

**In The Matter Of:**

***BROOKLINE ZONING BOARD APPEALS HEARING***

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***PROCEEDINGS - Vol. 5***

***April 10, 2014***

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**MERRILL CORPORATION**

**Legalink, Inc.**

101 Arch Street  
3rd Floor  
Boston, MA 02110  
Phone: 617.542.0039  
Fax: 617.542.2119

Volume V

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Brookline Zoning Board Appeals Hearing

Case Number 20130094

40B Application by Chestnut Hill Realty

The Residences of South Brookline

April 10, 2014 at 7:00 p.m.

Office of Town Counsel

333 Washington Street, 6th floor

Brookline, Massachusetts 02445

Merrill Corporation LegaLink, Inc.

179 Lincoln Street, Suite 401

Boston, Massachusetts 02111

(617) 542-0039 Fax (617) 542-2119

Reporter: Kristen C. Krakofsky

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Appearances

Board Members  
Jessie Geller, Chairman  
Jonathan Book  
Chris Hussey  
Mark Zuroff, Associate Member  
Avi Liss, Associate Member  
Kathryn Cochrane Murphy, Krokidas & Bluestein  
Edith M. Netter, Esquire,  
Edith M. Netter & Associates, P.C.  
Alison Steinfeld,  
Planning & Community Development Director  
Philip Paradis, Jr., P.E., LEED AP, CPSWQ, BETA  
Matthew J. Crowley, P.E., BETA  
Joseph Geller, P.E., Stantec Consulting  
Frank Holmes P.E., Stantec Consulting  
Irene Scharf, Resident of Russett Road

1 PROCEEDINGS

2 7:01 p.m.

3 MR. JESSIE GELLER: Good evening, everyone.

4 This is a continued hearing on the Residences of South  
5 Brookline. Our last hearing was dedicated to review of  
6 transportation and traffic issues. This hearing is  
7 limited to review of stormwater and drainage. Tonight  
8 we will hear from our town's peer reviewer who will  
9 provide a presentation and commentary on the Stantec  
10 report we received from the applicant.

11 A few administrative details: Just as a  
12 reminder, that guy, Avi Lis, Jonathan Book, Chris  
13 Hussey, Jessie Geller, Mark Zuroff.

14 If you are speaking this evening, I would ask  
15 that you speak into the microphone. Start by giving us  
16 your name and your business address. Speak loudly and  
17 clearly because we are clearly keeping a record.

18 A few other things: We have engaged the  
19 services -- I'm going to screw this up. Who knows how  
20 to pronounce their name?

21 MS. STEINFELD: Touloukian Touloukian.

22 MR. JESSIE GELLER: -- Touloukian Touloukian  
23 to assist with design review. They are peer reviewers,  
24 and we anticipate scheduling them and having them

1 available May -- we'll figure out that date.

2           The next hearing will be May 8th, and we would  
3 anticipate at that point that we will have an  
4 opportunity to hear final reports and get answers to  
5 some of the questions. Hopefully there will have been  
6 an exchange of whatever additional information was  
7 being sought with respect to both the transportation  
8 and traffic issues as well as with respect to  
9 stormwater. So that will be a focused hearing on  
10 May 8th.

11           What we propose to do at the end of the  
12 May 8th hearing is we would give the public the  
13 opportunity to speak with the focus limited to, again,  
14 the two subjects that that hearing will be dedicated  
15 to; that is first, transportation and traffic and  
16 secondly, stormwater.

17           Ms. Steinfeld, I understand we have an  
18 update?

19           MS. STEINFELD: Thank you, Mr. Chairman.  
20 Allison Steinfeld, planning director.

21           With the assistance of the Town's facilitator,  
22 town staff met with the applicant several times to  
23 discuss the proposal. We discussed the proposed  
24 development and its impacts on the town and the

1 abutting single-family neighborhood.

2 Staff articulated the Town's top priorities to  
3 be retaining as much of the green space as possible and  
4 while not within the scope of 40B, reducing the impact  
5 on our schools. Within the context of these  
6 priorities, we talked about the number of units, the  
7 bedroom mix, and retaining useable green space.

8 Discussions will continue, and I'll be pleased  
9 to report back to you next meeting. Thank you.

10 MR. JESSIE GELLER: Thank you very much.

11 Any questions at this point?

12 MR. BOOK: I do. Just a clarification.

13 On May 8th, the final reports, those two will  
14 be limited to traffic and stormwater?

15 MR. JESSIE GELLER: Traffic and stormwater;  
16 correct.

17 MR. BOOK: Okay.

18 MR. JESSIE GELLER: Because there were a  
19 number of issues our peer reviewer had raised, some  
20 outstanding information. I understand that there's  
21 been some sharing going. There were some questions  
22 that were raised, and that would be an opportunity to  
23 bring those back into view and try and respond.

24 MR. PARADIS: Thank you, Mr. Chairman, members

1 of the board, residents, and concerned citizens. My  
2 name is Phil Paradis. I'm a professional engineer with  
3 over 25 years of experience in land development  
4 engineering. Today I'm here with my colleague Matt  
5 Crowley. We have been able to review the project as it  
6 relates to civil and stormwater management aspects. I  
7 am a professional engineer. I am also a LEED  
8 Accredited Professional and a Certified Professional in  
9 Stormwater Quality. I want to review our findings with  
10 you this evening as it relates to the Residences of  
11 South Brookline.

12 Here's a summary of my presentation. We're  
13 going to do a little introduction in terms of the role  
14 of a peer review engineer versus a design engineer, we  
15 will go through the findings in the different aspects  
16 of the project, we'll summarize our major issues, we'll  
17 talk about what we expect to do in our next steps, and  
18 then we'll open it up to questions from the Board.

19 I wanted to clarify what engineering is.  
20 Engineering is not a practice where we do everything  
21 right, where we do everything possible to meet every  
22 "what if." It's not financially possible to build  
23 highways to handle every speed, to handle every event,  
24 stormwater systems, et cetera. We design based on an

1 accepted practice, kind of a minimum standard, the most  
2 probable situation and event.

3 The challenges today in site development is,  
4 the majority of sites are developed -- good sites. You  
5 know, all open fields are -- and you'll see some  
6 challenges with this site is that it's -- you know,  
7 we're down to sites that are more challenging.

8 Also, stricter regulations require us to think  
9 about protections of environments and safety issues --  
10 much stricter today. This particular development is  
11 subject to different regulations because it's a 40B.  
12 There's some relief there as it relates to zoning and  
13 local bylaws.

14 So a developer engineer is focused on how do I  
15 get this project built for the developer, you know,  
16 meeting the developer's goals, how many units I can fit  
17 on the site, make money, the whole nine yards. They  
18 spend a lot of time trying to do that when they're  
19 on-site -- quite a bit.

20 As a review engineer, we've had just a brief  
21 time to look at it but we are focused on the major  
22 impacts on local -- on the Town's infrastructure and  
23 the abutting properties and how to protect, how to  
24 minimize/avoid impacts and/or mitigate them.



1           Again, because of the brief time we've had a  
2 chance to look at it, we'll probably seek -- we have  
3 been seeking Town input and abutter input to understand  
4 all the issues. Our findings right now are kind of  
5 based on the documents that were presented to us, and  
6 we will outline some of the issues. There may be --  
7 there's many details that may be quickly answered.  
8 We're going to focus on the major issues.

9           The major issues we looked at were, along with  
10 stormwater, are some of these aspects of developing the  
11 site: the earthwork and the site prep, site plan, site  
12 access and parking, utilities, landscaping, lighting,  
13 environment. All those things were covered in our  
14 review letter. I've taken stormwater and put it at the  
15 end because that's going to be the focus of our  
16 discussion this evening.

17           As it relates to prepping the site for  
18 construction, the site is fairly challenged in that it  
19 is long, linear lots that are predominantly open space  
20 now and an area that wasn't developed, I would assume,  
21 primarily because it's mostly ledge. It's large  
22 outcroppings of ledge, and we are concerned about the  
23 amount of ledge that's going to be removed, the  
24 proximity of that ledge in relation to existing

1 buildings. You can see over here, you know, you're not  
2 very far from buildings.

3 There's an existing roadway on this side. The  
4 truck route -- you know, we did a back-of-the-napkin  
5 calculation and we think there's greater than 20,000  
6 cubic yards of rock that's going to be excavated, which  
7 is a sizeable amount. It's over 1,000 dump truck  
8 loads -- of fairly big dump truck loads.

9 So we want to make sure the developer can  
10 provide a Plan A for how safely -- get this rock out of  
11 the ground and off the site without destroying, you  
12 know, residences, local residences, protections there,  
13 and also for protection of the roadways. You put that  
14 number of trucks on the local roads, and that could  
15 have an impact.

16 You know, again, this is the section right  
17 there that we took -- well, actually it was provided  
18 for in the documents they gave us. All our document --  
19 all the illustrations here are from the plan set that  
20 was given to us to review. Again, the limits of  
21 excavation are fairly significant for this building.

22 And there are also probably other areas that  
23 may need some rock removal. Right now these kinds of  
24 open areas are used, I would presume, for recreation

1 areas. There are, I think, three of these stations  
2 that will be interrupted because of the development and  
3 we're just curious as to how that can be accommodated  
4 on that site, how they can reuse this.

5 Also there were -- in the site plan, there  
6 wasn't any clear indication as to how trash and  
7 recycling was going to be handled. Where are the  
8 locations for removal and stuff? So I think that's an  
9 important aspect with the close proximity to the  
10 buildings.

11 One of the major concerns, and it probably was  
12 addressed a little bit more in the traffic study, but  
13 as it relates to safety, we're concerned about the  
14 access, particularly off Asheville Road to the  
15 proposed, you know, very large development there.  
16 Right now Asheville Road accommodates -- you know, has  
17 access to the 180 spaces. We weren't able to figure  
18 out how many units it accompanied, so we related it to  
19 the spaces. In the future, Asheville Road is going to  
20 provide access to the 416 spaces, so it's a substantial  
21 increase.

22 And the major concern, from a civil  
23 engineering aspect, is emergency access. You know, is  
24 the fire department amenable to that? Can they get

1 their equipment if something were to happen at the  
2 entrance or, you know, something at Building 11 or 9 or  
3 10, you know, that would make it difficult for  
4 emergency access vehicles to get in. So we recommend  
5 that the applicant look at an opportunity to get at  
6 least an emergency access to the south end of the --

7 MR. JESSIE GELLER: Let me say that our last  
8 hearing was dedicated to these kinds of issues.

9 MR. PARADIS: Well, this slope issue is --  
10 again, from a civil engineering point of view, this  
11 existing parking lot in this area is -- requires a  
12 steep up and a steep down. We recommend that the  
13 applicant look at removing the steepness and  
14 particularly the crossroad at the lower driveway there.

15 The parking and access to the existing  
16 buildings are -- we didn't spend a lot of time looking  
17 at the architecture in terms of getting people off the  
18 parking lots and into the walkways and into the  
19 buildings but there's -- right now it looks like the  
20 residents would have to walk all the way around to get  
21 to the front door. Maybe it's a security reason. I  
22 don't know.

23 But we looked at opportunities for residents  
24 to get to their building. For instance, this one

1 requires crossing the driveway twice. This requires --  
2 it's a little bit better but the concern is for --  
3 especially for Building Number 10, you know, you have  
4 to go a long way to get to the parking lot. And there  
5 was also no indication as to -- I would assume that  
6 this visitor parking kind of in the center of that  
7 diagram is going to remain.

8           The utilities for this project were fairly  
9 standard. There was a unique feature on the north side  
10 of the site, a pump station, that was -- it looked like  
11 it could be eliminated if possible, but there were no  
12 details to show exactly what was happening. We also,  
13 you know, want to make sure that there's sufficient  
14 hydrants on-site. There was schematically basically  
15 the telephone, electric, and cable, however, no  
16 structures in terms of, you know, how they're going to  
17 service those shown on the drawings.

18           The landscaping -- I had our landscape  
19 architect review these things, the landscaping, and it  
20 appears that the -- you know, when parking is facing  
21 the residence, we recommend more screening be provided  
22 to prevent, you know, parking lights going right into  
23 people's homes. So that's why we recommended  
24 additional plantings. You know, we would also

1 recommend that the applicant consider protecting their  
2 existing buildings from that aspect as well.

3           These are more examples of some landscaping  
4 issues. There also isn't a cleared -- it doesn't seem  
5 that the landscaping around Building Number 13 is  
6 completed.

7           There's some slight lighting spillage onto  
8 adjacent properties. This one obviously would affect  
9 this resident. It's not significant, however, I think  
10 the lighting can be modified to reduce or eliminate  
11 that. There are a few other areas that light spillage  
12 can be addressed.

13           Other environmental concerns -- I know that  
14 the Town was looking to investigate whether there was a  
15 vernal pool at the north side of the site. Our wetland  
16 specialist looked at it today -- I haven't been able to  
17 talk to her -- so we should get information as to what  
18 her perception of that is.

19           The site isn't within a flood zone. There's  
20 no endangered species. There are -- this is in a  
21 watershed of, you know, impaired waterways. The  
22 Charles River has a TMDL for phosphorus and bacteria,  
23 and we will look for opportunities to work with the  
24 developer to address some of those. A lot of the --

1 the infiltration system would address that.

2 There is a couple of historic sites. One,  
3 obviously, is the Baker School adjacent to the site.  
4 We just want to make sure that this doesn't impact that  
5 site.

6 There was a question, also, about the impact  
7 of this development in terms of mosquitoes. The  
8 proposed design for the stormwater involves a lot of  
9 porous pavement which would -- you know, if properly  
10 constructed and installed and maintained, would reduce  
11 any ponding in the area and the mosquito issue would be  
12 minimal.

13 As it relates to stormwater, stormwater  
14 management practices for sites are -- the aim is to do  
15 no harm. The idea of developing a site is -- you need  
16 to get a control and mitigate any impacts due to  
17 stormwater management on-site and that's done through a  
18 number of methods, through DMPs, through, you know,  
19 detention and retention and low-impact development  
20 techniques.

21 The way you do that is you first investigate  
22 the existing conditions. You try to ascertain by  
23 making assumptions and doing investigations of the  
24 existing conditions and that would be, you know,

1 looking at the drainage areas. You want to confirm the  
2 drainage areas, confirm the surface condition, whether  
3 it's paved, whether it's wood, whether it's grass. You  
4 look at that those things. You look at the underlying  
5 soils and/or -- in this situation there's some ledge.  
6 You look at the groundwater elevations and levels, and  
7 then you figure in also any known flooding issues.

8 And so we would -- some of the information is  
9 available. We need a little bit clearer plans to be  
10 able to finish that investigation. Also, the applicant  
11 has provided a number of locations of soil tests but  
12 didn't provide all the data. So we would prefer to  
13 have all the data for the site.

14 There's also an issue of estimating the  
15 groundwater, the seasonal high groundwater. This was  
16 done -- they gave us data for a well, observation well,  
17 but they only took it on one day and that was one day  
18 in January, so we would want more data to make sure  
19 that they actually reached -- you know, provided the  
20 seasonal high groundwater. We looked at local  
21 published wells in the area, and it looks like that  
22 wasn't the peak, so we would want to do some soil  
23 testing and/or further monitoring of the observation  
24 wells to make sure, because we don't want to be putting



1 the infiltration systems or the porous pavement  
2 sections in within the groundwater.

3 In the proposed design, the applicant is  
4 required to look at, you know, obviously, grading the  
5 site to drain correctly and capturing the stormwater so  
6 it doesn't, A, do damage to their structures, also  
7 doesn't do damage to the abutting structures, and that  
8 it would offer some sort of treatment and/or mitigation  
9 for the impact of making it an open-space area  
10 impervious to infiltration.

11 And then we looked at the construction and the  
12 maintenance aspects of those systems. This particular  
13 area is down by the south end. Again, looking at this  
14 area, we would advise the applicant to provide  
15 additional drainage in this area because it looks like  
16 some of the water from the site could get onto abutting  
17 properties. So we would do this -- there's a few other  
18 areas that we are proposing that the applicant address  
19 this issue.

20 Again, the stormwater management standards are  
21 pretty standard, you know, from DEP's standpoint, and  
22 it is the standard today in which us as design  
23 engineers and then peer review consultants can rate a  
24 site. It's basically -- if the project meets these

1 standards, to a large extent it would be considered a  
2 good design.

3 Right now the project is not proposing any new  
4 untreated outfalls to wetlands. The design is  
5 attempting to not increase the peak rate of runoff from  
6 the site. They provided some BMPs for the groundwater  
7 recharge. They're showing some pollutant removal and  
8 treatment of runoff. They provided an erosion and  
9 control of sediment plan. So aspects -- if the BMPs  
10 and/or design features are designed properly, they  
11 would meet the standards. Note that Standards 5, 6,  
12 and 7 don't apply to this project, so we're didn't look  
13 at those.

14 As it relates to the major way the developer  
15 is mitigating the stormwater runoff, they are proposing  
16 a low-impact development technique that is beginning to  
17 be more and more acceptable. However, many of the  
18 features that we would -- we are questioning -- we want  
19 to make sure that the pavement is constructed properly,  
20 is modeled properly, there's certain protections.

21 You know, sites are primarily initially --  
22 most sites are developed. All the site work and  
23 earthwork is completed and then, you know, parking lots  
24 are typically paved, the binder course, and then they

1     come in and build the buildings, so they can use the  
2     parking lots for laydown and such. Well, we want to  
3     make sure that A, the developer has thought through how  
4     that's going to -- how this particular pavement  
5     section -- we don't want it to get damaged during  
6     construction. We want it to be able to function. We  
7     want it to be able to meet the goals of both the  
8     infiltration and working properly. So many of our  
9     comments are addressing that.

10           We also want to be cognizant of the fact  
11     that -- what happens if it fails? What are the issues  
12     for, you know, the town system, water quality to  
13     adjacent resources, abutters. And also how does this  
14     project -- you know, if the parking lot fails today,  
15     you know, the developer -- you know, the owner comes in  
16     and repaves it. Well, we don't want the developer  
17     coming in and repaving it the cheapest way they can  
18     once this is built, because this is their stormwater  
19     system, so we don't want -- there's got to be some  
20     mechanism for them to be required to put in -- replace  
21     this pavement in kind and repair it in kind.

22           So the major issues that we see from a civil  
23     and site design aspect are addressing the earthwork  
24     operations, addressing the emergency access issues and

1 safety issues concerned with access around the site,  
2 and then also the stormwater and porous pavement design  
3 and how that's incorporated.

4 The way we see the next steps working is we'll  
5 set up a meeting over the next few days and go over all  
6 our comments in our letter, see if we can't come to a  
7 resolution of what needs to be addressed and what  
8 doesn't. We'll also include any questions you have  
9 tonight. There's been some department reports that we  
10 want to review with the applicant as well, and then any  
11 surveys or any letters from abutters we will take into  
12 consideration as we sit down with the engineers. And  
13 then we will provide -- once any design changes or  
14 supplemental information is provided, we will update  
15 our review letter and present our findings at the next  
16 meeting.

17 Do you have any questions?

18 MR. JESSIE GELLER: I'm sure we do. I have  
19 quite a few.

20 MR. PARADIS: I'm going to have my colleague  
21 join me up here as well, Matt Crowley.

22 MR. JESSIE GELLER: Forgive me if this is  
23 dumbed down. I'm not an engineer, but I just want to  
24 have an understanding.

1           The applicant suggests that this fits within  
2           the Hydrologic Soil Group B. Is that correct?

3           MR. CROWLEY: We believe it's closer to a --  
4           more likely a C.

5           MR. JESSIE GELLER: And is there a substantive  
6           difference between B versus C?

7           MR. PARADIS: The difference -- well, if we  
8           step back and look at how they modeled the project,  
9           they modeled the project primarily as if all the  
10          existing ground were B. Right?

11          MR. CROWLEY: Correct.

12          MR. PARADIS: Which is more permeable than C  
13          soils. C soils are borderline, you know, impermeable,  
14          so that means they considered their existing condition  
15          in a conservative way. That means they're molding the  
16          runoff from the site less than what is probably  
17          happening, which means their proposed system can't be  
18          greater than that, if that makes any sense. So they  
19          have to design and mitigate the flow from their site so  
20          that it doesn't exceed the number that they're getting  
21          under the existing conditions.

22          MR. JESSIE GELLER: And assuming they build to  
23          the standard of B, what additional would they have to  
24          do to -- were they building to a C level, what are some

1 examples of what they would --

2 MR. CROWLEY: I think probably the best way to  
3 clarify this is by assuming that they're going to be  
4 using on a B soil. They're giving themselves a bigger  
5 challenge for designing the site properly, so more  
6 conservative to assume that.

7 MR. JESSIE GELLER: So by --

8 MR. CROWLEY: So we actually welcome them to  
9 use the B to give them a stricter challenge to design  
10 for.

11 MR. JESSIE GELLER: Okay. In the Stantec  
12 report, and I'm referring to page 32, there's a  
13 reference to pollution prevention measures. Did you  
14 review those, and do you believe they're sufficient?

15 MR. CROWLEY: They were reviewed mostly on a  
16 cursory basis. Without having the report directly in  
17 front of me, I couldn't say directly if they're  
18 sufficient, but I don't recall seeing anything standing  
19 out that wasn't consistent with what's typically  
20 accepted as pollution prevention measures.

21 They are also required to submit a stormwater  
22 pollution prevention plan in the future. That will be  
23 more comprehensive than the basic prevention plan that  
24 they had included in the stormwater report.

1 MR. JESSIE GELLER: Again, forgive my sort of  
2 dumbing this down. Porous pavement, it's an exiting  
3 technology and it's used, it's accepted; correct?

4 MR. CROWLEY: Yes.

5 MR. JESSIE GELLER: And is it accepted in  
6 projects of this scope, scale? Has it been used in  
7 these climates? Is it used in the Northeast?

8 MR. CROWLEY: It is used in the Northeast. It  
9 is used in this climate. The site itself presents some  
10 challenges that on an initial look you wouldn't  
11 immediately think that porous pavement is the ideal  
12 solution, but when designed properly, it still may be  
13 able to function effectively.

14 MR. JESSIE GELLER: Are you aware of any other  
15 projects that have used porous pavement that have some  
16 of the challenges of this site?

17 MR. CROWLEY: I am not directly aware of it,  
18 and that's, actually, one of the reasons why we  
19 requested that the proponent can actually document a  
20 similar site.

21 MR. JESSIE GELLER: And the assertions about  
22 grades, is that relevant to usage of porous pavement --  
23 creates greater risk?

24 MR. CROWLEY: That's correct. The MassDEP

1 Stormwater Handbook recommends that porous pavement not  
2 be installed on grades steeper than 5 percent. The  
3 gentler the slope, the better. The applicant is  
4 proposing porous pavement on slopes up to 5 percent.  
5 In areas where it's steeper than 5 percent, they're  
6 proposing conventional pavement.

7 MR. JESSIE GELLER: And they've also got  
8 conventional drainage associated with those areas?

9 MR. CROWLEY: That's correct.

10 MR. JESSIE GELLER: The Conservation  
11 Commission raised a question about whether the particle  
12 separator takes into account segregation of porous  
13 pavement. I assume they're meaning it gets clogged.  
14 Have they built in enough sort of excess capacity to  
15 separate out?

16 MR. CROWLEY: The particle separators that are  
17 proposed are part of the conventional stormwater  
18 treatment system. If the porous pavement would fail,  
19 there would not be particular separators to serve as a  
20 redundant system for that road.

21 MR. JESSIE GELLER: Is that why you're  
22 suggesting redundancy?

23 MR. CROWLEY: That's correct.

24 MR. JESSIE GELLER: The monitoring wells --



1 you reviewed the locations, obviously, and the  
2 results?

3 MR. CROWLEY: Correct.

4 MR. JESSIE GELLER: In your opinion, was there  
5 a sufficient number of monitoring wells? Were they  
6 located correctly? Did they provide adequate results  
7 in terms of what they proposed to achieve?

8 MR. CROWLEY: I believe they had eight  
9 monitoring wells across the site, which is a  
10 significant amount of monitoring wells. However, they  
11 only took data readings from a single day in January.

12 MR. JESSIE GELLER: And you're suggesting that  
13 there should be additional ...

14 MR. CROWLEY: That's correct.

15 MR. JESSIE GELLER: And are you looking --  
16 obviously, we're sitting here -- April is generally a  
17 pretty rainy period of time. Are you suggesting that  
18 we run that test now? You're not suggesting that we  
19 get random samples from all throughout the season?

20 MR. CROWLEY: That's correct. There's  
21 actually two methods that you can use for determining  
22 the high groundwater. The first and primarily  
23 recommended is to actually dig a hole in the four redox  
24 features. If the redox features are not available,

1 then you would look at the monitoring well data. And  
2 then with monitoring well data, you typically adjust it  
3 based upon other wells throughout the area that are  
4 monitored continuously by the USGS. So you can adjust  
5 it to get a true value on what the high water reading  
6 is.

7 MR. JESSIE GELLER: You mentioned before,  
8 usage of redundant systems. Are there other projects  
9 that have applied that, that you're aware of?

10 MR. CROWLEY: Not that I'm aware of, but I'm  
11 not aware of too many porous pavement systems as well.

12 MR. JESSIE GELLER: Okay. It's been suggested  
13 that the usage of porous pavement is totally  
14 incompatible with this site. Would you say that -- it  
15 sounds to me like you're not agreeing with that  
16 statement.

17 MR. CROWLEY: I wouldn't say it's totally  
18 incompatible. I would say there are site constraints  
19 that are not the most compatible for a porous pavement  
20 system. That being said, with enough design and enough  
21 effort, this system may be able to function properly.  
22 But we do need some assertions and some additional  
23 information to be able to judge that properly.

24 MR. PARADIS: The ideal location for many of

1 the low-impact development techniques are in A and B  
2 soils. And this is a -- I want to say it's a unique  
3 situation, and we would prefer to get some more  
4 information from the applicant in terms of why they're  
5 choosing this method in this area, because the soils  
6 are -- you know, as we indicated in many of the soil  
7 tests, are sandy clay loam underneath this. So it  
8 appears as though you may get some infiltration, but it  
9 would be very minimal.

10 And also there's obviously ledge issues, but  
11 they not proposing this porous pavement in the primary  
12 ledge areas. But there are some other areas that the  
13 ledge is fairly close and we want to make sure that the  
14 developer understands that it's -- obviously, this is  
15 an expensive system to put in. But also down the line,  
16 10, 20 years, they're going to have to replace it at,  
17 again, a cost, so it's a --

18 MR. JESSIE GELLER: There's a cost to  
19 maintenance, and there's a cost to replacement.

20 MR. PARADIS: Right. So I think, you know,  
21 that the applicant should come up with a budget to A,  
22 maintain it; and B, what happens if it fails?

23 MR. JESSIE GELLER: Is the soil depth adequate  
24 for use of these hydrodynamic separators? I assume

1 that's simply separating silt from liquids.

2 MR. CROWLEY: The hydrodynamic separators --  
3 Stormceptor is the brand name. They're actually a  
4 closed system, and they pretty much can be placed  
5 anywhere that a normal catch basin can be placed. If  
6 the soil isn't deep enough, if they encounter ledge,  
7 then the ledge would have to be excavated or blasted  
8 out to make room for it. But the Stormceptor unit does  
9 not require free drainage soils for the water to soak  
10 through.

11 MR. JESSIE GELLER: So if you chose to use it,  
12 if you were the applicant and you chose to use it, then  
13 you -- if you were going to use it in an effective  
14 manner, you would have to blast out if there was ledge  
15 to create the appropriate depth?

16 MR. CROWLEY: Yes. Just like the same with  
17 any catch basin that you placed on the site.

18 MR. JESSIE GELLER: But that fact that it's  
19 essentially encased in ledge does not affect its  
20 capacity to operate?

21 MR. CROWLEY: That is correct. There's no  
22 interaction between the water -- within that system and  
23 the surrounding soil.

24 MR. JESSIE GELLER: The water table

1 elevations, were they accurate, to the best of your  
2 knowledge? I think they provided some water tables.

3 MR. CROWLEY: I have no reason to think that  
4 they're not accurate.

5 MR. PARADIS: Again, we would want the testing  
6 to provide whatever the seasonal high ground is.

7 MR. JESSIE GELLER: Yeah. I understand the  
8 underlying belief here is that there's going to be some  
9 conversation going on. There's some information that  
10 needs to be shared. And you're going to be back, I  
11 believe, on May 8th, and at that point you'll have an  
12 opportunity to follow up this discussion and, in fact,  
13 you know, whatever that information is that you get  
14 will obviously have an impact on your responses to  
15 that.

16 Is the standard that all runoff is to be  
17 prevented from a location, or is your goal simply to  
18 achieve best ability within technological state as of  
19 whenever you're doing it?

20 MR. PARADIS: Right. Again, the model that  
21 is -- the typical practice is to model an existing  
22 condition as if nothing -- what happens today. And  
23 then --

24 MR. JESSIE GELLER: That's your baseline.

1           MR. PARADIS: Right, your baseline. So you  
2           can't design something that would increase the flow  
3           from a peak flow standpoint from the site. So the idea  
4           is that -- you know, and you provide substantial  
5           documentation to show that, you know, the standard  
6           stormwater management report which the applicant has  
7           provided.

8           But we want to make sure we can agree on the  
9           assumptions, agree on the parameters of the model, make  
10          sure that the design features that they are proposing  
11          match the model features in the report so that once --  
12          if those two are consistent, then the project should  
13          not increase the rate. But, you know, there will be --  
14          you know, this site, if it's a C soil, it should have a  
15          substantial runoff and/or ponding issues on the site.

16          MR. JESSIE GELLER: And the goal is to not  
17          increase the impacts?

18          MR. PARADIS: Right.

19          MR. JESSIE GELLER: It's not to essentially  
20          get rid of all impacts?

21          MR. PARADIS: Right. Within a certain design  
22          parameter. You don't design for every storm. You  
23          don't design for every situation. You design for a  
24          particular set of accepted practices.

1 MR. JESSIE GELLER: Right. Okay. The  
2 question was raised -- frankly, I thought it was a good  
3 one -- that there is an issue about retaining walls.  
4 There's a large usage of retaining walls here. And I  
5 think the comment that was made was that unless you do  
6 something about the water, then you wind up with a lot  
7 of swimming pools, maybe a single large swimming pool.  
8 And it was suggested that you would need to put in weep  
9 holes, and wherever there were weep holes, obviously,  
10 the water comes out, and what that impact is on the  
11 other side of the retaining wall.

12 Have you reviewed that, and have you drawn any  
13 conclusions about that?

14 MR. CROWLEY: I did take a look at the plans  
15 to look for retaining walls, and there are two  
16 locations where there are substantial retaining walls  
17 in proximity to the abutting residences. In one of the  
18 areas they are proposing several area drains between  
19 the retaining wall and the abutting residence, and  
20 we've also recommended some other area drains to  
21 alleviate any potential impact to those residents.

22 MR. JESSIE GELLER: Okay. Good. There was  
23 one other question that was raised about storm tanks  
24 being two feet above the seasonally high water mark.

1 That's as distinct from what the report was  
2 suggesting.

3 What is the standard?

4 MR. PARADIS: The standard design for  
5 infiltration systems is a minimum of two-foot  
6 separation to protect groundwater sources.

7 MR. JESSIE GELLER: Two-foot separation from  
8 what to what?

9 MR. PARADIS: From the bottom of an  
10 infiltration system to the seasonal high groundwater.

11 MR. JESSIE GELLER: And is that standard?

12 MR. PARADIS: The challenge is that we don't  
13 think that the seasonal -- they, again, ascertained  
14 that the high groundwater is based off this one test,  
15 one day, so we think it's a little bit higher. We're  
16 not sure how high, but it may be in question.

17 MR. JESSIE GELLER: So that's one of those  
18 questions that we're going to need to get further data  
19 on.

20 MR. PARADIS: Right.

21 MR. JESSIE GELLER: Okay. That's it. Thank  
22 you.

23 MR. HUSSEY: Well, Mr. Chairman, I think  
24 you've covered most everything.



1           I want to go over a couple of things. These  
2 retaining walls, they show weep holes in them, don't  
3 they, to reduce the hydrostatic pressure?

4           MR. PARADIS: We can review that. We didn't  
5 review that in depth.

6           MR. HUSSEY: But there are drainage pipes that  
7 show on the abutter side of that wall?

8           MR. CROWLEY: For one of the retaining walls,  
9 that is correct.

10          MR. HUSSEY: I think a retaining wall can be  
11 designed where it doesn't have weep a hole. You've  
12 just got an L shape. You know, just got to put enough  
13 reinforcement and thickness in it to cover that.

14          MR. JESSIE GELLER: But then you've got to  
15 deal with drainage.

16          MR. HUSSEY: Well, no you don't. You just let  
17 it, you know, flow to the other side through the  
18 ground. And you can put in drainage pipes on the high  
19 side of a retaining wall as well as the low side. I  
20 think there are ways on get around, loopholes. That  
21 was a complaint that somebody had.

22          The porous system, the porous drainage, is  
23 that more receptive to frost than normal hardtop?

24          MR. PARADIS: It all depends on the underlying

1 soils and/or the ability for -- this particular system  
2 has, at the low end, outlet pipes, perforated outlet  
3 pipes, to help drain the pavement areas. The areas  
4 we're most concerned about, if you can look at this  
5 picture here, is on the right side. It shows these  
6 kind of dam -- you know, these earth and dam things.  
7 Now, they're proposing sandy loam, so there will be  
8 some infiltration through the sandy loam material, but  
9 we're concerned that if it's not quick enough, then  
10 there's opportunity for freezing in that area. You  
11 know, especially if it's only a foot below the  
12 pavement.

13 MR. HUSSEY: I mean, there's been a lot of  
14 concern, and I'll have to say on the board as well,  
15 about the drainage system.

16 What is the service life of these porous  
17 blacktop systems? How soon does it have to be  
18 replaced? Are we talking about 15 years, 20 years, 30  
19 years? I know it varies depending upon a lot of  
20 things.

21 MR. PARADIS: Right. The service life is  
22 based on a number of different things. Obviously, the  
23 initial construction, how well it was constructed, how  
24 well it's maintained and/or, you know, the underlying

1 soil conditions. You know, just like pavement issues.

2 There isn't a lot of data in terms of the  
3 lifetime. You know, these are kind of a -- it's a new  
4 technology, so there isn't a whole lot of data. You  
5 know, we've been following what they're doing up in  
6 New Hampshire, the stormwater group up there, but, you  
7 know, again, it's -- you know, we can't say it's going  
8 to fail. We can't say it's going to be a long life  
9 system either.

10 MR. JESSIE GELLER: What's the age of the  
11 other system you're aware of using porous pavement?

12 MR. CROWLEY: I'd have to look at that  
13 specifically -- do some research on that. It's  
14 becoming more and more used these days. I think the  
15 initial porous pavement design came out perhaps in the  
16 '70s, but it's not until maybe the last decade or so  
17 it's become more prominent.

18 MR. HUSSEY: They're more prominent down  
19 South, anyway, aren't they? At least that's what I've  
20 seen.

21 MR. PARADIS: Right. I mean, there's issues  
22 with, you know, obviously, snow conditions. You know,  
23 what happens when you get freezing and thawing?

24 It hasn't been as -- I think a lot of -- we

1 work a lot with towns. They've been squeamish about  
2 trying it because A, they don't have the equipment to  
3 maintain it; and B, they're uncertain as to what  
4 effects it will have. So it is a system that's more  
5 widely used in the South.

6 MR. HUSSEY: The issue that you just raised  
7 that I hadn't thought of is the fact that at some point  
8 this is going to have to be replaced, and how do you  
9 ensure that that gets replaced? Would that require  
10 that the developer get a bond? Is it a 20-year bond, a  
11 50-year bond, a 100-year bond? I mean, you get to a  
12 certain point where it has to be replaced and nobody  
13 remembers what was there, so it gets to be, I think,  
14 problematic.

15 You talked about redundancy systems. Why not  
16 just go to a full drainage system, some system  
17 underneath it that will work whether this porous  
18 pavement works or not?

19 MR. PARADIS: Right. I think that's our  
20 initial question to the applicant. Can they do a  
21 conventional system?

22 MR. HUSSEY: You indicated the plans are  
23 difficult to read. Were you given a full-sized scale  
24 set of drawings or just the 11 by 17 set that we got?

1           MR. PARADIS: We have a full-sized set. You  
2 know, some of the -- even that 40 scale, there's a  
3 number of details that are difficult to read. The  
4 contour level -- you know, it's a fairly undulating  
5 site, so the contours are fairly close. The contour  
6 labels are very small. You know, I'm getting old.  
7 It's getting harder to see, so we would appreciate  
8 more -- especially in the Building 13 area where we  
9 could see, you know, more closely what's being done.  
10 And then also the drainage area maps came in at 11 by  
11 17 in the study, so if we could have full-sized  
12 watershed maps that we see here.

13           MR. HUSSEY: And, actually, if you had AutoCAD  
14 drawings, then you could look at them at any scale you  
15 wanted to.

16           There was an indication, I think, in your  
17 report that there had been or were going to be drainage  
18 surveys sent out to the abutters, to the residents, and  
19 you would review them. Have they been returned yet?  
20 Have you seen those?

21           MR. PARADIS: Prior to the meeting, we just  
22 received a package and I think the applicant as well,  
23 so we'll sit down and review that with them, find out,  
24 you know, again what is within the current practice of

1 addressing these things.

2 MR. HUSSEY: Right. The Chairman has already  
3 asked you about this business of the January readings  
4 of the ground wells. As I recall from my country  
5 architect days, when you have a sewer system, you  
6 tended to want to get the groundwater reading in April,  
7 as I recall. It would be the best month to find out  
8 what the high level is. I presume that that would be  
9 done at some point?

10 MR. PARADIS: Yes. Right now would be a  
11 better time to do it. Right.

12 MR. HUSSEY: Your landscape plan -- you talked  
13 about light fixtures overflowing into abutter zones.  
14 Have you indicated -- or the design indicated, I guess,  
15 that it's 16 feet above grade, and I assume that's to  
16 the light shade. That's not to the top of the  
17 gooseneck.

18 MR. PARADIS: That is typically where the  
19 Luminaire is mounted.

20 MR. HUSSEY: Right. Could that be reduced --  
21 seems to me in other towns that we worked in, it was as  
22 low as 12 feet. Could we get that down a little lower  
23 so you wouldn't get that spillover?

24 MR. PARADIS: Yeah. There's different

1 techniques. I'm not an expert in lighting but I know  
2 the lower you go, the more hot spots you have. You  
3 know, I think it's a balance between -- the higher you  
4 go, you can make it more even. It looks more spread  
5 out. I think there may be some cutoffs, that they  
6 could put some different fixtures in those tight areas  
7 or they could possibly relocate them slightly to reduce  
8 that. But there's a tradeoff between going too low and  
9 get -- you know, you require more fixtures but there's  
10 also hot spots.

11 MR. HUSSEY: Right. But that just means there  
12 is a higher lumen at that point, whereas further out  
13 there are some less --

14 MR. PARADIS: Right.

15 MR. HUSSEY: The standard in a parking lot is  
16 really pretty low, isn't it?

17 MR. PARADIS: Right. And they're not  
18 providing a lot. It's between 0 and 2.5 lumen, so it's  
19 not very high.

20 The only thing we wanted in terms of lighting  
21 was to make sure that, you know, are they adding  
22 fixtures on the wall that they're not accounting for.  
23 You know, some of those buildings are pretty close to  
24 the adjacent properties. We wanted to make sure that

1 the Luminaires were all accounted for in the  
2 photometrics.

3 MR. HUSSEY: Okay. Thank you.

4 MR. JESSIE GELLER: Thank you.

5 Anybody else?

6 MR. ZUROFF: Yes. I'm just looking at this  
7 from an overview point of view. So one question I have  
8 is, has your firm ever worked with Stantec before on a  
9 project like this?

10 MR. PARADIS: Worked with them?

11 MR. ZUROFF: Well, my understanding is that  
12 you have a lot of questions that you expect them to  
13 provide answers to over the next several time periods.  
14 Have you ever done this with Stantec before?

15 MR. PARADIS: Actually, we were just talking  
16 about -- Frank and I worked on a project in Billerica,  
17 Cabot. They were providing a new campus. So, you  
18 know, I think there's a comfortability there. We can  
19 work through some of these issues.

20 MR. ZUROFF: Okay. So you have some  
21 experience with the firm. And you feel comfortable  
22 that they'll be able to provide you with what you  
23 want?

24 MR. PARADIS: Yeah. Well, we'll see, but



1 there's not a doubt right now.

2 MR. ZUROFF: All right. So, again, on an  
3 overview point of view, I read your report. I don't  
4 understand a lot of it, but I do see that there are  
5 many questions that you have raised that you are hoping  
6 to get answers to either by increased data availability  
7 or maybe some additional testing or studies.

8 Is it your understanding and is it the  
9 understanding of the Town that there will be a  
10 cooperative effort in getting all of those questions  
11 answered to your satisfaction? Or where is this  
12 going? I'm just asking you.

13 MR. PARADIS: Right. Again, we're probably  
14 not as knowledgeable about the site as the site  
15 engineers, so many of these questions, maybe he's  
16 already got the answers. He just didn't provide it in  
17 the documentation. Many of the issues may be how do  
18 we -- you know, obviously the major issue is porous  
19 pavement. Do we want it or not? You know, is there a  
20 benefit to doing something different both for the  
21 applicant and for the Town? So I think that's going to  
22 be the crux.

23 But, you know, I've done this many times. The  
24 applicant -- we've worked together. It may not be done

1 in one meeting. You know, it make take a little bit  
2 more work to work through these things, and there may  
3 be things they can't do and that -- we will inform you  
4 in terms of the risk for that. You know, in  
5 engineering, again, we can't design for every "what  
6 if," but we will provide you with what we believe are  
7 the high risk issues and what are low risk issues.

8 MR. ZUROFF: And following up on that, at the  
9 very end of your report you note that there will be an  
10 increase in the volume of stormwater runoff to the  
11 sanctuary next to the site. Is there a way to abate  
12 that? Is there a way to protect the Sanctuary?

13 MR. PARADIS: Right. The current stormwater  
14 management standards don't restrict an increase in  
15 volume. They only restrict an increase in peak rate of  
16 runoff. And, you know, if the Town feels that that's  
17 an issue, we can work with the applicant to make sure  
18 that they meet that.

19 You know, again, the challenge with C soils is  
20 you really don't know how much is going to infiltrate  
21 on the site. We don't know how much infiltrates now,  
22 and it's a very variable type of soil, and so the  
23 current standard says, you know, you recharge as much  
24 as possible with C and D soils. And so, you know, I

1 think the applicant will have to evaluate whether or  
2 not they can do that; what kind of impact is from the  
3 project.

4 MR. ZUROFF: Thank you. You also referenced  
5 that your scientist will be studying the potential  
6 vernal pool on-site. When is that going to happen, and  
7 are we going to have that data?

8 MR. PARADIS: Right. She visited today. Now,  
9 my initial observation of that area is -- it's unlikely  
10 but I'm not a -- you know, because there's a drainage  
11 structure on the bottom. You know, it has to collect  
12 water for a period of time. It has to meet a certain  
13 definition to be a vernal pool. But we wanted to make  
14 sure that we had an expert look at it, so she visited  
15 the site today. Prior to -- you know, when we looked  
16 at the site, it was snow covered. It was very  
17 difficult to see. So I think we should have an answer  
18 within the next couple of days.

19 MR. ZUROFF: Another question I have is --  
20 it's been noted in a number of the reports that a lot  
21 of the mature trees along the green space area are  
22 going to be removed as part of this project. Are you  
23 recommending any particular volume, amount, type of  
24 landscaping improvements, plantings, and so forth to

1 help abate what will obviously result from the removal  
2 of the mature vegetation? There's going to be  
3 additional runoff because of that, I assume, so are you  
4 recommending particular types of landscaping infill?

5 MR. PARADIS: As part of the review of the  
6 stormwater management impacts, that will be  
7 accommodated in the reports, the surface area changes.  
8 So as it relates to stormwater management, that will be  
9 accommodated.

10 As it relates to landscaping in general, you  
11 know, they're basically, you know, clear cutting the  
12 whole area. So they are proposing a number of new  
13 trees, obviously going to be smaller, less mature, like  
14 you said, but we didn't specifically address that  
15 issue. Our recommendations were primarily based on  
16 screening. I know our landscape architect made a  
17 comment in terms of the species and whether it was a  
18 high potential for bug infestation or whatever, but in  
19 terms of reviewing the canopy and all that, we did not  
20 do that.

21 MR. ZUROFF: Would you be able to make  
22 recommendations?

23 MR. PARADIS: We can if that would be the  
24 Board's preference.

1 MR. JESSIE GELLER: Mr. Hussey?

2 MR. HUSSEY: Yes. The rock that is being  
3 removed, what sort of rock is it? What kind of rock is  
4 it?

5 MR. PARADIS: It's called puddingstone.

6 MR. HUSSEY: Is puddingstone porous at all?

7 MR. PARADIS: I don't believe so. I'm not a  
8 geologist by any stretch of the imagination, but I  
9 looked at it. I took pictures of it. It didn't look  
10 porous to me, so ...

11 MR. HUSSEY: The other question I have is sort  
12 of a "what if" question. Most of this development is  
13 low-rise. There's the one apartment building. What's  
14 the effect of that sort of -- that's not really  
15 qualified as a high-rise, because it's under 70 feet, I  
16 believe, but what is the effect of high-rise  
17 construction on -- which has interior parking -- on the  
18 drainage issues in general?

19 MR. PARADIS: Well, this particular building  
20 has the parking underneath it, so in terms of  
21 stormwater, that's an ideal situation. It is fairly  
22 large. Obviously, it's going to -- but that area, like  
23 your previous comment, it's pretty much rock now, so I  
24 don't know how much water is getting in there. It runs

1 off somewhere. So in terms of impact of that  
2 particular building in that location, in terms of  
3 stormwater, it should be minimal.

4 The question we had is when you dig out all  
5 that rock, are you changing the drainage patterns,  
6 subsurface? I'm assuming they'll want to have  
7 foundation drains to make sure that there's no  
8 hydrostatic pressure against the building and the  
9 parking garage areas.

10 MR. HUSSEY: So if this building was in a  
11 place where there was some possibility of drain-off  
12 around the building, that would be a better situation,  
13 is what you're implying, instead of being built on  
14 rock?

15 MR. PARADIS: Well, it would be a worse  
16 condition if it was built on an A soil, because an  
17 A soil -- right now most of the water drains right  
18 through the soil. If you put a building on it, you're  
19 obviously stopping the water from getting in and it's  
20 going to run off, so that's a fairly significant  
21 difference between -- right now the rock is -- I would  
22 imagine it's a D soil and so you're almost impermeable  
23 now and you're putting in an impermeable building on  
24 top of it, so the difference is very minor in terms of

1 the increase in runoff.

2 MR. JESSIE GELLER: You're able to direct the  
3 flow, I assume is the issue. The runoff, you can  
4 direct it where you want it.

5 MR. PARADIS: Right. You can collect it in  
6 roof drains and ...

7 MR. HUSSEY: Okay. Thank you.

8 MR. ZUROFF: I have one other question.

9 Did your report -- and maybe I missed it --  
10 consider the disposal of snow and how the new roadways  
11 and so forth will require somewhere to put the snow  
12 that's gathered and plowed and where that's going to be  
13 and how that's going to affect the drain water?

14 MR. CROWLEY: Yes. In our report we actually  
15 did request for specific provisions for the storing and  
16 handling of snow and also coordinating of the  
17 landscaping.

18 MR. ZUROFF: So we expect to get data?

19 MR. CROWLEY: That is correct.

20 MR. JESSIE GELLER: Thank you. Anything else?

21 (No response.)

22 Thank you.

23 MR. JOE GELLER: Joe Geller from Stantec  
24 Consulting, 226 Causeway Street, Boston,

1 Massachusetts. Thanks for the opportunity to respond  
2 to the presentation tonight. I'm going to start, and  
3 then Frank Holmes from my office is going to finish the  
4 presentation. He's the civil engineer who presented  
5 the drainage plan to you originally.

6 So our presentation is organized, basically,  
7 responding to the letter that we got from BETA, so I'll  
8 very quickly talk about a number of them, sort of more  
9 global issues like the demolition, earthwork, the site  
10 plan details, utility services, landscaping, lighting,  
11 and environmental and cultural impacts. And then I'll  
12 let Frank spend most of the time tonight talking about  
13 the stormwater. And as was stated by the  
14 representative from BETA, we intend to have a working  
15 session with them to present all this stuff. And to  
16 Mr. Zuroff's point, we have had a number of experiences  
17 working with BETA. They've all been very positive and  
18 we'll be able to work through all of this data over the  
19 next several weeks.

20 So with that, we'll go right to the first  
21 section that I talked about, the site demolition,  
22 earthwork, and site prep. We will be able to provide  
23 the earthwork numbers that they requested during the  
24 working session. We can go through how the earthwork



1 is going to be done at the large building.

2 The construction routing, phasing, and  
3 construction mitigation plans -- you know, typically  
4 that's done as a part of the general contractor's work,  
5 but we can talk about how that works. It's usually  
6 done in coordination with the traffic consultant and  
7 construction manager, so we'll work through some of  
8 those issues.

9 Blasting will certainly be done with strict  
10 conformance with all state and local regulations and  
11 with required permits. There is a permit required from  
12 the fire department for all blasting. There's a state  
13 regulation that you have to conform to. One of those  
14 is a preblast survey of all the utilities around the  
15 neighborhood as well as our buildings. So all of that  
16 will be done as part of any blasting that's done on the  
17 site. You can certainly go into more detail with your  
18 consultant about that.

19 In terms of the site plan details and site  
20 access, the exercise stations will be relocated. We  
21 did show exactly where they are, but that's something  
22 that we want to continue to have for our residents.

23 We will indicate where the trash and recycling  
24 locations are.

1           The ingress and egress questions -- there's  
2       been a number of comments about the width of the drive  
3       and all those kind of things. All the driveways meet  
4       the zoning requirement standards. One of the  
5       roadways -- I think there was a conversation about it  
6       being less than 20 feet. Nothing is less than 20 feet  
7       and, actually, Asheville gets widened to 24 feet. But  
8       we'll go through all of that. I think, actually, the  
9       transportation folks in their working session are also  
10      discussing this, so we'll coordinate all that together  
11      so we get the consistent answer on that.

12           We did understand the comment about the  
13      10 percent grade concern at Asheville where you enter  
14      the building and turn the corner into the parking lot,  
15      and we'll look at regrading that to make that  
16      smoother. And then other comments that came up during  
17      this section of their comment letter we'll address in  
18      the working session.

19           In the landscaping and lighting, there was a  
20      comment about planting quantities, so we'll provide  
21      those.

22           We'll consider the tree species alternatives.  
23      There was concern about some issues -- that a bug that  
24      has been a real problem in the Worcester area has

1 spread this way a little bit and they're concerned  
2 about that, so we'll look at that.

3 The screening questions, we'll look at how to  
4 provide more screening and more landscaping in those  
5 areas that they are concerned about. And they're  
6 correct that the planting plan actually didn't go all  
7 the way to show the planting around Building 13, so  
8 we'll add that to a plan so you can see what the  
9 proposal was for that.

10 And then there was a question about details on  
11 seeds and sod mix, the locations of where the seed and  
12 sod is, and we'll certainly provide that information.

13 The lighting -- actually, I think there may  
14 have been some confusion on the lighting plan, so we'll  
15 go through that with BETA and if there is a need to  
16 move or relocate or provide additional cutouts on  
17 fixtures, we'll certainly work to ensure that no light  
18 spillage happens off-site, which is something that we  
19 committed to in the first conversation we had with you.

20 With regard to the utility services, we will  
21 provide capacity and flow analysis. I think we have  
22 the sewer capacity information. I think the water --  
23 we need to do some flow tests, so that's something  
24 we'll have scheduled, because we couldn't do it over

1 the winter.

2 We'll certainly look at the pump station  
3 design. If there's a way to eliminate a pump station,  
4 we'll certainly favor that.

5 We'll show all the other utility services. We  
6 did show where they were. We just need to give them  
7 more information. That's fine.

8 And we'll review the fire hydrant locations.  
9 We thought we had identified the right locations of  
10 fire hydrants, but we can relocate them if that's  
11 appropriate.

12 And then there was a comment about all  
13 services that we remove be cut and capped at the main  
14 or manhole, and that's certainly something that we  
15 would do. It just wasn't specifically called out on  
16 the plans.

17 And then the environmental impacts -- the area  
18 between 4 and 5, this is the vernal pool concept.  
19 There is a hydrological connection to the municipal  
20 system, so I think that kind of defines it as not a  
21 vernal pool, but we're happy to listen to any comments  
22 about that.

23 And then we certainly agree with the comment  
24 that porous pavement is a good LID technique and best

1 management practice -- low-impact design technique and  
2 best management practice -- and will work well to  
3 address pollutants. And frankly -- and Frank will get  
4 more into this for sure, but the question has come up  
5 tonight -- why did you use porous pavement?

6 Well, there were a lot of reasons we used  
7 porous pavement. This is probably one of the most  
8 significant ones. We're trying to be environmentally  
9 responsible with what we're doing on the site. This is  
10 a very good technique. It is used a lot. It has been  
11 used a lot in the South. It is becoming much more used  
12 in this area. We've used it for a number of years.  
13 We've always used porous pavers. We've been using that  
14 for probably 20 years or more. I think the oldest  
15 pavement that I'm familiar with is at Walden Pond which  
16 was done probably 30 years ago. It's been in place for  
17 a long time. It's functioning very well. And Frank  
18 has some other examples.

19 The other -- except for the environmental  
20 reason why we did it, it think it's just a good thing  
21 to use. It's a good thing to do. More and more people  
22 are using it on larger areas. It's becoming much more  
23 acceptable.

24 The University of New Hampshire has a

1 stormwater center where they do research on  
2 stormwater. They have been for many, many years. They  
3 really promote the use of porous pavement and we  
4 utilize their standards. We utilize their details and  
5 their specifications when we use porous pavement.

6 So there's a lot being done to promote porous  
7 pavement, just like there are rain gardens and other  
8 things that improve the water quality and things like  
9 that, so we think it's a very good thing to use. When  
10 we looked at this project and we were looking at it in  
11 terms of LEED and how to be more sustainable, this was  
12 one of the things that jumped out. It would be very  
13 easy to do.

14 We have a client who maintains their  
15 property. We've been to the property. They maintain  
16 it impeccably. They maintain, they improve, they look  
17 at maintenance very consistently throughout their  
18 property. If you look inside the building, outside the  
19 building, everything is getting maintained. So that's  
20 the perfect client to use this kind of material on.

21 And we've also done it -- we have a client  
22 that's held on to properties for 30 or 40 years because  
23 they're an institution. That also is a good reason to  
24 use porous pavement because you know it's going to be

1 maintained. The concerns that everybody has about  
2 porous pavement is it's not going to get maintained.  
3 So that was sort of the environmental reason. So the  
4 concern about maintenance was mitigated because of our  
5 experience with this client over the last 25 years.

6 The other reason was really one of impact, the  
7 impact to our property and the impact to the  
8 neighborhood. By using -- and Frank will explain this  
9 in more detail -- but by using the porous pavement, we  
10 were able to keep the grades lower on the site than  
11 having to raise the grades on the site to use a  
12 different system, a larger system that required more  
13 storage or something like that. So we thought it was  
14 good to use this for the environmental reasons; we  
15 thought it was good to use this for the impacts on our  
16 property and on the abutting properties.

17 And so that's sort of why -- the question is  
18 why did we do this? I think those are the three  
19 reasons that we did it: the maintenance issues, being  
20 a client that could do it; the environmental  
21 improvements and benefits; and then sort of the way it  
22 fits into the grades on the site.

23 So I think with that I'll let Frank talk about  
24 stormwater. Unfortunately, Chairman Geller, you took

1 the wind out of our sails, because most of the  
2 questions you've already asked.

3 MR. HOLMES: Frank Holmes from Stantec,  
4 226 Causeway Street, Boston.

5 So I just want to start off by talking just  
6 generally about BETA's comments. A lot of their  
7 comments, we agreed with them. And in our subsequent  
8 submissions of plans and calculations and in our  
9 meeting in the working sessions that we're going to  
10 have, I think a lot of the comments in their letter  
11 will be addressed.

12 The majority of the comments -- the majority  
13 of the time that I'll spend tonight is really focused  
14 on the porous pavement issue and compliance with the  
15 DEP Stormwater Management Standards.

16 We'll eventually respond formally to all  
17 comments in writing, and we look forward to the working  
18 sessions where most of these will be worked through.  
19 And, you know, as I mentioned, I'm going to really get  
20 into more detail on porous pavement and compliance with  
21 the DEP standards.

22 So just some examples, and I won't go through  
23 all of these, but as I mentioned, there are a number of  
24 comments that we take no exception or that we agreed



1 to. Some of them are listed here and so we thought  
2 that instead of going through each comment specifically  
3 tonight, we'd kind of stick to the themes and leave  
4 point-by-point response to later, after the working  
5 sessions.

6 So I want to start -- in talking about the  
7 porous pavement, one of the things I do want to note  
8 is, one of the main purposes -- in addition to what Joe  
9 mentioned, one of the main purposes that the porous  
10 pavement proposes is to store stormwater and infiltrate  
11 stormwater on-site. And the design, we feel, is very  
12 conservative because as the stormwater is stored  
13 beneath the pavement, we're not taking any credit in  
14 our calculations for any water that will exfiltrate  
15 into the underlying soils.

16 One of the comments from BETA was asking for  
17 specifications. How would we design the pavement  
18 itself? I just wanted to note here that the design is  
19 based after the University of New Hampshire's  
20 specifications for porous pavement. They've been doing  
21 a lot of research on it, and they have published  
22 specifications on other projects that we've done where  
23 we've utilized porous pavement. That's the standard  
24 that we use and the spec that we use.

1           And so during our working session, we're glad  
2           to review that in more detail and provide information  
3           to BETA on where we've used porous pavement in other  
4           precedents.

5           So, again, I want to talk here and use this  
6           figure to talk a bit about some of the advantages that  
7           we feel that porous pavement has for this site.

8           So it was mentioned in the BETA letter, and  
9           we've heard it from other sources in town, questions  
10          about whether it's appropriate -- an appropriate  
11          technique for dealing with stormwater because of the  
12          presence of ledge on-site, because of the underlying  
13          soils, because of high groundwater. And, you know, I  
14          think we've recognized that if this were a flat site,  
15          if it were all very sandy soils, that might be an  
16          easier site to use porous pavement on. But we think  
17          that it's because of some of those constraints and  
18          restrictions that this is actually a good application  
19          to use porous pavement.

20          Like I mentioned, one of the primary purposes  
21          for using it is to store stormwater, so if we weren't  
22          going to store it in the pavement below, we'd need to  
23          construct it using the chambers, which we are doing on  
24          some other locations on-site where the conditions are a

1 little bit different.

2 So on the slide that's in front of you now, on  
3 the left there's a section through the porous pavement  
4 and the total depth of the section that we have is 31  
5 inches. And that section can vary with grades and the  
6 slope of the land.

7 On the right is a section through the pavement  
8 that shows chambers underneath. And, you know, using  
9 the shallowest chambers that we could possibly use, the  
10 depth from the grade to the bottom of the chamber  
11 system would be more on the order of 42 inches. And  
12 the chambers also need to be flat at the bottom, so as  
13 the grades change, you have even a greater depth from  
14 grade to the bottom of the chambers.

15 And so the reason I wanted to point this  
16 out -- what that means is we're able to reduce the  
17 amount of disturbance and the amount of filling on-site  
18 in order to maintain our two-foot separation by using  
19 the shallow profile that porous pavement allows.

20 And, you know, there were some comments that  
21 we've heard and some concerns about the height, the  
22 filling and the height of some of the retaining walls.  
23 If we would look at some other techniques for dealing  
24 with the stormwater, like chambers, what that would

1 mean is we would need to raise the grade even higher on  
2 the site or have higher retaining walls.

3 Another big advantage, as Joe mentioned, from  
4 an environmental standpoint, DEP Stormwater Management  
5 Policies and Guidelines encourage low-impact  
6 development and encourage infiltration of stormwater  
7 throughout the site to mimic the natural hydrologic  
8 regime and discourage the collection of stormwater in  
9 infiltration in discrete centralized locations. So in  
10 using porous pavement throughout the whole entire site,  
11 we feel that we're keeping with the direction and  
12 policy that the DEP has outlaid through the use of  
13 low-impact development.

14 So what I wanted to show here is -- this is a  
15 video. This is a project where we've used porous  
16 pavement and -- Joe is helping me out with the  
17 technical difficulties here. But what you're going to  
18 see is a video of a porous pavement parking lot that we  
19 designed at a project in Wellesley, and it really just  
20 shows how effective the pavement can be at draining the  
21 stormwater. And so the video is about a minute long,  
22 and as you're just watching this, I think it's really  
23 effective to show how the water can drain through.

24 I want to note here that we recognize that

1 it's critical for the long-term operation of the porous  
2 pavement -- for it to be properly maintained. So it  
3 needs to be designed properly, it needs to be  
4 constructed properly, and there needs to be a lot of  
5 quality control during the construction. And then once  
6 built, it's got to be maintained and it's got to be  
7 cleaned to prevent it from clogging. But if all those  
8 things are done, then it will perform as we just saw in  
9 that video.

10 In the next couple of slides we wanted to  
11 point out that it's not just us that's promoting the  
12 use of porous pavement. It's being used in a lot of  
13 other places throughout the state. This is a slide  
14 from a project that the EPA sponsored where the EPA is  
15 promoting the use of porous pavement at a public  
16 facility, an existing parking lot that was converted to  
17 a porous pavement parking lot. And one of the points  
18 that we wanted to make here is that this was being done  
19 as part of an education and outreach project to promote  
20 the use of porous asphalt. So this is something that  
21 the EPA has been looking at and is trying to promote  
22 within the state in our neighbors' communities.

23 Here are some photos of this project in  
24 Arlington of the existing parking lot, and at the

1 bottom left you'll note the proximity of the parking  
2 lot to an existing stream and wetland system.

3 In this photo, I think it's effective, it's  
4 showing the difference between the porous asphalt and  
5 the traditional asphalt that you see in the top  
6 left-hand corner of the photo. So this was taken  
7 during a rain storm. In the porous asphalt you see no  
8 water standing on the pavement at all, but you can see  
9 in the top left the water is collecting and sheeting  
10 off of the pavement.

11 So I think I've talked a bit about a lot of  
12 the reasons why we're proposing porous asphalt. There  
13 were a lot of the other comments that talked about  
14 concerns about its use. One was about how do we  
15 protect the soils underneath the porous asphalt during  
16 construction against trucks and heavy equipment that  
17 would be used in the construction process?

18 Again, we recognize that as a concern. And on  
19 this particular project, what we would envision in  
20 terms of a construction management plan is that the  
21 foundations for the new buildings would be constructed  
22 prior to the subgrade of the porous asphalt being  
23 prepared so that heavy equipment, concrete trucks, and  
24 all that would not be riding over the prepared subgrade

1 to overcompact it and that the parking lots would be  
2 built as the contractor was backing out of the site, so  
3 from the far end of the site out towards Independence  
4 Drive, for instance, and in the case of the portion of  
5 the project that's parallel with Beverly Road. So we  
6 recognize the concern, and the construction management  
7 plans would address the sequencing of the work to  
8 protect the subgrade.

9 Another comment was regarding a redundant  
10 collection system to be able to deal with stormwater in  
11 the event that the pavement wasn't infiltrating for  
12 some reason. And I think that our design did include a  
13 redundant system where we -- even though we don't think  
14 that the porous asphalt is going to need them, we have  
15 catch basins at any low points so just in case there  
16 was a flash rainstorm and a flash freeze and then more  
17 rain or in a freaky kind of event like that, there  
18 would be the ability for stormwater to be collected and  
19 not be ponding.

20 Questions about how the porous pavement would  
21 be repaired and replaced over time -- we feel that  
22 Chestnut Hill Realty, they maintain their properties  
23 very well and as the pavement needed to be repaired, it  
24 would be repaired by the owner. We feel that the

1 porous asphalt has a longevity in a design life similar  
2 to regular pavement. As Joe mentioned, we know of the  
3 porous pavement at Walden Pond. It's been there for  
4 over 30 years. But as it does need to be replaced, it  
5 would be.

6           There was one comment noting that we have a  
7 couple of cases where we have porous pavement within 20  
8 feet of a downgrading at a residence. We do want to  
9 note that we think that that's actually on our  
10 property, and none of the buildings on-site have  
11 foundations. The DEP Stormwater Handbook has a setback  
12 of about 10 feet from porous asphalt to a slab  
13 foundation, so we feel that we're in -- and where we do  
14 have a basement, there's a setback of 20 feet, so we  
15 feel that we're in compliance with the DEP's  
16 recommendations in that case.

17           There were also comments regarding the depth  
18 of the porous asphalt, and given the relatively low  
19 soil permeability of the underlying soils, whether  
20 froze heaves and damage from frost heaves would be a  
21 concern.

22           We're comfortable that that's not the case,  
23 and we'd note that the standard practice for depth to  
24 frost for pavement design -- and these are FAA



1 standards, so they're pretty stringent -- is 39 inches  
2 when absolutely no heaving is acceptable. However,  
3 they allow 65 percent of that depth in cases where  
4 minimal frost heaving might be allowed. And so we  
5 exceed that with the 31-inch profile that we have. And  
6 we have consulted with our own in-house pavement  
7 engineers that we have at Stantec and feel that there's  
8 a very minimal risk of frost heaving and if there were,  
9 it would be negligible, eighth of an inch, something on  
10 that order. There would not be damage to the pavement.

11 Also on this note, I want to point out that  
12 below the porous asphalt itself, the pavement, is a  
13 two-foot depth of crushed stone. I meant to mention  
14 this in starting off. The detail that we have actually  
15 says one foot. The hydrostatic model, it's modeled as  
16 two feet. The profiles that we have on the drawings  
17 actually draw it as two feet also, so it's a typo in  
18 the detail.

19 But that two-foot depth of crushed stone --  
20 crushed stone is not susceptible to frost heaving, so  
21 any water in the crushed stone that expands due to  
22 freezing has ample void space to expand into and would  
23 not heave the pavement.

24 Other comments were related, you know, noting

1 that the porous pavement is not installed on flat  
2 ground and were asking for information about the check  
3 dams that are shown on the drawings. And the purpose  
4 and the intent of the check dams is to halt the flow of  
5 stormwater through the crushed stone so that it doesn't  
6 follow the subgrade and just collect at the low point.  
7 So we're using the check dams as a way to hold the  
8 water back so that it's stored and to allow the  
9 stormwater to infiltrate into the underlying soils.

10 We did look at the comment, and we look  
11 forward to reviewing this in more technical detail with  
12 BETA. But if we were to reduce the amount of storage  
13 volume to account for the fact that the grade is  
14 sloped, Standard 2 of the DEP standards for peak rate  
15 reduction is still met if we were to account for that  
16 in our model.

17 A couple other points on this slide and, you  
18 know, I'll probably mention it a couple more times too,  
19 we're in total agreement that a robust plan for  
20 operation and maintenance of the asphalt is necessary  
21 to ensure its longevity and the ability for it to  
22 infiltrate. And we'll consider the recommendation or  
23 the suggestion that at the low point of the porous  
24 asphalt systems that a redundant method for TSS removal

1 will be provided.

2           So, again, I wanted to talk about how the  
3 whole analysis that we did in our stormwater report is  
4 conservative. It was mentioned earlier, and there was  
5 a question about the use of B soils versus C. The  
6 Natural Resource Conservation Service maps the site as  
7 both a mixture of B and C, and I think it was explained  
8 very well by BETA earlier here tonight how our design  
9 is conservative in that way.

10           A couple other things we'd like to note with  
11 that that weren't mentioned is there's also areas of  
12 ledge on-site that are basically impervious and, you  
13 know, we account for that factor in the calculations,  
14 which means not only were we considering it C soil, but  
15 we were not considering it impervious.

16           In also using the B soils, the Standard 3 DEP  
17 Stormwater Management Standard 3 for groundwater  
18 recharge requires you to infiltrate a certain volume of  
19 stormwater based on soil classification, and B soils  
20 require more of a recharge volume than C soils. So by  
21 classifying the soil as B, not only are we being  
22 conservative with the peak rate standard, but we're  
23 being conservative with the recharge standard also.

24           Some other comments that we've heard related

1 to the stormwater design of the site relate -- I think  
2 there's just pretty much universal recognition that the  
3 operation and maintenance is key to the performance of  
4 the porous pavement and, again, I want to recognize  
5 that.

6 I want to talk a little bit about some  
7 comments that have related to the detection of sewer  
8 contamination or bacteria contamination in the Hoar  
9 Sanctuary. It's our understanding that there's been  
10 water samples that have been collected at the outlet of  
11 the box culvert that runs from Independence Drive down  
12 Gerry Road and outlets into the wetlands.

13 Chestnut Hill Realty was made aware of that  
14 back in the 2008 and 2009 time frame and did some  
15 investigations in conjunction with the Town and it was  
16 found that there was a leak in a sewer force main in  
17 Gerry Road and that pipe was exposed, the leak was  
18 repaired, a new section of pipe was put in, and the  
19 force main was then aligned from that point of repair  
20 to Independence Drive. And since then, Chestnut Hill  
21 Realty is not aware that there have been further  
22 detections of the bacteria. And so Chestnut Hill  
23 Realty is willing, though, to work with the Town to try  
24 to identify the source of this continued bacterial

1 contamination that, until seeing it in the letter from  
2 the Town, they were unaware of.

3           There were some other comments related to  
4 other stormwater-related permits that the project would  
5 require and also comments related to the TMDL to the  
6 Charles River as it relates to phosphorous and  
7 bacteria. And we recommend that while our stormwater  
8 report did not specifically address how the stormwater  
9 management system reduces phosphorous and bacteria, we  
10 do want to note that it does and we'd be glad to  
11 provide documentation to demonstrate that.

12           And I'll just briefly touch on how that does  
13 happen, though. The first point that I want to make is  
14 that our operation and maintenance plan does include  
15 guidance for the use of fertilizers that include  
16 phosphorous and are one of the main contributors of  
17 phosphorous to stormwater. And the plan calls for the  
18 avoidance of the use of fertilizers where possible.  
19 But where it is required, that only the use of  
20 slow-release phosphorous would be allowed.

21           And the other point that we'd like to make is  
22 that the amount of volume that is going to be  
23 infiltrated, or that we're providing for that can be  
24 infiltrated during a storm event, is equivalent to

1 three-quarters of an inch of rainfall. In this area of  
2 the state, we get about 40 inches of precipitation over  
3 the course of a year and the great majority of our  
4 storm events are less than a half an inch. And so the  
5 amount of storage we have in our porous pavement system  
6 and in our chamber system provides for more than what  
7 we see in most of our rain events, and 100 percent of  
8 that is going to be stored and infiltrated. And so  
9 through the reduced use of one of the main contributors  
10 of phosphorous and through the infiltration, we're very  
11 confident that the goals of the TMDL will be met.

12 The project will require the submission of  
13 a -- or the preparation of a stormwater pollution  
14 presentation plan and the filing of a notice of intent  
15 with the EPA as part of the DEP's regulations. And so  
16 apart from that, we're not aware of any other  
17 stormwater regulations that we need to comply with.

18 These are some other comments. We look  
19 forward to discussing with BETA during the working  
20 session what might be appropriate postconstruction  
21 monitoring of the porous asphalt; we look forward to  
22 considering and discussing the need for redundant water  
23 quality measures, specifically particle separators or  
24 Stormceptors; and also to demonstrating our compliance

1 with the goals of the TMDL for the Charles River. And  
2 I noted a SWPPP will be prepared prior to the start of  
3 construction.

4 So that concludes the presentation that I  
5 wanted to make, and I'd be glad to answer any  
6 questions.

7 MR. JESSIE GELLER: Thank you. Questions?

8 (No response.)

9 No questions at this time, but I'm sure we'll  
10 have questions once you and BETA have had an  
11 opportunity to discuss the issues as well as exchange  
12 any of the missing data. I think then we'll want to  
13 revisit many of these issues. Thank you.

14 I'm shocked to see that it's twenty minutes of  
15 nine. The next hearing, as I mentioned when we  
16 started, will be on May 8th, so we will continue this  
17 until May 8th. On May 8th there will be an opportunity  
18 for us to review both the traffic studies and see what  
19 responses and final reports come in as well as to  
20 revisit the stormwater issues that have been raised  
21 tonight. Hopefully by then you will have resolved any  
22 outstanding issues or questions. I'm sure we will have  
23 lots of questions at that time, so thank you.

24 MS. SCHARF: A couple people here did not

1 receive their drainage questionnaire. And secondly,  
2 will there be an opportunity -- Irene Scharf from  
3 Russett Road -- will there be an opportunity for  
4 members of the neighborhood to ask questions concerning  
5 what we heard tonight?

6 MR. JESSIE GELLER: May 8th, after we hear the  
7 reports back, there will be an opportunity for the  
8 public to speak.

9 MS. SCHARF: And the survey?

10 MR. JESSIE GELLER: And the survey, we'll get  
11 to the bottom of it.

12 MS. STEINFELD: The survey was distributed to  
13 all direct abutters. It's about 50 property owners.  
14 So if you are a direct abutter and didn't receive one,  
15 feel free to see Maria Morelli or me at the end of the  
16 meeting. Thank you.

17 MR. JESSIE GELLER: Thank you, everyone.

18 (Proceedings suspended at 8:42 p.m.)

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1                   I, Kristen C. Krakofsky, Court Reporter and  
2                   Notary Public in and for the Commonwealth of  
3                   Massachusetts, certify:

4                   That the foregoing proceedings were taken  
5                   before me at the time and place herein set forth and  
6                   that the foregoing is a true and correct transcript of  
7                   my shorthand notes so taken.

8                   Dated this 22nd day of April, 2014.

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10                  Kristen Krakofsky, Notary Public

11                  My commission expires November 3, 2017.

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