Couple follow-up questions.

QUESTIONS BY MR. OLDENBURG (CONT'D):

Q. I asked a -- I got a really good answer to a very poor question. I made an assumption that you knew that the plan was to put plates over the splice vaults. So as part of the detail that was supplied with the presentation of the DOT that we've seen, they plan to, or at least they show using welded plates supported by I-beams over the splice vaults at the end of the day. So when I talked about jersey barriers, that sort of changes the dynamic of you don't have a hole that's open after the day is done, but during

traffic, during the day when, you know, you have the operation, there's a hole right next to traffic. Would you envision that being protected with jersey barriers, knowing that at night it would be plated and there's no hole to protect, but you wouldn't necessarily take the jersey barrier away because it takes too long?

A. (Bascom) Just one characterization I think you should appreciate is when the vault is set in place, the lower half and the upper half would more than likely be set in one workday or one work shift, so there wouldn't necessarily be an open pit left once the vault is set in place. To the extent the excavation takes more than a work day or multiple work days, then the situation you're describing, where there's a partial pit under construction, that would be steel plating. I'm not familiar that they'd have to remove the jersey barriers, or the intent is to remove the jersey barriers. That would be partially described I think by the traffic control.

Q. But from a roadway standpoint, I mean, you've worked on roadway projects. Would you typically see a jersey barrier used to separate traffic from a hole that size?
A. (Zysk) No.
Q. I mean, in the original construction panel, the separation was just a few feet.
A. (Zysk) I guess it would depend on the vehicle volume and the speed of the roadway. A low-volume, low-speed roadway, you'd probably get away with barrels. But in the higher, busier roadway, maybe even Route 3, it might be pertinent to use a barrier to separate. And at the end of the day they may grab the barrier and move it to the side of the road if they reopen the roadway in both direction.
Q. And one question, and this is a final question. This is new. So, the HDD drilling sites. Now there's two conduits, so there's two entries pits; correct? Two entries and two exits? Is that two drill rigs working simultaneously, or one drill rig drilling two holes, so it takes twice as long?
A. (Bascom) More than likely it would be one

drill rig for a couple reasons. But one is just in terms of staging the equipment and positioning it. The space that's available is constrained, so you'd want to use one drill rig. The other reason is that the tracking mechanisms that are used to know the position of the directional drill while it's happening can interfere with one another -- or they would interfere with one another, depending on the type of system that's used. So they wouldn't want to drill simultaneously unless there was a real reason to do that.

Q. So that could explain why there's a longer time to do the drilling. Because originally it was one 30-inch pole with two conduits in it, and now it's two separate operations.

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

Q. All right. Thank you very much. That's all.

CHAIRMAN HONIGBERG: Mr. Pappas, I assume you have some redirect for your panel?

MR. PAPPAS: I do.

REDIRECT EXAMINATION

BY MR. PAPPAS:

Q. Good afternoon, gentlemen. I'm going to skip

around a Little bit just to --

CHAIRMAN HONIGBERG: You know what, Mr. Pappas? I'm going to stop you because I see some people getting ready to leave, and I need to remind people of something before others go.

I'm going to ask folks who are spokespeople for their groups to remind members of their intervenor groups that it's not appropriate to call or try to speak to members of the Subcommittee personally. There's been a couple of Subcommittee members who have received calls at home from intervenors, not people I can see in the room right here, but members of various groups. And I will tell you it's people who have called who are in favor of the Project and who are against the Project. So I would just ask folks to remind the people in their groups that it's not appropriate to make what are called ex parte communications to members of the Committee.

I apologize for interrupting, Mr. Pappas. You may proceed.

MR. PAPPAS: Thank you, Mr. Chairman.

BY MR. PAPPAS:

Q. Mr. Taylor, let me start with you. Earlier this afternoon, Attorney Needleman asked you about Condition 22 for the DES approval of laydown areas. Do you recall that?

A. (Taylor) I do.

Q. And that DES approval is approval of the laydown area site itself, whether the actual laydown area site is appropriate; correct?

A. (Taylor) That's correct.

Q. You wouldn't expect the DES to assess the impact on traffic from the vehicles entering and exiting that laydown area; correct?

A. (Taylor) No, I would not.

Q. And he then asked you some questions about the DOT and a Traffic Management Plan. Do you recall that?

A. (Taylor) I do.

Q. And Mr. Oldenburg showed during his questioning a portion of the recent October 13, 2017 memorandum from the DOT that's requiring a Traffic Management Plan.

Do you recall that?
A. (Taylor) I do.
Q. Okay. Now, the Traffic Management Plan would handle things such as safety on the roads and traffic conditions and other things listed in this memo; correct?
A. (Taylor) That's correct.
Q. You wouldn't expect the Traffic Management Plan to assess, for instance, impact on business, would you?
A. (Taylor) No.
Q. And you wouldn't expect the Traffic Management Plan to assess impact to tourism, for instance, would you?
A. (Taylor) No.
Q. So, even if this Committee would defer to DES to identify specific laydown areas, or refer to DOT to deal with a Traffic Management Plan, that doesn't provide the Committee with information to assess impact from traffic going in and out of the laydown areas and how that would impact, for instance, businesses or tourism and so forth; correct?
A. (Taylor) That's correct.

Q. Now, Mr. Zysk, earlier you were asked by Attorney Needleman about heat damage to roads, Tiers 1 through 4. Do you recall that?
A. (Zysk) I do.
Q. You were asked about damage from heat from the cables to Tiers 5 and 6. So let me ask you, first of all, roads in the North Country, the 7-1/2-mile underground, those are Tiers 5 and 6; are they not?
A. (Taylor) They are.
Q. And do you have concern about damage to those roads from heat from the cables?
MR. NEEDLEMAN: Mr. Chair, was this the subject of direct examination or examination?
MR. PAPPAS: Yes. He was asked about roads, Tiers 1 through 4, and I'm just completing and asking about 5 and 6, because he asked about his direct -- or I think it was supplemental testimony about damage to roads from heat.
MR. NEEDLEMAN: I thought it was already in their testimony.

CHAIRMAN HONIGBERG: Yeah, I think Ms. Weathersby may have asked about 5 and 6.

MR. PAPPAS: Well, I apologize. I might not have been paying attention then. If you've asked about it, I'll move on.

BY MR. PAPPAS:

Q. Mr. Taylor, let me ask you this: You were asked this afternoon about the Applicant's position about closing Bear Rock Road. Do you recall that?

A. (Taylor) I do.

Q. And have you had the opportunity to review the Applicant's traffic control plans for Bear Rock Road?

A. (Taylor) I have.

Q. And do the Applicant's traffic control plans show Bear Rock Road being closed?

A. (Taylor) They do.

Q. And recently the Applicant produced some plan sets, plan sheets dated August 2017; correct?

A. (Taylor) Correct.

Q. And they produced some new alteration of terrain plans, also dated August 2017;

correct?
A. (Taylor) that's correct.
Q. But the Applicants haven't produce any new traffic control plans other than the ones that show Bear Rock Road being closed; correct?
A. (Taylor) That's my understanding.
Q. Okay. Mr. Taylor, what's on the screen in front of you -- is something on the screen in front of you?
A. (Zysk) Yes.
A. (Taylor) Yes.
Q. What's on the screen is Counsel for the Public's Exhibit 230, which is a December 2016 letter to the selectmen. Do you see that?
A. (Taylor) I do.
Q. And the highlighted portion of the letter indicates, "During construction, we anticipate the need for temporary road closures on Old County Road, North Hill Road and Bear Rock Road in Stewartstown." Do you see that?
A. (Taylor) I do.

Q. What's on the screen in front of you now is Counsel for the Public's Exhibit 231, which is a December 2, 2016 letter from the Project to the landowner. Do you see that?
A. (Taylor) I do.
Q. And to the landowners they indicated, "During construction, we anticipate the need for temporary road closures on Bear Rock Road." Do you see that?
A. (Taylor) I do.
Q. Okay. Mr. Taylor, let me ask you briefly a question about Transition Station 4. You were asked about the amount of material that needs to be removed and the number of trucks that would be needed to remove that material. Do you recall that?
A. (Taylor) I do.
Q. And you were asked whether or not the Applicant could store some of that material or deposit some of the material on property they owned around Transition Station 4. Do you recall that?
A. (Taylor) I do.
Q. Now, have you had the opportunity to visit

that Transition Station 4 location?
A. (Taylor) I have.
Q. And could you tell us, is that area forested?
A. (Taylor) A good bit of the area is forested. Correct.
Q. And how is the topography?
A. (Taylor) There is a considerable amount of topography, steep in some cases.
Q. And in order for the Applicant to remove material from the Transition Station 4 area and deposit it in their adjacent property, would they need to clear trees?
A. (Taylor) In all likelihood, yes.
Q. Would they need to build some roads in order for dump trucks to drive over?
A. (Taylor) It's highly likely, yes.
Q. And do you believe that at certain levels, that itself would require permitting?
A. (Taylor) Given the volume, yes.
Q. Now, Mr Bascom, let me ask you. You were shown Applicant's Exhibit 227 and asked a few questions about splice vaults. Do you recall there was a picture of the crane dropping a splice vault into a hole?

A. (Bascom) I do recall.
Q. On the screen now is Applicant's Exhibit 227. Do you see that?
A. (Bascom) I do.
Q. And this is the document where you were shown the crane dropping the splice vault into the hole; correct?
A. (Bascom) Yes.
Q. And this is a document from the Project itself; correct?
A. (Bascom) That's my understanding, yes.
Q. And it's in fact titled "Northern Pass Transmission Underground Construction Work Plan, dated May 16, 2017"; correct?
A. (Bascom) Yes, I see that.
Q. And it indicates Quanta Services on one side and PAR Electric on the other?
A. (Bascom) Yes.
Q. And this document -- and we went through it earlier, so I won't do it again. But it demonstrates manners in which Quanta and PAR would proceed and do the construction; correct?
A. (Bascom) Yes, I understood these to be the

construction practices they intended to use on the Project.

Q. Now, Mr. Taylor, let me move back to you. You were asked some questions earlier about the Applicant's intent to stay within the right-of-way. Do you recall that?

A. (Taylor) I do.

Q. Now, would you agree with me that, until the right-of-way is firmly established, you don't know if the Applicant can always stay within the right-of-way in certain designated areas?

A. (Taylor) That's correct.

Q. Okay. Mr. Bascom or Mr. Zysk, let me ask you this: You were asked earlier about reducing the work zone for the entry pits for HDD drilling down to 27 or 25 feet. Do you recall that?

A. (Bascom) Yes.

A. (Zysk) Yes.

Q. And you indicated a number of items that would have to be done for HDD drilling activities. Do you remember discussing those?

A. (Bascom) Yes.

A. (Zysk) Yes.
Q. And I believe you indicated that the picture showed static, but when the activity's going on there would be a lot of activity moving within that work zone; correct?
A. (Bascom) That's correct --
Q. So if the work zone were reduced from the 30-foot which we saw -- 3 feet wide, which we saw in most places, down to 27 or 25 feet, would that impact the movement of vehicles and equipment within that work zone and therefore slow down the HDD work?
A. (Bascom) I would anticipate that it would, yes.
Q. Okay. Mr. Zysk, let me ask you just a few questions about the splice vaults and the cranes for them that you were asked about earlier this afternoon. I'm going to borrow Mr. Thompson's sketches in order to ask you these questions.

On the screen now is CS Exhibit 136, Page 1, which is Mr. Thompson's sketch of a crane with the flatbed truck on the left-hand side and the splice pit vault area on the

right-hand side. Do you see that?
A. (Zysk) I do.
Q. And I don't want to repeat everything Mr. Thompson went through, but I want to draw your attention to the 47-foot length that Mr. Thompson estimated from essentially the center of the crane to the center of the splice pit hole area. Do you see that?
A. (Zysk) I do.
Q. Okay. And can we -- on the screen now is Page 2 of Exhibit CS 137, and it shows the crane picking up the splice vault from the flatbed truck. Do you see that?
A. (Zysk) I do.
Q. Okay. Then go to the third page. And on CS 138, Mr. Thompson has depicted that crane swinging the splice vault around in order to drop it into the hole. Do you see that?
A. (Zysk) I do.
Q. Now, based on what you know in terms of the size of the splice vault -- and we had testimony that they were going to come in two pieces, and each piece is about 25 ton in weight -- the distance, if they're going to

use the method shown on the work plan to pick up the splice vault on the flatbed and swing it around and drop it in the hole, and information on these sketches, what size crane would be needed to perform this activity?

A. (Zysk) Given the reach of the boom that would be necessary to pick up both up the vault piece and extend it out to center it over the pit, and the weight that's required to be picked up, I would estimate that the range of weight needed by the crane is the capacity of about a 50- to 80-ton crane.

Q. Okay. And Mr. Needleman asked about an alternative way in which to pick up the splice vault, if you will, and drop it in the crane. Do you recall that?

A. (Zysk) Yes.

Q. Okay.

MR. PAPPAS: Dawn, could we have the ELMO?

BY MR. PAPPAS:

Q. What's on the screen now is Counsel for the Public's next exhibit number, which will be

596. And all I want to use this for is the depiction of the method that Mr. Needleman described for you, where you see the crane, you see the splice vault hole, and then you see the flatbed truck on the other side of the hole. Do you see that?

A. (Zysk) I do.

Q. And am I correct in saying that what Mr. Needleman suggested was that you pick up the splice vault from the flatbed, which is on the opposite side of the hole, and you pick it up and you maneuver it to drop it in the hole?

A. (Zysk) I see that.

Q. Okay. And that would require a crane to do that; correct?

A. (Zysk) Yes.

Q. And does that -- do you think that the distance or the outreach of the crane itself would be greater in this method of dropping it in, greater than the prior method we just talked about earlier -- in other words, the span from the center of the crane to the flatbed truck in order to pick up the splice

vault?
A. (Zysk) It would be substantially longer.
Q. Yeah. Would I be correct in saying that if you have a substantially longer crane going out, you need the counterweight in the back of that crane in order to balance, if you will?
A. (Zysk) Well, there's only so far -- despite the sketch that's shown, there's only so far from a vertical orientation that a crane boom can effectively operate. So I think what is shown may be exaggerated. I would expect that you'd want to maintain that maximum deviation from vertical. You need a crane with a much longer boom so it could make that reach while still maintaining the same angle, and then it would be able to pick that up. And I don't know if, given the crane size we've already talked about, you would need a much larger crane mostly for the boom distance. The capacity of the crane wouldn't need to necessarily increase, but you'd need a much, much longer boom that would extend much higher up to make the same movement.

Q. Okay.

MR. PAPPAS: Dawn, could we switch back, please?

BY MR. PAPPAS:

Q. Now, Mr. Zysk, yesterday when Mr. Ahern was asking you some questions, he was inquiring about Exception Request No. 3, south of Plymouth. Do you recall that?

A. (Zysk) Generally, yes.

Q. Okay. And he described for you some sloped terrain in that area. Do you recall that?

A. (Zysk) Yes.

Q. He also described and showed you that the road had sloped a little bit in that area as well; correct?

A. (Zysk) Yes.

Q. And you had testified about the HDD drilling on a sloped area. Do you recall that?

A. (Zysk) Yes.

Q. Okay. Now, we saw where the exception requests that the Applicant has submitted have all indicated that the HDD drill site, the entry pit, generally needs a 30-foot area that is level, clear and stable; is that

right?
A. (Zysk) Yes.
Q. Okay. Now, yesterday you had testified that the HDD drill can actually drill in a sloped area. Do you recall that?
A. (Zysk) Some slope, yes.
Q. Some slope. Now, would I be correct in saying that the drilling equipment itself needs to be on this 30-foot level, stable area? Correct?
A. (Zysk) In general, yes.
Q. Yeah. And once you have a stable, level area for the drilling equipment, it can drill down to some slope; correct?
A. (Zysk) Yes.
Q. But the equipment itself, the HDD equipment itself, can't be on a sloped area. That equipment requires a level area in which to set in order to do the drilling; correct?
A. (Zysk) I think as I described it, level in the sense of transverse to the direction of the drill. If there was some slight -- like a roadway at a 2- or 3-percent grade would not affect the ability of the drill to do its

work.
Q. Right, right. But the equipment itself, as indicated in the exception request, that has to sit on a relatively stable, level area order to be able to drill; correct?
A. (Zysk) Correct. And again, if it was on a roadway with a standard 2-percent cross-slope, that would be acceptable.
Q. Mr. Taylor, earlier today Mr. Van Houten was asking you some questions about access at Transition Station No. 5. Do you recall that?
A. (Taylor) I do.
Q. And what's on the screen now is a page from Applicant's Exhibit 200, Bates stamp 67511. And do you see Transition Station 5 on the screen?
A. (Taylor) I do.
Q. And did you have opportunity to visit this area?
A. (Taylor) Yes, I've been there several times.
Q. Okay. Now, you testified this morning that the Project could be constructed in this area from this access point. Do you recall that?

A. (Taylor) I do.
Q. And if you look at the screen, in the middle of the right-of-way do you see the red triangle symbol, right where it shows the yellow which is the underground portion?
A. (Taylor) I do.
Q. Okay. And that is right adjacent to Route 302; correct?
A. (Taylor) It is.
Q. And that denotes how the Project is going to access the right-of-way in order to construct the overhead portion in this area of the right-of-way; correct?
A. (Taylor) That's correct.
Q. Okay. And would I be correct in saying, if you look at the map, it shows in the yellow squares the location of proposed structures? Correct?
A. (Taylor) That's correct.
Q. And you see the red double line going from structure to structure; correct?
A. (Taylor) I do.
Q. And am I also correct that that red double line is the access road that the Applicant

needs to build in order to construct each of the towers? Correct?

A. (Taylor) Correct. It's called out as "proposed access route."

Q. Okay. Now, that access route does not currently exist; correct? That's proposed to be built?

A. (Taylor) That's what it's indicating. Correct.

Q. And would I be correct in saying that that access road is going to be different than what the Applicant currently uses to maintain the right-of-way as it currently exists?

MR. NEEDLEMAN: Objection, Mr. Chair. This is testimony that Mr. Van Houten was not allowed to elicit from this panel, but it could have and should have been included. So I'm not sure now how it's appropriate for Mr. Pappas to be doing that.

CHAIRMAN HONIGBERG: Mr. Pappas.

MR. PAPPAS: Well, I disagree. I think that he, Mr. Van Houten, asked about being able to construct from this access point. And all I'm doing is clarifying. And Van Houten

also had shown between Route 302 and Route 116, and he didn't have access to these maps. And I'm just trying to clarify the areas that he went over. And I'm maybe a minute or two, and this is my last area, or second to last area, just to make sure it's clear in the Committee's mind. I think he was able to ask about this --

CHAIRMAN HONIGBERG: Overruled. You can answer.

MR. PAPPAS: Thank you.

BY MR. PAPPAS:

Q. Mr. Taylor, what's on the screen now is another page from Applicant's Exhibit 200, Bates Stamp 67504. Do you see Route 116?

A. (Taylor) I do.

Q. See the right-of-way where it intersects Route 116?

A. (Taylor) Yes.

Q. And I'll represent to you that, as you saw earlier today on Mr. Van Houten's map, the access for this part of the right-of-way is between Route 302 and Route 116. Do you recall that?

A. (Taylor) I do.

Q. Okay. And so would I be correct in saying that from structure to structure, tower to tower, what the Applicant is going to do is build an access road in order to construct the Project?
A. (Taylor) That's correct.
Q. And that's going to be an access road that's going to include gravel in order to allow the flatbed trucks and the cranes and the concrete mixers and so forth to travel from structure to structure to build the structures; correct?
A. (Taylor) That's correct.
Q. Okay. So the Applicant, in your opinion, can construct the right-of-way -- the Project in this area from those two access points, but what it also has to do is build the road in order to do that; correct?
A. (Taylor) That's correct.
Q. Okay. And finally, Mr. Zysk, let me ask you this: You had indicated earlier in response to a Committee question that there was one red-listed bridge along the route. Do you recall that?

A. (Zysk) Yes.
Q. And you couldn't recall where it was. But Mr. Alexander had looked at this and Dewberry looked at this, this red-listed bridge issue; correct?
A. (Zysk) Correct.
Q. On the screen now is Counsel for the Public's Exhibit 595. Do you see that?
A. (Zysk) I do.
Q. And this is a Google Earth picture of the proposed route on Route 18 in Sugar Hill running parallel to I-93. Do you see that?
A. (Zysk) Yes.
Q. And it's a little hard to read, but would I correct in saying that what this picture shows is the location of the red-listed bridge that is along the route?
A. (Zysk) Yes.
Q. And that is in Sugar Hill on Route 18; correct?
A. (Zysk) Yes.
MR. PAPPAS: And for the Committee's benefit, that portion of the route is in the SHEB drawings at Page 106 and 107.

Q. Thank you, gentlemen. I have no other questions.

CHAIRMAN HONIGBERG: All right. I think we are done with the panel. Thank you very much for your testimony.

We will be back on Thursday morning. And we'll be hearing from the Brattle Group; correct, Mr. Pappas?

MR. PAPPAS: Correct.

CHAIRMAN HONIGBERG: All right. We are adjourned.

(Whereupon the Day 51 Afternoon Session was adjourned at 5:20 p.m., with the Day 52 hearing to resume on October 25, 2017 commencing at 9:00 a.m.)

C E R T I F I C A T E

I, Susan J. Robidas, a Licensed Shorthand Court Reporter and Notary Public of the State of New Hampshire, 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.

_____

Susan J. Robidas, LCR/RPR
Licensed Shorthand Court Reporter
Registered Professional Reporter
N.H. LCR No. 44 (RSA 310-A:173)

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