THE STATE OF SOUTH CAROLINA
In The Court of Appeals

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SC Court of Appeals

APPEAL FROM HORRY COUNTY
Court of Common Pleas

Clifton Newman, Circuit Court Judge

Case No. 2010-CP-26-03901

Rivergate Homeowners' Association, Appellant,

v.

WW & LB Development Company, LLC, RWG, Inc., Aiello Associates, Daniels Engineering, Inc., Rivergate Homeowners' Association, Rivergate Homeowners' Association Board of Directors, Wayne Winderman, individually, Salvatrice Foran, individually, Gerald Foran, individually, Marcos Soares Construction, William C. DeSouza, individually, James Eason individually and d/b/a James Eason & Company, D&D Cleaning and Construction, Inc., Joel's Framing, Joe Freza, Aroldo Garcia, Joaquin Geraldo Zeferinao, individually and d/b/a Zeferino Framing, Leo Trombley, Judy Schultz, J&D Interior Design, Jose Dasmerces d/b/a J.P. Construction, Scott Chandler

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d/b/a Coastal Custom Windows & Doors, R&D Construction, Nicasio Ramirez Zunigo, Walchir Morais, Marco Trebbi, Blankenship Roofing, Inc., DLJ Construction, LLC, Dewayne Bates, The Bates Group, LLC, Bridges Construction Co., Brewer Construction, Inc., Speedy Concrete, REB-FEL, Inc., Mark Mychajluk, Eric Jazwinski, Southern Framing Corporation, AB Consulting Engineers, Inc., WWI Development Company, LLC, Michael Dawson Construction, Inc., Asphalt Paving & Maintenance Co., Inc. and Chuck's Construction Co., Inc., Right Way Group, Inc., Stevens Construction Co., Inc., Geometrics, Inc., Eric Yazwinski, Law Engineering, Inc., D & M Builders, Inc., Hill Construction Company, Bonnie Stone a/k/a Bonny Stone, DJL Construction Company, L.L.P., Adrian Mondragon, individually and d/b/a Mondragon Construction, Inc., and Glen Causey, Defendants,

Of Whom Speedee Concrete, Inc. and Chuck's Construction, Inc. are the Respondents.

Chuck's Construction Co., Inc., — Third-Party Plaintiff,

v.

Vereen Concrete Co., Inc. and Asphalt Pavement Maintenance of Myrtle Beach, Inc., — Third-Party Defendants,

Rivergate Homeowners' Association, — Appellant,

v.

WW & LB Development Company, LLC, Speedy Concrete, AB Consulting Engineers, Inc., and Chuck's Construction Co., Inc., — Defendants,

Of Whom AB Consulting Engineers, Inc. is the — Respondent.

RECORD ON APPEAL

VOLUME III

Stacy L. Stanley, Esquire
V. Denise Hamilton, Esquire
STANLEY LAW FIRM
3303 Highway 9 East
Little River, SC 29566
(843) 390-9111 – Tel.
Attorney for Appellant

G. Michael Smith, Esquire
THOMPSON & HENRY, P.A.
Post Office Box 1740
Conway, SC 29528
(843) 248-5741 – Tel.
Attorney for Respondent Speedee Concrete, Inc.

Stephanie Burton, Esquire
GIBBES BURTON, LLC
308 East Saint John Street
Spartanburg, South Carolina 29302
(864) 327-5000 – Tel.
Attorney for Respondent AB Consulting Engineers

Christina Bisset, Esquire
McANGUS GOUDELOCK & COURIE LLC
Post Office Box 1349
Myrtle Beach, SC 29578
(843) 848-6000 – Tel.
Attorney for Respondent Chuck's Construction, Inc. (Co-Counsel)

J. Christopher Clark, Esquire
McANGUS GOUDELOCK & COURIE LLC
Post Office Box 1349
Myrtle Beach, SC 29578
(843) 848-6000 – Tel.
Attorney for Respondent Chuck's Construction, Inc. (Co-Counsel)

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Certificate of Counsel

The undersigned hereby certifies that the Record on Appeal contains all material proposed to be included by any of the parties and not any other material.

November 9, 2015

Stacy L. Stanley, Esquire
V. Denise Hamilton, Esquire
Stanley Law Firm
3303 Highway 9 East
Little River, South Carolina 29566
(843) 390-9111
Attorney for Appellants

STATE OF SOUTH CAROLINA)
) COURT OF COMMON PLEAS
COUNTY OF HORRY)

ROBERT SANGER, representing a class of simmilarly Situated people,

Plaintiffs,

-versus-

CASE NO.: 07-CP-26-0228

WW & LB Development Company, LLC, Keye Construction Co., Inc., Right Way Construction Company, Inc., RWG, Inc., Russell Baltzer, Aiello Associates, Daniels Engineering, Inc., Rivergate Homeowners Association, Rivergate Homeowners' Association Board of Directors, Wayne Winderman, individually, Salvatrice Foran, individually, and Gerard Foran, individually, Marcos Soares, individually, and d/b/a M.S. Construction, William C. De Souza, individually, James Eason, individually and d/b/a James Eason & Company, D&D Cleaning and Construction, Inc., Joel's Framing, Jo Freza, Arolo Garcia, Joaquin Geraldo Zeferino, individually, and d/b/a Zeferino Framing, Leo Trombley, Judy Schultz, J&D Interior Design, Jose Dasmerces, d/b/a J.P. Construction, Scott Chandler d/b/a Coastal Custom Windows & Doors, R&D Construction, Nicasio Ramirez Zunigo, Walchir Morais, and Marco Trebbi,

Defendants.

RIVERGATE HOMEOWNERS' ASSOCIATION,

Plaintiffs,

-versus-

CASE NO.: 08-CP-26-4690

WW & LB Development Company, LLC, Keye Construction Co., Inc., Right Way Construction Company, Inc., RWG, Inc., Russell Baltzer, Aiello Associates, Daniels Engineering, Inc., Rivergate Homeowners Association, Rivergate Homeowners' Association Board of Directors, Wayne Winderman, individually, Salvatrice Foran, individually, and Gerard Foran, individually, Marcos Soares, individually, and d/b/a M.S. Construction, William C. De Souza, individually, James Eason, individually and d/b/a James Eason & Company, D&D Cleaning and Construction, Inc., Joel's Framing, Jo Freza, Arolo Garcia, Joaquin Geraldo Zeferino, individually, and d/b/a Zeferino Framing, Leo Trombley, Judy Schultz, J&D Interior Design, Jose Dasmerces, d/b/a J.P. Construction, Scott Chandler d/b/a Coastal Custom Windows & Doors, R&D Construction, Nicasio Ramirez Zunigo, Walchir Morais, and Marco Trebbi,

Defendants.

THE 30(B)(6) DEPOSITION OF RIVERGATE HOMEOWNERS' ASSOCIATION BY MICHAEL GARDNER

Tuesday, July 14, 2009
10:25 a.m. -- 4:55 p.m.

Prestige Court Reporting, Inc.
413 Paul Street
Conway, South Carolina 29527
(843) 248-5252

president to your knowledge?
A: When she held it? I believe, from the moment the board was assembled and we had our first meeting to approximately somewhere in February. I don't have those meeting notes in front of me, but she requested that she no longer be president and there was a vote, and I was elected president.
Q: Okay. So basically from the turnover or when the homeowners gained control of the HOA, Ms. Gum at that point was president. She maintained that position for a short period of time, sounds like, and then assumed it from then --
A: That's correct.
Q: --- until present; is that correct?
A: Right, that's correct.
Q: Who else serves on the Board of Directors currently?
A: Bob Krupczyk, Bob Sanger, Sylvia Lindsay and Bettye Gum.
Q: I am going to enter into the record of your deposition an actual copy of the deposition notice, and I'd ask for you to briefly look at that. Have you seen that deposition notice before?
A: Yes, I believe, yes.

we know the things that need to be done. So my answer to that would be, a strict maintenance plan, my answer would be no; but an idea of what things need to be done next, yes.

Q: Anything in writing?

A: No.

Q: When you say "an idea of things that need to be done next," give me what kind of categories that would include?

A: Items that are, -- homes that are leaking, homes that are -- and irrigation, not only irrigation problems, which really isn't part of this suit, but that's another thing that -- well it is and it isn't. Irrigation would be one thing, we've had problems with that, and we've had trouble with the upkeep with that. We also have had -- certainly the drainage within the community is a serious concern that needs to be addressed. We're trying to address these problems as we can; and again, wherewithal is important. Some of the questioning from this morning leads to, you know, how much money do we have to deal with projects at a particular time.

Q: Have you ever done any sort of study in order to determine the life, the different life cycles of

Q: Right, Exhibit 4?
A: Uh-huh (affirmative response), uh-huh (affirmative response). Yes, sir.
Q: You're fine, I understood you. As I understand it, at some point, I think possibly around November or -- October or November of 2007 the board or the power over the board or something to that effect transferred from Mr. Winderman or WW & LB or one of those people or entities over to the homeowners and an actual Board of Directors was elected out of the homeowners at Rivergate; is that correct?
A: That is correct.
Q: And am I correct about the time frame; October, November of '07?
A: Correct.
Q: Were you originally elected to be an officer of the board?
A: I was elected as a member of the board and then the board in, did the election within the five people as to who would be in what office.
Q: Let me make sure I understood you correctly. It appears from what I understood there was a first election to determine members?
A: That's correct.

Q: And out of those -- five members?
A: That's correct.
Q: Out of those five members, were then elected officers of the board, correct?
A: That's correct.
Q: So since the board has been controlled, for a lack of a better term, by the actual homeowners at Rivergate, you have either been a member or an officer of the board?
A: That's correct.
Q: And if I remember correctly, but for a short-term where Ms. Gum was president, you've been president of the board?
A: That's correct.
Q: Mr. Krupczyk, is he a member or an officer of the board?
A: He is a member.
Q: Explain to me exactly the difference between a member and an officer?
A: Okay, all members -- well let me start with all members of the board have one vote on any issue, so I guess that's one thing.
Q: All right.
A: The difference obviously is in what you do as a member -- as a part of the board. The president

the board aware of any other person at Rivergate that may have that similar concern?
A: I am not aware of anyone else having a concern related to their slab being compromised.
Q: Okay.
A: I am aware of drainage problems in the community which have been a concern right along.
Q: When did you move there again?
A: Five years ago.
Q: '04?
A: That's correct, July of '04.
Q: July of '04, almost probably to the day, five years. Have you had drainage problems at Rivergate since you moved there; and when I say "drainage," I mean rainwater damage, storm water drainage?
A: My quick answer to that would be yes, there are problems.
Q: How often do you run into Mr. Bucks or Mr. Pope or their spouses or family?
A: Not very often even though it's only a couple of houses away.
Q: You live in 4A or B?
A: I live in A.
Q: If I'm standing on Rivergate Lane and looking at

which your information shows Martin and Betty Jo Hope in 23B and Melvin R Barnett, Sr. in 23D and then the clubhouse. Let's just start with the clubhouse since it's one building and we don't have so many owners. As you sit here today, do you have any knowledge, information or evidence that there has been any leakage or problems with of leakage at the clubhouse?

A: I do not.

Q: Do you have any knowledge, information or evidence that there's been any problems with drainage at the clubhouse?

A: I do not.

Q: Beyond that do you have any information or evidence as you sit here today that there have been any repairs that have been necessitated at the clubhouse since original construction?

A: I have no knowledge of it, no.

Q: The clubhouse, in its entirety, is owned by the HOA; am I correct?

A: Well, interestingly enough, and one thing that hasn't -- the horizontal property regime which includes the swimming pool, clubhouse, streets, et cetera, are still under the control of WW & LB and not under the control of the Homeowners'

Association.
Q: Okay. I thought -- I went to the property management company and saw a document one time and it made a reference to the fact that WW & LB retained only ownership of those elements for 25 years, something to that effect. Does that sound vaguely familiar to you?
A: I don't recall a 25 years situation there: but I, I just am aware, and from everything that I have learned since I've been in there, that they still have control of the, much of the horizontal property regime. Basically, what we have control of is collecting money from the homeowners, you know, dealing with the problems of everyday life that occur in Rivergate, those types of things: but we do not have control, total control of things. Actually, we might, we probably have to ask permission to repair a road, from Wayne, the way it now stands.
Q: Okay. So as you understand it currently, as it now stands with regard to the clubhouse, if you folks wanted to do something to the clubhouse, ---
A: Uh-huh (affirmative response).
Q: --- say remodel in some way, renovate in some way

STATE OF SOUTH CAROLINA COURT OF COMMON PLEAS

COUNTY OF HORRY

Rivergate Homeowners' Association, et. al,
Plaintiff(s),
-vs-

CASE NO. 2010-CP-26-3901

WW & LB Development Company, LLC, RWG, Inc., Aiello Associates, Daniels Engineering, Inc., Rivergate Homeowners' Association, Rivergate Homeowners' Association Board of Directors, Wayne Winderman, individually, Salvatrice Foran, individually, Gerard Foran, individually, Marcos Soares, individually, and d/b/a M.S. Construction, William C. De Souza, individually, James Eason, individually, and d/b/a James Eason & Company, D&D Cleaning and Construction, Inc., Joel's Framing, Jo Freza, Aroldo Garcia, Joaquin Geraldo Zeferino, individually, and d/b/a Zeferino Framing, Leo Trombley, Judy Schultz, J&D Interior Design, Jose Dasmerces d/b/a J.P. Construction, Scott Chandler d/b/a Coastal Custom Windows & Doors, R&D Construction, Nicasio Ramirez Zunigo, Walchir Morais, Marco Trebbi, Blankenship Roofing, Inc., DLJ Construction, L.L.C., Dewayne Bates, The Bates Group, LLC, Bridges Construction Co., Brewer Construction, Inc., Speedy Concrete, REB-FEI, Inc., Mark Mychajluk, Eric Jazwinski, Southern Framing Corporation, AB Consulting Engineers, Inc., Geometrics Consulting, LLC, WWI Development Company, LLC, Michael Dawson Construction, Inc., Asphalt Paving & Maintenance Co., Inc., and Chuck's Construction Co., Inc.,
Defendant(s).

(Caption Continued)

THE DEPOSITION OF J. DREW WILKIE, taken on behalf of the Defendant on Thursday, January 19, 2012, commencing at 10:10 a.m. at the Law Offices of McAngus Goudelock & courie, LLC, Founders Centre, 2411 N. Oak Street, Suite 401, Myrtle Beach, South Carolina.

REPORTED BY: Nicole D. White

A-P-P-E-A-R-A-N-C-E-S:

Appearances for the Plaintiff:
By: Stacy L. Stanley, Esquire
STANLEY LAW FIRM
3303 Highway 9 East
Little River, South Carolina 29566
(843) 390-9111
Sstanley@stanleylawfirm.com

Appearances for the Defendants:
(A.B. Consulting Engineers, Inc.)
By: Stephanie Burton, Esquire
GIBBES BURTON
308 E. St. John Street
Spartanburg, South Carolina 29302
(864) 327-5000
Sburton@gibbesburton.com
and
(Chuck's Construction)
By: Daniel McCoy, Esquire
MCANGUS GOUDELOCK & COURIE, LLC
Founders Centre
2411 N. Oak Street, Suite 401
Myrtle Beach, South Carolina 29577-3173
(843) 848-6000
Daniel.McCoy@mgclaw.com
and
(Rivergate Homeowners' Association)
By: Ely Grote, Esquire
BROWN & BREHMER
1720 Main Street Suite 201
Columbia, South Carolina 29201
Ely.grote@brownandbrehmer.com
(803) 771-6611
and
(B&B and Blankenship Roofing)
(Via telephone)
By: J. Blanton O'Neil, Esquire
HOOD LAW FIRM
172 Meeting Street
Charleston, South Carolina 29402
(843) 577-4435
Blanton.Oneil@hoodlaw.com
and

(Appearances Continued)

(Via telephone)
By: Eric Cavanaugh, Esquire
SWEENY, WINGATE & BARROW
1515 Lady Street
Columbia, South Carolina 29201
(803) 256-2233
Jec@swblaw.com
and
By: Michael J. O'Sullivan, Esquire
RICHARDSON, PLOWDEN, CARPENTER & ROBINSON
2103 Farlow Street
Myrtle Beach, South Carolina 29577
(843) 448-1008
Mosullivan@RichardsonPlowden.com
and
(Alello Associates)
By: Barbara J. Wagner, Esquire
BARNWELL, WHALEY, PATTERSON & HELMS
885 Island Park Drive
Charleston, South Carolina 29492
(843) 577-7700
Bwagner@barnwell-whaley.com
and
(Mychajluk)
(Via telephone)
By: James Atkins, Esquire
CLAWSON & STAUBES
126 Seven Farms Drive, Suite 200
Charleston, South Carolina 29492
(843) 577-2026
JAtkins@clawsonandstaubes.com
and
(Joel's Framing, Joaquin Geraldo Zeferino and Zeferino's Framing)
(Via telephone)
By: Laura E. Paris, Esquire
CARLOCK, COPELAND & STAIR
40 Calhoun Street, Suite 400
Charleston, South Carolina 29401
(843) 727-0307
Lparis@carlockcopeland.com

(Appearances Continued)
and
(R&D Construction)
(Via telephone)
By: Jason Stevens, Esquire
WILSON & HEYWARD
924 Folly Road
Charleston, South Carolina 29412
(843) 762-4567
Sstephens@wilsonheyward.com
and
(Jo Freza, Aroldo Garcia and Scott Chandler d/b/a Coastal Custom Windows & Doors)
(Via telephone)
By: Christopher M. Adams, Esquire
COLLINS AND LACY
1330 Lady Street, Sixth Floor
Columbia, South Carolina 29201
(803) 255-0441
cadams@collinsandlacy.com
and
(M.S. Construction and Marcos Soares)
(Via telephone)
By: J. Rufus Bratton, Esquire
AIKEN BRIDGES
181 East Evans Street
Suite 409
Florence, South Carolina 29506
(843) 669-8787
Jrb@aikenbridges.com
and
(Judy Schultz and J&D Interior Design)
(Via telephone)
By: Carrie Fox, Esquire
AIKEN BRIDGES
181 East Evans Street
Suite 409
Florence, South Carolina 29506
(843) 669-8787
and
(William C. De Souza and REB-FEL, Inc.)
(Via telephone)
By: Peden Brown McLeod, Jr., Esquire
ELMORE & WALL
145 King Street, Suite 302
Charleston, South Carolina 29401
Brown.McLeod@elmorewall.com
(843) 329-9500

(Appearances Continued)
and
(J.P. Construction and Jose Dasmerces)
(Via telephone)
By: Elizabeth Fritz Bailey, Esquire
HAYNSWORTH SINKLER BOYD
134 Meeting Street, 3rd Floor
Charleston, South Carolina 29401
(843) 722-3366
ebailey@hsblawfirm.com
Also Present:
Amie Drucker

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(J. DREW WILKIE, P.E., having been first duly sworn, testified as follows:)

E-X-A-M-I-N-A-T-I-O-N

BY MS. BURTON:

Q. Mr. Wilkie, you and I have met before. My name is Stephanie Burton and I represent A.B. Consulting Engineers, Inc. in this lawsuit brought by the Rivergate Homeowners' Association that's pending in Horry County.

I'm going to ask you some questions today. I know you've given deposition testimony before, but the rules of civil procedure require that I give you certain instructions.

If I ask you a question that you don't understand for any reason, if you will ask me to repeat or rephrase the question, I'm glad to do that for you. I would ask that you don't ask Mr. Stanley how to respond to a question or ask him any questions. You need to ask the lawyer that asked you questions to clarify. Is that okay with you?

A. **I understand.**

Q. If you answer a question that I've posed to you, I'm going to assume that you understood the question that I asked; is that okay with you?

A. **It is.**

Q. If you want to take a break at any point today, just let me know and we'll take a break. We'll try and take a break every hour or so. I would ask that you answer any pending question before we take a break. Is that okay with you?

A. **All right.**

Q. Can you state your full name, please, sir?

A. **John Drew Wilkie.**

Q. Where are you currently employed, Mr. Wilkie?

A. **Kimley-Horn and Associates, Incorporated.**

Q. What's your position with Kimley-Horn right now?

A. **I'm an engineer and project manager.**

Q. And do you work in a particular group at Kimley-Horn?

A. **I work within a group that is commonly referred to as forensics.**

Q. Okay. To whom do you report in the forensics group?

A. **A gentleman named Rick Moore.**

Q. Is Mr. Moore in the forensics group or does he have other responsibilities, as well?

A. **He has other responsibilities, as well and he's also in the forensics.**

(Off-the-Record conversation.)
BY MS. BURTON:
Q. Mr. Wilkie, let me ask you this, so I understand your role in this case. Do you intend to render any opinions as an expert witness that any of the defendants deviated from the applicable standard of care?
A. I may.
Q. Okay. What does that mean, I may or I plan to?
A. I've presented my opinions and conclusions in this case in what I think is a very detailed manner in my report.
Q. Uh-huh.
A. And to the extent that those conclusions tie to someone's standard of care, I will speak about those, but only to that extent.
Q. Okay. Do you intend to render an opinion that my client A.B. Consulting Engineers deviated from any applicable standard of care?
A. I do.
Q. Okay. Can you tell me, when you say you're gonna render opinions about the standard of care, can you tell me what standard of care do you plan to compare their services to?

A. That of an engineer providing consulting services.
Q. An engineer providing what kind of consulting services?
A. Services for land development and improvement of real property.
Q. I mean, are we talking about civil engineering services?
A. Yes.
Q. Okay. During what period of time? Are you trying to compare services to services that were performed by engineers back in 1999 or today?
A. In 1999. Basically around the time that the -- that the site was designed and developed.
Q. Okay. You would agree with me that the initial design work was done in 1999, would you not?
A. Yes.
Q. And I think the plans were actually permitted in 2000; is that your understanding?
A. It is. And to some extent -- to some extent any opinions I have about the standard of care would -- would really apply to current standards, as well, but they would relate -- they would relate to the standards that would have been in place at that time.
Q. I'll have to -- you're gonna have to clarify. What do you mean it would apply current standards?
A. Well, what I mean is that I may -- I may have a difficult time parsing what any differences may exist between standards of care that would have been in effect at that time versus currently or within the last few years.
In many ways the things that I would opine about with regard to standard of care, standard of care would not have changed in that period of time, so the current -- current standard of care would be -- would be similar to what would -- what would have been in effect at that time.
Q. Let me ask you this, because I'm generally familiar with your background. Back in 1999 when the plans were prepared by my client, you'd been out of college for two years; is that right?
A. That's correct.
Q. And you were not at that time performing civil design services of the nature performed by A.B. Consulting Engineers, were you?
A. That's correct.

Q. You were, in fact, doing geotechnical work with SNME up in Spartanburg, my home town?
A. That is where I was employed, yes.
Q. When is the first time you prepared, and not in a forensic case, but where you were actually gonna be the engineer of record? When was the first time you prepared site plans like those prepared by A.B. Consulting Engineers as the engineer of record?
A. I don't typically prepare those kinds of documents as my -- in my course of business. I'm a consultant. I provide consulting services to people who encounter problems with their property or with their building and pavement and site systems, but I don't routinely prepare design plans. I'm a consultant by trade.
Q. So the answer to my question is you've never prepared drawings such as those prepared by A.B. Consulting Engineers as the engineer of record?
A. I have prepared drawings as the engineer of record, but not on a site that would be exactly like the one that's in question here.
Q. Have you done it on what I'll call a green field

site where somebody is actually gonna have to build from scratch on the site and perform all the original infrastructure?

A. No. No, I have not.

Q. Okay. Is the instances where you've prepared plans as the engineer of record, instances where there was gonna be some sort of repair or modification to an existing site?

A. Yes, they are.

Q. Okay. And is that work that you've done in connection with your work at Kimley-Horn?

A. Yes, it is.

Q. Okay. I assume you didn't prepare civil -- straight up civil design services when you were at SNME?

A. That's correct.

Q. You would have done geotechnical type work?

A. That's right.

Q. Is that right? Tell me on the instances in which you've prepared plans with respect to a repair or modification to an existing system in your work at Kimley-Horn, how many of those involved site design plans for a site located in the coastal area of South Carolina?

A. Could you state the question again?

Q. Sure. You understand that this case involves a subdivision in Horry County?

A. I do.

Q. Okay. Have you prepared civil drawings yourself for sites located on the -- in the coastal areas of South Carolina?

A. I have not.

Q. Okay. You prepared some repair drawings in this case?

A. I did.

Q. Have you prepared drawings similar to those, and by that I mean storm water management type designs for properties located in the coastal area, other than the ones you did for Rivergate?

A. I have not.

Q. Okay. Has most of your work been in the Piedmont area?

A. It ranges. I would say predominately my work is in the Piedmont area of North Carolina and in the mountains of North Carolina and in the upstate of South Carolina and also in parts of Georgia and Alabama.

Q. Okay.

A. And also some in Florida.

Q. Okay. Would you agree with me generally, that

the issues faced by a civil design firm such as A.B. Consulting Engineers working in Horry County and the coastal areas are somewhat different than those focused on by a civil engineer in the upstate of South Carolina?

A. I agree with that.

Q. I mean, there's different topography, different types of soils and different types of devices used for storm water management, aren't there?

A. I do agree.

Q. Okay. So your foray into designing storm water management in a coastal area is limited to this Rivergate matter?

A. No. No, it's not.

Q. Okay. Well, tell me when you've done other storm water management designs in the coastal area, other than at Rivergate?

A. I must not have listened clearly to your question, because when you said it the second time -- again, I have not designed storm water systems in a coastal area.

Q. Okay.

A. But it is common and I have reviewed and evaluated quite a few systems and sites that are in coastal areas, so my consulting work is --

has been provided in coastal areas, but I have not provided design work in coastal areas.

Q. Okay. Have you ever been involved in submitting a permit to DHEC for land disturbance?

A. No.

Q. You've never done an MPDES permit?

A. I've never submitted a permit for land disturbance activities.

Q. Have you ever had to submit a permit and deal with the folks at OCRM?

A. No, I have not.

Q. Have you had to submit drawings to Horry County for its review?

A. I have not.

Q. Okay. Do you have any information or knowledge about what requirements OCRM required back in 1999 if somebody submitted drawings to them other than those you've seen in the manual?

A. I do not.

Q. Okay. So basically, as I understood your report, I think you actually had a 2003 version of the South Carolina Storm Water Management and Sediment Control handbook, I mean, that's attached to your report, right?

A. **Yes, it is.**
Q. And of course, the 2003 version wouldn't have been used back in 1999, right?
A. **The portions of that report that I relied on were in effect in 1999.**
Q. How come you used the 2003 version then?
A. **Because the old version was no longer available. We talked with representatives for South Carolina DHEC who confirmed for us that the 2003 version in the sections of that document that we were reviewing were the same in name and verse as those that were in the earlier version. That they simply didn't have a copy of it anymore and that we could rely on that newer version and that it was the same as the earlier version, so that's what we did to see what version was in effect at the time of design and construction.**
Q. What does "we" mean, does that mean you or does that mean somebody other than you?
A. **I had several people that worked on this project with me. I didn't perform every single task or phone call on my own. I had other people that I would call on to do some of that work for me.**
Q. Okay. So somebody else called DHEC?

A. **Yes, they did.**
Q. Okay. Do you know whether the manual allows the folks that worked at OCRM to waive provisions contained in the manual?
A. **I don't know.**
Q. Okay. Would it surprise you if the folks that worked at OCRM could, in fact, waive provisions contained in the manual if they so chose?
A. **That would not surprise me.**
Q. Okay. Do you know whether any of the folks at OCRM waived any of the provisions contained in the manual with respect to this project?
A. **I do not.**
Q. Okay. You've assumed that they did not in your report; is that accurate?
A. **Well, I've assumed that they took the information that was provided to them and considered that before or in accordance with any waivers that they would have made.**
Q. Okay. Okay. But you don't have particular knowledge, obviously, about any discussions that anybody had with OCRM about the design?
A. **That's correct.**
Q. Okay. Do you intend to render any opinion regarding any deviation from the standard of

care with respect to the grading contractor?
A. **I do.**
Q. Okay. And who is it you understood was the grading contractor on the job?
A. **The documents that I reviewed as part of my work referred to two different contractors that, that I, that I interpreted as being site development contractors. One of their names is Chuck's Construction Company and the other is Stevens Construction Company.**
Q. What is your understanding about the division of labor between Chuck's and Stevens?
A. **I do not know.**
Q. So when you in your report opine about deviations in the construction from the drawings, which you do or defects or deficiencies in the actual construction, you don't know who to attribute that to I take it?
A. **I haven't made a determination of that.**
Q. And you're gonna have to help me a little bit, what -- I know you worked at SNME for about five years, was it?
A. **Five and a half years, I believe.**
Q. Okay. Did you when you worked with SNME in Spartanburg office, did y'all do any projects

down in Horry County?
A. **SNME did. I did not work on projects in Horry County at that time.**
Q. I would assume an office closer to Horry County would get that work and the Spartanburg office would be doing upstate work; is that a fair assumption?
A. **That's partly true.**
Q. Is it fair to say then, back in 1999 and 2000 when this project was constructed or at least commenced, that you personally did not have any experience with any grading contractors that worked in this area?
A. **I don't know, because grading contractors are a fickle bunch of contractors and they work where the work takes them, so some contractors that I worked with could have worked down here, but I don't know.**
Q. Okay. Are there different concerns when one is performing grading services in the coastal portion of South Carolina than if one is performing grading services in the Piedmont area of South Carolina?
A. **Yes. One has to know the area that they're working in.**

Q. Okay. And I assume because there are different topography and soil characteristics there may be different construction techniques that have to be utilized; is that fair?
A. That is a fair statement.
Q. Tell me then what experience you had back in 1999 and 2000 in the construction techniques utilized by grading contractors who performed work in the coastal area of South Carolina?
A. I didn't have that experience in 1999.
Q. Okay. Okay. Or 2000?
A. Correct.
Q. When did you first ever have that experience?
A. I don't have a clear answer for you.
Q. Would it be at Kimley-Horn?
A. Yes. Yes.
Q. Okay. And you -- I'm sorry, I just don't recall off the top of my head, when did you join Kimley-Horn?
A. In 2003.
Q. Okay. So sometime after 2003 you would have had experience involving a contractor who performed grading services in the coastal areas of South Carolina?
A. That's not -- that's not what I intended to say.

Q. Tell me what you intended to say?
A. Well, ask me your question again, so I make sure I answer it clearly.
Q. Okay. My question is -- I mean, I understand, Mr. Wilkie, that when you worked at SNME you would have worked on projects that would have involved mass grading, is that accurate?
A. It is.
Q. And you would have performed both construction and material testing services and geotechnical engineering services that related to those projects, is that true?
A. That's true.
Q. And would you have had familiarity by going out on those projects and working on them with grading services performed in that particular geographical area, is that true?
A. That's true.
Q. Okay. When did you first acquire similar experience with grading contractors that work in this geographical area along the coast of South Carolina?
A. Once I became employed at Kimley-Horn my experience in consulting for geotechnical and construction materials aspects of projects broadened to include coastal areas.
Q. Okay. So at Kimley-Horn is where you started performing similar services to those that you'd performed at SNME?
A. No. I didn't perform the same services. I don't to this day perform construction materials testing myself, but I provide consulting about those kinds of services.
Q. You say you performed consulting about those, you don't actually do geotechnical investigations at your company?
A. That's right.
Q. Y'all sub that out, I take it?
A. Historically I have sub-contracted that out. I can't speak for others.
Q. And does Kimley-Horn do construction and materials testing services?
A. I've not done that.
Q. Not while you were at Kimley-Horn?
A. No, ma'am.
Q. Okay. And does Kimley-Horn do geotechnical investigations?
A. No.
Q. Okay. So you've done forensic services that look at or relate to that type of work, I

gather?
A. I have.
Q. Okay. And when you've done that -- you're gonna have to help me a little bit. When you've done that, other than looking at a project that's been completed or assisting in a repair, would you have had any other involvement with grading contractors that work in this area of the state?
A. No.
Q. Okay. And tell me a little bit, since you've been at Kimley-Horn I think you said '90 -- I'm sorry, 2003?
A. That's right.
Q. Since you've worked at Kimley-Horn in 2003, how many projects have you personally been involved in where there was any grading operation actually performed under your work, I mean, using your repair or your maintenance plan or something?
A. I don't have an answer for you. Several, but I don't have a clear answer.
Q. Is several meaning less than five or give me some idea?
A. More than five. I just hesitate to put a number on it when I don't have a record of it. I just

don't keep track of those kind of things.

Q. Okay. Give me an idea, since you've been with Kimley-Horn, have you always worked in the forensics area there?

A. I have.

Q. Since you've worked at Kimley-Horn in the forensics area starting in 2003, how many projects have you actually prepared any kind of design for that are in the coastal area of South Carolina?

A. I have not. As I said before, I don't commonly provide design plans in my course of work.

Q. Okay. My question wasn't very good and I apologize, Mr. Wilkie. I know that you prepare drawings for repairs like you did here.

A. Yes.

Q. Okay. And I understand you don't do green field design, I understood that, but with respect to drawings like you prepared for this project where you've done some sort of repair drawing and scope --

A. Right.

Q. -- how many of those have you done that relate to a project along the coast and I want to focus solely on grading and storm water management?

MR. STANLEY: Object to the form. There's no question there.

A. Before you were asking specifically about Horry County, so I'm not -- you didn't say anything about Horry County when you rephrased it.

Q. Okay. Let me start again. In this case you've prepared repair drawings relating to a storm water management system, correct?

A. I've prepared a scope of repair and an accompanying plan that depicts what those repairs would consist of, yes.

Q. Okay, but they're not design --

A. But they're not construction plans. Those are conceptual plans to be used to help develop repairs and assign cost to those repairs.

Q. Okay. If you went forward, you would prepare a detailed design --

MR. STANLEY: Object to the form.

Q. -- is that true?

A. Whoever would go forward with that work would ultimately prepare a set of signed and sealed plans.

Q. Okay. So you would need some sort of detailed design and specifications so a contractor could actually execute the repair; is that true?

A. That's not necessarily true, no.

Q. Do you think they could do it off the drawings they have to date and the scope of repair?

A. As a starting point, that's certainly possible, yes.

Q. So you think a contractor could go out and execute based on those documents?

A. As a starting point. They'd need guidance and have some questions, but you could work through that. But those plans would be ample assistance to a qualified contractor to be able to do those repairs. Now, it's understandable they would have questions and there would have to be answers given to those questions, but yes, you could -- you could at least have a starting point there. But those plans are not intended for that purpose. I'm just saying it's possible that a qualified contractor could do that.

Q. Does the scope of repair that you prepared with respect to Rivergate, would that scope of repair have to be submitted to any sort of permitting agency?

A. I expect it would.

Q. Would a permitting agency require a more detailed design before they would issue the

permit?

A. I think so.

Q. Okay. So in reality, if you had to get the drawings permitted, what we've got so far is not sufficient for that purpose?

A. For the permitting process and for administrative purposes, no, but that wasn't really what you were asking before. You were more asking about could it be done.

Q. Okay. With respect to projects in the coastal areas of South Carolina, on how many occasions have you prepared drawings that could be submitted for a permit?

A. I have not.

Q. Okay. Are there other occasions where you have submitted drawings similar, and I don't mean in actual form, but similar in completion to those that you prepared for Rivergate for another project along the coast?

A. I don't have -- I don't have a project that I could call upon from memory right now to answer that, no.

Q. Okay. Well, let me ask you about your repair scope and drawing. Do you -- do you have that handy? You've got a nice notebook over there.

There we go. And I'll also hand you a document that we marked yesterday to the deposition of Donnie Ray, which is an e-mail, but it also has on the second page a quantity take off.

MR. STANLEY: Are you using that Exhibit 1 in this deposition or are you just having him refer to it?

MS. BURTON: I'm showing it to the witness. Yes, I'm having him refer to it.

MR. STANLEY: Okay.

BY MS. BURTON:

Q. The table that's page two of Exhibit 1 to Mr. Ray's deposition contains various items of work and quantities. Is that a table that you prepared?

A. I didn't type in the items and numbers associated with the table, but it was prepared under my direction, yes.

Q. Okay. Who prepared it under your direction?

A. I had Eric Hampton prepare the table for me.

Q. Who's Eric Hampton?

A. He is an engineer and colleague of mine at Kimley-Horn.

Q. What kind of engineer is he?

A. He's a civil engineer.

Q. I mean, does Mr. Hampton prepare civil drawings like the drawings prepared by A.B. Consulting?

A. He does.

Q. Okay. Tell me how the quantities were calculated?

A. Eric Hampton and I have worked together with a site plan for the property and defined the areas and the scope of work that -- that I wanted to accomplish and I asked him to measure those areas and extract from the measurements the quantities and put those into this spreadsheet so that I could review them and edit them and ultimately submit them to the contractor.

Q. Is there a computer program that was used to do this measurement and calculations of the quantities?

A. Yes. I believe -- I believe Eric used a CAD program to assist him in making some measurements. He scanned in a set of the -- or a sheet of the plans and used that as a basis to make measurements in CAD.

Q. When you say, "scanned in a sheet of the plans," what plans are we talking about?

A. Some existing plans that -- or some plans that I was provided that had been prepared by A&B for design purposes.

Q. Some of the original design drawings?

A. That's correct.

Q. Okay. So those were scanned into CAD, I take it?

A. They were scanned and portions of those elements in the plans were used with -- you know, with computer software to make some measurements.

Q. Okay. And then -- I'm sorry. Mr. Hampton used the CAD program to try and calculate areas and quantities; is that accurate?

A. That's what I asked him to do, yes. That I needed for him to use the areas and items that I delineated and discussed with him for repair and for him to boil that down into some quantities so that I could review them.

Q. Okay. Is there a drawing? You have a drawing that you've actually pulled out, which is attached to your 2010 report. Is there a drawing that you have marked on that shows areas of repair?

A. You mean that I've marked on by hand or what do you mean?

Q. Well, let me give you an example. When we

talked with Mr. Ray yesterday about, for example, demolition and replacement of concrete driveways, he couldn't tell us off the top of his head which driveways they were gonna be. We could only look at the quantities of concrete. Is there a document somewhere that's marked up that we can see this driveway, this driveway and this driveway are the ones that are in those quantities?

A. I don't know.

Q. Okay.

A. I don't recall.

Q. Okay. Do you -- I mean, did you and Mr. Hampton have a document that you used when he did the quantities or was it all verbal?

A. It started as an oral discussion, me explaining to him what it is that I wanted to accomplish and we -- we wrote on some plans, existing planning plans that we had and discussed that and I don't -- I don't recall there being -- there being a document where we took -- where we identified which driveway would be repaired versus which driveway would not be repaired. I don't recall there being a document like that.

Q. Well, tell me sitting here today then, which

driveways on your plan, repair plan, are going to be replaced?

A. I'm not able to recall which specific driveways are part of the repair scope. There's simply an allowance for a square footage of concrete driveway area that's to be included in the estimate. But I don't have a -- I don't have a way to say today to you which driveways are to be -- are to be replaced. There are some that do need to be replaced and there's an allowance for making that replacement, but I'm not able to point to which driveways and tell you that these are the ones that should be replaced. There's an allowance for that, but not an identification of the location.

Q. Okay. Can you tell based upon the quantities in your -- in the take off that Mr. Hampton assisted you in preparing, can you even tell me how many driveways it is?

A. Not exactly.

Q. Do you have any idea what quantity of concrete is required to replace one driveway so we could try and back into it?

A. I suppose I could go through those kind of calculations, but I'd rather not do it under --

under the pressure of your time and --

Q. Under duress?

A. And your purview today. I'm glad to do that and that -- that would be a way to see the number of driveways that are included in that.

Q. Well, is that how y'all did it when you were working with Mr. Hampton? Did you guys say, hey, it's gonna be eight driveways or ten driveways, so okay, I think it's 200 yards of concrete for a driveway and do a calculation or is this a more general allowance number than that?

A. It wasn't a general allowance at the time, but after years have past, as I look at it, it -- my inability to recall to you right now as I'm sitting here makes it seem that way. The way that I approached it while on site, I observed which driveways would obviously need to be replaced and -- and I essentially counted them and included that in the quantity of concrete replacement.

Q. Is there -- do you have notes from that counting?

A. I don't know. I mean, I have notes from my site visits, but I don't know if that kind of a

number would appear on them or not.

Q. Okay.

A. I just know that that's the way that I arrived at what quantity is in the scope, is that the combination of my visual observations in conjunction with what I knew would need to happen in those areas told me how many driveways or which driveways or an approximate number of driveways that would need to be replaced.

Q. Tell me the reason or reasons for the driveway replacement?

A. One reason is that the slope of the existing driveways on some of the alleys or avenues that go between, between sets of buildings, the slope of the driveways is excessive and that excessive slope in combination with the inadequate surface drainage between buildings has caused surface water to build up at the top of the driveway and as the surface water has built up, it has permeated through the soil that is underneath the driveway and caused a condition that some might refer to as soil piping. It's an underground soil erosion where the particles of sand and silt are simply washed downhill under the concrete slabs and the hydrostatic pressure

that they're pushed under the slab which causes the pavement in the street in front of the driveways to heave up and fail.

So that's the primary reason that I see for replacing the driveways is that they're eroded, they're settling and there's a surface draining problem at the bottom and the top of them. Add to that the fact that the work that would be required in the street will understandably damage some of the driveways and there is a need to replace some of them primarily due to the slope and the erosion that's taking place.

Q. When you talk about the erosion taking place, is that limited to the driveways that have an excessive slope?

A. Its appearance is most notable on the driveways that have a higher slope than others. So if we walked the site today and we find the driveway that's flatter than another driveway, we'll have a more difficult time seeing this condition of erosion piping that I'm describing to you, but it does exist on a number of driveways and streets.

Q. Do you have a photograph of that condition?

A. I believe that I do. I just happened to have

turned to a page that has a photograph of that within my report. It's photo number 11 of the report prepared by me dated June 18th, 2010.

Q. Okay. Bear with me just a second, Mr. Wilkie. Let me mark a document as Exhibit Number 1, and I appreciate you've got a nice color copy, which I believe is the report that you've got in that nice notebook in front of you.

A. It looks like the same report to me.

(Defendant's Exhibit 1 was marked for identification.)

Q. Okay. And in the report you have some attached photographs?

A. I do.

Q. Let me catch up with you. Which one is it you said?

A. I was talking about photo number 11.

Q. Okay. Photo number 11 has a circle on it?

A. It does.

Q. Okay. Now, tell me what to look at in the photo number 11 that reflects the driveway condition that you were just describing to us, please?

A. The evidence of it in this photograph is the deformed asphalt pavement that's located within the circle between -- between the edge of the

concrete pavement and the edge of the drop inlet.

Q. Uh-huh.

A. So your copy is a little more faint than the one that I have, but it still does show that there are some -- there are some lines of contrast in the pavement and I should explain it.

Whenever I'm looking at photographs of pavement systems, even photographs that I've taken myself of conditions that I could see very easily, it is sometimes somewhat difficult to see them in a photograph, even if you're very close up, because you're looking at a surface that's fairly flat anyway. But in this picture that deformation is very visible and what that deformation represents is a heaving of the pavement surface where soil particles from under the driveway have been driven downhill under the pavement and raised that pavement up.

Q. Okay. Slow down for me so I understand. When you -- and let me look -- let me just look over your shoulder at your better quality picture than I've got. In the circled area where you say that's an area that's heaved up, for us lay people, is that actually just a lump in the

asphalt?

A. It is.

Q. Okay. So if we're looking at that picture, there's a lump in that asphalt?

A. Not just a single lump, but a series of lumps.

Q. Okay. And you attribute those lumps, to use my words, not a very engineering word, to soil that has migrated from under that concrete driveway under the asphalt?

A. Yes.

Q. Okay. And the driveway from which it would have migrated is the one where the car is depicted in photograph 11?

A. Yes.

Q. Okay. So you're gonna have to enlighten me a little more. In your opinion, water is entering under the concrete driveway at the top of the driveway near the house?

A. That's one place.

Q. I mean, are there other places?

A. Sure. Sure. There's water that's entering through the joints in the concrete themselves. There are control joints that are cut in the concrete so surface water that's deposited on the concrete, some of that will get under the

concrete and flow downhill the same as water from above the top edge of the driveway.

Q. Okay. So would that be the case in any kind of concrete driveway construction where you don't have any control joints, that water is gonna seep into the earth beneath the driveway?

A. No. Not in any case, no.

Q. Okay. Well, why is this case unusual?

A. Because of the slope of the driveways.

Q. Okay.

A. And -- and the type of soil. The sands that are typical in this area are most easily picked up under hydrostatic pressure and when the driveway is constructed at an inclination, as water is flowing downhill, it tends to take the sand with it.

Q. So you're saying the sand is basically migrating with the flow of water under the driveway?

A. Yes. It's the underside of the slab. The soil under the slab is eroding downhill just because the water is moving that direction.

Q. Okay. If the soil, it's probably not a good geotechnical type question, but if the soil underneath the slab is properly placed and adequately compacted, would it still tend to

migrate in the fashion you've described?
A. Though there are things you could do to combat this condition --
Q. Uh-huh.
A. -- it's my opinion that the slope of the driveway and the presence of surface water applied to the driveway would cause that to happen anyway. I mean, there are things you could do. I mean, you could stabilize the soil with cement, you could stabilize it with lime, you could do things to make the soil particles be more cohesive to one another and be more resistant to this erosion that I'm describing to you. There are things that could be done, but in conventional construction, no, when you put this slope of driveway with this type of soil and you apply surface drainage to it, I would expect to see the same condition.
Q. When you talk about the driveways that need to be replaced, did you use a particular criteria for slope, if the slope exceeded X percent it needed to be replaced?
A. No, I didn't use a slope -- a slope requirement, per se. I did walk the site and I observed areas where this heaving of asphalt was

occurring and we later had a surveyor do -- had a surveyor do spot checks on the slope of some of the driveways to see whether the slope that I was observing was really significant or if it was -- if it was not and what I found was that the survey measurements indicate the slopes are fairly steep and that in combination with the heaving of the asphalt confirmed for me what was -- what was going on.
Q. Where are the -- where is the data from the surveyor on the driveway spot checking?
A. You would have to extract that electronically. I brought all my files with me as you asked in your notice to me to appear and the surveyor's information they sent to us is in those files. The only paper copy of the surveyor's information that I have is within these roll of plans that's behind me.
Q. Uh-huh.
A. They're not -- they're sort of what I call raw survey data. They're not in a prepared plan, so it would be difficult to extract much information from them.
Q. Did you get the survey data directly from the surveyor in CAD?

A. I don't know what formats they were sent to me in, whether it was CAD only or whether it was CAD and PDF, I don't recall what format they were sent to us in, but I do know we got the CAD information.
Q. Okay. Did you get data directly from the surveyor in electronic format?
A. Yes, I did.
Q. Do you still have at Kimley-Horn that electronic data?
A. That's what I'm telling you I have on disk that's with me in this file.
Q. Oh, you have a disk?
A. Yeah.
Q. Okay.
A. I brought all my files with me today.
Q. Okay. So there's actually electronic data in your file?
A. Yes.
Q. Okay. Thanks. With respect to -- well, let me ask you this. I assume you found that some of the driveways out there are not overly steep?
A. True.
Q. On -- and then you found that some driveways exceeded what you believe to be an acceptable

slope?
A. That's true.
Q. Are all the driveways that you've found to exceed an acceptable slope to be replaced under your repair plan?
A. The ones that have the problem with the pavement deformation are definitely to be replaced.
Q. Okay.
A. I wouldn't necessarily look at a driveway, measure that its slope is excessive and by that geometry alone tell you that that driveway needs to be replaced. To me, there would need to be some other reason besides it's a little too steep. I mean, if someone found that it's dangerously steep or there's some risk to safety by -- because the driveway's so steep, that would be a different thing, but just because the driveway is too steep, I wouldn't say it needs to be replaced. There's got to be something else and that's why I'm talking about this erosion and heaving issue, is because if that's going on, we know that those driveways need to be replaced.
Q. Okay. Did you -- do you have in your repair plan replacement of any driveway because it is

dangerously steep?
MR. STANLEY: Object to the form.
A. I would -- I've not undertaken any kind of an evaluation to determine what's dangerous or not and I shouldn't have even said that word, because that's not been part of my work.
Q. Your work with respect to driveway replacement is where you believe there's a migration of material from under the driveway and you observed a condition in the asphalt that led you to believe that material has migrated under the roadway?
A. That's correct.
Q. Okay. Did you compare the as-built condition of the driveways to the design documents?
A. I'm sure that I did.
Q. Did -- do the as-built conditions of the driveways conform with the design documents?
A. I don't know. I do know there are different -- there's different sets of information on different sets of plans --
Q. Uh-huh.
A. -- that I have. But I don't know. That's the answer.
Q. In your report you indicate that you received

file materials from -- that had been in A.B. Consulting Engineers' files; is that true?
A. That's true.
Q. Do you recall seeing any materials in what you reviewed that indicated that there was a discrepancy in the construction of the driveways from what A.B. Consulting Engineers had designed?
A. I do.
Q. Do you remember correspondence with Mr. Winderman regarding the steepness of the driveways?
A. I do.
Q. Okay. Did that lead you to believe that the driveways as constructed did not conform with the design documents?
A. Partly.
Q. Okay. Tell me why you say partly?
A. Well, because the information I read about the issue between Mr. Winderman and his engineering consultant was that A.B. had sent to Mr. Winderman some guidance about dealing with the problem of driveway slope, which I believe constituted some copies of architectural graphic standards with some particular sections circled.

But the areas that were, I'll say circled and pointed out to Mr. Winderman provided a couple different sets of advice for a driveway slope. One was lessor and one was greater, so I'm not -- I'm not sure what the advice was.
So if you follow the more aggressive slope advice that's circled in that information sent to Mr. Winderman, then the driveways are pretty much okay with a couple of exceptions. But if you follow the more conservative advice that was circled and sent to Mr. Winderman, there are many more of them that are not compliant.
Q. Did -- when you looked at the original permitted drawings, I assume you noticed that there was a particular layout of the future homes to be constructed at the property?
A. I've seen at least two layouts of homes to be constructed.
Q. Okay. And there are homes depicted on the permitted drawings, right?
A. I believe so.
Q. Do you know whether the homes that were actually constructed bear resemblance to what is depicted on the initial drawings?
A. To me they do, yes.

Q. Okay. So you think that -- I mean, I think there were quads shown on the original drawings, do you recall that?
A. Yes. And then there was a change.
Q. Do you know what's actually out there?
A. What's out there is different from the original or the earlier layout that consisted primarily of quad units and it's mostly duplexes.
Q. And do all the units that are constructed out there have garages?
A. I don't know if every unit has a garage.
Q. Okay. Let me ask you this. When you looked at the drawings, the permitted drawings, and we're looking at this heaving asphalt issue and I assume the heaving asphalt issue depicted in photograph 11 that we were discussing is on one of the little, I think you call them driveways, maybe in your report or alleys that are labeled A, B, C, D, did you determine whether those were constructed in accordance with the permitted drawings?
A. I did not.
Q. Okay. Did you notice in the drawings that those were supposed to be concrete and not asphalt?
A. I did.

Q. Okay. Did you determine how they came to be asphalt?
A. I did not.
Q. Okay. Do you think that that posed any problems by changing them from the -- the permitted drawings of concrete to asphalt?
A. What do you mean by, "problems"?
Q. Well, any of the issues, defects or deficiencies that you observed, would any of those have been changed or alleviated if those had been constructed in accordance with the drawings?
A. Oh, I think they would have been different. I don't know if they would have all been alleviated or how many of them would have been alleviated. That's an exercise in trying to tell the future that I just can't do, but they would have been different. It would have been a different set of problems and some of the problems might have been less.
Q. In your experience is it less expensive to install asphalt such as that appearing on these alleys, than it would be to install concrete?
A. It depends.
Q. Depends on what?
A. What materials are underneath it. What the size

and thickness is of the materials you're using, where you're gonna buy the materials from, there's all kind of factors. But rigid pavement can be much more expensive than flexible pavement in residential applications, but it really does depend on the type of materials and how the materials are assigned.
Q. How those materials are assigned?
A. Yes.
Q. What does "assigned" mean?
A. What's the thickness of it, what is the -- what kind of a mix is it, what's the strength of the material, all kinds of factors that could be involved in that. But in general, I mean, if we know -- if I knew nothing about the pavement that you're talking about, if all you told me was we're thinking about having concrete instead of asphalt, will we spend more money or less, in general, the answer would be you'd spend a little bit more money.
Q. Do you know why there was a change from the drawings' concrete requirement to asphalt?
A. I do not.
Q. Okay. Have you seen any documents that indicated why that occurred?

A. I have not.
Q. Okay. Is there any governmental entity that had to certify those asphalt driveways or streetlettes or whatever we want to call those, did anybody have to certify those roads?
A. I don't know that they did.
Q. Okay. What -- I mean, you just told me that it would depend on the type of construction as to the cost and I understand that. What type of asphalt construction did you observe or determine is out there on these little alleys or driveways?
A. It's a type three asphalt.
Q. What does that mean?
A. That's the type of asphalt it is. It's a type three asphalt.
Q. How thick is it?
A. Oh, the thickness varies.
Q. You're looking at the SNME report, right?
A. I am.
Q. Okay. Tell me what page to look at, please?
A. I'm looking at page four.
Q. And there's a table one on page four of SNME's July 14, 2009 report?
A. That's right.

Q. And it shows thickness ranging -- they did five borings, right?
A. That's true.
Q. And they show thickness ranging from 1.26 inches to it looks like the highest one is what, 2.82 --
A. Yes, it is.
Q. -- on the asphalt. And then they also measured the base course.
A. That's right.
Q. Is that accurate?
A. Yes.
Q. Based upon your review of SNME's data contained in table one, do you have any opinion about the adequacy of the construction of the asphalt driveways?
A. Well, they're not exactly what was specified.
Q. Okay. What do you mean by that?
A. They're not as -- they're not as thick in some places as they should have been.
Q. And when we say as specified, by whom?
A. What I reviewed in the plans prepared by A.B. I'm just comparing with what was in the plans I reviewed.
Q. The plans for the main road or the plan for the

concrete driveways?
A. Well, both.
Q. Okay. So when you -- and you'll have to help me out, because they didn't specify asphalt for the streetlettes, did they?
A. Right.
Q. So what are you comparing the asphalt in the streets to by way of specification then?
A. Well, I just was trying to answer your question exactly as you put it. I mean, there's less material there than what was specified and it's a different material than what was specified.
Q. Okay.
A. It's asphalt instead of concrete.
Q. Okay. How much material is specified?
A. There are two pavement sections specified in the documents that I reviewed. One of them is called a heavy duty asphalt pavement section. And my understanding is that heavy duty asphalt pavement section was to be installed on Rivergate Drive, which would be the main drive coming in off the road. And the second concrete -- the second section is a concrete paving section, which would have been what's termed as driveways or as I've maybe referred to them

earlier as alleys. So the heavy duty asphalt pavement section is specified to be two-inch type one asphalt over eight-inch base course and the concrete pavement section was to be six inches of portland cement concrete over a subgrade.
Q. Okay. So on the main road it's to be a total of what, ten inches if you include the asphalt and base course?
A. That's correct.
Q. And it was supposed to be a type one asphalt, which is different than the type of asphalt applied to the alleys?
A. Based on -- based on my analysis, the type of asphalt is different and the thickness of it is different, too.
Q. Okay. And then -- I'm sorry. With respect to the concrete, because I was trying to follow you, there's supposed to be six inches of portland cement concrete?
A. Yes.
Q. And what was below that?
A. The concrete was just placed on compacted subgrade, so there is no base course under the concrete.

Q. You can leave those. We may want to use them again. Okay. So with respect to the asphalt placed in the alleyways, it's a different type of material than anything specified in the drawings, right?
A. It is.
Q. And its thickness appears from the SNME report to vary somewhat from boring to boring?
A. It does.
Q. And it varies from the total depth depicted in the drawings?
A. It does.
Q. Okay. Do you believe that any of the degradation of the asphalt in the alleyways relates to the thickness or materials used to build those alleyways?
A. I think it does relate to it, yes.
Q. Okay. Tell me -- and I know in the report there is discussions about the mix of the asphalt materials and I gather there's some criticism about those?
A. Yes.
Q. Okay. And tell me what you believe the relationship is between the as-built construction to the degradation that you've

seen?
A. With regard to the type of asphalt mix being type three versus a type one, in my experience a type three mix does not hold up as well to heavy loads or turning loads. It will have a better aesthetic appearance than a type one when it's originally constructed because it will appear more smooth.
Q. Uh-huh.
A. But it won't typically hold up as long or as well under heavy or turning loads, so it's not gonna be as durable of a mix, because it has a finer grade of aggregate within it that are essentially in smaller pieces than the pieces of aggregate that are in the type one mix. It's gonna be more susceptible to deformation and turning and raveling and we do see some raveling taking place on the concrete or the asphalt surface there where you see some loose stone on the surface of the asphalt.
Q. What does that indicate to you if you see raveling?
A. It could be an indicator of several different things, but one thing that it sort of compares well with is -- well, two things, one is that

it's -- it is a type three mix, so it's gonna break down under turning loads more rapidly than a type one mix. The other is that the percentage of asphalt contained within -- within that type three mix is excessive compared to industry standards and an excessive amount of asphalt will tend to allow particles of aggregate on the surface to become more easily dislodged.

Q. Okay. What is the life expectancy, for lack of a better word, of a type three mix with ordinary traffic?

A. To be fair about it, the design life expectancy for a type three mix is not all together different from a type one mix on paper, but in practice they just don't hold up as well.

Q. What is the life expectancy on paper of a type one mix?

A. It's whatever the designer wants it to be. You can establish whatever life expectancy you want for a pavement system. At the start you can design that system. In this case the civil engineer of record could design a mix that will last -- a pavement section -- they could design a pavement section with a mix that will last

longer than others or less time than others. It is really dependant on the design, but in general the industry standard is 20 years.

Q. For type one?

A. For either a type one or type three mix. Conventionally my experience is people will design for 20 year -- 20 year service life, but I don't know what was designed for in this case, as far as age.

Q. Okay. But if you run big construction trucks over a type one mix and there's -- there were complaints I will tell you by some of the homeowners when Whispering Woods was being developed about trucks running across Rivergate Lane. If you run heavy trucks across your asphalt, I assume it will degrade quicker than your average 20 years life expectancy?

A. It depends on how long you allow those heavy loads to pass and with what frequency. The design of the pavement includes an allowance for heavy loads.

Q. Okay.

A. In a real practical sense asphalt pavements are designed for the number of heavy traffic loads that pass across them, not so much for the light

duty traffic associated with automobiles like we drive around. It takes a lot more -- so many more automobiles to equate to one passage of say a loaded dump truck that the number of automobiles that passes is not nearly as important as how much heavy traffic there is.

Q. Do you have any opinion with respect to this case that there has been any degradation to the asphalt paving due to loads from any heavy equipment?

A. I don't.

Q. Have you investigated that at all?

A. I have not.

Q. Can we take about a five minute break?

MR. STANLEY: Yeah. Absolutely.

(Whereupon, there was a short break in the proceedings.)

BY MS. BURTON:

Q. We've had some discussion about the concrete driveways at the units at Rivergate. Do you have any opinions regarding the adequacy of the construction of the concrete driveways?

A. I don't have any information about the material of the driveways themselves, because I simply didn't do any borings or core drilling of the

driveways. The only opinion I can think of that relates to your question is just that the way the driveways are constructed is not working properly and it's causing the driveways to deteriorate and that really is about the slopes and the erosion that we talked about earlier.

Q. Do you know who gave any direction to the contractors who constructed the driveways regarding the slope to be constructed?

A. No, no. The only guidance about driveway slopes that I saw in the documents I reviewed was the advice that A.B. had sent to Mr. Winderman.

Q. Okay. But with respect to the slope, do you know whether that's a slope that was achieved by a grading contractor or whether it was a slope that was achieved by the concrete contractor or whether it was a slope achieved by somebody else?

A. The documents I've reviewed don't tell me where that coordination took place or did not take place.

Q. And you don't know what involvement, if any, the developer had in directing the slope of the driveways?

A. I do not.

Q. All right. Let me change topics just a little bit and I want to talk some more about your repair document. And specifically I want to talk, if we could, Mr. Wilkie, about the storm water management design that you have prepared. And you're gonna have to help me a little bit interpret some of your document. As I understand your design, there is to be installed in the alleys PVC pipe, is it?

A. First of all, this is not -- this is not a design to be submitted for construction. This is a repair -- repair concept.

Q. Okay.

A. It includes some typical repair areas and it includes a set of -- a set of work items that would go into replicating those repairs on a large scale, but this is a repair concept. It's for evaluation and pricing purposes, it's not a design ready to be constructed tomorrow.

Q. Okay.

A. You keep calling it a design and I just wanted to make that -- make that clear as to what the purpose of this is. It's a scope of repair.

Q. Okay. Well, under your scope of repair which was submitted to A.O. Hardee for pricing, you

understood that, right?

A. Yes.

Q. Because you were involved in that, right?

A. That's right.

Q. And you understand that that pricing is part of the damages that's being claimed against my client, A.B. Consulting, don't you?

A. I do.

Q. So the basis for those damages calculations is at least based on this repair scope of yours, you understand that, don't you?

A. I do.

Q. All right. Under your repair scope, I understand, I think, that it includes installation of PVC piping in what is depicted as alleys on the Exhibit A drawing; is that true?

A. That's true.

Q. And the piping in the alleyway itself is what, 48-inch?

A. Yes.

Q. Okay. And I can't tell from your document, I'm making an assumption that it would include digging up the 15-inch piping that exists out there?

A. Yes.

Q. Okay. So it would include ripping up the street, right?

A. Right.

Q. Digging up the 15-inch perforated piping and the associated gravel or stone around it?

A. That's right.

Q. Yes? Hauling all that off?

A. I don't know whether it would have to be hauled off or to what extent that some of those materials could be reused, but certainly some of the materials would have to be hauled off.

Q. Okay. And then it includes installation of a 48-inch PVC pipe, and you'll have to help me, is this along the side of the alleyway?

A. That's not correct. You said a 48-inch PVC pipe, but I don't believe that's what -- I don't believe that's what I put in the scope of repair.

Q. Okay. What's the size of the pipe?

A. It's 48 inches, but it's not PVC.

Q. Okay. What is it?

A. It's reinforced concrete.

Q. Look back -- you've got my Exhibit 1 over there. I just want to make sure I've got that, because

I thought it was -- if you look at --

MR. STANLEY: You're talking about Exhibit 1 from Mr. Ray's deposition?

Q. Mr. Ray's. There's a bunch of PVC pipe listed with the quantities.

A. There are PVC pipe items and quantities, but they're not related to a 48-inch pipe. There's a 48-inch reinforced concrete pipe that's the primary storm drain pipe, but the PVC pipes are for other things.

Q. Hand me that back, let me look at it.

A. What are you looking at? Maybe I'm looking at the wrong thing. I see a 48-inch reinforced concrete pipe, so where do you see a 48-inch PVC pipe.

Q. Bear with me just a second. 48-inch gasketed type RCP storm drain, is that it?

A. Yes.

Q. And that goes where on these alleyways?

A. It goes, if you look at typical area number one, it goes along the right side of that alleyway.

Q. Okay. And right side being the low side?

A. Yes.

Q. I mean, the side going toward the waterway?

A. Yes.

Q. Okay. So you put it on the low side of each alleyway?
A. That's true.
Q. Okay. And then on the high side, so to speak, of the alleyway there's a trench drain?
A. That's true.
Q. And then the 48-inch RCP storm drain connects toward Baker Street to what?
A. It goes to a control structure.
Q. Okay.
A. And from the control structure there is an overflow that will go into the existing emergency overflow that's there now.
Q. The eight-inch?
A. No, it's not an eight-inch, it's a 15, what's there now is a 15-inch.
Q. You think the pipe along Baker Street is a 15-inch pipe?
A. I'm just saying I observed it to be 15 inches in one place. That doesn't mean it's 15 inches everywhere, but where I observed it was 15 inches.
Q. Where did you observe it?
A. At its outlet down at the bottom of the property.

Q. In the wetlands?
A. At the edge of the wetlands, yes.
Q. Okay. So you went down to the edge of the wetlands and looked for the opening of that pipe?
A. That's right.
Q. And observed a 15-inch pipe?
A. That's right.
Q. Do you know what the drawings depict is that pipe that runs along Baker Street?
A. As I'm looking at plans now, I don't see that pipe along Baker Street is identified by size, but the short segments of pipe that connect the alleyways to that line are identified. They're supposed to be eight inches and I believe they are. The ones I saw were.
Q. Okay. But you don't see a designation for the Baker Street?
A. Not right now as I'm looking at those plans, not right now.
Q. Okay. Okay. So I want to make sure I understand your scope of work drawing. The control structure attaches by pipe to what you believe to be the 15-inch pipe along Baker Street?

A. Yes.
Q. What is the size of the pipe that you used to attach the control structure?
A. Which -- between which points are you asking the question about the pipe materials?
Q. As I understood your testimony, there's a control structure at the end of the alleyway that your RCP pipe is connected to; is that accurate?
A. Yes.
Q. Okay. And then the control structure has an outlet pipe, does it not?
A. It does.
Q. And that runs to the piping along Baker Street?
A. Yes.
Q. What is the size of the outlet pipe?
A. 12-inch PVC.
Q. So you've got -- and the control structure is how big?
A. It's about eight and a half feet long, six feet wide.
Q. Okay. So it's 6 by 8 1/2?
A. Yes.
Q. Okay.
A. Roughly.

Q. So you're gonna have to help me with the concept, because I'm not a civil engineer that does storm water design, but under your design, if there's a heavy rainfall that is drained into this 48-inch RCP pipe, my impression is that basically it's an underground detention system so that the water builds up in that pipe and only gets released into that catch basin if you've got a certain build up of water?
A. No, that's not true.
Q. Okay. Tell me what the concept is.
A. There are elements in the control structure that allow a certain amount of water to pass through the system at all times.
Q. Okay.
A. So even if there's just a little bit of water in the 48-inch pipe, that water can still pass out of the system.
Q. To the 12-inch piping into the 15?
A. Yes. But there's a limit to how much at one time could come out and so that's -- that's the purpose of the weir that you can see in the detail of the control structure. There's a weir with an orifice and the orifice lets the water out if there's a small amount in the detention

system. But if there's a concentrated build up in the system, it still will only let that small amount out. That's the idea.

Q. If there's a concentrated amount, it is then detained in the 48-inch pipe and slowly released through your weir, right?

A. That's right.

Q. And so if it rains like cats and dogs, then you're expecting a certain amount of detention in the 48-inch RCP pipe, aren't ya?

MR. STANLEY: Object to form.

Q. I mean, there's no detention pond in the drawing to detain any water, right?

A. The storage provided by the pipe is the thing in this repair concept that is that buffer between when it's raining and after it stops raining.

Q. Okay. So it's basically underground detention?

A. Yes.

Q. It is, isn't it?

A. Essentially, I mean, for impractical way, yes.

Q. Now, that varies from the original design, which was an exfiltration system; is that accurate?

A. Yes.

Q. And under an exfiltration system, the water is supposed to seep out into the soils, to use a

layman's term; is that right?

A. Yes.

Q. You don't expect to retain it in a closed in pipe, you expect it to seep out through perforated pipe?

A. That's right.

Q. What percentage to your knowledge of jobs done in the coastal area of South Carolina use exfiltration systems?

A. I don't know.

Q. Is it a common design in the coastal areas of South Carolina to use an exfiltration system?

A. I believe it is.

Q. Okay. What do you base that knowledge on?

A. Well, if we were to leave this office and go ride around for a little bit, we could find quite a few sites that would have exfiltration systems in a very brief period of time. It's a popular thing to do. But underground detention is, too.

Q. Okay.

A. There's no reason why you couldn't do either one.

Q. Okay. And in an exfiltration system such as that designed by A.B. Consulting, you have a

different type of road, you have an inverted crown in the road as opposed to a crown that you've designed; is that true?

A. You don't have to have an inverted crown to have an exfiltration system, but the original design was for there to be an inverted crown.

Q. And the purpose for that was to allow the water to drain toward the center of the road and enter into the perforated pipe?

A. Well, you could achieve that on both sides of the road, too.

Q. Sure.

A. The advantage having it in the middle of the road, it creates a less costly system because you have fewer components to take the drainage from one side or the other or two sets of pipes you can have one set of pipes that are along the center line and not have to deal with moving the water from one side or the other under the ground.

Q. If you have an inverted crown road are there design considerations then about using asphalt versus concrete?

A. There are things I would certainly consider about it, yes.

Q. Isn't concrete preferable if you have an inverted crown?

A. For me it is.

Q. Why did you decide to use a closed -- what I'll call a closed detention type system as opposed to an exfiltration system?

A. Because when -- when -- when I started looking at the quantities of materials involved for both systems for the specific requirements of this site --

Q. Uh-huh.

A. -- it appeared to me that the exfiltration system, if properly sized, could possibly cost more in initial construction cost than just to have an underground detention system for this site -- for this site for its intended purpose.

Q. Let me ask you this. Under the calculations that support your design, what kind of year storm did you have to use?

A. Ten-year.

Q. A ten-year, 24-hour event?

A. That's right.

Q. Okay. And tell me what permeability of the soil you used?

A. Approximately 12 inches per hour.

Q. What is approximately -- is it 12 inches or something different?
A. I believe we used 12 inches per hour. The reason I don't recall it specifically is that once -- once I prepared -- began to prepare a scope and saw difference in the amount of materials that were gonna be required for the exfiltration system --
Q. Uh-huh.
A. -- at some point I abandoned the idea of using the exfiltration system and moved on to the underground detention system.
Q. When you talk about quantities of material and I notice in your report I think you use a figure of 500 linear feet, maybe, am I wrong about that? Let's see. Yeah, look at your report that we marked as Exhibit Number 1 to your deposition on page five, paragraph numbered six and if you look toward the bottom of that paragraph, I believe it says that using an appropriate infiltration rate yields a required trench length of approximately 500 feet.
A. Yes.
Q. And you help me if I don't understand, but I think you're saying that the trench length of

the 15-inch perforated pipe in the A.B. Consulting drawings was 240 feet; is that true?
A. That's true.
Q. And that is laid in the center of the alleyways; is that true?
A. That's true.
Q. And then by your calculations, the pipe would need -- the pipe would need to be 500-feet long?
A. Yes.
Q. Is that assuming the same dimensions of the trench around the pipe?
A. Yes. That length of 500 feet is assuming the configuration of the exfiltration trench that's shown on the plans.
Q. Okay. So would you agree with me that if you wanted to use an exfiltration system, you could, instead of making the pipe longer, make the trench bigger?
A. Yes, you could.
Q. Okay. I mean, that is part of the design criteria when you're doing an exfiltration system, you not only determine the pipe size, but you also determine the size of trench and rock around the pipe?
A. Yes.

Q. Did you do any calculations or design to determine whether you could, in fact, use an exfiltration system and just make a bigger trench around the thing?
A. Yes. Yes. Initially -- initially I sought out to prepare a scope of repair that included an exfiltration system that was sized appropriately, which would include a larger pipe and a larger stone envelope around it.
Q. Do you have calculations where you conducted that analysis?
A. I can't call them right now, but yeah, that was done, but I'm not going to be able to point to it as I'm talking to you.
Q. Is it in your file?
A. Yes, it is. On the actual sizing calculations for the pipe and the stone envelope --
Q. Uh-huh.
A. -- I would need to refer -- refer to Eric Hampton to recall those calculations, because those are calculations I had him -- had him do for me and I can find the outputs of those and where I reviewed the inputs and the outputs, but the calculations to get from the inputs to the outputs, I'd probably need to refer to him.

Q. Okay. So he did the actual ciphering?
A. Yes, he did.
Q. Okay. Okay. Under the scope of work drawing that you prepared and you have to help me so I understand, if the 48-inch RCP pipe fills up with water because it's a significant rain event, there's a limit, I guess, to how it can discharge to the emergency out-flow, because the size of the pipes are somewhat limited; is that not fair?
A. There is a limit to how the water can discharge from the 48-inch pipe.
Q. Limited ultimately by that, what you believe to be a 15-inch pipe running toward the wetlands?
A. Certainly, yes.
Q. Okay. And that's a limit that currently exists out there, is it not?
A. It is.
Q. Okay. So if the -- if the water exceeds that which can be infiltrated into the soil and discharges into the pipe running along Baker Street, there's a limit of the volume of water that pipe can hold; is that right?
MR. STANLEY: Are you talking about the -- I'm confused, because you refer

to the repair scope and then I thought you were referring to the as-built conditions.

MS. BURTON: I am.

MR. STANLEY: You're referring to the as-built conditions?

MS. BURTON: Did you understand that?

MR. STANLEY: You started your question out saying the repair scope.

BY MS. BURTON:

Q. Do you understand what I'm talking about in the existing conditions there's a limit imposed on the amount of water that the 15-inch pipe can handle?

A. Yes, there is.

Q. And in your repair scope there is also a limit imposed by the amount of water the same 15-inch pipe can -- can handle?

A. That's true.

Q. So if there is a rain event that exceeds the capacity of the 48-inch RCP pipe, there is a possibility that the 15-inch pipe can't handle the out-flow?

A. Not under -- not under the design assumptions

that have been made, no, there's not. Just like there wasn't with the original design. For the original design the 15-inch outlet pipe is okay.

Q. In a 15-year -- I'm sorry. In a 10-year, 24-hour event?

A. Yes.

Q. On occasion we get storms that exceed that capacity.

A. Sure.

Q. Okay. And those events you would expect that any system designed to a ten-year storm they might get exceeded, right?

A. Any storm water system design can be tested by an excessive amount of rainfall, that much is true.

Q. Sure.

A. But to assign it -- to say just in general that a pipe size is adequate or inadequate, I mean, you're really not following standards. What I'm saying, the 15-inch pipe that's there now, its size is appropriate and its size would be appropriate with this 48-inch system upstream from it that I'm talking about.

Q. Okay. How -- have you examined any historical weather data for the area around Rivergate since

this system was originally installed?

A. No, I have not.

Q. Do you know how many rain events exceeded a ten-year storm?

A. I do not.

Q. What is the average life expectancy for an exfiltration system such as that installed at Rivergate?

A. That's a tough, tough question to answer because the specific site conditions where each exfiltration system is installed --

Q. Uh-huh.

A. -- can be so different. But anecdotally those systems can last as long as -- as -- as any other storm drainage system. Or they could last ten or fifteen years and need some heavy maintenance.

Q. Okay.

A. It really depends on the site and the conditions that they're being subjected to.

Q. Okay. Well, on this site and the conditions this system is being subjected to, what is the life expectancy?

A. I'm not gonna engage in trying to tell the future to you about how long that system's gonna

last. I don't know.

Q. Okay. If you were designing an exfiltration system for an owner such as W.W. and L.B. in an area such as Rivergate, how long would you tell the owner they could expect that system to last?

A. That would be a product of a discussion I'd have with the client about what their expectations are for the life cycle and maintenance of the systems that they're buying. There wouldn't be one answer to that. It would be depending on the client's needs and wants.

Q. What if the client's needs and wants are very limited by budget constraints?

MR. STANLEY: Object to form.

A. Well, you'd have to put a number on that.

Q. On the budget?

A. On the limitations and what are the limitations. I'd want to probe more into that if the client told me I'm constrained by budget and that you know, here are my needs. I mean, that would be something I'd talk with the client about.

Q. Do you know what budget constraints W.W. and L.B. indicated existed on this project?

A. I don't.

Q. Okay. This system, I think, was installed in

about 2000. You've seen that in the documents, I take it?
A. Yes.
Q. So it has been in existence now for almost 12 years, right?
A. It has.
Q. Is it getting near the end of its expected life expectancy?
A. It is, in my opinion.
Q. Do you know what --
A. Let me -- I'm sorry to interrupt. Let me rephrase that.
Q. Yes.
A. You asked if it was near the end of its life expectancy and I answered a slightly different question. What I was saying it was near the end of really it's not its life expectancy, its service life. I feel it's nearing the end of its service life, it's usable service life.
Q. Tell me why you make that distinction, what's the difference between life expectancy and service life?
A. One's telling the future and one's not. You say life expectancy, you're telling somebody how much longer something is gonna last.

Q. Okay.
A. You talk about service life, you're sort of assessing what the state of things are now.
Q. Okay. So it's toward the end of its service life --
A. In my opinion.
Q. -- and thus would need to be replaced?
A. Yes.
Q. Is that right?
A. That's true.
Q. Okay. And any system has some anticipated service life, doesn't it?
A. It does.
Q. And an exfiltration system such as the one designed by A.B. Consulting Engineers had some anticipated service life, right?
A. Yes.
Q. And would you agree with me that it was something in the 10 to 15 year range?
A. No, I wouldn't.
Q. Do you know what it was?
A. I don't.
Q. Under your scope of work design, tell me and I need a little help, there are homes, duplex homes that abut the golf course, have you seen

that?
A. I have.
Q. And you're aware there's a golf course over there?
A. I am.
Q. And was a golf course over there before the neighborhood was developed?
A. I understand that.
Q. And did you understand that there was drainage coming across the golf course running across the Rivergate property before the development?
A. I read information about that.
Q. Wouldn't surprise you based on the topography, would it?
A. I don't know that I would say I'd be surprised or not surprised. I'm just telling you what I read.
Q. So you read that there was drainage coming off the golf course pre-development of Rivergate?
A. I read something about that.
Q. And in fact, aren't there some pipes that drain from the golf course into the wetland at the back of Rivergate?
A. That's my understanding.
Q. Okay. With respect to the homes that abut the

golf course, I don't see, and you can tell me, I don't see what drainage detail, if any, you've got in your scope of work design. I mean, is there some piping back here I don't see along the golf course?
A. Yes.
Q. Tell me what's -- tell me what's there, please?
A. There are two typical areas of repair identified --
Q. Yes.
A. -- on this sheet, Exhibit A.
Q. Uh-huh.
A. And the first one is what we spent more time talking about this morning, but there is a second one that's called typical repair area two and it -- it is to deal with conditions at homes along the golf course.
Q. Is it piping between the homes?
A. It is.
Q. Is there any piping that runs along the back of the property line?
A. No.
Q. Okay. Is there water draining off the golf course toward the back of the property line?
A. Well, there may be, but this scope of repair

that I have is not to address what may be going on on the golf course, it's to deal with what's happening on -- on this property.

Q. And my question probably isn't very good, but is it your understanding that there's water draining off the golf course onto the property of the homes that abut the golf course?

A. I can tell you that I've observed that surface drainage is in some areas directed from the golf course toward the Rivergate property.

Q. Okay.

A. But I don't know that it's entering onto the Rivergate property.

Q. You haven't observed such a condition?

A. I've observed where the water drains toward the Rivergate property, but I don't know whether it's passing onto the Rivergate property from the golf course.

Q. Have you observed any areas of running water along the rear of the homes that abut the golf course from water that's draining off both the homes and the golf course?

MR. STANLEY: Object to form.

A. I've seen a condition at the property line or where I believe the property line is that is

like what you described.

Q. Okay. Is there anything in your repair scope design, trying to use the right word because you pick on me when I say it's a design, that addresses that water that's coming from the golf course?

A. No.

Q. Okay.

A. Well, not -- not directly and not in those areas, but the repairs that I've put on this scope of repair, they will alleviate some of those problems because they will pick up drainage that ordinarily would end up along that property line.

Q. You mean the drainage between the homes?

A. Yes.

Q. And help me a little bit. The homes that are on the golf course, do they have gutters and downspouts?

A. Some do and some don't.

Q. What did you do, if anything, in this repair design to deal with water coming from downspouts?

A. There needs to be modification of the ground surface. Some fine grading done so that the

water will freely move around the building and go into some yard inlets and they can be picked up and taken off the property.

Q. Okay. So there's no plan to pipe it into any kind of inlet?

A. Some of them are already in the pipe. Some of the gutters and downspouts connect to an underground roof drain, but some of them don't and that's fine for there to be a difference between a house having an underground roof drain or not having, but when the buildings are fairly close together like this, you do need to have a way to handle the surface drainage on the ground in the event that it's there.

Q. Did you observe areas where there were downspouts that just discharged to the ground beneath the downspout?

A. Yes, I did.

Q. Is that a desirable condition?

A. I would -- with buildings that are this close together, it would be better to have them discharge into an underground roof drain.

Q. Okay. An underground roof drain connects to what?

A. The ones that I observed discharged just along

the rear of the property in different places.

Q. Okay. So just exited in some kind of piping system to the backyard?

A. Yes.

Q. Okay. In typical area two, tell me what is depicted, please?

A. A regrading of the ground surface between adjacent buildings and the installation of yard inlet's to collect surface drainage and transmit it off the property.

Q. What's the -- tell me what the regrading is, how's the land being changed?

A. Well, you'd change the shape of the ground surface, so that instead of it being level, that it's not level and water will drain away from it instead of standing in one place.

Q. You're gonna have to help me. What is the grading deficiency that you observed between these golf course houses --

A. The ground surface --

Q. -- currently?

A. The ground surface is flat. It accumulates water. Water hangs around. It doesn't flow off the property.

Q. Flat between the homes?

A. Yes.
Q. So it's just a flat spot and the water just sits there?
A. Flat or back sloped, yes.
Q. Back sloped, meaning what?
A. Some areas the water is standing up next to the building.
Q. So it's actually sloped towards the house?
A. In some places, yes.
Q. And that would be inappropriate, wouldn't it? Aren't you supposed to have positive drainage away from the house?
A. Yes.
Q. Wouldn't the code require that?
A. Yes.
Q. So in some instances you don't have positive drainage away from the house?
A. That's right.
Q. And some instances there's positive drainage away from the houses, but between the houses is just a low flat spot?
A. That's right.
Q. Under typical area two, what is the change in the fine grading? Tell me what I would observe if I went out there under typical area two?

A. You want to know what you would observe today or what you would do differently?
Q. What you would do differently. If this was implemented typical area two, what would I see by way of grading?
A. It wouldn't look a lot different to a passerby because the changes in elevation would be fairly small.
Q. Okay.
A. But you would have to take up whatever landscape materials are there and turf and essentially raise some areas, lower other areas so that you achieve at least a small slope that would allow water to drain around the building.
Q. Okay. Where is --
A. So you wouldn't see something very remarkable except that you wouldn't see water standing there anymore.
Q. Okay. Where would the water -- where would you slope the land between the buildings to drain the water? That's what I didn't follow, I'm sorry.
A. There is a space between the buildings.
Q. Yes, sir.
A. And there's kind of a slope that divides

buildings at a higher elevation from the lower elevation and there needs to be a more pronounced V between the two buildings that the water can drain into and then pass around the buildings. And to assist in that, because you're dealing with such a small confined area, there is a need for a yard inlet and that's why there's yard inlets on the plan.
Q. So there's actually going to be -- between the buildings you're going to come down to a V to a yard inlet?
A. Both. There will be yard inlets and some areas you'll need to have a V.
Q. And the V will then run the water which direction, back toward the golf course or toward the road?
A. Toward the road.
Q. To be caught in the curb inlet?
A. Yes.
Q. Okay. So it's gonna basically be shaped so the water would run toward the road and hopefully toward a curb inlet on the road?
A. Yes.
Q. Okay. I got it. Do you have any understanding about how the fine grading was accomplished at

Rivergate?
A. No, I don't.
Q. Okay. I mean, I assume in a typical situation such as this you'd have somebody who did mass grading, right?
A. You would.
Q. And you don't know whether that's Chuck's Construction or Stevens on this project, right?
A. That's true.
Q. But you think it's one of those two that did a mass grading operation?
A. I know that both of those two companies are mentioned in a light similar to what a mass grader would be doing.
Q. Okay. Is it typical for the grading contractor who does mass grading to go out and do fine grading as homes are put up?
A. Yes.
Q. Do you know who would have done fine grading around the homes?
A. I don't. I'm just conceding that it could be the same entity.
Q. Or could be somebody else?
A. It could be.
Q. In your experience, do landscape contractors

ever do fine grading of that nature?
A. In my experience I've not encountered projects where the landscaper would provide fine grading services on a new construction project.
Q. Okay.
A. But I have seen cases where in repairs that a landscaper might provide some fine grading.
Q. Okay.
A. That's just my experience. I've seen a distinction in what a landscaper would do where you could draw a line between new construction and existing construction.
Q. Okay. On this project I take it from listening to what you've told me so far that you don't think that having the land graded sloping toward the homes was a real great idea?
A. No, I don't think it was a good idea.
Q. Was that in accordance with any drawing that you've seen, to slope the land toward the homes?
A. There's not a plan that I've seen that would tell the contractor which way to slope the ground next to the house.
Q. Okay. So there's no design with that level of detail about how to slope around each building pad?

A. That's true.
Q. Is that true?
A. Yes.
Q. And you don't know how that was accomplished?
A. I don't.
Q. And then I gather you also have a criticism about the fact that there are areas between the homes that were essentially graded flat?
A. Yes.
Q. And therefore there was no place for the water to run, right?
A. That's right.
Q. And you've seen no drawings that depicted that condition?
A. I have not.
Q. Okay. Tell me what code you believe applied to the grading performed on the project?
A. I don't know what code would have been in effect for the grading.
Q. Okay. Have you done any investigations into the applicable codes back in 1999 and 2000 in Horry County?
A. Not for the grading.
Q. Okay. For any of it?
A. Well, we've talked some about the storm drainage

and what would have been required there from a permitting side of things, but not for the grading, no.
Q. Okay. Let me ask you to turn your attention to the Baker Street side. And I think in your report you talk about a drainage issue and I'll have to make sure I get the right alley name. "I" is the alley, I think that actually hooks to Baker Street, is this accurate?
A. It is.
Q. And I think you talk in your report, and you correct me if I'm wrong, about a drainage condition that exists at the intersection of alley I and Baker Street?
A. Yes.
Q. And tell me what your opinion is in that regard?
A. There is a catch basin shown on the plans at that intersection of alley I as I've called it and Baker Street that doesn't exist or it's covered with asphalt.
Q. In the roadway or in the grass?
A. Well, it's shown on the plans as being in the roadway.
Q. Okay.
A. And I'm -- what I'm saying to you is that it's

not there --
Q. Can't find it?
A. -- or it's underground.
Q. Okay.
A. Also, there's a condition just uphill from -- from that specified catch basin where standing water persists in the ditch that lines the -- this side of Baker Street, the side closer to Rivergate.
Q. So along Baker Street there -- you believe that there is a ditch?
A. A grass lined ditch.
Q. A what, grass lined ditch?
A. Grass lined ditch.
Q. Do you know whether that ditch was actually intentionally constructed or whether it developed overtime?
A. I remember reading some materials in this -- in this project that discussed the -- either the creation or the modification of that -- of that ditch on Baker Street. Either it was to be created or it was to be preserved, but there was some mention of it. So if there wasn't one there, there was some documents I remember reading that did talk about the ditch.

Q. Is the ditch you're talking about on property that's related to the road, part of the easement of the road?
A. Yes, it is.
Q. Okay. So it's not a Rivergate owned piece of land?
A. Correct.
Q. And the issue -- help me with the ditch, the water is building up in the ditch?
A. Well, two issues. The water building up in that ditch.
Q. Uh-huh.
A. And then there's another space between -- between the buildings of Rivergate and the berm that's constructed between Baker Street and the buildings. And so there's a drainage path that runs from the top of the subdivision at alleyway B and passes alongside -- alongside the buildings all the way to alleyway I.
Q. Uh-huh.
A. Well, when it gets to alleyway I, that -- that water is -- some of it is passing on alleyway I and onto the street, onto Baker Street.
Q. Do you have a photograph that depicts that condition?

A. I believe I do. I'm looking at photograph number one in my report.
Q. Yes, sir.
A. So that is a photograph of the standing water that I was mentioning in the grass lined ditch on Baker Street.
Q. Okay. Bear with me just a second, if you would. I'm going to get one piece of paper. Did you, as part of your work, look at the encroachment permit for street I?
A. It's possible that that document is in with what I reviewed, but I don't recall having reviewed it.
Q. Okay. Let me hand you a document. Bear with me.
(Defendant's Exhibit 2 was marked for identification.)
Q. Let me hand you a document I've marked as Exhibit Number 2. Flip through it, if you would, while I'm stapling here.
MR. STANLEY: I see where this was -- is this part of your file or part of whose?
MS. BURTON: It's part of our file.
MR. STANLEY: Has this been

provided to Mr. Wilkie?
MS. BURTON: It's been provided to you. Mr. Wilkie says you provided him with file materials from A.B. Consulting.
MR. STANLEY: I don't know that he's seen this. I would just like him to have an opportunity for him to review it. You may want to take a break.
MS. BURTON: Okay.
MR. STANLEY: And I have an opportunity to talk to him about it.
MS. BURTON: Sure. Go ahead.
(Whereupon, there was a short break in the proceedings.)
BY MS. BURTON:
Q. Mr. Wilkie, I handed you a document marked as Exhibit Number 2 and I believe you took some time to review that document --
A. I did.
Q. -- and discuss it with Mr. Stanley --
A. I did.
Q. -- is that correct? Had you seen the documents related to the encroachment permit for street -- I think we call it on your document alley I

before?
A. I believe that some -- some of this, if not all of it, was included in documents that were provided to me.
Q. Okay.
A. But as I'm sitting here today, I just didn't recall having read it. It's been some time ago.
Q. But when you got documents that purported to be A.B. files, documents, you think maybe the encroachment permit was contained in that?
A. It might be in there.
Q. Now, we took deposition testimony, Mr. Wilkie, from Jim Dunn last week. Do you know who Mr. Dunn is?
A. I do not.
Q. I will tell you that he owns a home at Rivergate, used to live out there, but he still owns a home out there. You've not heard his name?
A. Not that I recall.
Q. Mr. Dunn testified that some sort of governmental employee told him that alley I was illegal or illegally connected to Baker Street. Have you ever heard any such allegation in connection with your work on this particular

project?
A. No.
Q. Okay. If one wants to connect an alley or driveway or whatever we're calling alley I, if one wants to connect such a creature to an existing roadway as Baker Street, is the appropriate mechanism to get permission to do that an encroachment permit?
A. Yes. You typically have to get permission for those kind of things.
Q. And based upon your review of Exhibit Number 2, does it appear that Horry County permitted the connection of alley I to Baker Street?
A. As best I can tell.
Q. Okay. And you don't have any information or evidence to the contrary that this is not an appropriate connection between alley I to Baker Street, do you?
A. No, I don't.
Q. All right. If you would, please, sir, turn to the third page from the end and I'll hold it up so you can just see what it looks like.
A. All right.
Q. Okay. And it's labeled at the very top, page 4 of 5, application for encroachment permit, do

you see that?
A. I do.
Q. And I want to turn your attention to the drawing that's contained on that page and I want to make sure that you and I are talking about the same thing. Earlier in your testimony you said that on the drawings of A.B. Consulting there was an inlet that you could not locate on alley I; is that right?
A. Yes.
Q. Is that depicted on the drawing that's on page 4 of 5 of the application for an encroachment permit?
A. I believe it is, yes.
Q. Okay. Can you show me where you believe it's depicted?
A. Here (indicating).
Q. I'm just gonna lean over. A small white box?
A. Yes.
Q. And it says -- it has an arrow pointing to it at the top says, CV 12x12, rim equals 13.5, invert 11.2 --
A. That's right.
Q. -- is that right?
A. Yes.

Q. And you went and looked for that and cannot locate it?
A. I did not find it.
Q. And you don't know whether it's there and buried under asphalt or just never was put in for whatever reason?
A. That's true.
Q. On this drawing there is a notation on the left-hand side that says, "fill", do you see that?
A. I do.
Q. "Existing swale from top of bank at property line to existing EOP to match remainder of roadway." Do you see that?
A. I do.
Q. What does that notation indicate was supposed to occur in that location?
A. That the space between the swale and the edge of the pavement was to have been filled to meet the grade of the edge of pavement.
Q. And by edge of pavement, we're talking about Baker Street?
A. I believe that's what it means.
Q. So there was supposed to be some fill material placed adjacent to alley I toward Baker Street,

right?
A. Yes.
Q. There's not actually supposed to be a ditch there, is there?
A. What this gives is direction to the contrary.
Q. Fill it in?
A. Yes.
Q. Don't have a ditch, right?
A. Yes.
Q. And that apparently did not occur as based on your observations?
A. At least -- at least on that lower end of Baker Street, yes.
Q. Okay. And based upon your review of the encroachment permit, does it appear that it was provided by A.B. Consulting to the developer, if you look at the front page?
A. Yeah. I'm looking at a transmittal sheet that's addressed to Wayne Winderman, W.W. and L.B. Developing.
Q. Okay. Would you have expected that the encroachment permit and the information contained on the permit would have been provided to whatever grading contractor had to do work out there?

MR. SULLIVAN: Object to the form.

A. It would have at least needed to have been provided to the property owner and the developer. Whether or not they pass it on to the contractors, I do not know.

Q. Okay. So you don't know whether they did or you do not know whether they should have?

A. I thought you were asking me whether they should.

Q. Yeah, I was.

A. Yeah. I don't know whether they would need to.

Q. Okay. So you don't think the contractor needed to see any of the information in the encroachment permit?

A. They could have, but they could also have functioned without it.

Q. Okay. Okay. When we look at your photograph that you had directed us to, photo number one in your report that we marked as Exhibit Number 1, and you said that that was depicting, at least one of the conditions we had discussed --

A. Yes.

Q. -- you recall that? And we see water standing in a low place next to Baker Street in the picture, right?

A. Yes.

Q. Isn't that the place that was supposed to be filled in according to the encroachment permit?

A. It is.

Q. And so if it had been filled in and was at the grade, I can't remember the words they use, but basically to the grade of Baker Street, you wouldn't have water sitting there, would you?

A. Not likely.

Q. Okay. The water would run down Baker Street?

A. Yes.

Q. Okay. In this photograph there are bushes between where we see the water and the homes, do you see those?

A. I do.

Q. And earlier in your testimony you used the word berm when we were talking about this area and my question is whether those bushes, that area is, in fact, the berm?

A. That's the way I've characterized it.

Q. Okay. Where on what drawing have you ever seen that a berm was supposed to be constructed there?

A. I don't know that I've seen it on a drawing, but if I were to take a considerable amount of time, I could dig up a file, file document where I read the description of it to be implemented there.

Q. To be implemented?

A. Yes.

Q. What kind of document?

A. There is something in the files that I read that talks about that berm and is essentially describing that it should be there, that it should be added in the design phase of the project.

Q. Okay. Do you remember who the documents are between?

A. I could take a considerable amount of time and maybe dig that up for you, but I'm just telling you that I remember reading something about the presence of that berm.

Q. Is the berm depicted on the permitted drawings?

A. I'm gonna give you an answer that nobody will like. Sorta, kinda.

Q. What does sorta, kinda mean?

A. There's some topographic information on the plans that does show there being a V between the building and where I'm saying there is a berm, but the actual build up, the grading of the berm itself is not really shown. There is -- what I'm saying is there's topographic information that sort of identifies where the berm is and identifies where water will flow, but doesn't show a berm being build up to the extent that it appears to have been today.

Q. Okay. Well, show me the topographic information that you're referring to that says there's a V.

A. Really it's all along here (indicating).

Q. You're pointing to the dotted line, the dotted topo lines on drawing C3?

A. Yeah, some of them. What I'm saying is there's not a -- the berm as it exists now isn't really shown with that -- with that shape or with that geometry on this plan, okay, it's not.

Q. Okay.

A. I don't see it shown on this plan that we're looking at right now, but based on all the other information on the plan, one can see how there is -- there is a kind of a V that exists there for water to flow down from the upper part of the subdivision back here (indicating).

Q. And when you say there is a V, you're talking about these dotted topography lines, is that right?

A. Well, yeah. In some places you can see where there's kind of a sharp turn --
Q. Uh-huh.
A. -- in the topo line and I'm saying that's consistent with where you -- where you'd see a V. Up here (indicating) you don't see as much of that, so I don't see the topographic or geometry information that would tell us the berm is on this plan and at the size that it is today, but I do see some evidence that there is to be sort of a drainage feature between the buildings and the berm.
Q. Okay. The dotted line, the topography line --
A. Yes.
Q. -- that is existing topography, is it not?
A. It is.
Q. I mean, that's not get me to this elevation, this is the elevation that's in the field?
A. That's right.
Q. And so this would indicate that the drainage pre-development given the topography, drained as you've just described, right?
A. Well, it always did. It always drained downhill.
Q. But there's no change to it in these drawings,

is my point.
A. That's what the drawings show.
Q. I mean, they don't say change this elevation from 32 to some other elevation?
A. That's true.
Q. It's basically leave as is, right?
A. Essentially, yes.
Q. Okay. You have a stack of drawings which you rolled out on the table here today. Do you have any other drawings that were prepared by A.B. Consulting Engineers?
A. I brought all that I have.
Q. So that's everything you've got?
A. Those are all the plans that I have. Now, the documents that I was provided were in electronic form.
Q. Uh-huh.
A. And I brought those with me in my file in the same form that I've received them, so you're free to look and see if there's something I failed to print out, but the plans that I unrolled on the table are the ones that I have.
Q. And are those the ones that you used in connection with your work?
A. Yes.

Q. Okay. Okay. Getting back to Baker Street, if we can, from your pictures, we've talked, I think, about the area where we see standing water in photograph one?
A. (Indicating.)
Q. And that is as you understand it, land owned by the county?
A. Yes.
Q. Correct?
A. Yes.
Q. All right. And then we see the bushes that you and I've been calling the berm, right?
A. Right.
Q. And if we look down in photograph numbered two, I assume that we're looking at the area between the berm and the homes --
A. We are.
Q. -- now on Rivergate property?
A. Yes.
Q. And in the foreground of photograph number two we see an inlet?
A. Yes.
Q. Can you tell me where we are?
A. On the plan we would be just north of alleyway I, which is the drive that connects to Baker

Street.
Q. Okay. So somewhere going toward Highway 17?
A. Yes.
Q. And help me a little bit, in your report you talk about an absence of, I think it was maybe eight inlets that are on the drawings that you couldn't find out there. Do you remember that?
A. There are several missing.
Q. Were those in the area between Baker Street and the homes?
A. They were supposed to be.
Q. Okay. If you'd look at your report, please, sir, Exhibit Number 1, page numbered four. Item number three under storm drainage, it says, "The design plans required the installation of eight catch basins along the eastern edge of the property, none of which were installed," do you see that?
A. I do.
Q. And can you tell me where you're referring to when you refer to the eastern edge of the property?
A. (Indicating.)
Q. Along Baker Street?
A. Yes.

Q. And which -- which items that are depicted on the plans did you not find in the field?
A. I'm gonna just touch them with my finger.
Q. Okay. And just describe what they look like on the drawing, if you would.
A. Okay. The first one I'm gonna touch is a box that's in the northeast corner of the property on the first alleyway.
Q. Okay.
A. East end of the first alleyway. So it's a box. It's a, basically a yard catch basin.
Q. Is it like a 12x12 inlet?
A. It is.
Q. Okay. And does it connect into the pipe that you and I talked about earlier that you and I described as a 15-inch pipe?
A. Yes. Although I don't know if it's 15 inches there, but yes, it connects into that same line of pipe.
Q. And there's one of those little boxes at the end of each of the alleyways connecting to that pipe that ultimately discharges into the wetlands, right?
A. Yes.
Q. Are any of those inlets there?

A. No.
Q. You couldn't find a one?
A. I didn't find any of them.
Q. Okay. Okay. And that's what you're referring to in the item number three in the report that we just referred to?
A. That's right.
Q. Okay. What is in the photograph two, what is that item, that inlet that we see in the picture?
A. It's an inlet that is neither shown on the plans or talked about in any other documents that I've read and from my observations, it looks like its purpose is to collect the water that all those other eight inlets that I say are missing would have picked up if they were there.
Q. All of them?
A. That's just my interpretation of its role. What it's doing today is it's there for the purpose of collecting drainage that would have been collected by the missing yard inlets up hill from it.
Q. Does it connect to that pipe that we've described as a 15-inch pipe?
A. It does, but in a round-about way. It doesn't connect to it from directly above. If we're looking at this photograph --
Q. Uh-huh.
A. Photograph number two, if you were to imagine you're taking the grate off of the top of that catch basin and you pick your -- stick your head down into the catch basin, there would not be a pipe directly below that catch basin. You would have to look to your left through another length of pipe that goes over to the edge of the patio of that adjacent building and that's where -- that's where I believe that -- that that primary 15-inch line is.
Q. Okay. Well, you had a reference, and I'll see if I can find it, to a concern about a pipe under a patio.
A. That's the one I'm talking about.
Q. Let me find that real quick in your report. Okay. I think it's item numbered four on page four under storm drainage.
A. Yes.
Q. Okay. Tell me, the inlet that we see in photograph two has a pipe that actually runs over toward the house?
A. (Indicating.)

Q. Is that a yes?
A. Yes.
Q. And then it connects to the 15-inch pipe that's supposed to run along Baker Street?
A. Yes.
Q. You're gonna have to help me. Did you determine that the 15-inch pipe that runs along Baker Street is actually under a patio?
A. That's my opinion, that it's under the edge of the house and patio.
Q. Is that consistent with the drawings?
A. No.
Q. So does that mean that the -- you're gonna have to help me. Does that mean that the pipe was placed closer in toward the homes when originally constructed or that the houses are farther out than anticipated?
A. Could be either one.
Q. Did you measure any of that?
A. I didn't survey that location to determine which of those were out of position or whether they were both out of position, but they're in the wrong place. They're both in the wrong place.
Q. Did you determine whether the pipe, the 15-inch pipe, does that then run under various homes all

the way up Baker Street or only that last one?
A. It -- it's not clear as to where the pipe goes after it passes beyond that building --
Q. Uh-huh.
A. -- next to that drop inlet we were just talking about --
Q. Uh-huh.
A. -- but it does pass under the edge of the next house down, so there's two buildings that it passes near. I know less about the one further downhill than I do the one right next to the catch basin.
Q. Okay. You mention it in your report, but I guess I didn't determine other than the fact that it deviates from the plans, is there a problem with that?
A. There certainly is.
Q. Tell me what the problem is.
A. You just don't build storm drain lines underneath buildings. I mean, when you do, you're opening yourself up for bad things to happen.
Q. Like if the pipe breaks, you've got a major problem?
A. Very bad things, catastrophic things can happen

when you put a storm drainage system under a building. I've observed them before. And there's a maintenance problem. If there's ever an issue with a pipe or something that needs to be repaired, it's difficult to access it and then you've got a building involved and you got occupants. And the benefit of having a storm drainage pipe under grounds and pavement that are not in building areas is that if there's such a bad problem that develops that you start to erode the ground around the pipe, you can get a visual piece of feedback in that there's a hole in the ground and we know there's a storm drain pipe underneath it and now we need to fix that.
When you put it under a building, you don't have the same view of those symptoms, so you can have a problem persist without repair, without recognizing that it's there and bad things can happen.
Q. Did you in your review of any of the materials you've been provided determine how this occurred?
A. No. I do not know how the miss position of that pipe occurred.

Q. Okay. Or the house?
A. True.
Q. One or the other or both?
A. Or both, yes.
Q. Okay. Why don't we take, if it suits y'all, a lunch break now. We're five minutes before Mr. Wilkie's and I's plan. Does that suit everybody?
MR. STANLEY: Sure.
(Whereupon, there was a short break in the proceedings.)
BY MS. BURTON:
Q. Okay, Mr. Wilkie, we took a lunch break and before we start back, you brought with you today, looks like a couple notebooks and an expandable type file, plus a roll of drawings; is that right?
A. That's right.
Q. And I believe you told me when -- before the deposition started back, that contained in these materials are also CD's that I guess, contain electronic files.
A. That's true.
Q. Okay. I think what we agreed to do, Mr. Wilkie, was mark your original files as exhibits with

the understanding that you would retain a copy.
A. (Indicating.)
Q. And then you would arrange for a copy to be made or copies to be made for those who so desire it; is that okay with you?
A. I will be happy to. Yes, it is.
Q. And then can I put some stickers on some of your stuff, if you don't mind? You've got a notebook on the very top. Okay. You're ordering them for me?
A. I'm trying to. How do you want them to be?
Q. Let's start with the top one. The very top notebook has a piece of paper on it that says Rivergate and then has a number?
A. Yes.
Q. Is that some kind of file number?
A. That's my project number, internal project number.
Q. And what kind of stuff is in that notebook?
A. These are documents that were provided to me by Stanley Law Firm for my review.
Q. Okay. And I'm gonna mark it, that notebook, with your agreement as Exhibit Number 3 to your deposition. Is that okay?
A. It is.

(Defendant's Exhibit 3 was marked for identification.)

Q. You have another photograph that looks like an aerial photograph of Rivergate on the front.

A. Yes.

Q. What is this notebook?

A. This notebook contains a paper copy of my June 18th, report.

Q. Okay. And I'm gonna mark that notebook as number 4; is that all right?

A. It is.

(Defendant's Exhibit 4 was marked for identification.)

Q. Next you have an expandable file folder, what is that?

A. This is the rest of my paper file, so this is the primary file that I have for the project.

Q. And in that would be your work product --

A. Yes.

Q. -- and calculations and the like?

A. Yes. Including the electronic files that support that.

Q. Okay. And I'm gonna mark that expandable file with the sticker Exhibit Number 5; is that okay?

A. That's okay.

(Defendant's Exhibit 5 was marked for identification.)

Q. And lastly, at the end of the table you rolled out a stack of drawings; is that true?

A. That's true.

Q. And I'm gonna mark that stack of drawings as Exhibit Number 6; is that okay with you?

A. All right.

(Defendant's Exhibit 6 was marked for identification.)

Q. And the drawings appear to be a kind of a mix of items, including some drawings by A.B. Consulting, looks like some survey data and some landscape drawings among others?

A. That's right.

Q. Okay.

A. Some of the documents in that stack were provided to me for my review. Some of them are printouts of survey data by the surveyor that I hired.

Q. Right.

A. And some of them are drawings that I've made notes and marks and things on.

Q. Okay. Can I ask you just a minute about the survey data?

A. Yes.

Q. Did you -- I noticed in the large set of drawings that you had that there were, it looked like a variety of data points that had been shot by a surveyor?

A. Yes.

Q. Okay. And we can go down -- you mind walking down there with me? Okay. The first page that you turned to doesn't have a title block, but shows grids and various, looks like survey points.

A. That's right.

Q. And this is data that a surveyor hired by you prepared?

A. Yes.

Q. And what were you asking them to do?

A. We -- I asked the surveyor to establish some ground surface elevations at certain places on the property so that I could compare them with what was depicted on construction plans and with the conditions that were out there at the time to help make sense of where the drainage was working, where there were problems and just understand some of the elevations that were present.

Q. It appears on this particular document that most of the survey data is kind of concentrated in one area.

A. It is.

Q. Why was that?

A. It would have been possible to survey the entire site and obtain the same data in every -- on every lot or for every house that's there, but I did not go to that extent for the purpose of this evaluation. I targeted some areas to try and understand some typical conditions of the property rather than undertaking a full survey. The idea was that I had seen some conditions out there that I wanted to get some better understanding of and establish elevations for, but I didn't want to pay 25 or $30,000 for a full survey for the whole property.

Q. Sure. When you looked at survey data shot by the surveyor that you hired and compared it to the drawing elevations, what, if anything, did you determine?

A. One thing that I was looking for was to see what the relative slope of the existing storm drainage line was, that is the 15-inch perforated pipe that existed on the property.

Wanted to see the relative elevations from one -- from one catch basin to the next catch basin to see whether it was laid flat, zero slope, whether it had positive inclination or whether there was back slope, that was one thing.

Q. What did you find?

A. In some places it was flat, some places it was back sloped and some places it had positive.

Q. What was it supposed to be?

A. Flat.

Q. What else did you find?

A. Just wanted to see what some of the driveway slopes were, whether the driveways leading from the alleyway up to garages, whether they -- what kind of an inclination they had. I could see from walking around that they looked like they were steep, but I wanted to have a measurement of that.

Q. You determined that some of them were fairly steep?

A. Yes, they are.

Q. Let me ask a stupid question. If the original design did not anticipate the steepness of the driveway, that steep of a driveway as you found on some of the survey points, did you determine

that the house itself is at a higher finished floor elevation, did you determine that the road is at a lower elevation?

A. There are some variations in the finished floor elevation that we were able to determine through surveying. When you compare the finish floor elevation with what's represented on the plans, some of the finished floor elevations that we saw it looks like they are a little bit higher than what's shown on the plan, so like you said, building pad appears to be a little higher in elevation.

Q. Well, that would explain why you got a little steeper driveway if you got to get up to a higher finished floor elevation at the house?

A. It does, but I would qualify that to say that I don't feel that the documents that I've received include something that I would call as-built survey, so I don't know what -- what was established out there and how the combination of the builder, engineer, developer and rest of the construction design team, how they -- how they felt about the final product and whether that met the intended elevation or whether there was some reason for the change, but there are

differences in the elevations from what's on the design plans that I have.

Q. You have not seen an as-built survey?

A. No, not that I know of. I have some -- I have some as-built information about spots on the property, but I've not received something I'd call an as-built survey.

Q. Is there any requirement that anybody do an as-built survey?

A. That's something that would be subject to, you know, the owner and the consultants and the agreement they had between one another as to how that's gonna happen and with the contractors, too, because there's an incentive and disincentive for somebody to prepare an as-built survey.

Q. Well, somebody's got to pay for it.

A. Somebody's got to pay for it and the information it provides will inform on whether the work is complied with the intention.

Q. Okay. Are there other documents in your stack of survey data?

A. Well, there's one more here.

Q. Okay. So the next page is more data in another section.

A. Yes.

Q. Does it reveal generally the same information we just discussed?

A. Yes, it does.

Q. So we could take some of this survey data and read it, compare it to the topography and the elevations on the signed documents and see how close it is?

A. You could.

Q. Okay.

A. And this is in electronic form so you could have your consultants take the data from our electronic data and look at it and view it the same way I did.

Q. You could put it in CAD and lay it on top of the drawings?

A. You could.

Q. Did you do that, layer them together?

A. I don't think we layered them, because for one thing, we didn't have electronic copies.

Q. The drawings?

A. We only had the scanned copy.

Q. Okay. Okay. Thanks.

A. Before you move on to another question, I wanted to supplement an answer that I gave you earlier

about the berm that we were discussing.
Q. Yes, sir.
A. You had asked me about whether -- or how I knew that that berm was supposed to be there.
Q. Yes, sir.
A. And I said that I remembered reading something in the documents that I had that explained that it would be there, though I couldn't recall where or why. In our break I was able to locate a document that -- that relates to that and I wanted to point it out to you. The documents I have, they've been stamped with a document number and the number may mean more to you than it does to me since it came through a law office, but the number of the document I'm looking at is numbered CSD 000227.
Q. Yes, sir.
A. It's the second page of a letter written by A.B. Consulting Engineers to Horry County Planning Department.
Q. Give us the date for the Record, if you wouldn't mind.
A. The date of the letter is March 21st, 2000.
Q. Okay. And show me where you're talking about in the letter.

A. I'm looking at item number two on page two under the heading engineering.
Q. Uh-huh.
A. Well, the items under engineering are responses to the Horry County Planning Department's review of a set of plans that A.B. Consulting Engineers delivered to them. The comment that the planning department had is we think you need to do something about the drainage along -- along the street to the east of buildings and you need to put some kind of a swale or drainage feature there.

And item number two is responding saying, "The developer plans to install a small berm and landscaped area parallel to the Baker Street right-of-way. This feature will act to divert any storm water to the existing wetland and prevent run off to Baker Street."

Q. Okay.
A. I just wanted to point that out, because that's where I remembered reading that there was an intent to have that berm there.
Q. Okay. I appreciate that. When we were looking at your photograph number -- photograph numbers 1 and 2, the Baker Street photographs, I just

wanted to make sure I understood. One thing that you were saying on the second photograph where we see that inlet that you say runs to a pipe that runs under a patio --
A. Yes.
Q. -- that isn't depicted on the drawings --
A. Correct.
Q. -- right? Can you determine whether that inlet is actually draining water that would have gone into the eight inlets that you said are missing?
A. Yes.
Q. Okay. Is it performing effectively?
A. Somewhat. Its position on the property allows it to collect quite a bit of water that runs down the space between the berm and the buildings.
Q. Uh-huh.
A. But I can't say that it captures all of it, but it does a purpose of collecting some drainage that passes between the buildings.
Q. Well, you noted in your report that the eight boxes that you pointed to on the drawings with me earlier that are missing, but I don't know that I saw in your report and you can tell me, what is the impact, if any, on the missing

boxes?
A. There is more water that's gonna -- that flows down the space between the berm and the buildings and that causes some increase in erosion and that creates the challenge when you're trying to maintain the property. There's even a place uphill from this where the erosion from that water flowing between the berm and the buildings has eroded the ground to the point that someone has had to put some riffraff or crushed concrete on the ground to dissipate the energy of the water flowing down, downhill.
Q. Okay. So water is coming from the Highway 17 side, right?
A. Yes.
Q. Down along Baker Street in the grass --
A. Yes.
Q. -- right? And the eight inlets, as you understood the design, were designed to catch some of that water and put it into the pipe?
A. Yes.
Q. 15-inch pipe we talked about --
A. Yes.
Q. -- is that right? And so it isn't being caught until you get down to this inlet that's shown in

your photograph two --
A. Correct.
Q. -- is that true?
A. Yes.
Q. Did you do any calculations with respect to this inlet we see in photograph two to determine what volume of water it's capable of capturing?
A. I did not.
Q. Do you know whether it's capable of capturing the water flowing down this grass area in an ordinary rain event?
A. I don't.
Q. And you don't know why the inlets that are depicted on the drawings are not there?
A. I don't.
Q. You just know that it's a deviation from the drawings?
A. I know that they're missing and there's some erosion of the ground around it.
Q. Around what?
A. Around where they are missing from.
Q. Around somewhere on this grass area?
A. If we were to walk straight uphill from the perspective of photo number two --
Q. Uh-huh.

A. -- if we were to walk straight ahead through that photograph, you would get to some places where you could see that the flow of -- of water is eroding the ground surface.
Q. Okay.
A. Or was when I was there.
Q. Okay. When we talked about -- earlier about the requirement to get an NPDS permit from DHEC, as I understand it, you would have to provide certain calculations to DHEC with your application to see if they would approve your permit; is that true?
MR. STANLEY: Object to form.
A. What information that DHEC requires from you is really up to them and I'm certain there are some minimum requirements, but you're also subject to having more questions asked of you and maybe supplementing it with more detailed information.
Q. Sure. The purpose -- tell us what the purpose of getting the NPDS permit is?
A. It's a step -- an administrative step in developing property by improving it with drainage systems. I mean, that's a key component of it. That's just something you have to do. You've got to establish that permit

before you can proceed.
Q. What -- is DHEC looking at your permit to determine whether the increase of impervious surface by the development has an adverse impact downstream on the water shed?
A. That's one role that I'd expect DHEC would say they serve, but you'd really have to ask them what their -- what their overall purpose and what their requirement of people is. But my understanding is, yeah, that's one of the things you want to keep your impacts post construction overall at or less than they were before construction.
Q. And don't you have to demonstrate that to DHEC through calculations that the run off by increasing the impervious surface is no greater downstream than it was before it was developed?
A. You have to satisfy them of that, whether you do so by calculations or just by talking to them, but you got to establish that in one way.
Q. And that is one of the main purposes of getting an NPDS permit, is showing you don't have an adverse effect when you increase the impervious surface by your development, isn't it?
MR. STANLEY: Object to the form.

A. I don't know. I just know that's a requirement for this kind of construction and that's really the only answer I have for you. It is a necessary step and there's a reason for it.
Q. Isn't there also a water quality issue when you get an NPDS permit that they're trying to assure that you don't have an adverse impact on water quality?
MR. STANLEY: Object to form.
A. The issue of water quality would depend on the site and I don't know as I'm sitting here with you today, I don't know how to give you an answer that tells you which kind of sites would need water quality considerations, which ones won't. Sometimes, depending on the type of improvements you want to do, you don't need to implement water quality provisions, but sometimes you do.
Q. Okay. Do you know whether DHEC would back in 1999, whether they, or 2000, would issue an NPDS permit if you are -- didn't provide them with calculations about post development drainage?
MR. STANLEY: Object to form.
A. I don't know.
Q. Because you never submitted a permit to DHEC for

that purpose?
A. That's right.
Q. Okay. You mentioned a moment ago that you observed some riffraff that was placed in the area between Baker Street and the homes.
A. I did.
Q. And do you have any clue who decided riffraff should be placed there?
A. I do not.
Q. You believe it serves the purpose of reducing the speed, for lack of a better word, of the water flowing downhill?
A. I believe that's what it's doing. I don't know if that's why it's there.
Q. But it would serve that purpose?
A. Yes.
Q. Okay. We talked earlier about the infiltration system that was designed by A.B. Consulting Engineers for some length, right?
A. Yes.
Q. Tell me, in your report you talk about the water table based upon the five borings that were prepared by SNME --
A. Yes.
Q. -- do you recall that? In an infiltration

system such as that designed by A.B. Consulting Engineers, what impact, if any, does it have upon the water table?
A. That's a very broad question and I do want to give you an answer, but is there a more specific way you can put it, so that I don't give you more of an answer than you really want?
Q. Well, let me ask you this, wouldn't an infiltration system also allow ground water to seep into the perforated pipe and be drained out?
A. Yes, it would.
Q. So it would have some positive impact on subsurface underground water, wouldn't it?
A. If it weren't working properly, it would.
Q. If it weren't working properly? If there's no rain water in the pipe, but there's some kind of ground water coming up, wouldn't the ground water get into the pipe?
A. Well, for it to get into the pipe, the under drain system that surrounds the exfiltration system would have to be compromised or unfunctional, otherwise the ground water would never make it to the pipe, it would get into the underground system and drain that way.

Q. So it would get into the under drain system and exit through that system?
A. Yes.
Q. Okay. In the system, the conceptual system that you designed as depicted in, I can't remember what we're calling this drawing, the drawing Exhibit A to your report, what impact, if any, does your system have on ground water?
A. It has an under drain system that runs along each alleyway where it would be installed that would maintain the localized ground water level below -- below the underground detention system.
Q. How deep is your 48-inch RCP placed?
A. That information hasn't been defined.
Q. Okay. So at this point unknown?
A. Yes.
Q. Unknown depth?
A. It's undefined.
Q. Okay. With respect to an infiltration system such as that designed by A.B. Consulting Engineers, what kind of maintenance, ongoing maintenance is required?
A. That the system maintain normal operation, that any obstructions or debris that might accumulate within accessible parts of the system be removed

or cleaned. The maintenance for that kind of system wouldn't be very often, but it's something that, you know, would be -- would be done periodically. Probably inspected about every year to just see if there are any obvious problems or obstructions in the system.
Q. So if you designed an infiltration system such as the one designed by A.B. Consulting Engineers, what recommendation would you make about ongoing maintenance to the owner of the system?
A. That it would need to be inspected, at a minimum, it would need to be inspected every year.
Q. So annual inspections?
A. Yes.
Q. And then would you recommend that if any debris or sand or dirt or whatever was observed, that it be removed?
A. I wouldn't say any, but you'd want to look for an accumulation of excessive amounts of debris or sand or silt. You'd also want to try to determine why that material is getting into the system, because the area around that infiltration system is mostly vegetative aside

from -- aside from the pavements and the roof tops and the other impervious system there's not a-- there shouldn't be a large source of soil and sediment and debris to be picked up and if you've got a lot of that showing up in the system, it means you need to start looking around for where that's coming from and stop it, because that material is gonna compromise the way the infiltration system works. It will basically choke it out.

Q. Okay. Is there a correlation between maintenance of an infiltration system and service life?

A. Certainly.

Q. Okay. You need to maintain it to get a longer service life?

A. Yes.

Q. Is that true?

A. Yes.

Q. What evidence of maintenance have you seen on the infiltration system at Rivergate?

A. I'm not aware of what maintenance has been done or has not been done.

Q. Okay. When we talked earlier about the service life of an infiltration system, when such a

system reaches the end of its service life, what do you do?

A. I will answer specifically for this system.

Q. Sure.

A. For this system the way it's constructed, once it reaches the end of its service life, it really needs to be removed and replaced.

Q. So you dig it up and put something else in?

A. Yes.

Q. And I understand from your report you don't believe the system is adequately sized, is that a fair characterization?

A. It is.

Q. Assuming that the system was adequately sized and it reached the end of its service life, realistically you got to dig it up and put a new one in?

A. Parts of it. You at least have to take up parts of it.

Q. Sure.

A. You'd want to, if it was just for maintenance and you learned that it's reached the end of its service life, you could look for things to replace that wouldn't necessarily constitute the whole system and assess what improvement in

operation you could get from that to maybe defer the heavy expensive part of the maintenance downstream to some later date.

I'm not trying to be wishy washy, but when you're dealing with something that's that expensive and somebody's responsible for paying for it, if you -- if your only reason for replacing it is the maintenance of it has caused it to reach the end of its service life, there are things you could look for to try to get some improvement in service.

Q. You might try to do some incremental replacement, right?

A. Yes. Or -- or have it in phases where you do some of -- some of it this year and some of it next year.

Q. Okay. In your conceptual design, you're gonna have to help me understand, you add curb and gutter down these alleyways, right?

A. Yes.

Q. There's no curb and gutter out there?

A. That's right.

Q. And why do you have the trench as opposed to having the drainage on that -- that side of the street drain into a curb inlet like you do on

the other side of the street?

A. I don't follow your question.

Q. Okay. On one side of the street you have a trench, right?

A. Yes.

Q. So you're expecting water to run off, get in the trench and go underground and get into 48-inch RCP pipe, yes?

A. On the left side there is a trench drain, essentially like a French drain and its purpose is to help -- help control the elevation of ground water and intercept some of the near surface drainage.

Q. Stop just a minute, control elevation of the ground water?

A. Yes.

Q. Tell me what you mean by that?

A. If the ground water elevation reaches an elevation that or above that of an underground drain, then the ground water's gonna move into that drain and the ground water won't be able to rise any further than that in that localized area.

Q. Why did you feel -- how deep's this trench?

A. It's several feet.

Q. How far does it go into the earth?
A. Several feet.
Q. Two?
A. That's an undefined depth.
Q. Okay. Well, why do you think that there is ground water getting up within several feet of the surface of the earth in this particular subdivision?
A. We measured the presence of ground water at a fairly shallow depth in our borings and so we know that ground water elevation is somewhat shallow and we want to be sure my repair recommendations are mindful of that.
Q. Okay. Let's look at the SNME report and I think -- I think it's on page five of that report.
A. Yes.
Q. There's a table, right?
A. Yes.
Q. And it shows the depth to the water table for each of the five borings and then it shows a depth after seven days?
A. Yes.
Q. And the seven day chart is that by installing these piezometers?

A. Yes.
Q. Okay. So the first depth measured the highest the water was under the ground is under B2 at four feet; is that reading that right?
A. No. It's under B1 at 3.6 feet.
Q. Well, I'm sorry, let's start the first column --
A. Okay.
Q. -- which is when they measured it when they were doing the boring, right?
A. Okay. All right.
Q. And were you out there when they did this work?
A. Yes.
Q. Did they -- are we talking about using a drill rig or using hand augers or what?
A. That's a truck mounted drill rig that was used to help advance the borings.
Q. So there's a drill rig out there running these five borings?
A. Yes.
Q. How much did that cost you to get that done?
A. In what I have here that I'm looking at right now, I have an invoice amount for the total of SNME's services, but what I don't have is a subdivision of their cost to tell me what they charged me to do these borings, which is what you asked about.

Q. How much is their total bill?
A. The total bill for all their services is $8,580.
Q. And that was the services they did to prepare this report?
A. It is.
Q. And the main on-site services as I read it, was taking this drill rig out there and drilling five borings and they used that to determine water table, soil characteristics, right?
A. Yes.
Q. Okay. But to do that work and write you up a report was 8,500 bucks, right?
A. That's a very general way of putting it, because I feel like there's more that went into it than what you described. It's a fairly lengthy report if you read it.
Q. Sure.
A. But yes, that's the cost that's associated with getting us to the point that that report was written.
Q. Okay. Looking back at our table on page five of SNME's report, are you there?
A. Okay.
Q. When they first went out and did the borings,

the water at its highest point on B2 was four feet below the surface; am a reading that right?
A. Yes.
Q. Okay. And then when they measured seven days thereafter, they got changes in the water table, some up, some down, right?
A. That's true.
Q. Okay. And help me, somewhere in SNME's report they've actually got a picture that shows where the boring locations are. I think it's maybe about six pages back.
A. Figure number two.
Q. Figure two. And if we look at the boring locations, we look at B1 -- you'll have to flip back and forth, is that okay, Mr. Wilkie?
A. Yes.
Q. B1's in sort of the middle of the neighborhood, right?
A. Yes.
Q. And when they did the initial drilling, the water was seven feet below surface and then when they checked it through their piezometer, it was 3.6; is that right?
A. That's right.
Q. So the water table in the middle of the

neighborhood had risen during that seven-day period?
A. Yes.
Q. Okay. If we look at boring two, which is toward -- getting toward the rear of the subdivision over near Baker Street, right?
A. Right.
Q. The water table stayed the same initial boring to the piezometer reading?
A. Yes.
Q. Okay. We look at boring three, which is back near the wetland, right?
A. Yes.
Q. It was 4.8 and over seven days was 4. So got a little higher over the seven-day period, right?
A. Yes.
Q. And then B4 up at the front, getting close to where there's a bank up there caved in at five feet below surface, but then over the seven days the water table lowered; is that right, am I reading that right? Got to be 6.8 feet below ground?
A. Yes.
Q. And then on B5, which is the closest one to Highway 17, it also caved at five feet, but then

when they checked it seven days later, was greater than ten feet below surface.
A. Yes.
Q. What do you make of all that?
A. That the water table on this site is variable.
Q. Is it -- is it possible that when they did the initial borings there had been a more recent rainfall and then when they checked it with the piezometer there had not been interceding rain?
A. That's possible.
Q. Well, given the drainage of the property, doesn't the property drain from Highway 17 down toward what ultimately I think is a waterway, but the wetlands is in between?
A. Yes. There is a wetland between there and the waterway.
Q. Is a possible explanation that there had not been a rainfall event and so the ground water was actually moving toward the rear, which is why these front borings had a lower water table?
A. I wouldn't draw that conclusion from that data alone, no.
Q. Okay. What conclusion do you draw then?
A. That the water table is variable.
Q. Variable? Well, the closest to the surface it

was on any of these is 3.6, right?
MR. STANLEY: Object to form.
A. Right.
Q. Well, what is the closest it is to the surface of the earth?
MR. STANLEY: Object to form.
A. I don't understand your question.
Q. The water table measurements in table two of SNME's report show us where the water table is below the surface; is that right?
A. Yes.
Q. And the highest up it is to the surface of the earth was 3.6 feet; is that right?
A. Yes.
Q. Okay. Now, I want you to tell me, having looked at this, I want you to tell me again why you need a trench drain to deal with that water table?
A. Because the water, at least in these measurements, was as high as 3.6 feet below the ground surface and the underground detention system that -- that I've proposed be used as a repair is 48 inches in diameter, so if we want to maintain a sufficient amount of storage in that 48-inch diameter pipe, you need to have

more than 48 inches between the ground surface and ground water table.
Q. With your 48-inch pipe, assuming that it's somewhere below ground, it's gonna be in the water table, I mean, it's gonna be in saturated soils, isn't it?
A. Depending on where the water table is, it could be.
Q. Well, from the looks of this report, in some locations it's gonna be, isn't it?
A. Not if you put in an under drain system.
Q. Well, that's because you're gonna lower the water table artificially then, right?
A. Yes. At localized areas you're going to help control the water table.
Q. By using a trench drain?
A. A trench drain and a French drain, those phrases can be used interchangeably, but a French drain essentially.
Q. Can you artificially lower the water table by use of an infiltration system?
A. Yes.
Q. Okay. This trench drain, let me see if I can find it. It's not a cheap thing, is it?
A. No, it's not.

Q. Let me hand you a document that was marked as Exhibit 2 to the deposition of Donnie Ray. Did you see the estimates prepared by A.O. Hardee utilizing your conceptual design in Exhibit A?
A. Yes. I have seen some of his cost estimate information.
Q. Did you see the cost estimate information that was marked as Exhibit Number 2 to his deposition, Mr. Ray's deposition?
A. I'm not sure. I would have to compare this document with the ones that I do have, but yes, I've gotten something similar to this from him.
Q. Let me also hand you a document we marked as Exhibit 4 to the deposition of Mr. Ray, which I think is a subsequent estimate. I think it's got e-mail on top to you, doesn't it?
A. It does.
Q. Okay. Do you recall getting that e-mail and that estimate?
A. This has been a long time ago, so no, I don't recall getting it, but I recognize that it's something I received from him.
Q. Okay. Turn over to the estimate itself. And isn't there a line item, quantity line item for that French drain? I mean, I'm sorry, trench

drain?
A. Yes.
Q. 1200 linear feet?
A. Yes.
Q. And that's down the left-hand side of each of the alleys?
A. That's right.
Q. How much is that thing per linear foot?
A. $175.
Q. And so the total price in Exhibit Number 4 for that trench drain is what?
A. $210,000.
Q. Okay. Do you think that's the most cost effective way to reduce the water table in the manner you're trying to do?
A. I've not done a cost analysis of the repairs. I could do that. I mean, if that's something that -- that I need to do, I'd be happy to discuss it with my client. We could talk about whether that needs to be done, but that's not something I've done so far.
Q. Do you -- are you asked from time to time to do value engineering on a project?
A. Yes. I mean, everybody has their own financial needs on a project and you use the phrase value

engineering, that's something that does come up, yes.
Q. Okay. Were you asked in connection with doing this conceptual design set forth in Exhibit A, were you asked to do any sort of -- were you given any sort of budget, let me ask you that?
A. No. My instructions were to assist my client in helping them understand the nature of problems that exist relating to the pavement and drainage systems on the site and to help them understand what needed to be done in the form of corrective action to deal with those problems.
Q. Okay. Were you asked to try and design a system that would do so in the most cost effective manner possible?
A. I have a very simple scope, which wasn't -- which wasn't to place a specific budget number on what I come up with. It was to come up with the right way to fix it, not the least expensive way, not the most expensive way, but the right way to fix it and so far that's what I've come up with.
Q. Would you -- would you anticipate that there might be other right ways, to use your word, to fix it?

A. Well, in my experience, Ms. Burton, in the world of construction that even if you're doing something as simple as digging a hole out in the yard, we can come up with -- with a half dozen different ways to do it and all of them will cost different amounts.
Q. Sure.
A. Yeah. There's ten ways to skin a cat and this is one and it's based on the scope of repair that I submitted.
Q. Okay. And you don't know whether it is the most cost effective way to skin this particular cat?
MR. STANLEY: Object to form.
A. I haven't undertaken an analysis to determine the cost effectiveness of it.
Q. Okay. Okay. How many times did you go out to the Rivergate site?
A. I visited Rivergate site four times, as I recall.
Q. On any of those occasions was it raining?
A. Yes.
Q. How many?
A. I recall one occasion when it rained and I was there.
Q. Was it -- I'll use a lay term. Was it raining

cats and dogs or was it sprinkling or tell me about the rain when you were out there?

A. It was raining. I don't -- I don't remember that it was a torrential or anything like that, but it was raining.

Q. Okay. Which occasion was it that you went out there and when it was raining?

A. The one that I recall as I'm speaking to you was on my first visit, which was October 24th, 2007.

Q. And that's when you went out there with the mayor of West Minister? Help me with his name.

A. His name is Derek Hodgin.

Q. Derek Hodgin, former mayor of West Minister, I think now, but at the time might have been.

A. I'm not aware of his politics.

Q. When you went out there on that occasion, you recall that it was raining?

A. During part of the site visit.

Q. Okay. When you went out there did you observe water backing up out of any of the catch basins?

A. No, I did not.

Q. Okay. If you observed water backing out of a catch basin, what would that tell you?

A. One, one possible reason for that would be that there's an obstruction in part of the -- part of

the drainage system. Another reason could be that the exfiltration system is itself obstructed or clogged.

Q. Okay.

A. Those are two reasons I can think of. Or another reason could be that the rainfall itself exceeds the capacity of the drainage system that it was designed for and constructed for. But those are three reasons I can think of right now.

Q. But you did not observe that condition?

A. No, I did not.

Q. I -- did you observe any ponding of water on this visit you made out there on October 24 of '07?

A. Yes.

Q. Where did you observe water ponding?

A. Along the center line of some of the alleyways and along the edge of pavement for some of the alleyways and adjacent to some of the catch basins in the side yard between the buildings and the berm and next to Baker Street where we were discussing the issue of the ditch being filled or not filled. Those are a few places I observed standing water.

Q. Let me ask you about those. When you say you observed water standing in the center line, are we talking about where the road, alleys came into a V?

A. Yes.

Q. So we're talking about the alleys?

A. Yes.

Q. And you observed water standing, not moving toward the drains or anything?

A. Well, some of it was moving, some of it was standing still, but in localized low areas there are places where the water wasn't moving.

Q. Okay. Is that caused by a dip in the asphalt or the fact that the asphalt lay dead flat or what?

A. Either the pavement was constructed in a way that allowed water to collect into what I'll call bird baths or the pavement deformed after construction leading to the formation of these bird baths, one or the other. Either happened while it was being built or afterward, but all I know is that I saw the condition when I was there.

Q. Okay.

A. Don't know the origin of it.

Q. Okay. And when you talk about bird baths, how

big a bird bath are we talking about?

A. Some of them are very small.

Q. Little puddles?

A. Yeah. Some of them are little puddles and some of them are located next to a catch basin, which is really more of a concern.

Q. Why is that more of a concern?

A. Because in some of the areas where you could see the water standing, you could also see that the pavement was cracked and deformed, which told me that the condition has at least been going on for awhile and that there -- there is some -- there's some damage to the subgrade below it.

Q. When you saw the bird baths near a catch basin, did you determine that the water wasn't actually able to get to the catch basin and drain into it or was the catch basin full and there's no place for it to go?

A. The catch basin wasn't full of water, but the pavement around the catch basin had depressed to the point that not all the water could get over top of the rim and get inside the catch basin.

Q. Okay. When you said you observed standing water at the edge of the alleyways --

A. Yes.

Q. – is that where the alleyways go toward Baker Street and stop?
A. That's – one place where you could see that condition would be where the alleyways terminate at the long space between the buildings and Baker Street, that's one place, but another place would be just along both sides of the pavement up and down the alleys.
Q. Where they hit grass?
A. Yes.
Q. Let me ask you about the ends of the alleyways. When you went to the site did you observe concrete parking pads that had been constructed at the ends of alleyways?
A. Yes.
Q. Is that consistent with the design documents?
A. I don't recall if it is or not.
Q. Okay. You don't remember if there are any concrete parking pads shown?
A. No, I said I remember them being there. I'm telling you I don't recall whether that's consistent with the design or not.
Q. How about go down there and see if you see any concrete parking pads at the end of alleyways.
A. While I don't see any of the concrete pads

marked on the design drawings at the end of the alleyways, I recall there being a document I reviewed that talked about a need for the ability to turn around at the end of those alleyways so that an emergency vehicle would enter the alleyway, could turn around and so sort of like the berm issue we talked about where there's not really an identification of it on the plans, I recall their being some information in the documents that does say something about the potential need for something to be there whether it's those parking spaces or some other pavement system, but there was at least a discussion about a pavement system being at the end of the alleyways.
Q. You seen any information related to the installation of any additional parking because of a lack of garages?
A. I don't recall.
Q. Okay. When you observed water at the ends of the alleyways where the alleyways stop, was that where they met grass or was that where they met one of these concrete parking pads?
A. Both.
Q. Both places?

A. In – in one or the other or both places, yes.
Q. You also said you saw water standing at the edges of the alleyways, I guess, where they abut a homeowner lawn?
A. Yes.
Q. How is water standing there if the road is to be an inverted road?
A. In some places I don't think that V in the center line of the road is all that well defined and the pavement along the interface between asphalt and grass could have been depressed over time due to settlement, but yeah, there's not a – in some places there's not a well defined V that allows water to sit in that interface between turf and pavement.
Q. The intention of the design document was to have the road in an inverted V so that the water would drain toward the center, isn't it?
A. That's right.
Q. But the conditions you observed did not have the V as well constructed as would allow that?
A. That's right.
Q. Okay. We talked about Baker Street. I think you saw the water at Baker Street where alleyway I intersects?

A. Yes.
Q. And that's depicted in that photograph Exhibit – I mean photograph one?
A. Yes.
Q. And you also mentioned that you saw it at the edge of catch basins in the yards, I think that's what you said?
A. Standing water at the edge of catch basins.
Q. In the road?
A. Yes.
Q. Okay. Sorry. Did you talk – have you ever talked with any of the homeowners out there about any drainage issues?
A. I have spoken with some of the homeowners on some of the site visits I made.
Q. Do you recall who you talked to?
A. I don't.
Q. Did you take any notes?
A. I may have. If I did, they're in my file.
Q. Okay.
A. I was handed a couple photographs by one of the homeowners when I was there on one occasion and I've got a copy of those in my file.
Q. Okay. Okay. What information did you get from the homeowners that was relevant to your report?

A. **Well, on one visit I recall some homeowners just giving me general descriptions of what they observed when it -- when it would rain and it so happens that while I was there, it did start raining and so they were able to point out areas to me that they had described under dry conditions that now we could look at while it was wet. But in general, from the homeowners that I spoke with, I just got a sense of what it was they had observed.**

Q. Okay. Did you observe any areas where you saw water entering a home?

A. **I did not observe that, but I do understand there are some accounts of that.**

Q. There are some accounts?

A. **Accounts of that.**

Q. Where do you get your understanding about accounts of that?

A. **I believe some of the reports and notes prepared by Derek Hodgin and Ross Clements mentioned specifically interviews they've had with homeowners about water entering into garages.**

Q. Did any homeowner describe that condition directly to you?

A. **Not to me, no.**

Q. So it was information you got from Mr. Hodgin or Mr. Clements who got it from a homeowner?

A. **Well, I got it from their reports.**

Q. I see.

A. **And I did not undertake an interview of all the homeowners on the site. There's just some of the homeowners I happened to have spoke to while I was there at different times.**

Q. They saw you walking around and were curious?

A. **That's how it is, yes.**

Q. Figures. Let's turn if we could, Mr. Wilkie, back to your report, Exhibit 1.

MR. STANLEY: We've been going about an hour. Would you like a break?

THE DEPONENT: Sure.

(Whereupon, there was a short break in the proceedings.)

BY MS. BURTON:

Q. Mr. Wilkie, I want to back up to one thing we talked about earlier. Let me find this exhibit real quick. Exhibit Number 1 to the deposition of Donnie Ray, which has the e-mail at the very bottom from you to Mr. Thompson, do you see that?

A. **I do.**

Q. Is that an e-mail you sent to Mr. Thompson at Thompson Waterproofing?

A. **Yes.**

Q. And you sent two documents, I think?

A. **Yes.**

Q. If you turn over to the second page, I think we looked at this letter earlier, that's -- what do you call that thing you got a label on top?

A. **Preliminary quantity take off.**

Q. You got quantity take off with various quantity items and linear feet or square yards of some material?

A. **Yes.**

Q. In that you're very specific about this trench drain, classic -- can't remember what the name of it is. ACO classic drain K100S, you see that?

A. **I do.**

Q. Who speced that product?

A. **I did.**

Q. So that's a product that you decided should be part of this conceptual drawing?

A. **Yes.**

Q. And tell me about that ACO classic drain K100S, how big a thing is that?

A. **I don't have its size for you, I don't.**

Q. Is it basically a U-shaped object?

A. **Yes. But the idea in specifying -- my idea in specifying a trench drain at that location was two-fold, to not only provide a way to intercept some of the surface drainage between the yard and the pavement, but also to control the ground water. So the selection of a -- of a mid to upper tier of product I thought would allow enough flexibility once the pricing came in to be able to accomplish both of those things, whether they picked that specific product in the end to actually do it, but I picked that product because I thought that would give us -- give us the flexibility to put in something that would provide both the surface intercept and a French drain type capability.**

Q. Okay. The trench drain, this trench drain that is in the quantities, how deep in the ground does that thing go?

A. **Not very far. I mean, it's -- it's -- the trench drain component itself would only go a limited distance below the ground, but the French drain component of it that I would anticipate putting in in addition would go**

several feet below.
Q. Okay. A French -- where's a French drain in those quantities?
A. It's not on those quantities. It would be an integral part of installing that trench drain. It would be underneath that trench drain.
Q. Would you agree with me that trench drain doesn't have holes in it to let ground water seep into it?
A. Depends on how you installed it.
Q. You're going to install it in accordance with -- with the manufacturer's instructions, aren't ya?
A. This is a concept of repair that I expect would be revised at some point to provide additional details if needed and for -- for the purpose of what these repairs are trying to accomplish, this is an adequate, good -- good scope of repair. This is what I wanted to have in there at this stage.
Q. Okay. As Mr. Ray gave us a document that we marked as Exhibit 3 to his deposition where he -- his company had actually gotten a quote or was getting a quote on the trench drain that is in the table attached to your e-mail that we marked as Exhibit 1 to Mr. Ray's deposition, and

I'm not asking you -- I doubt you've seen that before, the internal documents for A.O. Hardee?
A. I don't believe I've seen this.
Q. If you flip back in the document, there's a bunch of technical brochure information about these trench drains and pictures of them; do you see that?
A. Yes.
Q. And you help me and I may be -- may not understand, but my impression is, is that it's got a grate on top and they talk about it being at ADA compliant grate and water enters in through the top in the grate and runs along, essentially in a U-shaped object; is that right?
A. Yes.
Q. So it captures water from above, doesn't it?
A. It does.
Q. And it doesn't go super deep into the earth, does it?
A. No.
Q. I mean, don't you see similar type things along the edges of swimming pools, for example? I mean, may not be as fancy and as expensive as that one is, but that kind of concept?
A. Yes.

Q. It isn't gonna do -- that object isn't gonna do anything to lower the water table, is it?
A. Nor did I say it would.
Q. I thought you told me it would a little while ago?
MR. STANLEY: Objection to form.
A. No. I said it -- in conjunction with the French drain, it would.
Q. So the purpose of this thing is to catch surface water, isn't it?
A. Yes.
Q. Okay. Why can't you catch the surface water and run it into a regular curb inlet?
A. Well, that's another way to do it. I mean, you could concept it that way and price it out, see how it comes.
Q. Okay. And when you're talking about a French drain, installing a French drain, we talking about installing some kind of perforated piping in the earth?
A. Yes.
Q. Sort of like the 15-inch perforated piping that was installed at Rivergate?
A. No.
Q. A different type of piping then?

A. Yes.
Q. Okay. And you don't know how far into the earth it would be installed I don't gather today?
A. Well, several feet. I mean, the idea is to put it at an elevation that compares well with the bottom elevation of 48-inch pipe that's to be installed.
Q. How far -- what is the minimum depth --
A. Let me -- I hate to interrupt you, but I'm going to. One of the reasons that these -- some of these elevation questions that you're asking are not -- I know they're important to you, but the reason that those elevations can't be answered at this point is that this is an existing site, it's not new construction. We're not putting just on paper and that we can go out and build whatever we want, because there's nothing there right now. There are buildings there, there are people living there, so there are understandably gonna be adjustments that are going to have to be made to the exact elevations in the field to match up with the existing infrastructure.
And it would be premature and really sort of a waste for me to define all of those spot elevations now at this stage of the game,

because that would all just get thrown away later. You'd have to redo it again. So I just want to make that clear as to why some of your questions about heights and elevations and exactly how big is this component gonna go there, that I understand why they're important to you, because you want to understand what it is I'm recommending, but a lot of that is gonna be subject to adjustment in the field and later -- later on.

Q. Okay. And I appreciate that. I just want to make sure one more time. I'm sorry if I'm beating a dead horse. The trench drain, however many linear feet that is equals $210,000 is in fact, designed to catch surface water runoff?

A. Well, it and what will go under it will capture both surface runoff and capture drain water.

Q. And there's nothing in that quantities chart that you prepared for the French drain line item?

A. Yes. My intent was that the -- whatever price came back for this trench drain would -- we'd also be able to implement a French drain right underneath it that what we got from that line item was gonna provide capability to do both of

those things, but as for what it included in that line item for the number of dollars that's shown on it, you'd really have to ask the estimator that. I don't know.

Q. When you met out on the site with Mr. Rooks and Mr. Ray, did you tell them that that line item includes a French drain also installed underneath?

A. No, I didn't. And we didn't discuss that item particularly, because I had not adopted that item in my scope yet.

Q. Okay. And with respect to the French drain, you're -- you want to utilize a French drain or you propose utilizing the French drain to lower the water table?

A. Yes.

Q. Then why are you lowering the water table with a closed system such as depicted in your conceptual drawing?

A. You still need to control ground water to a reasonable level. It's a 48-inch diameter pipe, but, you know, under certain conditions if you've got a sealed system, even though it seems like concrete's pretty heavy stuff, that large 48 inches in diameter if it's sealed and there's

nothing inside it and the ground around it becomes saturated, you could have some buoyant forces applied to the pipe because of the ground water and I think it's a good idea to try to, at least -- at least control ground water near the bottom elevation of the pipe so you don't have a buoyancy problem with the pipe.

Q. Okay. Are you telling me that in this area of South Carolina, the coastal area, where we have a relatively high water table, that sealed water systems usually include installation of something to lower the ground water table?

A. I don't know what's usual.

MR. STANLEY: Object to the form.

A. You'd have to be more specific.

Q. What is the standard of care in the coastal area of South Carolina, particularly Horry County, when one is designing a closed system with respect to the water table?

MR. STANLEY: Object to form.

A. I don't have an answer for you. I mean, I've presented to you what my recommendation is for how to fix this. That's what's in the scope of repair to fix it.

Q. You don't know what the standard of care is with

respect to this system?

MR. STANLEY: Object to the form.

Just answer I don't know.

A. I don't know. I don't have an answer for you.

Q. Let's look back at your June 18, 2010 report that we marked as Exhibit Number 1, please, sir.

A. What page?

Q. I'm gonna look at page four. And under your conclusions you have a heading for storm drainage, do you see that?

A. I do.

Q. Okay. I just want to -- we've talked about some of these, but I want to make sure we've talked about all of them, Mr. Wilkie. The first one says that, "The poor installation of storm drainage components has diminished the function and performance of the storm drainage system." Do you see that?

A. I do.

Q. What -- can you tell me which components you're referring to that you describe as being poorly installed?

A. I could give you some examples.

Q. Please do.

A. One is the lack of catch basins at the ends of

the alleyways in the lawn areas. Those are shown on the plans and they're not there and their absence can have an adverse affect on the function of the rest of the system.

Q. Are those – are those the eight that we talked about earlier?

A. Yes.

Q. Okay. Keep going.

A. Another example would be the orientation of the 15-inch pipe that is supposed to be flat, but in some places is back sloped or sloped positively.

Q. When you say, "back sloped," which way does that run?

A. So it's – it's not allowing water to run downhill. It's sort of damming the water.

Q. Okay.

A. That's what I mean when I say, "back sloping".

Q. Okay. What else?

A. Another example would be the curb inlets along Rivergate Drive. Some of them are positioned at an elevation that causes surface water to get pushed around them instead of into them.

Q. Okay. Does that mean they're too – too high?

A. Relative to the pavement, they're too high.

Q. Okay. What else?

A. Another example is some of the – some of the drop inlets were constructed with materials along the bottom of the rim that have failed and are pushing into the – into the drop inlet.

Q. Are we talking about bricks?

A. Yeah, utility bricks.

Q. Okay. Anything else?

A. I'm sure I could come up with a more lengthy list, but those are some examples I can think of right now.

Q. Okay. All right. Item number two, "The plans do not specify the installation of a culvert under the driveway at east outlet – at the east outlet from Rivergate onto Baker Street." And that is alley I; is that accurate?

A. Yes.

Q. And according to this, you believe a culvert should go under alley I running parallel with Baker Street?

A. I believe that based on the document that we reviewed earlier that relates to the encroachment permit onto Baker Street –

Q. Uh-huh.

A. – that that conclusion number two, it may no longer apply.

Q. Okay.

A. Because if you don't need to have a grass lined ditch there, there would be no reason to have a culvert there either.

Q. All right. Three, "The design plans require the installation of eight catch basins along the eastern edge of the property, none of which were installed." I think we've talked about that, have we not?

A. We have.

Q. Four, "The southern end of the emergency overflow pipe extends underneath a patio of one home." We've talked about that, have we not?

A. We have.

Q. Number five, "The storm water management package prepared by ABCE included a requirement for baffles, weirs and under drains at the catch basins for the exfiltration system, but none were installed. Their absence prevents the exfiltration system from performing as intended." I'm not gonna read the rest of that. I don't think we've talked about this particular paragraph at all, have we, sir?

A. We have not.

Q. Okay. And when you talk about baffles, weirs,

are we talking about basically like a wall within the catch basin itself?

A. It depends on which one. You said baffles and you said weirs.

Q. Okay. Well, which ones you think should be there that's not?

A. The one that's described in the documents that A.B. Consulting Engineers sent with their permit review package.

Q. Which is baffles or weirs?

A. Let's see how they describe it by just looking at it.

Q. Can you find it fairly readily, because I have it if it's hard for you to locate it?

A. If you have your finger on it, hand it to me.

Q. I don't have my finger on it, but I didn't know if you had it tabbed, because you have a lot of tabs.

A. I'll look for it. I'm going to look while you're looking, too.

Q. All right. We'll both look for it. Did you find it?

A. I don't know. I haven't found it yet, but I think A.B. Consulting Engineers referred to them as baffles.

Q. I got two reports. You want to take a look at those and see if you -- there's different dates, that's why I handed you two. I think they're different dates. Is that the report you're talking about, that type of report?
A. It may be. Let me look at it.
Q. Sure.
A. Yeah. They're referred to as baffles in A.B. Consulting Engineers' document.
Q. Okay. Read us the Bates number at the very top-left corner.
A. 10.21.10 000259.
Q. Okay. And there's a reference on page two, that particular Bates numbered page, but page two of the documents to baffles?
A. Yes.
Q. Okay. Can you tell us what a baffle would be?
A. It says, "Baffles will be installed in each catch basin where the under drain is connected to encourage exfiltration in the system rather than draining directly to the under drain system."
Q. Okay. Do you know what that physically is supposed to look like?
A. It's just a barrier between the outlet of

15-inch perforated pipe --
Q. Uh-huh.
A. -- and the inlet of the 8-inch emergency over drain pipe.
Q. To encourage water to stay in the 15-inch and get into the soil?
A. Will encourage it to get out of the 15-inch by way of the exfiltration system.
Q. And into the soil and the stone around it; is that right?
A. Yes.
Q. Going back to your report then, item number five, you're saying that there are no baffles -- I'm gonna take that back from you. Let me know if you need it again. No baffles within the catch basins that you observed?
A. No. There's not a physical baffle. There's a difference in elevation between the 15-inch pipe and the 8-inch emergency overflow. So having an 8-inch emergency overflow that's slightly higher than a 15-inch pipe that's coming in next to it --
Q. Uh-huh.
A. -- if you separate those elevations, you can create a kind of a quasi baffle just by raising

the outlet pipe so that the water level has to get so high before it even gets into the emergency overflow.
Q. Okay.
A. So some of the catch basins I saw did appear to have some quasi baffle function to them, because the emergency overflow was sitting a little higher --
Q. Uh-huh.
A. -- than the five ten-inch pipe, but there's no physical baffle in the box and that distance between the 15-inch pipe and the 8-inch pipe vertically seemed to vary so that it wasn't controlled the way I think the engineer intended it to be in their documents.
Q. But in some instances there's more control than others depending on this elevation change?
A. Yes. You would have to go from one catch basin to another and assess them individually to see which ones were positioned better than others.
Q. Okay.
A. But they're variable.
Q. In your report, item number five, you indicate that the absence of the baffles allows trash and debris to get into, I assume the catch basin and

thus the pipes?
A. Yes.
Q. Did you observe that condition or is that a theoretical statement?
A. That's not a theory, it's a fact that if you don't have that there, it does make the system accept debris and materials that it otherwise would not allow to get in by way of the baffle.
Q. Did you see debris and materials?
A. No. No, I did not.
Q. Do you have some belief that there are debris or materials in the system?
A. I haven't seen that there is.
Q. Okay.
A. But there is a condition that would allow that to happen.
Q. It could happen, but you don't know that it has happened?
A. I haven't seen that it's happened.
Q. All right. Of the -- let's turn over to item numbered six in your report on page five of Exhibit 1.
A. Okay.
Q. It's a fairly long one and I don't really want to read it into the Record. I think that this

relates in part to something we talked about, which is your opinion essentially, that the infiltration system's undersized because there was an incorrect assumption about the soil characteristics --

MR. STANLEY: Object to form.

Q. -- is that right?

A. Could you state that again?

Q. Do you believe the system is undersized?

A. Based on the design assumptions that were made, it is undersized.

Q. So you do believe it's undersized?

A. Yes.

Q. And you believe it's undersized because there was an incorrect assumption about the soil characteristics --

A. Yes.

Q. -- right?

A. Yes.

Q. And that incorrect assumption, I gather, relates to, and I probably can't use the right geotechnical word for this, how well the soil drains?

A. Yes.

Q. Okay. And I take it that, from your report,

that A.B. Consulting used a K value and infiltration rate of 40 inches per hour?

A. Yes.

Q. And you believe that a more appropriate K value is 12 inches per hour?

A. I'm saying that I found through on site measurements that 12 is closer to what -- to what the actual -- actual amount would be. It does vary though. Just like we were talking about the ground water conditions.

Q. Sure.

A. And you were kind of getting after me because I wouldn't concede that the ground water was variable on the site.

Q. I wasn't getting after you.

A. Same thing here, that the soil conditions on a site, especially one of any size, they vary from spot to spot. So the infiltration rates that you can achieve in soil are gonna change depending on soil type and that's what we saw on our test, it varies, but for the test we did, 12 inches is an appropriate number that could be used.

Q. When you talk about the tests, we're really talking about SNME's test?

A. Yes. We're talking about the in place infiltration test that I had SNME do.

Q. And I want to turn to the SNME report and look at page numbered four. You there?

A. I am.

Q. Okay. In their report, SNME categorized the soils into two strata, right?

A. Yes.

Q. But they couldn't decide -- as I read their report -- they couldn't decide what was fill and what was original residual material.

MR. STANLEY: Object to form.

Q. You read it that way?

A. In the types of soils that are on the Rivergate site it can be difficult to discern what is fill and what is not.

Q. And they, in fact, had difficulty making that determination about whether it was imported fill or whether it was original residual on site material?

A. Yes. And that's normal for this area.

Q. Okay. And have you heard anything anecdotally about any fill being brought onto the site?

A. I've read about it. I've not heard about it though.

Q. Okay. Have you looked at any of the pay applications that were submitted for any of the grading work to determine what fill was brought in and how much of it was brought in?

A. I don't recall. I just recall that there -- there was some fill imported --

Q. Uh-huh.

A. -- and that it was provided in different areas of the site, but I don't recall the details about where -- where it was put.

Q. Okay. So do you know whether any of the fill that was placed was placed in the areas of the five boring locations?

A. No. I just don't -- I don't have an opinion about whether there was definitively fill placed in any or all those locations. It's just clear from the borings that were done that there's a mix, mix of conditions, there's fill, there's natural soils and there's some you can't tell what they are.

Q. Okay. Let me ask you this, because I didn't understand this in the report. They determined the blow counts when they did the borings in those locations, right?

A. Yes.

Q. And they, for instance, in stratum one they found blows between four and sixteen, do you see that?
A. Yes.
Q. What do you believe to be an acceptable blow count for fill material of this type?
A. That would depend on the conditions around the material, whether the material's wet or dry. Whether it's confined or unconfined. At what depth it is.
Q. Well, in stratum one we know what the depth is, don't we?
A. Well, if you want to ask somebody what blow counts are appropriate for a certain soil, there is a need to define under what conditions, what do you want to do with that soil before you answer the question about what is appropriate or not. What is it that you want to achieve with that soil in that location.
Q. You mean whether it's under -- has structural loads on it or whether it's a landscape area?
A. Yes.
Q. Okay. Well, in this report SNME when they talk about the blows, they say that the soil is very loose to medium dense, relative density.

A. Yes.
Q. Does that have an impact on any of your opinions?
A. Yes.
Q. What impact?
A. It informed me of one, what kind of soil it is and two, that there is a variability in its consistency.
Q. In its consistency? You mean in the compaction effort placed on it?
A. I'm not talking about compaction and their blow counts aren't anything. Their blow counts are simply describing the resistance that the tip of the hammer encounters trying to drive through it.
Q. Okay. What does it tell you if it's four to 16 blows per foot, what does it tell you about the material?
A. It tells you that it classifies as something that's loose to relative dense.
Q. So what -- did you determine that that was a particular type of soil then?
A. Well, on the low side the blow count of four tells a person that if this were fill, it either may not have been compacted very well or it has somehow deteriorated on its own over time, which is unlikely, so if it's fill that you're looking at and it's only got a blow count of four, the amount of compactive energy that went into it may have been less than adequate, on the low side. On the high side of things, a 16 doesn't really tell you anything bad about the material, it just -- it just -- that's what it is. So on the low side it tells you there's a potential problem if that's fill.

Q. If it's fill, that's not a whole lot of compactive effort?
MR. STANLEY: Object to form.
A. Yeah.
Q. Okay. And you would -- that's why I asked you earlier if it is fill material what kind of blow count -- let's assume these borings were all through asphalt, weren't they?
A. Yes, they were.
Q. So they're under either an alley or road. What kind of blow count would you like to see with that application?
A. Directly under a road I would expect to see higher than seven if, you know, if things were -- if things were put together well and it's in a roadway --
Q. Okay.
A. -- a residential street, I would expect it to be better than seven. And depending on the needs and the wants, there could be good reasons to have a specification that's much more stringent than that. But I'm trying to concede that you don't have to have everything perfect, that if it was above seven, I'd be more -- more accepting of it as being adequate.
Q. And you said if it was fill, we talked about what if it was fill and had these blow counts, what if it's residual material and not fill and has these blow counts, what does it tell you?
A. In this -- in this type of soil it -- the difference may not be very much, because it's a sandy soil and the way that the tip of the rod penetrates through that soil, whether it's been picked up and recompacted over here versus undisturbed natural soil, the difference in the penetration resistance of those soils is not gonna be as stark as it would with other soil types like clays and fill. So in a sand, still maybe have the similar concern. If it had a lower blow count, it might need additional

compaction.

Q. Okay. Show me. I should know where it is, but I don't recall in SNME report where they determined the -- is the right word infiltration rate of the soils, is that the right word?

A. Hydraulic conductivity.

Q. Thank you. Hydraulic conductivity of the soils, where is that in the report?

A. Starts on page five.

Q. Thank you. We talked about the ground water measurement table and then they talk about measured hydraulic conductivity; is that right?

A. Yes.

Q. And they did their calculations, unfortunately for me because I didn't do too good in math, they did it in centimeters per second instead of feet per hour. Did you take their calculations and then convert it into feet per hour?

A. I converted it into inches.

Q. Inches per hour?

A. Yes.

Q. Okay. Where -- where is your mathematical calculations doing that conversion, is that in your expandable folder?

A. I have it somewhere in there, yes.

Q. Okay. But you took their 1.2 times 10 to the negative 4 and converted that into inches per hour?

A. I did.

Q. And you got a pretty wide variation, didn't you?

A. The numbers were variable, yes.

Q. Okay. And when you get back to your report, you criticize the use of 40 inches per hour by A.B. Consulting Engineers, correct?

A. Yes.

Q. And you say that the appropriate number is 12?

A. I say that the number -- an average number that I encountered of the ones -- and a good average number is 12, is basically what I -- what I adopted at this stage of the project.

Q. How did you -- I mean, is that just a straight up average of five numbers?

A. No. I think I threw out the highest one. There was one that actually -- was one that actually achieved nearly 40 inches per hour.

Q. 48, I think you say in your report. You say the range varied across the site from two inches to, to 48 inches per hour on page five, paragraph numbered six.

A. Yes.

Q. Okay. So you threw out the 48 and then averaged the others?

A. That's right.

Q. Okay. And came up with 12?

A. The one that was the highest was so much different than the others that my thought was that if you were gonna design a system that could later be adapted for use over the whole site, that if you had that long outlier included in what you made your design assumptions for, that it would be a potential problem, so I threw out the outlier and averaged -- averaged the others.

Q. Okay. Item numbered seven on page five --

A. Okay.

Q. -- you indicate that, "ABCE observed certain construction deficiencies during installation of the storm drainage system and recommended corrective action for a limited portion of the system, but failed to evaluate the remainder of the system for the same deficiencies." Do you see that?

A. I do.

Q. Does that refer to correspondence between A.B. Consulting Engineers and Wayne Winderman about

the failure to install the stone around the 15-inch perforated pipe?

A. It does.

Q. And do you -- can you find that readily, that letter?

A. I have that letter in front of me or one of the letters that mentions it.

Q. Is that one of the letters that you rely on in rendering this opinion contained in paragraph numbered seven?

A. Yes.

Q. Okay. Do you mind if I look over your shoulder real quick?

A. Sure.

Q. And the letter you have in your notebook which is, bear with me, Exhibit Number 3, is dated July 10, 2000 from Braxton E. Lewis, III to Mr. Wayne Winderman?

A. That's right.

Q. Okay. And is this the letter that talks about a lack of stone around certain of the pipes?

A. Yes.

Q. And could you tell from reading the letter generally where this location was that it was determined that the pipes were being laid with

no stone?
A. It's generally the last two alleyways on the south end of the property.
Q. Near the wetlands?
A. Yes.
Q. Okay. So we're getting down to street – alley H and I?
A. They are labeled by the engineer as G and H.
Q. I know there's some questions about labels, whether I is really H, but down toward that end.
A. That's why I said they're the last two. The last two.
Q. Okay. The last two. And they determined that there was not stone being placed around that pipe as indicated on the design documents and wrote to Mr. Winderman and notified him of that, right?
A. Yes.
Q. Which I think is your sentence that ABCE observed certain construction deficiencies during installation of the storm drain system?
A. Yes.
Q. Is there anything else that -- that they observed during installation that you're referring to in this paragraph, other than no

stone around that pipe?
A. No. That's what I'm referring to.
Q. Okay. So you're saying they saw no stone around the pipe, recommended corrective action?
A. Yes.
Q. Which is in the letter, correct?
A. Yes.
Q. For a limited portion of the system, which is those two streets?
A. Yes.
Q. But failed to evaluate the remainder of the system –
A. That's right.
Q. – you see that? How do you know they didn't see the rest of the system as it went in?
A. I'm gonna read to you something in that same letter. Starts about midway down the first paragraph. It says, "Based on our conversations with Mr. Luther Bellamy, Mr. Tink Benton and yourself, it has been represented to us that the remainder of the system has been installed in accordance with the plans and specifications revised 2/10/2000. We also understand that you have made some grading modifications to the finished floor elevations."

So what I gathered, right or wrong, from that statement, is that the engineer was informed by their client that the other parts of the system were fine, no need to worry about them. That's what I gather from it.
Q. Okay. Have you seen any documents in the files you were provided about how many site visits were made either by Ms. Drucker, who's sitting here with me, or Mr. Lewis?
A. I have documents that indicate that site visits were made, but I don't know how many.
Q. Okay. Do you know how close A.B. Consulting's office is to the Rivergate subdivision?
A. I do not.
Q. Do you -- so you don't really know how often they went out there and saw what was going on?
A. No. I don't know how often they were there.
Q. Okay. But this item, this opinion you've got in your report makes the assumption they didn't see the rest of the system going in.
A. No, that's not what I said. I'm saying at this point in time when the letter is written –
Q. Uh-huh.
A. – that it says to the reader that the writer is relying on the writer's client to tell them that

there are no other problems in the rest of the system, that everything's fine.
Q. Okay. You don't know whether they actually saw stone being placed around pipe in other portions?
A. It is possible that there is some other document or some testimony that could be made that after this letter was written, we also went and looked at all the other ones and they're fine too, but the documents I have don't tell me that, so I'm left with the information I have.
Q. Okay. Did you -- have you been furnished a copy of the deposition of Luther Bellamy?
A. I don't believe I have.
Q. Okay. Okay. Did you determine based on the documents you were provided that some portion of the system was actually placed directly by the developer?
MR. SULLIVAN: Object to the form.
A. I just see some discussion in some of the documents about work that was done under the direction of the developer. Is that what you're talking about?
Q. Do you know who Tink Benton is?
A. I don't know who he is.

Q. Do you know what, if anything, he was doing out there on the site?
A. I don't.
Q. Okay. Okay. Do you know whether all of the storm drain was put in either by Stevens or Chuck's?
A. I don't know who installed all the pieces of the storm drainage system. I've not really entered into an evaluation of who did what scope of work.
Q. Do you know whether there is stone around the 15-inch perforated pipe as depicted on the drawings?
A. I do not know.
Q. All right. Item numbered eight in your report on page number five indicates, "ABCE certified that the construction of the site improvements were in accordance with the plans and specifications, despite the engineer's discovery of significant deviations from the plans in July 2000." Do you see that?
A. Yes.
Q. Okay. And the discovery of significant deviations is referencing back to the letter we just discussed about the lack of stone around

the perforated pipe?
A. Yes.
Q. Okay. The certification that you refer to in paragraph number eight, do you have that?
A. I do.
Q. Can you find it? Can I peek over your shoulder? This is the certification? You've got a letter dated November 22nd of 2000 to Travis Keith at OCRM from Amie S. Drucker; is that right?
A. Yes.
Q. Is that the certification of the system that you're referring to?
A. It is.
Q. Is it the entire system?
A. What it says is that, "This letter's written to certify construction of the storm water management system and restabilization of the property disturbed by installation of the proposed improvement. That the above referenced project has been completed in reasonable accordance with the approved plans and specifications."
Q. How about let's look at the reference, says, "Project certification, final site inspection request for Rivergate phase one, buildings A

through P;" do you see that?
A. I do.
Q. Do you know what portion of the site that is?
A. I don't know what buildings A through P are.
Q. Have you seen any drawings that designated the buildings with alphabet letters?
A. I have building numbers on some of the documents that I remember reading, but I don't recall associating buildings by -- by letter.
Q. Okay. Would it shock you if buildings A through P wasn't the whole development?
A. It would neither shock me nor surprise me, but I would like to see it.
Q. Okay. And if it is only part of the development, have you seen any other subsequent certification that relates to the later sections of the subdivision?
A. This is the only certification that I've seen.
Q. Okay. Do you know whether there's a certification that relates to the pipe that was referenced in the July 2000 letter at the last two streets?
A. Say that again.
Q. Well, let me ask it this way. That letter that's in the reference refers to buildings A

through P, do you know if A through P is down at the last two streets where there was a problem identified?
A. I just told you that I don't recall seeing an association of the buildings with letters, so I don't have an answer to your question.
Q. Okay. In paragraph numbered eight of your report, is the implication of that, that A.B. Consulting Engineers certified construction in the improvements that really aren't in conformance with the drawings?
A. No. No, that's not -- that's not what I mean to imply. If there's any implication from what I've written in that number, it's just that if I had the same thing happen to me on a side arm project and I discovered a systemic problem with the installation of a system, I would -- I would tend to be more critical of the work that had already been done or the remainder of it. And if there's any implication that's not stated clearly in that item, that would be all.
Q. Okay. Are you suggesting that when Ms. Drucker signed the letter dated November, I believe it's 22nd, 2000 that's in your notebook, that somehow she was lying to OCRM?

MR. STANLEY: Object to the form.
A. I'm not at all saying that anybody is lying about what's written in that letter.
Q. Okay.
A. I am saying that she may not have had enough information to certify something that she hadn't seen. So if I'm told by somebody that they did -- they did this repair work and it's okay, I would be reluctant to certify that.
Q. After the letter was written to Mr. Winderman by Mr. Lewis about the lack of stone at the last two streets, do you know whether they put stone in the last two streets?
A. The documents I have indicate that it was done, that they did put the stone in. They excavated that and redid it.
Q. So it was then conforming to the drawings?
A. Yes.
Q. Okay. And the truth is that you don't know what observations Mr. Lewis or Ms. Drucker made of the site on an ongoing basis, do you?
A. Only what's in these documents. I can see that they did make periodic site visits.
Q. Okay. Let's turn our attention to paragraph numbered nine on page five of your report. You

refer to the South Carolina Storm Water Management and Sediment Control Handbook, right?
A. Yes.
Q. And you attached -- you may have attached all of it. You attached a lot of it at the back of your report, right?
A. Some of it is attached to the report.
Q. Okay. And you and I agreed earlier that it's the '03 version that was not in effect when the drawings were done?
MR. STANLEY: Object to the form.
A. No, we didn't agree to that.
Q. Okay. Was this portion of the book published at the time the drawings were prepared by A.B. Consulting Engineers?
A. The information that I relied on has been represented to me by DHEC that it was in effect at that time, though not under this exact cover.
Q. Okay. It was represented to a member of your staff who represented it to you?
A. Yes.
Q. Thank you. In your paragraph number nine you talk about the bottom of the exfiltration trench is not half --
MR. STANLEY: I just want to state,

I feel like I've sat here long enough to just put on the Record that I feel like your tone of voice and the way that you're directing things is inappropriate to my expert.
MS. BURTON: Uh-huh.
MR. STANLEY: And under the case of In Re: Golden (ph) I would like to tell you that I think it's inappropriate that you are getting very close to violating Rule 4.1.
MS. BURTON: Okay. I'll try and be nicer. I didn't think I was being rude to your expert.
MR. STANLEY: Well, you're asking answering questions.
MS. BURTON: Asking answering questions?
MR. STANLEY: You're asking questions that have already been answered several times.
MS. BURTON: Okay.
MR. STANLEY: You are directing, not asking my expert to go look at a document. Your tone.

MS. BURTON: What do you mean I'm directing him to look at a document?
MR. STANLEY: Just what I said.
MS. BURTON: I think I'm entitled to do that.
MR. STANLEY: You can ask him to go look at a drawing. You don't say go look at a drawing.
MS. BURTON: Okay. I'll say please. I apologize.
MR. STANLEY: Please and thank you, those kind of things work real well.
MS. BURTON: Okay. Mr. Wilkie, if I have been rude to you, I apologize.
THE DEPONENT: It's quite all right.
BY MS. BURTON:
Q. Can you please look at paragraph numbered nine on page five?
MR. STANLEY: Is that a sincere please or is that a sarcastic please?
MS. BURTON: Mr. Stanley, I don't have to explain myself to you. Seriously.
MR. STANLEY: I think that's what

my point is. I think the sarcasm, the condescension, the way that you're approaching my expert, I would ask that you be considerate, polite and professional.

MS. BURTON: Okay. I think I've been considerate, polite and professional of Mr. Wilkie, but I will continue to try and do so if that's okay with you, Mr. Stanley.

MR. STANLEY: That's perfectly fine.

MS. BURTON: Okay. Thank you.

BY MS. BURTON:

Q. Paragraph number nine, are you there?

A. I am.

Q. Okay. I want to ask you about the first bullet point. It says 11.B, which I think is part of section 72-307C.

A. Yes.

Q. Okay. Tell me what the problem is that's in the first bullet point.

A. The bottom of the exfiltration trench is not a half a foot above seasonal high water table.

Q. Okay. Hang on, tell me what page, please, in

the South Carolina Storm Water Management book I should look at?

A. Twenty-two.

Q. Okay. You're gonna have to help me out a little bit. You use the words in the report "infiltration trench". The document that you're referring to uses the words "infiltration practice". And you're gonna have to help me, because I didn't see Infiltration practice in the definitions. What is an Infiltration practice?

A. It's an Infiltration trench.

Q. So you -- you equate practice and trench?

A. In this context they are the same.

Q. Okay. How do you know that?

A. Because it is. I mean, the infiltration system is a practice to help control storm water.

Q. Okay.

A. The word practice is used in this manual, storm water manual. There are different practices to deal with the management of the storm water and so that -- the use of that word is -- is -- I mean, I could see how a lay person would look at that and that word would stick out because you know, I think of a practice -- I think of all

you lawyers, you got a practice and engineers have a practice, doctors have a practice, but infiltration, that is kind of an odd word, but that's what's used in the manual.

Q. Okay.

A. It's a practice, it's a method.

Q. Okay. So the practice in this instance equals the bottom of a trench, right?

A. Not the bottom of the trench, but the whole trench and its components.

Q. Okay. And by trench, we talking about stone in this instance?

A. Stone and pipe.

Q. Okay.

A. Fabric.

Q. Okay. Help me with this. When you opine in paragraph number nine that the bottom of the trench is not half a foot above the seasonal high water table, I assume you're using the calculations in the SNME table we looked at before?

A. Well, somewhat and then I supplement that with my own observations on the site. For example, during the visits I made, I was able to go to different catch basins and see that there was

standing water in the catch basins and in the pipe. In some places it was well above the spring line of the pipe.

Q. Above the what?

A. Spring line, the mid point of the pipe. If you look at the pipe as a circle, the mid point -- the mid point of that where the pipe is the widest, I'm calling that the spring point.

Q. Okay.

A. So we'll say the mid point of the pipe, so the water level in the catch basins, even when it's not raining or hasn't been raining for some time is -- is the pipe is half full.

Q. When did you observe that condition?

A. I first observed it on my first site visit and I observed it in different places at every visit after that.

Q. Okay. So you determined that the water was ground water and not rain water?

A. Well, it hadn't rained when I first saw it, so I didn't associate it with rain water.

Q. How many locations did you observe that condition?

A. Several, but I don't know how many.

Q. Did you note that in your notes?

A. **I didn't keep a tally of how many locations where I observed it, no.**
Q. Okay. Well – and I guess my question is when you have this bullet point number one opinion, is this in all locations, in some locations?
A. **In some locations. It – that's not – that item, that bulleted item about the six-inch difference in elevation of ground water, to be fair, I don't think – I don't think that you could find that in every spot under every linear foot of pipe in the whole complex, but I saw it in enough places at different times to tell me that it's a systemic problem and that in general was not compliant.**
Q. How far below -- when you say you saw it at the mid point in the pipe, I can't remember what you called it, the mid point of the pipe?
A. **That's one example and in some places it was lower than that.**
Q. Okay. Let's take the mid point of the pipe example. How far below earth is that?
A. **A foot, foot and a half, maybe two in some places and in other places maybe three feet.**
Q. So are you saying you saw conditions that led you to believe the ground water table was

actually just a foot below the earth?
A. **Close to that, a foot and a half, two feet. There were definitely conditions where it was that high in some places.**
Q. Okay. Which is a little bit different than the borings?
A. **Yeah. As I said, the ground water conditions are gonna vary widely over time depending on where you are on the site. So if we go out there today and made the same observations and went to every catch basin, some of them are gonna have standing water in it that's two inches deep, some of them aren't gonna have any water in them and some of them may be nearly completely full and if we did borings next to those areas, I think we'd find that the ground water elevations would vary, as well.**
Q. Let me ask you a stupid question. If that's the case, if you observed ground water varying from a foot below the surface to the SNME report, then are you saying that you can't use an exfiltration system on the project?
A. **No, I'm not saying that at all.**
Q. Well, wouldn't you have to be – if you have to have the trench six inches above the ground

water table and you're saying I've observed ground water conditions that are only a foot below the surface, I don't see how you could install an exfiltration trench in that condition.
A. **No, that's – that's not what we're saying.**
Q. Okay. Tell me why I'm confused about that or do you understand what I'm asking? If it's a foot below the ground and I've got to put a pipe and rock and everything, how am I gonna get it six inches above that?
A. **How you gonna do what?**
Q. How am I gonna get the exfiltration, infiltration practice six inches above that?
A. **You're gonna use an under drain system. That's what's on the design drawings. There is an under drain system on the drawings.**
Q. Okay. So I understand then, what is the criticism contained in bullet point number one in paragraph nine on page five? What's the criticism about my client?
A. **I'm not saying anything specific necessarily about your client, I'm just saying that that system doesn't work. It was supposed to keep it a half a foot above ground water, but it is not.**

Q. So the ground water is actually getting higher than it's supposed to?
A. **Yes.**
Q. Now I understand. Bullet point number two, 11.D. "Supporting data for the exfiltration system design was not established through on site borings."
A. **Yes.**
Q. And is that on the same page of the storm water management book?
A. **It is, page 22.**
Q. Page 22, paragraph D. It says, I guess, "The initial consideration can be based on a review of the appropriate soil survey."
A. **Right.**
Q. Do you see that? So I'm gathering that your initial design you can look at the soil survey?
A. **Yes, I would – I would do that, as well. I mean, the soil survey is a good place to start as a concept, then you got to get some real data after that.**
Q. Can you submit calculations for permit application to DHEC based upon review of the appropriate soil survey?
A. **I'm sure you could.**

Q. Okay. Do you know whether if you submitted your application for permit to DHEC for the storm water management system, whether they require you to provide to them on site soil borings and textural classification?
A. I don't know that they would.
Q. Okay.
MR. STANLEY: All right. We've been -- are you about finished with this line of questioning?
MS. BURTON: One more bullet point on this item.
MR. STANLEY: Are you okay?
THE DEPONENT: Yeah, sure.
BY MS. BURTON:
Q. So that I understand, Mr. Wilkie, the criticism here is that there should have been a geotechnical investigation?
A. Yes. There should have been some on site assessment of actual conditions to confirm that the assumptions were correct.
Q. Okay. Who was supposed to hire a geotechnical firm to do that work?
A. I don't know. That would be subject to the agreement -- agreements between the designer,

the developer and the contractors. Somewhere along that arrangement between design phase and construction there should have been somebody that verified that the system they were gonna install would do two things, it would be in accordance with the design and that the design was adequate based on the in-place soil conditions.
Q. Do you recall seeing in the contract between Wayne Winderman and A.B. Consulting Engineers an agreement that the owner was to hire the geotechnical firm?
MR. SULLIVAN: Object to the form.
A. I do recall that.
Q. Do you have that?
A. Somewhere in my documents I do, yes, I recall that.
Q. Okay. So you recall that the contract actually said the owner or the owner's consultants were gonna do geotechnical engineering services?
A. Yes, I recall that.
Q. Do you know whether there were any geotechnical services performed on the Rivergate site by any entity?
A. I don't know who -- who, if any -- anyone did

provide those services.
Q. Okay. So you don't know whether the owner, in fact, hired a geotechnical consultant?
A. I do not know.
Q. Let's look at the last bullet point of paragraph numbered nine. It's page five.
A. All right.
Q. It talks about paragraph 11J in the storm water management control handbook and it says it requires clearouts for every 100 feet for maintenance access?
A. Yes.
Q. Did you note correspondence between A.B. Consulting Engineers and DHEC about this item?
A. No, I don't -- I don't recall discussion about that item.
Q. Do you know whether A.B. Consulting Engineers got a waiver of this particular item by the folks at DHEC?
A. I could review my documents and check into that, but as I'm sitting here before you now, I don't. One of the, if I may, one of the things I'd like to point out as we've been talking for most of the day now, that a lot of work that I've done on this project was years ago and I've -- I've

taken some time to try and prepare for your questions today and I certainly appreciate all your questions, but I feel like there are a number of questions you've asked that given the time that's passed between when I've done my original work and appearing before you today, that there are things I've reviewed, but that have left my memory for now and I'd like to -- I'd like to review these documents in more detail and give you a better answer, but I just don't -- I don't recall whether I had that or not in the documents I reviewed.
Q. Okay. At the time you prepared the report dated June 18th of 2010, which I recognize was almost two years ago now, had you recently reviewed the documents that had been provided to you by Mr. Stanley?
A. Yes.
Q. Okay. So they -- at the time, whatever you had, you may or may not have all of my client's file, I understand that, but you would have been relatively familiar with what was contained in that file?
A. I should have been.
MS. BURTON: Okay. All right. You

want to take a break now?
MR. STANLEY: Okay.
THE DEPONENT: Yeah.
(Off-the-Record conversation.)
(This deposition was adjourned by agreement at 4:53 p.m.)

(Signature reserved.)

CERTIFICATE OF REPORTER

STATE OF SOUTH CAROLINA)
COUNTY OF CHARLESTON)

I, Nicole D. White, the officer before whom the foregoing deposition was taken, do hereby certify that the witness whose testimony appears in the foregoing deposition was duly sworn by me; that the testimony of said witness was taken by me to the best of my ability and thereafter reduced to typewriting under my direction; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken, and further, that I am not a relative or employee of any attorney or counsel employed by the parties thereto, nor financially or otherwise interested in the outcome of the action.

_____ Date _____
Nicole D. White
Notary Public in and for the
State of South Carolina

My Commission expires September 11, 2017

ERRATA SHEET

RE: Rivergate Homeowners' Association, et al. -vs-
WW & LB Development Company, LLC, et al.

DEPOSITION OF: J. Drew Wilkie, P.E.

Please read this original deposition with care, and if you find any corrections or changes you wish made, list them by page and line number below. DO NOT WRITE IN THE DEPOSITION ITSELF. Return the deposition to this office after it is signed. We would appreciate your prompt attention to this matter.

To assist you in making any such corrections, please use the form below. If supplemental or additional pages are necessary, please furnish same and attach them to this errata sheet.

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A
B
Consulting Engineers, Inc.

ENGINEERING ~ PLANNING

P.O. Box 538
North Myrtle Beach, SC 29597
843-280-5870
843-280-5870 Fax

SEND TO *Company name*	Wayne Winderman WW & LB Dev.	*Date*	August 21, 2001
Address	1414 Woodview Rd	*Re:*	River Gate
City	Yardley, PA 19067		

WE ARE SENDING YOU [X] Attached [ ] Under separate cover via U.S. Mail the following:

[ ] Plans [ ] Diskette [ ] Copy of Letter

[ ] Report [ ] Proposal [X] Permit

Date	Copies	Description
8/16/01	1	Horry County Encroachment Permit for Baker St. Drive

THESE ARE BEING TRANSMITTED AS INDICATED BELOW:

[ ] As Requested [ ] For Your Comments [ ] Returned After Loan to Us

[ ] For Approval [ ] Approved As-Is [ ] For Bids Due _____

[X] For Your Use [ ] Returned with Corrections

Comments:

EXHIBIT 2
Deponent Wilkie
Date 1/19 CR Rptr. MW

Sincerely: Annie Drucker

01-115

Horry County
Engineering Department
P.O. Box 1236
Conway, South Carolina 29528

Permit No. [redacted]

ENCROACHMENT PERMIT

NAME OF APPLICANT: W & E ED Development Co., LLC ADDRESS: c/o A B Consulting Engineers, Inc. P.O. Box 538 North Myrtle Beach, SC 29597 PHONE: 280-8870	ROAD NAME: Baker Street

In compliance with your request and pursuant to statutory and subject to all the provisions, terms, conditions and restrictions written herein, including General Provisions contained on the other side of this sheet, **YOU ARE HEREBY AUTHORIZED AND PERMITTED TO:** Construct one (1) 20' wide two-way asphalt drive

SPECIAL PROVISIONS
(SEE ATTACHED SHEET(S))

(In case of conflict between Special Provisions and General Provisions, Special Provisions shall govern.)

There shall be no excavation of soil nearer than two feet of any public utility line or appurtenant facility except with the consent of the owner thereof, or except upon special permission of this Department after an opportunity to be heard is given the owner of such line or appurtenant facility.

This permit shall not become operative until a written acceptance of same by permittee shall have been received by this Department and further shall become void and null unless the work contemplated herein shall have been completed

prior to: 2/14/02

Issuance Date/Time

HORRY COUNTY ENGINEERING DEPARTMENT

By: [signature]

( ) Horry County Engineer
(X) Horry County Engineer Tech.

I (We) accept the permit herein granted and agree to comply with all the provisions, terms, conditions and restrictions set out herein. I (We) do hereby agree, and bind my (our) heirs, successors and assigns, to assume any and all liability this Department might otherwise have in connection with accidents or injuries to person, or damage to property, including the roadway, that may be caused by the construction, maintenance, use, moving or removing of the encroachment contemplated herein and agree to indemnify this Department for any liability incurred or injury or damage sustained by reason of the past, present or future existence of said encroachment.

Date: 8-1-01 Signed: [signature]

Print Name: Linda Douglas, agent for W.H. & L.E. Development Co

THE HORRY COUNTY ENGINEERING DEPARTMENT SHALL BE NOTIFIED PRIOR TO CONSTRUCTION BEGINNING AS A CONDITION OF THIS PERMIT.

RECEIVED AUG 07

APPLICATION FOR ENCROACHMENT PERMIT
COUNTY OF HORRY

DATE: August 1, 2001

NAME OF APPLICANT:	COUNTY: Horry
W.W. & L.B. Development Company, LLC. c/o A B Consulting Engineers, Inc. P.O. Box 538 North Myrtle Beach, SC 29597	ROUTE: ROAD: Baker Street

The undersigned applicant hereby applies to the County of Horry for permit for encroachment on County right-of-way.

Request permission to install: One 20' wide two-way asphalt drive

SPECIAL PROVISIONS

1. All work to be in accordance with SCDOT Manual (A policy for Accommodating Utilities on Highway Right-of-Way) dated March 1987. A copy of which may be obtained from the State Utilities Engineer's Office in Columbia.

2. Signing of construction area will comply with the 1972 SCDHPT Manual on Uniform Traffic Control Devices for Streets and Highways, Rev. 6/1/76 and all subsequent addendums.

3. All materials and construction methods are to be in accordance with the SCSH Department Specifications for Highway Construction, Edition 1986.

4. Shoulders and ditches which are disturbed shall be replanted in accordance with section 810 of the Standard Specifications noted above and a satisfactory stand of grass is required.

5. Traffic to be maintained where open cuts are made with no trenches to be left open overnight.

6. No earth to be placed on pavement without permission from Horry County.

7. Any areas disturbed across driveways or within any portion of the traveled roadway shall be stabilized with an acceptable base material immediately after backfilling operations. Suitable material shall be defined as coquina (shell aggregate) or a suitable grade of crusher run stone (stabilized aggregate).

(continued on next page)

SIGNED: Amie S. Drucker agent Amie Drucker, agent WW & LB Development Co.	RECOMMENDED:
DATE: 8/1/01	COUNTY ENGINEER DATE: 8/16/01

8. Any excess spoil material resulting from construction shall be removed immediately following backfilling operations. Horry County shall reserve the authority to halt all construction activities if spoil material prohibits proper road or ditch drainage, or creates any hazardous conditions that might endanger pedestrian or automobile traffic.

9. Roadbeds and drainage ditches shall be rebuilt to provide proper service after every 500 feet of construction, at the end of each week's work, or after County inspection of a major situation.

10. When County drain pipes are damaged, the County should be notified immediately and the pipe repaired or replaced under County supervision. If Horry County furnished materials and/or labor for drainage repairs, the permittee will be billed for these costs.

11. All construction shall be subject to final inspection by the Horry County Engineer or his approved representative. The permittee shall be subject to a warranty period of one (1) year from the date of final acceptance. If the road is not paved immediately after permitted construction is finished, Horry County will resume temporary maintenance of the road. However, unusual maintenance expenses that result from settling, etc., will be charged to the permittee. The warranty period will not begin until after the road is paved.

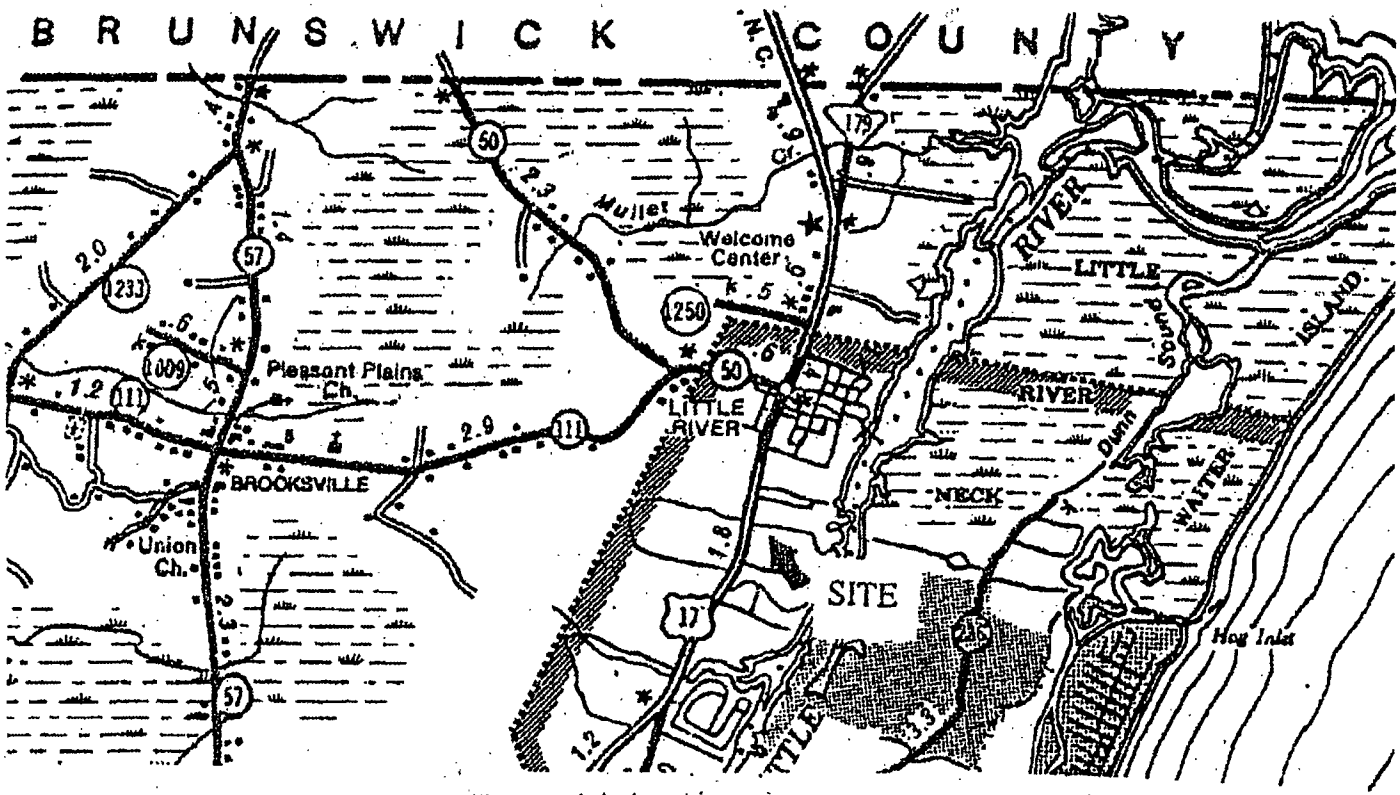
12. The permittee hereunder agrees to hold Horry County harmless for any loss it incurs as a result of a third party claim against the County for negligent construction or maintenance during the period of the encroachment agreement.

SIGNED: Amie S. Drucker, agent Amie Drucker, agent WW & LB Dev. Co.	RECOMMENDED:
DATE: 8-1-01	COUNTY ENGINEER: DATE: 8/16/01

APPLICATION FOR ENCROACHMENT PERMIT
COUNTY OF HORRY

NAME OF APPLICANT:	COUNTY: Horry
W.W. & L.B. Development Co., Inc. c/o A B Consulting Engineers, Inc. P.O. Box 538 North Myrtle Beach, SC 29597	ROUTE: ROAD: Baker Street

The undersigned applicant hereby applies to the County of Horry for encroachment on County right-of-way at the location shown on the sketch below.



The following subcontractor(s) will be used during this project

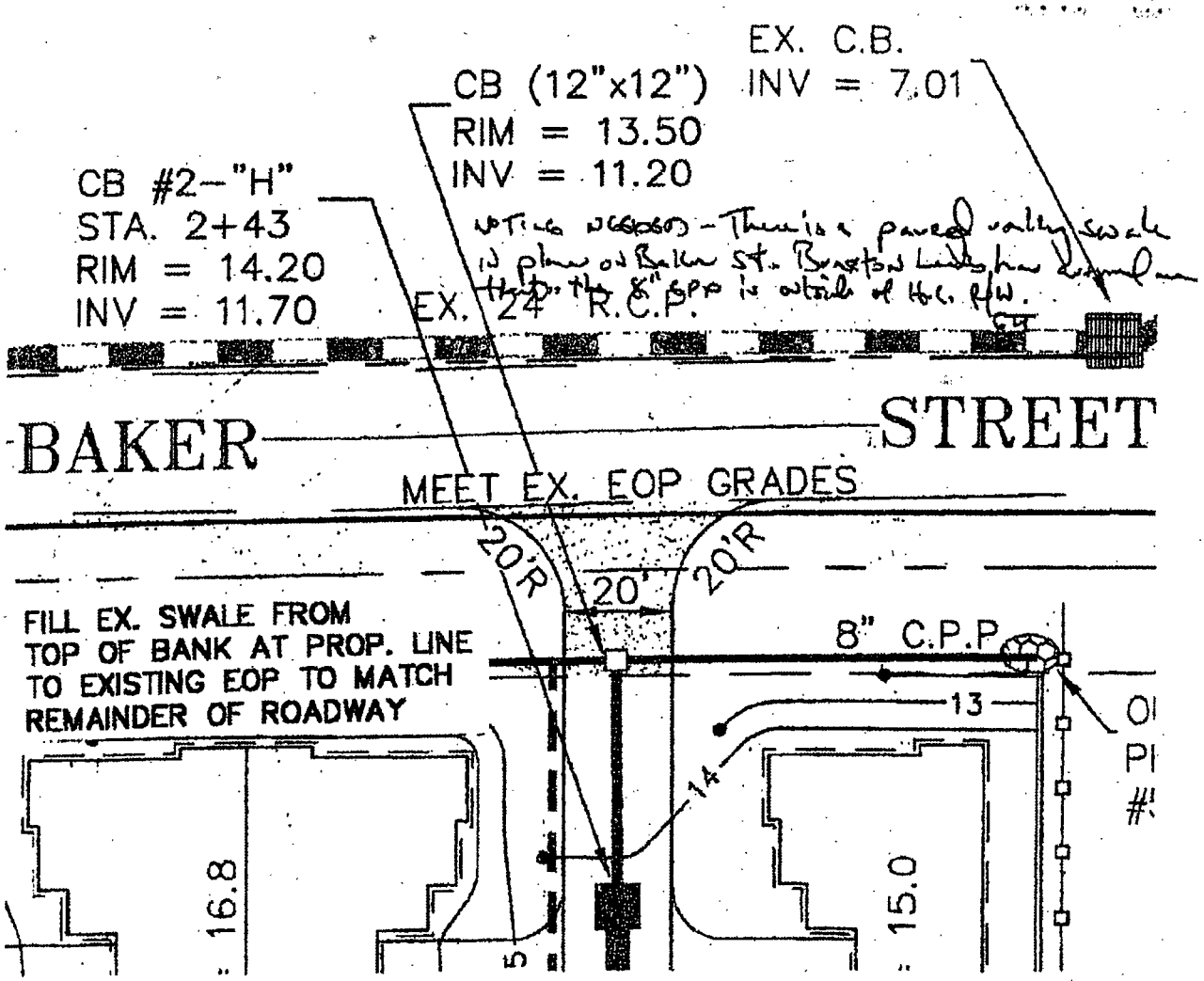
_____	_____
_____	_____

SIGNED: Amie S. Drucker, agent Amie Drucker, agent WW & LB Development Co.	RECOMMENDED:
DATE: 5-1-01	COUNTY ENGINEER: DATE: 8/14/01

APPLICATION FOR ENCROACHMENT PERMIT
COUNTY OF HORRY

NAME OF APPLICANT:	COUNTY: Horry
W.W. & L.B. Development Company, LLC. c/o A B Consulting Engineers, Inc. P.O. Box 538 North Myrtle Beach, SC 29597	ROUTE: ROAD: Baker Street

The undersigned applicant hereby applies to the County of Horry for encroachment on County right-of-way as shown on the sketch below.



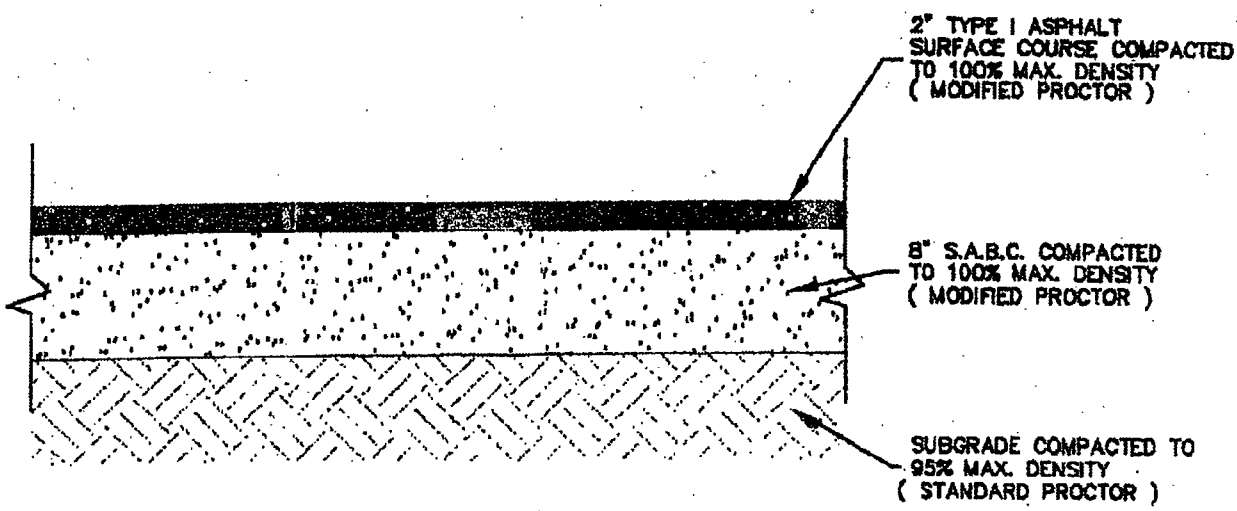
SIGNED: Amie S. Drucker, agent Amie Drucker, agent WW & LB Development Co.	RECOMMENDED:
DATE: 8-1-01	COUNTY ENGINEER: DATE: 8/16/01

APPLICATION FOR ENCROACHMENT PERMIT
COUNTY OF HORRY

NAME OF APPLICANT: W.W. & L.B. Development Company, LLC. c/o A B Consulting Engineers, Inc. P.O. Box 538 North Myrtle Beach, SC 29597	COUNTY: Horry ROUTE: ROAD: Baker Street

The undersigned applicant hereby applies to the County of Horry for encroachment on County right-of-way as shown on the sketch below.

(sketch)

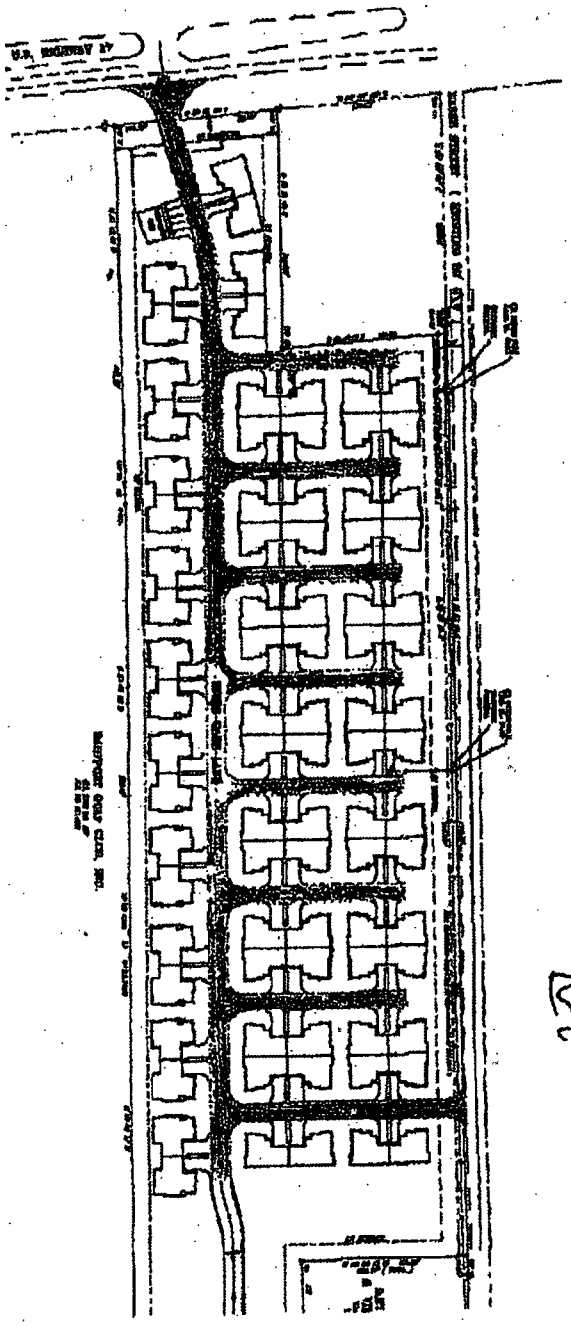


NOTE
IMPORTED EARTH FOR USE IN THE FILL AREAS OF THE PAVEMENT SECTION SHALL BE FREE OF ANY ROOTS, ROCK OR OTHER DELETERIOUS MATERIAL AND IN CONFORMANCE WITH AASHTO A-1, A-3 OR A-2-4. COMPACTION SHALL BE 95% MAX. DENSITY (STANDARD PROCTOR)

HEAVY DUTY
ASPHALT PAVEMENT SECTION

N.T.S.

SIGNED: Amie L. Drucker, agent Amie Drucker, agent WW & LB Development Co.	RECOMMENDED:
DATE: 8-1-01	COUNTY ENGINEER DATE: 8/16/01



River Bend

STATE OF SOUTH CAROLINA COURT OF COMMON PLEAS

COUNTY OF HORRY

Rivergate Homeowners' Association, et al.,
Plaintiff(s),

CASE NO. 2010-CP-26-3901

VOLUME II

-vs-

WW & LB Development Company, LLC, et al.,
Defendant(s).

VOLUME II OF THE DEPOSITION OF J. DREW WILKIE, taken on behalf of the Defendant on Friday, August 16, 2013, commencing at 10:37 a.m. at the Law Offices of McAngus Goudelock & Courie, LLC, Founders Centre, 2411 N. Oak Street, Suite 401, Myrtle Beach, South Carolina.

REPORTED BY: Nicole D. White

A-P-P-E-A-R-A-N-C-E-S:

Appearances for the Plaintiff:
BY: Stacy L. Stanley, Esquire
STANLEY LAW FIRM
3303 Highway 9 East
Little River, South Carolina 29566
(843) 390-9111
Sstanley@stanleylawfirm.com

Appearances for the Defendants:
(A.B. Consulting Engineers, Inc.)
BY: Stephanie Burton, Esquire
GIBBES BURTON
308 E. St. John Street
Spartanburg, South Carolina 29302
(864) 327-5000
Sburton@gibbesburton.com
and
(Chuck's Construction)
BY: Christina A. Bisset, Esquire
MCANGUS GOUDELOCK & COURIE, LLC
Founders Centre
2411 N. Oak Street, Suite 401
Myrtle Beach, South Carolina 29577-3173
(843) 848-6000
Christina.bisset@mgclaw.com

and

(RWG)
(Via Telephone)
BY: Michael Wright, Esquire
ROBERTSON & HOLLINGSWORTH
177 Meeting Street, Suite 300
Charleston, South Carolina 29401
(843) 723-6470
MEW@roblaw.net
and

(Appearances Continued)
(WW & LB)
BY: Douglas C. Baxter, Esquire
RICHARDSON PLOWDEN
2103 Farlow Street, Suite B
Myrtle Beach, South Carolina 29577
(843) 448-1008
dbaxter@richardsonplowden.com
and
(Speedee Concrete)
BY: G. Michael Smith, Esquire
THOMPSON AND HENRY
1300 Second Avenue #3
Conway, South Carolina 29526
(843) 248-5741
Msmith@thompsonlaw.com

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(Whereupon, the witness was sworn.)
MR. STANLEY: Real quickly, Stephanie, I just wanted to put on the Record that during Mr. Wilkie's last deposition I had some issues in regards to your questioning and I asserted those objections and I just want to state it for the Record.
I hope we don't have to go through that again, but I reference the case of In Re: Golden and I felt like you were asking questions numerous times that he had already answered.
I also felt like that your questioning was on the verge of being abusive and I'm sure you don't agree with that. I can tell by your reaction. But, you know, I just want to bring that up. Hopefully we don't have to cover that ground today.
And the other issue is that I couldn't tell looking at his testimony whether we stopped the deposition or continued -- or considered it a continuance of his deposition. And

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based on that, it's my position that we had stopped his deposition, that you have renoticed his deposition for questioning. I think it's been well over a year since you deposed him initially, so hopefully we're not going to have to go through all the questions that you asked initially or you have to re-ask those questions or you're going to have to go into detail. I will give you some leeway as far as you being able to ask him some follow-up questions, but as far as going in-depth, I think we had almost a whole day or you had with Mr. Wilkie, so, you know, I just want to state that before we get into this deposition today.

MS. BURTON: Well, with respect to whether it's a new deposition, I would respectfully disagree with that. Since none of the other lawyers got to ask questions, I think that's probably not a valid position to take.

With respect to In Re: Golden, which I read after that, I would

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respectfully disagree with you in many respects, because I've reread the deposition and I don't think I asked him repetitive questions, nor do I feel I was abusive to him, but certainly I will do my best to comply with the Rules of Civil Procedure today.

MR. STANLEY: Okay. I'm sure you will.

MS. BURTON: Okay.

MR. STANLEY: Thank you.

(J. DREW WILKIE, having been first duly sworn, testified as follow:)

E-X-A-M-I-N-A-T-I-O-N

BY MS. BURTON:

Q. Mr. Wilkie, have you done any new work since January 2012?

A. I have.

Q. Okay. Tell me what you've done.

A. I've made a couple of additional visits to the property.

Q. Uh-huh.

A. And I've reviewed some deposition transcripts and other documents that have been provided to me since then.

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Q. Uh-huh. Anything else?

A. I've done a little further research that might have been sparked by what I read in any of those documents that I've received. That's -- that's all that I can think of right now.

Q. When did you make additional visits?

MR. STANLEY: Who's on the phone?

MS. BURTON: Michael Wright.

MR. STANLEY: All right.

BY MS. BURTON:

Q. And you've got in your file a folder that already has a deposition and exhibit sticker on it. What number is that?

A. Five.

Q. Have you added to that?

A. Yes. And I can pull out items for you to copy while we're here or you can get them later.

Q. Why don't you do that so we can maybe mark it with a sticker, because now 5's been altered.

A. Yes. (Complying.) I have taken from Exhibit 5 all the items that have been inserted into Exhibit 5 since the year and a half ago when we were here.

Q. Okay.

A. I also have printed copies of some deposition

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transcripts. There are no marks, I don't believe, that I've made in them, but I can give you those, as well, if you would like to have those, but I think they would be the same copies of information that you would already have with the case.

Q. Are they listed -- and I see that you've pulled out some letters. Are the depositions that you have listed in the letters so we know which ones you've looked at or do you need to get them out to tell me?

A. I can tell you, but you're free to look at everything I've got.

Q. Why don't you hand me --

A. (Complying.)

Q. -- the expandable file folder that's new since you produced it.

A. Yes.

Q. All right.

MS. BISSET: Can we go off the Record real quick?

(Off-the-Record conversation.)

BY MS. BURTON:

Q. You have a letter in the stack you handed to me that's dated in 2010.

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A. Well, it's a paper copy. When I was here before you, there was not a paper copy in my file.
Q. Okay.
A. But I also provided to you my electronic files and that same exact document would have been in the electronic form.
Q. Okay.
A. But I simply have a paper copy and I want to be sure I'm giving you that, because that was not in here when I was speaking with you. If it was, it would have been pulled out and possibly marked with another number.
(Off-the-Record conversation.)
BY MS. BURTON:
Q. When did you make additional site visits and I know -- see we just had notes. That's why I was thinking you might not be able to tell me.
A. You know what, I can't tell you the dates without having documents. I was out at the property yesterday, which was the --
Q. 15th?
A. -- 15th. And I was out there at the property on the day of Mr. Wooten's testimony, which I believe was July 23rd.
Q. I don't remember off the top of my head, but in

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July?
A. And I was out there the day before that on July 22nd.
Q. Okay. On July 22nd what was the purpose of your visit?
A. I had just gotten into town and it had been some time since I had been to the property, so I wanted to walk around and see what I saw to understand whether conditions were the same as the last time I was there or whether they had changed or whether there were some obvious work that had been done or just to have a baseline from, okay, I was at the property, you know, several months ago and wanted to see what it looked like.
Q. What was your observations?
A. The conditions of the things that I have been evaluating in this case were worse, far worse.
Q. Which ones?
A. The issue with the erosion of soil from the driveways. The north -- north driveways of driveways C through I were worse than in my previous visits.
Q. I'm sorry, the driveways -- and we talk about streetlets and driveways and alleys, are we

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talking about the asphalt or the concrete?
A. And I want to be as kind and respectful to all of you as I can, so if you can tell me what convention that you have used in other talks and depositions --
Q. We've used every version.
A. -- I'll conform to whatever you tell me to to identify them.
Q. Okay. Let's call driveways the concrete things that go up to a house.
A. Okay.
Q. Where, you know, you park your car.
A. All right.
Q. And let's call the asphalt that goes down toward Baker Street.
A. Yes.
Q. You know what I'm talking about?
A. Yes.
Q. Let's call those streets, is that okay?
A. Yes.
Q. All right. Now, when you said the conditions were far worse erosion-wise, what are we talking about?
A. We're talking about the streets and driveways.
Q. Okay. Both?

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A. Yes.
Q. Okay. And you mean like soil's deposited on those?
A. Yes. There's more sand and silt deposited in the streets than there was before.
Q. Uh-huh.
A. And the -- the swelling of asphalt pavement where the sediment and sand are being forced and deposited underneath its surface is -- is worse.
Q. Under the asphalt?
A. Yes.
Q. Okay.
A. And I know it's been a long time since we were all in the same room, so I'll kind of describe that condition again as best I can. But there is a condition at this property where the accumulation of surface water between adjacent duplexes and quadplexes moves downhill toward the next downhill street. But when that surface water reaches the point of the top of a sloping driveway, some of that surface water is moving below grade under the surface of the concrete driveway and the hydrostatic pressure and the velocities of water involved in doing that are essentially causing liquefaction of the sand

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under the driveway and the effect of that is that portions of the driveway are lowering at the top edge of the driveway and the base of the driveway, the sand is being forced under the asphalt at the foot of the driveway and that is causing swelling, expansion of the asphalt beneath it.

Q. Did you determine where the sand and silt that you observed, I gather on the surface of either asphalt or concrete, did you figure out where it was coming from?

A. It's my opinion that it is what was the soil subbase for the concrete driveways themselves, but it could also be some sand and sediment that's from the side yards.

Q. So it could be dirt washing from in between the houses and some of it could be dirt coming from under the concrete?

A. Yes.

Q. I mean, is that, to use a lay term, is that what you're saying?

A. Yes.

Q. Okay.

A. And the reason for that happening is that the driveways are quite steep and the side yards

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tend to accumulate surface water and the separation between the elevation of the side yards and the elevation of the streets below is enough that when there's accumulation of water, there's -- there's a lot of -- there's a lot of hydrostatic pressure that goes into moving that water or attempting to move it downhill.

It's not much different, I mean, if we were to go out on the beach and dig a small hole in the sand where the waterline is, we could excavate a hole fairly steeply if we were not at the ground water level. But once we reach the ground water level, we start to be subjected heavily to the angle of repose for the sand, whatever the natural angle of repose is for that sand, when the sand gets wet, it tends to cave the hole in.

If you've been to the beach before and watched kids digging in the sand, you've sort of seen an example of this yourselves. And when the sand subgrade gets very saturated, it tends to do that, too and the forces associated with it are great enough that they can push the sand under the driveway and then under the street.

And I have some photographs that would

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show you where the pavement is swollen as a result of the sand that's been driven under it and it's not just something that's just started last week or a month ago, it's been going on for years, because I've actually got pictures of it as far back as when we were doing our earlier site visits in 2009, 2010.

And one of the borings that I had SNME perform, we -- I specifically selected a boring where -- where it was my -- at that time it was a hypothesis where I thought that that was occurring and when we cut the asphalt out from the road, there was a layer of sand under the asphalt between the asphalt and between the aggregate base course underneath it and so that -- that confirmed what was going on and now it's continuing to happen and it's getting worse.

Q. When you say you have photographs, are those in the stuff that's being copied?

A. Some of the photographs are in the file that you brought that you've had for years. But there are some new photographs --

Q. Okay.

A. -- as well.

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Q. You said, and I want to make sure I've written this down right, that that sand and silt condition you saw on streets C through I?

A. Yes. It doesn't occur on B because B doesn't have an uphill driveway area to its north.

Q. And by B, are we talking about, because everybody's all over the map on which street is named which one, is that the one by the bank?

A. Yes. It abuts the property of the bank. It shares the south border of the bank property.

Q. Okay. So you didn't observe that condition on street B?

A. No. Because there are no -- there are no driveways to the north of B.

Q. Just the bank --

A. Yes.

Q. -- land?

A. Yes. But on B, the condition there is a problem too, because the retaining wall there has failed and is continuing to overturn. Like last -- last month when I was there the retaining wall was six inches out of plumb.

Q. And by retaining wall, are we talking about the wall that's adjacent to the bank property?

A. Yes.

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Q. And let me ask you about that. I found on your disk that you provided to us at the last deposition you had a series of documents that appeared to relate to Waccamaw Bank?
A. Yes.
MS. BURTON: Do you have a sticker? Do you know what number we stopped on? I have 6.
MR. STANLEY: I have 6.
MS. BURTON: You have 6, too?
(Defendant's Exhibit 7 was marked for identification.)
BY MS. BURTON:
Q. Mr. Wilkie, I've handed you a stack of documents that I marked as Exhibit Number 7 to your deposition. And I'll tell you what I did, Mr. Wilkie, in the disk -- on the disk that you provided to us there were documents that I noticed related to Waccamaw Bank in the '08 timeframe, so I tried to gather up those and put them together in this collection so that I could ask you what the Waccamaw Bank thing was all about. Can you help me understand?
It looks like, at least from the date of some e-mails, that you had some involvement in

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reviewing the design that Waccamaw -- the Waccamaw Bank design team was preparing for purposes of seeing whether it would have any negative impact on Rivergate.
MR. STANLEY: Object to the form.
A. **I wasn't trying to see whether there would be a negative impact. My role, as I recall it, and to be fair, I've not reviewed these bank documents in years.**
Q. Okay.
A. **I did not review them in advance to coming here since -- well, I don't know how long ago.**
Q. Okay.
A. **But my recollection of that issue was that the bank was developing that property.**
Q. Right.
A. **And I was asked to look at some information that had been sent to the property owners of the neighborhood. And my role was to encourage the bank and their consultant, their engineer, to display enough information that would give the owners a sense of comfort and to the extent they could guarantee that their development would not adversely affect the -- any surface drainage that might be deposited onto the Rivergate**

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property.
Because at this time this dispute was already going on and my advice to the -- to the owners was you've got enough problems on the property as it is, if you allow an adjacent property owner to, you know, put more surface water on your property than you had before, it would just be that much more complicated going through this whole dispute in this matter and I thought it would help everybody, the property owners and the other parties in this dispute, if there was some clarity in terms of what the Waccamaw Bank was doing and what they were displaying in terms of how they were planning, so they did not adversely affect the Rivergate property.
So my role was to kind of encourage that and hopefully foster a sense that there was a need to provide some documents and some -- some information that would give both the bank and the Rivergate folks an understanding that things were being done to prevent -- prevent any adverse effects from happening.
Q. Did Kimley-Horn have a separate schedule of work for working with this Waccamaw Bank issue? I

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mean, did you have another proposal or contract?
A. **I don't think -- I don't know whether I had another written contract. I don't -- I don't know that.**
Q. I didn't see one in looking at your file.
A. **I know that I would have at least -- I would have at least -- and again, I haven't reviewed this in years, but I would have at least submitted in e-mail form a written -- a written explanation of what I was doing at each step of the way to keep them informed of what I was doing and why.**
Q. Okay.
A. **And I think you'll find there's a pretty clear e-mail chain of what information I was given and what I was doing with it.**
Q. Did --
MR. STANLEY: Stephanie, let me just interrupt you for a second. Are you going to have any other documents that you're going to present to Mr. Wilkie?
MS. BURTON: Yes.
MR. STANLEY: Okay. Did you disclose those to me prior to today?

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MS. BURTON: No.
MR. STANLEY: I would just like to have an opportunity before you ask him about them to see those documents and to have an opportunity to talk to him about it.
MS. BURTON: Sure. Y'all can go talk about Exhibit 7 right now.
MR. STANLEY: I think you've moved on, haven't you?
MS. BURTON: No, I haven't moved on.
MR. STANLEY: You're going to continue to talk about Exhibit 7?
MS. BURTON: Exhibit 7 I am, yes.
MR. STANLEY: What other documents do you have, so just while I'm talking to him, I can go through every one of them.
MS. BURTON: I've got his handwritten notes from his file.
MR. STANLEY: Okay.
MS. BURTON: And I have his invoice, but not current, I gather, because he has invoices in the materials

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that we didn't have yet.
MR. STANLEY: I think he's got at least one.
MS. BURTON: And I have his e-mails, his internal company e-mails out of his file. You want to take a break now and talk about all of them at one time? Is that what you want to do?
MR. STANLEY: If you're going to continue to ask him about the documents, then we're going to need to take a break and review those.
MS. BURTON: Okay. Go ahead.
MR. STANLEY: Unless there's something else that you can ask him about.
MS. BURTON: Well, I can't, because we don't have the copies of the new work, so I can't ask about that, since I haven't seen it yet and I think he needs to see it, too, to answer any questions.
So here's -- you already have Exhibit 7. Here's his handwritten notes, internal e-mails and the invoices that I found on the disk (documents

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tendered).
MR. STANLEY: Okay.
MS. BURTON: I'm not sure if that's all of them or not, frankly.
MR. STANLEY: All right. And that's all of the documents other than the ones that we're going to copy and mark today that are new documents?
MS. BURTON: And any documents -- I mean, we already have some exhibits, but no, there's no other documents.
MR. STANLEY: You going to ask him about -- are those your drawings?
MS. BURTON: Those are his drawings.
MR. STANLEY: Okay. Let's take a little break.
(Whereupon, there was a short break in the proceedings.)
BY MS. BURTON:
Q. Mr. Wilkie, have you had a chance to review Exhibit Number 7 and discuss it with Mr. Stanley?
A. Well, I looked through it just a few minutes and yes.

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Q. Okay. And do the documents in Exhibit 7 relate generally to the Waccamaw Bank development?
A. Yes.
Q. All right. The only thing I wanted to ask you about is I noticed in the documents there was a discussion about removing the retaining wall, and a discussion about options for the development of the land between Rivergate and the bank, and there was a discussion about having like a sloped bank versus having the retaining wall. Do you recall any of that discussion?
A. Which document are you talking about?
Q. Look at the first e-mail behind the drawings, which is dated January 31, 2008.
A. I'm there.
Q. Do you see that one? Is that an e-mail from you to Mr. Stanley?
A. Yes, it is.
Q. All right. And you copied some folks, somebody norris@sccoast, Robert Miller and Ken Moss.
A. Yes.
Q. Are those folks that were involved in the design of the bank?
A. I think I've identified them in the e-mails, so

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let me just read to see what they are.
Q. Okay.
A. David Norris was the project civil engineer. Robert Miller was the project architect and Ken Moss was an attorney for Waccamaw Bank.
Q. Do you know who Mr. Norris works with?
A. I don't, though there could be something in these documents that would tell you that.
Q. Okay. Look, if you would, please, sir, in that second paragraph of the e-mail, in the last sentence specifically it says, "These proposed changes were described to me and illustrated in an architectural exhibit as including the removal of the existing segmental retaining wall and replacing the wall with a vegetated slope." Do you see that?
A. I do.
Q. Is that the same wall? The reason I got off on this tangent was because you told me a little bit ago that the retaining wall, you'd observed it had moved more, for lack of a better word.
A. I didn't say it had moved more.
Q. I thought you said it had.
A. I said that last month when I was there, I measured the wall and found that it was six

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inches out of plumb.
Q. I thought you were saying that it had moved more from the previous?
A. It was out of plumb years ago and I don't know exactly how much worse it is or if it's worse, but an out of plumb retaining wall is not normal and it indicates that there is a problem with its -- with its function, but I didn't last month make a determination as to how much it had moved. I would need to review any measurements, if any, that I might have about that from years ago to know that.
Q. Okay. Is that the retaining wall that's being talked about in paragraph number two of the e-mail?
A. Yes, it is.
Q. I gather at the end of the day whatever Waccamaw Bank's design was, it did not involve removing the segmental retaining wall?
A. That would have required that they do work on Rivergate's property. Their property is behind that wall, so no, that retaining wall was not removed.
Q. Okay. And do you know anything about how that retaining wall was built?

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A. I don't have any details or plans that are specific to the segmental retaining wall. The drawings that I reviewed in this case show the position of the retaining walls, but they also identify the retaining walls as being something that is to be provided by the developer. I think that's how it's called out on the plans that -- though I'd have to see the exact sheet to give you the exact wording of that, but my recollection is that the walls on the plan are called for to be provided by the -- by the developer.
Q. Okay.
A. And so there's not an actual detail in the plans to tell you what the wall is and I've not seen any other details about the wall.
Q. Okay. And so do you know if the wall -- because I know in retaining wall there are folks out there who are specialists in designing retaining walls --
A. Yes.
Q. -- do you know whether there was an actual design for the wall or whether somebody just put it up?
A. I don't know whether or not there was an actual

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retaining wall design. I just know that its condition is that it has failed.
Q. Okay. Do you know whether it has fabric behind the face of the wall, some kind of geotechnical fabric or any kind of grid behind the wall?
A. I don't recall whether or not I made observations of their being any soil reinforcement engaged mechanically to the wall.
Q. Okay.
A. If I saw that, I've got a note or I've got a photograph of that somewhere in my file.
Q. Okay. Is there any piping through that wall?
A. I don't recall.
Q. Okay. Because the bank would be upstream of that, right?
A. The bank is uphill from that retaining wall.
Q. Where does the water coming from the bank that comes toward that retaining wall, where does it go?
A. It's intercepted by their -- the curb system of their parking lot and then it's collected in their onsite storm water system.
Q. Would there need to be piping through the retaining wall?
A. There would need to be some kind of a system of

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weeps.
Q. Okay.
A. But in a practical sense, if a segmental retaining wall is built properly, the weep system is somewhat redundant because the way the walls are built is that there should be a layer of aggregate directly behind the wall face and the wall face blocks have spaces between them that effectively function as a drain for the entire surface of the wall. So a weep system is desirable and it's generally depicted on a set of plans for a retaining wall, but it's somewhat redundant when it comes to the operation and function of the wall.
Q. Do you have an opinion why the wall is out of plumb?
A. Because the lateral earth pressure behind it exceeded the wall's ability to resist that force.
Q. Is that because the wall just wasn't built correctly or is that because however the wall was designed, and I know we don't know that, didn't account for that lateral earth pressure?
MR. STANLEY: Object to form.
A. Well, what I can tell you is that when -- when I

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evaluate the condition of a retaining wall, if the retaining wall is not in either a plumb or back slope condition, then it tells you that there's a problem with function of the wall, because it wouldn't be normal for someone to have built the wall that way. I don't know the -- all of the exact reasons to enumerate for you what -- what, if any, design problems there are with the wall, because I don't have design plans.
Q. Okay.
A. What I have are just my observations that the wall is six inches out of plumb and that is a performance problem for the wall.
Q. Do you know who built the wall?
A. I do not.
Q. Okay. And do you in the conceptual repair scope, propose taking out the wall and putting it back in or doing something else there?
A. I don't recall there being a -- an item in the scope that deals with that retaining wall.
Q. Okay. Could you put in a vegetated slope like was talked about with the bank folks?
A. You could. You could.
Q. Do you -- and there were some drawings in your

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file, it's at the first part of Exhibit Number 7. And they look like -- and they're not initialed, it doesn't look like, but they've got some corporate and individual seals on them. I don't know that that necessarily means that they were final. Do you know what the ultimate design of the storm water management system for the bank was?
A. My recollection is that they have an onsite storm water system that was gonna consist of an exfiltration system.
Q. Is that depicted on the drawings that you can see?
A. I don't know whether it is or not. As I'm thumbing through these pages --
Q. You're welcome to look at mine if that would be helpful. Mine are bigger than yours.
A. On one of the sheets, sheet C-3, I can see that there are drop inlets depicted on the site. And there are some notes that relate to the water, sewer and drainage installation, but these don't include details for -- for the onsite storm water system.
Q. Okay. But you discussed that, I gather, with the folks that were involved in the design or

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have an understanding, at least, of what they were proposing to do?
A. Well, I wasn't -- I wasn't attempting to interject myself into their design or their work for their client, and so I wasn't conducting anything like a peer review of their design or anything like that.
What I was asking them to do was to, in the course of their work, be mindful that there's a property adjacent to them that is already having some site drainage difficulties, to say the least, and that if they were not careful about doing their -- doing their work so that they did not adversely affect the adjacent property, that it could complicate the dispute that would be going on.
And I just felt like that would be a -- it would be really good for them and good for Rivergate and good for all the parties in this dispute if there was some clarity about what was going on on that property so that down the road there wasn't any confusion about, oh, this bank got developed and here's what happened and does the bank have anything to do with this. I felt like it would be a good idea to have -- have

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them be mindful of that so that they could be certain that they were not going to send too much surface water toward Rivergate property.

Q. Did -- and I understand you were talking to them about the possible concern. Did you or anybody at your company do any analysis of their design to see if the post development runoff would not exceed the predevelopment runoff from the site?

A. I know that Mr. Norris sent me some information that was effectively some design output numbers for that.

Q. Right.

A. I don't recall whether or not I discussed that with anybody else internally or not.

Q. Okay.

A. But the product of my conversations and e-mails with Mr. Norris was that I felt like he had -- he had provided me enough information to then relate to the Rivergate folks that the Waccamaw Bank project is making an effort not to adversely affect their neighbor.

Q. Okay. Where is that -- bear with me just a second, I'm trying to find the new stuff. Trying to find my copy, because I think this is

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his.

MS. BISSET: This is his original copy (indicating).

MS. BURTON: Sorry. I was thinking this one was his copy. Let me have that back, if you don't mind. You don't have an extra clip?

MS. BISSET: This is an extra copy.

MS. BURTON: No, I'm sorry. I got confused about what I had, whether it was my copy or Mr. Wilkie's copy, but I think I've got Mr. Wilkie's stuff right here.

BY MS. BURTON:

Q. All right, Mr. Wilkie, earlier before we went out for some copying, you had handed me some documents out of Exhibit Number 5 that were added after Exhibit Number 5 was previously marked.

A. Yes.

Q. And I have put a flat binder clip on those documents and I am going to mark those with an Exhibit Number sticker 8.

A. Okay.

(Defendant's Exhibit 8 was marked for

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identification.)

BY MS. BURTON:

Q. Okay. That way you and I now -- everybody's got a copy so we can all look on together and you can perhaps answer some questions about Exhibit Number 8.

The first document in Exhibit -- you okay? Is that the original? We'll give that to the court reporter right here. The first document in Exhibit Number 8 appears to be a letter from you to Mr. Stanley dated July 8th, 2013. Do you see that?

A. Yes.

Q. Did you receive that letter?

A. I did.

Q. In the first numbered paragraph in the letter Mr. Stanley writes, "In addition to any forensic investigations or findings, homeowners have complained of foundation cracks at the following units," and then it lists a number of units and then it says, "Additionally, the homeowners have complained of driveway issues at the following units," and it lists a series of unit numbers. Do you see that?

A. I do.

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Q. Have you performed any analysis or investigation regarding foundation cracks at the units identified?

A. No, I have not. I've simply not had time to do that, though I've been to the property since I received this letter.

Q. Uh-huh.

A. I was there to observe some other things that I -- that were more pertinent to -- to my attendance at the deposition that -- that week and I just have not had time to look into this. I have reviewed some documents I already have to see how they relate to the unit numbers that were here, but I've really not been back to the property to see these -- these issues.

Q. Okay. Have you ever, maybe I don't recall it, have you investigated foundation cracking on any units at Rivergate?

A. I have observed it.

Q. Okay.

A. But I've not undertaken a real evaluation of -- of it yet. I've observed that there are some cracks in the foundations, yes.

Q. And when we talk about the cracks in foundations you've observed, are we talking about in a

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concrete slab, are we talking about in a footing or help me out?
A. Both.
Q. Okay.
A. In the driveway slabs, there are cracks in the driveway slabs and then there are cracks in the building slabs along the edge where the slab turns down to a footing.
Q. Okay.
A. And I've seen photographs of at least one slab where there are cracks inside the building.
Q. Okay. So you've seen cracks in the concrete driveways?
A. Yes.
Q. And you've seen cracks in the turn down slab?
A. Yes.
Q. At the location where it turns down to go to a footing?
A. Yes.
Q. And I'm sorry, the last one when you said inside a unit, what are we talking about?
A. On the same slab that we just said, but inside the building.
Q. So like would that be underneath the carpeting or a tile or some sort of floor covering?

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A. The photographs I saw were underneath carpet and extending over the tile.
Q. And were the photographs ones that you took or somebody else showed you?
A. Someone else took them.
Q. Would that be Mr. Hodgin or Mr. Clements?
A. Actually, I don't know who took the photographs that I just talked about. About the interior?
Q. Yes, sir.
A. I don't know who took those photographs.
Q. Have you done anything to try and investigate cracking in the turn down slab or in the interior of buildings on the concrete slab?
A. Not as of today.
Q. Do you plan to conduct such an investigation?
A. I may. I may.
Q. Okay. Have you been asked to yet?
A. Well, I've been sent this letter that's telling me about these conditions --
Q. Okay. So you thought maybe you're gonna be asked to?
A. -- and I want to get that done, but I have not had time to look at that.
Q. Okay. Okay. In that second sentence of that numbered paragraph number one, it says,

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"Homeowners have complained of driveway issues," and then it lists some unit numbers. Do you know what the driveway issues are? I mean, what we mean by, "issue"?
A. I don't know exactly.
Q. Okay.
A. I know that some of the driveways have cracks in them. Some of the driveways have dislocation in them. Some of the driveways appear to be somewhat high with respect to the interior finish floor elevation. But I -- I don't know exactly what the issues would be at these specific units, because I have not yet looked at them.
Q. Okay. That's fine. When you say driveways I know what you mean, I guess, by cracks. What do you mean by dislocation?
A. Where there is not necessarily a crack, but that adjacent pieces of concrete would be higher or lower than the piece beside it.
Q. You mean like at a control joint, one side's higher at the control joint and the other one's lower?
A. Yes. Or at a crack where one side is higher than the other.

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Q. Okay.
A. Maybe a more clear way for me to say it would be vertical dislocation.
Q. Have you measured any of those vertical dislocations?
A. I have not evaluated those driveway issues yet, so no, I have not.
Q. And are you going to evaluate those driveway issues?
A. I may. If I'm able to get back to the property and look at the slab issues, I would anticipate evaluating the driveway issues at the same time.
Q. Okay. And then the other thing you said to me a moment ago is some of the driveways are high versus the finished floor elevation and I'm assuming of the concrete slab?
A. Yes.
Q. So you're saying the driveway's higher than the slab?
A. No. I'm not saying that at all. I'm saying that it is of -- the elevation of the driveway when looking at it from the street appears to be very high compared with the slab. Doesn't mean it's higher than the slab, just looks like it may be higher than it's supposed to be. You

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shouldn't have a condition where the driveway slab is at the same elevation and certainly not higher than the interior floor slab.
Q. Might make water run in toward the house, right?
A. And what I'm saying is if you were to walk through the neighborhood, you or me or anyone would be able to see that there are some of these driveway slabs where from the outside you look at it and you would wonder that driveway slab does it -- is it higher than the interior floor slab, because it looks like it is somewhat high against the wall finish.
Q. Do you -- when you see that condition, do you think that was an as-built condition? I mean, it existed at the time concrete was poured for the slab in the driveway or do you think one has settled?
A. Again, I have not evaluated all these issues yet.
Q. Sure.
A. So when I talk about them, I'm talking about them in terms of what I've seen in passing as I'm walking up and down the streets.
Q. Sure.
A. And what I can tell you is that some of these

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areas where -- where the driveway is -- where I'm suspicious of the driveway being high compared to the slab, the driveway is butting against finishes in a way that it looks like it's the way it was built. So if where we've got driveways that butt up against a stone veneer --
Q. Uh-huh.
A. -- if there's not a big gap showing you that one or the other of those materials is dislocated, then I would suggest that it was built that way. And I'm just saying that some of these areas when you -- when you look at them from the street or standing in the driveway, they look original, but I haven't -- I haven't looked into them specifically, so I would -- I would wait until I've done that to really form an opinion about it.
Q. Okay. In the letter, July 8th, 2013 letter, which is page one of Exhibit Number 8, it says that Mr. Stanley was forwarding you the condensed copy for Amy Drucker and I assume that's her deposition transcript?
A. Yes.
Q. Have you got -- did you get Ms. Drucker's

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transcript?
A. I did.
Q. Did you get it in July?
A. I don't know when I received it, but I did receive it.
Q. Okay. And it also says, "At this time we do not have the deposition of Mr. Lewis." Have you gotten that since the letter?
A. I have.
Q. All right. So you've gotten Braxton Lewis's deposition?
A. Yes.
Q. And have you got any other depositions?
A. Mr. Wooten.
Q. Okay. Anybody else?
A. Chuck Bellamy.
Q. Anybody else?
A. Those are all that I can think of.
Q. Okay.
A. Would you mind telling me the names of some of the deponents in the last week and a half? That might refresh my memory if I may have gotten another one.
Q. Sure. There was, and some of these other lawyers may have to help me, Robert Castle who

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was the expert for Chuck's.
A. Let me interrupt you there. I have received something --
Q. I think we just got his transcript or at least I just got his transcript this week or late last week.
A. I read part of Mr. Castle's transcript.
Q. And then is it Parker, Mike Parker who's the expert for Speedee Concrete?
A. I have not seen Mr. Parker's transcript.
Q. Okay. I think that's all, milling through my head, but I think that's all the recent ones.
A. The ones that I would add to that list that I said before is Mr. Castle's.
Q. Okay. If you look in Exhibit Number 8 there was an invoice.
A. Yes.
Q. It's after the letter that you had printed out earlier that was on the disk, but we didn't have the hard copy.
A. Yes.
Q. I think it's the only invoice that you handed to me in -- out of your red binder, so I'm gathering it's the only new invoice since January of '12?

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A. That is the only invoice that I've issued since then, but as you were asking that question --
Q. Uh-huh.
A. -- I know that there are invoices for document production --
Q. Sure.
A. -- that I don't know whether or not I pulled those out of this file or not. And as I'm thinking about it, those invoices could have been prepared after I was here for my first deposition, because you wouldn't -- no one would have been sending me document requests until after I was here.
Q. I think we were told though, just to help you out a little bit, how much it would cost to get the disk.
A. Okay.
Q. Because there's letters in your file where people are saying, okay, here's the check for 207.50. I don't know if you invoiced us. I think Mr. Stanley may have told us what the cost was and we --
A. Well, please let me look through my file again.
Q. Sure.
A. I want to make sure if there's some other

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invoice that occurred after I was here, that I can get you that out.
Q. Well, if you would do this for me, if you would, Mr. Wilkie, because I did go on your disk and try and find all your invoices and my invoices stopped -- the last one I had is June 30th of 2010.
A. Okay.
Q. So that's why I'm a little perplexed about invoices. And then we've now got this 8/5/13 invoice.
A. The last paper copy of an invoice that I can find in this file that is Exhibit 5 is the invoice you just mentioned, that 2010, what was the date?
Q. June?
A. June 2010.
Q. Yeah.
A. So what that tells me is that there must be an invoice after that and before the invoice that I just handed you that's on -- on my company's letterhead, because I would certainly have invoiced my client for my time here at the deposition that was after that. So -- so that invoice has to be in electronic form somewhere

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in my files, but it is not in the paper file.
Q. Okay. And you just brought up a point that frankly I hadn't focused on, because the invoices I think that I have before have this Kimley-Horn logo at the top.
A. Yes.
Q. And this invoice has a W.J. Drew Wilkie, P.E. thing at the top.
A. Yes.
Q. What's that mean?
A. What does what mean?
Q. Does that mean you're not with Kimley-Horn anymore?
A. Yes. I've not been with Kimley-Horn in a year and -- well, a year and a month or so. I started my own firm sole proprietorship in about June of last year.
Q. '12 -- 2012?
A. Yes.
Q. Oh, okay. So it's me, myself and I, is that Drew Wilkie, P.E. or do you have co-workers?
A. I do not have any employees. I operate as a sole proprietorship. I don't have any employees.
Q. And if you need help, I gather you consult other

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folks?
A. Yes.
Q. Okay. Sorry, I didn't know that. So that raises an interesting point. The file that you have, Exhibit Number 5, other than the new stuff, that's a Kimley-Horn file?
A. It is, but it was transferred to me and I can find a document where Kimley-Horn has signed a transfer of that file to me.
Q. Okay. But if there were invoices after June of 2010, which is what I think you and I say we've got --
A. Yes.
Q. -- that would actually be at Kimley-Horn until June of '12?
A. Yes.
Q. So there could be two years of invoices at Kimley-Horn?
A. Well, to be fair, the only invoice that there could be and to my recollection the only invoice that we don't seem to have in terms of paper copy while we're sitting here today --
Q. Uh-huh.
A. -- is an invoice that would have covered my time at my deposition a year and a half ago. After

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that there was not – there was not any work done by me that would have been invoiced until more recently.
Q. Okay. Okay. I appreciate – I think I understand.
A. But I do want to give you all the documents and we'll – we'll find that document, but I just want you to know that there is not an invoice every month for the last 16 months –
Q. Okay.
A. – for this – for this project.
Q. Do you think – and I understand you were deposed in January of 2012, so you would have invoiced for your time following that deposition at some point?
A. Very soon thereafter.
Q. Before June – before you left in June? So Kimley-Horn probably has another 2012 invoice?
A. Yes.
Q. Okay. How about in the latter part of 2010 and all of 2011, do you think there are any invoices during that period at Kimley-Horn?
A. What is the date of that invoice we were talking about again?
Q. June. The one I have is dated June 30, '10, the

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last one that I have.
A. Since that invoice was after the preparation and delivery of my June 18th, 2010 report –
Q. Uh-huh.
A. – to Mr. Stanley –
Q. Uh-huh.
A. – I don't expect there would have been much going on until the time that I appeared for deposition.
Q. Okay. Do you have the ability to get – if there are additional invoices and we, at least, think there's one for the deposition, do you have the ability to get that from Kimley-Horn yourself?
A. Yes, I can. And I may have that in electronic form already, because as I said, we – there was a transfer of files from Kimley-Horn to me.
Q. Okay.
A. And I should have – I should have that in electronic form.
Q. Okay.
A. But Kimley-Horn's a fairly big firm and the accounting information is sometimes not at the same place as the project information.
Q. Okay.

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A. So if I don't find it in my electronic files, I can work with the accountant to get that.
Q. Would you look for any invoice after June of '10 for us and prior to this August 5, 2013 just to make sure we all have all of the invoices that relate to your work on the project?
A. I am gonna get a piece of paper and a pen.
Q. Okay.
A. And I'm gonna have you tell me that again so I can write down and make sure I do exactly what you're asking.
Q. We're looking for any invoices after the June 30, 2010 Kimley-Horn invoice until your August 5, 2013 J. Drew Wilkie, P.E. invoice.
A. Okay.
Q. Okay.
A. I've made a note of that and I will get that done.
Q. Okay. The August invoice that's in the pack we marked as Exhibit 8 –
A. Yes.
Q. – it looks to me like the dates that you performed services start on June the 19th and conclude on July the 22nd. Am I reading that right?

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A. The 23rd. The last entry that you picked up is the 22nd is a lodging expense and this invoice and software pushes the expenses to bottom, but there's an entry to the 23rd above it.
Q. Going to the deposition?
A. Yes.
Q. Okay. Sorry. I see it. Put the extensions after the time of the service entry. Can you tell me, I notice two entries, at least, where you're talking to Ross Clements?
A. Yes.
Q. What are you talking with Mr. Clements about?
A. I was asking Ross to work with me to determine whether I had all of his reports for Rivergate and that if I didn't, to have him send them to me.
And the other thing I'd asked him for was if he would send me information about his presentation in the mediation that occurred so that I could review that.
Q. Did you get any information from Mr. Clements?
A. I did. And you know what, I'm gonna have some work to do when I leave here, because I don't think I printed paper copies of those.
Q. Okay.

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A. And so I would need to look at those electronically and send those to somebody so that you could -- you could have them. But they are -- he sent me reports that had, to my understanding, had already been produced, but they had -- some of them or at least one of the documents had been produced after the last work that I did, which was appearing for my deposition. So I was trying to catch up with him on what -- what he had done in the time since he and I had last talked.
Q. Did you review the reports that Mr. Clements sent to you?
A. I did.
Q. Did they have any impact on your opinions?
A. Well, I read them and some of what he sent me did, either in photographic form or in written word, relate to issues that -- that I've been evaluating, but I couldn't tell you exactly what extent that they had an impact on my opinions. I read the reports so that I would know what he had seen, what he had done.
Q. Okay. And then he sent you his mediation presentation, I gather?
A. Yes.

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Q. Is that like a PowerPoint thing?
A. Yes, it is.
Q. And you were looking at that just to see how he'd done it or what?
A. I've really not reviewed it.
Q. Okay. You just know you have it?
A. I have it.
Q. Okay. All right. Okay. The next page in Exhibit Number 8 is -- looks like just an updated list of times you've given deposition testimony?
A. Well, deposition, arbitration, yes, just testimony record.
Q. Okay. Because I think we had one -- as I recall, we had a version of this previously. You've just updated it to be current?
A. I have.
Q. All right. And then the next document you handed to me was a CV, four pages, I think. Yeah, four pages. Is that a new CV you've updated?
A. I've updated my CV and that's just an updated -- up-to-date copy.
Q. Okay. Okay. Can you turn to the page after the CV? It's a handwritten document.

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A. Yes.
Q. Is this your handwriting?
A. It is.
Q. Can you tell me what it is, what you're ciphering in here, because I don't understand it?
A. I made some observations at the property yesterday and -- and this is what I've written down as I walked down each street on the property --
Q. Okay.
A. -- and measured the water elevation with respect to pavement elevation in each of the 16 catch basins for the streets and the measurements that I took on each of the north driveways on each of those eight streets.
Q. Is it -- is it a table with columns down?
A. It is.
Q. Okay. The top, I can't really read your handwriting so you're going to have to tell me. Water level below something is the first one.
A. Pavement.
Q. "Water level below pavement", what does that mean?
A. I've measured the distance from the pavement

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surface --
Q. Uh-huh.
A. -- to the water level inside the catch basin.
Q. Inside the catch basin?
A. Yes.
Q. And what time of day did you do this work?
A. I was there yesterday afternoon, late afternoon.
Q. Okay. Was it raining or not raining?
A. It had started to drizzle. The pavement was wet and in some places water was dripping into some catch basins, but there was not -- there had not been a substantial amount of rain. I think it had just -- it had really just started -- started to precipitate when I was there. And it stopped raining while I was there, too.
Q. Okay. Do you know when it had rained before you showed up? Seems like it rains all the time now.
A. Well, I have some weather data in -- in amongst these document, but they are not for yesterday or the couple days prior to that, so I can't answer that question.
Q. All right. So walk me through this piece of paper so -- just so I understand what you got, you have B.

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MR. STANLEY: Can we just -- did you identify as best we can that document?
MS. BURTON: We identified it; the first hand written page after his resume.
MR. STANLEY: Okay.
BY MS. BURTON:
Q. You have B and what is that, just tell me?
A. B is driveway B, but we decided today we're going to call it streets, so it's street B.
Q. So it is the first street, I mean, the one that's adjacent to the bank?
A. Yes. The northern most street on the property.
Q. I've seen some -- the only reason I ask, sometimes some of the drawings show that as A and sometimes we're calling it B, but it's the one next to the bank?
A. It is. And I apologize for that being a confusing topic, but at some point when I was writing my findings and preparing some of these exhibits for my report, I had to decide on a convention --
Q. Sure. I know.
A. And one way or another I used something that

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someone else had already used on some drawings and I picked B as a starting point.
Q. Okay. B's the first street?
A. It is.
Q. All right. So you've gone to two different catch basins?
A. Yes.
Q. One at the -- which one's west and which one's east?
A. The west catch basin is on the west side of the street and is actually sitting against the curb for Rivergate Lane or Riverhead Drive.
Q. Okay. And is east toward Baker Street?
A. East is closer to Baker Street.
Q. Okay. Now, I got it. I'm better with locations and not east and west. Okay. So you went and you looked into the catch basin near Rivergate Lane and did what specifically?
A. I measured the distance from the pavement surface --
Q. Uh-huh.
A. -- to the water level.
Q. That's sitting inside the catch basin itself?
A. Yes.
Q. And it was 54 inches, am I reading that right?

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A. At that location it was.
Q. And near Baker Street it was 20 inches?
A. Yes. I should -- I don't want to interrupt you too much --
Q. You're fine.
A. -- but these observations I made on the 15th were a follow-up to observations I made on the 23rd.
Q. And is that gonna be in here, too?
A. It is. There are other notes in here. So on the 23rd I went and when I was there on the 23rd there had been no rain for several days, so I was able to see what the conditions were when I was certain that there had been no significant precipitation and I -- so I wanted to come back yesterday, because significant time had passed and I wanted to see if the conditions were any different and it just so happens I was there on a day when it started to rain, but hadn't accumulated much.
Q. Then the next column says, "Grade of north driveway."
A. Yes.
Q. What does that mean?
A. The driveways on the streets. There are

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driveways to the north of the street and there are driveways to the south of the street.
Q. Okay. Is north uphill?
A. North is the uphill.
Q. North are the steep driveways? Okay, uphill. And the next column is what? Can't read that one.
A. "Catch basin captures."
Q. What does that mean?
A. It is a note while I am looking at water on the pavement --
Q. Right.
A. -- and determining whether or not surface water is or can get into that catch basin.
Q. Okay. So whether it will roll toward, for lack of a better -- roll toward the catch basin itself?
A. Yes. And the reason I was making a note of that particularly along Rivergate Drive or Rivergate Lane, there are catch basins that are high enough that when water runs down the edge of the pavement, when it gets to the catch basin it is -- it is routed around the catch basin. It doesn't necessarily go in.
Q. Are we talking about -- we're talking about

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Rivergate Lane when you are mentioning catch basins being high and the water running around it?

A. We are. But the same condition -- a similar condition exists on some of the streets, as well.

Q. So the street is -- the topography of the street is not such that it will drain the water towards the catch basin?

A. Or the pavement next to the catch basin has settled, created a condition where the water has to build up before it can get into the catch basin.

Q. Okay. So when your column that says catch basin captures and you have W yes, E yes, you're saying west or east, yes, meaning the water is rolling into the catch basin or can?

A. Yes.

Q. What's the next one, reverse crown, is that meaning whether there's a V --

A. That's right.

Q. -- in the road? And some of them are flatter than others, I guess. So does "no" mean there's no crown in the road?

A. Well, when I say reverse crown I'm -- and I'm

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making an entry, I'm answering the question is there a reverse crown condition and when I say reverse crown, I'm talking about the opposite of what you just said.

Q. Okay.

A. The inverted crown is what's supposed to be there.

Q. Okay.

A. The reverse of that is that there is not an inverted crown, that there's positive crown.

Q. Or it's flat?

A. Or it's flat. So I'm answering the question is the crown the way the plans depicted it or is it not.

Q. Okay. And so on street B it is not an inverted crown in the road?

A. No. On street B there is no reverse crown, so it's correct there is an inverted crown. On street C --

Q. Okay.

A. -- there was one location where I found there is a positive crown and water was exiting the road instead of going to the V.

Q. Okay.

A. And on street D there was one location where I

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found there was not an inverted crown, the center line was high and water was exiting the road.

Q. Okay. How about E?

A. E there was no condition where water was exiting the road. Water was moving to the V.

Q. It was doing what it was supposed to do? And F?

A. F was water was exiting the road, because the slope was away from the V.

Q. And how about G?

A. G, the water was moving toward the V and H, the water was moving toward the V.

Q. And I?

A. And I, there were three areas where the water was exiting the pavement, moving away from the V.

Q. Okay. Okay. What's the next column that's there?

A. This is the water depth above the invert.

Q. What does that mean, I'm sorry?

A. The invert elevation is the bottom of the pipe. So if the pipe is -- you look at the pipe and it's a circle on the wall, the invert is the bottom edge of the circle.

Q. And we're talking about what pipe?

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A. The 15-inch corrugated plastic pipe that extends from the east catch basin to the west catch basin.

Q. How did you measure those?

A. How did I measure it?

Q. Yeah. I mean, did you get -- how did you get into the catch basin to go measure that invert?

A. Well, there is space between the grate that's on the catch basin.

Q. Uh-huh.

A. So you can see the water level without -- without even really getting on your hands and knees, but if you get on your hands and knees and you use a tape measure, you can measure the water level, you can measure the pipe, you could take a couple different kinds of measurements in there or you can do what I did the other day, which was you can just lift the catch basin grate off and get a little closer down to the water level and make the same measurements.

(Off-the-Record conversation.)

BY MS. BURTON:

Q. Tell me, and I'm sorry, I should know what this means then when it says, "seven inches on B," tell me what seven inches is?

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A. That means the water level was seven inches above the invert, so the pipe had seven inches of water in it.
Q. At the west location?
A. At the west location, yes.
Q. So toward Rivergate Lane the pipe had seven inches of water in it?
A. That's right.
Q. Did you only measure it west?
A. On this occasion I was primarily only measuring on the west end. On my other visit I measured all the east end water levels and -- but on this -- on this visit yesterday I was focusing on the west ones.
Q. Okay. So if -- would you expect the water would be deeper at the east end --
A. They should be the same.
Q. -- in the pipe?
A. They're supposed to be the same, because the pipe is supposed to be laid with little or no slope. They should be the same.
Q. Okay. So you'll have to -- make sure I understand. On B where you have the depth of the water is deeper than on the Rivergate Lane side than it is on the Baker Street side, right?

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A. Yes, it is.
Q. What did you conclude from that?
A. Well, the elevation of the pavement at the west catch basins is generally higher above the pipe than the elevation of the pavement at the east catch basins.
Q. So the topography slopes toward Baker Street?
A. (Indicating.)
Q. Did you conclude anything else? Other than the topography is different, is there anything else that you concluded from this measurement?
A. Not that I can think of, but I just took these measurements yesterday evening.
Q. That's fine. What was the purpose of taking the measurements?
A. I had been to the property on the 23rd of July and the reason that I was taking these similar type of measurements on the 23rd was that I was sitting in this room and I listened to Mr. Wooten give his testimony about the condition of the storm drainage system and he made a -- well, more than one statement. I've got a copy of them where I've circled them in here to make sure I'm clear on what he said. And what he was talking about was that he felt

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like the storm drainage system was working just fine and that it had not failed.
And he was asked by more than one of the attorneys in the room as to what would you see if the opposite was true, if the storm drain system was not working, what would you find when you went to the property, and his answer was, well, you would see water in the catch basins even when it hadn't rained for a while and that you would basically have a subterranean lake. Those were his words, "subterranean lake."
So I went to the property not an hour after his deposition was complete and it hadn't rained for four days and every single one of these eight streets with the exception of one street had several inches of water in it. Some of them as much as, you know, all the way up within three or four inches of the top of the pipe. Whereas, the ground water level was really supposed to be below the invert of the pipe. Supposed to be six inches or more below the invert of the pipe.
So what that tells me is that, at least by Mr. Wooten's definition, that, yes, the system has failed. It's not available to accept but

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only a fraction of the amount of storage that it's -- that it was designed to and there are subterranean lakes on almost every street out there.
Q. Have you been out there -- you know, we've had a lot of rain. I don't know about the coast. I know in the upstate we had record rain in July. Have you been out there when it was just, you know, pouring cats and dogs and we've had one of these deluge rains?
A. I have not been out there on an occasion like that.
Q. If the system was failing and was unable to accept the capacity of water out there in a deluge rain, I mean, we've had just downpour rains in South Carolina, would you not expect water to fill up the entire catch basin and start flowing out in the road?
MR. STANLEY: Object to the form.
A. If there was -- if there was enough rain, in theory, it could surcharge the catch basins and water could be standing in the streets. I've not been to the property on a day when that kind of rain was -- was occurring, but yes, I mean, you could -- you could even calculate at what

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point that might occur based on some assumptions about the condition of the system, but yes, that there is a limit to what the system can accept before the water would stand in the road. But if that happens, I mean, that's a -- that's really just a continuance of the symptoms that are already there, which are that the system has failed. It's holding water and the water is so close to the subgrade that it is causing damage to the streets and to the land, just because the water level is so close to the surface of the pavement.

It's just not desirable to have a condition where a street or a road or driveway or anything that's paved is -- is, you know, two feet -- is two feet below the paving surface. If the water level is that shallow, there are going to be problems when traffic moves across it. It might work for a sidewalk, but it won't work for a road.

Q. Okay.

A. And in the -- not just in the plans prepared by A&B, but in A&B's own description of what the intent of the design was, I mean, they explain very clearly the intent of this is to keep that

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ground water below -- well below the pipe.

So that's why -- that's why these measurements are important. There are subterranean lakes on nearly all of the streets and there's not the capacity in the storm drainage system that it's supposed to have, even after several days with no rain.

Q. Do you know how much total rainfall there has been in Myrtle Beach this summer?

A. I don't, but that could be easily obtained.

Q. I guess we'd have to talk about Little River and not Myrtle Beach, because I know the storms are somewhat isolated. Do you know what impact the recent rainfall we've had has on any of your measurements?

A. Well, any occurrence of rain, if the water saturates the ground or turns into surface drainage and makes its way to the catch basins, it's gonna have some effect. It's just depending on the conditions and the amount of rain, those sorts of things, as to how much effects. But I found my -- I found my measurements on the 23rd of July to be really interesting, because there appears to not have been any rain for several days prior to those.

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Q. And that's based on you getting weather data from some weather station?

A. Yeah. The weather station I used to make the statement I just made is the North Myrtle Beach Airport, so, you know, it's not right next door, but that's a close, reliable weather station. It's not something in somebody's backyard or on top of their birdhouse or anything like that. It's a real weather station.

Q. Okay. On your calculations that we were just looking at on C and some of those thereafter, under grade of north driveway, because the first one didn't have a north driveway, now the other ones actually have a north driveway, can you tell me what those numbers mean?

A. Yes.

Q. Okay.

A. The four digit number is the unit number --

Q. Okay.

A. -- on the placard for the unit.

Q. Okay.

A. The next number is the distance I measured at the end of a 48-inch beam level to measure the inclination of the pavement. So I'm holding a level with one edge touching the driveway and

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I'll lift the other edge of the level until I get a dead level measurement on the bubble and I'll take a measurement at the low end and what that distance is, is what I wrote down.

Q. I'm sorry, I probably should understand. You have a long level and you're measuring the inclination of the concrete driveways?

A. Yes.

Q. From like near the house or from near the bottom?

A. Midway between the street edge and the next control joint uphill from it.

Q. So from the -- more from the asphalt going up toward the house?

A. Not at the edge of the asphalt. I am not measuring it at the edge of the asphalt. I'm measuring it essentially near the middle of the lower concrete panels.

Q. Okay. Because the driveways I know are more than four feet long, so I was trying to figure out where in spacial relationship --

A. The driveways are large and depending on where one measures -- takes these measurements, you could get measurements that would be plus or minus a tenth of a percent or two percent, it

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just depends on where you measure it.
What I tried to do when taking these measurements was walk to the driveway, look at it as a whole and select a spot that seemed to be in the middle of a concrete panel –
Q. Uh-huh.
A. – but also, in the panel that's closest to the street.
Q. Is the purpose of your measurements to try and figure out the inclination of the driveway?
A. Yes.
Q. But it's just an inclination in a four-foot distance –
MR. STANLEY: Object to the form.
Q. – as apposed to the length of the whole driveway from the house down to the pavement? You're just getting a part of it?
A. I'm measuring a four-foot piece of it that by looking at the driveway, I've determined this is a representative area to measure to get an idea of what the inclination is of the driveway.
Q. Okay. So C, for example, you did four driveways and they measured anywhere from 10.4 percent inclination to 15.6 percent, am I reading it right?

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A. Yes.
Q. Okay. And is it the same then when we look at D, E, F, G, H and I, you're doing the same sort of task in coming up with some – I know the numbers vary, but that was the purpose of the exercise?
A. Yes.
Q. Okay. So all of the driveways – I guess the least steep was on D?
A. Well, the least steep driveways are the ones I didn't measure.
Q. Well, the low side, you didn't measure the low side?
A. I did not.
Q. Okay.
A. And I didn't measure – I didn't measure very many of the driveways that are along the west side of Rivergate Lane either. I did measure a couple of those just to see what the magnitude of the slope was there, but they were – they were all, you know, eight percent or less, pretty much.
Q. So you were looking for – if you went down say street C, you looked for the four units that looked like they had the steepest driveways?

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A. No. I measured all of the north side driveways on C.
Q. Okay.
A. But I'm just saying along Rivergate Lane, those houses that front the west side of Rivergate Lane –
Q. You talking about the golf course side?
MR. STANLEY: Let me just ask you, if you would just let him finish his answer, please.
A. I apologize, because I think I've probably been interrupting you, too.
Q. Thank you, Mr. Wilkie.
A. The driveways for the homes that are closest to the golf course are not as steep as the driveways on the north side of the streets.
Q. Okay.
A. So I measured a couple of the driveways on – that are close to the golf course, satisfied myself that those were what I would call reasonable in terms of their slope. I also measured a couple of driveways on the south side of some of the streets and determined for myself that those were an acceptable slope.
So that left me with the driveways that are

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on the north side of the streets and those are the ones if you walk down the street that I think a lay person would look at some of them and say these are very steep.
Q. Did you find in your work any regulations, ordinance, code provision, direction from Horry County or any other governmental entity that said what the driveways had to be?
A. Yes.
Q. What did you find?
A. There's an ordinance for Horry County, part of the land development regulations that went into effect November 20th of 2001 and have been amended and updated periodically since then.
Q. Uh-huh.
A. It's called the Horry County Land Development Regulations.
Q. Okay.
A. And there are some very specific guidelines for this kind of thing in that document.
Q. What do they say the slope has to be?
A. It depends on what the application is and whether the street has curb or whether it doesn't have a curb. There's a couple of ways that they approached the guidelines for it, but

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the maximum slope that I could find allowable in the regulations is somewhere around eight percent, up or down.

Q. What do you mean, I'm sorry, up or down?

A. Whether the slope is down eight percent or up eight percent.

Q. Oh, I see. Okay. And when you -- you said they had a lot of different applications. Is the eight percent in this application?

A. I think it would be fair to apply it to this application, but someone else might look at it and be more stringent and go to five percent.

Q. Okay.

A. There's a five percent entry and if you wanted to be very stringent, you could maybe find a way to find a reason to limit your driveways to five percent, but I would -- I think the eight percent is the appropriate number to use.

Q. And do you have the -- I see you flipped to something in your Exhibit Number Five.

A. Yes.

Q. You've got the regs. from November 2001?

A. Yes. And they've been updated periodically since then.

Q. Sure.

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A. But the information contained in these regulations started as early as November 20th, 2001.

Q. Okay. And they -- I hate to ask this question, but do they have -- do they say when they apply and by that -- I'll be very specific. Do they say it only applies to projects constructed after that date, designed after that date?

A. I don't know specifically whether the regulations address that question.

Q. Okay.

A. But in my experience in reviewing other -- other projects where the land development regulations are in play --

Q. Uh-huh.

A. -- it's my opinion that if a -- if a building is permitted after the effective date of the land development regulations, then the land development regulations should be adhered to.

Q. So if you go pull a building permit and go build a new duplex, then you're going to comply with the regulations then in effect to build that duplex?

A. That's my opinion, because when a county or city puts a regulation like this in force --

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Q. Uh-huh.

A. -- it's basically a law and it's basically notifying everybody in the community that lives here, works here, that this is what -- this is the game rules. That is what we're going to play by. So I think that if the permit is issued after the effective date of the regulations, then it's -- it should apply.

Q. Do you know whether the building authorities can waive the requirements of the regs?

A. A building official has the power to waive lots of different regulations and requirements and I won't speak for them as to whether this is something that they would be willing to waive or not. They have the power to do that, but in my experience, that power is used sparingly.

Q. Well, the only reason I'm asking you is I think you probably have seen from the documents that the buildings, the duplexes and quadplexes were built over time. I mean, it spans a fairly lengthy period of time and presumably building permits were pulled and building folks went out and did some sort of inspection periodically and that's why I was asking if all these driveways -- and I'm looking at your numbers and

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they're showing that on that side of the street, that, at least, all the ones you've got are over eight percent, so that's why I was asking whether a building official could waive that if they went out and saw that condition.

MR. STANLEY: Object to form.

A. I don't know whether they would waive that or not.

Q. Uh-huh.

A. But you're right to point out that a building official can be presented with things like that and be asked to weigh in on it. I just don't know whether that happened here.

Q. Right. Okay.

A. What I -- what I will say is that what I've read leads me to believe that the buildings were constructed over a fairly long period of time, so there may be some buildings that were permitted before -- before November 20th, 2001. I just don't know how many were or were not.

Q. Okay. That's fair. Okay. Can we go to next --

A. Oh, I'm sorry to interrupt you, but can I supplement my answer --

Q. Yeah.

A. -- to what I just said? I remember reading some

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information in the documents I was provided out of A&B Consulting's file --
Q. Uh-huh.
A. -- that there were comments that came back in the review of their plans by, I don't recall whether it was Horry County or DHEC or both, but there were comments about -- about the driveway slopes or there was, at least, a comment. I remember reading that in the documents.
Q. Do you recall whether --
A. It was just a concern that the reviewer was voicing in writing.
Q. Uh-huh.
A. That they -- I don't remember them providing a specific number or saying these driveways are too steep and you need to have this -- this kind of a slope. It was a general comment they were making about pavement slopes.
Q. Do you recall what, if any, modification was made to the design?
A. I don't.
Q. Do you know what the drawings were subsequently approved by that reviewer?
A. Ultimately, my understanding is they were approved.

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Q. Okay.
A. Based on the comments, the response to comments that AB Consultants provided back. They received comments and they responded back and whatever their response was, it was satisfactory enough to get the permit.
Q. Do you -- have you analyzed the existing slopes that you identify in the handwritten document, Exhibit -- that's part of Exhibit 8 behind your CV? Have you analyzed those and compared them to the drawings?
A. No.
Q. The next document in Exhibit 8 is dated 7/23/13, I think, and it says JDW at the top.
A. Yes.
Q. You and I on the same page?
A. Yes.
Q. Is this the notes that you made when you went out on July the 23rd?
A. It is.
Q. Is this a similar exercise?
A. It is.
Q. Okay. Because you said you'd done it, then you went back and did it again. And on this one you've got an unlabeled column on the very left

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side that has a series of numbers. Can you tell me what those are?
A. They're not labeled at the top, but at the bottom I've got an arrow pointing to them that identifies those as water level measurements below the pavement surface.
Q. How did you measure that number?
A. How did I measure?
Q. Yeah.
A. I placed a tape measure inside the catch basin.
Q. Uh-huh.
A. And I measured the distance from the water level up to the pavement surface.
Q. Up to the earth, I mean, top of where we can see it?
A. Yes.
Q. Okay. Just making sure I understand.
A. And so what I did on this day was that each of these catch basins, I removed the cast iron grate that's on the catch basin, observed what was inside the catch basin and made these measurements.
Q. And I'm sorry, the measurements here are east?
A. East.
Q. Which is, remind me?

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A. Near Baker Street.
Q. Thank you. If you say Baker Street side I do probably better than east. Okay. And then you have inches above the invert, that's the measurements -- you've done that measurement more recently?
A. Yes.
Q. We've talked about that similar measurement.
A. Yes.
Q. Inches above eight-inch invert, what's that one?
A. The eight-inch invert is emergency overflow for the exfiltration system. It's an eight-inch corrugated plastic pipe.
Q. We're talking about the end toward Baker Street?
A. Yes.
Q. Thank you. And you're doing what there?
A. Making the same measurement as I did on the 15-inch pipe, but for the eight-inch pipe.
Q. And how high is the water above the bottom of the pipe --
A. Yes.
Q. -- is that the measurement?
A. Yes.
Q. Okay. Thanks. And that would show whether water was going into the overflow pipe?

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A. Not only would the measurements tell you that, but you can see it when the water's moving. You can actually see the water flowing.
Q. So you can see it coming out of the 15 and going into the eight?
A. Yes.
Q. And you can see it discharge, can't you, down there in the wetland?
A. You could, though I did not walk down there and look at that on that day.
Q. Okay. Under draw present?
A. Under drain.
Q. Okay. What is that?
A. The underdrain is a component that is supposed to be part of the exfiltration system and it appears in the design for the system and it appears in the narrative that AB Consultants prepared describing what the system is and how it's gonna operate. The underdrain is the component that's supposed to maintain the ground water level below the exfiltration system, so when it rains, the exfiltration system will be ready and waiting to accept that storage.
Q. Okay.
A. So this is answering the question of can I see

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any sort of underdrain component present.
Q. And so then can I -- you're going to have to help me read it, because you've got like double columns there. On B you've got a little asterisk and then it says, "yes" and it has a note at the bottom, "The desired underdrain is a" -- you'll have to help me with that word.
A. It's part of the exfiltration system.
Q. Okay.
A. So there is an underdrain that's coming into that catch basin.
Q. Right.
A. And when I first looked at it I thought that it wasn't part of the exfiltration system because it was so high. It's way too high in the catch basin. The underdrain should be below and in the bottom of the catch basin, so when I pull the grate off the catch basin and looked inside --
Q. Uh-huh.
A. -- I could see there was an underdrain coming into the catch basin, but it was so high that I thought maybe this is not part of the underdrain system, maybe it's part of the segmental retaining wall or from somewhere else, but then

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I looked at the drawing and then I recalled, oh, yeah, in this particular instance on this one street the underdrain is supposed to come in at exactly that location or that position on the catch basin, but it's just not supposed to be that high.
Q. So it's supposed to be there, it's just at the wrong elevation?
A. It's really at the wrong elevation, yes.
Q. What is the "yes" on the other side? You've got "yes" with the little star and then "yes" next to it.
A. Whether I saw birdbaths being pervasive along the streets.
Q. Okay. So that's a separate column, birdbath?
A. Yes.
Q. So on C through I you can't find any evidence of an underdrain being installed?
A. No. And if the underdrain is located where it should be, then you shouldn't see the underdrain, because the plans show that it extends beyond the catch basin.
Q. Uh-huh.
A. At least the layout of it that's shown on the plan shows it extends beyond the catch basin.

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But the reason I'm answering that question there, despite the fact that it's not shown on the drawings to even be there, is that the details in the drawings depict the underdrain coming into the catch basin, so I still don't really understand what is depicted in the design plans, because the plan view of the underdrain shows it going past the catch basin, but the details of the catch basin show the underdrain coming into the catch basin.
Q. Is there -- and I'm probably slow, do you know whether there's an underdrain actually in existence on C through I?
A. I don't know whether there is or not. There should be.
Q. And there's no way to know unless somebody dug it up?
A. What I can tell you about the underdrain system is that the underdrain system on it -- on at least all but one of the streets --
Q. Uh-huh.
A. -- is not functioning. If it was, then we should see water levels in the catch basins much lower than what they were.
Q. So either it's not there and that's a

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possibility –
A. Yes.
Q. – or for some reason it's not working?
A. Yes.
Q. Or it's at the wrong elevation? That would be a possibility, right?
A. Yes.
Q. Okay. And we don't know which of the alternatives it is?
A. Or there's another alternative that I should point out, which is if the exfiltration system – if the pores inside those large number five pieces of stone that are supposed to comprise the entire exfiltration trench, if those number five stone, which are – just to give you a sense, number five, if you've ever walked on a railroad, number five is railroad ballast. It's larger than what you'd see on a driveway, but it's not boulder or riprap either, it's a large stone. So if the pores in that number five stone have become filled with sediment –
Q. Uh-huh.
A. – then that could choke out the exfiltration system and then you would not know whether or not the underdrain was working or not, because

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the exfiltration system is clogged.
Q. Okay. So the options for the underdrain is not present, not working, too high or the exfiltration system is clogged up, stone – the stone around – the stone envelope is clogged up?
A. Yes.
Q. Any other options?
A. That's all I can think of for now.
Q. Okay. And you've kindly pointed out that the column I didn't see, it was below the birdbath?
A. Yes.
Q. You just say there are birdbaths in the road or not?
A. Yes. And I didn't observe that on all the roads. I stopped – I stopped making a note to myself to look at that, because I was – I was running out of – out of daylight and I wanted to make sure I could see some of these other things.
Q. I see. So there could be birdbaths on the other streets, you just didn't get to it?
A. Yes, that's right.
Q. And sediment on pavement, that is whether you saw sand or silt or something on the asphalt?

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A. Yes.
Q. And the last one, H –
A. HMA heaving.
Q. What's that mean?
A. HMA is the abbreviation for the asphalt paving, hot mix asphalt.
Q. Oh, okay.
A. Whether or not I could see heaving of the pavement surface and that relates to the condition we talked about before, where we've got sand that's being driven under the driveway slabs and it's pushing the asphalt pavement up.
Q. So would all that heaving be near a concrete driveway?
A. Some of it is. Most of it is. The worst of it is. There's some location where it looks like it's happening that are not necessarily right in front of a driveway.
Q. How do you know that water isn't just going through the asphalt?
A. Say that again.
Q. I mean, if it's not near a driveway. I understood what you told me earlier, that you believed the soil is going under the concrete driveways and pushing up the asphalt and causing

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the asphalt to heave up.
A. Yes.
Q. Is that fair? I know it's got a geotechnical explanation, but is that a fair understanding of what you're telling me?
A. It is.
Q. But if it's not near the concrete, if it's halfway in the roadway, why do you think it's coming from under the driveway as apposed to water entering the pavement some – in some other method?
MR. STANLEY: Object to form.
A. I think I – I think I understand what you're asking. Where I've seen it not necessarily in front of a driveway –
Q. Uh-huh.
A. – is where the heaving has gotten so severe and the effects of it are so large that they are extending out into the pavement and further away from the driveway. So I'm not talking about – I'm not talking about places where there's no driveway at all, where it's just grass that abuts the asphalt. I'm not talking about it occurring there, because I haven't seen it there, but it's where the heaving and erosion

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has gotten so large that it's progressed outward from the driveway itself.
Q. But the heaving's always in front of a concrete driveway?
A. The worst of it that I've seen is right in front of the driveways.
Q. Have you seen any heaving next to a yard?
A. Only where it's right next to a driveway.
MS. BURTON: Okay. We've been going about two hours I think, Mr. Wilkie. Why don't we take a couple minute break. Is that okay with you.
THE DEPONENT: Okay.
(Whereupon, there was a short break in the proceedings.)
BY MS. BURTON:
Q. Mr. Wilkie, before we took a brief break we were looking at some handwritten notes contained in Exhibit Number 8 dated 7/23/13.
A. Yes.
Q. And I think we looked at most of the first page. The second and third pages appear to have unit numbers along specific streets and a few of them have some percentages listed.
A. Yes.

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Q. Was that an effort to measure the inclination of concrete driveways at those locations?
A. Yes. When I was there on that day I had intended on measuring some of the driveways and I did that, but I decided while I was there that I was gonna need to come back and do a little more complete job of that at another time.
Q. Okay. The last page of these, I think it goes with these notes (indicating). It's a photograph, I think. And it says -- it looks like it's got a date at the bottom.
A. Yes.
Q. Is that 3/8/13?
A. Yes.
Q. Is that a photograph you took?
A. It is.
Q. Can you tell me what it's a photograph of?
A. It's a photograph of the east catch basin on driveway -- I'm sorry, street H.
Q. Okay. So you've pulled up the grate and photographed inside the catch basin?
A. I did. And I'm looking at the water level and I'm looking at the 15-inch exfiltration pipe and I'm observing where the water is with respect to the top of the pipe, the invert of the pipe and

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on this photograph I've made some notes to try to visually describe for myself where -- where should the top of the exfiltration trench be if it was built in accordance with the design. And so what this --
Q. I'm looking on your -- I was just looking at your color a little bit.
A. And you can feel free to walk around behind me if it would be more clear for you to look at this. But what I've done is I've drawn two horizontal lines across the photograph. One at the approximate water level and then one at the approximate elevation of where the top of the exfiltration trench should be and I've compared that with the dimensions of the exfiltration trench as they should have been constructed.
And then I've done a calculation at the bottom on the left with the left corner to assess rough -- very roughly what percentage of storage is even left in the exfiltration trench if you've got this much water in the catch basin on a day when it hasn't rained for three or four days.
So hadn't rained in a while and at that spot this exfiltration trench really only has a

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third of the capacity that it should have at any other time.
Q. The line -- the bottom line, what does that say?
A. "Existing ground water level".
Q. So there's water up to there?
A. Yes.
Q. And then the top of trench, what is that, where the top of the box are?
A. No. That is where I'm assuming the top of the trench would be if it was constructed properly. I don't know whether it is there or not. It could be higher or it could be lower.
Q. Uh-huh.
A. But if the trench was constructed in accordance with the plans, that's roughly where the top of it would be.
Q. Okay. So that would be the top of the rocks that you told me about, size five stone?
A. Yes. And so then the other thing to notice from this is generally how far it is from the water elevation to the pavement elevation. And I've not made a note of that in that photograph, but by looking at it and seeing where the water level is, you could generally see how close or far away the water level is from pavement.

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Q. But there's no measurement of that on this particular item?
A. I have made a measurement of it, but I've not marked it on this photograph.
Q. Where is the measurement?
A. It's in the notes. We've already gone through some of those notes.
Q. It's on these notes (indicating)?
A. Yes.
Q. Oh, okay, earlier. First page?
A. So we've got on the left side of the handwritten notes dated July 23rd --
Q. Uh-huh.
A. -- I have a running list of depth from pavement surface to water level.
Q. So it's two feet four inches at H.
A. Yes.
Q. So the top of -- so from your line up to the asphalt is two feet four inches?
A. Yes.
Q. Okay. And then this little box where you're showing the pipe in presumably a stone envelope, the 3.25 and the 2.25, what are those measurements of?
A. They're not a measurement. Those are the

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dimensions that A&B stated that their trench would be, three and a quarter feet wide, two and a quarter feet tall.
Q. Okay. So you're saying if it's in that way, that's how big the stone square is?
A. Yes.
Q. Okay. Got it. And I'm sorry, the date on the photograph is not the same date as the notes?
A. I've dated it when I made the notes on the photograph. But I took the photograph when I was at the site.
Q. I got it. The next document or handwritten notes in your Exhibit Number 8 is a list of site visits?
A. Yes.
Q. Okay. And were you just trying to make a list of every time you went out there?
A. I was -- I was thinking about that I would be coming to see you again and --
Q. Right.
A. -- I might should have some idea as to when I've been at the property, so I thought I'd take out a piece of paper and write that down.
Q. And the times, because goes back to, you know, '07 and '09, did you pull that off of billing

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records?
A. Not just the billing records, but I have a time log, if you will, that's in the file.
Q. Uh-huh.
A. The file that you've had for some time, that explains when I was at the property and what dates.
Q. The next few pages I've got appears to be something you printed off the Internet from Weather Underground?
A. Yes.
Q. And did you tell me that was from the North Myrtle Beach Airport?
A. Yes, it is.
Q. And how come you used Weather Underground, just because it came up on the computer or what?
A. No. I've used that site for probably seven or eight years to obtain weather data.
Q. Okay.
A. It's just a very user friendly way to get data from an actual weather site.
Q. Uh-huh.
A. Now, there's a lot of data on there I don't think you should rely on, because it's in somebody's backyard and you don't really know

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the integrity of the data. But if you can find one that's a real weather station or it's an airport or something like that, I feel like it's -- it has more standing than some of the other data and it's easy to get because of the way the interface is on our software.
Q. The next document says, "South Carolina State Climatology Office".
A. Yes.
Q. And that looks like something you printed off the Internet?
A. Yes.
Q. Just to see what it said about rain?
A. Well, the climate office, they keep records of weather and they'll have summaries for really each week of the year.
Q. Uh-huh.
A. And then they'll talk about certain events that happened during that week. And they have some of the same data that you could get from National Weather Service or from Weather Underground and I wanted to read what they had for some of these other time periods that I was looking at Weather Underground on, just for comparison to see if it was sort of the same --

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same kind of weather or whether they're describing something different.
Q. Okay.
A. There could be other weather data out there that somebody could get, but I just picked two pieces of data to look at it and see whether they were both reasonable or not.
Q. Okay. The next thing I've got in Exhibit Number 8 is it's got a handwritten note, "Concrete driveway constructed with excessive slope".
A. Yes.
Q. And then I have photographs behind it.
A. Yes.
Q. I have three photographs behind it. Is that what you've got, too?
A. Yes.
Q. And is this depicting how you did the measurement with the four-foot level?
A. Yes.
Q. And it's -- I guess, is it one driveway, 4303 -- oh, two, 4303 and 4305's driveway?
A. These are just a couple of examples of where I took the measurements, just so somebody could see visually how I took it and what it looks like from a distance if you saw somebody taking

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that measurement. So the second photo, if you look at the second photo --
Q. Uh-huh.
A. -- I put that clipboard in a position that it's holding the level at level.
Q. So it's the bubble's in the middle?
A. Yes, it is.
Q. Okay.
A. And so that's just -- you know, it's hard to see a slope in a photograph --
Q. Right.
A. -- unless you have something to compare it to, so I included these photographs so I could show that to you if you asked me about it.
Q. Earlier, and I believe it's in the roll of drawings that we marked as an exhibit to your deposition, you had a bunch of spot elevations and I can't recall the surveyor's name that took them. Have you looked at the spot elevations to determine any driveway slopes?
A. Before -- before I did. I mean, before I submitted my report from 2010 --
Q. Right.
A. -- I had -- I had reviewed the spot elevations that the surveyor prepared, yes.

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Q. But if we wanted to know exactly the entire slope, for example, looking at the photograph you were just pointing out of driveway G, on driveway G, 4303, we could actually survey from the top down to the bottom and come up with the slope of the entire piece of concrete?
A. You could come up with the slope from the upper most data point the surveyor took to the lower most data point.
Q. Right.
A. That may be at the building corner or it may be down at the top of the driveway. We would have to look at that data to see it.
Q. Uh-huh.
A. There's an exhibit that shows at least one example of the survey data that we obtained.
Q. Uh-huh.
A. That was an attachment to my 2010 report.
Q. Uh-huh.
A. But it was only an example. It didn't -- it didn't -- it wasn't intended to be used as an average or representation of all the driveways. But there was one where they had gone around the perimeter of the driveway and taken some spot elevations.

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Q. If you wanted to know the true slope of each of the uphill driveways, for lack of a better word, you would have a surveyor take an elevation at the top and one at the bottom and do the mathematical calculation, right?
A. No.
Q. What would you do?
A. Well, if you want to know the true slope, you have to measure it at each and every spot because the driveways are not flat, they're sloped, but they're not flat, there is some curvature to them, so if you only took a measurement at the top and bottom you would get kind of an average slope, you wouldn't get a true slope at any point anywhere on the driveway.
Q. The regulations that you had, those '01 regulations you had in your little folder, when they talk about a slope, are they talking about an average slope or at each and every spot?
A. I don't know that they define it that clearly. In fact, to me -- to me, you could say that they're somewhat vague about that. They just say what the slope limits are.
Q. Okay. So could be eight percent over the whole

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length or eight percent at every interval?
A. Yes. But I'll concede this, I didn't use the numbers that I obtained from -- from the ordinance to draw some sort of a distinct line to say, oh, if you're a tenth of a percent over this, then you've got a serious, serious problem. I looked at them in the context of the whole neighborhood to say, well, are these generally in compliance, are they a little bit over or are they way off. And what I found was that a lot of these are -- they're double, in some cases they're triple of what, you know, what local guidelines are. So I'm not trying to nail down to the, you know, the tenths and hundreds of a percent, I'm just saying in general some of these, they're up to being three times the slope that they should be.
Q. The next document I have in Exhibit 8 is the Horry County Land Development regulations.
A. Yes.
Q. That say they were adopted in '01 and revised in '08, do you see that?
A. Well, that's the most recent revision they have noted, but there are revisions between those two dates.

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Q. These are ones that you printed off?
A. Yes, but the revisions are noted within the document. You can look in the document and you can tell whether a passage is a revision and approximately when it was entered into the document.
Q. Okay. Go ahead.
MR. STANLEY: Hold on one second if you don't mind and let me sign something.
(Whereupon, there was a short break in the proceedings.)
BY MS. BURTON:
Q. In the Horry County Land Development Regulations, the first page, table 4-A, "Street hierarchy definition," did you determine what the concrete driveways were, do they fall in any of those?
A. They're not a -- they're not a street, they're a driveway.
Q. Okay. Where is the driveway word? I mean, where is driveways in these documents? You've looked at them, I haven't.
A. I don't know. I mean, when I look at this table, it tells me at the top that it's a street

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hierarchy, so it may not necessarily say anything about the driveways themselves. This may be just for the streets.
Q. So might apply to the A, B -- I'm sorry, B, C, D, E, F, what we've been calling streets for purposes of today with asphalt on them?
A. That is how I've interpreted and I've highlighted the first entry, which is called an access street.
Q. Right. Which is the lowest order of streets it says, which you think those are, the lowest order of streets?
A. Yes. When I compare it to the descriptions of other types of streets, I think that one is most fitting.
Q. Is there anything in here that talks about driveway slopes?
A. In the document there is, but not on this sheet.
Q. Okay. Where is it in the document? If you'll point to it, it would probably be quicker. You probably highlighted it.
A. Got inverted crowns, got driveway grades, here we go, on page 70.
Q. Okay. Driveway grades?
A. Yes.

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Q. Well, there's no curb and gutter, right?
A. There's no curb and gutter.
Q. So is it where a shoulder exists?
A. Well, there's also a table, two tables that we can refer to or three. These pages are not numbered. Appendix H, "driveway approach".
Q. Hold on just a second, I'm trying to get with you. "Driveway approach", where it has upgrade five percent, downgrade five percent and then there's one with curb and gutters, that's eight. Am I reading that right?
A. Yes. Well, the one with the curb and gutter is five, the one without is eight.
Q. On the eight one, help me read this. Is there a -- does it look like it's flat before it goes up?
A. You mean where it says --
Q. Shoulder.
A. -- shoulder?
Q. Yeah.
A. Well, the line in the sketch is shown that way, but I don't think this is meant to be to scale. At least it doesn't say it is.
Q. It says four inch minimum though or four foot minimum?

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A. Yes.
Q. Are you reading that as you have to have asphalt and then you have to have a shoulder, then you can go up on a driveway?
A. That's what the sketch shows.
Q. It is? That's the way I'm looking at it, just looking at it for the first time today with you. Clearly there's no shoulders out there. I mean, it's asphalt straight to concrete driveway, isn't it?
A. I could -- I could see how you could describe it that way. That's another area where, you know, if somebody wanted to deviate from that, they probably have to ask.
Q. Right.
A. But you're right, if you want to interpret this as stringently as possible, then you would need to have four feet from the edge of pavement before you ever went up. The question is what can you call a shoulder. I mean, this sketch nor any of the stuff I've read in here so far defines the slope of the shoulder.
Q. Uh-huh.
A. And so the shoulder could be sloped downward or the shoulder could be sloped upward, so I don't

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know. I mean, you could look at some part of this neighborhood and possibly find a way to say, yeah, there is a little bit of a shoulder there.
Q. Okay.
A. Again, I'll update this again. When I look at these kind of standards, I'm not trying to crank down to the tenth of a percent and say that somebody has built something that's, you know, a tenth of a percent off or something. I'm looking at the big picture. You got a maximum of eight percent shown in these sketches. We've got stuff that's up to 26, 27 percent. That's so big of a difference you don't have to worry about the tenth of a percent or half percent or how big the shoulder is, it's so far off.
Q. Do you -- and this is probably a stupid question, but as these units were constructed, would they not have required a final inspection before a certificate of occupancy could be issued for each building?
A. Yes, I would think they would.
Q. And my -- I guess my query is, you know, if the driveways measure at the measurements you have in your handwritten notes, those would have been

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pretty obvious to whoever came out to do an inspection before they issued a CO for each building, wouldn't they?
A. I would think so.
Q. So does that not make you wonder whether they waived an eight percent requirement?
A. In my experience an inspection for a certificate of occupancy doesn't include everything that you could conceive as being a regulation or a requirement for a building. They're only going to look for certain things.
Q. Uh-huh.
A. Sometimes only have a brief checklist of things that they are going to look for. They may not look at all at the driveways and even if they did look at that, having that evaluation done and having that CO issued really doesn't excuse any deviation from a regulation or a building code. It just says on their review they're issuing a certificate of occupancy. It doesn't -- doesn't excuse anybody from -- from deviating.
Q. Do you know whether these regulations applied if the grading was done prior to November 20, 2001?
A. I don't know. I just know that it's conceivable

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that several or a lot of the driveways were constructed after this and those driveways in my opinion would have been subject to the regulation.
Q. Okay. Do you know who enforces this regulation, I mean, what entity?
A. Well, Horry County and some of the regulations in here would more relate to the roles of, you know, the folks that review things for storm water. Some of them relate more to things that would relate to, you know, the building official. So it's different for different requirements.
Q. Okay. But it would be some county official?
A. That's my opinion.
Q. Okay. I mean, DHEC doesn't necessarily comply with the county regs, do they?
A. I don't think that they would focus on that in particular except -- except in reviewing plans. If on the plans they found that there were slopes that they felt were excessive, they might provide a comment about that, that they've seen on the plans your slopes are excessive, but I don't think that would be something that would be their primary function. They just might see

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It in the course of their work.
Q. The next thing I have in Exhibit 8 is a printed out document. The top says, "Chapter 4, sidewalk design guidelines, page 10 of 20 and 11 of 20".
A. Yes.
Q. What is this from?
A. This is from the Federal Highway Administration for the federal government.
Q. Is this something you printed off their website?
A. Yes.
Q. And you looked at this because of what?
A. Because it has an AASHTO table in it that relates to slopes for different kinds of streets and different places and different environments and the table -- table includes a column of data for maximum percent grade based on whether the terrain is level, rolling or a mountainous terrain.
Q. Is it for roads or sidewalks?
A. This -- the table is for roads. The subject of the page that's printed out is -- is for sidewalks, but the table is extracted from the AASHTO manual that deals with roads.
Q. Uh-huh. Which did you decide, it says road

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type, is it -- what kind, rural?
A. I think it's urban local.
Q. Urban local?
A. Yeah.
Q. So it says, "The maximum grade level rolling mountain", whatever that means.
A. Yeah.
Q. And we're talking about the road here, right? "Is consistent with terrain", is that what it's talking about?
A. Yes.
Q. And what's it saying the slope of the road is?
A. Less than 15 percent or less than eight percent depending on the terrain that you selected.
Q. But that would be of the asphalt roads we're talking?
A. Yes.
Q. Okay. And then it has the cross slope number and a curb height number and then it talks about sidewalks. Did you determine that any of the roadways didn't meet these slope requirements?
A. I did not.
Q. Okay. Okay. Is there any requirement in this printout that you looked at and said, oh, something out there doesn't meet a requirement

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in this document?
A. No. The reason I looked at this was just in general to compare it with some of the guidance that it provides and to see how it compares with the local regulations and, you know, in one way it compares pretty well, because you see that eight percent number showing up in a couple different places.
Q. Uh-huh. For the roadway design?
A. Right.
Q. All right. The next thing I have in Exhibit 8 is another handwritten note, "HMA pavement exhibits reversed slope when compared with sheet C-2."
A. Yes.
Q. Tell me what that is.
A. Sheet C-2 is part of AB Consulting's plans and on that sheet they have a detail for the streets --
Q. Uh-huh.
A. -- that shows the streets are to be constructed with an inverted crown.
Q. Okay.
A. And I saw instances on the property where the inverted crown was compromised and the water is

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shedding off the road rather than into the V.
Q. So in those instances if we went out there after -- after right now, seeing as how it's raining, you would find puddling of water actually against the grass, right?
A. Yes.
Q. And that's because the road's not slopping towards the middle, it's somehow making the water roll toward the grass?
A. It's not just that it might be puddled against the grass, that it would head through the grass and into the side yards.
Q. You mean between, like in this photograph, which is the first one behind that note, it might get in between these two units?
A. Yes. Depending on the intensity of the rain.
Q. Uh-huh.
A. It could either just sort of puddle against the grass if the grass is higher than the pavement, or build up and sheet flow across the side yard and down to the next street, which is the reason I think that that's important to know that it exists, is that it's kind of a short circuit of the whole storm water plan. The storm water plan that AB put together captured the storm

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water at each street, collected it and then exfiltrated it and to the extent there was an excess amount of water, it delivered it to an emergency overflow. The way the streets are built, there are places that short circuit that and send it down to the next street.

Q. Okay. Or into the grass?

A. Yes.

Q. Okay. And so these photographs behind that cover page are just photographs of the areas where you found that the street wasn't graded in a manner that sloped it toward the middle?

A. These are examples of that, yes.

Q. Okay. Did you ascertain how that occurred, I mean, why that exists?

A. When I went to the property I saw it as -- or before I went to the property I knew that the condition existed in some places and my thought was that some of it could be due to settlement of the pavement, sort of like the birdbath problem that, you know, if there are places where the pavement settles, you're going to have a birdbath. Well, if the pavement happens to settle along the edge, it could settle and create an area that ponds -- ponds water. But

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when I got there it doesn't look like these conditions are occurring due to settlement. It looks like the road was constructed that way.

And the reason I have that opinion is that if -- if it was due to settlement, the amount of settlement that would be required in order to move the road vertically downward that much to send it from being, you know, a percent or two percent toward the V --

Q. Uh-huh.

A. -- to going the other way, it's too much. If there were that much settlement taking place, there would be visible evidence of it, a real dislocation between the pavement and the yards, something like that. So I think that some of those conditions are due to just the way that the pavement was laid. It was laid in that position and it's still in that position.

Q. And this probably isn't a good question, but is it how the dirt was graded or how the asphalt went on the dirt?

A. It's both. You have to have -- you have to have both to do it properly. If the grade -- if the grade of the roadway, the subgrade and then the base course on top of it, if they're graded

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improperly, then it's difficult, if not impossible for the paving company that comes in behind them to correct all the problems that could have occurred before. I mean, that much is true.

But if the paver notices that the grades are not what are on the plans, really, they should stop and that may mean modifying the grades of the road, but they need to stop before they're finished, because the paver is the last line. I mean, if it's wrong when the paving gets put on, it's wrong at completion. So yeah, the grades have to be right, the subbase has to be right, the subgrade has to be right and then the asphalt, the pavement has to be correct.

Q. You read Mr. Bellamy's deposition?

A. I read part of it.

Q. Okay. I think Mr. Bellamy testified that his company worked on Rivergate Lane and on the first two driveways and didn't work on the other driveways. Did you -- do you have any idea who graded and put -- and/or put asphalt down for, for instance, you've got a picture here on this one we were looking at of C, do you have any idea who actually put driveway C in or street C

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as you and I are calling it?

A. According to what you just said, if his testimony is accurate, he did, because that's -- C is the second one.

Q. C is the second one? Okay. How about D, you have a picture I'm pretty sure of D, too?

A. I don't know. I don't know who all the subcontractors and contractors were other than the parties that I have read and I know y'all are struggling with that and so far I have not undertaken a task of making a determination of exactly which parties did which work.

Q. Okay.

A. I've just read what I can about that.

Q. All right. Okay. So you took photographs on this issue of C and D or are there other photographs? You've got some other ones, but I'm not sure they're --

A. I don't know. I may have other photographs of that, but I've just -- I've just put these in here for this.

Q. If the street is not sloped properly to be an inverted crown, other than having areas where water stands in the road, have you seen any -- any other effect of that?

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A. Just what I described before, that it's a short circuit of the storm water plan, that you don't -- if you're not capturing the water on each street to be delivered to the catch basins on that street, then that is effectively sending the water to the next system down the hill, which is the next street.
Q. Does it send it downhill or just sit there, I mean, just sit on that little street?
A. Well, if it's a small enough amount of water, it may just sit there and exfiltrate into the ground just as surface water.
Q. Okay.
A. But if it's enough rain, it will go down to the next street.
Q. Out through Rivergate Lane or through the yards?
A. No, no, through the yards.
Q. Have you seen that occurring where you say, hey, it's raining?
A. I've seen erosion, surface erosion, where the movement of water through the side yards has eroded the ground surface and this condition we talked about earlier this morning where -- where the driveway sloped and is steep and water is moving under the driveway, well, that's --

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that's a product of having water accumulate in the side yards.
Q. Okay. So you've seen evidence of erosion in the side yards like in this picture, the second picture in this group that says driveway C and has a 7/23/13 date, you've seen evidence of erosion between those two, for instance, between houses like that?
A. For instance, I don't know if between those two buildings you would find that, but if we were to walk into the photograph between some buildings, you would reach a point further into the photograph where you could see that the movement of water has eroded the ground.
Q. Okay. And have you concluded when you've seen erosion of that nature that it came from the street upstream or did you conclude the water came from anywhere else?
My question may not be good, but I've read in some of your documents that there's, you know, roof drains, gutters, I mean, is all the water coming through just coming from the high street above or is it coming off the roofs, off the gutters, et cetera?
A. Well, there's water that's gonna land on every

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-- every surface in the neighborhood, so some of it is gonna hit the ground in the form of roof drainage. Some of it's gonna get onto the yard in the form of street drainage and some of it's just gonna be precipitation that fell on the lawn itself without coming onto the roof or coming from the street. So to me, you've got those three -- three sources of water before it would actually get to the yard.
Q. So the intent would be that this area between these two houses, to use this photo as an example, would be lower so that if it rained or water sheeting off these roofs, it would roll down through the grass and hit this road and then roll to the middle?
A. Not necessarily.
Q. Okay. How come?
A. My opinion about the side yards just is that when you have a neighborhood that is as dense as this --
Q. Uh-huh.
A. -- the side yards become fairly small and the surface of the roofs begins to be relatively large when compared with the surface of the yards themselves and at some point there's a

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tipping. There's a tipping point where you need to have yard inlets and some other means of collecting water in the side yards to get it into the storm drain system other than just letting it -- letting it either seep into the ground or flow down to the next street.
Q. I guess one option would be to have a gutter system where you pipe it somewhere, take the water off through gutters and you pipe it down the side of the house and then that pipes into something?
A. Yes. That would be one way to do it.
Q. Okay. And so here there are no yard inlet's, is that what you're saying?
A. I have seen a few yard inlets on the property --
Q. Right.
A. -- but not very many.
Q. Okay. Are the side yards between the houses sloped to go downhill to the roads?
A. Well, some of them. For instance, in that photograph, if we take this photograph as a typical view of a side yard --
Q. Uh-huh.
A. -- in some locations that side yard will slope generally toward the street that we're standing

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in when we took the photograph. Some cases it tends to slope the other way downhill. There's not one answer to that for every side yard. It's different for different buildings.

Q. There's not a consistent methodology where the grade, fine grade, I guess it would be, was sloped always toward downhill?

A. No. And it's -- it's not really shown on the plans either. I mean, typically when you have a set of plans where the buildings are this dense and the yards are this small, there's gonna be part of the plans that has a lot of spot elevations to tell -- to tell the contractor where to put the grades, not to tell them where the water should go, but to tell them the grades so that when the water does hit it, it goes in the right place and these plans don't really have spot elevations like that around the buildings. So not having -- not having that information in the form of a plan means that the contractor or contractors are left to figure that out on their own and so it's understandable there are going to be variable conditions. Some will slope this way, some will slope that way, some won't slope at all, so there will be water

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standing in the side yards.

Q. Water standing in the side yards?

A. Some of the side yards have standing water when it drains.

Q. Is that because it's flat?

A. Yes. It's because the area where the water is standing is lower than the area around it.

Q. Is there an acceptable rule of thumb after it rains like it's raining now, about how long water can stand before it should dry up?

A. I think there are subjective rules about that.

Q. I mean, is there like a common rule in the industry, if water, as long as it dries up in 24 hours, that's good?

A. I would agree with what you just said.

Q. 24?

A. If it dries within 24 hours or exfiltrates in 24 hours, then that would tell me that the problem may not be very severe. If it's still there after two days, then I think you could say there's a problem. There may be a problem. If it's hanging around longer than that, then there's really no question you've definitely got a problem.

Q. You mentioned birdbaths earlier?

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A. Yes.

Q. Do you expect some bird bathing in street paving like this?

A. No. I would not expect -- well, let me say that a different way. There is no way to build a perfect pavement, so there will be small pockets where water may stand in a paved area. So yes, some of it is -- is expected, but it's not expected to be a repeating and regular occurrence throughout the neighborhood. You should be able to walk around even after somebody did reasonably good work and find a spot or two that would hold water after a rain event for -- for a few hours or even maybe a day, as much as a day. But you shouldn't be able to find it on, you know, every street or anything like that.

Q. Is there any rule of thumb for that like, you know, five percent, or I mean, if I go walk through a Wal-Mart parking lot, I'm probably gonna see a birdbath or two, I'm guessing. I mean, is there any rule of thumb for five birdbaths per 100 square feet is okay or anything like that, that you know of?

A. Well, I've done -- done design work and rehab.

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work on Wal-Mart stores and I'm not aware of a percentage that you would use as limit for that. And I know in the case of Wal-Mart, at least contractually, they would not allow any birdbaths. You'd be in some serious trouble if you finished a project and they saw that you've got birdbaths of any measurable percentage. That's just based on my work on those -- on those facilities.

The reason there are so many birdbaths on these streets is that the slope of the roadway itself is fairly flat. If the -- if the inverted crown road had more fall from the west catch basin to the east catch basin moving toward Baker Street, if there was more fall, there would be less chance for water to pond in the middle of the V, so part of the occurrence of birdbaths is variability in workmanship. Part of it is the actual geometry of the road and how steep it is.

Q. Okay. Is there any standard about birdbaths that you're aware of? I mean, because I was out here this morning, there are little birdbaths in this little circle right outside this building from rain last night and there's little puddles

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here and there and I don't know if there -- if, you know, you would say that was too much or too little.

A. I'm just telling you that in my experience in actually drawing up rehab. plans for pavement systems and writing specifications for them, that in the course of my work I've included notes that disallow birdbaths, but when you do the walk through, if there are a lot of them, then, yeah, you're gonna get on the contractor about them and figure out a way to correct them. But if they're small and isolated and they're not very deep, then you can do another one.

You know, I've even heard of contractors using kind of what you call a quarter method, where if you can toss a quarter into the bird bath and you can still see the top of the quarter sticking out of the water, then that's okay. And that's actually a reasonable standard. Because that will tell you that is so little water that after a day or two it's going to evaporate anyway.

Q. Right.

A. I can only tell you what my experience is with that.

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Q. In Exhibit 8 there's another packet of documents and it says at the top -- I shouldn't say it says. It has driveway E at the top. Here, looks like that (indicating). Has a level on the --

A. Okay. I'm with you.

Q. Is this -- is this to depict something different than whether the roads are graded/paved in an inverted manner?

A. Yes, it is.

Q. What does it -- I can't read your handwriting at the top. If I could, I probably would know.

A. What it says at the top is, "Heaving erosion of pavement."

Q. So this is a photograph showing heaving?

A. Yes. And you can see looking at this photograph how difficult it is to show in a photograph what it is and so I've taken this photograph or I've taken photographs at this location in a couple different views to try to make it clear to show you or someone else looking at these documents what it is. So if we move to the next photograph, see that level in the first photograph?

Q. Yes.

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A. In the second photograph that level is still there.

Q. Where is it?

A. That's right. You can't see it, can you?

Q. No.

A. The asphalt is heaved so much that when you place the camera near the pavement surface you can't see over the heaved area of the pavement. That level is still sitting right where it was.

Q. So you're saying the level is now out of my line of site?

A. That's right. You cannot see it because that asphalt is -- has heaved so high that it obscures your view of the level.

Q. And then the next -- what's the third -- third photograph show? Is that the same thing?

A. The level's in the same place, but now I'm looking at it head on with the driveway.

Q. Uh-huh.

A. And it's still difficult to see what amounts to more than four inches of heaving, but you can maybe see it in the photograph there and so again, where I took the second photograph would have been to the right of what you see in the third photograph.

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Q. And the heaving, I mean, it looks like if I'm looking toward this vehicle you've got in it that there's a rise in the road up toward the vehicle; is that the heave?

A. Yes.

Q. Okay. Can I look at your color picture real quick?

A. Sure, sure. Then it goes back down where it hits the edge of the concrete pavement.

Q. How do you know it's a heave as opposed to a bump in the road?

A. Because if you go back to the first photograph --

Q. Uh-huh.

A. -- you see where I've marked an area where it says SNME's B-1?

Q. Yep.

A. Well, I had SNME do a boring at that spot and you can see a patch where they core drilled the asphalt.

Q. Right.

A. I thought this was heaved asphalt that would have sand under it and when I had them do this boring here to determine whether that was the case, they pulled the core out and sure enough,

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there's sand under the asphalt, between the bottom of the asphalt and the top of the base course.
Q. Okay.
A. So that's how I answered that question for myself, because you're right, if you see that, how do you really know what it is until you dig it up.
Q. Is there a gap between the asphalt and the concrete of this driveway? It looks like grass or something between the two.
A. There are weeds that are growing there and there is a vertical separation between the top of the concrete and the top of the asphalt. So the concrete is sitting a little higher than the asphalt.
Q. Is there a gap where there's like earth and no asphalt or concrete?
A. I haven't seen that.
Q. Okay. It just looks like a lot of weeds to me. I was curious whether there's a gap between the two?
A. I don't know. To me, the fact that there are weeds there, that's normal. You're going to have weeds pop up between adjacent materials.

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There's nothing abnormal about that in my opinion.
Q. Okay. And this is at driveway E, these photographs. Are all of these at that same location?
A. They are.
Q. Okay.
A. And so part of the reason that I've took these photographs the way I did was that I was hoping that that photograph number two would show you or anyone else in this room or anybody else that might be looking at these documents that this heaving issue is real. It's not something I made up. It's there and it's in a lot of places.
And when I was attending the deposition of Mr. Wooten, he said he didn't see it, that it wasn't there and I saw it in so many places that I thought it was worth taking a few extra photographs so that everyone else could see it, too and maybe Mr. Wooten could go back and look again.
Q. What unit is this with the car?
A. I would need to look at some notes or a plan sheet to tell you that. You want me to do that?

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I'd be happy to.
Q. I was gonna try and tie it, frankly, to your measurements of the driveway slope. Because you have driveway slope at unit E, so one of these is this, right?
A. You're thinking like me, because after taking those measurements, that's something I'd like to do, as well, is see whether the slope tends to suggest whether or not you're gonna have the heaving or not. But let me look and see if I can tell you which unit that is, okay.
Q. Yeah, please. That would be great.
(Off-the-Record conversation.)
BY MS. BURTON:
Q. Did you figure it out?
A. Okay. I've looked at my notes again and I believe those photographs of driveway E are taken at unit 4275.
Q. That had a 14.1 slope as you measured it?
A. Yes.
Q. All right. Okay. And so as I understood your testimony then, you believe that water from between these two buildings on the left and right side of the truck in the photograph is rolling under that driveway and coming -- and

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going all the way under the driveway and under the asphalt and carrying soil with it?
A. The force of the water is pushing sand and sediment under the slab and underneath the asphalt pavement, yes.
Q. Well, I mean, I assume the water is going with to carry the particles, right?
A. The water is what's forcing the sand there, yes. Another way to describe it in a term that maybe somebody else, if you had somebody like Mr. Wooten, if he wanted to review this and see whether he thinks that's a reasonable conclusion about what that is, another term for this is called soil piping.
MR. SMITH: Soil what?
A. Soil piping.
Q. How do you not have soil piping with a sloped driveway? If you have a concrete pad and it's downhill and you got dirt coming behind it, how do you keep dirt from going -- going under the driveway when it rains?
A. You control the slope based on the type of soil. If you are building a driveway in this part of the world, you wouldn't want to have a driveway slope of 27 percent, because you're going to

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induce soil piping if there's any accumulation of water at the top of it.
Q. Because it's sand?
A. Because it's a sand. Not just because it's a sand, it's a poorly graded sand. A lot of the particles of sand are the same size so they become more mobile more easily when water pressure hits them.
Q. Okay. Just so I understand, because in the up state where you live and I live, obviously, we have steeper slopes because of the topography, but we also have silty sands and sandy silts and all that kind of stuff, so they, I gather, don't migrate as easily?
A. They don't. And the reason for that is soils that are away from the coast are more cohesive in nature, so when you can have particles of silt and clay, those are cohesive materials. They will bond the other particles together. But if you have mostly sand, and then if the sand is mostly a narrow range of particle sizes, then it has virtually no cohesion to it, so you're left with the limitations of its angle of repose or what angle would the sand take if you just laid it on a table and let it rest and

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that's what -- that's the problem here.
And the reason that -- the reason that you don't see this much and maybe the reason Mr. Wooten hasn't seen it on other properties is that he probably has a good practice of not designing driveways that are that steep. And if you keep them fairly flat, you're not -- you're not gonna have this problem.
Q. Does it matter what the compaction effort was?
A. That could have an impact on it, because if there was very poor compaction, this could start earlier. But after, you know, after passage of time and the natural consolidation of the soils, the compaction that's been done on the soil is gonna have less and less of an effect because the soils are gonna consolidate over time anyway, especially with a poorly graded sand.
Q. Okay.
(Off-the-Record conversation.)
BY MS. BURTON:
Q. The next thing I have in Exhibit 8 is page 140, two pages -- two pages, 140 and one page 103 of the deposition of James Michael Wooten. It was after the photographs you and I were just looking at. Are we there?

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A. Okay. Yes.
Q. And I think you told me earlier that part of the reason you went out and did some of the work on 7/23/13 was in response to specific responses Mr. Wooten had given in his deposition?
A. Yes.
Q. And you said, "In fact, I highlighted those"?
A. Yes.
Q. This is it, right?
A. Yes.
Q. Or at least part of that?
A. Yes.
Q. All right. If you look after those three pages, I believe there's a handwritten note that starts with the word "underdrain"?
A. Yes.
Q. And then it's got some photographs?
A. Yes.
Q. And they look like they're numbered. There's a typed number on them?
A. There is.
Q. Is that your number?
A. It is.
Q. What does it correlate to?
A. That's photograph number.

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Q. Okay.
A. I took about 120 photographs on that day.
Q. I see.
A. And when I printed these to write some notes on them I wanted to make sure I could tell which photographs they were.
Q. And the note on the front says, "Under drain system missing or not functional, ground water elevated"?
A. Yes.
Q. And you and I talked earlier about underdrain systems and maybe they aren't there, maybe they're not working.
A. Yes.
Q. Is this the photographs of that issue?
A. It is. And this specifically is the first one is at driveway B and the larger diameter pipe in the center of the photograph --
Q. Yes, sir.
A. -- is the 15-inch corrugated plastic exfiltration pipe.
Q. Okay.
A. And the smaller diameter corrugated plastic pipe on the right side of the photograph is an underdrain coming into the catch basin and as

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you can see, it's several inches higher than the water level.
Q. Uh-huh.
A. And it's several more inches higher than the invert elevation of the pipe.
Q. Okay. And then the other photographs don't show a second pipe coming into the catch basin?
A. They don't. And based on the actual plan layout of those underdrains, you shouldn't see them in the catch basin, but based on the details in AB's plans, you should see them in the catch basin. So I'm just showing what it is, better or worse that's what the condition is. It's not in the catch basin.
Q. Okay. The next thing I have in Exhibit 8 are two more pages from the deposition of Mr. Wooten, 158 and 159.
A. Yes.
Q. And it relates to underdrains, I take it, the part you highlighted?
A. Yes. I was highlighting this because he was asked about underdrains and seemed not to know anything about their use or he was just unfamiliar with the term. He was asked a couple times about his use of the word underdrain. He

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didn't -- he didn't have a response that told me he knew what the underdrain system was and so I -- I highlighted that.
Q. Okay. The next thing I have is part of the storm water report dated 11/12/99.
A. Yes.
Q. And these are selective portions, I gather, that you copied out?
A. Yes.
Q. Because you have the whole report on that disk, I believe.
A. Yes.
Q. And this relates to, as far as I can tell, you copied out pages and highlighted related to underdrains and baffles, those are the parts at least, that look like they're highlighted on my copy?
A. Well, I've got four sheets including the cover that are all in sequence.
Q. Uh-huh.
A. This is the full narrative. This isn't a portion of it. This is the full narrative.
Q. Okay.
A. And yes. I've highlighted things about the underdrains.

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Q. Okay. And the last, I'm almost done, Mr. Wilkie, of Exhibit 8 is I've got a handwritten cover sheet; "Underdrain system when defective compared with sheet C-4 plans," and then it looks like you've got two photographs, one number 11 and one number nine?
A. Yes. And those are --
Q. What are those showing?
A. Those are the same conditions we just talked about.
Q. Where the underdrain's high?
A. Yes.
MS. BURTON: All right. Would it be okay with you to eat lunch?
THE DEPONENT: Yes.
(Whereupon, there was a short break in the proceedings.)
(Defendant's Exhibit 9 was marked for identification.)
BY MS. BURTON:
Q. Mr. Wilkie, I have marked a set of handwritten documents as Exhibit Number 9 to your deposition. And that is a copy of some documents that I previously provided to Mr. Stanley and I understand you have looked

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over?
A. I've gone through these for a few minutes, yes.
Q. Okay. And I just want to ask you a question about a few of them. The first page I'll tell you, Mr. Wilkie, that I tried to put these in chronological order starting with the oldest, just so we'd have some sequence to look at and the oldest note I found was the one that's on top of Exhibit Number 9 that appears to be dated 10/11/07; do you see that?
A. I do.
Q. Is that a handwritten note that you prepared?
A. It is.
Q. And does it relate to a telephone call you had with Mr. Hodgin?
A. Yes, it does.
Q. Was that the first time you were contacted about the Rivergate Subdivision?
A. I believe it was.
Q. Okay. I thought it was, but I just wanted to confirm that. And is Mr. Hodgin the person that initially contacted you about becoming involved?
A. It is.
Q. In the first line of notes it says, "Needs help on pavement".

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A. Well, let me back up a minute. Before I talked to Dirk I had an oral conversation with Rick Moore, because Dirk had reached out to Rick and after that conversation is when Dirk and I spoke.
Q. Okay.
A. So first I'd ever heard the word Rivergate or anything about this matter was actually a conversation with Rick Moore, but Rick didn't know anything about the matter. He was just telling me that he had -- he had given Dirk my name and number and what I should expect when he called?
Q. Okay. And was this your first call with Mr. Hodgin?
A. Yes, it was.
Q. And the first line says, "Needs help on pavement", am I reading that right?
A. Yes.
Q. What did he tell you he needed your help on with respect to pavement?
A. My recollection is that he explained what he and his firm had been doing at the property in terms of evaluating problems and that he had seen some conditions of the pavement that looked like they

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may not be normal and he wanted to know if I could -- if I could come and look at it and give some objective answers as to whether there's a problem here, there's no problem here or there's something else that needs to be evaluated with it.
Q. Why did Mr. Moore refer the matter to you at Kimley-Horn?
A. Because the subject matter involved with pavement is not something that Mr. Moore felt that was within his area of expertise as much as it is within mine.
Q. Okay. The next line says, "Question mark, road set up to fail because of negative drainage." Am I reading that right?
A. Yes, that's what it says.
Q. Is that something that Mr. Hodgin told you?
A. I don't know that he told me that. That's something I wrote down and the question mark means the question is or a question is are the roads set up to fail because of negative drainage. At that point I've not been to the property, so I have not seen anything, but as I'm hearing about the conditions I'm writing down -- may write down something and just remind

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of it later.
Q. Okay. Can you tell me what negative drainage means?
A. When water does not drain necessarily downhill or in a desirable direction and it accumulates in one place.
Q. Okay.
A. So a puddle or birdbaths or those kinds of things.
Q. Okay. If you could, please, sir, turn over four pages to the fourth page. Sorry, this one (indicating). It's got a date at the top 10/26/07. Says one of two. Are you there? And it says Riverside at the top.
A. Rivergate.
Q. Rivergate, I'm sorry.
A. Yes.
Q. Are these your handwritten notes?
A. Yes.
Q. Can you tell me, is this -- are these notes that you're making in your office of ideas and thoughts or is this something related to a conversation with somebody?
A. I know that I made these notes in my office.
Q. Okay.

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A. And I've not read through every word of them yet, but I don't think these are any sort of a transcription of a conversation I've had. I think these are more just my thoughts.
Q. Okay.
A. On this day at 10/26/07 here's thoughts I have.
Q. So it's notes to yourself as opposed to a meeting or anything like that?
A. Yes.
Q. You have a heading, I think, that says, "Impressions to date", midway down on the page?
A. Yes.
Q. And number one I think says, "The ABC design is suspect," I can't read the next word.
A. In performance.
Q. "In performance due to small pipe sizes and lack of adequate spot," is that elevations?
A. Yes.
Q. "For localized drainage around buildings."
A. Yes.
Q. And that was a thought you had that you were gonna investigate or thought you had based on what you'd done so far?
A. I don't have an answer for you. I just don't recall. It was a question, a thought that I was

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wanting to – to note for myself to keep in mind later.
Q. Okay. Number two says, "There are as-built conditions which indicate drainage is not adequate. Ponding beside buildings, partial collapse of catch basins, missing catch basins." Am I reading that right?
A. Yes.
Q. What catch basins have collapsed?
A. I didn't say collapsed, I said partial collapsed.
Q. Which ones have partially collapsed?
A. I won't be able to identify which ones as I'm sitting here, but there are a few catch basins on the property if you walk up to the grate, the pavement surface next to the catch basin is depressed and it creates a situation where the grate is higher than the pavement around it and that's what I call a partial collapse of the catch basin. And other places if you remove the grate and look inside the catch basin, the top of the catch basin itself, the four walls are being pushed in where the hydrostatic pressure or the lateral earth pressure next to them is pushing the material in and that is sort of

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collapsed or partially collapsed the catch basin. Those are the two conditions I'm talking about there. One's outside the box, one's inside the box.
Q. Okay. And it says, "Missing catch basins," is that the -- in the catch basins along Baker Street that you're talking about?
A. Yes.
Q. Number three, "Removed eight catch basins and added one to compensate for it." Is that Baker Street?
A. Yes.
Q. What's the one that's added that you're talking about?
A. There is a catch basin near street I.
Q. Where it intersects Baker Street?
A. No. It's between streets H and I.
Q. Okay.
A. But near Baker Street. So in the grassed area located between Baker Street and the buildings along Baker Street.
Q. Uh-huh.
A. As you go downhill in that grassed area you'll pass street H –
Q. Uh-huh.

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A. – on your right and then you'll get to that set of buildings between H and I.
Q. Uh-huh.
A. And right there in that midsection between H and I in the grass there is a catch basin with a grate on it and it's not of any size or shape that's shown on the plans, but it's in a position that looks like it's intended to collect all that drainage that's supposed to have been collected uphill at all the eight missing catch basins.
Q. Is it feeding into the eight-inch pipe, overflow pipe?
A. At that point I don't believe the overflow pipe is eight inches. I think it's likely it's a 15-inch pipe there. The eight goes in the 15 and the 15 goes into the – goes into the waterway behind the property.
Q. So it connects to the 15?
A. Yes.
Q. Do you know how it got added?
A. I don't know how it got added.
Q. Have you seen a drawing that added it?
A. I have not. I just know where it is.
Q. Okay.

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A. And I've lifted the grate off of it.
Q. Okay.
A. And by getting down inside – this structure is a little larger than the other ones, so you can get inside of it.
Q. Oh.
A. So you get inside of it and look what its connected to and what it does is it collects the water in the grass coming down the hill from B through H and puts it into the catch basin. When it hits the bottom of the catch basin it goes into what I believe is a 15-inch pipe. That 15-inch pipe goes over several feet toward the building underneath the patio of the building.
Q. That's the one you say goes under the house, I guess, that corner house?
A. Right.
Q. Okay. Okay.
A. And the way I know that that exists is because I got inside the box and I looked and looked at the distance over there and looked at the distance from the box to the building and, you know, you can see when you put your head inside that catch basin it looks like the 15-inch pipe

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is -- it's at least under the patio. It may be under the building.
Q. Does it go down then to the wetland?
A. At first it has to pass underneath street I.
Q. Okay.
A. After it gets through street I, then it goes to the wetlands. Now, what it does in between there, it may be underneath a building that's downhill from street I. But I don't know its position there because it's not a -- there's not a way to view it without excavating it.
Q. Is there any drawing that shows any of that? I mean, any of that 15-inch pipe connected to that catch basin. The 15-inch pipe going to the wetland?
A. The 15-inch pipe going to the wetland, yes. That's on the drawings.
Q. And that was to be part of the overflow system?
A. Yes.
Q. Okay. Have you figured out how the catch basin attaches to the overflow system upstream or does it?
A. Are we talking about the one that was added that I was just describing?
Q. The one that -- yeah, the one that you located

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between, I think, H and I?
A. So ask me your question about that catch basin again.
Q. Is there only one pipe and it's one going out downstream?
A. Yes. There's only one pipe in that catch basin.
Q. Have you seen any documents or anything about how that catch basin came into existence or who put it there?
A. No.
Q. Going back to your notes, number four, "The drainage deficiencies are not catastrophic in nature, but look like they are already taking a serious toll on the condition of the infrastructure." Am I reading that right?
A. Yes.
Q. What would catastrophic -- what does "not catastrophic in nature" mean?
A. I didn't see anything so far in my review of the conditions that told me there was a -- you know, that the system was so badly eroded that it wasn't there anymore. That, you know, that there are cavernous areas in the middle of the streets that, you know, cars are gonna fall into or something like that. I guess I'm trying to

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draw a line in saying, okay, this is -- this looks like some pretty serious problems, but it's not -- it's not something that pedestrians are gonna fall into walking down the street, at least not yet.
Q. Underneath that it says, "Other parties, potential AB Consulting."
A. Yes.
Q. And what's the purpose of that note?
A. I think at this point whenever I wrote this I had received a lot of documents in the case and I had read them and I had received a caption telling me different parties that were involved in the dispute and it looked like there were some issues with -- with the -- at least -- at least with the compliance of the work with the plans and possibly some issues with the plans themselves. And so I was noting that. That there -- there may be another party that needs to be contacted about this to see, you know, what -- what involvement they might have with this or what their take on this problem is.
Q. Did you contact AB Consulting at any time?
A. I did not.
Q. Okay. If you go a couple pages back you'll find

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that drawing. Looks like a layout of the buildings?
A. Yes.
Q. Okay. And then after that I want you to turn your attention to the notes on the following page.
A. Okay.
Q. And are these notes you took on November 2nd, of '07?
A. Yes.
Q. And it's got left-hand column and a right-hand column. The right-hand column says, "Call from Stacy on 11/05/07 at 2:45."
A. Yes.
Q. Are the notes below that, notes from that conversation?
A. They're not necessarily notes from the conversation.
Q. Okay.
A. There are things I wrote down either during or after the call.
Q. Okay. What about the other column on the left, is that something related to that call or is that something that pre-existed?
A. No, that existed before the call. If you look

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above at the top I had -- I had prepared some of the information on the 2nd.
Q. Uh-huh.
A. And then the call was --
Q. On the 5th?
A. On the 5th.
Q. That's what I thought.
A. I think it would be fair to say that at least some of the information on the left side of the page existed before the call.
Q. On the left-hand side you have "needs" and then you have three items. I guess there were things you thought you needed to acquire; is that reasonable?
A. Yes.
Q. And then tell me what the next sentence says. I just can't read it.
A. Conduct.
Q. And those are things to do?
A. Or to think about doing.
Q. Okay. And then questions, is that just questions you had?
A. Yes.
Q. First one says, "Why as-built -- "why as-built differs from designs."

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A. Yes.
Q. And is that as-built condition versus design condition?
A. It is.
Q. Have you been able to answer that question?
A. Not completely.
Q. Number two said, who changed what parts of the design." Did you answer that question?
A. A lot of the questions that -- that I raised for myself in doing the analysis I've done on this case. A lot of them have been answered in part, but there, as you all well know, there's been difficulty in getting certain kinds of documents and certain kinds of information. So, yeah, a lot of my questions, I think, are either unanswered or partially answered at this point.
Q. Question three, "Why did the buildings change?" Is that -- are we talking about the building mix like duplexes or are we talking about having garages and not having garages?
A. I don't know which one of those I'm talking about, but I'm aware of both -- both those scenarios, yes.
Q. Those items?
A. Yes.

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Q. Did you figure out why they changed?
A. I don't have a definitive answer for why they changed. I've read some information that suggested some reasons for why they changed.
Q. And what kind of information?
A. Well, just notes and things in the files that I've been given suggest that the change in the building composition could of had something to do with available space, materials, cost of construction, just different things, but, I mean, in a project of this size there's gonna be changes --
Q. Sure.
A. -- through the project. But to some extent, I understand why some of them changed, but I couldn't -- I couldn't tell you that for sure about every building.
Q. Okay. The next note I wanted to ask you about and I'll just show it to you, it's probably about four or five pages back. It's dated 2/10/09. Did you find it?
A. Okay.
Q. Are these your handwritten notes?
A. They are.
Q. Can you tell me what the purpose of these notes

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are?
A. No, not without reading all of them. I don't know that I'd be able to recall the reason for making those. Sometimes I'll make notes in my file at a stage in my work to help me with the next task that I'm thinking about doing. Just thoughts for the next day or the next week or so I -- I don't know exactly why these notes are written.
Q. Okay.
A. Is there a specific question you have about any of them?
Q. Well, it looks like a series of questions. I mean, each one of them has a question mark, I think, after and I didn't know if you were in a meeting and just taking notes or whether these are just notes to yourself, hey, I'm interested in this information, I'm going to make myself a list?
A. I hope you don't take my answer as being kind of a smart remark, but I'll tell you something about myself. With the kind of work I do, mostly the reason I'm involved in a project is because my client has been presented with a problem and they want to know what to do about

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it. I found that the best way I can help my clients is to have a questioning attitude. So I spend a lot of time thinking about questions, maybe writing down questions and just thinking about what is the next -- what are some questions I can work toward answering. What are some things I need to think about.

I make notes that sometimes some of them are for me to use to form an opinion, but some of them are just something to think about for the next time I open up the file to help me focus on what -- what my thoughts were when I last closed the file.

Q. Okay. You think that's what these are, just notes you made, I mean, as opposed to somebody saying, Mr. Wilkie, I'd like to find answers to these ten questions?

A. Oh, no. These are -- these are things that I wrote down to remind me of what I'm -- what I'm looking for and some of these, I haven't read through all of them yet while I'm talking to you, but some of them seem to be questions that I've written to lead to the next activity that I might do.

Q. Okay.

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A. For example, number one says, "How did Rivergate Development effect the interconnected ponds adjacent to the property." Well, one of the things I remember doing at some point in my analysis was asking a colleague about the difficulty and effort involved in doing an interconnected pond routing model for this property right here or any other. So it -- we'd have to go through each one and talk about them and I might be able to recall what I wrote that one question down for or I might not.

Q. Okay. If you would, Mr. Wilkie, in the back we had some undated notes and this is the third page from the end. It's on graph paper or what I think is graph paper.

A. Okay. Yes.

Q. Are these your notes?

A. They are.

Q. And the top part looks like eight questions or thoughts, is that a fair description of what they are?

A. Yes.

Q. The first one says, "Golf course drainage problem created by Rivergate construction?" Do you see that?

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A. Yes.

Q. Can you tell me what golf course drainage problem you're aware of?

A. There are some documents in AB Consulting's file that had to do with letters that had been received by them about the golf course's concerns about the work they were doing and Cricket Cove Marina's concerns and so at this point I can tell by these notations on the left side where I say file number one, file number two, file number three, I had had someone print out for me groups of documents and the file number one group was at least in part the file of AB Consulting and so the first blush I've put some notes on the page of things that stuck out to me when I opened the book.

Q. Okay. So you were looking at AB's file and writing yourself notes?

A. Yes.

Q. Okay. Did you ever ascertain whether there was any negative impact on the golf course by Rivergate?

A. Well, from the documents that I read, it looks like the matter was resolved. There was just a couple of letters in there and then it went

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away. It was a -- it had been an ongoing problem. I thought there would have been more to it than that. I will say though that each time I've been to the property, including the last couple times I've been there, there is a standing water problem on the golf course where the golf course abuts Rivergate. It's behind the houses that sit along Rivergate Lane. If you were to walk behind those houses about halfway down Rivergate Lane there's a large area that accumulates water and it's what I call negative drainage, where water's accumulating there, but it's not going anywhere. And I don't know whether that condition existed before the work, but it's definitely a drainage problem on the golf course that could have been caused by the Rivergate project, if the Rivergate project resulted in a higher grade, essentially pushing that water back and holding it on the golf course. And there's some mention of that kind of condition in the letter or letters that I read about Eastport Golf Course's concerns over the property. That's the only thing I've seen while I've been out there that would be in that category you've just asked about.

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Q. Have you done any calculations comparing the predevelopment runoff of Rivergate and the actual current runoff from Rivergate?
A. No. Not the actual current runoff. I've had colleagues of mine perform for me some calculations on estimated actual runoff, but the conditions are variable out there and, you know, as I was explaining to you before, you've got different water levels that are in -- that are in the catch basins. It would be very difficult to calculate all that stuff to be completely precise in terms of what is the actual -- the actual runoff and when it occurs and how long it takes for it to reach that level. But I have -- I have had colleagues of mine do the calculations to compare the design with what an estimate of current conditions would be.
Q. Okay. Slow down for me. Have you done any calculations or had colleagues of yours do any calculations of what the pre-development runoff was at Rivergate on that land?
A. As I'm sitting here with you, I don't recall whether -- whether we did calculations of pre-development or whether we reviewed what A&B had determined and found those to be adequate

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and simply adopted those as being reasonable and used those. We may have just relied on what they had after reviewing them.
Q. Okay. And then with respect to post-development runoff, have you or any of your colleagues done calculations about what the post-development runoff is in certain storm events?
A. Yes. Yes. Those calculations have been done for certain storm events, assuming a certain type of exfiltration system. The problem with -- with calling is actual though, you used the word "actual", and I don't know whether you just said that this time, but I'm focusing on that, because if you wanted to know exactly what the runoff was during a rain event yesterday, you would need to know very precisely, you know, how -- how badly the exfiltration has failed.
Now, I've got a sense of it from the measurements that I've taken in the catch basins that show how little of the exfiltration system is left in storage before it rains again. That's a data point that you could use in doing that calculation. But I don't have any calculations that would tell you exactly what the runoff is. It would be an estimate. And I

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think anybody else that would do that would have to make it an estimate.
Q. Okay. Am I right, that at the time the design was done, the predevelopment runoff -- the post-development runoff could not exceed pre-development runoff in a two-year and ten-year storm, 24-hour storm events?
A. You are correct.
Q. I mean, that was what was required. So if it was a hundred-year storm there was no requirement that the post-development not have more runoff, right?
A. You still have to have the protection, but you only have to design for two and ten.
Q. So I guess my question is, if we try to figure out what really is the post-development runoff for a two-year, 24-hour event, have you done that?
A. Yes. And that calculation's been done assuming -- assuming that the exfiltration system was installed properly, that there -- they have the underdrain system installed properly and that it's working the way that it should. So we've done those calculations.
Q. Okay. So you've done an as-built -- well,

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you've done it as designed calculations, not an as-built?
A. That's right, yes.
Q. And is that -- where is that?
A. It's in my file and it's -- it's mostly in electronic form.
Q. Okay.
A. Because most of those calculations would be done on StormCAD or something like that.
Q. Uh-huh.
A. And there are some graphical representations of it in the paper file.
Q. Okay.
A. But most of the number crunching behind that is -- is in digital form, I believe.
Q. And that, who did the calculations? I know it's input into a computer system. You use those fancy programs. Who did it?
A. The person I worked with the most to get that done was an engineer named Eric Hampton.
Q. Did you have any -- did you do any of that, putting it in the computer system so it could run those models?
A. No, I did not.
Q. What was the result of the as-designed in a

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two-year, 24-hour event?
A. I don't know without pulling out that data and looking at it. I don't know the answer to that.
Q. Is it in -- I mean, do we have to look at the fancy calculations on the disk or is there a paper document that summarizes those?
A. I don't have something that -- I don't think I have something that summarizes that.
Q. I didn't see anything, that's why I'm asking.
A. Yeah.
Q. So you think we'd have to pull up that Storm whatever? What program was that? Everybody uses different ones.
A. StormCAD is one of them, yeah.
Q. So you'd have to pull up StormCAD and look at it to see what data it crunched out?
A. Or just read the output data from it.
Q. Can you pull that up if you don't have StormCAD?
A. I think you could interpret it from like -- you should be able to take -- I'm not telling you what to do, but you should be able to take the paper copies that are in that file and have Mr. Wooten look at those and see whether he thinks that the inputs and outputs are reasonable or not and he should be able to see

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from that whether he generally agrees with that -- that analysis or not. And if you needed to have more detailed information, then you could go to the electronic files.
Q. Can you open the electronic files? I mean, do you still own StormCAD in your own business?
A. No. I don't have access to that, but if Mr. Wooten needed something like that, I'm sure we'd make arrangements to help him out. And he wouldn't have to use StormCAD, he could use any number of other things.
Q. I know, but I think once you run those, having dealt with those before, you have to be able -- you have to own the program to be able to open those and everybody uses different ones.
A. And I'm saying there would be other proprietary programs and would be just as well and provide a very similar output.
Q. Did you talk with Mr. Hampton after he did the program?
A. I did before and after.
Q. What did he tell you about a two-year, 24-hour event?
A. I don't recall.
Q. Do you know what he said about a ten-year,

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24-hour event?
A. Well, what I do recall is that in general -- in general, the design works on paper, if you have the infiltration rate for the soils that was assumed. And that means it works for the two-year and it works for the ten-year.
Q. Did you -- it's probably not -- maybe I misunderstood what you did. Did y'all tinker with the infiltration rate and then run that program?
A. They ran it -- they ran it a couple different ways. One, with the -- with the infiltration rates that were assumed in the design.
Q. Okay.
A. And again, with infiltration rates that were determined from our on-site testing.
Q. So you ran it with the 12-inch?
A. I don't know if 12 inches was the number that was input, but that sounds about right.
Q. Okay. Do you remember the results of those runs?
A. That the system was undersized. That the pipes and the stone envelopes around them would needed to have been either much larger or there would need to -- needed to have been two sets of them

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on each street versus one.
Q. Does the program tell you what the runoff would be if you're using 12-inch?
A. Yes, it will.
Q. I don't know what the program shows you.
A. It will show you all the data that you're talking about, yes.
Q. Is that all in the electronic form?
A. It should be. I mean, that data should be there in the electronic files.
Q. Okay.
A. And again, I think what -- if you go through this and review it with Mr. Wooten, I think the parts that he would start with would be the paper copies of the outputs of those, because he can take the paper copies of the outputs and see what the inputs were and he can start from scratch with his own program, whether it's StormCAD or something else and he can run through the same analysis knowing what the inputs were and knowing what the outputs were and see whether he gets something that's similar to it or different.
Q. Okay. And did your knowledge of what the results were all come from conversations with

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Mr. Hampton?
A. Not just conversations, but he reviewed with me the inputs and the outputs and I asked him questions about those and we had, you know, meetings and sit downs about it, but yes, basically from my review of his work and the questions that I asked him.
Q. Look through Exhibit 9, if you would. It looked to me like the handwriting was mostly similar. I didn't know if Mr. Hampton had notes that are in this exhibit or whether he had no notes or he has a separate file of notes.
A. Oh, well, the information that I've gotten from Eric was primarily written summaries that he would send me in an e-mail form after he and I would meet. So the e-mails would be -- some part of the e-mails would be some part of the things he's telling me that are new to me, but a lot of e-mails were sort of like a regurgitation of what he and I already talked about and I'm asking him, hey, now we've met, send this stuff back to me outlined the way we just talked about so that you and I are on the same page and we can keep each other straight as we move ahead. He also has some -- some of the handwritten

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notes that are in the paper file on the calculation outputs. Some of that would be his handwriting. But there's not a -- I don't think he had a file of, you know, notes he'd taken or anything. I think most of his work was on the drainage calcs. and in the e-mails that he submitted to me.
Q. Okay.
(Defendant's Exhibit 10 was marked for identification.)
Q. Let me hand you a series of documents that I marked as Exhibit Number 10. And again, Mr. Wilkie, it's the -- a copy of that was provided to Mr. Stanley and it's my understanding that during a break you've had a chance to at least look at some of this?
A. I have.
Q. And what I tried to do here was gather up some of these internal e-mails and put them in chronological order. And I know some of them had attachments of other documents, but just to let you know that was the purpose of, at least, trying to take your file and segregate it into some sections. And it looks like a number of these are e-mails between you and Mr. Hampton?

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A. Yes.
Q. And I think you just described for me that you -- he would summarize some discussions you'd had or offer suggestions and his thoughts to you in the e-mail format?
A. Yes.
Q. Okay. Is the first one an e-mail that you received from Mr. Hampton on February 20, 2009?
A. It is.
Q. And he says, the second sentence, "Please see the summary of my findings on the Rivergate storm drainage system based on the information that is currently available."
A. Yes.
Q. Help me a little bit, when did you enlist Mr. Hampton's assistance on the Rivergate project?
A. You mean on what date or --
Q. Well, generally what time? I didn't see him in or any of his notes in this Waccamaw Bank section.
A. Right.
Q. What -- at what point in time did you enlist him?
A. I sought his help once -- once my findings

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reached a point that I had specific questions about the design of the storm drainage system itself, because I don't do design of storm drainage systems day-to-day. I evaluate storm drainage systems that have failed, I do those kind of things. I don't do the day-to-day design and Mr. Hampton does. And he's a professional engineer who's licensed in South Carolina, so I -- once I got to a point that I knew I had specific questions that I wanted answered about the design, that's when I sought his help.
Q. Okay. He has some headings, four headings where he's kind of divided things into issues, here's construction, here's design, here's owner/developer and then he has a field needs section, do you see that?
A. Yes.
Q. And on the construction issues I wanted to ask you about those, if you don't mind. On number one he says that the pipe section within roads F and G were laid with a slope greater than 0 percent. Is that the infiltration pipe?
A. Yes.
Q. And how was the slope determined, the actual

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slope?
A. We had the surveyor pull the grates off of some of the catch basins and take survey measurements at each end of the pipe and that was in part of basis for making that determination.
Q. Okay. So two, "Based on the survey data, pipes in two roads are not at a 0 percent slope." Am I reading that right?
A. Yes.
Q. And is that -- is that your opinion today? I mean, has anything changed about that?
A. Well, I don't know that we surveyed every street.
Q. Oh, okay.
A. So some of what we were doing with the surveyor was we weren't going out and you -- you know, just trying to find all kinds of issues. In fact, at the time, we didn't know what exactly what all the issues were or all the problems would be.
And so we had the surveyor execute a limited scope that included getting the slopes of a driveway or two, checking the slope of a couple pipes, going around a few buildings and getting spot elevations to see how well that

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surface drainage was and so these streets evidently were part of that scope. So I do still agree that that statement is true.
Q. Uh-huh.
A. But I don't know whether it is limited only to those streets.
Q. Okay. So this is spot -- it was spot checking conditions, as-built conditions?
A. Yes.
Q. As opposed to checking all the as-built conditions, is that what you're saying to me?
A. That's right, yes.
Q. Number two says that, "The outlet pipe from pipe sections within roads B, C, F, G and H are constructed flatter than a reasonable slope with B, C, F and G being constructed in negative slope." Can you help me, just tell me what the outlet pipe is referring to?
A. The outlet pipe is -- I believe what's being described here is the emergency overflow pipe, is the 8-inch -- the 8-inch pipe.
Q. Is it coming out of the box?
A. Yes.
Q. Okay. So when it comes out of the box, it's not sloped properly; is that what that sentence

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means?
A. I'm just reading that statement before I ask you to ask your question again. I'm sorry. Okay. I've read that number two statement again and would you be kind enough to just tell me your question?
Q. Sure. Tell me what it means.
A. What it's saying is that the emergency overflow pipe has some negative slope in some areas and the effect of that is more water will be kept inside the catch basin than it should be. That the water will build in both the catch basin and the exfiltration system --
Q. Uh-huh.
A. -- to an elevation higher than it should be before it actually starts discharging from the emergency overflow.
Q. And back toward the catch basin?
A. Yes.
Q. I got it now. It says in that same number two, "As built survey will be needed to confirm."
A. Yes.
Q. Is that confirming the back slope of the pipe or confirming something else?
A. Well, to confirm whether that really is a valid

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condition. Some of this that's written here is based on a review that I did and then that I -- I had Eric do, as well, of the plans where there were different iterations of the plans in which the catch basins were moved, that -- and the inverts changed. There were elevations that changed through the project. So there was a set of plans on such and such a date. And then later -- later in the calendar the same plan was revised with new elevations on the catch basins. And so what this is talking about is that those changes, at least on paper, appeared to create a condition where there would be more water that would accumulate in the catch basin, but in order to conclude whether that really happened or not you'd need to go to the site and see it.
So this is a finding from reviewing the plans and then next step is let's go look and see if that's really happening or not.
Q. Is it or not?
A. It is.
Q. Okay. The next section says pipe systems within G and H are potentially not laid with the appropriate rock trench. Is that based upon the letters --

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A. **Yes, it is.**
Q. -- where AB said we're concerned about G and H?
A. **Yes.**
Q. Okay. Did you ever determine whether there was an appropriate rock trench at G and H?
A. **I only know what's written in the -- in the same file materials you have.**
Q. Okay.
A. **I've not undertaken any testing that would determine that.**
Q. Okay. That's fine. Next heading is design issues. And I think the first one talks about the baffles and overflows and I think you and I talked about that previously. Number two talks about the pipe in road A and there's not information about slopes inverts or rims. Do you see that?
A. **I do.**
Q. Do you know how the contractor determined slopes, inverts and rims?
A. **Well, as far as the invert, they wouldn't need necessarily a spot elevation for that, because spots are supposed to have 0 slope or whatever the slope is, you can calculate that. And if there's 0 there's nothing to calculate. But as**

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far as the rim, I'm not sure how they would make that determination.
Q. And you don't know how they, in fact, did it?
A. **I do not.**
Q. Okay. Number three, and I think you just mentioned this earlier in response to my question about construction issues, about reissuing drawings with pipe at a negative slope. Do you see that?
A. **I do.**
Q. Is that something different than what you just talked to me about on probable construction issues or is that the same?
A. **It's the same issue. It's just entered twice, because on one side of things -- well, that could be a construction defect, but on the other side of things it could be a design problem, as well.**
Q. Okay. Under owner/developer issues, it says that, "The developer authorized the contractor to change the finished floor elevations," do you see that?
A. **I do.**
Q. How do you know that that occurred?
A. **Well, that's an impression or conclusion that**

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I've drawn from reviewing the documents.
Q. Documents, meaning my client's file or somebody else's file?
A. **From -- I think the documents it's talking about are in your client's file.**
Q. Okay. If you would please, sir, there's an e-mail and it's probably about five pages back. It's dated Friday, July 17th at 10:25 a.m. from Mr. Hampton.
A. **Okay.**
Q. Did you find that? Is that an e-mail to you?
A. **It is.**
Q. And then the very first sentence says here is a summary of the items we have discussed that we believe to be deficient for Rivergate?
A. **Yes.**
Q. Is that an example -- you told me earlier that sometimes you and he would talk and he would summarize the discussion in an e-mail?
A. **Yes.**
Q. Is this an example of that?
A. **It is.**
Q. Okay. I thought it was. I only have a couple of questions on this. Item C under A -- storm drainage A, item C.

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A. **Yes.**
Q. I just want to give you a chance to read it before I ask you this, that's why I'm telling you where it is.
A. **I found it. Thank you.**
Q. Okay.
A. **Okay.**
Q. The last sentence of that says, "The lack of this baffle prevents the exfiltration system from performing as intended."
A. **I'm sorry. I must have been looking at the wrong number. Which number did you want me to look at?**
Q. A, storm drainage, item C. I probably wasn't clear enough. Starts out with the storm water design report.
A. **I'm with you.**
Q. I just wanted to focus your attention once you finish reading it on that last sentence.
A. **Okay. I've read it.**
Q. Can you tell me how the lack of baffle prevents the exfiltration system from performing as intended?
A. **The baffle was to restrict the outflow from the exfiltration system to a point so that it would**

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encourage water to seep into the ground instead of flowing through the overflow and off the property. So if the baffle's not there, and if the rest of the system is installed the way that it's shown, then there would be a tendency for water to exit the exfiltration system prematurely.

Q. And get in that eight-inch pipe?

A. Yes.

Q. Okay. So it would push it out into the overflow pipe that then would become the most restrictive, I guess, component of the system?

A. It would if the overflow pipe was correctly sloped and wasn't back sloped and keeping the water in the system. So what's out there now is instead of there being a baffle, and this either was by chance or by design, but instead of there being a baffle, the water does tend to stay in the catch basin. And so even though there's not a baffle, there's sort of a quasi baffle created by the fact that the water can't get out of the catch basin until it reaches a certain level.

Q. Okay. Under site grading, item B, and under B, under item B, that starts with the words "Roads C and D," you see that?

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A. Yes.

Q. "Roads C and D were constructed at a lessor slope than designed."

A. Yes.

Q. And I didn't know what "lessor slope than designed" meant.

A. The slope created by drawing a line between the catch basin near the golf course all the way to the catch basin near Baker Street, the slope of that line, the slope of that street, the slope of the V in the street, that's what it's talking about. The inclination of that pavement as it approaches the catch basin and it's closer to Baker Street.

Q. So we're talking about the slope from Rivergate Lane to Baker Street?

A. Yes.

Q. It's not -- it's flatter? It doesn't say, that's what I'm asking.

A. Lessor.

Q. I'm thinking it was flatter.

A. It's flatter than what it was intended to be.

Q. And that would have come off that spot survey that was done, the actual fact that it is flatter?

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A. Yeah. Some of that is reflected in the spot survey.

Q. Okay. If you wouldn't mind turning over to the second page of the e-mail and under item D of the second page it starts with the words "exfiltration system".

A. Yes.

Q. And it appears to me that someone has done a calculation using a permeability rate of 12 inches per hour and determined how big an exfiltration piping trench would be.

A. Yes.

Q. And it says the pipe's going to be 36 inches perforated and the trench is 7x5.25?

A. Yes.

Q. Who did that ciphering?

A. Eric Hampton. And that is the calculation we were talking about earlier --

Q. Okay. Well, if you change the --

A. -- using 12 inches per hour.

Q. The K factor, if you change that, then this is the size of the exfiltration system?

A. That's what it would take to make it perform properly.

Q. Okay. If you would, turn to the next page and

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all I want to know is what this chart is?

A. These are inputs and outputs from Eric's calculations that relate to the storm drainage on site. I mean, on the right-hand side you can see a rectangle with a circle in the middle.

Q. Yes, sir.

A. And that's a depiction of an exfiltration trench.

Q. Right.

A. And there is a calculations as to the elevations of different components of the system and then there's a calculation of the surface area of the trench to determine how -- how much area that the water in the exfiltration system has to drain into. That's what it is. It's an output of a calculation.

Q. Are these numbers that are typed in where it's got, you know, for example, "catch basin 1-A rims, sump," are those actual elevation numbers?

A. Yes, they're elevation numbers. As I'm looking at this, I don't know whether to -- what -- what benchmark they're based on.

Q. Okay.

A. But they are relative elevations.

Q. Relative?

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A. To some point.
Q. Okay. I didn't know whether they were, you know, they were spot survey elevations from the surveyor's data or they were off the drawings.
A. They -- I don't know whether these were extracted straight from the surveyor's data as I'm looking at this, but in all likelihood, yes, we got the surveyor out there to give us elevations. This is what they gave us. I just don't know what the baseline is for the elevations.
Q. Okay. If you would turn over to the next page, this is some of those -- this looks like it's off a program called HydroCAD.
A. Yes.
Q. Do you know what this is, this sub catchment 1-S predevelopment blanton; do you know what this shows you?
A. Yes. This is Eric's calculations of storm drainage and runoff and for a certain soil type that exists on the property. The word blanton is using the blanton type of soil and that classification is from the soil survey documents.
Q. What does it tell you? I mean, I understand

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it's for blanton soil, but what does the little graph end up telling you?
A. It shows -- if you were to calculate the area under part of that curve --
Q. Uh-huh.
A. -- that would tell you the amount of storage that you need in the exfiltration system.
Q. Okay. And this is for an acre runoff? If you look at the little graph, runoff area equals one acre?
A. Yes.
Q. So it's not actual for the neighborhood, it's just a -- if we have a one-acre area of blanton soils with rainfall of 6.4 inches here's a graph?
A. He's input some data for a ten-year event over a 24-hour period and this is -- this is the output from that.
Q. Okay.
A. Anymore detailed information about it I -- you need to ask Eric.
Q. Okay.
A. Because I -- this is not a software that I use every day.
Q. Okay. Is a 24-hour, ten-year event, 6.4 inches

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of rain over that 24 hours?
A. Yes, that's what that is.
Q. Okay. Thank you. Do you know what the next one is, ponds 1S-P, do you know what is being graphed here?
A. This one has instead of just one -- instead of just one output on it, which is just for runoff, this one has inflow, outflow, and two other parameters called discarded and primary.
Q. Do you know what it shows, what the purpose of the graph is?
A. It's the same as the previous one, it's just a different calculation. That's to do the same task, which is trying to evaluate what the storage would need to be for the exfiltration system.
Q. If you turn over to the next one, I'm thinking it's just a different soil type.
A. That's it. You're moving into the suffix category now, so you have a different K value and you do the calculation all over again.
Q. The next one, it's another blanton one. I think it might be the same thing as the first one. It looks like it to me.
A. I think that is just a second copy of the same

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thing.
Q. That's what it looked like to me. If you would turn past the AB Consulting report into the next e-mail. Is this an e-mail to Mr. Hampton to you dated Tuesday, September 22nd?
A. It is.
Q. And I think if you look on the next page he pushed reply to an e-mail you had sent him on September 15th. Looks like a string. I don't know if he was replying directly, but he picked your old e-mail when he responded.
A. Okay. I see that.
Q. Okay. Is that an e-mail from you to Mr. Hampton on September 15th?
A. Yes.
Q. Okay. And you asked him if he had time to research the specific violations, deviations we discussed?
A. Yes.
Q. So was that a request to look at codes and ordinances and the like?
A. Yeah. I was having him do some research about local ordinances and regulations, because he had some contacts with folks in these offices here, because he does this storm drainage design work

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day to day and so he'd be more accustomed with the people to ask and the questions to ask.
Q. And the next paragraph you say, "Also, can you draft a scope of repair that the contractor could use for developing an estimate?"
A. Yes.
Q. Did he do that?
A. He prepared what I asked him to, yes.
Q. Okay. Meaning a scope of repair?
A. Yes.
Q. Okay. And was that what was provided to a contractor to estimate?
A. Well, the -- a version of it was. I mean, at some point he and I met to discuss what he had put together.
Q. Uh-huh.
A. And we maybe made some revisions to it and then that's what was provided to the contractor.
Q. Okay. If you turn over to the e-mail he sent to you, was previously he was replying, I think. Yours is earlier than his.
A. Okay.
Q. You see that? He gives you a response to the ordinances, I think, in that first paragraph --
A. Yes.

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Q. -- under the word "ordinances" and then he has a paragraph that looks like it's in italics print under recommendations --
A. Yes.
Q. -- where he makes some recommendations and really what I wanted to ask you about is item D, exfiltration system.
A. Yes.
Q. And it looks to me like it looks similar to what you and I looked at earlier, that the exfiltration system could be put in, would have a 36-inch perforated pipe and the trench would be 7x5.25, am I reading that right?
A. Yes, you are.
Q. And you and I looked at that earlier and the reason I ask is if you turn over to the grid, the very last page of this exhibit --
A. Yes.
Q. -- it says it's a preliminary quantity take off.
A. Yes.
Q. Who prepared this document? Is this -- I thought it was the attachment to the e-mail from Mr. Hampton.
A. I had Eric prepare this.
Q. Okay. Because if you look on the e-mail it says

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there were attachments, quantity take off in a storm water excerpt?
A. Right. I don't know whether or not this is that attachment.
Q. Okay.
A. But there would have been an attachment that would look similar to that.
Q. Okay.
A. And then he and I met, talked about it, made some revision to it and then we sent -- we sent it to the contractor.
Q. Okay. Under -- in the fifth box, I think it says recommendations, option number one.
A. Yes.
Q. What is that? Is that for an exfiltration --
A. Yes.
Q. -- system?
A. Yes.
Q. Because I noticed it has an HDPE, is that high density polyethylene pipe?
A. It absolutely is.
Q. And then it's got number five stone for a trench and then it's got a whole bunch of filter fabric?
A. Yes.

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Q. Was that ever given to anybody to price?
A. I don't know whether the alternatives were submitted to them or not. I would have to look at what -- exactly what I sent to them.
Q. Okay.
A. I don't know whether it was priced. What I do know is that I had discussions with -- with Eric and really with some other colleagues in my office, as well, about that we, you know, we had this exfiltration system and it really looked like it was a matter of sizing if you wanted it to work the way it was designed, but that when we got to a point where the size was appropriate, it seemed overly large for the street. And so I had conversations with some colleagues of mine about what kind of pricing they were seeing for different storm water infrastructure on their sites.
Q. Uh-huh.
A. And it came up pretty soon that, you know what, I know you got this exfiltration system, but you may actually get a less expensive system that would function just as well as the exfiltration system in every way if you will just go ahead and consider using a closed underground storage

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system. And so that's when we started thinking about pricing – getting away from the exfiltration system and using – using sealed underground storage.

And sure enough, the more information I got about it, the more it sounded like that would be a less expensive alternative to having the exfiltration system, because you have to take out just as much area and the material involved and the labor involved would possibly wind up being more for the exfiltration system.

Q. Did you ever get price comparison of that from somebody who was able to do it?

A. I don't know. I don't know whether we had the contractor do that or not. But what I'll tell you is this, in my work and in my former firm Kimley-Horn, when I was at Kimley-Horn, we – a lot of engineers there, including myself, we were able and capable of doing cost analysis on different projects and materials. There is published price data out there for the whole country in terms of what things cost and so we can call on that if we want to evaluate internally what might be the cost implications of using one type system versus another.

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And what I remember is having conversations about that kind of pricing on these kind of systems. I don't know whether the contractor that priced this was ever given that information or provided an alternative pricing on that before.

Q. Okay.

A. But there's no reason why they couldn't. I mean, somebody could use that and simply do another iteration and see what pricing they come up with.

But the fact is, it's a lot of excavated area with the exfiltration area, just as much area as with underground storage and the materials involved are a little more time consuming than just using an underground storage system, so it's my opinion that if you price the exfiltration system of the size that it would take, it will come out to be more expensive.

Q. Okay.

(Defendant's Exhibit 11 was marked for identification.)

MR. STANLEY: Can we take a five-minute break?

(Whereupon, there was a short break

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in the proceedings.)

BY MS. BURTON:

Q. I have marked a stack of documents as Exhibit Number 11. And as I told you off the Record, I took the two new invoices that Mr. Stanley provided to us and hooked it to the back. So I will say they were in chronological order except for those two.

A. Okay.

Q. And if you'd flip through them, I think that it's all invoices from Kimley-Horn for the Rivergate project.

A. Yes.

Q. Okay. And I just wanted to ask you –

MR. STANLEY: Let me just ask you not to – it just hit me when you said, "All from Kimley-Horn," you just sent us an invoice.

THE DEPONENT: And that's in the file that she just copied.

MS. BURTON: But that wouldn't be Kimley-Horn, that would be J. Drew Wilkie, P.E.?

MR. STANLEY: I just wanted to make sure you wanted all the invoices

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together or you just wanted Kimley-Horn?

MS. BURTON: Kimley-Horn.

BY MS. BURTON:

Q. I think this is – and you help me out, Mr. Wilkie, with these invoices and the new one from August from your personal company, that's it?

A. Yes.

Q. Okay. Got it. It looked – I wanted to ask you a couple questions about some people I see talked about in the invoices.

A. All right.

Q. There's Eric Hampton and I think you and I talked about him. He's the guy that you coordinated with on civil design?

A. He's one of the people and in fact he was – he was my go to guy for helping me evaluate the storm drainage issues, doing design calculations and those kind of things, yes.

Q. And it looked to me, and I'm not holding you to these numbers, it looked to me like you worked 87 and a half hours, if you look at the combined total of the invoices, so he had a fairly substantial number of hours on the project?

A. He did.

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Q. Okay. And his role, as I understood it, was to look at storm water design and do various storm water calculations and help come up with a scope of repair?
A. He also attended at least one, maybe two site visits with me to the property.
Q. Okay. And I -- would that be reflected in your notes somewhere?
A. Yes.
Q. He was with --
A. You have a copy of a time log --
Q. Yes.
A. -- out of the Kimley-Horn file, that Exhibit 5 --
Q. Right.
A. -- and that's reflected in there.
Q. Okay. The other people that I saw and I just wanted to ask you about somebody named Austin Watts?
A. Yes.
Q. Who's Austin Watts?
A. Austin is also an engineer that I consulted with, though he is not licensed in South Carolina --
Q. Uh-huh.

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A. -- I've worked with him for a number of years on projects that involved site work and storm drainage and Austin has a lot of experience in infiltration systems.
Q. So he's a civil -- site civil type guy?
A. He is, yes.
Q. And I don't recall how many hours. Did he have any major role or is he somebody you kind of consulted with?
A. He's just some -- a colleague of mine that I consulted with during my evaluation.
Q. Okay. Laura Barrett's name is in some of the invoices.
A. Yes.
Q. Who is she?
A. Laura, her role and the only reason that her name would have any time associated with it for billing a client is that she is very good at reviewing deliverables for grammar and formatting. She's a Duke graduate. She's really sharp and when I prepare reports while I was at Kimley-Horn I would -- I would ask for her help to review things, because I'm an engineer, I'll seek out help to review things for grammar and spelling and so she -- if she's

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on there you might not see a great deal of effort on her part, unless it's a very long deliverable that she has to read.
Q. Well, I think looking at the June 30th invoice that would be an hour and a half, but that would be her role, review of documents that you're going to send out?
A. Yes. And not a technical review, a review for grammar and spelling formatting.
Q. Okay. John Ferguson?
A. Tell me which invoice that you're looking at.
Q. Let me find John's name again.
A. But while you're looking, John Ferguson is an IT person.
Q. Oh.
A. And if this project went on -- has gone on for very long and as is practice with some companies, things get archived digitally from time to time and if there was a date time when the project was found to have gone stale on the network, parts of it could have been archived and I would have -- I would have gotten John's help to restore those and sometimes there -- it takes some time to find those. They're on a tape backup and sometimes it's easy to get to

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them and sometimes it's not, so if he has a time entry there it's got to do with retrieving data.
Q. Okay. He's not an engineering professional?
A. He's not.
Q. On that October invoice I saw him under the word professional --
A. Oh, and it's a half hour.
Q. -- so I assumed he was an engineering type professional, but you're saying he's an IT type guy?
A. He is.
Q. I got it. Mary Ann Mosley?
A. Which invoice?
Q. Mary Ann is also listed as a professional on this September 28th.
A. And just to give you some background, most of the employees at Kimley-Horn would be classified under the term professional.
Q. You had senior professionals?
A. Yes. Yes. But that word doesn't imply that they're a licensed engineer or something like that.
Q. Well, there's also this category I wasn't planning on asking you about, project administrator.

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A. Yes.
Q. And I'm assuming that's more of a clerical staff person?
A. Yes.
Q. I thought so. I was trying to pick out who I thought might be an engineer, because when it said professional that was my assumption.
A. Right.
Q. I know Mr. Ferguson is not an engineer and Mary Ann Mosley, I'm sorry, you said she was what?
A. She's not an engineer, she's an analysis. She's somebody who would be able to -- be able to do certain tasks as they relate to preparing plans, doing drafting, those kind of things, but she's not an engineer.
Q. On this June invoice, which is where I think I got Austin Watts --
MR. STANLEY: What year?
MS. BURTON: '10.
Q. June 30, 2010 he had 20 hours.
A. Yes.
Q. Do you know, was he helping with a report?
A. Well, his time will have logs associated with it that are in that file.
Q. That would tell you what he was doing

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specifically?
A. Yes. But I would have asked him to review some documents that I had pulled out from the files. I would have met with him and we discussed some things and he reviewed that and then we would meet again and he would talk to me about what he's found and -- but to tell you exactly what he did, we'd have to go look at those logs, which I think you have in the file.
Q. Okay. So just so I can summarize, you have a good bit of time on the invoices, obviously?
A. Yes.
Q. Then Mr. Hampton, I think, looks like he worked on it the next most amount of time.
A. Yes.
Q. Would that be consistent with your recollection?
A. Yes.
Q. And then it looked like from an engineer standpoint, the only other person who had any significant amount of time is Mr. Watts and it's that 20 hours, I think?
A. That's right.
Q. And that was kind of the team -- the main engineering team that worked on it?
A. Yes.

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Q. Do any of those folks that worked with you, Mr. Hampton or Mr. Watts, have experience doing site civil design at the time AB Consulting did their design?
A. You'd have to ask them.
Q. Okay.
A. The reason I say it that way is that, obviously, I did not work with them or it may not be obvious, but I'll tell you I did not work with them until I began working at Kimley-Horn.
Q. Okay.
A. So I don't have an awareness of what their roles were particularly in a design capacity before I came to Kimley-Horn. And just the timeline -- the time span you're talking about was before I came to Kimley-Horn, so you'd have to ask them about that.
Q. Mr. Hampton --
A. Yes.
Q. -- he's a young fellow, isn't he, fairly young fellow?
A. Well, he's probably a couple years or so younger than me, but I don't know what his age is. Why?
Q. Well, I tried to find out about him and I think he graduated from -- did he go to Georgia Tech

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graduated from Georgia Tech?
A. That sounds right, but I can't say for sure.
Q. Okay. Well, I found Eric C. Hampton that works at Kimley-Horn and Associates, graduated from Georgia Tech in '04. Does that sound like how old this fellow is?
A. That could be right, but gosh, if he -- if he didn't graduate until '04 he must have graduated with a masters.
Q. Okay. Do you know when he got licensed in South Carolina?
A. You'd have to ask him that.
Q. Okay. Anybody else engineer -- engineering-wise, other than the folks we've talked about, that has worked on the Rivergate project that worked with you as opposed to being a consultant? And I know you used SNME as a consultant.
A. I think in the very early stages of that I talked with Matt Edwards and he's got a time entry there that may not have shown up on your radar because it's not that many hours, but Matt Edwards is an engineer that I talked with, too.
Q. Okay. What kind of engineer is he?
A. He's a site civil engineer.

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Q. I found an invoice in here from SNME for $8580. I can probably find that entry for you. Because they were a subconsultant. It's on the July -- I'm sorry, August 31, 2009 invoice, there's an entry for SNME for $8,580. You're welcome to look at mine if it would be easier. It's right here (indicating).
A. Oh, I was looking for the wrong thing. You're talking about an entry in mine.
Q. I don't have a back up invoice. There's an estimate, I think. You actually had some handwritten notes where you were trying to estimate how much it would cost and they gave you guys a proposal, but this is what I found in terms of actual billing, which was consistent, frankly, with what the estimate was?
A. Yes.
Q. Did they just have one bill to your knowledge?
A. Yes. I don't remember getting any supplemental invoices for them.
Q. And that would be for the five borings they did and I know they did a lot of laboratory testing, sieve analysis and that kind of stuff and they installed piezometers?
A. Piezometers. And they did infiltration testing.

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Q. And that's what the 8,500 is for?
A. Yes.
Q. Okay. And then you had a subconsultant surveyor?
A. Yes.
Q. Has anybody else been a subconsultant other than the SNME and the surveyor?
A. No. Because the utility location service was not something that we paid for. That was -- that was just a called in.
Q. Right. Right. Called the number and they come out?
A. So no, I don't think there's any other subs.
Q. Okay. That's all the questions I have, Mr. Wilkie. Thanks.
MS. BISSET: I think Michael's gonna go or I'll go.
MS. BURTON: We're gonna let Michael go because he said he doesn't have many.
(Off-the-Record conversation.)
E-X-A-M-I-N-A-T-I-O-N
BY MR. WRIGHT:
Q. Mr. Wilkie, can you hear me okay?
A. I can.

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Q. Okay. All right. My name is Michael Wright. I represent Asphalt Pavement Maintenance of Myrtle Beach. Are you familiar with them at all?
A. I've heard their name and read it in some of the documents I've reviewed.
Q. Okay. Are you familiar with the scope of work that they performed at Rivergate?
A. No. I have just read in some of the documents that they allegedly performed some work involving the paving of the property.
Q. Okay. It's my understanding that Asphalt Pavement, I'll just call them that for short, installed type one asphalt on Rivergate Lane, a portion of it, and type three asphalt to the first two of the side streets. I just wanted to clarify a couple things from your earlier testimony. The first two side streets at Rivergate, what are the letter designations that you use for those two streets?
A. The first two side streets?
Q. Yes, sir.
A. I've identified those as B and C.
Q. Okay. Do you know what is street A, if there is one?
A. A is Rivergate Lane.

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Q. Okay.
A. And that's what drove me to use the B through I nomenclature, is that somewhere in the documents I had -- I saw that initially they had -- someone had called Rivergate Lane A and so I used B through I.
Q. Okay. That will help me. There are a couple clarifications I have. You testified a little bit about the crowning of the streets and it may not have come through very well over the phone. Side street B, did you testify that that was an inverted crown or that you had found that it was an actual crown.
MR. STANLEY: Mike -- hey, Michael, this is Stacy. I'm sorry to interrupt you, but you're coming through real crackly. Is there any way you -- I guess you're on a speaker phone?
MR. WRIGHT: Yeah.
MR. STANLEY: Could you take it off speaker phone and see if we can hear you a little bit better?
MR. WRIGHT: Can y'all hear me a little better?
MR. STANLEY: That is much better.

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Thank you.
BY MR. WRIGHT:
Q. My question was, at the side street B, did your investigation find that to be a crown or an inverted crown?
A. Inverted crown.
Q. Okay. And the side street C, did you find that to be an inverted crown or a crown.
A. It also had an inverted crown. Each of the streets, Mike, did exhibit an inverted crown, but there were deviations from the inverted crown in some areas of several streets and that's what -- that's what was talked about earlier today and what's -- what I've made notes about in the last couple site visits I've been to, is that there are locations where the inverted crown, for lack of a better word, was collapsed and leaned away from the center of the road. It's not that -- it's not that I observed a condition where the entire street deviated from having an inverted crown, it's just certain areas did.
Q. Okay. And were those certain areas found within side streets B or C?
A. I know that side street B does not -- does not

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have those conditions. The side street B appeared fairly normal as far as being constructed with a -- with an inverted crown. I need to put my hands on my notes to answer about C. So let me do that, okay?
Q. Sure. Take your time.
A. There's one location on street C that deviated from having an inverted crown.
Q. Okay. What percentage of street C, if you could make a percentage judgment, do you believe has a crown as opposed to an inverted crown?
A. It's less than 25 percent. But the importance of it -- when you ask for percentage, less than 25 percent is a fair number. But the importance of it is not so much how much area it takes up, it's the effect it has, because what it does is it short circuits the path of water and the ground surface, the asphalt pavement, the concrete driveways, everything that water touches is really part of the overall storm water plan. And so if something isn't shaped appropriately, then it can cause a deviation from the routing of the storm water. So the only real importance from having these -- these areas where the inverted crown is missing is

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that it pushes water off the road and that gets it off the path that it's supposed to travel and it sends it onto -- possibly onto the next system downhill.
Q. Okay. Do you know the current age of streets B and C?
A. I do not. I do understand that they were constructed early on in the project and before the other streets that -- that are located C through I or D through I, but I don't know their exact age.
Q. Okay. If those streets were in excess of ten years old or eight to ten years old, would you expect to see some of that inverted crown deteriorating at that age?
A. I looked for the possibility that the -- the loss of the appropriate crown in the road could have been due to age and traffic and those kinds of things, but I didn't find any evidence of that in my observations. What I said earlier about having looked for that, is that if there -- if there was some age related dislocation of the pavement that caused the crown to -- to diminish and push the water off the street, I would have expected to see a -- a sister

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condition to that, which would either be some dislocation, vertical dislocation between the pavement and the adjacent yards or possibly even some -- some heavy cracking in the pavement where -- where some of this crown issue shows up. But I guess what I'm saying is what I observed looked like it had been constructed that way and that there's not been a great deal of change in the shape of the pavement in those areas.
Q. Okay. Is it your understanding that the concrete driveways were installed after the asphalt was laid?
A. I don't know whether that's the way it happened. I just know I've read some testimony where -- where it may have even been the attorneys who were asking the questions had represented to other witnesses that -- that it happened that way. That the streets were in place, that the buildings were in place and that the driveways were to fill the space in between. I've heard that described, but I've not read a document that would tell me that.
Q. Okay. If that were, in fact, the case, would the driving of concrete trucks or heavy trucks

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and equipment over those side streets during the construction have in any way impacted the inversion crown?

A. It's possible that could happen. If that were to happen, that would be a telltale sign that there is a significant deficiency in the preparation of the subgrade below the roadway. Because before they ever put the aggregate base course on a street like this, even if there's no compaction testing done, somebody's gonna proof roll that road and then after the aggregate base course is applied, even if they don't test the aggregate base course, which they probably will, but even if they skip that part they're probably gonna proof roll it again before the asphalt pavement goes down. So that shouldn't happen. But if it did, that would be an indication there was a subgrade problem.

Q. Okay. Now, as for the -- if Asphalt Pavement only came in and installed the asphalt on top of the existing grade, is -- they basically lay the asphalt on the slope of the inverted crown as they find it, would that be accurate?

MS. BISSET: Objection to form.

A. It's been my experience that in my work and

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direct interactions with paving contractors, that they generally do not just show up on the site and put the prescribed two inches of asphalt on whatever's there. My experience is that good paving contractors will walk -- walk the site. They will make sure that the site is ready for them to do their work, because the mobilization of a paving crew is awfully time consuming. I mean, when they show up on a site, they can take up a lot of space. There's trucks everywhere, there's people everywhere, their equipment is heavy equipment, they don't want to show up when things aren't ready for them.

So they do a fair amount of diligence, take a fair amount of due diligence to make sure the site's ready for them. And if they got out there and the grids aren't right, my experience has been that the paving contractor will tell whoever they're working for, call me when you got this ready. This looks wrong. Fix it. It wouldn't be in the paving contractor's interest to proceed, because once their work is done there really is no easy way to fix it. I mean, it's quite difficult and destructive to fix things after the paving is down. I'm not saying

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it couldn't happen that way, I'm just saying in my experience with paving contractors it doesn't normally happen that way.

Q. Okay. Other than your visual observations, what basis -- on what basis are you saying that the inverted slope may be inadequate? Is it a specific code section, the plans or is it industry standard you're referring to?

A. Well, the plans -- the plans show it having an inverted crown and the design that the plans are based on relies on the inverted crown as -- as a component of the storm water routing.

So there's -- I don't know of a standard that I would call out, a written standard that would say if you don't have -- if your inverted crown is deviated from, then you've got a problem, because you don't need to have a standard to know that.

If you're supposed to have an inverted crown, you maintain the inverted crown, but what I'm comparing the condition to is putting a level on the pavement, seeing that it's wrong and looking at the plans and seeing that it's not the way the plans showed it.

Q. And your recommended fix for those side roads is

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to turn the inverted crown into a crown and to change the storm drainage system?

A. That's the scope of repair that I've -- that I've proposed, yes.

Q. Okay.

A. Part of the reason --

Q. And in order to -- if the only thing you needed to do was to change the storm drainage system, you would still need to rip out those first two side streets; is that correct?

A. Yes. The work on the streets to correct the storm drainage would affect a significant percentage of the roadway width. And, you know, these are -- these streets are -- you know, it's not like they're eight feet wide or anything like that, but they are narrow enough that working on and replacing the storm drainage system is effectively gonna take out, you know, at least half of the street.

But the other reason for -- you mentioned switching from an inverted crown to a conventional positive crown. The Horry County -- Horry County regulations very much discourage the use of an inverted crown. So it would be silly of me to suggest that you go back with

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that when I know that those systems are problematic and they're discouraged locally.

Q. Okay. Does your scope of repair include any work on Rivergate Lane itself, the main asphalt road?

A. To the extent that the storm drainage work extends all the way from catch basin to catch basin which does cross Rivergate lane, yes, it does affect that road. But it doesn't affect it linearly from one end to the other. It just affects it at the locations where the storm drainage crosses the road.

Q. And in your opinion was type one asphalt acceptable as the type of pavement used for Rivergate Lane?

A. Yes, that was acceptable.

Q. Okay. And was the use of type three asphalt as a material acceptable for the two side streets B and C?

A. I don't find there being anything wrong with the use of a type three asphalt in that application, but it deviated from what had been called out and specified for the project.

The other issue with the type three is it is more sensitive to wheel turning, heavy loads.

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It's a finer mix. It's a mix that has more liquid asphalt content to it, so it's a softer mix and it's gonna react more to heavy loads, especially when it's hot outside. So it's a -- it's an asphalt mix that looks good for a little bit longer time if you're concerned about the appearance of your pavement. But it might not function as well if you're gonna put heavy loads or turning loads on it. And it's softer. So it's just a different performing product than the type one.

MR. WRIGHT: I don't think I have any other questions based on my notes, so I'll pass you on to the next person.

MS. BURTON: Next.

E-X-A-M-I-N-A-T-I-O-N

BY MS. BISSET:

Q. Can you hear me if I sit here (indicating)?

A. Yes.

Q. Mr. Wilkie, I met you earlier. My name is Christina Bisset. I represent Chuck's Construction. Are you familiar with Chuck's Construction?

A. Only through my reading of the documents in this matter.

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Q. Do you know what the scope of work was that Chuck's Construction performed at Rivergate?

A. I earlier read portions of the deposition of Chuck Bellamy and from that, I did gather some impressions about what -- what the scope of work was at least from Mr. Bellamy's perspective.

Q. And what were those impressions that you got from his deposition?

A. That he initially proposed to perform all of the site preparation work and storm drainage work on the property, but at some point his scope of work was pared down to allow the owner to self-perform the work.

Q. Have you, in your review of documents, come up with any other documents pertaining to any other work that Chuck's Construction is alleged to have performed other than the mass grading of the site, some road prep work for, I think we're calling them streets A -- excuse me, B and C and Rivergate Lane?

A. I remember and please, correct me if I've misread this, because I did just get this transcript just a couple of days ago, but I recall reading that Mr. Bellamy had also worked on doing some repair work in streets G and H.

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Q. That's correct.

A. Okay. Other than that, that's -- I think that's a pretty brief description of it, yes.

Q. Okay. What I'd like to do and I apologize in advance, I'm probably going to cross over some areas other people have touched on. I'm basically really concerned with just what Chuck's scope of work was, which you talked about a little bit a while ago.

Street B, what are your issues with street B other than drainage issues with the storm drain?

A. Well, the asphalt pavement on street B, it is deteriorated. Exhibits alligator cracking, map cracking and eroded joints along the center line where the inverted crown is formed. And there is standing water that occurs when it rains along that center line over a distance of more than half of the length of the roadway. So there's a little bit of a localized drainage condition that's problematic on street B.

The catch basin at the east end of street B, which is closest to Baker street, it is constructed improperly because it has the underdrain system for the exfiltration trench

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coming into the catch basin at too high of an elevation. And there's standing water in the catch basin which indicates the exfiltration system's not working. Those are issues I can think of with regard to street B.

Q. Do you know how old the asphalt pavement is that's on street B?

A. No. But it's my understanding that that was one of the earlier areas of the site that a portion of Rivergate Lane and streets B and C were the first areas that were paved, so they should be somewhat older. How much, I don't know, but somewhat older than the remainder of the project.

Q. Do you know what the design life is for asphalt pavement?

A. The design life of asphalt pavement depends heavily on how much of it's in place and how well the subgrade below it is prepared.

I've read other testimony from other experts in this case who have opined differently about asphalt, that it's -- I think one I read it commented in response to -- I think in response to my report that 20-year pavement design is excessive and that the pavement can

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only last a lot less time than that.

There are different opinions about that, but asphalt pavement is a unique product when it's designed, because most -- you think about most construction products have a set life to them. If you build a building, well, the building should last X number of years, at least that's the expectation.

But asphalt pavement, the designer can basically determine how many -- how many wheels can cross that pavement fully loaded before that pavement needs to be replaced. That is the basic design process for asphalt pavement. You tell the formula how many wheel passes do you want this to last and the product of the calculation is how thick the asphalt is. That's it. It's plain and simple. So you get to determine how long it lasts.

So if the civil engineer designs a pavement to last 20 years, then they will use inputs and assumptions that will get them to a 20-year life. If their client has a concern that, hey, we don't want to -- we don't want to have to do anymore maintenance on this for a very long time, can you give us a pavement that's gonna

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last longer than a normal pavement, the civil engineer can design pavement so it will sustain a lot more wheel path traffic than the 20-year example and you can get more out of it or you could do less, but you can't drive the numbers down so low, because you reach a point where you'd start having a design output that tells you the pavement's only going to be a half inch thick or a quarter inch thick and you just can't place a quarter inch of asphalt or half inch of asphalt. So the minimum design life for pavement is 10 or 20 years and how well the subgrade is prepared beneath it.

Q. Do you know what the design documents called for in this project for the pavement?

A. The dimensions of the pavement are spelled out in the documents. They're different than what's out there, because they used a different material on the streets than what's in the documents. The documents call for concrete streets, they've got asphalt, but, yeah, that's all laid out in the plans and I'm not able to recite it for you right now, but we could look it up together.

Q. Who determines -- I guess, the design life from

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what you're telling me, is determined by the designer, whoever designs how much stuff they were gonna put in the mix, I guess? I'm a little confused, I'm sorry.

A. Okay. In my experience usually on a project where there is a site civil engineer and there's gonna be a pavement design, the site civil engineer is going to hire a geotechnical firm or they're going to require that their client, the owner or developer, hire a geotechnical engineering firm to explore the site, obtain soils information, determine in general the suitability and adaptability of the site for any construction and then, also provide them with, if the site is adaptable for construction, provide them with a pavement design. And the pavement design will be driven by whatever the site civil engineer tells the geotechnical engineer that they're going to do with that property.

So in my experience when I used to do that kind of work, when I used to do geotechnical work, a lot of my clients were site civil engineers and when they developed the site, they call me up and they say, I've got this property,

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we're going to develop it. We want to build a shopping center, we want to build a neighborhood or we want to build a retail complex and here's how we expect it to be laid out. We need you to go explore this site and tell us whether it's adaptable or not and if it is, these are kind of pavement systems we're thinking about building. Can you do a pavement design for us.

So you go out, you explore the site, you get the soils information, you determine whether the site's even adaptable. There could be ground water conditions, there could be soil conditions, there could be other things that cause you to turn to your client and say, this is a bad site or this site has some significant challenges and you're going to have to spend a lot of money to adapt it so you can do what you want to do with it. Or you may answer that, yeah, the site is very much adaptable and then here's the pavement design.

But the geotechnical engineer is normally who would calculate the design and then provide it to the site civil engineer and the site civil engineer would adapt that into a detail that shows up on the plans.

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Q. Do you know if a geotechnical engineer was hired on this project?

A. It's my reading of the documents that there's no – there's no record of that having occurred. That there was a mention of it in some contract language, but that if it was to be done it was to be the responsibility of the owner to be done and I haven't read anything to tell me that a geotechnical engineer was hired. If they did, I don't know where their work product is, because it's not in the plans or the documents I reviewed.

Q. And what – again, did you say how long the design life is for asphalt pavement just generally?

A. If you build asphalt pavement on poor soil, you can still make the pavement last eight or ten years. But if it's done on a well prepared subgrade and it's designed appropriately, you could get 30, 40, 50 years out of a pavement that gets maintained. The key is maintenance, how you maintain it, when you start maintaining it.

Q. And when would one start maintaining pavement? What sort of things should put somebody on

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notice that there is a potential issue, maybe things that they got to start fixing?

A. Just being observant of – of the conditions on the property. Some things can be pretty easily maintained, like if there's – if there is a seam in the pavement that opens up. When I say a seam, I mean a joint between two side by side runs of pavement. If the joint between those materials starts to erode or separate, then, you know, you look for things like that to fill them or patch them or seal them so that you don't – you don't let that condition get out of hand. But mostly it's about observation. Just making an assessment of, you know, what – what doesn't look right on the property.

The other thing and what applies on this property is some of the pavement conditions here are driven by things that can't really be fixed by routine pavement maintenance. You could go out and do crack sealing, you could go out and do patch work, but you're not gonna fix the problem. The problem is much bigger, it's much deeper and you're just kicking the can down the road. So there's maintenance that could be done on any pavement, but in this case the big issues

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are really driven by things that aren't related to routine maintenance.

Q. What about birdbaths, is that something that you would recommend if homeowners' association sees that's something that's important to fix or is it something that they can just wait – and wait a few years and not do anything about it?

A. It depends on where they are and it depends on how easily they can be fixed. In this case a lot of birdbaths are not just in a spot, but they're along a significant length of the center line of the streets. And there's not a way to fix that, because the reason the birdbath is there is that the street is relatively level and you're not gonna be able to modify the slope of the street from one end to the other to make that water run the other way. It's sitting where it is because – because the way it was built. And you can't fill enough asphalt in enough places to fix that. If it's one birdbath and it's in the center of a parking area then you could cut out a patch of pavement or you could put in a slurry coat of something to even that out so that the water didn't stand there, but here you got a situation where it's going a

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significant distance from one end of the street to the other, it's just there's not a quick easy maintenance type fix to resolve that. It's been caused by the way it's built.

Q. Do you know if the HOA in this case has done any sort of maintenance to any of the roads at Rivergate?

A. I don't have any information that directly tells me whether they have or haven't. I don't know that. I mean, I see things like there are speed humps or speed bumps out there in different places. There are areas of asphalt that have a different color and texture than other areas that indicates there may have been some patching that has been done at different intervals, but I don't have any written information or anyone that's told me a regime of maintenance that they've taken. I just don't know.

Q. Would you expect HOA at this point considering the life of the pavement to have done some sort of maintenance work on the roads at Rivergate?

A. I would expect in the time that's passed since the site was built there would be some maintenance that's been done, yes.

Q. Now, if you'll go to street C, we've talked a

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lot about the inverted crowns and I think I have a pretty good grasp on that. Anything else that pertains to the road or any of the subgrade for road C?

A. I would need to probably look through all of my photographs, at least the ones that relate to road C to give you a full and complete answer, but I believe road C has some issue with some settlement around the east catch basin where water doesn't readily fall into the catch basin.

Q. Anything else that you can think of with road C?

A. Not with the road -- not with regard to the road itself, but let me look at these notes from when I was out there just yesterday.

Q. Go ahead. Take your time.

A. Road C has a -- street C has an area about halfway down the road moving east toward Baker Street where the -- the reverse crown dissipates and sends water toward the front yard of the adjacent lots. That's a problem. And the slopes of the driveways on road street C vary from about ten and a half percent to 15 and a half percent. That's a problem that we've already spent some time talking about today.

The ground water elevation in the

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exfiltration system on street C is quite shallow. It's approximately two feet from the pavement surface, which means that the sub-base and the upper part of the subgrade below the pavement gets wet when the ground gets saturated. There's ground water two feet from the ground surface, so in a heavy rain event when the exfiltration system fills, the water level was gonna be even more shallow than that. It could be even into the base course.

Which the shallow ground water issue that's documented by measuring the water level inside the wash basin, it could explain why there is some of this undulating shape of the pavement along the center line and -- and the birdbaths in the center of the street. It could explain some of that, because when the subgrade gets very wet, because it's inundated and because the exfiltration is full and it's holding water up into the sub-base and subgrade, if there's -- if there's traffic on that road while that saturated condition exists it's just like trying to drive a dump truck on a water bed. Roadway is gonna respond to that by deflecting, and moving, and settling.

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That's all I can say about C and then, really that's kind of a general way to describe what conditions there are in the rest of the streets. But B was in a little better shape than that.

Q. So you're telling me that the exfiltration system caused some -- possibly could cause some moisture to get in through the subsurface and could cause some of the pavement issues that we've been discussing today?

A. Absolutely. That's really why the ground water needs to be controlled in the exfiltration system. There's two reasons it needs to be controlled. One, if the ground water gets too high there's not enough storage in the exfiltration system so the design that the engineer put together, the numbers don't work. That it's pushing too much water out of the neighborhood and exfiltration fills up too fast. That's the first problem with having ground water high. The second problem is that just that it exposes the pavement to premature failure.

Q. Rivergate Lane, other than the storm drain issue there, any issues with the pavement failing or

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any issue with the sub-base underneath the pavement?

A. I haven't seen indications that there's a significant amount of pavement failure going on along Rivergate Lane. That -- that condition is mostly confined to the streets. The problem on Rivergate Lane is that the catch basins in several locations are too high so that when water is running down the gutter, making its way down the hill, that it gets pushed around the catch basin and doesn't go inside the catch basin. And that's a problem because it's kind of like that short circuit issue that I described on the streets where the reverse crown goes away and it pushes the water into the yard. Well, on the street the -- the high catch basin pushes the water around the catch basin and on down the hill to the next catch basin, which puts things out of balance, because each street is essentially its own storm water system. So if one is short circuiting and sending its water to the other, then that means the other's got twice as much water to deal with.

Q. Is there a way to fix the catch basin issue without destroying the pavement?

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A. Well, I wouldn't use the word destroying, but you could go out there and take the grate off the catch basin, cut out an area of the curb -- there's a roll face curb, which makes it a little easier to deal with, because it won't be as unsightly if you were to patch it -- it over about 10, 20-foot section. So you could take the grate off, take out a portion of the roll face curb, cut part of the catch basin off, so cut out two or three or six inches of the catch basin, remove that and then place the frame and grate back down at a lower elevation and then put everything back together, so that things were tending to go into it rather than around it. And that gets done. That's not like an unheard of scope of work for a utility contractor to do.

Q. Going back to street B, if you didn't have an issue with the storm drainage, is there a way to fix the roads there without destroying the pavement or not destroying, but something along those lines?

A. That depends on the condition of the subgrade. If the subgrade soils and the base course are sufficiently stable to hold up to traffic, then

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you could have an alternate scope for that area. If you're asking me if I were to ignore problems with the exfiltration system; is that what you're saying?

Q. Yes, yes.

A. If I ignore the problems with the exfiltration system on street B, I would then proof roll the street to make sure that there are no subgrade problems that won't support any new pavement and then I would do patch repairs and crack filling and I would overlay the pavement. But you understand that that's not really practical with the situation with the exfiltration system.

Q. No, I understand that.

A. But if you discount that, then yeah, you could do something -- you could do something different that wouldn't be as intrusive.

Q. Do you, and this might just exceed your scope, do you have any idea what that would potentially cost, the scope of repair like that as opposed to having to remove all of the existing pavement because of the exfiltration system?

A. Well, I don't off the top of my head, but if you wanted to --

Q. Just a guess.

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A. I'm not gonna guess.

Q. Okay.

A. But if you wanted to determine that based on documents that we have, I'll tell you where to go get it.

Q. Okay.

A. Just open up the A.O. Hardee estimate.

Q. Okay.

A. And we asked him to provide unit prices for all the major components of work and there will be a unit price in there for asphalt pavement and if you multiply that times the area of that street and then you add a contingency percentage to it for patching and the crack sealing you can get to a ballpark number for that.

Q. If I was to show you the A.O. Hardee estimate could you just pinpoint to me on there, because I see where it says asphalt demolition, asphalt parking, I'm just not real clear where the asphalt would be necessarily for the streets?

A. Okay. Let me look at it a second. They've got $28 per square yard for asphalt paving.

Q. Well, is the asphalt parking the same thing as asphalt paving?

A. They've -- yeah. They've used some language

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where I see why you didn't catch it.
Q. I thought maybe there was a parking area and that's what it was referring to doing a parking lot. I didn't really --
A. No. They would have to answer for you why they chose that word, but, you know, paving contractors sometimes categorize their work into what they generally do with that product and I don't know. I mean, that's what the product is. That's the asphalt pavement and it's $28 a yard. So if you multiplied that times the surface area of the road and added some contingency percentage to cover the patching and seal coating and crack control, that could get you a ballpark estimate.
Q. Do you know who did the fine grade on this project?
A. I don't.
Q. Do you know when the fine grade is normally done on a project of this size?
A. I can tell you when I've observed that it's being done, but I still won't know on this -- on this project. It normally be done after -- after the roads are in, after the building is finished, but could be done before the driveways

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are actually constructed. When I say driveways, I mean the piece of concrete that connects the street to the garage. Fine grading could be done before that, but that's in general when I've seen it happen. And depending on how closely or how good of a job that the mass grading contractor did, it could be deferred until the time that they're doing the landscaping.
Q. I believe you testified earlier that going from type one to a type three grade for pavement wouldn't be a problem for streets B and C, correct?
A. Not per se. It wouldn't be a problem by itself, but you're using a more sensitive material, material that doesn't hold up as well to heavy traffic or concentrated wheel loads, but it could function. It could operate.
Q. And do you know if street B and street C were expected to have heavy traffic? Is it a main road or are these side roads, correct?
A. You're calling them side roads but --
Q. Is there a way to -- is there a way to get out from B and C other than to leave the Rivergate Lane?

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A. No. To my knowledge there's not a way for emergency vehicles, garbage trucks, delivery vehicles or any number of large vehicles to get in and out of those streets. Since they're at that end they're gonna have some pretty heavy wheel loads with delivery vehicles and equipment and those kind of things coming in and out to the property, but yeah, I don't -- I don't know of anything to tell you about that.
Q. So UPS truck and a garbage man's truck you would expect to potentially over time do some damage to type three asphalts on a street?
A. Really, when it comes down to pavement design, asphalt pavement, the thing that you're calculating when you design the pavement is not the automobiles. The automobiles are almost free. What you're calculating is the number of heavy traffic passes. So what's input into the design equation is the number of equivalent single axle loads and ESAL, or an ESAL and that is basically an assumed 18,000-pound load on a single axle on two wheels and that's what you input into the design equation. Cars, it takes an awful lot of, you know, Honda Civics and Ford Tauruses and those kind of things. Someone tell

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you nearly 500 of them. It will take nearly 500 of them to equal what it takes to have one equivalent single axle load. What you design for is you design for the heavier vehicles. You don't design for automobiles.
Q. And for type three asphalt, where would you normally see that?
A. Parking lots. Parking lots where a customer wants to have a nice smooth looking pavement that they understand may need to be maintained more frequently than the type one, but that they want it to have a smooth top surface appearance. You know how when you go to a parking lot if the parking lots been there awhile there's -- you may see larger exposed pieces of stone where the asphalt is kind of eroded or washed off. Well, type three, those pieces of stone are gonna appear somewhat smaller because number one, the aggregate is a little smaller, there's more fine aggregate in it, but secondly, there's more asphalt in it, so there's more asphalt to cover the aggregate. It's gonna look blacker, smoother for longer and so it's a more aesthetic appearance for some customers. But it's also a little more light duty product, as well.

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Q. Do you recall what the plans called for the thickness of the asphalt that should have been constructed at Rivergate?
A. I would need to look at the plans, but what I recall is that the streets were supposed to be concrete. Portland cement concrete and that Rivergate Lane was to be asphalt.
Q. Do you know what the thickness of the pavement is for street B for the asphalt?
A. I had SNME core drill a spot that may have been on that street and we could look at their report and I could tell you exactly what the thickness of it was at that location, if you'd like me to.
Q. If you would, please.
(Off-the-Record conversation.)
A. I've opened SNME's report to read the boring log for boring B-4, which was located in street B.
Q. Okay.
A. And the thickness of the asphalt measured at that location was approximately 2.23 inches.
Q. And what does that tell you about the asphalt, does it tell you anything, whether or not it's structural strength is still intact or is it falling?
A. The measurements of the thickness doesn't tell

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you anything about its integrity.
Q. So what does the thickness tell you, anything?
A. Just the geometric information that is thickness. That's all that it tells you.
Q. This might be a silly question, but what is better, for it to be thicker or thinner?
A. It will last longer if it's thicker. But thicker costs more money and that's why you do a pavement design that has the output of telling you what the thickness is. So if I say I want 18,000,000 ESALs out of this pavement design I'm gonna get a much thicker pavement as the output than if I say I want 2,000,000 ESALs out of that pavement design.
Q. Am I correct that you haven't seen a pavement design in this case?
A. I don't know that one exists.
MS. BISSET: I think that's all I have for you. Thank you.
THE DEPONENT: Okay.
(Off-the-Record conversation.)
MR. STANLEY: Mr. Smith and I discussed the situation wherein Mr. Wilkie had stated that he may go back out to the site to do some

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investigations as to the building pads and concrete driveways and we have agreed that between, at least me and Mike and Doug and anybody else that it pertains to, that if Mr. Wilkie does go out to the site to do additional investigations and has any additional opinions, that we'll leave the deposition open for that purpose only. Is that satisfactory?
MR. BAXTER: Yes.
MR. STANLEY: Okay. Back off the Record.
(Off-the-Record conversation.)
E-X-A-M-I-N-A-T-I-O-N
BY MR. SMITH:
Q. My name is Mike Smith and I represent Speedee Concrete. Before I get started into the substantive stuff, can you tell us whether you have any opinions that you formulated on this project that you have not already talked about or that are written in your report?
A. Well, we've been talking for a long time, but I can't think of any.
Q. Okay. In an off-the-Record discussion your

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lawyer and I were talking about one of the concerns that I had, which was that letter that you've got as exhibit -- what number is that?
A. 8.
Q. 8. And if you look at the top number there on Exhibit 8 it talks about some concrete issues with the pads and different driveways, you see that?
A. Yes.
Q. Do you at this point have any intention of going back out and doing any further investigation on those issues?
A. I don't have scheduled a visit to go there. I may go, but right now I don't have plans to go back to the property for -- for that.
Q. And it's my understanding you do not know anything about the items or issues that are listed in that paragraph number one; is that right?
A. I just know the unit numbers that were related to me and that there are some entries in some of Ross Clements' and Derek Hodgin's reports that may relate somewhat to those units and the conditions that -- that I might find when I go to those units, but because I haven't seen them

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yet, I just don't know and don't have an opinion about it.
Q. And is there any way to tell without doing testing of bore samples or whatever, whether it's a compaction issue underneath those concrete pads, whether it's a concrete mixture issue, is there any way to tell why the concrete pads are cracking without doing testing? In other words, you can't just visually observe the cracking, can you?
A. There are some things you could confirm or rule out by simply observing the cracks.
Q. Such as?
A. If -- If you pulled back the carpet in a carpeted room or if you pulled up the vinyl or whatever the floor finish is you exposed a part of the slab. If you could determine that there were no control joints in the slab and you find that there are cracks in the slab that occur at regular intervals, depending on the shape of the cracks and where they are, you could reach an opinion that the cracks were due to shrinkage and a lack of control joints. That's one thing you could find without doing any testing if you could just see the slab.

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Q. Okay.
A. If you could see the cracks and there was a significant amount of vertical dislocation from one side of the crack to the other --
Q. Soil compaction issue?
A. You could -- you could maybe rule out that it's solely a control joint shrinkage issue and then you might, you know, focus on compaction and that kind of thing.
Q. Okay.
A. Another thing you could see is if you looked at the cracks in the floor and if cracks in the floor have an upward curvature at both ends, so if you -- to exaggerate it I'm going to move my arms from outside to in and raise my fingers in the middle (indicating). If the crack had that kind of a shape to it, then you could -- you could reasonably determine that there's a curling issue with the slab and that's a -- that's a finishing problem if there was a curling issue. Those are a few things I can think of that wouldn't require any destructive testing.
Q. To do that you'd have to remove the carpet or remove the flooring material?

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A. You would.
Q. Have you asked for permission from any of these homeowners to do that?
A. No.
Q. Have you been inside any of those units to see whether there's been a cracking of the floor materials?
A. I have not.
Q. Have you ever seen concrete that didn't crack over its lifetime?
A. There's no such thing. There are cracks in concrete that you can see and there are concrete -- there are cracks in concrete that you cannot see, but there is no such thing as concrete with no cracks.
Q. Cracking is something that's just inherent in the concrete material?
A. Really the important think about cracking in concrete is how it's managed and controlled. If it's done right, the cracks in the concrete are so small or they're so far apart that they're not a problem or you don't even see them. But yes, there's no such thing as concrete that has no cracks in it.
Q. Okay. In the Watkins estimate -- it was

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Watkins, right?
MR. BAXTER: No.
MR. STANLEY: Thompson.
MS. BURTON: A.O. Hardee.
Q. A.O. Hardee there's 3,200 square feet of concrete that is called for four inches of concrete, nine-inch coquina sub-base. Where do you envision this 3,200 square feet of concrete being placed?
A. Close to the streets, none along the west edge of Rivergate Lane.
Q. Now, when you say west edge, give me just a second. Just a second.
MR. STANLEY: Off the Record.
(Off-the-Record conversation.)
BY MR. SMITH:
Q. When you said -- I lost my train of thought. You just said along the west edge?
A. Yes.
Q. And the west edge side is which side again, is that the Rivergate side or the Baker Street side?
A. The Rivergate Lane side is what I'm calling the west and Baker Street is what I'm calling the east.

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Q. Okay. Which seems counter intuitive to me when you have the little directional arrow there makes perfect sense looking at the map. So what were you saying about the west side again?
A. I was saying that I don't anticipate there being concrete repairs that are part of that estimate occurring along the west edge of Rivergate Lane, because the work that's described in that estimate really only takes place on Rivergate Lane as a function of getting the storm drainage corrected from catch basin to catch basin, so it's not gonna affect many or any driveways. If it does, it's because of the proximity of the catch basin to a driveway or two and it won't amount to much.
Q. Okay. I'm lost. You got 3200 square feet of concrete?
A. Yes.
Q. Where you gonna put it. That's my question to you? Where's the 3200 square feet gonna go?
A. It's gonna be consumed by the work that takes place on the streets. The streets between the east catch basin and the west catch basin and the process of removing the roadway and installing the new storm drainage system, all

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that is gonna consume concrete that's adjacent to it and it will likely take up that much or more in square footage concrete. That's not a lot of square footage when you start looking at it in a scale of eight streets.
Q. Right. So if there were no concrete issues at all with the subcontractor, you're gonna have 3200 square feet of concrete needed because of the road repairs, is that what you're saying? I think that's exactly what you just said. And we can read it back.
MS. BISSET: Object to form.
MR. STANLEY: Object to form.
Q. Isn't that what you just said?
A. What you just said is essentially correct, that if you --
Q. Okay.
A. -- did not have concrete issues you would still have a significant amount of concrete work to do just because the other work is gonna be so close to it you're gonna wind of consuming some of the concrete.
Q. Have you ever been involved in a project that required your work with a concrete subcontractor hand in hand?

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A. You mean where I've hired a concrete subcontractor?
Q. Or worked with him, designed for him, assisted in the actual application of the concrete on a project?
A. I have worked side by side with a lot of concrete subcontractors, but I've not ever had a contractual relationship with them while I'm there.
Q. Yeah. And I -- I don't want to confuse the issue here. I'm not talking about somebody that's building a home while the concrete's being poured. I'm talking about have you ever had a relationship with a concrete subcontractor to where you either designed the concrete project or where you showed him how to put the concrete down, how to do the substrate, anything dealing with concrete? Have you ever done a work project dealing hand in hand with a concrete subcontractor?
A. I've not dictated a means and methods of concrete work, so the finishing, the craft that is flat work --
Q. Right.
A. -- and concrete work, that is -- that is not my

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expertise.
Q. Okay. How much expertise do you have in concrete?
A. Quite a bit. What would you like to know about it?
Q. Well, you said just a second ago that it wasn't your expertise in setting up a concrete job in essence.
A. Well, I'm not a contractor and really what I thought you were asking about had to do with the actual execution of the work --
Q. Right.
A. -- that the concrete contractor does. You know, the use of their equipment --
Q. (Indicating.)
A. -- the how -- what they tell their employees to do, the timing of the placement and the finishing and the soft cutting of the joints and all the things that make up their trade, their craft, I've not been a contractor, so I don't have the expertise that a contractor would have who is doing that, but I -- but I have evaluated numerous, dozens and dozens and dozens of projects where there are concrete problems or where they are not concrete problems, but I've

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been involved while concrete work is going on as either an observer or an owner's representative, but in the capacity of helping -- helping the work move along and if there are problems with the concrete work, bringing that up and fostering a solution.

Q. Okay. That's sort of on the forensic side. I'm talking about on the construction side.

A. Oh, yes. I'm not talking about forensics either. I'm talking about construction.

Q. Okay.

A. I've done a lot of work side by side with concrete subcontractors during construction.

Q. What kind of work have you done side by side with concrete contractors?

A. When I got out of the college the first firm that I worked for was SNME. I worked for SNME in Spartanburg, South Carolina and mostly what I did involved doing testing of concrete, soils, being present to observe and evaluate the placement of steel reinforcement, concrete, compaction tests, erection of steel, evaluation of roof decks, really from site grading to building construction, I was on sites a lot of time working side by side with the GCs and their

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subs, so I've -- I've been around construction for an awful long time.

And before my career in construction I worked off and on as a kid for my dad. My dad's a small residential contractor. And I don't think that necessarily plays into my expertise, but I'm just giving you an idea I didn't just, you know, a couple years ago decide I wanted to render some opinions about concrete. I've been around construction all my life and I've been around it in a professional capacity since I graduated from college.

Q. That was in '97?

A. Yes.

Q. Have you ever designed a concrete parking deck or designed concrete?

A. I've designed concrete pavement.

Q. Pavement?

A. And I've designed concrete footings.

Q. And where have you designed concrete pavement?

A. When I was at SNME.

Q. What was involved in that design process?

A. First establishing what the pavement system is supposed to achieve, is it for light duty traffic, standard duty traffic, or heavy duty

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traffic. What kind of a facility is it gonna be in, is it residential, is it retail, is it commercial, heavy industrial and using the information to get from talking with the client about the needs combining that with the -- with the soils and the sub-base that the concrete's gonna be placed on and then going through design -- actual design calculations for what thickness and the composition of the pavement should be.

Q. Now, did you do this as the -- the lead engineer or as an associate engineer, in what capacity?

A. I've done that when I was EIT and I've done it when I was licensed.

Q. Okay. IT?

A. EIT.

Q. EIT?

A. Most of the design work that I've done designing concrete pavements was when I was an EIT.

Q. Have you ever sealed a set of plans where you designed the concrete drives and roadways?

A. I'm sure that I have, but it has been a while. The last thing I can think of that I would have sealed was a set of pavement rehab. plans for any number of Wal-Mart facilities that I was

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doing rehab. plans for in South Carolina for -- directly for Wal-Mart.

Q. And the Wal-Mart facilities that you've done, those have been primarily with the asphalt paving part of it?

A. No. They have concrete pavement as well, depending on where you are in the country. They have concrete pavement and asphalt pavement.

Q. Have you ever done any classes with ACI or where they've talked about concrete as part of your post education, seminars, things like that?

A. I don't know that I've had any courses directly with ACI and I really don't recall right now as to what sort of concrete courses, you know, post -- post -- post college --

Q. Post college?

A. -- that I've done.

Q. Looking through your CV, are there any projects that stand out to you as projects that you were responsible for the concrete, either redesign or remediation or actual initial construction?

MR. STANLEY: You talking about the document that's been marked today?

MR. SMITH: Yeah. Yeah.

MS. BURTON: It's in 8.

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A. Actually, the first one on the list, Harbor Baptist Church, that's a concrete issue. They're precast concrete double Ts. That was really the issue at hand in that case.
Q. Now, that's totally different than what we're talking about?
A. It is. I thought you were just asking about concrete.
Q. I am. I am. What else?
A. The next item I see that's in the CV is the item that's labeled as Wal-Mart Stores, Incorporated.
Q. That's on the second page at the top right?
A. Yeah. And I didn't enumerate all of the Wal-Mart projects that I've provided services for that relate to concrete, because there would -- frankly there would be too many for me to write, you know, have them all listed there.
Q. Sorry. Go ahead.
A. Several of them are in South Carolina, but several more are just all over the country in different places. What I did involved Wal-Mart's work for several years. A colleague of mine and I, we together worked on a program for Wal-Mart where Wal-Mart figured out that they were having a problem with their pavements

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that was showing up two, three years after they would open the store. And they're a number crunching organization and they figured out how many millions of dollars that this was costing them. That they should be getting service life before they were doing heavy maintenance on pavement. So we worked with them to evaluate the "problem children" type cases --
Q. Right.
A. -- all over the country and some of them involved just simply, you know, finding an area that was a problem and helping them get a contractor to fix it, but some of involved some pretty involved rehabilitation plans and investigative work and subgrade repairs and those kind of things and some of that was in asphalt pavement and some of it was in concrete pavement.
The more difficult areas to deal with were the ones that were in concrete pavement, because most of their concrete pavement in the country are in heavy duty area where the trucks are and they can't really shut that down. So anyway, that goes -- that went on for a couple years or so all over the country. And then after that,

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that worked out well enough that they -- we gave them some suggestions on what to do so that they don't have those problems again and how to kind of update their specifications. So then we started doing peer reviews of other civil -- site civil consultants work all over the country that were sending them plans, so they could kind of head off the problem before the construction even started. So that's what that little bullet is about and there's a lot of concrete work in there.
I'm gonna look through the rest of it and I'll tell you what else sticks out.
Q. Sure.
A. The next bullet down, the Charlotte Douglas International Airport, that is a engineered material arresting system that I designed at the end of runway L that's supported by a -- I believe it's supported by a concrete pavement system. Other than that, I wouldn't mention it at all.
The Food Lion store in Forest City, North Carolina, that's a concrete pavement system that needed to be expanded and the existing parts of it needed to be repaired.

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Q. You talking about at the bottom?
A. It's at the bottom on the right side, yes.
Q. And basically that one looks to be just making the area where the trucks come in bigger so that they could get access to the loading docks?
A. That and dealing with the problems that they had with what was already there.
Minneapolis/St. Paul International Airport. I did an assessment and worked with a team of folks. I was by no means the lead person on this project, but I was the lead field person to assess the condition of all the parking decks in all of the daily lots of Minneapolis/St. Paul Airport. And those are all a combination of precast/cast in place concrete?
Q. I was gonna ask you.
A. There's some that are double Ts and then a lot of the -- a lot of the other structural vertical components are cast in place.
Q. Okay.
A. And that -- that was a -- really part of a maintenance regime that the airport would do every so many years and that's what that was about.
I'll tell you that my CV is -- is not --

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and I have not ever intended to list all of my projects I worked on in my CV. It's meant to be just kind of a sampling of the experience I have and the difficult types of projects, but as I've gone through that, those are the projects that stick out there that are listed in the CV that are about concrete.

Q. And the Harbor Baptist Church in Charlotte, who were you working with at that time?

A. I was working for the -- an insurance carrier called Brotherhood Mutual.

Q. They were your employee -- employer?

A. No, they were my client.

Q. No, I wanted to know who you were working for?

A. Oh, Kimley-Horn, but in the late stages of that I was working for myself.

Q. So when was that church job?

A. The case settled just couple months ago.

Q. Okay. So 2012/2013 timeframe?

A. Yes. And that's part of the reason that this has been updated is that if -- if it's a project where I've -- where I've testified in some way, I've, once the project's over, I put it on it there so I don't forget to do that and put it on my testimony record.

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Q. And what about the Wal-Mart stores, is that Kimley-Horn or somebody else?

A. Yes. That was with Kimley-Horn, but then I also had worked with Wal-Mart stores at SNME, also. The whole time I was at SNME I was working on Wal-Mart projects.

Q. And --

A. And that was actually how I came to work at Kimley-Horn, was I was working on pavement rehab. projects for Wal-Mart and Kimley-Horn hired SNME and I was staffed to do the work that Kimley-Horn wanted done, and so I was working with Kimley-Horn while I was at SNME on these pavement rehab. projects all over South Carolina. And Kimley-Horn was ramping up and doing more work for Wal-Mart and other retail -- retail giants and so that's how I came to work at Kimley-Horn.

Q. And who was the chief engineer on the Wal-Mart stores from Kimley-Horn?

A. Most of the projects that I worked on the engineer was a person named Omar Heracless (ph).

Q. Where's he out of?

A. He is in Gastonia.

Q. And what about the Charlotte Airport, who did you work for?

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A. I was the engineer on that project.

Q. Did you work with your own company on that project --

A. No.

Q. -- or Kimley-Horn?

A. That was through Kimley-Horn.

Q. And Food Lion, was that Kimley-Horn?

A. Kimley-Horn.

Q. Who was the chief engineer on that job?

A. I was.

Q. Okay. And the St. Paul Airport, Minneapolis/St. Paul Airport, is that a Kimley-Horn job?

A. Kimley-Horn job and I'm not able to recall the name of who would be the chief engineer on that.

Q. But you assisted the chief engineer on that job?

A. Yes. I would not have been the chief engineer on that job, because I am not licensed in Minneapolis.

Q. Why did you leave Kimley-Horn?

A. Do you want a short answer or a long answer?

Q. We got time it's only 6:00 o'clock on Friday afternoon?

A. Well, Kimley-Horn is a fantastic firm and I was there for about nine years. The last few years

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I was there I really had aspirations of wanting to start my own firm, but I couldn't leave. It was too good of a place to work. I was well taken care of. The people were fantastic and it's just a great company. And I, you know, I couldn't find a reason to leave even though I had some aspirations of going out on my own.

Well, a couple of years ago my colleagues that I work with, primarily on forensic type projects, a couple of them started making plans to start their own firm. And I knew that they were leaning toward that direction, but they purposely kind of kept me out of the loop, so that I -- so that I wouldn't be a damage to them or myself and -- but when that became known, I started thinking more about going out on my own once -- once my colleagues, one by one.

So one one month and one the next month and before it's over, there's four of them that have left from my group that I've worked with for nine years, once they had each one by one departed, there began to be a change of I'll say sentiment in Kimley-Horn about this group that I was working in, even though I'd been -- you know, everything's been fine there for nine

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years, but if one person leaves and the ones that are left say, oh, no, none of us are leaving and then the next month one of those leaves and then the ones that are left say no, none of us are leaving, if you do that four times, the guys that are left, they are in a position where even if they're -- you know, even if you're -- you're doing all you can and you're being truthful and honest about your work, that, you know, it's the sentiments change.

And so I had some long heart to heart discussions with some folks high up on the food chain in Kimley-Horn and they told me point blank that, you know, we know you say you're not going, but all these other folks, they've left and they all said the same thing, what's going on here? And I told them I'm not leaving. I said, you know, I can't. I'm just not -- I'm not gonna leave. I like it here and you're too good to me. I'm not -- not going.

And so anyway, that went on and on for a while and it wound up being that I was coming to the office, driving all the way to Charlotte, 68 miles one way and then all the way back in the evenings. And I would go to the office and

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I might not need to interact with anybody the whole time I was there. So after a few months of that I realized that I had already been working for myself for several months, ever since my colleagues left and the only thing left for me to do was just to stop driving to Charlotte every day, so that's what I did.

Q. Okay. Do you do mostly forensic work now or do you do --

A. Yes. I do mostly forensics work, but my client mix is there are some attorney clients I have, some are insurance adjusters, some are property managers, some are contractors. If you want me to give you a ration of those I'll do my best, but there's a mix of client types there.

Q. All right. The letter that Stacy wrote you on July the 8th of 2013, it references and we talked a little bit about the concrete foundation, you -- you really don't know, you haven't been in the houses, you have to go look at it. And so far as the driveway issues that are set forth in that letter, do you know what those issues are, have you had any discussion with Stacy or anybody out at the project?

A. I have not.

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Q. All right. So you don't know whether they're dealing with cracking, slope or what?

A. No.

Q. Okay. As we sit here today, is there a document that you could go to that says where 12-A, 13-A, 16-A and so forth like that are?

A. No. There may be something in my file, but I wouldn't be able to turn to it right now. It would take me awhile to find that.

Q. Okay. Do you know where build -- this unit 12-A is, what street it's on or --

A. Not as I'm sitting here right now.

Q. Okay. Going through your report of June 18, 2010, did you reference the soil piping issue at that time --

A. No.

Q. -- in that report? When did that become an issue for you?

A. The condition has been there since before I started my evaluation of Rivergate, but it was not until I had enough information that I felt comfortable enough to have formed an opinion that that was what was going on, and I -- I'm not able to tell you a date that I would have formed that opinion, but once I had both gotten

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information from SNME on the conditions from the borings they did and gotten some information from the surveyor, that I felt like that was likely what was going on. But until I had spent more time looking at the slopes and just given that some thought about what was really happening and seeing some of the information about the drainage problems, until then I really wasn't in a position that I felt like, you know, rendering an opinion to that effect. But so, I guess what I'm saying is I've had a questioning attitude about it the whole time because it looked somewhat, I don't want to say obvious, but to anybody who's seen that condition happen before it looks similar to the other things like that, that I've seen happen on other projects. But I kind of wanted to be more sure of it before -- before I brought it up.

Q. Let me -- let me determine why or what makes you more sure of it and why if you -- if it was there at the time you wrote the report you didn't include it in the report initially. Let's deal with the last question first. If it was out there at the time you did the initial report, did your initial investigations, why did

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you not think it important enough to put it in your report?

A. Well, because I didn't as much appreciate how -- how difficult the conditions were of drainage and standing water in side yards and the -- how steep the driveways are. I didn't fully understand how extensive those problems were until sometime after -- sometime after putting that report together. And even, I'll say this, I -- my measurements that I took that we've talked about some already today, that is a big part of why I -- why I've shared that opinion with you today, is that I've not just measured one driveway or had the surveyor measure one or two driveways or got just a little bit of spot data, I've now gone back and looked at it and I've looked at every steep driveway out there and tried to be critical of what -- of what's going on in terms of is this the issue that I think it is or could it be something else. And seeking as I might, I'm sure now that what it is, is a soil piping problem induced by poor drainage.

Q. All right. Soil piping problem induced by you said --

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A. Yes.

Q. -- poor drainage?

A. And the soil types.

Q. Soil type is what primarily, sand?

A. Yes.

Q. Would you agree with me that sand is pretty permeable insofar as water penetration?

A. It is.

Q. Okay. What I'm trying to do is to figure out how you're getting the soil piping and how that interacts with the slope of the driveways and then how that interacts with any pavement. So first of all, what factors are you looking at out at the property that leads you to believe within a reasonable degree of scientific certainty that there's soil piping going on at the project?

A. There is standing water that occurs between the buildings. The -- and there's water that comes from the streets, from the roofs, but there's -- there is a substantial amount of water that makes its way into the side yards between buildings. And when you walked property you can see that there is a great deal of water that hits the ground in those areas, one way or another, whether it's coming off the roof, coming off the roads or just falling out of the sky straight onto the grass, but the side yards get a lot of water on them. And there's such grade separation between side yards and the street, there is a potential for erosion to occur.

The slope of the driveways is very steep. The driveways are likely constructed on the same sand subgrade that the rest of the property is sitting on. And in the roads there is sand underneath the pavement. And I was able to confirm that by having boring done on top of one of these areas that was suspect and finding sand under the pavement in this heaving area of asphalt.

So I see the problem at the top, I see the problem in the middle and I see the effect of it at the bottom. It's not a gray area. It's not a -- it's not an, oh, this might be this, this is what it is.

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Q. Let's stop for just a second. When you say soil piping, are you talking about -- tell me what you're talking about?

A. I'm just talking about the movement of soil particles induced by the flow of water.

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Q. So sand through sand?

A. Yes.

Q. It's movement of sand through sand is what you're talking about?

MR. STANLEY: Object to the form.

A. I don't know what you mean by, "sand through sand".

Q. Well, you said most of the substrate is sand, right?

A. Yes.

Q. Probably 90 percent of the substrate is sand?

A. Yes, that's a fair statement.

Q. Okay. So it would be the movement of the sand particles through sand is what you're talking about, the piping?

A. No, it's not.

Q. Okay.

A. That's not really possible. How do you move sand through sand?

Q. That's why I've got a big question.

A. Is that why you're having a hard time understanding it?

Q. Yes.

A. Let me -- let me draw something --

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Q. Absolutely.
A. -- that I think might --
Q. I would give you a sheet of my paper. I have two sheets left.
A. If this doesn't --
MS. BURTON: I can donate paper.
A. -- if this doesn't clear it up it will cause 50 more questions.
MR. STANLEY: Don't do it.
MS. BURTON: Here you go.
A. I wonder if it might work better for me to explain this if you all want to stand behind me.
Q. Actually, I can see it.
A. Okay. So what I've drawn here is I've got an incline slab of concrete.
Q. Gotcha.
A. And I've exaggerated the incline.
Q. I assume it's not drawn to scale.
A. Trying to make a point though. This is actually pretty close to some of what's out there, as awful as that looks.
Q. Looks like the banking at Bristol, but go ahead.
A. The top side we've got turf, all right. And this is not in every instance, but in most instances we've got turf grass at the top of the

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concrete slab. At the base of the concrete we've got the street and that's an asphalt pavement and so I put a little pattern on that.
Q. Can you write street and drive and turf for us?
A. (Complying.)
Q. Great.
A. Okay. So you got a concrete slab and you've got water -- surface water flowing across the turf toward the slab.
Q. And can I stop you for just a second? The compaction rate of the soil, would you assume that the soil is compacted more underneath that drive or underneath the turf or is it the same compaction for both?
A. I don't have a way of assessing whether it is or not, but if everything was done correctly and with care, I would think there would have been more effort put into what's under the -- what's under the slab than under the turf.
Q. So typically, and I know you don't know the as-built out there for actual compaction purposes, but typically you would expect the soil underneath the drive to be more compressed, if you will, than the soil to each side of the drive?

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A. I wouldn't say compressed. I would expect it to have a higher density.
Q. Higher density through compaction, right?
A. Because it's a sand, it has virtually no cohesion to it. So water flowing across it, no matter how condensed you make it, if you flow water across a cohesionless material, it will flow just like the water.
Q. Okay.
A. So if we have water that moves on the turf toward the driveway slab, if that water saturates the soil at the top end of the driveway slab, that will in turn continue to saturate the soil as you work down the slope of the slab.
Q. Understood.
A. Okay. That soil is -- is saturated then it -- it will start to exert hydrostatic pressure on the base of the slab. That's one thing that will happen. So there will be -- there will be hydrostatic pressure here at the base of the slab.
Q. And that hydrostatic pressure would be present whether that slab was at 36 degrees, 25 degrees or eight degrees, is that right?

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A. No. There will be more hydrostatic pressure the steeper the slab is. The more you incline something, if you put the water behind it, the more the hydrostatic pressure is at the base of it. You've got to think about the weight of water. If I stack up -- if I have one bucket of water and that bucket has one gallon of water in it and a gallon of water weighs 62.4 pounds per cubic foot, then -- let's say 1 cubic foot bucket instead of one gallon. A one cubic foot bucket, that's 62.4 pounds. If I put another bucket on top of it that's another 62.4 pounds. And I can stack them up all day long until I can get ten of them and that's 624 pounds. So if you had 624 pounds of water or ten feet of head of water, that's 624 pounds exerted at the base of a column of water if it weren't in buckets stacked up.
Q. So it's gonna have to find a place to come out?
A. Yes. And there are joints in the concrete pavement that are supposed to be there and they're supposed to be there. They are control joints in the pavement. So one place that the sand and the mixture of sand and water comes out is through the joints --

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Q. Right.
A. -- but in the concrete pavement. Another place is at the seam between the concrete and the asphalt.
Q. Right. And another place would be along each side of the pavement?
A. Yes. Along each side as the water flows down the turf or whatever might be -- the mulch beside it. But what happens at some point is that there is enough movement of water downhill under that slab that there will be a small pocket, if you will, between the concrete and the soil that the concrete rests on.
Q. An air pocket?
A. Yes.
Q. Have you seen any of those air pockets?
A. No. But I've seen the effect of it. And the effect of it is this. If you walk out on the Rivergate property and you go to some of the worst areas of heaving on the asphalt, you stand where the asphalt is heaved, you look straight at the driveway, the concrete driveway slab, you will see that the driveway slab has actually settled at the center line joint. And that the driveway slab is no longer the same -- it's no

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longer a flat surface all the way across it from right to left.
Q. Like in that picture (indicating)?
A. Yes. In the background can you -- I know it's hard to see in a photograph, but in the background there is -- there is a V formed by that slab and the reason that's there is that water has flowed down this joint and it has piped, if you will, over time and created a void space here (indicating).
Q. All right. Let's let the court reporter know what we're talking about. At the top of this picture says 7271354; is that right?
A. Yes.
Q. And that was all part of Exhibit 8, I believe; is that right, guys?
MS. BURTON: Yes.
Q. And that is the picture with the Ford Explorer or Expedition or whatever Ford that is?
A. Yes.
Q. Okay. Ford SUV. And that particular driveway is, I think if you flip over, towards Rivergate Drive?
A. It is the -- and I think I testified as to which unit it was earlier, so it's the second unit on

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the left when you come off of Rivergate Drive onto driveway E.
Q. And what is the slope of that drive?
A. About 13 and a half percent.
Q. Okay.
A. Do you understand at least the mode of water movement that I'm describing now?
Q. Yes.
A. It's just water moving downhill.
Q. It is water moving downhill. And I think you agreed with me that if done properly that there would be more compaction of the soil underneath the driveway all things being equal?
A. There likely would, but I don't expect it would have much of an effect on this happening.
Q. You haven't done any tests to determine though, the density under the driveways versus the density under the turf, have you?
A. The density wouldn't matter. The issue is not density, it's cohesion. And sand is virtually --
Q. You haven't done any cohesion tests either, have you?
A. We have had tests done by SNME where they determined what the type of soil was and it is a

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poorly graded sand and a poorly graded sand has virtually no cohesion.
Q. Okay. And is that all over the project?
A. Pretty much.
Q. All right. We know that the water's either gonna have this additional pressure underneath it at the bottom of the slope or -- and it's gonna force water out to the side of the pavement, it's gonna force water through the control joints any number of places?
A. Yes.
Q. Okay. And what we see on this -- now, you've got this as a 13 degree slope?
A. Thirteen percent, 13 and a half percent.
MR. STANLEY: Can you identify the picture again?
A. Photograph 56.
Q. Yeah. Now, we're talking about photograph 56, dated July 23rd, 2013, driveway E. And on that 13 percent -- 13 percent?
A. 13 percent -- 13 and a half percent.
Q. All right. That draws my next line of questions. Appendix N of Exhibit 8, can you look at that for me?
A. Okay.

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Q. On that figure 7.5 do you see where it says the pavement and then the shoulder and then the upgraded eight percent and then it says D, says, "Maximum six percent grade for low volume driveways," you see that?
A. Yes.
Q. The way I interpret that is it's eight percent plus a maximum of six more percent for a low volume driveway, which is a total of 14 percent?
A. That is what it says, but before you can do that you have to move 40 lateral feet.
Q. 40 feet?
A. Laterally. Look at the detail –
Q. Yeah. I saw that.
A. – and I'll walk you through it.
Q. Yes.
A. There's a 40-foot dimension from the base of the driveway where it meets the shoulder until you could start to incline to that plus six percent, so you have to move 40 feet.
Q. Forty feet?
A. Yes. And I don't know the dimension exactly between the edge of the typical driveway out there and the face of the building, but it may be less than 40 feet.

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Q. Two cars – you could put two cars in 40 feet?
A. Yeah. It's a long ways compared to what is built out there.
Q. All right. Do you know whether that particular application applies to residential drives?
A. Which application?
Q. 7.5.
A. No. And I – I'll say this again, I've not looked at this – this ordinance document as being something that I'm gonna say, oh, well, this driveway is two tenths of a percent too steep. I don't want to look at it that way. I'm evaluating the problem that is much, much bigger than just something being off by a couple percent. This is grossly in the wrong direction some of them triple the requirement.
Q. Let me talk about that for a second. Were you aware of the warnings that were given by the concrete subcontractor about the steepness of the driveways that were given to the builder/developer out there?
A. I've heard about that, but I don't think I've read about it. I've heard as much.
Q. Okay. Let me ask you to assume a set of facts. Number one, there's a change in the original

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design on the slope of the project by the builder/developer from what was originally designed to what's gonna end up as an as-built.
Number two, is when the concrete subcontractor comes out to the job site he's looking at the building pad elevations and the street elevations and says, if I build these driveways, it's gonna be too steep.
Number three, is let's assume that the builder/developer says I don't care how steep it is, I want you to build the driveways.
What's the subcontractor supposed to do at that point, do what he's hired to do and told to do by the builder/developer, walk off the job, combination thereof, what's he supposed to do?
MR. BAXTER: Objection to form.
A. Those are a lot of conditions. And –
Q. No. I'm asking you to assume everything is true.
A. I know that you're asking me to assume everything is true, but you just talked for almost a minute and a half with the conditions lined up one after the other and I think I remember all of them, so I'm gonna give you the best answer I can.

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Q. Okay.
A. If I read afterwards what you said and I don't remember it – I don't read it the same way I remember it now, I'll send an errata or something, but what I understood you saying, my answer is this. The only thing that guy can do is walk off the job, because there's an ordinance in place that tells what are the limitations for this kind of work.
Q. What ordinance?
A. What we just talked about, we just looked at.
Q. Horry County land?
A. Yes. If you work in Horry County and you don't follow the laws of Horry County you got no reason to work here. I mean, they've got an ordinance in place that covers that work. If a contractor, especially if he's got a license or any kind of a local license of any kind, if he's at all accredited in his trade and his craft, you've got to keep up to speed on what the environment is that you're working in and adjust your work accordingly. So really, all he can do is walk off the job. That's the only right thing to do or have the customer fix it. The other thing I could say –

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Q. Or have the customer fix it?
A. Yeah. The customer who might be a general contractor. Just go to the contractor and say, look, I can't do this until you resolve this issue. Call me when -- call me when it's resolved, which is the same thing as walking off the job really.
But the other thing I want to say is that in this case what you described is a person who has experience in a trade and they are working for -- not for a general contractor who has their own contracting license and might at least be able to give them some assurance that, hey, I've permitted this project, this is my license on the line, you're just working for me, I need you to -- you're just labor. You're just helping out here. That would be a slightly different set of circumstances if this was that, if it was a licensed general contractor hiring a tradesman and asking him to perform labor that might not meet their standards, but meets the standards of the licensed general contractor who hired him. It would be different if that happened. But what happened here, you've an unsophisticated, from what I read, possibly

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first time developer who's hired a tradesman. You got to know when to just walk away.
Q. Okay. So you don't ever see a situation where the subcontractor does what his boss tells him to do in a situation like this?
A. Money drives a lot of things, but you asked me what --
Q. What you would do?
A. -- what they should have done and I'm just telling you if you got the knowledge that there are ordinances in place for the work that you're doing and you deviate from that, you're putting a lot at risk. I mean, not just the work you just did, but you're kind of risking your reputation, too.
Q. All right. How much of the 3200 square feet goes to alleviating the slope issues?
A. I don't know that any of it is gonna resolve that problem.
Q. Why wasn't it designed -- why didn't the design that -- recommendations include rectifying the slope issue?
A. I haven't so far come up with an effective way to really substantially change those slopes because the buildings are there, the streets are

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there.
Q. Sort of the same thing as the subcontractor encountered, wasn't it? Go ahead. I'm sorry.
A. Well, what I was gonna say was that I've not come up with a way to, I guess, be financially responsible in what kind of a -- what kind of a scope of repair you would suggest to do that. I mean, I wouldn't sit in front of you all and tell you that you just need, you know, basically just nuke the site and start over every single thing, because that's not a -- to me, that's not a reasonable way to repair it.
What is reasonable is to identify what are the specific problems and see if you can stop those problems or at least -- at least reduce the symptoms of them and the causes of them enough that -- that the infrastructure can work and that it can function and then it can be maintained.
So my scope of repair is intended to do that. To -- not to make everything perfect, because that's an unreasonable bar to be set. Nobody's come up with a perfect project yet. Nobody's ever built a perfect one or designed a perfect one, but taking the conditions that are

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there, as bad as some of the conditions are, there are things you can do short of destroying the whole site and starting over again to alleviate some of those problems. And I feel like my scope does that.
Q. Okay.
A. And I'll say this, I want to get this out there, because so far I've not seen any other scopes of repair that have been prepared by others on this in this project. I'm open minded about what an appropriate scope of repair is. If any of you or whether there's anybody else involved in this that would send me or sit down with me at any time or meet at the property and talk about what are the alternatives in place, I would embrace that and I will do whatever I can to cooperate and come up with something that is agreeable to, you know, to multiple parties in this. I don't -- I don't for one minute think that I'm the one and only person in the world that could come up with an appropriate scope and I would like to work with anybody else to come up with something that's agreeable to folks.
Q. And I apologize for backing up on you. On the soil piping issue, again, I've seen and read

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articles where there's soil piping out in pastures and fields and things of that nature, so that's a condition that can occur notwithstanding any kind of concrete drives; is that right?

A. You're talking about a geologic condition, not one that's born by surface drainage. You're talking about a geologic condition. Sounds like you're talking about sink holes; is that what you're talking about?

Q. No. It's actually soil piping. I got online and looked while you were testifying today. There's soil piping in Europe, soil piping in California and all kinds of different places. Discovered something new today.

A. Well, what is your question to me about?

Q. You can have soil piping issues based on slope and drainage just as a natural occurrence without necessarily having a concrete driveway to facilitate it?

A. You certainly could.

Q. Okay. And in fact -- well, let me ask you this, did you see any evidence of the soil piping under driveways that were eight degrees or less?

A. No, I have not.

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Q. So it's just under the steep drives?

A. Yes.

Q. And other than your visual observations -- and what articles did you read to have this new hypothesis?

MR. STANLEY: Object to form.

A. I don't have any -- I don't have any articles to share with you that I've read about that.

Q. What research did you do on the project to come up with this new hypothesis?

A. I've been doing material and geotechnical evaluations of problems with soils and slopes and water since 1997 and really, all I have to stand on is my experience and what I've seen.

Q. So you've had 13 years; is that right?

A. Fifteen.

Q. Well, 13 years of experience by the time this particular report was done on the soil piping issue when you did the report in June?

A. I'm not holding myself out as solely a soil piping expert. I'm saying that I -- I have expertise that's specific to soils and materials, ground water, surface water and the problems that come along with that. I've evaluated enough -- enough of those problems over that many years that this is something I'm confident to talk to you about and tell you what it is. And if you've got somebody else who's telling you that something else is going on, I would love to hear about it, because this is not a gray area. This is what is happening out there.

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Q. Well, what you're talking about is sand eroding between -- underneath the driveways and popping up?

A. Yes.

Q. Okay. Is there any evidence of any erosion through the actual turf parts of the yards?

A. There is some erosion in the turf, but there's not pressure created by being confined under the slab and on the steep slope that results in the heaving of asphalt. There are places where just the movement of water across the turf has eroded the soil but not the heaving of the asphalt.

Q. And the kind of pressure that you're talking about is there's enough hydrostatic pressure underneath this sloped driveway in your opinion that's causing the pavement to heave out in the field of the pavement?

A. Yes. That's exactly what I'm talking about.

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Q. So the pressure of the water is greater than the strength of the asphalt in your opinion?

A. No, that's not what I said. It's between the asphalt and the stone base that's beneath it. So the pressure of that water doesn't have to get anywhere near the strength of the asphalt. All it has to do is be greater than the weight of the asphalt, which is really only about 110 pounds per square yard. It's not a lot of weight. Not a lot of pressure.

Q. Out in the field, you would expect that to go -- to extend out to the field of the actual asphalt?

A. Yes. Well, it's a progressive problem. It starts at the base of the concrete driveways and once -- once the sand has pushed the asphalt up there it has essentially wedged it's way between the asphalt and the base course. Once it's in there, if the condition isn't stopped it will continue and just get larger and larger and progress into the field of the pavement.

Q. You agree with me that the weight of the soil on either side of the driveways is less than the weight of the asphalt?

A. Yes, it is.

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Q. So if your hypothesis were to hold true, then the hydrostatic pressure that's being developed underneath the asphalt drives by all this piping of the water would force the dirt at the end of the driveway up?
A. Yes.
Q. Okay. Have you seen that against every driveway where the slope's steeper than eight percent out there?
A. I've seen it next to the driveways where heaving is. There is sand being forced out from the edge of the driveways and it's deposited on top of the asphalt. Exactly what you just said.
Q. On all of them?
A. I don't know if it's on all of them, because some of it washes away when it rains, but we could go to that property now and I could show you exactly what you just described.
Q. Okay. I was out at the property so I've seen --
A. Then you saw it.
Q. -- some of it.
MR. STANLEY: Are you a witness now?
Q. Yeah. But I've actually seen it on driveways that were towards Riverside, as well. I mean,

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Rivergate, as well.
A. Sand in the streets?
Q. Yeah. Why would that happen?
A. Well, if the predominant soil type is sand there's gonna be sand on the pavement where water washes into the road.
Q. And I understand what you're saying about the hydrostatic pressure being greater under the steeper slopes, but your theory would hold true -- I mean, there's going to be pressure built up behind every one of those driveways as the water migrates downhill; is that right?
A. Yeah. And it depends on really the circumstances at each location as to whether that's even gonna happen or not. It's gonna have to be a good bit of water building up in the side yards for that to happen, in my opinion.
Q. Now, if the soil was proper substrate soil -- you've mentioned before that it was poor soil?
MS. BISSET: Object to form.
A. Well, let me explain something to you that maybe I should have made this clear earlier. The term poorly graded sand, that's not -- that's not meant as a -- as a descriptor of the quality.

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It's not meant for me to say it's no good. I'm not saying that. That's not what that is. That's an actual term that is in the unified soil classification system that one uses to decide what soil type it is.
Q. These guys may know that, I don't.
A. There's well graded, there's poorly graded.
Q. What's poorly graded?
A. An example of poorly graded is when all the particles are a similar size. So marbles in a -- in a jar would be kind of an example of a material that had a poor grading of grain size.
Q. Sand on the beach?
A. Sand on the beach.
Q. Poorly graded?
A. Poorly graded.
Q. So what you want are different size aggregates?
A. If you want it to be strong and you want it to hold together and you want it to have, you know, resistance to being picked up by the movement of water, yes.
Q. Okay. All right.
A. But there's nothing -- there is nothing poor about the soil on the site per se. That's just the classification that is assigned to them

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based on what they really are.
Q. Understanding that, if you had a good grade of soil in the project, would that have eliminated or alleviated the problem, the soil piping problem?
A. It might have reduced it. I don't know that it would have eliminated it, but it might have reduced it. Now, if however, we were in a different area where you didn't have what was predominately a cohesionless sand and you had something that had a clay or silt component to it so it was a cohesive soil material, you would have very little that's going on. But you can't have that because we're on the coast and on the coast you got coastal sands.
Q. So you're stuck with the soil that you build on?
A. You dance with what brung ya.
Q. Okay. If you were the site contractor out there and you saw that you're building on soil like this and you've got the kind of slopes that are originally designed in the property, would you bring in a different kind of soil?
A. No. I don't at all have any -- find any fault with utilizing the materials that are on site.
Q. Okay. From your review of the documents do you

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know why there was a change in the originally designed ABC plans on the slope of the driveways and such?

A. I have some impressions I've drawn just from having read the documents.

Q. What are your impressions?

A. And some of what's formed my impressions are based on what I read very recently in some of the transcripts of testimony that you all have taken.

There was an economical problem on the site that was driven by a lack of – a lack of balance between cut and fill and that created a situation where the developer/owner needed to import soil from somewhere in order to get the building pads at the elevations that were desired. That creates a money problem, because you got to buy something that you thought may have already been present on the property. And then you got space limitations between the buildings and most developers are in the business of, you know, producing a product that is profitable and the way to do that is to have a higher density. They don't want to spread things out. They want to get things closer

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together in terms of what's built.

So my impression, it was an economic problem. The site didn't lend itself in terms of balance in terms of cut and fill and then the owner/developer needed more soil and in the process of – of not importing a substantial amount of soil, borrowed soil from other parts of the site. That changed the grades of this street and that street and it was just a progressive problem that was driven by the economics of the project.

Q. Which made the drives necessarily steeper at the bottom of the project, because of the borrowing of the soil from the bottom up to the top?

A. They're not necessarily any less steep or more steep at the very bottom than they are midway up. It's not that way. They're variable in terms of how steep they all are. Like some of the steepest ones are more than halfway up the hill. And then at the bottom of the hill on I, there are some that are a lot flatter than ones that are two streets up. So there's not any real regularity to it.

Q. Any idea why that happened?

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A. Well, it's hard to – difficult if not impossible to know what – you know, what really went on. I mean, I've read some things and you all have probably heard some things that the contractor shared about his first-hand observations of what was going on on the property and that there was some borrowing of soil from one street to take to another street and then there was still a shortage of soil, so there was soil borrowed from the next street to take to the next street. You know, stealing it from Peter to pay Paul with the dirt you've got available on site, that kind of thing. If that testimony about that is accurate, it's understandable how things could have gotten in as bad of shape as they are.

Q. And I'm still trying to understand the soil piping issue. What causes the water to stop under the asphalt and come up instead of continuing on down the grade of the property?

A. Because at that point it's in the road and the velocity has stopped, so there's no velocity once -- once the water stops moving, the soil particles will fall out.

Q. And I understand that if you were on a flat

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piece of land, but I mean, doesn't it slope all the way down to the waterway?

A. Well, it's that the slope is interrupted every time the slope touches a street. So there's a slope, then there's a street. There's a slope, there's a street. It's not one slope the whole way down.

Q. So based on that hypothesis, then you would have less piping further down the project because there's been more areas where the water has stopped up the project? In other words, there's more piping on the steeper slopes on B and C and D than there is on F G and H, because it's like you said, it's stopped by the roadways; is that right?

A. I don't –

Q. Either that's true or it flows all the way through. I don't see how you can have it both ways?

A. Well, there's a V or supposed to be a V formed by the inverted crown of every street, so for the water and the soil to move all the way across the street and still keep moving it would have to cross the street, go through the side yard and then get to the next – get to the next

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street. So I don't -- I don't follow what you're saying.

I see it as every street is a system and every street suffers the symptoms of what's happening uphill from it. But at every street there's an opportunity for the water and the sediment to be intercepted and go into the catch basins and go off the property underground through the pipes.

So I see every street as a system except in the case where there's a few breaches in the inverted crown that we talked about, where some places the pavement instead of having inverted crown tends to run away into the yard next to it. So where you've got those short circuits in the inverted crown, then you can have water move from one street, down the property, across another street and so on. But other than that, it's a closed system. The water gets captured. It's supposed to be captured at every street.

Q. So you're saying that the water from street -- the houses on the -- oh, shoot, the -- the downside of street B, for example, whatever rain fall, drainage, soil piping, goes into the street C and stops?

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A. it should, yes.

Q. Okay. All right. This is my first page of notes.

MR. STANLEY: You want to take a break?

THE DEPONENT: Yes, please.

MR. STANLEY: Let's take a break we've been going awhile.

(Whereupon, there was a short break in the proceedings.)

BY MR. SMITH:

Q. If you can find this exhibit for me (indicating).

A. Before we answer the question you're gonna ask me about that document, I was thinking about a question that you asked me when we first started talking and it is getting kind of late in the day and I think I may have heard your question more clearly after I answered it than I did before.

You asked me about having any further opinions and I told you I think my answer was that -- that I didn't, but you and I have -- have been talking and you've been asking me questions for a half hour or so and I'm sure in

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there somewhere I've probably stated some opinions before I told you that I did not have anymore opinions, so I should have listened more carefully to your question and I just wanted you to know that I realize that what I've told you are additional opinions and that I wouldn't have answered your question that way if I listened more carefully to it.

Q. And I think the way that I asked it and the way that I meant it up until the time that I had started questioning you, so that's fine. I mean, I don't care. We're good.

MR. STANLEY: What did -- what did --

MR. SMITH: I can't remember.

MR. STANLEY: I just want to make sure that you don't have any other -- now that he's mentioning that, you're not saying is that all his opinions, does he have any additional opinions?

MR. SMITH: I think once we get done with everybody's questioning, we may ask if there are anymore opinions on the project at that point that he's got that have not been expressed or asked

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about in connection with, for example, my concrete, but for right now, I'm fine. I think until Doug gets finished and we get through, I think I'm good.

MR. STANLEY: Okay. Because I do remember that question and then you went on to ask other opinions, so --

MR. SMITH: Yeah. I'm --

MR. BAXTER: Off the Record.

(Off-the-Record conversation.)

BY MR. SMITH:

Q. All right. You ready?

A. Yes.

Q. Okay. If you can find this exhibit, this is the one that has the B, C, D, E, F. That's the first page of it right there (indicating).

A. Yes.

Q. Okay. I need some help with your handwriting on the back page. And if you can slowly read those two paragraphs for me it may help me and I may not have any questions once you read it.

A. All right.

Q. I think it's the north driveways?

A. "The north driveways of each drive/ally were

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measured" --
Q. That's measured, okay?
A. -- "were measured with a 48-inch beam level. The inch measurements are the distance from being level."
Q. Now, what are you referring to when you say, "The inch measurements are the distance from being level." Are you talking about the inch measurements up above in this chart (indicating)?
A. Yes, sir.
Q. Okay.
A. The next thing are some figures that give an example of that.
Q. Right.
A. "Seven and a half inch measurements noted above equals there is seven and a half inches of fall in the distance of 48 inches."
Q. Okay.
A. "The note on reverse crown relates to instances where surface water flows away from the center line of the driveways, (positive crowns), toward the south driveways and lawns."
Q. What does that mean, what do you mean by all that?

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A. This is the condition that I've described as being a short circuit of the inverted crown where the street was designed to have an inverted crown that drains to the center line and then to the catch basin, but in some places instead of that inverted crown continuing the whole way there is a place where the pavement slopes out of the center line and toward the adjacent lawn.
Q. Gotcha. Okay. And regarding driveway slopes/grade?
A. "Regarding driveway slopes/grade, the north driveways of B through I are primarily the areas that exhibit excessive slope. The maximum observed at the south of the neighborhood in east facing driveways was nearly eight percent, others were less."
MR. SMITH: Okay. All right. Thank you, sir. We done?
MR. STANLEY: I think we need to be.
MS. BURTON: For now.
MR. SMITH: It will be 8:30 before we get out of here. We'll have another round of questions once he got

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done.
MR. STANLEY: So we're continuing his deposition. My thing is that doesn't allow me really to speak freely with him and we're going into mediation, so I would just ask that we stop his deposition and that you renotice it. Is that acceptable to you, Doug?
MR. BAXTER: Yes.
MS. BURTON: What does that mean?
MR. BAXTER: Why don't we just waive that rule?
MR. STANLEY: About his substance of his testimony?
MR. SMITH: Right.
MR. STANLEY: I can't exactly go into mediation and not be able to talk to him about his testimony.
MR. SMITH: The alternative is to continue the mediation and I'd rather not do that.
MS. BURTON: I'd second that idea.
MR. STANLEY: So we have agreed. Are there any objections to us waiving the rule?

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MR. SMITH: Michael, any objections to us waiving the rule on Stacy talking to his witness?
MR. WRIGHT: No objection.
(This deposition was adjourned at 6:59 p.m.)

(Signature reserved.)

CERTIFICATE OF REPORTER

STATE OF SOUTH CAROLINA)
COUNTY OF CHARLESTON)

I, Nicole D. White, the officer before whom the foregoing deposition was taken, do hereby certify that the witness whose testimony appears in the foregoing deposition was duly sworn by me; that the testimony of said witness was taken by me to the best of my ability and thereafter reduced to typewriting under my direction; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken, and further, that I am not a relative or employee of any attorney or counsel employed by the parties thereto, nor financially or otherwise interested in the outcome of the action.

_____ Date _____
Nicole D. White
Notary Public in and for the
State of South Carolina

My Commission expires September 11, 2017

ERRATA SHEET

RE: Rivergate Homeowners' Association, et al.
-vs- WW & LB Development Company, LLC, et al.,

DEPOSITION OF: J. Drew Wilkie (Volume II)

Please read this original deposition with care, and if you find any corrections or changes you wish made, list them by page and line number below. DO NOT WRITE IN THE DEPOSITION ITSELF. Return the deposition to this office after it is signed. We would appreciate your prompt attention to this matter.

To assist you in making any such corrections, please use the form below. If supplemental or additional pages are necessary, please furnish same and attach them to this errata sheet.

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SUBSCRIBED and SWORN TO before me this _____ day of _____, 2013

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My Commission expires:_____

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STATE OF SOUTH CAROLINA

COUNTY OF HORRY

IN THE COURT OF COMMON PLEAS

Civil Action No. 2010-CP-26-3901

(Case No. 2007-CP-26-0235 and 2008-CP-26-4690 were consolidated under 2008-CP-26-4690 by Order filed 3/31/09)

Rivergate Homeowners' Association,

Plaintiff,

vs.

WW & LB Development Company, LLC, Daniels Engineering, Inc., Walchir Morais, DLJ Construction, LLC, Dewayne Bates, The Bates Group, LLC, Bridges Construction Co., Brewer Construction, Inc., Speedy Concrete, Eric Jazwinski, Southern Framing Corporation, AB Consulting Engineers, Inc. WWI Development Company, LLC, Michael Dawson Construction, Inc., Asphalt Paving & Maintenance Co., Inc. and Chuck's Construction Co., Inc., Right Way Group, Inc., Stevens Construction Co., Inc., Geometrics, Inc., Law Engineering, Inc., D & M Builders, Inc., Hill Construction Company, Bonnie Stone a/k/a Bonny Stone, DIL Construction Company, L.L.P., Adrian Mondragon, individually and d/b/a Mondragon Construction, Inc., and Glen Causey,

Defendants.

Chuck's Construction Co., Inc.,
Third Party Plaintiff,

vs.

Vereen Concrete Co., Inc. and Asphalt Pavement Maintenance of Myrtle Beach, Inc.

Third Party Defendant.

AFFIDAVIT OF J. DREW WILKIE, P.E.

PERSONALLY APPEARED BEFORE ME, J. Drew Wilkie, P.E., and upon being duly sworn, states as follows:

1. I have been a licensed engineer in the State of South Carolina for seven years.

2. I am the owner of the forensic engineering firm J. Drew Wilkie, P.E. Engineering, and was previously an engineer with the firm Kimley-Horn and Associates, Inc.

3. I was hired by the Rivergate Homeowners' Association, Inc. (hereinafter HOA) to investigate civil construction defects as it relates to the common elements of the HOA.

4. I have reviewed the allegations in the HOA's Complaints and I am in agreement with those allegations and I will testify at trial in support of the HOA's allegations.

5. As a result of my investigations at the HOA, I issued a report on June 18, 2010 that outlined civil construction and design deficiencies and resulting damages observed up to that date. The text portion of this report is incorporated herein as Exhibit A.

6. While the HOA may have been aware of undesirable symptoms at the HOA such as standing water, erosion, etc., it is my opinion that the HOA would not have been aware that these symptoms were associated with or caused by civil construction and design defects until the report that I issued on June 18, 2010.

7. After reviewing the allegations in this matter, it is my opinion that the HOA brought suit against the Defendants as soon as practicable in this case.

8. Moreover, it is my opinion that the Defendants were aware or should have been aware of the civil construction and design deficiencies at the time of construction and thereafter, but failed to repair or correct these deficiencies even with this information and knowledge.

8. Moreover, it is my opinion that Braxton Lewis of AB Consulting held himself out as a licensed engineer, but was not licensed by the State of South Carolina at the time of AB Consulting's design, inspection, and certification of the Rivergate project.

J. Drew Wilkie, P.E.

SWORN to before me this

___ day of _____, 2014

_____ (L.S.)
Notary Public

My Commission Expires: _____

NELSON H LONG NOTARY PUBLIC RUTHERFORD CO., NC

Kimley-Horn
and Associates, Inc.

EXHIBIT
4

June 18, 2010

Suite 100
1918 South Boulevard
Charlotte, North Carolina
28203

Mr. Stacy Stanley
Stanley Law Firm, LLC
3303 East Highway 9
Little River, SC 29566-7825

Re: Robert Sanger, et al vs. WW & LB Development, et al.
Rivergate Section 1 HOA
Little River, SC
Civil Action No.: 2007-CP-26-228
KHA Project No: 018461000

Dear Mr. Stanley:

Kimley-Horn and Associates, Inc. (KHA) is pleased to submit the following report to Stanley Law Firm, LLC regarding our evaluation and findings in the above matter. The purpose of our evaluation was to conduct a visual and limited intrusive survey of property conditions to determine whether conditions relating to the pavements, grading, and drainage system represent deficiencies in design or construction and provide recommendations for corrective action.

Description

Stanley Law Firm represents the Rivergate Homeowners Association (the HOA) in a complaint against companies and individuals who developed, designed, and constructed Rivergate, a community located in Little River, South Carolina. Rivergate is located between Baker Street and Rivergate Lane, south of US Highway 17. Rivergate is a multi-family residential development, which includes 37 duplex and quadplex residential buildings, a community clubhouse, paved streets and driveways, and landscape features. The subject property and its surroundings generally slope downward from northwest to southeast toward the Atlantic Intracoastal Waterway.

Project Background

The property owner, Mr. Wayne Winderman, contracted with AB Consulting Engineers, Inc. (ABCE) on May 14, 1999 to provide professional services associated with the development of an 8-acre parcel to include approximately "120 multi-family units with associated asphalt parking areas." The contract included considerations for zoning, utilities, wetlands, surveying, landscaping,

TEL 704 333-0223
FAX 704 409-1813

and engineering. The engineering services were described to include site planning, infrastructure design and permitting, geotechnical investigation, preparation and administration of contract documents, and services during construction.

Partial List of Items Reviewed

1. Boundary and Wetland Survey for Wayne Winderman dated July 28, 1999 by Eric A. Perry, RLS
2. Boundary, Wetland, and Wetland Buffer Survey dated June 5, 2000 for W.W. & L.B. Development Company by Eric A. Perry, RLS
3. Construction Drawings for Rivergate (Sheets C1-C9) prepared by Amie S. Drucker, P.E. of ABCE with dates ranging from November 12, 1999 to March 12, 2004
4. Survey for Rivergate Phase XXXIV, As-Built Building 12, dated December 2, 2005 prepared by Joel F. Floyd of Atlantic Land Surveying Company
5. Rivergate Adult Community Landscape Plan dated December 5, 1999
6. Rivergate Building Plan – Sheet B1 dated August 7, 2001 prepared by Amie S. Drucker, P.E. of ABCE
7. Rivergate Drainage Area Plan – Sheet D1, dated November 12, 1999 prepared by Amie S. Drucker, P.E. of ABCE
8. Sewer As-Builts - Rivergate, prepared by Atlantic Land Surveying Company, sealed by Amie S. Drucker, P.E., dated December 1, 2000
9. Water As-Builts - Rivergate, prepared by Atlantic Land Surveying Company, sealed by Amie S. Drucker, P.E., dated December 1, 2000
10. Boundary Survey by Eric A. Perry, RLS of Perry Land Surveying, Inc., dated March 3, 2000
11. Contract for Engineering Services between ABCE and Wayne Winderman dated May 14, 1999
12. Rivergate, Phase I Stormwater Management and Sediment/Erosion Control Narrative with Calculations, prepared by Amie S. Drucker, P.E. of ABCE, dated November 12, 1999 and February 10, 2000
13. Contract Agreement between W.W. & L.B. Development Company and Clinck's Construction Company dated November 12, 1999
14. Various file documents for ABCE (labeled CSD000001 – CSD000560)
15. Land surveying data by The Earthworks Group, Inc., compiled in June 2009
16. Revised Draft Report of Geotechnical Exploration prepared by S&ME, Inc. for Kimley-Horn and Associates, Inc., dated July 14, 2009
17. South Carolina Stormwater Management and Sediment Control Handbook for Land Disturbance Activities, August 2003
18. Construction Science and Engineering, Inc. reports dated October 29, 2007, March 11, 2008, August 11, 2008, and January 12, 2009

Abbreviated Timeline for the Rivergate Project

- May 14, 1999 – Agreement for Engineering Services
- November 12, 1999 – Site construction drawings
- February 9, 2000 – Engineer's response to plan review comments by South Carolina's Office of Ocean and Coastal Resource Management (OCRM)
- February 16, 2000 – OCRM certified plans dated February 10, 2000
- February 24, 2000 – Agreement for Site Construction
- March 13 and 21, 2000 - Permits issued for water and wastewater construction
- April 18, 2000 – Horry County Planning Department issued letter permitting commencement of site work
- July 1, 2000 – Contractual or payment conflict between owner and general contractor
- July 7, 2000 – Engineer notified owner of deviations from plans in grading and drainage
- July 10, 2000 – Engineer's notification of deviation from plans, and engineer's request for hold harmless agreement
- July 11, 2000 – Rezoning of Rivergate property
- July 25, 2000 – Engineer's acceptance of storm water system modifications, and engineer's submittal of recommendations for the limits of driveway slopes
- November 22, 2000 – Engineer's Project Certification for storm water management system

We have not had the opportunity to review correspondence among the owner, developer, engineer, and contractor that might explain how the design and construction evolved. Key among the documents we have not seen are those related to value engineering, RFIs, meeting minutes, a full copy of Construction Specifications (which presumably accompanied the construction plans), or the owner's maintenance records for the grounds, pavements, and drainage system. Further, we have had no discussions with the engineer, owner, developer, or contractor related to the issues raised in this report.

Parties Involved in the Construction of Rivergate

1. Wayne Winderman – Owner
2. W.W. & L.B. Development Company, LLC – Developer
3. Dewayne Bates – Architect
4. AB Consulting Engineers, Inc. – Civil Engineer
5. Chuck's Construction Company – Site Contractor
6. Steven's Construction Company – Site Contractor

Abbreviated Timeline of KHA's Activity Prior to this Report

- October 11, 2007 – Discuss Rivergate case with Derek Hodgin
- October 15, 2007 – First Contacted by Stanley Law Firm
- October 18, 2007 – Agreement for Engineering Services
- October 24, 2007 – Site visit to Rivergate property
- October 15, 2008 – Submit preliminary report
- January 15, 2009 – Receive project file of AB Consulting Engineers, Inc. for review
- May 29, 2009 – Submit interim report
- June 2, 2009 – Site visit to Rivergate property
- June 12, 2009 – Site visit to Rivergate property
- June 2009 – The Earthworks Group, Inc. performed land surveying
- June 2009 – S&ME, Inc. conducted field and laboratory testing
- July 14, 2009 – S&ME, Inc. submitted report of findings
- October 13, 2009 – Submit preliminary written scope of repair to contractor
- November 19, 2009 – Site visit to Rivergate property
- February 3, 2010 – Submit revised scope of repair and exhibit to contractor

Conclusions

KHA has conducted observations of the property and reviewed construction documents, design documents, and project correspondence as part of our analysis. During this evaluation, we have confirmed the following deficiencies in the paving, grading, and drainage systems:

Storm Drainage

1. Poor installation of storm drainage components has diminished the function and performance of the storm drainage system.
2. The plans do not specify the installation of a culvert under the driveway at the east outlet from Rivergate onto Baker Street. (Photo 1)
3. The design plans required the installation of eight catch basins along the eastern edge of the property, none of which were installed. (Photo 2)
4. The southern end of the emergency overflow pipe extends underneath the patio of one home. This condition poses a maintenance concern because of the possibility of leaks developing near the building foundation. (Photo 3)
5. The stormwater management package prepared by ABCE included a requirement for baffles (weirs) and underdrains at the catch basins for the exfiltration system, but none were installed; their absence prevents the exfiltration system from performing as intended. The absence of true baffles prior to water entering the exfiltration system allows the entry of trash and debris that can block the pipe and associated drain holes. The absence of the weir allows water to bypass the exfiltration system. The 8" connection from the exfiltration system to the header pipe acts like an orifice and allows water to exit the system. (Photo 4)

6. The design of the storm drainage exfiltration system was based on inaccurate soils characteristics and did not take into account the variability of on-site soils. The appropriate soils characteristics were readily obtainable at the time of design and construction. The design calculations by ABCE assumed an infiltration rate of the soil to be 40 inches per hour. The infiltration rate (hydraulic conductivity "k value") obtained from the Web Soil Survey Hydraulic Conductivity Report (See Appendices J and K) varies from 0.57 inches per hour to approximately 13 inches per hour. This is significantly less than the design value. Additionally, field testing of the existing soil indicated an average k value of approximately 12" per hour (although the range varied across the site from approximately 2" to 48" per hour). Good practice would be to design each segment of exfiltration trench using soil borings taken at each trench location. Using an appropriate infiltration rate yields a required trench length of approximately 500', which is significantly greater than the 240' provided. Flooding of the paved driveways, deterioration of the pavements, and erosion are direct results of these design deviations.
7. ABCE observed certain construction deficiencies during the installation of the storm drainage system and recommended corrective action for a limited portion of the system, but failed to evaluate the remainder of the system for the same deficiencies. Instead, ABCE relied on the owner's verbal representation that the remainder of the work had been constructed in compliance with the construction plans. The deviation observed by ABCE was the absence of the required stone backfill around the exfiltration pipe. Soil was used in its place. Exfiltration trenches surrounded by soil instead of stone severely diminish the performance of the storm drainage system.
8. ABCE certified that the construction of the site improvements were in accordance with the plans and specifications, despite the engineer's discovery of significant deviations from the plans in July 2000.
9. The design of the storm water system violated the explicit written requirements of the *South Carolina Stormwater Management and Sediment Control Handbook for Land Disturbance Activities* (section 72-307.C) in the following manner (See Appendix I):
   - (11.b) The bottom of the exfiltration trench is not 0.5' above the seasonal high water table in some areas based on recent limited borings.
   - (11.d) Supporting data for the exfiltration system design was not established through on-site borings.
   - (11.j) Cleanouts every 100' for maintenance access were not provided.

Site Grading

10. The construction of the property deviated adversely from the design and construction documents.
11. One of the retaining walls depicted on the construction plans was not constructed. This resulted in a steep slope in the affected property that is difficult to maintain and does not allow for a "yard" that would have been provided if the site was built per the plans. (Photos 5 and 6)

12. Segmental retaining walls constructed on the site exhibit failure because they were not adequately constructed to resist lateral earth pressure and divert surface drainage either due to a design failure or a construction deviation. (Photos 7 through 9)
13. Deficiencies in site grading resulted in conditions of inadequate surface drainage including standing water, erosion, and deterioration of vegetation and pavements. (Photos 10 through 15)
14. The constructed topography of the property has resulted in the degradation and deformation of pavements and land.
15. Driveways are constructed at an improper slope. Based on information from the Horry County Building Department and the Horry County Land Development Regulations, the maximum slope for low volume driveways with grass shoulders is 8%. Some driveways in this development exceed 16% slope. (Photo 16)
16. The combination of poor surface drainage and steep driveways has resulted in erosion of driveways and deposition of eroded soil underneath adjacent pavements. This condition has caused deformation of both driveways and pavements. (Photos 11, 16, 17, and 18)
17. Soils used to develop the property did not comply with the engineer's assumptions for soil permeability used in the design of the storm water system. (See item 6 under "Storm Drainage")

Geotechnical Findings

18. Compaction of hot-mix asphalt pavements was inadequate, failing to meet industry standards. (See Appendices F and J)
19. The percentage of liquid asphalt contained in the hot-mix asphalt pavement was excessive, failing to meet industry standards. (See Appendices F and J)
20. The hydraulic conductivity of the on-site soils contradict the design assumptions used to size and specify materials for the storm drainage system. (See item 6 under "Storm Drainage")
21. Groundwater reaches an elevation at or above the bottom of the exfiltration pipe, a condition which further diminishes the storm drainage system's ability to function properly and which was not taken into account in the original design. (Photo 19)

Pavements

22. The pavements exhibit cracking, settlement, and deformation as a result of deficiencies in design and construction.
23. The construction of the hot-mix asphalt pavements at an inadequate slope has resulted in conditions of standing water, diminishing the performance of the pavements. (Photos 20 and 21)
24. Cast-in-place Portland cement concrete driveways have been constructed on a steep slope, causing erosion of soil underneath the driveway as well as deformation of driveways and adjacent hot-mix asphalt pavements. (Photos 11, 16, 17, and 18)

25. An excessive percentage of liquid asphalt and inadequate compaction of the asphalt pavement have contributed to its deformation and deterioration. (See items 18 and 19 under "Geotechnical Findings")

Maintenance

26. By not including baffles (not to be confused with weirs that are called baffles in the documents), the exfiltration pipe is subject to debris entry. Over time, silt and debris will further clog the perforated pipe and reduce its efficiency.
27. It should be noted that the anecdotal life span of exfiltration trenches is 10-15 years. Ultimately, the voids in the stone and surrounding soil will become clogged and the efficiency of the trench will decrease to the point where flooding occurs. At that time, the only viable long-term repair is the complete removal and replacement of the exfiltration trench system.

Summary

The deficiencies in design and construction stated above have caused damage to the property and likely will continue to cause deterioration and erosion of the land and pavements. Left uncorrected, these conditions are likely to worsen progressively, and some of the conditions are likely to cause structural damage to the buildings and their appurtenances.

Recommendations

Extensive reconstruction and repair are needed to correct the condition of the property. An itemized description of the scope of repair is presented in the attached Preliminary Quantity Takeoff, and a schematic of typical repair areas is included in Appendices C and D. These documents include general descriptions of the recommended scope of work to repair damaged conditions and to correct the deficiencies that caused them.

The scope of repair is necessary: 1) for the property to function and remain accessible by its occupants and 2) to bring the storm drainage system into compliance with local regulations.

Closure

This report has been prepared in accordance with the applicable professional standard of care. No other warranties or guarantees, express or implied, are made or intended. This report has been prepared solely for Stanley Law Firm for the purpose stated herein and should not be relied upon by any other party or for any other purpose. Specifically, this report may not be used in connection with actual renovation or construction of any kind. The conclusions in this report are based on the limited investigation described above. Any reliance on this report by any party other than Stanley Law Firm shall be without liability to Kimley-Horn and Associates, Inc. or its employees.

Additional information and photographs are contained within the appendices. Please call us at (704) 335-0210 if you have any questions regarding this report.

Very truly yours,

KIMLEY-HORN AND ASSOCIATES, INC.

J. Drew Wilkie, P.E.
Project Manager

SOUTH CAROLINA
No. 22634
J. DREW WILKIE

Austin L. Watts
Associate

SOUTH CAROLINA
KIMLEY-HORN AND ASSOCIATES, INC.
NO. C00166
CERTIFICATE OF AUTHORIZATION

SPEEDEE CONCRETE
3681 renee dr box 351
Myrtle Beach, SC 29579

Phone # 843-946-6000
Fax # 843-916-9353

Invoice

Date	Invoice #
3/22/2007	9256

Bill To
WW LB DEV RIVERGATE 1414 WOODVIEW RD YARDLEY PH, pa 19067 FAX-2802394

P.O. No.	Terms	Project

Item	Description	Rate	Quantity	Amount
flat work turnkey	flat work turnkey	2.15	0	0.00

Total	$0.00
Balance Due	$0.00

Thank You for Your Prompt Payment.

12.23.08.000481

AGREEMENT
BETWEEN OWNER AND ENGINEER
FOR
PROFESSIONAL SERVICES

This Agreement is made this 14 day of May, 1999 between A B Consulting Engineers, Inc., a South Carolina corporation (hereinafter referred to as Engineer) and Mr. Wayne Winderman. (hereinafter referred to as Owner).

WHEREAS, the Owner intends to develop a multi-family subdivision on 8 acres of land, located on U.S. Highway 17, in Little River, Horry County, South Carolina (hereinafter referred to as the Project); and

WHEREAS, the Owner retained the Engineer to perform certain professional services in connection with the development of the Project.

NOW, THEREFORE, it is agreed between the parties as follows.

I. SCOPE OF SERVICES

The Engineer shall perform all services delineated in the attached Engineering Proposal and prepare any such design calculations, construction drawings, construction specifications, permit applications, maps, forms or other documents, as well as, conduct any such field investigations reasonably required to support the design documents, as outlined below

A. Design and Construction Drawings including:
   1. Grading and Drainage Plan
   2. Sediment and Erosion Control Plan
   3. Sanitary Sewer System and Pump Station Plans
   4. Water Distribution System Plans
B. Supporting Calculations and Documentation
C. Permit application preparation, submission and follow up

II CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement and the Engineer's Proposal for Engineering and Surveying Services, as well as, the following to be provided by the Owner or Owner's Consultants:

A. Geotechnical Engineering Services
B. Wetlands Consulting and Permitting Services
C. Architectural Design Services
D. Landscaping Design Services.

EXHIBIT
3
2-25-13 Dm

III. RELATIONSHIP OF THE PARTIES

The Engineer accepts the relationship of trust and confidence established by this Agreement and covenants with the Owner to utilize the Engineer's skill, efforts and judgment in furthering the interests of the Owner; to perform the Services in an expeditious and economical manner consistent with the interests of the Owner. The Owner agrees to exercise best efforts to enable the Engineer to perform the Services efficiently and in an expeditious manner by furnishing such materials and information required by the Engineer in a timely manner and by making payments to the Engineer in accordance with this Agreement.

IV. FEES FOR SERVICES

The Owner shall pay the Engineer in current funds for the Engineer's performance of the services in this Agreement, to be paid as follows:

Surveying.

A. Upon completion of the Boundary Survey
$1,055.00

B. Upon completion of the Topographic Survey
$2,000.00

Engineering

A Upon execution of this Agreement
$1,400.00

B. Upon completion of the design drawings and submission to the various regulatory authorities
$6,500.00

C. Upon receipt of the construction permits
$6,500.00

D. Services during construction shall be billed monthly at an hourly rate of $55.00. Terms for payment shall be net 5 days.

V. CHANGES IN THE SCOPE OF SERVICES

Changes made by the Owner in the Scope of Services, hereinbefore described, and which the Owner and Engineer mutually agree constitute additional work for the Project, shall be completed upon written authorization of the Owner at hourly rates or by written amendment of this Agreement outlining a fixed sum for the agreed changes.

VI. REIMBURSABLE EXPENSES

The Owner agrees to reimburse the Engineer for expenses incurred incidental to the services provided under this Agreement, to include not be limited to the following, exclusive of normal overhead:

A. Permit Fees
B. Travel
C. Telephone / Telecopier Costs
D. Printing / Photocopying Costs
E. Postage / Express Mail

VIII. LIMITATION OF LIABILITY

The Engineer maintains Professional Liability coverage for losses by the Owner resulting from errors and omissions on the part of the Engineer. The Owner agrees to limit the liability of the Engineer to $100,000.00, or 50% of the value of the proposed improvements, whichever is less. The Owner may elect to provide additional liability coverage, which can be made available for an additional fee upon request.

IX. CONTRACT TERMINATION OR SUSPENSION

The Owner may, at his discretion, elect to either suspend or terminate the Contract with the Engineer, upon written notice of such action, to be received by the Engineer 45 days prior to the effective date of this action. The Engineer shall, upon receiving notice, immediately suspend completion of further services, or shall complete that portion of services currently in progress, as directed by the Owner. The Owner agrees to pay the Engineer the lesser of: a) his time, at standard rates, invested in completing agreed services up until receipt of the notice of action, or, b) the fixed fee for completion of that portion of the services which is currently in progress.

The Engineer may, with the consent of the Owner, terminate or suspend his services under this Agreement, upon providing 45 days written notice to the Owner of this action. The engineer shall continue such services as are required to complete that portion of the work currently in progress, or as directed by the Owner.

IN WITNESS WHEREOF, the parties have made and executed this Agreement as of the day and year first above written.

OWNER:
Wayne Winderman

Wayne Winderman
BY: Wayne Winderman

WITNESS

ENGINEER:
A B Consulting Engineers, Inc.

BY: Braxton B. Lewis III.

WITNESS

CONTRACT AGREEMENT
Site Contract

AGREEMENT

Made as of the 24 th day of February in the year of 2000.

BETWEEN the Owner:

WW & LB Development Company
1414 Woodview Road
Yardley, Pa 19067

And the Contractor:

Chuck's Construction Company
P.O. Box 1380
Little River, S.C. 29566

Project

Rivergate Adult Style Village
Route 17
Little River, South Carolina

Architectural Plans Prepared by:

Dwayne Bates
514 20th Avenue North
North Myrtle Beach, S.C. 29582

Article 1

The Contract Documents

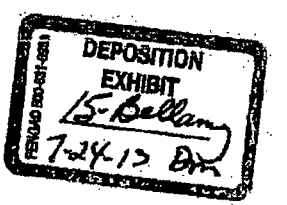
The Contract Documents are as Follows:

1. Architectural Drawings Prepared by Dewayne Bates. Dated 12/22/99.

2. Site Engineering Plans prepared by Braxton Lewis of ABC Consulting Engineers, Inc. Dated: 11/12/99.

A work copy will be provided or made available to the contractor in a construction trailer at the site.

Article 2
Mutual Rights and Responsibilities



Article 2
Mutual Rights and Responsibilities

The owner and contractor shall be mutually bound by the terms of this Agreement and if the contractor enters into a subcontract then the any subcontractors shall be bound by the terms of this agreement.

Article 3

The Owner shall cooperate with the contractor on providing a schedule of work completion and the contractor shall be notified on a timely basis of any subsequent changes.

If after timely communication is made to the contractor to complete a certain phase of the contract and the contractor fails to start the work order within 10 days and completes the work order within six weeks excepting delays caused by the Owner. Owner shall have the right to cancel this contract by giving 3 days advance notice in writing for failure to complete the contract. This notice can be made by fax or certified mail or overnight carrier.

Article 4

Contractor or Subcontractor

The contractor shall agree to work with the Owner in scheduling of work to avoid conflict and delay. The contractor agrees that the owner shall have the authority to reject work which does not conform to the Specifications and or Standards of the Project which shall not be unreasonably enforced by the owner.

The owner agrees to pay for all permit fees and materials unless agreed to otherwise by both parties in writing.

The Contractor agrees to take all reasonable safety precautions to ensure the safety of all parties that will work and visit the site.

The contractor agrees to provide a warranty for all work performed for a period of one year against faulty workmanship. The owner shall be responsible for all faulty materials provided to the contractor including any labor to replace materials and or appliances that are faulty that were initially installed by the contractor.

To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner for any damages caused by the negligence of the contractor or for any errors in omission made by the contractor.

Article 5
Changes to the Work

All changes to the workshall be only made in writing and agreed to by the Owner and the Contractor. All claims for additional work claimed by Contractor shall be made within 45 days of the completion of the work and submitted in writing to the Owner.

Article 6
Arbitration

Any controversy or claim between the Owner and the Contractor shall be settled by Binding Arbitration in accordance with the rules of the American Arbitration Association currently in effect and governed by rules in the State of South Carolina.

Article 7
Termination or Suspension or Assignment

Contractor can terminate this contract for any invoices that remain unpaid that are not in dispute that are older then (45) forty-five days. Such cancellation must be done so in writing by fax, certified mail or overnight carrier.

Owner can cancel this contract if after proper notification is made to contractor and contractor does not start the job within (10) ten days and complete the job within (15) fifteen weeks as it relates to the operational sits improvements listed below unless such delay is caused by owner weather conditions beyond the control of the contractor. Such cancellation must be done so in writing by fax, certified mail or overnight carrier.

This contract can not be assigned unless agreed to in writing by the owner and contractor.

Article 8
Scope of the Work and Contract Amount
Phase 1 Site Improvements

Description	Quantity	Amount
Sanitary Sewer		
Pump Station	1	$ 50,000
4" Force Main	1460 LF	10,950
8" PVC, 0-6 ft	1196 LF	21,528
8" DIP 6-8 ft	162 LF	4,050
Manholes 6-8 ft	5	7,250
Manholes 8-10 ft	1	1,800
8x6 PVC Wyes	23	4,278
Total Sanitary Main		99,856
Sanitary Sewer - Unit Connection		
Double Service	5	2,250
Single Service	18	7,200
6" Service Lines	1310fl	19,650
6" Cleanouts	8	1,200
Total Unit Connection		30,300
Unit Costs (30,300/84 Units)		360
Water Supply		
Water Main		
6" C-900 PVC & 2" C900PVC	1750 lf	21,875
6" Tee	1	350
6" Hydrant Tee	3	900
Fire Hydrant w/6" GV	3	5,025
6" GV Box	3	1,350
2" GV Box	7	1,750
2" Blowoff	1	425
3/4" Blowoff	5	1,325
Total Water Phase 1 Water Main		33,000
Water - Unit Connection		
Double Service	40	13,000
Single Service	45	13,500
Total Unit Connection		26,500
Unit Costs (26500/84)		315

Stormwater Control System Phase 1		
Installation of 2'x 3' Catch Basins	17 @ 800 ea	13,600
Catch Basins 1'x1'	7 @ 65 ea	455
Catch Basin 2'x2'	1 @ 600	600
8" Perforated Pipe	1335 @ 8lf	10,680
15" Perforated Pipe	1920 @ 25lf	48,000
Total Costs Phase 1 if ground water below pipe elevation		73,335
Additional Cost if Actual Conditions Require Overdrain		
6" Overdrain	2240 @ 9lf	20,160

Demolition, Excavation & Road Improvements Main Road	
Demolition of three homes	$ 18,000
Clearing 9 1/2 Acres and removal of all debris	76,000
Cut 14,665 cubic yards and fill 18629 yds Mucking and removal of unsuitable materials	29,330
Subgrade Excavation of Main Road 3888 yds	7,776
Curbing 3065 lin ft @ $ 8.50	26,053
Excavation, grading and pipe for front entrance	2,500
Base Material for Main Road 3827 @ 5.50 yd	21,384
Asphalt 2" Type 1 for Main Rd 3827 @ 5.50 yd	21,049
Total Demolition, Excavation and Main Road	202,092

Driveway Improvements for Units

Subgrade Excavation of Driveway and Pad 8785 yds @ $ 2.00	17,570
Allowance for Additional Fill Material to be obtained on site in rear of property	12,000
Base Material for Driveways 8785 @ 5.50 yd	48,317
Asphalt 2" Type 1 for Drive 8785 @ 5.50 yd	48,317
Landscaping and Retaining Walls	75,000
Total Driveway Improvements and Pads for Units	201,204
Cost per Unit (201,204/84)	2,395

Site Contract Recap

Operational Site Improvements

Sewer Main	99,856
Water Main	33,000
Storm Water	73,335
Reserve for Storm Water Overdrain	20,160
Demolition & Main Road	202,092
Total Operational Site	$ 428,443

Unit Site Improvements

Unit Sewer Installation	30,300	360 unit
Unit Water Installation	26,500	315 unit
Unit Driveway Improve	202,092	2,395 unit
Total Unit Site Improvements	258,892	3,070 unit

Progress Payments

The Contractor shall submit progress invoices based on work completed by the 25th day at the end of each month. Owner shall make payment to Contractor within 15 days after such submission unless agreed to in writing by owner and contractor.

Article 9
Final Payment

Before issuance of final payment, the owner reserves the right to request and receive satisfactory evidence that all invoices for materials and equipment have been satisfied to the extent that the contractor has supplied materials or equipment as part of the project.

Article 10
Other Conditions

Contractor agrees to provide the proper licensing required to obtain a permit for the contruction of the quad units and or duplex units to constructed in the Rivergate Project and each subcontractor must be properly licensed as required by the governing authority.

This agreement is entered into as the day and year written above.

Witness:

Owner

Wayne Winderman
WW & LB Development Company
Managing Partner

Contractor

Certifications

I have reviewed the above costs listed above in this contract and have determined that the above costs listed as Operational Site costs and these costs are sufficient to install improvements necessary in receiving a certificate of occupancy permit for the individual units for Phase One of the Rivergate Project. Further, I have reviewed the unit costs for the completion of all site work related to the water, sewer and driveways to be sufficient to complete the indidual units on an as built basis.

Wel: c Bellamy

Chuck Bellamy
Chucks Construction Company
Date:

Braxton Lewis
AB Consultants
Date:

RIVERGATE HOA
519 CLARENDON COURT
YARDLEY, PA 19067
215-321-0114

September 12, 2007

Dear Homeowners/ Members

Some Homeowners/ Members of the HOA have made a motion to the Horry County Courts through their attorneys to seek to take control and force me to resign from the HOA as your manager. As many might recall, I attempted to form a board of directors a few years ago and relinquish these duties at that time. This attempt was opposed by another group at Rivergate and their attorney who at the time convinced willing homeowners to refuse service under the threat of legal liability. We have also made attempts to form committees to address issues and likewise these efforts were derailed.

The time is long overdue to turn the HOA over to an elected Board of Directors. We will not oppose the motion and thereby advise each member that they consider carefully who they might want to serve on the Board. The resignation is effective October 31, 2007.

We have worked diligently at all times to keep the impact of the monthly dues at a minimum. We are proud of the fact that the dues have remained the same for two years and there is a sizeable surplus. We have not charged a management fee and paid HOA expenses from our company, such as the cost of utilities to operate the irrigation pump and pool. We have provided use of the clubhouse at no additional cost to the homeowners. We will be vacating the clubhouse on or about October 1, 2007 and will turn over the electric invoice to the HOA for payment.

We urge the members to choose their board carefully. We could only expect that each member wants to continue to have reasonable dues. We intend to waive any additional management fees and project a very sizeable surplus that should take care of many issues that might remain. Much of this surplus is the result of our tight fisted approach to cost containment. Your new board may not be as concerned to control costs and engage in unnecessary expenses and costs that might increase your dues. Further, there is the complex issue of insurance. It appears that insurance rates may have flattened and even might be cheaper this year. However, the replacement costs suggested by the insurance company is high in our experience and will cause excess coverage in our opinion. We have fought vigorously to keep these costs under control and will passing that torch to your new board of directors and management company. These homes should be audited for actual cost replacement by an independent appraisal company.

There are issues concerning the management of the HOA and that will be the decision of the Board of Directors. We felt compelled to provide management as a direct result of the service vendors recommended that provided less then adequate services. We have had a much better experience with Benchmark Management for the Whispering Woods HOA. They have provided excellent vendors that get the job done at the lowest cost on a timely basis. No Management Company will be a miracle worker and provide everything that everyone might desire. Again we respectfully turn this decision over to the new Board. Perhaps the Board might want to self manage to continue to save costs?

Lastly, we have requested on numerous occasions, the Atalaya Management provide us with maintenance reserve estimates so that Whispering Woods HOA can pay its appropriate portion of the road maintenance and irrigation maintenance as well as the cost to operate the irrigation pump. We have not received these estimates and will attempt to calculate an appropriate reserve and will have Whispering Woods provide cash funding to Rivergate HOA reserve and operation account for these costs pursuant to the easement and other agreements that have been executed between the entire property as a whole.

We sincerely believe that we have done our very best to manage the HOA and exercised our best efforts. Many leave their positions of this nature with financial distress and extreme deficits. We are extremely proud that there are is no financial distress and a substantial surplus. We often hear compliments on how great the project looks and are in fact proud of the project as a whole. We sincerely wish each and every homeowner the best of health and continued enjoyment in their retirement.

Very Truly Yours,

Wayne Winderman

Wayne Winderman
Manager

Donna L Dawson

Donna Dawson
Manager
Rivergate Hoa

CC: Angie Knight

Rivergate HOA
Balance Sheet
July 31, 2007

ASSETS

Current Assets			
Cash Oper-NBSC 6572420201	$ 30,869.69		
Reserve Savings	29,779.09		
Questionable Dues A/R WWLB	100.18		
Account Receivables - HOA Fees	2,798.64		
Total Current Assets			63,547.60
Property and Equipment			
Furniture and Fixtures	(98.22)		
Total Property and Equipment			(98.22)
Other Assets			
Prepaid Insurance	67,345.25		
Total Other Assets			67,345.25
Total Assets		$	130,794.63

LIABILITIES AND EQUITY

Current Liabilities			
Accounts Payable	$ 602.20		
Insurance Payable	33,659.55		
Advance Assessments	5,139.88		
A/P APM	125.00		
Total Current Liabilities			39,526.63
Long-Term Liabilities			
Total Long-Term Liabilities			0.00
Total Liabilities			39,526.63
Equity			
Reserves for Replacement	29,102.86		
Retained Earnings	22,608.39		
Net Income	39,556.75		
Total Equity			91,268.00
Total Liabilities & Equity		$	130,794.63

These Financial Statements are not audited they are for Management Purposes only

WW&LB Development Company, LLC
519 CLARENDON COURT
YARDLEY, PA 19067
215-321-0114

September 16, 2007

Atalaya Management

On September 28, 2007, we are requesting that the utilities including power, water and sewer be transferred to Rivergate Hoa. We will be vacating this facility and this will be turned over to the Hoa. This will include the location at 4220 Rivergate Lane which is the clubhouse for Rivergate. (The attached letters are self explanatory)

We are in the process of turning the Hoa over to the homeowners but shall remain in control until October 31, 2007. We have waived our management fee but have chosen to expend funds that we have earned on the site. You will be receiving an invoice for repair of the entrance into street number 4 at Rivergate. A pothole has formed in this area and we consider this issue to be maintenance. However, we do not wish to dispute this issue and will direct your company to pay this invoice and record this amount either as a repair or as a management fee.

Lastly, we are in the process of calculating a reserve for maintenance and operation of the irrigation pump and maintenance of the main road and last access road at Rivergate which are under an easement and maintenance agreement. Upon completion of this last task, your company will receive a check to fund the portion related to the Whispering Woods for deposit in Rivergate Hoa. We will hope to have this done in the next week or so.

Please advise me if you have any questions or problems. As you will note, we have instructed the utility companies to shut off the utilities as of September 28, 2007. We assume that you will have no objection transferring this expense to the HOA as we will have vacated any use of these facilities. If the power and water is shut off this will result in an interruption of the pool and irrigation systems that are wired to the clubhouse. It will also result in the front lights of the development being disconnected.

Thanks in advance for your cooperation on this matter.

Very Truly Yours,

Wayne Winderman
Managing Member
WW&LB Development Company, LLC

WW&LB Development Company, LLC
519 CLARENDON COURT
YARDLEY, PA 19067
215-321-0114

September 16, 2007

Santee Cooper
P.O. Box 188
Moncks Corner, SC 29461-0188

Dear Santee,

On September 28, 2007, we are requesting that the power be transferred to Rivergate Hoa. We will be vacating this facility and this will be turned over to the Hoa. This should include the following accounts:

6-961-45886 Clubhouse, Pool Irrigation Pump (Rivergate Hoa)
6-961-44834 Front Entrance Lights (Rivergate Hoa)
6-961-46220 Irrigation Control (Probably disconnected recently
And new charges should be against Whispering
Woods Hoa
6-961-46025 Irrigation Control (Rivergate Hoa)

Please advise me if you have any questions or problems. If for some reason the management company disputes turning over these accounts to the HOA please disconnect all these accounts accordingly on September 28, 2007. We will not longer pay these invoices as of September 28, 2007. Thanks in advance for your cooperation on this matter.

Very Truly Yours,

Wayne Windermann
Wayne Windermann
Managing Member
WW&LB Development Company, LLC

CC: OtaPaya Management
Brookmark Management

WW&LB Development Company, LLC
519 CLARENDON COURT
YARDLEY, PA 19067
215-321-0114

September 16, 2007

Little River Water and Sewer
Little River, SC

Dear Little River Water and Sewer,

On September 28, 2007, we are requesting that the Sewer and Water be transferred to Rivergate Hoa. We will be vacating this facility and this will be turned over to the Hoa. This will include the location at 4220 Rivergate Lane which is the clubhouse for Rivergate.

Please advise me if you have any questions or problems. If for some reason the management company disputes turning over these accounts to the HOA please disconnect all these accounts accordingly on September 28, 2007. We will not longer pay these invoices as of September 28, 2007. Thanks in advance for your cooperation on this matter.

Very Truly Yours,

Wayne Windeknecht
Managing Member
WW&LB Development Company, LLC

CC: Ainlaya Management Company

rec'd 7-11-05
4:15 PM per
Judy Medlen
from office

RIVERGATE HOA
519 CLARENDON COURT
YARDLEY, PA 19067
215-321-0114

Committee

July 6, 2005

Rivergate Hoa Ad Hoc Committee
Jim Dunn
Little River, SC

Dear Committee;

I am in receipt of your ten page letter dated June 21, 2005. Many of the items are interior issues that are not part of the HOA committee. There has been a County re-inspection of the houses that were all previously approved for code violations. The county has prepared a list which is attached and these items will all be corrected within 30 days. Please note that your committee will not be recognized for any other purpose then to address legitimate concerns of the HOA.

at Jim Dunn's request

We have made inspections of drainage issues and will address the same as quickly as possible. I

Concerning the clubhouse please refer to the master deed as to when the developer is required to turn over the clubhouse. Also note, that there are no charges to the HOA for the clubhouse at this time.

?

Concerning the various issues raised on the the Townhouses and Condo's. Please refer to the HOA Agreement concerning the Developers rights to grant easemeats and to develop their property. The easements have been granted for access from and to all the Phases as permitted in the HOA Agreement.

Concerning issues of Maintenance they will be fairly addressed. There will be a fee charged for the maintenance of irrigation, road maintenance and reasonable regulations will be put into place restricting loitering on the Phase 1 property. There will be no use of the clubhouse or front pool afforded the Phase 2 homeowners. Phase 2 will have its own pool. If the Committee would like to provide a suggestion as to a reasonable allocation and the accrual of a reserve to be charged to Phase 2, we would be more then happy to consider the same in an open manner. The Committee is free to inquire as to County Maintenance of Roadway.

File: Rivergate
Origin: Jim Dunn
0346

night and early AM. As a test, if you think yours is not working place some pie pans with a few rocks to keep them from blowing away. Check each morning for brown water. Please provide some written records on your unit for the committee.

Some have asked what is happening to unit 13 that's under construction. It is too close to the unit next door. The current plan is to remove a minimum of 21 inches from that side of the unit.

Rivergate Property Restrictions

See pages10 and 11 **Use of common elements subject to the rules of association.**
See page 11 **Condominium to be used for lawful purposes, restriction against nuisances, etc. (See Attached)**
When you purchased your unit you agreed to these restrictions and must adhere to them. Please read page 10 and 11 very carefully and take the necessary action to correct any out of compliance issues that you have.

The Pool

There are rules for using the pool and they must be obeyed for you own safety.
No pets or glass in the pool area. Keep in mind this is an adult community. Visitors with children are welcome but please be considerate of adult residents.

Other Items

There were additional items listed, not code violations, but of concern to the homeowners of a workmanship nature that have not been addressed by our Developer. They still need to be resolved and it seems we will have to pursue another avenue for these items.

Please review the attached copy of Wayne Winderman's letter dated July 6, 2005 addressing other issues raised by various home owners.

Wayne also forward copies of all HOA financial data for committee review.
There are two items that each home owner should be made aware of.

1. It appears that we are under insured.
2. Based on industry standards for condo HOA's, we do not have adequate moneys in reserve.

These items to be reviewed for clarification and action taken if needed to protect everyone's interest.

If you have issues in or around your unit that have not been addressed please contact a committee member for clarification or assistance in the matter.

Committee Members

Mike DeMartino	**663-1277**
Jim Dunn	**663-4325**
Margaret Horan	**663-4275**
Susann Hutt	**663-4229**
Bob Krupczyk	**663-5219**
Eddie Medlin	**663-4321**

Conclusion of what? Rivergate Whispering Woods & or Condo's on Marsh

Upon conclusion of construction, we will have an engineer inspect the site for any repairs needed on the roadways TOO LONG Time

We will have our engineer inspect the walkways for compliance to normal and acceptable engineering standards. When?

We review the sprinkler system including ongoing maintenance issues within the next month and provide a report. NO Report

We will review the clean out pipes for compliance with code.

We will inspect retaining wall in 4223. ?

Trimming of grass along roadway not part of current contract. This can be added next year at an additional cost if the homeowners desire the same.

Concerning issues of management, we have found dealing with Atalaya to be inadequate. The contractors they have recommended have been far inferior then those now in place. Rivergate has never looked better. However, Atalaya was not responsible for hiring the current lawn maintenance company. Further, we have not received timely accounting reports nor are there adequate controls over spending in place. We have removed Atalaya as the Manager at Rivergate. Attached is the latest financial statements that only provide information to April 2005. Atalaya has not fulfilled its obligation to provide timely accounting information. We encourage the committee to review the statements on a monthly basis. whose opinion

Rivergate sign is solely up to the discretion of the developer.

Please refer to Atalaya concerning accounting issues and reserves.

The issue of the courtyards is strictly at the discretion of Developer. Any issue of impact on community is completely unfounded as all units continue to sell quickly at much higher prices.

Developer has provides its obligation to the community as pool is now in operation. Any improvements is the responsibility of the HOA.

Power washing of units is the responsibility of the HOA and not in the current year's budget.

Developer has provided its obligation in the construction of the Front Entrance to Rivergate.

File: Rivergate
Origin: Jim Dunn
0347

Billboard sign has been granted an irrevocable easement to the front property. Developer has not been collecting rent and this area is being maintained pursuant to that Agreement. The HOA has no rights to that easement agreement that was put in place prior to the dedication of any land to the HOA. That portion of the land will be excluded from the Hoa accordingly.

We will talk to the contractors concerning speeding.

In conclusion, Rivergate has never looked better as the we have received numerous compliments on the project and its appearance. We will work together to address issues as they arise to preserve the value and quality of life at Rivergate which continues to escalate and rise in value.

Very Truly Yours,

Wayne Winderman
Manager of HOA

File: Rivergate
Origin: Jim Dunn
0348

MINUTES OF RIVERAGE HOME OWNERS MEETING – NOV. 4, 2006

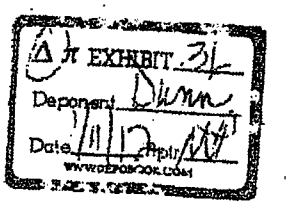
Meeting was held at Little River Methodist Church & hosted by Sylvia Lindsay & Jim Dunn. Sylvia thanked everyone for coming & explained that the Church hall was free for us to use but it would be nice to give a donation.

She said we should try to follow some rule or order for this meeting, so the procedure will be to hold up your hand to be recognized if you want to ask a question or address the crowd. We will find out what the issues are that concern all at Rivergate, since Wayne Winderman has said that by the end of the year he will be leaving & turning everything over to us. We must prepare & be ready.

Jim Dunn told everyone that he & the AdHoc Committee has done a lot of work in the community; the yellow lines were eliminated; sewer lines were put in the ground where they belong; street lights were straightened; French drains were installed at the end where Candace Cochran lives, but it didn't do much good. I have talked to every government agency in Horry County & the State; a lot of you know that there were a number of Code Violations that were fixed & Wayne was shut down until they were. Carolyn King's house has 2 ft cut off the side of it to correct a big mistake. The next big thing that took forever was the LLR(License,Labor & Regulations in Columbia) blank forms that 13 or 14 of us turned in & finally, after a year they came out & did all the inspections. They said the least that could probably happen is a fine would be given to RiteWay since they took out the permit & did the work. Wayne, Luther, LLB did not have a builder's license to do the work. We haven't heard back from them yet. All the information will be turned over to the Review Board.

Susann Hutt said Mr. Dempsey from LLR called her & said from the very beginning they didn't even have a bond.

Jim mentioned there are still code violations that need to be fixed; some foundations that are cracking; conduit box coming up from floor is exposed & not in the wall; leaking windows; there are still other punch-list items that we were promised would be fixed & haven't been as yet.



File: Rivergate
Origin: Jim Dunn
1365

Recommendation was that we have a class action suit against Wayne, but we are not an HOA yet.

Whispering Woods is not a part of Rivergate...Rivergate stops at the original road at the wetlands..they are using our road, our sprinklers, &complaints voiced about construction traffic & their speed...police do not have any authority because it is a private road...they will not set up a radar devise to clock the speed or put a police car there, they have no jurisdiction...

Sylvia said these are the issues we are addressing for the whole group, not personal punch list, and nothing can be done until we have an attorney, which we can't get until we are a HOA. There is a definite Violation of the South Carolina Law that says you must hold an HOA Meeting once a year. It's been almost 18 months since we've had a meeting. There was a law suit brought by the early residents...we are still waiting the results.

Susann Hutt said the law suit contained 19 residents & was started the end of 2002. It's been winding through the courts...the judge found WW was mismanaging the funds, the audits weren't done properly...Court ordered Atalaya Property Management as receiver & WW had to turn over the monies...& also allowed them to handle the property, but Atalaya found him to be in violation of things, WW got annoyed & fired them as property manager. They had been doing a good job for Rivergate, we were able to call them with a problem & they sent someone to fix it. An Arbitrator was assigned & he found WW guilty of violating everything in his Master Deed. We are still waiting to hear further. However, be mindful that this Law Suit got us the Pool & the Clubhouse.

Angela Nichols asked if we had a Clubhouse, all she sees is an Office...can we use this...Gina Sirignano said yes, this is our Clubhouse, & we were told the clubhouse is available to us from 9am to 5 pm or whatever hours it's open..however, there are 3 desks, office equipment, telephones, sales people, etc. no room for us to do anything in there...

File: Rivergate
Origin: Jim Dunn
1366

This has been a big issue for us & we are waiting for her to get out of there so we can take over. Meantime we should be collecting rent from her.

Jim said Wayne hasn't dedicated Rivergate into the HOA, so we can't do anything yet.

Susann said Wayne's 'mantra' is: "they'll get tired of waiting & do it themselves, #2 is: so sue me, you'll be out of money & I'll be gone, & #3, so I'll be fined but I'm still ahead of the game".

Sylvia found out that Wayne's liability holds for 25 yrs.

Roger from 19D said he spoke to Wayne personally & found that what he said made sense & he felt WW should be here to face upfront the residents.

Sylvia said if he could arrange to have Wayne come to a meeting we will all be there...you're in charge.

Jim mentioned that Wayne & Donna were sent the same invitation to come to this meeting, but Wayne doesn't answer or return phone calls or even sign for registered return receipt mail from any of any of us. He thought Donna was going to be here, he's got numerous LLR forms that she will not sign for & Wayne won't sign for them either. The original Ad Hoc meeting with the group of us Wayne said Yes, go for it & he gave me all the support, verbally.

There is one driveway that is so steep you can't even park your car on it. He called the concrete people & they told him, "Wayne, we told you this at the time we poured that it was too steep & needed a wall & steps" and he got hostile with them because they said this in front of me. But it was going to be fixed that day & they were starting work the next week. And that's been the same for over a year.

Ray Bucks said anybody who thinks you can deal with Wayne & believe what he says, he's got news for them! He got into a fight for 2 hrs. right in the middle of the street. He has cave-ins on the side of his property & he told WW & Luther & the relative who was the foreman who was then fired when he told WW what had to be done. WW assured Ray it would be fixed, but it never happened, WW said you'll be gone before anything bad happens here. Point is you cannot negotiate with this man!

File: Rivergate
Origin: Jim Dunn
1368

Jeri & Jim Mulhern have similar issue with flooding & washout at their corner at Baker Street. At one time in the spring after very heavy rain the water was up to the sidewalk. They have spoken to Wayne, Luther & Donna & got no results. This must be fixed before he turns the HOA over to us; we should not have to pay for this repair.

Jim said retaining walls need to be built.

Ultimately, we should hire an attorney; unfortunately, they cost money, but with this many people, it won't cost that much; but to get this on record legally that these streets are this way, we have this storm drainage problem, and any other big item that's going to cost a lot of money, because if you don't do it, it will reach a fiasco & at some point in time if you can accept it when we are our own HOA, assessment will be charged.

John Riley @4308 lives here 4 yrs. but unfortunately, don't live here all the time...last comment hit home...the last heavy rain you could see the water just flowing down Rivergate & he sent a letter to Horry County about this, the water doesn't go into any of the drains due to the grade being above street level & it settles down at the bottom. Seems like we need to band together & maybe write letters & if the County gets 80 letters then maybe we can get something done. He's already written many letters to the County as well as having his attorney involved.

Questions, Answers, Suggestions & Discussion followed regarding the following items: Luther's 2 lots, not yet built on; who pays taxes on this property; WW not dedicating Rivergate Lane; Possibly changing Telephone Service; signs on property; letters painted on sidewalk; motorcycles; Code Enforcement; Pool regulations; parking on the street; commercial vehicle parking; Whispering Woods; Reserve Funds; Mailboxes; Hiring an attorney.

Another meeting will be held on a Saturday in January 2007...notice will be sent out as soon as date is determined.

Meeting adjourned...

Respectfully submitted,

Gina Sirignano

File: Rivergate
Origin: Jim Dunn
1367

Land Records

Search by owner name or parcel number for tax history and payment information.

Search Land Records by TMS, PIN, or Owner's Name (LAST FIRST)

ww & lb Search

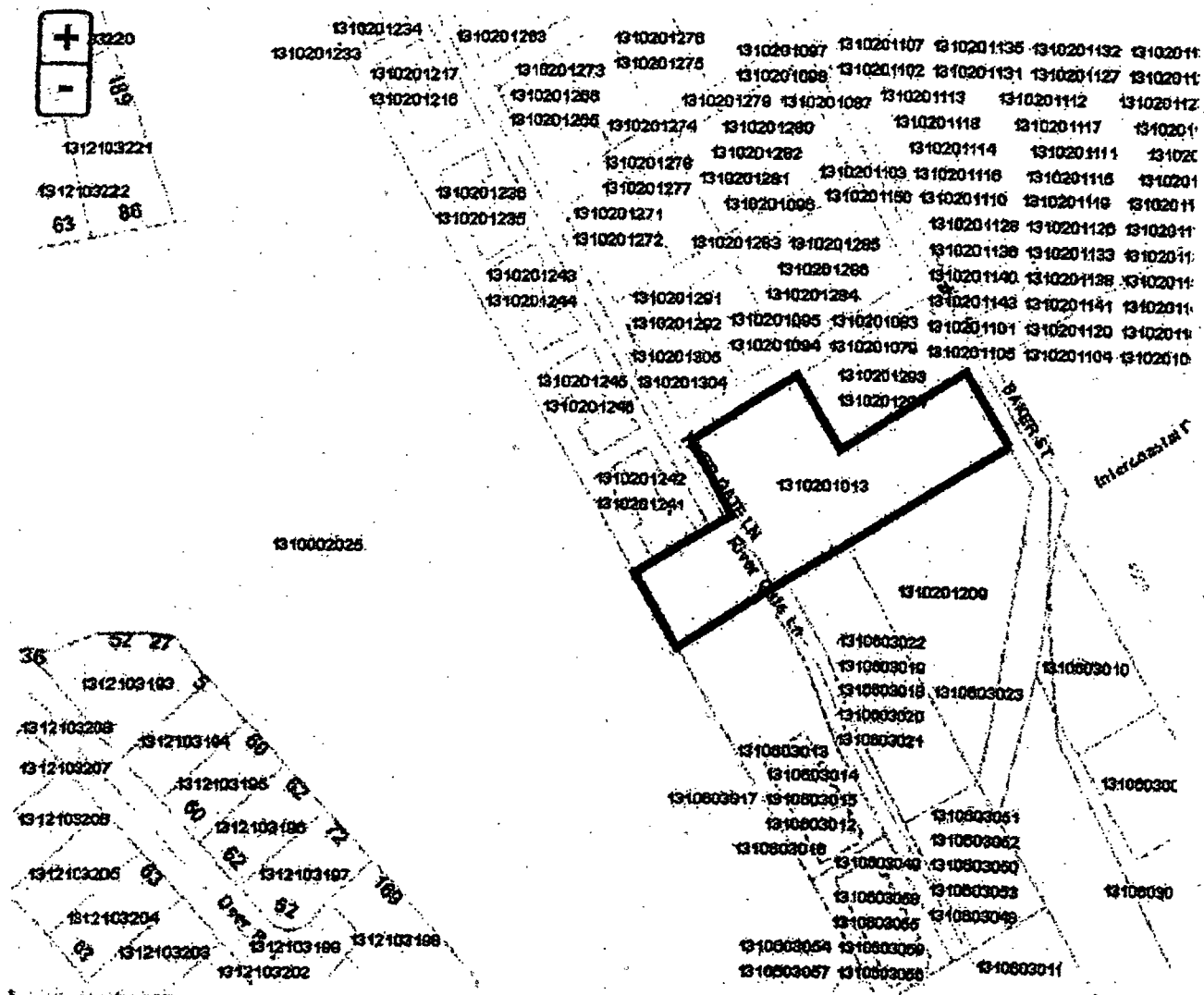
TMS	PIN	Legal Description	Owner	Billing Street	Billing City	Billing State	Billing Zip	
1310201013	31212040001	; S OF HWY 17	WW & LB DEVELOPMENT CO LLC	1414 WOODVIEW RD	YARDLEY	PA	19067-5776	Select

Enter a TMS or PIN Number in a textbox below to retrieve the corresponding TMS/PIN.

TMS PIN

Get PIN Get TMS

1099



horrycounty.org
GIS Application

- Map Legend
- Search Results

Horry County

- Limited Access Highways
- Highways
  - Highway
  - Major Road
- Roads

RIVERGATE SUBDIVISION SITE REPAIR - PRELIMINARY BUDGET
A.O. HARDEE & SON, INC. (JOEY ROOKS)
DATE: 3/1/2010

	TYPICAL AREA #1				
100	MOBILIZATION & CONSTRUCTION STAKING	1	LS	$ 46,100.00	$ 46,100.00
110	FINE GRADE	12800	SY	$ 1.50	$ 19,200.00
120	ASPHALT DEMOLITION	6000	SY	$ 5.00	$ 30,000.00
130	STRUCTURAL FILL IMPORT	1800	CY	$ 12.80	$ 23,040.00
140	ASPHALT PARKING - STANDARD DUTY (SEE NOTE 4 BELOW)	6000	SY	$ 28.00	$ 168,000.00
150	CONCRETE DRIVEWAYS - STANDARD DUTY (4" CONCRETE & 6" COQUINA BASE)	3200	SY	$ 55.00	$ 176,000.00
160	18" MOUNTABLE CURB & GUTTER	3200	LF	$ 14.75	$ 47,200.00
170	6" PVC STORM DRAIN	160	LF	$ 7.00	$ 1,120.00
180	8" PVC STORM DRAIN	2200	LF	$ 10.00	$ 22,000.00
190	12" PVC STORM DRAIN	240	LF	$ 15.00	$ 3,600.00
200	16" RCP STORM DRAIN	240	LF	$ 32.00	$ 7,680.00
210	48" O-RING GASKETED WATER TIGHT RCP STORM DRAIN & WASTE HAULOFF	1920	LF	$ 125.00	$ 240,000.00
220	12"X12" NYLOPLAST YARD INLET	40	EA	$ 1,050.00	$ 42,000.00
230	SCDOT 719-001 CONCRETE CATCH BASIN	32	EA	$ 2,475.00	$ 79,200.00
240	ACO KLASSIKDRAIN K100S TRENCH DRAIN (WITH ADA GRATE)	1200	LF	$ 175.00	$ 210,000.00
250	CLEAN-OUT	6	EA	$ 1,275.00	$ 10,200.00
260	6'X8.5' CONCRETE OUTLET CONTROL STRUCTURE	8	EA	$ 6,650.00	$ 53,200.00
270	GENERAL LANDSCAPING & TURF REPAIR ALLOWANCE (8-STREETS @ $7,000.00)	8	EA	$ 7,000.00	$ 56,000.00
				SUB-TOTAL	$ 1,234,540.00
	TYPICAL AREA #2				
100	FINE GRADE TYPICAL AREA #2	960	SY	$ 2.00	$ 1,920.00
110	12"X12" NYLOPLAST YARD INLET TYPICAL AREA #2	16	EA	$ 1,050.00	$ 16,800.00
120	CLEAN-OUT TYPICAL AREA #2	8	EA	$ 1,275.00	$ 10,200.00
130	GENERAL LANDSCAPING & TURF REPAIR ALLOWANCE (9-AREAS @ $5,000.00)	9	EA	$ 5,000.00	$ 45,000.00
				SUB-TOTAL	$ 73,920.00
				PERFORMANCE & PAYMENT BONDS:	$ 16,365.75
				EROSION/SEDIMENT CONTROL CONTINGENCY:	$ 50,000.00
				TRAFFIC CONTROL CONTINGENCY:	$ 10,000.00
				OVERALL CONTINGENCY:	$ 75,000.00

				TOTAL:	$ 1,459,815.76
	COMMENTS & EXCLUSIONS				
1	QUANTITIES ABOVE BASED ON ENGINEERS TAKEOFF DATED 2/3/10				
2	MUCKING & FILLING OF ROADS AND OTHER AREAS NOT INCLUDED				
3	SCDOT ASPHALT INDEX FEBRUARY 1, 2010				
4	THE FOLLOWING ITEMS WERE FIGURED IN THE STANDARD DUTY ASPHALT PARKING:				
	A) EARTHWORK CUT TO OFFSITE DISPOSAL				
	B) 9" COQUINA BASE COURSE				
	C) 2" ASPHALT SURFACE COURSE				
	D) 3" ASPHALT SURFACE COURSE (PATCH ACROSS RIVERGATE DRIVE)				

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FILED
HORRY COUNTY
2001 MAR 16 PM 12:07
R.M.C.

MASTER DEED

FOR

RIVERGATE

HORIZONTAL PROPERTY REGIME

DEED
2351 1239

1239 pm

MASTER DEED

for

Rivergate

Horizontal Property Regime

Horry County, South Carolina

****

WW & LB Development Company, LLC, having its principal office at 498 E. Highway 90, Little River, S.C. 29566, County of Horry, State of South Carolina, hereinafter referred to as the GRANTOR, as the sole owner in fee simple of the land and improvements hereinafter described, does hereby make, declare and publish its intention and desire to submit, and does hereby submit, the land and building hereinbelow described (Phase I), together with all other improvements thereon, including all easements, rights and appurtenances thereto belonging, to a Horizontal Property Regime (sometimes termed "condominium" ownership) to be known as Rivergate, in the manner provided for by Sections 27-31-10 through 27-31-300 (both inclusive) of Chapter 31 entitled "Horizontal Property Act of the 1976 Code of Laws of South Carolina", as amended (the "Act"). In conformity with Sections 27-31-30 and 27-31-100 of said Act, the GRANTOR sets forth the following Particulars:

I.

The lands which are hereby submitted to the Horizontal Property Regime are described as follows:

FOR PROPERTY DESCRIPTION SEE ATTACHED EXHIBIT "A", WHICH IS INCORPORATED HEREIN AND MADE A PART AND PARCEL HEREOF.

II.

SURVEY AND DESCRIPTION OF IMPROVEMENTS

Annexed hereto and expressly made a part hereof, as Exhibit B, is a plot plan showing the location of the land, buildings and other improvements comprising Phase I, and a set of floor plans of the buildings which show graphically the dimensions, area and location of each UNIT therein and the dimensions, area, and location of the COMMON ELEMENTS and LIMITED COMMON ELEMENTS affording access to each UNIT. Each UNIT is identified by a specific number on said Exhibit B, and no UNIT bears the same designation as any other UNIT. Exhibit B is also recorded as a separate condominium plat in the public records of Horry County, maintained by the Register of Deeds.

III.

ADDITIONAL PHASES AND EASEMENTS THEREFORE

In addition to the lands with improvements thereon in Phase I, the GRANTOR may construct additional UNITS on property contiguous to or near the property described in Paragraph I herein and submit same to Rivergate Horizontal Property Regime in additional phases not to exceed forty (40) phases (including Phase I). The additional property shall be referred to as "Phase II" through "Phase XL". Each additional phase shall consist of one or more building(s) containing not less than two (2) UNITS and not more than twenty-four (24) UNITS and associated COMMON ELEMENTS. In the event the GRANTOR exercises its right and option to add Phases II through XL(or any one or more of said Phases), the property of said phase then submitted will become an integral part of Rivergate Horizontal Property Regime once the appropriate amendment to this Master Deed has been filed as hereinafter provided. Further, there is reserved by the GRANTOR, for itself, its successors or assigns, in, over, across, under and upon the properties shown as Phase I (and each additional phase(s) which is submitted to the terms and provisions of this Master Deed) all easements and rights of ingress and egress necessary and convenient for the construction of the said Phases II through XL, or any one or more of them, or for the construction and maintenance of improvements upon lands of GRANTOR, its successors and assigns contiguous to or near the property, as the case may be, which such easements shall remain in full force and effect for such time as the GRANTOR, its successors and/or assigns, retains the option of submitting the said Phases II through XL, or any one or more of them, to the Regime. The easements reserved by the GRANTOR shall include, but not be limited to, the easements expressly reserved by the GRANTOR pursuant to the terms of this Master Deed and the Exhibits and Amendments hereto, as well as non-exclusive easements over the roads, driveways, and parking areas for ingress and egress (including vehicular ingress and egress) and for the installation and maintenance of utilities, as well as the right to connect to and utilize water, sewer and other utilities within Phase I (and each additional phase(s) which is submitted to the terms and provisions of this Master Deed). Such easements may be assigned, mortgaged or otherwise conveyed by GRANTOR, including a partial or non-exclusive assignment, mortgage or conveyance of such rights held by GRANTOR.

The GRANTOR hereby reserves unto itself, its successors or assigns, the right and option, to be exercised at its sole discretion, to submit the Phases II through XL property, or any one or more of such Phases, or to submit additional COMMON ELEMENTS consisting of, but not limited to, roadways, clubhouses, pools, open areas, sidewalks, and parking areas, and to the provisions of this Master Deed, thereby causing such Phase(s) or COMMON ELEMENTS, to become and be a part of Rivergate Horizontal Property Regime. The GRANTOR may elect to exercise this right or option as to Phases II through XL or COMMON ELEMENTS, no later than twenty-five (25) years from the filing of this Master Deed. Each additional Phase or COMMON ELEMENTS shall be added only upon execution by the GRANTOR, its successors or assigns, within the time specified herein, of an amendment or amendments to this Master Deed which shall be filed of record in the Office of the Register of Deeds for Horry County, South Carolina. Any such amendment shall expressly submit such Phase to all of the provisions of this Master Deed and the By-Laws of Rivergate Homeowners' Association, Inc. made a part hereof, as either or both may be amended. Upon the

exercise, if any, of this right or option, the provisions of this Master Deed and all exhibits hereto shall then be construed and understood as embracing Phase I (the basic "property" herein defined) and any future Phase(s) so submitted, as appropriate, together with all improvements then or thereafter constructed. Should the GRANTOR fail to exercise its right or option within the time specified herein, then in that event, said option shall expire and be of no further force or effect.

Although the site plan or other plans for Rivergate Horizontal Property Regime may show or depict certain amenities to be constructed as part of Rivergate Horizontal Property Regime, the GRANTOR shall have no obligation to construct any such amenities until such time that the GRANTOR exercises its option to submit the phase of Rivergate Horizontal Property Regime actually containing such amenities. In the event that the GRANTOR does not construct and submit any phase to the terms and provisions of this Master Deed thereby making it a part of Rivergate Horizontal Property Regime, the GRANTOR shall have no obligation whatsoever to construct any amenity associated with that phase of Rivergate Horizontal Property Regime as provided for in this paragraph. Future phases by GRANTOR may contain COMMON ELEMENTS which may include swimming pools, workout rooms, game rooms, snack rooms, clubhouses, streets and/or sidewalks. To the extent the proportionate amount of Common Expenses is deemed to be substantially increased by the submission of such amenities, it is hereby disclosed that expenses normally associated with the use of such facilities may be expected if the same are constructed and submitted.

The right to submit the additional Phases to the Horizontal Property Regime is assignable by the GRANTOR. If GRANTOR elects to assign such right, the assignee shall be solely responsible therefor including, but not limited to, the quality of construction and compliance with this Master Deed.

The GRANTOR shall be under no obligation to construct or submit Phase II or any subsequent phase(s). Should Phase II or any subsequent Phase be constructed and submitted, GRANTOR shall be under no obligation to submit any future Phase(s). The construction and submission of each Phase shall be at the sole option of the GRANTOR. Further, GRANTOR may submit any Phase(s) to the provisions of this Master Deed in any order notwithstanding the numerical sequence thereof.

Each Phase shall be depicted on a map or plat showing the boundaries of the Phase and the location thereon of all improvements, amenities, parking, etc. Phase I and each additional Phase, as constructed and submitted, shall constitute the entirety of the Regime, and the Regime, the Association (as hereinafter defined) and the Owners of UNITS shall not acquire any rights as to any properties not depicted thereon and specifically submitted to the provisions of this Master Deed. The "site plan", "floor plans", and all other Exhibits attached hereto, incorporated herein and/or associated herewith which depict or refer to any Phase which has not been specifically made a part hereof by amendment as herein provided shall be of no force or effect as to such additional phase(s) until such Phase has been incorporated herein by amendment. No such "site plan", etc. shall constitute a warranty or representation that any additional Phase will be constructed or submitted or that any amenity is or will be constructed or submitted. Until such time, if at all, as an additional Phase is submitted to the terms of this Master Deed by amendment as herein required, all real estate

upon which additional Phases may be added may be used for any lawful purpose by the Owner thereof.

ALTHOUGH PORTIONS OF THE RIVERGATE HORIZONTAL PROPERTY REGIME MAY BE LOCATED ADJACENT TO PROPERTY ON WHICH IS CURRENTLY LOCATED A GOLF COURSE AND RELATED FACILITIES, SUCH GOLF COURSE AND RELATED FACILITIES ARE OWNED BY AN UNRELATED THIRD PARTY AND ARE NOT OWNED OR CONTROLLED BY GRANTOR. NO OWNER SHALL ACQUIRE ANY RIGHTS IN SUCH GOLF COURSE AND RELATED FACILITIES BY VIRTUE OF HIS OWNERSHIP OF A UNIT(S) WITHIN THE RIVERGATE HORIZONTAL PROPERTY REGIME. FURTHER, GRANTOR MAKES NO REPRESENTATIONS REGARDING THE CONTINUED EXISTENCE OF SAID GOLF COURSE OR AS TO THE FUTURE USE OF THE PROPERTY ON WHICH SAID GOLF COURSE IS CURRENTLY LOCATED.

IV.

UNITS, COMMON ELEMENTS AND LIMITED COMMON ELEMENTS

The CONDOMINIUM consists of UNITS, COMMON ELEMENTS, and LIMITED COMMON ELEMENTS as said terms are hereinafter defined.

UNITS, as the term is used herein, shall mean and comprise the four (4) separate and numbered UNITS within Building 2 and 6, which comprise Phase I and are described in Exhibit B to this Master Deed, excluding, however, all spaces and improvements lying beneath the undecorated and/or unfinished inner surfaces of the perimeter walls and floors, and above the undecorated and/or unfinished inner surfaces of the ceilings of each UNIT, and further excluding all spaces and improvements lying beneath the undecorated and/or unfinished inner surfaces of all interior loadbearing walls and/or unfinished bearing partitions, and further excluding all pipes, ducts, wires, conduits and other facilities running through any interior wall or partition for the furnishing of utility services to UNITS and COMMON ELEMENTS.

COMMON ELEMENTS, as the term is used herein, shall mean and comprise all of the real property, improvements and facilities of the CONDOMINIUM other than the UNITS, as same are hereinabove defined, and shall include easements through UNITS for conduits, pipes, ducts, plumbing, wiring and other facilities for the furnishing of utility service to UNITS and COMMON ELEMENTS, easements of support in every portion of a UNIT which contributes to the support of the improvements, and shall further include all personal property held and maintained for the joint use and enjoyment of all of the Owners of all such UNITS. The term "COMMON ELEMENTS" may be further defined in other provisions of this Master Deed and the exhibits and amendments hereto by specific designation of certain improvements and facilities as COMMON ELEMENTS. Such further designation of COMMON ELEMENTS shall not act to limit the definition of COMMON ELEMENTS as herein provided, but is intended to be in addition thereto.

LIMITED COMMON ELEMENTS as the term is used herein shall mean and comprise the following: (A) attic space, if any, and grade-level concrete driveways, patios or stoops and porches

accessible by normal means from the UNIT, immediately adjacent to or above the UNIT; and (B) All water, power, telephone, electricity, plumbing, gas and sewage lines located in the UNIT; provided, however, that the portion of said lines located in a common compartment for, or installation of, such lines shall be COMMON ELEMENTS as described above. LIMITED COMMON ELEMENTS are intended for the exclusive use and benefit of the UNIT which it is associated with. In all other respects, and except as specifically provided in this Master Deed, LIMITED COMMON ELEMENTS shall be treated as, and included within the definition of the term "COMMON ELEMENTS".

V.

OWNERSHIP OF UNITS AND APPURTENANT
INTEREST IN COMMON ELEMENTS

Each UNIT shall be conveyed and treated as an individual property capable of independent use and fee simple ownership, and the Owner or Owners of each UNIT shall own, as an appurtenance to the ownership of each said UNIT, an undivided interest in the COMMON ELEMENTS, the undivided interest appurtenant to each said UNIT being that which is hereinafter specifically assigned thereto. The percentage of undivided interest in the COMMON ELEMENTS assigned to each UNIT shall not be changed except with the unanimous consent of all of the Owners of all of the UNITS and except as provided in Article III with regard to the amendments of this Master Deed to admit additional Phase(s) into this Horizontal Property Regime. There shall also be appurtenant to each UNIT the exclusive right to the use of the LIMITED COMMON ELEMENTS appurtenant to that UNIT in accordance with the provisions of this Master Deed.

VI.

RESTRICTION AGAINST FURTHER SUBDIVIDING
OF UNITS AND SEPARATE CONVEYANCE
OF APPURTENANT COMMON ELEMENTS, ETC.

No UNIT may be divided or subdivided into a smaller UNIT than as shown on Exhibit B attached hereto, nor shall any UNIT, or portion thereof, be added to or incorporated into any other UNIT, except as provided in Exhibit B hereto. The undivided interest in the COMMON ELEMENTS declared to be an appurtenance to each UNIT shall not be conveyed, devised, encumbered or otherwise dealt with separately from said UNIT, and the undivided interest in COMMON ELEMENTS and the right as to the LIMITED COMMON ELEMENTS appurtenant to each UNIT shall be deemed conveyed, devised, encumbered, or otherwise included with the UNIT even though such undivided interest is not expressly mentioned or described in the instrument conveying, devising, encumbering, or otherwise dealing with such UNIT. Any conveyance, mortgage, or other instrument which purports to affect the conveyance, devise or encumbrance, or which purports to grant any right, interest or lien in, to, or upon, a UNIT, shall be null, void and of no effect insofar as the same purports to affect any interest in a UNIT and its appurtenant undivided interest in COMMON ELEMENTS, unless the same purports to convey, devise, encumber or otherwise trade or deal with the entire UNIT. Any instrument conveying, devising, encumbering or otherwise

dealing with any UNIT which describes said UNIT by the UNIT Number assigned thereto in Exhibit B without limitation or exception, shall be deemed and construed to affect the entire UNIT and its appurtenant undivided interest in the COMMON ELEMENTS and the right as to the LIMITED COMMON ELEMENTS. Nothing herein contained shall be construed as limiting or preventing ownership of any UNIT and its appurtenant undivided interest in the COMMON ELEMENTS by more than one person or entity as tenants in common, or joint tenants. Further, nothing contained herein shall be construed as limiting or preventing the GRANTOR, its successors or assigns, from adding additional phase(s) as provided herein.

VII.

CONDOMINIUM SUBJECT TO RESTRICTIONS, ETC.

The UNITS, COMMON ELEMENTS and LIMITED COMMON ELEMENTS shall be, and the same are hereby declared to be, subject to the restrictions, easements, conditions and covenants prescribed and established herein, governing the use of said UNITS, COMMON ELEMENTS and LIMITED COMMON ELEMENTS, and setting forth the obligations and responsibilities incident to ownership of each UNIT and its appurtenant undivided interest in the COMMON ELEMENTS, and said UNITS, COMMON ELEMENTS and LIMITED COMMON ELEMENTS are further declared to be subject to the restrictions, easements, conditions, and limitations now of record affecting the land and improvements of the CONDOMINIUM.

VIII.

PERPETUAL NON-EXCLUSIVE EASEMENT IN COMMON ELEMENTS

The COMMON ELEMENTS shall be, and the same are hereby declared to be, subject to a perpetual non-exclusive easement in favor of all of the Owners of UNITS in the CONDOMINIUM for their use and the use of their immediate families, guests, and invitees, for all proper and normal purposes, and for the furnishing of services and facilities for which the same are reasonably intended, for the enjoyment of said Owners of UNITS, subject to the exclusive right of use of the LIMITED COMMON ELEMENTS appurtenant to any UNIT. Notwithstanding anything above provided in this Article, Rivergate Homeowners' Association, Inc., hereinafter identified, shall have the right to establish the rules and regulations pursuant to which the Owner or Owners of any UNIT may be entitled to the exclusive use of any parking space or spaces. Provided further, that if the Board of Directors of said Association determines it to be in the best interest of all of the Co-owners, the Board of Directors may hereafter grant easements for the benefit of the Regime Property and the Co-owners. Each Co-owner, by the acceptance of the deed to his UNIT does hereby grant to the Board of Directors an irrevocable power of attorney to execute, deliver and record for and in the name of each Co-owner, such instruments as may be necessary and proper to the granting of such easements.

Pursuant to this provision, GRANTOR has granted, or intends to grant, an easement to property owners located adjacent to lands of the GRANTOR comprising the project for ingress and egress over roadways within the project.

IX.

EASEMENTS FOR UTILITIES

GRANTOR hereby reserves, for the benefit of itself, its successors and assigns, the alienable, transferable and perpetual right and easement, as well as the power and authority to grant and accept easements to and from any private or public authority, agency, public service district, public or private utility or other person or company upon, over, under and across all or any portion of the COMMON ELEMENTS for constructing, installing, replacing, repairing, operating, maintaining and using master television antenna, television cable systems and/or telephone systems. Such easements may be granted or accepted by GRANTOR with respect to the COMMON ELEMENTS without notice to or consent by the ASSOCIATION or UNIT Owners. Telephone, master television antennas and/or cable system services may be provided to the project pursuant to the terms of agreements between the ASSOCIATION and GRANTOR, its affiliates, its successors or assigns, or third parties. However, nothing herein shall obligate GRANTOR to provide any such services.

Pursuant to this provision, GRANTOR has granted, or intends to grant, an easement to Time Warner Cable for the purpose of providing telephone and cable television service to the project and this Master Deed is granted subject to the terms of that Easement. Pursuant to the terms of said Easement and related agreements, all equipment used for the purposes of providing telephone and cable television service to the project, is and shall remain, property of Time Warner Cable.

X.

EASEMENT FOR UNINTENTIONAL AND NON-NEGLIGENT ENCROACHMENTS

If any portion of the COMMON ELEMENTS now encroaches upon any UNIT or if any UNIT now encroaches upon any other UNIT or upon any portion of the COMMON ELEMENTS as a result of the construction or repair of any building or if any such encroachment shall occur hereafter as a result of settlement or shifting of any building or otherwise, a valid easement for the encroachment and for the maintenance of the same, so long as the building stands, shall exist. In the event any building, any UNIT, any adjoining UNIT, or any adjoining COMMON ELEMENT shall be partially or totally destroyed as the result of fire or other casualty or as the result of condemnation or eminent domain proceedings and the reconstructed building, UNIT or part of the COMMON ELEMENTS encroaches upon any UNIT or over any UNIT, or upon any portion of the COMMON ELEMENTS due to such reconstruction, the reconstruction shall be permitted and valid easements for such encroachments and maintenance thereof shall exist so long as the building shall stand.

XI.

RESTRAINT UPON SEPARATION AND PARTITION OF COMMON ELEMENTS

Recognizing that the proper use of a UNIT by any Owner or Owners is dependent upon the use and enjoyment of the COMMON ELEMENTS in common with the Owners of all other UNITS, and that it is in the interest of all Owners of UNITS that the ownership of the COMMON ELEMENTS be

retained in common by the Owners of UNITS in the Condominium, it is declared that the percentage of the undivided interest in the COMMON ELEMENTS appurtenant to each UNIT shall remain undivided and no Owner of any UNIT shall bring or have any right to bring any action for partition or division. Provided, however, the Co-owner's interest in the COMMON ELEMENTS may be diminished by the addition of Phase II or any additional phase(s), as set forth in Article III herein.

XII.

PERCENTAGE OF UNDIVIDED INTEREST IN
COMMON ELEMENTS APPURTENANT TO EACH UNIT

The undivided interest in the COMMON ELEMENTS appurtenant to each UNIT in Phase I is that percentage of undivided interest which is set forth and assigned to each UNIT in that certain Schedule which is annexed hereto and expressly made a part hereof as Exhibit C, or, following submission of additional Phase(s), calculated in accordance with the schedule set forth in Exhibit "C".

XIII.

EASEMENT FOR AIR SPACE

The Owner of each UNIT shall have an exclusive easement for the use of the air space occupied by said UNIT as it exists at any particular time and as said UNIT may lawfully be altered or reconstructed from time to time, which easement shall be terminated automatically in any air space which is vacated from time to time.

XIV.

ADMINISTRATION OF
RIVERGATE HORIZONTAL PROPERTY REGIME
BY RIVERGATE
HOMEOWNERS' ASSOCIATION, INC.

To efficiently and effectively provide for the administration of the CONDOMINIUM by the Owners of UNITS, a non-profit South Carolina corporation known and designated as Rivergate Homeowners' Association, Inc. has been organized, and said corporation shall administer the operation and management of the CONDOMINIUM and undertake and perform all acts and duties incident thereto in accordance with the terms, provisions and conditions of this Master Deed, and in accordance with the terms of the Articles of Incorporation of Rivergate Homeowners' Association, Inc. hereinafter referred to as the ASSOCIATION, and By-Laws of said corporation. A true copy of the Articles of Incorporation and By-Laws of the ASSOCIATION are annexed hereto and expressly made a part hereof as Exhibit D and Exhibit E, respectively. The Owner or Owners of each UNIT shall automatically become members of the ASSOCIATION upon his, their or its acquisition of an ownership interest in any UNIT and its appurtenant undivided interest in COMMON ELEMENTS, and the membership of such Owner or Owners shall terminate

automatically upon each Owner or Owners being divested of such ownership interest in such UNIT, regardless of the means by which such ownership may be divested. No person, firm or corporation holding any lien, mortgage or other encumbrance upon any UNIT shall be entitled, by virtue of such lien, mortgage or other encumbrance, to membership in the ASSOCIATION, or to any of the rights or privileges of such membership. In the administration of the operation and management of the CONDOMINIUM, the ASSOCIATION shall have and is hereby granted the authority and power to enforce the provisions of this Master Deed, levy and collect assessments in the manner hereinafter provided, and, subject to the terms of this Master Deed, to adopt, promulgate and enforce such rules and regulations governing the use of the UNITS, COMMON ELEMENTS and LIMITED COMMON ELEMENTS, as the Board of Directors of the ASSOCIATION may deem to be in the best interest of the CONDOMINIUM.

XV.

AGE AND RESIDENTIAL USE RESTRICTION APPLICABLE TO UNITS

Each UNIT is hereby restricted to residential use by the Owner or Owners thereof, their immediate families, guests, and invitees; provided further, that an Owner may not rent his or her UNIT for a period of time less than sixty (60) days. Further, provided, however, that so long as GRANTOR shall retain any interest in any UNIT or have the right to add any additional phase(s) to the CONDOMINIUM, and for a period of five (5) years thereafter, it shall retain the right to utilize a UNIT or UNITS of its choice, from time to time, for sales offices, models, and/or other usages for the purpose of selling and marketing UNITS in the CONDOMINIUM or in other projects in which GRANTOR or its affiliates may have an interest. Further still, GRANTOR may assign this commercial usage right to such other persons or entities as it may choose; provided, however, that five (5) years after the later of all UNITS having been conveyed or the GRANTOR, its successors and assigns, no longer having the right to add any additional PHASES(S) to the CONDOMINIUM, this right of commercial usage shall immediately cease. Further, the GRANTOR shall have the right and easement to install and maintain signage on portions of the COMMON ELEMENTS to be used relative to GRANTOR'S marketing of UNITS within the CONDOMINIUM, as long as GRANTOR owns a UNIT(S) within the CONDOMINIUM or has the right to add an additional PHASE(S) to the CONDOMINIUM.

In order to restrict the CONDOMINIUM to use as a retirement community, no family may occupy a UNIT unless at least one member thereof has attained the age of forty-eight (48) years, provided, however, that in the event GRANTOR has not transferred forty (40) Units within the CONDOMINIUM, including Units within future phases, if submitted to the CONDOMINIUM by GRANTOR, on or before July 10, 2001, then GRANTOR, its successors and assigns, or GRANTOR's construction lender, Coastal Federal Savings Bank, shall have the right, at their option, to remove this age restriction from the provisions of this Master Deed by filing an amendment hereto in the public records of Horry County, South Carolina. Additionally, GRANTOR hereby reserves the right, for the GRANTOR, its successors and assigns, to exempt up to six (6) Units from the within age restriction by so stating in the deed from GRANTOR to the purchasers of said Units. Such exemption of up to six (6) Units shall not be deemed an exercise of GRANTOR's option, as set forth above, to remove said age restriction entirely. Said six Units shall be subject to and governed by all the terms of this Master Deed other than the within age restriction.

No UNIT or any portion thereof may be submitted to a plan of interval ownership or any form of timesharing. Provided however, nothing herein shall be construed as limiting the right of any Owner of any UNIT from renting or leasing his or its UNIT.

XVI.

USE OF COMMON ELEMENTS SUBJECT TO RULES OF ASSOCIATION

A. Subject to the terms and provisions of this Master Deed, the use of COMMON ELEMENTS by the Owner or Owners of all UNITS, and all other parties authorized to use the same, shall be at all times subject to such reasonable rules and regulations as may be prescribed and established governing such use, or which may hereafter be prescribed and established by the ASSOCIATION.

In addition to the rules and regulations promulgated by ASSOCIATION, the property is hereby restricted such that the only pets which are permitted within the Horizontal Property Regime including the UNITS, the COMMON ELEMENTS are companion pets such as birds, domesticated cats, fish, dogs and other small mammals. Further, non-owners, such as renters or guests of owners, may not have any pet within the Horizontal Property Regime which weighs more than twenty (20) pounds. Under no circumstances are exotic cats, non-human primates, reptiles, horses or other farm livestock or zoo type animals permitted within the Horizontal Property Regime. Pets must be on a leash or carried when on any COMMON ELEMENTS. Further, the Board of Directors of the Association may restrict pets to certain designated areas within the COMMON ELEMENTS and may further establish rules regulating pets within the COMMON ELEMENTS. It shall be the Owner's obligation to dispose of waste material from pets. The Board of Directors of the ASSOCIATION shall have the right to order the removal of any pet which, in the Board's sole discretion, is considered a nuisance, and the same shall be done without compensation to the Owner. In such event, the Board shall give written notice thereof to the pet owner, and the pet shall immediately thereafter be permanently removed from the Horizontal Property Regime. A pet not on a leash shall be deemed a nuisance. A pet which makes excessive noise shall be deemed a nuisance. Failure to properly dispose of the waste material from a pet shall be deemed a nuisance.

The property is hereby further restricted such that no commercial use vehicles, oversize trucks, trailers, campers, mobile homes, boats, watercraft or unregistered, abandoned or inoperable motor vehicles are permitted within the COMMON ELEMENTS or LIMITED COMMON ELEMENTS. Provided however, boats and other watercraft may be stored within Garage UNITS as long as such boats and other watercraft are completely enclosed within such Garage UNIT and the door to same is kept closed except when entering and exiting the Garage UNIT. Further, no mopeds, motorcycles, motor bikes or unregistered "dune buggies" may be operated, located, stored or maintained upon the property.

In addition to the foregoing, no gas or charcoal grills may be located within a UNIT or LIMITED COMMON ELEMENTS nor shall any other cooking devices be located, maintained or used on any LIMITED COMMON ELEMENT or COMMON ELEMENT (including decks, porches or patios notwithstanding whether same is part of a UNIT, the COMMON ELEMENTS or LIMITED COMMON ELEMENTS), except for grills provided by the Association and specifically designated for such use by ASSOCIATION. Further, the ASSOCIATION may promulgate additional rules and regulations regarding the use and storage of grills and cooking devices.

XVII.

CONDOMINIUM TO BE USED FOR LAWFUL PURPOSES, RESTRICTION AGAINST NUISANCES, ETC.

No immoral, improper, offensive or unlawful use shall be made of any UNIT or of the COMMON ELEMENTS or LIMITED COMMON ELEMENTS, or any part thereof, and all laws, zoning ordinances and regulations of all governmental authorities having jurisdiction of the CONDOMINIUM shall be observed. No Owner of any UNIT shall permit or suffer anything to be done or kept in his UNIT, the COMMON ELEMENTS or LIMITED COMMON ELEMENTS, which will increase the rate of insurance on the CONDOMINIUM, or which will obstruct or interfere with the rights of other occupants of the building or annoy them by unreasonable noises, and no Owner shall undertake any use or practice which shall create and constitute a nuisance to any other Owner of a UNIT, or which shall interfere with the peaceful possession and proper use of any other UNIT, COMMON ELEMENTS or LIMITED COMMON ELEMENTS.

XVIII.

RIGHT OF ENTRY INTO UNITS IN EMERGENCIES

In case of any emergency originating in or threatening any UNIT, regardless of whether the Owner is present at the time of such emergency, the Board of Directors of the ASSOCIATION or any other person authorized by it, shall have the right to enter such UNIT and the LIMITED COMMON ELEMENTS for the purpose of remedying or abating the cause of such emergency, and such right

of entry shall be immediate. To facilitate entry in the event of any such emergency, the Owner of each UNIT shall deposit under the control of the ASSOCIATION a key to such UNIT.

XIX.

RIGHT OF ENTRY FOR MAINTENANCE OF COMMON ELEMENTS

Whenever it is necessary to enter any UNIT for the purpose of performing any maintenance, alteration or repair to any portion of the COMMON ELEMENTS, the Owner of each UNIT shall permit the duly constituted and authorized Agent of the ASSOCIATION, to enter such UNIT and its LIMITED COMMON ELEMENTS, provided that such entry shall be made only at reasonable times and with reasonable advance notice. In that regard, ASSOCIATION, or its designated contractor shall perform monthly service for pest control which will include spraying within each UNIT and each Owner of a UNIT is hereby so notified.

XX.

LIMITATION UPON RIGHT OF OWNERS TO ALTER AND MODIFY UNITS

No Owner of a UNIT shall permit any structural modifications or alterations without first obtaining the written consent of the ASSOCIATION, which consent may be withheld in the event that a majority of the Board of Directors of the ASSOCIATION determines, in its sole discretion, that such structural modifications or alterations would affect or in any manner endanger the building in part or in its entirety or adversely affect the aesthetics of the building. If the modification or alteration desired by the Owner of any UNIT involves the removal of any permanent interior partition, the ASSOCIATION shall have the right to permit such removal so long as the permanent interior partition to be removed is not a load-bearing partition, and so long as the removal thereof would in no manner affect or interfere with the provision of utility services constituting COMMON ELEMENTS located therein. No Owner shall cause any balcony, porch, deck or patio abutting his UNIT to be enclosed, or cause any improvements or changes to be made on the exterior of the building, including painting or other decoration, or the installation of electrical wiring, television antenna, machines or air conditioning units, which may protrude through the walls or roof of the building, or in any manner change the appearance of any portion of the building not within the walls of such UNIT, or affix storm panels or awnings, without the written consent of the ASSOCIATION being first obtained. Notwithstanding the foregoing, nothing herein shall limit the right of the GRANTOR to enclose or screen balconies, decks or porches as a part of the original construction of any building.

Without limiting the foregoing, but except as hereinafter provided, no Owner shall install any receiving or transmitting device which requires any exterior protrusion, nor shall any antennas or other receiving or transmitting devices be located on any balcony, porch, patio or deck.

Further, no clotheslines shall be placed or maintained on the exterior of any UNIT (including on any balconies, porches, patios or decks). In addition, for the purpose of aesthetic harmony, all window

treatments shall include a uniform white backing which shall be visible from the exterior of the UNIT. All patios, balconies, porches and decks which are LIMITED COMMON ELEMENTS shall be maintained in a neat and orderly appearance by the OWNER of the UNIT for which its use is intended. Patios, balconies, porches and decks shall not be used for storage. To prevent unsightly conditions within the CONDOMINIUM, nothing shall be kept and maintained on or within any porches, balconies, decks and patios except normal patio furniture and plants. Further, no Owner, or his agent, may place any signs upon the COMMON ELEMENTS, or within his UNIT or the LIMITED COMMON ELEMENTS so as to be visible from the exterior of the UNITS, including, without limitation "For Sale" signs. Nothing herein shall limit the rights of GRANTOR to place signage upon the COMMON ELEMENTS.

Any improvements or alterations made to a UNIT or COMMON ELEMENT by a UNIT Owner (other than Grantor) without authorization in accordance with the foregoing must be removed within thirty (30) days after notice from the Association or the Association may remove the unauthorized improvement or alteration and assess the Owner in violation any charges necessary for the removal.

XXI.

RIGHT OF ASSOCIATION TO ALTER AND IMPROVE COMMON ELEMENTS AND ASSESSMENTS THEREFOR

The ASSOCIATION shall not make or cause to be made alterations or improvements to the COMMON ELEMENTS which prejudice the rights of the Owner of any UNIT, unless such Owner's written consent has been obtained; provided however, the making of such alterations and improvements must first be approved by the Board of Directors of the ASSOCIATION, and, except as hereinafter provided, the cost of the alterations or improvements shall be assessed as a common expense to be collected from all of the Owners of UNITS according to the percentages set out in Exhibit C of the Master Deed. Where any alterations and improvements are exclusively or substantially exclusively for the benefit of the Owner or Owners of a UNIT or UNITS requesting the same, then the cost of such alterations and improvements shall be assessed against and collected solely from the Owner or Owners of the UNIT or UNITS exclusively or substantially exclusively benefitted, the assessment to be levied in such proportion as the percentage interests of each of the UNITS being benefitted bears to the total of the percentage interests of all of the UNITS benefitted as set forth on Exhibit "C" hereto.

XXII.

MAINTENANCE AND REPAIR BY OWNERS OF UNITS

Every Owner must perform promptly all maintenance and repair work within his UNIT and of all LIMITED COMMON ELEMENTS to which such UNIT has exclusive use which, if omitted, would affect the CONDOMINIUM in its entirety or any part belonging to other Owners, and shall be expressly responsible for the damages and liability which his failure to do so may engender. Further, the Owner of each UNIT shall be liable and responsible for the maintenance, repair and replacement,

as the case may be, of all air conditioning and heating equipment, stoves, refrigerators, fans, dryer vents and hoses, all condensation lines serving the heating, ventilation and air-conditioning system for any UNIT, or other appliances or equipment now or hereafter located within such UNIT or serving that particular UNIT exclusively, including any fixtures and/or their connections required to provide water, light, power, sewage and sanitary service to his UNIT. Provided, however, ASSOCIATION , as a common expense, shall maintain, repair and replace any portions of the foregoing which are not part of a UNIT and which serve more than one (1) UNIT. Such Owner shall further be responsible and liable for maintenance, repair and replacement of any and all window glass, wall, ceiling and floor exterior surfaces, painting, decorating and furnishings, and all other accessories which such Owner may desire to place or maintain in his UNIT and of all LIMITED COMMON ELEMENTS to which such UNIT has exclusive use. Further, and notwithstanding whether same is a part of the UNIT, a COMMON ELEMENT or a LIMITED COMMON ELEMENT, each UNIT Owner shall be responsible for the maintenance, repair and replacement of all doors, door frames, windows, window frames and all screens (including those in any screened porches) associated with or used in conjunction with that UNIT. The ASSOCIATION, at its expense, shall be responsible for the painting of all exterior portions of the buildings, including the exteriors of all doors, doorframes and window frames (including the doors on any exterior storage closets) on a regular schedule. In between the times set for such regular painting, each UNIT Owner shall be responsible for painting the exteriors of all doors, doorframes and window frames associated with that Owner's UNIT, and doors on storage closets maintained by ASSOCIATION, at such time as same is needed, using a paint of the color, brand and type as is approved by the ASSOCIATION. Wherever the maintenance, repair and replacement of any items for which the Owner of a UNIT is obligated to maintain, repair or replace at his own expense is occasioned by any loss or damage which may be covered by any insurance maintained in force by the ASSOCIATION, the proceeds of the insurance received by the ASSOCIATION, or the Insurance Trustee hereinafter designated, shall be used for the purpose of making such maintenance, repair or replacement, except that the Owner of such UNIT shall be, in said instance, required to pay such portion of the costs of such maintenance, repair and replacement as shall, by reason of the applicability of any deductibility provision of such insurance, exceed the amount of the insurance proceeds applicable to such maintenance, repair or replacement. The porch, deck or patio floors, the walls facing the porch, deck or patio, and any porch, deck or patio railings attached to his UNIT shall be maintained by the Owner of that UNIT at his expense; provided however, said Owner shall take no action which will alter the exterior appearance of the building. Should the Owner fail to provide the maintenance and/or repairs as required, the ASSOCIATION shall have the right to enter the UNIT to accomplish same at the sole cost and expense of the Owner and said cost and expense shall be charged against the Owner, including the expense of making a key should Owner fail to deposit a key with the ASSOCIATION pursuant to the requirements of Article XVIII. Any such costs and expenses shall become a lien on the UNIT in like manner as an assessment.

XXIII.

MAINTENANCE AND REPAIR OF COMMON ELEMENTS
BY ASSOCIATION & COMMON EXPENSES

The ASSOCIATION, at its expense, shall be responsible for the maintenance, repair and replacement of all of the COMMON ELEMENTS, including those portions thereof which contribute to the support of the building, and all conduits, plumbing, wiring and other facilities located in the COMMON ELEMENTS for the furnishing of utility services to the UNITS and said COMMON ELEMENTS, and should any incidental damage be caused to any UNIT by virtue of any work which may be done or caused to be done by the ASSOCIATION in the maintenance, repair, or replacement of any COMMON ELEMENTS, the ASSOCIATION shall, at its expense, repair such incidental damage.

The Board of Directors of ASSOCIATION shall cause the COMMON ELEMENTS to be inspected and evaluated annually by a professional engineer, architect, qualified property inspector, or other qualified professional, who shall then render a maintenance recommendation report to the Board of Directors of the ASSOCIATION and to the Grantor as to the condition of the COMMON ELEMENTS, as well as any recommendations for repairs and maintenance of the COMMON ELEMENTS. Such report shall be used by ASSOCIATION to assist it in the performance of the maintenance of the COMMON ELEMENTS. All of such reports shall be maintained in the files of ASSOCIATION and may be reviewed by any Owner, upon reasonable request. The first such inspection shall occur not later than one (1) year from the date of the filing of this Master Deed. Each subsequent inspection shall occur annually between January 1 and July 1 of each year. The cost of such inspection and report shall be a common expense. The term "Qualified Professional" as used herein shall mean a person whose education, training and work experience, as well as licenses and other professional qualifications, qualifies such person to perform the services provided for herein, in the reasonable discretion of the Board of Directors, after review of such qualifications. The Board of Directors shall report to the Association and the Grantor that any repair or maintenance suggested by such maintenance recommendation report has been corrected within sixty (60) days of receipt of such report.

In addition to the foregoing, the Board of Directors of the ASSOCIATION shall cause to be maintained a termite bond covering the buildings comprising the CONDOMINIUM which will provide coverage for the repair, replacement and retreatment of any portion of the buildings which are damaged or destroyed by infestation of termites or other wood-boring organisms. Such bond shall be maintained in full force and effect at all times and the cost thereof shall be a common expense of the ASSOCIATION.

The provisions of this Section XXIII may not be amended without the express written consent of the GRANTOR.

XXIV.

PERSONAL LIABILITY AND RISK OF LOSS OF OWNER OF UNIT AND SEPARATE INSURANCE COVERAGE, ETC.

The Owner of each UNIT may, at his own expense, obtain insurance coverage for loss of or damage to any furniture, furnishings, personal effects and other personal property belonging to such Owner and may, at his own expense and option, obtain insurance coverage against personal liability for injury to the person or property of another while within such Owner's UNIT or upon the COMMON ELEMENTS. All such insurance obtained by the Owner of each UNIT shall, wherever such provision shall be available, provide that the insurer waives its right of subrogation as to any claims against other Owners of UNITS, the ASSOCIATION, and the respective servants, agents and guests of said other Owners and the ASSOCIATION, and such other insurance coverage may be obtained from the insurance company from which the ASSOCIATION obtains coverage against the same risk, liability or peril, if the ASSOCIATION has such coverage and if it is available. Risk of loss of or damage to any furniture, furnishings, personal effects and other personal property (other than such furniture, furnishings and personal property constituting a portion of the COMMON ELEMENTS) belonging to or carried on the person of the Owner of each UNIT, or which may be stored in any UNIT or in, to or upon COMMON ELEMENTS shall be borne by the Owner of each such UNIT. All furniture, furnishings and personal property constituting a portion of the COMMON ELEMENTS and held for the joint use and benefit of all Owners of all UNITS shall be covered by such insurance as shall be maintained in force and effect by the ASSOCIATION as hereinafter provided. The Owner of a UNIT shall have no personal liability for any damages caused by the ASSOCIATION, any Owner or otherwise in connection with the use of the COMMON ELEMENTS. The Owner of a UNIT shall be liable for injuries or damage resulting from an accident in his own UNIT, to the same extent and degree that the Owner of a house would be liable for an accident occurring within the house.

XXV.

INSURANCE COVERAGE TO BE MAINTAINED BY THE ASSOCIATION; INSURANCE TRUSTEE, APPOINTMENT AND DUTIES APPROVAL OF INSURERS BY INSTITUTIONAL LENDER; USE AND DISTRIBUTION OF INSURANCE PROCEEDS, ETC.

The following insurance coverage shall be maintained in full force and effect by the ASSOCIATION covering the operation and management of the CONDOMINIUM and the said CONDOMINIUM, meaning the UNITS and COMMON ELEMENTS, to-wit:

A. Casualty insurance covering all of the UNITS, and COMMON ELEMENTS, in an amount equal to the maximum insurance replacement value thereof, exclusive of excavation and foundation costs, as determined annually by the insurance carrier, such coverage to afford protection against (i) loss or damage by fire or other hazards covered by the standard extended coverage or other perils endorsements; and (ii) such other risks of a similar or dissimilar nature as are or shall

be customarily covered with respect to buildings similar in construction, location and use to the CONDOMINIUM, including but not limited to vandalism, malicious mischief, windstorm, wind driven rain damage, water damage and war risk insurance, if available.

B. Public liability and property damage insurance in such amounts and in such form as shall be required by the ASSOCIATION to protect the ASSOCIATION and the Owners of all UNITS, including but not limited to, water damage, legal liability, hired automobile, nonowned automobile and off premises employee coverage.

C. Worker's Compensation insurance to meet the requirements of law.

D. Director's and Officer's liability coverage providing coverage for the Directors and Officers of the ASSOCIATION.

E. Such other insurance coverage, other than title insurance, as the Board of Directors of the ASSOCIATION, in its sole discretion may determine from time to time to be in the best interest of the ASSOCIATION and the Owners of all of the UNITS.

All liability insurance maintained by the ASSOCIATION shall contain cross liability endorsements to cover liability of all Owners of UNITS as a group as to each UNIT Owner.

Although pursuant to the foregoing, the insurance carrier for the ASSOCIATION shall determine annually the maximum insurance replacement value of the UNITS and COMMON ELEMENTS, it shall be the duty of the Board of Directors of ASSOCIATION to conduct a review of the insurance coverages maintained by ASSOCIATION to determine the adequacy thereof not less than once every three (3) years to increase the amount of any such insurance deemed inadequate. In conducting such review, the Board of Directors of the ASSOCIATION may obtain and use appraisals of the property prepared by licensed appraisers. The cost of obtaining such appraisals shall be a Common Expense. Upon such review, a report shall be presented to ASSOCIATION at the annual meeting next following the completion of such review, summarizing the findings of the Board of Directors of ASSOCIATION.

All insurance coverage authorized to be purchased shall be purchased by the ASSOCIATION for itself and for the benefit of all of the Owners of all UNITS. The cost of obtaining the insurance coverage authorized above is declared to be a common expense, as are all other fees and expenses incurred which may be necessary or incidental to carrying out the provisions hereof.

All policies of casualty insurance covering the CONDOMINIUM shall provide for the insurance proceeds covering any loss to be payable to the Insurance Trustee named as hereinafter provided, or to its successor, and the insurance proceeds from any casualty loss shall be held for the use and benefit of the ASSOCIATION and all of the Owners of all UNITS and their respective mortgagees, as their interests may appear, and such insurance proceeds shall be applied or distributed in the manner herein provided. The ASSOCIATION is hereby declared to be "Insurance Trustee" acting by and through the Board of Directors of the ASSOCIATION and is appointed as authorized agent for all of the Owners of all UNITS for the purpose of negotiating and agreeing to a settlement as to

the value and extent of any loss which may be covered under any policy of casualty insurance, and is granted full right and authority to execute in favor of any insurer a release of liability arising out of any occurrence covered by any policy or policies of casualty insurance and resulting in loss of or damage to insured property.

The ASSOCIATION shall have the right to delegate the duties of the Insurance Trustee to some other party and all parties beneficially interested in such insurance coverage shall be bound by said delegation.

The Insurance Trustee shall not be liable for the payment of premiums, for the renewal of any policy or policies of casualty insurance, for the sufficiency of coverage, for the form or content of the policies or for the failure to collect any insurance proceeds.

The sole duty of the Insurance Trustee shall be to receive such proceeds of casualty insurance as are paid and to hold same in trust for the purposes herein stated, and for the benefit of the ASSOCIATION and the Owners of all UNITS and their respective mortgagees, such insurance proceeds to be disbursed and paid by the Insurance Trustee as hereinafter provided. The ASSOCIATION, as a common expense, may pay a reasonable fee to said Insurance Trustee for its services rendered hereunder, and shall pay such costs and expenses as said Insurance Trustee may incur in the performance of any duties and obligations imposed upon it hereunder. Said Insurance Trustee shall be liable only for its willful misconduct, bad faith or gross negligence, and then for only such money which comes into the possession of said Insurance Trustee. Wherever the Insurance Trustee may be required to make distribution of insurance proceeds to Owners of UNITS and their mortgagees, as their respective interests may appear, the Insurance Trustee may rely upon a Certificate of the President and Secretary of the ASSOCIATION, executed under oath, and which Certificate will be provided to said Insurance Trustee upon request of said Insurance Trustee made to the ASSOCIATION, such Certificate to certify unto said Insurance Trustee the name or names of the Owners of each UNIT, the name or names of the mortgagee or mortgagees who may hold a mortgage or mortgages encumbering each UNIT, and the respective percentages of any distribution which may be required to be made to the Owner or Owners of any UNIT or UNITS, and his or their respective mortgagee or mortgagees, as their respective interests may appear. Where any insurance proceeds are paid to the Insurance Trustee for any casualty loss, the holder or holders of any mortgage or mortgages encumbering a UNIT shall not have the right to determine or participate in the determination of repair or replacement of any loss or damage, and shall not have the right to elect to apply insurance proceeds to the reduction of any mortgage or mortgages, unless such insurance proceeds represent a distribution to the Owner or Owners of any UNIT or UNITS, and their respective mortgagees, after such insurance proceeds have been first applied to repair, replacement or reconstruction of any loss or damage, or unless such casualty insurance proceeds are authorized to be distributed to the Owner or Owners of any UNIT or UNITS, and their respective mortgagee or mortgagees, by reason of loss of or damage to personal property constituting a part of COMMON ELEMENTS and as to which a determination is made not to repair, replace or restore such personal property. So long as any lender shall have the right to approve the company or companies with whom said casualty insurance coverage is placed, such lender shall also have the right to approve the amount of such insurance coverage to be maintained.

In the event of the loss of or damage to COMMON ELEMENTS and/or UNITS, real or personal, which loss or damage is covered by the casualty insurance, the proceeds paid to the Insurance Trustee to cover such loss or damage shall be applied to the repair, replacement or reconstruction of such loss or damage. If the insurance proceeds are in excess of the cost of the repair, replacement or reconstruction of such COMMON ELEMENTS, then such excess insurance proceeds shall be paid by the Insurance Trustee into the reserve fund as described in Article XXVIII, Section E. If it appears that the insurance proceeds covering the casualty loss or damage payable to the Insurance Trustee are not sufficient to pay for the repair, replacement or reconstruction of the loss or damage, or that the insurance proceeds when collected will not be so sufficient, then the ASSOCIATION shall deposit with the Insurance Trustee a sum which, together with the insurance proceeds received or to be received, will enable said Insurance Trustee to completely pay for the repair, replacement or reconstruction of any loss or damage, as the case may be. The monies to be deposited by the ASSOCIATION with the Insurance Trustee, in said latter event, may be paid by the ASSOCIATION out of its Reserve for Replacements Fund, and if the amount in such Reserve for Replacements Fund is not sufficient, then the ASSOCIATION shall levy and collect an assessment against all Owners and their UNITS in an amount which shall provide the funds required to pay for said repair, replacement or reconstruction.

In the event of loss of or damage to property covered by such casualty insurance, the ASSOCIATION shall, within sixty (60) days after any such occurrence, obtain reliable and detailed estimates of the cost to place the damaged property in a condition as good as that before such loss or damage, such estimates to contain and include the cost of any professional fees and premiums for such bonds as the Board of Directors of the ASSOCIATION may deem to be in the best interest of the membership of the ASSOCIATION. Wherever it shall appear that the insurance proceeds payable for such loss or damage will not be sufficient to defray the cost of the repair, replacement or reconstruction thereof, the additional monies required to completely pay for such repair, replacement or reconstruction of said loss or damage, shall be deposited with said Insurance Trustee not later than thirty (30) days from the date on which said Insurance Trustee shall receive the monies payable under the policy or policies of casualty insurance.

In the event of the loss of or damage to personal property belonging to the ASSOCIATION, the insurance proceeds, when received by the Insurance Trustee, shall be paid to the ASSOCIATION. In the event of the loss of or damage to personal property constituting a portion of the COMMON ELEMENTS, and should the Board of Directors of the ASSOCIATION determine not to replace such personal property as may be lost or damaged, then the insurance proceeds received by the Insurance Trustee shall be paid to ASSOCIATION.

XXVI.

APPORTIONMENT OF TAX OR SPECIAL ASSESSMENT IF LEVIED AND ASSESSED AGAINST THE CONDOMINIUM AS A WHOLE

In the event that any taxing authority having jurisdiction over the CONDOMINIUM shall levy or assess any tax or special assessment against the CONDOMINIUM, as a whole, as opposed to levying

and assessing such tax or special assessment against each UNIT and its appurtenant undivided interest in COMMON ELEMENTS as now provided by law, then such tax or special assessment so levied shall be paid as a common expense by the ASSOCIATION, and any taxes or special assessments which are to be so levied shall be included, wherever possible, in the estimated annual budget of the ASSOCIATION, or shall be separately levied and collected as an assessment by the ASSOCIATION against all of the Owners of all UNITS and said UNITS if not included in said annual budget. The amount of any tax or special assessment paid or to be paid by the ASSOCIATION in the event that such tax or special assessment is levied against the CONDOMINIUM, as a whole, instead of against each separate UNIT and its appurtenant undivided interest in COMMON ELEMENTS shall be apportioned among the Owners of all UNITS so that the amount of such tax or special assessment so paid or to be paid by the ASSOCIATION and attributable to and to be paid by the Owner or Owners of each UNIT shall be that portion of such total tax or special assessment which bears the same ratio to said total tax or special assessment as the undivided interest in COMMON ELEMENTS appurtenant to each UNIT bears to the total undivided interest in COMMON ELEMENTS appurtenant to all UNITS. In the event that any tax or special assessment shall be levied against the CONDOMINIUM in its entirety, without apportionment by the taxing authority to the UNITS and appurtenant undivided interests in COMMON ELEMENTS, then the assessment by the ASSOCIATION, which shall include the proportionate share of such tax or special assessment attributable to each UNIT and its appurtenant undivided interest in COMMON ELEMENTS, shall separately specify and identify the amount of such assessment attributable to such tax or special assessments, and the amount of such tax or special assessment so designated shall be and constitute a lien prior to all mortgages and encumbrances upon any UNIT and its appurtenant undivided interest in COMMON ELEMENTS, regardless of the date of the attachment and/or recording of such mortgage or encumbrance, to the same extent as though such tax or special assessment had been separately levied by the taxing authority upon each UNIT and its appurtenant undivided interest in COMMON ELEMENTS.

All personal property taxes levied or assessed against personal property owned by the ASSOCIATION shall be paid by the ASSOCIATION and shall be included as a common expense in the Annual Budget of the ASSOCIATION.

XXVII.

THE ASSOCIATION TO MAINTAIN REGISTRY OF OWNERS AND MORTGAGEES

The ASSOCIATION shall at all times maintain a register setting forth the names of the Owners of all of the UNITS, and in the event of the sale or transfer of any UNIT to a third party, the purchaser or transferee shall notify the ASSOCIATION in writing of his interest in such UNIT together with such recording information as shall be pertinent to identify the instrument by which such purchaser or transferee has acquired his interest in any UNIT. Further the Owner of each UNIT shall at all times notify the ASSOCIATION of the names of the parties holding any mortgage or mortgages on any UNIT, the amount of such mortgage or mortgages, and the recording information which shall be pertinent to identify the mortgage or mortgages. The holder of any mortgage or mortgages upon any UNIT may, if he so desires, notify the ASSOCIATION of the existence of any mortgage or

mortgages held by such party on any UNIT, and upon receipt of such notice, the ASSOCIATION shall register in its records all pertinent information pertaining to the same.

XXVIII.

ASSESSMENTS: LIABILITY, LIEN AND ENFORCEMENT

The ASSOCIATION is given the authority to administer the operation and management of the CONDOMINIUM, it being recognized that the delegation of such duties to one entity is in the best interest of the Owners of all UNITS. To properly administer the operation and management of the CONDOMINIUM, the ASSOCIATION will incur, for the mutual benefit of all of the Owners of UNITS, costs and expenses which will be continuing or nonrecurring costs, as the case may be, which costs and expenses are sometimes herein referred to as "common expense." To provide the funds necessary for such proper operation and management, the ASSOCIATION heretofore has been granted the right to make, levy and collect assessments against the Owners of all UNITS and said UNITS. In furtherance of said grant of authority to the ASSOCIATION to make, levy and collect assessments to pay the costs and expenses for the operation and management of the CONDOMINIUM, the following provisions shall be operative and binding upon the Owners of all UNITS, to-wit:

A. All assessments levied against the Owners of UNITS and said UNITS, including the ASSOCIATION should it own any UNIT, shall be uniform and, unless specifically otherwise provided for in this Master Deed, the assessments made by the ASSOCIATION shall be in such proportion that the amount of assessment levied against each Owner of a UNIT and his UNIT shall bear the same ratio to the total assessment made against all Owners of UNITS and their UNITS as does the undivided interest in COMMON ELEMENTS appurtenant to each UNIT bear to the total undivided interest in COMMON ELEMENTS appurtenant to all UNITS.

B. The assessment levied against the Owner of each UNIT and his UNIT shall be payable in annual, quarterly or monthly installments, or in such other installments and at such times as may be determined by the Board of Directors of the ASSOCIATION.

C. The Board of Directors of the ASSOCIATION shall establish an annual budget in advance for each fiscal year which shall correspond to the calendar year, and such budget shall project all expenses for the forthcoming year which may be required for the proper operation, management and maintenance of the CONDOMINIUM, including a reasonable allowance for contingencies and reserves (as hereinafter provided), such budget to take into account projected anticipated income which is to be applied in reduction of the amount required to be collected as an assessment each year. Upon adoption of such annual budget by the Board of Directors of the ASSOCIATION, copies of said budget shall be delivered to each Owner of a UNIT and the assessment for said year shall be established based upon such budget, although the delivery (or non-delivery) of a copy of said budget to each Owner shall not affect the liability of any Owner for such assessment. Should the Board of Directors at any time determine, in the sole discretion of said Board of Directors, that the assessments levied are or may prove to be insufficient to pay the costs

of operation and management of the CONDOMINIUM, or in the event of emergencies, said Board of Directors shall have the authority to levy such additional assessment or assessments as it shall deem to be necessary.

D. Upon the initial sale of each UNIT by the GRANTOR, each Owner purchasing such UNIT from the GRANTOR shall pay over to the ASSOCIATION the amount of $150.00 which shall not be a prepaid assessment, but shall constitute a separate payment to provide initial operating funds.

E. The Board of Directors of the ASSOCIATION, in establishing said annual budget for the operation, management and maintenance of the CONDOMINIUM shall include therein a sum to be collected and maintained as a reserve fund for replacement of COMMON ELEMENTS, which reserve fund shall be for the purpose of enabling the ASSOCIATION to replace and/or conduct major repairs upon, structural elements and mechanical equipment constituting a part of the COMMON ELEMENTS as well as the replacement of personal property and amenities which may constitute a portion of the COMMON ELEMENTS held for the joint use and benefit of all of the Owners of all UNITS.

F. The Board of Directors of the ASSOCIATION, in establishing said annual budget for operation, management and maintenance of the CONDOMINIUM, shall include therein a sum to be collected and maintained as a general operating reserve which shall be used to provide a measure of financial stability during periods of special stress when such sums may be used to meet deficiencies from time to time existing as a result of delinquent payment of assessments by Owners of UNITS, as a result of emergencies or for other reason placing financial stress upon the ASSOCIATION.

G. All monies collected by the ASSOCIATION shall be treated as the separate property of the ASSOCIATION, and such monies may be applied by the ASSOCIATION to the payment of any expense of operating and managing the CONDOMINIUM, or to the proper undertaking of all acts and duties imposed upon it by virtue of this Master Deed and the Articles of Incorporation and By-Laws of the ASSOCIATION and as the monies for any assessment are paid to the ASSOCIATION by any Owner of a UNIT the same may be commingled with the monies paid to the ASSOCIATION by the other Owners of UNITS. Although all funds and other assets of the ASSOCIATION, and any increments thereto or profits derived therefrom, or from the leasing or use of COMMON ELEMENTS, shall be held for the benefit of the members of the ASSOCIATION, no member of the ASSOCIATION shall have the right to assign, hypothecate, pledge or in any manner transfer his membership interest therein, except as an appurtenance to his UNIT.

H. The payment of any assessment or installment thereof due to the ASSOCIATION shall be in default if such assessment, or any installment thereof, is not paid to the ASSOCIATION on or before the due date for such payment. When in default, the Board of Directors may accelerate the remaining installments of the annual assessment upon notice thereof to the UNIT Owner, whereupon the entire unpaid balance of the annual assessment shall become due upon the date stated in the notice, which shall not be less than ten (10) days after the date of the notice. In the event any assessment, installment, or accelerated installment is not paid within twenty (20) days after its due

date, the ASSOCIATION, through its Board of Directors, may proceed to enforce and collect the assessment against the UNIT Owner owing the same in any manner provided for by the Act, including the rights of foreclosure and sale. When in default, the delinquent assessment or delinquent installment thereof due to the ASSOCIATION shall bear interest at the rate of 18% per annum until such delinquent assessment or installment thereof, and all interest due thereon, have been paid to the ASSOCIATION. Further, a late fee of $25.00 shall be assessed for each installment not paid within 30 days after the due date thereof.

I. The Owner or Owners of each UNIT shall be personally liable to the ASSOCIATION for the payment of all assessments, regular or special, which may be levied by the ASSOCIATION while such person or persons is or are Owner or Owners of a UNIT in the CONDOMINIUM. In the event that any Owner or Owners are in default in payment of any assessment or installment thereof owed to the ASSOCIATION, such Owner or Owners of any UNIT shall be personally liable for interest on such delinquent assessment or installment thereof as above provided, and for all costs of collecting such assessment or installment thereof and interest thereon, including a reasonable attorney's fee, whether suit be brought or not.

J. In addition to all of the foregoing, each Owner of a UNIT, at the time of the original conveyance of the UNIT from the Grantor, shall pay to ASSOCIATION an advance assessment for insurance in an amount to be determined by ASSOCIATION'S Board of Directors in its reasonable discretion, and such determination shall be deemed final.

K. No Owner of a UNIT may exempt himself from liability for any assessment levied against such Owner and his UNIT by waiver of the use or enjoyment of any of the COMMON ELEMENTS, or by abandonment of the UNIT, or in any other manner.

L. Recognizing that the necessity for providing proper operation and management of the CONDOMINIUM entails the continuing payment of costs and expenses therefor, which results in benefit to all of the Owners of UNITS, and that the payment of such common expense represented by the assessments levied and collected by the ASSOCIATION is necessary in order to preserve and protect the investment of the Owner of each UNIT, the ASSOCIATION is hereby granted a lien upon such UNIT and its appurtenant undivided interest in COMMON ELEMENTS, which lien shall secure and does secure the monies due for all assessments now or hereafter levied against the Owner of each UNIT, which lien shall also secure interest and late fees, if any, which may be due on the amount of any delinquent assessments owing to the ASSOCIATION, and which lien shall also secure all costs and expenses, including a reasonable attorney's fee, which may be incurred by the ASSOCIATION in enforcing the lien upon said UNIT and its appurtenant undivided interest in the COMMON ELEMENTS. The lien granted to the ASSOCIATION may be foreclosed in the same manner as mortgages may be foreclosed in the State of South Carolina, and in any suit for the foreclosure of said lien, the ASSOCIATION shall be entitled to rental from the Owner of any UNIT from the date on which the payment of any assessment or installment thereof became delinquent and shall be entitled to the appointment of a Receiver for said UNIT. The rental required to be paid shall be equal to the rental charged on comparable types of Units along the Grand Strand of South Carolina. The lien granted to the ASSOCIATION shall further secure such advances for taxes, and payments on account of superior mortgages, liens, or encumbrances which may be required to be

advanced by the ASSOCIATION in order to preserve and protect its lien, and the ASSOCIATION shall further be entitled to interest at the legal rate as set out hereinbefore on any such advances made for such purpose. All persons, firms or corporations who shall acquire, by whatever means, any interest in the ownership of any UNIT, or who may be given or acquire a mortgage, lien or other encumbrance thereon, is hereby placed on notice of the lien granted to the ASSOCIATION, and shall acquire such interest in any UNIT expressly subject to such lien.

M. The lien herein granted to the ASSOCIATION shall be effective from and after the time of recording in the Public Records of Horry County, South Carolina, a claim of lien stating the description of the UNIT encumbered thereby, the name of the record Owner, the amount due and the date when due, and the lien shall continue in effect until all sums secured by said lien, as herein provided, shall have been fully paid. Such claims of lien shall include only assessments which are due and payable when the claim of lien is recorded, plus interest, late fees, costs, attorney's fees, advances to pay taxes and prior encumbrances and interest thereon, all as above provided. Such claims of lien shall be signed and verified by an officer or agent of the ASSOCIATION. Upon full payment of all sums secured by such claim of lien, the same shall be satisfied of record. The claim of lien filed by the ASSOCIATION shall be subordinate to the lien of any mortgage or any other lien recorded prior to the time of recording of the ASSOCIATION'S Claim of Lien.

In the event that any person, firm or corporation shall acquire title to any UNIT and its appurtenant undivided interest in COMMON ELEMENTS by virtue of any foreclosure or judicial sale, such person, firm or corporation so acquiring title shall only be liable and obligated for assessments as shall accrue and become due and payable for said UNIT and its appurtenant undivided interest in COMMON ELEMENTS subsequent to the date of acquisition of such title, and shall not be liable for the payment of any assessments which were in default and delinquent at the time it acquired such title subject to the lien of any assessment by the ASSOCIATION representing an apportionment of taxes or special assessments levied by taxing authorities against the CONDOMINIUM in its entirety. In the event of the acquisition of title to a UNIT by foreclosure or judicial sale, any assessment or assessments as to which the party so acquiring title shall not be liable shall be absorbed and paid by all Owners of all UNITS as a part of the common expense, although nothing herein contained shall be construed as releasing the party liable for such delinquent assessment from the payment thereof or the enforcement of collection of such payment by means other than foreclosure.

N. Whenever any UNIT may be sold or mortgaged by the Owner thereof, which sale shall be concluded only upon compliance with other provisions of this Master Deed, the ASSOCIATION, upon written request of the Owner of such UNIT, shall furnish to the proposed purchaser or mortgagee, a statement verifying the status of payment of any assessment which shall be due and payable to the ASSOCIATION by the Owner of such UNIT. Such statement shall be executed by any officer or agent of the ASSOCIATION and any purchaser or mortgagee may rely upon such statement in concluding the proposed purchase or mortgage transaction, and the ASSOCIATION shall be bound by such statement. In the event that a UNIT is to be sold or mortgaged at the time when payment of any assessment against the Owner of said UNIT and such UNIT due to the ASSOCIATION shall be in default (whether or not a claim of lien has been recorded by the ASSOCIATION) then the proceeds of such purchase or mortgage proceeds, shall be applied by the purchaser or mortgagee first to payment of any then delinquent assessment or installment thereof due

to the ASSOCIATION before the payment of any proceeds of purchase or mortgage proceeds to the Owner of any UNIT who is responsible for payment of such delinquent assessment.

In any voluntary conveyance of a UNIT, the Grantee shall be jointly and severally liable with the GRANTOR for all unpaid assessments against GRANTOR made prior to the time of such voluntary conveyance, without prejudice to the rights of the Grantee to recover from the GRANTOR the amounts paid by the Grantee therefor.

Institution of a suit at law to attempt to effect collection of the payment of any delinquent assessment shall not be deemed to be an election by the ASSOCIATION which shall prevent its thereafter seeking enforcement of the collection of any sums remaining owing to it by foreclosure, proceeding by foreclosure to attempt to effect such collection shall not be deemed to be an election precluding the institution of suit at law to attempt to effect collection of any sums then remaining owing to it.

Notwithstanding anything in this Master Deed to the contrary, it is declared that until the expiration of ninety (90) days after the date of recordation of this Master Deed, each UNIT in Phase I shall be exempt from the assessment created herein until such time as the UNIT is conveyed by the GRANTOR to a Grantee and that the GRANTOR shall be assessed and pay to the ASSOCIATION in lieu of such assessment a sum equal to the amount of actual operating expenses for the period of such assessment less an amount equal to the total assessments made by the ASSOCIATION against Owners of UNITS other than those owned by GRANTOR for such period. Commencing ninety-one (91) days after the recordation of this Master Deed, the GRANTOR shall be subject to assessments as provided for in this Master Deed so that it will pay assessments on the same basis provided for under this Master Deed for other UNIT Owners. GRANTOR reserves the right in future Phases for a period not to exceed ninety (90) days after recordation of the amendment adding each such Phase, to contribute in lieu of normal assessments the actual operation expenses attributable to the UNITS in each Phase less the amount of total assessments made by ASSOCIATION against Owners of UNITS other than those owned by GRANTOR. Notwithstanding the foregoing, GRANTOR may elect to pay assessments on unsold UNITS in the same manner as other Owners in lieu of paying the operating deficit as provided above.

XXIX.

TERMINATION

This Master Deed and said plan of CONDOMINIUM ownership may only be terminated by the unanimous consent of all of the Owners of all UNITS and all of the parties holding mortgages, liens or other encumbrances against any of said UNITS, in which event the termination of the CONDOMINIUM shall be by such plan as may be then adopted by said Owners and persons holding any mortgages, liens or other encumbrances. Such election to terminate this Master Deed and the plan of CONDOMINIUM ownership established herein shall be executed in writing by all of the aforenamed persons, and such instrument or instruments shall be recorded in the Public Records of Horry County, South Carolina.

XXX.

AMENDMENT OF MASTER DEED

Except for any alteration in the percentage of ownership in COMMON ELEMENTS appurtenant to each UNIT, or alteration of the basis for apportionment of assessments which may be levied by the ASSOCIATION in accordance with the provisions hereof, in which said instances consent of all of the Owners of all UNITS and their respective mortgagees shall be required, and except for any alteration, amendment or modification of the rights and privileges granted and reserved hereunder in favor of GRANTOR, and the Lender which said rights and privileges granted and reserved unto the said GRANTOR and the Lender shall only be altered, amended or modified with the respective express written consent of the said GRANTOR or Lender, as the case may be, this Master Deed may be amended in the following manner:

An amendment or amendments to this Master Deed may be proposed by the Board of Directors of the ASSOCIATION acting upon a vote of the majority of the Directors, or by the members of the ASSOCIATION owning a majority of the UNITS in the CONDOMINIUM, whether meeting as members or by instrument in writing signed by them. Upon any amendment or amendments to the Master Deed being proposed by said Board of Directors or members, such proposed amendment or amendments shall be transmitted to the President or Secretary of the ASSOCIATION, in the absence of the President, who shall thereupon call a Special Meeting of the members of the ASSOCIATION for a date not sooner than twenty (20) days nor later than sixty (60) days from receipt by him of the Proposed amendment or amendments, and it shall be the duty of the Secretary to give to each member written or printed notice of such Special Meeting, stating the time and place thereof, and reciting the proposed amendment or amendments in reasonably detailed form, which notice shall be mailed not less than ten (10) days nor more than thirty (30) days before the date set for such Special Meeting. If mailed, such notice shall be deemed to be properly given when deposited in the United States mail addressed to the member at his postal address as it appears on the records of the ASSOCIATION, the postage thereon prepaid. Any member may, by written waiver of notice signed by such member, waive such notice and such waiver, when filed in the records of the ASSOCIATION, whether before or after the holding of the meeting, shall be deemed equivalent to the giving of such notice to such member. At such meeting, the amendment or amendments proposed must be approved by an affirmative vote of sixty-seven (67%) percent of the members owning a UNIT in the CONDOMINIUM in order for such amendment or amendments to become effective. Thereupon, such amendment or amendments of this Master Deed shall be transcribed and certified by the President and Secretary of the ASSOCIATION as having been duly adopted, and the original or an executed copy of such amendment or amendments so certified and executed with the same formalities as a deed shall be recorded in the Public Records of Horry County, South Carolina, within thirty (30) days from the date on which the same became effective, such amendment or amendments to specifically refer to the recording data identifying the Master Deed. Thereafter, a copy of said amendment or amendments in the form in which the same were placed of record by the officers of the ASSOCIATION shall be delivered to all of the Owners of all UNITS and mailed to the mortgagees listed in the registry required to be maintained by Article XXVI hereof, but delivery and mailing of a copy thereof shall not be a condition precedent to the effectiveness of such amendment or amendments. At any meeting held to consider such amendment or amendments, the

written vote of any member of the ASSOCIATION shall be recognized if such member is not in attendance at such meeting or represented thereat by proxy, provided such written vote is delivered to the Secretary of the ASSOCIATION at or prior to such meeting. Furthermore, no amendment to this Master Deed shall be adopted which would operate to affect the validity or priority of any mortgage held by a mortgagee or which would alter, amend or modify in any manner whatsoever the rights, powers and privileges granted and/or reserved herein in favor of any mortgagee or in favor of GRANTOR without the consent or all such mortgagees or GRANTOR as the case may be. Notwithstanding anything contained herein, the GRANTOR, its successors or assigns, may, without the consent of the UNIT Owners or MORTGAGEES, at any time prior to twenty-five (25) years from the date of filing of this Master Deed, amend this Master Deed in the manner set forth in Article III so as to subject any additional Phase(s) or COMMON ELEMENTS to the provisions of this Master Deed and the Horizontal Property Act of South Carolina so as to make such additional Phase(s) or COMMON ELEMENTS an integral part of Rivergate Horizontal Property Regime. Any such amendment shall, together with this Master Deed, contain all of the particulars required by the said Horizontal Property Regime Act of South Carolina and from and after the recording of any such amendment, Rivergate Horizontal Property Regime shall include the Phase or COMMON ELEMENTS then being submitted as well as all Phases and COMMON ELEMENTS previously submitted. The UNITS in future Phases are to be of similar design as those UNITS in Phase I except as more particularly provided in Exhibit "C" hereto. The designation of each UNIT number and its proportionate interest in the COMMON ELEMENTS is set forth in Exhibit C, which is attached hereto and made a part and parcel hereof. It is not contemplated that submission of additional Phase(s) will substantially increase the proportionate amount of the common expenses payable by existing UNIT Owners.

The GRANTOR further reserves the right to make changes or amendments in this Master Deed, without the consent of any UNIT Owners or their mortgagees, to correct typographical, scrivener's or similar errors or to make a change required by an institutional lender, provided that any such correction or amendment shall not adversely affect the proportionate interest of any Owner or Owners in the COMMON ELEMENTS. Such change or amendment may be made by the recording of an appropriate document in the Office of the Register of Deeds for Horry County executed by the GRANTOR.

XXXI.

REMEDIES IN EVENT OF DEFAULT

The Owner or Owners of each UNIT shall be governed by and shall comply with the provisions of this Master Deed, and the Articles of Incorporation and the By-Laws of the ASSOCIATION and its rules and regulations as any of the same are now constituted or as they may be adopted and/or amended from time to time. A default by the Owner or Owners of any UNIT shall entitle the ASSOCIATION or the Owner or Owners of other UNIT or UNITS to the following relief:

A. Failure to comply with any of the terms of this Master Deed or other restrictions and regulations contained in the Articles of Incorporation, By-Laws of the ASSOCIATION, or its rules and regulations, shall be grounds for relief which may include without intending to limit the same,

an action to recover sums due for damages, injunctive relief, foreclosure of lien or any combination thereof and which relief may be sought by the ASSOCIATION, or, if appropriate, by an aggrieved Owner of a UNIT.

B. The Owner or Owners of each UNIT shall be liable for the expense of any maintenance, repair or replacement rendered necessary by his or their act, neglect or carelessness, or by that of any member of his or their family, or his or their guests, employees, agents or lessees, but only to the extent that such expense is not met by the proceeds of insurance carried by the ASSOCIATION. Such liability shall include any increase in fire insurance rates occasioned by use, misuse, occupancy or abandonment of a UNIT or its appurtenances. Nothing herein contained, however, shall be construed so as to modify any waiver by insurance companies of rights of subrogation.

C. In any proceeding arising because of an alleged default by the Owner of any UNIT, the ASSOCIATION, if successful, shall be entitled to recover the costs of the proceedings, and such reasonable attorney's fees as may be determined by the Court.

D. The failure of the ASSOCIATION or of the Owner of a UNIT to enforce any right, provision, covenant, or condition which may be granted by this Master Deed or other above mentioned documents shall not constitute a waiver of the right of the ASSOCIATION or of the Owner of a UNIT to enforce such right, provision, covenant or condition in the future.

E. All rights, remedies and privileges granted to the ASSOCIATION or the Owner or Owners of a UNIT pursuant to any terms, provisions, covenants or conditions of this Master Deed or other above mentioned documents, shall be deemed to be cumulative and the exercise of any one or more shall not be deemed to constitute an election of remedies or to preclude the person thus exercising the same from exercising such other and additional rights, remedies or privileges as may be available to such person at law or in equity.

F. The failure of the GRANTOR, or the Lender to enforce any right, privilege, covenant or condition which may be granted to them, or either of them, by this Master Deed or other above mentioned document shall not constitute waiver of the right of either of said parties to thereafter enforce such right, provision, covenant or condition in the future.

XXXII.

USE OR ACQUISITION OF INTEREST IN THE CONDOMINIUM TO RENDER USER OR ACQUIRER SUBJECT TO PROVISIONS OF MASTER DEED, RULES AND REGULATIONS

All present or future Owners, tenants or other persons who use the facilities of the CONDOMINIUM in any manner are subject to the provisions of this Master Deed and all documents appurtenant hereto and incorporated herewith, and the mere acquisition or rental of any UNIT or the mere act of occupancy of any UNIT, shall signify that the provisions of this Master Deed are accepted and ratified in all respects.

XXXIII.

RIGHT OF GRANTOR TO SELL OR LEASE UNIT
OWNED BY IT AND RIGHT OF GRANTOR TO REPRESENTATION
ON BOARD OF DIRECTORS OF THE ASSOCIATION

So long as GRANTOR shall own any UNIT, the said GRANTOR, shall have the absolute right to lease or sell any such UNIT to any person, firm or corporation, upon any terms and conditions as it shall deem to be in its own best interest. Further, provided that GRANTOR has not terminated "Class II" membership in the ASSOCIATION in accordance with the Articles of Incorporation and ByLaws of the ASSOCIATION, or so long as any phase or phases of the CONDOMINIUM project have not been submitted to the CONDOMINIUM or GRANTOR, its successors or assigns, is the Owner of Five (5) or more UNITS, then GRANTOR, it successors and assigns, shall have the right to designate and select a majority of the persons who shall serve as members of each Board of Directors of the ASSOCIATION. Whenever GRANTOR shall be entitled to designate and select any person or persons to serve on any Board of Directors of the ASSOCIATION the manner in which such person or persons shall be designated shall be as provided in the Articles of Incorporation and/or By-Laws of the ASSOCIATION, and GRANTOR, shall have the right to remove any person or persons selected by it to act and serve on said Board of Directors and to replace such person or persons with another person or other persons to act and serve in the place of any Director or Directors so removed for the remainder of the unexpired term of any Director or Directors so removed. Any Director designated and selected by GRANTOR, need not be an Owner of a UNIT. The power of the GRANTOR to designate Directors as above referred to shall terminate no later than the 1ST day of May, 2026.

Any representative of GRANTOR serving on the Board of Directors of the ASSOCIATION shall not be required to disqualify himself upon any vote upon any management contract or other matter between GRANTOR and the ASSOCIATION where the GRANTOR may have a pecuniary or other interest. Similarly, GRANTOR, as a member of the ASSOCIATION, shall not be required to disqualify itself in any vote which may come before the membership of the ASSOCIATION upon any management contract or other matter between GRANTOR and the ASSOCIATION where GRANTOR may have a pecuniary or other interest.

XXXIV.

ANNUAL REPORTS TO BE PROVIDED TO LENDER

So long as any Lender selected by GRANTOR is the Owner or holder of a mortgage encumbering a UNIT in the CONDOMINIUM, the ASSOCIATION shall furnish said Lender, upon such Lender's request, with at least one (1) copy of the Annual Financial Statement and Report of the ASSOCIATION audited and prepared by Certified Public Accountants satisfactory to Lender and setting forth such details as the said Lender may reasonably require, including a detailed statement of annual carrying charges or income collected, and operating expenses, such Financial Statement and Report to be furnished within ninety (90) days following the end of each fiscal year.

XXXV.

SEVERABILITY

In the event that any of the terms, provisions or covenants of this Master Deed are held to be partially or wholly invalid or unenforceable for any reason whatsoever, such holding shall not affect, alter, modify or impair in any manner whatsoever any of the other terms, provisions or covenants hereof or the remaining portions of any terms, provisions or covenants held to be partially invalid or unenforceable.

XXXVI.

LIBERAL CONSTRUCTION AND ADOPTION
OF PROVISIONS OF CONDOMINIUM ACT

The provisions of this Master Deed shall be liberally construed to effectuate its purpose of creating a uniform plan of CONDOMINIUM ownership. The South Carolina Horizontal Property Act, 1976 Code of Laws, as the same may be amended from time to time thereafter, is hereby adopted and expressly made a part hereof. In the event of any conflict between the provisions of this Master Deed and the said South Carolina Horizontal Property Act of South Carolina, as the same may be amended, the provisions of the Act shall take the place of any provisions in conflict with the Master Deed.

XXXVII.

MASTER DEED
BINDING UPON GRANTOR, ITS SUCCESSORS AND ASSIGNS,
AND SUBSEQUENT OWNERS

The restrictions and burdens imposed by the covenants of this Master Deed are intended to and shall constitute covenants running with the land, and shall constitute an equitable servitude upon each UNIT and its appurtenant undivided interest in COMMON ELEMENTS and this Master Deed shall be binding upon GRANTOR, its successors and assigns, and upon all parties who may subsequently become Owners of UNITS in the CONDOMINIUM and their respective heirs, legal representatives, successors and assigns.

XXXVIII.

DEFINITIONS

A. The term "UNIT" or "UNITS" shall be synonymous with the term "Apartment" or "Apartments" as those terms are used under the Horizontal Property Act of the 1976 Code of Laws of South Carolina, as amended. UNIT herein may also be described as "Villas" or "Dwellings".

B. "Building" means a structure containing in the aggregate two or more UNITS comprising a part of the CONDOMINIUM.

C. "Co-owner" or "Owner" means a person, firm, corporation, partnership, association, trust, or other legal entity or any combination thereof, who owns a UNIT within a Building.

D. "Assessment" means a UNIT Owner's pro rata share of the common expenses which from time to time is assessed against a UNIT Owner by the ASSOCIATION.

E. "Association" means council of co-owners as defined by the Horizontal Property Act and also means Rivergate Homeowners' Association, Inc., the corporate form by which the council of co-owners shall operate Rivergate Horizontal Property Regime.

F. "Common Expense" means the expenses for which the UNIT Owners are liable to the ASSOCIATION and include:

1. Expenses of administration, management, maintenance, insurance, operation, repair or replacement of the COMMON ELEMENTS and of the portions of UNITS which are the responsibility of the ASSOCIATION.

2. Expenses declared common expenses by provisions of this Master Deed;

3. Any valid charges against the CONDOMINIUM as a whole.

G. "Common Surplus" means the excess of or receipts of the ASSOCIATION, including, but not limited to assessments over the amount of common expenses.

H. "Condominium" refers to Rivergate Horizontal Property Regime and means the form of individual ownership of a particular UNIT in a Building together with the common right to a share with other co-owners in the general COMMON ELEMENTS.

I. "Common Elements" means and includes the elements described in the Horizontal Property Regime Act, and in this Master Deed (including Exhibits), as "COMMON ELEMENTS" and also the following:

1. Easements through apartments for conduits, ducts, plumbing, chimneys, wiring, and other facilities for the furnishing of utility services to UNITS and the general COMMON ELEMENTS; provided, however, such easements through a UNIT shall be only according to the plans and specifications for the Building, or as the Building is constructed unless otherwise approved in writing by the UNIT Owner.

2. An easement of support in every portion of an UNIT which contributes to the support of a Building.

3. Easements through the UNITS and general COMMON ELEMENTS for maintenance, repair and replacement of the UNITS and general COMMON ELEMENTS.

4. Installations for the furnishing of utility services to more than one UNIT or to the general COMMON ELEMENTS or to a UNIT other than the one containing the installation, which installation shall include ducts, plumbing, wiring and other facilities for the rendering of such services.

5. The tangible personal property required for the maintenance and operation of the CONDOMINIUM, even though owned by the ASSOCIATION.

A. "Limited Common Elements" shall have the meaning attributed thereto in Article IV of this Master Deed.

ARBITRATION

IN THE EVENT THAT A DISPUTE OR CLAIM SHALL ARISE WITH RESPECT TO ANY OF THE TERMS OR PROVISIONS OF THIS MASTER DEED, OR A DISPUTE BETWEEN THE GRANTOR OR ANY CONTRACTORS EMPLOYED BY THE GRANTOR, AND ANY ONE OR MORE UNIT OWNERS, SUCH CLAIMS TO INCLUDE BUT NOT BE LIMITED TO CLAIMS FOR NEGLIGENT OR IMPROPER CONSTRUCTION, FAILURE TO MEET SPECIFICATIONS, AND OTHER CLAIMS RELATED TO STRUCTURAL IMPROVEMENTS, ALL DISPUTES OR CLAIMS SHALL BE RESOLVED BY BINDING ARBITRATION PURSUANT TO TITLE 15, CHAPTER 48 (UNIFORM ARBITRATION ACT) OF THE CODE OF LAWS OF SOUTH CAROLINA. ALL RESULTING AWARDS AND DETERMINATIONS MADE BY THE ARBITRATORS PURSUANT TO THE PROVISIONS OF THIS SECTION SHALL BE CONCLUSIVELY BINDING UPON ALL PARTIES HERETO AND JUDGEMENT MAY BE RENDERED THEREON.

IN WITNESS WHEREOF, WW & LB Development Company, LLC, a South Carolina Corporation, has caused these presents to be executed this 14th day of March, 2001.

SIGNED, SEALED AND DELIVERED
IN THE PRESENCE OF:

WW & LB DEVELOPMENT COMPANY, LLC

By: Wayne Windermann
Its: Manager

STATE OF SOUTH CAROLINA)
)
COUNTY OF HORRY)

PERSONALLY appeared before me the undersigned notary, who, after first being duly sworn, deposes and states that s/he saw the within named WW & LB DEVELOPMENT COMPANY, LLC, by and through its duly authorized officer(s), Sign, Seal and Deliver the within Master Deed; and that s/he with the other witness witnessed the execution thereof.

Betty G. Dew

SWORN to before me this 14th day of March, 2001.

(L.S.)
Notary Public for South Carolina
My Commission Expires: 3/18/09

EXHIBIT "A"

TO MASTER DEED FOR Rivergate HORIZONTAL PROPERTY REGIME

ALL AND SINGULAR, all that certain piece, parcel or tract of land, with improvements thereon, situate, lying and being in Conway Township, Horry County, State of South Carolina and being more particularly shown and designated as "Phase 1" containing 1.37 acres total, more or less, (said 1.37 acres includes parcels designated as "Signage" containing 0.13 acres, "Ingress & Egress" containing 0.58 acres, "Signage" containing 0.06 acres, "Building "2"" containing 0.30 acres, and "Building "6"" containing 0.29 acres) as shown on a plat entitled "River Gate Phase I" prepared by Atlantic Land Surveying Co. dated February 20, 2001, and recorded March 16, 2001, in Plat Book 175 at Page 207, records of Horry County, reference to which is incorporated herein and made a part and parcel hereof.

SUBJECT to easements and restrictions of record.

These being portions of the property conveyed to WW & LB Development Company, LLC by deed from Grover E. Rabon, III and Tyler B. Dunlap, Jr., dated October 31, 1999, and recorded November 24, 1999, in Deed Book 2210, at Page 1239, and by deed from Lesonly Stanley, II, Lonnie Stanley, Jr., Ora Mae Stevenson, Elmer Stanley Ellison, Aree Stanley Bellamy, Minnie Stanley Brown, Dorothy Bellamy Stanley, Individually, and Dorothy Bellamy Stanley, as Personal Representative of the Estate of Lesonly Stanley, Sr. recorded March 16, 2000, in Deed Book 2243, at Page 85, all records of Horry County, South Carolina.

RIVERGATE
HORIZONTAL PROPERTY REGIME

EXHIBIT "B"
TO
MASTER DEED

HORRY COUNTY ASSESSOR
NEW PARCEL 131-02-01-214 thru 217
SPLIT FROM 131-02-01-013
Map Blk Parcel
3/19/01 pa

NOTE: Exhibit "B" is a survey dated February 20, 2001, prepared by Atlantic Land Surveying Co., (the "Survey"), which shows the location of the Buildings and other improvements and a set of floor plans dated August 2, 2000, and revised August 31, 2000, prepared by Herbert Craig Daniel, Registered Professional Engineer (the "Plans"), which shows graphically the dimensions, area and location of each UNIT therein, and the dimensions, area and location of COMMON ELEMENTS affording access to each UNIT. Both the Survey and Plans are recorded in Condominium Plat Book C at Page 993, records of Horry County, South Carolina and are incorporated herein by this reference. Said Exhibit further includes the following:

There are two (2) Buildings, also identified as Buildings 2 and 6, containing two (2) UNITS each building in Phase 1. Each UNIT is identified by a separate UNIT identifier on the Plans. Each UNIT which has the number "2" as the first digit of its UNIT identifier is located in Building 2 and each UNIT which has the number "6" as the first digit of its UNIT identifier is located in Building 6, as shown on the Survey and Plans. Each UNIT is individually identified using the UNIT identifier shown both on the Plans and on Exhibit "C" to this Master Deed. The UNIT identifier consists of the building number, either "2" or "6" and followed by a dash and a unit letter (2-A, 2-B, 6-A and 6-B for Phase I). Phase 1, for purposes of this Master Deed, shall consist of Building 2 and Building 6 and the UNITS contained therein.

Although other property of the GRANTOR may be shown on the Survey, such property shall not be deemed submitted to Rivergate Horizontal Property Regime until such time, if at all, that the same is specifically submitted to the terms of this Master Deed by amendment hereto.

The Buildings contained within Phase 1, are one level in height and contain two (2) UNITS in each Building. All UNITS are located on level one of the Buildings. Each UNIT is individually identified using the UNIT identifier shown both on the Plans and on Exhibit "C" to this Master Deed.

Each UNIT within Buildings 2 and 6 (Phase I) is a three (3) bedroom UNIT, as shown on the Plans. Each such UNIT has an entrance door opening onto a walkway as shown on the Plans.

Each three bedroom UNIT contains three bedrooms, two bathrooms, a living room, dining room, kitchen, bonus room and garage, all as shown on the Plans.

All built-in kitchen appliances, refrigerator, heating and air-conditioning units and condensers, hot water heaters and bathroom fixtures located in each UNIT are a part of the UNIT in which they are located and are not COMMON ELEMENTS. All window screens are also part of the UNIT which such items serve. The air-handling units which serve each UNIT are a part of the UNIT which it

serves and are not COMMON ELEMENTS, notwithstanding that such equipment may be located outside of the confines of the UNIT.

References to areas as COMMON ELEMENTS or COMMON AREAS in this Exhibit shall be in addition to, and read in conjunction with, the further designation of COMMON ELEMENTS as set out in other portions of this Master Deed and the Survey and Plans making up the balance of this Exhibit "B".

This Exhibit "B" shall be amended if Phase II through Phase XL or any one or more of such Phases shall become a part of Rivergate Horizontal Property Regime in accordance with the terms of this Master Deed.

RIVERGATE HORIZONTAL PROPERTY REGIME

EXHIBIT "C"
TO
MASTER DEED

Schedule of Percentage (%) of undivided interest in the COMMON ELEMENTS appurtenant to UNITS in Rivergate Horizontal Property Regime, a Condominium, including Phase I, and if developed, Phases II through X, inclusive. Statutory Value is for statutory purposes only and has no relationship to the actual value of each UNIT.

UNIT NUMBER	Statutory Value	Percentage Interest (Phase I)
PHASE I		
2-A	140	25
2-B	140	25
6-A	140	25
6-B	140	25
Total Statutory Value for Phase I	$560	100.000% (rounded to nearest one thousandth)

In addition, up to thirty-nine (39) additional buildings may be added to Rivergate Horizontal Property Regime as Phases II through XL, or any one or more of them. As each Phase is added, the total statutory value of all Phases submitted and constituting Rivergate Horizontal Property Regime at that time and the percentage interest of each UNIT therein may be determined using the formula hereinafter set forth. To determine the percentage interest of each UNIT, a formula shall be utilized with the statutory value of the type of each UNIT as set forth in the chart below as the numerator with the total statutory value of all of the UNITS within Rivergate Horizontal Property Regime at that time (including the Phase being submitted and any Phases previously submitted) as the denominator. The resulting fraction shall then be expressed as a percentage rounded to the nearest .0001. The statutory value of each UNIT to be contained within Phases II through XL, or any of them, if constructed and submitted, shall be in accordance with the chart contained herein. The building number as referred to herein has no relationship to the Phase in which it will be contained, but is merely for identification.

In the event that the GRANTOR elects, in accordance with the provisions of the Master Deed to which this Exhibit is attached, to proceed with the development of Phases II through Phase XL, or so many of said Phases as it might elect, within the time provided in the Master Deed, the percentage

of undivided interest appurtenant to each UNIT in Phase I through Phase XL (or so many of such Phases as may be constructed and submitted), as of the date of recording the amendment incorporating each additional Phase will automatically be the percentage to be set forth in a chart(s) which GRANTOR must record as a part of its election to construct and submit Phase II through XL, or so many of them as GRANTOR might elect to construct and submit to Rivergate Horizontal Property Regime. Such percentage interest shall be determined by the ratio of the statutory value of the individual UNIT as the same bears to the total statutory values of all UNITS within the Condominium. Provided, however, the assigned values to be reflected in the chart for UNITS in additional Phases must be the values provided in the following schedule depending on the type of UNIT involved as follows:

Type	Statutory Value
2 Bedroom, 1 car garage	$115.00
2 Bedroom, 2 car garage	$120.00
3 Bedroom unit within duplex building	$140.00
3 Bedroom unit within multilevel building	$120.00
3 Bedroom unit Townhome	$140.00

The GRANTOR may construct in Phase II and any subsequent Phases through Phases XL any combination of the Types of UNITS set forth in the chart above, provided that GRANTOR at the time of recording its election, specifies in the chart amending this Exhibit "C", the percentage interest of each UNIT in Phase I and so many additional Phases as might have at that time been incorporated hereunder, using the values of the different UNITS assigned above. Each Phase shall consist of one (1) building and related improvements, with no less than two (2) UNITS and no more than twenty-four (24) UNITS in each Building.

Each additional Phase shall have a minimum total statutory value based on the sum of all statutory values of all UNITS within that Phase of $230.00, and a maximum total statutory value of all UNITS within that Phase of $3,360.00. Therefore, the minimum and maximum percentage interest of each UNIT within Phase I, at any time during the development and submission of additional Phase or Phases to Rivergate Horizontal Property Regime may be determined by use of the formula hereinafter provided.

The actual percentage interest of each UNIT may be computed in accordance with the following formula with the result obtained from such formula being then expressed as a percentage:

$$\frac{\text{Statutory Value of the UNIT}}{\text{Total Statutory Value of all UNITS then submitted to the Horizontal Property Regime}} = \text{Percentage Interest of The UNIT (Expressed as a Percentage)}$$

EXHIBIT "D"

ARTICLES OF INCORPORATION

CERTIFIED TO BE A TRUE AND CORRECT COPY AS TAKEN FROM AND COMPARED WITH THE ORIGINAL ON FILE IN THIS OFFICE

FEB 20 2001

SECRETARY OF STATE OF SOUTH CAROLINA

STATE OF SOUTH CAROLINA
SECRETARY OF STATE

NONPROFIT CORPORATION
ARTICLES OF INCORPORATION

Jim Miles 4
SECRETARY OF STATE
FILED
FEB 20 2001
AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

TYPE OR PRINT CLEARLY IN BLACK INK

1. The name of the proposed corporation is Rivergate Homeowners' Association, Inc.

2. The initial registered office of the nonprofit corporation is 1160 HIGHWAY 17 NORTH (Street Address)

Little River (City) Horry (County) South Carolina (State) 29566 (Zip Code)

The name of the registered agent of the nonprofit corporation at that office is:

x SALVATRICE FORAN (Print Name)

I hereby consent to the appointment as registered agent of the corporation.

x Salvatrice Foran (Agent's Signature)

3. Check "a", "b" or "c", whichever is applicable. Check only one box:

a. [ ] The nonprofit corporation is a public benefit corporation.

b. [ ] The nonprofit corporation is a religious corporation.

c. [X] The nonprofit corporation is a mutual benefit corporation.

4. Check "a" or "b", whichever is applicable:

a. [X] This corporation will have members.

b. [ ] This corporation will not have members.

5. The address of the principal office of the nonprofit corporation is 1160 Highway 17 North (Street Address)

Little River (City) Horry (County) South Carolina (State) 29566 (Zip Code)

6. If this nonprofit corporation is either a public benefit or religious corporation (when box "a" or "b" of paragraph #3 is checked), complete either "a" or "b", whichever is applicable to describe how the remaining assets of the corporation will be distributed upon dissolution of the corporation.

Rivergate Homeowners' Association, Inc.
NAME OF CORPORATION

a. [ ] Upon dissolution of the corporation, assets shall be distributed for one or more exempt purposes within the meaning of section 501(c)(3) of the Internal Revenue Code or the corresponding section of any future federal tax code, or shall be distributed to the Federal government, or to a state or local government, for a public purpose. Any such asset not so disposed of shall be disposed of by the Court of Common Pleas of the county in which the principal office of the corporation is then located, exclusively for such purposes or to such organization or organizations, as said court shall determine, which are organized and operated exclusively for such purposes.

b. [ ] Upon dissolution of the corporation, consistent with the law, the remaining assets of the corporation shall be distributed to:

_____

7. If the corporation is a mutual benefit corporation (when box "c" of paragraph 3 is checked), complete either "a" or "b", whichever is applicable, to describe how the (remaining) assets of the corporation will be distributed upon dissolution of the corporation.

a. [X] Upon dissolution of the mutual benefit corporation, the (remaining) assets shall be distributed to its members, or if it has no members, to those persons to whom the corporation holds itself out as benefitting or serving.

b. [ ] Upon dissolution of the mutual benefit corporation, the (remaining) assets, consistent with the law, shall be distributed to:

_____

8. The optional provisions which the nonprofit corporation elects to include in the articles of incorporation are as follows (See Section 33-31-202(c) of the 1976 South Carolina Code of Laws, as amended, the applicable comments thereto, and the instruction to this form).

_____

_____

9. The name and address of each incorporator is as follows (only one is required)

Wayne Winderman	1414 Woodview Road, Yardley, PA	19067
Name	Address	Zip Code

10. Each original director of the nonprofit corporation must sign the articles but only if the directors are named in these articles:

_____
Name (Only if named in articles) Signature of director

11. Each incorporator must sign the articles.

Wayne Winderman 1/25/01
Wayne Winderman (Signature of Incorporator)

EXHIBIT "E"
BY-LAWS

OF

Rivergate HOMEOWNERS' ASSOCIATION, INC.

Article I
Name, Principal Office and Definitions

Section 1. Name. The name of the Association shall be Rivergate Homeowners' Association, Inc. (hereinafter sometimes referred to as the "Association").

Section 2. Principal Office. The principal office of the Association in the State of South Carolina shall be located in Myrtle Beach, County of Horry. The Association may have such other offices, either within or without the State of South Carolina, as the Board of Directors may determine or as the affairs of the Association may require.

Section 3. Definitions. The words used in these By-Laws shall have the same meaning as set forth in the Master Deed for Rivergate Horizontal Property Regime, as amended, renewed or extended from time to time, as hereinafter sometimes referred to as the "Master Deed", unless the context shall prohibit.

Section 4. Purpose. The purpose of the Association is to manage the affairs of Rivergate Horizontal Property Regime, a Horizontal Property Regime established pursuant to the terms of the Master Deed therefor, filed or to be filed in the Office of the Register of Deeds for Horry County, South Carolina.

The Association is not organized for profit and no part of the net earnings, if any, shall inure to the benefit of any member or individual person, firm or corporation.

The Association shall have all of the common law and statutory powers of a nonprofit corporation. The Association shall also have all of the powers necessary to implement the purposes of the Association and to provide for the general health and welfare of its membership.

Article II
Association: Membership, Meetings, Quorum, Voting, Proxies

Section 1. Membership. Every person or entity who is a record Owner of a fee or undivided fee interest in any UNIT which is subject by the Master Deed to assessment by the Association shall be a member of the Association, provided that any such person or entity who holds such interest merely as a security for the performance of an obligation shall not be a member.

Section 2. Voting Rights. The Association shall have two (2) classes of voting membership.

Class I. Class I members shall be all those Owners as defined in Article XIV, in the Master Deed. Class I members shall be entitled to one vote for each UNIT in which they hold the interest required for membership. When more than one person holds such interest or interests in a UNIT, all such persons shall be members; however, they shall select one (1) member to vote, which such member shall be designated as the "Voting Member" and shall be so designated in writing to the Secretary of the Association. In no event shall more than one (1) vote be cast with respect to any UNIT.

Class II. The sole Class II member shall be the GRANTOR. The Class II member shall be entitled to four (4) votes for each UNIT in which it holds the interest required for membership by Article XIV in the Master Deed provided that the Class II membership shall continue only so long as any phase of the Condominium Project has not been submitted to the Horizontal Property Regime, or GRANTOR, its successors or assigns, is the Owner of five (5) or more UNITS in the entire CONDOMINIUM. GRANTOR reserves the right at any time to terminate Class II membership by filing an instrument in the records of the Clerk of Court of Horry County, so doing and in any event the Class II membership shall terminate no later than May 1, 2026.

Section 3. Place of Meetings. Meetings of the Association shall be held at the principal office of the Association or at such other suitable place convenient to the Voting Members as may be designated by the Board of Directors either within the properties or as convenient thereto as possible and practical.

Section 4. Annual Meetings. The first meeting of the membership, whether a regular or special meeting, shall be held within ninety (90) days after the expiration of one (1) year from the date of incorporation of the Association. The next annual meeting shall be set by the Board so as to occur no more than ninety (90) days after the close of the Association's fiscal year. Subsequent regular annual meetings of the membership shall be held within thirty (30) days of the same day of the same month of each year thereafter at an hour set by the Board. Subject to the foregoing, the annual meeting shall be held at a date and time as set by the Board of Directors.

Section 5. Special Meetings. The President may call special meetings. In addition, it shall be the duty of the President to call a special meeting of the Association if so directed by resolution of a majority of a quorum of the Board of Directors or upon a petition signed by Voting Members representing at least ten (10%) percent of the total votes of the Association. The notice of any special meeting shall state the date, time and place of such meeting and the purpose thereof. No business shall be transacted at a special meeting except as stated in the notice.

Section 6. Notice of Meetings. Written or printed notice stating the place, day and hour of any meeting of the Members shall be delivered either personally or by mail, to each Voting Member entitled to vote at such meeting, not less than ten (10) nor more than fifty (50) days before the date of such meeting, by or at the direction of the President or the Secretary.

In the case of a special meeting or when required by statute or these By-Laws, the purpose or purposes for which the meeting is called shall be stated in the notice. No business shall be transacted at a special meeting except as stated in the notice.

If mailed, the notice of a meeting shall be deemed to be delivered when deposited in the United States mail addressed to the Voting Member at his address as it appears on the records of the Association, with postage thereon prepaid.

Section 7. Waiver of Notice. Waiver of notice of a meeting of the Voting Members shall be deemed the equivalent of proper notice. Any Voting Member may, in writing, waive notice of any meeting of the Voting Members, either before or after such meeting. Attendance at a meeting by a Voting Member or alternate shall be deemed waiver by such Voting Member of notice of the time, date and place thereof, unless such Voting Member specifically objects to lack of proper notice at the time the meeting is called to order. Attendance at a special meeting shall also be deemed waiver of notice of all business transacted thereat unless objection to the calling or convening of the meeting, of which proper notice was not given, is raised before the business is put to a vote.

Section 8. Adjournment of Meetings. If any meetings of the Association cannot be held because a quorum is not present, a majority of the Voting Members who are present at such meeting, either in person or by alternate, may adjourn the meeting to a time not more than thirty (30) days from the time the original meeting was called. At the reconvened meeting, if a quorum is present, any business which might have been transacted at the meeting originally called may be transacted.

Section 9. Voting. The voting rights of the Members shall be as set forth in the Articles of Incorporation, and such voting rights provisions are specifically incorporated herein.

Section 10. Proxies. Voting Members may vote in person or by Proxy.

Section 11. Majority. As used in these By-Laws, the term "majority" shall mean those votes, Owners or other group as the context may indicate, totaling more than fifty (50%) percent of the total number.

Section 12 Quorum. Except as otherwise provided in these By-Laws or in the Master Deed or Articles of Incorporation, the presence in person or by alternate of the Voting Members representing fifty-one (51%) percent of the total vote of the Association shall constitute a quorum at all meetings of the Association. Any provision in the Master Deed concerning quorums is specifically incorporated herein. So long as a quorum is present at the opening of the meeting, business may be transacted until adjournment notwithstanding the withdrawal of enough members to leave less than a quorum in attendance. Further, at any adjourned meeting at which a quorum is present at the reconvening of such meeting, any business may be transacted which might have been transacted at the original meeting notwithstanding the withdrawal of enough members to leave less than a quorum in attendance.

Section 13. Conduct of Meetings. The President shall preside over all meetings of the Association, and the Secretary shall keep the minutes of the meeting and record in a minute book all resolutions adopted at the meeting, as well as a record of all transactions occurring thereat.

Section 14. Action Without a Meeting. Any action required by law to be taken at a meeting of the Voting Members, or any action which may be taken at a meeting of the Voting Members, may be taken without a meeting if a consent in writing setting forth the action so taken shall be signed by all of the Voting Members entitled to vote with respect to the subject matter thereof, and such consent shall have the same force and effect as a unanimous vote of the Voting Members.

Article III
Board of Directors, Number, Powers, Meetings

A. Composition and Selection.

Section 1. Governing Body; Composition. The affairs of the Association shall be governed by a Board of Directors each of whom shall have one (1) vote. Except as provided in Section 2 of this Article, the Directors shall be Members. In the case of an Owner which is a corporation or partnership, the person designated in writing to the secretary of the Association as the representative of such corporation or partnership shall be eligible to serve as a Director. The initial Board of Directors shall consist of three (3) persons. The names and addresses of the first Board of Directors of the Association, who shall hold office until the first annual meeting of members and until qualified successors are duly elected and have taken office, shall be as follows:

1) Wayne Winderman
1414 Woodview Road
Yardley, PA 19067

2) Sally Foran
4300 Rivergate Lane
Little River, SC 29566

3. Gerard Foran
4300 Rivergate Lane
Little River, SC 29566

Section 2. Directors During Class "II" Control. The Directors who shall serve on the Board of Directors of the Association shall be selected by the Class "II" Member acting in its sole discretion and shall serve at the pleasure of the Class "II" Member until the first annual meeting of the membership following termination of Class II control at which time the Board of Directors shall be increased to five (5) Members.

Within one hundred twenty (120) days thereafter, the Class "II" member shall call a meeting, as provided in Article II, Section 4, of these By-Laws for special meetings, to advise the membership of the termination of the Class "II" member's control or, in the alternative, shall notify each member by U. S. Mail that the Class II membership has terminated.

The Directors selected by the Class "II" member pursuant to this Section need not be Members as provided in Section 1 of this Article.

Section 3. Veto. This Section 3 may not be amended without the express, written consent of the Class "II" member, so long as the Class "II" membership exists.

So long as the Class "II" membership exists, the Class "II" member shall have a veto power over all actions of the Board and any committee, as is more fully provided in this Section. This veto power shall be exercisable only by the Class "II" member, its successors, and assigns who specifically take this power in a recorded instrument. The veto power shall be as follows:

No action authorized by the Board of Directors or any committee shall become effective, nor shall any action, policy, or program be implemented until and unless:

(a) The Class "II" member shall have been given written notice of all meetings and proposed actions approved at meetings of the Board or any committee by certified mail, return receipt requested, or by personal delivery at the address it has registered with the Secretary of the Association, as it may change from time to time, which notice complies as to the Board of Directors meetings with Article III, Sections 10 and 11, of these By-Laws as to regular and special meetings of the Directors and which notice shall, except in the case of the regular meetings held pursuant to the By-Laws, set forth in reasonable particularity the agenda to be followed at said meeting; and

(b) The Class "II" member shall be given the opportunity at any such meeting to join in or to have its representatives or agents join in discussion from the floor of the meeting relative to any prospective action, policy, or program to be implemented by the Board, any committee, or the Association. The Class "II" member and its representatives or agents shall make its concerns, thoughts, and suggestions known to the members of the subject committee and/or the Board. The Class "II" member shall have and is hereby granted a veto power over any such action, policy, or program authorized by any committee or the Board of Directors and to be taken by any committee or Board of the Association or any individual member of the Association if Board, committee, or Association approval is necessary for said action. This veto may be exercised by the Class "II" member, its representatives, or agents at any time within ten (10) days following the meeting held pursuant to the terms and provisions hereof. Any veto shall not extend to the requiring of any action or counteraction on behalf of any committee, or the Board or the Association.

Section 4. Number of Directors. The number of Directors in the Association shall not be less than three (3) nor more than five (5), as provided below. The initial Board shall consist of three (3) members as identified in the Articles of Incorporation.

Section 5. Nomination of Directors. Except with respect to Directors selected by the Class "II" Member, nominations for election to the Board of Directors shall be made by a Nominating Committee. The Nominating Committee shall consist of a Chairman, who shall be a member of the Board of Directors, and three (3) or more Members of the Association. The Nominating Committee shall be appointed by the Board of Directors not less than thirty (30) days prior to each annual meeting of the Voting Members to serve from the close of such annual meeting until the close of the next annual meeting, and such appointment shall be announced at each such annual meeting.

Nominations shall be permitted from the floor. All candidates shall have a reasonable opportunity to communicate their qualifications to the Members and to solicit votes.

Section 6. Election and Term of Office. Notwithstanding any other provision contained herein:

At the first annual meeting after the termination of Class II control, five (5) Directors shall be elected. Two of the Directors, elected pursuant to this Section, shall be elected to serve for a term of three (3) years. Two (2) of the remaining Directors shall be elected to serve for a term of two (2) years, with the final Director elected to serve for a one (1) year term. Members of the Board of Directors shall hold office until their respective successors shall have been elected by the Association. Directors may be elected to serve any number of consecutive terms. Each member elected thereafter shall be elected for a two (2) year term.

Section 7. Removal of Directors and Vacancies. Any Director of the Association may be removed, with or without cause, by a vote of the Voting Members with a majority vote of the membership. Any Director whose removal is sought will be given notice prior to any meeting called for that purpose. Upon removal of a Director, a successor shall then and there be elected to fill the vacancy by the Voting Members responsible for such removal.

Any Director who has three (3) consecutive unexcused absences from Board meetings or who is delinquent in the payment of any assessment for more than thirty (30) days may be removed by a majority of the Directors present at a regular or special meeting at which a quorum is present, and a successor may be appointed by the Board. In the event of the death, disability, or resignation of a Director, a vacancy may be declared by the Board and it may appoint a successor. Any Director appointed by the Board shall serve for the remainder of the term such successor was appointed to fill.

Section 8. Voting Procedure for Directors. At any election of Directors to the Board of Directors, each Voting Member may cast, in respect to each vacancy, as many votes as he or she is entitled to exercise under the Articles of Incorporation. The candidates receiving the largest number of votes shall be elected.

B. Meetings.

Section 9. Organizational Meetings. The first meeting of the Board of Directors following each annual meeting of the membership shall be held within ten (10) days thereafter at such time and place as shall be fixed by the Board.

Section 10. Regular Meetings. Regular meetings of the Board of Directors may be held at such time and place as shall be determined from time to time by a majority of the Directors, but at least four (4) such meetings shall be held during each fiscal year with at least one (1) per quarter. Notice of the time and place of the meeting shall be communicated to Directors not less than four (4) days prior to the meeting; provided, however, notice of a meeting need not be given to any Director who has signed a waiver of notice or a written consent to holding of the meeting.

Section 11. Special Meetings. Special meetings of the Board of Directors shall be held when called by written notice signed by the President or by a majority of Directors. The notice shall specify the time and place of the meeting and the nature of any special business to be considered. The notice shall be given to each Director by one of the following methods: (a) by personal delivery; (b) by first class mail, postage prepaid: (c) by telephone communication, either directly to the Director or to a person at the Director's office or home who would reasonably be expected to communicate such notice promptly to the Director; or (d) by telegram, charges prepaid. All such notices shall be given by use of the Director's telephone number or shall be sent to the Director's address as shown on the records of the Association. Notices sent by first class mail shall be deposited into a United States mailbox at least four (4) days before the time set for the meeting. Notices given by personal delivery, telephone, or telegraph shall be delivered, telephoned, or given to the telegraph company at least three (3) days before the time set for the meeting.

Section 12. Waiver of Notice. The transactions of any meeting of the Board of Directors, however called and noticed or wherever held, shall be as valid as though taken at a meeting duly held after regular call and notice if (a) a quorum is present, and (b) either before or after the meeting each of the Directors not present signs a written waiver of notice, a consent to holding the meeting, or an approval of the minutes. The waiver of notice or consent need not specify the purpose of the meeting. Notice of a meeting shall also be deemed given to any Director who attends the meeting without protesting before or at its commencement about the lack of adequate notice.

Section 13. Quorum of Board of Directors. At all meetings of the Board of Directors, a majority of the Directors shall constitute a quorum for the transaction of business, and the votes of a majority of the Directors present at a meeting at which a quorum is present shall constitute the decision of the Board of Directors. A meeting at which a quorum is initially present may continue to transact business, notwithstanding the withdrawal of Directors, if any action taken is approved by at least a majority of the required quorum for that meeting. If any meeting of the Board cannot be held because a quorum is not present, a majority of the Directors who are present at such meeting may adjourn the meeting until such time and place as they may determine. At the reconvened meeting, if a quorum is present, any business which might have been transacted at the meeting originally called may be transacted without further notice.

Section 14. Compensation. No Director shall receive any compensation from the Association for acting as such unless approved by Members holding a majority of the total vote of the Association at a regular or special meeting of the Association; provided any Director may be reimbursed for expenses incurred on behalf of the Association upon approval of a majority of the other Directors.

Section 15. Conduct of Meetings. The President shall preside over all meetings of the Board of Directors, and the Secretary shall keep a minute book of meetings of the Board of Directors, recording therein all resolutions adopted by the Board of Directors and all transactions and proceedings occurring at such meetings.

Section 16. Open Meetings. Subject to the provisions of Section 17 of this Article, all meetings of the Board shall be open to all Voting Members, but Voting Members other than Directors may not participate in any discussion or deliberation unless permission to speak is

requested on his or her behalf by a Director. In such case, the President may limit the time any Voting Member may speak.

Section 17. Action Without a Formal Meeting. Any action to be taken at a meeting of the Directors or any action that may be taken at a meeting of the Directors may be taken without a meeting if a consent in writing, setting forth the action so taken, shall be signed by all of the Directors, and such consent shall have the same force and effect as a unanimous vote.

C. Powers and Duties.

Section 18. Powers. The Board of Directors shall be responsible for the affairs of the Association and shall have all of the powers and duties necessary for the administration of the Association's affairs and, as provided by law, may do all acts and things as are not by the Master Deed, Articles, or these By-Laws directed to be done and exercised exclusively by the Voting Members or the membership generally.

The Board of Directors shall delegate to one of its members the authority to act on behalf of the Board of Directors on all matters relating to the duties of the managing agent or manager, if any, which might arise between meetings of the Board of Directors.

In addition to the duties imposed by these By-Laws or by any resolution of the Association that may be hereafter adopted, the Board of Directors shall have the power to and shall be responsible for the following, in way of explanation, but not limitation:

(a) preparation and adoption of an annual budget in which there shall be established the contribution of each Owner to the Common Expenses;

(b) making assessments to defray the Common Expenses, establishing the means and methods of collecting such assessments, and establishing the period of the installment payments of the annual assessment; provided, unless otherwise determined by the Board of Directors, the annual assessment for each UNIT'S proportionate share of the Common Expenses shall be payable in equal monthly installments, or as determined by the Board of Directors;

(c) providing for the operation, care, upkeep, and maintenance of all of the Common Areas;

(d) designating, hiring, and dismissing the personnel necessary for the maintenance, operation, repair, and replacement of the Association, its property, and the Common Areas and, where appropriate, providing for the compensation of such personnel and for the purchase of equipment, supplies, and materials to be used by such personnel in the performance of their duties;

(e) collecting the assessments, depositing the proceeds thereof in a bank depository which it shall approve, and using the proceeds to administer the Association; provided, any reserve fund may be deposited, in the Directors' best business judgment, in depositories other than banks;

(f) making and amending rules and regulations;

(g) opening of bank accounts on behalf of the Association and designating the signatories required;

(h) making or contracting for the making of repairs, additions, and improvements to or alterations of the Common Area in accordance with the other provisions of the Master Deed and these By-Laws after damage or destruction by fire or other casualty;

(i) enforcing by legal means the provisions of the Master Deed, these By-Laws, and the rules and regulations adopted by it and bringing any proceedings which may be instituted on behalf of or against the Owners concerning the Association;

(j) obtaining and carrying insurance against casualties and liabilities, as provided in the Master Deed, and paying the premium cost thereof;

(k) paying the cost of all services rendered to the Association or its Members and not chargeable to Owners;

(l) keeping books with detailed accounts of the receipts and expenditures affecting the Association and its administration, specifying the maintenance and repair expenses and any other expenses incurred. The said books and vouchers accrediting the entries thereupon shall be available for examination by the Owners and mortgagees, their duly authorized agents, accountants, or attorneys, during general business hours on working days at the time and in a manner that shall be set and announced by the Board of Directors for the general knowledge of the Owners. All books and records shall be kept in accordance with generally accepted accounting principles;

(m) making available to any prospective purchaser of a UNIT, any Owner of a UNIT, any first Mortgagee, and the holders, insurers, and guarantors of a first Mortgage on any UNIT, current copies of the Master Deed, the Articles of Incorporation, the By-Laws, rules governing the UNIT, and all other books, records, and financial statements of the Association; and

(n) permitting utility suppliers to use portions of the Common Area reasonably necessary to the ongoing development or operation of the properties.

Section 19. Management Agent.

(a) The Board of Directors may employ for the Association a professional management agent or agents at a compensation established by the Board of Directors to perform such duties and services as the Board of Directors shall authorize. The Board of Directors may delegate to the managing agent or manager, subject to the Board's supervision, all of the powers granted to the Board of Directors by these By-Laws, other than the powers set forth in subparagraphs (a), (b), (f), (g), and (l) of Section 18 of this Article. The GRANTOR, or an affiliate of the GRANTOR, may be employed as managing agent or manager.

(b) No management contract may have a term in excess of one (1) year and must permit termination by either party without cause and without termination fee or penalty on ninety (90) days' or less written notice.

Section 20. Accounts and Reports. The following management standards of performance will be followed unless the Board by resolution specifically determines otherwise:

(a) accrual accounting, as defined by generally accepted accounting principles, shall be employed;

(b) accounting and controls shall conform to generally accepted accounting principles;

(c) cash accounts of the Association shall not be commingled with any other accounts;

(d) no remuneration shall be accepted by the managing agent from vendors, independent contractors, or others providing goods or services to the Association, whether in the form of commissions, finder's fees, service fees, prizes, gifts, or otherwise unless it benefits the Association;

(e) any financial or other interest which the managing agent may have in any firm providing goods or services to the Association shall be disclosed promptly to the Board of Directors;

(f) commencing at the end of the month in which the first UNIT is sold and closed, financial reports shall be prepared for the Association at least quarterly containing:

(i) an income statement reflecting all income and expense activity for the preceding period on an accrual basis;

(ii) a variance report reflecting the status of all Association ledger accounts in an "actual" versus "approved" budget format;

(iii) a balance sheet as of the last day of the preceding period; and

(iv) a delinquency report listing all Owners who are delinquent in paying the assessments at the time of the report and describing the status of any action to collect such installments which remain delinquent (A monthly installment of the assessment shall be considered to be delinquent on the fifteenth (15th) day of each month unless otherwise determined by the Board of Directors); and

(g) an annual report as of the end of the fiscal year consisting of at least the following shall be distributed to all Members within one hundred twenty (120) days after the close of the fiscal year: (1) a balance sheet; (2) an operating (income) statement; and (3) a statement of changes in financial position for the fiscal year. The annual report referred to above shall be prepared on an audited basis, by an independent certified public accountant for each fiscal year.

Section 21. Borrowing. The Board of Directors shall have the power to borrow money for the purpose of repair or restoration of the Common Areas or for the purpose of funding budgetary shortfalls, without the approval of the membership; provided, however, the Board shall obtain Voting Member approval by majority vote for special assessments in the event that the proposed

borrowing is for the purpose of modifying, improving, or adding amenities, and the total amount of such borrowing exceeds or would exceed five (5%) percent of the budgeted gross expenses of the Association for that fiscal year.

Section 22. Rights of the Association. With respect to the Common Areas, and in accordance with the Articles of Incorporation and By-Laws of the Association, the Association shall have the right to contract with any person for the performance of various duties and functions. Without limiting the foregoing, this right shall entitle the Association to enter into common management, operational, or other agreements with trusts, condominiums, cooperatives, or neighborhood and other Owners or residents associations, both within and without the properties. Such agreements shall require the consent of two-thirds (2/3) of all Directors of the Association.

The Association shall not be bound, either directly or indirectly, by any contract, lease, or other agreement (including any management contract) executed during the period of Class "II" control unless such contract, lease or other agreement contains a right of termination exercisable by either party without penalty at any time, with or without cause, upon not more than ninety (90) days notice to the other party.

Notwithstanding anything to the contrary contained herein, the Association, through its Board of Directors, shall have the right to enter into a declaration of easement and covenant to share costs or similar arrangement whereby the Association assumes maintenance responsibility for property which it does not own, or grants easements to entities which are not Members, in consideration for payment by the Owner of such property or such nonmembers of all or a portion of the costs associated with such maintenance or use.

Section 23. Enforcement. The Board shall have the power to impose reasonable fines, which shall constitute a lien upon the property of the violating Owner, and to suspend an Owner's right to vote or to use the Common Area for violation of any duty imposed under the Master Deed, these By-Laws, or any rules and regulations adopted hereunder; provided, however, nothing herein shall authorize the Association or the Board of Directors to limit ingress and egress to or from a UNIT. In the event that any occupant of a UNIT violates the Master Deed, By-Laws, or a rule or regulation and a fine is imposed, the fine shall first be assessed against the occupant; provided, however, if the fine is not paid by the occupant within the time period set by the Board, the Owner shall pay the fine upon notice from the Association. The failure of the Board to enforce any provision of the Master Deed, By-Laws, or any rule or regulation shall not be deemed a waiver of the right of the Board to do so thereafter.

(a) Notice. Prior to imposition of any sanction hereunder, except the suspension of voting rights for nonpayment of assessments, the Board or its delegate shall serve the alleged violator with written notice describing (i) the nature of the alleged violation, (ii) the proposed sanction to be imposed, (iii) a period of not less then ten (10) days within which the alleged violator may present a written request to the Covenants Committee, if any, or Board of Directors for a hearing; and (iv) a statement that the proposed sanction shall be imposed as contained in the notice unless a challenge is begun within ten (10) days of the notice. If a timely challenge is not made, the sanction stated in the notice shall be imposed.

(b) Hearing. If a hearing is requested in a timely manner, the hearing before the Covenants Committee shall be held in executive session affording the Owner a reasonable opportunity to be heard. Prior to the effectiveness of any sanction hereunder, proof of proper notice shall be placed in the minutes of the meeting. Such proof shall be deemed adequate if a copy of the notice, together with a statement of the date and manner of delivery, is entered by the officer, director, or agent who delivered such notice. The notice requirement shall be deemed satisfied if the alleged violator appears at the meeting. The minutes of the meeting shall contain a written statement of the results of the hearing and the sanction, if any, imposed.

(c) Appeal. Following a hearing before the Covenants Committee, the violator shall have the right to appeal the decision to the Board of Directors. To perfect this right, a written notice of appeal must be received by the manager, President, or Secretary of the Association within thirty (30) days after the hearing date.

(d) Additional Enforcement Rights. Notwithstanding anything to the contrary herein contained, the Association, acting through the Board of Directors, may elect to enforce any provision of the Master Deed, these By-Laws, or the rules and regulations of the Association by self-help (specifically including, but not limited to, the towing of vehicles that are in violation of parking rules and regulations) or by suit at law or in equity to enjoin any violation or to recover monetary damages or both without the necessity of compliance with the procedure set forth above. In any such action, to the maximum extent permissible, the Owner or occupant responsible for the violation of which abatement is sought shall pay all costs, including reasonable attorney's fees actually incurred.

Article IV
Officers

Section 1. Officers. The officers of the Association shall be a President, Vice President, Secretary, and Treasurer, to be elected from among the members of the Board. The Board of Directors may appoint such other officers, including one or more Assistant Secretaries and one or more Assistant Treasurers, as it shall deem desirable, such officers to have the authority and perform the duties prescribed from time to time by the Board of Directors. Any two (2) or more offices may be held by the same person, except the offices of President and Secretary.

Section 2. Election, Term of Office, and Vacancies. The officers of the Association shall be elected annually by the Board of Directors at the first meeting of the Board of Directors following each annual meeting of the membership, as herein set forth in Article III. A vacancy in any office arising because of death, resignation, removal, or otherwise may be filled by the Board of Directors for the unexpired portion of the term. The names and addresses of the first officers of the Association, who shall hold office until the first annual meeting of directors and until successors are duly elected and have taken office, shall be as follows:

Office	Name	Address
President	Wayne Winderman	1414 Woodview Road, Yardley, PA 19067
Vice President/ Secretary/Treasurer	Sally Foran	1160 Highway 17 N., Little River, SC 29566

Section 3. Removal. Any officer may be removed by the Board of Directors whenever in its judgment the best interests of the Association will be served thereby.

Section 4. Powers and Duties. The officers of the Association shall each have such powers and duties as generally pertain to their respective offices, as well as such powers and duties as may from time to time be specifically conferred or imposed by the Board of Directors. The President shall be the chief executive officer of the Association. The Treasurer shall have the responsibility for the preparation of the budget as provided for in the Master Deed.

Section 5. Resignation. Any officer may resign at any time by giving written notice to the Board of Directors, the President, or the Secretary. Such resignation shall take effect on the date of the receipt of such notice or at any later time specified therein, and unless otherwise specified therein, the acceptance of such resignation shall not be necessary to make it effective.

Section 6. Agreements, Contracts, Deeds, Leases, Checks, Etc. All agreements, contracts, deeds, leases, checks, and other instruments of the Association shall be executed by at least two (2) officers or by such other person or persons as may be designated by resolution of the Board of Directors. Provided however, agreements, contracts and checks may be executed by the Management Agent.

Article V
Committees

Section 1. General. Committees are hereby authorized to perform such tasks and to serve for such periods as may be designated by a resolution adopted by a majority of the Directors present at a meeting at which a quorum is present. Each committee shall operate in accordance with the terms of the resolution of the Board of Directors designating the committee or with rules adopted by the Board of Directors.

Section 2. Covenants Committee. In addition to any other committees which may be established by the Board pursuant to Section 1 of this Article, the Board of Directors may appoint a Covenants Committee consisting of at least five (5) and no more than seven (7) members. Acting in accordance with the provisions of the Master Deed, these By-Laws, and resolutions the Board may adopt, the Covenants Committee, if established, shall be the hearing tribunal of the Association and conduct all hearings held pursuant to Article III, Section 23 of these By-Laws.

Article VI
Miscellaneous

Section 1. Fiscal Year. The fiscal year of the Association shall be set by resolution of the Board of Directors.

Section 2. Parliamentary Rules. Except as may be modified by Board resolution, Robert's Rules of Order (current edition) shall govern the conduct of Association proceedings when not in conflict with South Carolina law, the Articles of Incorporation, the Master Deed, or these By-Laws.

Section 3. Conflicts. If there are conflicts or inconsistencies between the provisions of South Carolina law, the Articles of Incorporation, the Master Deed, and these By-Laws, the provisions of South Carolina law, the Master Deed, the Articles of Incorporation, and the By-Laws (in that order) shall prevail.

Section 4. Books and Records.

(a) Inspection by Members and Mortgagees. The Master Deed and By-Laws, membership register, books of account, and minutes of meetings of the Members, the Board, and committees shall be made available for inspection and copying by any Mortgagee, Member of the Association, or by his or her duly appointed representative at any reasonable time and for a purpose reasonably related to his or her interest as a Member at the office of the Association or at such other place within the Properties as the Board shall prescribe.

(b) Rules for Inspection. The Board shall establish reasonable rules with respect to:

(i) notice to be given to the custodian of the records;

(ii) hours and days of the week when such an inspection may be made; and

(iii) payment of the cost of reproducing copies of documents requested.

(c) Inspection by Directors. Every Director shall have the absolute right at any reasonable time to inspect all books, records, and documents of the Association and the physical properties owned or controlled by the Association. The right of inspection by a Director includes the right to make extracts and a copy of relevant documents at the expense of the Association.

Section 5. Notices. Unless otherwise provided in these By-Laws, all notices, demands, bills, statements, or other communications under these By-Laws shall be in writing and shall be deemed to have been duly given if delivered personally or if sent by United States Mail, first class postage prepaid:

(a) if to a Member or Voting Member, at the address which the Member or Voting Member has designated in writing and filed with the Secretary or, if no such address has been designated, at the address of the UNIT of such Member or Voting Member; or

(b) if to the Association, the Board of Directors, or the managing agent, at the principal office of the Association or the managing agent, if any, or at such other address as shall be designated by notice in writing to the Members pursuant to this Section.

Section 6. Amendment. Prior to the conveyance of the first UNIT, GRANTOR may unilaterally amend these By-Laws. Thereafter and otherwise, but subject to the provisions hereinafter provided, these By-Laws may be amended only by the affirmative vote (in person or by alternate) or written consent of Voting Members representing sixty-seven (67%) percent of the total votes of the Association, including sixty-seven (67%) percent of the votes of Members other than the GRANTOR. However, the percentage of votes necessary to amend a specific clause shall not be less than the prescribed percentage of affirmative votes required for action to be taken under that

clause. Further, no amendment of any provision reserving a right specifically in favor of the GRANTOR may be amended without the GRANTOR'S express consent. No amendment shall be effective until recorded in the public records of Horry County, South Carolina.

Article VII

INDEMNIFICATION

The Association shall indemnify any person who is made a party or is threatened to be made a party to any claim, suit, proceeding or liability by reason of the fact that he is or was a director, officer, employee, agent or representative of the Association to the fullest extent permitted by law, and the Association may advance expenses to any such person to the fullest extent permitted by law. The Association shall also have the power to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee, agent or representative of the Association against any liability asserted against him in any such capacity.

IN WITNESS WHEREOF, Rivergate Homeowners' Association, Inc., a South Carolina Corporation has caused these presents to be executed this 14th day of March, 2001.

RIVERGATE
HOMEOWNERS' ASSOCIATION, INC.

Betty J. Dearden

By: Wayne Winderman
Its: President

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