

1 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 TOWNSHIP OF WEST ORANGE DEPARTMENT OF PLANNING AND DEVELOPMENT WEDNESDAY, DECEMBER 3, 2025 6:30 P.M. RE; PB-24-01 WEST ESSEX HIGHLANDS, INC. BOARD MEMBERS: ROBERT BAGOFF, Chairman JERRY GUARINO, Vice Chairman SUSAN McCARTNEY, Mayor LEE D. KLEIN WILLIAM B. WILKES KEN ALPER LORI KAPFERER SUSAN SCARPA, Councilwoman JORDAN RIZZO, Engineer MALVIKA APTE, Planner JAMILET BAQUERIZO VITE, Board Secretary GENIECE GARY-ADAMS, Zoning Official WITNESS: SAMUEL N. KLEINBERG, Engineer FISHMAN COURT REPORTING AGENCY 89 HEADQUARTERS PLAZA NORTH 4 SPEEDWELL AVENUE, SUITE 1440 MORRISTOWN, NEW JERSEY 07960 (973) 285-5331 - FAX - (732) 605-9391	3 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 INDEX OF EXHIBITS <u>EXHIBIT</u> <u>DESCRIPTION</u> O-36 E-MAIL FROM MR. KLEINBERG TO MARK SEEL O-37 LANGAN ENGINEERING INVESTIGATION PLAN WITH MARKING BY MR. KLEINBERG
2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 1 APPEARANCES: HUTT, SHIMANOWITZ & PLOCKER, ESQS. BY BRYAN D. PLOCKER, ESQ. Bplocker@huttshim.com 459 AMBOY AVENUE WOODBIDGE, NEW JERSEY 07095 Appearing on behalf of the Applicant GACCIONE & POMACO, ESQS. BY DIANA P. McGOVERN, ESQ. ONE BOLAND DRIVE, SUITE 102 WEST ORANGE, NEW JERSEY 07052 Appearing on behalf of the Board BRUCE I. AFRAN, ESQ. 10 BRAEBRUN DRIVE PRINCETON, NEW JERSEY 08540 Appearing on behalf of the Objector, We Care NJ Corp.	4 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 CHAIRMAN BAGOFF: Mr. Kleinberg, you are still under oath, sir. MR. KLEINBERG: Yes, sir. MS. McGOVERN: My notes show that you were in the middle of cross-examination of Mr. Kleinberg. MR. AFRAN: That is correct. And I think Mr. Kleinberg was supposed to report back as to whether you got the additional information that you were, that you were seeking from Langan. THE WITNESS: I did. MS. McGOVERN: Okay. Terrific. I guess, Mr. Afran. MR. AFRAN: Yes, I don't know if Mr. Kleinberg wants to address that information as part of direct testimony now that he has it. MS. McGOVERN: Do you want to fill us in as to what you got, you know, what requested information you got, what was given to you? THE WITNESS: Yes. Within our report there were two outstanding issues or additional information that we had requested. One we had recommended that there, that in case of severe weather involving heavy microburst kind of rainfall situations, such as we had a couple months ago, that should be included in the evaluation of the slope stability and that we would

5 1 recommend that they include an elevated water surface 2 elevation in their stability analyses. It's my 3 understanding that Langan had included a case with an 4 elevated water level in their original submittal but 5 they didn't include the output drawings showing that 6 summary of the calculations and we asked them to send 7 them to us. They sent them to us about a week ago. I 8 got home from vacation on Monday and took a look at the 9 information and we noted that the water level that -- we 10 felt that the water level they assumed wasn't high 11 enough and that we recommended that they consider a 12 water level at the surface with seepage parallel to the 13 slope. This is an extreme condition, it's not certain 14 that this could ever occur and I believe it's Langan's 15 position that the condition cannot occur. But it's a 16 worst case scenario and it's a, what if, question. 17 There's a rather simple calculation that can 18 be done to determine what the slope stability for a 19 shallow slope failure under a condition with groundwater 20 is flowing the groundwater level is at the top of the 21 slope and that the seepage is parallel to the slope, so 22 there are hydraulic, additional hydraulic measures which 23 lead to a reduced stability. Using, we gave them an 24 example of some simplistic calculations that showed that 25 if a condition could develop and would develop that kind	7 1 the building, on the west side of the building, which is 2 further away from the ridge line, but that would, we 3 recommended that the applicants engineer confirm that 4 the stormwater infiltration would not introduce or under 5 sever rainfall system situations rather that that would 6 not introduce any flow towards the slope that would 7 impact the stability. And so we left them with those 8 two recommendations in a conversation yesterday on the 9 phone. 10 MR. AFRAN: Is there any 11 writing that reflects that discussion? 12 THE WITNESS: I have my comments on e-mails. 13 I can leave that with the board. 14 MR. AFRAN: Well, I am a little concerned of 15 the idea if you're producing a report outlining what 16 needs to be done and now we are told that you made a 17 request and phone call and none of us were privy. So we 18 need to have some written record to show what was 19 discussed and what was agreed with that. I need to know 20 that. I can't cross-examine without seeing that 21 material. Do we have that here? 22 THE WITNESS: Yes. 23 MR. AFRAN: Okay. Well, let's perhaps we 24 break and take a look at that. I want know if it 25 exists.
6 1 of flow that the stability would become marginal for 2 shallow and localized slope failures. That's assuming 3 the soil properties that were assumed for the, by both 4 engineering firms, the opposers engineer and the 5 applicants engineer, that assumes there is no cohesion 6 in the soil, kind of sticky property that would be in 7 certain types of soils compared to a plain sand. All 8 the analyses done to date have been done for plain sand 9 materials over lining the bedrock and additional type of 10 cohesion and Langan's discussion, back and forth 11 discussion on what we were recommending, Langan 12 indicated, and we agree, that there are procedures for 13 taking credit for the root action of the vegetation on 14 the slope. And that, and that it can be shown to apply 15 a significant amount of additional resistance equivalent 16 to soil cohesion. And so we recommended to the, I think 17 it was to Mark Seel, Langan's engineer who worked on 18 the, their stability study, that they do the engineering 19 analyses showing what the additional credit could be 20 taken for the vegetation and make a formal submittal to 21 confirm that. 22 In addition, the other outstanding 23 item that we had was that we noted that the stormwater, 24 the best management practice is a stormwater management 25 system will be inducing the groundwater infiltration at	8 1 THE WITNESS: It exists. It's here. 2 MR. AFRAN: I can take it now? 3 THE WITNESS: Sure. 4 MR. AFRAN: Thank you. 5 MS. McGOVERN: Okay. 6 MR. KLEIN: Wait a minute. 7 MR. AFRAN: Is there a problem? 8 MS. McGOVERN: I would like to see it 9 because I wasn't a part of it. 10 MR. AFRAN: Well, yeah. Here's the thing, 11 it's kind of long. 12 MS. McGOVERN: I think what we need to do is 13 make a copy and mark it for identification. So is there 14 a copy machine close by? 15 You can write the number on it and mark it. 16 MR. AFRAN: Mr. Kleinberg, other than what 17 you gave us, is there any other writing that references 18 that discussion? 19 THE WITNESS: No. 20 MR. AFRAN: You also mentioned that there 21 was a discussion with Mark Seel dealing with an 22 engineering analyses for the additional credit for the 23 vegetation, is that discussion referenced in that 24 e-mail? 25 THE WITNESS: Yes, it is.

9 1 MR. AFRAN: Okay. Thank you. 2 I interrupted, I don't know if you had more 3 to go. 4 THE WITNESS: No, those were the two 5 outstanding issues we referenced in our original report. 6 And that is a summary of what, that was a summary of 7 where the review stood and the information that Langan 8 had submitted. 9 Q. So from your perspective then what specific 10 things are we still waiting to get? 11 A. An engineering confirmation that under extreme 12 conditions and utilizing the benefits of the root 13 vegetation would provide adequate stability for what 14 would be an extreme and maybe a situation that could not 15 actually develop. 16 Q. Is this referenced, is this issue referenced in 17 your original report? 18 A. Yes. 19 Q. Okay. 20 Do you happen to know the page where that's 21 referenced? 22 A. I can check for you. I think it's Page 14. It's 23 on page, I'm sorry, Page 19 of 21, I believe. And it's 24 item number 7 on Page 19. The applicants engineer 25 should, in our opinion, review the mounding influence of	11 1 A. The root system provides a measure of tensile 2 resistance within the soil that would improve the 3 stability of the soil. 4 Q. So you don't mean an actual mathematical credit, 5 just an additional benefit to the structure, is that 6 correct? 7 A. I didn't, there are mathematical methods to 8 provide the beneficial effects for root systems. 9 Q. You don't reference those in your report because 10 you asked the engineer to come up with an analyses? 11 A. Correct. 12 Q. Is it fair to say you don't have either of those 13 two elements yet? 14 A. Yes. 15 Q. Okay. 16 Is there anything else based on what you said 17 tonight that you're still waiting for from the 18 applicants engineer? 19 A. Waiting, waiting for them to provide the 20 engineering calculation for that particular mode of 21 slope stability. 22 Q. With the issue of the vegetation? 23 A. Right. 24 Q. Okay. That's a credit? 25 A. And I believe that can be done.
10 1 the proposed infiltration basins number 10 and 11 and 2 consider mitigation by either providing a cutoff, 3 possibly using the building foundation walls preventing 4 infiltration to the east or relocation of the basins 5 further down the back slope. 6 Q. Now -- thank you. 7 Now, perhaps I misunderstood, how does the 8 question of vegetation play into that or have I 9 misunderstood? 10 A. It doesn't play into that. It's a separate 11 issue. 12 Q. Okay. 13 So that is -- the second question now is the 14 issue of vegetation and the engineering analyses in 15 terms of the additional credit, does that appear in the 16 original report? 17 A. Yes, on the same page. Recommended requirements 18 to be considered by the board, Item 2, long-term 19 measures should be required to maintain the health of 20 the forest on the slope. The health of the root system 21 provides reenforcement to the shallow topsoil layer on 22 the slope. 23 Q. So that's what I am, when you say, additional 24 credit, what did you mean by the term, additional 25 credit?	12 1 Q. Okay. 2 Thank you. 3 MS. McGOVERN: All right. So this we're 4 calling O-36. We're marking it as O-36, this is an 5 e-mail from Mr. Kleinberg to Mark Seel dated December 2, 6 2025. That's the top e-mail, which is a reply to an 7 e-mail earlier that day on the 2nd from Mr. Seel to Mr. 8 Kleinberg. 9 MR. AFRAN: I'm sorry, what number did you 10 give that, I missed that? 11 MS. McGOVERN: O-36. 12 Q. I would like to take you back to your report. If 13 you, I am making reference to, a reference at Page 5 and 14 you make a statement that structural drawings indicating 15 building floor details and construction type were not 16 available to check the likely distributed dead loading? 17 A. I did. 18 Q. Now, are those drawings available at this point, 19 to your knowledge? 20 A. No. 21 Q. Now, could you explain the significance, if any, 22 of this point that you included in Page 5? 23 A. The significance is the magnitude of the uniform 24 of the distributed load that was assumed for the 25 stability calculation. However, the differences are not

13 1 likely to make a big difference in the stability 2 analyses based on our experience. 3 Q. What does the phrase, dead load, refer to? 4 A. Dead load is the weight of all the structural 5 elements in the building. In other words, the weight of 6 the walls, the ceilings, the floors, all the structural 7 elements. 8 Q. Now, what does it mean where you say, "The 9 evaluation did not include an evaluation of the benefits 10 to 'weight credit' achieved by removal of the existing 11 soils in the basement." 12 A. Well, where you take the bearing load of the 13 building you are removing -- let's say soil weighs 120 14 pounds a square foot, cubic foot, if you remove 10-feet 15 of soil, let's say for the basement, in this case it's 16 up to 20-feet of soil, that means that the weight is 17 being taken off of the bearing surface, you eliminated 18 that weight so you can reduce the effect of the new load 19 on the foundation due to removal of the soils that are 20 in place. It's called weight credit. 21 Q. Now, how do we know there will be a real benefit 22 if there's no evaluation of it? 23 A. It's obvious that it's a benefit. 24 Q. But do you know what the benefit will be? 25 A. Yeah, I told you, if I take 10-feet, 1200 pounds	15 1 potentially if we had drawings as to distributed dead 2 loading? 3 A. The differential, it would be a standard. That's 4 a standard foundation design. It has in effect on the 5 stability of the slope, which I think is the issue 6 tonight. 7 Q. Okay. Thank you. 8 Have you been able to identify the actual high 9 point of the ridge from any of the records? 10 A. Yes. 11 Q. Okay. 12 Where does that appear in the record? 13 A. The high point on the, I think it's said it in 14 the report near Langan's boring. It's right at the last 15 test pit 4 on the plan and it's in that Langan boring -- 16 it says on the report, Langan boring LB-3. 17 Q. Well, the building is 800 feet long and so it's 18 going to run along the ridge 800 feet? 19 A. You asked me the high point. The high point is 20 here. That's the highest elevation on the ridge. 21 Q. I apologize. Have you identified the ridge line 22 itself? 23 A. Yes, the ridge line is identified on the drawing 24 as a line that roughly runs through it and right about 25 here, like this.
14 1 credit, which exceeds the load, that has a credit to the 2 building. 3 Q. Okay. 4 So even though you don't have the drawings about 5 the deadweight, the distributed dead loading? 6 A. No, I said there is a benefit they could apply to 7 it and that would likely keep the influence of the 8 building in the neighborhood that they're assuming. 9 Q. How do we know what the effect of that weight 10 credit would be if we don't have the drawings as to the 11 distributed dead load? 12 A. You multiply 120 pounds cubic foot times 10-feet 13 and you get 1200 pounds per square feet. 14 Q. No, I understand. If you don't know what the 15 dead load is how do you apply the credit? 16 A. Well, it's whatever the final load that the 17 foundation sees is the dead load minus the 1200 pounds 18 of square foot. Which is less than the weight of the 19 building that they're predicting. 20 Q. Where does your figure show that though? Show 21 the weight of the building. 22 A. They assumed the building would be a load of 1000 23 pounds per square foot at the foundation level. That's 24 in their report. 25 Q. And what percent differential would one expect	16 1 Q. May I see that. 2 CHAIRMAN BAGOFF: Do you know what page you 3 are looking at? 4 MR. AFRAN: Yeah, I will do that. 5 A. There is a very faint line about a quarter of an 6 inch to half an inch from the line of the building. It 7 sort of follows the high point of the ridge. 8 Q. Is that the hyphenated line with the graph line 9 moving up and down? 10 A. Should I come over and point it out to you? 11 MS. MCGOVERN: Can we have a description of 12 the document survey, what it is? 13 MR. AFRAN: The document is Langan 14 Engineering, it's a document that is described as 15 Investigation Plan and bears the date of 6/18/2025 drawn 16 by RLB checked by AY. It's a one page engineering 17 drawing. 18 MS. MCGOVERN: Okay. Thank you. 19 THE WITNESS: That was in the report. The 20 original report. 21 Q. So let me walk -- I will save you the trip. So 22 let me just walk over to you. I see two lines, one is a 23 dotted line somewhat faint. 24 A. It's the dotted line. 25 Q. And I see a graph line that's moving up and down?

17 1 A. It's the dotted line somewhat faint that hits 2 the, you see the contours here it's following, that's 3 the ridge line. 4 Q. Okay. 5 So I can describe it for the record then as a 6 dotted line that is to the right of a more solid line 7 that has a graph line going up and down through it? 8 A. But I think the solid line you are referring to 9 is the limits of the disturbance. 10 Q. Well, there is a line that says, limits of grade, 11 and then the dotted line you are referring to is just to 12 the right of that? 13 A. Correct. 14 MR. KLEIN: Is there a elevation number 15 associated with the ridge line? 16 THE WITNESS: What it does is the topo 17 contours and what happens is right where there's the 18 ridge is where the line is going perpendicular. Where 19 it encircles the contours. 20 Q. In other words, this is superimposed on the 21 contour? 22 A. Yes. 23 MR. KLEIN: And what's the number? What's 24 the elevation. 25 THE WITNESS: Oh, the high elevation is --	19 1 applicant must stay west of in accordance with the 2 ordinance. 3 MR. AFRAN: My reason for doing this we 4 didn't identify it in earlier testimony. I want to have 5 that established. 6 MS. McGOVERN: At the end of tonight we are 7 going to take that from you and we are going to give it 8 to our board secretary and have it copied. 9 MR. AFRAN: Should we just mark it O-37? 10 MS. McGOVERN: Right now, yes. 11 So this the Langan Engineering Investigation Plan 12 dated June 18, 2025. It would be marked as O-37 with 13 markings by Mr. Kleinberg on it. 14 THE WITNESS: Just to clarify, I think we 15 attached this to our original report, this drawing. 16 MR. AFRAN: Yes, but because Mr. Kleinberg 17 made a mark I want to identify it separately. If you 18 would be kind enough to write O-37 on the top. 19 Q. On Page 8 you make a statement that excavations 20 in rock to a depth of approximately 25 feet below the 21 top of rock at the high point of the ridge, could lead 22 to disturbance and weakening of the slope, particularly 23 if blasting is used. In your understanding based on 24 your review of the plans is there any way to build this 25 without blasting at this stage?
18 1 the elevation varies along the ridge. I am just going 2 to grab it right here, 616, I think is roughly the high 3 point. 4 MR. KLEIN: Okay. 5 THE WITNESS: And if you go to the north end 6 of the building it drops to about 609 existing. 7 Q. So my question was, actually I misspoke earlier 8 when I spoke to the high point of the ridge, I simply 9 want to identify the line of the ridge itself, so that 10 would be the dotted line just referred to? 11 A. Correct. 12 Q. Thank you. 13 A. You're welcome. 14 MR. PLOCKER: Can I confirm the line that 15 Mr. Kleinberg is talking about? Is referring to. 16 THE WITNESS: It follows the ridge line all 17 the way up and goes up into here. 18 MR. AFRAN: Yeah, I would like to, I would 19 like, since Mr. Kleinberg just put in my pen a trace on 20 much of that line, I would like to just mark that as an 21 exhibit, if we could. 22 MS. McGOVERN: Okay. That would be O-37, I 23 think we are up to. 24 MR. PLOCKER: And I would like to say for 25 the record that appears to be the line which the	20 1 A. Yes, there are and I would -- they were described 2 in the Langan report. 3 Q. Right. 4 Now, when would it be appropriate -- strike that. 5 If one does not know if blasting is to be used 6 and if there is no blasting plan provided, how would we 7 be able to evaluate the likelihood of disturbance and 8 weakening of the slope? 9 A. We had recommended, we have a list of 10 recommendations that the Planning Board set as 11 requirements and one of those is to have an excavation 12 work plan certified by an engineer retained by the 13 contractor performing the work that would indicate the 14 measures that would be taken to minimize the disturbance 15 of the rock and to the slope, to provide provisions for 16 support of the excavation and to do what you just asked 17 about. And that there are experts, which I am not, that 18 would be able to produce that and it should be a 19 requirement that they do produce it. 20 Q. Well, without knowing if blasting is going to be 21 used and without seeing a blasting plan are you in a 22 position to evaluate the degree which would be 23 disturbance and weakening of the slope? 24 A. That has to be done during the construction. 25 Q. Well, the blasting plan doesn't have to be done

21 1 during the construction, that could be done? 2 A. No, but then there has to be follow up with 3 monitoring, with a monitoring program and evaluation by 4 a geologist or geological engineer. And that, and that 5 would be, if we were running the specifics for the job, 6 that would be included in the work plan. 7 Q. Well, my question is a little different. It was 8 simply, without knowing if a blasting is going to be 9 used and without seeing a blasting work plan, are you in 10 a position to evaluate "disturbance and weakening" of 11 the slope arising from the blasting? 12 A. Well, I am not at this point in time, but this 13 is, this is something that takes place later in the 14 development of the project. 15 MR. PLOCKER: May I. We already agreed to 16 that. 17 CHAIRMAN BAGOFF: The applicant agreed to 18 that. 19 MR. AFRAN: That's very nice for the board 20 to evaluate. Nice gesture. 21 MR. PLOCKER: You would like this hearing to 22 continue, I assume. This is a process that we take very 23 seriously. It is done, as Mr. Kleinberg testified, 24 during the construction phase. So are we going to get 25 through Mr. Kleinberg's cross-examination with serious	23 1 program. 2 MR. KLEIN: Right. So knowing that, to his 3 question -- say your question again then. 4 MR. AFRAN: That wasn't my question. I 5 wasn't directing my question to disturbance of the 6 neighbors. My question was different. 7 MR. KLEIN: The slope. 8 MR. AFRAN: Disturbance of the slope. 9 MR. KLEIN: Excavating such a big blast even 10 effected, I am saying smaller blasts. 11 MR. AFRAN: We don't dismiss the impact on 12 neighbors. Blasting, that's always an issue in managing 13 construction projects. It's a very simple question, 14 blasting could lead to disturbance and weakening of the 15 slope. That's at Page 8 of the report. My question is 16 very simple. Are you able to evaluate, sitting here 17 right now without knowing if blasting is going to be 18 used and without seeing a blast plan, what the level of 19 disturbance and weakening of the slope will be, "yes" or 20 "no"? Are you able to do that sitting here today 21 without the blast plan. 22 A. In my experience when they, when an experienced 23 blaster is charged with doing his work to minimize 24 disturbance it can be done. This takes place in 25 Manhattan where there are buildings on the property
22 1 questions or are you going to continue to delay these 2 proceedings, which clearly is your clients goal. 3 MR. AFRAN: That comment really should be 4 struck from the record. It's inappropriate. 5 CHAIRMAN BAGOFF: Okay. 6 Mr. Klein. 7 MR. KLEIN: Mr. Kleinberg, I thought I heard 8 somebody say several meetings ago that you can control 9 the blast, you can have a certain amount of explosives, 10 you can put a max on it so it's not going to disturb as 11 far away, you may have to do a lot of smaller blasts as 12 opposed to one big blast? 13 THE WITNESS: Correct. 14 MR. KLEIN: Okay. So to his question, is 15 there no way that they can blast this without disturbing 16 the neighbors or is there a way that they can blast it 17 in smaller amounts and not disturb the neighbors? 18 THE WITNESS: It can be done in a controlled 19 manner in conjunction with other types of special rock 20 splitting equipment. 21 MR. KLEIN: Right. 22 THE WITNESS: And line drilling. There's 23 all kinds of procedures, but that's really the 24 contractors generally and we would recommend that they 25 be required to have a professional engineer certify a	24 1 line. 2 Q. And I will -- Mr. Kleinberg, let's go back to the 3 question I asked, which I now asked three times and has 4 not been answered. It is a very simple question. 5 Without knowing if blasting is going to take place and 6 without seeing a blast plan are you, as the independent 7 expert evaluating slope stability, right now able to 8 evaluate what level of disturbance and weakening of the 9 slope will take place, "yes" or "no"? Are you in a 10 position to make that evaluation now without seeing a 11 blast plan. 12 A. Okay. If you're going to be, if you're going to 13 discount the way, the way things are done in the 14 construction industry, I can't tell you sitting here at 15 this point in time, no. The answer is, no, I can't tell 16 you. 17 Q. That's all I asked. 18 A. But I know it can be done. 19 Q. Lots of things can be done. This board has a 20 public safety duty to know whether a project will be 21 safe for the public. I am simply asking, can you 22 evaluate that issue right now? 23 A. It can be done so that it will protect the 24 public. 25 Q. We can go to Mars, that's not the question. Can

25 1 you evaluate it right now sitting here today? 2 A. No, I can't. 3 Q. That's all I want to know. 4 A. Not sitting here, but I know that it can be 5 evaluated if I was tasked to do that. 6 Q. I understand. 7 A. And it wouldn't be something I can do in a 8 five-minute interchange here, but it can be done. 9 Q. Well, you don't have a blast plan, you couldn't 10 do one right now no matter what, fair to say? 11 A. Right. That's correct. 12 Q. Okay. 13 A. This is a Planning Board application. It's 14 not -- 15 Q. Mr. Kleinberg, there's no crime under New Jersey 16 law to simply answer yes or no. If a question calls for 17 that please just -- 18 A. Yeah, but the answer tends to distort the 19 picture. 20 Q. Well, that's your view. 21 A. If you just say "yes" or "no" it doesn't tell the 22 whole story. 23 Q. I want ask you, can you evaluate the level of 24 risk disturbance and weakening of slope based on what 25 you have in front of you right now?	27 1 infiltration could cause rock -- 2 A. No, there might be wider cracks but not evidenced 3 at the surface. There's very little rock exposed at the 4 surface. 5 Q. Okay. 6 So when you said last week, you don't know if the 7 joints are there, you were referring to internally in 8 the rock? 9 A. It's just a precaution. 10 Q. When you said last week that we don't know if the 11 joints are there, that's because you can't yet see 12 inside the rock, is that correct? 13 A. That's correct. 14 Q. Okay. 15 So the surface joints that you see were different 16 from what you're referring to last week where you said 17 you couldn't see them? 18 A. Right. That's a remote possibility. 19 Q. Why do you say, that's remote, how do you know if 20 you can't see it? 21 A. Well, it's just based on the, it's based on the 22 observation of rock that have been made in other areas 23 near the site. That's just the way you have to do it if 24 you can't see. 25 Q. I'm not saying you have x-ray vision, I am just
26 1 A. No. 2 Q. Thank you. 3 A. No. 4 Q. Thank you. 5 At Page 9 of your report you make the statement, 6 "The principal jointing pattern indicated jointing with 7 dip favorably downward into the slope and steep, nearly 8 vertical joints." Now, are those the joints you were 9 referring to last week when you said, infiltration could 10 take place and cause ultimate instability? 11 A. Those are parts of the system of joints, yes. 12 Q. Now, it then says, "Some of the exposed rock 13 showed a series of tight vertical cracks spaced as close 14 as 1 or 2 inches." 15 A. That's what we observed. They're not serious, 16 they're very fine cracks. 17 Q. It says, I was quoting you, it said -- it says, 18 "A series of tight vertical cracks." 19 A. Right, but they're not -- it's not unusual. 20 Nothing unusual about the observation. 21 Q. In other words, not unusual on a ridge line to 22 have that? 23 A. Right. In any type of a rock formation. 24 Q. Those cracks, those joints are what you're 25 referring to at the last meeting when you said water	28 1 asking you, how do you know it's a remote chance if you 2 can't see inside the rock? 3 A. Because generally joints are tight and sometimes 4 they're wider joints. 5 Q. And you could see wider joints on the surface but 6 you don't know if they're below? 7 A. Correct. 8 Q. Okay. 9 Now -- 10 A. I don't know if they're there either. 11 Q. I just said, you don't know if they're there? 12 A. Right. 13 Q. Okay. 14 Now, if those joints are there and water 15 infiltrates, ultimately that will destabilize the rock, 16 is that correct? 17 A. Not necessarily. We don't know, but it's a 18 precaution you take. If you see them you fill them. 19 Q. If the joints are there and water infiltrates 20 that's the factor that causes destabilization 21 ultimately, isn't that correct? 22 A. Correct. 23 Q. Thank you. 24 Now, you also say at Page 9, you report to a 25 fault line. And you say, "Tectonic jointing is reported

29 1 to range from a few feet to many feet far from the 2 mapped faults but become closely spaced near the 3 faults." Now, what is the reference and relevance of 4 that to this project? 5 A. That's the, that's the, we have a surveyors 6 reference in there, it's the bedrock geology of the 7 Caldwell Quadrangle Map and I think that statement comes 8 from the map. 9 Q. And also refers to the Second Watchung ridge, 10 right? 11 A. Right. 12 Q. So these faults are present in this ridge, is 13 that correct? 14 A. No, the maps, there's one fault shown, it's about 15 2000 feet from the site, it was referenced by Langan in 16 their report. It's in their report. The location is in 17 the report. It's about 2000 feet away. Half a mile. 18 Q. Then you go onto say, "Tectonic jointing is 19 reported to range from a few feet to many feet far from 20 the mapped faults." So what is many feet, how far from 21 the mapped faults do we see the tectonic jointing? 22 A. I'm sorry. Are you talking about the spacing of 23 the joints? 24 Q. I just read what you wrote. You said, you know, 25 there is a fault line about 2000 feet from the site.	31 1 affect the local stability of the soil overburden." 2 Now, what is this complex network of intersecting 3 fractures and where is it on the site? 4 A. The whole rock formation is cracked. So it's all 5 over. 6 Q. So everywhere are on this site where they want to 7 put this building the rock formations cracked? 8 A. Everywhere they're building in the Metropolitan 9 area they have rock cracks. 10 Q. Well, most buildings aren't built on the ridge 11 line that rock collapses? 12 A. Some. 13 Q. But some are. 14 Now, this building is on a network of 15 intersecting fractures, is that correct? 16 A. Right. And almost all buildings are. 17 Q. I heard you. 18 Now, what is the size of those fractures, is 19 there any analyses done of that? 20 A. We just defined them as very fine cracks roughly 21 2 inches apart and there are other cracks that were 22 described from the Langan report. 23 Q. What other cracks and how wide? 24 A. I didn't get a direct width, but there are test 25 borings that would have core samples in the Langan
30 1 And then you say, "Tectonic jointing is reported to 2 range from a few feet to many feet from the mapped 3 faults but becomes closely spaced near the faults." So 4 I am saying, how far is many feet? 5 A. Well, many feet could be 5 or 10-feet. 6 Q. It could be a 1000 feet or 2000 feet? 7 A. It would be good if it was as much as a 1000 8 feet. 9 Q. Why? 10 A. The further spacing the better, because then 11 there's more intact solid rock. 12 Q. So we don't really know at this point from this 13 reference whether it's better or worse, this condition? 14 A. Right. But they identified joints, the spacing 15 is there and there's joint spacing indicated on the test 16 borings and there is a whole discussion of that in the 17 back and forth between Langan and Princeton Hydro. 18 Q. Now, you also mentioned, you also mentioned, you 19 say at Page 15, this is referring to the site itself, 20 "The rock formation, however, has a variable secondary 21 permeability which is created by the complex network of 22 intersecting fractures. Depending on the width of the 23 fractures, the filling and surface roughness cracks 24 surcharged by water levels high up on the slope can 25 develop localized high hydrostatic pressures which could	32 1 rebuttal report. There are rock core samples if you 2 want me to take a look at that. 3 Q. Now, fair to say there are thousands of fractures 4 say where Building D would go? 5 A. Right. And that's typical. 6 Q. I'm simply asking you, is it fair to say there 7 are many fractures where Building D will go? 8 A. Right. 9 Q. Okay. 10 Now, when excavation is done, presumably the 11 joints that exist inside the rock may be seen or will be 12 seen? 13 A. Correct. 14 Q. Now, who is responsible for filling those joints 15 to avoid this infiltration of water you spoke about last 16 time? 17 A. That would be part of the excavation work plan 18 that we recommend having an engineer prepare as part of 19 the requirement for the construction. 20 Q. And what would be in the excavation work plan 21 that would deal with this issue? 22 A. It would be the -- it would be the treatment of 23 cracks. 24 Q. In other words, the method of treating? 25 A. Right.

33 1 Q. Now, who on-site would ascertain and guarantee 2 that these joints are in fact filled when they're 3 identified? 4 A. It would be -- there would be a requirement for a 5 specialist to do that work in the excavation work plan. 6 Q. When you say, specialist, who would that person 7 be? 8 A. It would be a person who has a lot of experience 9 in filling cracks in rock. 10 Q. So they would be there, presumably, when they 11 fill the cracks and then what happens? Is there 12 grouting those cracks, is that inspected by some neutral 13 person or does the foundation work begin? 14 A. The treatment of the rock is completed and then 15 the foundation would begin. 16 Q. So no inspectors actually going to know to what 17 extent grouting was actually done because the foundation 18 will go on top of it before any inspector sees it, isn't 19 that true? 20 A. No, you inspect the rock before you pour the 21 concrete. 22 Q. I just asked whether or not there's an inspector 23 who's going to examine the grouting before the 24 foundation is poured? 25 A. Okay. I didn't understand.	35 1 this last week, the toe of the slope is the area that 2 flattens out underneath the slope so the slope an maybe 3 the toe comes here? 4 A. Correct. 5 Q. Okay. 6 Now, would you agree in this particular site the 7 slope on the building or next to the building, near just 8 above the toe of the slope not on the applicants 9 property, but actually on the private homes that are 10 behind the slope? 11 A. There is a break in the slope, the slope flattens 12 about halfway down the slope and then the toe of the 13 slope would be down near the road where the houses are 14 on the lower roadway. 15 Q. So the toe of the slope is actually on private 16 property, right? 17 A. It goes right to the street probably. 18 Q. Okay. 19 So it's on their houses? 20 A. Right. 21 Q. It's on their land. So the toe of the slope, to 22 clarify, is on the private homeowners land, right? 23 A. I am not sure that's the final toe. There's 24 another couple 100 feet to the main road, so. 25 Q. Well, if --
34 1 Q. Okay. 2 A. Yes. There is. There would be an inspector. 3 Q. Now, there could be thousands of potential cracks 4 to be grouted, right? 5 A. Right. 6 Q. And this is a 800 hundred foot long by 200-foot 7 excavation going down 25 feet, right? 8 A. Right. 9 Q. Now, if cracks are not filled and ultimately 10 filled with water that's what causes destabilization, is 11 that correct? 12 A. Well, where did the water come from? 13 Q. Why are you raising it in the first place? 14 A. So that the water is controlled, that's why we 15 recommended that they look at the infiltration basins, 16 so that they don't introduce water, otherwise there's -- 17 we're not sure there's even groundwater there. 18 Q. And you haven't had a confirmation on that issue? 19 A. Sorry? 20 Q. You haven't had confirmation yet on that issue? 21 A. On what issue? 22 Q. The examination of the infiltration basins. 23 A. No, I said that. 24 Q. Okay. I wanted to clarify. Thank you. 25 Now, let me get back to this page. We touched on	36 1 A. The slope may continue beyond what's shown on the 2 drawings. I didn't investigate that. 3 Q. Okay. 4 Well, let me ask you, in the catchment area it 5 refers to the area of toe of the slope that is designed 6 to catch rocks and overburden and other things that may 7 come down the slope, isn't that correct? 8 A. I don't know what that is. 9 Q. You don't where the catchment area is? 10 A. No. 11 Q. Well, it's actually in the townships steep slopes 12 ordinance that refers to catchment areas being -- 13 A. If you're talking about the slope where there's 14 rock fall, which is not the case here, then you need an 15 area to contain the rock fall, if that's what you mean, 16 then that's what it is. 17 Q. Well, if there is no rock fall seen presently 18 you're saying -- you're saying you haven't observed rock 19 fall presently? 20 A. There's only small outcrops roughly 10-feet high. 21 Q. Well, if the ridge is destabilized by blasting 22 then isn't there a much greater likely of rock fall? 23 A. Well, the blasting charges should be limited so 24 it wouldn't be destabilized. 25 Q. If mistakes are made or good planning is not

37 1 used, and we have seen in many cases buildings collapse 2 and other structures collapse because of engineering 3 problems, then rocks would slide and you need a 4 catchment area, isn't that fair to say? 5 A. No, not in this case. 6 Q. Why not in this case, what makes you so sure? 7 A. Because this is essentially a soil slope with 8 rock in it. It's not a rock slope. If you -- there's 9 another site down on the First Watchung Mountains on 10 Northfield Road where everything you're talking about 11 exists, but doesn't exist here. 12 Q. Well, if you stabilize the rock where we are 13 going to blast that rock destabilizing could cause a 14 slope? 15 A. You're going to do it so you don't destabilize 16 it. 17 Q. Engineering is designed to cover when people make 18 mistakes so people don't die. Would you agree with that 19 proposition? 20 A. I have been doing this for 20 years and -- 21 CHAIRMAN BAGOFF: I think he answered the 22 question as an expert. You keep asking him to answer 23 questions the way you want, he answered the question 24 three times. 25 Q. Let me ask this question.	39 1 A. Sorry. 2 Q. Let me repeat that. Would you agree that the 3 slopes we are dealing with here are steep slopes as 4 defined by the townships steep slope ordinance, unless 5 you don't know? 6 A. I don't know what the ordinance says exactly. 7 The hazards report called them a moderately type of 8 slope, but I'm not sure what the slope ordinance defines 9 as steep slope. They're not particularly steep for the 10 rock slopes. 11 Q. Well, have you read the towns steep slope 12 ordinance? 13 A. No, I haven't. 14 MR. PLOCKER: Which does not apply to the 15 application. 16 MR. AFRAN: Well, yes, you are taking the 17 position that it was set aside. 18 CHAIRMAN BAGOFF: Whatever the position is. 19 MR. AFRAN: Mr. Kleinberg is not a lawyer. 20 CHAIRMAN BAGOFF: Continue talking to him, 21 please. 22 MR. AFRAN: Okay. 23 I just need one moment. 24 CHAIRMAN BAGOFF: Sure. 25 Q. I'm sorry.
38 1 CHAIRMAN BAGOFF: He answered. 2 MR. AFRAN: This is a different question. 3 Q. The reason we have engineers is so we can build 4 property that minimize the risk of human life and 5 property, isn't that fair to say? 6 A. And that's why I recommended that there be an 7 excavation work plan certified by a professional 8 engineer registered in the State of New Jersey. 9 Q. Even though the Planning Board would not see that 10 and not be able to evaluate it? 11 A. We recommend that be sent as a requirement to the 12 developer. 13 Q. Thank you. But does that mean as a condition of 14 approval after this is approved, possibly, or do you 15 mean before the board votes? 16 A. I don't do municipal engineering myself, I don't 17 know what this process, what, you know, what the process 18 is. I am just telling you technically what is done. 19 Q. That there is an excavation work plan and that 20 should answer many of these questions? 21 A. Yes. 22 Q. Okay. 23 Would you agree that these slopes we are dealing 24 with here are steep slopes as defined by the town steep 25 slope ordinance?	40 1 Well, Page 11 you speak of slope mapping under 2 Hazard Mapping and there you say, "The slope angle on 3 the upper slope, as determined by the spacing of 4 contours created by aerial survey, is steeper than 5 indicated by the contours and ranges from 17 to 29 6 degrees, which may require a re-evaluation of the Hazus 7 Class by the Agency publishing the map." Doesn't that 8 mean that other evaluations show a much steeper slope 9 than the hazards map shows? 10 A. Right. But the stability analyses that were 11 performed address that. 12 Q. I am just asking a question. You just said -- 13 A. Also a 29 degree slope is not a steep slope. 14 Q. Yes, but 15 percent is what qualifies as steep 15 slopes on most municipal rules, isn't it? 16 A. Most highway embankments are 29 degree slopes. 17 Q. But most municipalities use 15 percent -- 18 CHAIRMAN BAGOFF: He's not talking -- he is 19 testifying to something in the report. Now you're 20 talking about something where most folks are. 21 MR. AFRAN: We are not building a highway, 22 correct? 23 CHAIRMAN BAGOFF: Correct. 24 Q. We're not building highway, Mr. Kleinberg? 25 A. No.

41 1 Q. That's all. We're not building a highway. 2 Now, it also says on Page 11, "We were not able 3 to obtain additional background information on the basis 4 of the classification in time for this review." What 5 does that mean? 6 A. The map, referring to the landslide mapping for 7 Essex County, New Jersey prepared for the New Jersey 8 Geological Survey, it's referenced in the Langan report, 9 and the report show -- identify a Class 3, I think, 10 level of concern. And that's all included in the Langan 11 report. And so the, it just, the map just states that, 12 but they're not describing why they made that 13 classification or what the mechanism of a landslide 14 would be in that particular area. You can not find the 15 basis for their findings. 16 Q. And what does Class 3 refer to? 17 A. It's a Hazus classification, it's a government 18 agency that investigates certain types of hazards, 19 including landslides. 20 Q. I mean, what does Class 3 mean? 21 A. It's moderate or -- it's a moderate risk. 22 Q. Moderate risk of what? 23 A. Landslide. 24 Q. So Building D is going to be placed just above a 25 slope with a moderate risk of a landslide, is that fair	43 1 A. Well, they're the conditions that are shown on 2 the cross sections and in the project files that are 3 done based on the exploration. 4 Q. So you're referring to data that was provided by 5 Langan? 6 A. Right. 7 Q. Thank you. 8 At Page 12 you say that, "The overburden soils 9 were reported to have been classified visually. There 10 were no index testing results, such as moisture content 11 and grain size tests, included in the report. Two 12 unconfirmed compression tests were performed of the 13 Basalt bedrock." Now, when you say, the overburden 14 soils report to have been classified visually, who did 15 that report of the visual classification? 16 A. Langan. 17 Q. Langan. 18 And you said, there's no testing result such 19 moisture content and grain size tests. What does that 20 refer to? 21 A. That refers to, you take a sieve and you, a series 22 of sieve's and you shake the sand through the sieve and 23 you break it down into different sizes of grains. 24 Q. And what's the relevance of finding that 25 information out?
42 1 to say? 2 A. Well, there was an investigation done that 3 indicated that the stability, when it's completed, we 4 have a couple others that we asked for that done a more 5 thorough investigation, that was done for people who 6 made the classification, and so far it hasn't indicated 7 instability exists on the slope. 8 Q. Yes, but Class 3 was indicated by the agency? 9 A. Right. But they don't do the -- did not do test 10 borings and stability analyses and that sort of thing, 11 as far as we know. 12 Q. Then why do you mention as a relevant factor that 13 you couldn't get information on the basis of the 14 classification if it doesn't matter? Why even bother 15 mentioning it. 16 A. Because it needs -- they need it to provide an 17 explanation in my opinion, otherwise it's misleading. 18 Usually the maps have a text on them and this has no 19 legend or text or anything on the map. 20 Q. Thank you. 21 In the last sentence of that paragraph you say, 22 "The analyses performed by both Langan and Princeton 23 Hydro do not, in our opinion, indicate instability under 24 the assumed conditions." What do you mean by, assumed 25 conditions, or what are they?	44 1 A. It, it provides additional criteria to come up 2 with soil strength parameters, permeability, a whole 3 bunch of engineering properties. 4 Q. Are those important? 5 A. Right. There were investigations done by Shore 6 Engineering for the applicant as well and they did do 7 the index testing. 8 Q. Thank you. 9 At Page 13 you refer to the fact that Princeton 10 Hydro reviewed inferred stratigraphy and that Langan did 11 a general stratigraphy. Can you explain what those two 12 terms mean? Inferred and general stratigraphy. 13 A. That may be a poor choice of words, but inferred 14 means you do borings 100 feet apart and then you, and 15 then basically the practice is to interpolate them 16 between the two points that, you know, where the strata 17 are and you have to infer that the conditions between 18 follow that general trend. They don't necessarily do 19 that, but you won't know until you excavate. 20 Q. And what about what does general stratigraphy 21 mean? You used both terms. 22 A. I know, maybe I should have used inferred twice. 23 General could be inferred. 24 Q. Well, what did you mean by general, because you 25 used two different words?

45 1 A. I was not that careful at that point, but they 2 both mean roughly the same thing. They're synonymous. 3 Q. You mentioned on Page 14 that "Langan reported a 4 joint set dipping downward to the east on a slope of 17 5 degrees." Then you go onto say, "downward dip to the 6 east is not, in our experience, a favorable inclination, 7 which would be downward towards the west." What do you 8 mean by this? 9 A. What I mean is that they reported, I am just 10 reading their report and they said it was 17 -- it was 11 dipping 17 degrees in the easterly direction, which is 12 down slope. 13 Q. No, I understand you're reciting what's in their 14 report. 15 What did you mean by your conclusion that the 16 eastern inclination is not a favorable one. The 17 favorable one would be downward toward the west? 18 A. If the joints dip in the direction of the slope 19 then there's -- it reduces, it reduces the safety factor 20 against sliding, but those assume the 45 degree angle, 21 which is twice the 35 degree friction angle, which means 22 that the rock joint won't slide if it was only sloping 23 17 degrees. 24 Q. What's their basis for that assumption of the 35 25 degree friction angle?	47 1 Q. So what does it mean that you couldn't identify 2 that? 3 A. We couldn't. 4 Q. No, I mean what's the significance that caused 5 you to make this reference in the report? 6 A. Well, it would have been interesting to know 7 which piece of rock core they selected from the 8 photograph. 9 Q. And why would it be interesting to know that, 10 that's my question? 11 A. It would be, it would have been good to see the 12 rock before it was subjected to the test. They do have 13 pictures of the rock core in their thing before it was, 14 before it was subjected to a compression test. 15 Q. And why would it have been a good to see that 16 first? 17 A. It would not particularly be important that we 18 could see it, but we couldn't see it and I -- 19 Q. So you make a point of, a point of knowing but, 20 it's not particularly important, is that what you're 21 saying? 22 A. I did that, yes. 23 CHAIRMAN BAGOFF: Move own. Move on. 24 MR. AFRAN: I am not sure why you're saying 25 move on, I think that's a very important point.
46 1 A. It's a fairly representative value and based, and 2 they had people go over the rock Basalt that they saw. 3 Q. Well, if it is fine the way they did it, why did 4 you comment that, "A downward dip to the east is not a 5 favorable inclination, which would be downward towards 6 the west?" 7 A. I believe in their report it was referenced as a 8 favorable one and we didn't agree with that. 9 Q. That's because gravity will tend to cause rock to 10 move in a direction where there's less support and in 11 this case that would the east, is that fair to say? 12 A. Correct. 13 Q. Thank you. 14 You also make a the statement that Langan in 15 their rebuttal -- strike that. 16 You make the statement that when you're read 17 Langan's rebuttal CME was not able to identify the 18 section of core which samples were taken. This is, 19 again, at Page 14. Can you explain that statement? 20 A. We were looking -- at that time they took two 21 core samples and they were close together, they were 22 taken from the same rock core and we could not identify 23 the piece that was used in the -- there's photographs 24 and nobody drew a circle on the photograph and said, 25 this is the piece we took the samples from.	48 1 CHAIRMAN BAGOFF: Not in his opinion. He is 2 the expert. 3 MR. AFRAN: You are the expert who judges 4 ultimately and you need to hear the full level of 5 details or lack thereof. 6 CHAIRMAN BAGOFF: He said in his opinion it 7 wasn't important. Thank you. 8 Mr. Klein. 9 MR. KLEIN: So how many core samples do have 10 the circle in the photograph to tell them which pieces? 11 THE WITNESS: They only took samples from 12 one core. 13 MR. KLEIN: So there's only one core and 14 they just identified -- 15 THE WITNESS: They didn't locate the -- I 16 couldn't see on the photo which piece was the one that 17 they removed from the core box and trimmed it. You have 18 to trim them and everything and I couldn't see that on 19 the photo. 20 MR. KLEIN: Could they identify it now or is 21 it to late now? 22 THE WITNESS: I am sure somebody from Langan 23 could probably identify it. I don't think it's that 24 significant. 25 MR. KLEIN: When you looked at the whole

49 1 core, did you see like a section you wished they had 2 studied instead of? 3 THE WITNESS: No, they have a photograph. 4 MR. KLEIN: Of the whole core and whether 5 they took this piece up here or went down six more 6 inches and took that piece, it's pretty similar? 7 THE WITNESS: Right. 8 MR. KLEIN: All right. 9 Q. See Mr. Kleinberg, the problem is, me as a 10 lawyer, I assume what's put in a report is what is 11 important or you wouldn't put it in the report. So I 12 keep asking you questions about statements you made and 13 then you keep saying, they're not important. I am 14 trying to understand why you care about whether you 15 could see this piece of rock? 16 A. It would have been good to see which piece they 17 took from it. It would, but it's, in the big picture of 18 things, it's not that significant. But I did put it in 19 the report. 20 Q. I am still trying to understand what would be the 21 value to seeing it. That's what I'm asking you. You 22 couldn't see it, you don't know where it is, may have 23 been devoid, what is the value at this point? 24 A. When you look -- because there are a number of 25 joints and fractures on the existing core and it would	51 1 of the anticipated strength range for Basalt. Now, 2 let's deal with that first, what does that mean? 3 A. That means that the, that means that the strength 4 of the Basalt is typically, typically about 30,000 PSI 5 and these were about 3,000 PSI. And each of the 6 engineers involved observed the same point. Princeton 7 Hydro went over it and Langan also went over it. 8 Q. And so you're saying that this particular Basalt 9 is not as strong as one normally would expect from 10 Basalt, is that correct? 11 A. The sample was not as strong, but we don't know 12 what the rest of the rock is, if that's typical of the 13 rest of the rock. 14 Q. But the part tested showed that it's much, much 15 weaker than Basalt normally is. Isn't that fair to say? 16 A. Correct. 17 Q. Okay. 18 Now, then you said, and these results were 19 "roughly equivalent to that of a low to medium strength 20 concrete." 21 A. Correct. 22 Q. Because concrete is not, doesn't have the 23 cohesion of Basalt or other forms of rock and so you're 24 saying this Basalt is actually more akin to the 25 strength, weight bearing strength to cement, is that
50 1 have been good to, it would, if I were -- when I was 2 looking for the piece I would have wanted to see the 3 piece that they took, they selected for the samples. 4 Q. How deep was that core? 5 A. That I think was at the top surface of the rock 6 and it was, and I think the core is generally 5-feet and 7 then they would stop and take the core sample out, put 8 the barrel down and run another 5-feet. 9 Q. Thank you. 10 You also make a statement that you, referring to 11 different compressive strength measures on Page 14. 12 This is in the -- are you all right? 13 A. Sorry. 14 Q. Thank you. 15 This is in the paragraph headed, Basalt Bedrock. 16 Now you say, after addressing two compressive measures 17 you say, "The results are a small fraction of the 18 anticipated strength range for Basalt and roughly 19 equivalent to that of a low to medium strength 20 concrete." 21 A. Correct. 22 Q. Now, what are you trying to say there? 23 A. Sorry. 24 Q. You're making a comparison, you're saying the 25 results of these compression tests are a small fraction	52 1 what you're saying? 2 A. I'm sorry, you said I didn't -- you said more 3 than -- 4 Q. I will rephrase it. 5 A. Yeah. 6 Q. You're saying here that this Basalt actually in 7 terms of its weight bearing strength is equivalent only 8 to a low to medium strength concrete? 9 A. Correct. 10 Q. Okay. Thank you. 11 What do you mean when you say Langan "attributed 12 the unusually low strength to porosity, and crystalline 13 grain size characteristics in the rock." I won't say 14 the rest of the sentence. What does that mean, 15 attributed this low strength, this unusually low 16 strength to porosity and crystalline grain 17 characteristics of the rock? 18 A. That's what they said, and I was just quoting. 19 Q. Do you have any knowledge of that fact one way or 20 the other? 21 A. No. 22 Q. Okay. Thank you. 23 So basically this rock is much weaker than rock 24 normally would be in this class and it actual is 25 equivalent in strength to a relatively low grade cement,

53 1 is that fair to say? 2 A. Concrete. 3 Q. Concrete. 4 A. Yes, that's what I am saying. That particular 5 piece of core, I don't know about the rest of it. 6 Q. Right. And we don't have any other measures, 7 right? 8 A. Right. 9 Q. So the one that we have shows that this rock base 10 is no better than a low to moderate concrete, is that 11 fair so say? 12 A. That's fair to say. 13 Q. Thank you. 14 Would you agree that this ridge formation in our 15 area is a product of glacial action at some point? 16 A. Sorry. 17 Q. Would you agree that this ridge formation is a 18 product of glacial action at some point? 19 A. It's a product of, it was, it was a product 20 before the glacier arrived. 21 Q. Igneous intrusion was much earlier, millions of 22 years earlier? 23 A. Hundreds of millions. 24 Q. Hundreds of millions. 25 Years ago earlier glaciers though, tens of	55 1 that? 2 A. Correct. 3 Q. And you said however, if the building were built 4 on a slope you would apply the 2.0 factor? 5 A. Yes, that's what, that's what I would do. Not 6 because it is required, but that's what I would do. 7 Q. As a matter of engineering practice that's what 8 you would do if it was built on a slope? 9 A. Yeah, but the buildings aren't being built on a 10 slope. 11 Q. But if a building was built on a slope it 12 wouldn't be resting on the soils, it would be excavated 13 into the bedrock that forms the ridge, right? 14 A. I don't know. Depends on the design. 15 MR. KLEIN: But it's not built on the slope. 16 MR. AFRAN: The point I am raising, you 17 don't want to build on topsoil. The question is, he 18 would've given it a 2.0 safety factor if it was built on 19 the slope, which means it is anchored into the bedrock, 20 it is the same bedrock structure being anchored to on 21 top. 22 MR. PLOCKER: Bruce, you have an engineering 23 degree? You're testifying as an engineer. 24 MR. AFRAN: I am proposing a problem to a 25 witness.
54 1 thousands of years ago, carved out ridges and left 2 ridges, is that fair to say? 3 A. There was a tremendous force of ice on top of the 4 rock. 5 Q. Right. And so these ridges collapsed either 6 because -- well, ice or because the force of ice moving, 7 is that fair to say? 8 A. They didn't necessarily collapse. I don't know 9 that they collapsed. 10 Q. Well, the ridge didn't exist naturally, like that 11 part was cut away from by glacial impact leaving the 12 ridge, is that correct? 13 A. I think the ridge is the end of the, of the 14 volcanic flow, I am not sure. I am not a geologist. 15 Q. I don't want you to answer if you can't. 16 A. I can't. I am not, it's my impression that 17 that's the end of the flow of the lava. 18 Q. You don't know really as a base of expertise? 19 A. No. 20 Q. Okay. Then I will not trouble you with these 21 questions. 22 Now, we spoke last time and you said that in your 23 view the 1.5 safety factor in the Army Corps Manual was 24 appropriate for this project and that the 2.0 factor 25 would normally be for projects like dams and things like	56 1 Q. So if in fact you build on the slope would it be 2 anchored into the same bedrock structure as that would 3 be anchored when it is on top? 4 Why would you give it a 2.0 only when it's 5 anchored on a slope and not on top? 6 A. We are not talking about stability of the 7 structure. We are talking about the stability of the 8 slope. 9 Q. I know. So why would you use a 2.0 safety factor 10 if anchored in bedrock on the slope but if not anchored 11 in the same bedrock on soil? 12 A. Because the forces would be much higher on it if 13 it was on the slope than they would be if it was -- 14 where they're going to put it. 15 Q. Now, if the rock under this Building D were 16 fractured and not properly grouted and if there are 17 other friable or destabilizing elements under that rock 18 the entire structure collapses and with it part of the 19 slope, isn't that fair to say? 20 A. No, it is not fair to say. 21 Q. Well, the structure collapses on the rock under 22 the structure it would go down part on the slope, 23 wouldn't it, it would have to? 24 A. This is not an extremely heavy building and it's, 25 and the condition of the rock and there are buildings

57 1 allover the Palisades that are built in situations like 2 this. 3 Q. Well, those are older buildings, that's not 4 modern practice? 5 A. We have a 30-foot high retaining wall on the 6 Palisades that I designed. 7 Q. But did you design that? 8 A. Before COVID. 9 Q. But we're not formally putting ridge line 10 numbers -- 11 CHAIRMAN BAGOFF: Don't tell him what he 12 normally does, ask him. 13 MR. AFRAN: It's an engineering question. 14 CHAIRMAN BAGOFF: We're not normally doing 15 anything. You can ask him not normally doing but -- 16 MR. AFRAN: It's a question. I said, we're 17 are not normally building buildings on top of a ridge 18 line, are we, in modern practice? It was a question. 19 CHAIRMAN BAGOFF: Okay. 20 MR. AFRAN: You may not like it. 21 CHAIRMAN BAGOFF: If he can answer. 22 Q. We're not normally doing this typically in the 23 ridge line, are we? 24 A. Sorry. Of course we are. 25 Q. As a regular practice in New Jersey? So is this	59 1 MR. AFRAN: That may be your way of 2 analyzing, I'm simply asking whether to his knowledge as 3 an engineer building on ridge lines are typically 4 constructed in modern practice in New Jersey. 5 MR. KLEIN: And he answered. 6 MR. AFRAN: I am not sure what the answer 7 was. What he said is no one told me. 8 MR. KLEIN: Yes, still do. 9 THE WITNESS: Yes, we'll do it. If we need 10 to put the building there, we'll do it. 11 Q. Is it typical practice any longer in most 12 municipalities to allow buildings to be built on top of 13 ridge lines, simple question? 14 A. If you're saying that there are ordinances that 15 say that you're not, I am not aware of them. I didn't 16 read the West Orange one, if there's a restriction on 17 building on ridge lines. 18 Q. So my question simply is, are you able to answer 19 whether building on top of ridge lines is typically 20 constructed as a general matter in New Jersey or is this 21 an exception to general practice in a modern context? 22 A. I gave you my opinion. It is not an exception, 23 that's my opinion. I don't know what else to say. I am 24 out of answers. 25 Q. Well, there is a steep slope ordinance in --
58 1 an exception? 2 A. If it's doable. If somebody asked me to do it, I 3 would design it. 4 Q. Look, engineering and enough money many things 5 are doable. I simply asked the question, we're no 6 longer doing this as a regular building practice in New 7 Jersey, are we? 8 A. Nobody told me that. 9 Q. You're an engineer for many years, I am simply 10 asking the question based on a normal engineer in this 11 state, can you answer? 12 CHAIRMAN BAGOFF: He answered. 13 A. I did answer. Yes, we are building buildings on 14 the ridge lines. 15 Q. I didn't ask whether we are. I asked normally is 16 it currently typical practice? 17 A. I don't know normally or not normally. 18 Q. I don't know. Thank you. 19 MR. AFRAN: Mr. Kleinberg reacting that way, 20 I'm simply asking an engineer what is typical practice 21 today in modern engineering in our state. I think it's 22 a perfectly reasonable question. 23 MR. KLEIN: You now have anchors of land on 24 ridge lines and then what percentage of that, of all the 25 land and percentage of buildings are on ridges?	60 1 CHAIRMAN BAGOFF: We're talking about 2 ordinances, he said -- you asked specifically, you asked 3 can they be built. He said, he said he is not aware of 4 an ordinance. I think we're done with the ordinance. 5 Thank you. 6 Q. You would agree under the Army Corps of Engineer 7 a higher safety factor of 2.0 is appropriate where a 8 slope failure would have severe consequences to life and 9 property? 10 A. Right. They're talking about, they're talking 11 about huge dam structures is what they're talking about 12 in that reference manual. 13 Q. Well, let's take a look at that. 14 A. What they say in the ordinance, slopes of 1.5 is 15 adequate. 16 Q. Just a moment. It says in Section 7-12, for 17 major concrete structures, dams, wells, basins, walls 18 and retaining embankments, etc., the minimum requirement 19 safety factor is 2.0? 20 A. Right. 21 Q. That's 7-12. However, you would have to agree 22 that Section 8-13 speaks of applying a safety factor of 23 2.0 in general circumstances for major rock slope 24 consequence of failure is severe. And in Section 8-13A 25 they don't talk about limiting that to dams and similar

61 1 functions, do they? 2 A. No, but in other references they reference 1.5 as 3 adequate for slopes. 4 Q. Yes, but in Section 8-13A it says, Where the 5 failure of a slope will have severe consequences, the 6 appropriate standard is 2.0. Isn't that what it says, 7 "yes" or "no"? Isn't that what the Army Corps Manual 8 says. 9 A. That's what it says for the structures that you 10 are talking about and this is not what they're talking 11 about. 12 Q. Well, I am going to hand this to you and take a 13 look at 8.13, does it have any reference to limitation 14 to dams and things of that nature. And if you could 15 find it please show it to me. 16 A. I brought the wrong pair of glasses today, do you 17 want to read it to me. 18 Q. I am not going to read 8 paragraphs. Well, you 19 know, let me get back to that. 20 You know the Army Corps, right? 21 A. Sorry. 22 Q. You know the Army Corps Manual, right? 23 A. I know it exists. I can't quote it chapter and 24 verse. I don't know what you mean, do I know. Yes, I 25 downloaded it, I looked through it and your references	63 1 A. I talked about it as a precaution that you would 2 usually take into account in your design. You always -- 3 it could occur, I don't know that it does occur. 4 Q. None of us have that skill to predict the future 5 and engineering is designed to take into account things 6 we may not expect to happen but may very well, isn't 7 that correct? 8 A. Very well. But for this case the safety factor 9 of 1.5 is adequate, in my opinion. 10 Q. And you would agree however your report focuses 11 on rock safety, doesn't it? 12 A. Sorry. 13 Q. And you would agree that your report focuses 14 almost entirely on the safety and structure of the rock, 15 isn't that true? 16 A. We do reference in a number of areas precautions 17 that should be taken when you have rock underlining a 18 slope. 19 Q. Almost all of your report deals with quality and 20 structure and safety of the rock, isn't that true? 21 A. Well, it's true but the stability analyses of the 22 rock, the rock does not come into play that were done by 23 both engineering firms. 24 Q. I'm simply asking if this slope where rock is a 25 major feature, not the failure of it, would fall under
62 1 for situations that we are in 1.5 is adequate. 2 Q. And you're not in a position to dispute that 3 because you don't have your glasses, that Section 8-13A 4 3G does not refer to specialized projects such as dams 5 and things like that? 6 A. I believe it does. 7 Q. 8-13A, "For major rock slopes where the 8 consequence of failure is severe, the minimum required 9 calculated factor of safety is 2.0." 10 A. This is not a rock slope to begin with. It's a 11 soil slope for the most part. 12 Q. Well, we have been analyzing the rock strength 13 all along, now you tell us it's not a rock slope? 14 A. None of the failure surfaces that were referenced 15 as significant in the reports were passing through rock. 16 They were passing through soil. 17 Q. Well, we have analyzed rock repeatedly in your 18 presentation and in your report and you made the point, 19 you made the point that there could be joints that we 20 don't know about and you say there are thousands of 21 smaller joints and it seems to me the purpose of talking 22 about that was because failure of that rock could have 23 severe consequences. Isn't that why you talked about it 24 in your report? Isn't that why you talked about it in 25 your report.	64 1 Section 8-13? 2 A. But the stability analyses don't exist, don't 3 indicate that there would be a failure. 4 Q. Well, 8-13 doesn't say only if the stability 5 analyses indicates a likelihood. It simply says, "Where 6 the consequence of failure is severe the minimum 7 required factor is 2.0." 8 A. What you're referencing is a design manual for 9 heavy-duty engineering projects and this is not. That's 10 not applicable, in my opinion, to this particular 11 situation. 12 Q. And you're saying that Section 7-12, which refers 13 to safety factor 1.5 for other kinds of buildings is -- 14 strike that. 15 You would agree that Section 7-12, which refers 16 to the 1.5 safety factor, is in this same section of the 17 manual, isn't it? They're in the same section of the 18 manual, aren't they? You want my glasses. 19 CHAIRMAN BAGOFF: Mr. Afran, last question. 20 THE WITNESS: Okay. From the same manual 21 there's, I think 7.12 and what it says, for retaining 22 walls ordinary type structures a safety factor of 1.5 is 23 adequate. 24 Q. I know. And that's the same section as 8-13 that 25 refers to places where it can be major consequences the

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1 safety factor is 2.0. So isn't it a fact that this is
2 not referring only to dams and structures like that?
3 A. Right.
4 Q. But to perfectly ordinary buildings?
5 A. Right. And they say a 1.5 safety factor is
6 adequate for retaining walls.
7 Q. But when you say 8-13 is the only section dealing
8 with dams and similar structures, that was not correct?
9 A. Yeah, I am reading now to Section 7-12.
10 Q. Where in 8-13 does it limit it to things such as
11 dams or doesn't it, sorry?
12 You're having an assistant reading it for you.
13 A. I'm sorry, I brought the wrong glasses.
14 Q. We can revisit this another time. The Chair says
15 we should end and I have a little left, but I think we
16 have to stop. So I would ask you to please read 8-13 so
17 we can go over that subject. Okay. My question is very
18 simply, does Section 8-13 -- don't answer now because
19 you don't have your glasses, does Section 8-13 --
20 A. What's the name of the manual?
21 Q. Army Corps Manual. Section EM 1110-1-290.
22 A. Continue. What's the title?
23 Q. Sliding Stability is Chapter 7 and Chapter 8 is
24 titled --
25 A. But --

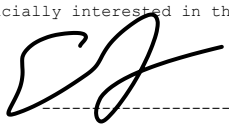
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1 Q. -- Design Considerations.
2 A. I think the manual is for rock foundations. The
3 manual is -- I think the title of the manual is Rock
4 Foundations.
5 Q. We can resolve that next meeting since we don't
6 have cover letters, but Section 8-13 is Design
7 Considerations. It's headed, Design Considerations.
8 CHAIRMAN BAGOFF: Okay.
9 Ladies and gentlemen -- thank you Mr. Kleinberg.
10 MR. AFRAN: Thank you, Mr. Kleinberg. Thank
11 you.
12 THE WITNESS: You're welcome.
13 CHAIRMAN BAGOFF: PB-24-01, West Essex
14 Highland, Block 179, Lot 32, Warner Road will be carried
15 to the December 10 Special Meeting at 6:00 o'clock PM in
16 council chambers.
17 The next regular Planning Board meeting --
18 MS. McGOVERN: 6:30.
19 CHAIRMAN BAGOFF: 6:30.
20 Would be 6:30 PM in council chambers and the
21 regular Planning Board will be January 7, 2026 at 7:30
22 via zoom.
23 MR. AFRAN: Mr. Chairman, I was writing --
24 CHAIRMAN BAGOFF: Mr. Afran.
25 MR. AFRAN: Clarify the date. December 10

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1 at what time?
2 CHAIRMAN BAGOFF: December 10 at 6:30 PM in
3 council chambers.
4 (Hearing concludes at 11:00 PM.)
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1 CERTIFICATE
2 I, ERIC S. FISHMAN, a Shorthand Reporter
3 and Notary Public of the State of New Jersey do hereby
4 certify that the foregoing is a true and accurate
5 transcript of the testimony as taken stenographically by
6 and before me at the time, place and on the date
7 hereinbefore set forth, to the best of my ability.
8 I DO FURTHER CERTIFY that I am neither a
9 relative nor employee nor attorney nor counsel of any of
10 the parties to the action; and that I am neither a
11 relative nor employee of such attorney or counsel; and
12 that I am not financially interested in the action.
13
14 
15 -----
16 ERIC S. FISHMAN, S.R.
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19 Dated: 1/5/2026
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