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Return to
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of Supreme Court of Appeals

Record No. 7009

In the Supreme Court of Appeals of Virginia at Richmond

RICHARD E. ROBERTSON, t/a, etc.

v.

CITY OF ALEXANDRIA

FROM THE CIRCUIT COURT OF THE CITY OF ALEXANDRIA

RULE 5:12—BRIEFS

§5. Number of Copies. Twenty-five copies of each brief shall be filed with the clerk of this Court and three copies shall be mailed or delivered by counsel to each other counsel as defined in Rule 1:13 on or before the day on which the brief is filed.

§6. Size and Type. Briefs shall be nine inches in length and six inches in width, so as to conform in dimensions to the printed record, and shall be printed in type not less in size, as to height and width, than the type in which the record is printed. The record number of the case and the names and addresses of counsel submitting the brief shall be printed on the front cover.

HOWARD G. TURNER, Clerk.

Court opens at 9:30 a.m.; Adjourns at 1:00 p.m.

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IN THE

preme Court of Appeals of Virginia

AT RICHMOND

Record No. 7009

VIRGINIA:

In the Supreme Court of Appeals held at the Supreme Court of Appeals Building in the City of Richmond on Wednesday the 12th day of June, 1968.

RICHARD E. ROBERTSON, whose name was spelled
RICHARD B. ROBERTSON in the court below,
t/a ALEXANDRIA DRAFTING COMPANY,
Plaintiff in error,

against

CITY OF ALEXANDRIA,
Defendant in error.

From the Circuit Court of the City of Alexandria
Barnard F. Jennings, Judge

Upon the petition of Richard E. Robertson, whose name was spelled Richard B. Robertson in the court below, t/a Alexandria Drafting Company, a writ of error is awarded him to a judgment rendered by the Circuit Court of the City of Alexandria on the 26th day of December, 1967, in a certain motion for judgment then therein depending, wherein the said petitioner was plaintiff and City of Alexandria was defendant; upon the petitioner, or some one for him, entering into bond with sufficient security before the clerk of the said circuit court in the penalty of $300, with condition as the law directs.

RECORD

* * * * *

page 21 }

* * * * *

AMENDED MOTION FOR JUDGMENT

The above-named Plaintiff moves this Court for judgment against the above-named Defendant in the sum of $12,000.00 for damages done to personal property and/or real estate owned by the Plaintiff at 38 West Reed Avenue, Alexandria, Virginia on August 20, 1963, which damages were proximately caused by a violation of duty owed by the Defendant to the above-named Plaintiff and others due to the negligence and carelessness of the Defendant, which negligence and carelessness were the proximate cause of the damages claimed, all as may be hereinafter set forth more particularly:

1. The Defendant is and has been authorized and empowered since prior to the year 1930 by the law of Virginia, including Title 15.1, Chapter 18, and by its predecessor comparable title and chapter, to create a storm water and sanitary sewer system for the City of Alexandria, its inhabitants and property owners.

page 22 } The City of Alexandria was further authorized and empowered specifically by its Charter, including Sections 2.03, 2.04 and 2.05 and by comparable provisions of earlier charters, to construct, maintain and operate within and without the City sanitary sewers, storm sewers, drains and culverts.

2. The City of Alexandria did accept its responsibliity and duty to construct, maintain and operate an adequate and sufficient system of sanitary sewers, storm sewers, drains and culverts by ordinances duly passed and now comprising Chapter 28 and Chapter 33 of the Alexandria City Code, whereby, among other provisions, the jurisdiction and control of the City Council was extended over the entire City sewer system, storm water, sanitary or combined.

3. From a date prior to January 1, 1930, and from time to time since that date the City of Alexandria has had a duty to maintain, operate and develop an adequate and sufficient storm water sewer system for the inhabitants and property owners of the City of Alexandria.

4. As of January 1, 1930, certain annexation proceedings

became effective, taking the northerly boundary of the City of Alexandria to the center line of the channel of a stream known as Four Mile Run. From that date the City commenced to use and has continued to use Four Mile Run as a part of its storm water, sanitary and combined sewer systems and has incorporated into the City sewer system the said Four Mile Run and its subsidiary streams in the City of Alexandria as well as the many storm water, sanitary and combined sewers flowing thereinto. Since January 1, 1930, and acting under provisions of the City Code and

page 23 } regulations of the City's administrative bodies issued thereunder, the City has increased and has permitted others to increase the flow of storm water into Four Mile Run and has continued to permit the emptying of sanitary sewage into the said Run. Notwithstanding its duty to maintain and operate Four Mile Run adequately and sufficiently as a part of the City sewer system, and in violation of such duty, the Defendant has been negligent and careless and has violated its ministerial duties in countless respects, including those specifically set forth in the following paragraph:

5. (a) It permitted the filling in of the Four Mile Run basin so as to decrease the capacity of that basin as a part of the City sewer system.

(b) It did fail to properly clean out the Four Mile Run basin so as to make that basin more nearly adequate and sufficient as a part of the City sewer system.

(c) It did fail to exercise its power and authority to compel the installation by others of adequate drains and culverts and did fail itself to install adequate drains and culverts, all where such were necessary to an adequate and sufficient sewer system.

(d) It did fail to prevent the overloading of storm sewerage facilities that have existed and have been constructed in the Four Mile Run water shed since January 1, 1930.

(e) It did fail to sufficiently widen, deepen and otherwise improve the channel of Four Mile Run.

(f) It did permit the channel of Four Mile Run to become filled with silt, dirt and other obstructions.

page 24 } (g) It did fail to take necessary and proper steps to prevent earth and silt, which the City had removed from Four Mile Run, from washing back into the Run.

(h) It did permit the channel of Four Mile Run to become increasingly constricted and inadequate by the growth of trees, shrubbery and other obstructions and by permitting logs and other debris to choke the Run.

(i) It did fail to confine Four Mile Run within its channel through the erection of levees or other similar protective devices at low points along the southerly embankment of the Run.

(j) It did fill in and permit the filling in of the Run by others so as to further constrict the channel and lessen the capacity of Four Mile Run to carry off flood waters.

(k) It did fail to provide adequate bridges and culverts at points along Four Mile Run over which the City exercised jurisdiction and control.

(l) It did fail to compel others to provide adequate bridges and culverts at points along Four Mile Run where the City had the authority and power to compel the construction of such culverts.

(m) It did permit culverts to become obstructed with logs and other debris.

All of the above acts and omissions of the City were negligent and careless and were all in violation of ministerial duties owed by Defendant to the Plaintiff and others.

6. As a direct and proximate result of the breach of duties, negligence and carelessness of the City as aforesaid, the Plaintiff suffered damage to personal property page 25 } and/or real estate as set forth above on August 20, 1963, when Four Mile Run rose above its banks and flooded a large area in the City of Alexandria, Virginia, including that where the Plaintiff's property was located.

7. The Plaintiff gave legal notice to the Defendant of damage to the Plaintiff's property by filing written statement of the nature of the Plaintiff's claim and of the time and place at which the damage is alleged to have been received with the City Attorney, the Mayor and the City Manager of Alexandria, Virginia, on or before October 18, 1963.

WHEREFORE, Plaintiff will move the Court for judgment against the Defendant as set forth above.

Armistead L. Boothe
Attorney for above-named Plaintiff
Boothe, Dudley, Koontz, Blankingship
and Stump
711 Princess Street
Alexandria, Virginia

* * * * *

Filed Clerk of Courts, City of Alexandria, Jan 22 12:44

PM '65, Alvin W. Frinks, Clerk, By K.H. Bradfield, Deputy Clerk.

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ANSWER AND GROUNDS OF DEFENSE OF DEFENDANT

Comes now the Defendant, City of Alexandria, a municipal corporation of Virginia, by counsel, and for its Answer and Grounds of Defense to the Amended Motion for Judgment exhibited against it herein states and alleges as follows:

1. It denies each and every allegation of negligence and carelessness sought to be laid to its charge in the Amended Motion for Judgment.

2. It denies that it breached any ministerial duty which it may have owed the Plaintiff in this case and further denies that it did any act or made any omission constituting actionable negligence for which the Plaintiff would be entitled to recover in this case.

3. It neither admits nor denies the allegations alleged in Paragraph 1 of the Amended Motion for Judgment but calls for strict proof of each and every allegation therein contained.

page 43 } 4. It denies the allegations contained in Paragraph 2 of the Amended Motion for Judgment and affirmatively alleges that Chapter 28 and Chapter 33 of the Alexandria City Code refers solely to the regulations of sanitary sewers, storm sewers, drains and culverts by private parties and calls for an answer to said affirmative defense.

5. It denies the allegation of Paragraph 3 of the Amended Motion for Judgment.

6. It denies the allegations of Paragraph 4 of the Amended Motion for Judgment.

7. It denies the allegations of Paragraph 5(a) of the Amended Motion for Judgment.

8. It denies the allegations of Paragraph 5(b) of the Amended Motion for Judgment.

9. It denies the allegations of Paragraph 5 (c) of the Amended Motion for Judgment. It affirmatively alleges that no duty existed on behalf of the Defendant to perform the matters set forth in Paragraph 5(c) of the Amended Motion for Judgment and calls for answer by the Plaintiff thereto.

10. It denies the allegations of Paragraph 5(d) of the Amended Motion for Judgment.

11. It denies the allegations of Paragraph 5(e) of the Amended Motion for Judgment. It affirmatively says that no such duty existed as set forth in said paragraph and calls for answer thereto.

12. It denies the allegations of Paragraph 5(f) of the Amended Motion for Judgment.

13. It denies the allegations of Paragraph 5(g) of the Amended Motion for Judgment.

page 44 } 14. It denies the allegations of Paragraph 5(h) of the Amended Motion for Judgment.

15. It neither admits nor denies the allegations contained in Paragraph 5(i) of the Amended Motion for Judgment. It affirmatively alleges that there existed no duty on behalf of the Defendant to perform the matters set forth in said paragraph and calls for answer thereto.

16. It denies the allegations of Paragraph 5(j) of the Amended Motion for Judgment.

17. It denies the allegations of Paragraph 5(k) of the Amended Motion for Judgment.

18. It denies the allegations of Paragraph 5(l) of the Amended Motion for Judgment. It affirmatively alleges that there existed no duty by the Defendant to compel others to perform the acts alleged in said paragraph and calls for answer by Plaintiff as to the basis for any such alleged duty thereto.

19. It denies the allegations of Paragraph 5(m) of the Amended Motion for Judgment.

20. It denies the allegations of the last unlettered paragraph of Paragraph 5 of the Amended Motion for Judgment.

21. It denies the allegations of Paragraphs 6 and 7 of the Amended Motion for Judgment.

22. It affirmatively alleges that the Plaintiff assumed the risk of damage by flood and further affirmatively alleges that the Plaintiff was guilty of negligence which proximately caused or contributed to the alleged damages mentioned in the Amended Motion for Judgment.

page 45 } 23. The Defendant alleges that the flood of August 20, 1963 was caused by an Act of God over which it had no control and for which it is not liable to the Plaintiff, and/or the acts or omissions of others.

24. It says that the alleged breach of duties mentioned in the Amended Motion for Judgment were governmental in nature and that the Plaintiff is therefore not entitled to recover from the Defendant as a matter of law.

25. It denies that the Plaintiff sustained damages in the amount and to the extent alleged and calls for strict proof of every item thereof, and further denies that the said Plaintiff is entitled to recover from it in the amount sued for or in any amount.

CITY OF ALEXANDIRA, a municipal corporation of Virginia

By Robert Lee Watt
Of Counsel

* * * * *

Filed Clerk of Courts, City of Alexandria, Apr 30 2:41 PM '65, Alvin W. Frinks, Clerk, By T.A. Briel, Deputy Clerk

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MOTION FOR GROUNDS OF OBJECTION TO DEFENDANT'S MOTION FOR BILL OF PARTICULARS

COMES NOW the defendant, City of Alexandria, a municipal corporation of Virginia, by counsel, and respectfully moves the Court to require the plaintiff to file a statement of grounds of objection to the defendant's Motion for Bill of Particulars, heretofore filed by the defendant.

CITY OF ALEXANDRIA, a municipal corporation of Virginia

By Robert Lee Watt
Of Counsel for Defendant

* * * * *

Filed Clerk of Courts, City of Alexandria, Jul 8 11:24 AM '65, Alvin W. Frinks, Clerk, By T.A. Briel, Deputy Clerk.

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BILL OF PARTICULARS

Now comes the Plaintiff, by counsel, and states this Bill of Particulars as directed by Order entered by the Judge of the above-named Court after hearing on July 21, 1965.

1. The City has been empowered to create a storm water and sanitary sewer system since its original incorporation in 1749 and such powers were regranted prior to and since June 1, 1930 and before August 20, 1963.

9. The word incorporated means brought into and made a part of the sanitary and storm water sewer system of Alexandria. More specifically, when the City of Alexandria annexed a portion of Arlington County on January 1, 1930 it took over and made an integral part of the sanitary and storm water sewer facilities of the City of Alexandria the existing facilities maintained by the Town of Potomac which then flowed into Four Mile Run and made use of
page 52 } Four Mile Run as a part of the said sewer systems then existing.

12. The City Manager, the City Engineer and other persons charged with the maintenance of public works, the City Zoning Commission, now known as the Planning Commission, the City Council and subordinate officers and agents of all these groups whose names are unknown.

13. The diversion of storm waters into Four Mile Run by the City and by developers at the behest and direction of the City, resulting from the creation and development of land. This diversion resulted from the enclosure of open streams, from the construction of concrete pipes, paved streets, sidewalks, curbs and gutters, catch basins, manholes and storm water sewer pipes.

15. All of the developers of land located within the Four Mile Run watershed within the City, and the City itself in its development of streets, highways and public buildings in the same areas.

16. Answered under 13 above.

17. Shortly after January 1, 1930, the City permitted the owners of the Four Mile Run marsh or basin, containing approximately forty (40) acres, and lying between the old electric car line (now Commonwealth Avenue) and the Jefferson Highway, to open and operate a trash and garbage dump thereon. Plaintiff is informed the land belonged to Arlington

Development Corporation which operated the dump and collected fees from customers from Virginia and the District of Columbia for the privilege of dumping. As a
page 53 } result of these operations the land level of the forty (40) acres is now from eighteen (18) to twenty (20) feet higher than the original marsh grades.

18. The City has continually failed for more than thirty (30) years to properly clean out Four Mile Run, particularly that portion thereof lying within the City boundary. Just prior to the flood of August 20, 1963 the City had cleared a small portion of the Run east of the Mount Vernon Avenue bridge. On the other hand, since January 1, 1930 it had neglected to keep the Run cleared of silt, debris, bushes and trees. By condemnation in 1943 the City acquired forty-five (45) acres of the Four Mile Run basin located between Commonwealth Avenue and the Beverly Plaza Subdivision for the purpose of providing a storm water basin in Four Mile Run. This acquisition was made after the flood of October, 1942. However, instead of keeping this area cleared the City permitted the forty-five (45) acres to become filled with silt and growths which have actually impeded the flow of Four Mile Run and has destroyed its usefulness as a storage basin.

19. The City failed to exercise its power and authority to install and to have property owners install pipes, drains and culverts necessary to an adequate storm water sewer. The other persons referred to are those who owned property on the Alexandria side of Four Mile Run and who were allowed to narrow the Run by fills and to install inadequate drains and culverts to carry off the flow of the Run. One specific owner may be the Richmond, Fredericksburg and Potomac Railroad which owns and controls a culvert east
page 54 } of U. S. Highway 1. However, the City itself, directly or indirectly, constructed and maintains a culvert west of and under part of Highway 1 which is itself inadequate to a proper storm water sewer system. The City further failed to cooperate with and obtain assistance from other political subdivisions abutting on Four Mile Run to prevent the hazards and eliminate the dangers caused by obvious development in the Four Mile Run watershed.

20. Numerous storm water sewer lines constructed in the streets of Alexandria by or at the behest of the City throughout the area lying within the Four Mile Run basin and within the City have become overloaded and inadequate. The actual locations of these sewers, particularly in the Arlandria area, are well known to the City and exact data as to their locations may be obtained from the City Department of Public Works.

21. South of the Arlington-Alexandria line from the western limits of the City to the Potomac River.

22. Answered in 17 above.

23. An area east of the Mount Vernon Avenue bridge was cleared prior to August 20, 1963 and a storm washed most of the removed dirt back into the channel also prior to August 20, 1963.

24. From January 1, 1930 to August 20, 1963 along the entire length of the channel within the City of Alexandria except for the limited area mentioned in 23 above.

26, 27, 28 and 29 answered in 17 above.

Armistead L. Boothe
Attorney for above-named Plaintiff
Boothe, Dudley, Koontz, Blankingship
and Stump
711 Princess Street
Alexandria, Virginia

* * * * *

Filed Clerk of Courts, City of Alexandria, Aug 2 11:44 AM '65, Alvin W. Frinks, Clerk, By K. H. Bradfield, Deputy Clerk.

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page 70 } INSTRUCTION NO. 1

The Court instructs the jury that under the law of Virginia, the City of Alexandria has power to provide for the adequate drainage of any and all areas in the City, and to effectuate such power, the City may install and maintain drainage systems and acquire by gift, purchase, lease, condemnation, or otherwise, lands, buildings, structures, or any interest therein, and may appropriate money therefor.

The Court further instructs the jury that the City is vested with the power of eminent domain to the extent necessary to effect such acquisitions, and is empowered to institute legal proceedings to enable it to widen or clear obstructions from a sewer or drainage system even on private property.

The Court further instructs the jury that the failure of the City to exercise such power is not in and of itself negligence.

BFJ

* * * * *

page 80 } INSTRUCTION NO. E

The Court instructs the jury that the jury cannot find the verdict in favor of the plaintiffs unless it has been demonstrated by the preponderance of the evidence that all or a definite part of the damages complained of was caused by some act or omission of the City, and for which act or omission the City is legally responsible under the instructions of the Court.

BFJ

* * * * *

page 82 } INSTRUCTION NUMBER J

The Court instructs the jury that there is no liability upon the City of Alexandria in collecting surface waters from the higher grounds in the Four Mile Run basin, and conveying such surface waters through a system of artificial sewers and drains down to its common and natural depository, which in this case is Four Mile Run, even though the quantity of water in the stream was thereby increased at the time of high water and diminished at other times.

BFJ

page 83 } INSTRUCTION NUMBER N

The Court instructs the jury that there is no obligation or duty on any person to do an act which if performed to the extent possible under existing conditions of ownership and control, would still not have had the effect of materially reducing or eliminating damages sustained. And the jury is therefore instructed that if they believe from the evidence that there was no reasonable act which the City of Alexandria could have performed which would have materially prevented the flooding and the resultant damage which was incurred by the plaintiffs on the 20th of August, 1963, then you must find in favor of the City of Alexandria.

BFJ

* * * * *

page 93 } INSTRUCTION NUMBER D

If the jury believes from the evidence that the injury of which the plaintiff complains might have been due to any of several causes for one of which the defendant might have been responsible and for the others of which it was not responsible, and if the jury are unable to determine which of the several causes occasioned the injury complained of, then the jury shall find their verdict in favor of the defendant, City of Alexandria.

Refused BFJ

* * * * *

page 96 } INSTRUCTION NUMBER K

The Court instructs the jury that the City of Alexandria was under no legal duty or obligation to acquire by purchase, lease, condemnation or otherwise, any of the land which formed the south side of Four Mile Run even at points where the said south side was within the City of Alexandria, for the purpose of channel improvement, owing to the fact that this property was in private ownership. The jury is further instructed that the City of Alexandria had no power or authority to force any private property owner to take any affirmative steps relative to channel improvements.

Refused BFJ

page 97 } INSTRUCTION NUMBER L

The Court instructs the jury that the decision as to when and where and to what extent public improvements, such as sewers, culverts and drains shall be constructed by a municipal corporation are decisions involving discretionary powers of the municipality, and even if the jury should find that a reasonable or ordinary man would have made decisions of this type in a manner different from that made by a municipality, that alone does not create or give rise to any actionable negligence on the part of the City for which a jury could find a verdict for the plaintiff.

Refused BFJ

page 98 } INSTRUCTION NUMBER G

The Court instructs the jury that there has been evidence in this case of filling in the natural storage basin of Four Mile Run within and beyond the corporate limits of the City of Alexandria. However, the Court instructs you that there has been no evidence as to any increase in the level of the pond as a result of such filling by the City.

Therefore, the Court instructs you that as a matter of law you should not consider filling in the Four Mile Run basin in arriving at your decision in this case.

Refused BFJ

* * * * *

page 101 } INSTRUCTION NO. S

The Court instructs the jury that if you believe that the sole proximate cause of the flood was a combination of the storms of August 19 and 20, 1963, the tides, the railroad culverts, trestle in the channel and the Memorial Highway Bridge, then the City is not liable and you should find your verdict in its favor.

Refused BFJ

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page 104 } INSTRUCTION NO. V

The Court instructs the jury that the City has the power to acquire by gift, purchase, lease, condemnation, negotiation or suit, lands, buildings, and structures for a sewer system and the power to appropriate money therefor.

The Court further instructs the jury that except in the instance of maintenance and areas over which it has control it has no duty to exercise such power and is not responsible for failure to exercise such power.

The Court further instructs the jury that the City has the power to negotiate with the Federal Government with respect to its property but no power to condemn Federal property under the facts in this case.

Refused BFJ

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page 118 }

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MOTION TO SET ASIDE JURY VERDICT AND ENTER FINAL JUDGMENT FOR DEFENDANT, OR IN THE ALTERNATIVE AWARD A NEW TRIAL

Comes now the defendant, City of Alexandria, a Municipal Corporation of Virginia, by its Counsel, and respectfully moves the Court to set aside the verdict of the jury in favor of the plaintiffs and enter final judgment for the defendant, or in the alternative award a new trial, and for its grounds therefor states as follows:

First: The verdict of the jury was contrary to the law and evidence in this case and was without evidence to support it.

Second: The Court erred in failing to sustain the defendant's Motion to strike the plaintiff's evidence at the conclusion of the plaintiff's case.

Third: The Court erred in failing to strike the plaintiff's evidence at the conclusion of all of the evidence.

Fourth: The Court erred in permitting the introduction of evidence relating to the alleged filling in of the
page 119 } Four Mile Run Basin beyond the scope of such alleged filling in as stated in Paragraph 5A of the Amended Motion for Judgment and as amplified in the plaintiff's Bill of Particulars.

Fifth: The Court erred in refusing to grant the defendant's Instructions Lettered D, G., H, I, K, L, M, Q, S, T, U, and V.

Wherefore the defendant, City of Alexandria, a Municipal Corporation of Virginia, moves the Court to set aside the Jury Verdict and enter final judgment for the defendant, or in the alternative award a new trial.

CITY OF ALEXANDRIA, A MUNICIPAL CORPORATION OF VIRGINIA

By V. Floyd Williams, Esq.
Of Counsel

* * * * *

Filed Clerk of Courts, City of Alexandria, Jun 16 4:06 PM '67, Alvin W. Frinks, Clerk, K. H., Bradfield, Deputy Clerk.

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ORDER

This cause came on to be again heard the 20th day of December, 1967, upon the pleadings, proceedings and orders formerly had; upon the evidence, including testimony and exhibits, adduced upon trial by Jury upon the issue of liability alone as stipulated by Counsel with the consent of the Court; upon motions and other incidents of trial as shown in the transcript of proceedings therein; upon the verdict of the Jury rendered in favor of the Plaintiffs on May 26, 1967; upon motion filed by the defendant requesting the Court to set aside the Jury's verdict and to enter final judgment for Defendant; upon argument of said motion before the Court on July 5, 1967 and the Court's determination, rendered on said date; and was argued by Counsel;

And it appearing unto the Court that the Plaintiffs failed to prove, as a matter of law, any negligence on the part of the Defendant, City of Alexandria, which was the proximate cause of any damage sustained by Plaintiff, and that the Defendant's Motion to Set Aside the Verdict of the Jury should be stustained upon the grounds set forth in said Motion.

page 148 } Upon consideration whereof, it is ADJUDGED and ORDERED that the verdict of the Jury entered in this cause on May 26, 1967, be, and the same is hereby, set aside upon the grounds assigned by the Defendant as being contrary to the law and the evidence in this case and without evidence to support it, as a matter of law, and final judgment is hereby entered for the Defendant.

To the action of the Court in setting aside the jury verdict, the Plaintiffs, by counsel, duly except.

The Plaintiffs, by counsel, having indicated their intention to present to the Supreme Court of Appeals a Petition for an Appeal from the Order herein entered by the Court;

It is FURTHER ADJUDGED and ORDERED that the execution of this Order be and the same hereby is suspended

for a period of 120 days from this date and thereafter until such Petition is acted on by the Supreme Court of Appeals, if such Petition is actually filed within the specified time of 120 days from the date hereof, provided the Plaintiffs, or someone for them, shall give or file a bond in the Clerk's Office of this Court, with surety to be approved by the Judge or the Clerk of this Court in the penalty of $1500.00 with condition reciting this Order and the intention of the Plaintiffs to present such Petition for Appeal and provided for the payment of all damages as may accrue to the Defendant or to any person by reason of such suspension in case a *supersedeas* to such Order be not petitioned for within such time, or if so petitioned for, should not be allowed and be effectual within the time so specified.

ENTERED this 26th day of December, 1967.

Barnard F. Jennings
Judge of the Circuit Court of the
City of Alexandria, Virginia.

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NOTICE OF APPEAL AND ASSIGNMENTS OF ERROR

The Plaintiffs in the above-entitled cause, aggrieved by the Final Order entered by Honorable Barnard F. Jennings, Judge of this Court, on the 26th day of December, 1967, do hereby file this Notice of Appeal, do allege that the Court erred in the following particulars, and do file these assignments of error thereto:

1. In ordering that the verdict of the Jury, rendered in favor of the Plaintiffs on May 26, 1967, be set aside.
2. In entering Final Judgment for the Defendant.
3. In holding that the Plaintiffs failed to prove as a matter of law, any negligence on the part of the Defendant which was the proximate cause of any damage sustained by the Plaintiffs.
4. In holding that the Defendant's Motion to Set Aside the Verdict of the Jury should be sustained upon the grounds set forth in said Motion.

page 155 } 5. In ordering that the verdict of the Jury for the Plaintiffs rendered on May 26, 1967, be set aside upon the grounds assigned by the Defendant as being contrary to the law and the evidence in this case and without evidence to support it, as a matter of law.

RICHARD B. ROBERTSON, (Correctly spelled
RICHARD E. ROBERTSON, t/a Alexandria Drafting
Company, a Virginia Corporation, et al

By: Armistead L. Boothe
Armistead L. Boothe
Charles S. Perry
Boothe Dudley Koontz Blankingship & Stump
Counsel for Plaintiffs
711 Princess Street
Alexandria, Virginia 22314

* * * * *

Filed Clerk of Courts, City of Alexandria, Feb 15 9:09 AM '68, Alvin W. Frinks, Clerk, By T. A. Briel, Deputy Clerk.

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ASSIGNMENTS OF CROSS-ERROR

COMES NOW the Defendant, the City of Alexandria, a municipal corporation of Virginia, which does hereby file its Assignments of Cross-Error, alleging that the Court erred in the following particulars:

1. In failing to sustain the Defendant's motion to strike the Plaintiff's evidence at the conclusion of the Plaintiff's case.
2. In failing to strike the Plaintiff's evidence at the conclusion of all of the evidence.
3. In permitting the introduction of evidence, relating to the alleged filling in of the Four Mile Run Basin, beyond the scope of such alleged filling in as stated in Paragraph 5A of the Amended Motion for Judgment and as amplified in the Plaintiff's Bill of Particulars.

4. In refusing to grant the instructions lettered D, G, H, I, K, L, M, Q, S, T, U and V offered by the Defendant.

CITY OF ALEXANDRIA, a
Municipal Corporation of Virginia

By: Robert L. Murphy
Robert L. Murphy, of counsel

* * * * *

Filed Clerk of Courts, City of Alexandria, Feb 28 3:34 PM '68, Alvin W. Frinks, Clerk, By Alvin W. Frinks, Clerk.

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page 8 }

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Alexandria, Virginia

Monday, May 22, 1967

The above-entitled matters came on to be heard, pursuant to notice, at 10:17 o'clock, a.m.

BEFORE:

HONORABLE BARNARD F. JENNINGS, Judge

APPEARANCES:

ARMISTEAD L. BOOTHE, ESQUIRE
CHARLES S. PERRY, ESQUIRE
CARL BUDWESKY, ESQUIRE
For the Plaintiffs

HENRY B. CROCKETT, ESQUIRE
V. FLOYD WILLIAMS, ESQUIRE
ROBERT L. MURPHY, ESQUIRE
For the Defendants.

* * * * *

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The Court: Gentlemen, before we actually start hearing the evidence in these cases, the attorneys have made certain stipulations and agreements that will shorten the time of presentation of evidence, so, at this point I will read these stipulations to you.

STIPULATION BY THE PARTIES

"The parties to the aforenumbered cases have agreed:

1. Four Mile Run is a natural stream which rises in Fairfax County near the northwest corner of the Arlington County line and runs ten miles in a southeasterly direction to its outlet into the Potomac River just south of the Washington National Airport. During its course it
page 69 } falls 400 "feet to sea level. From about the point where it goes under Shirlington Road just west of Shirley Highway, and for more than 2-1/2 miles on down to its mouth, it runs as shown on map prepared by Department of Public Works of City of Alexandria and on base map of Four Mile Run to be introduced as an exhibit by the Plaintiffs. Between Arlington and Alexandria the Run is bridged at West Glebe Road, at Mount Vernon Avenue, at U.S. Rourt 1, and at the George Washington Memorial Parkway. West of Mount Vernon Avenue the Run winds in and out of Arlington County and Alexandria City off and on.

2. The Four Mile Run drainage area contains 19.3 square miles of which about 3.1 square miles are in the City of Alexandria. On August 20, 1963, there existed a ponding area for Four Mile Run downstream from Mount Vernon Avenue and upstream from U.S. 1.

3. On August 20, 1963:

(a) The West Glebe Road Bridge had been enlarged (in 1959) so as to increase its waterway area from approximately 290 square feet to approximately 1200 square feet.

(b) At Mount Vernon Avenue, a new bridge had been constructed (in 1958) enlarging the waterway area and from approximately 300 square feet to approximately 2400 square feet.

page 70 } (c) At U.S. Highway No. 1, Four Mile Run passed through two adjacent culverts under the Highway itself and under a part of Potomac Yards. For the

upstream or westerly one-half of the width of U.S. 1, each of these adjacent culverts had a waterway area of 290 square feet, and a total waterway area together of 580 square feet. From the midline of U.S. Highway No. 1, downstream, or easterly, each culvert had a waterway area of 176.8 square feet, giving the two culverts together a total waterway area of 353.6 square feet. The two original culverts had been installed by the Alexandria Washington Turnpike Company prior to 1855. They are now under the easterly one-half of U.S. Highway No. 1.

The two original culverts were extended in an easterly direction by the Alexandria Washington Railroad in about 1855. They were identical in size with the two already existing. From 1902 to 1907, the Washington Southern Railroad constructed Potomac Yards and further extended the extensions of the two original culverts to their present total length of 480 feet eastwardly from the center line of what is now U.S. Highway No. 1. About 1943, U.S. Highway—"

The Court: I assume that's U.S. Highway No. 1?

Mr. Boothe: Yes.

The Court: (Continuing)—U.S. Highway No. 1

page 71 } was "widened, and the larger culverts were built under the westerly one-half of the present U.S. Highway No. 1.

"5. The City stipulates that for the purpose of this trial, all of the Plaintiffs here involved received damages, but in so stipulating, the City reserves unto itself every defense available to it as against each Plaintiff. However, in the event of a finding of liability in this case, the compensable damages, if any, shall be subject to proof by or on behalf of the respective Plaintiffs."

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page 73 }

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The Court: Would there be any exhibits that would apply only to one individual case, or do all these exhibits apply to all of them?

Mr. Boothe: All of them will apply to all cases.

The Court: All right. That will be fine.

Mr. Boothe: And we would like it understood that all of them are being introduced in evidence in all of the cases.

The Court: Yes, sir.

* * * * *

page 74 } Whereupon,

JOHN A. BRADY, JR., having been first duly sworn, was examined and testified upon his oath as follows:

DIRECT EXAMINATION

By Mr. Boothe:

* * * * *

page 79 }

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Mr. Boothe: Mr. Brady, have you examined Exhibit 3-A and Exhibit 4 and ascertained the scale of these enlargments?

The Witness: Yes, sir; we have.

By Mr. Boothe:

page 80 } Q. Would you tell the jury what those scales are?

A. The scale of the '37 photo was one inch equals 205 feet, approximately. The scale of the '63 photo is one inch equals 210 feet approximately.

Q. In other words, about 200?

A. Approximately. Yes, sir.

Q. One is 205, and the other is 210?

A. Yes, sir.

Q. Now, also in connection with these photographs 3-A and 4, did you prepare an overlay for each of those aerial photos?

A. Yes, sir.

Q. And will you tell us what those overlays are?

First of all, are they identical overlays except for scale?

A. They are identical except for scale, to make them conform with the photograph scale.

Q. And they were made to conform to the different photograph scales?

A. Yes.

Q. Could you tell the commissioners what those overlays represent in both cases?

John A. Brady, Jr.

page 81 } A. We have a survey obtained from the City Engineer's Office prepared by Mr. George Garrett in 1924—December, I believe, of the George Alexander Estate, outlining this area and titling it the "Four-Mile Run Bay"—breaking the area of Commonwealth Avenue into two separate parcels—one containing 23 acres approximately—the other containing 45 acres approximately.

Q. What does this bottom line show?

A. That survey calls that bottom line mean high water line.

Q. And what does "mean high water line" mean?

A. This would be mean high tide elevation of the Potomac River.

Q. Now, also on this overlay on Number 4 there is a little triangle drawn in, which I believe is also on the '37 map, is it not?

A. Yes, sir.

Q. What does that designate?

First of all, what does it designate on the '37 map?

A. This is the triangular parcel of property which belonged in 1924 to the Town of Potomac. It shows the parcel extending all the way up to the culvert under Number 1 Highway.

Q. Now, it shows on the '37 map the point of the triangle extending all the way up to the southerly culvert?

page 82 } A. Yes, sir.

Q. I see.

Now, then, that was owned by the Town of Potomac in 1924?

A. Yes, sir.

Q. Do you know what happened to it when *Alexancria annexxed* the area in 1930?

A. It became the property of the City of Alexandria, I would assume. I haven't done any research on it.

Q. All right.

Now, on Exhibit Number 4—Plaintiff's Exhibit Number 4, I notice that you have drawn a rectangle in there in place of the triangle; and I ask you what that represents?

A. This is the approximate shape of the parcel that the City now owns in that location, based on their assessment maps. They entered into a land trade with the adjacent owner.

Q. I think you said the tip of the triangle extended up to the culvert.

Now, the City ownership no longer extends to the culvert; is that correct?

A. This is right. No, sir.

Q. Now, where I have the tip of this pointer, do you know what building that is?

page 83 } A. That's the office building for Helms Concrete Pipe Company.

Q. That's the Helms Concrete office building?

A. Yes, sir.

Q. And that's on the City property?

Q. The office building, I believe, is just off the property. The shop behind the office building is partially on the City property.

Q. I see. All right, sir.

Mr. Boothe: I should have asked about those, because I'd like them to be part of those exhibits, Your Honor.

The Court: I will consider them as such.

Mr. Boothe: All right.

By Mr. Boothe:

Q. Now the next is the base map.

I'd like to direct your attention now, Mr. Brady, to what we will offer as Plaintiffs' Exhibit Number 5-A, which is described as "Base Map Showing Four-Mile Run and Vicinity Affected by Flood of August 1963."

Can you tell us what that is?

A. This base, as was Exhibit No. 3, was prepared from both the City and the County topographic surveys.

Q. You say the same as Exhibit No. 2, do you mean?

page 84 } A. Number 2. I am sorry. Yes, sir.

Q. I see. And this is really a City base map?

A. The southerly portion is from the City's map. Yes, sir.

Q. And you have shown the area over in Arlington County nearby, too, haven't you?

A. Yes, sir.

Q. I see.

You have also shown the Alexandria City Line?

A. That is the City-County Line approximately as it existed in '63.

Q. In 1963?

A. Yes, sir.

Q. Now, I notice certain lines—Line No. 1, 2, 3, 4, 5 and 6 on this map.

Would you tell the jury what they are?

John A. Brady, Jr.

A. This is the locations of cross-sections which we have run in the field and from ancient topographic maps to determine the shape of the channel and the swamp, or bay, as it may be called, through the flooded area.

Q. And the ends of these lines—for instance, this line Number 1 runs up above Glebe Road—does it not?

A. Yes, sir.

page 85 } Q. And this southerly end of Line Number 1 is down how far? What is this in here? Is this Reed Avenue?

A. That's Reed Avenue.

Q. Right. And this shows—

A. This shows—

Q. The southerly end of the cross-section?

A. Yes. It's down to the cross-section of the north and south channel.

Q. Now, then, in order to cover this quickly, approximately what distance separates each of these cross-sections through the channel of Four-Mile Run that you took?

A. Approximately 500 feet.

Q. Approximately?

A. Four hundred and fifty to 600 feet.

Q. They're from 450 to 600 feet?

A. Yes, sir.

Q. I see.

And that's shown here.

And again, in each case the northerly limits and the southerly limits of the lines are shown. Is that correct?

A. Yes, sir.

Q. And these two—Number 5 and Number 6 cross Mount Vernon Avenue. Is that correct?

page 86 } A. Yes, sir.

Q. Now, I notice also on here some few additional lines. For instance, what does this one show?

A. That, I believe is twin 66 by 54-inch storm water—

Q. It says twin 66 by 42.

A. All right—42. I beg your pardon. Twin 66 by 42-inch storm water discharge point.

Q. This is storm water discharge point?

A. Yes, sir.

Q. Of what?

A. Draining the area to the south.

Q. I mean is it a City storm water sewer coming out there?

A. Yes, sir.

John A. Brady, Jr.

page 87 } Q. Now, here it says, "twin 54," what does that mean?

A. Again, this is a storm water discharge point from the west side of Mount Vernon Avenue carrying the water from the west.

Q. That empties into Four Mile Run?

A. Yes, sir.

Q. Here is one that says, "thirty inch."

A. Again, storm water discharge point carrying primarily local drainage from the direct Arlandria area.

Q. Into?

A. Four Mile Run Bay.

Q. Here is one. It says sixty x eighty-four, box culvert.

A. Which is another storm water discharge point.

Q. A storm water discharge point. What does this carry?

A. This carries water from the south side of Glebe Road and the area between Glebe Road and Four Mile Run.

Q. Four Mile Run?

A. Yes, sir.

Q. This is an extension, as I understand, or is it not an extension of the Alexandria storm water sewer?

page 88 } A. Yes, it is an extension of Alexandria storm water sewer.

Q. What about this one which reads, "48 CONC.?"

A. That is a 48-inch concrete pipe.

Q. What is that?

A. Storm water discharge from the City. It discharges into the run.

Q. What does that drain or lead from?

A. This again is leading from Glebe Road, possibly very little to the south of Glebe Road.

Q. Now, these indications of storm water sewer lines pretend to be all of those that drain into the run from this southerly area?

A. No, sir; these are only the major storm water discharge points.

Q. You mentioned going down to the smallest, thirty inch.

A. We didn't go any smaller than that. There are numerous small discharge points.

Q. Is there another one coming from Park Fairfax which is not shown on there?

A. Yes, there is.

Q. Before we finish that, will you turn over to the next one?

John A. Brady, Jr.

We will offer this as Plaintiffs' Exhibit 5-A, Your
page 89 } Honor.

The Court:
All right, sir. It will be received.

(The document referred to was received as Plaintiff's Exhibit Number 5-A.)

By Mr. Boothe:
Q. Would you explain to the jury, the Court and jury, what this overlay shows?
A. Using the mentioned Arlington County-City of Alexandria topographic map, we approximated the limits of the flood in August 20, 1963.
The line, southerly side, is a direct trace from the City's map. The one on the northerly side we approximated from the Arlington topo.
Q. This down here is a tracing from the City map and up here you did your own figuring and approximations, is that it?
A. Yes, sir.
Q. What are these numbers that are scattered all over this map?
A. We compiled a list of actually high water mark, high water field elevations, from Arlington County, the City of
Alexandria, some on our own; determined the ac-
page 90 } tual elevations of each of these points. These are
depicted on the map.
Q. Now, for instance, if it says 14.28 here, what does that mean?
A. The water surface elevation at the time of the storm was approximately, was 14.28 at approximately that point on the map.
Q. Coming down to the one that says 12.57, what does that mean?
A. That is the water surface elevation at the Route 1 bridge in accordance with the Arlington County listing.
Q. And then back here where it says 13.35?
A. Again, water surface elevation in conformance, I think this time, with Alexandria's listing.
Q. And for instance, let's just take one more point. Here is one that says 14.41. What is that?
A. That one is one that we located. It is the watermark

inside Brill's Store, mark in the plaster—actually two marks in there.

Q. The outside lines show the borders of the flood area?

A. Show the elevation as determined by that high water-mark.

page 91 } Q. Elevation of flood area?

A. Yes, sir.

Q. You can look through this overlay, can you not, and pick out the plaintiffs' properties which we numbered and have shown the location of in order to see that they are all enclosed within this flood line?

A. Yes, sir.

Mr. Boothe: We would like to introduce this, Your Honor, as Plaintiffs' Exhibit 5-B.

The Court: It will be received and so marked.

(The overlay referred to was marked Plaintiffs' Exhibit 5-B and received in evidence.)

By Mr. Boothe:

Q. Now, will you tell us, Mr. Brady, what the top overlay is which we will offer as 5-C?

A. This is again a reduction of the George Garrett survey showing the Four Mile Run Bay as he reported it to exist in 1924.

Q. This also has the drawing of the town of Potomac Park, 0.858 acres at that time?

A. Yes, sir; it has.

Q. And again shows that there is a triangle

page 92 } there which runs up to the western side of the culvert under the highway?

A. Southerly side, yes, sir.

Q. Southerly?

A. Southerly side, yes, sir.

Q. In other words, that actually the line goes into the stream itself?

A. Yes, sir; the center of the southerly—

Q. So there is no access from Highway 1 over to this part of the ground, isn't that true?

A. Yes, sir.

Q. Except by crossing the City property?

A. By crossing the property.

Q. Now then, you have also shown the main high water line on this map, have you not?

John A. Brady, Jr.

A. Yes, sir. We have added to the mean high waterline as shown on the topos work we had done on the Humes Subdivision. The area you are pointing at is from the topo of the subdivision. Beyond that shown on Mr. Garrett's survey, yes.

Mr. Boothe: We would like to offer that at this time formally as 5-C.

The Court: It will be so marked and received.

page 93 } (The topo referred to was marked Plaintiffs' Exhibit 5-C and entered in evidence.)

Mr. Crockett: With respect to that last exhibit, the overlay, it is based on some survey, apparently, that he is purporting to tell what the survey reveals. We certainly do not want to have it admitted for the accuracy of such a survey unless this gentleman surveyed it himself.

The Court: As I understood it, you don't have any objection to these things as they come in unless you indicate.

Now, as I understand what you are saying at this point, you don't object to it coming into evidence as such, but you do not agree necessarily as to its authenticity or as to its accuracy?

Mr. Crockett: Or what it actually means.

As I understand it, this is a survey taken back in 1924.

The Court: Right. In other words, you agree to its being admitted for what it is worth.

Mr. Crockett: That's about it, Your Honor.

Mr. Boothe: That's all right, sir.

Now, then, Exhibit Number 6.

By Mr. Boothe:

page 94 } Q. Now, Mr. Brady, I ask you to look at this which is marked, Cross section, Four Mile Run, 1915 and 1929, and tell the Judge and jury what this represents.

A. As we stated on the base sheet exhibit, we show the locations of various cross sections. These are the actual configurations through the swamp, the day area, at the locations pinpointed by that previous map.

Q. In other words, you showed on this, cross sections on Exhibit 5-A?

A. Yes, sir; and the location.

Q. These are the profiles of those cross sections?

John A. Brady, Jr.

A. These are the ground profiles at those locations. These 1915 sections were prepared from the U.S. Geological Quad Sheet of that year. We attempted to use the 1929 quad sheet. It contained a note that said the topography was actually—

Mr. Boothe: Pardon me.

The Witness: We attempted to use the 1929 quad sheet, but it was noted that the actual topography on that sheet had been run in 1915. So we used the '15 sheet.

By Mr. Boothe:

Q. In other words, you are saying that the 1929 data and the 1915 data were one and the same?

page 95 } A. Topographically. They did add cultural data, location of houses.

Q. What?

A. Location of houses and streets on the '29.

Q. Location of houses. But the basic data that you have shown here were the same?

A. Elevation was the same.

Q. Now this, as I understand, in 1929—'15 and '29—shows the elevations of the basin of Four Mile Run where you made your first cross section?

A. Yes, sir.

Q. This is number two, three, four, five, and six?

A. Again, the numbering conforming to the numbering on the map.

Q. Just as shown on this map, one, two, three, four, five, six?

A. Yes, sir.

Q. Starting at the highway, U.S. Highway Number 1, or rather 500 feet west of that and coming up toward Mount Vernon Avenue?

A. Yes, sir.

Q. All right, sir.

Now, I would like to introduce this as Plaintiff's

page 96 } Exhibit 6-A.

The Court: It will be received and so marked.

(The topo referred to was marked Plaintiff's Exhibit 6-A and received in evidence.)

By Mr. Boothe:

Q. Now, what do these represent?

John A. Brady, Jr.

A. In November, 1966, we actually went to the field and at the location of these cross sections on the map ran field elevations on the ground across the flooded or swamped area.

Q. And this was done in November, 1966, was it not?

A. Yes, sir.

Q. Now, at that time, had there been any filling whatsoever since August 20, 1963?

A. It is possible there had been some excavation, but the City had established a moratorium—

Q. Had there been any filling?

A. No, sir.

Q. Now, had there been any excavation by the City for channel work and other purposes since August 20, 1963?

A. Yes, sir.

page 97 } Q. So that then these cross sections taken in November of 1966 rather than on August 20, 1963, would be beneficial to the City because, admittedly, there was no filling and they would show some excavation, is that correct?

A. Yes, sir.

Q. With that exception, what they show here would have been shown if you had taken the cross sections in August of '63?

A. Yes, sir.

Q. Now, then, again, had you made these cross sections at the same point you did on this basic map?

A. Yes, sir; they were established at those locations.

Q. They were established at those locations. What does this show?

A. This shows, again, the profile of the ground at the individual stations as of the date of field work which was November, '66.

Q. The heavy black line or that black line on the overlay shows the fill which existed in August 20, 1963, and the light line underneath what existed in 1929?

A. The black line shows the ground surface which existed in '66; the one underneath, the ground surface.

Q. The ground surface which existed?

page 98 } A. In 1915.

Q. The other, ground surface existed in—

A. 1915—

Q. And '29?

A. Yes, sir.

John A. Brady, Jr.

Mr. Boothe: Now, then, we would like to introduce that, Your Honor, as Defendant's Exhibit 6-B.

The Court: All right; it will be received.

(The document referred to was marked Plaintiffs' Exhibit 6-B and received in evidence.)

Mr. Boothe: We are going to offer as Plaintiffs' Exhibit 7 a profile of centerline—in Centerline Profile, Four Mile Run, from U.S. Route 1 to Long Branch, U.S. Route 1 being down this and Long Branch being up here.

By Mr. Boothe:

Q. Will you tell the Commission what this represents?

A. The solid blue line at the bottom shows the invert of the creek, again, November of '66. Invert, the ground surface as of that day.

The dashed line along the top—

Q. This is what date?

A. November, '66.

Q. The ground surface at '66?

page 99 } A. Yes, sir.

Q. I see. What do you mean, the invert down here?

A. Yes, sir.

Q. I see.

A. The dashed line at the top is the water surface as closely as we could determine it from those high watermarks shown on the previous base map.

Q. This is the year what?

A. 1963, August 20.

Q. August 20.

And then what these figures up here along the top or near the top of the exhibit?

A. There are two sets of figures there. One shows the locations of our cross sections, one through six, with the computed water surface elevation; the other is measurement from using centerline of Route 1 as a base, distance upstream from the centerline of Route 1.

Q. Well, now, here is something that say, "Commonwealth Avenue, 14.3." What does that mean?

A. That is the location of the old railroad track which was at one time Commonwealth Avenue. The water surface elevation at that location.

John A. Brady, Jr.

Q. Water surface elevation, 14.3?

page 100 } A. Yes, sir.

Q. At what time?

A. August, 1963.

Q. August 20, 1963?

A. Yes, sir.

Q. And then here, "top of paving, elevation 13.4."

A. This is the U.S. Route 1 culvert; that is top of paving elevation.

Q. And is this the culvert that goes all the way down here to minus 3?

A. That is the actual culvert opening, yes.

Q. And then this point here says 1963 high water level. What is this particular point?

A. That is just identification. That is the dashed line we spoke of.

Q. You follow the same procedure going up the creek, is that right?

A. Yes, sir.

Q. Mount Vernon Avenue, for instance says, "top of grade, elevation 16.5." What is that?

A. Elevation of paving on the newly reconstructed bridge.

Q. Then down here, pointing to this dotted line,

page 101 } is elevation 14.5?

A. That is the water surface elevation on the east side of the bridge.

Q. East side of the bridge?

A. Yes, sir.

Q. Here you have another little arrow and dotted line on the west bridge of elevation 15.9.

A. This is the elevation of, as close as we could determine, on the west side of the bridge.

Q. So the water was higher on the west side of the bridge than it was on the east side of the bridge?

A. Yes, sir.

Mr. Boothe: We would like to introduce this as Plaintiffs' Exhibit Number 7.

(Plf.'s Exhibit 7 received.)

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CROSS EXAMINATION

By Mr. Crockett:

Q. Mr. Brady, I'd just like to get you to clarify a few of the matters that you have testified to on these several exhibits. I guess I can work my way through here.

Let's go back, if you would, Exhibit 5, that's the base map.

I wonder if you could step down here a moment, Mr. Brady.

This is 5-B. As I understand it, this area here in light blue indicates Four Mile Run?

A. Yes, sir.

page 105 } Q. All the way down?

A. Yes.

Q. This heavier blue line represents the boundary between Arlington County and Alexandria, is that correct?

A. Yes, sir.

Q. In other words, half of this dark blue line is in the City of Alexandria and generally north is in the County of Arlington?

A. Yes, sir.

Q. And identifying it a little more precisely, this is the Jeff Davis Highway here?

A. Yes, sir.

Q. All right, sir.

Now, going westward to this point here—is this Mount Vernon Avenue?

A. Yes, sir.

Q. All right.

West from Mount Vernon Avenue for this distance, the run is in Arlington County after it leaves Mount Vernon Avenue?

A. Yes, sir.

Q. And then can you estimate approximately what this distance is from Mount Vernon Avenue to the point where the Alexandria-Arlington line goes back across the

page 106 } run?

A. Approximately a thousand feet.

Q. All right, sir.

Now, at this point according to this, it goes over the run and then back again, and this part is in Alexandria?

A. Yes, sir.

John A. Brady, Jr.

Q. And this part is in Arlington?
A. Yes, sir.
Q. Exclusively?
A. Yes.
Q. All right, sir.
Now, if I may get this overlay—
A. I'll have them in a minute. You've got both of them showing.
Q. I see. All right.
Now, this, as I understand it, is the general limits of the flood area?
A. Yes.
Q. 1963 flood?
A. Right.
Q. All right, sir.
Now, I'd like to ask you again what this is. Exactly what is this green area?
A. The survey by Mr. George Garrett of De-
page 107 } cember 24, showing survey—

The Court: Excuse me just a minute. Would you repeat the last thing you said? I don't believe the jury, all the jury, heard you.
The Witness: This is a survey dated December 24 by Mr. George Garrett of a part of the Four Mile Run. This survey identifies, as does the green in this area, the Four Mile Run Bay, split the area in two parts. Now, there's one east, which was then the electric trolley line, but now known as Commonwealth Avenue, 23 acres; the parcel west is 45 acres.

By Mr. Crockett:
Q. All right, sir.
Now, this survey was made when, in 1924?
A. December of 1924.
Q. 1924; all right, sir.
Now, would you explain to the jury what this mean high water line is down under here.
A. We assume this would be mean high tide level, which would be the approximate elevation of three to four.
Q. You mean from the Potomac River?
A. Yes, sir.

* * * * *

page 112 }

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Q. Just one or two other little matters I would like to get cleared up in the minds of the jurors, Mr. Brady: At points during the identification of these exhibits, you pointed out certain elevations as high-water marks. For example, at one point you said there was a high-water mark of 14.28 and another, 14.21. Will you explain to the Jury what you mean when you say 14.28 and 14.21 as high-water marks?

A. Yes, sir. The government, which runs these area benchmarks—in this case, we had one in the railroad right-of-way, R. F. & P. right-of-way immediately east of the property. We mean, by precise levelling extended these elevations into the flooded area, established benchmarks or construction benchmarks in this area, tied in various points that had been identified by the City, by various landowners as being the point to which the water rose in the August flood of 1953.

Q. Right at this point, I would like to clarify this: By that elevation, 14.28 or whatever it is, that does
page 113 } not mean the height of the water, does it? That means some feet above sea level?

A. This is 14.28 feet above mean sea level.

Q. 14.28 feet above mean sea level.

A. Yes, sir.

Q. How would you calculate the depth of the water at that particular point?

A. By knowing both the water surface elevation and the invert elevation.

Q. Then, these so-called high-water levels, are the levels above sea level that the water reached, but is not indicative of the depth of the water?

A. Yes, sir, this is correct.

Q. There was just one other matter that I would like to get cleared up, Mr. Brady, and perhaps if you would look at the Exhibit 7—That's the '63 profile right behind. There we are.

As I understood your direct testimony, Mr. Brady, this dark line at the bottom represents the bottom of Four Mile Run?

A. Actually in the Channel.

Q. In the Channel.

page 114 } A. Yes, sir.

Q. Where did you point out on this map, Mount Vernon Avenue Bridge? I believe you mentioned that.

A. That's the cross-hatched area.

Q. Right here (indicating)?

A. Yes, sir. Written in, vertically, up above, it says that. Right directly above your pen.

Q. All right, sir. Let me be sure that I have got my bearings straight on this: Is to the right of this exhibit, going east?

A. Going west.

That's going west?

A. Yes, sir.

Q. I see. That's going west. If I could bother you just once again to come down here, I am a little confused on this. Both of these things have been going— What are these elevations you show here?

A. This is the water surface elevation, as closely as we could establish it from the high-water marks in the immediate vicinity that we had.

Q. I would like to ask you very particularly about that: Did you take those high-water marks from your own checking of the high-water at that area, or did you

page 115 } take them from the City high-water marks?

A. In 4 or 5 instances, we had our own individual high water marks. We also had a list of high-water marks that were established by the Department of Public Works, and which were indexed by various methods, paint marks, nails, nails in telephone poles, et cetera; and we had marks which were indexed by Arlington County.

Q. All right, sir. So far as you know, is there any inconsistency in the high-water marks that you took and the high-water marks as appear on the City records?

A. Very minor difference in elevation, which is insignificant.

Q. I see. On this one particular exhibit, Exhibit 7, are these the only two marks that you have put on here—and that's on each side of the Mount Vernon Avenue Bridge?

A. No, sir, there are marks on the upper side of Number One Highway Bridge.

A. All right, sir.

Q. —at the breaking point, at Commonwealth Avenue and extending along Mount Vernon Avenue. I think that's the last.

John A. Brady, Jr.

Q. Do you have available with you here today, Mr. Brady, your notes on these particular figures with reference to the to the high-water marks of the Mount Vernon Avenue Bridge?

page 116 } A. Yes, sir.

Q. I wonder if you would check those and reconfirm the figures you have placed there on each side—that is on the east and west side of the Mount Vernon Bridge for us?

A. Yes, sir.

Do you have the exhibit, Mr. Boothe? Do you recall which exhibit that was—Arlington and Alexandria.

Mr. Perry: The big list.

The Witness: (Examining document) Brill's Store had an elevation of 14.4 by the mark in the plaster inside the building. This is the basic mark used to establish those—

By Mr. Crockett:

Q. I am particularly interested in this point in where you obtained your information for this map for the high-water marks on the east and west side of the Mount Vernon Avenue Bridge?

A. This was estimated from the water marks that we have around the edges.

We have no marks right out in— Actually, the Bridge is in the center of the stream. We have no marks in the center.

Q. Then, the big figures you have on this map are based on your estimates and not based on any official data,

page 117 } City data?

A. Based on the estimates that we have on the high-water mark data that we have around the edges.

Q. What I'm asking, what the data is you are referring these high-water marks to around this bridge, on this particular map?

A. These are from these high-water marks and water surface as established by the Plaintiff's engineers at the sound line of the creek, which is different from the edges.

Q. I'm afraid I'm still not clear, Mr. Brady. Are those estimates, or are these based on some information gathered by a particular party that you can give as reference to. They are estimates based on the high-water marks along the edges. That's the best.

John A. Brady, Jr.

The Court: Is, in effect, your question: What is the mark along the edge, and where did he get this information as to that mark?

Mr. Crockett: Yes, sir.

The Witness: The nearest thing I have to the intersection is the stream at Mount Vernon Avenue, is the mark in Brill's store where the water surface elevation

page 118 } was 14.4.

The Court: What sort of mark was in the store?

The Witness: This was a stain in the plaster wall in the store.

By Mr. Crockett:

Q. That was how much, 14?

A. 14.4.

Q. Were there any other marks that you used to gather your figure, put on there at the Bridge?

A. At the corner of Four Mile Road, and I believe it is Notabene, Number 630 Notabene, we had an elevation 14.95, where the owner said the water was one inch above his door sill. 14.95 water surface 15.03. This is immediately above Four Mile Run Bridge.

Q. All right, sir. Is that the basis of your information for these marks?

A. Yes, sir, all the water marks are on the list that have been introduced.

Q. Can you explain how you arrived at an elevation on the west side of Mount Vernon Avenue Bridge, the high-water mark 15.9?

A. As stated, the water marks that we have are not at the center line of the stream; they are along the

page 119 } edges. I personally did not set the elevations in the stream. I think it was the engineers that worked on it. This is their best estimates of what the water rose to before jumping Mount Vernon Avenue to the south of the Bridge and going across Mount Vernon Avenue.

Q. Then, the substance is that the figures as shown on that Exhibit 7 are based on an estimate in that area?

A. Immediately to the west of Mount Vernon Avenue, yes, sir, (nodding).

Mr. Crockett: That's all. Thank you.

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Whereupon, CARL BUDWESKY, having been previously duly sworn, was examined and testified upon his oath as follows:

page 121 } DIRECT EXAMINATION

By Mr. Boothe:

Q. What is your name?

A. Carl Budwesky.

Q. Where do you live?

A. 51 Tennessee Avenue, Alexandria, Virginia.

Q. What is your line of business?

A. A lawyer.

Q. Where do you practice? Where is your office?

A. 117 North Fairfax Street, Alexandria.

Q. How long have you been admitted to the Virginia Bar? How long have you practiced law?

A. Since February, 1917.

Q. You had your 50th anniversary this year?

A. Yes, sir.

Q. Were you at one time city attorney of Alexandria?

A. Yes, I was.

Q. For what years did you hold the office of City Attorney?

A. From June, 1929 to December 31, 1938.

Q. And you were selected by council for that job, is that correct?

A. The job was then appointive by the City

page 122 } Council.

Q. You succeeded the now Honorable Albert V. Bryan when he stepped down from City Attorney to become Commonwealth Attorney?

A. That's right.

Q. You were, from 1929 to December 31, 1938, City Attorney?

A. That's right.

Q. Were you ever City Manager?

A. Yes, I have been City Manager.

Q. What years were you City Manager of Alexandria?

Carl Budwesky

A. From about February 14-15, 1938 to the middle of August, 1947.

Q. Therefore, for most of the year, you overlapped and were City Attorney and City Manager, is that correct?

* * * * *

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Q. Now, who was City Attorney when Alexandria annexed the Del Ray area on up to Four Mile Run, the area which now runs up Four Mile Run, did then run up Four Mile Run?

A. Mr. Albert Bryan conducted the annexation proceedings and the decree in favor of the City was entered sometime around May or June of 1929 and annexation became effective on January 1st, 1930.

I had no part in the litigation, but I did participate in the necessary phases to complete the annexation after my appointment in June 29.

Q. Annexation became effective?

A. January 1st, 1930.

Q. January 1st, 1930?

A. That's right.

* * * * *

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* * * * *

Q. Do you recall under that ordinance what the northerly boundary of the City was?

A. Well, it was described in the annexation ordinance as being the centerline of Four Mile Run from its intersection with the Washington and Old Dominion Railroad to the Potomac River.

Q. Out here in the westerly end to the Potomac River?

A. That's right.

Q. Now, do you personally recall the general conditions in Four Mile Run area in 1930?

A. Yes, I do.

Q. Was there any fill at that time in the area

Carl Budwesky

page 125 } which in 1937 had been occupied partially by the Arlington Development Corporation?

A. In 1930, no.

Q. In 1930, was there any *filing* at all in the so-called Four Mile Run Bay?

A. No, sir; there was not.

Q. Does this map of April 30, 1937 give a fair picture of the development or lack of development in this area?

A. Well, this aerial map shows more development in '37 than there had been in 1930.

Q. What is this area here in what is near the middle of the photograph?

A. The area around which you are making the circle now was the original street layouts of what is now Beverly Hills. The area to the west of what you see in the nature of streets is the balance of Beverly Hills, Lloyd Apartments, Park Fairfax Development, and to this side, on the picture south of the area designated Beverly Hills is Monticello Park.

Q. We will get to those. I am just talking about thirty-seven.

Now, do I understand that this area, part of page 126 } Beverly Hills, was not there in 1930?

A. No, no.

Q. This development had come since '30?

Now, for the record and for the interest of the jury, I now ask you to look at Exhibit 4 which is an aerial photo of April 1963.

Do you know personally what this area is here?

A. That is Park Fairfax.

Q. What is this?

A. This is Beverly Hills.

Q. How about down in here?

A. Well, the lower part there now, what you are touching now, is Lloyd Apartments. Just below that is a new Beverly Forest Subdivision between original Beverly Hills and Lloyd Apartments.

Q. What is this over here, if you know?

A. Now you are getting over into—that is on the east side of Mount Vernon Avenue.

Q. No, here is Mount Vernon Avenue.

A. Wait a minute. That is on the east side of Glebe Road there, yes. That's right. That is Old Dominion Gardens. Beverly Park Apartments. And then Presidential Gardens.

That is where Presidential Gardens—

Carl Budwesky

page 127 } Q. Can you see this area in here?

A. Yes, that is the old part of Beverly Hills.

Q. Now then, what about down in here?

A. Let me see where we are.

Q. This is Russell Road.

A. Mount Vernon Avenue.

Q. Do you know what this area is here, Mount Vernon Avenue?

A. Well, that is that whole area west of Mount Vernon Avenue and south, southerly from Glebe Road, and there are apartments and commercial developments and everything in there now.

Q. Now, then, going east here of Mount Vernon Avenue—

A. There are filling stations and that is, early part of the Arlandria commercial section and below that is the new part. Back of it is Beverly Plaza Apartments.

Q. What is this area in here?

A. That is newer development that has taken place since I left the City and the exact designation of which I am not familiar with.

Q. Do you know this area down in here?

A. Yes. Those are apartments.

page 128 } Q. How about in here? What up in this area?

A. That is over there on Reed Avenue which bordered the Four Mile Run swamp area and comes on over. There is a subdivision there north of Glebe Road. I just forget the name of it. It is between Mount Vernon Avenue and Number 1 and north of Glebe Road. Then south of that you get Auburn Gardens and Del Ray section.

page 129 } Q. Now, then, do I understand that the development which you have pointed out, with the exception of the original Beverly Hills, has happened since 1937?

A. That is correct?

Q. That has occurred since 1937?

A. That is correct.

Q. And some of this development, including Park Fairfax and Beverly Hills, began while you were in office. Is that correct?

A. Yes. Beverly Hills—Mr. Loftus took over from some local people—Dick Washington and a couple of other boys in about '33 and '34, when he commenced his development. And I think he concluded it somewhere along about '43 or '44.

Carl Budwesky

Park Fairfax was commenced at the request of the War Department in 1938.

Q. Now, were any storm sewers put in this area of Beverly Hills and Park Fairfax?

A. Oh, yes.

Q. And where was that?

A. They all emptied into—carried through culverts—either pipe or monolithic type construction culverts—into the waters of Four-Mile Run.

Q. Well, does that apply to much of this other
page 130 } area on the photograph? Did any of the others drain into Four-Mile Run?

A. Well, there was about three miles of the entire water shed in Alexandria that empties into Four-Mile Run—three square miles.

Q. I see.

And the change that has occurred showing that area emptying into Four-Mile Run is fairly depicted between 1937 and 1963 by these aerial photos?

A. That's right.

Q. Now, when Alexandria annexed this area in 1930, were there any storm water sewers in this area at that time?

A. Yes. There was one. The Town of Potomac, sometime in the twenties, had issued bonds and installed a sanitary sewer system.

Did you say storm water or sanitary?

Q. Well, either.

A. Well, the Del Ray system got a lot of storm water, so you could probably call that almost a combined sewer.

They installed a sanitary sewer system for the subdivision known as Del Ray, or the Town of Potomac rather, which included Del Ray and Saint Elmo. And they carried it northward and emptied it at a point in Four-Mile
page 131 } Run just west of Four-Mile Run's intersection with U. S. Number 1.

Q. Now, you see the triangular part of lane I am pointing to?

A. Yes.

Q. Who owned that at the time of the annexation?

A. The Town of Potomac.

Q. And who got it as a result of the annexation?

A. The City of Alexandria assumed—acquired all the assets and assumed all the liabilities of the Town of Potomac.

Q. Now, did this piece of land come up to a point here?

Carl Budwesky

A. It went to the apex of the triangle. It was a triangle. The upper northern end of it was at least triangular in shape. It terminated in the center of Four-Mile Run.

Q. And that is as is shown here on this overlay?

A. Well, I didn't notice that the map carried it all the way up, but it went right up to the center line of the Four-Mile Run stream. The area of ownership went to that point.

Q. And the Town of Potomac sewer went across that piece of land and had its outflow in Four-Mile Run?

A. That's right.

Q. Now at that time there was no dump there. Is that correct?

A. At what time?

page 132 } Q. 1930.

A. No; there was not any dump there.

Q. Now, when did the dump begin? When was it born?

A. Well, sometime in the thirties. I don't know exactly when, but the owners of the property had started the dump sometime in the 1930's. The owners of the swamp.

Q. Now, could the owners, without crossing City land, get to this dumpsite?

A. No; they could not.

Q. They could not. I see.

And, as City Manager, or as City—yes, in 1930 you were still City Attorney—

Do you know what the City did about the dumpsite?

A. Well—

Q. During the thirties.

A. During the thirties the City apparently in the early part of the thirties were not too concerned, I don't believe, or paid any attention to the dump; because—

Mr. Murphy: Your Honor, I hate to interrupt the witness, but on this point we are talking about a dump which I think if elaborated on would be a trash and garbage dump, and we would object on the basis of the fact that the maintenance of the trash or garbage dump by a municipal cor-

page 133 } poration is a governmental function for which, even if negligent, there would be no liability.

And, therefore, we submit that there is no relevance at all.

Mr. Boothe: This is no city dump.

(To the witness) Was this a dump owned by the City, or was it privately owned?

Carl Budwesky

The Witness: It was privately owned—a privately owned dump.

Mr. Boothe: Did they charge for fill-in?

The Witness: The owners did.

Mr. Boothe: The garbage and trash in that dump?

The Witness: That's right.

Mr. Boothe: And everybody had to pay to do it? Isn't that right?

The Witness: Well, they did in the early stages.

Mr. Murphy: Your Honor, as to my objection, so long as this is a dump over which we had no control, I have no objection.

The Court: All right.

Mr. Boothe: Well, the evidence is it did have control, because they had control of the access to the dump, Your Honor, and it was a private dump.

page 134 } The Court: I would think that the objection would go to the weight to be given to it. You can elaborate on it on cross examination. Go ahead.

By Mr. Boothe:

Q. Now, Mr. Budwesky, during the time that you were City Manager of Alexandria, did the Arlington Development Corporation—now, that's who owned the dump then, is it not?

A. That's right.

Q. When you became City Manager in '38, Arlington Development Corporation owned the dump?

A. Yes; they did.

Q. Did they make any attempt to buy the right of way out to the highway?

A. They wanted to acquire the strip of land that belonged to the City.

Q. That is the tip of the triangle?

A. Well, they wanted to buy it all, but they would have been satisfied just to get a 200-foot frontage for access to the whole area.

Q. I see.

Now, then, this was 1938. What did the City do about that?

A. We refused to sell the property.

page 135 } Q. And later on during your tenure of office as City Manager, were other attempts made to buy part of the City land between the dump and Highway Number 1?

A. Oh, yes. They repeatedly undertook to negotiate with

the City to acquire all or a part of the strip of land owned by the City, because they had no frontage on Number 1 except for the old carline, or Commonwealth Avenue—they had no access.

Q. It was not sold to them while you were City Manager; is that right?

A. No, sir.

Q. Now, after you stepped down as City Manager, was there any transfer from the City to the Arlington Development Corporation of access to Highway 1?

A. Yes. The City conveyed them a strip of land about the northern 200 or 250 feet of it.

Q. Do you know when that was?

A. I think maybe '51 or '52, somewhere like that.

Q. Now, going back. As I understand, you became City Manager in January of 1938?

A. Yes, sir.

Q. Can you tell the jury whether or not in 1942 anything disastrous or difficult happened out in the Arlandria area?

A. Oh, yes. We had heavy rain fall and flood-
page 136 } ing in the Arlandria area. There was an old bridge across Four-Mile Run at a point which in Alexandria was Old Dominion Boulevard, and in Arlington County it was called Lang Street. And the bridge at Mount Vernon Avenue, the one up at Glebe Road, and the blockage down there where the fill had been made in the marsh, all contributed to a flood condition incident to a heavy rainfall in 1942. And it caused quite a bit of havoc along Mount Vernon Avenue.

And it even caused some problems in the basement apartments in Beverly Park and in Beverly Plaza.

Q. Now, did you personally go out to the Arlandria area in 1942 when the flood of that year occurred?

A. Oh, yes. I went out with the City Engineer, who was then Mr. C. Luckett Watkins.

Q. Do you know what month that was?

A. I think it was August.

Q. Of '42?

A. That's right.

Q. Now, can you tell the jury just generally what areas you found flooded in August of 1942 personally when you were City Manager?

A. Well, it was primarily southward along Mount Vernon Avenue from Four-Mile Run, and then eastward

page 137 } and westward from Mount Vernon Avenue. I think the water in Mount Vernon Avenue got—I don't think it got beyond Bruce Street at that time.

Q. Beyond what?

A. Bruce Street—where Bruce Street intersects—

Q. Is that the street that cuts east in between part of Small's Shopping Center and People's Drug Store?

A. That's right.

My recollection is it did no damage—the '42 flood didn't cause any damage to Presidential Gardens. It caused problems with the grocery store and—

Q. Is that Brill's?

A. Brill's.

Q. What about Beverly Park?

A. And Beverly Park and Beverly Plaza Apartments.

Q. Do you know how deep the water was at Beverly Park?

A. Well, I don't know. There have been heavier floods than that since then, but it was the first flood that we had that enabled us to alert the City Council to the danger of that situation.

Q. What about the Beverly Plaza Apartments in the back of Bruce Street?

A. Well, they had some problem, but largely from the sewers backing up. You see, they are English-type page 138 } apartments and the lower ground floor apartments are probably three or four feet below the street level, and then the rest of it is up above.

Q. So the flood level of waters in 1942 were not as high as they were in 1963?

A. Oh, no.

Q. Now, then, as a result, however, of the flood of 1942, what, as City Manager, did you do?

A. Well, it was the first time I was able to prevail upon the City Council to do something about the ponding area. And they authorized me to have the City Attorney begin condemnation proceedings to acquire the 45 acres of marshland west of Commonwealth Avenue.

Q. Now, is that this area that was in here?

A. That's right.

Q. But the 45 acres here west of Commonwealth Avenue were condemned?

A. Yes. We started the proceedings in '42, and the condemnation award was made and paid sometime, I think, in the early part of '43.

Q. In '43. And that was to increase the ponding area?

A. That was to preserve it. Otherwise they would have gone ahead and filled the whole thing up.

page 139 } Q. Now what else did you do?

Did you seek advice from anybody?

A. No. The Council authorized us to employ a competent engineering firm to make a study of the flood plane of the Four-Mile Run area and to advise the City as to what should be done in order to avoid similar or perhaps more severe flooding situations.

Q. What particular company did you seek advice from?

A. Well, we hired a firm called Chester Engineers, and we dealt with the Pittsburg office of that company.

Q. Now, did the Chester Engineers render the City a report as a result of their consultation?

A. Oh, yes. They made a very comprehensive study and made definite recommendations as to what should be done to avoid flooding of the low-lying area of Four-Mile Run in the future.

Q. Now, do you recall—or let me ask you this.

I'm going to read you some of the statements in the Chester Engineers report.

Mr. Boothe: Your Honor, we have a copy of this dated December 1943, which we wish to put into evidence. It will have to go in as Exhibit Number 11. I am sure you all are familiar with this.

Mr. Crockett: May I see it, please.

page 140 } By Mr. Boothe:

Q. First of all, did the Chester Engineers state that the War Housing Activities and the other developments had tended to increase the total runoff into Four-Mile Run because of the increase in impervious areas after removal of trees and vegetation?

A. That was obvious. We were all aware of that situation.

Q. And did they indicate that about 400 acres of this type of development was in the City of Alexandria, and 900 acres in Arlington County?

A. That's right.

Q. And, of course, they were in both Arlington and Alexandria?

A. Yes.

Q. And even more in Arlington than in Alexandria?

Carl Budwesky

A. Yes. Perceptively more, yes.

Q. Now, do you recall what the recommendations of the Chester Engineers were to the City?

A. Yes. They were very definite.

Q. What were they?

A. They suggested the immediate enlargement of the water area and the replacement of the Glebe Road Bridge, the Mount Vernon Avenue Bridge; the acquisition of
page 141 } the entire flood area, part of which between Number 1 and Commonwealth Avenue had already been filled in: the enlargement of the culvert under Number 1; and the construction of two large barrels under the RF&P Railroad.

Q. They wanted to barrel-out those culverts, so to speak?

A. I beg your pardon?

Q. They wanted to barrel-out those culverts, and instead of leaving them semi-circular they wanted them to be round? Is that right?

A. They wanted them to be very much larger than the existing culvert that is in there.

page 142 } Q. About double the size, is that correct?

A. I think it was more than that.

Q. Now, do you recall whether or not they also recommended some changes in channel design?

A. Yes, they figured that the channel could be straightened and widened, bridges rebuilt and widened.

Q. Now, in 1943 they recommended, did they not, a 50-foot bottom from Long Branch down to Mount Vernon Avenue, or do you recall that?

A. Well, it strikes me that their report speaks for itself. I didn't undertake to memorize it. I know what the highlights of the report were.

Mr. Boothe: I would like at this time to introduce the report as our exhibit.

Mr. Crockett: We have no objection, Your Honor, although I do understand the report is not a complete report. Is that correct.

Mr. Boothe: It is complete except for the maps in the back and the hydrographs and detailed tables. The report itself is complete, fifty-two pages.

Mr. Murphy: Is this (indicating) part of the report?

Mr. Boothe: I think it is. That is only one
page 143 } map of several.

Carl Budwesky

Mr. Crockett: There are several other maps.

The Court: If there is no objection, it will be received as Plaintiffs' Exhibit Number 11.

(The document referred to was marked Plaintiffs' Exhibit Number 11 and received in evidence.)

By Mr. Boothe:

Q. Now, also, in this report, do you recall whether or not they did dwell at length on page thirty-four on the question of pondage?

A. Yes, they were very strong that the City should maintain the ponding area that was available. We had already undertaken to acquire the forty-five acres back in '42. We were aware of the necessity—that is, the City engineer persuaded me of this, it was desirable to retain the ponding area and they recommended that we reacquire the area that had been filled in as being essential.

Q. Well, now, you recall whether or not they prophesiesed that flood tragedies will increase in this area unless the recommendations were followed:

A. Well, I think they made a perfectly obvious statement in view of the development that was going on in the

page 144 } Four Mile Run watershed, that as the development increased the runoff would be greater and, therefore, the capacity of the run should be greater in order to take care of it.

Q. Do you recall this statement in the report? "Thus, the flood tragedies will increase in geometric proportion until ample relief measures are undertaken, or unless the adoption of alternate plans for the removal of all homes and stores to higher ground and away from the hazardous lowlands"—do you remember that statement?

A. Yes, I remember the statement.

Q. I think you answered this question:

Do you remember that they did recommend that Arlington County and Alexandria should acquire all the lowlying land?

A. That's right.

Q. By negotiation or condemnation?

A. That's right.

Q. For the two-fold purpose of providing required pondage and preventing of any more building development, is that correct?

A. That's right.

Carl Budwesky

Mr. Boothe: I would like this to be over here at the jury in case, at recess, they would like to look at it.

page 145 } By Mr. Boothe:

Q. Now, Mr. Budwesky, the Chester Engineers' report was dated December, 1943. As I understand, you said the bridge at Lang Street was removed?

A. Yes, we removed that very shortly after the '42 storm.

Q. Did the City Council do any more about attempting to purchase the City Dump?

A. No, they did not.

Mr. Murphy: I object to the characterization of "City Dump" because he has already told us it was not.

Mr. Boothe: Arlington Development Corporation Dump. Private peoples' dump.

By Mr. Boothe:

Q. Did the City try to buy that, the City Council?

A. No; it was recommended but the Council never did it.

Q. Did the Council do anything about widening either the culverts underneath U.S. 1 or trying to get the R.F. & P. culverts widened while you were in office?

A. The Council did not. I sent copy of the Chester report to the R.F. & P. Railroad Company because I page 146 } thought we should immediately proceed against them to force them to enlarge their culvert, but the Council never authorized the proceeding against the Railroad Company.

Q. Did you send this letter?

A. Beg pardon.

Q. Did you send that report to the R.F. & P. in a letter of March 20, 1944?

A. I sent it to the R.F. & P. Railroad Company very shortly after it came into our possession.

Q. I will ask you if that is a copy of it?

A. That's correct.

Q. Was this the answer dated March 24, 1944, four days later, that you got from the Chief Engineer of the Railway Company, Railroad Company?

A. Yes, sir; it is.

Q. I now hand you a letter dated May 17, 1945, to Mr. Carl Budwesky, City Manager, again from the Chief Engineer, and ask you if you can recognize that letter as coming to you?

A. Yes.

Q. Will you read the last paragraph of that letter? Just let me show it to counsel first.

Mr. Boothe: We would like to introduce these page 147 } as Defendant's Exhibits 12, 13, 14.

Mr. Williams: We have some letters, too. We are checking to see the difference between these letters and our letters, and if these are correct letters. Those two certainly are.

The Court: I understand there is no objection, then.

Mr. Crockett: I didn't notice the signature on that railroad letter, Mr. Boothe. Who is that from?

Mr. Boothe: Chief Hastings. Down here it says, Chief Engineer. Same thing here. Just says, Chief Engineer, E. M. Hastings. He was the Chief Engineer, but I can't say he signed them.

The Court: They will be received then, as Plaintiffs' Exhibit 12, 13, and 14.

Mr. Boothe: Thank you, sir.

(The documents referred to were marked and received as Plaintiffs' Exhibits 12, 13, and 14.)

By Mr. Boothe:

Q. Would you read to the jury the last paragraph of the Exhibit Number 14?

A. Yes.

page 148 } "The opening by which the water at Four Mile Run is brought to the Railroad Company's property line is of exactly the same cross section as that across and under the property of the Railroad Company.

"There is nothing this company could do to help this condition so long as the present openings above the Railroad arch are of the same size as the Railroad arch.

"I would appreciate your comment on this matter. Very truly yours."

And signed by the City (sic) Engineer of the R.F. & P. Railroad Company.

Q. What was he talking about there?

A. What was he talking about? What do you mean?

That was the Alphonse and Gaston deal between the City

and the Railroad Company all the time. The City blamed it on the Railroad Company and the Railroad Company blamed it on the City.

Q. Was the City's arch—

A. The City, what they were talking about, is the culvert under Number One.

Q. That was the same?

A. There was no point in enlarging the opening under the railroad until the city opened it under Number 1.

page 149 } However, I figured the best place to start was at the outfall end and I thought the Railroad should open theirs and we would open ours and go on up rather than start at the bridge and come on down. But the Council would not authorize any proceeding against the Railroad Company.

Q. Did you attempt to take some action in order to have this culvert widened when you were City Manager?

A. That was the recommendation of Chester Engineers.

Q. Did you take—

A. I undertook to do it. I was never able to persuade the Council to do it. Apparently none of my successors have been able to do it yet.

Q. Did you ask the City Council to do it?

A. I certainly did, repeatedly; so did the engineer, Watkins. He had better appreciation of the situation than I did. I am a lawyer; he is an engineer.

Q. Is that Luckett Watkins?

A. That's right.

page 150 } Q. Oh, Mr. Budwesky, just going back one second, you mentioned in 1942 you requested the City Attorney to condemn some land?

A. That's right.

Q. And the land involved was where?

A. It was approximately 45 acres of land on the west side of the old street electric car line between Alexandria and Washington, now known as Commonwealth Avenue.

Q. Is that found in this outline overlay on Exhibit No. 4-A?

A. That's right.

Q. As being the land west of the electric car line, that's Commonwealth Avenue?

A. That's right.

Q. Now, after your time do you know personally—strike that question.

During your tenure of office was any fill put in that area?

A. Of course not.

Q. Now, since your tenure of office, do you know personally whether or not any fill has been put in the area?

A. Yes. I've been out to see it.

Mr. Williams: If it please the Court, I'm going
page 151 } to have to object to this testimony at this stage.
The plaintiffs' Bill of Particulars confines its allegations as to filling in the 40 acres east of Commonwealth Avenue, not 45 acres that we're now speaking of. This is very specifically pointed out in 17 of the plaintiffs' bill and 26 of the plaintiffs' bill.

Mr. Boothe: That was a gross error or a typographical error.

No, there are not 40 acres east of Commonwealth Avenue—as counsel well knows, there are 22 acres east of Commonwealth Avenue.

Mr. Williams: Well, it was repeated throughout the bill—40 acres east of Commonwealth Avenue and 45 acres appear west. Now you're talking about the 45 acres, as I understand it, west.

Mr. Boothe: Is there anyplace it was 45 acres relative to Commonwealth Avenue? The bill says 40 acres east of Commonwealth Avenue as to the filling.

Mr. Williams: In two places, the only places that that is mentioned, 17 of the plaintiffs' bill and 27—26 of the plaintiffs' bill. Both refer specifically to 40 acres east of Commonwealth Avenue.

Mr. Boothe: Your Honor, even if this be true, there is
certainly no surprise on the part of the City's
page 152 } Attorney, because, knowing this area so well,
the City engineers, they know this is the only 45-acre tract in this relatively—

Mr. Williams: Mr. Boothe, this is a court of law, we're going to try this as a law case.

Mr. Boothe: Yes, sir.

Mr. Williams: According to the Bill of Particulars, well, —

Mr. Boothe: Well, I would like for permission to amend and put this 45 acres west of Commonwealth.

The Court: As far as the motion is concerned, in regard to the Bill of Particulars, Mr. Williams, which is the question you are referring to now—

Mr. Williams: The only question that I am concerned with is that he now has asked Mr. Budwesky about—

Carl Budwesky

The Court: I mean, which number on your Bill of Particulars.

Mr. Williams: 17 of the plaintiffs' bill and 26; both referred to filling on 40 acres east of Commonwealth Avenue.

Allegation 5-A of the motion for judgment, if the Court—we're interested in that.

The Court: Now, your question there in 17 was what part of Four Mile Run basin was filled in; is that
page 153 } correct?

Mr. Williams: That is correct; and the plaintiff in his bill in both places said—

The Court: Well, let me read it. Just a minute.

Mr. Williams: Surely.

The Court: All right.

Now, I have read Paragraph No. 17 in the Bill of Particulars, and what is the problem now so far as 17 is concerned?

Mr. Williams: Because 17 specifically mentions 40 acres east of Commonwealth Avenue. The last question he asked is with reference to 45 acres west of Commonwealth Avenue.

The Court: Maybe I'm reading the wrong thing, but I don't see it.

I see 40 acres lying between the old electric car line now Commonwealth Avenue and Jefferson Highway.

Mr. Williams: That is correct, that 40 acres east of Mount Vernon Avenue—east of Commonwealth is the important language.

The Court: Well, do I understand that the area is not located between Commonwealth Avenue and Jefferson Highway?

Mr. Williams: That is correct. The area he has just asked question to is west of Commonwealth Avenue.

Mr. Boothe: Now, if you look at Paragraph
page 154 } 18, you get west of Commonwealth Avenue.

Mr. Williams: That's not filled, as I recall, 18; 26 and 17 have to do with fill. That's cleaning.

The Court: Suppose we let the jury go to the jury room and at this point we'll have a short recess as far as the jury is concerned.

You all can go to the jury room now, and I'll take this up with counsel in chambers.

IN CHAMBERS

Mr. Boothe: If you look at 17 and 18 in the Bill of Particulars, Your Honor.

Carl Budwesky

The Court: Well, you talked about east of—

Mr. Boothe: What 40 acres east? It's 22 east, something like that.

The Court: Beg your pardon.

Mr. Boothe: There weren't 40 acres east, only 22 east.

The Court: Right. I was trying to get the language straight.

Now, you might stay off the record for a little while.

(Discussion off the record.)

The Court: Suppose you all formally state
page 155 } your objections for the record.

Mr. Williams: For the record I would say that No. 17 of the plaintiffs' bill, in response to 5 of his original bill, and plaintiffs' 6 of the plaintiffs' bill, refers specifically that the filling he is complaining of took place in 40 acres east of Commonwealth Avenue and that he does not mention fill in any other place.

He does in 18 speak, in response to 5-B, he does speak of cleaning out silt, debris and trees and, if you take them in context with the whole complaint, whereby he specifically talks about fill, he specifically talks about trees, he specifically talks about debris, he specifically talks about silt, and in his Bill of Particulars he treats these separately, and we maintain that his case can rise no higher than this that he has alleged himself, these specific items in response to our motion for a bill.

The Court: All right, Mr. Boothe.

Mr. Boothe: Your Honor, this motion results from the following: The plaintiff alleged in Paragraph 5-A of their amended motion for judgment that the City permitted the filling in of the Four Mile Run basin so as to decrease the capacity of that basin as a part of the City sewer system.

That's the allegation in the pleading.

page 156 } The City then filed a motion for a Bill of Particulars in Paragraph 17 of which it said, with reference to Paragraph 5-A, when the plaintiff alleged that the City permitted the filling in of the Four Mile Run basin, who filled in the Four Mile Run basin, what substance was placed in the Four Mile Run basin and what part of the Four Mile Run basin was filled in.

Then, in Paragraph 18 of the Bill of Particulars, they have, with reference to Paragraph 5-B of the motion for judgment,

when does plaintiff allege the City properly failed to clean out the Four Mile Run basin and what part of the Four Mile Run basin did the City fail to clean.

Now, in Paragraph 17 of the Bill of Particulars, the plaintiff alleged that shortly after January 1930 the City permitted the owners of the Farms of Four Mile Run basin—and at that time the entire basin was owned by the Arlington Development Corporation—actually, the total marsh was about 75 acres or 77 acres. In the Bill of Particulars we said lying between the old electric car line and Jefferson Davis Highway, the acreage in there was about 22 acres, as the exhibits in this case do show, and west of the electric car line or Commonwealth Avenue now there were about 45 acres, making up the balance of the 77 acres.

page 157 } Now, in 18, Paragraph 18 of the Bill of Particulars, the plaintiff specifically did refer the area of 45 acres west of Commonwealth Avenue, alleging that this had become filled with silt and growth and so forth, which included the run.

Now, next I offer to the Court a letter dated January 7, 1953, addressed to Mr. Nathaniel J. Taube, who is the developer of Warwick Village, from R. F. Willard, City Manager, authorizing him to dump 90,000 cubic yards of earth to the proposed school site on the west side of Commonwealth Avenue north of Read Avenue. I say this because this letter, of course, is in the City's file and the City has notice of this authorization and, therefore, if there is any deficiency in the pleading, I do submit, sir, most respectfully, it is extremely technical and that the plaintiff should be allowed to amend their Bill of Particulars to show that, not only was the Arlington Development Corporation permitted to fill the dump east of Commonwealth Avenue, but that the City did permit fill to be put in the pounding area west of Commonwealth Avenue.

The Court: Well,—

Mr. Williams: If it please the Court, I have one citation that I neglected to mention in this connection.

Mr. Boothe: This is certainly discretionary

page 158 } with the Court.

Mr. Murphy: The citation as it has reference to a Code Section 8-217, which talks about a material variance between the pleadings and the proof. The Code Section says that, if substantial justice will be promoted, and that the opposite party cannot be prejudiced thereby, it may

allow the pleadings and so forth to be amended.
page 159 } I think, your Honor, that the Court has got to find that by allowing Mr. Boothe to amend his Answer almost two years after he furnished the City with this information—The answer to this bill was filed in 1965. Certainly had we gotten some other answer than this in 1965, we could have and would have inquired further. But one of his basic allegations in his Bill of Complaint is contained in 5-a which says we allowed certain fill to the detriment of the Plaintiff. When we asked him what fill, he told us and we accepted that.

Right now, after trial has started, I submit this substantial variance between the allegations and the proof, certainly it cannot be said the City is not prejudiced. If he is being allowed to show fill in the entire watershed, and I submit that when Mr. Boothe is now offering a letter, he is doing what the Courts are saying that proof without allegations is not a bit better than allegation without proof.

The Court: I would overrule the objection to it. I think that he has substantially answered the questions. I think that the evidence should be admitted.

Mr. Williams: We, naturally, take exception to this for the reasons stated.

* * * * *

page 160 }

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Mr. Boothe: All right. Also, I understand the Circuit Court's ruling is to allow us to consider the pleadings amended so that we can deal with what happened west, in the limited area west of Commonwealth Avenue?

The Court: As a practical matter, when you
page 161 } consider 17 and 18 together, I'm not sure it's necessary to be. It's up to you.

Mr. Boothe: Well, no, no. There are not 45 acres involved in the whole fill.

* * * * *

By Mr. Boothe:

Q. I believe when we took the intermission, the last ques-

tion asked was, During your term of office was any fill put into the 44.88 acres west of Commonwealth Ave-
page 162 } nue which was condemned by the City?
A. No, it was not.

Q. Was there any subsequently put in there?

A. Yes. The City subsequently permitted a developer to deposit very large amounts of fill into the impounding basin.

Q. This was after you had ceased to be City Manager?

A. That's right.

Q. I ask you if you recognize this area in here (indicating).

A. Yes, I recognize it.

Q. Do you know what this building is?

A. It's a school built by the City.

Q. Do you know which school?

A. Cora Kelly School.

Q. Do you know what this building is on the fill line?

A. Well, that structure houses part of the new sanitary sewer system. It pumps the sewage from that area and gets back down to the sewage disposal plant, at Hunting Creek.

Q. Is that a City structure?

A. That's a City structure.

Q. Just to keep the record straight, East of
page 163 } Commonwealth Avenue, the old dump property contains 23.4 acres, does it not?

A. I believe that's correct; total acquisition about 72 acres.

Q. Not 40 or 50 acres?

A. That's right.

Q. But 23.4 acres east of Commonwealth Avenue toward U.S. 1?

A. That's right.

Q. And the 45 acres, or rather 44.88 acres lies west of Commonwealth Avenue?

A. That's right.

Q. And the fill of which you are testifying is just in a small portion of that?

A. It fills in a portion of the ponding basin.

Mr. Boothe: Yes. I think at this time I would like to introduce in evidence the Condemnation award with map attached, being Order of Corporation Court of the City of Alexandria dated May 20, 1943. And that would be Exhibit what?

The Clerk: 15.

Carl Budwesky

Mr. Boothe: As Exhibit 15.
The Court: It will be received as Plaintiff's Exhibit 15.

page 164 } (Exhibit was received in evidence as Plaintiff's Exhibit 15.)

By Mr. Boothe:
Q. Mr. Budwesky, you have referred to a storm in 1942. Which storm were you referring to? What was the date of the one you were referring to?
A. The first one that disturbed us was in August of '42.
Q. Was there another one in '42?
A. Yes, there was another one in October.
Q. So, there were two storms in 1942?
A. Yes. The *october* one was more severe than the one in August.
Q. The October one was. Did the October one involve any flooding in Arlandria?
A. Oh, yes.
Q. It did?
A. Yes, it did.
Q. In substantially the same area as the August one, or not,?
A. A little more so. In other words, the elevation of the water in the October storm of '42 was higher than the August storm of '42.
page 165 } Q. I see. I won't take time to read it, but those two storms are referred to in the Chester Engineers Report which we have introduced into evidence, on page 25?
A. I believe they are.
Q. While you were City Manager, were there any other storms that resulted in flooding in Arlandria?
A. Oh, yes, there was one in '45. Well, you're referring to while I was City Manager.
Q. While you were City Manager.
A. Yes. We had another flood in '45 that I recall. Well, every time we had any particular rain, it worried us. We'd all run out. I don't know of any that— August and October '42 and the '45 storms. There were other times of concern, but they don't occur to me right at the moment.
Q. Since your retirement as City Manager, have you been familiar personally with any floods in Arlandria?
A. Oh, yes, yes.

Carl Budwesky

Q. Do you remember when they were?

A. Well, there was one in— I wasn't here as much during the fifties as I have been since—

Q. Let me ask you this: Do you own any property in the Arlandria area, or did you?

A. Yes, I owned two buildings in Beverly Park.

page 166 } Q. Is this the—

A. There up on Old Dominion Boulevard, up above there. I was not in the flood area; I was above it.

Q. Well, do you of your own knowledge know of any floods since you were City Manager?

A. Oh, yes, they had a big flood in '55, and of course, they had another one in '63.

Q. That's all right, and—

A. And they had another one in '66.

Q. I am thinking about prior to '63.

A. They had a pretty big one in '55.

Q. Do you recall one in May of '53?

A. Not personally.

Q. Do you think that might be the one you mentioned in '55—that you referred to as the '55 flood?

A. It could be. I know there was one that gave me some concern after I left the City; but during the fifties, I was engaged in the practice of law in Wilmington, Delaware. As a matter of fact, I still have an office there.

Q. Right. Just let me ask you a few questions—we'll move along. During your tenure as City Attorney and City Manager, did the City make any use of Four Mile Run?

A. Oh, yes.

page 167 } Q. For what purposes?

A. To empty storm water pipes and culverts into it.

Q. And from the large part of the area here shown on this photograph (indicating)?

A. That's right.

Q. And I believe you also testified as to certain acts that the City did in removing a bridge and changing a channel, buying land, and so forth?

A. Not all—Other than the one bridge that was taken down while I was City Manager, at Old Dominion Boulevard and Lang Street, and a little cleaning out, there wasn't too much done.

Q. Well, now specifically, do you remember what the situation was in Beverly Hills, as far as run-off was concerned, when that was constructed?

Carl Budwesky

A. Oh, yes.

Q. Tell the Jury how it was—

A. Originally, down Old Dominion Boulevard, in Beverly Hills—it's a wide street—there was an open ditch that ran down from the Circle, at the junction of Chalfonte Drive and Old Dominion Boulevard, down to Glebe Road; and the residents of Beverly Hills didn't care so much about the open ditch running down through *there* main

page 168 } streets, and they prevailed upon the City Council to pipe it. So, the City installed a 72-inch pipe, reinforced concrete pipe, down Old Dominion Boulevard from the circle.

Q. Where did they run that to?

A. They first ran it across Glebe Road, and it emptied into the old stream bed through the property of a colored woman named Emma Watson—There is a subdivision out there known as Sunnyside.

Subsequently, the City, on the complaint of Emma Watson, constructed monolithic type box to carry the storm water from the east side of Glebe Road down to the then location of Four Mile Run, which was somewhat southward of the present location of the Run. As a matter of fact—

Q. Did the Run, in those days, dip down a little bit to what is now Brookside Apartments?

A. That cross-designed apartment building that you had your pointer on a moment ago, and right now, was built exactly in what was formerly the bed of Four Mile Run.

Q. In the bed of Four Mile Run.

A. That's right.

Q. What about Park Fairfax? When the Metropolitan Life Insurance Company developed that, did the City participate in any way in getting—

A. Oh, yes.

page 169 } Q. (continuing)—getting water out of Park Fairfax into the River?

A. There was a great deal of grading and filling in order to utilize that property. There are about 200 acres in that parcel of land bought by Metropolitan Life Insurance Company, and the grades are rather steep; but all of the run-off from that project of 3—1650 apartments—goes through concrete storm sewer and empties into Four Mile Run, and that was built in '38 and '39.

Q. Without going into every subdivision that came along, can you tell the Jury whether or not, in general, the City of

Carl Budwesky

Alexandria did construct or cause the construction of storm water sewers for much of this area running into Four Mile Run?

A. Well, they either constructed it or they required the developers of the subdivisions or apartment projects to construct them before their plans were approved.

Q. And the out-flow from all these sewers was carried into Four Mile Run?

A. Yes. Not only from the City, but from Arlington County, as well.

Q. Well, now, as a fact, would you say whether or not it is true that Four Mile Run really was a part of the
page 170 } City's storm water sewer system?

A. Well, all of its storm water sewer from that area of about 3 square miles goes into it, and we put it there.

Q. Are you personally familiar with the so-called "Agreement" which I understand is not in writing, between Alexandria and Arlington for the up-keep of Four Mile Run?

A. I am not.

Q. that was done after your time?

A. I generally understand that there is such an Agreement with regard to—

Q. But that was after your time as City Manager?

A. Yes, that was after my tenure of office. As a matter of fact, I think it is kind of recent.

Mr. Boothe: Your Honor, I believe that is all. Thank you.

* * * * *

CROSS-EXAMINATION

By Mr. Crockett:

Q. I would like to refer your attention to the area of land lying west of Commonwealth Avenue which the City acquired through condemnation that you testified to.

A. Yes.

page 171 } Q. Would you state to the Jury, just what part of that 44.88 acres was filled in subsequently?

A. Well, I can do no more than to tell you what it looks like has been filled in on the map—I don't know whether it is 15 percent of the total area. I don't know.

Q. I see.

A. Mr. Hall could tell you better than I can.

Q. All right, sir. Now, you have spoken of the development of the area up above Arlandria and adjacent to it especially with the apartments, and the area up in Beverly Hills.

A. Yes.

Q. And you have testified that there were storm sewers constructed by the City, or others, that went into Four Mile Run.

A. Yes.

Q. I would like to just ask you this, Mr. Budwesky: This water that was channelled through storm sewers to Four Mile Run, was that water that was within the Four Mile water basin or was it without the drainage basin of Four Mile Run?

A. Well, I'm not aware of having any pumps in our storm water sewer system, so I would say that all of page 172 } them that I am familiar with are within the area of the City of Alexandria, that is, within the Four Mile Run basin.

* * * * *

page 173 } Whereupon, PHILIP B. HALL was called as an adverse witness by counsel for the plaintiffs, and having been first duly sworn, was examined and testified upon his oath as follows:

DIRECT EXAMINATION

By Mr. Boothe:

Q. You are Mr. Philip B. Hall?

A. Yes, sir.

Q. And where do you live, Mr. Hall?

A. 718 Timberbranch Parkway, Alexandria.

Q. And what is your professional job?

A. I am the Director of Public Works of the City.

Q. How long have you worked for the City of Alexandria?

A. Since March the 1st, 1946.

Q. And could you tell us just briefly in what capacities you have worked for the City?

A. Yes, sir.

I have been Assistant City Engineer.

Q. If you happen to remember about the years, would you state them?

area shown on the south side of Four-Mile Run—that is, in the City of Alexandria, is focused into Four-Mile Run?

A. Yes, sir.

Q. And these storm water sewers directly empty into Four Mile Run?

A. Which storm water sewers are you speaking

page 176 } of, sir?

Q. Well, all of these.

I'll ask you where the ridge begins, and what the storm water sewers are from this area shown on this photograph that flow into Four-Mile Run?

A. There is one.

If I may come down there and point them out, I think it would be better.

Q. Surely.

Start at the westerly end and go east.

A. There is a storm drain emptying from a portion of Park Fairfax, roughly at this point where Four-Mile Run crosses under the W. & O.D. Railroad tracks.

There is a storm sewer taking an area generally right in here of Lloyd's Apartments, which empties at Four-Mile Run adjacent to the Vepco property which lies generally from Valley Drive over to this point.

There is a storm sewer, as I testified earlier I believe, which empties out at this point which comes down between Lloyd's Drive and Milan Drive and empties in the Run.

There is a storm sewer that comes down Old Dominion Boulevard generally in that alignment and empties—originally empties out at about this point in the Old Run, and has since been extended to the limits of the New Run.

page 177 } Q. Let me ask you about that part of the sewer right in here.

As I understand, the Old Run came down here. In other words, in 1930 this was the limit of the City Line, about here in Four-Mile Run?

A. Yes, sir.

Q. Then when the Run was moved up to this point, then did the City extend that sewer to the New Run?

A. The City extended that sewer from where it had stopped on the Old Run. For quite a long time the Old Run was left open.

Q. Yes.

A. And then at a later date because of conditions we were having at this point, we extended the sewer through.

Philip B. Hall

A. I was Assistant City Engineer from March the 1st, 1946, to August the 1st, 1950; Director of Plan-
page 174 } ning from August the 1st 1950 to March the 14th, 1953; Deputy Director of Public Works from March 15th, 1953, to August the 18th, 1954.

Q. Wait a minute. That was March what of 1953?

A. March the 15th, 1953.

Q. To—

A. To August the 18th, 1954; and from August the 18th, 1954, to November the 30th, 1955, I was Acting Director of Public Works.

From that date to this date I have been Director of Public Works, except for a period of six months from November 28th, 1961, to June 15, 1962, when I was the Acting City Manager.

Q. November 28th to June—

A. To June 15th.

Q. June 15th of 1962 as Acting City Manager?

A. Yes, sir.

Q. And your years as Director of Public Works have been since when?

A. Since November 30th, 1955.

Q. That's a good 12 years.

A. Yes.

Q. To date.

Now, back in—so you really came into the City
page 175 } as Assistant City Engineer in 1946? Is that correct?

A. Yes, sir.

Q. Will you tell the jury how many floods have been in Arlandria, to your knowledge, since that date?

A. There was one on June the 7th, 1947. This was an over-all City flood, but it also caused some problem in Arlandria mostly in the streets.

There was a significant flood on May the 5th of 1953.

There was, of course, the flood of August the 20th, 1963, that we are discussing today.

There were a number of smaller floods of less significance for which I do not have the dates available.

Q. In between those years?

A. Yes, sir.

Q. Now, could you just tell us in a summary way, without going into any details, whether or not Mr. Budwesky was substantially correct in saying the storm water from much of this

Philip B. Hall

Q. Do you know approximately when that was? I don't mean to hold you down to any year.

A. Approximately 1956, I believe.

Q. Excuse me for interrupting you.

A. There is a small storm sewer at this location which empties into a ditch which runs across here. Th storm sewer itself doesn't empty directly into the Run. It empties into a ditch just off of Mount Vernon Avenue on the east side.

Q. Yes, sir.

page 178 } A. There are two storm sewers—generally two storm sewers in the neighborhood of the Cora Kelly School. One comes from Russell Road, comes down and empties into a concrete boom at this point, and then goes by an open channel through the storage area and eventually gets into the Run.

There is one coming down from Mount Vernon and Commonwealth, which comes down beyond Cora Kelly School and likewise empties into this drainage channel through the storage area, which is visible at times of low tide, and eventually gets into the Run at that point.

Q. Thank you.

Mr. Hall, I won't go over the whole history of the Run with you, but I would like to ask you some facts about the condition of the Run on August 20, 1963.

A. Yes, sir.

Q. On August 20, 1963,—

First of all, there had been reference to an agreement between the City of Alexandria and Arlington County to clean out the run, or to cooperate in the handling of the Run—something to that effect.

Now, do I understand from Mr. Williams that nothing in writing was entered into between the County and the City?

A. That's correct.

page 179 } Q. Well, can you tell us about the oral agreement?

I know I am laying myself wide open, but I would just like to find out what it is for the record.

When was this agreement entered into? Who were the parties to it?

A. Up until about 1947 the County and the City maintained the Run. One might do the work one year, and one might do the work the next time. And then whichever one did the work would bill the other jurisdiction for one-half the cost.

This became a problem administratively. I mean, just to

keep the records of the cost and do the billing. So, in 1947 it was agreed that the City would maintain that portion of the Run east of Mount Vernon Avenue to Commonwealth Avenue, and that the County would maintain that portion of the Run west of Mount Vernon Avenue to the W. & O.D. Railroad.

Q. I see. So that the City maintained the Run from here, or from U. S. 1 up to Mount Vernon, and the County from Mount Vernon west to—I guess west here to W. & O.D. Railroad?

A. No, sir, to the W. & O.D. Railroad which is about six inches to your right.

Q. Along in here?

A. No; a little farther down.

page 180 } Q. Oh, here. I see.

A. And on the other side we maintained from Mount Vernon Avenue east to Commonwealth Avenue—not east to Number one highway.

Q. Oh, you maintained to Commonwealth Avenue?

A. Yes, sir.

Q. I beg your pardon. Alexandria was to maintain from Mount Vernon to Commonwealth?

A. That's right.

Q. And then who was going to maintain from Commonwealth to U. S. 1?

A. That was in private ownership, as far as we were concerned.

Q. Private ownership?

A. Yes, sir.

Q. You mean nobody was going to maintain that? I mean neither jurisdiction?

A. Yes, sir.

Q. Who was the private owner?

A. The owners on each side of the Run at that point. The Arlington Development Corporation on the east, and I believe that they possibly went over to the west. I do not know the ownership on the Arlington County side.

page 181 } Q. I see.

In other words, under this agreement the City stopped its, or in its agreement with Arlington County ceased its duty to maintain eastward from Commonwealth Avenue to U. S. 1?

A. We ceased maintenance at Commonwealth Avenue.

Q. Ceased their maintenance at Commonwealth Avenue.

And then the private property owners were allowed to

maintain it, or build up on it as they saw fit, from there on out to U.S. 1?

A. Yes, sir.

Q. Well, now, actually, Mr. Hall, is it not true that the City owns a piece of land just a little below the Run, west of Highway No. 1, and on which Helms has a piece of property, or has some of its structures?

A. He has no structures. He has pipe piled on a piece of property which the City owns, but he does not actually have a structure on that property.

Q. I see.

And the City property does not go quite to the Run, does it?

A. No, sir.

Q. And then, as I understand, since '47 this is the way you all have handled it, and it's been up to Arlington

page 182 } to take care of the Run to the west from Mount Vernon Avenue?

A. That's correct.

Q. Has there ever been any publication of this agreement or any formal enunciation of it in any way?

A. I have in my files a communication—copies of County communications—these are within the County—*incicating* that this is our policy. The file is not here, but I have it.

Q. I see. It's a letter or something like that?

A. It was a memorandum from the Director of Public Service to the County Manager in Arlington County.

Q. Did you make this—you, in 1947, as the Assistant City Engineer?

A. No, sir. This was made by the City Engineer.

Q. Made by the City Engineer? And who was that at that time?

A. Mr. C. Luckett Watkins.

page 183 } Q. Have the City Council ever ratified this, do you know?

A. I don't believe they have. I don't believe they would have to, Mr. Boothe; it is an administrative procedure.

Q. *Adminstrative* procedure.

While it is not in writing, there is a letter indicating that this was a meeting of minds of a couple of the parties?

A. Yes.

Q. Between the engineer of Alexandria and who in Arlington?

A. The Director of Public Service.

Philip B. Hall

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Mr. Budwesky went out as City Manager in '47. You said there was a flood in Arlandria, I believe, June 17, '47.

A. I believe that was on June 7, 1947. It was an overall flood. It caused problems, with water in the streets. I don't remember, and I can't remember at this time exactly how much water there was there.

Q. Do you know whether anything was done after that flood to protect the Arlandria area or aimed at protecting the Arlandria area in '47?

A. It was shortly after that, I believe, Mr. Boothe, that we began—yes, I do. Shortly after that, or about that time, the County and the City collaborated in preparing a plan for the improvement of the Run, particularly that section west of Mount Vernon Avenue to the Washington and Old Dominion Railroad track.

Q. This section here?

A. That's right, sir.

Q. Was that plan reduced to writing?

A. That plan was actually put in the form of construction plans.

Q. Construction plans?

page 185 } A. Yes, sir.

Q. Did that involve straightening the Run?

A. It involved straightening, yes.

Q. That is when the kinks that had existed ever since the Alexandria boundary, ever since the annexation in 1930, was straightened out, is that correct?

A. I believe that the realignment which shows from Mount Vernon Avenue westward to beyond the Brookside Apartments, that section there, was first straightened out, possibly before 1947, possibly in 1946, but generally in that same period of time. The alignment was generally based on the plan which was determined in 1947.

Q. That was one step that was done? After the '47 flood, that plan was put into action?

A. Yes, sir.

Q. The straightening was made?

A. Yes, sir.

Philip B. Hall

Q. Then, you also mentioned that in 1953, May 5, 1953, Arlandria was flooded?

A. Yes, sir.

Q. That was quite a big flood, wasn't it?

A. Yes, sir.

page 186 } Q. They had cars floating around out there? Were you out there yourself?

A. I didn't see any cars floating around. I was out there myself, yes, sir.

Q. At that time, in May of 1953, you were the Deputy Director of Public Works?

A. Yes, sir.

Q. You did visit the area?

A. Yes, sir.

Q. Now, did the City Council take any action after that flood that you know of to abate this difficulty?

A. Yes. After that flood which occurred on May 5, 1953, conversations were initiated between the County and the City for the improvement of the two bridges, the one at Glebe Road at Park Fairfax, and the one on Mount Vernon Avenue.

Q. Is this what you called Park Fairfax or Glebe Road?

A. Yes, sir. And the Mount Vernon Avenue Bridge at Four Mile Run.

Q. Now, it was at that time that this bridge here was the bridge over Four Mile Run here at Glebe Road, had its waterway increased from about 290 square feet to 1,200 square feet?

page 187 } A. It was after that, as I say, we intiated action. Remember, it takes time to design the bridge and get funds available for construction.

Q. That was started in '53?

A. Yes, sir.

Q. Completed in '59?

A. No, I think that was, I think the Mount Vernon Avenue Bridge was completed in '58 or '57 and the Glebe Road Bridge in '58. I think those are the correct dates.

Q. We will change our stipulation to that effect.

This bridge was widened in '58 and the Mount Vernon Avenue Bridge in '57?

A. Yes, sir.

Q. That was widened, the waterway there was widened from 300 square feet to about 2,400 square feet, wasn't it?

A. That's correct.

Q. In other words, it was made about eight times larger?

A. Yes, sir.

Q. That bridge was widened to take care of a whale of a flood, wasn't it?

A. Yes, sir.

Q. 2,400 square feet?

page 188 } A. Yes, sir.

Q. If the whole area from here on down, Jefferson-Davis to the Potomac River, were 2,400 square feet, we wouldn't have any flood, would we?

A. I wouldn't want to answer that question to that extent. I wouldn't want to say that.

Q. But in any event, this bridge was redesigned and reconstructed in 1957, looking forward to taking care of any tremendous runoff under that bridge, wasn't it?

A. Yes, sir.

Q. Now, then, after the 1953 flood, what was done beside building the bridges?

A. In 1955-56, the winter of 1955-56, the County and City jointly, and I might point out that those bridges were also a joint project.

Q. Did the County-City split the cost of those?

A. Yes, sir.

Q. The City did put up half and the County put up half?

A. Yes.

Q. Across the run?

A. Yes, sir.

Q. The new Run?

page 189 } A. That's correct.

Q. Even though part of it was then in Arlington County?

A. That's correct.

Q. All right, sir.

A. In the winter of 1955-56, the County and the City jointly again widened that portion of the channel starting at Commonwealth Avenue and running westerly for 1,000 feet, which is approximately where, if you move your pointer west there, a little farther east now, come east—right there—we widened the section from Commonwealth Avenue to that point in '55 and '56. This is in the wintertime when it is better working, when there is no water to deal with.

Later, in 1961-'62, we widened the channel from that point to Mount Vernon Avenue.

Q. Now, you widened it from what to what? From Commonwealth Avenue to this point, you widened it how many feet?

Philip B. Hall

What was its width at the base before and after you widened it?

A. The old channel was probably about a maximum of forty feet in width.

Q. At the base?

page 190 } A. At the base.

Q. At the base?

A. Rectangular type channel. We widened this to a channel which was a triangular-type channel 200 feet wide at the top and ten feet deep.

Q. Is this the channel that shows on this map?

A. Actually, what shows on the map is where the water was the day the picture was taken. The channel limits are roughly 100 feet from the centerline of that water area on both sides.

Q. They actually go out to a total of 200 feet?

A. That's correct, sir.

Q. Is it the same? Then it goes on up here and gets about 240 feet here east of the Mount Vernon Avenue Bridge, doesn't it?

A. That's correct.

Q. That is the total from bank to bank with ten feet to the bottom of the channel?

A. Yes, sir. The section from where we stopped the triangular section up to Mount Vernon Avenue is of varying cross sections, depending upon the available land for right-of-way and the closeness of the houses that were in that area. So it is a varying cross section but it is larger

page 191 } than anything we had there before and considerably larger.

Q. Then, as I understand, this was done in '55 and '56?

A. The first part in '55 and '56.

Q. First part.

A. The second part, '61-'62.

Q. So it was done between '55 and '62?

A. Yes, sir.

Q. That was after your agreement that Arlington or Alexandria was to do all of this by itself, but Arlington chipped in and went in fifty-fifty with you?

A. The agreement where we did the portion to the east and Arlington did a portion to the west was a maintenance agreement; but for construction purposes it was a fifty-fifty situation.

Q. Thank you.

As far as the construction, then, or improvements is con-

cerned, it is still a fifty-fifty deal all the way from the top to bottom?

A. Yes, sir.

Q. Including this strip here from east of Commonwealth Avenue and down to the Bridge?

page 192 } A. Neither County or City has taken any jurisdiction over that area so I can't answer that question.

Q. Either for maintenance or for construction?

A. That's correct.

Q. That is just no man's land.

Now, I did want to ask you—I will ask it this way—was there any channel made, change in the channel made, between U.S. 1 and Commonwealth Avenue at any time?

A. I am sorry, sir; I can't hear you.

Q. Was there any change in the channel made between Commonwealth Avenue and U.S. 1 at any time?

A. Not since I have been here, to my knowledge.

Q. Now, this portion, the last-named portion, this sort of no-man's land or no man's channel, is the portion of the channel which leads right up to the culverts under U.S. Highway Number 1?

A. That's correct.

Q. Now, the westernmost culvert which takes up—as a matter of fact, there are two culverts—the westernmost culverts which occupy the westerly one-half of U. S. Highway Number 1, I believe have a waterway area of 290 square feet east, is that not true?

A. I believe that's correct.

Q. Total waterway area altogether of 580 square feet?

page 193 } A. Yes, sir.

Q. As compared to the waterway area—strike that question.

That culvert, those two culverts, were put in by the Federal Government, County of Arlington, State of Virginia, and City of Alexandria, were they not?

A. As far as I know, the City did not share in the cost of that work.

Q. Did not share in any of the cost of the work under U.S. 1?

A. Not as far as I can determine.

Q. Well, doesn't the line of ownership run in an easterly-westerly direction through, across those culverts?

A. That's correct.

Q. The lower half is in Alexandria or the lower culvert?

A. That's correct.

Q. But the City didn't have to pay anything for the installation of the westerly culvert?

A. As far as I can find out, no.

Q. Now, that had a total waterway, did I ask you, total waterway area of 580 compared to a total waterway area of 2,400 square feet up here?

page 194 } A. That's correct.

Q. Or about one-fourth of the waterway area at the culvert put in by whoever put it in under U.S. 1, and this certainly was some public facility, wasn't it?

A. Yes, sir.

Q. Was about one-fourth the size of the waterway area under the new bridge at Mount Vernon Avenue?

A. That's correct.

Q. Now, would you identify a couple of pictures for me? I hand you herewith a photograph which purports to be a shot looking from the west in an easterly direction, at the twin culverts under Highway Number 1.

A. That is what that is.

Q. And here is just a second shot which is a photograph simply of one culvert, is it not, a closeup of it?

A. This is a photograph showing mainly the old culvert which you testified to originally, which they were put in by the Washington-Alexandria Turnpike Company.

Q. Now, let me introduce these, if I may. I showed these to you, didn't I?

Mr. Boothe: I would like to introduce these as Exhibits 16, please?

page 195 } The Court: Suppose you make them 16-A and B.

Mr. Boothe: All right, sir; 16-A and B.

The Court: They will be received.

(The photographs referred to were marked Plaintiffs' Exhibits 16-A and 16-B and received in evidence.)

By Mr. Boothe:

Q. Now, looking at 16-A, holding that up, Mr. Hall, so the jury can see it, this concrete strip across the top here represents the westerly culvert, does it not, that you have described with the waterway area of 290 feet each?

Philip B. Hall

A. This is the westerly end of the southerly culvert.

Q. Westerly end of the southerly culvert?

A. That's correct.

Q. Inside, where the arches begin—strike that question. There are actually two culverts, are there not?

A. Yes, sir.

Q. Inside where the arches begin, what do you call the old culverts?

A. This is the old culvert where the arches begin.

Q. Now, the point where the arches begin is under the centerline of U. S. 1?

page 196 } A. Approximately so.

Q. That's right.

They start out and go under U.S. 1 for the full width of the right-of-way of U.S. 1, do they not?

A. For one half of the width.

Q. One half?

A. Easterly one half.

Q. The easterly one half?

A. That's right.

Q. There the R.F. & P. culverts of the same size pickup?

A. That's correct.

Q. They continue on out for 480 feet from the centerline of the Highway?

A. From this point here, 480 feet easterly.

Q. This is a closeup of what we call the old arches starting at the midline of U. S. 1?

A. This only shows the upper part of the arch. The water level is so high—actually the arch is considerably larger than it shows.

Q. I think that was covered in the stipulation. We will leave those, we have heard so much about them.

I believe you told us about the bridge and you

page 197 } told us about the widening of that channel.

Has anything been done since the '53 flood to get additional ponding area in what is here marked Four Mile Run Bay by the City? Have they actually made any purchases of land and cleaned it out?

A. We purchased a little additional land immediately west of—what would be the short west line of that forty-five acre tract.

Q. Southwest line?

A. The west line, the short line. You see the short line right there? We purchased a little piece of land with that.

Philip B. Hall

Q. I see.
A. That is about the only purchase we made in that area.
Q. How much of this did you buy, do you know?
A. When?
Q. How much did you buy?
A. I don't know, Mr. Boothe, offhand.
Q. What purpose did you buy that for?
A. It was bought for future widening of the run and for storage purposes, also.

Q. You wouldn't know whether it was one acre
page 198 } or five acres?

A. Right off hand, no. I could find out.
Q. This is where the golf driving range is now laid out, is it not?
A. It was land which was not owned by the golf driving range but lay immediately east of that.
Q. East of that?
A. That range.
Q. Piece of land between the golf driving range and this line?
A. That's correct.
Q. Then, let me ask you this question:
To your knowledge, since you became Assistant City Engineer on March 1, 1946, can you tell us what, if any, efforts the City has made to get cooperation or perhaps to take more forceful action against the R.F. & P. Railroad with reference to widening the culvert under the Potomac Yards?
A. We have contacted the Railroad by conversations verbally with the Chief Engineer at various times. The County, since this is something that cannot be done unilaterally—this is a joint situation with the County—has actually con-

tacted the Railroad by letter requesting that
page 199 } they consider improving the culverts under the railroad. Since the '63 flood we have done the same thing again.

Q. Well, now, I was going to ask you about that. What I would like to know is, what did Alexandria do between 1953 and 1963 in this regard, if anything?
A. Mainly it was, I believe, verbal conversations and joining in by having the County, not the City but the County, contact the railroad. The County in this case made all the contacts.
Q. To your knowledge, the City didn't make any contacts with the R.F. & P. during those ten years?

Philip B. Hall

A. I didn't say that. I said we made verbal contact with the Chief Engineer.

Q. Do you know who made those contacts?

A. In most cases either I did or Mr. Watkins did. As far as I know, we were the only two who did.

Q. Do you know whether the City Manager did? If you don't—maybe you don't know what he did.

A. I can't answer that. I don't know.

Q. Do you know whether or not City Council took any action? Are you cognizant of any open action taken by City Council trying to get the R.F. & P. to do something about widening the culverts?

page 200 } A. Between 19—

Q. '53 and '63.

A. No.

Q. Since 1963, since the flood, I understand you have had several conversations, haven't you?

A. We have had correspondence.

Q. Correspondence, too?

A. Yes, sir.

Q. You have had some of that correspondence?

A. Yes, sir.

Q. Anybody else in the City involved in it?

A. I can't remember whether the City Manager has or not. I think I have, myself.

Q. Do you know whether or not the City has ever suggested to the City Attorney that he explore or take action to compel the widening of culverts?

A. I have requested the City Attorney to investigate that.

Q. That was after '63?

A. No, sir; that was in 1955, I believe.

Q. Did he ever do it? Did he investigate or come back with a recommendation?

A. He indicated that he felt that the Railroad

page 201 } was responsible for taking care of their own problem.

Q. He thought they were?

A. Beyond that, I can't answer your question.

Q. He didn't suggest going any farther than admitting, saying that the Railroad was responsible for taking action?

A. I don't know whether he suggested that to the City Manager or not.

Q. Well, now, what did the City do between 1953, the flood of '53, and the flood of 1963 with regard to seeking aid from

the Federal Government or the State Government in regard to this Four Mile Run situation as it involved Arlandria particularly?

A. To my knowledge I don't believe—well, I take that back. We have had conferences with representatives of the Corps of Engineers, and I don't remember the date of this, but it was in that period of time, at which time they indicated that there was no project that could be worked up at that time; there were no funds available from the Federal Government at that time. So we did not follow it any further even then.

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page 203 }

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Q. Mr. Hall, did you ever read the Chester Engineers' Report of December 1943?

A. I've never read it in full; I have seen it.

Q. I think I asked you this: Do I understand the County and the City together cooperated 50-50 in moving Four Mile Run from its old site to the new site here?

A. I believe this is true, Mr. Boothe. I believe this happened either before or just after I came, and I have to rely on memory here.

Q. Since '63, there has been some dredging of this area of the Run, west of Mount Vernon Avenue, is that page 204 } not true?

A. Just west of Mount Vernon Avenue I believe is the main portion.

Q. Would this be maintenance, or would it be construction, or what was it?

A. That portion in there was construction.

Q. That was construction 50-50 between the City and the County?

A. That's correct.

Do you know the width of the Run, in this area, in August '63, I mean the width of the Run?

A. It varied from 240 feet at the bridge itself to probably about—I would have to estimate this being maybe 150 feet at the westerly end of that breach.

Q. You mean this breach?

A. Right there.

Philip B. Hall

Q. As a matter of fact, before the dredging occurred, wasn't it 50 feet wide?

A. No; more than that. The entire channel was more than that because the channel had been opened up when the Bridge was built, for a short distance back from the bridge.

Q. Right, it was; and then there began to run a constriction until you all completed the new construction and widening, isn't that true?

page 205 } A. Well, it was not as wide as 240 feet, but I don't believe it was anywhere near like 50. It was nearer 150 than 250.

Q. Are you familiar with the trees and shrubbery that hung over the area just west of this wide part (indicating) on August 26, '53?

A. Yes, some of it.

Q. And do you know the width of the channel here in front of the Helms property on August 20, '63, that No-man's channel?

A. Only by inspection. I would say it was about 40 feet wide.

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page 206 }

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By Mr. Boothe:

Q. This purports to be a photostat of a letter of January 7, 1953 from the then City Manager Ira Willard to Mr. Nathaniel Taube. Would you look at that and see if you were familiar with that transaction. If you were, I am going to ask you some questions. If you are not, I cannot ask you about it.

Mr. Hall, I don't want to wear you down.

A. I don't believe I have seen the letter, but I am familiar with the Agreement in general, but not in detail, as that letter sets forth.

Q. To save a little time, I will ask you this then: You were familiar with negotiations between Mr. Nathan J. Taube, the developer of Warwick Village, and Mr. Ira Willard, the City Manager of Alexandria?

Q. What was the date of that letter?

A. January 7, 1953.

page 207 } A. I was still director of planning. I was just generally familiar with them.

Philip B. Hall

Q. Did you know that the City Manager had made an agreement with Mr. Taube to permit him to put at least 90,000 cubic yards of earth, to be delivered to the school site west of Commonwealth Avenue?

A. No. As Director of Planning, I would not have been familiar with that particular thing. I was interested at that time more in the planning of the project as a whole which was Warwick Village.

Q. Yes.

A.—rather than what happened off-site.

Q. I see. Did you ever learn in your then capacity or your capacity of Acting City Manager, or as Director of Public Works, that a good deal of earth from Warwick Village was deposited in the so-called ponding area?

A. Yes.

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CROSS-EXAMINATION

By Mr. Crockett:

Q. Mr. Hall, you first testified to the storm water drainage from the areas adjacent to Arlandria, above it, into Four Mile Run. I just want to ask you a couple of questions about that. Were these storm sewer lines that you have mentioned that go into the Run draining any area other than the Four Mile Run basin itself?

A. To the best of my knowledge, no.

Q. All right, sir. Mr. Boothe has talked about an area along Four Mile Road east of Commonwealth Avenue up to Route 1, and referred to that as "No-Man's Land." I would like to ask you to clarify, if you would, please, who owns the land adjacent to the Run and to the south of it?

A. As far as I know, the Arlington Develop-
page 209 } ment Corporation.

Q. All right, sir. Let me ask you: Does the City of Alexandria own any of this land south of the Run, between Commonwealth Avenue and Route 1?

A. No, sir.

Q. On the other side of the Run, this is Arlington County, as I understand?

A. Yes, sir.
Q. And it is also in private ownership?
A. As far as I know.

The Court: Is that all?

page 210 } Q. Mr. Hall, while I was looking at some exhibits that were handed to us over here, I'm not quite certain of your testimony regarding the area of widening that the City did in the Four-Mile Run channel.

Was the area that you were describing widening that occurred since 1953, where was that located?

A. Since nineteen what?
Q. Since 1963.
A. Sixty-three. That was the portion west of Mount Vernon Avenue.
Q. All right, sir.
A. In the Arlington County area.
Q. Well, now, between 1953 and 1963, you have indicated two stretches of the run that had been widened by the City?
A. That's correct.
Q. And where were they located?
A. They were at the section between Mount Vernon Avenue and Commonwealth Avenue.
Q. I see.
A. East of Mount Vernon and west of Commonwealth.
Q. And had that work been completed prior to the storms of the 19th and 20th of August, 1963?

A. Yes. That work was completed in the early
page 211 } spring or late winter of 1962.

* * * * *

REDIRECT EXAMINATION

By Mr. Boothe:

Q. I just want to straighten out one little thing. I know you didn't mean to be inaccurate.

I think Mr. Crockett asked you—

He said the City did not own any land east of Commonwealth Avenue.

You meant right on the Run, did you not?

page 212 } A. That's what I think he asked me.

Philip B. Hall

Q. Because I think the City does own a piece of land in here—a rectangle, doesn't it?

A. That's correct.

Q. On which some of Helms' activities are located?

And, indeed, he pays taxes to the City for the use of that land, doesn't he?

A. He pays a lease, I believe.

Q. A lease. I see.

Now, just one other thing.

Again, Mr. Crockett reminded me—

When the Run was straightened west of Mount Vernon Avenue, this was not a maintenance, but a construction deal, wasn't it?

A. Yes, sir.

Q. And when it was raised from this crooked way down here back up to this straighter line, the City and County did that fifty-fifty?

A. That's correct.

I was wrong in my answer to Mr. Crockett. I forgot that you had asked me about that once before.

Mr. Boothe: That's all right.

Mr. Crockett: If Your Honor please, I have to
page 213 } object to that line of testimony. I think it's beyond the scope of the pleadings as we have discussed.

Mr. Boothe: It doesn't have anything to do with the pleadings. It's who did the work. I'm not saying anything else except that I want to show the City's participation in the work.

Mr. Crockett: Are we relating it west of Mount Vernon Avenue now?

Mr. Boothe: Only where it was done, yes.

Mr. Crockett: Well, if you are relating it west of Mount Vernon Avenue, you are going beyond the scope of the pleadings.

The Court: I think we have gone into it before.

Objection overruled.

Does that conclude your questions?

Mr. Boothe: That's all. I have no more.

Mr. Crockett: Exception, Your Honor.

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PHILIP HALL resumed the witness stand, and, having been previously sworn, was examined and testified upon his oath as follows:

REDIRECT EXAMINATION

By Mr. Boothe:

Q. Mr. Hall, your testimony last night leads me to ask you about three or four classes of questions.

You are the Director of Public Works?

A. Yes, sir.

Q. And are you responsible, as Director of Public Works, for the maintenance of City streets?

A. Yes, sir.

Q. And also the construction of City streets
page 223 } comes under you.

A. Yes, sir.

Q. And does Alexandria pay for its own city streets with some help from the state?

A. Alexandria pays for all the normal streets. The only aid we get from the state and from the Federal Government is on those streets which are designated as extensions of primary routes—Route 1, Route 7, and Route 236.

Q. And U. S. 1 is a primary route, for instance?

A. Yes, sir.

Q. And how do you share with the Federal and State Governments on primary routes?

A. At the present time, the City would pay 15 percent of the cost. The Federal Government would pay 50 percent; and the State would pay 35 percent.

Q. Thirty-five percent.

Now, does this include bridges on these routes, or crossings of streams?

A. If they are part of the project, yes.

Q. Well, now, Jefferson Davis Highway is U.S. 1—a primary route; is it not?

A. Yes, sir.

Q. Then in the construction and maintenance of Jefferson
Davis Highway, the City pays 15 percent; the
page 224 } State 35; and the Federal Government 50?

A. Normally, that's correct.

Q. It normally does?

Now, I believe you testified yesterday that you could not find any evidence that the City had contributed at all to the construction of the culvert at Four-Mile Run under the road.

A. That's correct.

Q. Could you find any reference to the City's payment of any part of the construction of the road over the culvert?

A. No, sir; not at that point.

Q. Well, now, what you meant in your testimony was not that the City had not participated, but that you couldn't find any record of its participation. Is that right?

A. I found records in the Council Minutes whereby the City indicated to the State Highway Department that it had no funds available at the time that this construction was to go forward, and, therefore, they could not participate in the cost.

Q. All right.

Well, now, that's different.

You mean they had no funds to participate in the widening at all?

A. Apparently so, according to the Council Minutes.

Q. And, therefore, the Federal Government page 225 } and State did all the widening for the City?

A. As far as I know. This was before I came with the City, Mr. Boothe.

Q. I see.

But ordinarily the City would participate?

A. Ordinarily is correct.

Q. And suppose today, for instance, the culverts under that road right at Four-Mile Run—if the culverts just collapsed, who would repair them?

A. The repair would be our problem.

Q. I see.

But the Federal Government and State would participate?

A. No.

I would like to differentiate between maintenance and construction.

Q. Right.

A. Maintenance is the function of the City, but construction is done on a participating basis by the Federal Government and the State.

Q. I see.

If you were to put in a new culvert, it would be on a participating basis?

A. That's correct.

page 226 } Q. That's under construction—15 percent, 35 and 50.

Now, then, all of the City's sanitary sewers do not come under your direction—jurisdiction—or do they?

A. All of the City's sanitary sewer system except the interceptor lines and the sewage disposal plant come under our jurisdiction—under my jurisdiction.

Q. Now, the ones that go into the sewage disposal plant are under the Alexandria Sanitary Authority—is that correct?

A. That's correct.

Q. But all those that do not go into that area are under yours?

A. Well, all of the sewer system which leads to the interceptors, which are under the control of the Sanitation Authority—the normal sewer in the streets are ours. And then the Sanitation Authority picks up these interceptors and takes them to the sewage disposal plant.

Q. I understand.

Now, are the storm water sewers under your jurisdiction?

A. Yes, sir.

Q. All over the City?

A. Yes, sir.

page 227 } Q. I'm speaking now, of course, of public sewers. Are there any private sewers left in the City—storm water sewers?

A. There are some private storm sewers in some developments which pick up water on the development and lead it to the public sewer in a street. But those portions which are in the development and which are not picking up any public water are, in many cases, privately controlled and privately maintained and privately constructed.

Q. And they are directed where to lead the sewers?

A. They are normally directed to a public—

Q. To a public sewer?

A. To a public sewer.

Q. But all the public storm water sewers in the area that we have been discussing are under your jurisdiction?

A. Yes, sir.

Q. And when I say under your jurisdiction, of course, I mean, therefore, through you they are under the City's jurisdiction?

A. That's correct.

Philip B. Hall

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page 228 } By Mr. Boothe:

Q. I hand you herewith Plaintiff's Exhibit No. 17, Mr. Hall, which you looked at yesterday. This is a letter from the City Manager, Mr. Ira Willard, is it not. Mr. Nathan J. Taube, the developer of Warwick Village?

A. Yes, sir.

Q. And that refers to an agreement under which Mr. Taube is permitted to dump 90,000 cubic yards of earth from Warwick at or near the Cora Kelly School site. Is that not true?

A. That's what it appears to say, Mr. Boothe.

Q. And I herewith hand you Plaintiff's Exhibit No. 18 dated July 17, 1963, and ask you if that is not a report to the City Manager from you dealing with, among other things, the conditions around Four-Mile Run?

A. If it's my report to the City Manager, I'd have to read it to determine exactly what it is.

Q. All right, sir.

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page 229 }

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By Mr. Boothe:

Q. That letter dated July—what is it—17?

A. July 17th, 1963.

Q. It is a report from you to the City Manager of Alexandria. Is that correct?

A. That is correct.

Q. All right, sir.

A. And do you recall—

I hand you herewith a letter dated September 13, 1961, to Miss Katherine J. Lumis, 3814 Edison Street Alexandria, and ask you if that is a letter from you to Miss Lumis?

A. Yes, sir.

* * * * *

page 231 } By Mr. Boothe:

Q. Since your affiliation with the City, and your tenure in office, has the City ever sought to get the Fed-

eral Government to clean out the mouth of Four Mile Run at the Potomac *River?*

A. Not to my knowledge, Mr. Boothe, though it's possible it could have happened when Mr. Watkins was City Engineer.

Q. That was back when?

A. Between 1946 and 1955, so in this period of time this could have happened and I would not have knowledge of it necessarily.

Q. Has the City ever asked the railroad whether or not they would give them an easement through the Potomac yards for a wider culvert?

A. No, sir.

Q. One last question in the third category that I had in mind—you mentioned yesterday this strip of land down here that nobody had jurisdiction over, running from Commonwealth Avenue to U. S. 1, and you said it was privately owned on both sides.

A. I said that it was privately owned on the south side. I am not sure on the north side.

Q. I mean it is possible that this might not be privately owned. Well, aren't great shares of this run pri-

page 232 } vately owned right here?

A. That portion is, that's correct.

Q. What about the backs of these homes over in Arlington, or do you know?

A. I believe that part of that is privately owned and part by the County. I cannot testify directly to that, I am not sure.

Q. Is any part of the Run privately owned just west of Mount Vernon Avenue, in back of the AMOCO gas station and Brill's Store and now Warner and Brookside Apartments and all that?

A. Adjoining the Run?

Q. Yes.

A. Yes.

Q. That's all privately owned?

A. Yes.

Q. What about farther west on the Alexandria side, is that all privately owned?

A. There are portions of that which actually cross the Run which are owned by the State Highway Department and the County jointly.

Q. But most of it is privately owned?

A. Majority of it is privately owned.

Philip B. Hall

Q. What is the difference between private own-
page 233 } erships up the stream and private ownerships down here between Commonwealth Avenue and U.S. 1?

A. I don't quite understand.

Q. Why did you single this strip out of the Four Mile Run from Commonwealth Avenue to U. S. 1 and say that, as I understand, nobody bothered about maintaining that because it was privately owned?

A. This would have to be a matter, I think, of opinion, if I were to give you an opinion on this. We owned the 45 acres of land immediately west of Commonwealth Avenue.

Q. Right here?

A. And the County owned on the other side. In this area we had jurisdiction and could widen. We acquired land and the County acquired land from there to Mount Vernon Avenue and other portions of the Run. They did not at any time take jurisdiction or acquire any property between Commonwealth Avenue and No. 1 Highway.

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page 234 }

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By Mr. Boothe:

Q. I will just ask you, have you ever asked the City Attorney for an opinion as to whether you can widen this Run to U. S. 1?

A. Not at that particular point.

Q. You never asked for such an opinion as that?

A. Not there.

Q. No. And I think that is all I want to ask you about that. Oh, yes. No, prior, on August 19th, the day before this flood occurred in 1963, August 1963, a great deal of dredging had already been done east of Mount Vernon Avenue, just east, hadn't it?

A. That was done in July.

page 235 } Q. And the earth from the dredging, a lot of it was put up right on the bank, hadn't it?

A. That had been removed by that time as far as I know.

Q. As far as you know?

A. Yes, sir.

Philip Hall

Q. You are not certain about that, are you?

A. Yes, I am certain of this because we did not leave it there that long. As soon as we got it on the bank, we started to remove it and since we were doing the dredging in the period between July 2 and July 11, I am sure by that time the material had been removed.

Q. You went out there on the 20th?

A. Yes, sir; I was on the 20th.

Q. And you didn't see earth down in the bottom of that creek that washed back from the piles that had been on the side the night before?

A. No, sir.

page 236 } Q. Now, then, after the storm of August, 1963, did the City remove any logs or debris from any part of the Four Mile Run Channel?

A. I couldn't—

Q. *Specficially* did you find any down here at the culverts?

A. No, sir.

Q. You did not?

A. We did not.

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page 237 }

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The Court: Mr. Hall, if you don't mind, I would like to ask you a few questions.

I wonder, Mr. Boothe, if you would lend Mr. Hall your pointer, and if you would step down to the board and let me ask you just a very few questions.

So far as the Four Mile Run Basin itself is concerned, Mr. Hall, would you be in a position on aerial photograph, which is Petitioners' Exhibit 4, to run your pointer around the rough outline of the basin itself?

The Witness: Well, of course, this is only going to show the lower portion of the basin, Your Honor. The basin extends for some ten miles.

The Court: I understand that, but so far as this exhibit is concerned?

The Witness: Generally, it would be a little bit hard for me to figure out. There is a ridge line over in this area (indicating) in Arlington County. And this is the shopping center.

Philip B. Hall

The ridge line is still up in here. I am not even sure that this goes as far as the upper ridge line which comes into the basin from Arlington.

page 238 } On the Alexandria side, the basin limits would be—see if I can pick it out of here—about in this area here.

Now, the majority of Park Fairfax is this complex at this point, drains into Four Mile Run. Beverly Hills, from approximately this point, I think it is.

The Court: If you would just take your pointer and run it.

The Witness: Generally, the line is there, just down in here. It will be a cross-through here.

The Court: All right, sir.

Now, so far as the City-County line is concerned, would you just roughly run your pointer along that line as it relates to this photo?

The Witness: The City-County line is described as the meanders of the Run—this is from the annexation of 1930—this started, actually, at the intersection of what is *know* as Shirlington Road and the Washington and Old Dominion Railroad. It runs along the south right-of-way line, the Washington, Old Dominion Railroad, to the point where Four Mile Run crosses under the Washington and Old Dominion Railroad. From that point on, it follows the meanders of the run.

page 239 } The meanders of the Run in 1930 follow very closely to what shows in this location until it reaches a point right here.

At that point, the old Run came down in this direction (in-point where the culverts outlet and then, from there, went on generally just to the Potomac River because at that time, in 1930, at the time the line was established, the airport was not built. The airport was not built, so it is a little hard to show it on this line.

The Court: If I have understood your testimony correctly, the Four Mile Run is the natural drainage area for all of the area that you have outlined with your pointer.

In other words, the drainage from Arlington

page 240 } County storm drainage, the natural drainage, as well as the storm and natural drainage from the City of Alexandria within this area, eventually works to the Four Mile Run, is that correct?

The Witness: Yes, sir.

Philip B. Hall

The Court: Now, if I further understood your testimony correctly, there is an oral agreement that has been testified to between the City of Alexandria, appropriate officials of the City of Alexandria, and of Arlington County, that in effect provides that each jurisdiction would provide for the maintenance of Four Mile Run within their particular area whereby it is solely or exclusively within the City of Alexandria, or Arlington County—where the line runs along, there is a joint sort of arrangement so far as maintenance is concerned with respect to construction. Then that is a different situation. Is my understanding correct or is it different from that?

The Witness: I think so.

What happens, since the line, as I said here, runs generally along this line in here and over here the line, the County-dicating) and came back here, turned and went up about to a point up in here (indicating); actually went through this old bridge, not the present bridge, but the old bridge, turned at right angles again, followed down and meandered through this area to a point about here where the run started to move over in this direction and went down in Ox Bow and back and then followed not quite the alignment of this channel, but slightly in a bow and reached the point of the center of these culverts.

At that point it followed the center of the culverts to the City line, runs like this (indicating) and meanders and comes down in here, we found that from a maintenance standpoint originally—for instance, the County might go in and maintain a section, then bill the City for one half

page 241 } of the cost of that section. This was several years ago.

Likewise, the City might do the work and the County might bill (sic).

In order to eliminate details of billing, administratively it was decided between the administrative officials responsible that the City would maintain all of that portion of the run from Mount Vernon Avenue eastward to the point where we stopped control of the run at Commonwealth Avenue whether it lay in the City or the County.

Likewise, from Mount Vernon Avenue westward to the Washington and Old Dominion Railroad track, the County would maintain this section.

As far as construction is concerned, either one or the other, depending upon which one had the staff and the time at that time to draw the plans and let the contract, would let a con-

tract for work done here whether it be the bridges or the widening and the other, the cost to be shared equally between the two.

The Court: Do I understand then that there would have to be an independent agreement between the two jurisdictions prior to any construction work being initiated or commenced?

page 242 } The Witness: That's correct, because the council and the County Board of Supervisors would have to allocate funds. Therefore, there has to be an agreement. I might point this out maybe a little bit easier.

Actually, on this channel widening which was testified to, the City in both cases drew the plan, made the surveys and drew the plans and let the contract. The County paid one-half the cost.

For the bridges at Mount Vernon Avenue and at Glebe Road, the County and the City participated in the designs through a consulting engineer; then the County in this case let the contract, supervised the contract. The City paid one half the cost.

The Court: All right, sir.

Now, again, keeping in mind the outline that you made so far as the place itself is concerned and the line between the County and the City, would you say that roughly one half of the drainage comes from the City of Alexandria, one half comes from Arlington County, or would you divide it up differently?

The Witness: In this particular area, the lower part of the watershed, no; but the overall watershed, the total amount of drainage from the City is only about one sixth of the total amount of the total watershed.

page 243 } The Court: So far as this particular area is concerned, are you in a position at this time—

The Witness: As far as this particular area is concerned, there is a larger amount. We have not computed the amount. There is a larger amount of drainage, I believe, from this City area than there is from the County area since the County area is quite steep at this point, with the exception of Long Branch which is a stream which enters—see if I can find it now—enters right here (indicating) and continues up through the County up there, well beyond the Army-Navy Country Club, up into the Arlington Hall area.

The Court: Would you be in a position to roughly estimate that aspect of it?

The Witness: Not at this time, sir; I would not.

The Court: Those are all the questions I have, then.

* * * * *

page 244 } Whereupon, KATHRYNE DEMAINE, being first duly sworn, was examined and testified upon her oath as follows:

DIRECT EXAMINATION

By Mr. Boothe:

* * * * *

Q. Now, there has been some conversation or some talk at this trial about a flood which occurred in May of 1953 at Arlandria. Do you have any recollection of that flood?

A. I will never forget it.

Q. I want you to tell the jury over here just what you remember about the flood of May, 1953 in Arlan-
page 245 } dria?

A. Well, it was around—around 6:30 in the evening. It may have been an hour earlier, give or take. I was coming down from Glebe Road, back of the shopping center, Brill's. Are you familiar with that?

Q. They will be.

A. Brill's. Albert Street, I believe it is named.

All at once my car went up in the air. Can you imagine that? I was scared to death.

Q. What kind of a car were you in?

A. Cheap car, Chevrolet, little fellow.

Q. You were coming down Albert Avenue?

A. Yes.

Q. You had no warning prior to this?

A. No, I wouldn't certainly go into water, not as scared as I was of water.

Q. What happened to you then?

A. The car was lifted up. I had no control. I had been driving quite a number of years and so far I have never been really frightened in my life. I don't think I have ever been frightened, I mean really think I was going to die.

Q. What happened to you after your car went in the air?

A. The water seeped through and after it got
page 246 } up to about here (indicating) I really got frightened.

Q. Up to your chest?

A. Not quite, but about. And it kept coming in.

Then a bus came down and of course I had no control of the car after I hit the water. It just floated. You can imagine driving a car without any control. So the bus was already there and another one was coming. I got right in between and here I was bobbing up and down between the buses.

So you asked me, do I remember it? I will never forget it.

* * * * *

page 252 } Whereupon, J. CHARLIE LEWIS, having been first duly sworn, was examined and testified upon his oath as follows:

DIRECT EXAMINATION

By Mr. Boothe:

* * * * *

page 254 } So, on June 30, 1963, we had a flash flood and many cars were—had to be towed out of here; and then August the 20th you had another flood. There were two floods in '63, but the flood of August 20, 1963 filled up all the basements and all the first floors to about three feet. That's August the 20th, but July the 30th, that approximately could be one day ahead previous to that, filled up all the basements, the shopping center and got the cars, but didn't go in the first floor.

Q. I see.

A. I believe the City dredged all—Arlington County dredged over here, a little bit of dirt and put it up in the ground and I believe on August the 20th that pile of dirt was there and, of course, it would wash across the banks and come in here.

* * * * *

Q. Mr. Lewis, when were these properties constructed down here in Beverly Park and Beverly Plaza and the shopping center to which you referred?

A. The shopping center was approximately
page 255 } 1937 and '38, and the Beverly Plaza Apartments were approximately 1938, and Beverly Park—

Q. The Beverly Plaza Apartments are those east of Mount Vernon Avenue?

A. That's right, sir. That's those eight in there.

Q. And they were done in about 1938?

A. '38.

Q. I see.

A. And then Beverly Park was approximately 1941.

Q. Do you have any independent recollection of a flood in 1942?

A. 1942, I believe we had two and, why I recall that, I forget the dates, I think one was a couple or three months' difference—was that the contractor finished up here and he began the—we were going to build some more on this side here, and they weren't started yet. We were going to build some more in here. (Indicating)

Q. I see.

Was there—

A. These were eventually built as duplex houses. They called for sites in here, and the contractor had stored some 550-gallon oil tanks, because at that time, during the priorities and so forth, he had bought the tanks for the

page 256 } whole project, so some of them were floated down, way on down here by the culvert. Some of them went down and picked up a couple and a couple we never did find. That's how I happen to recall the '42 incident.

Q. I see.

And in the 1963 flood, I believe you did state—you did state how high the water came, didn't you, in the '63 August 20—

A. Yes, they filled up the apartments and the basements approximately—it was up to the door knob.

Q. About three feet?

A. And it was a deposit of both raw sewerage and storm water. Your sewerage was backing up the first part of the flood in the early part of the evening, started backing up into the bathtub.

Q. Do you think it was all caused by the flood itself? You see, we're just interested in the ultimate.

A. Yeah, because the water wouldn't let it out. It was caused by that, but I mean that was just the first indication.

Q. Because the Run was up?

A. That's right. It wouldn't allow it to back up.

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page 257 }

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By Mr. Boothe:

Q. Was there any flood between 1942 and '53?

A. 1945 there was a flood in August. I forget the exact date, but I was in Alexandria Hospital August the 15th when all the whistles starting blowing, and that was V-Day. I was in Alexandria Hospital with pneumonia because of getting wet by the flood. So the flood happened just prior to that—August the 15th I was in the hospital of 1945.

Then we had another flood in '53, but I was in Wilmington, Delaware, at that time, but I had to pay the bills and so forth.

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CROSS EXAMINATION

By Mr. Crockett:

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page 261 }

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Q. All right, sir.

Well, what did you mean when you referred to the high tides in the Potomac River?

A. Well, when the high tide is in, naturally the water is held back and doesn't flow as fast as it does when the tide is going out.

Q. All right, sir.

A. It holds it back. It doesn't go out as fast.

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page 262 }

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REDIRECT EXAMINATION

By Mr. Boothe:

Q. When you all went in this area to build in 1938, did you have to get various permits from the City?

A. Yes, sir, it's customary.

Q. And did you have to get any rezoning, do you recall?

A. I don't recall getting any rezoning.

Q. In connection with—I'm not speaking in connection with the Beverly Park and the shopping center and Beverly Plaza. You did come to City Hall for various permits?

A. That's right.

Q. And they were given to you?

A. That's right.

* * * * *

page 265 } Whereupon RICHARD EDGAR ROBERTSON, a witness called on behalf of the Plaintiffs, was called and having been duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

By Mr. Boothe:

* * * * *

Q. Where is your place of business?

A. At the time of the flood?

Q. Yes, where was it on August 20, 1963?

A. 38 West Reid Avenue.

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page 267 }

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Q. Did you take any measurement then or later of the water level in your office on the night of August 20?

Richard Edgar Robertson

A. Yes, sir; we had a four-drawer file, a regular letter-size file, and there was a water mark on it and we measured it. It was exactly 50 inches deep.

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page 268 }

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Q. Did you drive through any other part of Arlandria?

A. Yes, sir; we came down Glebe Road and, of course, right in front of the building on Glebe Road is a little dip, and you can't get through there, which we couldn't when we parked —walked through the water back to the back of my office.

Then I walked down back by the Acme Store—that's situated between Glebe Road and Reid Avenue—and the water was way up in the parking lot, up past the building and—it seemed sort of odd, but there was somebody down there in a boat, which struck me as rather funny, floating around the middle of the street in a boat.

Of course, there were several firemen down there to keep people from going down into the area, because right in front of that building there is a dip and the water was getting, well, I guess, three feet deep out in that street. So when we went back and tried to go down to Arlandria, that was blocked off

Q. It was blocked off?

A. Yes, we couldn't get down there—just to see the extent of the flooding.

Q. In fairness to the City, we don't want to charge them with anything we don't think they are responsible for. I wish you would tell the jury how your office is con-
page 269 } structed. As a matter of fact, is it not below Reid Avenue, about 18 inches?

A. Yes. The bottom—the floor of our office is, I would say, about 18 inches below the street level, and there is a—you have to take two steps down to get to the level of our office from the street level.

Q. From Reid Avenue?

A. From Reid Avenue, that's right.

Q. So when you frequently had water coming in under the door, you don't mean it was due to any flooding which—

A. No, this was sort of a well affair. They had a sump pump and water would collect from anywhere.

Richard Edgar Robertson

Q. I see.

A. As long as you kept a sump pump in operation, it was all right.

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CROSS-EXAMINATION

By Mr. Crockett:

* * * * *

page 270 } Q. And your office is on Reid Avenue, and did I understand your testimony, was, it was some 18 inches below the elevation of the ground?

A. The floor of our office is approximately 18 inches below the level of the roadway.

Q. Is this a basement office?

A. Yes, sir.

* * * * *

REDIRECT EXAMINATION

By Mr. Boothe:

Q. You mean it is 18 inches down from the street, it is not a full basement?

A. Not a complete— The floor of our office is about 18 inches below ground level, is what it is.

Q. Eighteen inches below ground level?

A. A regular basement would be about six feet.

Q. The point is—I believe you testified you had 50 inches of water in your office that night?

A. That's right.

Q. And that would mean that 32 inches of it would be above the street level?

A. That's correct.

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Abraham O. Brill

page 274 }

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Whereupon, ABRAHAM O. BRILL, a witness called on behalf of the Plaintiffs, was called and having been duly sworn, was examined and testified as follows:

* * * * *

page 279 } Q. Mr. Brill, when did you build this store?
A. In 1943, sir.

Q. 1943?

A. I started building in 1943, and we opened our store for business June 22, I think, in '44.

Q. You have been there ever since that time?

A. Yes, sir.

Q. Do you recall any earlier flooding of this property?

A. Yes, we have had water on and off for pretty near every two or three years. It wasn't as much as this. The 1953 was the worst one we had. That ruined everything on the bottom shelves, everything in the store on the bottom shelves.

Q. That was '53?

A. In '53.

But on and off we had water about every couple or three years. It used to come in through the back, and we had something to push it out through the front and clean up, and so forth, and get back in business the second day. But in '53 we suffered quite a pretty good sized loss.

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page 280 }

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Q. Were there any high water marks in your store?

A. Thirty-eight inches.

Q. Thirty-eight inches was the mark?

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Abraham O. Brill

CROSS EXAMINATION

By Mr. Crockett:

Q. Mr. Brill, you referred to the flood of 1953.

Between that time and 1963, was there anything comparable to the flood which occurred on August 20, 1963?

A. No.

Q. To *you* knowledge, had there ever been a flood comparable to the one of August 20, 1963?

A. No, sir.

Q. And the magnitude of that flood was greater than any that you can recall since you have been in that area?

A. Correct, sir.

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page 281 }

REDIRECT EXAMINATION

By Mr. Boothe:

Q. In between '53 and '63, did you have just a number of small floods?

A. Right.

Q. How frequent were those?

A. About every two or three years, something like that.

Q. Just a little flooding in between?

A. Yes, sir; just water coming in.

Q. What caused them? Did they come from Four-Mile Run?

A. Yes, sir; filled up and came through the back of the store and everything.

Q. So you had a real bad storm in '53, and just some small floodings about every two or three years and another one in '63?

A. That's right.

Mr. Boothe: Thank you.

RECROSS EXAMINATION

By Mr. Crockett:

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Q. Let me ask you this: When were you there on August 20, 1963?

A. I was there until about 4:00 or 5:00 o'clock, I think.

Q. Did you have any water in your store at that time?

A. I beg your pardon?

Q. Did you have any water in your store at that time?

A. No, sir.

Q. Did you have any water in your store?

A. But I could see where the creek was filling up and coming over through the back of the store, back of the gasoline station where the tires was and all that ground used to get filled up. It was coming over the creek, from the creek.

Q. What time was this, do you remember?

A. The water I have seen?

Q. Yes. What time was this that you saw this?

A. Before I left.

Q. What time was that?

A. I think it was around 4-something.

page 283 } Q. Four-something?

A. Yes.

Q. Was this coming up from behind your store?

A. Yes, sir.

Q. From the rear of it?

A. From the creek.

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page 285 }

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Whereupon, LILLIAN LAMKIN, being first duly sworn, was examined and testified upon her oath as follows:

DIRECT EXAMINATION

By Mr. Perry:

Q. Mrs. Lamkin, would you state your name for the jury, please?

A. Mrs. Lillian Lamkin.

Q. You live at 3818 Edison Street, is that correct?
A. Right.

* * * * *

page 286 }

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Q. Now, between the years of 1951 and the flood of August, 1963, were there any floodings that took place at your home?
A. Well, we had two near floods.
Q. Two near floods?
page 287 } A. But August of '63 was the first time I had water in my home.
Q. Would you tell the Court and jury what you mean by "near floods"?
When was the first one as you recall?
A. The first was in May of '53.
Q. What happened then?
A. It got within about an inch of coming in my home.
Q. Of coming in the front door?
A. Front door. I mean, the whole underhouse— I don't have a basement, of course, but the whole underneath the house was completely full, like looking at the ocean, but didn't quite make it in the house.

* * * * *

Q. Prior to August of '63 had there been any other floods other than May of '53?
A. June, '63. It almost got in the house again, got up into the yard.

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page 289 }

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Whereupon, GEORGE FAIGEN, having been first duly sworn, was examined and testified upon his oath as follows:

George Faigen

page 290 } DIRECT EXAMINATION

By Mr. Boothe:

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page 291 } Q. Will you tell us how long you have had these businesses in Arlandria?

A. My father and brother started the one in Beverly Plaza in 1941.

Q. 1941?

A. Yes, sir.

Q. When was the other, the Drive-In?

A. We built the Drive-In in 1954.

Q. Fifty-four?

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page 294 }

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Q. I don't want to interrupt your train of thought, but now we have got to the water in Mount Vernon Avenue up against the storm doors. Just tell the jury what next happened as far as the water was concerned.

A. Right, sir.

We always, from habit, we always watch the back because when the water is rising in the street, this happens all the time; but when the water starts coming in the back then we know we have problems. We always keep our eye on the back, and towards the latter part of the evening, I refer to probably a couple of hours later, an hour and a half later—

Q. What time was this?

A. It was between 8:00 and 9:00, I would say, in approximation. I could look out the back of the store behind the shopping center. I mean, looking to the northeast, east northeast, approximately looking down towards the creek, and when the water starts running down that, coming down behind the gas station and runing parallel to the Mount Vernon Avenue and behind the shopping center, then we know we have problems and we always watch that, and when that starts running down there, when it comes down it comes down

page 295 } like, just like a torrent because it brings everything with it.

George Faigen

The fact of the matter—

page 296 } Q. Well, now, you tell them what happened that night. Did it come down there that night?

A. Yes, sir.

We stood out there, we watched the water and the water started pouring down. We could see the water as far as we could visibly see. It was just pouring down behind the gas station and coming right down there on the driveway behind our plant and continued right on down the street and just pouring down as if you'd turned on a fountain. When that happened—

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page 297 }

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Q. Well, now, how did the water get in your store, if you know?

A. Yes, sir, I know exactly. It was as high as my neck line, sir, and thanks to the facilities of the Fire Department, they threw rope in there and we pulled ourselves out in the latter part of the evening with the rope.

Q. It was as high as your chin?

A. I was able to swim through it. I couldn't touch the floor at the center of our plant, and we are right in the center at the low point there.

Q. All right.

Now, you said that you had left your car somewhere.

A. The car was in the front; yes, sir.

Q. And what happened to the car?

page 298 } A. That washed on down outside the next morning and the water went down about eight or nine stores down.

* * * * *

Q. Mr. Faigen, you obviously did get out of your store sometime that night?

A. Yes, sir.

page 299 } Q. What time, approximately?

A. I got out in a rowboat with the Fire Department.

Q. They brought you out in a rowboat?
A. Yes, sir.

* * * * *

page 301 }

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Q. Oh, you mentioned water before, do you recall any other floods out there from the time you all went in in 1941?
A. Yes, sir. I would say it was about every two or three years.
Q. What did you say?
A. I cleaned hangers and picked up mud for every two or three years.
Q. Well, do you remember the dates of any of the prime floods, do you remember? If you don't,—
A. I wasn't there in the flood of '54, I was in the service then. I had just come home from the Army two days afterwards and I saw the results of it.
Q. I see.
A. But since then I've seen the floods. I've been through two or three.
Q. What results did you see in the flood of '53?
A. All our equipment was inoperative. Everything was full of mud. All the machines were under water and all the help was sitting around washing hangers or else
page 302 } trying to recoup whatever we could. I came in a few days afterwards.
Q. You don't know what the high water mark was then?
A. Yes, sir, the wall was still up there.
Every flood was a bad flood, but they just each one just went a little higher. You could see one water mark and then you see one overlapping and one overlapping. They just kept getting higher. They were always there.

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page 307 }

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Whereupon, ALBERT SMALL, having been first duly sworn, was examined and testified upon his oath as follows:

Albert Small

DIRECT EXAMINATION

By Mr. Boothe:

Q. Will you please state your name?

A. Albert Small.

Q. And are you the Mr. Albert Small who owns the part of the shopping center at Arlandria?

page 308 } A. Yes, I am.

Q. And as a matter of fact, your shopping center is south of Mr. Loftus', is it not?

A. Yes.

Q. As a matter of fact, I think Hayman's store is the first one in your shopping center coming down from the north, is it not?

A. Hayman's used to be in there, yes.

Q. Hayman's used to be in there?

A. Yes.

Q. And Rogers' Mens Wear and Mr. Wolin's also in there?

A. Yes.

Q. Is Brentano's Book Store in there?

A. It used to be in there, yes.

Q. And the Young Fair used to be, is that still there?

A. No, they moved out.

Q. They moved out.

Then above the south of Bruce Street, I believe you have Peoples Drug Store, do you not?

A. Yes. We have eight large stores from Bruce Street south.

Q. South. Do you know what those stores are?

A. Yes.

page 309 } Q. What are they?

A. Peoples Drug Store, Young Fair, H. L. Green, Top Notch TV Stamps, Kinney's Shoes, ABC Liquor Board and the Giant Food Store.

Q. Giant Food Store.

Now, some of those that you mentioned are—up to the liquor store and the Giant—are plaintiffs in this case?

A. Yes.

Q. And they were—these stores that we've mentioned—were tenants of yours at the time?

A. Yes, sir.

Q. Now, Mr. Small, when did you build this shopping center?

A. 1947.

Frederick H. Bennett

* * * * *

Q. And were you present on the night of August 20, 1963 when this flood occurred?

A. No, I was not.

Q. Did you go down there afterward?

A. The next morning.

page 310 } Q. I see.

And what did you find?

A. I just found utter chaos. It was just the most awful thing I think I've ever seen. It just made you sick to see it.

* * * * *

page 311 } Q. All right, sir.

Now, after 1947 what, if any, rains or storms—

A. We had rains. I really don't know of any flooding. In '53 I knew of the flood. The creek overflowed and flooded quite a few of the stores.

page 312 } Q. Your shopping center is on little higher land than Mr. Loftus', is it?

A. Well, if I may point it out to you—

Q. Yes.

A. I built these stores first, next to Loftus. It was about a year before I built—

Q. I think you are pointing to Mr. Loftus here.

A. This is Bruce Street, isn't it?

Q. Yes.

A. These are the four stores that I built first (indicating), and these. Whenever there is a flood, these were completely flooded and all the way down through this store they get flooded. From here down, there is no flooding.

Q. At least that has been the history?

A. That's been the history.

Q. You say the four northernmost stores are not flooded?

A. No, the southernmost, they don't get flooded.

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page 314 }

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Whereupon, FREDERICK H. BENNETT, a witness on be-

Frederick H. Bennett

half of the Plaintiffs, was called and, having been duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

By Mr. Boothe:

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Q. Where do you work?
A. I work for Brill's Supermarket.
Q. Are you Assistant Manager out there?
A. Assistant Manager.

* * * * *

Q. Were you in the store on the night of August 20, 1963?
A. I was at the store all day long that day and next day.
Q. Will you tell the jury just what happened, in your own language?
A. On that day, it was raining constantly all day long, very heavy rain, and late in the evening around six o'clock, I would say, at the rear of the store it started fill-
page 316 } ing up and in this area where the Warner Towers is now—it was vacant then—the water started filling up in that area.

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page 317 }

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Q. What did you say the high water mark was on the store?
A. On the inside of the store near the front end, I marked it as I watched the water rise at the window, rise inside the window and when it made a point where it was equal, I marked it.
Q. What was the high mark—
A. 38 inches.

Q. In the store?

A. I measured it later after I had—

page 318 } Q. Since you have been with Mr. Brill, have you had any floodings prior to 1963?

A. I was in Mr. Brill's second store on Mt. Vernon Avenue, up in the Del Ray section in '53 when they had a big flood there then, and I came down that afternoon, I guess it was around six or seven o'clock, to see if I could help and see what damage there was to the store there, and I had to leave my car several blocks away and wade into the store, to help him at that point and I helped him clean up that night, too.

Q. I see and between '53 and '63 did you have any flooding?

A. We have always had fear of water—

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page 320 }

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Whereupon, LAWRENCE V. BELL, having been previously sworn, was examined and testified on his oath as follows:

DIRECT EXAMINATION

By Mr. Boothe:

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Q. Do you do part-time work now?

A. Part-time work, Roger's Men's Wear, yes, sir.

Q. Is that a store in the shopping center?

A. Arlandria section.

Q. Shopping center?

A. Yes, sir.

Q. How long have you been work at Roger's Men's Wear?

A. I have been there since '51, September.

page 321 } Q. September '51?

A. Yes, sir.

Q. Did you work there full time?

A. Yes, sir.

Q. For a long period?

A. Up until last July.

Lawrence V. Bell

Q. Last July.
Were you at the store on the night of August 20, 1963?
A. Yes, sir.

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I was in there, water practically up to here.
Q. Up to how far was that?
A. Right up to my chest. I was yelling for all bent for election. Some kid happened to be walking by outside. I don't know what he was doing out there in that water. It was two or three fellows out there swimming in the street. This kid heard me yelling.
He says, "Do you want help?"
I says, "I do."
"Well, then," he says, "I will get it."
Just then the water got so heavy and so strong
page 326 } the bottom of the front door caved in. That came in, just washed everything down.
Q. How did you get out yourself?
A. Well, after this boy asked if I wanted help, he sent the firemen from the next block after me; said there was a man in the store down there, go down and get him.
So they came down in a rowboat and took a pick axe and broke the rest of the door out, told me to come on out.
I says, "I am not coming out to step on those live wires down there."
He says, "They will only sting you."
I says, "Not going to sting me in my bare feet; no, sir."
So he says, "If you won't come out, I am going to come in and get you."
He was a pretty good-sized boy, over six feet. He came in and picked me up and threw me across his shoulders and carried me out and threw me in the rowboat. I was scared.

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page 327 }

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CROSS EXAMINATION

By Mr. Crockett:

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Q. Now, in 1953 to 1963, did you have any similar experience?

A. We had visions of a flood coming quite a few different times. The water came up.

Q. Were you ever flooded?

A. In '53 we had a foot and a half of water into the store. We lost quite a bit of merchandise then.

Since that time, from '53 to '63, everytime we had a big heavy rain we were always calling the Police Department to come down and tell us about the creek. I have done that fifty times, I guess.

Q. Between that time in '53 and August 20, '63, did you ever get any flooding in your business there?

A. Yes, sir.

Q. To what extent was it?

A. Well, I would say six to eight inches.

Q. When was that?

A. Well, that was, I can't give you the exact date on that, sir.

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JOHN V. ARBAN, having been previously duly sworn, was examined and testified upon his oath as follows:

John V. Arban

DIRECT EXAMINATION

By Mr. Boothe:

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Q. Your building is to the north of Reed Avenue?
A. That's right.
page 331 } Q. West of Jefferson Davis Highway?
A. Yes, sir.
Q. All right, sir.
You say you have been in there since 1937?
A. That's right.
Q. Have you had any flooding problems?
A. Not prior to '42.
Q. Then after '42 did you have any?
A. We had water rising in our yard but never what I would call a flood.
Q. Until what time?
A. 1953.
Q. '53?
A. Yes.
Q. There was a flood in that year, is that correct?
A. Yes, we had a bad flood.
Q. Would you describe that?
A. We had water in spots about seven feet high, by the watermarks.

* * * * *

page 332 } Q. All right, sir. What about 1963?
A. 1963 we had a flood again.
Q. How high was the watermark then?
A. I would say about four foot six.

* * * * *

Q. Were you there during the time of the flood at night?
A. We had the flood during the day in the afternoon, late afternoon.

John V. Arban

Q. I see. In '63?
A. Yes.

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Q. We won't talk about the damages.
Without running down your place, was your place constructed on part of what was the old Alexandria Dump?
A. No, sir.
Q. It wasn't? South of that?
A. South of it.
Q. South of that.

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page 338 }

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Mr. Boothe: May it please the Court, we would like to read two short excerpts from the minutes of the meeting of the City Council of Alexandria. The first minutes are taken from a *regulr* meeting held on Tuesday, December 9, 1952, at 7:30 p.m.; Mr. C. L. Watkins, the City Engineer; Mr. Philip B. Hall, Director of Public Works.

Mr. Watkins remarked: "This area was flooded approximately every five years." He is referring to the Four-Mile Run area. Mr. Hall declared that no matter what was built on this land, there would be flood conditions, and thought all persons involved should be apprised of this fact.

The second minute is taken from a meeting—a special meeting of May 7, 1953, held at 10:00 a.m., and reads as follows:

"The Hume tract was discussed, as were the problems on Mount Vernon Avenue, Commonwealth Avenue, and Four Mile Run at Hunting Creek.

"Mr. Watkins declared the question of relief on Four-Mile Run, in his opinion, was one of the most serious
page 339 } situations confronting the City. The City Manager stated the flood was unprecedented in the

memory of the people of Alexandria, and that a little in excess of 5 inches of rain had fallen in a very short period. He remarked that due to the foresight of Mr. Watkins, the forces of his department were on the job almost immediately. These men did a tremendous job. Also the Police Department did a wonderful job.

Mr. Willard desired to bring to the attention of the Council that every department of the City went into action with full forces and deserve commendation."

That was May 7, 1953.

* * * * *

Whereupon, FRANKLIN F. SNYDER, *haveing* been previously sworn, was examined and testified upon his oath as follows:

page 340 } DIRECT EXAMINATION

By Mr. Boothe:

* * * * *

Q. And are you just retired?

A. I retired from the Government job, yes, sir.

Q. From a Government job?

A. I am now a consulting hydrologic engineer.

Q. Will you tell us *that* hydrologic or hydrology means? You are a hydrologic engineer. What does it mean?

A. The broad meanig of hydrology is the science dealing with the currents, the distribution and the transmission of water on the earth's outer layer.

* * * * *

page 349 } Q. What else did you do in making your exhaustive study of this flood of August 20, '63?

A. Of course, the main interest centers in the ponding area between Mt. Vernon Avenue Bridge and the Route 1 Bridge, so I proceeded to see if I could reconstruct the conditions there as closely as possible.

There are just too many unknowns for a direct solution, so the solutions tend to be indirect because of that.

Franklin F. Snyder

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Q. After you had plotted the total inflow against time, what did you then do?

A. Well, the objective was to route it through the ponding area to see whether I would check the values that reserve. That is one thing we had fairly good measure on, the maximum level reached at the ponding area. In an ordinary case this is not very difficult. This, as you realize by now, this is not ordinary.

You have the control of that ponding area, which is rather complicated.

I will start at the river. First, you have the tidal fluctuations in the river. And the elevation of the tide does affect the amount of water that goes throughout the culvert at Route 1. Then you have Memorial Bridge coming upstream. In other words, it takes some loss of headwater to force the water through that bridge. That raises the water as you come upstream.

Then you go through the conduits underneath
page 354 } the railroad tracks and the culvert inflowing,
and the culvert at Highway Bridge, Route 1.
That still doesn't get you into the ponding area; that gets you into a constricted chanel that runs from Commonwealth Avenue down to the highway, Route 1 Highway Bridge.

So you have to take care of the friction and head losses in that channel before you get back up to this pond where the water was fairly near level in the pond. Every place else tends to have a slope.

So without attempting, at the moment of describing the techniques, I used fairly standard hydraulic methods of computing the losses through these successive structures up to the pond. Well, that then gave me a relationship that I could begin my routing with.

Q. When you say "losses at these points," you mean reductions in the amount of water that would go through these points?

A. No, speaking of elevation or head losses. In other words, the things that drive the water downstream is the elevation, it lowers and elevates because that energy is being used to push it downstream.

Q. I see. Excuse me. The head losses at all those points, then you got out to the ponding area?

page 355 } A. Yes, with those relationships established, then I was ready to start routing the flood through the ponding area.

Q. I see.

Now you are ready to write?

A. Yes. That, of course, there were so many unknowns there—

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Q. I see, sir. I see.

Now, then, from your study—let's go back to the rainfall for a minute before we finish with that now.

From your study of this area, your study of these records, in your opinion—or do you have an opinion, as to whether or not a rainfall of this size could be predicted, just the rainfall alone?

A. Yes.

Within the time I've watched closely here, and I'm sure by looking through the record I could find out this, but since 1950 there have been three storms in this area of the same type, of about the same size.

Q. I see; as far as the storms are concerned?

A. Yes, as far as rainfall is concerned.

The flood conditions depend on where these things center. In other words, the 1953 storm centered south and east of the Four Mile Run basin, and the '66 centered upstream, but the rainfall characteristics and the fact that there is a, say, approximately three inches give or take some of rain falls in two or three hours, that's what makes the flood.

In other words, for a flood on Four Mile Run

page 379 } which has a concentration time of about two hours, there has to be heavy rainfall in a two or three-hour period, otherwise there won't be a flood.

Q. Now, moving on from the rainfall itself to the flood discharge of August 20, 1963, have you made any computation as to the frequency of that discharge in this area?

A. I made a study of the—at the gauging station. I did not

study the discharge that I arrived at down at Route 1, but I did study estimated by synthetic procedures what the flood frequency picture would be at the *guage* under the present state of development at the basin.

Q. That's at Parkfairfax?

A. Yes.

Q. The Parkfairfax gauge?

A. That's right.

Q. And what were your conclusions as to the frequency of discharge and the present conditions at that gauge?

Mr. Crockett: If Your Honor please, I wonder if this shouldn't be relayed as of the time of the storm we're talking about here. I understand here that you're calculating something beyond August of 1963?

The Witness: I think I said, I may not have said, I meant to say that I made these computations with the
page 380 } basin as it was existing in August 1953.

Mr. Boothe: '63.

The Witness: '63, yes.

I assumed the amount of imperviousness that would be existent then and the amount that would have storm sewers and that sort of thing.

By Mr. Boothe:

Q. Would you tell us what that word imperviousness means?

A. Well, if something is pervious, it means that water gets through it; and if it's impervious, the water doesn't get through it.

Q. I see; so you took into consideration the extent of the imperviousness, the inability of the water to get into the land?

A. That's correct.

Q. I see, all right, sir.

A. I'll give both values.

Q. Yes.

A. My estimate of the peak discharge of the *guage* which was around 9,000 has a recurrence interval of about 25 to 50 years. The geological survey estimate would be just, on the basis of these computations, would be about 100
page 381 } years.

Q. About 100 years. Yours was how much, 20?

A. Between 25 and 50, this is a—this business of recurrence interval is so misunderstood so much that some people

just don't even like to talk about it, because it can lead to an awful lot of confusion.

You design a project for a certain recurrence interval and then, if that flood happens to happen the next year, why they tell you that you said it wouldn't happen for a hundred years.

page 382 } Q. Well, that's not what a hundred frequently means.

A. No.

Q. Let me ask you this. As an area develops and more, what happens to the frequency in a given area?

A. The recurrence interval becomes more frequent—

Q. Does that—

A. The recurrence interval decreases as the flood of a given size recurs more frequently.

Q. First of all, the recurrence frequency under the conditions in 1963, on August 20, 1963, under those conditions was less than the recurrence frequency would have been back in 1937?

A. Oh, yes. The recurrence interval for this size—for this size flood, you mean?

Q. Yes.

A. —was much more frequent, of course.

Q. And as the basin develops, you say the recurrence frequency is going to get less and less?

A. It does. How much less it gets depends on the wisdom of the people that continue the development. For instance, Arlington County has showed pretty good judgment in buying land along the streams and making parks out of them.

But if the real estate pressure ever got high,

page 383 } and they put those streams into conduits, then it all comes down here in a shorter time and it is going to get worse down here.

So, you can't say how much further development there will be, but there is bound to be some of the routine development. It is not fully developed yet.

Q. Now, Mr. Snyder, I think you have explained your method of analyzing the flood. We have gone back to the rainfall and to the discharge, and let's get on back down now to the ponding area where you brought us some time ago.

During your study, did you make any calculation or estimates of the filling of the so-called Four Mile Run Bay?

A. Yes, sir; that is, the engineers did under our—my indirect supervision. I did not actually do the detail measurements.

Q. Did you check the figures which were—
A. Yes.
Q. —submitted by the engineers personally?
A. Yes, sir.
Q. What determination did you come up with from those calculations?
A. Well, the cross-sections that were used have been already placed in the record. The total capacity of the
page 384 } ponding area below the level that the August 1963 flood reached, that's what was determined.
Q. I see.
A. In other words, the total volume underneath that plain, reaching from Mt. Vernon to Route 1, as shown on the profile that was also entered, as of 1915.

The Court: As of 1915 the amount of 68 million.

By Mr. Boothe:
Q. Just a minute. As I understand it,—
A. I mean—
Q. The 1915 date is the same, is it not, as '29?
A. Well, that's what I understand; yes, sir. I will call it 1915-1929. There was 68,159,000 cubic feet, which is the equivalent in cubic yards of 2,524,000.
Q. 2 million—
A. —524,000 and in acre-feet that was 1,565. Acre-foot is the volume of water that it takes to cover one acre one foot deep.
Q. I see. acre-feet, all right, sir.
Now, that was 1915-1929.
A. In 1963 the total volume below the flood plain of August '63 was 36,367,000 cubic feet, 1,300,000—one figure you have here is illegible. I believe it is 1,347,000 or 1,348,-
page 385 } 000.
Q. All right, sir, cubic yards.
That is cubic yards and 835 acre-feet.

Mr. Crockett: If Your Honor please, I hate to interrupt at this point, but I am just wondering if Mr. Snyder could indicate the area he is talking about in '29 and the area he is talking about in '63. What does this encompass? What parts is he talking about?
The Witness: Will you move those exhibits back over here?
Mr. Boothe: He wants me to show the area you are talking about.

Franklin F. Snyder

The Witness: Wouldn't you prefer it on the plan rather than—

By Mr. Boothe:
Q. That's right.
Why don't we just wait for cross-examination? I think that's more orderly.

The Court: You can go ahead and do it. But suppose you do that.
Mr. Boothe: Let the counsel for the City ask you on cross-examination.

page 386 } The Court: Suppose you come back here and if you would—I believe you have done this before —just in general terms tell us the general area that was used in arriving at these conclusions that you have arrived at.

The Witness: Mr. Boothe, I think you better—
The Court: Just do it in words as distinguished from trying to point out.
The Witness: Well, it is the area—the *think* we wanted to know in order to do this flood routine was the volume of space occupied by the water at the time of its highest level during the flood August 20, 1963, and we confined it to the area bounded by between Mt. Vernon and Route 1.
We didn't—
The Court: Mt. Vernon Avenue and Route 1?
The Witness: Yes.
The Court: That's what you are concerned about, Mr. Crockett.
The Witness: Primarily.
The Court: Is that what you are concerned about, Mr. Crockett, the geographical area that he based his studies on?
Mr. Crockett: If he can be more precise on acres set up in here.

page 387 } The Court: Suppose, then, you take care of it in cross-examination.

By Mr. Boothe:
Q. What effect, or do you have any opinion as to what effect this loss of capacity was in the area from Mt. Vernon Avenue to Route 1, of 835 acre-feet—of 730 acre-feet, a loss of 730 acre-feet between '29 and '63?

Franklin F. Snyder

A. Having all the other studies preliminarily is of the study described made, it was merely a case of another routing, this time using what is known as a capacity curve, which shows the amount of storage in the pond for a particular elevation. This you need when you are routing through the pond and I had been using in the studies I have described so far, I was using the actual 1963 conditions. So all I needed then was the pond capacity curve for the 1915-29 conditions.

And it is just a matter of a couple of hours' work to route the flood through again and find out what the maximum elevation of the pond was.

Q. All right then, as I understand, you took all the conditions that existed in this area as of August 20, 1963, except you considered the so-called ponding area as it was in 1929?

A. Yes, sir.

Q. And you routed the flood through it. Now,
page 388 } what was the result of your calculations in that regard?

A. The pond level was lower three feet.

Q. The pond level was lower by three feet.

A. By three feet; yes, sir.

Q. So if you had had that full pond area on August 20, 1963 that you had in 1929, the whole flood or pond level would have been three feet less?

A. Yes, sir.

Q. Would it be fair to say that according to your calculations that in a store where they said the level was 38 inches, it should have been nearer 2 inches?

A. If it was—this might or might not have been true of the Brill Store, which is upstream of Mt. Vernon Avenue.

Q. Yes.

A. But it would be generally true of everything east of Mt. Vernon Avenue.

Q. I see, sir.

That was true with all the conditions of August 20, 1963, except the ponding area existing?

A. That's right, I kept—well, I made two computations. One—I made one with the channel restriction that's in there now. It hasn't been described quite right. I should have given you an answer of 3.2 feet for the conditions,
page 389 } in everything back to the way it was in 1915-29.

I made two routings: one with a channel constriction as it is now and one without.

Q. What do you mean "channel constriction" where?

A. From Commonwealth Avenue down to the Route 1 Bridge.

Q. I see. That added .2 feet to it?

A. For this particular flood.

Q. I see.

A. For the flood as it actually happened, it adds about a foot and a half. The difference in elevation from just upstream of the bridge, up to the pond, is around a foot and a half in a flood this size, due to the channel.

Q. Let me see if I understand this. Due to the constriction here in the chanel itself, that made a difference of how much?

The Court: I think what Mr. Boothe intends is to have you repeat what you said before.

The Witness: I said about a foot and a half, but if he is going to pin me down, I prefer to give him a figure.

By Mr. Boothe:

Q. I didn't understand the difference frankly between the .2 feet and the foot and a half, and I want to have it clear in the Court's and the jury's and our minds, too.

A. I can hardly explain it myself.

page 390 } Q. Well, the big thing is, as I understand, a part—together with the construction it would have made a difference of about 3.2 feet.

A. With everything back in the way it was.

Q. In the old days, in '29?

A. Yes.

* * * * *

By Mr. Boothe:

Q. Mr. Snyder, after making all of your studies and calculations, did you arrive at any conclusions, or do you have an opinion as to what factors caused this flood of August 20, 1963?

A. Yes, I guess so. First, you have to have the rainfall. Then, the stage of development of the basin is a major factor.

And, of course, in this case it is, I think, fairly page 391 } well agreed that from the exhibits and everything, that it is fairly well developed. And then in this particular basin, the condition of that ponding area has a rather significant factor on floods and then the restrictions through the highway and railroad is another factor.

Franklin F. Snyder

Q. And you are not denying that the outlet down at the tailend should be greater, is that correct?

A. It certainly should for current conditions.

Q. And in order to solve the flood problems which exist now—this is one of the solutions that you feel?

A. That's part of the solution.

Q. Part of the solution?

A. Yes.

Q. Namely, the widening of the culverts under the road and under the railroad?

A. Yes.

Q. But actually, as I understand your testimony, if this ponding area had been in 1963 what it was in '29, the effects of the flood would have been minimized?

A. Yes, sir; I think that's a fair statement. Minimized, you couldn't say they would be eliminated. Undoubtedly there would be some damage, but certainly it would have been decreased considerably.

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page 392 }

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Q. One other question I do want to ask you, too.

In determining and predicting the frequency of floods now, not rainstorms, what kind of records, over what period of time do you need adequate records to enable you to do this?

page 393 } A. Well, if you are working from the stream flow record itself, if you want to estimate what a fifty year flood is, you should have at least that long a record. Even then it isn't real good, but it is done so much, it is done so much worse than that, that you would almost compromise and say if you had a fifty-year record you could estimate a fifty-year flood. But some people take a fifteen year and start talking about a thousand year flood. This is done, but it is not really—

Q. How old are these flood records, these gauge records upon which these predictions are based?

A. The gauge record there at West Glebe Road was established in 1951.

Q. I was going to ask you specifically about that. The gauge record at what you call the Parkfairfax gauge, the West Glebe Road gauge, was established in '51?

Franklin F. Snyder

A. Yes, sir.

Q. So it had been there for twelve years at the time of the August '63 flood, been there now for about sixteen years?

A. About sixteen years.

Q. And why are these gauge records so new? The Geological Survey did just not get into this practice or

page 394 } what?

A. No, they have been doing this since the turn of the Century, but the small area, it is only recently that the interests in—the urban picture has opened up—that is, the tremendous urbanization that the Country is witnessing. And originally, most of the gauges were established on the larger streams. The smaller streams haven't are only now getting at least part of the attention that they should get.

Q. Would you tell us whether or not you can really establish much more than a—have any predictions as to much more than a fifteen or sixteen-year old storm, just from the gauge at Parkfairfax?

A. Well, the record, the length is inadequate, of course, but you can't determine—there is nothing that you can determine that you know what you have got because the basin has been changing. The record itself is no good for determining anything in the way of frequencies because there has beeen a tremendous change within those sixteen years. So what have you got? You can study the record and apply a technique to it but you don't know what you have got, to come out with some figures, because your basin has been changing all the time.

Q. And depending upon how much more

page 395 } changes, it will be less of an accurate indication of what to expect, is that true?

A. After the basin is fully developed, then you get thirty-five-fifty years, then you can begin to estimate it.

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page 396 } CROSS EXAMINATION

By Mr. Crockett:

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Q. Yes, sir.

Well, have you made any computation from data or figures available to you as to what percentage of run-off came into Four-Mile Run from the City of Alexandria?

A. Not by political subdivision; no, sir. I have an estimate of how much run-off came below the gauge, which was somewhat near the same drainage area. But it's from both sides of the creek.

Q. Now, both sides of the creek—

Do you mean that would take into consideration the Alexandria side and the Arlington County side?

A. That drainage area happens to be—

Well, it's a little bigger than the figure you're talking about. It's—the gauge—

Well, I'll subtract. The gauge is 14.4, so there is 4.9 square miles below the gauge.

Q. Four point nine square miles below the gauge.

But now, of course, part of that 4.9 square miles is in Arlington County, isn't it?

A. I say, though, that 4.9 square miles is the
page 398 } only part of the area close to what you're talking about that I've made any estimates for.

Q. I see.

A. I didn't care much for my computations where the water came from.

Q. Whether it came from Arlington or whether it came from Alexandria?

And then at the Parkfairfax gauging station, at that point all the water—the bulk of the water came from without the City of Alexandria; is that correct?

A. If you mean more than half, sir, yes. The bulk of it yes. I don't know what the percentage is—a large percent.

Q. All right, sir.

Now, as I understand it, you were away in August of 1963 and you got back in September?

A. No. About the 30th or 31st of August practically.

Q. All right, sir.

And you had a rainfall gauge, I believe you said, at your home? And that was not much help to you for some reason or another?

A. Well, it was overflowing. I mean, I—.....

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Q. All right.

Now, you have mentioned in your testimony that there are a lot of unknowns in arriving at your determinations.

Would you state, Mr. Snyder, what hydrograph in the states of the stream flow at successive times did you use in making your studies of ponding?

Now, we start up here at the Parkfairfax gauging station. At what points did you make your calculations for your hydrograph to get your rate at U.S. Rout 1?

A. I brought it merely into the pond. In other words, the gauge—I lacked 15 minutes to get it down to beyond Mount Vernon Bridge. Now, the whole rest of the area I made in one lump computation, based on averaging the distance that the water would have to travel from one place to get into the pond. I lumped them all together, though, and used my judgment as to what the time lag would be for that 4.9 square miles.

There is one major drainage channel. That's the Long Branch. That's about half, I believe, of the total.

Q. All right.

Where is Long Branch? Can you point it out?

A. It's not on those pictures. It's upstream.

page 400 } It's a little closer to west Glebe Road than it is to Mount Vernon Avenue. It comes in from the north—

Q. It comes in from the north from Arlington County; does it not?

A. Yes.

Q. All right, sir.

And that, you say, accounted for a little more than half?

A. Well, yes. I have Long Branch 2-1/2 square miles, and the remainder 2.4.

Q. Well, now, Long Branch 2-1/2 square miles—what do you mean by that—2-1/2 square miles grades in Long Branch?

Franklin F. Snyder

A. It's the drainage area at the mouth where it flows into Four-Mile Run.

Q. If I understand correctly, 2-1/2 square miles drains into Long Branch, which in turn drains into Four-Mile Run?

A. That's what it says here. I assume that it—

It's been a long time since I did that, but—

I did it in two pieces—Long Branch and the remainder.

Q. All right.

page 401 } Now, do you know of your knowledge that Long Branch is solely and exclusively within Arlington County?

A. Well, I couldn't swear it was, but I am willing to agree that it probably is entirely in Arlington.

Yes, the only place it couldn't be would be some extremities, and I just don't see how it could possibly—

I see. All right, sir.

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Q. Now, of course, Alexandria is at the lower end, the lower end of the Four-Mile Run basin. And you have mentioned the effect of development and build-up and the run-off as affected by the drains and storm sewers in the area.

page 403 } Would you state, Mr. Snyder, how, in your opinion, the storm drains in Alexandria affected the peak flow in the flood of August 1963?

A. Well, I can again compare very easily the flow from this lower 4.9 square miles, which is representative of both sides of the creek, I think.

Q. All right, sir.

A. As I said before, I don't care where the water comes from. I merely wanted to derive the inflow from the total drainage basin below the gauge. And that I have. I can tell you when it peaked with respect to when the main stream peaked, and that sort of thing.

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Q. All right, sir.

So there were 3 inches on the 19th. We are starting on the 19th up to noon of the 20th?

A. Yes, sir.

Q. All right, sir. From that time on, what was the rainfall records for the storm of the 20th of August?

A. This began about either a little before or a little after 8 p.m.

At the Four Mile Run gauge they show here 3.3 inches.

Q. Now, that 8 p.m. is that daylight or standard time?

A. That's daylight.

Q. So that means 7 o'clock standard time?

A. Yes, sir.

Q. So you had there, then, about 6.3 inches in 24 hours?

A. Yes, sir.

Q. Now, I believe your testimony was that if this storm had been spread out over the 24-hour period, there would not have been any flood?

A. Yes, sir.

Q. The amount of rainfall, the volume of rainfall in the given period of time is a factor that is taken into consideration.

page 408 } A. That's critical, yes.

Q. I believe you also testified that there are other considerations, Mr. Snyder, besides the rainfall, one of which would be the effect of tides in the Potomac River?

A. Yes, sir.

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Q. It just so happened that on this occasion the peak—

A. Tide.

Q. —and the peak discharge hit at the same time, or approximately?

A. Very nearly, yes.

Franklin F. Snyder

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Q. Mr. Snyder, I would like to direct your attention down here—I suppose to use this map is the best means of pointing it out—and ask you to start here at the Potomac River and work to the west, and tell the jury, if you would please, what effect the culvert under the Memorial Highway Bridge—now this is the Mt. Vernon Memorial Highway going along here—what effect did that culvert have on the elevation of the ponding area?

A. At what time, sir?

Q. At its peak.

A. At the time of the peak outflow?

Q. Yes, sir.

A. Just a little under three feet, about 2.9-something.

Q. Do you mean the Memorial Highway Bridge affected the elevation of the water by that amount?

A. Yes, sir; it is the function of that amount of water going through and, of course, this is the maximum effect with this—

Q. Did you make any study, calculate what the maximum outflow through the culvert at Memorial Highway was?

A. No, sir. And let me correct myself. I in-
page 412 } cluded the losses through the timber trestle through that which would be about a quarter of a foot.

Q. All right, I was going to work on up to that next.

A. I lumped that in with the Memorial Bridge.

Q. We did via Memorial Bridge and before you get into the RF&P culverts, under the railroad there, there is a timber trestle?

A. Yes, sir.

Q. Tell the jury what effect that had on the ponding area up here that we are talking about.

A. All these timber piles in the water tend to apply a restriction there, just like the culverts or anything else do.

Q. And these downstream obstructions affect the ponding area here in Arlandria, and you are calculating in each one as you go along?

A. Yes, sir.

Q. Let's move on from the Highway Bridge to the RF&P

trestle to the culverts underneath the railroad tracks—the railroad culverts under that, and ask you what effect that had, or those trestles under there had on the ponding level of this flood.

A. It is about 2.7 tenths loss through the culverts.

Q. 2.7.

page 413 } All right, then there was a loss under the Route 1 Bridge?

A. They are one structure. This is the whole business.

Q. I see you used that entirely. Did you make an inspection of the bridge over Mt. Vernon Avenue in Alexandria?

A. Yes, sir.

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page 415 } Q. You don't know what is the capacity of the Mount Vernon Highway Bridge in cubic feet per second?

A. No, I have never estimated it. I certainly have always assumed it was perfectly adequate for this flood.

Q. So you feel that the bridge is adequate for this storm?

A. The August, 1963. I think this is just—I didn't compute it, but the 1,200 square feet certainly sounds like it is adequate if it were all effective.

Q. Based on that, you would then feel that the Mount Vernon Aveue Bridge is adequate for the '63 storm?

Would you come to the same conclusion with respect to the bridge on Glebe Road?

A. It does not have proportionately as much waterway opening as the Mount Vernon Avenue does, but the water there was—I really ought to check my notes on that—it was pretty well filled up during the flood. I have some notes on it, but I just don't remember what they are. I didn't really come prepared to discuss that far upstream—because I also studied the bridges all the way on upstream and I have a book with those notes in them, but I don't have that book with me.

Q. All right, Mr. Snyder, I would like to direct

page 416 } your attention with more detail to your previous testimony with respect to a differentiation that you arrived at between 1,565 acre feet in the 1915-'29, as opposed to 835 acre feet in 1963. I would appreciate it, sir, if you would kindly step down to this map and point out to me, if you can, just what area you are referring to.

A. Would it be better to work from the cross sections

sheet? This is the outline of flooding as it was presented by Mr. Brady, the outer limits of the flooding. These are the cross sections that we used, which are shown here in profile.

Q. Just to clarify this, before we go any farther, these limits here are the limits of the flooded area of 1963?

A. Yes, sir.

Q. Now, I just want to be certain how you arrived at your computations. Are you taking the area in this entire section as it was in 1915 and comparing it with how it was in 1962?

A. Just at the Mount Vernon Avenue.

Q. Just up to Mount Vernon Avenue?

A. Yes.

page 417 } Q. Let me see if I follow you. You are taking the area then east of Mount Vernon Avenue and encompassing this entire area here?

A. Yes, sir.

Q. Is that your testimony, sir?

A. Yes, it is under the flood plain. Here you see the line on here, the high watermark, the fourteen? It is the volume between that flood plain and the ground line.

Q. Let me just be certain that I have got this clear. You have taken, in making your computations, *and* area east of Mount Vernon Avenue?

A. Yes, sir.

Q. As shown on this map?

A. Yes, sir.

Q. That is shown on Plaintiffs' Exhibit 5-B?

A. Yes.

Q. Now, you will note, Mr. Snyder, that you have taken into your considerations in arriving at that a larger area that lies in Arlington County?

A. Yes, sir.

Q. Is that correct, sir?

A. Yes, sir.

page 418 } Q. So, therefore, you are basing this figure that you have arrived at on the difference in elevation in Arlington County as well as that in Alexandria east of Mount Vernon Avenue?

A. Yes.

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Q. Now, we are going to consider the area east of Mount Vernon Avenue and within the City of Alexandria. In that you have got Mount Vernon Avenue here and you have got Commonwealth coming in right in here and then you have Route 1. Do you know the area of land, total,
page 421 } overall land area between Commonwealth Avenue and Route 1 that you took into consideration?

A. It wasn't subdivided that way, no. I can give you the volume.

Q. You don't know the number of acres in here?

A. No, this was done from the cross sections. We checked for the 1963 condition; we checked it by planimeter contour also, but there again we didn't subdivide it so I could, without redoing the planimetering, give you that answer.

Q. You don't have any record as to how much land area lies in here between Four Mile Run, Commonwealth Avenue, and Route 1?

A. No, sir.

Q. Do you know how much land area lies between Commonwealth Avenue, Four Mile Run and Mount Vernon Avenue?

A. No, sir.

Q. Now, you are then basing your computation on the '63, Alexandria and Arlington map, in attempting to determine the difference between the acre feet as you arrived at it on the 1915-1929 ten-foot U.S.G.S. contour map, is that right, sir?

A. Yes, sir.

page 422 } Q. What did you come up with, sir? What were your findings in that?

A. We have already read them into the record. You want the split between the two jurisdictions?

Q. I would like to know what your answer is as to Alexandria.

A. Yes, sir.

For 1915—again would you like them in all three units?

Q. That would be all right, sir.

A. 1915-1929 condition, the Alexandria portion was 46,088,000 cubic feet; 1,707,000 cubic yards; 1,058 acre feet.

1963 conditions: The Alexandria portion was 26,879,000 cubic feet; 996,000 cubic yards; 617 acre feet.

Franklin F. Snyder

page 423 } Q. All right, sir.

If my quick arithmetic is accurate, when we're considering only the Alexandria portion, rather than having a 730-acre feet we have a 441 acre feet dimunition.

The Court: Mr. Crockett, do you need this witness at the board anymore?

Mr. Crockett: No, sir, he can take his seat.

The Court: All right, come back and take your seat now.

The Witness: I didn't subtract them that way. I'll do it if you want me to check your subtraction.

By Mr. Crockett:

Q. You said 441, did you?

A. 441, is that what you said?

Q. Yes, I think that's what I said.

A. That's what I'd get.

Q. All right, sir.

Now, did you use that figure and run it through your computations to make any adjustments with respect to what effect that had on the level of the pounding?

A. No, sir.

Q. Well, you must admit, sir, that it had a substantial effect on it.

page 424 } A. Every acre of it is equal as far as I'm concerned, I don't care where it is.

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Q ***

You have testified with reference to a recurrence frequency.

A. Yes, sir.

Q. Of this storm, and I believe that your estimate was based on 25 to 50 years?

A. Yes, sir.

Q. Is that correct, sir?

A. Yes, sir.

Q. And you indicated that the U.S.G.S. estimate was more like a hundred years storm?

A. Yes, sir, a hundred-year flood.

Q. A hundred-year flood?

A. Yes.

Q. All right, sir.

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By Mr. Crockett:

Q. Now, when you made your calculations with respect to 1929, did you take into consideration the downstream situation as they existed in 1963, the Mount Vernon Avenue Bridge and the railroad trestle, the culverts under the R.F. & P. Railroad?

A. The condition was that everything stayed the same.

Q. The same as what, sir?

A. As it is in 1963.

Q. As it is in 1963?

A. Except for the pounding area.

Q. All right, sir.

A. The flood's the same, the culvert's the same in which they were.

page 428 } Q. You say everything was the same?

A. No, I didn't say everything was the same. I'd have to—I didn't—I'd have to check into that.

Most things were the same, I think, but, regardless of that, that's the assumption that is made, that everything was the same except for the pounding area.

To throw another unknown in there would only add additional confusion.

Q. All right, sir.

As I understand it, just to verify this once and for all, your original computation that you gave on direct examination involved the entire area east of Mount Vernon Avenue and including Arlington County to Route 1?

A. Yes, sir.

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REDIRECT EXAMINATION

By Mr. Boothe:

Q. Mr. Snyder, what was the effect of the widening and straightening of the channel and the enlarging

page 429 } of the bridges, if any, on the discharge from Four Mile Run Bay on out through the culverts to the river?

A. Well, the effect would be similar to that effect, the gen-

eral effect, of urbanization. It would shorten the concentration time a little bit and get the water into the pounding area a little faster and with a little higher peak.

Q. Would it get it out any faster?

A. Only to the extent that it got in faster. There's an action of reaction. In other words, if you put it in an hour earlier, why, the outflow would be an earlier—or an hour earlier, too.

Q. Would you tell the Court this: In standard engineering practice, if you want to empty a basin of water or if you want to keep a drainage area open all the way, do you start improving it in the middle or at the bottom?

A. Well, the circumstances may alter this. It would depend on a lot of things, but, of course, ordinarily the logical thing to do would be to start at the outlet and work upstream.

Q. But this would depend on circumstances?

A. Yes.

Q. Well, in this particular case would not standard engineering practices dictate opening the outlet be-
page 430 } fore you improve the inflow into the basin itself?

A. It would certainly be a good engineering recommendation that that be done; yes, sir.

Q. Now, I just want to understand what you meant when you made some answer or an answer to Mr. Crockett's question about the height of the tide at Memorial Bridge. I think you said that it had caused a loss of three feet of some kind?

A. Almost three feet, a little less than three feet, a head loss through the trestle and the Memorial Bridge. I lumped the two together.

Q. There was a head loss?

A. Yes. In other words, the elevation at the riverside and the elevation upstream would be that three-foot difference.

Q. Oh, I see, there'd be a three-foot difference between the elevation upstream and the elevation at the river

A. Only I didn't care about breaking it down between the two factors. All I had to have, I wanted to know what the tail water was at the conduits, that was it.

Q. I see.

Well, you didn't mean it raised the pond three feet?

A. No, sir.

Q. Or anything like that?

A. No, sir.

page 431 } Q. Just that there was a head loss of three feet?

A. Yes, sir. It's all part of the outlet, in determining the outlet capacity. That's one of the factors.

Q. I see.

Now, the Glebe Road Bridge, is that east or west, upstream or downstream, from Long Branch?

A. It is upstream.

Q. Upstream from Long Branch.

So the water from Long Branch does not go under the Glebe Road—

A. No, sir.

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CROSS EXAMINATION

By Mr. Crockett:

Q. Mr. Snyder, I just want to get this clear, this 3-foot loss of head, under the RF&P and the trestle there, what effect did that have on the ponding area?

A. It depends on the time. It depends on the discharge involved. If you want, I'll look and see—if you want to know exactly at the time of the peak when the discharge—

Q. Well, let's say that you had a maximum height in here at a certain time in the ponding area.

A. Yes.

Q. This loss created by restrictions under the railroad and under the railroad trestle and under the Mount Vernon Memorial Bridge, have you computed what effect that had on this back-up, or this bonding?

A. I say it's different at different times. In other words, I have a rating curve which shows— A major portion of it is transmitted *upstrea*, if that's what you want me to say.

page 433 } The Court: Would the peak period be what you were interested in, Mr. Crockett?

Mr. Crockett: Well, I'm interested at the peak of the flood, the height of it, what effect—

The Court: The peak of the tide was at 10:10, as I understood it; so, suppose you give it at that time, if that's what you—

The Witness: I'm not just sure how I am going to do this, though. At that high stage, I don't know how— The effect at the high stage there is unit-for-unit, in other words, but the discharge changes—

By Mr. *Crocket*:

Q. I understand. So, the only way I know to get it would be to route the flood through with— You can't change the tide for one ten-minutes and then assume—

Q. I understand. Can you say, as a generality what effect the three-foot loss of head had in general, or as a general proposition on the ponding area of the flood?

A. Because you see, when the flow is very small, the flow in the pond area would tend to be the same as a (the) river; there is no loss of head in the bridge if the tide went out a foot in the ponding area; there is no flood going
page 434 } on, so the thing varies, depending on—
I don't know quite how to, other than to route the flood through with a different tide. I don't know quite how to tell you what the effect would be on the ponding area.

Q. Let's assume—

A. —because if you change the tailwater half a foot, and you kept the flow coming into the pond at a constant flow indefinitely, eventually there would be a half a foot difference in the pond, but there is a time element involved in this, which the only way I know to evaluate it would be to introduce the flood with a different tidal cycle, but there is a major portion of that loss that is transmitted to the pond.

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page 436 }

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Q. Are you aware of the ownership of the Mount Vernon Memorial Highway?

A. I assume it's a Federal— The Park Service has jurisdiction over it, the Federal Government. At least, I know they are the ones that give you parking tickets and whatnot through there.

Q. All right, sir. Are you aware of the ownership of the trestles and culverts under the RF&P Railroad?

page 437 } A. I don't know the corporate structure par-

ticularly, if that's the name of the railway—I assume the railroad owns them. Someone may own the railroad.

Q. I will ask you, Mr. Snyder: Have you ever had occasion to go through the culverts under the RF&P Railroad?

A. We planned to go through them. I don't know whether it was the lack of gas masks, or what. We wanted to go, but we never did quite make it.

Q. Do you know what arrangements had to be made in order to get through there?

A. I assume they would have to be made with the railroad.

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REDIRECT EXAMINATION

By Mr. Boothe:

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Q. I would like to direct your attention, first of all, to the left side of the exhibit, to the culvert existing at United States Highway Number 1.

A. Yes, sir.

Q. This is before you get to the RF&P culvert—and I will ask you whether or not you are familiar with the 1963 high-water level across the pond.

A. Yes, sir.

Q. And, can you state whether or not actually west of the so-called "Helms" restriction, the high-water level was higher than it was at the culvert?

A. Yes, sir.

Q. What did that tend to show?

A. Well, there is a restricted channel there of about 40-45 feet wide at low tide, at low-water level.

Q. Can you refer to that. Is that the one I referred to as "No-Man's Land," "No-Man's Channel"?

A. Yes. It is construction from just below Commonwealth Avenue down to the Route 1 Bridge.

page 439 } Q. What is the significance of the fact that the 1963 high-water level there just upstream, or

west of the restriction was higher than the level at the culvert?

A. Well, it has a net effect of making the pool a little bit higher than if it would—if a restriction would not be there. Actually, the total drop there is a friction loss and a velocity head factor. The velocity head factor, you can't get rid of because you are going from practically—you either develop it in the channel or you develop it at the culverts.

The velocity above Commonwealth Avenue is practically zero velocity, or one foot a second. Anything you want to call it—it won't affect your answer very much. But when that water gets channelled into a small channel, it immediately picks up velocity, and it takes energy to give it this velocity, and that energy is represented by the drop of the surface approximately—

Q. I see.

A. So, there is a drop down there from Commonwealth Avenue, down to just upstream of the Bridge, of around a foot-and-a-half or so; and then as it goes into the culvert, there is another draw-down again, a velocity
page 440 } head-loss. So, by taking out that construction, as I visualize it, you don't recover that foot-and-a-half; you primarily recover only the friction loss part of it, because the velocity head part you're going to lose anyhow when it goes from zero into the high velocity of the culvert—you're going to lose it all at one time instead of losing it in two pieces.

Q. I see.

A. I think that's why I , when I made my computation—

Q. Let me ask you this question: If Mr. Crockett really wants it, can you reroute this storm at its peak through the culvert so as to give him any idea of the effect of the tide at the peak?

A. Yes. We would have to agree on what tidal condition he wanted it done under.

Q. Would this be possible to do overnight, or is it too big a job?

A. You mean, on Tuesday night?

Q. I mean, from a practical viewpoint, is it—

A. It is not impossible.

Q. Well, if he doesn't ask for it, I won't ask for it; but it could be done?

A. It could be done.

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Whereupon, GAIL A. HATHAWAY having been previously sworn, was examined and testified under his oath as follows:

DIRECT EXAMINATION

By Mr. Boothe:

Q. Would you please state your name.

A. Gail A. Hathaway.

Q. And where do you live, Mr. Hathaway?

A. 416 Van Buren Street, University Park, Maryland.

Q. Where is your office?

A. 1010 Vermont Street (sic), Washington, D.C.

Q. And what line of work do you pursue?

A. I'm a consulting civil engineer.

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Q. Did you reach any conclusions as to the effect of the imperviousness of the ground, the area and the time of travel between storm and floods, and how that would be affected by this development?

A. Well, it's been reported in, from various sources that in 1938, the area—that is the entire drainage area
page 454 } of Four-Mile Run— was about 38 percent under development, or subdivided, I should say—not all developed. And at the present time, around 90 percent.

Q. Was that in '63?

A. That's in '63, yes, sir.

Q. Of course, the percentage of imperviousness,—That is, you might say, and area is pervious if some of the rain that falls soaks into the soil, but if it is imprevious, it runs off rather quickly.

A. That depends. The percent of run-off or the percent of imperviousness depends on the type of development, whether it's homes, apartments or commercial developments or indus-

trial developments and I think that it might be said that the early development or percent of imperviousness might have been as low as 5 percent—it might be 10 percent; but it is gradually reaching the saturation point as far as buildings are concerned, and it might go as high as 40 percent.

At least, I noticed with a great deal of interest that Chester Engineers, in their design, used the factor of 40 percent of imperviousness in computing their run-off from their design storm.

Q. That report was in 1943. Their estimate was as of what time?

page 455 }

A. That was as of '43, but they were estimating the ultimate, what they considered to be pretty close.

Q. They were anticipating the future?

A. Yes, they had to do that in order to make an appropriate design.

Q. Ground is impervious, as I understand, when water will not soak into it?

A. That's right.

Q. What has been the effect of development of this area over the last twenty years, up until '63?

A. Well, the floods have, for the same type of storm, under the situation, say, such as 1963, August 1963, your floods—there is a greater percentage of run-off, more of the rain that falls on the ground runs off, and it also reaches the lower end much quicker.

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Q. Now, before we leave the subject of the Chester Engineers' Report, this is a report that was given to the City of Alexandria, was it not?

A. That's to whom it was addressed, prepared for the City of Alexandria.

Q. And they analyzed those two floods of '42

page 457 } and made certain recommendations, didn't they, to prevent a recurrence?

A. They prepared what they called a "design *foood*" and recommended certain improvements.

Gail A. Hathaway

Q. Do you recall what those improvements were?

A. I can't recall from memory, sir, but they recommended a channel 50 feet bottom width, with water flow at a depth of 10 feet.

Q. Let me just ask you this: One recommendation was widening of the channel, wasn't it?

A. Yes, and preparing—

Q. Without getting into details—

A.....—widening and straightening. And I note with interest that the present straightening of the channel follows very closely to their recommendation.

Q. Does that?

A. Follows very closely to the Chester Engineers' recommendation.

Q. Right.

A. They also recommended an enlargement of the conduits between the culverts underneath Highway Number 1 and RF&P Railroad, to almost double its size. They recommended two 20-foot-diameter tunnels, or barrels, you might call them.

page 458 } Q. Practically double the size. They recommended doubling the size of the culverts?

A. That's right. They computed the capacity of those with a head of, elevation of about 7.7 in the ponding area—that's mean sea level—7.7, to be 12,000 cubic feet per second. Their flood, as I recall, was around 11,000.

Q. They were imagining a flood of around 11,000 cubic feet?

A. That's the hypothetical flood they computed for design purposes.

Q. What else did they recommend besides the channel and the culverts?

A. Well, they recommended, and have quite a paragraph in their report pertaining to the retension or retaining as it was at that time, of the pondage area, which as you has been reduced practically in half.

Q. They did recommend retaining all the ponding area?

A. That's right.

Q. In that connection, too, you mentioned that one of their recommendations was straightening the channel. Will you tell the Jury whether or not it is good engineering practice, where a drainage area is being improved, to start to work at the bottom or at the top?

page 459 } A. Well, of course, there may be circumstances

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which would alter the normal, natural procedure that we might call "good engineering practice." I would certainly not start in the middle of a project to straighten and improve it and without providing an adequate opening at the lower end.

It would be normal procedure, in my opinion, to start at the lower end, because by improving the channel in the middle of it, they might help people who are just up-stream from the improved area, but they certainly do dump the water much faster into the lower end, where it cannot be released.

Q. In the case we have got before us here, in the Four Mile Run Basin, the channel was improved, as I understand, from the westerly portion of Alexandria on down to Commonwealth Avenue.

A. That's right, sir.

Q. Yes, sir, and what effect would that have on the water, would it stop it or speed it up?

A. It would speed it up.

Q. I see.

A. —and aggravate the situation in the ponding area.

Q. As I understand, from your testimony, it page 460 } would help the people back up here?

A. Yes, above the improved section.

Q. They would get their water faster, but what about the effect down in here?

A. It would make it much worse for those people—I wouldn't say how much—but it would be worse off than as if the channel had not been improved in the middle.

Q. And, in your opinion, the part for the retention of the ponding area which Chester recommended, work should have been begun down at the lower end, is that correct?

S That would be, in my opinion, yes, sir.

Q. To get the water out to the river?

A, Yes, sir. Of course, the Chester Engineers' Report and recommendations contained, provided for taking care of the lower end.

Q. I see. They made three recommendations to be done simultaneously.

A. I assume that the actual procedure in the construction work would depend upon many things, many factors.

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Q. Did you also make some calculations as to the amount of fill which had been placed in the ponding area between 1930 and 1963?

A. I took—

Q. (continuing)—in conjunction with others?

A. Yes. I took quite an interest in that, in the preparing of the cross-sections and the surveys, although I did not do them myself. I have checked their calculations of the area involved in the fill, and the area in the ponding area, and I don't know whether that answers your question completely or not.

Q. I just wonder what conclusions you came to?

A. Well, it's quite obvious that the ponding area has been reduced. Just one second: I will obtain those figures.

The ponding area overall has been reduced about 46-1/2 percent.

Q. From '30 to '63?

page 463 } A. From '30 to '63, that's right, sir.

Q. Do you have any opinion as to what effect that was upon the storm of August 10, 1963? To put that question a little differently, assuming the conditions existing as of August 20, 1963, except for the ponding area and assuming that that was as it had been in 1930, do you have any conclusions, any opinion as to what the effect would have been on the flood of August 20th?

A. I can merely say that I have worked very closely with Mr. Snyder, and his calculations show that around 3 feet.

Q. And you think they are reasonable?

A. Oh, yes, sir, definitely. I have great confidence in his ability along these lines.

Mr. Crockett: Your Honor, if your Honor please, I am reluctant to interrupt in Mr. Hathaway's testimony, but I think we have got to pinpoint what area he is talking about with respect to this matter, and where it is located.

The Court: I assume that will be Mr. Boothe's next question, to tie it in.

Mr. Boothe: Yes, sir.

By Mr. Boothe:

Q. Would you please tell the Court and Jury what you mean when you refer to the "ponding area?"

page 464 } A. It is the area within the dashed black lines on the exhibit, the map.

Mr. Crockett: If your Honor please, I wonder if counsel may approach the bench on this?

The Court: All right.

Mr. Boothe: You are now referring to the flood area?

The Court: He wants to approach the bench.

(Bench Conference was had off the record.)

By Mr. Boothe:

Q. Mr. Hathaway, do you want to clarify what is in this area shown on this Exhibit 5-B? What do you understand this area to be?

A. That outlines the area flooded by backwater from the August 1963 flood.

Q. When I was speaking to you, or referring to the ponding area, I meant Four Mile Run Bay.

* * * * *

Q. (continuing) In other words, I asked you to assume that the conditions in 1963 were the same as they were in that year, or assuming conditions the same as they were on August 20, 1963, except Four Mile Run Bay being in the page 465 } shape it was in 1930—when I asked you whether or not you have any opinion as to what the effect would have been if it had been left alone?

A. Well, that's the result of the routings—would have been the three feet which Mr. Snyder reported.

Q. What I am talking about, though, when I asked you what the ponding area was, and you pointed out this larger area, you were referring, then, to the flood area of August 20 1963?

A. That's right.

Q. Now, what is the area where the Chester Engineers recommended that the City obtain or retain all of its pondage, in 1943?

A. Yes. I think that is outlined very well on the other areal mosaic.

Q. Can you tell us—

A. Well, it's in the lower end, and it is, the ponding area area is outlined on the old maps, which is flooded by mean high tide at elevation around 2-1/2 or 3 feet above mean sea level.

Gail A. Hathaway

Q. East of Mount Vernon Aveue, is it, or west of Mount Vernon Avenue, or where is it located?

A. It's mostly between Mount Vernon Avenue and US. Highway No 1

page 466 } Q. And north or south of Glebe Road?

A. Well, it's mostly south.

Q. South?

A. Yes.

Q. I think that's very clear. Now, was it at your behest that these cross-sections were made?

A. Well, I can't recall distinctly, but I think it was our first view that we should have those cross-sections made in order to obtain an indication of the change in conditions between 1915 and 1929 versus 1963.

Q. Changes in what area?

A. Mostly in the ponding area, plus the overflow *airea* which is naturally flooded when these high floods come along, such as in 1942, '53 and '63.

Q. Is it correct to say, when you were referring to the ponding area, you were referring to roughly Four Mile Run Bay?

A. That's right.

Q. Not the whole flood area— You weren't trying to bring in other flood—

A. You're correct, sir.

Q. —other flood matters?

page 467 } A. Of course, you must remember, when a flood comes along the water is not necessarily limited to what we originally referred to as the ponding area.

Q. Oh, no, sir. I understand.

A. It rises much higher and spreads out over quite a bit of the original aleuvial valley.

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Q. What is the effect of that constriction in the channel just before it gets to U. S. 1?

A. That holds the water back, of course, from getting to the culverts. There is a distinct dropoff, as shown on the

profile there, of around one and a half feet due to that constriction, restriction, I guess you call it.

Q. So that in back of the restriction, the high watermark at the time of the August 20, 1963 flood, was about a foot and a half about what it was at the culvert?

A. That's right, or just upstream from the culvert. There is a draw down as it dips into, the water surface dips into the culvert.

Q. Upstream, not counting the drawdown, but
page 469 } above the drawdown?

A. That's exactly right.

Q. Foot and a half difference. I don't want you to mention any dates, but did you confirm the fact that there was a one and a half foot drop between the point west of the noman's land constriction, and the culvert by measuring the high watermarks of another flood?

A. Yes, sir. I didn't—

Q. Don't mention any dates.

A. I didn't actually do the measuring, the instrumentation of getting the exact level, but I spent considerable time in the field *locationg* high watermarks which would—

Q. For another flood?

A. For another flood which would confirm and substantiate this profile showing identical dropoffs.

Q. The other flood was a little bit lower than this?

A. It was about one and a half feet below that.

Q. One and a half feet below?

A. Yes, sir.

Q. However, that meant that the ponds or the water level was all over, was about a foot and a half below?

A. Precisely.

page 470 } Q. Correct?

A. Yes, sir.

Q. Here, at the point west of the constriction, the high water level was still a foot and a half above the high water level at the culvert?

A. That's right. In that neighborhood.

Q. In that neighborhood.

Just one last question, Mr. Hathaway. Do you have an opinion as to the causes, cause or causes of the flood of August 20, 1963?

A. Well, you might first start off by saying it was heavy rainfall but not unusual rainfall.

However, the development of the basin, straightening of the

channel and the may buildings that have been constructed in the area, increases the amount of runoff, the percent of runoff. And I think—I don't think, I know—that for similar rainfall and probably even less amount of rainfall, you will have continuing floods and increasing in severity and also in number—that is the time between them will decrease.

Q. Will decrease?

A. Yes, sir.

Q. What do you think caused, though, this one

page 471 } of August 20, 1963? What, in your opinion?

A. Caused the flood, you mean?

Q. Yes, sir, besides rainfall and the development of the area and the channel?

A. Are you speaking of the flood or the flooded area?

Q. The flooded area, beg your pardon.

A. I want to be clear on that.

I would say that the constriction by the Helm's property, from Commonwealth Avenue to the Highway Number 1, added to it a foot and a half as the profile shows. The rest was due to the restrictions below that, underneath Highway Number 1, the R. F. & P. Railroad, the Railroad trestle, and the bridge under the Memorial Highway, George Washington Memorial Highway—Mount Vernon.

Q. Do you feel that filling in of the ponding area made any difference?

A. That added to it; there is no question about that. Computation will show that they were a contributing factor to the increase in the level of the flood, high level of the flooded area, I should say.

Q. Now, the Chester Engineers in their report

page 472 } routed a flood of what velocity through this area?

A. I don't know the velocity. I know I can tell you their design flood.

Q. I asked you probably the wrong word.

A. I would say—

Q. They routed some sort of a flood right through their area, trying to recommend what should be done, didn't they?

A. Yes, sir. They had a flood, their design flood, the peak discharge at, from Shirley Highway to Long Branch, was 9,100 cubic feet per second. From Long Branch to Ridge Road, which is Mount Vernon Avenue on below, was 10,738 cubic feet per second and from Ridge Road or Mount Vernon Avenue to U.S. 1 was 11,105 cubic feet per second. I am sorry.

Under Route 1 to the Potomac they used a value of 11,920 cubic feet per second. That was their design flood.

Q. That was their design?

A. That's right.

Q. They claimed that if you followed their recommendations, it would take care of that big a flood?

A. That's right. They designed for that.

Q. Now, if the recommendations of the Chester
page 473 } Engineers had been carried out by the City,
what effect would that have had on the flooding of August 20, 1963?

A. The flooded area upstream from U.S. 1, according to their calculations, would have reached an elevation of 7.7, mean sea level. That is U.S. Coast and Geodetic Datum—7.7.

And 7.7—well, I haven't outlined that on the map, but it was certainly less than 14.3 or thereabouts.

Q. This is a question I haven't asked you before—maybe I should. What I am trying to find out now is: you have described to us the storm that Chester Engineers envisaged?

A. That's right.

Q. For protection against which they made recommendations?

A. That's right.

Q. What I am asking you is, if the recommendations of the Chester Engineers had been carried out, the culverts doubled, the ponding area retained, channel straightened, then how would the flood of August 20, 1963 have behaved?

A. It would have passed without any damage.

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CROSS EXAMINATION

page 474 } By Mr. Crockett:

Q. Mr. Hathaway, as I understand your testimony, in June of 1964 you were requested by Mr. Boothe to conduct a study of the problems related to the Four Mile Run, is that correct, sir?

A. That's correct.

Q. Prior to that time, had you had any direct dealings with the area so far as studies, engineering work, in the Four Mile Run basin?

A. I did not.

Gail A. Hathaway

Q. Now, what is the square mile area of the entire Four Mile Run basin?

A. There are various figures, but I think it is 19.1 or 19.2 square miles.

Q. All right, sir.

Of that 19.1 or 19.2 square miles, what amount of that, what square miles, lies in Alexandria?

A. Around three square miles.

Q. All right, sir. About three.

A. think it is 3.1, as I recall.

Q. 3.1 percent?

A. Square miles, not percent.

Q. Yes, sir. Square miles.

page 475 } Of the entire drainage area, I understand you have made a complete survey or personal inspection of the entire Four Mile Run basin? You testified that you had gone up to where it starts on several occasion?

A. I made a visual inspection.

Q. Visual inspection?

A. On several occasions.

Q. I believe you testified you had gone up to the source of Four Mile Run?

A. Yes, sir.

Q. Would you tell the jury where the source of Four Mile Run is?

A. Well, I can't distinctly recall where it is. You mean the uppermost point?

Q. Uppermost part, the source that you visited two or three times.

A. I don't believe I have a map with that outlined on it, but I don't recall precisely the street intersection, if that is what you are asking for.

Q. Do you know what county it is in?

A. It is in Fairfax County.

Q. Where does it go from its source in Fairfax County?

page 476 } Would you describe to the jury the course it takes from its source to the point where it empties into the Potomac River?

A. Well, of course, the answer not being facetious, it runs downhill, of course.

Q. Where does it go? What jurisdictions does it pass through?

A. It passes through, from Fairfax, through Arlington

County, then into, generally down the line between Arlington County and the City of Alexandria.

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Q. Now, getting back to the development of the area, you have testified that the entire Four Mile Run basin consisted of approximately 19 and some acres of which a part is in Fairfax County and a part is in Arlington County and 3.1 square miles are in Alexandria.

Now, in the entire 19 square miles is there development throughout that area?

A. Not entirely; the Army-Navy Country Club which is not developed; there are certainly parks in Arlington County and there still remains certain areas that are not developed.

The estimate, as I said, is around ninety percent, which may be high.

Q. All right, sir.

A. I don't think anyone has counted the houses and apartments and things like that.

Q. But from your general observation, would page 483 } you be in a position to say whether or not the development is pretty much uniform throughout the drainage area?

A. I think that's a pretty fair statement; yes.

Q. In other words, that is the development between Arlington, Alexandria, Fairfax and Fairfax County, and I believe the Run also goes into Falls Church, doesn't it?

A. Yes, sir.

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Q. I see.

Now, Mr. Hathaway, I believe you testified that, if you had been, had had control of this situation in making the improvements that you thought were necessary in this matter,

that you would have started at the lower end down here?

A. That's correct, sir.

Q. Now, tell the jury just what this lower end is, the lower constriction in the channel.

A. Well, the constriction is, there are two twin culverts some 480 feet long.

Q. Sir, I hate to interrupt you, but I was referring now to the furthermost constriction next to the Potomac River.

A. Well, that's the Washington Memorial—no, Mount Vernon Memorial Highway. The area of that is 630 square feet.

A. All right, sir.

Now, do you consider that a constriction and

page 489 } a contributing factor in the pounding area?

A. Yes, sir, it has some effect.

Q. All right, sir.

Do you have any knowledge as to who controls or owns the Mount Vernon Memorial Parkway?

A. It's the Government of the United States through the Department of the Interior and the National Park Service.

Q. All right, sir.

Have you made any examination or independent check of any record that would indicate the maximum capacity that the Mount Vernon Avenue Bridge would handle?

A. No, I haven't.

Q. In cubic feet per second?

A. No.

Q. But, nevertheless, you feel that it is not adequate itself?

A. That's correct.

The computations show—which I have not made—both of the Corps of Engineers and by Mr. Snyder that there is backwater effect from that restriction.

Q. All right, sir; now we go on the the next constriction, and what is that, sir?

A. That's a pile trestle bridge of the R. F. & P. Railroad.

page 490 } Q. Suppose you describe that trestle bridge to the jury in a little more detail.

A. Well, it's a series of pile bends. I don't know the span, I suspect it's about 15 or 16 feet, and the piles are—it's quite wide, I think it carries two or four tracks—I don't recall precisely, and, of course, that presents an obstruction. It's driven into the stream bed. That presents obstruction to

the floor. It catches debris, of course, which would assist in backing up the water.

Q. All right, sir.

Now, this trestle, as I understand it, is—the railroad tracks go over top of it?

A. That's right, sir.

Q. And is it down adjacent to the R. F. & P. culverts, where it goes in under the culverts?

A. I would say it's 150 feet or 200 feet below downstream from the outlet of—

Q. That is east towards the Potomac River?

A. Yes, sir.

Q. All right, sir.

Now, did you make a personal inspection of that trestle?

A. Yes, sir, on two occasions.

page 491 } Q. Tell the jury what you found when you went there to inspect it.

A. Well, the water was low at the time, nothing unusual at the time that I inspected it.

page 492 } Q. You mentioned a moment ago in response to another question that there was debris lying around.

A. That's right, some debris, logs and sticks caught in the piling.

Q. I see.

A. But not to any great extent at the time I was there.

Q. In other words, this trestle is not a free-flow—

A. That's correct.

Q. —situation. There are piles driven down into the stream bed?

A. Yes.

Q. These piles would create something that these logs or debris or whatever you have would catch on?

A. Yes.

Q. All right, sir.

Now, then, we have the underpass under the R.F. and P. Railroad tracks.

Would you describe those to the jury and tell them how you consider that a constriction and also as a contributing factor to this ponding area?

A. The culverts—that is, the culverts as far as the size is concerned—start at the middle of U. S. Highway

page 493 } 1 and continue some 480 feet down the stream.

Gail A. Hathaway

I think the record, the area of *thos* twin culverts, have already been put into the record.

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page 495 }

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By Mr. Crockett:

Q. I hope it will not make it more difficult, but I am going to take each one separately and ask you if you ascertained the amount of head loss that occurred when the stream went under the Mount Vernon Memorial Highway Bridge?

A. They have not been completed, to my knowledge, separately.

Q. Have not been completed separately.

Would you tell me what has been computed and I will ask you what that is based on, how you have computed it?

A. I didn't compute it. I just made the statement a moment ago that I had reviewed the computations of the Corps of Engineers and Mr. Snyder, so that I have made no direct computations myself.

Q. I understand that, but are you using those computations in arriving at your conclusions?

A. Yes, sir.

page 496 } Q. All right.

Then do you know what those computations are?

A. I have just stated that I have reviewed them.

Q. What are they? That is what I am asking you, sir. What is the head loss under this area as you have computed it or as you have reviewed the computations?

A. I can't recall precisely the figures, but somewhere in the neighborhood of five feet.

Q. Now, Mr. *Hatahway,* this may be a little difficult, but I would just like for you, just for a moment, in giving you a hypothetical question based on your engineering experience and so forth, to tell the jury what would have happened in 1963 if it hadn't been a memorial highway bridge, if there hadn't been a railroad trestle, and there hadn't been a culvert under R.F. & P. and there hadn't been a United States Highway 1?

Gail A. Hathaway

Do you know?

A. No, but I would surmise that the flood loss or the flood heads in what we call the ponding area would certainly have been much lower. And just how much it would be, I don't know.

Q. Would there have been a flood?

page 497 } A. 11,000 cubic feet per second is estimated by Mr. *Synder* would create quite an overflow, but to what extent I am not prepared to say.

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page 498 }

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Q. In other words, it is your testimony then that the improvement in the channel follows closely the recommendation made by the Chester Engineering?

A, Yes, sir. The widths are much greater under your present plan, whatever your plan is, and whose engineering recommendations you are following, I don't know.

Q. They are in excess of the recommendations of the Chester Engineering?

A. They are in excess, but I assume that the depth of water is not as great as recommended by Chester Engineering.

Q. You are assuming. Did you take any checks or measurements?

A. I don't know what your calculations are for the present improvements. I have not seen any engineering reports setting forth those design figures and what floods you are designing for or anything. That has not been made available to me.

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page 500 }

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Q. Now, you have testified that the lower end is the Mount Vernon Memorial Parkway, isn't that correct?

A. That is the most—

Gail A. Hathaway

Q. Followed by the R.F. & P. matters?

A. Yes.

Q. Do you think that any further improvement that the City could have made in the channel or the bridges within the City of Alexandria would have prevented the

page 501 } flood of 1963?

Mr. Boothe: What is that question again? Would you repeat that?

The Witness: It is an iffy question.

Mr. Boothe: What was the question?

Mr. Crockett: I am asking Mr. Hathaway if, based on his engineering experience, he could testify as to whether or not any reasonable further improvement in the channel of Four Mile Run within the City of Alexandria, or the bridges passing thereover, would have effectively eliminated the flood of August, 1963.

Mr. Boothe: We don't object.

The Witness: I think that you are sort of placing me in the position of the City Council and the Government of the City of Alexandria, and I have no knowledge regarding what resources they had at hand to do anything in this respect so I think it is, in my opinion, not a proper question for me to expose myself on or render any opinion.

Certainly it would appear, if I can make this statement, that the City of Alexandria should have done something long ago in connection with this bottleneck because it was pointed out quite effectively in 1942 by the Chester Engineering Report.

page 502 } Q. You are aware, are you not, sir, that the alleged or so-called bottleneck that you are referring to lies under the railroad property and under the property of the United States Government, isn't that correct, sir? You are aware of that, are you not?

A. The two lower ones?

Q. That is what I am talking about.

A. Your statement doesn't apply to U.S. Highway Number 1 because the City of Alexandria as I understand it—I may be misinformed—has a hand in that.

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Q. All right; fine.

Now, I just want to be certain that we are talking about the area that you used in computing the difference in the level or the fill between 1915 and 1963.

Now, would you tell the jury—just more or less outline that entire area on this map.

A. You mean of the fill?

Q. Of where you—yes, the area that you computed the fill in.

A. Well, the fill was mostly all along in there, that side there, was filled—all along Four-Mile Run.

Q. All right, sir.

A. That's shown by these cross-sections.

The area occupied by Helms in through here, plus the area occupied by the school has all been completely filled.

Q. All right, sir.

Did you get beyond here? Did you go into any of these areas?

A. The marks show the limits of the crossings.

Q. All right.

page 508 } Then you took into consideration all these houses, and so forth, along in here?

Mr. Boothe: Your Honor, I object. If Mr. Crockett is trying to make the man say that he got it on fill in here, he's misleading him.

The Court: I think it's proper cross examination.

Mr. Boothe: Well, I would just like him to make clear what he's asking him. I don't know myself.

Mr. Crockett: The thing is this: He has already stated that he has taken into account in his computation of fill all this fill over here in Arlington County and then down to the lower limits of these lines on this map.

Now, is this the area between these lines that you have used in making your computation?

The Witness: I think I understand what you're asking for now. The area that we considered only the area under this 1943 high water line, which is shown on these—on each cross-section. I misunderstood your question. I'm sorry, sir. It's shown on this one, and you can, of course, transfer it below.

Gail A. Hathaway

By Mr. Crockett:

Q. Do you have a map showing that high water line?

Mr. Boothe: Mr. Crockett, did the witness mean 1943 or 1963?

page 509 } The Witness: Sixty-three, I think you said. Mr. Crockett: 1963.

The Witness: Yes. This is the '63 high water line. Well, the '63 high water line—the outline is shown by this.

Mr. Crockett: This is the high water line here?

The Witness: Yes—'63.

By Mr. Crockett:

Q. Well, now, this is the high water line of the flood.

A. That's right.

Q. But this isn't the area that you used in computing?

A. Only within the confines of where this line strikes, the cross-section.

Q. Well, can you show us on a flat map just where that area is? Can you show us on here just where that area lies?

A. That's a little difficult, but this one, for example, cross-section Number 3—here is the County Line. It's about—oh, each one of these sections is 500 feet, so I would say this was about 400 feet from cross-section three, would be a distance of about 400 feet, somewheres in here (indicating) on this one.

They have not been put on the map. That could be done, if you wish, so that we could outline the area on the cross-section to be put on this map quite easily, which would be the '63 high water.

page 510 } Q. All right, sir. You may take your seat. Now, what was your calculation of total volume of increase in the area that you calculated?

In other words, between 1915 and 1963—what was the total volume of increase according to your calculations.

A. Of fill?

Q. Of fill, yes.

A. You mean both Arlington County and the City?

Q. That first; yes, sir.

A. Well, Mr. Snyder gave you those figures, but I will repeat.

In 1915 the total ponding capacity was 1,565 acre feet, and that had been reduced by filling in 1963 to 835 acre feet. Those are the same figures that Mr. Snyder gave you

yesterday. I can give it to you in cubic feet and cubic yards, but I don't believe that's essential, unless you wish.

Q. All right, sir.

Now, those figures are the entire area—both Arlington County and Alexandria?

A. That's right, sir.

Q. Do you have any computations of the amount of fill south of Four-Mile Run or within the City of Alexandria?

page 511 } A. Well, in 1915 it would be the difference between—I'm sorry. It's 441, I think—441 acre feet.

Q. All right, sir.

A. The difference between 1,058 and 617. That value was referred to yesterday.

Q. All right, sir.

Do you have that broken down further as to the area south of Four-Mile Run and west—

A. That's in Arlington County?

Q. No; south of Four-Mile Run. That's in Alexandria—and east of Commonwealth Avenue. That is, this area that was mentioned in here that you said that Helms Concrete was on, and so forth.

A. I don't have that readily available.

The volumes and areas were computed for each one of these six cross-sections, but they don't precisely follow the line that you mentioned.

Q. So you wouldn't have—

A. I wouldn't have—

Q.—for east or west of Commonwealth Avenue?

A. Not broken down; no, sir.

Q. Do you have it broken down as to the volume of fill north of Four-Mile Run in the area that you computed?

page 512 } A. That's in Arlington County?

Q. In Arlington.

A. Yes, sir.

The Arlington County area in 1915 and '29—it's the same in both years—was 507 acre feet, and that's been reduced by 1963 to 218 acre feet, or a reduction of 289 acre feet, or 50 percent of the area—57 percent of the area that was available in 1915 and '29.

Q. All right, sir.

Now, Mr. Hathaway, do you know, or can you tell the jury what this fill consisted of? Was it man-made, or was it accretion, or what was it?

Gail A. Hathaway

A. I think—I wasn't there when it was placed. I have seen the excavations for this new sewage disposal plant and inspected those pits, but in general it's earth and gravel. It's dumped from some surrounding excavation, probably, for the construction of apartment houses and buildings.

Q. Apartment houses and buildings?

A. I'm not sure where it came from.

Q. This sewage disposal plant that you mentioned—can you *extimate* from what you observed of that as to what percentage that fill had to the over-all amount that you have indicated here?

A. Do you mean—

page 513 } Q. How much fill was that at the pumping station?

A. Do you mean at the Arlington County sewage disposal plant?

Q. I'm talking about the Alexandria pumping station.

A. I have no information on that.

Do you mean the small one by the school?

Q. The small one by the school in Alexandria, yes.

A. It's all lumped together in one figure.

Q. All right, sir.

A. That and Helms together—the fill under Helms property where their plant is.

Q. All right, sir.

Now, just a couple of questions, Mr. Hathaway.

When I was asking you about the downstream constrictions under Route 1 and R.F.&P., and so forth—you attempted to break it down. As I understand, the computation was based on the whole matter. Can I ask you this:

Let's assume that the culvert under U.S. Highway 1 was widened to a capacity that you would deem appropriate, but the channel or culverts under the RF&P Railroad remained the same, as well as the additional downstream obstruction, or constructions, what effect, if any, would it have on the amount of water that was able to escape through the RF&P?

A. Well, I could only take a guess at that.

page 514 } There would be some minor effect, because your constriction losses would be slightly reduced—not very much, but there would be some minor effect.

Q. Minor effect?

A. Yes.

Q. In other words, what you would, in effect, be doing would be to widen the entrance and then narrow it down to what's there anyway. Is that right?

A. Yes; that's right.

Q. And the only effect that would have would be some slight friction?

A. That's right, reduction in the length of the conduit.

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REDIRECT EXAMINATION

By Mr. Boothe:

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Q. I would like to ask you what would have happened if the City had maintained or increased the size of the ponding area which existed in 1930?

A. Well, if they had maintained the ponding area that existed in 1930, the flood would have been 3.4, I believe his figures were that he gave—would have been that much lower.

In other words, the entire ponding area would have been reduced by that level.

Q. And if they had doubled the size of the ponding area, what would have happened?

A. It might have been able to store the entire flood.

By that—don't misunderstand me, please.

If you doubled it, you couldn't make it deeper. You would have to extend it laterally.

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Q. Now, I want to ask you what would the effect be if the RF&P culvert were widened to the proper capacity and the

culverts under U.S. Highway Number 1 were left the same?

A. Well, I think the answer would be approximately the same, unless—well, it would have been—the same as '31.

Q. The same that existed in 1931?

A. It would have been a little bit more—the same as in 1931—so the flood would have been lower. I mean the flooded area would have been—

Q. In what year now?

A. Sixty-three I'm speaking of—would have been lower, but just how much I'm not prepared to say.

Q. I see.

A. But it seems obvious by reasoning that it would have been reduced.

Q. Well, now, from common sense and an engineering viewpoint, all those culverts should be widened, shouldn't they?

A. Well, I don't think there's any question about that, sir.

Q. I mean from the west side of U.S. 1 right

page 520 } on through the RF&P?

A. Precisely.

Q. Mr. Crockett asked you a question which you very modestly said you didn't think you were qualified to answer.

He said: "What should the City have done to cure the condition that existed there?"

Now, just presuming—don't get into worrying about anybody's power. The Court will take care of that.

What should the City have done to cure the condition that existed out here on August 20, 1963?

A. Well, I—

Mr. Crockett: If Your Honor please, that isn't a question, basing it on a hypothetical situation.

The Court: The question was: "What could the City have done," as I understood it. Is that correct?

Mr. Crockett: That's correct.

The Witness: Well, I'm not familiar with all the legal—

Mr. Boothe: I'm not asking you about the legal. I'd like you to answer his question from an engineering viewpoint.

The Witness: They could have taken steps to follow the Chester Engineering report and widen that out-

page 521 } let as early as—well, after the 1943 report.

By Mr. Boothe:

Q. And then what else?

A. Well, I presume they would be required to initiate some

sort of negotiations with the National Park Service and the Railroad to take out the trestles, and so forth.

Q. What about the ponding area. Of course in 1963 that was gone then; wasn't it?

A. Well, yes; but they had notice in 1943 to stop the dumping or the filling in the ponded area. Because you must remember that Arlington County was in that, too, you see.

Q. Well, then, your answer is that in '63, admitting the fill and everything else, your answer as to what they could have done in '63 was get those culverts widened. Is that right?

A. That's correct.

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RECROSS EXAMINATION

By Mr. Crockett:

Q. It wouldn't have done any good to widen Route 1—the underpass under Route 1, unless the underpass under the RF&P were also widened. Isn't that correct, sir?

page 522 } A. That's correct.

Q. This matter is more or less interdependent on each other; isn't it?

A. That's correct.

Q. For a proper solution?

A. Yes.

The Court: Your answer is "yes?"

The Witness: Yes, sir.

By Mr. Crockett:

Q. And further, just to clarify for the record, I understand that your estimate of the difference in ponding area between 1915 and 1963 was based on the area that you have indicated to the jury, which included a portion of Arlington County?

A. Yes, sir.

Q. And certain other developed areas in Alexandria?

A. That's right.

Q. You do not know when those areas were developed, do you?

A. You mean when the areas were filled?

Q. Yes.

A. No. I have no precise knowledge of that.

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REDIRECT EXAMINATION

By Mr. Boothe:

Q. Likewise, it wouldn't have done much good to have compelled RF&P, or gotten RF&P to widen its culverts, if the culverts under U.S. Number 1 hadn't been widened at the same time, would it?

A. That's correct; yes, sir.

Mr. Boothe: That's all.

The Court: You may step down.

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Mr. Boothe: Your Honor, the plaintiffs are drawing near the end of their case. I believe there are two prime things left.

We will want to refer to certain portions of the City Code. Now, of course, the Charter is the law of the State, and is a matter for the Court to instruct on. The Code itself we would like to have considered, to be put in evidence, Titles 28, dealing with Sewage Disposal and Drains; 33 dealing with Streets; and 23-33 dealing with Nuisances.

* * * * *

Mr. Murphy: Your Honor, so far as the Charter is concerned, obviously, the Court will take judicial notice of the Charter. We have no objection to any part of the

page 525 } City Code going into evidence. The only thing is, Chapters 28 and 33 include such a variety of things as air-conditioning systems, bootblack stands, telephone booths and house numbers, none of which I think is pertinent.

It would help, I think, if they could designate the sections of either of those two chapters they feel is in any way re-

lated to the case, and we would certainly allow that to go in without objection.

The Court: I assume you do have certain excerpts or paragraphs, Mr. Boothe, that you are—

Mr. Boothe: Yes, sir, although, the reason I mentioned the entire chapter was that the sections skip around a lot, and the requirements are in many other sections. There are only 23 sections in Chapter 28.

The Court: Well, in order to arrive at a solution to this quickly, could we consider, then, that any portions of Title 28, 33 and 23-3—

Mr. Boothe: Dash 33.

The Court: —Dash 33, would be received in evidence, and then Mr. Boothe could make the appropriate extracts, excerptions from the Statute, and then offer those into evidence, or actually put them in the record, if it's necessary to do it, or in the event it would be taken care of in the

page 526 } instructions, we would then solve the problem.

Mr. Murphy: Subject to this reference of this 23-33. This, I think, is the first time since the '63 flood we have heard any reference to that chapter, or to that section. It's also not been set out in the pleadings.

The Court: The nuisance section.

Mr. Murphy: —or either in the Motion for Judgment as amended, or in the Bill of Particulars where we asked for this particular type—

The Court: Then, as I understand you agree to any portions of Title 28 or 33, but you do not agree to any portions of 23-33.

Mr. Murphy: We're taken by surprise too, on that.

Mr. Boothe: I will withdraw my request for 23-33 and just rely on state law.

The Court: Does that resolve the matter?

Mr. Murphy: That's fine.

Mr. Boothe: Then, the last thing, your Honor, as you know, the law requires that we prove the giving of notice to the City of the claims in this case.

The Court: —within a 60-day period.

Mr. Boothe: Sir?

The Court: Within a 60-day period.

page 527 } Mr. Boothe: And that's under Section 8-653 of the Virginia Code.

Mr. Budwesky here has all the notices in his eight cases, and I have here the form of Notice given in all of our cases, and the receipt for the Notices, signed by Mrs. McIver for the

Mayor, City Manager, B. Floyd Williams, and Robert Murphy.

One case of Catherine Gallow, one time for the City Attorney.

The Court: Is there any question, Mr. Murphy, about sufficiency of the Notice, or Mr. Williams?

Mr. Murphy: We would like to see them, your Honor. So far as the sufficiency is concerned, that's what is raised in our Answer, grounds of defense.

Mr. Boothe: They were shown, as a matter of fact, the time you all demurred.

Mr. Murphy: I wasn't present at the time the Demurrer was argued.

The Court: What you would like to do is offer these in evidence, together with the receipts, is that correct?

Mr. Boothe: Yes. I want it be satisfied, that we prove the City got Notice of all these claims within 60 days.

page 528 } The Court: I understand what you are doing now is offering these things in evidence, is that correct?

Mr. Boothe: Yes, yes, sir.

The Court: Any objection to their going into evidence?

Mr. Murphy: For the purpose of showing we did receive Notice within 60 days, but not as a matter of sufficiency—

The Court: All right.

Mr. Boothe: What do you mean by "matter of sufficiency of Notice?"

The Court: I understand he is not agreeing the notice is sufficient, or agrees or complies with the provisions of the statute, but you don't object to its going into evidence?

Mr. Boothe: That was raised and determined by this Court on Demurrer about a year and a half ago.

Mr. Murphy: I was the one who began on this point, but I will have to sit down in deference, because I was not in the case when they raised these points.

Mr. Boothe: Like myself. I just don't want any misunderstanding about this.

page 529 } Mr. Williams: If I may summarize, sir, there is no question about the fact he has to prove this, and we are agreeing these come in for the purpose of proof, and that's the nature of our movement at the moment.

The Court: Let's stop at that point. Suppose we go ahead and receive these things in evidence at this point.

Of course, each of these would apply to a separate case, and I expect probably the easiest thing would be to consider—What's the next number?

The Clerk: 23, sir.

The Court: Suppose we make them 23, and then identify them as— Well, for example, "23-Robertson" which would be the Robertson case, and put the name by each of the numbers so we won't get them mixed up. I assume the name of the plaintiff is mentioned in the Notice itself, anyway.

Mr. Boothe: Yes, sir, it is; yes, sir.

Now, there is just one other thing that I feel compelled as an attorney, and I suppose an arm of this Court, to call attention to: One of these Notices, the Notice by the Crowell-Collier Company, was served upon the City Clerk.

page 530 } According to the information we have of standard procedure, this Notice was sent on to the City Attorney. I would like to get Mr. Williams' word on whether or not he received that Notice. It was a letter sent, of which we have a copy here, dated August 27th, seven days after the flood; and I cannot ask for this stipulation without informing the Court there is this one inaccuracy.

The Court: What's your position on that?

Mr. Williams: As far as I am personally concerned—I would have to check my records and see—if it did go to the Clerk, and in turn went to me, and I can verify this, there is no question whatsoever, of course.

The thing I will have to reserve judgment on is whether or not that valid Notice got to me as provided by the statute in time, and this we can only tell by checking what information we have.

Mr. Boothe: In that case, I do want to submit, then, as an additional exhibit, copy of the letter from an insurance company—this particular plaintiff made the mistake of going to the insurance company instead of lawyer—which was sent to the Town Clerk, so you can follow it up, and we are willing to abide by your word on it.

page 531 } The Court: Then, you want to also offer that in evidence?

Mr. Boothe: Yes.

The Court: Do you have any objection to that?

Mr. Williams: Subject to the conversations we just had.

The Court: I mean, do you have any objection to its going into evidence?

Mr. Williams: No.

The Court: Suppose we make that 23, in that particular case.

Mr. Boothe: Mr. Budwesky's are the first 8. I would suggest they be 23-A.

The Court: 23 is the number we would use?

The Clerk: Yes.

The Court: All right, it would be 23, and after the "23," we will put the name of each case we are concerned with, for example, "23-Robertson" and then you have "Crowell-Collier"—

Mr. Boothe: Right. Put them all in together?

The Court: Eventually, they would go in the individual jackets.

Mr. Boothe: Yes, sir.

page 532 } The Court: Can you work it that way, Mr. Davis, all right?

The Clerk: What was that second name?

The Court: Whatever the name of the case is. Eventually, you would have to check them all and match them up with the files. One number would be "23" and the letter would be 24, in that particular case.

(The documents referred to were marked Plaintiffs' Exhibits No. 23 and 23-A for identification and received in evidence.)

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Mr. Murphy: May it please the Court, the defendant, City of Alexandria, at this time makes its motion to strike, *it's* motion to strike the evidence of the plaintiffs, all of them, the sum total of the combined plaintiffs, which is being tried in this lawsuit as a consolidated suit against the City. The basis of our motion is as follows:

These so-called flood damage suits are all being tried on matters of liability only and they're all signed in pleadings on the theory of negligence. Now, it is alleged in these pleadings and amended motions for judgment that the negligence of the City of Alexandria, a municipal corporation of Virginia, caused certain damage to each of the various plaintiffs.

Now, the City has stipulated that each of the plaintiffs was injured or damaged, but we have not stipulated that any or all of the plaintiffs were injured as a result of any negligence on the part of the City of Alexandria.

page 537 } We have denied, as a matter of fact, that the City of Alexandria was in any way negligent in anything that it did. We have also denied the fact that, if

there is any negligence which has been established, that the negligence was in the operation or consummation of a governmental function for which no liability was present.

We have also said that, if there is any negligence which was not immune by virtue of governmental immunity, that that negligence was not the proximate cause of any injury which the plaintiffs may have sustained.

Now, in these suits, as well as in any other negligence action, plaintiff has the duty, has the burden of proving, first, that there was some duty that the defendant city owed to these plaintiffs; secondly, it must show that there was material breach of that duty; and third, which breach proximately caused the injuries or damages alleged; and, of course, they must show that there was an injury.

Now, the position of the defendant at this time is simply that the plaintiff has not carried that burden. In support of that position I would like briefly to review the evidence that has been introduced so far against the City and submit their case must rise or fall as far as evidence is concerned as a matter of law on what is in at this time.

page 538 } Mr. Budwesky testified at the outset that there had been some dumping which occurred on certain lands east of Commonwealth Avenue, or it has been referred to as the old electric car line—I think these are one and the same—east of Commonwealth Avenue. He testified that some dumping occurred and this dump he referred to shortly after the date of the annexation, which was in 1930.

Now, at one point the City objected to testimony relevant to this dump on the grounds that the operation of a garbage or trash disposal or dump, or whatever you want to call it, would be in the nature of a governmental function and, if he was saying that the City did any of these things, we were suggesting that this would not be actionable negligence but would be immune from liability, and we were quickly told—I'm not talking about the City Dump at all, we're talking about a private dump. Therefore, I submit that all the testimony that's in this case this far of any filling in the area of what they refer to as a dump east of Commonwealth Avenue was all a private dump, specifically told to us by counsel.

Now, they had made a point, repeatedly made it, that the City of Alexandria upon annexation had acquired as its very own—the ownership, not just extension of corporate limits—of a small triangular piece of land which

page 539 } had frontage along Route 1 and apparently ran all the way up to the creek bed right alongside of U.S. 1. They referred to this little triangular piece of

land repeatedly when referring to the operation of this private dump in that same area. Now, I can only imagine that the purpose of stressing this small triangle, which I believe the testimony indicated along that area was probably not more than three or four feet wide, the only imaginable reason I can see for stressing that is that they want to show some control in the city and, therefore, some responsibility for this dumping operation, and the only control or responsibility that can be tied down to the fact the private dump has no access to U.S. Route 1 other than to be allowed to drive across their property.

Now, I submit, Your Honor, that this is stretching the point of control. If it is ture, as I'm suggesting to the Court, and I believe it is, that a municipality could have operated this dump themselves, could have filled this garbage and trash refuse dump themselves, and it being a governmental function, would have been immune from any liability by virtue of any negligence which may be established from having operated that dump. Now, if the municipality would have been immune, if they would have had to operate it, the dump,

page 540 } themselves, then it could possibly be stretched to say that they're not immune because we allowed a truck to run over a small strip of property. This is the only tie-in that I could see from any testimony of any of the witnesses to the dump, that there is a certain small area of city property that was allowed to be run over by the dump trucks.

Now, I say that on the part of the dump there's no evidence whatsoever of any actionable negligence against the City of Alexandria.

And Mr. Budwesky also made the point that the City Council had authorized him when he was City Manager to begin conferences with the City Attorney relative to condemnation of some 45 acres on the other side of Commonwealth Avenue, on the west side. Now, he testified that during his tenure of office, I believe, that this was ultimately carried out. The City of Alexandria did condemn 45 acres; now Mr. Budwesky said they were condemned for flood storage, so that's the evidence right now.

Now, so we condemn 45 acres, so it's for flood storage, as the evidence now shows. They have not gone beyond that to show that this was a negligent act, wherein lies the negligence from the election of the City Council in its discretion to elect to undertake a condemnation suit. They

page 541 } are electing only to carry the power of eminent domain which was given to them by the most basic power of all, that is, the police power delegated to the municipality by the State of Virginia.

Mr. Budwesky testified further that the City allowed some fill west of Commonwealth Avenue—or did some fill action west of Commonwealth Avenue. He specified the purpose of this fill—this limited area he's talking about now—he said that the City filled west of Commonwealth Avenue to build the Cora Kelly School and to build a sewage pumping station.

Now, it is, I think, clear in the laws of Commonwealth that the election to build schools is a governmental decision to be made by the governing body of the municipality. Certainly the election when, where and if to build sewage treatment plants, pumping stations, is also a governmental function.

If he is suggesting that by having dumped this relatively restricted amount of fill, which he never—I don't think, unless one of the exhibits, one of the City Managers may have specified an amount—I don't believe Mr. Budwesky specified the amount of fill.

Now, on the fill that was dumped by the pumping station, just this morning we heard Mr. Hathaway say,
page 542 } refer to that as a little pumping station or a little bit of fill, but, here again, we're talking about what the City of Alexandria did so far as filling in any of this basin, and we're tying it down to testimony from Mr. Budwesky related to two purposes only, the school site and the sewage pumping station, both of which, I submit to the Court, as purely discretionary powers relating to governmental function.

Mr. Budwesky testified, in addition, that the City had authorized a firm of consulting engineers to make studies relative to the entire drainage area of the Four Mile Run basin. The testimony is that this Four Mile Run drainage basin consists of approximately 19.1 square miles, and of that 19.1 square miles only 3.1 square miles are located within the jurisdictional limits of the City.

Mr. Budwesky testified that consulting engineers, the Chester Engineers, made various recommendations to the City based on the optimum development of the watershed and the optimum public improvements which they would like to see from an engineering standpoint to cure the water problems which probably had been there from the time the area was created.

Now, they are assuming when they make these recommendations, they are assuming that these would be nice if, in the event the City is in a position to meet them,
page 543 } they wanted them to do so and so forth. In other words, they make the recommendations from purely theoretical ivory towers, saying this is what we're

doing—it would be nice if we could do these things, this is what you should do.

Mr. Budwesky testified that from the Chester Engineers' report he made a recommendation to the City Council that the City proceed to condemn the R. F. & P. Railroad property under which 480 feet of narrow winding culvert travel.

Now, what you have there is a recommendation from the City Manager to his legislative branch of government, the executive to the legislative, making a recommendation suggesting to them that what he would like to see done and what he would recommend to them, this is what would help alleviate the problem, is that they go in and condemn the railroad. Now, the City Council in their infinite wisdom, for whatever reasons, elected that at that time, what with receiving the Chester Engineers' report and Mr. Budwesky's recommendation, was neither the time nor the place to begin a condemnation study or to actually begin to file condemnation suit against the railroad.

Here again, this is a factor—is this negligence on the part of the City to fail to condemn, condemnation again, a basic power given under the police power to any muni-
page 544 } cipality. The election, the discretionary decision to condemn or not to condemn has always been—and I don't think you'll find any authority to the contrary—has always been a governmental decision to make, and I say that, being clothed in discretionary power as it is, it's a decision which would not be reviewed by a Court except in a limited area and, once the decision to condemn has been made, the Court will review only to find out whether or not, as a fact, the purpose for the condemnation was a public purpose, and here is where the Housing Authority cases and so forth come up—was it a true public purpose for which a condemnation was to be made.

Other than that, the Court will not go back in and try to substitute itself for the City Council in some previous year without knowing what the taxing situation was, the financial indebtedness, limits and so forth.

So, I say that the election on the part of the City not to follow a recommendation which Mr. Budwesky as Manager may have made is not any evidence whatsoever or negligence, not even the kind that you would have to hide behind governmental immunity to avoid the liability. I don't think it's negligence of any sort. It is certainly a governmental function to make this determination.

Mr. Budwesky also testified at length that the
page 545 } City of Alexandria, by virtue of its storm

water system on the City side of Four Mile Run, drained some of the high lands to the south of the Run.

Now, this, of course, is not denied. The testimony is, and I think Mr. Hall testified also, that when rain falls on the basin, the rain that falls is in some areas gathered up through basins through storm drains and so forth and channeled by the City through the storm water system and by private systems which are attached to the system of the City, private drains, under men's houses and so forth. When you start with your drainage system, you start right with the downspouts in a man's roof, all of this is part of your storm water drainage system if you want to look at it from a broad view; but, when it gets out to the City's part of the system, the culverts, that carry it down toward its ultimate depository, which is the natural stream, which is Four Mile Run—I don't think anybody can doubt that—the same water would reach Four Mile Run, anyhow, except what was allowed to go into the ground, but he has made a great point of the fact that the sewer system, storm water sewer system, is there. He has made a point of the fact that the City was allowed to improve the natural lay of the land or, in other words, saying that the City allowed civilization to come to this part of

page 546 } the town.

Is it negligence to allow land of this topography to build up? I think we have got to look at that point and at that point clear and cold, by itself? Is it negligence to allow development in an area which is situated similarly to Arlandria and this entire basin area?

I submit you don't have to go any further back than the case of *Miller and Myers* v. *the City of Newport News,* which is found in Volume 101 Virginia, also at 44 Southeast, page 712. In the *Miller* case, the Court approved an instruction from the lower Court in which the Jury was told simply that, "The City had a right to construct ditches along its streets and drain its surface water into the ditch, which was the natural purpose of draining the streets, even though quantities of water increased at times of rainy weather and diminishes at other times."

The Court in the *Miller* case also cited for approval two other cases. They cited *St. Paul Railroad Company* v. *Duluth,* a Minnesota case in which it was there held "there was no liability upon the City whereby means of *artifical* sewers that collected surface waters on the hill side and conveyed these surface waters to their common and natural dumping ground"—which in that case happened to be the property of the plaintiff.

page 547 } The Minnesota case said:

"The plaintiff seems to forget that nature and not the City has made this place such a dumping ground. The City has never relieved the land of that servitude. Can the owner of a swamp improve it and *them* compel the owner of higher ground right above keep the surface water a naturally tributary to it from coming down from the higher land to the swamp."

That is quoted with approval in the case of *Miller and Myers* v. *City of Newport News.*

The Court in the Miller case also cited with approval a New York case, *Waffle* v. *New York Central Railroad* wherein the Court there said that,

"Defendant,"—which was the railroad—"had an absolute right to drain its surface water upon its land into the stream which was a natural outlet, through ditches constructed upon its own land, although the quantity of water in the stream was thereby increased at the time of high water and diminished at other times. A proprietor having the right to reclaim his land by draining the surface water therefrom
page 548 } by ditches discharging into "a stream running therein, * * * which is a natural outlet of the water."

Finally, the Court, in the Miller case, said the following, which I believe is a direct quote:

"It would seem unnecessary to review other authorities cited in support of the proposition of law that a City has the right to construct ditches and drains for the purpose of draining surface water from its streets into a ditch or drain which is a natural water course, so long as reasonable care and skill is exercised in doing that work."

Now, on the latter point of reasonable skill and care—I bring to the Court's attention there is no negligence whatsoever alleged against the City of Alexandria by virtue of inadequacy of the stormwater system. As a matter of fact, I believe—and counsel can correct me—I believe counsel stated it is adequate as far as this case is concerned.

Going to another point, Mr. Phil Hall was called as a witness for the plaintiffs. He was designated as an adverse witness, I assume, because of his position, I assume, with the City.

page 549 } Mr. Hall testified to various things. He was asked, for instance, what the City had done after 1947 to protect the Arlandria area. "Well," he said, "Yes, they had done some things, that the City of Alexandria, through a cooperative agreement with the County of Arlington, that they had begun, as a matter of fact, to collaborate a plan for maintenance and a plan for capital improvements. The capital improvements part of this plan would include channel relocation in a certain limited area of Four Mile Run and bridge rebuilding in certain specified areas.

Mr. Hall testified that fruits of that cooperative agreement over a period of years between 1947 and 1963 were—among those were listed the following: The City built a brand new bridge at Glebe Road. This was the bridge farthest west in the City's jurisdiction—and this was in conjunction with Arlington County—both of these bridges. They also built a new bridge at Mount Vernon Avenue. They also did some channel improvements, directing, relocation of channel, straightening out the various meanderings and bends of the channel, which in the wisdom of the combined forces of engineers from the City and from the County, was felt would regenerate a better flow.

page 550 } Mr. Hall testified—and I submit this is important—testified the improved channel at any place where the City had touched it was considerably better than anything that had been there before.

Mr. Hathaway also testified this morning, on the manner of the improvements which the City and County had done to these bridges—testified that on the Glebe Road Bridge he had no opinion, as I recall. On the Mount Vernon Avenue Bridge, he testified that it was designed and built completely adequately for anything the City might anticipate comes through.

He also said that every bit of channel improvement that he had noticed, not only followed much the course recommended by the Chester Engineers, but seemed to have been constructed in excessive width of that recommended by the Engineers.

Mr. Hall testified further relative to certain culverts under U.S. Highway No. 1. Now, these culverts, your Honor, I believe—

What's the length of those culverts, Mr. Boothe?

Mr. Boothe: 480?

Mr. Murphy: Under the Highway, is it 60 feet or 40 feet? Is it in the stipulation?

page 551 } Mr. Boothe: I don't believe so, just the width of the Highway.

Mr. Murphy: Half of the highway.

Mr. Boothe: Yes.

Mr. Murphy: He talked about these culverts which were under U.S. Highway Number 1, that they are there now and were at the time of the flood—have been since the early forties. These culverts are in length, half the width of the highway as it exists. We will call that 40 feet, 50 feet, somewhere in that area.

Mr. Hall testified that from his best recollection, the City of Alexandria participated in not one nickel's worth in the construction of those culverts.

Mr. Boothe questioned him on that, and I suppose if there were any evidence that he could show to refresh Mr. Hall's recollection, we would have received it by now; but the only evidence before the Court is the City contributed not one bit to the construction of those culverts.

We are talking about, as I say, the twin, rectangular culverts which the photographs will show, our photographs in evidence showing twin, rectangular culverts which are immediately west of the openings between the twin,
page 552 } semi-circular, or whatever design you call it, culverts underneath the railroad property. They abut onto the older culverts which run for 480 foot under railroad property.

Now, these twin culverts, I believe, by the stipulation, if the Court will look to the stipulated waterway area of the twin culverts under the highway as compared with the railroad culverts, will see that they are larger than the railroad culverts by more than 50 percent.

He testified only—so far as the City is involved, is concerned, and I do believe this is the only testimony before the Court—that the City has the obligation to maintain these rectangular culverts under the Highway.

Now, maintenance of a sewer, maintenance of a culvert, maintenance of a stream or anything else that is part of your system—maintenance is something for which it is not a discretionary function, it is not a governmental function from which a City can hide behind a particular type of offense. It is particularly a proprietary offense. If we are negligent, we are negligent the same as any other party would be. We had the duty to maintain those twin, rectangular culverts. But the only evidence before the Court
page 553 } when it comes to capital improvements or reconstruction of the culverts, this is something which would necessitate combined cooperation of the Federal Gov-

ernment, the Commonwealth of Virginia, the County of Arlington, and ultimately, the City.

Now, from Mr. Hall's testimony relative to the culverts, we submit to the Court the question: Wherein lies the negligence from what he has testified to? What are they attempting to say, what negligence on the part of the City with regard to these culverts which caused or contributed to the flood damage? What has Mr. Hall said, coupled even with what Mr. Budwesky said, that shows any actionable negligence on the part of the City? Where have they established that there was any duty running to the City of Alexandria to its citizens, from the City, by virtue of the testimony we have heard today and yesterday? Where was there a breach or anything at all showing that whatever the City did or did not do was the proximate cause of the flooding injury?

Yesterday morning, we got around to calling certain eyewitnesses to floods. Some of the witnesses were testifying about one flood and other witnesses were testifying about another flood.

page 554 } Most of them, of course, directed their attention to the flood of 1963, which is the subject of these suits; but I don't believe any of them anywhere mentioned the word "negligence" on the part of the City or pinpointed anything *partular* that the City had done.

They were there only to establish the fact that they were in fact damaged, and goodness knows, the City is not disputing the fact that people in Arlington were damaged. We are disputing here only legal liability, and ask the Court's indulgence to constantly keep that before it. We are not disputing the fact that these people were hurt. We are disputing only the fact that legally, we were responsible for their injuries.

To go back for a minute to the testimony of Mr. Phil Hall, he brought out the plan for public improvements along the channel. He said it was the result of a cooperative agreement between the County and the City, and that the City and the County began to promulgate a plan and carry out the plan somewhere around 1947, that as the plan progressed, it progressed about as rapidly as the two jurisdictions could agree, as to what and when and where, and so forth, the improvements were necessary, and also importantly, when, as and if the money was available in either jurisdiction.

page 555 } Mr. Hall said that, apparently under the Plan that they adopted, the decision was made by this combined force of municipal officers, skilled in their field, and the election was made to attack the problem in the area of the

Four Mile Basin, which lies between and includes the boundary line of Alexandria and Arlington—I am talking about the Basin, not the channel; that they made the decision to attack this Plan by first attacking the problem in the area which was within their jurisdiction, within their control,—in other words, to get their own house in order first.

Now, they had been told as far back as the Chester Engineering Report that there were problems all along this stream. They had been told the old bridge, the old ricketty bridge at Glebe Road was bad. They knew that. There was a bridge at Lang Street. Now, I won't bother to point it out on the map, but Mr. Budwesky testified that during his tour of duty as City Manager, or as City Attorney, I don't know which, they did remove a bridge over Lang Street. I think the evidence of Mr. Hall will show—I don't think it is in dispute—that Lang Street would have been an extension of what is Old Dominion Boulevard now.

page 556 } Anyway, it would fall between the Glebe Road Bridge and the Mount Vernon Avenue Bridge, is that correct, Mr. Boothe?

Mr. Boothe: Yes.

Mr. Murphy: There was a bridge there at the time of the Chester Engineers' Report. The City knew it, and knew it was another obstruction in the stream-bed, so they had three to worry with, that were their own, three they could not disavow: Glebe Road, Lang Street, Mount Vernon, and they had a fourth—there was a bridge or a trestle of some description over Commonwealth Avenue. That might not appear in the evidence. If it does not, I don't mean to—

At any rate, the combined forces of engineers decided—and I submit, rightfully so; there has been no real testimony otherwise—that to get their own house in order first was the proper thing to do, and they began to attack that. During the mid-50's, they completely tore down and reconstructed the bridge at Glebe Road, a new bridge, which Mr. Hathaway is not in a position to say is not entirely adequate, and I believe all the other testimony is at least similar or better.

page 557 } Then, whether it is in chronological order or not, they removed one of the obstructions at Lang Street. They rebuilt and reconstructed a bridge at Mount Vernon Avenue which Mr. Hathaway admits is well designed, well in excess of any flood the City could anticipate.

These two bridges were built at great expense to the public. In addition to that, and the removal of the Lang Street Bridge—and if it is in evidence the other one at Common-

wealth Avenue; and if not, it's not important—in addition to that, the City and County jointly were engaged in rather extensive channel relocation project.

These channel relocation projects were completed up to the point that they existed at the time of the flood in 1963. These projects were completed within the year prior to the flood of 1963, in other words, sometime in 1962, they had done everything that they had been able to do up until the time the flood occurred.

They had, in other words, only a period of a year or less from the time they finished the channel improvements and finished all the bridge removal work before they were hit with this flood of 1963.

Now, in the case of *Chaukley* v. *Richmond,* we are told that the general law in Virginia and most everywhere is that the obligation to establish a sewer system is a legis-
page 558 } lative duty. Now, in this case, we have two legislative or governmental decisions to improve the channel, to provide additional public improvement in the nature of these bridges. These are the two decisions that they make—to improve the channel and improve the bridges.

These were done by the combined efforts of the County and the City. They were done over a period of time, perhaps 7 to 8 years.

Now, I submit that when they finished, in 1962, this extensive work that related back as far as 1954 and thereabouts, when they finished, they were not negligent merely because within a year there was a flood that showed that all the work that they had done, that all the money that they had spent was not adequate to take care of that particular flood.

This does not even get into the question of whether this was such an exceptional flood, and so on and so forth, as need not be responsible. Frankly, I know this is not a matter I should argue as a point of law on Motion to Strike: There will be evidence of this. But even aside from that, I submit they were not negligent when in one year, or less than a year after they finish the work, the first time the flood came down
page 559 } the pike, it damaged these people, and I submit they were not negligent for having stopped where they did for whatever their reasons, and there is no testimony here that they stopped for any particular reason.
page 560 } I am not submitting that they can stop and rest on their laurels and sit back and wait for four or five more floods before they decided, well, by golly, maybe we haven't quite done enough. But I think this: That in Cheatwood versus Richmond, I believe heavily relied on by the

plaintiff, and it is found in 130 Virginia page 76—in Cheatwood versus Richmond, an experience factor which I think had to come into play here, in order for the City of Richmond in the Cheatwood case to have been in held responsible—the Cheatwood case, basically we think is easily distinguished from this by virtue that culverts were all City culverts in the Cheatwood case; they were culverts under bridges that ran across, carried streets, built by the City and so forth, or at least they were City culverts, no question about that.

The Court said that the City knew or should have known from previous experience that the culverts, although once adequate, had become inadequate.

The Court: This is in a period of sixty or seventy years?

Mr. Murphy: I know at least fifty. I don't remember the case that well, but at least fifty years. But there was an experience factor which related to the City's re-
page 561 } sponsibility to go in and tear those culverts up and do those over. These were culverts owned by the City, as I say.

In this case, I don't know how many floods the City should have had in order to build up an experience factor, but I submit that having done extensive public improvements of capital nature over a period of eight years or so, from the time they got the engineers' report, from the time they had the money and the combined facilities to do this work, that when a year or less goes by and they are hit with the first flood, there is no experience factor such as was built into the Cheatwood case.

Now, the City was in the process still of formulating and carrying into existence a plan which had been promulgated between the two jurisdictions. Any inadequacy of the plan is not enough upon which to attach negligence or not actionable negligence at least, because the formulations and adoption of a plan is a governmental function.

It is not enough, and I think the authorities were in agreement, to say that a municipality, when it undertakes a public improvement, has got to go all the way and do the ultimate thing which may be recommended by consulting
page 562 } engineers; has no duty to go ahead and do the ultimate or nothing at all because to do that would be to stifle improvement anywhere.

There are very few cities with all the other demands on the public bankroll which can say, "here is a report from the engineers—we would like to have these done—it would help your flood problem; and they go ahead and do it, lock, stock and barrel."

This is again a basic decision which has to be made, which

is cloaked in discretion and which is purely governmental, to make or not to make.

There is no liability, in other words, for the inadequacy of the plan alone without some negligence in the manner in which it is carried out, or the manner in which it is executed by way of unskillful work in the construction and so forth.

I submit that what was done, we did what we could have done and what we did do since 1953, which was the date of the last major flood, ten years before this one, that there was no actionable negligence resulting from this flood, no matter what evidence of negligence there might have been, and I submit there was no evidence of negligence at all that has been shown.

page 563 } Going briefly into the testimony of the experts, Mr. Snyder and Mr. Hathaway—these gentlemen, especially Mr. Snyder, prefaced his testimony by saying his main interest was in the ponding area generally between Mount Vernon Avenue and U. S. Number 1. He prefaced everything he said, Your Honor, "I don't care where the water came from." His interest was in the ponding area and I think his figures showed that he didn't care where the water came from, whether it jumped the banks at Arlington, whether it came from the two and a half square miles which was immediately tributary to this Long Branch Stream which flows entirely within the County of Arlington, or whether it came from surface waters which drained from Alexandria. He just didn't care. From an engineering standpoint, he shouldn't care, but from our point we do care.

He attributed the flood to five things, five elements:

Tidal effects;

The loss of head at Memorial Parkway Bridge;

The Railroad culverts;

Route 1 culvert;

Restricted channel.

page 564 } Now, tidal effects obviously we can't be held responsible for. The fact that these two storms, on the 19th and the storm on the 20th, which culminate because of the decreased runoff, saturated ground, because of the culmination that the peak flow, second day, happened to hit at the same time as the tides hit their maximum peak, is something over which we had no control.

So we cannot be held responsible for the tides or the fact that it rained. The head loss at Memorial Highway is beyond our control, Your Honor, because it is, from the witnesses' testimony, it is owned by the Federal Government.

The R.F. & P. culvert, Mr. Snyder says he doesn't know

the exact corporate structure, but he knows it is owned by the R.F. & P. Railroad.

The Route 1 culvert, we exercise some jurisdiction over it in that we keep them clean. We have not authority to go in and rebuild them. We are only on a participation basis, as Mr. Hall has said, if, as and when it became necessary.

Now, on those culverts, assuming, though, for a minute, that they were entirely ours, which I submit they are not, Mr. Hathaway was asked the question this morning, if at the time of the August 20th flood the R.F. & P.

page 565 } twin culverts of 480 feet underground were still where they were, and you removed the constructions caused by, if they were caused by, the twin rectangular culverts underneath the highway, would that have diminished the flood level or the capacity of the twin culverts under the Railroad to carry it out?

I believe his testimony was almost exactly that there would be a minor increase in the capacity of the culverts to carry it out, only that amount which was caused by the reduction of friction from the water rubbing against the sides of these twin culverts when they went through underneath the highway.

Now, the Court can see the picture of that. We cannot speculate, any of us, as to what is meant by friction of water in openings as big as all that; but certainly it must be a minute amount and Mr. Hathaway very honestly said it is a very minor increase in capacity of the culverts; if you had taken away the culverts under the highway altogether which are the only culverts that I think the evidence can point to us as having any control over whatsoever, and then the only evidence is that our only duty is the duty to maintain them, keep them clean, keep the shrubbery out that may wash down from goodness knows where.

page 566 } Here we are at the tail end of this watershed, three miles out of a total of nineteen square miles, trees and everything at times of high water can wash down there from any of the other jurisdictions or from across the stream in Arlington. We have an obligation to keep those culverts clean; that is all we have. That is the only element of control which is before the Court.

Lastly, he refers to a restricted channel. Mr. Boothe has been referring to it as no man's land, I believe. We all know where we are talking about. We are talking about a strip of the channel which is immediately west of United States Highway Number 1 and the Railroad culverts, immediately east of Commonwealth Avenue.

Now, where is negligence so far before the Court that can pin any liability on the City of Alexandria for these, this strip of land?

The City-County line generally runs down the middle of that stream. That is not exactly true and we have a map which we can show you more clearly demonstrates, if the Court would like to see it. Not all of that stretch of stream between Commonwealth and Number 1 is a straight line. The line does vary but generally, by and large, the south bank of that stream is in the City of Alexandria.

page 567 } Now, we submit very simply this: We have no control over it. We have no control over it and, therefore, we have no legal duty to do anything with it.

Whether or not we have a moral obligation or whether it would be nice to spend the taxpayers' money on going down and buying that land or anything else, we are here to be faced with an obligation that we violated a legal duty.

This is private property. The City does not own it, not one stretch, not one inch of waterfront on the south edge of that bank between Commonwealth and Number 1 Highway does the City own.

Now, we as the City have no right to tell Helm's Concrete or anybody else who owns that south bank that he has to do anything with that bank. We have no right to tell him he has to cut trees; we have no right to tell him he has got to cut the bank away; we have no right to tell him that he has to stop filling, if he has done any, or anything else.

Any exercise of authority made along that bank to the detriment of any private property owner, I submit, would clearly, under the State and Federal constitutions, amount to a taking without compensation.

page 568 } Now, I am not suggesting that somewhere in the future by combined agreement or by individual action on the part of the City, long-range development of this water course, that it will not be necessary to increase the channel capacity at this particular area between Commonwealth and Number 1; that it won't be necessary sometime, at some later date, when the downstream obstructions over which we have no control are removed, that it will then be the plan of the City to go in and open up this narrow channel. But right now our duty is fixed as of the date of the flood. What was our duty then?

I submit, Your Honor, that pure private ownership of that land prevented our doing anything. We could have condemned it; we could have gone in and condemned twenty feet, fifty feet on our side; but here again, Your Honor, it is a matter

of legal duty as proved by the evidence to this point. Where is the legal duty on the part of a municipality to exercise this discretionary power to condemn or not to condemn? And I think the Court should not be asked in the cold light of a lawsuit to re-examine the action of a City Council over a period of years in not exercising a discretionary power.

Lastly, we come to a lot of testimony about the page 569 } filling. I would say that the bulk of the plaintiffs' cases so far have been aimed at the fact, the alleged fact, that sometime between 1915, which is the first date I have heard mentioned, and 1963, somebody, some person, somehow, has removed what Mr. Garrett's old survey called or referred to as sort of a bay area or natural swamp bottom land, I suppose. When I say they removed it, they have added to it so that it is not there at the same depth that it was before. There has been, in other words, from the testimony, purely and simply a lot of evidence that there has been filling going on.

Now, we have got computations as far as volume of fill. I think it is extremely confusing right now as to where this fill is, that the two experts used in order to compute the fact that had the fill been as it was in its natural state, and I frankly am not being facetious—I don't know what they meant, whether two million years ago or whether they meant in 1915—but if it had been in its natural state, not been allowed to be filled, upon what did they compute the factor that the water level in the inundated area, ponding area, so forth, would be three feet lower.

Obviously, from Mr. Snyder who made the figures—Mr. Hathaway made no figures of his own; he merely page 570 } took Mr. Snyder's—obviously from Mr. Snyder he was computing, first of all, fill that had been made by somebody at some time in Arlington County as well as Alexandria.

Now, I submit it has to go out. We had no control over any fill that anybody made in another political jurisdiction.

Where else is the fill and by whom else was the fill made? We don't know.

Where has the City done any filling, Your Honor? Where has the City done any filling which can be logically and properly and legally computed to show how much this water level would have been dropped in the August 20 flood.

The only testimony of City fill is a little bit for Cora Kelly School and the little bit for that sewer pumping station. They have not once by any witness tied down any fill in any part of the basin to the City of Alexandria, except what was done

from Cora Kelly School and what was done for the pumping station.

Now, they have talked about, and I believe their engineers either had or could have broken down the figures as to how much fill was on the City side of the creek and how much wasn't. Although I don't think they were following the boundary lines as they truly existed, I think they were
page 571 } following the old creek boundary lines which were not the true lines of this flood and should not be *propery* admitted.

They have, to some extent, broken down the amount that was on the City side but no where have they broken it down to the responsibility for the fill, and I think it is important.

We can no more go into Helm's Concrete or any other private property owner and tell him that he cannot dump a pile of dirt in the back of his property yard than we could fly without some device such as flood plain zoning and that sort of thing. There is no evidence of that. And I think if the Court had any question about it, there would be some evidence of it, if there were any such thing in this case, I guarantee you. Without something of that type we cannot possibly tell anybody what he can do on his private property.

Now, this, I think, is the basic point so far as who did the filling and where it was done.

The other point of the three questions, who, where, has to be when. When was all of this filling done? When was the filling done which cut by fifty percent, forty percent, whatever the figure was, the total available storage basin? Was it done in 1915 or possibly 1916, or was it done day be-
page 572 } fore the flood or was it done a little bit evenly distributed between 1915 and 1963? I don't know and I don't think the jury should be allowed to speculate that all of it or a fourth of it or half of it or three-fourths of it or none of it was done after the City acquired any jurisdiction fifteen years after the status of the original basin was shown by these old maps that they have got.

I just don't know, Your Honor, who did the filling, when it was done and where it was done.

I think it is crucial; I think this is the big point of their case—had the fill not been done the water level would have been decreased. Who did it? Nobody said we did it. There is no evidence of negligence against the City so far as that point is concerned.

One other point:

Mr. Boothe has indicated for the first time, and I guess it is fair to assume he will argue this point by attempting to

introduce Chapter 23 of the City Code, or a section of it, as to nuisance.

Well, there are laws in the Commonwealth of Virginia and most cities and counties, I guess, prohibiting nuisances. But, Your Honor, I will show you, if he raises it, the authority that I think is persuasive on the point is that

page 573 } even a nuisance per se that is occuring within a municipality, by and under the direction, under the control of someone other than a municipality, that there is just no legal duty on the part of the City to enjoin or abate a nuisance.

The Court: Suppose you wait on that point and see whether or not it is in issue.

Mr. Murphy: Finally, as far as what the City could have done, Mr. *Hatahway* said, it would take the combined efforts of the City, County, Federal Government, State, Commonwealth of Virginia, and so forth. I submit this is *ture*. It would take that cooperation now just as it would have taken it on the morning of the 19th, before it began to rain.

The failure to arrive at an agreeable compact, if you will, between the five municipalities or five political subdivisions, or five separate *jursidictions*—and this is not to include Fairfax County and the City of Falls Church who also contribute to the downflow—seven, if you want to include those—the failure or the lack of a cooperative agreement such as up until the date of this flood would have solved all the problems, is no evidence of negligence.

For all those reasons, Your Honor, I submit

page 574 } that there has been no evidence shown of any actionable negligence against the City of Alexandria and we should be removed as a party.

The Court: As I recall it, there is a letter, some evidence was testified to, with respect to Mr. Willard, at one point granting permission to a particular concern to dump some fill in the area that we are concerned with. Do you care to comment on that?

page 575 } Mr. Murphy: Yes, Your Honor. I wish I had the letter before me. If I'm not mistaken, it's a letter from Mr. Taube of Warwick Village. He wanted to get rid of some dirt, and I think Mr. Lloyd wanted some dirt. If I'm not mistaken, this was dirt which was allowed to come in to fill part of the acreage to the west of Commonwealth Avenue for the construction of either the Cora Kelly School or the pumping station. I may be in error on that point, but I will submit, Your Honor, that what I said before about tying down the responsibility for the fill applies specifically to that letter.

This is the type of tying down—this is the type of direct allegation and proof of negligence on our part, if it is negligence, and if it's actionable and not a governmental function, and so forth. But this is a direct tie-in between the City and land being built up.

And I submit that if that's all he has, that letter plus the school site, plus the pumping station—the letter as far as my recollection was went into one of those two—but even if we've got three things now. The engineers have got to concede the fact that this is land that was filled by the City. Had they not filled it, the flood would have been the same, or the flood would have been diminished by an inch, or maybe the whole three feet. But their estimates are not page 576 } based on that. Their estimates are based far afield from municipal responsibility. And, therefore, I submit they have no probative value.

There being no probative evidence against the City on this point of negligence, we should be excused.

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Mr. Murphy: Just briefly, your Honor, Mr. Boothe has mentioned a variety of things in his rather impassioned plea. Among others, he has touched on this word "nui- page 594 } sance" which, as I mentioned to the Court, you might anticipate, based on his attempt to offer the Ordinance into evidence that he would raise.

First off, nowhere in the pleadings is there any allegations that the City was conducting a nuisance or permitting anybody else to conduct a nuisance. But I don't think—at least I would argue at this time—that precludes him in his argument from talking of something in the realm of nuisance.

It's true that in the *Chalkley* case, to which Mr. Booth refers, there is language which would lead you to believe that the Virginia Court was saying that a city that has the authority, the power to abate a nuisance anywhere within its jurisdiction must exercise that power, and is liable and responsible if it does not.

That language gives you trouble, your Honor, until you read the later cases in which they distinguish, especially in the case of *Robinson* v. *the City of Danville, at* Volume 101, Virginia—and again I don't have the page number—but also

in the Miller case which was previously referred to in the same volume, 101, Virginia.

They clearly distinguish the *Chalkley* case from page 595 } the later case he is talking about, the city's duty in Virginia to abate a nuisance, and they say, "if it is a nuisance being conducted on a property not under the control of the City, or if it is a nuisance which is being conducted or operated by others than the City, that there is no concurrent duty to abate the nuisance."

Even if that were not the law—and I harp on the fact that that is the law—but even if it were not, there is no proof here before this Court that anybody was conducting a nuisance, per se, which you would have to be for this Court to rule at this time that the City was negligent in not abating somebody else's nuisance. You just can't allege some sort of a type of action on the part of a private individual, and come into this law court and characterize that as a nuisance, and say, "Therefore, it is negligence on the part of the City."

There is no evidence anybody else was conducting a nuisance; if they were it is a nuisance not continued or maintained by the City. And therefore, under *Miller* v. *Newport News,* there is no duty on the part of the municipality of Virginia to abate it.

Mr. Boothe has talked about joint tort feasers. It's not to be surprised that he would like to put the City of page 596 } Alexandria in a position of saying, "You, concurrently with others, are responsible for what happened down there. Therefore, we don't have to sue Arlington, which we can't; we don't have to sue the State, which we can't; we don't have to sue the Federal Government, which we can't; can't sue Fairfax County; could have sued Falls Church, but they have such a small portion that they wouldn't try that. But they don't have to say you are solely, jointly, or severally responsible for all the damages resulting from joint feasorship, if you will.

This is not a case of joint tort feaser. This is a case, at this point of their evidence, of saying that they are asking the Jury to consider damages from one of which causes the City might have been responsible; and I submit that that is not even true in the state of the evidence we have now.

There is no evidence against the City for which we could be held responsible as anything other than an extremely remote increase, or tendency toward aiding this situation. There is no evidence of any City evidence in this case pointing toward responsibility for flood damage. But it is a situation where the Jury would have to be told that if the

page 597 } City, for one of several causes, may be responsible, and the Jury is unable to determine from the evidence which of the several causes complained of caused the injury, then they must find for the defendant.

We are getting to the point, before we get to the Jury, of saying to the Court, under any stretch of their case, in light most favorable to them, under their interpretation of the law, the most they could say under those circumstances is for some small part of this the City may be responsible, but they don't attempt to say for what part, whether it be 5 percent or 95 percent, and I say it is pure speculation from the state of the evidence, which the jury should not be allowed to come up with a verdict against the City, the only defendant, when perhaps the evidence is no more than 5 percent, if that much, and there would be pure speculation. And I submit this is not the law in Virginia, and we are not in the situation of joint feasors or something else.

There has been a lot of talk about the ministerial duties of a city with regard to sewer maintenance. Nowhere in this case is there a bit of evidence that I can recall alleging in any way that the City was negligent in how they maintained either the channel or the bridges under their control . There is no evidence of the fact that this flood was contributed to

page 598 } by the fact we allowed dirt, silt, trees and what-have-you to back up at the openings of any of these culverts, and therefore, this contributed to the backup. There is no evidence of it.

This is what is meant by maintenance, a periodic cleaning out of things that float down from our system's jurisdiction up to the west, from Fairfax, Arlington, from Falls Church, and even down through Long Branch, and other tributaries of the stream.

This is what maintenance is. We are the tail-end of the thing. We are responsible for certain parts of maintenance, whether it comes from our side, Arlington, Fairfax's side, or any other place. We will maintain our portion of the stream; but there is no evidence of improper maintenance upon which any liability can attach. If there were, this is a purely ministerial function, a proprietary function for which we would be held responsible if there were any. But this is not the same as saying that we had the duty to go ahead and take additional capital improvement steps. This is not maintenance, under any stretch of the imagination. This is the election, in the wisdom of the legislature, to do or not to do a capital improvement.

When we are told by the Chester's Engineering Report in '43, told that, "Gentlemen, we recommend to you
page 599 } that you not let any more of the ponding area get away from you," when we are told the optimum results would be obtained if you don't allow another square foot to be filled, this is nothing surprising.

But the only way we could control that, your Honor, is to go in and buy it, or lease it, or condemn it. We cannot and could not at that time—nor could we in 1963—tell any of those property owners in any of that area, "You can't do this," and "You *can'd* do that" because we don't want to get in a situation where you are filling up a drainage area."

This is not a power of the City, not a duty of the City to do those things. The Charter specifically says that, "We shall have the power"—again not the duty—but "we shall have the power to go in and acquire these lands if they are needed for similar purposes. But how do we acquire it? Do we just tell them we need it? Pass an ordinance prohibiting certain things? No. We acquire by purchase, lease, condemnation and so forth.

page 600 } Now, there has been a lot of talk here about the duty as related to control. Your Honor, we have exercised control over part of the stream, no question about it, by putting in culverts which run under streets which it is our duty to maintain—Mount Vernon Avenue, Glebe Road, the old bridge that was over Lang Street, the old bridge that was over Commonwealth Avenue, both of which are now gone. These are our areas of designated duty, control, authority and ownership, if you will.

The only evidence, as I recall, relative to control over the R. F. & P. culvert is that, before anybody can go through them, they have to get a permit from the railroad.

Now, there is not a shred of evidence, Your Honor, that we had any control over the R. F. & P. or over the outfall area of the United States Memorial Parkway; there is no evidence of control over the culverts under No. 1, other than the fact that we have assumed the duty to maintain them. Here, in maintenance, as opposed to duty to construct. Mr. Hall testified to that. It came out on request of the plaintiff.

Again, on the matter of fill, I go back to the three questions: Who did the filling? Where was it done? When was it done? We don't have answers to those questions.

page 601 } These are crucial questions because, as far as I can determine the theory of their case in tying the City down, is that we allowed this escape or this basin area to get away from us. I submit we had no duty to control

it. We have had no power to control it short of purchase or condemnation and there was no duty to go into either of those functions on behalf of the Municipal Government.

Thank you.

The Court: After having heard the evidence up to this point and the arguments of each of you, I have some serious reservations in my mind as to whether or not the evidence is sufficient to submit it to the jury.

There are a number of things that have to be considered in this type of situation. I think the evidence is overwhelming that there are a number of factors that did contribute to this flood and to the damage that did result.

The main thing that I do have some reservations in my mind about is the negligence. I do feel that this part, there is some evidence of negligence on the part of the City of Alexandria, but whether or not such negligence is or was a contributing part ot the damage, this flood did take place.

So, what I am going to do at this point is to reserve decision on the motion and hear the evidence of the City.

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page 603 }

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Whereupon, RUSSELL W. REVELL was called as a witness and, after being first duly sworn, was examined and testified as follows:

DIRECT EAMINATION

By Mr. Crockett:

Q. Mr. Revell, would you please state your full name for the jury, please?

A. My name is Russell W. Revell.

Q. And where do you live, Mr. Revell?

A. I live at 679 Hill Road, Winnetka, Illinois.

Q. And where are you employed?

A. I'm employed by the Harza Engineering Company of Chicago, Illinois.

Q. And in what capacity are you employed by that company?

page 604 } A. I'm employed as a specialist in hydrology and flood control.

Russell W. Revell

Q. Now, Mr. Revell, how long have you been engaged in such work?

A. About 28 years.

* * * * *

page 609 } A. My title is Specialist in Hydrology and Flood Control. I am the Senior Hydrologist for the company.

Q. I see.

Mr. Crockett: If Your Honor please, I move that this witness, Mr. Revell, be qualified as an expert as an hydrology engineer.

Mr. Boothe: No objection at all.

The Court: All right.

By Mr. Crockett:

Q. Now, Mr. Revell, I would like at this time to direct your attention to the Four Mile Run, as it passes through the City of Alexandria and follows its ultimate way out to the Potomac River.

Have you made a personal inspection of the Run and the course it takes prior to going into the Potomac River?

A. I have made an examination in the damaged area including an inspection trip of the culverts under the railroad and trestle under the railroad yards. We made a boat trip down through the culverts down and back up the other side and visited the trestle in the railroad yards, and also from a short distance I saw the culvert under the parkway and, of course, under U.S. 1, and investigated most of the basin within the damaged area.

page 610 } I did not investigate the basin farther upstream which contributed a large part of the water.

Q. All right, sir.

Now, would you describe for the jury what you discovered with respect to the opening under the Mount Vernon Highway?

A. The opening under the Mount Vernon Highway—are you talking about the Parkway?

Q. The Parkway, yes.

A. I saw no obstruction in it. I was not really close to it, but I observed no obstruction and the cross-section of the

area obviously was larger than it was in the culverts farther upstream.

The size of it has been made a matter of record, I believe.

Q. All right, sir.

Now, what was the next constriction to flow from the Mount Vernon Memorial Parkway Bridge westwardf?

A. There is a trestle carrying nine tracks of the railroad. This trestle is made up of pilings within the stream bed. There are ten rows of piling in the stream bed and additional rows on the bank of the stream. In each row there is 45 piling, making a total of 450 pilings driven into

page 611 } the stream bed. The width of the trestle in an up and downstream direction is about 120 feet, * * *

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page 617 }

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Q. All right, sir.

Now, Mr. Revell, did you make any study with respect to the effect of the culverts under the R.F. & P. Railroad, the Railroad trestle, and the Memorial Bridge on the level, surface water, level of the water obtained in the flood of August 20, 1963?

A. I made a study showing the results of the combined effects of all the culverts and the trestle. Yes, I did.

Q. All right, sir.

What was the result of that study or computation?

A. The result of all that computation shows that it caused considerable flooding in the area in question and it caused a stage to reach, caused the water surface to reach a stage of about 14 and a half feet.

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page 620 }

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By Mr. Crockett:

Q. Can you state, Mr. Revell, what effect on

page 621 } the water surface elevation the height of the

water at Route 1, that the culvert under United States Highway 1 had on that elevation?

A. Well, under Highway 1, proportionately small effect because of the very short length of the culvert. That culvert is about thirty feet long and the culvert under the Railroad track is 480 feet long. So the length of the Highway 1 culvert is less than one sixth of the length—much smaller than that. It is about six and three-tenths percent of the total length of the whole thing. It is about one-fifteenth of the length of the culvert under the Railroad, and the opening under the Highway Bridge is somewhat larger than the opening under the Railroad, as has been stipulated.

Therefore, it would be a very logical to assume that the lost head in the Highway 1 culvert is about one-fifteenth of what the lost head is under the Railroad culvert or through the Railroad culvert, I should say.

page 622 } Q. Mr. Revell, there has been testimony in this case regarding the possible effect of land fill on the total elevation of the *pounding* area in the flood of 1963. I would ask, sir, if you have made a study, yourself, of what effect, if any, land fill in Alexandria had on the surface elevation of the water.

A. Yes, I did make such a study involving the land fill in Alexandria only. I did not investigate the effect of the land fill in Arlington.

I find that the loss in head due to the land fill in 0.6 feet, which would be around seven or eight inches.

Q. Now, in reaching that computation, sir, I understand that you took the entire area within the City of Alexandria in computing that?

A. First, in order to establish the hydraulic characteristics of the reach, I took the inflow drive, as I told you earlier. To get the outflow I took the theoretical outflow through the culvert, what it would be if there were no obstructions, and then I multiplied that by a factor taking into account obstructions, and I tried several different factors until I found an outflow, hydraulic characteristics, which duplicated the stage of pooled area and I used those same hydraulic characteristics then in two different routings,

page 623 } and one routing was with a channel—I am talking about the routing of the flood through the ponding area—as was described yesterday by Mr. Snyder, described to the jury, how the routing was made; and I made one with the channel as it existed on August 20, 1963.

Russell W. Revell

Then I made another one in which the volume of the pool area available for flood storage was increased by the amount of the difference, increased by the amount of hydraulic—not hydraulic fill, but total fill in Alexandria.

Now, in totaling up the amount of that fill, sometime in my testimony I want to bring out the fact that not all of that fill is directly attributable to hauling dirt or debris into the area. The significant part of that would be the natural process of the stream, which I will explain now if you wish me to—now or later?

Q. I will ask you this:

Do you know of your own knowledge who in the City of Alexandria or work in the City of Alexandria, contributed or added to this fill that you have taken into account? Do you know whether it was privately owned or whether it was—

A. I have no knowledge of that, no.

Q. So you took the entire area in Alexandria?

A. Entire amount of fill as computed by the
page 624 } difference in two topographic maps.

Q. All right.

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page 625 }

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As Four Mile Run carries the water down, especially in time of flood, it carries a large amount of sediment. The amount of sediment is increased many times over during the process of urbanization—building streets, digging basements and so forth disturbs the natural ground surface which has a certain amount of protection against erosion, lays it bare, and every rain can wash mud down into the stream which gradually is carried down the street and, as you get down to the lower reach of the stream where the velocity is decreased, the ability of the stream to carry this sediment is decreased.

Then it drops out. It settles out just like you
page 626 } have a glass of muddy water and let it sit for a while. Eventually the mud will settle out.

Of course, the larger particles settle out first; some of the finer particles may stay in suspension for quite a length of time. The result is that this area has been building up before

this photograph was taken and it is a continuing process as urbanization increases in the watershed of the stream. That process is greatly accelerated.

Q. All right, sir.

Now, can you point out on this photograph the area of your consideration in making the comparison between the year 1929 and 1963 or the fill in the area?

A. The fill was only on the Alexandria side except a little area here which, as the creek represents the boundary between Alexandria and Arlington, this part here, presumably was in Arlington at one time, and the stream now goes more across like this, something like that (Indicating).

Q. So you are referring to an area east of Mount Vernon Avenue along the southern banks of the Four Mile Run to an area extending out from that how far, do you know?

A. To the extent of, to a ground surface elevation equal to a point where the ground surface elevation equals the stage of the flood in 1963. In other words, the part that

page 627 } was flooded.

* * * * *

page 630 } Q. All right, Mr. Revell, I would like to ask you this:

You have here a peak inflow of 13,000 cubic feet per second.

Will you tell the jury what your estimated capacity of outflow through the RF&P tracks culverts was at this time?

A. Through the whole series of culverts?

Q. Yes, sir.

A. The outflow—I'll have to get my tabulation here.

I get a maximum outflow through the culverts of 4,150 cubic feet per second.

Q. All right, sir.

So, the outflow through those culverts was limited to that amount, and the water then, not being able to get through there, built up as shown on this graph here?

A. That is correct. That middle graph shows the elevation at various times during the flood.

Q. All right, sir.

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page 631 }

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Q. With respect to Exhibit E, Mr. Revell, what does this show?

A. This exhibit was made exactly the same way as the other one, using exactly the same inflow and using the same hydraulic characteristics of the culverts, but using a different stage storage curve. In making these routings you have to know for different amounts of storage in the pool—you have to have—to know what the elevation would be. And for that purpose we have a stage storage curve.

We have one stage storage curve for this first exhibit, and a different stage storage curve for this *exhbit*. And that is the difference between the two.

Now, this one—the peak stage of the flooded area was 14 feet as against 14-6/10 feet, or roughly 7 inches difference.

Q. As I understand your testimony, sir, that difference is attributed to all of the fill from whatever cause
page 632 } or source or by whom within the City of Alexandria since 1915 to 1963.

Is that correct?

A. Yes.

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CROSS EXAMINATION

By Mr. Boothe:

Q. Mr. Revell, when were you employed in this case?

A. Approximately two weeks ago.

Q. And when did you first arrive down here to discuss it?

A. I arrived here last Sunday morning. I spent all of last week in my own office reviewing the case, and first
page 633 } conferred with them a week ago Friday.

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Q. This is Wednesday?

A. This is Wednesday, yes.

Q. Five days ago?

A. No—12 days ago.

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page 642 }

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Q. I see. Well, now, are you saying that this little diagram you have got here, are you saying that the culvert at the Memorial Parkway Bridge had some effect on the height of this pond back here (Indicating chart)?

A. Yes, it would.

Q. How much?

A. I can't answer the exact amount.

Q. Well, would it be inches or feet, or what, in your opinion?

A. Well, the total was about 11 feet for all of those structures and—

Q. What do you mean, the total was 11 feet? That was causing 11 feet of the ponding?

A. That's the difference in elevation between the tide level and the water just upstream from the Highway No. 1 culvert. I will check that figure to be correct, to be sure it's correct.

page 643 } Q. The pond level is about 2, 4, 6, 8, 10, 11 feet above tide level?

A. The pond level at the Highway 1 Bridge?

Q. At U.S. Highway 1—it was 11 feet?

A. That's correct.

Q. —above the tide level. Well, you don't mean that these structures, or do you mean that this situation here at Memorial Bridge put the pond up any?

A. Yes, I do.

* * * * *

Q. Now, we get here to the RF and P trestle. I guess the trestle isn't—

A. The trestle was built after 1937, so it would not show on that picture.

Q. (New chart) I ask you, direct your attention here to this photograph: We have just been talking about the Mount Vernon Memorial Highway, which is down here, haven't we?

page 644 } A. That's correct.

Russell W. Revell

Q. Now, we're coming up here to the— this must be the trestle across the open water, is that it? (Indicating)

A. That's the trestle, yes.

Q. About in here (Indicating)? How wide is the stream itself as it goes under that trestle?

A. I did not measure it. We saw it at the stream low-tide, so it was much narrower than it would be at high-tide. I couldn't tell exactly.

Q. You did not measure it from bank to bank to see?

A. I did not.

Q. (continuing)—to see how much area flows through under that trestle. Therefore, I don't imagine that you figured the square foot area of the stream under the trestle itself, did you?

A. No, I did not.

Q. —either at low tide, id you, when the stream was flowing slowly, or when it was full?

A. That's correct.

Q. Well, did you— You did figure, I think, that the trestle itself was 120 feet wide, upstream and down. That's 120 feet up from here to there.

A. Approximately 120 feet, by pacing it on the walkway there.

page 645 } Q. You don't know how long it was from this bank to this bank (indicating), or from that bank to that bank?

A. No, I did not cross it.

Q. You said there was something like 450 pilings.

A. I counted the number of rows of piling, and I counted the number of piling in one row, only assuming they would all be the same number, as certainly would be reasonable. I multiplied the 45 by 10.

Q. I see. There were—

A. —10 rows.

Q. And 45 in each row?

A. That's correct.

Q —all in the stream bed?

A. In the stream bed, yes, from about the— During an extreme high flood, there was another row which might be in the River also, but that's approximately—

Q. But the day you saw it, they had 450 in there?

A. About, yes, I would say 450.

Q. What were the dimensions of those pilings?

A. I would say that they averaged, probably 18 inches in diameter.

Q. Were they round or square?

A. Round.

page 646 } Q. And how much space was there betwee each piling?

A. Well, for 45, at 18 inches, that would be a foot and a half—that would be about, I would say that the pilings, the space between the pilings about equaled the width of the pilings.

Q. They were that close together?

A. They were that close together, very close together.

Q. About 18 inches both ways. Now, then, you came up

A. Now then, you came on up— You went down, as I understand, rowed down and went in a boat underneath the culvert, which starts on the westerly side of U.S. 1, and went on down there and rowed on back?

A. Yes.

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page 649 }

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Q. But you would not recommend, if you widened the railroad culvert, made that as adequate as it should

page 650 } be, you wouldn't recommend leaving 60 feet of the kind of culvert shown in that picture, under U.S. 1, would you?

A. It would be ligical to assume if some of the culverts were enlarged— There would be no particular point in enlargening some without enlargening the others.

Q. I think that's a fair statement: If you are going to enlarge one, you ought to enlarge them all, shouldn't you?

A. That would be my opinion, yes, sir.

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page 652 }

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Q. Then, *als* I understand, the ponding area during the

floow was a little over 14 feet. I think everybody is agreed on that—14-1/2 feet?

A. Around 14-1/2 feet.

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page 654 }

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Q. I understand.

Now, then, in other words, what you are saying that if they just hadn't had any fill in this area since 1930—

A. No fill in Alexandria.

Q. —in Alexandria since 1930, that the only difference it would make is the ponding area would have been 7 inches down?

A. Approximately.

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page 657 }

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Q. What was the storage at the time of the peak, Mr. Revell?

A. I have that value for two different conditions. At the time of the peak, I have—well, I'd say about
page 658 } roughly 51-1/2 million cubic feet under the conditions as they were in 1963. And I have essentially 50 million cubic feet under the conditions as they were before the accumulation of fill in Alexandria.

Q. Excuse me. Fifty-one point five million storage in '63, and fifty million—

A. Approximately, yes.

Q. —in 1930, before the fill?

A. Yes.

Q. You mean you had more storage in 1963 than you did in 1930 after there had been that fill?

A. Yes, because I had a higher elevation. You see, I had—the pool was 6/10 of a foot higher.

Q. I see.

So it was down 7 inches—if it was down 7 inches it would

be a difference of 1-1/2 million cubic feet of storage, is that right?

A. Well, there is not only a difference in the elevation of the water surface, but there's also a difference in configuration.

Q. I see.

A. Of the pool.

Q. I understand.

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page 661 }

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Q. And *di* you agree with their statement that it appears likely the most practicable fully effective project—talking about this area—protecting it—will include channel improvements, utilization of the flood water storage area, the construction of storage area and channel levees and increased water areas at U.S. Highway 1 and the R.F. & P. Railroad culverts?

A. I feel that the only real solution is to in-
page 662 } crease the capacity of the conduits, culverts and so forth, downstream of the flooded area.

Q. You feel that the others are kind of surplusage?

A. The ponding area would have some effect, yes, and levees might have some effect locally.

Q. You say you studied the Chester Engineering Report and you know that they also recommended the keeping of the pondage area which then existed, don't you?

A. I noticed that, yes.

Q. And they recommended some channel improvements, is that right? And they recommended barreling out the whole system of outlets from U.S. 1 right on down to beyond the R.F. & P., what is now the R.F. & P. Railroad tracks?

A. They recommended that.

Q. Yes, sir.

As a matter of fact, from the figures that you have given us here today, given the Commission here today, if the City had carried out the recommendations of Chester Engineers, it would have been a very small flood on August 20, 1963, wouldn't it?

A. Yes, I would say that if all the recommendations had been carried out, the flood would have been very substantially smaller.

Q. Minimal?

A. I can't say exactly, but it would have been

page 663 } very smaller. I wouldn't say how many feet smaller.

Q. You wouldn't say that it might not have completely—there might have been no flood at all, would you?

A. I couldn't say that without going into the hydraulics of their recommendations, barreling of culverts and so forth, because it would have to be not only the culverts under the railroad, but other structures, the trestle, very general enlargement of the downstream outflow conduits. Naturally, it would reduce the flood.

Q. Those trestles were built after 1937, weren't they?

A. I believe they were built during World War II as an emergency construction and are still in existence.

Q. And left them up there?

A. That is my understanding.

Q. Of course, you don't know what effort has been made to get them down?

A. I have no knowledge at all.

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page 666 }

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Whereupon, DANIEL ANDERSON having been first duly sworn, was examined and testified upon his oath as follows:

DIRECT EXAMINATION

By Mr. Crockett:

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Q. And where are you employed, sir?

A. I am employed with the U. S. Geological Survey, 4055 Chain Bridge Road, Fairfax, Virginia.

Q. Now, you work for the United States Government?

A. Yes, sir.

Q. And in what capacity are you employed with the United States Geological Survey?

A. My job title is Hydraulic Engineer. My

page 667 } title on the job is Engineer in Charge of the Fairfax Sub-district Office.

Q. All right, sir.

How long have you been in charge of that office?

A. Approximately 8 years.

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page 677 }

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Q. I think we are primarily interested as to the 19th, what was the total amount of precipitation that fell on the 19th?

page 678 } A. Three inches is what we collected in our gauge.

Q. All right. Let's get to the second storm, the storm that occurred on the heels of that one on the 20th of August, and I would like for you to tell, in some detail, as to when the major portion of that precipitation fell, in what period of time and the course it took?

A. Our first tip during that storm occurred at 6:45 p.m. It started out fairly slow at the start of the storm. At 7:03, the period of high intensity rainfall began.

Q. How long did that period of high intensity rainfall continue?

A. By 7:35 it had rained two inches.

Q. In other words, from 7:03 to 7:35, two inches of rainfall had fallen?

A. Yes, sir.

Q. And then, from this 7:03 to 8:00 p.m., say 8:05—7:03 to 8:05—which is approximately one hour, it had rained two and a half inches?

A. The total precipitation that we had recorded on our gauge was 3.2 inches with the last tip ending at 8:05.

Q. All right, sir.

A. We had made a visit on the 19th. After the water passing through the tipping bucket mechanism, it is

page 679 } discharged into a receiver-collector, in other words, a can to hold this.

We also visited the station at 8:40 a.m. on the 21st, and at that time we measured 6.4 inches in the can. Now, I said that,

from the standpoint of recorded tips we had three inches on the first storm, we had 3.2 inches on the second storm.

However, with the high intensity rainfall that occurred, there is some rain that comes into the gauge in the process of tipping. In other words, it takes perhaps a second or two for it to go through this tip so that there is a slight tendency for the gauge to over-record, but I do think that 6.4 inches would confirm what had been recorded on the gauge.

Q. And that 6.4 inches fell in the storms of the 19th and 20th of August, 1963?

* * * * *

Q. All right, sir. Would you refer to your record, and tell the jury if you can, please, what the peak of discharge at the Parkfairfax gauging station was in cubic feet per second on August 20th?

A. We computed 11,700 cubic feet a second.

Q. 11,700 cubic feet a second?

A. That's right.

page 680 } Q. Now, Mr. Anderson, would you tell the jury how that peak discharge compared with any prior peak discharge since your records at that station had been maintained?

A. Yes. We have records since May of 1951, plus one indirect determination for the peak discharge in 1947—I have forgotten that date—that was 2,250 cubic feet a second.

Q. 2,250?

A. Yes.

Q. This was 11,700 on the 20th?

A. Excuse me, I haven't finished answering the first question. I was just saying, we do have that reference to that one peak discharge.

Q. I see.

A. From May of 1951 up until August 20 of 1963, the next highest discharge was 3,600, which was August 26, 1961.

Q. That was 3,600, was it?

A. Yes, sir.

Q. And the storm of August 20th, 1963 was 11,700?

A. Yes, sir.

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page 681 }

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Q. Just briefly, Mr. Anderson, I would like to ask you if you have prepared for the United States Government any pamphlet that may yet be unpublished regarding the flood in Four Mile Run of August 1963?

page 682 } A. Yes, sir, I have prepared a report on that particular flood. This is to be included in the summary of floods for 1963. In other words, the significant floods throughout the country for 1963, and Four Mile Run was considered to be one of those that should be included.

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page 684 }

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Q. Now, would you tell the jury as a result of your study, and from a review of all these records, you have mentioned, what your flood frequency interval was for a storm of that magnitude in Four Mile Run?

A. I think that you wanted to keep in mind that we are speaking of a peak discharge, and only at that site. We are not talking about a flood in Arlandria.

Q. I am talking about at Parkfairfax Station.

A. My computed frequency from that was approximately 100 years.

Q. 100 years.

A. Yes, sir.

Q. And as I understand, in arriving at that figure you took into consideration data other than data that was maintained at the Parkfairfax gauging station since 1951?

A. Yes, sir.

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Daniel Anderson

CROSS EXAMINATION

By Mr. Boothe:

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page 687 }

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Q. In a period of ten minutes, it rose 2,000 feet in ten minutes?

A. No, in fifteen minutes it rose from 9,050 to what we had here, 11,400, which is not the peak determination; it is the discharge we used for that time interval. That's fifteen minutes there, from 9:20 to 9:35—it went from 9,650 to 11,-400. From 9—

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page 689 }

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Q. You also have fairly explained, I think, that in regard to flood frequencies, you feel that a *food* at this point, that is, at the Park Fairfax gauge station, would occur at least once within 100 years?

A. I thought I defined that before, but it's—

Q. Should occur?

A. Well, I said that the recurrence interval that we will be publishing will say that it is approximately a 90-100-year recurrence interval. The way it is worded in that report, it will be slightly less than 100 years.

Q. And actually, you might get 2 or 3 within 100 years?

page 690 } A. You might get 2 or 3 before the week is over, as far as that goes. It's statistically possible. And then again, we might not get another one like that for a couple of hundred years.

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page 691 } By Mr. Boothe:

Q. On September 14, 1966, at that particular gauge—

A. We ran an indirect determination of discharge for that September 14, 1966 flood, of 7,030, the figure that will be published will be 6,900, however.

page 692 } Q. So that was, that '66 one, was even bigger than any between 1951 and '63?

A. Yes, sir; that's correct.

Q. Mr. Anderson, isn't it true, also, that the records there at the Parkfairfax, or the gauge at Parkfairfax, had only been there for twelve years before the '63 flood?

A. Yes, sir; that's correct.

Q. The longer the gauge is there, even for that one point, the better chance you have of getting an accurate recurrence frequency?

A. Yes, sir.

Q. You would be happier if it had been there since 1863 than you were knowing it was there only since 1951, weren't you?

A. Yes, sir; that's correct.

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page 696 }

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Q. So that you could really, in this general area, count on having 3.2 rainstorm in twenty-four hours about every two years?

A. That's right.

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REDIRECT EXAMINATION

By Mr. Crockett:

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Daniel Anderson

page 697 }

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Q. Let me ask you this, then, sir. The figure that you gave to Mr. Boothe, the recurrence of rainfall of 3.2 inches is based on, spread out over a twenty-four hour period, is that correct?

A. Yes, sir.

Q. All right, sir.

Now, I would like to direct your attention specifically to your record with respect to the storm of August 20, 1964—I should say, August 19-20. As I understand your testimony, sir, there was three inches of rain that fell during the 19th, and that was followed by a storm of the 20th?

A. Yes, sir.

Q. Tell the jury in what period of time the 2.1 inches fell during the 20th of August?

page 698 } The Court: 2.1 or 3.1?

Mr. Crockett: 3.1. I am sorry, sir.

The Witness: The total of the 3.1 inches was from 21:40 to 02:55—that is the 19th, excuse me.

Here is the—if you prefer daylight time, the first tip occurred at 7:45 daylight time; the last tip occurred at 10:05 daylight time, which would be two hours and twenty minutes.

Q. Two hours and twenty minutes for the entire storm?

A. For the entire storm, right.

Q. Tell the jury what your records reveal happened in that storm between 7:03 p.m. and 7:35 p.m.

A. You realize that I am, in all of these figures, that I am reading this from this chart that the Weather Bureau has prepared.

That would be approximately a seventeen-year return period.

page 699 }

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Do you know whether or not your *guaging* station at Parkfairfax is the closest station to the Arlandria area?

A. Yes; in fact, it's quite close.

Q. And the discharge that you record there is from the area upstream from the Parkfairfax gauging station?

A. Yes, sir.

Q. And how far upstream does that Run go from your station?

A. Well, it originates in Falls Church. I presume that would be roughly ten miles.

Q. Down to your *guaging* station?

A. Yes.

Q. This measures the water that comes in there

page 700 } from its inception to Parkfairfax?

A. Yes, sir.

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page 701 }

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Whereupon, RICHARD DERGEN was called as a witness by the defendant and, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

By Mr. Crockett:

Q. Mr. Dergen, what is your full name, please?

A. Richard J. Dergen.

Q. Where do you live?

A. 116 Patrick Street, Leona.

Q. And where are you employed, sir?

A. I'm presently employed with the Department of Public Works, Engineering & Design Division, City of Alexandria.

Q. Engineering & Design Division?

A. Yes.

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page 706 }

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Q. Now, Mr. Dergen, if you will take the first exhibit that we have in here that shows the entire basin—now, Mr. Der-

gen, I understand that this exhibit, which has been marked as Defendant's Exhibit H, shows the entire drainage area of Four Mile basin, is that correct, sir?

A. That's correct, sir.

Q. Would you point out, the perimeter of that basin, to the jury on this map?

A. The total area is this area here. (Indicating)

Q. All right, sir.

Now, the map it will be noticed is in three different colors. Would you tell the jury what those colors represent?

A. Yes.

The pink color represents—

Q. Point to it, if you please.

A. The pink color represents Arlington area. The yellow represents Fairfax. The brown, Falls Church area, and the green, the City of Alexandria.

Q. All right, sir.

Now, would you point out the Four Mile Run on the map—just run from its source.

A. Yes.

page 707 } Four Mile Run runs this way. (Indicating)

Q. All right, sir.

Now, have you made a computation of square miles of the entire Four Mile Run basin?

A. Yes, sir.

Q. And how much is that?

A. The total square miles of the basin is 19.3 square miles.

Q. All right, sir.

Of that amount can you tell me how many square miles are located within the County of Fairfax?

A. Within the County of Fairfax is 2.1 square miles.

Q. All right, sir.

Can you tell me how many square miles are in the City of Falls Church?

A. In the City of Falls Church the area is 0.7 square miles.

Q. All right, sir.

Now, would you tell the jury how many square miles are in Arlington County?

A. Total area in Arlington County is 13.4 square miles

Q. And how many square miles are in the City of Alexandria?

page 708 } A. The area in the City of Alexandria is 3.1 square miles.

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page 711 } Q. Now, referring to Exhibit J, Mr. Dergen, would you again, if you would, point out to the Jury the Four Mile Run itself?

A. Four Mile Run is the blue area on the map.

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Q. All right, sir. Would you please start at the far end which would be the eastern end of the Run, toward the Potomac River, and point out to the Jury just what the colors on this map are, and what they mean?

A. The purple color, we say, represents the Federal-owned property, this property here (indicating). The orange-reddish color represents the area of Arlington County Board, and this area here— No, this is not the Arlington County Board. This is the utility, which in this case is the railroad property. The green area is porperty that is

page 712 } owned by the City of Alexandria. The black area is privately-owned property. The brownish area is owned by the County, Arlington County Board. We have some more down here (indicating). Also, the yellowish area is represented by property owned by the State, State of Virginia.

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Q. Between U.S. 1 and Commonwealth Avenue, would you tell the Jury the state of the ownership of each side of the Run?

A. On each side of the Run it is owned by private property —it is private property.

* * * * *

Q. Going back between Commonwealth Avenue and Mount Vernon Avenue, as I understand, the green along the southern bank of the Run in the City of Alexandria is owned by the City?

A. This is correct.

Q. And the area in brown on the north side of the Run is owned by Arlington County?

page 713 } A. This is right.

Richard Dergen

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A. That's right.

Q. Along the run, as it leaves Mount Vernon Avenue, the brown area indicates ownership in Arlington County, is that correct?

A. This is correct.

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Q. I believe you said when we got to this point, this yellow in here, and on the north side of the Run, isn't it the Highway Department, State-owned property?

A. State-owned property.

Q. Did you testify as to what this area is up page 714 } there?

A. Yes, this area is utility-owned property.

Q. All right, sir. And all of the area in gray or black or what-have-you designated is private ownership?

A. Private ownership.

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CROSS-EXAMINATION

By Mr. Boothe:

Q. Mr. Dergen, just a couple of questions. You just drew this particular map to show the ownership, is that what you were instructed to do?

A. It shows ownership of the property along the Run.

Q. Of course, you are in the Department of Public Works?

A. Yes, sir.

Q. But you don't know what efforts the Department of Public Works have made, if any, to get the utilities or the Government, or to get the State or any of the other owners to cooperate in opening up the culverts in Four Mile Run?

A. That's right.

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page 716 }

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REDIRECT EXAMINATION

By Mr. Crockett:

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Q. How many private owners are there, if you know, in this area designated in black?

A. I don't know what that figure is.

Q. More than one, of course?

page 717 } A. Oh, yes.

Q. And all of these little diagrams on here represent certain properties?

A. That's right.

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page 719 }

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Whereupon, THOMAS M. NILES, having been previously sworn, was examined and testified upon his oath as follows:

DIRECT EXAMINATION

By Mr. Crockett:

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page 720 }

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Q. How long have you been associated with the firm of Greeley & Hanson?

A. Since July of 1925, nearly forty-two years.

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page 724 } Mr. Crockett: All right.

Mr. Niles, I believe you testified that you have been engaged in a study of the flooding problem in the Four Mile Run area since shortly after the flood of August, 1963.

Now, Mr. Niles, have you in your study of Four Mile Run and its watershed made a study and observation from records of the topography in the watershed?

The Witness: Made a general study, yes.

By Mr. Crockett:

Q. Would you, first of all, describe the topography generally in the Arlandria area?

A. Topography in the Arlandria area is relatively low and flat. It is mostly adjacent, however, to fairly steep slopes and higher ground leading to the south, the southwest.

Q. The topography of the area rises, then, to the south and southwest?

A. Yes.

Mr. Crockett: If Your Honor please, for the purpose of the record, I would like to qualify Mr. Niles as an expert.

Some questions may relate to opinion testimony.

page 725 } Any objection?

Mr. Boothe: No, sir.

The Court: Mr. Boothe has indicated he doesn't object. I will accept him as an expert.

Mr. Crockett: Thank you, sir.

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page 746 }

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Q. Do you know whether or not you had to obtain a permit from anyone to go through the railroad culverts, that property?

A. Yes, a permit was obtained, and we had to sign a waiver of all claims for damages if anything happened to us, and one thing and another; but that's normal.

Q. From whom did you get that permit?

A. I understand that was obtained—I didn't obtain it; the City obtained it— I understand they obtained that from one of the officials of the RF&P Railroad.

Thomas M. Niles

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page 753 }

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Q. Now, there's been testimony as to the Run—starts under the culverts at U.S. Route 1, that they go for approximately half of the width of U.S. Route 1 and then go in culverts that coincide with the size of the culverts under the R. F. & P. Railroad.

Are you familiar with that, sir?

A. Yes, sir.

Q. Now, let me ask you this, Mr. Niles.

Considering the culverts under the R. F. & P. Railroad and the trestle in the Four Mile Run bed and the bridge at Memorial Highway, I would ask you whether or not in your opinion any widening of the culverts under U.S. Route 1 would have prevented the flood which occurred on August 20, 1963.

A. It would not.

Q. In your opinion, sir, would any widening of those—of the capacity under Route 1—have significantly reduced the level of the water?

A. It would not.

Q. And would you explain to the jury why you don't think that it would have had any appreciable—made any appreciable difference?

A. The principal losses through the culverts are due to or related to the velocity through those culverts.

page 754 } This is a very slight portion of the loss that is involved in friction through the pipe itself.

By far the greater portion of the losses due to the entrance and exit losses which will be the same, regardless of the length, generally speaking, regardless of the length. So that enlargement of the U.S. Highway 1 portion of that combined conduit installation would in itself have extremely insignificant effect on the total losses.

There would still be the enormous entrance—well, I say enormous—in the neighborhood of a foot and a half to two feet, depending on the velocity, and an exit loss—well, I'll correct that.

I doubt if the entrance loss would be that high, but the exit loss would be in the neighborhood of one and a half to

two feet, and any change of the culverts under U.S. 1 would have practically no effect on the ability of the openings remaining to carry water.

I think I could say that it's very difficult for me to picture enlarging the U.S. Highway No. 1 Bridge all by itself. If we put in, say, four openings instead of two, or six openings instead two, any new openings we provided would have no outlet and would not be effective.

It's an impossible situation to visualize as an
page 755 } independent improvement.

Q. Now, I believe you have testified regarding the bridges over the Run and the City of Alexandria, then the Glebe Road Bridge in the Mount Vernon Avenue area.

Are you also familiar with the Four Mile Run channel within the City of Alexandria?

A. Generally, yes.

Q. All right, sir.

I would ask you this: Bearing in mind the existence of the culverts under Route 1 and R.F. & P. Railroad, the railroad trestle and the Memorial Highway Bridge, can you state to the jury whether in your opinion any further widening of the channel within the City of Alexandria would have prevented the flood which occurred on August 20, 1963?

A. It would not.

Q. Bearing in mind that same question, in your opinion would any further improvement in the channel in Alexandria have significantly reduced the level of the flood in 1963?

A. It would not.

Q. Will you amplify why you believe it would not?

A. It's a matter of what caused the flood.

The reason the water backed up and ponded to the elevation
that it reached, the reason being that more water
page 756 } was coming in than could get out.

Now, unless you do something that's going to let more water out, there's still more water coming in than get out by the same amount whether or not you have a channel in the bottom of that pool that's twice as wide as the present channel or four times as wide.

It could have no significant effect on the elevation to which the storage would be required as a result of the excessive inflow over outflow capacity.

Q. All right, sir, just one or two final questions.

Again bearing in mind the existence of the bridge over Memorial Highway, the R.F. & P. Railroad trestle and the

culverts under the R.F. & P. Railroad and that portion under U.S. Route 1, in your opinion would any further improvements, either to bridges within the City of Alexandria or the channel within the City of Alexandria, have prevented the flood which occurred on August 20, 1963?

A. It would not.

Q. In your opinion would any such improvement have significantly reduced the level of the water attained in that flood?

A. It would not.

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page 759 }

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Q. Now, relating your answer to the situation and circumstances as they were immediately prior to August 20, 1963, what is your opinion regarding the channel and bridges in Alexandria, insofar as their adequacy under the existing conditions were?

A. I consider they were adequate.

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page 762 }

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CROSS EXAMINATION

By Mr. Boothe:

Q. Mr. Niles, getting right on down to the most important point in this case, it is your opinion, as I believe it is every witness' opinion in this suit, that the culverts beginning at the west side of U. S. 1 and going on out have got to be widened. Isn't that correct?

A. Yes, sir.

Q. And Mr. Crockett asked you if there would be any sense in widening the culverts under U.S. No. 1 and not widening them under the Potomac Yards; and you said there would be little sense in doing that.

A. Yes, sir.

Q. And likewise you would not recommend widening the culverts under Potomac Yards and leaving the culverts as they are under U.S. 1, would you?

A. No, sir.

Q. They all ought to be widened?

A. Yes, sir.

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page 765 }

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Q. Well, now, if the culverts under U.S. 1 and under the RF&P had been widened up to the size of the Mount Vernon Avenue Bridge—

A. Yes, sir.

Q. I mean if the waterway at U.S. 1 and under the RF&P culverts were made—had been made 2,400 square feet on August 20, 1963, they would have passed most of the water that came through; wouldn't they?

A. I think probably that's right. I think they probably would.

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page 768 }

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But here's what I'm driving at.

Actually, the widening of Glebe Road Bridge waterway and the widening of Mount Vernon Avenue Bridge waterway, and the widening of the channel and the straightening of the channel, did very little to relieve the flood conditions as long as the City didn't get those culverts open. Isn't that true—at U.S. 1?

A. As long as the downstream obstructions existed, the improvements upstream would have made very little difference in the flood.

Q. Exactly.

A. Yes.

Q. And ordinarily it is good engineering practice to start your improvements at the bottom, or the outlet of the drainage area; isn't it?

A. I think the best practice, if you can, is to do it all at once.

Q. Altogether. Right. That's my point.

Now, then, Greeley & Hanson made a preliminary report to the City on the August 20, 1963, flood; didn't they?

A. We did; yes, sir.

Q. That's your firm?

A. Yes.

page 769 } Q. And in that report, your company made two alternate suggestions; did they not?

A. I believe I have a copy of it here which I'd like to get out so we can be looking at it.

Q. All right, sir.

A. August of 1963—what was the date on that report, Mr. Boothe?

Q. The date on this report was September 2, 1965.

A. I have it. It's entitled "Interim Report."

Q. Yes, sir.

Look on page 4.

A. Yes.

Q. Now, your two alternates were: (a) that all flood waters would be carried by Four-Mile Run to the Potomac River with no flooding or storage of flood water upstream from U.S. Highway No. 1 and the RF&P culverts. Is that correct?

A. That's what it said; *hes*, sir.

Q. Than (b) all flood waters would be carried by Four-Mile Run to the Potomac River except at the floodwater storage area now owned by Alexandria upstream from U.S. 1, U.S. Highway 1, and the RF&P Railroad culverts would be utilized to its maximum capability.

A. Yes, sir.

page 770 } Q. That was one of the alternates?

A. Yes, sir.

Q. Now, then, did you not also say that each of the alternates in your report would require one or more of the following: (a) general improvement and enlargement; (b) construction of levees; (c) enlargement of culverts and bridge openings?

A. Yes, sir.

Q. Now, then, at the bottom of page 5 you also stated what the flood storage area was; is that not correct?

A. The statement here is that this area has a storage capacity of about 8 million cubic feet below the maximum acceptable water surface elevation.

Q. And what was that water surface elevation?

A. I believe that was related to an elevation of around seven or eight, something in that—about 7 or 8 feet above mean sea level.

Q. And you estimated that the entire storage capacity above 7 or 8 feet above sea level in the pondage area was only 8 million cubic feet?

A. It's below that elevation was 8 million cubic feet—not above that elevation. In other words, that the depth that the water in the pond could rise to 7 or 8 feet.

page 771 } Q. And would hold?

A. And store about 8 million cubic feet of water at that elevation, which at the time we considered—at the time of this interim report, preliminary studies which had been carried out in detail, we considered to be an acceptable pond height with no damage.

Q. Now, before I leave that, in order to turn cubic feet into cubic yards, I think you divide by 27, don't you?

A. Yes, sir.

Q. Now, at the top of page 6, *you* report stated this, did it not:

"In the alternate projects that would utilize this area, levees would be constructed around the perimeter and along the channel above and below the storage area. The area within the levees would be available for development as a park, subject only to occasional flooding."

Is that correct?

A. That's a correct quotation.

Q. Now, getting down to the culvert and bridge openings at the very bottom of page 6, it says:

"For any fully effective flood relief project, substantial augmentation of the capacity of the No. 1 Highway and Railroad culverts will be needed."

page 772 } Isn't that so?

A. I am still of that opinion.

Q. You are still of that opinion; although you do not have at this time an opinion as to how big it whould be made?

A. Except in a very general way.

Q. Well, you all have calculated these things, now, haven't you? Both you and Mr. Black have calculated the possibilities?

A. We have calculated all the way from 16,000 to 24,000 cubic feet per second. I don't recall what the areas were, and I don't have the figures before me; because we have not reached that stage yet as to a recommendation.

Q. I see.

Since September 2, 1965?

A. That's right.

Q. When you made this report?

A. Yes.

Q. Well, you did calculate this up to 25,000 cubic feet a second; didn't you?

A. I think we did. I just we figured up as high as 24. If it was 25, we—

Q. Now, in your preliminary conclusions and recommendations on page 8 you stated:

page 773 } "It appears likely that the most practicable, fully effective project"—

Excuse me. Have you caught me yet?

A. Yes.

Q. —"will include channel improvements, utilization of the flood storage area, the construction of storage area and channel levees, and increased waterway areas up the U.S. 1 Highway and RF&P Railroad culverts."

Is that right?

A. Yes, sir.

Q. You went on to say:

"Reconstruction of the George Washington Memorial Parkway Bridge would probably not be needed except to provide for the highest flows at times of highest tide elevation."

Is that correct?

A. I no longer would make that statement following studies I have made since the date of this interim report.

Q. All right, sir.

And in this report you did not mention the railroad trestles; did you?

A. It's not mentioned specifically; no.

Q. It's not mentioned at all.

A. Not mentioned at all.

Thomas M. Niles

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page 774 }

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Q. This brings me up right to date.
Now, this report was at September 2, 1965?
A. That's right.

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page 775 }

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A. Yes; I remember that.
Q. Well, wasn't there talk then about a final report coming up, and to wait for the final report?
A. I think there may have been.
Q. Sure; but there is no final report.
A. We have not made a final report.

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page 776 } Q. Now, are you familiar with the Chester Engineering Report of December 1943?
A. Only very generally. I have not studied it in any detail.
Q. Did you read it?
A. I think probably at some time in the past I have read parts of it.
Q. Do you know what their recommendations were?
A. I believe they recommended something like boring out some culverts. I don't know what they meant by that. I don't recall what area they felt should be provided under the Railroad.
Q. Mr. Niles, you either read the Chester Engineering Report or you did not?
A. If I read it, Mr. Boothe, I read it some years ago, and I do not recall what it said, and I made no particular effort to memorize what it said.
Q. You don't mean to tell this jury you didn't understand what they meant by barreling out and doubling the circumference?

Thomas M. Niles

A. Yes. I don't understand what barreling out meant that has been referred to.

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page 779 }

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Q. Now, you have looked at this problem of widening the outlet to this drainage system from the west side of U.S. 1 out to the open water. You have looked at this from an engineering viewpoint, have you not?

A. Yes, sir.

Q. You are not personally familiar, nor is it any of your function to know what the power of the city is to enlarge this waterway?

A. That's correct.

Q. You are not familiar with, nor is it your fuction to know, what the duty of the Railroad is?

A. That's correct.

Q. To open it?

A. That's correct.

Q. The only thing you are concerned with, very properly, is that you agree, as all of us agree, that the waterways have got to be opened, isn't that right?

A. Yes, sir.

Q. That you can't keep pouring more and more water into this basin and not get it out?

page 780 } A. That's correct.

Q. The prime obligation of whoever's responsibility it is to open the waterway at the lower end of this basin to prevent flooding.

A. That I am not qualified to answer, as to whose responsibility.

Q. Regardless of whose responsibility.

A. Maybe it is nobody's responsibility. I am not prepared to say.

Q. The prime obligation, the prime need is to open that waterway?

A. That is the prime need, yes, sir.

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Thomas M. Niles

page 784 }

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Q. Let me get to it this way:

You saw the cross sections that were put up here by the plaintiffs?

A. Yes.

Q. You disagree with the showings there, do you not?

A. I am not sure that I do entirely. I did feel—

Q. You disagree by 100 percent because on the Alexandria side you disagree 100 percent, because on the Alexandria side the difference alone on the Alexandria side was over 20,000,000 cubic feet.

A. I thought the testimony was that it was just under 20,000,000. I was very much amazed at that discrepancy.

Q. Between you and them?

A. Yes, yes.

Q. I mean you do differ with them?

A. We do very decidedly on that particular point.

Q. 100 percent.

A. On the fill volume alone it is 100 percent. On the total volume there is still, I believe, some difference, but I am not sure it is 100 percent.

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page 788 } Q. Now then, I guess what I'm really asking you is, if Mr. Snyder's calculations are right, the tub would be at least twice as big as your tub, wouldn't it?

A. I think, if his figures are right, the tub would be about half as big or maybe two-thirds as big as my tub.

Q. Two-thirds as big?

A. I believe that his figures on total pond volume as of 1963 conditions—I believe his figures were somewhat lower than ours for this volume relationship, and, of course, they were very much lower if he figured in twice as much fill.

Q. You heard his testimony, didn't you?

A. Yes.

I was a little bit surprised it was as small as it was.

Q. He said it would make a three-foot difference in the flood level of the pond, didn't he?

A. Yes, sir.

Now, I'm unable to check that at all.

Q. There's some little discrepancy between you all on that?
A. Yes.

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page 791 }

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REDIRECT EXAMINATION

By Mr. Crockett:

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Q. There was one question that I wanted to ask, Mr. Niles, relating to the question of accretion in the Four Mile Run basin relating to the fill problem.

Could you explain to the jury—Mr. Revell touched on it—but could you explain to the jury what effect, if any, would the natural accretion have on filling in the basin?

page 792 } A. Well, I could only say that over the years it unquestionably contributed greatly to the filling in of the basin, just because that's the way these streams are operated.

All rivers, so far as I know, carry silt in time of flood and sometimes in time of normal flow and carry it where the velocity is high and deposit it where the velocity is low. The Mississippi does, the Nile does—Four Mile Run does it, too; and I have seen many maps that were published or made, say 100 years ago, that show open water where now there is no open water.

To my own knowledge, when we started working on the sewer problem in Alexandria in 1944, I could go down to Hunting Creek and I could see a broad expanse of water that would fill up on an incoming tide and empty out on the outgoing tide. Within this short period of 20 years, I have seen that change, even before the highway earthwork was involved.

I have seen that change to the place where there was no longer a broad tidal sheet of water that came in and out as the tides change. I have seen that filled with sediment to the place where there were just channels, and I have no doubt whatever, having looked at some of the old maps of a hun-

dred or a hundred and fifty years ago, that that same thing has happened in Four Mile Run.

page 793 } Over the years there will be an enormous deposition in the flood outlet of whatever has eroded from upstream. Now, some of that erosion is natural erosion —it would take place even in a natural state of the ground.

We do find that, when development work is underway with a lot of earth moving and regrading and stripping of the vegetation and so on, that, when a rainfall comes along, that erosion is greatly accelerated, and I would suspect that during the period of the development here there has been quite a lot of such deposition that has come on down.

Further evidence of that is that it is my understanding from discussions with the people who have been maintaining this stream, that after a flood they find that large quantities of sand and gravel have washed down from upstream and that material has to be removed.

So, I think, without any question, there has been a lot of that that has been coming down. It may help to explain to a degree the enormous difference in the fill volume computed between 1915 and 1963 by all three—I can't remember the man who testified for Mr. Holland, but, at any rate, he was the man who gave two sets of profiles, and it may have made quite a difference as between the profile in 1915 and the profile in 1963, even if there had been no other filling

page 794 } than natural filling.

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page 798 }

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Whereupon, FRANKLIN *P.* SNYDER was called as a rebuttal witness by the plaintiff and, having been previously duly sworn, was examined and testified further as follows:

DIRECT EXAMINATION

By Mr. Boothe:

Q. Mr. Snyder, just one or two questions I wanted to ask you about the—one of the questions is about third importance, and that's about rainfall.

Mr. Niles said that this rainfall he used was point rainfall

and not rainfall representative of the entire basin. Would you tell me the significance of that?

A. Well, it shows a rather extreme rainfall right there for three five-minute intervals.

There's no point to be made of it, but it's a pretty heavy rainfall for that short period of time. Of course, the intensity—that fifteen-minute rainfall by itself without the rest of the rain water, there wouldn't have been any flood whatsoever—but that's a small piece of the rain—it was intense and, of course, Mr. Niles—he said he got this

page 799 } record from the Geological Survey.

I happen to have a copy of the Geological Survey Rain Gauge Record, and no one could pick off five-minute rates of rainfall from that.

Q. That's the next question I was going to ask you.

Can you pick off five-minutes rates of rainfall from it?

A. No.

The time space is for one hour—the space area is one-tenth of an inch wide, and this goes up and down three times there practically on top of each other, which indicates it was a very intense rain, but I don't believe anyone could reasonably estimate what the five-minute rainfall rates were.

The best I could do would be to say that most of that intense part fell in somewhere between fifteen and twenty-five minutes, but it's not the sort of rain gauge trace that you can pick five-minute intervals on.

page 800 } Q. Now, just one other thing: Do you know whether or not the U.S. Geological Survey figure for Long Branch, the rainfall there, was lower or higher than the figure that Mr. Niles used?

A. For Long Branch?

Q. Yes, sir.

A. There happen to be two Long Branches in the basin. I'm sure Mr. Niles was talking about the one that comes out of the golf course.

Q. The nearest one to Alexandria.

A. —the downstream area. The downstream area did have about the same rain as the gauge. The place that had the light rain was at the upper end of the basin. It was a little lighter. But most of the area had around 3 inches.

Q. My question to you was: Do you know whether or not the figure used by Mr. Niles for Long Branch was lower or higher than the U.S.G.S. figure.

A. You said "rainfall." I guess you mean the discharge.

Q. I beg your pardon.

A. It so happens that the Geological Service also estimated a peak discharge for that basin; and apparently, Mr. Niles did not choose to use that. Their estimate was around 2700-2600 cubic feet.

page 801 } Q. Did you all make any compensation or not for accretion, or deposition, for computing the amount of fill between '29 and '63 in the Four Mile Run Basin?

A. We thought this had been pointed out, but I guess the only way to make it clear is to get the exhibit.

Q. Which one?

A. The one that has the two sets of cross-sections on it.

I guess to make sense, you have to have the one which shows where the cross-sections are.

Q. Get to the side, so the Jury can see, will you, please?

A. (Indicating) The right side here is the Arlington side. This heavy dashed line is the boundary in each case. As it has been previously mentioned, I think, the information for the 1963 conditions was obtained from very good maps, with two-foot contour intervals on it. In addition to that, the engineers actually surveyed the bottom. In other words, the bottom across here in each case, for the 1963 conditions was surveyed in the field; so it is pretty well established. But this, then, was used as the basis for estimating the bottom in 1915-1929.

page 802 } Of course, now, cross-section number 1 is down, you will recall, in the section between Route 1 and Commonwealth Avenue here, and I guess everyone knows that this has been practically all filled in, and this, of course, is shown here. But you will notice here that the bottom line for 1915 and 1929 is at, as was said, about 3 feet. In other words, from the old map we got the expanse of that area; but the map itself being the 10-foot intervals, did not have any indication of where the bottom of that area covered by the water was, so we picked what we thought was a reasonable value.

In line with the information which was contained in 1963—

The Court: If you don't mind my interrupting, your answer to Mr. Boothe's question is that you did all take into consideration the accretion and you used the field survey made by Holland Engineers for the 1963 period, and then you used the Government survey that was made in 1915, and was prepared in 1919, is that in effect—

The Witness: The way we took account of it was to eliminate it. In other words, the bottom—

The Court: I understand. But those are your sources?

The Witness: Beg pardon.

page 803 } The Court: Those are your sources that you used to work from?

The Witness: Yes, sir.

The Court: And you did that, considered the accretion aspect of this situation?

The Witness: Well, we eliminated it by keeping the base—in other words, the sediment would be in the low area.

The Court: You eliminated it, but you did consider it.

The Witness: We certainly considered it.

The Court: I think that was Mr. Booth's question.

By Mr. Boothe:

Q. In other words, instead of starting at mean sea level, you started at 3 feet above mean sea level.

A. Yes, which is about where the land is now.

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page 806 }

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The Court: Gentlemen: You all recall that at the conclusion of the plaintiff's case, I indicated to you that I would defer any rulings on the plaintiff's motion to strike. At that time, I also expressed some doubt as to whether or not the plaintiff had proved at that point that there was any actionable negligence so far as the City of Alexandria was concerned.

There have been a number of allegations of page 807 } negligence. I am not going to, in any sense of the word, try to comment on all of the evidence, rehash it over and over at this point. But I do feel that this is a case that at this point, that I should submit to the Jury. I don't feel that the plaintiff did carry the burden of proof on a number of the allegations of negligence that were made.

I think one of the main things that is questionable in my mind is the allegation of negligence so far as the City is concerned with respect to permitting this area to be filled in, and actually be taking part in the filling itself.

There has been some evidence that by a process of accretion, this initial ponding area has been filled in to some extent on the City of Alexandria side. There has been evidence that the City of Alexandria itself participated in filling in this area, so far as the erection of a school is concerned and so far as the erection of a pumping station is concerned.

There is evidence on behalf of the plaintiff to the effect that this filling of the ponding area did cause the water level to rise under flooding conditions. I don't think that there was any tangible evidence that was presented by the

page 808 } plaintiff that would indicate the extent to which the water level did rise as a result of this fill.

I can't consider this in ruling on this point, but there was some evidence by the City as to the distance that the water level did rise, that it was 7 inches approximately; as I say I can't consider that at this point.

I think there is also a question, as far as the Plaintiff's evidence is concerned, as to what portion of that is attributable to the City of Alexandria and what portion of it is contributable to Arlington County or some other jurisdiction, so far again, as the fill is concerned.

So, I think that in and of itself, at this point, at least, is enough for me to submit the case to the jury on the question of the City's negligence.

Now, so far as the City not doing anything about the culvert or passage under the RF&P Railroad, under Mount Vernon Memorial Highway or under U.S. Route 1, of course, there are a number of problems and a number of considerations in connection with that.

I don't feel that there is any primary responsibility on the City of Alexandria to take care of the situations. I think it is a serious question as to whether or not the City could, even if it were so inclined.

page 809 } But again, without going into the problems like that of trying to resolve them at this point, I think there is enough evidence to let it go to the jury at this point, so I will deny the Motion to Strike.

Mr. Crockett, I assume you will want to put your exceptions in the record, or Mr. Murphy, I'm sorry.

page 810 } Mr. Murphy: Your Honor, we would respectfully ask the Court to note our exception to the overruling of the motion which was made at the conclusion of the plaintiffs' case.

We feel there was really no proof to back up the allegations as contained in the motion for judgment having to do with matters of, first, the matters of the filling of the natural basins.

The Court: Your exceptions in effect would be the same thing as you stated in your argument?

Mr. Murphy: Yes, Your Honor.

May I ask also, is this an appropriate time, would the Court entertain another motion to strike based primarily on the same grounds? Now, at the conclusion of the entire case, we would renew our motion for the record.

The Court: You do renew your motion? My ruling would be the same.

Suppose you all come back to chambers and we will start on instructions.

Mr. Murphy: Could the record show an exception to your overruling the motion, Your Honor?

The Court: Yes, sir.

* * * * *

Alexandria, Virginia

Wednesday, July 5, 1967

The above-entitled matters came on to be heard on motion to set aside verdict, pursuant to notice, at 10:00 o'clock, a.m.

BEFORE:

HONORABLE BARNARD F. JENNINGS, Judge

APPEARANCES:

ARMISTEAD L. BOOTHE, ESQUIRE
CHARLES S. PERRY, ESQUIRE
For the Plaintiffs

V. FLOYD WILLIAMS, ESQUIRE
HENRY B. CROCKETT, ESQUIRE
ROBERT L. MURPHY, ESQUIRE
For the Defendants.

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The Court: Let me comment first of all on what each of you, I think, have considered to be of some importance.

So far as the evidence going beyond the scope of the pleadings, and that is considering the bill of particulars as such, a pleading, in the memorandum that has been filed by the City, and arguments of Mr. Murphy, the effect of the argument is that in the amended motion for judgment that was filed by the plaintiff or the plaintiffs, an allegation was made that said the City permitted the filling in of Four Mile Run Basin so as to decrease the capacity of that basin as a part of the City's sewer system, and in response, later on, the City —I mean the plaintiffs, did file their bill of particulars and indicated that the City permitted forty acres east of Commonwealth Avenue to be filled by the owners thereof.

Now, evidence was admitted that tended to
page 124 } show that there was a filling of this basin to the west of the Avenue and the theory on which that evidence was admitted was not, or at least to my mind, Mr. Murphy, was not in complete disregard of what was said in the bill of particulars. But because of the tenor of the case, the nature of the case as such, I felt it was absolutely essential for all evidence as to fill to be before the jury and before The Court and I do not feel that that should be limited to what the plaintiff said in his bill of particulars—not necessarily that the City would be responsible as such for the filling in this other area and, of course, I make no determination as to that, but regardless of who is responsible for the fill, whether it was the City or the individual or some other governmental agency, regardless of who it might have been, I think that that evidence, whatever it might be, is something that should be considered by the jury and by The Court.

So, I do not feel that there was error in admitting that testimony.

As I say, that was the theory on which it was admitted as distinguished from being admitted in complete disregard of what was said in the bill of particulars.

Now, commenting on some of these other things, and starting out with the basic problems, in effect: Obviously, there was a flood and a substantial one, and obviously,
page 125 } the various plaintiffs did receive damage. That was stipulated to. I think the evidence is clear in this matter—in fact, overwhelming—that a number of different factors did contribute to cause this flood. And I think the experts that testified on behalf of the City and also testified on behalf of the plaintiffs, were pretty much in agreement as to the cause of the damage itself. There was some minor disagreement, but I think, in effect, they were pretty much in agreement.

First of all, one of the major contributing factors was the development along the Four Mile Run Basin, the filling of certain areas, the concentration of water, not only in the City of Alexandria, but in Arlington County, Fairfax County, especially Long Branch, as I recall, in Arlington County; there was certainly a wealth of evidence as to the filling of this ponding area as such, again not only in the City, but also in the County of Arlington.

There was some evidence that the tide in the Potomac River had some bearing on the height of the water itself in the flood area.

There was considerable evidence to the effect that the inadequacy of the passageways going under the R.F.&P. Railroad and Route 1 and Mount Vernon Memorial Parkway contributed to cause this.

page 126 } There was, I think, considerable evidence as to the concentration of water, as I mentioned before, in Long Branch that came down in volume and did contribute, in effect, to the problem that did come to be.

Considering those as being the main and the primary things that did contribute to this damage, and bearing that in mind, in order for the City to be liable under these circumstances, the City, of course, does have to be negligent. The negligence of the City would have to be the proximate contributing cause to the end result that did take place—that is the end damage.

I think all of you are pretty much agreed that that is the law that we are confronted with.

Now, tying that in to the role the City of Alexandria played in this situation, first of all the City of Alexandria admittedly had some control over a part, at least, of the Four Mile Run Basin.

There is a large portion of it that it had no control over whatsoever. I think the evidence was, it was stipulated to, that 3.1, or at least three and a fraction square miles of this entire basin of 19-some odd square miles, was within the City of Alexandria. The mere fact it is within the City obviously does not mean that the City has control over it. It does not mean that the City has assumed control over it as

page 127 } such, but again, there is no question but that some parts of the City had some control over and did work on, in conjunction with Arlington County.

So far as the tide in the Potomac River is concerned, obviously the City would have no control over that.

Now, as to whether or not the City has any control over Route 1 or the R.F. & P. Railroad, the passageways under

it, Mount Vernon Memorial Boulevard, the evidence was itself, to my mind, lacking in a number of respects so far as that situation is concerned.

There was some evidence to the effect that the City of Alexandria had exercised some joint control over Route 1 and I don't think there was any evidence to the effect that the City had exercised any control over the R.F. & P. Railroad property or of Mount Vernon Memorial Bridge area.

The most I feel that the evidence indicates that the City could have done in any of these situations would be to endeavor to have, speaking now of the parkway and of Route 1, is to have the other jurisdictions that did have some control over it to participate with the City of Alexandria in trying to do something about that.

There was some evidence that the City did contact the railroad through its agents, through its officers on occasions, to try to get them to do something.

There is no evidence whatsoever as to what
page 128 } would have been accomplished or could have been
accomplished if the City had tried to do something to cause these other jurisdictions to participate with them to alleviate the situation.

I do not feel that the evidence is sufficient to show that the City was negligent so far as not participating with these other jurisdictions are concerned; nor do I feel that the evidence is sufficient to show that the City was negligent in not endeavoring to cause the R.F. & P. Railroad to do something so far as the situation under their property was concerned.

There is no evidence at all as to what might have been accomplished or what could have been accomplished under these circumstances.

I think that the cases that we have earlier considered so far as the motion to strike is concerned, so far as the demurrer is concerned, that was argued some time ago, are all distinguishable from this case that we are now concerned with.

I think in most all those cases—that is, the Virginia cases, we were dealing with situations where the drainage area and any obstructions to the drainage were within the confines of a particular jurisdiction. For example, in the Richmond case where there was recovery against the City of Richmond, all of that area was within the City of Richmond, not the area of problem we have here when there are a number
of jurisdictions that are affected, contributed to
page 129 } a situation in one way or another.

Now, so far as the control over the develop-

ment in the area is concerned, to some extent, obviously the City of Alexandria would have control over private development within the City of Alexandria, but for the City to say that you cannot build a house, that you cannot build a shopping center, cannot build some other commercial establishment in these areas that were built in, I don't think that there is sufficient evidence to show that there was any negligence on the City, in not prohibiting this, even if the City would have had the power to do it, which I doubt seriously under most of these circumstances that have been brought out in argument and in the evidence.

Now, going to this ponding situation and that, to my mind, is the most important, the most crucial and critical aspect of this case—the evidence is that the City of Alexandria did instigate and did, in effect, of its own volition cause to be filled certain areas within this ponding area—that is, the school site and the pumping station site. There is no question but that the City of Alexandria was responsible for them.

Now, having that in mind, the next question is whether or not that, if it was negligence, whether or not that was a proximate contributing cause to the damage that page 130 } these plaintiffs did sustain. The plaintiff in each of these cases would have the burden of proof to show the causal connection between this act on the City and the resulting damage. The plaintiff would again have to show that by a preponderance of the evidence. I do not feel that the plaintiff has borne the duty that, or the plaintiffs have borne the duty that they would have in that connection.

I am well aware of the fact that The Court should not and must not substitute its judgment for that of the jury. Each of you will recall when the arguments were made on the motion to strike, and when I made the ruling after having deferred it on that motion, that I indicated then I had very serious doubts as to the liability of the City under these circumstances, but that because of the time, the work, the effort, the expense that all of the parties have gone to in this connection, I felt it was much better to let the case go to the jury and thus have a complete record that can go to the Court of Appeals with a view to the Court of Appeals making a final judgment on it one way or the other if they are in a position to do so.

I feel that the evidence that was present in this case was insufficient to let the jury or to enable the jury to reach the verdict that it did and I don't feel, though, that I have any choice at all except to grant the motion that has page 131 } been made by the City and to set aside the ver-

dict of the jury. I think the factual situation in this case is such that I should go ahead and enter final judgment on the evidence that has been presented in favor of the City.

So, if you would prepare an appropriate order, Mr. Murphy, and note the exceptions of Senator Boothe, I will sign it.

* * * * *

A Copy—Teste:

Howard G. Turner, Clerk.

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