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LEET TOWNSHIP  
ZONING HEARING BOARD  
194 Ambridge Avenue  
Fair Oaks, PA 15003-1248

Friday, August 20, 2021  
9:00 a.m.

- - -

SPECIAL EXCEPTION APPLICATION

QUAKER VALLEY SCHOOL DISTRICT

- - -

Reported by:

CAVALIERE COURT REPORTING  
Leaette Cavaliere, Court Reporter  
162 Cobblestone Drive  
Pittsburgh, PA 15237  
(412-508-0035)

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A P P E A R A N C E S

LEET TOWNSHIP ZONING HEARING BOARD:

Terry Soster, Chairman  
Chuck Soman  
David Kovacs  
Tony Tirimacco (alternate)

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MR. SOSTER: We will convene the Leet Township hearing board. We will open with the pledge of allegiance.

(Pledge of Allegiance)

MR. SOSTER: And this is a continuance of the application made by the Quaker Valley School District and just a note, due to the Covid, if you feel comfortable moving wider, fine, your choice of how you like to social distance. And I believe, Mr. Solicitor --

MR. RESTAURI: We need to have the oath given. So if anyone is here or on zoom and intends to testify, Ms. Cavaliere is going to administer the oath. If you decide later to testify and you haven't taken the oath, please let us know at that time and she will swear you in. If you do testify, it will be presumed that you have been sworn in and you are thereby representing to us that you have taken the oath. So if you plan to testify, Ms. Cavaliere will swear you in.

1 (WITNESSES JOINTLY SWORN)

2 MR. RESTAURI: Thank you. My  
3 understanding is that the school district has  
4 two more expert witnesses.

5 MR. GRAMC: We have two here  
6 today. We will have one testify. They will  
7 both be available to answer questions.

8 MR. RESTAURI: Very good. Then,  
9 Mr. Gramc, please proceed.

10 MR. GRAMC: Just to save time --  
11 there is ten copies of everything cause I was  
12 told to do that. This is the Geoff Phillips  
13 resume and Joe Boward's resume. That's  
14 Exhibit 11 is Geoff Phillips, 11.5 is Joe  
15 Boward, and Exhibit 12, QVSD Exhibit 12 is  
16 Mr. Phillips' report. So I will just leave  
17 these here for you.

18 MR. RESTAURI: Thank you.

19 MR. DePAUL: I have not seen a  
20 copy of those. Can I assume those are the  
21 exhibits previously submitted and they are  
22 identical to those? Or is there anything new?

23 MR. GRAMC: They're not new since  
24 we've started this hearing.

25 MR. MICHAEL: Are they new from

1 the time that they were submitted previously?

2 MR. GRAMC: They have not been  
3 submitted previously to this board at this  
4 hearing cause these witnesses are just  
5 testifying today. So these are -- I'm not  
6 sure what the question is.

7 MR. DePAUL: If you recall, Dan,  
8 there was a procedure whereby if reports were  
9 submitted in advance of the hearing pursuant  
10 to agreement of parties and there is an  
11 opportunity to object and raise issues  
12 regarding those reports. If these reports are  
13 the reports that have previously been  
14 submitted, that's fine. If they are new and  
15 have not been submitted as part of this  
16 process, then we have to have an opportunity  
17 to review those.

18 MR. RESTAURI: Well, the school  
19 district has submitted resumes and reports and  
20 they are different documents. The resumes are  
21 different documents from the reports.

22 MR. MICHAEL: I think all he is  
23 asking, Mr. Solicitor, is there was a report  
24 previously submitted pursuant to the  
25 agreement. Is this the same as the other?



1           That's all he is asking.

2                       MR. DePAUL: I want to make sure  
3 this is nothing that we have not previously  
4 seen or that has not been previously submitted  
5 because I don't have a copy of it here.

6                       MR. RESTAURI: Right.

7                       MR. DePAUL: It appears to me, is  
8 it just the four page letter that's been  
9 submitted?

10                      MR. GRAMC: Yes. And the resumes.

11                      MR. DePAUL: That's fine.

12                      MR. RESTAURI: Let's start here  
13 then. You are calling Mr. Phillips?

14                      MR. GRAMC: I am.

15                      MR. RESTAURI: Does anyone  
16 challenge Mr. Phillips' qualifications to  
17 testify as an expert in this area? Hearing  
18 none, his testimony will be accepted as  
19 offered within his field of expertise.

20                      MR. GRAMC: For explanation, we  
21 are going to have Mr. Phillips testify to the  
22 background and to the report. Mr. Boward  
23 assisted in that report with the firm so we  
24 have both of these engineers available today.  
25 Because as questions come on

1 cross-examination, it may be more appropriate  
2 for one or the other so we wanted to make sure  
3 everybody was available.

4 MR. RESTAURI: Appreciate it.

5 MR. GRAMC: Mr. Phillips will just  
6 testify on our behalf and, as I've said  
7 previously, we are doing this as a courtesy  
8 because we have been requested to do this on  
9 geotech. We don't believe any of the geotech  
10 is part of the use of the property. We  
11 understand it's a very important part of the  
12 design factor when we go to the planning  
13 commission and whenever we have to design the  
14 building that's important.

15 I also make it clear that  
16 Mr. Phillips and Mr. Boward are engaged as the  
17 engineers on the due diligence. They have not  
18 been engaged, no one has been engaged on the  
19 design of the building. We do not have -- the  
20 architect has not designed the building so  
21 there can be no engineering relating to the  
22 specific building. What we have is the  
23 general engineering on whether you can build  
24 on this site and that's what we're presenting.

25 MR. RESTAURI: So you are

1           presenting his testimony about land use, not  
2           about the building.

3                       MR. GRAMC:   Just on whether this  
4           land can support a new high school.

5                       MR. RESTAURI:  Understood.  Thank  
6           you, sir.

7                       MR. DePAUL:  Vince, just so the  
8           record is clear, we have an objection to the  
9           school district's characterization of the  
10          necessity of this testimony and what  
11          constitutes their burden of proof under the  
12          applicable ordinance standard and what needs  
13          to be proved.  It's our position, obviously,  
14          that they need to prove that this is safe and  
15          can be used properly and not only with respect  
16          to use, but the construction of the site, and  
17          the dangers potentially associated with the  
18          construction of the site are inextricably  
19          intertwined with the use.

20                      So if it turns out that somebody  
21          would have the position that the use is fine  
22          but the construction is dangerous, then it's  
23          our position that those are inextricably  
24          intertwined and one in the same.  So I want to  
25          make the record clear on that point before we

1 get started and so no one can argue there has  
2 been any waiver.

3 MR. RESTAURI: Understood, and  
4 it's noted. Thank you.

5 MR. MICHAEL: We will join in the  
6 objection.

7 MR. RESTAURI: Thank you.

8 - - -

9 GEOFFREY PHILLIPS,  
10 having been first duly sworn, was examined and  
11 deposed as follows:

12 - - -

13 DIRECT EXAMINATION

14 BY MR. GRAMC:

15 Q. Could you please state your name for the  
16 record?

17 A. My name is Geoffrey Phillips.

18 Q. And could you give us -- can you verify the  
19 Curriculum Vitae that we have submitted on  
20 your behalf as a qualified engineer?

21 A. Yes, I'm a licensed professional engineer in  
22 Pennsylvania and have over 30 some years of  
23 experience.

24 MR. MICHAEL: Can you speak up,  
25 please?

1                   THE WITNESS: I'm a licensed civil  
2 professional engineer in the State of  
3 Pennsylvania and several other states and have  
4 over 30 years of experience working in site  
5 development.

6 BY MR. GRAMC:

7 Q. And did you prepare the report that we have  
8 submitted as Exhibit 12 to the board?

9 A. Yes, my team, Garvin, Boward, Beitko, prepared  
10 the report for the site that is before the  
11 board.

12 Q. And Joe Boward was involved in that process  
13 with you?

14 A. Yes, he's a part of that process.

15 Q. Are you familiar with the property shown on  
16 the plan that's posted here as SP-3?

17 A. Yes, sir. We have been involved in the site.  
18 We were hired by the school district to do the  
19 due diligence evaluation of the property prior  
20 to them purchasing the property.

21 Q. Could you explain what that due diligence  
22 involved and the conditions of the soils?

23 A. Basically, the due diligence included  
24 evaluation of surveying the property,  
25 evaluating the geotechnical aspects of the

1 property, evaluating all environmental aspects  
2 of the property, and preparing preliminary  
3 grading plans for the stipulation of whether  
4 the school district could build -- there was  
5 enough property here that was able to create a  
6 buildable pad of at least 50 acres which at  
7 the time that was the criteria we had been  
8 given that the school district in their  
9 planning, very preliminary planning needed to  
10 construct the high school campus which  
11 included all amenities for the district.

12 Q. In your report you referred to colluvial soils  
13 and red beds. Could you explain those  
14 conditions?

15 A. Yeah, I'll keep it in brief terms. Joe Boward  
16 could be more technically oriented with it.  
17 But colluvium is where gravity pulls down the  
18 soils to a lower part of the slope. That's  
19 where the soils have -- their safety factor  
20 has been decreased due to wind, water,  
21 erosion, to be less than one. So the soils,  
22 by gravity, go to the tow of the slope.

23 Now the red beds which are used is the  
24 terminology that's generally in industry of  
25 engineering and geotechnical that describes

1 the material that has slid from claystone.  
2 Claystone is throughout the whole district.  
3 It's throughout all of the township, other  
4 than down along the flood plain areas where  
5 the creeks are. It's a claystone that is  
6 throughout the whole district.

7 There isn't any part of Leet Township or  
8 the school district that doesn't encounter  
9 this type soils if you do any kind of  
10 development here. All the homes, all the  
11 hillsides up here has that in it.

12 Q. Can you safely build on colluvial soils or red  
13 beds?

14 A. You don't build on the colluvial soil. What  
15 we do is remove it -- because it's not  
16 compacted, it's unconsolidated material, so  
17 you go in and remove that material down to the  
18 claystone or rock layer or substantial  
19 material and then you build up from that. So  
20 you remove that material that has already  
21 slid.

22 Q. And that would also involve the red beds and  
23 the colluvial soils would all be removed to  
24 get you to a stable base?

25 A. That's correct.

1 Q. And was that your recommendation to the school  
2 district, that this site could be safely --  
3 you could safely build a high school on this  
4 site by engaging in that activity, by removing  
5 the troublesome soils?

6 A. Right. As you see on the site plan that is  
7 before the board, the area where any slopes  
8 are being proposed, you can see it's  
9 extensively taken down to the lowest part of  
10 the slope where we take all the colluvial  
11 material out, onto stable material, then we  
12 build the slope back up. Sort of when you  
13 look at it in a cross-section, it looks like a  
14 set of staircases. So you actually sawtooth  
15 or staircase the slope back up in solid  
16 material so that it is well anchored.

17 Q. After you engage in that recommended action to  
18 safely build, would the site be more stable or  
19 less stable than it is today?

20 A. The site will be more stable because we have a  
21 factor of safety of at least one and a half  
22 whereas the conditions that are out there now,  
23 they're borderline one.

24 Q. Are these site conditions unique to the use of  
25 this property as a high school or would these



1 same conditions need to be addressed for any  
2 other development on the site?

3 A. They would need to be greatly addressed for  
4 any kind of development on this property.

5 Q. So are all these physical conditions, these  
6 conditions you identified, related to the  
7 physical condition of the site rather than  
8 what the end use of the site would be?  
9 Whether it be single family residential, other  
10 institutional, school, do these conditions  
11 exist for all of those uses?

12 A. Yes, any development that takes place on this  
13 property, all of these properties, you're  
14 going to encounter those materials and that  
15 condition so therefore they have to be  
16 engineered properly in order to be able to  
17 develop.

18 Q. Can the site be safely developed?

19 A. Yes, it can.

20 Q. Now, Geoff, did you prepare the survey that's  
21 shown on SP-3?

22 A. Yes, we did.

23 Q. And there was some testimony that was a little  
24 bit confusing by prior witnesses regarding  
25 whether this site has access at the southeast

1 corner. Could you explain whether this site  
2 has access to any other public roads other  
3 than Camp Meeting Road?

4 A. Yes, if I can approach the drawing.

5 MR. RESTAURI: Of course.

6 MR. DePAUL: Object to the scope  
7 of this testimony. It's outside of the  
8 witness' expertise. He is not a traffic  
9 engineer. He is the geotech engineer. I will  
10 keep that running objection.

11 MR. RESTAURI: It's noted. Thank  
12 you.

13 MR. DePAUL: I won't interrupt the  
14 testimony again.

15 MR. GRAMC: The question had  
16 nothing to do with traffic.

17 MR. RESTAURI: Proceed.

18 MR. GRAMC: We will proceed.

19 THE WITNESS: The eastern -- the  
20 property line I'm going to follow with my  
21 finger -- hopefully, everybody can see -- is  
22 here, all the way over and around. This is  
23 Little Sewickley Creek Road. This is Walker  
24 Park that runs all along each side of Little  
25 Sewickley Creek (indicating). So this

1 property is not abutting Little Sewickley  
2 Creek.

3 So as far as access to Little  
4 Sewickley Creek, there is a right of way that  
5 is here. However, because of the terrain,  
6 this is very, very steep and there are  
7 wetlands where this is located. It's not  
8 feasible to get from up here down to there for  
9 any type of use other than maybe a ski slope.  
10 It's very steep.

11 So it does not abut Little  
12 Sewickley Creek at any point. The only road  
13 that this property is adjacent to is Camp  
14 Meeting Road and what is called Wood Spur down  
15 here in the subdivision here (indicating).

16 MR. GRAMC: Okay, thank you.  
17 That's all the questions I have for  
18 Mr. Phillips.

19 MR. RESTAURI: Thank you.  
20 Mr. Miller, any questions for the witness,  
21 sir?

22 MR. MILLER: No, thank you.

23 MR. RESTAURI: Mr. DePaul?

24 MR. DePAUL: Yes, if I may.

25

- - -



1           that report?

2       A.   Yes, sir.

3       Q.   So I have a couple questions regarding the  
4           representations made in this report.  If you  
5           look on the first page, the second paragraph,  
6           about the third sentence down, it says:  
7           Information obtained from the 75 test borings  
8           indicate the east-west aligned ridge is capped  
9           by sandstone underlain by the often  
10          landslide-prone Pittsburgh red bed formation.

11                   Did I read that correctly?

12      A.   Yes.

13      Q.   With respect to the 75 test borings, would you  
14          agree with me that if it's easy to develop on  
15          a property and the property is not landslide  
16          prone and there are little issues with the  
17          property, that it's not necessary to take 75  
18          test borings?

19      A.   Correct.

20      Q.   So the reason that we took 75 test borings  
21          with respect to this particular property is  
22          there are potential issues given the nature of  
23          the property.

24      A.   Yes.

25      Q.   And can you explain, so the board understands,

1           what a test boring is.

2           A. A test boring is where we drill down into the  
3           ground to observe what the geologic formation  
4           is, whether it's topsoil, rock, what kind of  
5           rock, what kind of other material, whether  
6           it's been fill material that's been placed,  
7           whether it's good fill material that was  
8           compacted or was fill material that was just  
9           dumped over the side of a hill, whether there  
10          are stumps or trees or other material  
11          involved. So that when we go in to design, we  
12          are aware of all these things so we can take  
13          those conditions and the design of the site.

14          Q. And you conducted the process that you just  
15          described 75, 75 separate times because you  
16          were probing for any potential issues with the  
17          property.

18          A. Well, let me just clarify the 75. Thirty of  
19          those borings were done prior to the site by  
20          Gateway Engineers who was the engineer for  
21          Mr. Tuhl, in order to build his house, and  
22          those borings were along the top of the ridge  
23          and they had gone down into rock but had not  
24          gone substantially deep enough to determine  
25          how thick, if there was any colluvium which is

1 the material that has slid by gravity was on  
2 the site.

3 So we did another 37 holes, spaced out  
4 over two to three hundred feet throughout the  
5 whole piece of property and due to timing and  
6 issues of getting property access, we did  
7 another eight borings down towards Camp  
8 Meeting Road on Mr. Dohr's property.

9 Q. So just in terms of the timing, when you  
10 conducted these borings, am I correct that at  
11 the time you conducted the borings the school  
12 district had already purchased the property?

13 A. No, this was before the school district  
14 purchased the property.

15 Q. And who commissioned you to take the borings?

16 A. The school district.

17 Q. In anticipation of purchasing the property?

18 A. It was one of the sites that was selected by  
19 them as a potential site for the school and  
20 therefore they hired us to do the extensive  
21 due diligence to find out, is this property  
22 going to be adequate to build on?

23 Q. And the borings were conducted because there  
24 was a potential for issues given the nature of  
25 the property.

1 A. Given the history of the property, there was  
2 Mr. Tuhl's involvement in it, that out where  
3 the old driveway that went up to the Walker  
4 house, there was already existing evidence of  
5 sliding material.

6 Q. In your report you mentioned in the same  
7 sentence that I previously read from your  
8 report, you mentioned that the ridge is capped  
9 by sandstone.

10 A. Yes.

11 Q. And sandstone is hard, right?

12 A. That's correct.

13 Q. And it's not malleable.

14 A. No.

15 Q. So if you encounter sandstone, that sandstone,  
16 and you need to move it or rearrange it, that  
17 sandstone needs to be blasted.

18 A. Depending on the hardness of it. If it's very  
19 hard sandstone, yes. If it's a hardness that  
20 machines could go in and they could rip it,  
21 they have the great big teeth on the back of  
22 the machines. So that's something that's  
23 still to be determined. We did not do that  
24 testing or it was not done at this stage of  
25 the game. It was determined that there is



1 sandstone.

2 Q. Right. So you don't know at this point in  
3 time whether or not blasting is going to be  
4 necessary and/or whether or not the machine  
5 process that you described is going to be  
6 necessary or whether or not they'll both be  
7 necessary.

8 A. At this time, no, we have not because we have  
9 not -- nobody has been hired to design that  
10 aspect. This was a due diligence which you go  
11 in to evaluate, make them aware of all the  
12 concerns that we see and how they can be  
13 engineered and the design.

14 Q. So the amount of blasting that will be  
15 required has not even been evaluated.

16 A. That's correct.

17 Q. So as you sit here today, you have no idea how  
18 much blasting and/or what type of blasting is  
19 necessary to develop this property.

20 A. That's correct.

21 Q. And so nobody, as far as you're aware, knows  
22 anything about the nature of the blasting that  
23 will be required on this property.

24 A. At this time, no, that's correct.

25 Q. Would you consider blasting a dangerous

1 process?

2 A. If it's done properly, it is not.

3 Q. Can it be a dangerous process?

4 A. It can, if it's not done properly. I've seen  
5 it done properly and, you know, they take a  
6 lot of precautions prior to it. Surveys are  
7 done throughout the area of all the homes  
8 within a certain radius of the project prior  
9 to any activity to evaluate. It's basically  
10 like an insurance company goes out and  
11 evaluate, they videotape all the houses, any  
12 cracking and existing conditions, and then  
13 there is monitoring throughout the blast with  
14 monitors all around the site to determine how  
15 much the ground shook and then there is  
16 evaluation of all the homes afterwards to see  
17 if there is any damage.

18 Q. So based on what you described, there can be  
19 damage to the homes in the area.

20 A. There could be, yes.

21 Q. And you don't know, you don't have any idea,  
22 you said a professional or somebody that's  
23 very experienced can conduct this blasting,  
24 you have no idea who in this instance is going  
25 to conduct the blasting, do you?

- 1 A. No, but that criteria will be in the  
2 specifications to minimize any of those  
3 problems to the residents in the area.
- 4 Q. But that whole process hasn't been explored or  
5 evaluated, has it?
- 6 A. No, not at this time.
- 7 Q. And have you seen blasting gone wrong, too,  
8 haven't you?
- 9 A. Not in site development, but you see it in  
10 rock quarries and things like that where  
11 things have -- and that's not the type of  
12 blasting that will be done here.
- 13 Q. So as you sit here today, you're unaware of  
14 any instances during site development where  
15 blasting has gone wrong.
- 16 A. Not in my experience, I have not witnessed  
17 that.
- 18 Q. But it's possible.
- 19 A. Anything is possible.
- 20 Q. If we could turn now to page two of your  
21 report, sir. If we can look at the second  
22 paragraph, the first sentence says: In  
23 particular in this case, the project plan is  
24 to incrementally remove the colluvial soil  
25 deposits.

1                   When you say incrementally remove the  
2                   colluvial soil deposits, what do you mean by  
3                   that?

4       A.   You go in and take it out at stages, more so  
5           down towards Camp Meeting Road where the  
6           deepest deposits are that we found through the  
7           borings.  You can't just go in and dig  
8           straight down a deep hole.  You have to go in  
9           and do it incrementally so that you don't  
10          destabilize any of the surrounding area.

11       Q.   And does that take a sufficient amount of time  
12          since you are doing the removal of the  
13          colluvial soil incrementally?

14       A.   Yes, it does take time.

15       Q.   And that can take weeks?

16       A.   Yes.

17       Q.   Could take months?

18       A.   Yes, it could.

19       Q.   And what types of vehicles will be removing  
20          the colluvial soil?

21       A.   Large excavators.

22       Q.   And how many large excavators at a time does  
23          it take to remove the colluvial soil?

24       A.   Depending on the size of the excavator,  
25          probably one.

1 Q. And how big is an excavator?

2 A. They can get as big as you want, you know, to  
3 the point where you have to bring it in on  
4 tractor-trailer, multiple tractor trailers,  
5 yes.

6 Q. So multiple tractor trailers will have to  
7 bring an excavator up to the site to remove  
8 the colluvial soil.

9 A. Yes.

10 Q. And once the colluvial soil is removed, what  
11 happens to it?

12 A. We mix it with some of the other suitable  
13 material on site which will be some of the  
14 sandstone, but most of the sandstone and rock  
15 that is excavated will be put down at the tow  
16 of the slope to start building the slope up  
17 with stable material.

18 Q. As you sit here today, you're unaware of any  
19 concrete plan regarding specifically how the  
20 colluvial soil will be incrementally removed.

21 A. No, because the final geotechnical report has  
22 not been done yet.

23 Q. Right. Just so the record is clear, the  
24 answer to that question is no, you are unaware  
25 of the specifics of any plan to incrementally

1           remove the colluvial soil.

2       A.   At this time, no, it has not.   Because the  
3           site has not been designed.

4       Q.   In that same sentence, "The project plan is to  
5           incrementally remove the colluvial soil  
6           deposits with sufficient engineering  
7           forethought," what is sufficient engineering  
8           forethought?

9       A.   What we started which is to drill and be aware  
10          of all the conditions that are out on the site  
11          so that we are designing a slope that is going  
12          to be stable for a long time and have at least  
13          a factor of safety of one and a half.

14      Q.   But you're unaware of any specific plan that  
15          would detail what the specific or sufficient  
16          engineering forethought in this instance would  
17          be.

18      A.   That plan has not been designed yet.

19      Q.   Would you agree with me that after there is  
20          some excavating there could be potential  
21          subsurface issues that you do not anticipate  
22          that you could encounter?

23      A.   Correct.   Every project has it.   Nobody has a  
24          crystal ball, can tell what is underneath the  
25          ground.

- 1 Q. So there is a lot of unknown regarding how the  
2 development of this site will be handled after  
3 the excavation begins.
- 4 A. Yes, that's why we have geotechnical engineers  
5 on site as the excavation is being done, so  
6 that we can observe these conditions as they  
7 change, so that if the design changes need to  
8 happen, they can happen.
- 9 Q. So as you sit here today, you can't tell the  
10 board and you can't tell the citizens that  
11 live in close proximity to this site what will  
12 be encountered after you start excavating in  
13 terms of what will be encountered subsurface  
14 on the site.
- 15 A. No, I don't have a crystal ball.
- 16 Q. And you can't tell the board and you can't  
17 tell the folks that live in close proximity to  
18 this property the amount of blasting that will  
19 be necessary as part of the site, can you?
- 20 A. At this time, no.
- 21 Q. Do you anticipate the need for additional  
22 exploratory borings?
- 23 A. Yes.
- 24 Q. How many?
- 25 A. Depending on where all the amenities are

1           located, could be possibly another hundred  
2           borings.

3       Q.   So there is a significant amount of additional  
4           exploration and analysis that will be  
5           required.

6       A.   That's correct.

7       Q.   And as you sit here today, you have no idea of  
8           what is going to be encountered with those  
9           hundred plus additional borings or what is  
10          going to be discovered in those hundred plus  
11          additional borings.

12      A.   Well, preliminarily, we have shown what the  
13          geology of the site is but due to the spacing  
14          of the holes across the whole site, there  
15          could be, you know, deeper colluvium or there  
16          could be shallower colluvium. We don't know.

17      Q.   So you have taken -- as far as you know, there  
18          are 70 borings that have taken place thus far.

19      A.   Correct.

20      Q.   You intend now to take almost double the  
21          amount of those borings in addition to the  
22          70 that were already done.

23      A.   Uh-huh.

24      Q.   And you're doing that because you need to  
25          figure out what is below subsurface on this



1 property.

2 A. In more detail, what's below. We have a  
3 general idea of the type of soils and the type  
4 of rock, but we don't have the more specific  
5 and whether you drill a hole that's located 20  
6 feet here or 20 feet there, the colluvium may  
7 be 15 feet deep and over here it may be ten  
8 feet deep. So there is a variation. That's  
9 why we do borings.

10 Q. So you need to conduct an additional hundred  
11 borings to get a more detailed understanding  
12 of what exists subsurface at the property.

13 A. In order to get final design parameters for  
14 the school building and the roads and the  
15 slopes, yes.

16 Q. So as you sit here today, you're asking this  
17 board and you're asking the citizens that live  
18 in close proximity to this site to accept all  
19 these potential unknowns that could be  
20 discovered during these additional hundred  
21 borings and with additional blasting or  
22 additional site development that would need to  
23 happen.

24 A. Yeah, but that's normally done in the planning  
25 stage as far as the planning commission and

1 the supervisors or council which is the actual  
2 design. We're at a zoning hearing which is  
3 the land use. Nobody comes to zoning that has  
4 a final design before them. We are  
5 presenting, with this site plan to the board,  
6 what the high school is going to look like,  
7 where the roads are, where the accesses are,  
8 as required by zoning, but not to the level of  
9 final design, ready to construct today.

10 Q. I move to strike that to the extent he's  
11 offering a legal opinion.

12 MR. RESTAURI: It's noted.

13 Q. Would you agree with me that, in order to use  
14 a property, you have to develop it?

15 A. Well, there is varying -- if you want to use  
16 the word "development," that's very broad, but  
17 you could use it as exists, you know, as  
18 woods.

19 Q. So in this instance that property could be  
20 used as woods.

21 A. Yes.

22 Q. And it could be used for an environmental  
23 park.

24 A. If somebody wanted to pay for it and keep it  
25 that way, yes.

- 1 Q. And there are many uses for this property that  
2 would not involve development.
- 3 A. Well, other than letting it be natural.
- 4 Q. You could put a park there.
- 5 A. But then you're developing it. Cause you're  
6 going to have to put parking. Just as Walker  
7 Park is down below, people have to have access  
8 to it. So you are developing it.
- 9 Q. There are varying degrees of what would be  
10 necessary -- the development work that would  
11 be necessary to make a property for certain  
12 use.
- 13 A. Yes, right.
- 14 Q. Would you agree with me, to build a school on  
15 this property requires significant development  
16 work?
- 17 A. Yes.
- 18 Q. Would you agree with me, to use this property  
19 for a school, it would require some  
20 significant development?
- 21 A. As a school, that's what we are proposing,  
22 yeah. There is significant development of  
23 creating access to the property, building the  
24 buildings and all the parking that is required  
25 by zoning.

1 Q. Would you agree with me that with respect to  
2 the development that is required to use this  
3 property for a school, you don't have detailed  
4 information regarding building foundation  
5 designs, road supports or field supports?

6 A. Not at this time.

7 Q. Cause you have to take a hundred additional  
8 borings to figure out the state of the  
9 subsurface property, state of subsurface on  
10 this property.

11 A. Yes, because that is the good engineering that  
12 needs to be done in order to make this a safe  
13 site.

14 Q. And you don't know what you're going to  
15 encounter with these hundred additional  
16 borings.

17 A. I don't even know if it will be us because  
18 they have not chosen us an engineer for the  
19 project yet. The board has only chosen an  
20 architect.

21 Q. Right. And the architect and site plans and  
22 engineering plans aren't developed yet, are  
23 they?

24 A. No, they are in the beginning stages and the  
25 architects are doing what they do. I'm the

1 engineer, they're the architect.

2 Q. And you don't know what design measures will  
3 be implemented, do you?

4 A. As far as the buildings?

5 Q. Yes.

6 A. No, I don't, cause that's between the board --

7 Q. And as far as development of the property, you  
8 don't really know that either, do you?

9 A. I haven't been hired to do it. All I was  
10 given was to -- in the due diligence, was to  
11 provide 50 developable acres on a piece of  
12 property. What was going to be on that, no, I  
13 don't know.

14 Q. So you have to conduct an additional hundred  
15 borings to determine what is located  
16 subsurface on the property. You don't know  
17 what design measures are being done with  
18 respect to developing the property for  
19 construction and you don't know the design  
20 measures that are going to be implemented with  
21 respect to the school, do you?

22 A. No, because at this time the school district  
23 is coming before this board to get the special  
24 exception which would allow them to build the  
25 school here according to the ordinance and

1           that's why it's a special exception is that  
2           the board has the right to decide what type of  
3           school can go in there.

4       Q.   Strike that again cause it's a legal  
5           conclusion. I just want to ask you about  
6           geotech.

7       A.   Okay.

8       Q.   So given all those unknowns that you just  
9           testified are existing with this property, as  
10          you sit here today, you can't say for sure  
11          that the development of this property is going  
12          to be safe, can you?

13      A.   I can say that it can be developed safely.

14      Q.   But you can't say that it will be developed  
15          safely.

16      A.   Not unless -- I can only say that if I'm doing  
17          it.

18      Q.   You agree with me, as you sit here today, you  
19          can't ensure that during the development of  
20          this property that won't affect homes that are  
21          close to the property.

22      A.   There is going to be an effect. The property  
23          is going to get developed whether it's a  
24          school or not. It is going to affect --  
25          whatever goes there is going to affect the

1 community.

2 Q. When you say whatever goes there, you mean the  
3 actual process of developing this property is  
4 going to affect the community.

5 A. Yeah, you can put homes there, you can build a  
6 park there. There is going to be some impact.

7 Q. If you build a school there, it has the  
8 potential to have a detrimental impact on the  
9 community that lives close to the school.

10 A. I wouldn't use detriment. I think it's going  
11 to have an impact, but I would not say  
12 detriment.

13 Q. So if there is blasting and it cracks my  
14 foundation and I live close to that area, you  
15 wouldn't call that a detriment to my property?

16 A. That's why there is insurance out there.

17 Q. So you agree with me it would be a detriment  
18 to my property?

19 A. There would be an impact to your property. I  
20 don't know that it's a detriment cause a  
21 detriment is varying degrees and levels.

22 Q. So if there is a crack in my foundation as a  
23 result of blasting, it's your testimony today  
24 that's not a detriment?

25 A. Not in my definition.

1 Q. Would you agree with me that it's entirely  
2 possible and maybe even likely that during  
3 blasting the homes in close proximity to this  
4 site are affected?

5 A. There will be an effect, yes. To what degree,  
6 I can't testify to.

7 Q. And in terms of what you view as a degree, you  
8 don't even view a crack in a foundation of a  
9 home caused by blasting as a detriment.

10 A. No, because I'm pretty sure most all these  
11 houses in Western Pennsylvania have some  
12 cracks in them just due to settlement of the  
13 ground naturally and due to the types of  
14 soils, the types of construction, whether the  
15 house is built on fill that was not properly  
16 placed. So I don't know of any house I've  
17 ever been in that doesn't have cracks in it.

18 Q. So it's your testimony that if you live in  
19 close proximity to this site and there is  
20 blasting and it puts a crack in the foundation  
21 of my home, I just have to accept that.

22 A. No, that's why they do the insurance  
23 inspections ahead of time. If that crack was  
24 not there, then the blasting contractor's  
25 insurance will cover fixing it.



- 1 Q. What if that blasting injures somebody that  
2 lives in close proximity to the site?
- 3 A. Then the insurance will cover that issue.
- 4 Q. You're still injured, right?
- 5 A. Yeah, and a tornado could hit here or any  
6 other natural things could hit. You could  
7 walk --
- 8 Q. But this isn't a natural -- you are comparing  
9 this to a tornado. This isn't a natural  
10 event. There are men going in and blasting  
11 it. Those aren't comparable events, are they?
- 12 A. It's a disaster. I mean it's the same -- the  
13 terminology you're using that it's a  
14 detriment, you know, no different than a  
15 vehicle could run into a house. It's a  
16 detriment to that. There is potential of any  
17 kind of those things.
- 18 Q. So just so I'm clear, you are comparing the  
19 blasting that could be conducted on this site  
20 to a vehicle running into somebody's house and  
21 a tornado hitting somebody else's house. Am I  
22 right? That's what you just said, right?
- 23 A. I said that those are causes that can cause  
24 cracking to happen into a house and could  
25 possibly take life.

1 Q. So it's your testimony that the blasting on  
2 the site could possibly take a life. That's  
3 what you just said, right?

4 A. No, I said that -- I was referring to a  
5 tornado or a car, as you said, that the  
6 blasting -- what would happen if it did take a  
7 life.

8 Q. So it's possible that could take a life.

9 A. Anything is possible.

10 Q. And even though if you lost a life, insurance  
11 would cover that, but the life doesn't come  
12 back, does it?

13 A. No, it doesn't.

14 MR. RESTAURI: Mr. DePaul --

15 MR. DePAUL: Hold on a second.

16 MR. RESTAURI: I want to ask a  
17 procedural question. Mr. Gramc said earlier  
18 that if you wanted to ask questions on cross  
19 of the geotech expert, you could do that, and  
20 I just wanted to alert you that you have that  
21 right. If you want to ask those questions and  
22 come back, however you want to do it.

23 MR. DePAUL: We are proceeding  
24 here. I have an exhibit to mark.

25 MR. RESTAURI: How do you want

1           this to be marked, Lou?

2                   MR. DePAUL:  Whatever pleases the  
3 board.  My suggestion would be to mark them by  
4 witness, that way it's easier to categorize,  
5 if that makes sense to everybody.

6                   MR. GRAMC:  I think we have  
7 running objections, but I object to this,  
8 involving Kilbuck Township.  I don't know we  
9 have authentication of the report, and I don't  
10 know it has anything to do with Leet Township.

11                  MR. RESTAURI:  So noted.  This  
12 will then be -- Mr. Phillips has his two, his  
13 resume and his report.  Let's make this  
14 Phillips Exhibit 3.  Let's not do it that way.  
15 Is this the first exhibit you've offered, Lou?

16                  MR. DePAUL:  It may be, although I  
17 don't recall, so I don't want to stipulate  
18 that it is, in the event I did previously.

19                  MR. RESTAURI:  Let's make these  
20 done by lawyers who introduce them.  So this  
21 is Mr. DePaul's Exhibit 1, 8-20-2021.

22                  MR. DePAUL:  For the record, this  
23 exhibit is the Kilbuck Township landslide  
24 findings and recommendations, report of the  
25 task force and advisory committee on the

1 Kilbuck Township landslide, June, 2008.

2 BY MR. DePAUL:

3 Q. Mr. Phillips, are you aware of this report?

4 A. No, I'm not.

5 Q. So you didn't review this report in  
6 anticipation of providing your testimony or  
7 your findings or thoughts about this site.

8 A. No. I am aware of this site, being an  
9 engineer in the area, so I'm aware of it, but  
10 I do not know all the details of it. I do  
11 know that Garvin, Boward, Beitko was hired by  
12 one of the insurance companies that was  
13 involved in this. So any more specifics  
14 regarding this site and more technical would  
15 be better asked of him, of Joe.

16 Q. And Joe is not on your team.

17 A. Joe Boward.

18 Q. With your --

19 A. Yes.

20 MR. GRAMC: He is here.

21 THE WITNESS: So I'm just saying I  
22 don't -- I would not be able to comment on  
23 this.

24 BY MR. DePAUL:

25 Q. No, I appreciate that and so I --

1 A. Instead of asking me --

2 Q. I have a question for you and I might have a  
3 similar question for Joe. So my question is,  
4 you were aware of this before you authored  
5 this letter.

6 A. Correct.

7 Q. And even though you were aware of the Kilbuck  
8 Township landslide and you were aware of the  
9 fact this happened on similar type property in  
10 the same district, you didn't review or  
11 evaluate this report in anticipation of  
12 drafting your report for submission to this  
13 board, did you?

14 A. No, I didn't.

15 Q. And you testified that, earlier today on  
16 direct examination, that the soil in terms of  
17 the red bed and colluvial soil in this  
18 district is relatively the same everywhere.

19 A. Correct. Other than the colluvium which, you  
20 know, there are varying degrees depending on  
21 how much has eroded or been impacted by water  
22 or, you know, has settled by gravity to the  
23 lower parts of the slopes.

24 Q. So is it the same generally or is it not the  
25 same?

1 A. It's the same geological type, but it's not  
2 the same exactly for development.

3 Q. So the property that is the subject of this  
4 report would have been geologically the same  
5 as the property at issue with respect to this  
6 development.

7 A. Yes.

8 Q. May I ask questions of your partner, very  
9 briefly?

10 MR. GRAMC: Does the board prefer  
11 us to proceed in that manner?

12 MR. RESTAURI: Yes. Whatever  
13 works for counsel.

14 MR. PHILLIPS: May as well ask the  
15 right questions to be responded to.

16 MR. RESTAURI: And my  
17 understanding is that, Joe, you and Geoff are  
18 not partners in a technical legal sense or are  
19 you?

20 MR. PHILLIPS: No, we're on a  
21 team. Garvin, Boward, Beitko is a separate  
22 engineering company that was part of the due  
23 diligence team.

24 MR. RESTAURI: And Geoff's company  
25 was a separate company.



1 engineer with Garvin, Boward, Beitko  
2 Engineering.

3 Q. And, Joe, do you agree with me you are on  
4 Mr. Phillips' team?

5 A. Our company is part of his team, yes.

6 Q. And you consulted and collaborated in  
7 anticipation of the submission of  
8 Mr. Phillips' report with regard to this  
9 development.

10 A. Specifically with respect to the geotechnical  
11 aspects of the protocol.

12 Q. As part of your collaboration with  
13 Mr. Phillips on this project, did you review  
14 or consider the Kilbuck Township landslide  
15 report?

16 A. I did not consider the specific report, but I  
17 considered the landslide. I'm familiar with  
18 it.

19 Q. And how did you consider that?

20 A. When the landslide occurred in 2004. I was  
21 made aware of it cause I'm a geotechnical  
22 engineer, all geotechnical engineers in this  
23 area were made aware of it.

24 Later on, our company was engaged I  
25 think by Walmart -- but I can't be sure of



1           that cause it was a long time ago -- to look  
2           at it forensically to try to understand some  
3           of the causes of the slide. I had visited the  
4           site. I looked at it multiple times so I am  
5           familiar with that site and the landslide that  
6           occurred there.

7        Q.    That was done in 2004.

8        A.    After 2004. Years after.

9        Q.    You didn't do that in conjunction with this  
10       project?

11       A.    No, separate, but you asked me if I was  
12       familiar with it.

13       Q.    Did you do any analysis of this Kilbuck  
14       Township landslide in conjunction with your  
15       work on this project?

16       A.    I analyzed the Kilbuck Township landslide but  
17       not specifically for this project because they  
18       are two separate sites.

19       Q.    So as part of your work on this project, you  
20       didn't consider at all the Kilbuck Township  
21       landslide.

22       A.    Yeah, I certainly did.

23       Q.    You just testified that you didn't review it  
24       as part of this project.

25       A.    Well, I considered it.

- 1 Q. How did you consider that?
- 2 A. It's a red bed strata in Kilbuck so you have  
3 to keep that in mind when you are dealing with  
4 any red bed strata throughout Southwestern  
5 Pennsylvania.
- 6 Q. So this particular development is on a red bed  
7 strata?
- 8 A. Yes, it is.
- 9 Q. Just like the Kilbuck Township landslide.
- 10 A. It's on a red bed strata but not geologically  
11 the same.
- 12 Q. Did you prepare any memos or put anything in  
13 writing as part of your project regarding the  
14 development of the school here that analyzes  
15 or discusses at all the Kilbuck Township  
16 landslide?
- 17 A. Not in writing.
- 18 Q. So there is no memos, there is no records,  
19 there is no detailed analysis that was  
20 submitted by you to anyone regarding the  
21 Kilbuck Township landslide as part of this  
22 project.
- 23 A. That would be inappropriate for me to do that  
24 on any project, even if they have red beds on  
25 them, to bring up the Kilbuck Township

- 1 landslide every single time.
- 2 Q. Shouldn't you evaluate all the potential  
3 problems that occur on this site as part of  
4 submitting a report saying that this site is  
5 appropriate for development?
- 6 A. Well, certainly.
- 7 Q. And wouldn't the Kilbuck Township landslide be  
8 relevant? It's the same soil as has been  
9 testified.
- 10 A. It's the same red beds but not the same  
11 geology.
- 12 Q. Did you have any discussions with Mr. Phillips  
13 regarding the Kilbuck Township landslide as  
14 part of the submission of the report in this  
15 instance?
- 16 A. Only in passing.
- 17 Q. So you did not have any substantial  
18 discussions with Mr. Phillips regarding the  
19 Kilbuck Township landslide as part of the  
20 submission of the report regarding development  
21 of this property.
- 22 A. It would be inappropriate. It would be  
23 inappropriate.
- 24 Q. You did not, right?
- 25 A. No, it would be inappropriate.

1 Q. It's inappropriate to consider similar type  
2 events?

3 A. It would be inappropriate to be bringing that  
4 up with respect to this particular site. I  
5 have to keep in mind, as a geotechnical  
6 engineer, the aspects related to landslides  
7 throughout Southwestern Pennsylvania. That is  
8 what part of the geotechnical engineer does as  
9 the standard of care and, of course, with the  
10 National Society of Professional Engineers, I  
11 have to take that into account.

12 So, yeah, I of course considered it, but  
13 it's inappropriate to be bringing in every  
14 single aspect of every single site that has  
15 had problems throughout Southwestern  
16 Pennsylvania when you write a report for a  
17 specific site.

18 Q. That's because there has been so many sites  
19 with so many problems in Western Pennsylvania  
20 that in order to think about and categorize  
21 them would take entirely too much time.

22 A. Yes, Western Pennsylvania per square mile has  
23 more landslides than any other place in the  
24 Continental United States.

25 Q. Let me repeat that. Did I hear that

1           correctly?   Western Pennsylvania --

2       A.   Southwestern Pennsylvania.

3       Q.   Southwestern Pennsylvania per capita has more  
4           landslides than any other place in the United  
5           States?

6       A.   That's why it's so important to have a  
7           geotechnical engineer such as myself is so  
8           important to be involved in a site like this,  
9           especially in Southwestern Pennsylvania.  When  
10          you have approximately 40 years of experience  
11          and when you analyze a site like this, you  
12          have to be aware of the conditions and how to  
13          address those conditions.

14                 I have worked with multiple sites with  
15                 red bed materials.  Obviously, Southwestern  
16                 Pennsylvania, because it's so predominant, we  
17                 have a good understanding of how to deal with  
18                 those materials, how to make them safe, so  
19                 the site will be stable in the long term.

20       Q.   You haven't considered what would be done in  
21           this instance to make the site safe, have you?

22       A.   Certainly.

23       Q.   Mr. Phillips just testified there are so many  
24           variables that are unknown, there are a  
25           hundred borings that need to be made, there is

1 design specifications that need to be  
2 finalized, there is work that needs to be  
3 done. You don't have any details on any of  
4 that stuff, do you?

5 A. What we did was, when we drill the borings --  
6 you have to understand, let me educate you a  
7 little bit. When we drill the borings, we  
8 drill the borings in such a way that we can  
9 look at the proposed fill embankments. We  
10 drill them in such a way that you can do  
11 cross-sections. The data from the borings,  
12 the subsurface data, along with the  
13 topography, the existing topography and the  
14 proposed topography, is entered into software  
15 and the test borings -- of course, we do tests  
16 in the borings, hence test borings. They give  
17 us data on the physical properties of the  
18 soils.

19 When we enter that in the computer  
20 program, we run slope stability analyses to  
21 look at the factor of safety of these proposed  
22 embankments to see if they are going to be  
23 stable in the long term. That is the standard  
24 of care for geotechnical engineering. That is  
25 what we did. So we do understand that the

1 site will be safe when it's developed.

2 Q. And that process you just described, you did  
3 that 70 times?

4 A. You have to understand, we don't do that for  
5 one boring. You have to have several borings  
6 in a row on a cross-section, develop that full  
7 subsurface cross-section. So, no, we didn't  
8 do it 70 times, but what we did is developed a  
9 cross-section and each cross-section would  
10 have been subjected to the sub-stability  
11 analysis.

12 Q. In addition to what you did, you have to do  
13 that a hundred more times, right?

14 A. No, those hundred borings aren't all for slope  
15 stability. Many of those borings will be for  
16 evaluating what type of material you are going  
17 to be cutting to. Just for cuts, not even  
18 talking about slopes. They have to be done  
19 for the building itself.

20 Whenever somebody comes up with a final  
21 building footprint, you have to drill borings  
22 for the foundation recommendations. Some  
23 borings have to be drilled for the roadways to  
24 determine the subgrade conditions for the  
25 roadways, to make sure you design the roadways

1           in accordance with the California bearing  
2           ratio.

3                       So there are many of those borings being  
4           drilled for other aspects. Now when they  
5           finally come up with a final grading plan  
6           that's going to be final with respect to the  
7           slopes, then, yeah, some of the borings are  
8           going to be reoriented to those slope areas to  
9           run the same slope stability analysis to  
10          determine how to stabilize them.

11        Q.    So in terms of you said the cutting, I want to  
12          make sure I use the right word.

13        A.    Yeah, there were aspects of this project --  
14          they were looking at the top of the apex of  
15          the ridge being cut down some and hence you  
16          are talking about the sandstone, and we have  
17          to potentially drill more borings to try to  
18          understand what they're going to be sitting on  
19          exactly. We drilled a scattering of borings  
20          for due diligence to get an idea what you're  
21          going to be getting into, but once you come up  
22          with a final building footprint, you're going  
23          to want to concentrate on that area to try to  
24          understand that specific area.

25        Q.    So you don't know exactly what you are



1 drilling on, to quote your word.

2 A. That I am drilling on?

3 Q. You don't know exactly. You use the word you  
4 are going to conduct additional borings to  
5 understand exactly what you're excavating.

6 A. In specific areas. For roadways, for the  
7 building, that's part of final design which is  
8 the next stage.

9 Q. And you, as far as you are aware, you don't  
10 know the slope stability of the road, that  
11 still needs to be conducted.

12 A. The road -- I know, based on the preliminary  
13 analysis we did for the due diligence, because  
14 the road surcharge is included in the slope  
15 stability analysis. When you run a slope  
16 stability analysis, if there is a road on top,  
17 you add a traffic surcharge cause that will  
18 affect the stability of the slope, of course.

19 So we understand that. But when they do  
20 the final grading, we are probably going to  
21 have to do some of that again.

22 Q. I don't believe I have any additional  
23 questions. Mr. Phillips, I am not finished  
24 with. Actually, I do have one additional  
25 question, I'm sorry. My apologies.

1                   Do you have any reason, as you sit here  
2                   today, to dispute the findings in this report?

3       A.   I haven't read it.  I can't confirm or dispute  
4           anything in it.

5       Q.   So you haven't read the Kilbuck Township  
6           landslide findings and recommendations?

7       A.   I don't think so.  Not this one.  I mean when  
8           I was involved in the Kilbuck Township and  
9           analyzing, I had literally thousands of pages  
10          of documents.  I don't know if this was in  
11          there or not, this was years ago, but I don't  
12          think so.

13      Q.   So even though you testified that you  
14          considered this report --

15      A.   No, I didn't say that.  I said I considered  
16          the landslide.  I specifically said that I did  
17          not consider this report.

18      Q.   So in your work in trying to understand and  
19          consider the landslide for this particular  
20          project, you did not read this report.

21      A.   This report is well and fine, but there are  
22          many engineering reports out there, literally  
23          hundreds of them on that landslide, and I'm  
24          not sure that this is going to be the end all  
25          on that type of situation.  This doesn't look

1           like a geotechnical report.

2       Q. Did you read this report in anticipation of  
3           analyzing and discussing that landslide?

4       A. I already said I don't think I read this  
5           report.

6       Q. And you mentioned there are all kind of very  
7           good reports. Which one of those reports did  
8           you read and analyze in anticipation of  
9           providing your opinion --

10      A. There was a report by Kimball Engineers. They  
11         were very involved in it. There was a report  
12         by -- I can't remember the name of the  
13         engineering company, but engineering company  
14         from down southern United States. I can no  
15         longer remember the name of it.

16                 Actually, I wrote a report but it had to  
17         do with how to stabilize that landslide. The  
18         specific aspect of it, I wrote for Kilbuck  
19         Township. And I can't remember all the  
20         reports. That was 14, 15 years ago I was  
21         working on that.

22      Q. So the last time you looked at that stuff was  
23           15 years ago?

24      A. With those reports, yeah.

25      Q. And you did the work on this project a year

1           ago?

2           A.    Couple years ago, I think.

3           Q.    So it was at least ten years since you looked  
4           at those reports from the time you gave your  
5           opinions regarding this project.

6           A.    Probably.

7           Q.    I don't have any additional questions.

8                                 - - -

9                                 GEOFFREY PHILLIPS,

10           having been first duly sworn, was examined and  
11           deposed as follows:

12                                 - - -

13                                 CROSS-EXAMINATION

14           BY MR. DePAUL:

15           Q.    Mr. Phillips, if you could open the executive  
16           summary of this report which would be on page  
17           one after you get past the appendix, at the  
18           top it says:  On September 19th, 2006, a  
19           massive landslide occurred in a commercial  
20           development site in Kilbuck Township,  
21           Allegheny County.  Between 500,000 and 600,000  
22           cubic yards of earth and stone cascaded down  
23           the hillside, across the four lane Ohio River  
24           Boulevard and onto three adjacent railroad  
25           tracks, stopping short of the Ohio River.  As

1 a result, roadway, commerce and railroad  
2 commerce were greatly affected as Ohio River  
3 Boulevard carries approximately 22,000  
4 vehicles each day.

5 Did I read that correctly?

6 A. Yes.

7 Q. You look at the last sentence, it says: In  
8 January, 2007, it was reported that  
9 remediation costs totaled two million dollars  
10 and monitoring costs totaled \$75,000 per  
11 month. In the end, the commercial development  
12 project was halted and the site will be  
13 returned to pre-development, natural slope  
14 that includes trees and vegetation.

15 Did I read that correctly?

16 A. Yes.

17 Q. Would you agree with me, Mr. Phillips, that  
18 you can't guarantee that this won't happen as  
19 part -- that a similar event -- let me strike  
20 that.

21 Would you agree with me, Mr. Phillips,  
22 that as you sit here today you cannot  
23 guarantee that an event similar to the Kilbuck  
24 Township landslide will not occur as part of  
25 this development?

1       A.  At this stage of the game, no, because it has  
2           not been finally designed so, therefore, I  
3           cannot say that a situation could arise to  
4           this extent that they are talking about here.  
5           You have to take into account many factors  
6           that that site may have presented that are not  
7           similar to this site.  Just because you have  
8           the word "red beds" and you have a region  
9           doesn't mean that the catastrophe that is  
10          imminent is of the same caliber.

11       Q.  But you didn't analyze this report as part of  
12          your report for this so you don't even know  
13          what's similar and what's dissimilar.

14       A.  That's correct, other than in the wording that  
15          is here, it doesn't go into the level of  
16          detail other than it just said it happened and  
17          this is what the cost was.  It doesn't have  
18          the cause, it doesn't have how it was  
19          designed, what failure in the design  
20          potentially could have mitigated this not  
21          happening.

22       Q.  So you would agree with me, as you sit here  
23          today, that it's possible, that as part of the  
24          development of the school on this property,  
25          that a landslide could occur similar to the

1 Kilbuck Township landslide.

2 A. I would have to say no, not to that extent. A  
3 landslide anywhere could happen. To this  
4 extent of damage, no.

5 Q. But you didn't review this report so you don't  
6 know what caused that landslide or the  
7 damage --

8 A. It's talking about 500 to 600 thousand cubic  
9 yards. This project is not involving 500 to  
10 600 thousand cubic yards of material that  
11 could be moved.

12 Q. How many pages is this report?

13 A. A lot. You know, the numbering goes to 127.  
14 Sorry, 128, but that doesn't include the  
15 appendix and everything.

16 Q. So there are 128 pages plus appendices and you  
17 didn't read any of that.

18 A. No, sir, I haven't.

19 Q. No further questions.

20 MR. RESTAURI: We are going to  
21 take a 15 minute break. So let's resume at  
22 about quarter till 11, please.

23 (RECESS TAKEN))

24 MR. RESTAURI: Mr. Michael, you're  
25 up.

1 MR. MICHAEL: That's true.

2 - - -

3

4 EXAMINATION

5 - - -

6 BY MR. MICHAEL:

7 Q. Mr. Phillips, how are you?

8 A. Good, sir.

9 Q. I am Tom Michael, and I represent several of  
10 the homeowners, and I have a few questions for  
11 you. You've taken borings that you've  
12 discussed, at least a hundred of them have  
13 been taken. Do any of those borings give you  
14 any data that you can share with us that would  
15 indicate where subsurface water would go  
16 following blasting and/or development of the  
17 site?

18 A. There were some water readings. That isn't --  
19 one of the things during the test boring is  
20 they determine where ground water is present  
21 in the borings and given there is a sandstone  
22 layer and then above that is soil, you know,  
23 the rock is hard so the water is going to come  
24 out at that level, at that elevation.

25 Q. And if you broke that sandstone, does anybody



- 1           know where the water would go?
- 2       A.   Not unless you have a crystal ball.
- 3       Q.   And that's not within your -- you don't have
- 4           that in your bag of tools?
- 5       A.   No, I haven't found that yet.
- 6       Q.   Okay, so as I understand this, and you can
- 7           correct me if I'm wrong, you have topsoil and
- 8           below that is colluvial soil?
- 9       A.   Well, in this particular site you have the
- 10       sandstone layer which is roughly 70 feet deep.
- 11      Q.   Seventy feet of sandstone.
- 12      A.   Then below that you have --
- 13      Q.   Excuse me, maybe I said that wrong. At 70
- 14       feet down you have sandstone?
- 15      A.   No, the thickness of the sand is 70 feet
- 16       thick.
- 17      Q.   And sandstone is brittle, is that not correct?
- 18      A.   It's not brittle -- it can be very hard.
- 19       Again, sandstone -- that's why you have to do
- 20       additional cores to determine the makeup of
- 21       it, as to how hard it is. It can be soft, it
- 22       can be hard.
- 23      Q.   And if it's hard, you have to blast. If it's
- 24       soft, there is equipment that you can use,
- 25       great big graders and buckets with teeth on

- 1           them.
- 2       A.   Right, the size of Tonka toys.
- 3       Q.   You can use something like that to dig it out.
- 4       A.   Right.
- 5       Q.   But we don't know in either case what the  
6           effect is going to be if you have to go down  
7           and deal with that sandstone layer because it  
8           can crack.
- 9       A.   Yes.
- 10      Q.   And water -- you'll agree with me water seeks  
11         cracks.
- 12      A.   Uh-huh. That's how it gets out.
- 13      Q.   That's how it gets out. And we don't know  
14         what the effect is going to be on -- I'm going  
15         to point to this on the map. Notice how I  
16         raised my voice when I walked over here.  
17         That's a lawyer trick.
- 18      A.   I'll try to remember.
- 19      Q.   This is the wetland, this is the school, and  
20         down below it are the houses here, and this is  
21         where there is a sandstone layer, is that not  
22         correct?
- 23      A.   Yeah, underneath, yes.
- 24      Q.   Yeah, underneath. So right now, if my  
25         basement was dry and my neighbors' basements

1           are dry, crack that sandstone, they may no  
2           longer be dry; is that correct?

3       A.   Possibly, yes.

4       Q.   And we don't know that.

5       A.   No, but we are designed -- if in fact I am the  
6           engineer, we will design to collect any of the  
7           water that's coming out of the hillside.

8       Q.   Collect the surface water.

9       A.   And also down below because when we go to  
10          build these slopes, we put under drains in.

11      Q.   And you'll agree with me that when you do  
12          this, you're designing as to what's there and  
13          what you think is there now, correct?

14      A.   Correct.  And during construction, if we  
15          encounter different situations such as when  
16          they're excavating down, we encounter a lot of  
17          ground water, then we will provide design  
18          measures to take that water away.

19      Q.   At that time.

20      A.   That is correct.

21      Q.   But in the future it could change, couldn't  
22          it?

23      A.   Mother nature has a way of changing things,  
24          yes.

25      Q.   And what's the old saying, you can't mess with

1 mother nature?

2 A. That is correct.

3 Q. So we can agree that even though you design  
4 something and even though you think that at  
5 the time you design it you've cured the  
6 problem, mother nature can step in there and  
7 screw everything up.

8 A. Can in any development, anywhere, at any time.

9 Q. And you've previously said, well, that's why  
10 we have insurance.

11 A. Well, yes, that's pretty much --

12 Q. But you're not the insurance company, are you?

13 A. No, sir, I'm not.

14 Q. And so you can't say -- you can say we have  
15 insurance, but you can't say that they're  
16 going to pay.

17 A. No. I can say that, correct. She wants me to  
18 talk louder into the mic.

19 Q. I understand.

20 (DISCUSSION HELD OFF THE RECORD)

21 Q. Okay, so are you aware of the Allegheny County  
22 landslide portal?

23 A. I myself am not.

24 Q. It's a website or a site portal that you can  
25 go on, on the internet, it's run by Allegheny

1 County, and it shows where there are  
2 landslides or a history of landslides in the  
3 county.

4 A. Okay.

5 Q. And by your testimony, you would not be aware  
6 then that the Borough of Leetsdale and Leet  
7 Township, this part of Leet Township, are  
8 labeled landslide areas.

9 A. That, I am -- not that specific site, but  
10 there are other -- Pennsylvania Geology  
11 publishes material that shows all the  
12 landslide areas in Pennsylvania. So I'm aware  
13 on the larger scale but not specifically the  
14 Allegheny County.

15 Q. And you'll agree with me that Leetsdale and  
16 the slopes of Leetsdale and Leet Township are  
17 designated as landslide areas.

18 A. Oh, yes, pretty much all of Southwestern PA.

19 Q. And that's because the peneplain, to use a  
20 geotechnical term, the peneplain that existed  
21 here as an ocean umpteen million years ago has  
22 eroded and what we call hills here in  
23 Pittsburgh really aren't hills, are they?

24 A. No.

25 Q. They're just erosion.

- 1 A. Right.
- 2 Q. And so all of this mess of geology is the  
3 result of water going downhill.
- 4 A. Yes.
- 5 Q. And it goes downhill on the surface and  
6 underneath.
- 7 A. Yes.
- 8 Q. And you'll agree with me, won't you, that the  
9 subsurface water is as much of a problem as  
10 the surface water is?
- 11 A. Yes.
- 12 Q. Now below the sandstone cap is colluvial soil  
13 which just means junk that's washed down and  
14 packed in --
- 15 A. Well, if you are looking straight down, below  
16 that is the claystone, and then the colluvium  
17 soils is on the surface, stuff that has slid  
18 on the surface.
- 19 Q. Above the claystone.
- 20 A. No, on the sides of the hill. And that's what  
21 colluvium is, it slides down to the tow of the  
22 slope and it's uncompacted, non-uniform  
23 material, as you say, junk.
- 24 Q. It's the result of erosion and weathering and  
25 a whole bunch of factors.

- 1 A. Right.
- 2 Q. So you have clay soil or claystone. Have you  
3 ever been to my backyard?
- 4 A. Yes, I actually have. Well, not in your  
5 backyard, I have been above your backyard when  
6 the drilling and surveying.
- 7 Q. Did you grab any hunks of clay?
- 8 A. No, I didn't grab it.
- 9 Q. Are you aware that at that particular area you  
10 can take out and dig out clumps of clay as big  
11 as your head?
- 12 A. I would suspect, yeah, given --
- 13 Q. And clay is pretty much water impervious,  
14 isn't it? Water doesn't go through it, it  
15 goes around it.
- 16 A. It goes around it.
- 17 Q. And so when you have a clay layer like that,  
18 water is not penetrating, it's sliding.
- 19 A. Right.
- 20 Q. And right now you can perhaps read from your  
21 borings where it's sliding to but you'll agree  
22 with me, if you mess that clay layer up, we  
23 don't know where it's going to go, where water  
24 is going to go.
- 25 A. It will change, yes.

- 1 Q. It will change. And so just another -- you  
2 have got the hard cap of sandstone, then below  
3 it you have colluvial soil -- well, below it  
4 you have clay with colluvial on the sides.  
5 And below the clay is where you encounter the  
6 red stone, right?
- 7 A. Yeah, there's claystone and then it goes back  
8 and there is another shale layer.
- 9 Q. And shale -- red stone is really a shale.
- 10 A. It's a sedimentary rock.
- 11 Q. And that's a rock that is in layers because  
12 it's the result of mud being compacted.
- 13 A. And compressed.
- 14 Q. A million billion years ago and they made  
15 shale out of it.
- 16 A. Right.
- 17 Q. And it's very strong in one direction but not  
18 strong at all in another direction cause it  
19 fractures.
- 20 A. Right.
- 21 Q. And if you go up to Lake Erie and you look at  
22 the cliffs that make up the lake shore, you'll  
23 see layers and layers and layers of shale  
24 breaking into plates because that's what it  
25 does.



- 1 A. Right, the weather gets to it.
- 2 Q. Right. And water gets to it and the freeze  
3 that you factor gets to it and it cracks it.  
4 And so the shale layer that sits below the  
5 clay is horizontally strong, is vertically  
6 strong but horizontally weak and it, too, is  
7 water impervious.
- 8 A. Well, it cracks.
- 9 Q. But for the cracks. The material itself is  
10 impervious but when it cracks, the water gets  
11 in and it follows the cracks.
- 12 A. Right.
- 13 Q. And the water that comes down and gets on the  
14 subsurface clay, it makes that clay slippery,  
15 doesn't it?
- 16 A. Yes.
- 17 Q. So you have got a slippery clay layer on top  
18 of the shale layer and if that moves -- well,  
19 that's prone to movement, isn't it?
- 20 A. Right, that's how it slides is the way the  
21 water is absorbed into it causes it to exceed  
22 the factor of safety and it will slide.
- 23 Q. And at this point we don't know, we think we  
24 know how to design it, but mother nature could  
25 cause that water to go down into the area that

1 I pointed out above the houses there and cause  
2 that shale to slide -- or cause the clay to  
3 slide on the shale because mother nature does  
4 what mother nature is going to do and we don't  
5 know what she's going to do.

6 A. Right, she can do anything that manmade makes  
7 and tear it down.

8 Q. And so at this point in time we don't know  
9 what the effect of the construction of that  
10 school would be or any school would be on the  
11 top of that hill. We think we know, but we  
12 don't really know. Isn't that true?

13 A. That's possible. We are going to use our best  
14 engineering practices of our profession to  
15 design this property, if we are selected or  
16 whoever is selected in the profession, to  
17 design the property so that it is stable. But  
18 as you said, mother nature has their own ways  
19 of throwing curve balls. But none of us in  
20 any instance can guarantee that. Except death  
21 and taxes.

22 Q. I'm not so sure about death, but I will give  
23 you taxes. I'm going to ask you this  
24 question. It was testified to by your  
25 colleague but I'm going to ask you, and if you

1           can't answer, I don't want to have to switch  
2           players, but we'll try.

3       A.   Okay.

4       Q.   And that is, he testified that the slope  
5           design is done for safety purposes.  You agree  
6           with that?

7       A.   Yes.

8       Q.   But it's really safety purposes and water  
9           purposes may be different.  Or may have  
10          different effects.  You may design something  
11          for safety and it would be great, but it might  
12          screw up the water situation.

13      A.   Well, in his parameters that's what he was  
14          discussing, and I can always bring him up, but  
15          I will keep it simple if it's not technical,  
16          is that saturated soils are taken into account  
17          in his software.  In other words, the ground  
18          water.  That's why we need to know where the  
19          ground water elevation is, because the  
20          saturated soils below act differently.  So  
21          they are taken into account in the safety  
22          factor of the slope.  So water is a part of --  
23          in control of that, meaning you will enter  
24          that information into the software.  I can say  
25          that much.

1 Q. You enter it in the software but mother nature  
2 doesn't pay attention to the software.

3 A. A lot of times you're correct.

4 Q. And we don't know if this is going to be one  
5 of those times.

6 A. No.

7 Q. That's all I have. Thank you.

8 MR. RESTAURI: Thank you,  
9 Mr. Michael. Ms. Turnbull?

10 MS. TURNBULL: Thank you.

11 - - -

12 CROSS-EXAMINATION

13 - - -

14 BY MS. TURNBULL:

15 Q. How are you, sir?

16 A. Doing just fine.

17 Q. You're hanging in there. That's all you can  
18 do.

19 A. We are all here to get this information out so  
20 everybody can understand.

21 Q. Well, I appreciate that. And actually, it's  
22 one of my first questions is really just to  
23 understand a term that we see referenced.

24 You indicated that you have participated  
25 in this project from the due diligence phase

1 kind of to present; is that correct?

2 A. That is correct.

3 Q. And did you prepare a due diligence executive  
4 summary as part of that?

5 A. Yes, I did.

6 Q. So in that document it states that, quote,  
7 while it is impossible to accurately predict  
8 mass landslide movement, it is well known that  
9 this area is currently metastable -- a word  
10 that has never come out of my mouth before so  
11 thank you -- metastable or borderline stable  
12 due to weather and gravity and surface and  
13 ground water issues over geotechnical history.

14 Can you define metastable just for the  
15 purposes of our record?

16 A. I will defer to my colleague to answer that  
17 question in more detail level that you would  
18 like.

19 MR. BOWARD: Should I come up?

20 - - -

21 JOSEPH BOWARD,

22 having been first duly sworn, was examined and  
23 deposed as follows:

24 - - -

25 CROSS-EXAMINATION

1 BY MS. TURNBULL:

2 Q. Trying to think of how to do this elegantly  
3 otherwise. Yes, please, sir.

4 A. Okay, when geotechnical engineers use the word  
5 "metastable," it's referring to what we  
6 consider a factor of safety. I don't want to  
7 get too technical but when we look at a slope,  
8 the factors of safety is the sum of all the  
9 forces tending to resist slope movement  
10 divided by the sum of all the forces tending  
11 to cause slope movement.

12 Okay, so if there are more forces  
13 resisting slope movement than there is forces  
14 causing it, the factor of safety will be  
15 greater than 1.0. When the factor of safety  
16 is about 1.0, or we say unity, that means it's  
17 right on the verge, the forces are roughly  
18 equal and that's what we mean by metastable.  
19 It's technically stable, but it doesn't take  
20 much to cause it to begin to be unstable and  
21 potentially begin to move.

22 Q. So an Oxford definition of metastable, for the  
23 lay people, if I read this to you, I will ask  
24 you what you think, if it fairly and  
25 accurately kind of describes the same

1 principle.

2 A. Yes.

3 Q. A condition of a system in which is or has a  
4 precarious stability that can be easily  
5 disturbed.

6 A. That's correct.

7 Q. So if I'm hearing that correctly, is it fair  
8 to say that a minor disturbance in a  
9 metastable environment can cause a failure?

10 A. Well, of course, it depends on the disturbance  
11 but, yes, if it's the wrong type of  
12 disturbance, it can cause it to become  
13 unstable.

14 Q. So the rock formations on this hillside that  
15 we're considering here, in the preliminary  
16 plan which I understand has not been fully  
17 designed at this point, is it fair to say that  
18 a minor disturbance on this hillside to the  
19 rock formation could cause a failure?

20 A. It's not the rock formation we're so concerned  
21 about, it's the soil mantle which is typically  
22 the material above the bedrock. That's what  
23 we're most concerned about.

24 Q. And is it fair to say that a failure would  
25 adversely affect the downhill neighbors, so

1           those located primarily in Leetsdale Borough?

2       A.   It can.  I mean it depends on where the  
3           failure is, what the magnitude and degree of  
4           the failure is, but it can have a detrimental  
5           impact to the people down slope.

6       Q.   And I think, you know, we've talked about  
7           theoretical landslides.  Are you aware of  
8           active or active landslides or subsidence on  
9           this hillside right now?

10      A.   We are aware of some slumps which are a type  
11           of landslide and some sloughs, s-l-o-u-g-h-s,  
12           that are more surficial sliding elements.  And  
13           we are aware that there was a landslide along  
14           the -- I can't remember the name of the road,  
15           that access road that went into the Tuhl  
16           property.  Wood Spur.

17      Q.   And Wood Spur is located in Leetsdale Borough,  
18           correct?

19      A.   Yes.

20      Q.   The tag team.  I appreciate that.  And I  
21           believe I heard testimony from Mr. Phillips  
22           that talked about saturated soils, data  
23           collection, that that's part of the exercise  
24           here.  Has that been done already?

25      A.   We drilled test borings.  Actually, we didn't



1 find much in the way of ground water. We  
2 found evidence of isolated seeps and springs,  
3 underground springs running through the area.  
4 We didn't find within the soil mantel a static  
5 ground water table. But one thing is, when  
6 we're developing plans or schematic plans or  
7 fill embankment construction, Geoff described  
8 it quite well, we excavate down to competent  
9 material which tells you you are moving the  
10 colluvial soils and removing the red bed clays  
11 that are potentially unstable to bedrock that  
12 is stable, and we stair step that into that  
13 ground that's stable.

14 In those stair steps we install drains,  
15 field drains. There could be hundreds of  
16 drains by the time it's done, depending on the  
17 final design. The intent of those drains is  
18 if there is any water seeping out of the  
19 ground, the original ground we excavated to,  
20 the drains will cut that water off before it  
21 gets to the field embankment. So we're  
22 actually addressing the ground water,  
23 potential ground water issues.

24 It's nice to hope for the best, but we  
25 tend to design for the worst case. So we're

1           adding the drains to try to address the ground  
2           water before it gets into the slope and  
3           saturates it, reduces its shear strength.

4       Q.    In your professional opinion, would it be  
5           necessary to step and to excavate the entire  
6           hillside from the top of the hill down towards  
7           Leetsdale?

8       A.    Only where we're putting the fill embankment.  
9           The portions of the hillside that there is no  
10          proposed fill or cuts, there is very little  
11          cut, most of this is fill, we aren't doing  
12          anything to those hillsides so we're not  
13          changing conditions there. They're going to  
14          be the same as they are now.

15      Q.    Is it possible that blasting would affect  
16           those hillsides and the water even in the  
17           undisturbed areas?

18      A.    Actually, it's done per code. There is a  
19           Pennsylvania code mostly obtained through the  
20           Department of Environmental Protection. There  
21           are codes and regulations for blasting. It's  
22           performed in such a way -- you have to  
23           understand the geotechnical properties of the  
24           site. It's done that the peak particle  
25           velocity which is the ground wave only reaches

1 a certain figure so that it doesn't cause  
2 structural damages to houses and it shouldn't  
3 affect the ground.

4 Now when we do blasting, we of course  
5 have seismographs on the site, too, to  
6 actually monitor that peak particle velocity  
7 and see where it actually is. That would  
8 entail potential adjustments but up front  
9 these computations are undertaken to limit the  
10 amount of vibration you're going to get during  
11 blasting operations.

12 Q. With respect to the hillside, do you intend to  
13 cut that road into the hillside or add fill to  
14 create the road or both? Have you gotten --  
15 does your design kind of -- have you analyzed  
16 that at this point yet?

17 A. We did analyze -- we had some subsurface  
18 cross-sections with the test borings that went  
19 up through the road so that was taken into  
20 consideration.

21 Q. How do you intend to address -- how would you  
22 recommend to your client, if you are engaged  
23 to do that work, I mean to do that and to  
24 stabilize the hillside in the area of the road  
25 construction, secondary road?

1       A.   It's going to be the same process for fill  
2            embankments that I just discussed, excavating  
3            down, removing the problematic materials,  
4            adding the drainage and so forth.  When it  
5            comes to existing hillsides that we are not  
6            doing any work on, what you have to do is  
7            analyze those existing hillsides in their  
8            present state and you add the traffic  
9            surcharge from the road onto that because you  
10          are adding a little bit of surcharge.

11                 If it turns out that that slope is now  
12            going to be unstable, factor of safety less  
13            than one, you are going to have to take  
14            measures to stabilize it.  And there is  
15            various tools in our tool box as geotechnical  
16            engineers to do that.  You typically don't go  
17            in and excavate it away, you try to stabilize  
18            it in place with various measures.

19        Q.   And I understand that there is an effort in  
20            the proposed plan to minimize deforestation or  
21            removal of trees.  But do your calculations  
22            take into account the quantity of trees  
23            necessary to be removed and how that would  
24            affect water?

25                         MR. PHILLIPS:  Do you have any

1 more geotechnical type in depth that Joe  
2 might --

3 MS. TURNBULL: I think I'm okay  
4 for now, but I will do my best.

5 MR. PHILLIPS: So that's more of  
6 the overall water issue that you mentioned of  
7 trees, yes, my understanding was part of the  
8 reason they picked this property was to keep  
9 the vegetation around the perimeter, keep a  
10 large buffer. So as far as what is shown on  
11 the drawing and what is now the architect  
12 being directed to, my understanding is that's  
13 going to try to keep as many of the trees on  
14 the property as possible. So as far as the  
15 fill slopes and the configuration of the road,  
16 that will have to change in order to do that  
17 during the design.

18

- - -

19

GEOFFREY PHILLIPS,

20

having been first duly sworn, was examined and  
21 deposed as follows:

22

- - -

23

CROSS-EXAMINATION

24

BY MS. TURNBULL:

25

Q. And you testified about the tow of the slope.

1           Can you talk about what the tow of the slope  
2           is and the significance of that on this  
3           project?

4       A.   The tow of the slope is the lowest part of a  
5           slope where the material gathers and, as Joe  
6           mentioned earlier, if you remove that  
7           material, then you have the potential to  
8           destabilize any of the area above it.  So  
9           that's why it has to be done at an incremental  
10          manner.  You can't just go in and dig a hole  
11          because the slope is not going to stay on its  
12          own.

13       Q.   Is the tow of the slope entirely on district  
14          owned property?

15       A.   The proposed slopes are, yes, all the proposed  
16          tow of slopes.  But the nature of this hill,  
17          we're at the high part and the river is at the  
18          low part, so it extends all the way to the  
19          river.

20       Q.   And the tow of the slope, is it fair to  
21          characterize that as a vulnerable area in a  
22          landslide prone location?

23       A.   It's one of the factors, yeah.

24       Q.   If there are failures of this hillside, the  
25          hillside comes down, correct?

- 1 A. Depending on where that, you know, happened.  
2 In other words, if it was higher up on the  
3 slope, then it may not reach that far.
- 4 Q. It might not reach the tow but it's coming  
5 down, gravity is helping it move, correct?
- 6 A. Yeah, that's what gravity does, the weight of  
7 gravity pulling it down.
- 8 Q. And the sensitivity, of course, is that there  
9 are houses located at the tow of the slope,  
10 correct?
- 11 A. Well --
- 12 Q. Or close to even the proposed tow of the  
13 slope.
- 14 A. When you say tow of slope, that's usually  
15 we're looking at more of a proposed tow of  
16 slope. That means that we are creating at  
17 that location. Naturally, where a tow of  
18 slope is, is usually at the lowest point along  
19 that slope which the lowest point along the  
20 whole slope is down towards the river which is  
21 long past all those houses, now you have  
22 smaller slopes where houses were built where  
23 they have gone in and cut and filled. There  
24 are tow of slopes there cause you are manmade.
- 25 Q. So the proposed tow of the slope as it would

1           be designed in an ideal world, with your  
2           expertise, right, do you have a sense of what  
3           the distance of the top of the proposed slope  
4           would be from the nearest residential  
5           structure?

6        A.   Just looking at the plan there, Mr. Michael's  
7           house is the closest one.  So I would say it's  
8           in the neighborhood of three to four hundred  
9           feet away.  Because they're actually not  
10          proposing a slope, they're grading it up there  
11          where the drive is, over to the west is where  
12          there is some grading which goes down towards  
13          Camp Meeting Road.  So to the residents that  
14          are in Leetsdale, you know, three to four  
15          hundred feet away would be the proposed top of  
16          slope.

17       Q.   There has been a little bit of discussion  
18          about the Kilbuck once upon a time landslide  
19          and its comparability of sorts to this  
20          location.

21       A.   It's sort of like a traffic accident.  Not  
22          every traffic accident is the same because you  
23          have different vehicles, okay.  So there are  
24          geologic issues that were at that site that  
25          potentially could be here.  But is it the



- 1 same? Not exactly.
- 2 Q. Now it's not the same in the sense that there  
3 were no houses in between the landslide site  
4 and the end of it, isn't that correct? There  
5 were no houses compromised.
- 6 A. There was a state highway and a railroad track  
7 that was impacted down slope.
- 8 Q. And in this location the worst case scenario  
9 involves potential loss of property,  
10 residential property, public roads, right of  
11 ways and possibly people, correct?
- 12 A. If you are going to describe a catastrophic  
13 failure but I --
- 14 Q. And you have referenced the Kilbuck landslide  
15 in connection with your due diligence in  
16 public presentations, correct?
- 17 A. That we are aware of it, yes.
- 18 Q. You referenced the Kilbuck landslide and the  
19 Kilbuck site in a power point presentation to  
20 the board and the public.
- 21 A. Right, because the public has that in their  
22 mind, that any development within the  
23 southwestern region is going to end up that  
24 way.
- 25 Q. In light of the very specific conditions here,

1 is the safety design different than on your  
2 side of things as the engineer?

3 A. Yeah, we have a safety factor, all the slopes  
4 that are being designed to have at least one  
5 and a half will be a factor. And as far as  
6 any runoff, there are regulations from DEP as  
7 well as Allegheny Conservation as well as Leet  
8 Township's ordinances that we abide by to  
9 control any potential increase in runoff from  
10 the site.

11 Q. But do you do anything -- if you were  
12 designing for this site versus designing for  
13 the Kilbuck site, do you do anything different  
14 to account for a potential higher likelihood  
15 of adverse effects to residential properties  
16 or to people, to a more densely populated  
17 area?

18 A. Well, it's still the same engineering  
19 principles. There was a failure of the  
20 engineering that was done at Kilbuck. They  
21 did not take the engineering to the level that  
22 it should have been done, whereas here we will  
23 design to the standard of at least one and a  
24 half, meaning it's one and a half times of  
25 stability for all proposed slopes here.

1 Q. Is that going over or beyond the professional  
2 standard that would otherwise be required?

3 A. Well, as a professional civil engineer, we  
4 protect the public in our design. We are to  
5 do that. And we utilize the tools and the  
6 engineering technology that's available to do  
7 that. Now is there still failures? Yes,  
8 there are failures. We try to minimize.

9 Q. You had previously testified to some degree  
10 about there are cracks in everyone's  
11 foundation in Western Pennsylvania and old  
12 houses and maybe there will be more cracks,  
13 there is insurance. I want to be clear cause  
14 it is not your testimony, correct, that Quaker  
15 Valley has the right to engage in activities  
16 that cause damage to people or to property  
17 because they have insurance, right?

18 A. That's correct. No, I'm just saying that  
19 cracks are evident in all houses because there  
20 is movement no matter -- as was testified  
21 before, mother nature is going to do what  
22 mother nature does.

23 Q. But if we do things as people, as property  
24 owners that contribute to that, we become  
25 responsible for the change in mother nature.

1       A. Right, that's the only thing with the  
2       insurance is you are a responsible individual,  
3       if the problem happens they will be  
4       responsible to fix it. They are not saying  
5       that they're given the free will to do that,  
6       make that problem happen.

7       Q. You did reference a blasting contractor's  
8       insurance coverage and insurance inspections.

9       A. Correct.

10      Q. Are those typical precautions or typical  
11      things that you would want to see as  
12      conditions or as protections for this type of  
13      work being done at this site?

14      A. Correct. That would be within the  
15      specifications when they bid the project, that  
16      those contractors have that level of  
17      insurance, they would do that level of detail,  
18      what's called before the incident happens,  
19      meaning they do a survey of anything and they  
20      install monitoring equipment, seismographs,  
21      things like that. They will install  
22      monitoring all around the site so that they  
23      can minimize any impact that's to leave the  
24      site. The insurance is the money end of the  
25      thing.

- 1 Q. Are there any other specific safeguards to  
2 protect downhill neighbors in the Borough of  
3 Leetsdale that you would recommend?
- 4 A. Well, I can't say right now because I'm not --  
5 I haven't been chosen as the design engineer.
- 6 Q. On other sites that might be comparable to  
7 this, what are the recommendations that you  
8 make as the professional to put safeguards in  
9 place through grading, through blasting?
- 10 A. Again, those are the ordinances that are out  
11 there. Those are the state regulations that  
12 Joe mentioned that are through DEP at the  
13 higher level. So there are all those  
14 regulations. It would be a matter of the  
15 municipality, when they review the design  
16 drawings, that those regulations are adhered  
17 to, meaning that those are a part of the  
18 specifications.
- 19 Q. So you don't have any -- other than insurance,  
20 you don't have any specific recommendations  
21 that you would make for safeguarding?
- 22 A. That's what the whole laws --
- 23 Q. Compliance with ordinances.
- 24 A. Compliance with all of those. Those are what  
25 standards that are out there, you know, to

1 protect the public. And as a civil engineer,  
2 we design all of our designs to take into  
3 consideration the public safety.

4 Q. So throughout this process you've provided  
5 advice to the Quaker Valley School District;  
6 is that correct?

7 A. Yeah, we did the due diligence, we made  
8 recommendations and specified all the facts,  
9 all the information that was available. Our  
10 findings throughout the due diligence of what  
11 the property holds for all of the items, you  
12 know, surveying, geotechnical, civil, review  
13 of ordinances, environmentals, to give them  
14 the best information for them to decide  
15 whether they wanted to purchase the property  
16 or not purchase the property. They chose to  
17 purchase the property and to continue to  
18 develop a new high school.

19 Q. Do you remember what some of your concerns  
20 were that you communicated to them about this  
21 site prior to them purchasing it?

22 A. Well, it's going to have to be a community  
23 effort here because you're involving Leet  
24 Township, you've got Leetsdale Borough, you've  
25 got Edgeworth, three municipalities you will

1           have to work with. You're also going to have  
2           to work with Allegheny County Public Works for  
3           the road that they have jurisdiction on.

4                     There are existing issues along that  
5           road as far as the water that's coming down  
6           along Camp Meeting Road has eroded some of the  
7           area there, in other words, taken out the tow  
8           of slope that holds up the road. There is  
9           drainage issues which have come down through  
10          there into Leetsdale with the flooding and  
11          everything.

12                    So all of those issues we made aware of  
13          to the township, but we also went further and  
14          we had meetings with -- and I was a part of --  
15          with the county, in particular with Camp  
16          Meeting Road, to discuss if they had any plans  
17          of how they were going to fix their things.  
18          And as government usually says, it got cut out  
19          of the budget, we don't have the money.

20                    There is utility infrastructures that  
21          have some problems there, the sanitary sewer  
22          that runs through there. There are water  
23          infrastructures with the water system in this  
24          area in the fact that it's not looped, it's  
25          single source. In other words, you have a

1 line that's going up Camp Meeting Road and you  
2 have some spurs that are coming off over into  
3 Oakdale and the community you're talking about  
4 houses.

5 So if you have a water line break, the  
6 water is shut off. If you loop it, that means  
7 it has a way to come in another way, you shut  
8 it off by valves where the break is but you  
9 still maintain water for the rest of the  
10 residents. So those are things that are going  
11 to have to be a part of this project, working  
12 with the utility companies to improve the  
13 conditions not only for the school but for the  
14 community around it.

15 Traffic is another issue that came about  
16 in the fact that you have a single source  
17 road. I mean this municipality only has three  
18 major roads. It has Little Sewickley Creek,  
19 it has Camp Meeting Road, and it has Big  
20 Sewickley Creek. That's the only three main  
21 arteries coming into the township. So that's  
22 where the volume of your traffic is going to  
23 be.

24 Now the school district has been here  
25 for a long time so they already have some



1 traffic on it, but you are now going to be  
2 evaluating with our traffic engineer to make  
3 sure that it's going to be a safe road to  
4 travel. And there are some improvements that  
5 are going to have to be done. Are they  
6 finalized? No. There are going to be some  
7 discussions with the county and what they can  
8 do to help improve some of the stuff.

9 It's the same way with the drainage  
10 that's coming down through there. It's  
11 already a problem. It's been identified. I  
12 have had discussions with Mr. Slagle, who is  
13 the engineer for both Leet and for Leetsdale  
14 Borough, and when we went through the  
15 subdivision, those questions were asked by  
16 planning commission and council in Leetsdale.

17 And we have had meetings with Allegheny  
18 Conservation to look at improving the water,  
19 fixing the problems that are there in  
20 conjunction. So there are a lot of  
21 stakeholders in this project, as I use the  
22 word stakeholder, that you are going to work  
23 with other agencies to make this a better  
24 situation. Not just go out and design  
25 something, say, well, there it is. It's going

1 to be reviewed by many people, and they are  
2 going to have their experts review the work.

3 So there are a lot of things that have,  
4 on the preliminary basis, happened. But  
5 again, we are not the final design. Once we  
6 get into final design, then you will have  
7 stuff on paper that can be determined.

8 MS. HYJEK: And in some of those  
9 early conversations that happened in the  
10 public -- I mean I think you have been very  
11 transparent with what the district has done  
12 and having many of these discussions at public  
13 meetings and power point presentations which  
14 is helpful. I mean is it fair to say that you  
15 at least at one time had concerns about the  
16 excavability of sandstone on this site.

17 A. Yeah, because of the hardness, whether it  
18 could be used with a piece of equipment to dig  
19 it or whether blasting. And again, that  
20 hasn't been determined.

21 Q. So do you still have those concerns?

22 A. Well, we have to determine that. So it's an  
23 unknown and that's what we made the district  
24 aware of.

25 Q. And you had concerns with pyrite and

1 sandstone; is that correct?

2 A. We did not encounter, to my knowledge, but it  
3 is another factor here in Western  
4 Pennsylvania, that it's another issue that  
5 does cause problems on a project so we have to  
6 do extensive borings to find if there is that  
7 problem.

8 Q. And that's still a concern to be --

9 A. Right, this was a preliminary. By far, this  
10 is not final design and was not enough borings  
11 done. It was only preliminary. So that's why  
12 we've told them in our report more borings  
13 need to be done.

14 Q. And you had communicated to the district that  
15 you had grave concerns about rock outcrops  
16 indicating blasting is definitely needed. Is  
17 that still a grave concern?

18 A. Not sure what you're asking there.

19 Q. Do you recall having a grave concern, I  
20 believe in March of 2017, about outcrops  
21 indicating blasting definitely needed?

22 A. I don't know. I know there are rock outcrops,  
23 but the only ones I think are over in the  
24 Edgeworth area where it is very, very steep.  
25 In other words, the soil has all eroded off of

1           and exposed the rock over there.

2       Q.   Did you help to prepare the power points that  
3           were presented to the district?

4       A.   Yes.

5       Q.   So just to show you where I am looking, does  
6           this look familiar?

7       A.   Yeah.  Okay, so the context of rock outcrops  
8           indicating blasting definitely needed, we  
9           concluded was more on the expense, meaning  
10          that if in fact the rock is hard, you're going  
11          to have to spend money in order to get it out.  
12          So that's evaluation concern that they need to  
13          be aware of, that you are not just going to go  
14          in and develop the site for very minimal  
15          money.  You are going to have to spend some  
16          money in order to do it.  That was the concern  
17          was, are you willing to spend that money in  
18          order to develop the site?

19      Q.   So that was what you were kind of referencing  
20          in that grave concern?

21      A.   Right.  In other words, it's a major expense  
22          that you are going to have to have in your  
23          budget in order to create a developable piece  
24          of property here is you are going to have to  
25          remove that rock, and it may have to cause you

1 to do blasting in order to do that. So if you  
2 can't spend the money, then this isn't the  
3 property to be developing.

4 Q. And then also in that same section of your  
5 power point it identified that you had grave  
6 concerns about severe landslide activity  
7 definitely adds remedial action to the  
8 project, expensive, question mark.

9 A. Correct, the site has already shown and in the  
10 Edgeworth the developer, Mr. Tuhl, which was  
11 Three Rivers Trust, had already encountered  
12 those issues. So we were just responding that  
13 those are already existing issues that are on  
14 the property. But the site plan is not  
15 including any development over there.

16 Q. And then the other thing -- and just for  
17 clarification, cause again this is a public  
18 document that's out in the world, it says,  
19 quote, even if Tuhl donates site, you may not  
20 want it, end quote, dot, dot, dot, try to  
21 better assess costs of these before further  
22 evaluation and drilling.

23 What did you mean by that, when you  
24 wrote that? And whose quote is that? Is that  
25 your quote?

1       A.   It's a combination.  Again, the situation is  
2           we were asked not only to evaluate this site  
3           but several other sites, so we were putting on  
4           the table that this is going to be an  
5           expensive site to develop.  So, in other  
6           words, you're not going to have a budget of  
7           site construction of only \$10,000 here.  
8           You're going to have to spend several million  
9           dollars to develop this.

10       Q.   Do you have a ballpark of what it would cost  
11           to do the geotech site development?

12       A.   Well, we put in our estimate there to do the  
13           bulk grading of the site to get the 50 acres  
14           flat was in the neighborhood of like 21 to 23  
15           million dollars.  And that just gets you the  
16           grading.  It's not putting in infrastructures  
17           or any of the other site facilities that need  
18           to go with the development.

19                    It's similar to the industrial parks you  
20           see built in Southwestern PA.  They go in and  
21           do the bulk grading, do the infrastructure,  
22           put all of that in, in other words, have lots  
23           that are what they call ready build for  
24           developers to come in and develop.

25                    So we indicated it was a significant

1 amount of money you're going to have to spend.  
2 So not only are you looking at that expense,  
3 because that's what happens, somebody will say  
4 to us, oh, I got this property real cheap to  
5 develop, okay.

6 Q. And you want to make sure that they really  
7 want it.

8 A. Just cause you got it cheap doesn't mean it's  
9 going to cost you cheap to develop it. And  
10 that's sort of where that came about. You're  
11 still going to have to spend a large amount of  
12 money to develop it even if it was given to  
13 you.

14 Q. Thank you for your time. I don't have any  
15 further questions.

16 A. Okay.

17 Q. Thank you.

18 MR. RESTAURI: Thank you. Ladies  
19 and gentlemen, it's 20 minutes to noon. I can  
20 start my questioning or we can break for lunch  
21 and come back around 12:30. I think I'm  
22 probably going to be 45 minutes to an hour,  
23 maybe shorter, hopefully. What's your  
24 preference?

25 MR. SOSTER: Why don't we break

1 for lunch whenever you are done?

2 MR. RESTAURI: Fine with me.

3 MR. SOSTER: Let's get it done.

4 - - -

5 EXAMINATION

6 - - -

7 BY MR. RESTAURI:

8 Q. Mr. Phillips, one of the things that we  
9 wrestled with -- and I understand your counsel  
10 may think it's beyond our scope -- but one of  
11 the things we wrestled with is that we're  
12 being asked to decide how much risk is an  
13 acceptable risk to put hundreds of school kids  
14 in at the top of a hill that's landslide prone  
15 when 10 or 15 years ago, not too far away,  
16 Walmart, with all its money and all its  
17 engineering, couldn't stop a landslide.

18 So I tell you that just to give you some  
19 perspective, so you are not thinking that we  
20 are just asking questions for no good reason.  
21 This is a concern. Is there some standard in  
22 your profession that says that it's an  
23 acceptable risk of a landslide for a school to  
24 be 1.5 or 2 or 1.25 in the slope analysis?

25 A. No, the engineering does not stipulate and



1 reference the type of risk. As I testified  
2 earlier, we are to protect the public with the  
3 design, just as you lawyers are to do your job  
4 to a certain standard but every lawyer has a  
5 different standard that they meet in different  
6 states.

7 So the only thing is, there are  
8 regulations that are out there to minimize the  
9 risk. To what degree of a number, there  
10 really isn't, other than in our engineering  
11 practice the 1.5 is the acceptable risk factor  
12 of design for a new slope.

13 Q. And that's true for whether the building is a  
14 Walmart or is a school or is a gas station.

15 A. That's correct, or a residential home  
16 development or you know --

17 Q. There has been some testimony this morning --  
18 and, Mr. Boward, if you want to answer these  
19 questions rather than --

20 MR. BOWARD: Could I expound on  
21 what he said?

22 MR. RESTAURI: Sure. Joe, if you  
23 want to sit close, both of you can take  
24 whichever answers or questions you want,  
25 please.

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JOSEPH BOWARD,

having been first duly sworn, was examined and  
deposed as follows:

- - -

EXAMINATION

BY MR. RESTAURI:

A. Okay, first of all, the factor of safety of  
1.5 we are using is really the global standard  
of care. Most of the United States factor of  
safety 1.3 is used. The reason why  
geotechnical engineers in this locale use 1.5  
is because of the landslide prone nature of  
many of the areas in Southwest Pennsylvania.  
So we as geotechnical engineers in this locale  
have increased the standard of care to account  
for the conditions in Southwest Pennsylvania.

All we can do as geotechnical engineers  
is follow a standard of care. Actually, we  
cannot say we are exceeding the standard of  
care. Our insurance companies will not insure  
us.

Q. So it is possible, however, to exceed the 1.5  
slope standard of care?

A. Yes, it is. As a matter of fact, when we

1 conducted our slope stability analyses for the  
2 due diligence phase of this project, our  
3 lowest factor of safety is 1.5 on slopes.  
4 Some slopes were as high as 2.5.

5 Q. And is it possible to translate 1.5 into a  
6 percentage likelihood that there would be a  
7 landslide in a hundred instances or a thousand  
8 instances? If you have a thousand properties  
9 or a hundred properties -- let's say a hundred  
10 properties, all of which had a 1.5 slope  
11 factor, would five of them fail and be a  
12 landslide? Ten? None?

13 A. The factor of safety used in geotechnical  
14 engineering does not correlate well with that  
15 type of statistical analysis. If you have a  
16 factor of safety of 1.5, what that's saying is  
17 that you have forces resisting slope failure  
18 that are 50 percent greater than the forces  
19 tending to cause it. If your factor of safety  
20 is 1.5, if it is truly 1.5, the slope won't  
21 fail. I mean that is -- engineering wise,  
22 that is what that's telling you. If something  
23 else happens within the slope that you could  
24 not account for based on your analysis, then  
25 you may have a slope failure.

1           The one other thing I wanted to point  
2 out was, I am familiar enough with what  
3 happened to Kilbuck. I happen to know the  
4 engineer there did no slope stability  
5 analysis. There was no analysis that we are  
6 talking about here done.

7           I also happen to know at that time  
8 Walmart did not own the property. It was a  
9 developer condition. There was a developer,  
10 ACS, who owned the property and was developing  
11 it. The idea was they were supposed to  
12 develop the property up to a flat pad in  
13 correspondence with Walmart's requirements and  
14 then Walmart would buy the property from them  
15 and build their building.

16 Q. I see.

17 A. The other thing you have to keep the mind --  
18 and I almost hate to say this in public record  
19 but it is public knowledge -- the developer  
20 ACS was owned by a person, partially owned by  
21 a person that also owned the geotechnical firm  
22 that was working on the property. And the  
23 geotechnical firm on the property had  
24 individuals out there doing construction,  
25 inspecting the geotechnical aspects. So in

1           essence, the developer was inspecting his own  
2           work.

3       Q.   When you did your work after the landslide,  
4           did anyone conduct a slope analysis then or  
5           was it too late at that point?

6       A.   Well, slope analyses had to be done.  First of  
7           all, to understand where it was in regards to  
8           its movement.  Cause it moved for quite a long  
9           time, for years, quite frankly.  And then  
10          slope stability analyses had to be conducted  
11          to determine how you're going to fix this.  
12          Cause whatever fix you come up with has to  
13          have a factor of safety of 1.5.

14                 They went to some extraordinary measures  
15                 to fix that.  It's my understanding they spent  
16                 in excess of 50 million dollars to fix that  
17                 landslide.  So, yeah, slope stability analyses  
18                 were performed ultimately for the fix.

19       Q.   Knowing what you know now -- and I understand  
20           your testimony and respect certain things  
21           would be inappropriate for you to say -- but  
22           please try to understand what we are trying to  
23           wrestle with.  Is there something that could  
24           have been done there at the Walmart site that  
25           wasn't done that you can or would recommend be

1           done here to make sure it doesn't happen  
2           again?

3       A.   At the Walmart site, I'm familiar with test  
4           borings were done after the slide occurred.  
5           And we found something in the order of I think  
6           almost a hundred feet of colluvial soil under  
7           the site that had not been removed. So the  
8           site was being constructed on top of an old  
9           landslide. And there were red beds in there,  
10          of course, as well, red bed clays that had not  
11          been removed.

12                 So they were trying to construct, I  
13           don't remember exactly, I think 75 foot high  
14           fill embankment on top of an old landslide.  
15           So you are surcharging an old landslide which  
16           is not stable to begin with, an old landslide,  
17           reached some point of equilibrium, so now you  
18           are adding a surcharge which drastically  
19           decreases its stability.

20                 So they should have removed -- well, it  
21           probably would have been impractical to remove  
22           all the colluvial soil in that case because it  
23           was so deep and so thick. But other measures  
24           could have been taken such as retaining walls  
25           in that particular case. Retaining walls are

1 very expensive and of course nobody wants to  
2 go to that expense if he can get away without  
3 doing it, especially if you are a geotechnical  
4 engineer that is recommending how to stabilize  
5 a slope and also the developer.

6 So they could have taken measures there  
7 to provide a stable condition. In that  
8 particular case, it would probably have  
9 entailed retaining walls. In this case, the  
10 colluvial soils and the red bed soils aren't  
11 so deep that you can't remove them. I think  
12 the very worst case is 40 foot deep.

13 A lot of the site has roughly around 10  
14 or 15 feet of this material has to be removed  
15 in depth. So this site it is practical to  
16 take measures to remove those landslide  
17 susceptible soils and begin on material that  
18 is stable bedrock material.

19 Q. Joe, what is the list of -- without regard to  
20 money, without regard to cost, what is the  
21 list of everything you can conceivably think  
22 of that would minimize this risk of landslide  
23 to that school? Even if you say to yourself,  
24 you know, it might only happen once in 250,000  
25 times?

1           Can you give me the menu of what's out  
2           there for you and tell me how it reduces the  
3           residual risk? I'm trying to get this risk  
4           down to zero, and I know that that may not be  
5           possible, but for heaven's sake, you know,  
6           let's get it down as close to zero as we can,  
7           please.

8        A.   There are multiple factors, okay. One factor  
9           is to remove the landslide prone material down  
10          to competent material. Because when you build  
11          a fill embankment, the bottom of the tow  
12          almost acts like a foundation for that fill  
13          embankment. So we need to get down to good  
14          competent material that has high shear  
15          strength, has high strength factors. That's  
16          number one.

17                Number two is to undertake measures, try  
18                to bond the new fill as much as you can to the  
19                existing material, subsurface materials. That  
20                is the stair step benching we're talking  
21                about, okay.

22                Number three, let's try to keep the fill  
23                embankment as dry as possible because when  
24                your slope becomes wet or saturated, its shear  
25                strength is reduced. Just think of picking up



1 a hard clump of dirt that's pretty dry, you  
2 squeezed it, you can't necessarily break it  
3 but now it's saturated and it's mud and mush  
4 in your hands, doesn't have much strength.

5 So you want to keep it dry. That's why  
6 we're including on those stair step benches  
7 every single bench has a drain running along  
8 it. So any water that happens to be coming  
9 through that hillside above and beyond the new  
10 fill embankment we are building, those drains  
11 are going to cut it off. It will hit the  
12 drains before it percolates to the fill  
13 embankment.

14 So we are keeping it dry by adding all  
15 this drainage. Whether or not there is ground  
16 water or not, we are adding the drainage cause  
17 what you encounter during excavation is not  
18 necessarily what's going to happen all year.  
19 During the rainy season, there might be  
20 springs you are not seeing so we are putting  
21 drains in there to cut off any potential  
22 water.

23 The next factor is how you place the  
24 fill. The fill has to be placed in layers.  
25 They call them loose lifts. It has to be

1 placed in layers that are adequately thin,  
2 that the construction equipment, the  
3 compactive energy from the construction  
4 equipment is adequate to compact those layers  
5 to a certain density.

6 We have to understand, what does that  
7 density have to be compacted to? Cause we  
8 want to be sure that density has that shear  
9 strength that we require as per we did on our  
10 slope stability analysis. So we had to enter  
11 factors in for strength, of course.

12 So we have to understand what density do  
13 you have to have to get that minimum shear  
14 strength? So it's placed in layers, each  
15 layer is compacted. Usually, the layers are  
16 six or eight inches. Each layer is compacted  
17 and then density tests are taken by  
18 geotechnical personnel on the site during --

19 Q. As it's being done?

20 A. As it's being done. And the geotechnical  
21 personnel there, if it's done correctly, are  
22 there full time watching the fill go in,  
23 making sure it's put in the thin lifts, making  
24 sure the fill is representative of the testing  
25 you're doing on it. Because if the character

1 of the fill changes, these density tests won't  
2 mean anything cause it's a different material.  
3 If that happens, you have to go back in the  
4 lab, run more tests to get the baseline  
5 results that you need.

6 But we do density tests with a what's  
7 called nuclear densometer. But we have that  
8 equipment that has a computer that can tell  
9 you the density and water content of the soil  
10 because it has to be certain content limits.  
11 I will not get into all the technicalities.  
12 But we have to test that while it's being  
13 placed.

14 The final factor is being sure that the  
15 final slope grade that is constructed is in  
16 accordance with what the plans show and in  
17 accordance with what you analyze. If you  
18 analyze a slope that was a grade of two  
19 horizontal to one vertical, in other words,  
20 for every two feet horizontal it rises one  
21 foot vertical, that has to be constructed to  
22 that grade. If they construct it at a slope  
23 of 1.5 to one, you may have a problem.

24 So that has to be verified. And that's  
25 usually per survey as it's being done. Those

1           are the main -- those are the main elements  
2           that go into being sure you have a stable  
3           slope.

4       Q.    Would a retaining wall, not a fill embankment  
5           but a retaining wall, add further security?

6       A.    Not necessarily.  It depends on the type of  
7           retaining wall you're putting in.  There are  
8           certain types of retaining walls that actually  
9           you wouldn't want to use them because they can  
10          actually add load to the slope and not really  
11          stabilize it.

12                You would need a retaining wall that's  
13           really supporting tow of the proposed slope,  
14           that's adding resistance to the tow of the  
15           slope.  You are going to get a higher factor  
16           of safety but it's not -- you're spending  
17           money unnecessarily.  It's like a belt and  
18           suspenders.  Cause retaining walls are very  
19           expensive and if you can't remove the poor  
20           material, the foundation material for the fill  
21           embankment, then you have to consider a  
22           retaining wall.  In this case, we are able to  
23           do that and get these factors of safety.

24       Q.    If these factors that you mentioned, not the  
25           retaining wall but the other factors, are all

1 done, can you offer us an opinion of what the  
2 residual risk of landslide would be?

3 A. I can't quantify that. All I can say is that  
4 in my experiences over approximately 40 years  
5 in this profession, if these factors are  
6 properly implemented, carried out, I have yet  
7 to see a landslide occur on a slope that has  
8 been constructed in this fashion.

9 Q. Is there a monitoring regimen that would help  
10 with respect to landslides, you know, every  
11 six months during the first year, every nine  
12 months during the second year, and so on?

13 A. Yeah, there is -- typically, it's not  
14 undertaken if you have gone to all these  
15 measures we are talking about, but there are  
16 ways to monitor hillsides. They include such  
17 things as surface monument, survey monuments  
18 that are inserted into the ground, and then  
19 the survey data on the monument is undertaken  
20 in the three dimensions. And you can do that  
21 periodically, once a month or couple times a  
22 month or however long you want to do it, a  
23 year or two.

24 The other method you can undertake is  
25 what's called a slope inclinometer. You can

1 look that up online. What that entails is  
2 drilling a hole vertically into the ground and  
3 there is a special casing that's inserted into  
4 the ground all the way down usually into  
5 bedrock and then you can insert instruments  
6 into that casing. It's a special instrument.  
7 It's attached to a cable and you have a  
8 computer specially designed for that  
9 instrument and you take readings at intervals  
10 along that casing.

11 What that tells you is like if you take  
12 a reading one month and wait two weeks or wait  
13 a month and take another reading the next  
14 month, you're going to see variations. You  
15 will see a graph that shows variations  
16 vertically to see if there is any movement of  
17 the slope and how it's moving, how much it's  
18 moving. That can be done as well.

19 Q. Is it possible to have a school like this  
20 built in such a way to allow it to accommodate  
21 some measure of unexpected landslides? You  
22 know, it's almost like the old earthquake  
23 thing that I read about all the time, areas  
24 that are earthquake prone built differently.

25 A. There certainly is. Landslides in this area

1           predominantly occur to soil mantel. There are  
2           rock falls, but those are along usually  
3           highways where the rock has been cut very  
4           steep, sometimes vertically. We are not  
5           talking about that here. We are talking about  
6           a landslide in the soil.

7                        So if the school is supported on  
8           foundation that extends directly to bedrock,  
9           if the soil mantel fails, it's not going to  
10          affect the school because the bedrock is not  
11          going to fail. And there is a good chance  
12          that's going to happen at this site because it  
13          isn't very deep to that sandstone cap  
14          everybody is talking about.

15                      If you build the school up -- there are  
16          ways to protect it there, too, more expensive  
17          ways. You still want to support it on bedrock  
18          so what you do is you drill a vertical cast in  
19          place, concrete fill drilled shaft, also  
20          colloquially termed caissons. Those are  
21          foundation systems, deep foundation systems.  
22          They will go to bedrock.

23                      So the school is in essence -- as far as  
24          subsurface wise, you are not going to see  
25          them, but it's sort of on stilts extending the

1 bedrock. So if the earth were to slide, it's  
2 going to slide under and around these caissons  
3 and not affect the building.

4 Q. So it is possible to make certain that this  
5 school, if it's built, is built either  
6 directly on bedrock or through the use of  
7 caissons supported by bedrock?

8 A. Yes, it's possible.

9 Q. I'm assuming there are going to be gas lines  
10 underground, electric lines underground. Is  
11 there some way to manage or engineer the  
12 placement of those lines so that if there were  
13 a landslide, they would not be compromised?  
14 I'm concerned about fires, explosions.

15 MR. PHILLIPS: Right. So the  
16 utilities would be coming from Camp Meeting  
17 Road. So essentially, if you look at the  
18 diagram of the site, they would follow along  
19 the road which the road is coming along the  
20 ridge. So they are not being built over fill  
21 material. They are being built in areas that  
22 are caught which is in the rock area. So the  
23 gas, the water and electric would be coming  
24 through that area.

25 The only utility that will not --



1           and it's not a catastrophic other than the  
2           smell -- is the sanitary. The sanitary has to  
3           go down the hill towards Beaver. What it is  
4           is Camp Meeting, the sanitary is down there.

5

- - -

6

GEOFFREY PHILLIPS,

7

having been first duly sworn, was examined and  
8           deposed as follows:

9

- - -

10

EXAMINATION

11

BY MR. RESTAURI:

12

Q. So the assurance that we have is that if there  
13       is a landslide, it will not cause an  
14       electrical catastrophe or a gas catastrophe.

15

A. The risk is very minimal.

16

Q. So if we can summarize it, how would you say  
17       that risk is so very minimal? What is the  
18       condition --

19

A. It's being installed above the rock mantel --  
20       bedrock surface.

21

Q. So if there is a slide, because it's  
22       underground and above the bedrock surface, the  
23       slide would not be heavy enough or would not  
24       displace the soil that's above those lines?

25

A. That is under those lines.

- 1 Q. That is under those lines.
- 2 A. Yeah.
- 3 Q. How do we make sure that the earth coming down  
4 in a possible landslide doesn't somehow get to  
5 those lines and cut them or burst them?
- 6 A. Well, what you have is you have a ridge like  
7 this and below that ridge is the rock, and  
8 you're going to take this material off the top  
9 in order to develop that. So essentially the  
10 flat area that you see up there is all going  
11 to be on rock.
- 12 Q. And where will the lines be?
- 13 A. The utility lines will be in that area, not  
14 off the edge of the slope. So essentially,  
15 just like Joe indicated, unless you are  
16 building a fill which there is no fill, they  
17 are not showing any lines there, those lines  
18 are going to be over the bedrock. So there  
19 really isn't a substantial amount of material  
20 under it that would allow it to slide.
- 21 Q. And material coming down on top of it wouldn't  
22 get to it.
- 23 A. Right, cause there is no slope above it.
- 24 Q. In your experience, where that technique has  
25 been used, are you familiar with any instances

1           where the electrical lines have been  
2           compromised or the gas lines have been  
3           compromised despite those best efforts?

4       A.   Not in any of the developments in the last 35  
5           years I've been involved.

6                       MR. RESTAURI:  Joe, agree?

7                       MR. BOWARD:  Yeah, I agree.  Not  
8           if you -- now if you undertake measures less  
9           than that, of course, the risk increases.

10       BY MR. RESTAURI:

11       Q.   Unless your counsel objects, I'd like to ask  
12           both of you, as you leave here today, if you  
13           think of other things that you say, I should  
14           have said this, I should have said that, this  
15           might help, that might help, we have a while  
16           to go before we make a decision.  If you would  
17           let us know and we will let counsel know.  You  
18           know, what matters to us is that we get this  
19           right.

20       A.   Right.

21       Q.   We know it matters to you, we know it matters  
22           to all of you.  We don't stand -- we are not  
23           standing on legal technicalities.  We have  
24           kids we are putting up there.  We all know  
25           that, okay.

1 A. Can I make one comment there?

2 Q. Sure.

3 A. And I think the township has already done  
4 this, but I'm not fully aware, is there are  
5 two sides to this. There is our side where we  
6 design it but then there is the municipality  
7 side where they review it. And as long as you  
8 have all of the geotechnical engineers on  
9 board to review all of this stuff, that's  
10 somewhat what didn't happen at Kilbuck. You  
11 sorta had the fox in charge of the chicken  
12 coop and you had a developer who was money  
13 driven.

14 This project is a public project,  
15 meaning it's for school, it's for kids. The  
16 district is not going to cut any corners  
17 because of costs in the design to make this  
18 safe for the public. However, if the  
19 municipality has in their professional side  
20 people to review it and give good feedback,  
21 then we can minimize any problems of not  
22 covering to minimize the risk.

23 Q. And I think I need to be clearer than maybe I  
24 was. I am not suggesting that the school  
25 district did not care, wasn't concerned as

1           much as we are. This is one of those  
2           situations where the more heads that are on  
3           it, the better.

4       A. And we agree.

5       Q. So I am not at all being critical of the  
6           school district in any way.

7                       MR. BOWARD: I have to say  
8           something, too. The element that we just  
9           covered that should be undertaken during  
10          construction to provide for a stable fill  
11          embankment, fill slopes, we haven't gone to  
12          the design phase yet so there is no  
13          specifications written, there is no reports,  
14          no final geotechnical reports from us,  
15          assuming we were engaged to perform that.

16                      But if I were to be engaged for  
17          that purpose, our reports and specifications,  
18          everything I just said would be included in  
19          there that has to be done by the contractor.  
20          And I would recommend that our personnel be  
21          out there full time during all earth work  
22          operations. That is a standard recommendation  
23          from us.

24                      In fact, we go as far as to say  
25          that if we're not out there, we are not going

1 to be held responsible. Whoever is out there  
2 inspecting it has to be ultimately responsible  
3 because they are uncovering subsurface  
4 conditions, they are seeing what's actually  
5 being done.

6 Geotechnical engineering is a two  
7 part process. There is test borings and so  
8 forth, analysis and design. That's the first  
9 part. The second part is the actual work in  
10 the field which is just as important as the  
11 front part. So that would be one of our  
12 recommendations, that that all be undertaken.

13 MR. RESTAURI: Thank you. Joe,  
14 your software you were mentioning, is there a  
15 standard margin of error in that software that  
16 is concerning at all?

17 MR. BOWARD: There is not really a  
18 margin of error. It uses a technique. There  
19 are several techniques that undertake it. It  
20 uses the Bishop circular failure method mostly  
21 cause that's the type of failures you see out  
22 here. And it undertakes -- it slices the  
23 slope up into pieces and adds forces.

24 I go so far back that I actually  
25 had to do this by hand back in the seventies

1           and eighties, before computers were out there.  
2           But it undertakes the same process we used to  
3           use by hand. In fact, there is less error now  
4           because the computer is doing it and I'm not  
5           making multiplication mistakes and so forth  
6           like when I did it by hand.

7                        So there is not really a margin of  
8           error. The biggest error, if you are going to  
9           look at an error, would be human error in  
10          putting the wrong data in, whether that be  
11          topographic data or physical property data for  
12          the various strata.

13                      MR. RESTAURI: And that's the same  
14          kind of human error that might arise in the  
15          way test borings were conducted, for example.

16                      MR. BOWARD: Yeah, I mean there is  
17          a chance of human error there, too. However,  
18          when we did the test borings, we didn't let  
19          the contractor do them. We had a geologist or  
20          engineer out there full time when the test  
21          borings were done. So we could see them and  
22          classify them.

23                      So we do what we can to reduce the  
24          error. Then the samples come back to our  
25          laboratory and I get a chance to look at them

1           again to see what their logs say and see if I  
2           agree with it when I take a look at the  
3           samples.

4       BY MR. RESTAURI:

5       Q.   Shifting gears --

6       A.   Just one other thing that brought to mind is  
7           you, as a municipality, you know, not only  
8           should have geotechnical on board, an  
9           engineer, but also they should be out there  
10          also throughout construction to monitor, too.  
11          In other words, it's not just our word.  
12          That's another way of doing it.

13                 In most large projects we encounter we,  
14                 as the design engineers, are out there  
15                 monitoring it to make sure that the contractor  
16                 is building it properly, but the municipality  
17                 or the government agency also has their  
18                 inspector out there. So that it's another, as  
19                 you mentioned earlier, another set of eyes on  
20                 it or heads on the project to observe that  
21                 everything is being done to the best care that  
22                 can be for the public safety.

23       Q.   Is there any other layer of during  
24           construction inspection or eyes on it that  
25           customarily happens or that you would



1 recommend even if it's unusual because of the  
2 situation?

3 A. There is testing. In other words, what Joe  
4 mentioned. In other words, in the  
5 specification it requires the contractor to  
6 provide soil testing which he then -- what  
7 he's going to be placing, and then those  
8 parameters come. But sometimes during  
9 construction, if it rains more than not, those  
10 characteristics change. So the testing part  
11 of it is another aspect of those soils.

12 Q. In your experience, is there a way to write  
13 into the bidding specifications for a lot of  
14 this work? Specifications that you have seen  
15 pass level muster to make sure you are getting  
16 good people out there to do this and that, in  
17 addition to your inspections, you're starting  
18 with people who are well experienced, have  
19 been through these kind of things before and  
20 know what in the world they're doing.

21 MR. BOWARD: I am going to let  
22 Geoff comment on that, too. But when I  
23 prepare bid specifications, I have  
24 pre-qualification requirements, a whole form  
25 within the specifications that they have to

1 fill out and be reviewed. So we have that.  
2 Unfortunately, at least in my experience,  
3 there isn't a whole lot more to do because  
4 it's a public bid.

5 MR. RESTAURI: Right.

6 MR. BOWARD: You know, it becomes  
7 difficult because of all -- I'm not an  
8 attorney and not going to claim to understand  
9 the law, but I know there are legal  
10 ramifications with looking at these bids and  
11 who you accept.

12 MR. RESTAURI: Right. That's why  
13 I said if it passes legal muster.

14 BY MR. RESTAURI:

15 Q. With respect to the Walmart project, is there  
16 anything else that went wrong at Walmart that  
17 you are able to tell us we should look out for  
18 here? We understand the ownership interests  
19 and the failure to take the slope  
20 measurements. Anything else we learned or  
21 should have learned from Walmart that we can  
22 take into account and try to make sure it  
23 doesn't repeat here?

24 A. I'm not intimately involved with that project.  
25 Maybe Joe and his partner, Doug Beitko, who

1           was going to testify but couldn't, is what  
2           we've just explained is the inspection side.  
3           I don't know if Kilbuck had a geotechnical on  
4           board and whether they were relying on the  
5           design and the developer's expertise only  
6           which was a bad thing. They should have had  
7           their own inspectors and their own  
8           professionals checking that out to make sure  
9           that the borings were done deep enough and to  
10          question the potential slides.

11                       MR. BOWARD: I provide  
12          geotechnical engineering consulting for many  
13          municipalities as a geotechnical engineer --  
14          Moon Township, Edgeworth Borough, Monroeville,  
15          several others. So when these municipalities  
16          receive a geotechnical report for a  
17          development, even for somebody putting an  
18          addition onto their house, it's usually sent  
19          to me for review. And on behalf of that  
20          particular municipality, I will review it and  
21          send a letter of concerns that should be  
22          addressed.

23                       It would behoove the  
24          municipalities to undertake the same effort to  
25          have a civil engineer and geotechnical

1 engineer on board to review documents coming  
2 out for the school system. I can add that.

3 MR. RESTAURI: Okay. Shift gears.  
4 No, let's stay on this a minute.

5 Was it your testimony previously  
6 that there is really no place in the Quaker  
7 Valley School District that would produce less  
8 of a risk than the site selected here for  
9 landslides?

10 MR. BOWARD: Red bed strata are  
11 very prolific throughout this area. On the  
12 lower laying regions next to the river, for  
13 instance, you're not going to encounter red  
14 beds, but you have a whole host of other  
15 problems that limit what you can do. There  
16 isn't a lot of land on the lower levels. In  
17 other words, bases of some of the valleys and  
18 along the river that appear to be, at least  
19 based on what the school district asked us to  
20 review, appear to be adequate nature for this  
21 development. I will let Geoff add to that.

22 MR. PHILLIPS: Yeah, when you get  
23 down to what is seemingly flatter ground, now  
24 you have flood problems to deal with. So you  
25 have different other major concerns that

1           happen there.

2                       What happens is you are at the low  
3 point so that's where everything is eroded  
4 down to so now you have very soft soil so your  
5 foundations become very deep and expensive.  
6 So you sort of trade one extreme to the other.  
7 But there still is some risk in any  
8 development that you do. Mapping wise,  
9 throughout this whole district and Leet  
10 Township, Leetsdale, Edgeworth, it's all got  
11 the same stability problems no matter where  
12 you develop.

13                      MR. RESTAURI: And is that true no  
14 matter how high you are? For instance, I  
15 understand the difference between being at the  
16 top of the hill and being down in the valley.  
17 But what if you found a spot where you were  
18 midway in the hill, not as high? Would that  
19 make any difference?

20                      MR. BOWARD: Yeah, in other words,  
21 if this site was to just develop the very  
22 narrow piece at the top of the hillside which  
23 probably would just be a few acres and not get  
24 out into the slopes whatsoever, then your  
25 chance of causing a landslide, of course, is

1 reduced. There is still a chance of a  
2 landslide. You are not going to get away from  
3 that.

4 In fact, you will have more chance  
5 because the fill areas we are putting in here,  
6 we are actually increasing the stability of  
7 those areas. So those areas will be more  
8 stable than they are now. But you would be so  
9 limited on the area you could actually  
10 develop, you can't get a nice pad to develop  
11 when you try to do something like that.

12 MR. PHILLIPS: Plus, if you  
13 develop midway down a slope in order to have a  
14 buildable area, you are going to have both a  
15 cut and fill so you will be cutting back into  
16 the material that potentially is unstable. So  
17 you are going to have to put a lot of  
18 retaining walls and the same thing on the  
19 lower side, you are going to be filling out so  
20 we're on top of the hill, so we're taking some  
21 of the top off. But in order to build the  
22 roads and some of the other ancillary  
23 development parts, they're built on the slope  
24 so we need to stabilize the slopes.

25 MR. BOWARD: And, actually, cut

1 slopes are often worse than fill slopes with  
2 respect to stability cause you can't really  
3 engineer them. You are cutting into original  
4 ground and you are leaving the original ground  
5 exposed. So what measures can you take? You  
6 make flatter slopes. Instead of two-to-one,  
7 make it three-to-one, four-to-one,  
8 five-to-one, and you build retaining walls to  
9 try to stabilize them. So cut slopes can be a  
10 problem.

11 So if you build at the base of a  
12 valley where there is no red bed directly  
13 under the school, if you have to -- if you cut  
14 into the sides of the valley, the flanks of  
15 the valley, you are increasing the risks of  
16 landslides occurring and falling down into the  
17 developable area.

18 MR. RESTAURI: I want to shift  
19 just a second to blasting and drainage. The  
20 blasting that was discussed this morning,  
21 worst case, give us the worst case of how many  
22 people or how many properties would be  
23 impacted by noise and debris. Are we talking  
24 about hundreds, just several who are important  
25 of course nearby? I want an order of

1 magnitude here.

2 MR. BOWARD: If blasting was  
3 required, which we don't hundred percent know  
4 yet, that would be part of the analysis. I  
5 can't give you a figure right now. That would  
6 require engineering analysis.

7 But as I said before, blasting is  
8 regulated by a lot of codes. There are  
9 certain blasting delays, certain charge  
10 weights, and when blasting is done it not like  
11 you see on TV. If you do it properly, if you  
12 do it properly for a development like this,  
13 there is no fly rock. If it's done properly,  
14 what they do is drill a grid pattern of holes  
15 into the ground, into the bedrock. Cause you  
16 can excavate away the soil, grid pattern of  
17 holes that goes so deep and they put charges  
18 in each hole and the charges depend on a lot  
19 of factors--the depth of the hole, the amount  
20 of material you are trying to remove in one  
21 plain, the properties of the rock, and then  
22 it's all set off at once. Typically, if it's  
23 done right, what you see is the ground do this  
24 (indicating). That's it.

25 The idea is you are breaking up



1 the surface several feet, anywhere from two to  
2 five, six feet of the rock. So now they can  
3 go in with the equipment and scrape it off.  
4 It's all broken up.

5 That's what the intent is. The  
6 intent is not to go into like you see some  
7 quarry on the Gunsmoke show where they are  
8 blowing rock and rock is flying everywhere and  
9 people are running behind trees. If that  
10 happens, that is not properly done, not in  
11 accordance with regulation. If there is an  
12 engineer involved, he is negligent.

13 MR. RESTAURI: And the blasting,  
14 even as you described it, I assume, please  
15 tell me if I am wrong, it's your professional  
16 opinion that would not itself cause  
17 landslides?

18 MR. BOWARD: If it's done  
19 properly, it would not cause landslides. But  
20 you have to analyze it in advance to  
21 understand the vibrations you're going to get  
22 from it and understand the properties of the  
23 soils around it. If it's improperly done,  
24 yeah, it can cause landslides.

25 MR. RESTAURI: And how often in

1           your career, if ever, have you seen it  
2           improperly done such that landslides were  
3           caused?

4                       MR. BOWARD:  None of the projects  
5           I have been involved with, but I am aware that  
6           along the parkway, the Ikea store, they had to  
7           blast rock there.  And this is what I heard  
8           through the grapevine, the engineering  
9           profession, but they had done something wrong  
10          there, not sure what it was, but there was fly  
11          rock that flew out on the parkway and hit some  
12          cars.

13                      So they did something wrong there.  
14          I'm not sure what it was.  You should not have  
15          fly rock ever.  It should just lift the ground  
16          up, you see the ground lift up maybe a foot or  
17          two and come right back down and it's broken  
18          the rock up.

19                      MR. RESTAURI:  What could be done  
20          to maximally ensure that it happens the right  
21          way and not the wrong way?  It's a Joe event,  
22          not an Ikea event.

23                      MR. BOWARD:  You do the test  
24          drilling, you do the geotechnical analysis,  
25          you run through the computations to understand

1           what you need in the way of charge weight and  
2           so forth.

3                       MR. RESTAURI:  Joe, who is the  
4           "you" do that?  It's not the contractor or is  
5           it the contractor and --

6                       MR. BOWARD:  Contractor can do it,  
7           but he has to engage a professional engineer  
8           to do it on his behalf.  If that happens, I  
9           would recommend whatever that professional  
10          engineer comes up with, it be given to say the  
11          municipality engineer, geotechnical engineer  
12          to review to make sure it's adequate and do  
13          what I said, review it and potentially put a  
14          letter out with concerns or comments that have  
15          to be addressed.

16                      But, yeah, it has to be done by a  
17          professional.  And the contractor would  
18          actually do the work, the means and methods.  
19          And the engineer is on site while that's being  
20          done, typically, unless you are out in the  
21          middle of a corn field and there is nothing  
22          around.  But seismographs would be included in  
23          that and you would get the data from those  
24          seismographs and correlate that with what  
25          computations they have given you.

1                   MR. RESTAURI: Anything from you,  
2                   Geoff, on that?

3                   MR. PHILLIPS: Yeah, as far as the  
4                   blasting, they are not blowing out a huge  
5                   amount of rock all at once. They'll go in and  
6                   drill down only so far, crack that up with a  
7                   blast, remove it and then do more drilling if  
8                   need be. They are not trying to do it all in  
9                   one shot.

10                  MR. BOWARD: Done in layers.

11                  MR. PHILLIPS: It's done in  
12                  layers. The same way that we put the soil  
13                  back, it's done in layers so you are not  
14                  having to use heavy charges and not having any  
15                  material fly away.

16                  MR. RESTAURI: On to drainage.  
17                  Worst case, how many people, houses,  
18                  properties are impacted if this is done wrong?

19                  MR. PHILLIPS: Well, may I just  
20                  explain if the initial intent of the drainage  
21                  for this project -- again, unless I get hired  
22                  to do it -- but any civil engineer, to meet  
23                  the requirements and what the site plan is  
24                  showing you, is to collect all the water,  
25                  surface water, meaning rain water that hits

1 the ground, up on top, filter it through bio  
2 retention gardens, and what those are are  
3 little puddle areas where it allows the  
4 sediment and the oils and greases to settle  
5 out and filter the water, then it will go into  
6 a storm pipe system which will be taken over  
7 to the west to a detention facility to be  
8 built near Camp Meeting Road. And that  
9 detention facility will hold the water and  
10 release it at a certain rate so that it does  
11 not flood out the areas down below. And  
12 that's designed up to a hundred and including  
13 a hundred year storm.

14 The other thing, too, as John  
15 testified, that because there is no detention  
16 facility for all of the development that has  
17 taken place to the west, northwest of Camp  
18 Meeting Road which is the Quaker Heights I  
19 think they call that, that water comes running  
20 down through there and underneath Camp Meeting  
21 Road and down along Camp Meeting Road, that  
22 that would be taken into account in the  
23 calculations so that it can be minimized, the  
24 amount of water that is coming there, down  
25 towards Leetsdale Borough, whether it's piped

1 from there down to the highway and along the  
2 highway and obviously gets into right near  
3 where Little Sewickley Creek enters the Ohio  
4 River.

5 The other thing, too, in my due  
6 diligence meetings with Allegheny  
7 Conservation, they have taken grants, gotten  
8 grants to improve water sheds in Allegheny  
9 County, and the director and assistants and  
10 their staff we met with said they would be  
11 willing to be a part of that in this  
12 particular case. So as far as any of the  
13 surface water, it's going to get collected,  
14 it's going to be directed to a proper  
15 facility, it's going to be controlled with a  
16 proper facility and released so that it does  
17 not overload the system that is already in  
18 place that goes underneath Beaver and all the  
19 way down.

20 The biggest part of that is that  
21 all those sediments that are coming down along  
22 Camp Meeting are clogging that system up now.  
23 It's not open to its full capacity. The other  
24 factor is down at 60 where the main highway  
25 is, the water has to make a 90 degree turn and

1           that's not efficient. In other words, what  
2           happens there is you lose a lot of the water  
3           energy and what happens is it actually slows  
4           it down and impacts it so much.

5                        So if we went in there and  
6           reconfigured that location to get the water to  
7           go in a more smooth path around, that would be  
8           another factor that we would analyze. That's  
9           only the surface. The subsurface we are  
10          talking about is the other part Joe was  
11          mentioning is we were -- all of the slopes  
12          that are being proposed will have subsurface  
13          drains along it and they would then be  
14          connected into this detention facility to take  
15          it and properly handle that water.

16                       There's also been -- in our  
17          investigative due diligence report we  
18          identified numerous springs. There are  
19          springs up there. So those would be taken  
20          into account as far as the collection of some  
21          of those to improve drainage from going down  
22          and off of the property.

23                       By us sort of putting a cap of  
24          pavement on top of the hill and collecting  
25          that storm water, that ground water that's

1 coming out, we're actually cutting off some of  
2 that source. Because that's how ground water  
3 is, is it's the surface water percolating down  
4 to an impervious layer such as a rock layer,  
5 the clay layer, as Mr. Michael mentioned, and  
6 that's where then the water comes out.

7 So those are some of the measures  
8 that can be designed in this project to  
9 minimize drainage to the downstream and off  
10 property, down gradient and other properties  
11 off site.

12 MR. RESTAURI: What's the margin  
13 of error or margin of risk that some of your  
14 assumptions and analyses are incorrect?

15 MR. PHILLIPS: In what respect?

16 MR. RESTAURI: That you are making  
17 underlying assumptions about mother nature,  
18 about --

19 MR. PHILLIPS: Well, any  
20 calculation, as Joe mentioned, there is  
21 software that is used, you are trying to put  
22 numbers to mother nature. And therefore  
23 that's the science we have and that's the  
24 engineering we have that's available. So  
25 that's the best that's available that we can



1           utilize to minimize the risk.

2                   MR. RESTAURI:  So the state of the  
3           art is telling you that if you do these things  
4           or the school district does these things,  
5           there will be minimal risk of something  
6           different happening than what you've  
7           described.

8                   MR. PHILLIPS:  Correct.  But that  
9           doesn't mean mother nature doesn't throw us a  
10          curve ball.  Just like these storms.  We don't  
11          have just a normal rain anymore.  It comes in  
12          and dumps.

13                   MR. RESTAURI:  You raise an  
14          interesting point.  So I remember -- used to  
15          be when I was a much, much younger man, we  
16          talked about the hundred year rain.  Now I  
17          don't know what we're up to.

18                   MR. PHILLIPS:  Well, if you ask  
19          news people, you know, a lot of times they  
20          were saying that was a hundred year storm,  
21          that was a hundred year storm.  Now you see  
22          that was a 99.9 year storm because the hundred  
23          year storm happened last year, now we have  
24          another one this year.

25                   MR. RESTAURI:  So what do you

1 design to, the hundred year storm now or 500  
2 year storm?

3 MR. PHILLIPS: You design to the  
4 hundred year storm for developments on these  
5 sites. The only reason you would go to the  
6 500 is that we were down in the flood plain  
7 and, therefore, you would need to know what  
8 level that 500 would be.

9 MR. RESTAURI: And that's standard  
10 practice?

11 MR. PHILLIPS: Yes.

12 MR. RESTAURI: In your profession?

13 MR. PHILLIPS: Uh-huh.

14 MR. RESTAURI: Is there anything  
15 else about the blasting or the surface or  
16 subsurface drainage that would manage the risk  
17 in addition to the things you already said?

18 MR. PHILLIPS: I can't think of  
19 any at the time, but if we do, we will let you  
20 know.

21 MR. RESTAURI: Yes, that would be  
22 much appreciated. Mr. Chairman, I think I'm  
23 done. It might be a good time to break and  
24 then come back. If I have anything, I can ask  
25 a question or two more but then we go to you.

1                   MR. SOSTER: We will be back at  
2                   1:30? Is that enough time?

3                   MR. RESTAURI: 1:30 should be  
4                   good. Thank you very much.

5                   (LUNCHEON RECESS TAKEN)

6                   MR. RESTAURI: I have no further  
7                   questions. Mr. Soster?

8   - - -

9   EXAMINATION (of Mr. Phillips)

10    - - -

11           BY MR. SOSTER:

12           Q.    What we will do now, Geoff, let the board ask  
13                   and we will take them one at a time. And I'm  
14                   going to direct my questions to you, but I'd  
15                   like Joe to answer, too, in sequence.

16           A.    Okay.

17           Q.    You were the site engineer, you're a civil  
18                   engineer. You've done other school issues  
19                   such as site preparation or is this the first  
20                   time you have done this?

21           A.    No, I have done other schools in the area.  
22                   McKeesport, Gateway school, I've done some  
23                   over in Ohio, Macedonia, Nardonia Hills.

24           Q.    Do you do residential site development?

25           A.    Yes, I have.

1 Q. For developers?

2 A. Yes, I have.

3 Q. Did I hear your testimony that it's your  
4 opinion that the site development for  
5 residential homes would take the same amount  
6 of work as this school?

7 A. Yes, it should, but working with developers,  
8 they're always trying to minimize costs so  
9 they will try to do the minimum. They would  
10 not spend the amount of money on borings that  
11 we have done to determine what actually needs  
12 to be there.

13 Q. And again, I know you don't have the benefit  
14 of analysis, but if I could ask the question,  
15 you can say that you can't answer it. You're  
16 stating that the site development for this  
17 school, to build housing with AAA zoning  
18 housing, would take the same -- you would  
19 remove the colluvial soils, you'd go down to  
20 bedrock which would be the same site  
21 development?

22 A. I'll let Joe answer that.

23 MR. BOWARD: If it was a  
24 residential development -- of course, it  
25 depends how the layout is going to be in the

1 end, as to what they would do rating wise.  
2 But let's just say they were going to have  
3 similar layout, at least with respect to the  
4 ground surface, not the buildings.

5 My experience -- and I am an  
6 expert witness on several cases right now  
7 where landslides have happened in residential  
8 developments, I'm an expert, is that the  
9 developers typically do few to no test borings  
10 up front and they don't typically take all the  
11 effort to remove the colluvial soils from red  
12 bed materials.

13 They typically -- and this is a  
14 sad state of affairs -- but they typically  
15 just build the fill embankments and keep their  
16 fingers crossed nothing happens because they  
17 don't want to spend the money up front. They  
18 figure if anything slides they will find out  
19 about it later and deal with it later.

20 MR. DePAUL: That's hearsay,  
21 speculative, irrelevant. There are a lot of  
22 things with that testimony that are  
23 objectionable. I won't continue to object  
24 every time but what developers do and how they  
25 spend and how they develop property, it

1 bordered on slanderous for him to say that  
2 about other developers. Without them being  
3 here, without them testifying, it's hearsay at  
4 minimum, it's outside his scope of expertise  
5 at a minimum and could potentially be a bunch  
6 of other things. So I want to put that on the  
7 record.

8 MR. BOWARD: Can I answer that?  
9 It's not outside my scope of expertise. I'm  
10 actually engaged as an expert witness on  
11 multiple landslides and property that's been  
12 prepared by developers. What I said is what  
13 I've seen multiple times, not just now, but  
14 over the past 30 plus years that I have been  
15 doing this type of work.

16 Not all developers do this, of  
17 course. There are some that will do more.  
18 Not all developers. I am not going to make a  
19 blanket statement. But the cases I've been  
20 working on, I have been seeing a lot of that.

21 BY MR. SOSTER:

22 Q. Again, answer to the best of your ability. I  
23 am asking a question that might require a lot  
24 of analysis. If developed as a residential  
25 site, does it propose any more or less risk

1           than being developed as a school site?

2       A.   Again, it would come to the amount of effort  
3           put in the engineering pre-development as far  
4           as drilling the site, as far as investigating  
5           any of the water sources.  Because most of the  
6           time the houses, depending how big they are, a  
7           lot of them will be on the outside of the  
8           ridge and the roads usually run down the  
9           middle of the ridge so a lot of those houses  
10          are being built on the fill material that has  
11          sloughed down over the years.  And if you  
12          don't see what's underneath those for the  
13          foundations, the potential is much greater  
14          than the expense that's being put forth in the  
15          effort of engineering here to design this  
16          school.

17       Q.   You're familiar with this site in terms of  
18          grading and slopes.  Are the slopes that are  
19          proposed in the site development for the  
20          school greater or lesser than the slopes that  
21          exist there now?

22       A.   You mean in height or length?

23       Q.   Look at your walls, your stepped walls.  
24          Again, I know there is detailed design.  But  
25          those stepped walls, can you give me -- I mean

1           are they --

2       A.   Well, they are not stepped walls.  You are  
3           talking about the lines there.  Those are the  
4           contours.  Those are ten foot contours.  So  
5           it's actually just a slope.

6       Q.   Are there any stepped walls that will be part  
7           of this construction?

8       A.   At this time, they are not showing any.

9       Q.   Any retaining walls that will be part of this  
10          construction?

11      A.   There possibly could be.  At this time, I  
12          don't see any on the drawing.

13      Q.   In your role as a civil engineer, Geoff, do  
14          you work with municipalities?

15      A.   Yes.

16      Q.   Do you provide land use guidance in  
17          development of zoning and those types of  
18          matters?

19      A.   Yes, we have been municipal engineers for  
20          several municipalities.

21      Q.   I'm not a zoning expert but this special  
22          exemption that was given for this site --  
23          again a question that might take some  
24          analysis, but I'd like your opinion -- if you  
25          were developing zoning for this township,



1           would you have -- knowing what you know now,  
2           would you have allowed the special exemption  
3           for a school on this site?

4       A.   Again, you have to go back to when -- I use  
5           the word forefathers -- put forth wanting to  
6           have zoning in this municipality -- that I do  
7           not see any difference in characteristics of  
8           the east side of Camp Meeting Road versus the  
9           west side of Camp Meeting Road.  It's unusual  
10          to see where the road, they've designated --  
11          you have designated AA on your west side which  
12          allows a school but on the east side it's a  
13          special exception.

14                 Whether that was due to one of the  
15                 forefathers lived on that side of the road or  
16                 the other side of the road is usually what  
17                 transpired.  As far as -- the reason I think  
18                 the special exception was put in is to make  
19                 sure that -- the word "school" can be a broad  
20                 term.  You can have a diesel mechanic school,  
21                 you can have, you know, some kind of aircraft  
22                 engineering school.

23       Q.   You can have an environmental school.

24       A.   Correct.  So you can have a lot of types of  
25          schools and therefore they wanted -- the

1 township would like to have a say on what kind  
2 of school goes there. But because they have  
3 already identified that it's a special  
4 exception, it means they are going to allow it  
5 to be there. So this is a high school which  
6 is a normal high school of a public school,  
7 it's not private, that it's nothing out of the  
8 ordinary.

9 MR. RESTAURI: Mr. DePaul, I hear  
10 your objection.

11 MR. DePAUL: He's giving a legal  
12 opinion, clearly. Your question asked that.  
13 So I don't want to disrespect your question,  
14 but I just want to protect the record. So  
15 it's nothing against your question, it's just  
16 protection of the record in the event this  
17 case is appealed. I objected to that answer,  
18 move to strike. It's a legal opinion.  
19 Obviously, we disagree with it.

20 MR. RESTAURI: It went a little  
21 far, Geoff. Do you want to try again?

22 BY MR. SOSTER:

23 Q. My question was meant relating to land use,  
24 the land use issue. Does a municipality  
25 arbitrarily say we will give a special

1 exemption to AAA zoning, allow the school to  
2 be built there and not even define a school,  
3 what a school is? And my question was really,  
4 if you do that kind of work for  
5 municipalities, is that the way most  
6 municipalities work, that without expert  
7 opinion, where they look at the land and say,  
8 maybe we shouldn't build a steel mill here,  
9 maybe we shouldn't build a school here?

10 A. What normally is in the definitions, they will  
11 have in the definitions the various school  
12 types and they'll have in there -- such as you  
13 may put industrial here but they have  
14 stipulated that only this type of industrial.  
15 Cause there is new technology and new things.

16 Like I was involved in I-79 industrial  
17 park. That's, quote, light industrial. So  
18 it's not a heavy industrial. It's where, you  
19 know, Pepsi Cola is in there, there is a  
20 distribution center. So that's where they had  
21 definitions that you could put industrial but  
22 it was under a certain classification.

23 Here, the ordinance does not  
24 specifically -- I think was mentioned earlier  
25 you have certain definitions that are very

1 detailed but a lot of definitions are very  
2 broad. So it makes it difficult to determine.

3 MR. DePAUL: Same objection.

4 MR. RESTAURI: Noted.

5 BY MR. SOSTER:

6 Q. And as a comment from my own approach, I  
7 understand from prior testimony that because  
8 it's special exemption doesn't mean it's  
9 automatically stamped allowed. There are  
10 certain conditions that have to be met.

11 A. Correct.

12 Q. You have worked in other school site  
13 development. Comparatively, does this school  
14 site development present risks that other  
15 school site developments you have don't  
16 present?

17 A. Given I'm in Western PA and most of the  
18 schools -- one is in Western PA. Gateway had  
19 the same situation. There was red beds there.  
20 Same way down at McKeesport, we had the red  
21 beds involved in that. Pretty much most of  
22 the buildings are founded on rock which,  
23 whether they can reach it by normal footings,  
24 so it's within five to six feet deep or they  
25 have had to go deeper where it's 10 to 15

1 feet, they put caissons or driven piles.

2 Q. And your expert report is based on the site --  
3 or the facilities are shown on that exhibit.

4 A. That is correct.

5 Q. No other facilities are considered outside of  
6 that exhibit.

7 A. Correct. We were just given that site plan  
8 that you have before you here.

9 Q. So any facilities that may be added in the  
10 future would require --

11 A. Additional engineering, correct, and review.

12 Q. Did you review alternative sites in Leet  
13 Township?

14 A. Yes. We initially looked at, preliminary,  
15 Health South. They approached them and were  
16 not able to get an agreement with them to  
17 allow us access to the property to actually do  
18 some due diligence.

19 We did look at a combination of  
20 properties that are bordered in Leet which is  
21 called the Scrabbit property in conjunction  
22 with another piece of property that's in Bell  
23 Acres. There we did some preliminary due  
24 diligence. We did not get to drilling there.  
25 We did look outside of Leet Township at

1 several properties.

2 Q. How does this particular 108 acre site for a  
3 school, including all its related buildings,  
4 create a substantial detriment to Leet  
5 Township that would not be created if the  
6 school serving the same number of kids, same  
7 facility, same faculty, same amenities, same  
8 price tag be constructed somewhere else in the  
9 AAA zoning district in Leet Township?

10 A. It would not.

11 Q. You're stating that all these other sites  
12 present the same --

13 A. Present the same thing. And given the fact  
14 that just on the west side of Camp Meeting  
15 Road is all zoned for school so you would have  
16 the same traffic, the same impacts.

17 MR. DePAUL: Vince, I object  
18 again. This is outside of the scope of his  
19 expertise for what he's been offered. Lack of  
20 foundation. Calls for hearsay.

21 MR. RESTAURI: Noted.

22 MR. DePAUL: To the extent there  
23 are any additional -- calls for legal  
24 conclusion, too. So to the extent -- I don't  
25 want to interrupt, continue to interrupt the

1 questions. If it's okay with you, can I make  
2 that a continuing objection to the extent that  
3 line is pursued?

4 MR. RESTAURI: Yes, it's  
5 continuing. Thank you.

6 MR. SOSTER: In answer to the  
7 question I just asked -- it's not just related  
8 to the civil work, it's related to the  
9 geotechnical work -- if I can repeat the  
10 question, Joe. Or did you hear the question?

11 MR. BOWARD: Why don't you repeat  
12 the question?

13 MR. SOSTER: Relative to  
14 geotechnical work that's required for this  
15 facility and the risks that are proposed from  
16 this site, how does this particular 108 acre  
17 site for a school, including its related  
18 buildings, create a substantial detriment to  
19 Leet Township that would not be created if a  
20 school serving the same number of students,  
21 faculty and administration, with the same  
22 amenities, same price tag, were located  
23 somewhere else in the AAA zoning district in  
24 Leet Township?

25 MR. BOWARD: Okay, somewhere else

1 is pretty broad. But we did look at some of  
2 the sites that Geoff had mentioned that we  
3 were instructed to look at by the district.  
4 And the sites that we looked at all had red  
5 bed strata problems, every single one of them.  
6 So we had to deal with that no matter which  
7 site we would go to.

8 The other sites -- I don't think  
9 we drove test borings in any of them, but we  
10 did the geologic review, we went that far to  
11 understand the general geology. We had gone  
12 that far with the Tuhl site, too. They all  
13 had similar problems.

14 BY MR. SOSTER:

15 Q. So maybe in a more simple way, of the sites  
16 you had looked at, civil, geotechnical, there  
17 is no site that you saw that could fit the  
18 situation better for a school than this site?

19 A. Well, better is determining a lot of factors.

20 Q. To be frank, spending 21 million dollars for  
21 site development.

22 A. I'll clarify. That 21 was for the 50 acres of  
23 buildable area. That's not what they are  
24 spending here now.

25 Q. Let me interrupt you, Geoff. Maybe that's



1           stated wrong. It's not an economic issue,  
2           although maybe economic issues are part of our  
3           land use. We have to determine how we do  
4           that.

5                        But relative to risk to public, safety  
6           of the public, welfare of Leet Township -- and  
7           let's not use the word public, let's use Leet  
8           Township -- of any of the sites you saw from a  
9           geotechnical and a civil perspective were  
10          better sites than this site. And again,  
11          better is qualitative, but I'm looking to  
12          safety, fewer landslides, less likelihood of  
13          landslides, runoff, deforestation, those types  
14          of issues.

15        A. All the sites we looked at was going to have  
16        to remove trees cause they were larger  
17        properties that had vegetation on them. They  
18        weren't flat, open fields. All of them, as  
19        Joe mentioned, had red beds so we were going  
20        to have to get involved in significant site  
21        work, meaning excavation and moving of dirt to  
22        create a buildable area. So all of the sites  
23        that we looked at were similar in impact.

24        Q. Did you look at sites outside of Leet  
25        Township?

- 1 A. Yes, we did.
- 2 Q. Did you look at the existing site of the  
3 school?
- 4 A. Yes, we did.
- 5 Q. And that site is not --
- 6 A. The existing site --
- 7 Q. From a land use perspective.
- 8 A. -- from a land use perspective, is not the  
9 landslide issues, but there they have springs  
10 and ground water at the current high school  
11 that are coming out of the hillside there  
12 below Beaver Road and down where the football  
13 stadium at the lower level, that's all in the  
14 flood plain.
- 15 Q. And the flood plain cannot be mitigated?
- 16 A. The only way you can mitigate the flood plain  
17 is they would have to buy other property to  
18 offset what they filled in along Sewickley  
19 Creek. You have to prove to the Army Corps of  
20 Engineers you will not raise the water level.
- 21 Q. This may be going outside of what is expected  
22 of me as a Zoning Hearing Board, and I want to  
23 assure you that I look at everything from a  
24 Zoning Hearing Board perspective, land use.  
25 Could it lower the flood plain? You could not

1 lower the flood plain?

2 A. That's what I meant. You would have to have  
3 all the property to lower, to offset what you  
4 were filling in.

5 Q. I'm not saying filling. I'm saying construct  
6 downstream facility that lowers the flood  
7 plain.

8 A. Well, the problem is --

9 Q. How do you know Beaver dam is not --

10 A. It's an Army Corps of Engineer dam.

11 Q. How do you know there is not a Beaver dam  
12 downstream that's causing the flood plain?

13 A. Because we looked at the flood insurance  
14 reports where they calculated to determine the  
15 flood elevations for the mapping, for flood  
16 insurance, and the water level that is  
17 basically covering the ball field is generated  
18 by the dam that's downstream by the Army Corps  
19 of Engineers.

20 So the height of that dam, it's called  
21 back water. It is backing the water up and a  
22 hundred year storm and 500 year storm onto the  
23 ball field.

24 MR. SOSTER: For the moment, I am  
25 completed. Chuck?



1 Q. But there is quite a few of the homes that are  
2 built on the edge and none of them have  
3 slipped off the side yet. I don't know if  
4 there has been anything you guys would know  
5 of. Not downstream. We all know there is a  
6 big problem in Leetsdale. But for the Quaker  
7 Heights houses, any problem with them?

8 A. Not aware of any. I've driven back there  
9 cause I wanted to find out where all the water  
10 was coming from. I do know there is an  
11 erosion channel that's from all the storm  
12 water that's being dumped, I don't know whose  
13 property it is, to get down to Camp Meeting.  
14 So it's a pretty deep gully there.

15 Q. I just wondered if, you know, you guys have  
16 done a lot of things and you're going to  
17 continued to do a lot of things if you get  
18 hired, that kind of stuff wasn't going on back  
19 in the day?

20 A. Not in that time period.

21 Q. Were either of yens in on the Baden Walmart  
22 built at the top of the hill?

23 A. I was not.

24 MR. BOWARD: I was not an engineer  
25 on it, but I had been engaged by that

1           municipality to take a look at the  
2           geotechnical aspects of it, on behalf of the  
3           municipality, like I talked about before.

4                   MR. SOMAN: Was there the red clay  
5           and the ugly dirt involved?

6                   MR. BOWARD: As I recall, not to  
7           the extent we're talking about here at this  
8           site. There were some landslide concerns, but  
9           the engineers on that project had addressed  
10          that to my satisfaction.

11       BY MR. SOMAN:

12       Q.   Okay, good. If you go in the property, you're  
13           going down the driveway that we're talking  
14           about now, the one that goes straight back,  
15           this side was pasture, kind of nice. The  
16           other side is like a cliff. So what's the  
17           plan for that?

18       A.   Well, the road is going to go down along the  
19           top but then if you get further back where the  
20           Walker house is now, that was a field there.  
21           It was sort of a crown field. They leveled  
22           that off to bring that house up.

23                   So that's where the school is going is  
24           in that area, the building. So there will be  
25           a road coming out along the area that you

1 defined.

2 Q. Speaking of the home, which is an historical  
3 home, my thought is when there was a guy from  
4 the school that said, oh, we can tear that  
5 down and it's even written on the plans to be  
6 demolished --

7 A. On which plans?

8 Q. It's on this. Existing home to be demolished.

9 A. For that? I know the front ones have  
10 demolished. It's on that one? Okay.

11 Q. All right, so with Mr. Tuhl, with his amount  
12 of attorneys, engineers, anybody else on the  
13 planet that he can afford to do and he had to  
14 move it, he wasn't allowed to tear it down.  
15 What makes us think that you can tear it down?  
16 I mean I know it's not a geotechnical  
17 question, but it's on your prints.

18 MR. BOWARD: All I can say is that  
19 I don't think we had a lot of input on that.  
20 That was a decision by others. That wasn't  
21 our decision. Is that correct, Geoff?

22 MR. PHILLIPS: Only thing I can  
23 say is I have been involved preliminary wise  
24 up to this point with the project, and I know  
25 the architect has been directed to look at the

1 house and how to incorporate it into the new  
2 high school. How it's going to be done, that  
3 has yet to be determined. What is to be done,  
4 you know, that's still to be determined.

5 MR. BOWARD: That's beyond us.

6 BY MR. SOMAN:

7 Q. I know Mr. Tuhl said -- when they said he  
8 can't tear it down, he said, okay, we'll move  
9 it. Well, can you imagine the cost of that?  
10 They didn't even crack a piece of plaster.  
11 It's amazing.

12 A. It was 1.2 million dollars to move it.

13 Q. I would have done it for 1.1.

14 A. They had to have lunch. It took a while.

15 Q. All right, you have Freedom High School up on  
16 the hill. These new schools are on a hill.  
17 But it is up on a hill, beautiful school.  
18 However, I think it was about five years ago,  
19 maybe a little more, all of a sudden they had  
20 a sink hole in their field. How do we prevent  
21 that? How do you prevent that?

22 A. Well, I'd have to know what the cause is,  
23 whether it was an old well. I have had  
24 instances where property has been developed on  
25 farmland and all of a sudden a hole shows up



1           and what it is, it's been an old stone well  
2           that just got covered over with a piece of  
3           plywood and dirt got put over it and nobody  
4           knew it was there. Again, to truly answer  
5           your question, when site work starts and we  
6           open up the ground, we will be able to see things  
7           like that.

8        Q.   Hopefully.

9        A.   Yes.

10                       MR. BOWARD:  Yeah, Geoff is  
11           exactly right, that we'd have to know the  
12           cause of it, and we don't because there is  
13           more than one possible cause.  Could be an old  
14           well, like Geoff said.  It could be an  
15           underground sewer line that the joint opened  
16           up and you got piping, they call it piping in  
17           the fine soils and a sink hole.  It's probably  
18           not mine subsidence cause there are really no  
19           deep mines in this particular area, not this  
20           one area.

21                       The other type of thing that can  
22           happen, which is not going to happen here,  
23           would be karstik conditions, where you get  
24           sink holes from limestone.  But we really  
25           didn't find any limestone at the site so

1           that's very unlikely that would occur here.

2                         So I guess the factors would most  
3 likely be the well situation that Geoff  
4 pointed out or a sewer line for some reason  
5 opening and you get a sink hole. But you have  
6 to find the cause first.

7                         MR. SOMAN: Okay, thank you.

8 Also, in 1918, I think -- there is a  
9 cornerstone on the high school. Did they have  
10 geotechnical reports when they built that?  
11 Because it looks like a place that could slide  
12 off the hill down to the bottom.

13                         MR. BOWARD: Geotechnical  
14 engineering did not become something of a  
15 profession until the 1930's. There were a  
16 couple of engineers, Tersagi and Cassandra,  
17 that were involved in turning geotechnical  
18 engineering into more of a science. So 1918  
19 there has been little to no geotechnical  
20 engineering or geologic considerations.

21                         MR. SOMAN: Maybe a dividing rod.  
22 But it didn't slide off the hill. And the  
23 hill is a steep hill. I sled rided down on a  
24 cafeteria tray and it didn't end well for  
25 anybody. I know that.

1 BY MR. SOMAN:

2 Q. Blasting. From what I know and have seen,  
3 don't they have these blankets?

4 A. They do use those. They are mesh steel  
5 blankets they will lay down if they think  
6 there possibly could be any fragments.

7 Q. Okay, because I actually watched it blow up  
8 and it was boom, I was expecting a big boom.  
9 I was very disappointed.

10 A. That's another safety factor they can put on  
11 that can be required.

12 Q. So let's say everything is a go and then you  
13 guys are going to go in and do a hundred more  
14 holes. What if you find out it's bad?

15 A. When you say bad, meaning --

16 Q. Meaning you shouldn't build a school here.

17 A. I will let Joe answer.

18 MR. BOWARD: We would advise the  
19 school district of our findings. We're  
20 engineers and there is actually a code of  
21 ethics for engineers and in that code of  
22 ethics we have to provide all the information,  
23 relevant information to our client. We can't  
24 -- we have to tell them what we found. The  
25 ultimate decision will be theirs, but we have

1 to make sure they are making an educated  
2 decision.

3 MR. SOMAN: Okay. I think that's  
4 all I have for right now. We will turn the  
5 mic over. Thank you.

6 MR. SOSTER: Before I give it to  
7 Dave, I have one. At this stage, are you  
8 aware of any need for applying for a dam  
9 permit? And I'm thinking of your retaining  
10 ponds.

11 MR. PHILLIPS: Only need a dam  
12 permit if we have more than 12 foot from the  
13 crest to the bottom.

14 MR. SOSTER: Rather than an  
15 excavation?

16 MR. PHILLIPS: Correct. It has to  
17 be from the ground surface to the final finish  
18 elevation of the top of the dam. There is a  
19 permit required by dam safety at 12 feet. If  
20 it's over 12 feet, then it has to be  
21 permitted.

22 MR. SOSTER: And at this time you  
23 are not aware of needing any?

24 MR. PHILLIPS: That's correct.  
25 We're not proposing anything.

1 MR. SOSTER: Dave?

2 - - -

3 EXAMINATION (of Mr. Phillips)

4 - - -

5 BY MR. KOVACS:

6 Q. You talk about the sandstone cap at the top?

7 A. Yes.

8 Q. So let's go down a little bit, like where he  
9 just talked about at the detention basin.

10 What's the makeup of the soil underneath that?

11 A. That's where the colluvium soils -- that's  
12 where the soils have slid and that's where we  
13 determined up to 40 feet thick. So that will  
14 all get excavated out. Down to rock.

15 Q. So you will take that all the way down to  
16 bedrock?

17 A. Correct.

18 MR. BOWARD: Yes.

19 MR. PHILLIPS: So when we dig all  
20 that out, instead of putting it back and  
21 building it 40 feet back up, that's where  
22 we're going to put the detention facility.

23 BY MR. KOVACS:

24 Q. And do we have a capacity on the detention  
25 basin?

1       A. We have not done any design. So I can't give  
2       you that answer right now.

3                   MR. KOVACS: That's all I got.

4                   MR. RESTAURI: Are there any  
5       members of the audience in support of the  
6       application who wish to ask questions of the  
7       witness?

8                   MR. MILLER: My name is Daniel  
9       Miller. I'm representing a group of  
10      homeowners in support of the petition. I have  
11      just a couple questions, and they largely  
12      relate to some of the testimony you've  
13      provided regarding how the plan --

14                  MR. RESTAURI: Excuse me, Dan.  
15      You're actually kind of doing redirect of  
16      these guys, right?

17                  MR. MILLER: Do you want me to  
18      wait?

19                  MR. RESTAURI: I think what we  
20      probably want to do is --

21                  MR. DePAUL: He declined and  
22      changed his mind after the lunch break.

23                  MR. RESTAURI: He asked me and I  
24      did say -- there is no objection?

25                  MR. GRAMC: None.

1 MR. RESTAURI: Please go ahead.

2

- - -

3

JOSEPH BOWARD,

4

having been first duly sworn, was examined and  
5 deposed as follows:

5

6

- - -

7

CROSS-EXAMINATION

8

BY MR. MILLER:

9

Q. Thanks, I appreciate it. So I had some  
10 follow-up questions about some of the comments  
11 and testimony you provided regarding the  
12 changes to the slope compared to how they are  
13 now and regarding drainage. So I'm going to  
14 go through some questions about each topic.

15

So in your initial assessments after the  
16 cores were taken, after the analysis was made,  
17 I understand that you determined that the  
18 property is generally metastable, right, that  
19 is, around that 1.0 score that you described,  
20 correct?

21

A. Correct.

22

Q. And is that general throughout the area? Are  
23 there some points within the property that are  
24 higher and lower and they generally average to  
25 one? Or how does that work?

25

1       A.   That's about right.  We average it sort of  
2           one.  There are some areas a little bit more  
3           stable, there are some areas that are in  
4           active movement.  I mean maybe not this  
5           moment, but every time it rains it moves a  
6           little bit more.  That would be indicating  
7           that it's one or sometimes falling below one.  
8           So it would be more or less an average.

9       Q.   Gotcha.  As I understand it, based on your  
10          testimony, at that one point, at that one  
11          point score, when there are conditions that  
12          push toward instability, there can be further  
13          movement, right?  Like the sloughs that you  
14          identified already, correct?

15      A.   Yes.

16      Q.   So the area is already in a sort of  
17          transitional state where it's not as stable as  
18          what your planned outcome for the areas would  
19          be that involve remediation of fill?

20      A.   Where we're putting the fill embankments,  
21          we're going to be improving the factor safety,  
22          obviously.  Where we are not doing any earth  
23          work, the factor of safety is probably going  
24          to remain about the same.  The only thing that  
25          it may help it is the fact that Geoff is



1            putting these storm water facilities in, it's  
2            probably going to cut up a lot of the runoff,  
3            the storm water runoff to the slope areas we  
4            are not doing work on which should make them a  
5            little bit more stable because we are catching  
6            all that water.

7            Right now, it's just raining or snow is  
8            melting and it's just running down the slopes  
9            and into the soil mantel. So the fact we are  
10          putting the storm water system there probably  
11          makes those slopes a little more stable.

12          Q.    Actually, the storm water would be my second  
13          point. I wanted to combine them now that you  
14          have addressed that.

15          So not only is the general average  
16          stability score for the property increasing,  
17          right, because you're taking the property  
18          where the fill embankments are and making it  
19          more stable, bringing it up to 1.5 which would  
20          raise the average generally, correct?

21          A.    Yeah, that's correct.

22          Q.    And then the remediation of the storm water  
23          which will address not only some existing  
24          issues around the erosion near the Camp  
25          Meeting Road and any additional runoff that's

1           incurred because of the construction, that  
2           would help with the stability of the property  
3           as well, correct?

4       A.    It certainly will, at least in some areas,  
5           yes.

6       Q.    Okay. Can you walk me through the benefits  
7           that would be incurred by both the property  
8           and by nearby properties as a result of those  
9           two issues?

10      A.    Well, the properties down gradient, in other  
11           words, below the school in elevation, they are  
12           at some risk of landslides encroaching into  
13           the property.

14      Q.    Right now.

15      A.    Right now, yes. And by modifying these slopes  
16           with fill embankments and so forth, that risk  
17           will be substantially mitigated.

18                   The same is true of the properties that  
19           we are not trying to fix the condition of the  
20           slope or leaving it pretty much the way it is.  
21           Since we are controlling the storm water which  
22           is really basically uncontrolled on this  
23           property now, it should help those slopes as  
24           well.

25                   Slope stability is affected by four

1 major factors. One is putting surcharge on  
2 top of the slope such as fill, uncontrolled,  
3 so you are not doing it in a way that's going  
4 to be engineered. Another way is cutting at  
5 the top of the slope, taking the slope top  
6 away which we're not doing here.

7 The third one is water. If you increase  
8 water to a slope, it's going to reduce the  
9 stability because water reduces the shear  
10 strength of the soils. Since we are taking  
11 the water away, the slopes will have more of a  
12 chance to dry out.

13 And then the third way would be  
14 earthquakes or uncontrolled blasting. We are  
15 looking at if they have to blast here, I don't  
16 know that's really been determined yet, but if  
17 they do, it would be controlled blasting. So  
18 it would be -- earthquakes are uncontrolled  
19 vibrations, vibrations of adequate magnitude  
20 that could cause instability.

21 Q. Okay, and I think my last question is going to  
22 be this. Do you often find on the projects  
23 you work on, especially projects like this  
24 involving public works, that properties nearby  
25 have incurred fewer risks or run into fewer

1 issues because of the different steps related  
2 to slope adjustment, to storm water mitigation  
3 and so on that are taken as part of these  
4 construction projects?

5 A. Well, the projects where I have seen it done  
6 properly, yeah, it does mitigate the risk. As  
7 I said earlier, I'm involved as an expert and  
8 have been on projects where things were not  
9 done properly and those result in sort of  
10 detrimental conditions. But the idea is to  
11 properly engineer it up front and to be sure  
12 it's implemented correctly by the contractors  
13 as monitored in the field and documented in  
14 the field by the engineers.

15 Q. Okay, well that response generates one  
16 follow-up. So thinking about all of the  
17 testing, inspection and preparatory steps that  
18 have been taken today, understanding that  
19 there is not a final plan yet, would you say  
20 that any of the projects you've worked on have  
21 required additional inspection, testing or  
22 preparation, or is this sort of the premium  
23 standard, if you will, in terms of those  
24 efforts?

25 A. We don't really have a premium standard. We

1           have a standard of care and, regardless of the  
2           project, we recommend that standard of care be  
3           implemented which entails and includes  
4           construction phase monitoring documentation,  
5           observation, evaluation by the engineers, in  
6           my case the geotechnical engineer, to verify  
7           that they are constructing the slope in  
8           accordance with our recommendations and the  
9           design.

10        Q.    Gotcha.  Maybe I miscommunicated.  I'm  
11           interested in the efforts undertaken to date.  
12           So compared to other projects like private  
13           development, it sounded like, based on your  
14           experience, that the testing with the cores,  
15           the analysis with regard to the slope, those  
16           are steps that may not be undertaken with  
17           regard to every private development.  So would  
18           you say that the standard of care met for this  
19           development meets or exceeds anything that you  
20           performed for other projects?

21                       MR. DePAUL:  Same objection that I  
22           have lodged in this line of questioning  
23           before.  The witness' opinion regarding  
24           private development is outside of the scope of  
25           his opinion and constitutes hearsay.  His

1           experience with private development is not an  
2           issue here.

3                           He previously made some surprising  
4           testimony about what he's experienced dealing  
5           with private developers. I think that's out  
6           of the scope, it's hearsay. There is a lack  
7           of foundation.

8                           MR. RESTAURI: It's noted. You  
9           may answer.

10       BY MR. MILLER:

11       Q. You may answer.

12       A. I think the best response is there is a  
13       standard of care that's followed. We never  
14       say we're going to do above and beyond the  
15       standard of care cause that's undefined.  
16       First of all, what does that even mean?

17                           Second of all, quite frankly, our  
18       professional liability insurance carrier said  
19       if we ever make that statement, we're  
20       bareback, they are not going to cover us. We  
21       can't say that. Cause all we can do as  
22       engineers is follow standard of care.

23                           So we are following that, attempting to  
24       follow that on this. We haven't gotten to the  
25       design phase yet. On some private

1           developments that I have experienced with  
2           that, I have reviewed as an expert witness,  
3           the standard of care that I'm familiar with  
4           and I would use, and I think the other  
5           geotechnical engineers that I know would use,  
6           I didn't find that. I didn't see that in the  
7           documentation provided to me.

8       Q.    Okay, thank you.

9                       MR. RESTAURI: All right, any  
10           members of the public who are not lawyers and  
11           who are not represented by counsel who would  
12           like to ask questions of either of the  
13           witnesses, whether it's supporting or opposing  
14           the application? If you are present in the  
15           room, please raise your hand.

16                      Okay, I see two hands. Three.  
17           Four. Okay, four. All right. Let's start at  
18           the far left. Yes, ma'am?

19                      MS. GATESMAN: I'm Kim Gatesman,  
20           Edgeworth Borough, and thanks, Mr. Phillips  
21           and Mr. Boward.

22

- - -

23

EXAMINATION (of Mr. Phillips)

24

- - -

25       BY MS. GATESMAN:

- 1 Q. So to follow up on a few of the other  
2 questions which led to do all the other  
3 properties that you investigated before,  
4 saying this one is the best option we can get  
5 out of our other options, do all of them have  
6 more down slope neighbors than this site right  
7 here?
- 8 A. I would say they probably have similar amounts  
9 because in Leet Township the ones that we did  
10 look at did have neighbors that were down  
11 slope. As far as Bell Acres, there was the  
12 same.
- 13 Q. Same total number of houses?
- 14 A. Not the same total number of houses, no.
- 15 Q. So do they have less or more?
- 16 A. They all had less.
- 17 Q. Okay. Does the current existing high school  
18 on its location, does it have any houses where  
19 people sleep in them at night below the  
20 current existing high school?
- 21 A. No, because the high school owns the property  
22 all the way to the highway.
- 23 Q. So there were other properties that didn't  
24 have any down slope neighbors, other than  
25 tennis courts --



1 A. The one you just mentioned, the current high  
2 school. All the other ones did have houses.

3 Q. But less houses.

4 A. Correct.

5 Q. So you mentioned during the average risk, when  
6 we are all done developing this site, to get  
7 to our nice little flat plateau, is going to  
8 be 1.5 which is better than what it is right  
9 now. But at any time during this development  
10 does the average risk go below 1.0 or does it  
11 have to wait until we are completely done to  
12 be 1.5 while this whole risk thing is going  
13 on?

14 A. Well, during construction the contractor is  
15 bound by OSHA and they have regulations that  
16 the factor of safety is determined. For  
17 instance, if they are doing trenching, they  
18 have to have trench boxes. If they have to  
19 excavate such as this 40 foot deep colluvium  
20 material, that they are required to maintain  
21 certain slopes if they can't do it at  
22 one-to-one because the material won't hold up.  
23 If not, they have to go in and put temporary  
24 shoring in. So there is other methods that  
25 they would institute during the construction

1 to shore up the slope that they were digging  
2 next to.

3 Q. That's OSHA.

4 A. Correct.

5 Q. So that's for the people working, right? OSHA  
6 covers the safety of the workers while doing  
7 this site.

8 A. Well, it's also the public because the slopes  
9 are above the public.

10 Q. So what are the standards for OSHA? Does it  
11 have to be greater than or equal to the  
12 existing risk it has? Or is it I have to be  
13 at the risk level of 1.5 while I'm doing it?

14 A. No, it's determined by what OSHA has  
15 determined is a safe working environment to be  
16 able to construct, okay. So they have  
17 regulations for trenching. You know, you  
18 can't just dig a trench down eight feet and  
19 have a person there without having shoring.

20 Q. I understand working conditions. I'm just  
21 saying, in the protection of the neighborhood  
22 that are down slope from there, does OSHA  
23 specifically address homeowners versus working  
24 conditions?

25 MR. BOWARD: I'm going to go

1           beyond OSHA here cause they do tend to protect  
2           the workers on sites. What is typically done  
3           is when you get to the design phase, we have  
4           to look at the temporary slopes during  
5           excavation to make sure they are going to be  
6           safe. We actually run slope stability  
7           analyses on those. The factor of safety is  
8           not typically 1.5, it is typically 1.2 or 1.3  
9           for the temporary excavation. And that may  
10          entail going in and some of these slopes,  
11          laying them back, and flatter grades before  
12          you even begin the excavation at the tow of  
13          the slope.

14                       Often these fill embankment  
15          excavations, it's not unusual for them  
16          sometimes to start basically from the top  
17          down, to lay back the slope, get down to the  
18          tow and then begin your excavation at the tow  
19          to prepare for the foundation for that fill  
20          embankment. So measures have to be  
21          implemented by engineers to verify that the  
22          temporary slopes are going be stable during  
23          that time period. Then they begin to work on  
24          the placement of the fill and so forth and  
25          eventually get back to a factor safety of 1.5

1           which has never been achieved out there.

2       BY MS. GATESMAN:

3       Q.   Okay.  So in your prior testimony you said  
4           that you had made the due diligence report  
5           prior to the purchase of this particular site  
6           to the school board, correct?

7       A.   Correct.  We did -- again, we evaluated the  
8           properties that were identified and the due  
9           diligence that was asked of us to do on this  
10          particular property, we gave them all the  
11          plusses and minuses and the school board then  
12          made a decision of whether to buy or not buy.

13      Q.   So when you were doing that -- cause I've done  
14          a commercial project or so before and normally  
15          I made sure my zoning was in place before I  
16          purchased the property.  So did you recommend  
17          any contingencies prior to the purchase, like  
18          making sure that the zoning was approved or  
19          that you completed all the tests so we would  
20          know what the sandstone cap is like right now  
21          or a whole bunch of other things which no one  
22          knows?

23      A.   Well, we did do borings before they purchased  
24          it.  And as far as the zoning, we made them  
25          aware that special exception was for a school

1           here.

2           Q. Right, but did you suggest you seriously need  
3           to have some contingencies before you purchase  
4           this property that should be met prior to  
5           purchasing the property?

6           A. Well, that's more of a legal question on real  
7           estate. I mean I don't know what  
8           contingencies I, as an engineer, would be for  
9           zoning.

10          Q. Okay, that's fine.

11                        You mentioned Wood Spur as an access  
12           point to the site. Will that road be enhanced  
13           to provide a satisfy emergency egress, ingress  
14           options since Camp Meeting is our only way  
15           onto this thing normally?

16          A. My understanding is, no, that will not be  
17           improved, it will remain there because that  
18           whole area is in Edgeworth and is going to  
19           basically be staying natural vegetation.  
20           There is no development proposed there. So as  
21           far as access in and out of the site, it's at  
22           the two locations that are shown on Camp  
23           Meeting Road.

24          Q. But say in case of an emergency, something we  
25           really have to get everybody off of that

1           thing, we can't use that at all to get  
2           students off of?

3       A.    They can walk it, yes.

4       Q.    So in the initial designs, when you were  
5            recommending -- and I understand this part is  
6            the school board asking you to do this -- that  
7            you are supposed to get 50 relatively flat  
8            acres.  And then there was a design done by  
9            EBH Engineers which had a lot more than is  
10           currently on this plan.  It had tennis courts  
11           in Edgeworth and a whole bunch of other stuff.

12                    So what happened between what is there  
13                    and what everybody thought was going to be  
14                    there in 2019?

15       A.    Well, when I started on this project, the  
16            school board basically had directed the real  
17            estate broker to find property to build a  
18            whole campus, meaning they wanted to pull all  
19            of their ancillary sports fields, all stadium,  
20            the school, the administration.  There was  
21            even talk of putting a bus garage.  That was  
22            part of the 50 acres, basically everything all  
23            in one site.  Because they were proposing for  
24            the next hundred years for this district in  
25            the meetings that they had.

1           What happened then was we did our due  
2 diligence, they purchased the property, they  
3 hired an architect that you mentioned to come  
4 in and start doing some preliminary layouts  
5 such as what Mr. Thomas' company did, but they  
6 were still being under those -- all those  
7 amenities.

8           Then, finally, they put a price to all  
9 those amenities. That's what changed the  
10 school board to say, we don't have enough  
11 money to do all those amenities, we really  
12 just need a new high school.

13           So Mr. Thomas was directed to just do a  
14 layout for the high school, and I did see he  
15 put a tennis court on there and to have  
16 physical education they have to have an area,  
17 a field to do that, and that's my  
18 understanding what the field is. So price  
19 wise, that's what's on it at this time.

20       Q. Since you said it got downgraded and he was  
21 given the directive to just build a new  
22 school, at that point, even after we've now  
23 purchased the property, was there any  
24 discussion -- did the school board ever ask  
25 you to go back to the current location and

1           just say, hey, could we put a new high school  
2           there and give you that directive?

3       A.   Well, we had looked at that in the initial  
4           directive because the previous superintendent  
5           I guess wanted to reuse the old high school.  
6           And so the first study that was done at EBH --  
7           well, she was at Eckles. It was Cassie, the  
8           architect, she was with Eckles at the time who  
9           did the other two school expansions in the  
10          district, to evaluate that. The situation is  
11          the old high school pretty much has been built  
12          and expanded over the years and has multiple  
13          different kind of foundations, has multiple  
14          issues.

15       Q.   That's not my question. I'm talking about  
16           tear it down and a brand new thing treated as  
17           if it's a brand new site, there is no high  
18           school there, it doesn't exist, it's poof,  
19           gone.

20       A.   Well, the factor that involved that was -- and  
21           I was only hearing what was in the meetings --  
22           where are you going to put the kids in order  
23           to do that? So that was a factor that they  
24           were looking at.

25       Q.   So the answer, though, is nobody really went



1 back after we now downgraded the plan.

2 A. Correct. They did not go back. They  
3 initially looked at it, moved on, and then did  
4 not come back. To my understanding.

5 Q. Which is fine. Because the children moving  
6 part is a whole school board issue. My oldest  
7 son went to Anthony Wayne twice. He got  
8 middle school and got elementary school. So  
9 this whole rehousing humans -- and we just did  
10 -- zoom is not something insurmountable that  
11 we can't figure out where to put people. It's  
12 not a real good reason.

13 So you were one of the people who was  
14 giving the tours along with Charlie and the  
15 new architect of the site which was wonderful.  
16 John Thomas had mentioned that the storm water  
17 was going to be over designed. So how much  
18 extra capacity in percentage wise would it be  
19 able to handle above the minimum amount of a  
20 hundred year flood?

21 So say that's maybe four thousand --  
22 let's do it in thousand gallons or percentage  
23 wise. Is it going to be 30 percent more extra  
24 water we can deal with or is it ten or five?

25 A. Well, there is a lot of factors involved and

1           some of it mentioned with existing system is  
2           that we have to analyze the capacity of what  
3           pipes are there and what amount of water can  
4           go down through that system safely, then  
5           determine how much water is coming down from  
6           Quaker Heights and then whatever is left below  
7           that, we will have to design the facility to  
8           handle that.

9                        So that I can't tell you right now  
10           whether it's 30 percent bigger or 20 percent  
11           bigger, because of that. But what would  
12           basically happen is there wouldn't be any more  
13           water coming down and into the culvert there  
14           at Beaver Road than the capacity of that pipe.

15                       So, in other words, you're only allowing  
16           a certain amount of water that can go in  
17           there. If Quaker Heights has say -- say you  
18           are allowed ten, Quaker Heights provides six  
19           of it, then we are only allowed to release  
20           four.

21       Q.   Okay, so then we're going to have to hold back  
22           extra water somewhere to make sure --

23       A.   We will hold it back there.

24       Q.   But when we're designing it, if we're holding  
25           it back, what amount extra are we going to

- 1 hold back? Percentage wise.
- 2 A. It maybe 20, it maybe 30 percent.
- 3 Q. It wouldn't go as low as five. It would be at  
4 least significant, a decent chunk, right?
- 5 A. Yeah, again, because of the nature that Quaker  
6 Heights hasn't done any detention. And it may  
7 be that, as you brought up, there is an issue  
8 over there that maybe, in conjunction with the  
9 community, we work with something over there  
10 on the other side of the road.
- 11 Q. So then on the tour you mentioned what would  
12 happen during a micro burst, dramatic increase  
13 of all these impervious surfaces?
- 14 A. The water would flow into the storm system and  
15 be discharged into the detention facility.
- 16 Q. But initially you said you couldn't plan for  
17 what would happen during a micro burst because  
18 it's huge amounts of rain. So now we can  
19 address micro bursts, handling all the rain?
- 20 A. Again, the facility will be designed for the  
21 hundred year storm. Now whether that micro  
22 burst is a hundred year storm or it's only a  
23 90 year storm --
- 24 Q. Let's make it a 200 year storm. Can we handle  
25 200 year storms?

1 A. No, because it's beyond any standards, beyond  
2 even the capacity of anything along the road,  
3 the highway. So, in other words, it's a  
4 standard that only if you are designing a  
5 bridge that you would design to. For volume  
6 of water.

7 Q. Okay, I'm pretty sure I saw 200 year floods.  
8 There are no detention levels higher than one  
9 hundred year flood.

10 A. That's pretty much all the standards since  
11 1972 that I have been involved in.

12 Q. I need to research.

13 A. Now dams will go to 500. If it's a dam, a  
14 large facility that has emplacements, they will  
15 go to 500 year storms for their emergency  
16 spill waste.

17 Q. Okay. So in the 21 to 23 million dollars  
18 that's just the rough grade, doesn't include  
19 the utilities, but you said it might be lower  
20 because the site is smaller, but does that  
21 include potentially blasting -- I'm talking,  
22 worst case scenario, the very worst -- what's  
23 a ballpark to get the utilities and blasting  
24 and all colluvium soil and everything bad  
25 happens when you do the rest of those core

1 borings?

2 A. Well, the 21 to 23 million I mentioned was the  
3 estimate to do bulk grading to get the 50  
4 acres, okay. That's not what's being here.  
5 The grading that's being done here, if I  
6 remember correctly, John Thomas indicated  
7 it's --

8 Q. 27, I think.

9 A. I thought it was around 12. Oh, six? Anyway,  
10 it's a much lower number so it's not that  
11 high. But that's only a construction side of  
12 it. The engineering and the design and all  
13 that, that's a separate number.

14 Q. Okay. I have some more at my seat but if you  
15 are looking at the site and imagine that this  
16 high school and stuff isn't here, doesn't the  
17 topography of the Leet stuff look a lot like  
18 the topography of the Edgeworth part? Like we  
19 have a flat area and some steep slopes and it  
20 surrounds these little flat areas.

21 A. Yeah, along the ridges there were fields  
22 during prior and fairly flat areas and then  
23 it's steep towards the north, steeper on that  
24 side than it is to the south towards  
25 Leetsdale.

1 Q. But the Edgeworth side, when we are at the  
2 plateau, kind of resembles the Leet side, like  
3 the slopes, and we have a top flat area.

4 A. Yeah, I can agree to that.

5 Q. They would be kind of sister and brother or  
6 stepsisters or something.

7 A. Okay.

8 Q. Half related. So in Edgeworth, which is where  
9 I live, and I have some of the same type of  
10 topography on the part that I wasn't allowed  
11 to develop, that's the conservation overlay  
12 district which is having a slope greater than  
13 25 percent. So what's the normal slope before  
14 development on the Leet-ish part? Like is it  
15 greater than 25 percent or less than 25  
16 percent?

17 A. On the south side, it's less. On the north  
18 side, there are some areas that are at 25  
19 percent.

20 Q. So we had a lot of restrictions. Like you can  
21 have a max impervious surface of 20 percent  
22 but if you are in conservation overlay  
23 district, then it's half of that which is ten  
24 percent. So what's the total impervious  
25 surface there --

- 1 A. Being shown?
- 2 Q. Uh-huh.
- 3 A. I think it's in the neighborhood of eight  
4 acres.
- 5 Q. Okay, and then related to things that could  
6 make this more stable, in the road design  
7 manuals that I was reading, for our types of  
8 soil, clay and whatever, the minimum standard  
9 is a two-to-one slope and they say especially  
10 depending if you are adding water or some  
11 other stuff, you can go as high as  
12 three-to-one. So isn't a three-to-one slope  
13 more stable than a two-to-one slope?
- 14 A. It depends on how you put it in, yeah. The  
15 flatter the slope --
- 16 Q. It's done exactly like the engineers said it  
17 was to be done.
- 18 A. Well, if you build them the same way, they are  
19 both the same stability because you have the  
20 safety factor that's the same. Which means  
21 that the material is one and a half times more  
22 stable than before it would lose its  
23 stability.
- 24 Q. It's exactly the same as my slope gets  
25 dramatically increased and 50 percent less?

1 The risk is the same?

2 MR. BOWARD: If you are talking  
3 the same conditions and you were to run a  
4 sub-stability analysis on two-to-one slope  
5 compared to three-to-one slope, your  
6 three-to-one slope safety factor will be  
7 higher.

8 MS. GATESMAN: So there is one  
9 more thing to make that slope safer would be a  
10 three-to-one slope.

11 MR. BOWARD: It would increase the  
12 factor of safety, but there are other  
13 limitations on this property such as available  
14 space. If you go too flat a slope, you will  
15 not have enough space at the top and flat area  
16 to provide for the roadway and some of the  
17 other amenities, the parking lots, the school  
18 building and so forth. Cause when you make it  
19 a flatter slope, you will lose less space on  
20 the top.

21 MS. GATESMAN: Right.

22 MR. BOWARD: A two-to-one slope is  
23 quite a normal standard of care slope for a  
24 fill embankment. So that's not unusual.  
25 Going steeper than two-to-one, there are



1 potential problems with that.

2 MS. GATESMAN: But considering  
3 it's in the AAA residential area and the way  
4 it is right now, there is technically three  
5 homes, a footer, a house that moved and there  
6 is an entrance house. If you were to leave it  
7 as AAA, you wouldn't have to do any of that,  
8 correct? If you just leave it.

9 MR. BOWARD: I'm not sure what the  
10 question is. Can you answer, Geoff?

11 BY MS. GATESMAN:

12 Q. If it was residential and you only allowed two  
13 more houses or something.

14 A. But you still have areas that are going to  
15 slide naturally because they've already shown  
16 signs that they are going to slide on the  
17 slope. On this property.

18 Q. Do you have like a plan like on the QV site  
19 that shows all the little different spots that  
20 it's been sliding?

21 A. No, we don't.

22 Q. Can we get one?

23 A. I don't know. That's a legal question.

24 MR. GRAMC: If it doesn't exist.

25 MR. PHILLIPS: We didn't create

1           it. We have observed these areas.

2       BY MS. GATESMAN:

3       Q.   If you observed, you probably documented. So  
4           even if there is not a map, cause you are an  
5           engineer, you like to document stuff, right?

6       A.   Well, we have made the locations, yeah, we  
7           have located them. They are on the Edgeworth  
8           piece, I can tell you that.

9       Q.   It can just say southeast corner, two spots.

10      A.   Again, we can put them on a drawing but they  
11           won't be all of them because it's an  
12           interpretation -- you know, does this lump  
13           look like it was manmade or is this lump where  
14           it slid, you know, you'd would have to get a  
15           geotechnical engineer to evaluate it.

16      Q.   You could just have one that said "no notation  
17           of concern" or something that says something.

18      A.   Okay.

19      Q.   In the application, the addendum, it's to get  
20           the special exception that was filed and I  
21           don't know if you can -- it was written and it  
22           says the existing site is not functional, the  
23           on site parking is extremely limited with a  
24           majority of the parking located 50 vertical  
25           feet below the entrance to the building, the

1 vertical distance and parking areas is  
2 difficult to achieve 88 compliance.

3 In some of the prior notes that I got  
4 from a right to know request, they discussed  
5 having a parking garage. So can't we make a  
6 parking garage with an elevator that goes 50  
7 feet? Isn't that possible?

8 A. It's possible.

9 Q. Which would eliminate that one particular  
10 justification. The site -- when you said you  
11 did the initial evaluation at 625 Beaver  
12 Street, it's pretty much all the documentation  
13 shows an addition. Has anybody ever looked at  
14 it moving -- you can go almost to 25 feet to  
15 Beaver by just moving it.

16 A. Well, again, I don't think that level was  
17 done. It was different circumstances. Again,  
18 the scope of the work at the time when the  
19 architect looked at that school was for a lot  
20 much larger. I think it was 200 some  
21 thousand, 220,000.

22 Q. 232,000.

23 A. Square feet. Where that came from, I don't  
24 know. I was given that was the area they  
25 needed. But that's what they were working

1 with which now I think the school building is  
2 about 165, 170. So that's a significant  
3 difference.

4 Q. So that explains why nothing ever was done  
5 there.

6 A. None that I am aware of.

7 Q. Then when you did the original geotechnical  
8 report on November 6, 2013, we talked a lot  
9 about red beds, colluvium soil, but in that  
10 particular report it doesn't have any mention  
11 of red beds at 625 Beaver Street.

12 A. No, there is actually coal below that and  
13 there was a lot of colluvial -- in other  
14 words, deposits, everything had run off the  
15 hill so it was uncontrolled fill was what was  
16 under the borings that were done there.

17 Q. And their bedrock on existing site is between  
18 741 and 744 which is a much shorter  
19 differential between bedrock and where that  
20 thing is located there. I think -- have you  
21 met with any of the consultants -- like after  
22 reading the Kilbuck 14 four pages, they have a  
23 lot of different things, that you should meet  
24 with the DEP prior to even designing and  
25 getting a blasting permit and all that kind of

1           stuff. Have you met with those, like DCNR and  
2           DEP?

3       A. Well, we met with Allegheny Conservation, we  
4       met with Allegheny Public Works for the  
5       highway, for the road, and as far as DEP, the  
6       only DEP permit that is required for this  
7       construction, because we would be disturbing  
8       more than one acre, is an MPDS permit but that  
9       goes through Allegheny Conservation. They  
10      review that on behalf of DEP.

11     Q. And do they have any, since the report came  
12     out, any additional requirements when dealing  
13     on sites like this? Cause the commission, the  
14     joint tack force that created that report had  
15     a bunch of advice but I don't know if it ever  
16     made it into the guidelines.

17     A. Not that I'm aware of. I know DEP is in the  
18     process of revising their manual for  
19     construction, but it hasn't been published  
20     yet.

21     Q. That's all I've got. Thank you.

22                   MR. RESTAURI: Thank you very  
23     much. Ms. Cavaliere, think we should take a  
24     break? It's 2:52. Let's be back at 3:10,  
25     please.

1 (RECESS TAKEN)

2 MR. RESTAURI: The next person in  
3 the audience who wants to question these two  
4 gentlemen, please. Yes, sir? Doctor.

5 - - -

6 EXAMINATION (of Mr. Boward)

7 - - -

8 BY DR. GARBER:

9 Q. Jordan Garber, 28 Myrtle Hill Road. I live  
10 right across from where the detention ponds  
11 are planned currently. So I just wanted to  
12 back out for a second to the picture here.

13 These three gentlemen have to make a  
14 decision on whether or not to allow this  
15 exception based on very simple criteria of  
16 whether the proposed use of the land would  
17 create a substantially different impact on the  
18 community, meaning not just Leet Township, but  
19 they're speaking and deciding for us who live  
20 here, a substantial impact than if the school  
21 use occurred, the same school on similar land  
22 somewhere else.

23 So you both I think mentioned that you  
24 had some awareness of the school board  
25 considering -- I'm sorry, considering the use

1 of the current site, and I just wanted to ask  
2 some more questions about that. But first, in  
3 terms of what you were talking about with  
4 blasting, the shock waves that extend out from  
5 this dampened loosening of the earth, I assume  
6 they spread out radially and may be modified  
7 by the density of the earth. Is that fair to  
8 say? So some areas may experience more, some  
9 less.

10 But my concern is the area where I live  
11 and the whole of Camp Meeting Road as it  
12 covers that one side of the site, do you have  
13 any concerns about Camp Meeting Road being  
14 affected by blast wave work or other ways that  
15 it may be impacted by earth moving or say the  
16 construction of the ponds, if one of those  
17 were to fail? Do you have any issues,  
18 concerns about the impact of this project on  
19 Camp Meeting Road that way?

20 A. I'll start with the blasting question first.  
21 It's not been fully determined if they're  
22 going to require blasting for the excavation.

23 Q. Let's say it does.

24 A. If it does, then engineering analysis will  
25 have to be performed.

1 Q. Let's say it's done properly, all the  
2 calculations. Is it possible it could be  
3 affected, the substrate?

4 A. If the calculations are correct, if we are  
5 properly monitoring with seismographs, it  
6 should not affect the road system because what  
7 they did is they make sure that the vibrations  
8 -- there is frequency, there is velocities  
9 that are calculated to be sure that they're  
10 not going to affect structures and roadway  
11 systems. So, no, it shouldn't affect it if  
12 it's done properly, if it's engineered  
13 properly and implemented properly by the  
14 contractor.

15 Q. Is there any way that you can put an estimate,  
16 like a probability of one percent or half of  
17 one percent, one-tenth of one percent on there  
18 being some penetration of the substrate of the  
19 road by the shock waves?

20 A. I can't at this time.

21 Q. Even if it's done right, statistically.

22 A. I can't at this time. We would have to run  
23 through the analysis. But when the analysis  
24 is done, it's done in a way that what we call  
25 the peak particle velocity which is the shear



1 wave implemented by the blasting vibrations is  
2 at a value that would not damage roadway  
3 subgrades, roadway surfaces, structures.

4 So it's not a percentage -- I know a lot  
5 of people like to see things done in a  
6 statistical percentage but engineers don't  
7 work that way. So there is really no way to  
8 quantify that very well. But it would require  
9 engineering analysis to be sure that we're  
10 keeping below that peak particle velocity and  
11 it has to be verified in the field as well.

12 Q. As far as the other --

13 A. The other aspects --

14 Q. Including the use of the road for construction  
15 vehicles, the earth moving equipment, the  
16 increased uses for the traffic during the  
17 period of construction and then the increased  
18 traffic volume afterwards.

19 A. That's getting a little bit beyond my  
20 expertise. I'm a geotechnical engineer but I  
21 will talk about -- I may let Geoff talk about  
22 that a little bit. The weight of the trucks,  
23 it will affect the roadway surface but  
24 roadways are designed based on truckloads,  
25 they are not designed based on car loads. So

1 I'm going to let Geoff talk about that.

2 As far as the storm water pond, the  
3 earth work and so forth, that should  
4 ultimately improve the stability of the road  
5 because when we go through our calculations  
6 that determine stability, we have to be sure  
7 that we're buttressing the road slope to make  
8 sure it won't fail into our new storm water  
9 pond and so forth.

10 So that should ultimately -- at least  
11 where we are doing the earth work, that should  
12 ultimately improve the roadway. As Geoff  
13 said, he has had conversations with entities  
14 about the roadway and our hope is that maybe  
15 they will get involved some, too, so we can  
16 even do more on the roadway to try to help  
17 stabilize it. Because right now it's not very  
18 stable.

19 As Geoff mentioned, there is storm water  
20 running alongside the road in uncontrolled  
21 fashion which is causing erosion. Erosion  
22 eroding out the tow of the slope along the  
23 road which is of course reducing the stability  
24 of the slope supporting the road.

25 The development would assist in

1           addressing all those conditions and should  
2           make a better situation for that section of  
3           the roadway. I'm going to let Geoff take it  
4           from there.

5                       MR. PHILLIPS: Yeah, as far as  
6           Camp Meeting Road, it's a county road system  
7           so they have equipment load requirements for  
8           trucks. I think it's 80,000 pounds is the  
9           max. So none of the equipment that will be  
10          brought in here will exceed that capacity to  
11          be brought into the site. As far as --

12                      DR. GARBER: Fully loaded?

13                      MR. PHILLIPS: Correct. Because  
14          that's all the permitting they will be able to  
15          get.

16                      DR. GARBER: So they will have to  
17          restrict themselves.

18                      MR. PHILLIPS: That's correct. In  
19          other words, the state highway has a certain  
20          loading equipment, that they are only allowed  
21          to have certain loads at certain times of the  
22          day, and the county has the same thing.

23                      As far as the stability, as Joe  
24          mentioned, there are already existing areas --  
25          - there is an area shown on the plan there

1           which I'm not quite sure which house was  
2           yours, but you see there is a cross-hatched  
3           area. If I can come over to the plan.

4                     DR. GARBER: I live right there  
5           (indicating).

6                     MR. PHILLIPS: This area right  
7           here is already sliding (indicating). So  
8           we're going to buttress this and improve this  
9           condition here as well as down along here  
10          where we put the driveways in and stuff like  
11          that. So there will be work adjacent to the  
12          road to improve what's there now as we do the  
13          grading. So we are not going to destabilize  
14          --

15                    DR. GARBER: I have been there 31  
16          years and there has been no slide there, but  
17          I'm sure you're both aware of the closure for  
18          several years of the far end of Camp Meeting  
19          Road.

20                    MR. PHILLIPS: Yeah, up near the  
21          ball fields there.

22                    DR. GARBER: So that great plan to  
23          have that community resource was put a kibosh  
24          on that. But we haven't had any slides right  
25          there.

1                   Do you know how much that's going  
2                   to cost and who is going to pay for that?

3                   MR. PHILLIPS: For what?

4                   DR. GARBER: For the buttressing.

5                   MR. PHILLIPS: That's part of the  
6                   school project, to fix that along there,  
7                   because it is destabilized and they don't have  
8                   the money and we need to fix that in order to  
9                   put our road in.

10                   And as far as the pond, it is not  
11                   adjacent to the roadway. In other words,  
12                   there will still be area between it and the  
13                   roadway so that the road is not being impacted  
14                   where the detention facility is.

15                   DR. GARBER: So in terms of these  
16                   detention facilities, despite the best  
17                   engineering and materials and intentions and  
18                   performance standards and all that, they do  
19                   fail occasionally. Is there a -- do you  
20                   calculate what the possibility is of a failure  
21                   of a detention pond.

22                   MR. PHILLIPS: Well, again, as has  
23                   been mentioned before, as long as it is  
24                   constructed according to the design and that  
25                   it is put in -- the soils are all removed --

1           in other words, we're going to remove all the  
2           bad soils there. Where if it wasn't done and  
3           they started building the empilement on top of  
4           those soils, that's why it would fail. We're  
5           not proposing to do that.

6                        As far as the failures, what most  
7           of them that I observed and have evaluated  
8           around the outlet structure is because what  
9           happens is you put a pipe through a dike and  
10          if you don't put the cutoff walls which are 90  
11          degrees to keep water from creeping along  
12          there, that's usually where most of your  
13          failures are.

14                      DR. GARBER: So it's not something  
15          that's in your area of expertise but I'm sure  
16          as engineers, like you do forensic analyses,  
17          you have seen these things fail. To ask this  
18          question of you may be a little bit outside of  
19          your area, but I will anyway.

20                      In this design, the use of this  
21          land will require Camp Meeting Road be open  
22          not just because there are people that live  
23          all the way up it and because there are  
24          housing developments and already a hospital  
25          and already a school and it's a vital access,

1           you know, for all these people including a  
2           hospital. So like the main artery to the  
3           heart, if it fails, things can die.

4                     MR. PHILLIPS: Right.

5                     DR. GARBER: So have you seen  
6           other schools be placed in a location where  
7           there was only one road allowing people in and  
8           out? Because here there is intention to have  
9           two access roads to the school for buses and  
10          cars but it all depends on Camp Meeting Road  
11          which, as you have seen and know has failed  
12          repeatedly, is an imminent of situation that  
13          might fail before you ever get started on the  
14          construction in your experience with schools  
15          built in this region or anywhere.

16                    MR. PHILLIPS: I know of two  
17          schools. Peter -- Penn Trafford, they have  
18          one main entrance in and then at the back of  
19          the football stadium they have an emergency  
20          exit.

21                    DR. GARBER: Where does that go?

22                    MR. PHILLIPS: The emergency exit?

23                    DR. GARBER: A different road than  
24          the neighbors?

25                    MR. PHILLIPS: It goes onto a side

1 street. So it's not a major street, it's a  
2 small side street.

3 DR. GARBER: We don't have  
4 anything like that in this current  
5 configuration.

6 MR. PHILLIPS: No, we have an  
7 entrance at one end and entrance at the other  
8 end. I don't know off the top of my head, but  
9 there are other schools that we have gone --  
10 and my sons have played soccer where that is  
11 the only road they come off of is the main  
12 road because it's in a more farm area and  
13 that's the only access they have.

14 DR. GARBER: So you have an  
15 opinion as to whether that's advisable from a  
16 geotechnical standpoint? Knowing that there  
17 are risks of things happening that might close  
18 that one road, do you recommend to your  
19 clients that they make a provision for there  
20 to be some separate other egress?

21 MR. PHILLIPS: Well, the  
22 regulations require -- the state regulations  
23 are that you have to have two means of ingress  
24 and egress into the school site for emergency  
25 exit. It does not stipulate that that exit or



1 egress, ingress/egress is only on the one main  
2 road.

3 DR. GARBER: So state regulations  
4 as such but as a parent, you know, I worry  
5 that we are putting our children in a  
6 situation where there is jeopardy more than  
7 there needs to be. So with this issue of  
8 failure of the road with buses traveling on  
9 it, it seems like there are some perils  
10 associated with that.

11 But again, you haven't seen a  
12 situation where a road -- I mean a school was  
13 built on a hill top like this. You said you  
14 had seen the one at Freedom that was built on  
15 a hill?

16 MR. PHILLIPS: Well, there was  
17 Penn Trafford and Norwin is another high  
18 school that is built isolated. They only have  
19 one way in and one way out of that facility,  
20 other than they do have a residential street  
21 that it could go over to.

22 Now we looked at this site of  
23 bringing school buses up from Beaver through  
24 the residential zone, but it would require  
25 taking some of the houses because those roads

1 are not wide enough, you know, for school  
2 buses and stuff like that to bring it up  
3 through and around. And the school board  
4 decided they did not want to displace  
5 homeowners with this project.

6 DR. GARBER: I guess some people  
7 know the history better than I. I guess they  
8 bought some houses and sold them.

9 MR. PHILLIPS: That was a previous  
10 superintendent at that time.

11 DR. GARBER: So just in terms of  
12 this question of substantially different  
13 impact, you both talked about the current site  
14 and your experience when they were talking  
15 about this project. Why can't there be a high  
16 school there? There is now, obviously. You  
17 said something about that it doesn't have the  
18 red bed problem but it does have some ground  
19 water and springs.

20 Then there was the issue of the  
21 flood plain and needing to have the  
22 possibility of mitigation. Could you tell us  
23 about mitigation of that? The flood plains.

24 MR. PHILLIPS: Yeah, the flood  
25 plain, what happens is it's like your bathtub.

1 DR. GARBER: I meant the process  
2 of getting mitigation credits and that kind of  
3 thing.

4 MR. PHILLIPS: Mitigation credits?

5 DR. GARBER: Yeah.

6 MR. PHILLIPS: What they require  
7 is you have to do an analysis that you cannot  
8 increase the water surface of the flood. So  
9 anybody adjacent to that area, if we go in and  
10 we fill that area in where the stadium is, it  
11 is now going to push more water over into  
12 other people's properties. So you are not  
13 allowed to do that unless you mitigate by  
14 buying another piece of property adjacent,  
15 excavating it down to that volume that you're  
16 displacing so that you can fill in that area.

17 DR. GARBER: So this would be  
18 necessary if the high school was going to be  
19 built by filling out back towards the --

20 MR. PHILLIPS: Where the stadium  
21 is.

22 DR. GARBER: If they weren't going  
23 to do that, is the flood plain an issue?

24 MR. PHILLIPS: Not if they are not  
25 going to do that. If they try to build where

1 the existing high school is, then there are  
2 other issues that come about such as where are  
3 you going to put the students. And those are  
4 things that the school board has to decide.

5 DR. GARBER: That's a different  
6 kind of impact than the geotechnical impact,  
7 and I won't ask you to comment on it.

8 MR. PHILLIPS: Correct.

9 DR. GARBER: The issue of  
10 substantially different impact by choosing to  
11 go through all of the steps of preparing the  
12 land and buttressing the road and still having  
13 a very fragile road, single lane in each  
14 direction, curved linear and plus exposure to  
15 landslide risk, as low as they might be, if  
16 everything is done perfectly like, you know,  
17 at costs that may be unbearable financially,  
18 the differential impact --

19 MR. PHILLIPS: There is a  
20 difference because now if you are building  
21 down there, you are now impacting all those  
22 residents with the construction and everything  
23 that's there and not up here.

24 DR. GARBER: Construction meaning  
25 noise and congestion?

1                   MR. PHILLIPS: Noise and vehicles  
2                   and everything.

3                   DR. GARBER: So I will be exposed  
4                   to that and all the people up Camp Meeting and  
5                   below. I hear the cheers from the football  
6                   games and soccer games and the PA. Everything  
7                   comes up and echos up from the river. It's  
8                   nice, actually, sometimes to hear the tooting  
9                   of the horns but other times it's noise, like  
10                  you say.

11                  So that's a very different impact  
12                  to say the people who live across the street  
13                  or next to the high school would be affected  
14                  by noise than to say the impact -- the risk of  
15                  buses and cars not being able to get up and  
16                  down the road and lives being disrupted by,  
17                  not just traffic, but other events.

18                  So in terms of the flood plain  
19                  issue which seems to be a sticking point, was  
20                  the initial evaluation -- is it also possible  
21                  to use land that's not on the site as the  
22                  exchange mitigation? Can you have land that's  
23                  not owned by the school right there, they  
24                  could buy it somewhere else?

25                  MR. PHILLIPS: Well, that's what

1 I'm saying. They would have to find other  
2 property that is available near that vicinity,  
3 near Little Sewickley Creek, to be able to  
4 lower it to offset the volume that is being  
5 taken away by filling in where the stadium is.

6 DR. GARBER: So that could be done  
7 locally. Could it be done more distantly?

8 MR. PHILLIPS: No, because you  
9 don't -- the impact is right there. You can't  
10 do it upstream or you can't do it downstream.

11 DR. GARBER: So the property for  
12 mitigation has to be right there?

13 MR. PHILLIPS: Correct.

14 DR. GARBER: If there is no fill  
15 going on, then you don't have to mitigate the  
16 flood plain?

17 MR. PHILLIPS: Correct.

18 DR. GARBER: So I'm not sure if  
19 the members of the Zoning Hearing Board have  
20 thought a lot about the question of this  
21 rejection of the current site because it was  
22 sort of -- we just can't do that cause of this  
23 flood plain problem. You know, I don't know,  
24 but I'd encourage you to think of that more.  
25 If it's not really an issue if construction is

1 done differently.

2 In your experience, both your  
3 senior, well-experienced experts in this field  
4 of supervision of construction, supervision of  
5 the engineering aspects of earth moving and  
6 pond building and such, I wonder what your  
7 opinion is. You said some things that were  
8 sort of impugning the process and the people  
9 involved. Do you think it goes as well as it  
10 should or like say a small town like ours  
11 needs to keep the budget down, that corners  
12 get cut, cost gets shaved and bad things  
13 happen.

14 MR. PHILLIPS: Well, projects of  
15 this size, most of the large projects that  
16 have funding that's public money, usually  
17 there isn't any corners cut and there is  
18 proper supervision and proper inspection and  
19 personnel to do it. It's more, in our  
20 experience, where we've gone on the private  
21 side where you are working for development,  
22 where not necessarily they have gone to the  
23 utmost extremes and also, as we told the board  
24 here, that if they have on staff the  
25 geotechnical and expertise on their side to do

1 the proper review. Because they review the  
2 reports and they do give review letters that  
3 say, okay, well, have you looked at this or  
4 have you looked at that, to make sure that the  
5 risk is minimized on all sides?

6 DR. GARBER: Do you have any way  
7 -- last question, I'm sorry to take so long.

8 MR. RESTAURI: That's fine.

9 DR. GARBER: An estimate of what  
10 percentage of the budget for a project like  
11 this which is inflating up to 120 million  
12 dollars, what percentage of a budget should be  
13 allocated like they do for bonds or surety or  
14 whatever, to that process of appropriate  
15 oversight?

16 MR. PHILLIPS: It's usually 20  
17 percent.

18 DR. GARBER: Twenty percent.  
19 Thank you very much.

20 MR. SOSTER: Could I follow up?  
21 Geoff, on the flood plain issue, is the issue  
22 with Little Sewickley Creek or the Ohio River?

23 MR. PHILLIPS: The backup is from  
24 the Ohio River.

25 MR. SOSTER: It's not Sewickley



1 Creek backing up this way, it's the Ohio River  
2 backing up this way?

3 MR. PHILLIPS: Yeah, the Ohio  
4 River is backing up and pushing back off  
5 Little Sewickley Creek. So the dam that is on  
6 Ohio River is what's dictating what the  
7 elevation is.

8 MR. SOSTER: Have you done the  
9 analysis, I think it's called Heck 2 analysis,  
10 you have to back up water one foot? Has that  
11 just been -- as the gentleman said, is that  
12 something that you just said, well, we can't  
13 do it? Or have you done the analysis that  
14 says if we build this structure in either the  
15 floodway or flood plain, that we are going to  
16 back the water up above allowable?

17 MR. PHILLIPS: We have not run the  
18 calculations. It was based on our experience  
19 of the volume of fill that would have to go in  
20 there. We are not talking ten yards of fill,  
21 we are talking, you know, a hundred yards of  
22 fill. I mean a thousand -- sorry, a hundred  
23 thousand yards of fill would have to go in  
24 there because you have to be 18 inches higher  
25 than the flood plain, okay. So that amount of

1 fill going in there is that much volume that  
2 we would be displacing and water which would  
3 cause the elevation to rise that much.

4 MR. SOSTER: Are all those homes  
5 there and shopping center built in the flood  
6 plain?

7 MR. PHILLIPS: Yes.

8 MR. RESTAURI: Next person,  
9 please, who would like to question?

10 MS. HYJEK: I just have one quick  
11 question. My name is Suzanne Hyjek.

12

- - -

13

EXAMINATION (of Mr. Phillips)

14

- - -

15 BY MS. HYJEK:

16 Q. You talked about on this property you are  
17 building storm drains and retention ponds.  
18 Who is going to maintain the storm drains and  
19 who is going to maintain the retention ponds?

20 A. That will be maintained by the school  
21 district. As part of the NPDS permit that I  
22 mentioned earlier, you have to have a post  
23 construction storm water management plan and  
24 with that you have to have procedures and some  
25 of those procedures are after storm event that

1 the facilities need to be inspected, after  
2 every major event they have to go around and  
3 check all the structures to make sure there is  
4 no garbage in them, that they haven't filled  
5 up with leaves and sediments and stuff, and  
6 that especially with the parking lots in the  
7 wintertime, after they've salted or cindered  
8 or whatever, they are swept and that all  
9 material is cleaned up and properly disposed  
10 of. So there is an ongoing maintenance  
11 program that goes with that permit.

12 Q. So the school will have full responsibility  
13 for all that?

14 A. That is correct.

15 Q. You talked about moving the water lines and  
16 the sewer lines going up to Quaker Heights and  
17 everything.

18 A. Yes.

19 Q. So is the school also paying for that full  
20 cost?

21 A. The waterline is going to be looped around.  
22 As far as the sanitary line, we have to talk  
23 with the sewer authority because right now  
24 there is problems with that sewer line. The  
25 erosion has -- I've made the engineer aware of

1           the problems we observed when we walked up  
2           there. So those are existing conditions. So  
3           it's going to be a combination, but there is  
4           money in the budget for some of that. Not the  
5           total cost.

6        Q.   From the school.

7        A.   Correct.

8        Q.   So the rest of it, we in Leet Township will be  
9           paying for that.

10       A.   Well, when I talk about -- let me rephrase. I  
11        talk about stakeholders and the stakeholders  
12        is give and take. In other words, there are  
13        situations where there are permit fees and  
14        things like that that the school district  
15        would have to be tap fees and things like that  
16        that could possibly be waived in order for us  
17        to spend the money to fix some of those  
18        things.

19                It's the same thing with the county road  
20        system. They don't have the money right now,  
21        but they have the ability to wave some of  
22        those fees that we may have to pay in order to  
23        use that money to fix the roads and stuff like  
24        that.

25        Q.   And to add that extra lane, the school would

1           be paying that?

2       A.   The school is paying for the realignment of  
3           the road up at the top and any work that we do  
4           down at the other entrance.  The whole road as  
5           it spans, that's what we have to talk to the  
6           county about.

7       Q.   The school will be rebuilding that part, lower  
8           part?

9       A.   If I may, I will come over.

10      Q.   Down where the gates are.

11      A.   It's a little below that, but yes.  The lower  
12           entrance, this is Camp Meeting Road coming up.  
13           This is the location of what they call the  
14           pump house.  It's down over the edge but most  
15           of the local people know where it is.  Just up  
16           from that, between it and the gates are about  
17           right here, so about halfway through there.

18                 So there will be road improvements all  
19           along here, there will be road improvements  
20           all along down to Beaver.  We are not really  
21           doing any improvements in this loop, the  
22           horseshoe, but we are doing improvements along  
23           the edge of the road here.  And then we are  
24           actually rerouting the road over into the  
25           school property and swinging back over.  So

1           this area here will all be part of that  
2           project (indicating).

3       Q.    So the county has agreed to do this?  Because  
4           the county builds it, you don't.

5       A.    We will build it, the county will approve it.

6       Q.    Which typically takes a couple years to do  
7           cause the engineers have to come out.

8       A.    We had preliminary meetings and again with all  
9           the agencies, all the authorities, and their  
10          engineers, preliminary wise, but they have not  
11          seen this plan yet because we're at the  
12          beginning stages.

13      Q.    Right.

14      A.    All of that will be submitted to them, will be  
15          reviewed, and we will retain occupancy permits  
16          for these two driveways and the road work.

17      Q.    So the county will let you build it.

18      A.    That's correct.

19      Q.    That will be the first one.  That's it.

20                   MR. RESTAURI:  By "you," we are  
21                   talking about the school district.

22                   MR. PHILLIPS:  Correct.

23                   MS. HYJEK:  Not you personally.

24                   MR. RESTAURI:  I wanted to be  
25                   clear.

1                   MR. PHILLIPS: I will be going  
2                   down there with my little flag.

3                                   - - -

4                   EXAMINATION (of Mr. Phillips)

5                                   - - -

6           BY MS. INNAMORATO:

7           Q. Janet Innamorato. Mr. Phillips, I think that  
8                   you did earlier today, but we couldn't see  
9                   through people, but can you point out where  
10                  the sandstone ridge is that conceivably needs  
11                  to be --

12          A. It comes out through here, right down the  
13                  middle of what's being proposed (indicating).  
14                  And this is where school is and that's where  
15                  we met there. Right here is the house, the  
16                  Walker house location. So the school would go  
17                  here. So that area would be lowered which  
18                  means lowering it is going to go into the  
19                  sandstone.

20          Q. And lowering by how far?

21          A. We don't know at this time. When I was  
22                  building a large area, I was dropping that 40  
23                  feet.

24          Q. In more recent drafts, we saw 30 feet?

25          A. That, I can't say to it. I don't see an

1 elevation on there. Yeah, that hill there is  
2 about 30 feet, yes.

3 Q. Thirty feet, okay, thank you. My first  
4 question is, if I can make this large enough  
5 so there is some chance I can read it. In the  
6 preliminary report of due diligence you stated  
7 observations revealed such elements as  
8 significant landslide activity, springs and  
9 massive, very hard bedrock. You state also in  
10 this report that you believe that blasting  
11 will be necessary. Now today you indicated  
12 that you were not sure, that you were not a  
13 hundred percent certain blasting would be  
14 necessary.

15 A. Well, to get down through the thickness of  
16 rock, the 40 feet that I talked about, and  
17 that's rock. Up here the 30 feet we are  
18 talking about is not all rock. There is about  
19 10 to 15 feet of material on top.

20 So in our eyes, at that time, to go  
21 through 40 feet of rock, you would need to  
22 blast. But if we're only digging 10 to 15  
23 feet, they may be able to use equipment to do  
24 that.

25 Q. So, in other words, the 40 feet that you were



1 thinking of before was really 65 feet.

2 A. Possibly in elevation, yes, ma'am.

3 Q. I see. I see. What would you say the  
4 likelihood of blasting necessity is now? I  
5 know you said it's not hundred percent. I  
6 know you said you hate percentages but --

7 A. Well, we drilled and they did core the rock.  
8 As you go deeper in the rock, it does get a  
9 lot harder. So the majority of it I think  
10 would probably be done without having to  
11 blast. But we don't have the final  
12 configuration of what's here so that's why we  
13 don't --

14 MR. BOWARD: There needs to be  
15 more analysis done on that. The upper portion  
16 of the sandstone is more weathered because  
17 it's closer to the surface and, like Geoff  
18 said, you get deeper, there is less  
19 weathering, it gets harder. We need to  
20 analyze that specific to the final design.

21 MS. INNAMORATO: Okay, thank you  
22 very much.

23 BY MS. INNAMORATO:

24 Q. So if you needed to blast -- and you have  
25 testified earlier that on the hillsides that

1           you don't intend to disturb, you will not be  
2           doing any protection or any changes, you will  
3           not be disturbing them in any fashion.

4       A.   Right, we are keeping this all wooded here.  
5           So we weren't proposing -- and then all the  
6           area out here at the end which is in  
7           Edgeworth, none of that is going to be done.  
8           And my understanding from the architect, and  
9           John Thomas testified, he had showed a slope  
10          here that he wants them not to do that.

11                 So the only slopes that are being  
12          constructed are really in this region right  
13          here, okay. So none of these -- out here will  
14          all stay vegetative, will all stay there, and  
15          we are not changing any characteristics along  
16          there that would destabilize it, other than  
17          mother nature.

18       Q.   But you have indicated that really most of the  
19          land here is metastable already; is that  
20          correct?

21       A.   Yes.

22       Q.   So is there some likelihood that blasting will  
23          have some impact on those hillsides that you  
24          don't intend to disturb?

25       A.   That is what the calculations do for the

1           blasting is, you know, if there is any  
2           vibrations here, that it's limited to a  
3           smaller area and does not migrate into these  
4           other areas.

5       Q.   Yes.  But in fact this is a pretty steep  
6           slope.  These are pretty steep slopes here.

7       A.   On the back side, yes.

8       Q.   You will potentially be blasting all the way  
9           along here?

10      A.   No, we only anticipate it being here because  
11           these are all higher (indicating).

12                   MR. BOWARD:  I'm not sure if Geoff  
13           knows.  In the software we have for slope  
14           stability, this is able to enter a seismic  
15           factor.  So when we are going through the  
16           calculations for the blasting and we determine  
17           what the various velocities are, you have to  
18           look vertically and horizontally.  It's  
19           basically a sound wave that's entered into the  
20           program.  And that is entered in and that has  
21           an effect on the factor of safety of the  
22           slope.  So that will be analyzed if blasting  
23           is required.  It will be analyzed as part of  
24           the slope stability analysis.

25                   MS. INNAMORATO:  Thank you.  Thank

1           you.

2       BY MS. INNAMORATO:

3       Q.   Then earlier in this same report you say:  
4           Based on our observation, we contacted Quaker  
5           Valley School District and indicated that this  
6           particular site may not be suitable from the  
7           typical budget perspective even if the site  
8           was effectively gifted or donated to Quaker  
9           Valley School District.

10                   So did you change your mind or did  
11           Quaker Valley School District tell you go  
12           ahead anyway?

13       A.   What do you mean, go ahead anyway? To  
14           evaluate it? No, we put in that statement  
15           that this site is going to require a  
16           significant amount of work and cost to make it  
17           a buildable site.

18       Q.   Right.

19       A.   And even if this property was given to them,  
20           it doesn't necessarily mean that's the best  
21           option.

22       Q.   You said may not be workable.

23       A.   Correct, from a financial standpoint.

24       Q.   I see. So again, did the school district come  
25           to you and say, we want you to go ahead

1           regardless of that, or did you discover  
2           something in your further exploration that  
3           made you think we were mistaken?

4       A.   No, we didn't find any -- that was after we  
5           had done the due diligence. So we reported to  
6           them that here are all the plusses, here are  
7           all the minuses, for them to make their  
8           decision on whether to buy or not buy the  
9           property. We didn't make that decision.

10      Q.   Okay. Mr. Phillips, do slopes exceeding 25  
11           percent exist on the site?

12      A.   There are some back here along this back steep  
13           area, but this proposed development is not  
14           involved in that.

15      Q.   Do slopes exist where you intend on disturbing  
16           grading or building that go up to 25 percent?

17      A.   Not in this area where we're proposing or on  
18           top of the ridge where the development is.  
19           Cause again I said back in this area and out  
20           here on the end of Edgeworth here.

21                   MS. INNAMORATO: What would you  
22           say the steepest slopes are that are over  
23           there where you intend on building your  
24           secondary access road?

25                   MR. PHILLIPS: Most of them are

1 three-to-one or less.

2 MS. INNAMORATO: Which is what  
3 percent?

4 MR. PHILLIPS: Thirty-three  
5 percent.

6 MS. INNAMORATO: Three-to-one.

7 MR. PHILLIPS: Right.

8 MS. INNAMORATO: And two-to-one is  
9 what?

10 MR. PHILLIPS: Fifty percent.

11 MS. INNAMORATO: So if the slope  
12 says it's two-to-one on the drawings, on the  
13 topographic maps, then isn't that slope  
14 steeper than 25 percent?

15 MR. PHILLIPS: No, when you do the  
16 percentage, it's opposite.

17 MS. INNAMORATO: Okay. Okay.

18 MR. PHILLIPS: In other words, the  
19 two-to-one slope is 50 percent, three-to-one  
20 slope, which is a flatter slope, is 33  
21 percent.

22 Q. I see. Roughly, on this plan, how many acres  
23 will be disturbed?

24 A. I did not do the calculation, but Mr. Thomas  
25 reported 40 acres.

1 Q. And how many slopes do you anticipate needing  
2 to terrace with your plan that you discussed  
3 earlier?

4 A. The terracing will happen on all fill slopes.  
5 All the slopes will be stair stepped back into  
6 the hillside.

7 MR. BOWARD: That's subsurface.  
8 You won't see it on the surface.

9 MS. INNAMORATO: Okay.

10 BY MS. INNAMORATO:

11 Q. But how many different places will you be  
12 doing that?

13 A. It will be done here, it will be done here, it  
14 will be done right here. All of this is all  
15 cut. They're eliminating this. This was one  
16 slope here (indicating). But all of this is  
17 basically you are coming in, cutting the top  
18 of the hill off, and so there is no slope,  
19 it's just being excavated to that amount.

20 Q. So there will be three major areas --

21 A. Yes. And most over here along Camp Meeting  
22 Road.

23 Q. And roughly how many acres do you think is  
24 involved in the terracing?

25 A. I would say probably about 20 acres here.

1 Q. Twenty acres, okay. So you described putting  
2 drains in on each bench to get water away from  
3 it. In fact, a lot of information was  
4 designed to say how to get water away from  
5 areas to avoid dangers of landslide. I want  
6 to know if you have some thought about how  
7 that vegetation is affected by you removing  
8 all the water from an area.

9 MR. BOWARD: That's subsurface  
10 water, by the way. That would be water that's  
11 coming subsurface. So we are trying to keep  
12 that fill embankment dry so it remains shear  
13 strength.

14 MS. INNAMORATO: So the terrace is  
15 how deep below the surface?

16 MR. BOWARD: Well, they are going  
17 to vary. The depth of the stair steps are  
18 going to vary. I wish I had a picture, but  
19 it's probably not going to affect plant life  
20 much, if at all.

21 MS. INNAMORATO: They said at my  
22 house you need French drains all around the  
23 house. Then they said too bad you can't plant  
24 anything because of all the stone there.

25 MR. BOWARD: This particular case



1 will have negligible effect on vegetation  
2 because vegetation is typically relying on the  
3 more surficial ground water regimen than that  
4 deep regimen we are talking about here.

5 MS. INNAMORATO: So trees?

6 MR. BOWARD: Trees would be  
7 viable. We have done this type of  
8 construction -- well, it's standard of care.  
9 I have been doing this since I started in the  
10 business. I learned from other geotechnical  
11 engineers that mentored me and they put  
12 vegetation on the slopes, trees and so forth,  
13 and they seem to vegetate very well.

14 MS. INNAMORATO: All right, thank  
15 you.

16 BY MS. INNAMORATO:

17 Q. Is removing colluvial soils called cut?

18 A. Yes, we will be excavating and digging them  
19 out, yes.

20 Q. And there was a figure put forward earlier  
21 that you anticipate approximately -- I think  
22 Mr. Thomas said 375,000 cubic yards.

23 A. That sounds about right, yes.

24 Q. Does that include all the colluvial soil?

25 A. I don't know. I can't answer that question.

1 Q. Okay. Mr. Thomas also testified that you  
2 would balance -- that the cut and fill would  
3 balance each other on this site. Do you  
4 think, based on your expertise, that that is  
5 the case given the amount and depth of the  
6 colluvial soils and where all they are?

7 A. Well, you have to remember, we're going to  
8 remove the colluvium soils but we are going to  
9 be filling it back in with good soil, and we  
10 are going to take the colluvium soils and mix  
11 it with good material and make it reusable.  
12 So there is no material leaving the site. It  
13 will all be reused. So that's what they mean  
14 by balanced. In other words, we're not going  
15 to have to remove any of this material from  
16 the site.

17 MR. BOWARD: The main reason  
18 colluvial soils are a problem is because  
19 mother nature has caused them to move.  
20 They're derived from soils and rocks from  
21 higher elevations and migrated down due to  
22 gravity. So they are not in a very compact  
23 state.

24 So once you remove them and mix  
25 them with some of the rock fragments we are

1 excavating out, then you can have it tested in  
2 the laboratory to determine how much you have  
3 to compact it to increase its shear strength.  
4 So we have been putting the colluvial soil  
5 back mixed with other materials, but it will  
6 be compacted to a much higher shear strength  
7 than its natural conditions. So it would be  
8 acceptable, suitable material to reuse as  
9 fill.

10 Colluvial soil is not necessarily  
11 bad. It's called colluvial, it's bad because  
12 of how far it's moved and density in its  
13 natural state. There isn't any particular  
14 mineral or anything in this colluvial soil for  
15 the most part that would make it unsuitable.

16 MS. INNAMORATO: When the reports  
17 say that the sandstone is underlain with  
18 Pittsburgh red bed, they mean that underneath  
19 this sandstone ridge there is red bed?

20 MR. BOWARD: The red beds come in  
21 more than one form. The red bed material is a  
22 strata and it's typically purple, red, maroon,  
23 and sometimes gray clay. The clay is what we  
24 are worried about. That is a soil. Clay is a  
25 soil. But the red beds also are part of the

1 bedrock strata.

2 So you can find red beds as a  
3 claystone, as a clay shale, even as a shale.  
4 The bedrock isn't as much of a problem cause  
5 bedrock is so dense.

6 So we are not really concerned  
7 about the stability of the red bed bedrock.  
8 It's the red bed soils, the clays that we are  
9 really concerned about. Because when those  
10 clays get wet, they lose most of their shear  
11 strength. So that has to come out and mixed  
12 and processed to be viable for reuse again.

13 MS. INNAMORATO: So when you say  
14 it's underlain with Pittsburgh red bed, do you  
15 know from your borings what kind of red bed it  
16 is?

17 MR. BOWARD: Yes, there are boring  
18 logs that describe the material. We found red  
19 bed claystone, red bed clay shale, I think,  
20 and red bed silt stone. This red bed comes in  
21 the form of silt stone. So we were able to  
22 identify the type. This red bed material was  
23 so hard, you couldn't shovel it out. We had  
24 to quarry through it. Cause it's bedrock.

25 Like I said, the real problem is

1 the red bed clays, the soil portion, because  
2 it's so weak. It just doesn't have the  
3 strength bedrock has.

4 MS. INNAMORATO: So if it's  
5 underneath the stone, you are not worried  
6 about it?

7 MR. BOWARD: No. If it is in the  
8 bedrock strata, it isn't of concern. It's the  
9 red bed soils that are the biggest concern.  
10 That's what we have to remove from those  
11 areas.

12 MS. INNAMORATO: So is it correct  
13 colluvium and red bed is the same thing?

14 MR. BOWARD: No, not necessarily,  
15 no. Red bed soils is a type of strata that  
16 was naturally laid down as a sedimentary  
17 deposit. In this area, most of the  
18 sedimentary deposits are pretty horizontal in  
19 layers.

20 There is some variation cause of  
21 tectonic activity over the millions of years.  
22 It's fairly horizontal and it was laid down  
23 that way. Colluvium doesn't have to be red  
24 beds, it can be a soil that has basically  
25 moved down slope due to gravity.

1                    Know this. All landslides are  
2                    composed of colluvial soil but not all  
3                    colluvial soil is a landslide. Colluvial soil  
4                    can creep down very slowly, it's a technical  
5                    term, and it never develops into a landslide.  
6                    But when it develops into a landslide, of  
7                    course, even if it wasn't colluvial soil, now  
8                    it's colluvial soil cause it's moved. And not  
9                    all red beds are colluvial soil because they  
10                   haven't all resulted in landslides or movement  
11                   down slope.

12                   MR. PHILLIPS: So what happened is  
13                   the top of this hill over time has gotten  
14                   shorter and that material has moved down and  
15                   is now deposited here at the lower elevation.  
16                   And that's where the concern is. The section  
17                   -- if you take a knife and look at a  
18                   cross-section of this, the material that's  
19                   below the rock and through here, it's okay.  
20                   It's good and hard. It's just the surface  
21                   areas where it slid that's where the problem  
22                   is.

23                   BY MS. INNAMORATO:

24                   Q. And you are going to take all of that out, mix  
25                   that --

- 1 A. And reuse it.
- 2 Q. Okay.
- 3 A. And put it properly in because right now it's  
4 just dumped.
- 5 Q. Okay. If there are 20 acres there, will those  
6 20 acres be clearcut?
- 7 A. Portions of it. But some of it won't. But  
8 again, the architect -- again, this will be  
9 tweaked by the architect. He's been advised  
10 to try to keep as many of the trees on site as  
11 possible.
- 12 Q. Okay. And 20 acres for the plateau, will that  
13 be clearcut?
- 14 A. Again, it depends on what elevation. If they  
15 don't go down to 30 feet then, no, it won't  
16 have to.
- 17 Q. Have you any estimate of the cost of the rough  
18 grading now that it's 40 acres instead of the  
19 50 that you talked about?
- 20 A. For this, I think the cost estimate for the  
21 site work was somewhere in the neighborhood of  
22 eight million dollars.
- 23 Q. Does that seem reasonable to you?
- 24 A. For this site here, yeah. And they're hoping  
25 to make it less because they're wanting to

1 work with the elevations that are out there,  
2 the architect.

3 Q. I see. Earlier you talked about looking at  
4 other sites, the feasibility of other sites  
5 including the current site.

6 A. Yes, ma'am.

7 Q. This school district has 11 municipalities.  
8 How many different municipalities did you look  
9 at sites in?

10 A. We looked at Bell Acres, Leet, Leet Township,  
11 we looked at Aleppo. What's the one below  
12 Aleppo?

13 Q. Osborne?

14 A. I can't remember the one below that. There  
15 was a couple pieces of property there.

16 Q. Did you do borings in all of those?

17 A. No, we didn't.

18 Q. Where did you do borings?

19 A. We did here at this property because that was  
20 after they selected three -- there was like  
21 ten sites, they narrowed it down to five, then  
22 narrowed it down to three, and those three we  
23 did our evaluation on and then they had  
24 narrowed it down to this one on the Scrabbit  
25 site and Scrabbit we didn't get permission to



1           drill. This site we did get permission to get  
2           drilled. So this site here is the only one we  
3           drilled (indicating).

4       Q. So how do you know there is red bed on the  
5           other sites?

6       A. Because of the existing published geology  
7           information, the surveys that have been done.  
8           There is other published information and  
9           geotechnical engineers share information of  
10          projects done throughout the area.

11       Q. Okay, thank you very much for your time.  
12          Thank you.

13                           MR. RESTAURI: Mr. Jasper?

14                           MR. JASPER: One of the things  
15           going last, most of the questions have been  
16           asked.

17   - - -

18   EXAMINATION (of Mr. Phillips)

19   - - -

20       BY MR. JASPER:

21       Q. Our home is right here, okay (indicating).  
22           You're doing all this benching over here and I  
23           guess this you are not going to do benching  
24           anymore?

25       A. My understanding is that will not be there

1           anymore.

2           Q.   The contour lines look pretty much the same to  
3           me, and I am just a layman so I don't know.  I  
4           know that this slope coming down here is  
5           unstable.  It's always moving.  I mean we have  
6           to deal with it just like the lady said.  We  
7           put in French drains inside, outside of the  
8           house, all kind of things to deal with it.  
9           And we can tell that the ground is moving.

10                    So I don't understand.  What I heard you  
11           say is you are going to dig a whole bunch of  
12           dirt out of here, dig a whole bunch of dirt  
13           over here to make this retention pond, and you  
14           are kind of using that dirt maybe to make  
15           these benches?  Like it's a use of the  
16           material rather than just being driven by the  
17           contours of the land.

18                    So I'm wondering why you are not using  
19           that -- some of that over here for all the  
20           positive reasons I heard about benching and  
21           drainage and soil stability.  Because you  
22           start doing things here, doing construction,  
23           even if you don't do blasting, there is other  
24           stuff.  You said you were going to do rock  
25           crushing, you are going to be moving a whole

1           he bunch of heavy machinery and stuff like  
2           that.

3       A.   Yeah, there will be cranes.

4       Q.   So there will be a lot of vibration and  
5           shaking on that hill.

6       A.   Yes.

7       Q.   So we know that this is landslide prone. Why  
8           isn't it going to make it worse and why are  
9           you not suggesting doing this kind of benching  
10          over here to improve it?

11      A.   Well, to answer your question, originally the  
12          plan that I put together for the 50 acres did  
13          include doing that.

14      Q.   Okay.

15      A.   But the price tag for that project of 50  
16          acres --

17      Q.   What I heard is you are over-engineering this  
18          to take care of all these eventualities and I  
19          am hearing that you are cutting corners.

20      A.   I am not cutting corners. The school district  
21          sized back the project.

22                 Now as far as the woods are still here,  
23                 the trees are still here. We are going to  
24                 take away the water that's coming down that  
25                 slope over into here. So we are going to

1           reduce the amount of water that's surface  
2           water. As far as --

3       Q. But the colluvial stuff is what's sitting on  
4           top.

5       A. Correct. And we're trying to keep -- because  
6           the school district heard from the public  
7           don't take down all the trees, so we're not  
8           clear cutting. So we're doing select cutting.

9       Q. The trees hang on to everything. But the  
10          trees topple over. We see them topple over  
11          all the time.

12      A. Correct. So to answer your question, I'm not  
13          the guy that makes that decision finally of  
14          what is done here. I can only engineer what  
15          properly is left to be done. So that part of  
16          it, my understanding was that it was  
17          eliminated of doing any filling in here  
18          because the residents didn't want a slope  
19          being built above. But in actuality, we were  
20          improving the condition with our slope. But  
21          everybody saw it as a Walmart-Kilbuck site,  
22          that this slope was all going to come down  
23          into here (indicating). So that's all I can  
24          say.

25      Q. What I am saying now is the school probably

1           won't wind up in our living room but the  
2           hillside could.

3       A.   Over time, yes.

4       Q.   Well, that's comforting.

5       A.   But you bought that house with that all along.

6       Q.   Thirty years ago I was willing to live with  
7           gradual.  But if this accelerates it, it's no  
8           longer gradual.

9       A.   We're trying to prevent it from accelerating.

10      Q.   I know, but Boeing tried to fly the 737 Max,  
11           too, and that failed.  I believe in  
12           engineering, but I also believe in engineering  
13           doesn't always work.

14      A.   Well, we are working with mother nature.

15      Q.   Yeah, well --

16      A.   And gravity.

17      Q.   This is a --

18      A.   A buyer retention guard for water quality.

19      Q.   Somebody asked about a cloud burst.  The water  
20           just can't -- the capacity of this system to  
21           convey it all over here and then bring it down  
22           into Leetsdale, what if this overflows?

23      A.   This whole system is designed for the hundred  
24           year storm.  So if it's over the hundred year  
25           storm, then it's going to come over.  And this

1 whole boulevard and a lot of these other  
2 places are all going to be flooded anyway from  
3 other things.

4 Q. There is a cart path that comes down from  
5 where the house used to be located. It comes  
6 down here and then it comes right around here  
7 and then there is a storm drain that Leetsdale  
8 put in here because they thought that they  
9 needed that storm drain to take water coming  
10 off the hill.

11 A. Yeah, there is a right of way that comes up  
12 through here.

13 Q. That is a conduit for water coming down the  
14 hill, too. So if this overflows, I'm just  
15 saying again, it's going to be in our living  
16 room.

17 A. Again, I will say, if I'm the engineer, those  
18 are concerns that I'm going to design this  
19 property to take care of.

20 MR. BOWARD: Can I interject a  
21 couple items?

22 MR. DePAUL: Hold on. I don't  
23 think there is a question posed. You don't  
24 have a question for him, do you, Mr. Jasper?

25 MR. BOWARD: He is talking about

1           some geotechnical issues.

2                   MR. JASPER: Well, I am looking  
3 for any expert that can allay my concerns.

4                   MR. RESTAURI: He was asking the  
5 questions to both.

6                   MR. DePAUL: You are allowed to  
7 ask whatever you want.

8                   MR. RESTAURI: Please.

9                   MR. JASPER: I don't care.  
10 Whoever is the expert.

11                   MR. BOWARD: I want to point out a  
12 couple things that are being missed here. As  
13 far as the hillside goes, above your house,  
14 it's been in that condition for years, it's  
15 been metastable for years. What we're going  
16 to do is not going to change that. It's going  
17 to still be metastable. If nothing is done  
18 there, if nobody does anything, it will still  
19 be metastable.

20                   The risk will be the same except  
21 that the system, the storm water system that's  
22 being proposed to control the water on the  
23 site should remove some of the storm water  
24 that's now flowing down that hillside. It  
25 should make it a little bit more stable. I

1 can't say it's going to make it so stable that  
2 it won't move, I would not say that, but what  
3 I'm saying is it should make it somewhat more  
4 stable.

5 MR. JASPER: How about all the  
6 vibration during construction?

7 MR. BOWARD: Like I said before,  
8 part of the process, if we were engaged -- if  
9 we are engaged in the next phase, would be to  
10 analyze those conditions with respect to  
11 vibrations. Because the slope stability  
12 analysis allows you to enter a seismic factor  
13 into the analysis which include the vibrations  
14 and the effect on the slope. It's in there on  
15 the software, so that would be entered, as  
16 well as to try to determine what effect it has  
17 on the slope.

18 The final thing I'd like to say  
19 is, as far as the storm water goes, when you  
20 look at the hundred year storm, if no  
21 development has taken place and there are no  
22 controls on the storm water, other than what's  
23 there, are there now, which is basically  
24 nothing, you are going to have more water  
25 coming down to your house than you are going



1 to have after they build that up there and put  
2 in a storm water control system.

3 So it's actually improving the  
4 storm water that will reach your house. So  
5 you have that as well. So I don't see really  
6 anything happening here other than  
7 improvements to the down slope properties, at  
8 least with respect to geotechnical and  
9 strictly with respect to storm water  
10 considerations. I'm not going to go beyond  
11 that, to the houses down below.

12 MR. DePAUL: If I may, I need to  
13 interject and object on the record to this  
14 and make it clear for the record. This  
15 testimony was provided on the record after  
16 Mr. Phillips gave an answer that maybe the  
17 school district didn't like, and there was  
18 some signaling that happened over here to the  
19 witness and prodding the witness to interject.  
20 He then interjected and provided a monologue  
21 that was nonresponsive. So I will put that on  
22 the record.

23 MR. BOWARD: I'm sorry if you  
24 didn't like my answer but that's the facts of  
25 the case here. As an engineer, I'm providing

1           them to you to make sure you are educated. I  
2           completely understand why you are concerned.  
3           I would be, too, if it were my property and  
4           somebody is developing up above it. But I'm  
5           trying to assure you that if the engineering  
6           is done properly, it should improve conditions  
7           to some degree on your property with respect  
8           to geotechnical and storm water conditions. I  
9           can't say anything else.

10                       MR. DePAUL: Same objection.

11                       MR. RESTAURI: Understood. Noted.  
12           Mr. Phillips, do you have anything further?

13                       MR. PHILLIPS: Other than that,  
14           the water issue coming down along this private  
15           road which is --

16   BY MR. JASPER:

17   Q.   It's a cart path, undeveloped.

18   A.   Does anybody use that?

19   Q.   We used to walk our dogs there.

20   A.   Cause there are measures that need to be done  
21           to improve that condition. It's directing a  
22           channel down to your property.

23   Q.   Yeah. So if this lets loose up here, that's  
24           where it comes.

25   A.   Right. But now that we're aware of this

1 situation which again we do these things when  
2 we get into the design, we can maybe alleviate  
3 that by directing it to another place so that  
4 it doesn't impact your property.

5 Q. I think you answered my question before  
6 because when I look at the slopes, you are  
7 doing things to stabilize it over here but  
8 choosing not to do it here.

9 A. This site plan does not.

10 Q. It's because of cost.

11 A. This site plan, yes.

12 Q. That doesn't make me too confident.

13 A. But others who want trees to stay don't want  
14 us to do that.

15 Q. I am not the only one down here. There are  
16 plenty of other people that I'm sure have the  
17 same concern.

18 A. I understand. My understanding is there will  
19 be meetings with the public by the architect  
20 team and probably other engineering teams to  
21 listen to the public as far as some of these  
22 specific concerns. They want to be good  
23 neighbors. I mean they are not here, you  
24 know --

25 Q. The only other point I have is I have heard a

1 lot of talk in this meeting and before about  
2 bonding and insurance and stuff like that.  
3 You know, if I'm a homeowner down here and I  
4 don't have any cracks in my foundation right  
5 now, or maybe I have a crack but it gets  
6 bigger and I perceive that there is damage, if  
7 I communicate that to you or the contractor or  
8 whoever is doing the work or the school  
9 district or whatever, there is an insurance  
10 company in the middle and they're not just  
11 going to write me a check and say "here is  
12 \$10,000, go fix it."

13 So the burden of proof is really on me.  
14 Anybody down here who thinks they have been  
15 damaged by what's going on up here has to  
16 prove it and that's a pretty steep burden.

17 A. Well, especially with the programs that we  
18 have been involved in in large construction  
19 which has blasting in at this time, they come  
20 in and they do a radius, they go through with  
21 video cameras and do all of that. And that's  
22 an insurance company doing it. But they  
23 identify existing conditions and then come  
24 back and redo the whole thing to say, okay,  
25 this did happen after the fact.

1 Q. And they are just building their case to deny  
2 my claim. That's right. Well, I appreciate  
3 having the opportunity to voice our concerns.

4 MR. RESTAURI: Thank you.

5 Mr. Phillips, with respect to Mr. Jasper's  
6 question -- and I understand about the  
7 environmental concerns and the trees and so on  
8 -- is there some way to accomplish both?

9 MR. PHILLIPS: Not really. Cause  
10 you have to remove the soil that's under the  
11 trees.

12 MR. RESTAURI: Yes.

13 MR. PHILLIPS: And put it back.  
14 So you can't just go in and dig around the  
15 roots. You would have to remove all these  
16 trees, build the slopes and then come back and  
17 plant trees.

18 MR. RESTAURI: And what's wrong  
19 with that?

20 MR. PHILLIPS: There isn't. But  
21 somebody has to make that decision.

22 MR. RESTAURI: So it's as  
23 Mr. Jasper said, it can be done, it's just  
24 really expensive.

25 MR. PHILLIPS: Correct. And my

1           understanding was that Mr. Thomas -- I think  
2           he testified that he was directed by the board  
3           to minimize any kind of slopes above the  
4           residence here because it was of concern at  
5           that time. Now if that is changed, then plans  
6           can change.

7                       MR. RESTAURI: Are you aware of  
8           anything else like that with respect to your  
9           work or Mr. Boward's work where there was a  
10          recommendation made that was removed because  
11          of cost?

12                      MR. PHILLIPS: Well, they  
13          downsized, they didn't build all the original  
14          buildings. They are moving the stadium up  
15          here. They don't have all the practice fields  
16          that they were going to have. The  
17          administration --

18                      MR. RESTAURI: Anything from a  
19          geotechnical landsliding, noise --

20                      MR. PHILLIPS: Because the  
21          footprint of the development has shrunk, the  
22          amount of earth work has shrunk, so the amount  
23          of geotechnical impact has shrunk.

24                      MR. BOWARD: We didn't necessarily  
25          recommend that these other slopes that are not

1           being touched now be provided with fill  
2           embankments. Early on in the due diligence,  
3           when Geoff was looking at possible layouts of  
4           the site to achieve that 50 acres, it was  
5           required to put a fill there to get a wide  
6           enough area on top to achieve 50 acres.

7                         Now that they reduced the acreage,  
8           you don't need that fill embankment to do  
9           that. You can put it elsewhere. So we  
10          weren't recommending putting a fill embankment  
11          there to stabilize the slope, we were just  
12          coming up with what could be done to make sure  
13          that fill embankment was stable, that you need  
14          to put there to give you 50 acres. But that's  
15          changed now. Am I making sense to you?

16                        MR. RESTAURI: Kind of, but not  
17          exactly. So are you saying that that drawing  
18          contains information that was accurate at the  
19          time the project was bigger, now it's smaller  
20          but the information hasn't been updated?

21                        MR. BOWARD: No, I'm not saying  
22          that. It was a bigger project and because of  
23          that there was going to be more earth work and  
24          that meant more fill slopes to grade the flat  
25          pad on top. It's been reduced in size, the

1 amount of acreage they need, so we don't need  
2 all those fill slopes.

3 So the area we're concerned about  
4 the stability of the slope is no longer a fill  
5 slope. It's not going to be touched. Because  
6 they've changed the layout. It's a reduced  
7 area they have up on top.

8 MR. RESTAURI: So does that mean,  
9 first of all, this drawing is accurate as of  
10 the reduced size of the footprint?

11 MR. BOWARD: That's correct.

12 MR. RESTAURI: And are we saying  
13 that Mr. Jasper's concern is as Mr. Phillips  
14 testified about it?

15 MR. BOWARD: I think what Geoff  
16 said was accurate.

17 MR. RESTAURI: Okay, we're good.  
18 Thank you.

19 MR. MICHAEL: Vince, I just have  
20 one point bugging me and I want to clarify.

21 MR. RESTAURI: Okay.

22 MR. MICHAEL: When they say "we  
23 would have to take out the trees and put in  
24 new trees," they're going to be taking out 60  
25 foot maples, but they are not going to be



1 replacing them with 60 foot maples; is that  
2 correct?

3 MR. PHILLIPS: That's correct.

4 MR. MICHAEL: It might be a ten  
5 foot maple or smaller.

6 MR. PHILLIPS: Right. On these  
7 slopes and stuff, to re-vegetate and put trees  
8 back that will obviously grow to 60 foot  
9 trees.

10 MR. MICHAEL: But none of us will  
11 be here.

12 MR. PHILLIPS: I thought you said  
13 you weren't dying. You told me that wasn't a  
14 guarantee.

15 MR. RESTAURI: Will there be  
16 enough of the smaller trees planted so the  
17 root systems will have the equivalent effect  
18 with respect to water runoff?

19 MR. PHILLIPS: There will be other  
20 vegetation.

21 MR. BOWARD: Not initially, it  
22 won't be, but as they grow --

23 MR. RESTAURI: The overall impact  
24 that the combined types of vegetation will  
25 manage their own.

1 MR. BOWARD: To some degree.  
2 Geoff is already managing a lot of the runoff  
3 with the storm water system up there.

4 MR. PHILLIPS: But all these areas  
5 disturbed, we have to make sure they have  
6 ground cover, in other words, grass, or on the  
7 slope, you know, vegetated to 70 percent  
8 before they will release the permit and any  
9 requirements.

10 MR. RESTAURI: Are there any  
11 persons on zoom who wish to question the  
12 witnesses? Is there any redirect of the  
13 witnesses?

14 MR. GRAMC: No, sir.

15 MR. RESTAURI: Is there any --  
16 Mr. Miller, anything?

17 MR. MILLER: No. Thank you.

18 MR. RESTAURI: Any recross of the  
19 witnesses?

20 MR. DePAUL: No, sir.

21 MR. RESTAURI: Yes, ma'am?

22 - - -

23 CROSS-EXAMINATION ( of Mr. Phillips)

24 - - -

25 BY MS. TURNBULL:

1 Q. Do you know how many one hundred year rain  
2 events we have had in Leet Township in the  
3 last five years, 10 years, 15 years?

4 A. Well, I am not over a hundred years old so I  
5 am not sure.

6 Q. But that's a standard that comes from somebody  
7 else, that is not a personal judgment,  
8 correct?

9 A. The situation is this. Due to the technology  
10 age and the precision of all our weather  
11 forecasting, they like to put little dots all  
12 over the place. So what happens is, what in  
13 the past would have set a hundred year storm,  
14 now they're quoted saying it's a 98 year  
15 storm, this one is a 99.4 storm. So it's not  
16 quite a hundred year storm. So it's very  
17 difficult to say that.

18 Q. Do you know how many over 90 year standards we  
19 have had?

20 A. The situation is you can only look at whether  
21 the Ohio River has experienced in this  
22 location up to the hundred year flood  
23 elevation, and I'm not sure that the stadium  
24 has been totally flooded for some time.

25 Q. So the measure is the height of the river

1           rather than the amount of --

2       A.   That would be the only way to really gauge, to  
3           say has there been a hundred year storm here.  
4           But, for instance, I could go right out here  
5           and these thunder clouds, it could be pouring,  
6           the intensity, the amount of volume of water  
7           at this parking lot for a hundred year storm  
8           but 300 feet down the road it isn't. So it's  
9           very --

10       Q.   How do you design to it then? What does that  
11           mean when you say that you are designing to a  
12           hundred year storm?

13       A.   What it is, there has been -- well, there is  
14           not a hundred years worth of data yet, in  
15           other words, to determine it.

16       Q.   So what do you design to?

17       A.   It is a curve that they have projected, okay,  
18           and for the hundred year storm they have come  
19           up with amount of rain based on taking that  
20           curve and projecting it past 75 cause they  
21           have data points all along to determine that  
22           this frequency is how much rain falls, how  
23           many inches of rain. And in this area, for a  
24           hundred year storm, that amount of rain is in  
25           the neighborhood of eight inches.

- 1 Q. In what period of time?
- 2 A. Eight inches of volume.
- 3 Q. In a 24 hour period of time?
- 4 A. No, in a one hour period of time. So it's a  
5 significant amount. Most storms that we  
6 experience are in the neighborhood of 15 to 20  
7 years, that everybody thinks is a really bad  
8 storm. It's only more -- like a hurricane, if  
9 we had Agnes that came through, this hurricane  
10 that came through, there were certain areas  
11 that got hit harder than others. If it sat  
12 there the two years, yeah, you might have a  
13 hundred year storm.
- 14 Q. So when you say that you have a high degree of  
15 confidence that you can, you would design this  
16 site to the specification of a hundred year  
17 storm, to provide for that, in your mind or in  
18 a layman's terms it could accommodate up to  
19 eight inches of water down to an hour.
- 20 A. Across the whole is surface, that volume of  
21 water.
- 22 Q. So the retention ponds, all of that will be  
23 designed to accommodate that level.
- 24 A. That's correct. The storm system and  
25 everything would collect all of that and

1 contain it. Now Quaker Heights, all that  
2 water will come down through there, so that's  
3 also what we would do as far as the channel  
4 down through there. We may, in conjunction  
5 with the county, reconfigure some of that,  
6 slow the water down and basically keep all the  
7 sediments and erosion from coming down into  
8 that pipe.

9 Q. I heard what I believe is potentially  
10 contradictory testimony between you two  
11 gentlemen, and I want to have it clarified. I  
12 believe you testified that the reason why this  
13 hillside directly -- this proposed undisturbed  
14 area above the residential properties of  
15 Leetsdale was not -- you weren't going to  
16 touch that hillside because it was a  
17 preference of the residents to keep the trees;  
18 is that correct?

19 A. It was two parts. The plan that I put  
20 together for the due diligence was published  
21 and people saw that the school district heard  
22 from residents -- and I'm only getting this  
23 through the board telling us -- that there was  
24 a major concern that that hillside was being  
25 built right above their houses and that the

1           impact of that potentially sliding down like  
2           Kilbuck, they were very concerned about that.  
3           And so the district took that concern and  
4           directed Mr. Thomas to minimize any kind of  
5           grading in that area.

6       Q.   And do you understand that that was based on  
7           surveys or anecdotal feedback?

8       A.   That, I can't answer. That was the direction  
9           that he was given. As far as our design part,  
10          we needed to make that -- you see how narrow  
11          the development is. In order to make it  
12          wider, we needed to push that and build that  
13          slope. But now that they've narrowed it  
14          there, which is what Mr. Thomas did to  
15          minimize that, no work is being proposed in  
16          that area.

17      Q.   So it's not so much about a choice between a  
18          stable, more stable slope and more stable  
19          engineered slope and trees, it's really about  
20          now the site is being designed or proposed in  
21          a way that you no longer need to engineer that  
22          hillside in order to accommodate the activity  
23          at the top; is that correct?

24      A.   Sort of. Majority of that I would say is  
25          correct, other than the trees came into effect

1 of the people in the rest of the community  
2 saying we love the trees there, we want to  
3 keep as many as possible. So there was  
4 feedback.

5 Q. There could have been a more generalized  
6 community aesthetic preference or  
7 environmental concern about the number of  
8 trees, number of mature trees.

9 A. Right. So my understanding is to minimize any  
10 proposed slope above the residents here and  
11 that's what's been done here.

12 Q. So it's not necessarily about neighbor impacts  
13 or making that hillside any more stable from  
14 an engineering perspective, other than taking  
15 the water off the hillside to the extent that  
16 you can for the improvements that you are  
17 making.

18 A. Yeah, I mean if the residents would like that  
19 to be more stable with the new slope and they  
20 don't have a problem with removing the trees,  
21 I'm sure the design can accommodate that.

22 Q. If the district chooses to pay for that, cause  
23 I'm assuming it would be more expensive to do  
24 more benching on that hillside than it is to  
25 leave it alone and leave the trees.



1 A. No. But if you see to the north, all the  
2 parking lot over there, they would not need to  
3 build all of that and disturb that area over  
4 there where that slope is. They could move  
5 over everything this way (indicating).

6 Q. Can you show what the alternative would look  
7 like that would result in more engineered  
8 stability on the hillside?

9 A. So this area here, you go straight across  
10 here. So you have this area here that could  
11 be developed, instead of pushing this parking  
12 lot to the north area out here, you could  
13 possibly move it over into this area and build  
14 the slope up right here. So you are just  
15 switching, not necessarily the economics  
16 because you are taking away having to build  
17 this slope and we're building it over here  
18 (indicating).

19 Q. I appreciate you pointing that out and  
20 exploring that alternative.

21 A. The only thing is, we would be removing the  
22 trees that are here which would be behind  
23 Mr. Michael's house, cause he is right here,  
24 part of it, and we would have to plant new  
25 trees and buff -- we would probably create a

1           buffer here of a berm or new vegetation to  
2           screen all of that. And that would be larger  
3           like pine trees, things like that. They  
4           wouldn't be hard woods that would grow  
5           quickly. We have done that in other areas.

6       Q.   Certainly health and safety is first, correct?

7                       MR. MICHAEL:  Vince, I have one  
8           small theory that I want to clarify.

9                       MR. RESTAURI:  Okay.

10                      (DISCUSSION HELD OFF THE RECORD)

11                     MR. MICHAEL:  There is a new water  
12           quality basin here that is not the retention  
13           pond; is that correct?

14                     MR. PHILLIPS:  That's correct.

15                     MR. MICHAEL:  Now let's say that  
16           we had an 85 year rain and it would go into  
17           that retention pond.

18                     MR. PHILLIPS:  Right.  Water  
19           quality.  It's six inches deep, ponds about  
20           six inches of water in grass and has plants  
21           that will grow in water and absorb.

22                     MR. MICHAEL:  What would happen if  
23           we had another 85 year storm the next day?  
24           Would this water stay here or would it follow  
25           the slope and go down?

1                   MR. PHILLIPS: No, in the middle  
2 of this will be a catch basin. So once the  
3 water gets more than six inches, it goes into  
4 the catch basin and will go to the pond. So  
5 any water up to a hundred year storm will be  
6 contained within that area.

7                   MR. MICHAEL: I guess that's my  
8 point, up to a hundred year storm. But if we  
9 had two storms that were 90 year storms, one  
10 day after the next, would that overwhelm the  
11 ability of this basin to contain it and cause  
12 it to spill out?

13                   MR. PHILLIPS: It shouldn't  
14 because we developed the capacity of the  
15 hundred year storm so the next time the storm  
16 comes it should have drained down into here.

17                   MR. MICHAEL: It should have.

18                   MR. PHILLIPS: That's correct.

19                   MR. MICHAEL: Doesn't mean that it  
20 will.

21                   MR. PHILLIPS: Mother nature can  
22 throw a curve ball.

23                   MR. MICHAEL: Mother nature  
24 strikes again.

25                   MR. PHILLIPS: Yes.

1                   MR. MICHAEL: So if that occurred,  
2                   that water would go down the slope here and  
3                   affect this property down here; is that right?

4                   MR. PHILLIPS: Yes, yours and your  
5                   neighbor's.

6                   MR. MICHAEL: The people I  
7                   represent.

8                   MR. PHILLIPS: Yes.

9                   MR. MICHAEL: Okay, that's it.  
10                  Thank you.

11                  MR. SOSTER: Ladies and gentlemen,  
12                  we will meet again for a nine o'clock till  
13                  noon session on Monday, September 13th, and if  
14                  needed, we will meet on Friday, September  
15                  17th, for an all day session. Is there any  
16                  objection to excusing these two gentlemen so  
17                  that they can go about their lives and not  
18                  return on the 13th?

19                  MR. DePAUL: No objection.

20                  MR. MICHAEL: No objection.

21                  MR. RESTAURI: Thank you both very  
22                  much. The board appreciates your testimony  
23                  and your help.

24                  (DISCUSSION HELD OFF THE RECORD)

25                  MR. RESTAURI: We are done on the

1            record.

2

3                            (Whereupon, at 4:40 p.m. the  
4            record was closed.)

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C E R T I F I C A T E

I hereby certify that the transcript of the proceedings and evidence contained herein are a true and accurate transcription of my stenographic notes taken by me at the time and place of the within cause; that the transcription was reduced to printing by me; and that this is a true and correct transcription of the same.

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