DACW-33-85-D-0011 Delivery Order 0013
West River, New Haven, CT

FILE COPY

ATLANTIC TESTING LABORATORIES, LIMITED

Sustaining Member—N.Y.S. Society of Professional Engineers

Box 29
Canton, N.Y. 13617
(315) 386-4578

Box 356
Cicero, N.Y. 13039
(315) 699-5281

September 22, 1986

U. S. Army Corps of Engineers
New England Division
424 Trapelo Road
Waltham, MA 02254-9149

Attn: Chief, Engineering Division, NEDED

Re: Subsurface Investigation
West River, New Haven, CT
Contract DACW-33-85-D-0011
Delivery Order No. 0013
ATL File No. CD016-1-7-86

Gentlemen:

In accordance with Delivery Order No. 0013, dated 25 June 1986, attached is one final copy of our Engineering Report for the subsurface investigation performed at West River, New Haven, CT.

By copy of this letter, we are also transmitting two copies of this report to the Chief of the Geotechnical Engineering Branch.

If you have any questions or comments, please do not hesitate to call.

Respectfully submitted,

Spencer F. Thew, P.E./L.S.
President

SFT/TAB/smf

2 cc: Chief, Geotechnical Engineering Branch, NEDED-GF

encs.

SECTION 1

SUBSURFACE INVESTIGATION
WEST RIVER
NEW HAVEN, CT

CONTRACT DACW 33-85-D-0011
CONTRACTING OFFICER:
Edward D. Hammond, LTC, CE
28 June 1985

DELIVERY ORDER NO. 0013
25 JUNE 198

PREPARED FOR: U.S. Army Corps of Engineers
New England Division
424 Trapelo Road
Waltham, MA 02254-9149

PREPARED BY: Theresa A. Beddoe
Atlantic Testing Laboratories, Limited
P. O. Box 29
Canton, NY 13617

July 16, 1986

ATL Report No. CD016-1-7-86

SECTION 2

TABLE OF CONTENTS

SECTION 1 Title Page

SECTION 2 Table of Contents

SECTION 3 Scope of Investigation
- a. Delivery Order
- b. Project Site
- c. Purpose
- d. Authority
- e. Scope of Work

SECTION 4 Quality Control
- a. General Certification Statement
- b. Records Taken
- c. Equipment Used
- d. Procedures

SECTION 5 Summary of Activities and Telephone Log
- Table I Summary of Activities
- Table II Telephone Log

SECTION 6 Chain of Custody Logs

SECTION 7 Safety Reports

SECTION 8 Field Inspector's Logs
- a. Figure 1 - General Project Map
- b. Figure 2 - Site Location Map
- c. Figure 3 - Boring Location Plans
- d. Boring Logs

SECTION 3

SCOPE OF INVESTIGATION

a. DELIVERY ORDER NO. 0013

CHECKED BOX APPLIES: [X] ORDER FOR SUPPLIES OR SERVICES

[ ] REQUEST FOR QUOTATIONS NO. RETURN COPIES OF THIS QUOTE BY (THIS IS NOT AN ORDER. See DD Form 1155r)

PAGE 1 OF 2

5. CERTIFIED FOR NATIONAL DEFENSE UNDER DMS REG 1 DO

1. CONTRACT NO: DACW33-85-D-0011

2. DELIVERY ORDER NO: 0013

3. DATE OF ORDER: 86 JUN 25

4. REQUISITION/PURCH REQUEST NO: GEB 86-64

6. ISSUED BY: Dept. of the Army
New England Division, Corps of Engineers
424 Trapelo Road
Waltham, MA 02254-9149
Buyer/Symbol: Hebert/NEDSD-P Phone: AC 617-647-8207

7. ADMINISTERED BY (If other than 6)

8. DELIVERY FOB: [X] DEST [ ] OTHER (See Schedule if other)

9. CONTRACTOR/QUOTER — NAME AND ADDRESS:
Atlantic Testing Laboratories, LTD
P.O. Box 29
Canton, NY 13617

10. DELIVER TO FOB POINT BY: In accordance with Paragraph 7 of the Attachment

11. CHECK IF BUSINESS IS: [X] SMALL [ ] SMALL DISADVANTAGED [ ] WOMEN-OWNED

12. DISCOUNT TERMS: NET

13. MAIL INVOICES TO: Finance & Accounting Officer at Issuing Office

14. Services for:
U.S. Army Engineer Division, New England
ATTN: Geotechnical Engineering Br.
424 Trapelo Road
Waltham, MA 02254-9149

15. PAYMENT WILL BE MADE BY: Finance & Accounting Officer at Issuing Office

MARK ALL PACKAGES AND PAPERS WITH CONTRACT OR ORDER NUMBER

16. TYPE OF ORDER: DELIVERY [X] — This delivery order is subject to instructions contained on this side of form only and is issued in accordance with and subject to terms and conditions of above numbered contract.

PURCHASE [ ] — Reference your furnish the following on terms specified herein, including, for U.S. purchases.

General Provisions of Purchase Order on DD Form 1155r (EXCEPT CLAUSE NO 12 APPLIES ONLY IF THIS BOX [ ] IS CHECKED, AND NO. 14 IF THIS BOX [ ] IS CHECKED); special provisions ; and delivery as indicated. This purchase is negotiated under authority of 10 USC 2304(a)(3) or as specified in the schedule if within the U.S., its possessions or Puerto Rico, if otherwise under 2304(a)(6).

[ ] If checked, Additional General Provisions apply; Supplier shall sign "Acceptance" on DD Form 1155r and return copies.

SBSA

ACCOUNTING AND APPROPRIATION DATA/LOCAL USE

96X3122 Construction General
BE749301X0PA000

Rumall 6/25/86

Status AE/PS C
GEB
SO
JJH/ln

18. Contract Line Item No.	19. SCHEDULE OF SUPPLIES/SERVICES	20. QUANTITY ORDERED/ ACCEPTED*	21. UNIT	22. UNIT PRICE	23. AMOUNT
	Furnish necessary Services and Equipment for Explorations of Subsurface Conditions Around the Banks of the West River in New Haven, CT. as specified in Attachment No. 1	APPROX.			ESTIMATED
1.1	Geologist	88	hr	$ 40.00	$ 3,520.00
1.3	Per Diem — Overnight Stay	8	day	45.00	360.00

*If quantity accepted by the Government is same as quantity ordered, indicate by √ mark. If different, enter actual quantity accepted below quantity ordered and encircle.

24. UNITED STATES OF AMERICA BY: EDWARD D. HAMMOND, LTC, CE
Deputy Division Engineer
CONTRACTING/ORDERING OFFICER

25. TOTAL: $27,3[illegible]1.50

29. DIFFERENCES

26. QUANTITY IN COLUMN 20 HAS BEEN: [ ] INSPECTED [ ] RECEIVED [ ] ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED

DATE — SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE

27. SHIP. NO. [ ] PARTIAL [ ] FINAL

28. D.O. VOUCHER NO

30. INITIALS

32. PAID BY

33. AMOUNT VERIFIED CORRECT FOR

31. PAYMENT [ ] COMPLETE [ ] PARTIAL [ ] FINAL

34. CHECK NUMBER

36. I certify this account is correct and proper for payment.

DATE — SIGNATURE AND TITLE OF CERTIFYING OFFICER

35. BILL OF LADING NO.

37. RECEIVED AT | 38. RECEIVED BY | 39. DATE RECEIVED | 40. TOTAL CONTAINERS | 41. S/R ACCOUNT NUMBER | 42. S/R VOUCHER NO.

STANDARD FORM 36, JULY 1966 GENERAL SERVICES ADMINISTRATION (41 CFR) 1-16.101 EXCEPTION TO SF 36 APPROVED BY NARS, MAR 1977	CONTINUATION SHEET	REF NO OF DOC BEING CONT'D Delivery Order No. 0013 to DACW33-85-D-0011	PAGE 2	OF 2

NAME OF OFFEROR OR CONTRACTOR

Contract Atlantic Testing Laboratories, Ltd

ITEM NO.	SUPPLIES/SERVICES	QUANTITY APPROX.	UNIT	UNIT PRICE	AMOUNT ESTIMATED
1.4	Mileage from Waltham , MA & Return	540	mi	$ 0.35	$ 189.00
2.1	Geotechnical Report (Price expressed as Percentage of Line Item 1.1 or 1.2.)	1	job	60% of 1.1	2,112.00
6.1	Mobilization and Demobilization	1	job	700.00	700.00
6.2	Mileage from/to Waltham, MA	270	mi	1.15	310.50
6.5	Standby Time/on site moves	16	hr	75.00	1,200.00
14.1	0-50 Ft. Depth	320	lf	22.00	7,040.00
17.1	BX, NX Size	280	lf	15.00	4,200.00
17.2	HX and 6-inch Size	80	lf	24.00	1,920.00
18.2	HX and 6-Inch Size	80	lf	28.00	2,240.00
22.3	NWX Size and/or NWM	80	lf	45.00	3,600.00

ATTACHMENT NO. 1

GEB REQUISITION NO. 86-64, DELIVERY ORDER NO. 0013

CONTRACT NO. DACW 33-85-C-0011

INSPECTION AND EXPLORATION INSTRUCTIONS

PROJECT: West River Local Flood Protection Project

SITE: New Haven, CT

AUTHORITY: Section 205 of the 1948 Flood Control Act

PURPOSE: To provide information on foundation conditions for the design of floodwalls.

1. SCOPE OF INVESTIGATIONS

a. Locate eight (8) continuous drive sample borings by tape measure as shown on the survey sheets which comprise Attachment 2. Each boring log shall have a sketch showing distances from the boring to at least 3 landmarks such as existing buildings and utility poles. Such landmarks shall be shown on a general plan included in the geotechnical report. Ground surface elevations for the borings will be estimated based on the contours shown on Attachment 2.

b. All eight borings will be driven to a depth of 40 feet. The top ten feet of each hole shall be cased with HX casing unless more casing is required to stabilize the hole or refusal is encountered before 10 feet. Overburden sampling shall be performed using a 300 pound hammer driving a five foot long, 2 inch diameter solid sample spoon. Sampling shall continue until refusal is encountered or to the depth specified herein. Refusal is defined at 50 blows with no penetration or bouncing refusal. If refusal is encountered before reaching the specified overburden sampling depth, the boring shall be advanced by drilling with an NWX or NWM size core barrel. If a break-through occurs before reaching the specified overburden sampling depth, continuous sampling shall be resumed up to the required 40 foot depth or an additional refusal is encountered. If additional refusals are encountered above the specified depth, drilling shall be resumed until 10 continuous feet of rock are cored or the specified depth is reach.

c. A geologist shall act as field inspector during the prosecution of the boring work. The inspector shall provide telephone reports to Mr. L'Heureux, Corps of Engineers, at tel. 617-647-8669 at least once per day.

d. All soil samples and rock core shall be delivered to the Corps of Engineers, New England Division Materials Laboratory in Waltham, MA. This delivery shall be coordinated with the Laboratory Director at tel. 617-647-8367/8392.

2. SITE CONDITIONS

The work area is in a well-developed, privately owned, industrial area and generally within 40 feet of a stream bank. All except one of the borings are in areas easily assessed by vehicles adjacent to buildings. The remaining boring is in a lawn area.

3. RIGHTS OF ENTRY

Rights of entry have been obtained by the Corps of Engineers for all properties where explorations are sited and are enclosed as attachment 3.

4. COORDINATION

Mr. P. L'Heureux, Corps of Engineers, tel. 617-647-8669 shall be contacted five days prior to the start of work and shall be informed of progress every day thenceforth until completion of the work. The contractor shall notify "Call B4 you dig" at tel. 203-281-5435 within 48 hours of the commencement of the borings in order to notify utility companies of the subsurface explorations. The contractor shall also notify property owners identified in Rights of Entry.

5. EXPLORATION NUMBERS

The drive boring locations as shown on Attachment No. 2 and designated A through H shall be numbered FD 86-1 through FD 86-8 in order of their completion. The new numbers shall be indicated on the boring logs and shown on a plan of exploration.

6. GOVERNMENT REVIEW

The Government will review the draft geotechnical report submittal as well as the completed report. Subsequent to such review, the Contractor shall accomplish any corrections which may be directed as the result of the Government review.

7. COMPLETION SCHEDULE

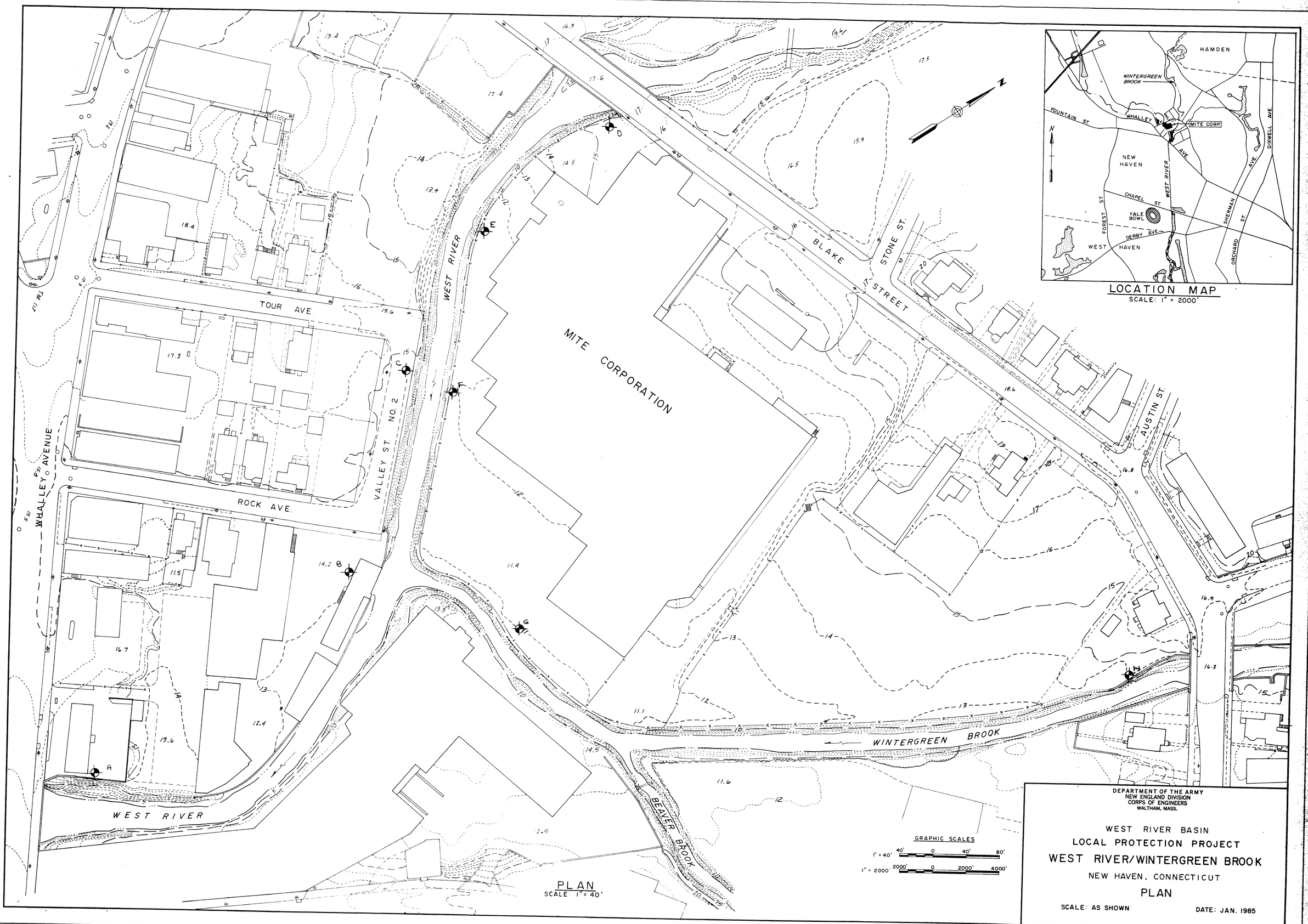
Services under this delivery order shall start within seven calendar days after receipt of the delivery order. The duration of the field work is estimated to be ten work days. The geotechnical report shall be submitted in draft format for review (by Government) no later than seven calendar days after the completion of the field work. Government review will take approximately ten calendar days from receipt of the draft report. The final geotechnical report shall be submitted no later than seven calendar days after the receipt of the draft report and shall incorporate all corrective actions noted by the Government on the draft report.

8. QUALITY CONTROL

You will be held responsible for the quality of the maps submitted and for all damages caused the Government as result of your negligence in the performance of any services furnished under the contract.

Although submissions required by your contract are technically reviewed by the Government, it is emphasized that your work must be prosecuted using proper internal controls and review procedures.

The letter of transmittal for each submission which you make shall include a certification that the submission has been subjected to your own review and coordination procedures to ensure (a) completeness for each discipline commensurate with the level of effort required for that submission; (b) elimination of conflicts, errors, and omissions; and (c) the overall professional and technical accuracy of the submission. Documents which are significantly deficient in any of these areas will be returned to you for correction and/or upgrading prior to our completing our review. Contract submission dates will not be extended if a resubmission of draft material is required for this reason.



MAREPEACE P-5728

WEST RIVER PROJECT
(Project, Installation or Activity)

426 West Rock Ave
(Tract Number or Other Property Identification)

The undersigned, hereinafter called the "Owner", hereby grants to the UNITED STATES OF AMERICA, hereinafter called the "Government", a permit or right-of-entry upon the following terms and conditions:

1. The Owner hereby grants to the Government an irrevocable right to enter upon the lands hereinafter described at any time within a period of Sept 86 (4) *months from the date of this instrument, in order to survey, make test borings, and carry out such other exploratory work as may be necessary to complete the investigation being made of said lands by the Government.*

2. The permit includes the right of ingress and egress on other lands of the Owner not described below, provided such ingress and egress is necessary and not otherwise conveniently available to the Government.

3. All tools, equipment, and other property taken upon or placed upon the land by the Government shall remain the property of the Government and may be removed by the Government at any time within a reasonable period after the expiration of this permit or right-of-entry.

4. The Government agrees to be responsible for damages arising from the activity of the Government, its officers, employees, or representatives on said land, in the exercise of rights under this permit or right-of-entry, either by repairing such damage or at the option of the Government by making an appropriate settlement with the Owner in lieu thereof.

5. If aircraft flights over said lands, or entry upon the land by means of helicopter or other type aircraft, are necessary, the Government shall inform the Owner, in advance, of each such flight or entry.

6. The land affected by this permit or right-of-entry is located in the State of Connecticut, *County of* New Haven, *and is described as follows:*

SAME AS ABOVE
No Equipment to be parked on the Site

WITNESS MY HAND AND SEAL this 27th *day of* May, *19* 86

Francis J Rivellini *(SEAL)*

WITNESS Eugene S. Cognetta *(SEAL)*

UNITED STATES OF AMERICA

By

ENG FORM 1 APR 74 1258 (ER 405-1-625) EDITION OF 1 DEC 62 IS OBSOLETE.

Attachment 3

DEPARTMENT OF THE ARMY

RIGHT-OF-ENTRY FOR SURVEY AND EXPLORATION

West River Program — 425 427-429 W. Rock Ave.
(Project, Installation or Activity) — (Tract Number or Other Property Identification)

The undersigned, hereinafter called the "Owner", hereby grants to the UNITED STATES OF AMERICA, hereinafter called the "Government", a permit or right-of-entry upon the following terms and conditions:

1. The Owner hereby grants to the Government an irrevocable right to enter upon the lands hereinafter described at any time within a period of Sept 86 (4) *months from the date of this instrument, in order to survey, make test borings, and carry out such other exploratory work as may be necessary to complete the investigation being made of said lands by the Government.*

2. The permit includes the right of ingress and egress on other lands of the Owner not described below, provided such ingress and egress is necessary and not otherwise conveniently available to the Government.

3. All tools, equipment, and other property taken upon or placed upon the land by the Government shall remain the property of the Government and may be removed by the Government at any time within a reasonable period after the expiration of this permit or right-of-entry.

4. The Government agrees to be responsible for damages arising from the activity of the Government, its officers, employees, or representatives on said land, in the exercise of rights under this permit or right-of-entry, either by repairing such damage or at the option of the Government by making an appropriate settlement with the Owner in lieu thereof.

5. If aircraft flights over said lands, or entry upon the land by means of helicopter or other type aircraft, are necessary, the Government shall inform the Owner, in advance, of each such flight or entry.

6. The land affected by this permit or right-of-entry is located in the State of CONN. *County of* New Haven, *and is described as follows:*

Property located at above address.

WITNESS MY HAND AND SEAL this 20th *day of* May 1986, *19*

William Pallyto Owner (SEAL)

(SEAL)

UNITED STATES OF AMERICA

By

ENG FORM 1 APR 74 1258 (ER 405-1-625) EDITION OF 1 DEC 62 IS OBSOLETE.

Attachment 3

DEPARTMENT OF THE ARMY

RIGHT-OF-ENTRY FOR SURVEY AND EXPLORATION

WEST RIVER PROJECT
(Project, Installation or Activity)

334-336 BLAKE ST
(Tract Number or Other Property Identification)

The undersigned, hereinafter called the "Owner", hereby grants to the UNITED STATES OF AMERICA, hereinafter called the "Government", a permit or right-of-entry upon the following terms and conditions:

1. The Owner hereby grants to the Government an irrevocable right to enter upon the lands hereinafter described at any time within a period of To Sept 86 (4) *months from the date of this instrument, in order to survey, make test borings, and carry out such other exploratory work as may be necessary to complete the investigation being made of said lands by the Government.*

2. The permit includes the right of ingress and egress on other lands of the Owner not described below, provided such ingress and egress is necessary and not otherwise conveniently available to the Government.

3. All tools, equipment, and other property taken upon or placed upon the land by the Government shall remain the property of the Government and may be removed by the Government at any time within a reasonable period after the expiration of this permit or right-of-entry.

4. The Government agrees to be responsible for damages arising from the activity of the Government, its officers, employees, or representatives on said land, in the exercise of rights under this permit or right-of-entry, either by repairing such damage or at the option of the Government by making an appropriate settlement with the Owner in lieu thereof.

5. If aircraft flights over said lands, or entry upon the land by means of helicopter or other type aircraft, are necessary, the Government shall inform the Owner, in advance, of each such flight or entry.

6. The land affected by this permit or right-of-entry is located in the State of Connecticut, *County of* New Haven *, and is described as follows:*

NO HEAVY EQUIPMENT WILL BE ALLOWED ON THE SITE. ADDRESS ABOVE

WITNESS MY HAND AND SEAL this 21st *day of* May *, 19* 86

Stan Romanik *(SEAL)*

WITNESS: Elsie S. Capuchetra *(SEAL)*

UNITED STATES OF AMERICA

By

ENG FORM 1 APR 74 1258 (ER 405-1-625) EDITION OF 1 DEC 62 IS OBSOLETE.

Attachment 3

DEPARTMENT OF THE ARMY

RIGHT-OF-ENTRY FOR SURVEY AND EXPLORATION

WEST RIVER PROJECT — 781 WHALLEY AVE

(Project, Installation or Activity) — *(Tract Number or Other Property Identification)*

The undersigned, hereinafter called the "Owner", hereby grants to the UNITED STATES OF AMERICA, hereinafter called the "Government", a permit or right-of-entry upon the following terms and conditions:

1. The Owner hereby grants to the Government an irrevocable right to enter upon the lands hereinafter described at any time within a period of Sept 86 (4) *months from the date of this instrument, in order to survey, make test borings, and carry out such other exploratory work as may be necessary to complete the investigation being made of said lands by the Government.*

2. The permit includes the right of ingress and egress on other lands of the Owner not described below, provided such ingress and egress is necessary and not otherwise conveniently available to the Government.

3. All tools, equipment, and other property taken upon or placed upon the land by the Government shall remain the property of the Government and may be removed by the Government at any time within a reasonable period after the expiration of this permit or right-of-entry.

4. The Government agrees to be responsible for damages arising from the activity of the Government, its officers, employees, or representatives on said land, in the exercise of rights under this permit or right-of-entry, either by repairing such damage or at the option of the Government by making an appropriate settlement with the Owner in lieu thereof.

5. If aircraft flights over said lands, or entry upon the land by means of helicopter or other type aircraft, are necessary, the Government shall inform the Owner, in advance, of each such flight or entry.

6. The land affected by this permit or right-of-entry is located in the State of Connecticut, *County of* New Haven *, and is described as follows:*

SEE ADDRESS ABOVE

WITNESS MY HAND AND SEAL this 21st *day of* MAY *, 19*86

Jerry Goldberg *(SEAL)*

Witness { Paula Carter *(SEAL)*
Ethel S. Capacchiano

UNITED STATES OF AMERICA

By

ENG FORM 1 APR 74 1258 (ER 405-1-625) EDITION OF 1 DEC 62 IS OBSOLETE.

Attachment 3

DEPARTMENT OF THE ARMY

RIGHT-OF-ENTRY FOR SURVEY AND EXPLORATION

WEST RIVER PROJECT — 1 Valley St.

(Project, Installation or Activity) — *(Tract Number or Other Property Identification)*

The undersigned, hereinafter called the "Owner", hereby grants to the UNITED STATES OF AMERICA, hereinafter called the "Government", a permit or right-of-entry upon the following terms and conditions:

1. The Owner hereby grants to the Government an irrevocable right to enter upon the lands hereinafter described at any time within a period of Sept 84 (4) *months from the date of this instrument, in order to survey, make test borings, and carry out such other exploratory work as may be necessary to complete the investigation being made of said lands by the Government.*

2. The permit includes the right of ingress and egress on other lands of the Owner not described below, provided such ingress and egress is necessary and not otherwise conveniently available to the Government.

3. All tools, equipment, and other property taken upon or placed upon the land by the Government shall remain the property of the Government and may be removed by the Government at any time within a reasonable period after the expiration of this permit or right-of-entry.

4. The Government agrees to be responsible for damages arising from the activity of the Government, its officers, employees, or representatives on said land, in the exercise of rights under this permit or right-of-entry, either by repairing such damage or at the option of the Government by making an appropriate settlement with the Owner in lieu thereof.

5. If aircraft flights over said lands, or entry upon the land by means of helicopter or other type aircraft, are necessary, the Government shall inform the Owner, in advance, of each such flight or entry.

6. The land affected by this permit or right-of-entry is located in the State of Connecticut, *County of* New Haven *, and is described as follows:*

See Address above

WITNESS MY HAND AND SEAL this 21st *day of* May *, 19*84

Michael Pappis *(SEAL)*

W. Turos { Lisa B. Sanders *(SEAL)*
Elaine S. Cognetta

UNITED STATES OF AMERICA

By

ENG FORM 1 APR 74 1258 (ER 405-1-625) EDITION OF 1 DEC 62 IS OBSOLETE.

Attachment 3

DEPARTMENT OF THE ARMY

RIGHT-OF-ENTRY FOR SURVEY AND EXPLORATION

WEST RIVER PROJECT — 801 WHALLEY AVE

(Project, Installation or Activity) — *(Tract Number or Other Property Identification)*

The undersigned, hereinafter called the "Owner", hereby grants to the UNITED STATES OF AMERICA, hereinafter called the "Government", a permit or right-of-entry upon the following terms and conditions:

1. The Owner hereby grants to the Government an irrevocable right to enter upon the lands hereinafter described at any time within a period of Sept 84 *) months from the date of this instrument, in order to survey, make test borings, and carry out such other exploratory work as may be necessary to complete the investigation being made of said lands by the Government.*

2. The permit includes the right of ingress and egress on other lands of the Owner not described below, provided such ingress and egress is necessary and not otherwise conveniently available to the Government.

3. All tools, equipment, and other property taken upon or placed upon the land by the Government shall remain the property of the Government and may be removed by the Government at any time within a reasonable period after the expiration of this permit or right-of-entry.

4. The Government agrees to be responsible for damages arising from the activity of the Government, its officers, employees, or representatives on said land, in the exercise of rights under this permit or right-of-entry, either by repairing such damage or at the option of the Government by making an appropriate settlement with the Owner in lieu thereof.

5. If aircraft flights over said lands, or entry upon the land by means of helicopter or other type aircraft, are necessary, the Government shall inform the Owner, in advance, of each such flight or entry.

6. The land affected by this permit or right-of-entry is located in the State of Connecticut, *County of* New Haven *, and is described as follows:*

See Address Above

WITNESS MY HAND AND SEAL this 21st *day of* May *, 19* 86

_____ *(SEAL)*

Witness _____ *(SEAL)*

UNITED STATES OF AMERICA

By

ENG FORM 1 APR 74 1258 (ER 405-1-625) EDITION OF 1 DEC 62 IS OBSOLETE.

Attachment 3

RIGHT-OF-ENTRY FOR SURVEY AND EXPLORATION

WEST RIVER PROJECT
(Project, Installation or Activity)

883-889 WHALEY
(Tract Number or Other Property Identification)

The undersigned, hereinafter called the "Owner", hereby grants to the UNITED STATES OF AMERICA, hereinafter called the "Government", a permit or right-of-entry upon the following terms and conditions:

1. The Owner hereby grants to the Government an irrevocable right to enter upon the lands hereinafter described at any time within a period of SEPT 86 (4) *months from the date of this instrument, in order to survey, make test borings, and carry out such other exploratory work as may be necessary to complete the investigation being made of said lands by the Government.*

2. The permit includes the right of ingress and egress on other lands of the Owner not described below, provided such ingress and egress is necessary and not otherwise conveniently available to the Government.

3. All tools, equipment, and other property taken upon or placed upon the land by the Government shall remain the property of the Government and may be removed by the Government at any time within a reasonable period after the expiration of this permit or right-of-entry.

4. The Government agrees to be responsible for damages arising from the activity of the Government, its officers, employees, or representatives on said land, in the exercise of rights under this permit or right-of-entry, either by repairing such damage or at the option of the Government by making an appropriate settlement with the Owner in lieu thereof.

5. If aircraft flights over said lands, or entry upon the land by means of helicopter or other type aircraft, are necessary, the Government shall inform the Owner, in advance, of each such flight or entry.

6. The land affected by this permit or right-of-entry is located in the State of Connecticut, *County of* New Haven, *and is described as follows:*

SAME AS ABOVE

No heavy Equipment To be STORED or parked on the Site.

WITNESS MY HAND AND SEAL this 27th *day of* MAY, *19* 86

William J. Romano Sr. *(SEAL)*

WITNESS Ettore S. Capuletto *(SEAL)*

UNITED STATES OF AMERICA

By

ENG FORM 1 APR 74 1258 (ER 405-1-625) EDITION OF 1 DEC 62 IS OBSOLETE.

Attachment 3

WEST RIVER PROJECT

(Project, Installation or Activity)

370 BLAKE ST.

(Tract Number or Other Property Identification)

The undersigned, hereinafter called the "Owner", hereby grants to the UNITED STATES OF AMERICA, hereinafter called the "Government", a permit or right-of-entry upon the following terms and conditions:

1. The Owner hereby grants to the Government an irrevocable right to enter upon the lands hereinafter described at any time within a period of Sept 86 (4) *months from the date of this instrument, in order to survey, make test borings, and carry out such other exploratory work as may be necessary to complete the investigation being made of said lands by the Government.*

2. The permit includes the right of ingress and egress on other lands of the Owner not described below, provided such ingress and egress is necessary and not otherwise conveniently available to the Government.

3. All tools, equipment, and other property taken upon or placed upon the land by the Government shall remain the property of the Government and may be removed by the Government at any time within a reasonable period after the expiration of this permit or right-of-entry.

4. The Government agrees to be responsible for damages arising from the activity of the Government, its officers, employees, or representatives on said land, in the exercise of rights under this permit or right-of-entry, either by repairing such damage or at the option of the Government by making an appropriate settlement with the Owner in lieu thereof.

5. If aircraft flights over said lands, or entry upon the land by means of helicopter or other type aircraft, are necessary, the Government shall inform the Owner, in advance, of each such flight or entry.

6. The land affected by this permit or right-of-entry is located in the State of Connecticut, *County of* New Haven *, and is described as follows:*

Same As Above

WITNESS MY HAND AND SEAL this 27th *day of* May *, 19* 86

Witness as to both Philip S. Cappellato

Thomas DeRosa (SEAL)

Margaret DeRosa (SEAL)

UNITED STATES OF AMERICA

By

ENG FORM 1 APR 74 1258 (ER 405-1-625) EDITION OF 1 DEC 62 IS OBSOLETE.

Attachment 3

DEPARTMENT OF THE ARMY

RIGHT-OF-ENTRY FOR SURVEY AND EXPLORATION

WEST RIVER PROJECT — 44 Blake St.

(Project, Installation or Activity) — *(Tract Number or Other Property Identification)*

The undersigned, hereinafter called the "Owner", hereby grants to the UNITED STATES OF AMERICA, hereinafter called the "Government", a permit or right-of-entry upon the following terms and conditions:

1. The Owner hereby grants to the Government an irrevocable right to enter upon the lands hereinafter described at any time within a period of SEPT. 1986 (4) *months from the date of this instrument, in order to survey, make test borings, and carry out such other exploratory work as may be necessary to complete the investigation being made of said lands by the Government.*

2. The permit includes the right of ingress and egress on other lands of the Owner not described below, provided such ingress and egress is necessary and not otherwise conveniently available to the Government.

3. All tools, equipment, and other property taken upon or placed upon the land by the Government shall remain the property of the Government and may be removed by the Government at any time within a reasonable period after the expiration of this permit or right-of-entry.

4. The Government agrees to be responsible for damages arising from the activity of the Government, its officers, employees, or representatives on said land, in the exercise of rights under this permit or right-of-entry, either by repairing such damage or at the option of the Government by making an appropriate settlement with the Owner in lieu thereof.

5. If aircraft flights over said lands, or entry upon the land by means of helicopter or other type aircraft, are necessary, the Government shall inform the Owner, in advance, of each such flight or entry.

6. The land affected by this permit or right-of-entry is located in the State of Connecticut, *County of* New Haven, *and is described as follows:*

Same As Above

WITNESS MY HAND AND SEAL this 27th *day of* MAY, *1986*

William P. [illegible] *(SEAL)*

W. Tuccs Esther S. Caporusso *(SEAL)*

UNITED STATES OF AMERICA

By

ENG FORM 1 APR 74 1258 (ER 405-1-625) EDITION OF 1 DEC 62 IS OBSOLETE.

Attachment 3

b. Project Site

The site is adjacent to the West River/Wintergreen Brook channels in a well-developed, privately-owned industrial area in the City of New Haven, CT.

c. Purpose

The subsurface investigations were to provide information on foundation conditions for the design of floodwalls.

d. Authority

The West River Local Flood Protection Project is funded under authority of Section 205 of the 1948 Flood Control Act.

e. Scope of Investigation

Inspection and exploration instructions, which were provided by the Army Corps of Engineers, New England Division, are included in Section 3a.

Work under this delivery order consisted of locating eight (8) drive sample borings by means of taping the distances given on Attachment No. 2 of the delivery order. Elevations for the borings were roughly estimated from the contours shown on Attachment No. 2 and refined using the topographic plans which are included in Section 8c as the boring location plans.

The drive sample boring FD86-1(G) was performed in accordance with Paragraph 14, page C-22 of the specifications, with the exception that the sampler was a 2 ft long by 1-3/8" I.D. split spoon sampler, driven 2 ft, 2 ft and finally one foot into the undisturbed soil below the specified HW casing. The casing was advanced and continuous sampling performed in less than 5 ft intervals when caving of the hole interfered with the sampling of a complete 5 ft interval.

Exploration instructions were altered on July 1, 1986 (section 5, Table 2) to authorize the use of 3-1/4" I.D. hollow stem augers to advance the borings while maintaining continuous sampling with a 300 pound hammer. This work was performed in accordance with paragraph 12, page C-21, of the specifications. Boring FD86-2(F) was performed in accordance with these instructions.

Exploration instructions were again altered on July 3, 1986, (section 5, Table 2) to incorporate SPT sampling at 5 ft intervals using a 140 pound hammer. The remainder of the borings were performed in accordance with paragraph 13, page C-21 of the specifications.

The borings were terminated at the specified depth in the overburden except for FD86-1(G) which was advanced to 40.5 ft to improve sample recovery. The entire sample for each SPT drive was saved.

SECTION 4

QUALITY CONTROL

a. General Certification Statement

I hereby certify that the above mentioned records, equipment and procedures were used to perform the subsurface exploration described herein. I also certify that the work was performed in a professional manner and meets the requirements set forth in the delivery order. This report has been subject to my review and is both complete and technically accurate.

CERTIFIED 16 July 1986

Spencer F. Thew, P.E./L.S.

b. Records Taken

NED Forms 121, 58, 58a and 59 were used to record pertinent drilling and sampling operations including elevations, blow counts, etc. Section 8 contains a complete series of these logs for the eight borings along with location maps.

Summaries of daily activities and telephone logs can be found in Tables I and II of Section 5. A chain of custody log is in Section 6. Safety meeting reports, NED Form 251, are located in Section 7.

c. Equipment Used

All equipment and supplies were provided by Atlantic Testing Laboratories, Limited. A listing of pertinent equipment follows:

- truck mounted CME 75 drill rig
- 300 pound drive hammer used to advance casing (FD86-1) and to advance the split spoon sampler (FD86-1, FD86-2)
- 140 pound drive hammer used to advance the split spoon sampler (FD86-3 through FD86-8)
- HW sized casing (FD86-1)
- 2-15/16" tricone bit (FD86-1, FD86-4)
- 3-1/4" I.D. hollow stem augers (FD86-2 through FD86-8)
- 1-3/8" I.D. split spoon soil samplers, 2.0 ft in length
- AW sized rods were used to advance the split spoon sampler
- NW sized rods were used to advance the tricone bit.

d. Procedures

The boring locations were established by taping the distances given on Attachment No. 2 of the delivery order (Section 3a). The actual boring locations (Figure 3, Section 8c) varied only slightly from these specified locations except in the case of boring FD86-8(B). This boring was moved because of overhead electrical and telephone lines.

Elevations for the borings were roughly estimated from the contours shown on Attachment No. 2 and refined using the topographic plans (Section 8c).

Boring FD86-1(G) was accomplished using HW sized casing advanced by a 300 pound hammer dropping in free fall from a height of 18 inches. Continuous sampling was accomplished using a 1-3/8" I.D. split spoon sampler 2.0 ft in length. The sampler was advanced by a 300 pound hammer dropping in free fall from a height of 18 inches. Refusal was defined as 50 blows with no penetration or bouncing refusal. The sampler was advanced in two 2 ft and one 1 ft increments before advancing the casing another 5 ft. Difficulty with caving was experienced below the water table, and the casing was advanced in shorter intervals to ensure the proper sampling interval. The casing was advanced to 1 ft above the specified depth, and the final 1.5 ft of the boring was completed by sampling.

The remainder of the borings were advanced using a 3-1/4" I.D. hollow stem auger to 2.0 ft above the specified depth. The final 2 ft of the borings were completed by sampling. The augers were advanced in varying intervals in order to maintain the integrity of the sampling interval.

Continuous sampling was employed in FD86-2(F) as in FD86-1(G). Borings FD86-3(D) through FD86-8(B) employed SPT sampling at 5 ft intervals. Sampling was accomplished using a 1-3/8" I.D. by 2 ft long split spoon sampler advanced by a 140 pound hammer dropping in free fall from a height of 30 inches. Refusal was defined as 50 blows with no penetration or bouncing refusal.

In all cases, the sample spoon shoes were kept reasonably sharp at all times. Dull, bent or otherwise damaged samplers were not used.

The complete sample was saved and placed in 16 oz glass jars with hermetically sealed lids. Samples were classified in the field immediately following the removal of the sample. Classification was in accordance with ASTM D-2488. Jars were labeled using ENG Form 1742.

It should be noted that the soils from Boring FD86-7(A) on the Amoco Station property were found to be contaminated with petroleum product to a depth of 26 ft.

SECTION 5

SUMMARY OF ACTIVITIES
AND
TELEPHONE LOG

TABLE I

Summary of Activities

Date	Activity
29 June	Sunday: on-site 16:00 - 17:00 - locate areas of borings - locate hospital, gather safety information
30 June	Monday: on-site 7:30 - 16:30 - stake out borings - safety meeting (1/2 hour) - drill FD86-1(G) to 17.0 ft
1 July	Tuesday: on-site 7:00 - 17:00 - complete FD86-1(G), FD86-2(F) - Paul L'Heureux on-site 11:00 - 14:00, delivered a copy of Attachement 3 and the rough draft survey notes for the job - bore hole moves - 1 hour
2 July	Wednesday: on-site 9:00 - 9:30 - 8 hours standby time granted for heavy rain
7 July	Monday: on-site 06:30 - 17:00 - complete FD86-3(D) - drill FD86-4(E) to 22.0 ft - safety meeting (1/2 hour) - bore hole moves - 1 hour
8 July	Tuesday: on-site 06:00 - 18:30 - complete FD86-4(E), FD86-5(H), FD86-6(C) - bore hole moves - 1.5 hours
9 July	Wednesday: on-site 06:30 - 16:30 - drill FD86-7(A) - Amoco representative, S. Lane Coulson on-site at 11:00. - drill FD86-8(B) after being granted permission to move the boring due to overhead lines - cold patch the borings and general site cleanup - bore hole moves - 1.5 hours
10 July	Thursday: on-site 07:30 - 10:00 - tape the final boring locations - at USACE, NED Headquarters 13:00 - 14:00 - deliver soil samples to materials lab - pick up mylars for Attachment No. 2 and the topographic plans

TABLE II

Telephone Log

Date	Conversation
30 June	Monday: 7:15, Paul L'Heureux - He is in the office from 6:30 - 15:00. - He will mail a copy of Attachment No. 3 to me so that I might have access to owner's names. - I should mail safety meeting pages to him. - Granted permission to use a 2 ft long split spoon sampler.
1 July	Tuesday: Paul L'Heureux on-site 11:00 - 14:00 - Authorized use of 3-1/4" hollow stem augers instead of driving casing. - Continue continuous split spoon sampling with 300 pound hammer. - Delivered the copy of Attachment No. 3 and the draft copies of the topographic plans.
2 July	Wednesday: 6:30, Ron DeFillipo - Hole H - take care that the flower beds adjacent to the boring are not damaged. - There may be heavy fill which could be a problem when using hollow stem augers. 8:15, Paul L'Heureux - 8 hours standby time granted due to heavy rain.
3 July	Thursday: 9:30 and 11:20, Paul L'Heureux - ATL left site yesterday because of rain. - Authorized use of 140 pound hammer and SPT sampling at 5 ft intervals and the continued use of hollow stem augers. - Wants a clear, precise estimate of changes in material composition based on blow counts, augering difficulty, etc. - For three borings on northeast side of river (D, E, H), if have material with 10 blows/ft at 40 ft, call the hole. If not, take the hole to 50 ft (last sample 48-50 ft). - Project manager is Tim Beauchemin. - Reconfirmed location of boring H - as in Attachment No. 2.
7 July	Monday: 11:45, Paul L'Heureux - Job progress. - Difficulty handling weather conditions; informed him of intent to break up work day into morning and evening work periods if hot, humid weather continues unabated.
8 July	Tuesday: 14:00, Paul L'Heureux - Job progress: D, E and H all terminated at 40.0 ft. - Borings will be complete Wednesday. - Bring samples to Waltham on Thursday. - Please have mylar of Attachment No. 2 ready for pickup.

Date	Conversation
9 July	Wednesday: 7:30, Paul L'Heureux - Problems with location of boring B; requested moving hole. 9:30, Ron DeFillipo - Granted permission to drill B further to the south, between two buildings. - Requested taping the location of boring B from structures to the west, as buildings to the east will be demolished. 11:00, Ms. S. Lane Coulson, Territory Manager, New Haven District Office, Amoco Oil Company - They were never notified of the impending work. The dealer was the person contacted and he signed the right of entry, but he never informed the district office. Amoco owns the property, not the dealer. This was an internal problem with Amoco and not the fault of the Corps or ATL. - Informed them of the contamination present in the soils to 26 ft, which is below the water table. 1:45, Ron DeFillipo - Location of boring B(FD86-8) was placed further south than that location agreed upon at 9:30. - Authorized to continue boring. It did not have to be relocated.

SECTION 6

CHAIN OF CUSTODY LOG

ATLANTIC TESTING LABORATORIES, Limited

CHAIN OF CUSTODY LOG

PROJECT: West River, New Haven CT CD016
D.O. # 13
DACW 33-85-D-0011

ITEMS:

Tubes: 0

Bottles: 0

Jar Samples: see below 106 Jars, 9 boxes

Core Boxes: 0

Sampling Logs: 8 (5 pages each)

Date & Time Received	Date & Time Transferred	Comments	Custodian
6-30-86	as sampled		TAZeddoe
7-10-86	1:15		P Jaeger

FD 86-1	20
FD 86-2	22
FD 86-3	10
FD 86-4	11
FD 86-5	9
FD 86-6	8
FD 86-7	11
FD 86-8	15
	106

SECTION 7

SAFETY REPORTS

WEEKLY SAFETY MEETING

NEDSO

Date held 30 June 86

THRU: Area Engineer, New Haven Area

Time 12:00

Report No. CD016-6-86

TO: Safety Office, NED

1. Weekly safety meeting was held this date for the following personnel:

Contract No./D.O.No. 0013 Contractor Atlantic Testing Labs, Ltd

Conducted By TMBeddoe Personnel present (Contr) 3

(Sub) ____

(Govt) ____

Subjects discussed (Note, delete, or add):

X Individual Protective Equipment - gloves, hard hats, steel-toed shoes

X Prevention of Falls -

X Safe Lifting Techniques - of rod, hammer, etc

Emergency Communications -

Fire Prevention -

X Sanitation, First Aid - check kit, fire extinguisher

X Tripping Hazards - trash, hose, nails in lumber -

Staging, Ladders, Concrete Forms -

Hand Tools, Portable Power Tools, Woodworking Machinery -

X Equipment Maintenance (Zero defects) - quality of rope, wire, rod, etc cables, rope are new

X Hoisting Equipment - cathead

Ropes, Hooks, Chains and Slings -

Electrical Grounding, Temporary Wiring -

Lockouts for safe clearance procedures - electrical, pressure, moving parts -

Welding -

Excavations -

Loose Rock and Steep Slopes -

Explosives -

Water Safety -

X Other - communicated and posted emergency numbers

Prepared by TMBeddoe Title ____

2. Forwarded.

Signature Theresa A. Beddoe
Resident Engineer

EXPOSURE HOURS:

Work Date: ____ ____ M-Hours

Non-Work Date: ____

FIG. No. 11

WEEKLY SAFETY MEETING

FOR THE CONSTRUCTION INDUSTRY

afety Meeting Outlines Box 294 Park Forest, IL 60466 312-481-6930 No. 38 Vol 8 Week of Sept. 23, 1985

Company Name Atlantic Testing Labs **Job Name** West River - CD016 **Date** 30 June 86

GUARD RAILS

Your body can withstand a lot of abuse, but it's not too good at taking falls from upper levels. In fact, in the construction industry alone, there are nearly 1000 deaths and 100,000 disabling injuries annually just from falls. You can bet that each of those victims would much rather have bumped into a guard rail.

Guard rails are a requirement -- make it a habit not only to install them, but to construct them properly as well -- remember, they must be capable of withstanding a 200 pound load in any direction. A standard guard rail must be 42 inches high from the floor to the top rail, with posts not exceeding 8 foot centers.

The minimum requirements for wooden rails are 2" x 4" stock for posts and top rail, with a 1" x 6" midrail. The material should be selected to avoid defects and splinters. If you prefer steel, use 1½" pipe, or 2" x 2" x 3/8" angle for posts, top and midrail. Other materials of equal or greater strength may be substituted, however, due to its unpredictable strength and brittleness, re-bar IS NOT an acceptable material for use as guard rail.

To be complete, your guard rail must have a 4" high toe board, secured to the posts with no more than ¼" gap to the floor, and made of material strong enough to hold back anything that might otherwise roll, fall, or be kicked over the edge to lower levels.

If its your job to install or remove guard rails -- plan your moves to avoid losing your balance and tie off with a safety belt whenever necessary.

The most important thing to remember about guard rails is to install them BEFORE, NOT AFTER, an accident.

SAFETY REMINDERS

STEPPING ON A NAIL CAUSES PAIN, INCONVENIENCE, AND LOST WAGES

TAKE TIME TO PULL NAILS OUT OR BEND THEM OVER

Special Topics For Your Project protective equipment, safe lifting techniques, tripping hazards, emergency numbers, hospital location

Employee Safety Recommendations

Meeting Attended By

TA Beddoe (ATL)
Gary Cambridge (ATL)
Todd Burnham (ATL)

Supervisors Signature Theresa A. Beddoe

WEEKLY SAFETY MEETING

NEDSO

Date held 7 July 86

THRU: Area Engineer, New Haven, CT Area

Time 9:30 AM

Report No. CD016-6-86

TO: Safety Office, NED

1. Weekly safety meeting was held this date for the following personnel:

Contract No. /D.O.No. 0013 Contractor Atlantic Testing Labs, Ltd

Conducted By TA Beddoe Personnel present (Contr) 3

(Sub)

(Govt)

Subjects discussed (Note, delete, or add):

X Individual Protective Equipment -

X Prevention of Falls - drill rig derrick

X Safe Lifting Techniques -

Emergency Communications -

X Fire Prevention - fire extinguisher easily reachable, gas cans

X Sanitation, First Aid - ditto for first aid kit

X Tripping Hazards - trash, hose, nails in lumber - casing

Staging, Ladders, Concrete Forms -

X Hand Tools, Portable Power Tools, Woodworking Machinery - Keep area picked up so that all tools are easily accessible in case of an emergency

Equipment Maintenance (Zero defects) -

X Hoisting Equipment -

X Ropes, Hooks, Chains and Slings - Keep in good order - cables

Electrical Grounding, Temporary Wiring -

Lockouts for safe clearance procedures - electrical, pressure, moving parts -

Welding -

Excavations -

Loose Rock and Steep Slopes -

Explosives -

Water Safety -

Other - remaining hydrated in hot weather, sunstroke

Prepared by TA Beddoe Title

2. Forwarded.

Signature Theresa A. Beddoe
Resident Engineer

EXPOSURE HOURS:

Work Date: 6/29, 6/30, 7/1, 7/2 — 48 M-Hours (ATL)

Non-Work Date: 7/3, 7/4, 7/5 — 24 M-H standby due to rain 7/2

3 M-H (Corps of Eng)

FIG. No. 11

WEEKLY SAFETY MEETING

FOR THE CONSTRUCTION INDUSTRY

Safety Meeting Outlines Box 294 Park Forest, IL 60466 312-481-6930 No. 29 Vol 8 Week of July 22, 1985

Company Name Atlantic Testing Labs, Ltd Job Name West River, Newtown CT Date 7-7-86

CONFINED SPACES

STOP -- Never enter a confined space area such as a tank, bin, silo, boiler, vault, manhole, sewer, pipeline, duct, pump room, ship hold, or any open-top pit over four feet deep unless it has been tested with proper instruments for oxygen deficiency, and for toxic or combustible gasses and vapors.

Don't be fooled by the innocent looks of a confined space -- they're all potential gas chambers. For example -- even a clean, unused, steel pipe or tank can become your death trap due simply to rust. As steel rusts, oxygen is used up, and you can't live long without oxygen.

Oxygen deficiencies can also occur from bacteria, combustion, or from the oxygen being forced out by other, heavier gasses.

Some of the most deadly and combustible gasses have no odor, and in confined areas they can lay on the bottom, rise to the top, or fill the entire atmosphere, just waiting to kill or explode.

Beware -- additional quantities of gasses can be released due to welding, cutting, grinding, scraping, sand blasting, or by evaporation from air movement.

Remember -- NEVER enter confined space areas until the air has been tested safe by a qualified person, and be sure that monitoring is continued throughout the entire workshift. If special life support equipment is required for entry, make sure you are aware of all the dangers involved, that you're properly trained to use the equipment, and that all required safety regulations are being followed.

SAFETY REMINDERS ALWAYS SECURE OXYGEN AND ACETYLENE CYLINDERS IN AN UPRIGHT POSITION, WITH CAPS ON, & NEVER TAKE CYLINDERS INTO CONFINED SPACES OR INTO AREAS OF EXTREME HEAT

Special Topics For Your Project remaining hydrated in hot weather, sunstroke

Employee Safety Recommendations cathead hoisting rope replaced 7-2-86

Meeting Attended By

Theresa Beddoe (ATL)
Gary Cambridge (ATL)
Todd Burnham (ATL)

Supervisors Signature Theresa A. Beddoe

These instructions do not supersede local, state or federal regulations

WEEKLY SAFETY MEETING

NEDSO

Date held ——

THRU: Area Engineer, New Haven Area

Time ——

TO: Safety Office, NED

1. Weekly safety meeting was held this date for the following personnel:

Contract No. I.D.Q. No. 0013 Contractor Atlantic Testing Labs, Ltd.

Conducted By _____ All personnel present (Contr) _____
(Sub) _____
(Govt) _____

Subjects discussed (Note, delete, or add):
EM 385-1-1, Section: _____

Accident Prevention Plan

Individual Protective Equipment -

Prevention of Falls -

Back Injury, Safe Lifting Techniques -

Fire Prevention -

Sanitation, First Aid, Waste Disposal -

Tripping Hazards - trash, hose, nails in lumber -

Staging, Ladders, Concrete Forms, Safety Nets -

Hand Tools, Portable Power Tools, Woodworking Machinery -

Equipment Inspection & Maintenance (Zero Defects) -

Hoisting Equipment -

Ropes, Hooks, Chains and Slings -

Electrical Grounding, Temporary Wiring, GFCI -

Lockouts for safe clearance procedures - electrical, pressure, moving parts -

Welding, Cutting -

Excavations -

Loose Rock and Steep Slopes -

Explosives -

Water Safety -

Toxic materials - hazards, MSDS, respiratory, ventilation -

Other -

Prepared by TABeadoe Title ——

2. Forwarded.

Signature Theresa A. Beadoe
Resident Engineer

CF: EXPOSURE HOURS

WORK DATE July 7-10, 1986

NON-WORK DATE July 6, 11, 12, 1986

CONTRACTOR 85.50 Man-hours

NED FL APP FZ 251

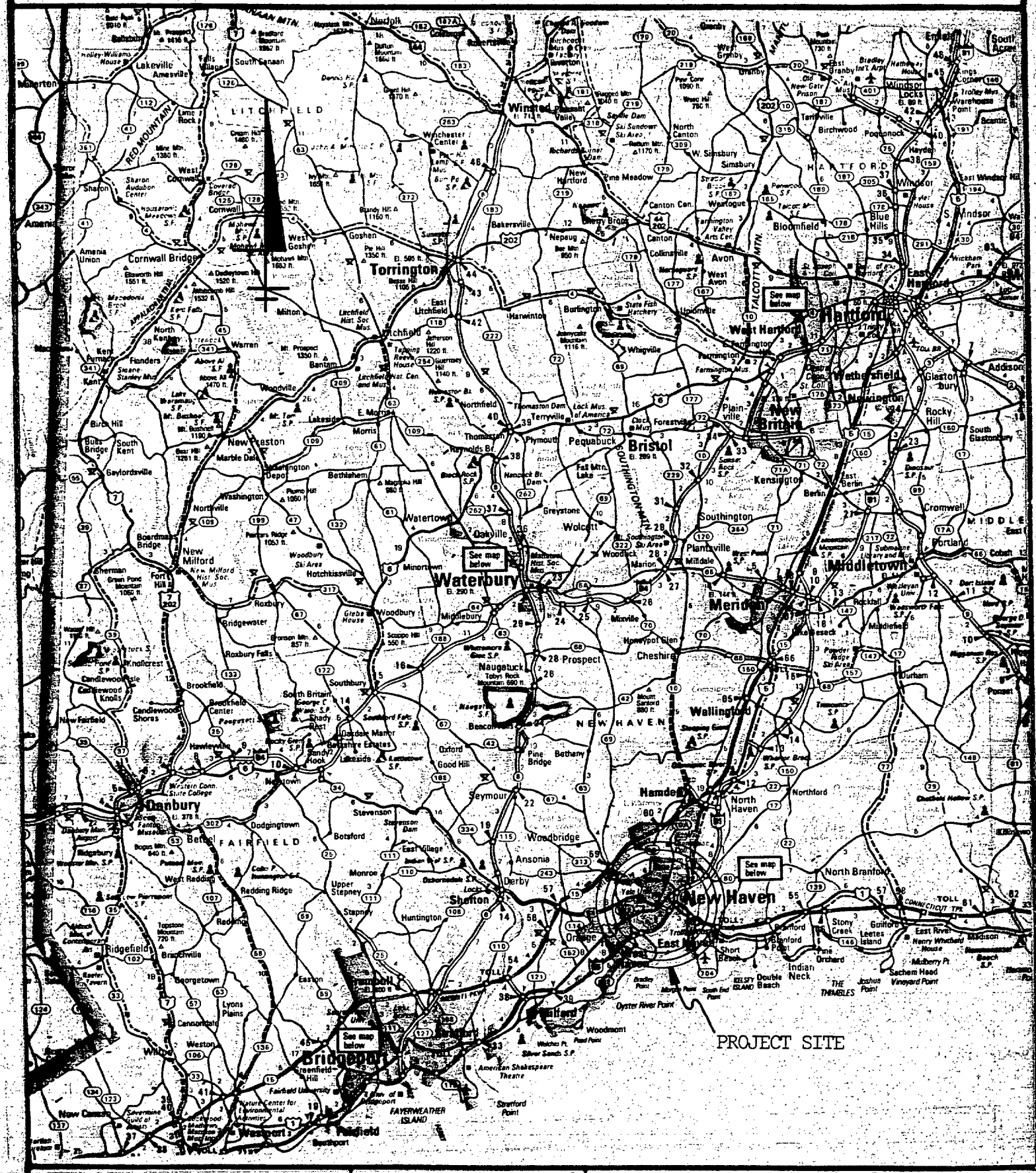
SECTION 8

BORING LOGS

a. **Figure 1 - General Project Map**

FIGURE 1

GENERAL PROJECT MAP



PROJECT No CD016	SCALE: 1" = 7 miles	CONNECTICUT

b. Figure 2 - Site Location Map

FIGURE 2

SITE LOCATION MAP

PROJECT No CD016 **SCALE:** 1:62,500 **U.S.G.S. QUAD:** New Haven, CT

c. Figure 3 - Boring Location Plans

CORPS OF ENGINEERS — U. S. ARMY

CONNECTICUT STATE PLANE COORDINATE SYSTEM

BENCHMARK
CUT SPIKE IN POLE #3178
ELEVATION = 15.46

BENCHMARK
CHISEL SQUARE ON CONCRETE FOOTING
ELEVATION = 11.89

1 STORY CINDER BLOCK BUILDING #425 WEST ROCK AVE.
FLOOR ELEVATION = 14.86

2 STORY BRICK BUILDING #429 WEST ROCK
FLOOR ELEVA = 13.85

1 STORY CINDER BLOCK
FLOOR ELEV. = 13.85

1 STORY CINDER BLOCK BUILDING
FLOOR ELEVATION = 12.48

1 STORY CINDER BLOCK MACHINE SHOP
FLOOR ELEV. = 13.84

BRICK BUILDING FURNITURE FACTORY #781 WHALLEY AVENUE
FLOOR ELEVATION = 17.88

BRICK BUILDING FURNITURE FACTORY #781 WHALLEY AVENUE
FLOOR ELEVATION = 17.88

WEST RIVER

WHALLEY (PUBLIC - 70' WIDE) AVENUE

WEST ROCK (PUBLIC - 24' WIDE) AVENUE

CONCRETE SIDEWALK

ROCK SLOPE

CINDER BLOCK SHED

ASPHALT BASKETBALL COURT

ASPHALT PARKING AREA

STORAGE BUILDING

BRICK CASHIER'S BOOTH

CROSS SECTION K-K

CROSS SECTION J-J

CROSS SECTION I-I

SEE SHEET 2 OF 4

SEE SHEET 3 OF 4

NOTE:
ELEVATIONS REFER TO NATIONAL GEODETIC VERTICAL DATUM.

INDEX MAP
SCALE: 1Inch = 200 feet

GRAPHIC SCALE: 1" = 20'

REVISION	DATE	DESCRIPTION	BY
✓	7-15-86	Add borings FD86-7 and FD86-8 by Atlantic Testing Laboratories, Limited P.O. Box 29, Canton NY 13617 (315) 386-4578	J.A.B.

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION
CORPS OF ENGINEERS
WALTHAM, MASS.

DES. BY / DR. BY J.E.C. / CK. BY J.M.D.

SUBMITTED: PROJECT MANAGER

REVIEWED: CHIEF, COAST. ENG/SUR SECT.

APPROVAL RECOMMENDED: CHIEF, DESIGN BRANCH

WEST RIVER BASIN
LOCAL PROTECTION PROJECT

WEST RIVER/WINTERGREEN BROOK TOPOGRAPHIC PLAN

NEW HAVEN — CONNECTICUT

APPROVED — DATE JULY 7, 1986

CHIEF, ENGINEERING DIVISION

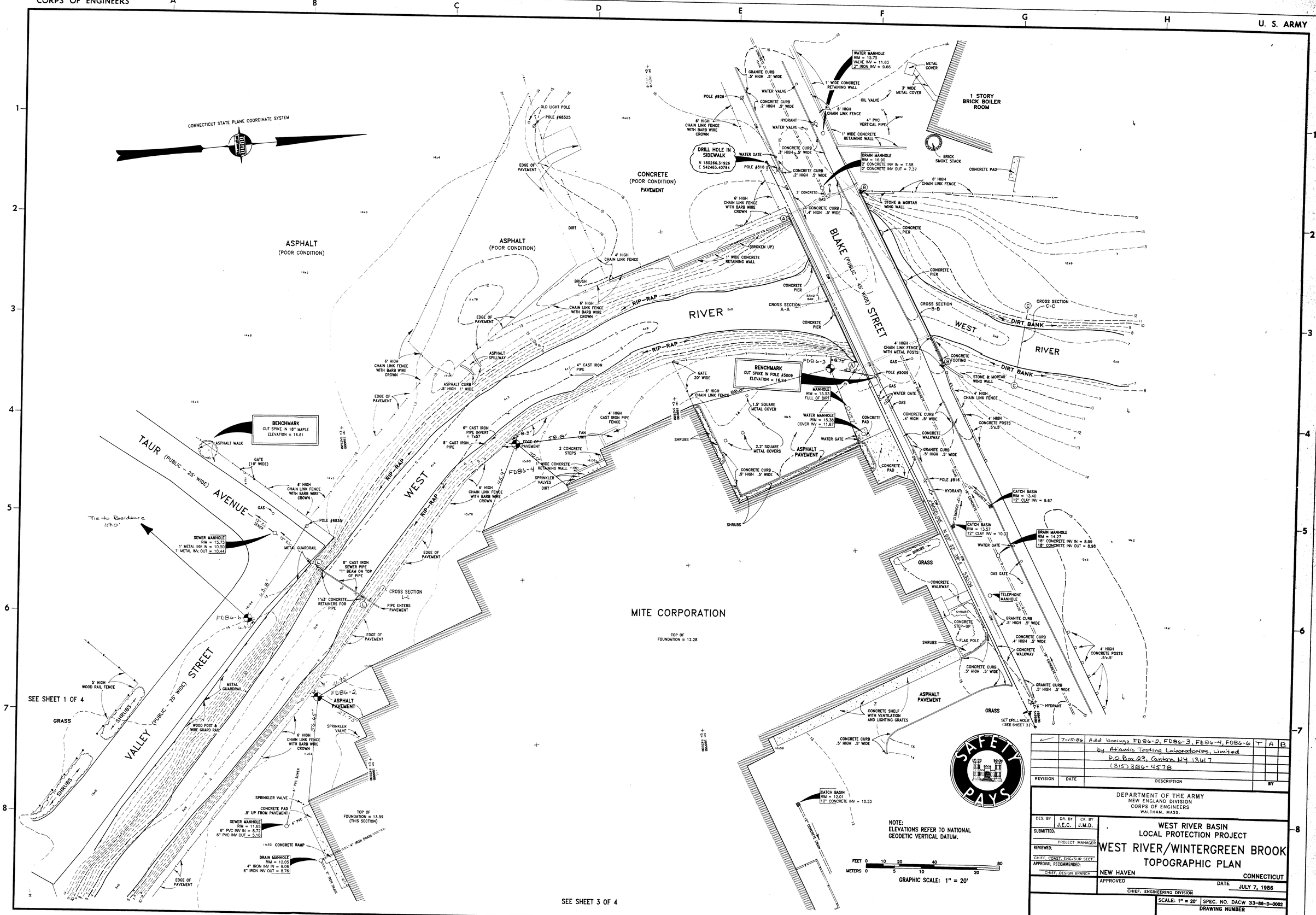
SCALE: 1" = 20' — SPEC. NO. DACW 33-86-D-0002

DRAWING NUMBER

SHEET 1 OF 4

CORPS OF ENGINEERS

U. S. ARMY



REVISION	DATE	DESCRIPTION	BY
	7-15-86	Add borings FD86-2, FD86-3, FD86-4, FD86-6 by Atlantic Testing Laboratories, Limited P.O. Box 29, Canton, NY 13617 (315) 386-4578	T A B

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION
CORPS OF ENGINEERS
WALTHAM, MASS.

DES. BY J.E.C. | DR. BY J.E.C. | CK. BY J.M.D.

SUBMITTED: PROJECT MANAGER

REVIEWED: CHIEF, COAST. ENG/SUR SECT

APPROVAL RECOMMENDED: CHIEF, DESIGN BRANCH

WEST RIVER BASIN
LOCAL PROTECTION PROJECT

WEST RIVER/WINTERGREEN BROOK TOPOGRAPHIC PLAN

NEW HAVEN CONNECTICUT

APPROVED CHIEF, ENGINEERING DIVISION

DATE JULY 7, 1986

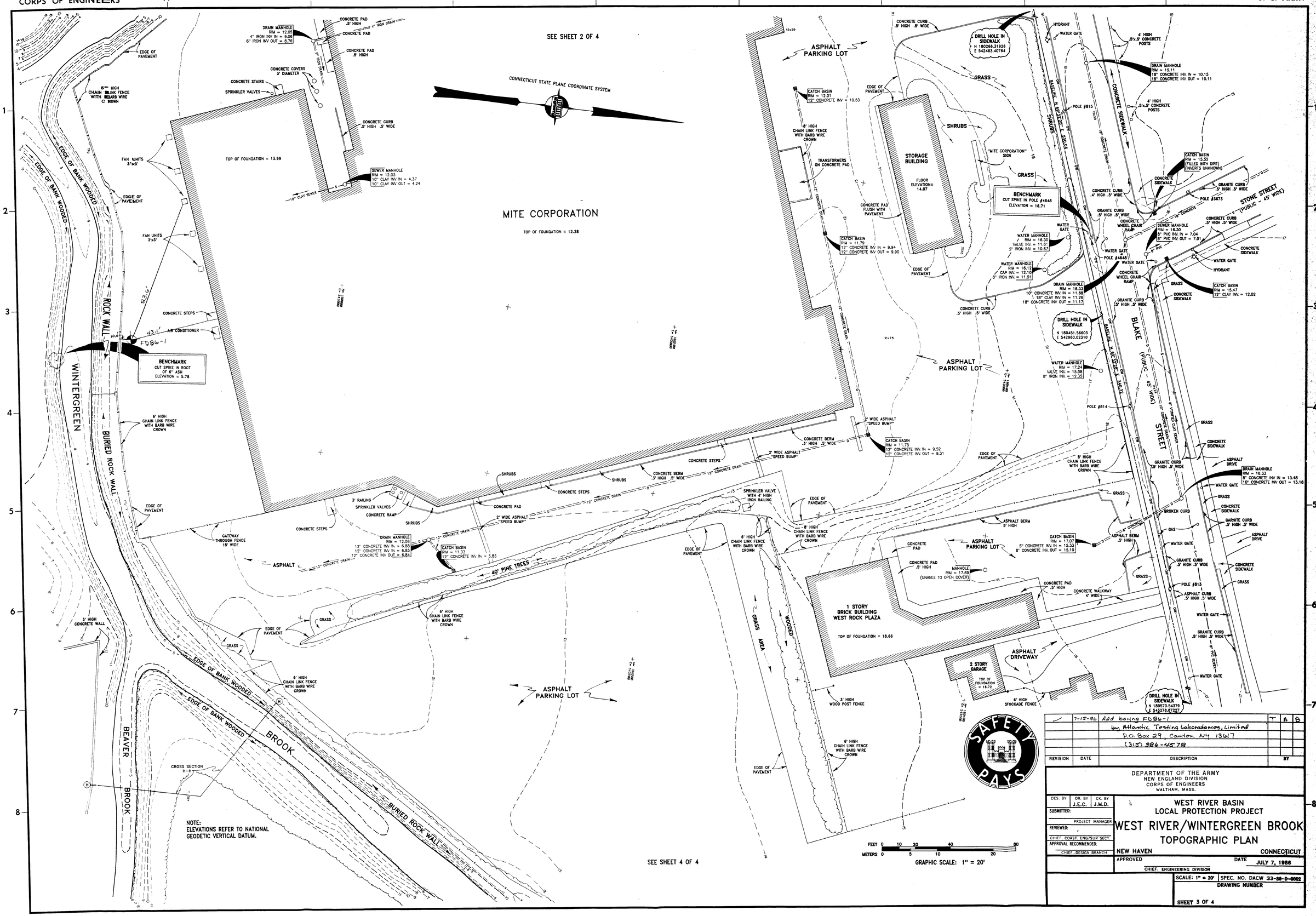
SCALE: 1" = 20' | SPEC. NO. DACW 33-86-D-0002

DRAWING NUMBER

SHEET 2 OF 4

CORPS OF ENGINEERS

U. S. ARMY



REVISION	DATE	DESCRIPTION	BY
	7-15-86	Add boring FD86-1 by Atlantic Testing Laboratories, Limited P.O. Box 29, Canton, NY 13617 (315) 986-4578	

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION
CORPS OF ENGINEERS
WALTHAM, MASS.

DES. BY	DR. BY	CK. BY
	J.E.C.	J.M.D.

SUBMITTED: PROJECT MANAGER

REVIEWED: CHIEF, COAST. ENG/SUR SECT.

APPROVAL RECOMMENDED: CHIEF, DESIGN BRANCH

WEST RIVER BASIN
LOCAL PROTECTION PROJECT

WEST RIVER/WINTERGREEN BROOK TOPOGRAPHIC PLAN

NEW HAVEN CONNECTICUT

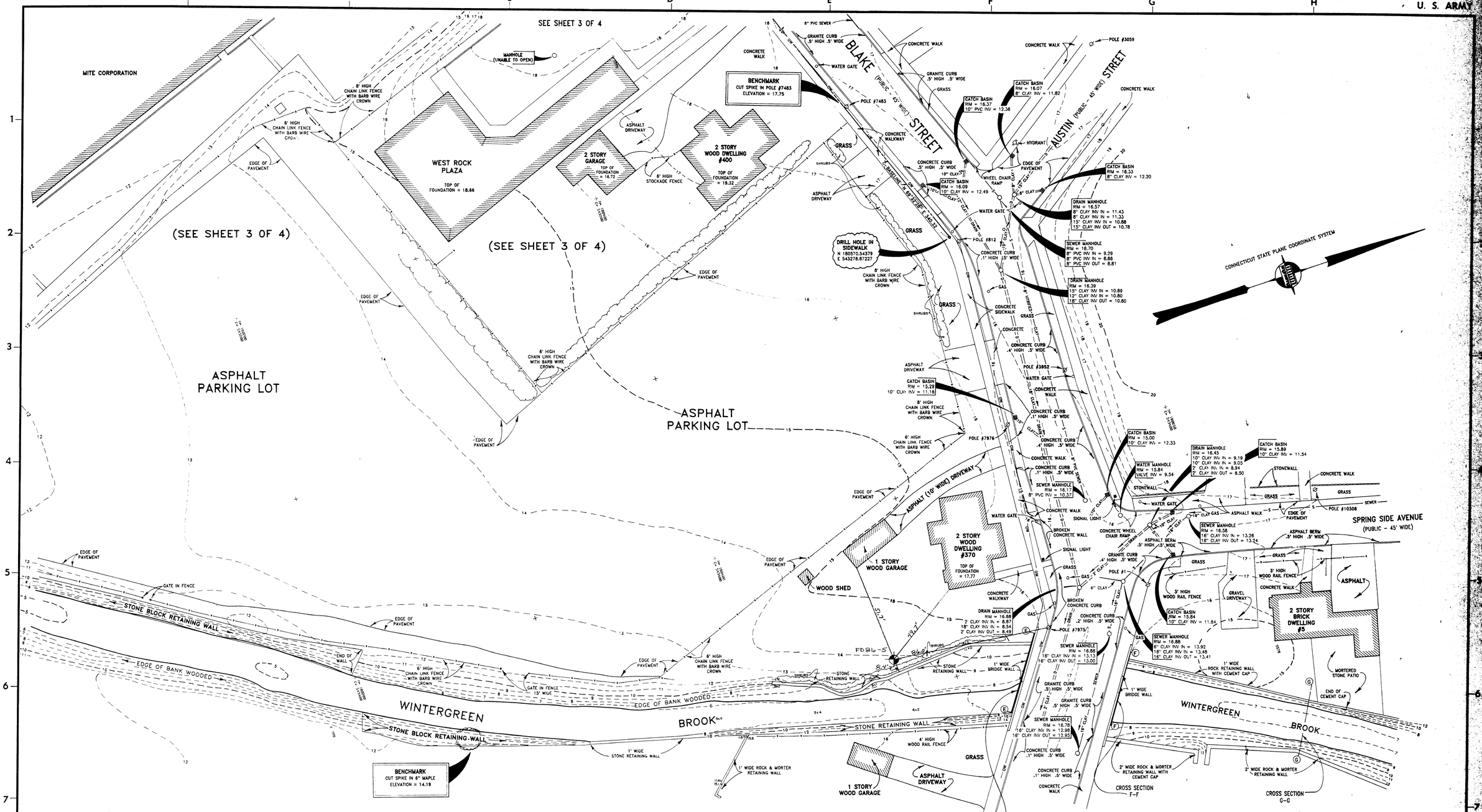
APPROVED DATE JULY 7, 1986
CHIEF, ENGINEERING DIVISION

SCALE: 1" = 20' | SPEC. NO. DACW 33-86-D-0002

DRAWING NUMBER

SHEET 3 OF 4

CORPS OF ENGINEERS — U. S. ARMY



NOTE:
ELEVATIONS REFER TO NATIONAL GEODETIC VERTICAL DATUM.

GRAPHIC SCALES

FEET 0 10 20 40 80
METERS 0 5 10 20

GRAPHIC SCALE: 1" = 20'

REVISION	DATE	DESCRIPTION	BY
C	7-15-86	Add boring FD86-5 by Atlantic Testing Laboratories, Limited P.O. Box 29, Canton NY 13617 (315) 386-4578	T A B

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION
CORPS OF ENGINEERS
WALTHAM, MASS.

DES. BY	DR. BY	CK. BY
	J.E.C.	J.M.D.

SUBMITTED: PROJECT MANAGER
REVIEWED: CHIEF, COAST. ENG/SUR SECT.
APPROVAL RECOMMENDED: CHIEF, DESIGN BRANCH

WEST RIVER BASIN
LOCAL PROTECTION PROJECT

WEST RIVER/WINTERGREEN BROOK
TOPOGRAPHIC PLAN

NEW HAVEN — CONNECTICUT

APPROVED: CHIEF, ENGINEERING DIVISION
DATE: JULY 7, 1986

SCALE 1" = 20' | SPEC. NO. DACW 33 86-D-0002
DRAWING NUMBER
SHEET 4 OF 4

d. Boring Logs

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. D.O.# 0013

Site New Haven, Conn. — Page 1 of 5 Pages

Hole No. FD86-1 Diam. (Casing) HW — Boring Started 6-30-86

Co-ordinates: ~~N~~ see ~~E~~ plan — Boring Completed 7-1-86

Drilled by Cambridge & Burnham — Report Submitted

Purpose of Exploration to provide information on foundation conditions for the design of floodwalls

Elevation Top of Hole 10.4± M.S.L.* — Casing Left in Place 0 Feet

Total Overburden Drilled 40.5 Feet

Elevation Top of Rock — M.S.L.

Elevation Bottom of Hole -30.1± M.S.L.

Total Rock Drilled 0 Feet

Total Depth of Hole 40.5 Feet

Core Recovered 0 %

Core Recovered 0 Ft.; — Diam. — In.

Soil Samples 1 3/8 In. Diam. 20 No.

Soil Samples — In. Diam. — No.

* elevations estimated from survey notes (CORPS)

Water Table Depth 5.8 ft

Depth From	Depth To	Method of Drilling and Type of Bit Used
0.0	39.0	driven HW casing followed by 2 15/16" roller bit
39.0	40.5	1 3/8" ID split spoon sampler

INDEX

Ground Water	~~Back of~~ Page 5
Boring Location Sketch	~~Back of~~ Page 5
Overburden Record	Page 2-4
Rock Drilling	Page —
	Page
	Page
	Page

Prepared by Theresa A. Beddoe (Field Data) — (Lab. Data)

Submitted by Atlantic Testing Labs, Ltd.

NED FORM DEC 63 121 — REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site New Haven, Conn. Page 2 of 5 Pages

Boring No. FD86-1 Desig. G Diam. (Casing) HW

Co-ordinates: N see boring E location plan

Elevation Top of Boring 10.4± M.S.L. Hammer Wt. 300# Boring Started 6-30-86

Total Overburden Drilled 40.5 Feet Hammer Drop 18" Boring Completed 7-1-86

Elevation Top of Rock — M.S.L. Casing Left no

Total Rock Drilled 0 Feet Subsurface Water Data _____ Page 5

Elevation Bottom of Boring -30.1± M.S.L. Obs. Well no

Total Depth of Boring 40.5 Feet Drilled By Cambridge & Burnham

Core Recovered 0 % No. Boxes — Mfg. Des. Drill truck-mounted CME 75

Core Recovered 0 Ft. — Diam. — in. Inspected By: TA Beddoe

Soil Samples 1 3/8 in. Diam. 20 No. Classification By: TA Beddoe

Soil Samples — in. Diam. — No. Classification By: —

DEPTH 0'	DEPTH 1"=2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE / CORE RECVY	BLOWS PER FT.	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
		S-1	1 3/8	rec 5%	10/6/5/3	Sampling using 2' long, 2" split spoon sampler driven 2', 2' then 1', drive HW casing 5' after sampling 5'	0.25' ASPHALT
2'		S-2	1 3/8	50%	3/1/1/3/3	2 15/16" roller bit to following 5' sampling interval	Brown to red-brown c-m-f SAND, little mf GRAVEL, trace SILT, trace CINDERS, trace ORGANICS (wood chips) (moist, non-plastic) loose FILL - SP
4'		S-3	1 3/8	2%	2/1	Poor Rec. due to driving gravel before sample shoe	Med. brown cmf SAND, trace f GRAVEL, trace SILT (moist, non-plastic) SP
6'		S-4	1 3/8	25%	3/1/1/3/1	5.8' water level	Med. red-brown c-m f SAND, trace cm-f GRAVEL, trace SILT, trace ORGANICS (roots, wood chips) (wet, nonplastic) loose SP
8'		S-5	1 3/8	40%	1/1/1/1/4		Similar Soils SP
10'		S-6	1 3/8	100%	7/7		Similar Soils SP

GENERAL REMARKS:
casing advanced with 300# hammer with an 18 inch drop
sampler advanced with 300# hammer with 18" drop
elevations estimated from survey notes (CORPS)

NED FORM MAR 71 58 (Test)

Boring No. FD86-1

Site	Boring No.	Page 3 of 5
New Haven, Conn.	FD 86-1	

DEPTH		CORE/SAMPLE NO.	SIZE	~~DEPTH RANGE~~	BLOWS PER FT. / CORE RECVY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
10'	1'-2'	S-7	1 3/8"	REC 60%	7/3/2/2	driven the casing followed by 2 15/16" roller bit sampling by 1 3/8" ID split spoon sampler	Lt. red-brown cmf SAND, little c f GRAVEL, trace SILT, trace debris (metal slug) (wet, non-plastic) loose SW
12'		S-8	1 3/8"	50%	2/3/2/3		Similar Soils - no DEBRIS, trace GRAVEL SW
14'		S-9A	1 3/8"	100%	2		Similar Soils - no GRAVEL SW
		S-9B	1 3/8"	100%	3		Lt. red-brown c-mf SAND, trace SILT, trace m GRAVEL (wet, non plastic) loose SP
16'		S-10	1 3/8"	75%	22/12/12/13	drilling easy till removal of S-10. Encounter difficulty with flowing sands. end of explorations 6-30-86	Lt. red-brown m-fr SAND, trace SILT (wet, non plastic) med. Dense SP note 3 pieces c GRAVEL at top of sample accounts for high blows.
18'		S-11	1 3/8"	35%	25/30/10/9	exploration continued 7-1-86	Med to Dark red-brown m-fr SAND, little SILT, trace mf GRAVEL, trace DEBRIS (wet, nonplastic) med dense SP
		S-12	1 3/8"	1%	10/25		Similar Soils SP (no debris)
20'		S-13	1 3/8	5%	18/20/8/3		Similar Soils SP
22'		S-14	1 3/8"	15%	3/1/2/4	Note poor recovery probably due to sands washing out of spoon	Med red-brown cmf SAND, trace SILT, trace f GRAVEL (wet, non plastic) loose SW
24'		S-15	1 3/8"	5%	7/5		Similar Soils - SW
26'		S-16	1 3/8"	0%	5/1/1/2		No Recovery

Site	Boring No.	Page 4 of 5
New Haven, Conn.	FD 86-1	

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
27'	1" 2'						
28'		S-17	1 3/8"	35%	2/2/2/3	driven HW casing followed by 2 15/16" roller bit sampling by 1 3/8" split spoon sampler	Similar Soils - SW
30'		S-18	1 3/8"	20%	3/3		Similar Soils - SW
		S-19	1 3/8"	0%	5/2/1/1		No Recovery
32'		S-20	1 3/8"	65%	2/2/3/2		Similar Soils - SW
34'		S-21	1 3/8"	0%	2/3		No Recovery
36'		S-22	1 3/8"	0%	5/5/4/4		No Recovery
38'		S-23	1 3/8"	0%	2/2/3/3		No Recovery
40'		S-24	1 3/8"	100%*	2/3/3	*Recovery improved by preventing flow of water down through spoon.	Similar Soils - SW
						Boring Terminated at 40.5'	

Site: New Haven, Conn.
Boring No: FD 86-1

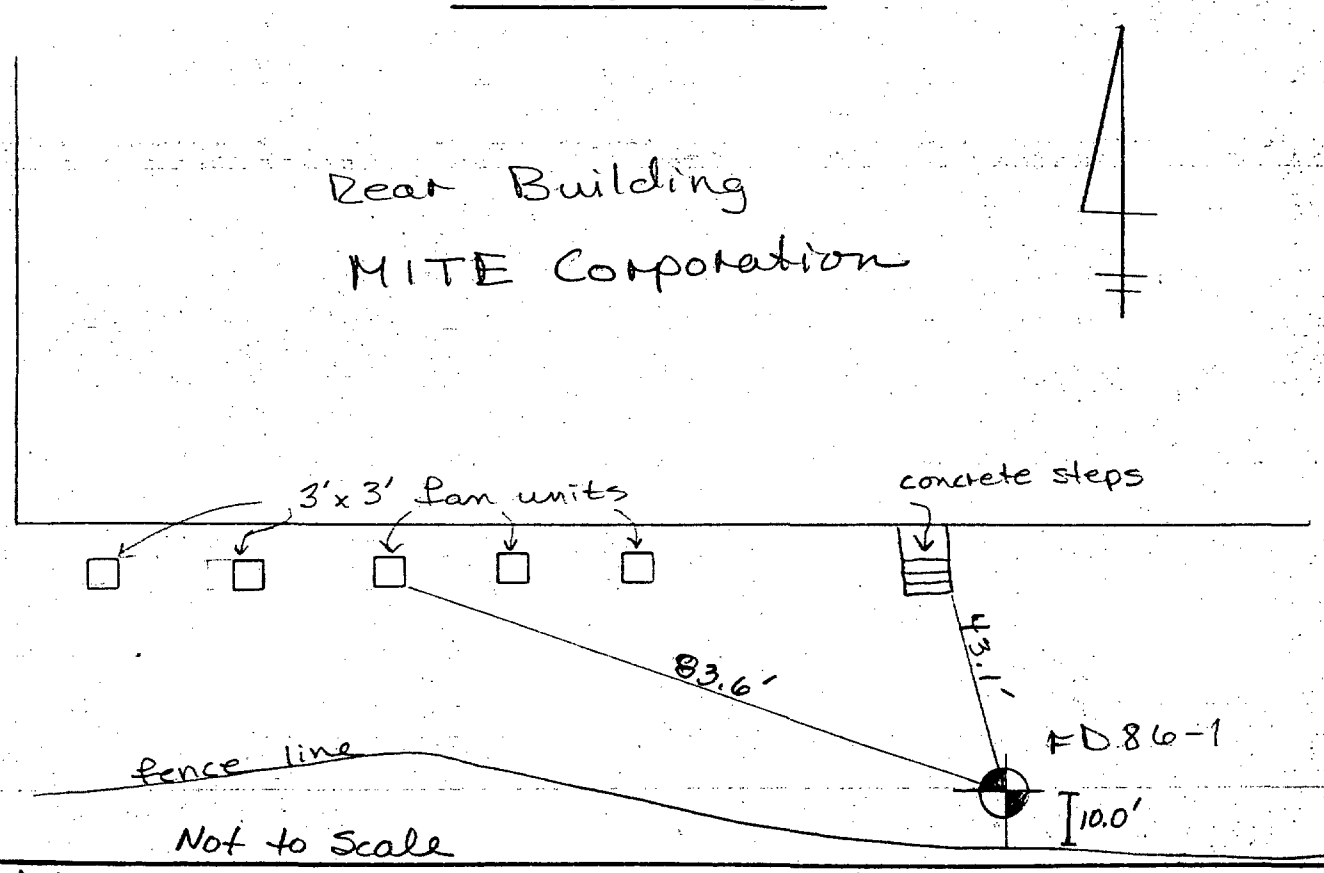
SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION* WATER	REMARKS
7-1-86	7:00	—	17.0	5.8	4.6±	reading obtained at start of drilling operations, 7-1-86 use of water in drilling operations made other determinations meaningless

* elevations estimated from survey notes (COE DS)

Note: Depths are in feet below original ground

BORING LOCATION SKETCH



CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. D.O. #013

Site West River, New Haven CT — Page 1 of 5 Pages

Hole No. FD86-2 Diam. (Casing) 3¼" Hollow Stem Auger — Boring Started 7-1-86

Co-ordinates: N see E plan — Boring Completed 7-1-86

Drilled by Cambridge & Burnham — Report Submitted

Purpose of Exploration to provide information on foundation conditions for the design of floodwalls

Elevation Top of Hole 10.2± M.S.L.* — Casing Left in Place 0 Feet

Total Overburden Drilled 40.0 Feet

Elevation Top of Rock — M.S.L.

Elevation Bottom of Hole -29.7± M.S.L.

Total Rock Drilled 0 Feet

Total Depth of Hole 40.0 Feet

Core Recovered 0 %

Core Recovered 0 Ft.; — Diam. — In.

Soil Samples 1 3/8 In. Diam. 22 No.

Soil Samples — In. Diam. — No.

* elevations estimated from survey notes (CORPS)

Water Table Depth 7.2 ft

Depth From	Depth To	Method of Drilling and Type of Bit Used
0'	37'	3¼" ID Hollow Stem Auger
		(augers washed out with hose)
37'	40'	1 3/8" ID Split Spoon Sampler

INDEX

Ground Water	~~Back of Page~~ 5
Boring Location Sketch	~~Back of Page~~ 5
Overburden Record	Page 2-4
Rock Drilling	Page —
	Page
	Page
	Page

Prepared by TABeddoe — Field Data — Lab. Data

Submitted by Atlantic Testing Labs, Ltd

NED FORM DEC 63 121 — REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U.S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site West River, New Haven CN — Page 1 of 5 Pages

Boring No. FD86-2 Desig. F Diam. (Casing) 3 1/4" Hollow Stem Auger

Co-ordinates: N See boring E location plan

Elevation Top of Boring 10.3± M.S.L.
Total Overburden Drilled 40.0 Feet
Elevation Top of Rock — M.S.L.
Total Rock Drilled 0 Feet
Elevation Bottom of Boring -29.7± M.S.L.
Total Depth of Boring 40.0 Feet
Core Recovered 0 % No. Boxes 0
Core Recovered 0 Ft. — Diam. — in.
Soil Samples 1 3/8 in. Diam. 22 No.
Soil Samples — in. Diam. — No.

Hammer Wt. 300# Boring Started 7-1-86
Hammer Drop 18" Boring Completed 7-1-86
Casing Left 0
Subsurface Water Date — Page 5
Obs. Well no
Drilled By Cambridge & Burnham
Mfg. Des. Drill truck mounted CME 75
Inspected By: TA Beddoe
Classification By: TA Beddoe
Classification By: —

DEPTH 0'	DEPTH 1" = 2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE RECOVY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				REC		Sampling using 2' long, 2" split spoon sampler driven 2', 2', then 1'. drilling by 3 1/4" ID hollow stem auger	2" Asphalt
		S-1A	1 3/8"	75%	18/10/5		S-1A Dark grey c m f GRAVEL and c m f - SAND, trace SILT, trace CEMENT (moist, nonplastic) med. loose GP
		S-1B					S-1B Lt. brown c-m-f- SAND, trace f GRAVEL, trace SILT (moist, non plastic) SP
2'		S-2	1 3/8"	50%	4/3/3/2	Augering easy	S-2 Med-brown similar soils, trace ORGANICS (roots) SP
4'		S-3	1 3/8"	80%	3/2		Dark brown Similar Soils - SP
		S-4A	1 3/8"	80%	3/3/6/8		Similar Soils - SP
6'		S-4B					Med. ~~red~~ brown c m f SAND, some c-m f + GRAVEL, trace SILT (moist, nonplastic) med loose - SW
						-7.2' water level	
8'		S-5	1 3/8"	40%	11/8/9/9	Soils saturated at 8.0 feet	Med. brown c m f SAND and c-m f + GRAVEL, trace SILT (wet, nonplastic) med. loose SW
10'		S-6	1 3/8"	50%	10/4		Med. brown c m f + GRAVEL and c m f SAND, trace SILT (saturated, nonplastic) med. loose GP

GENERAL REMARKS:
elevations estimated from survey notes (CORPS)

Site	Boring No.	Page 3 of 5
New Haven, Conn.	FD86-2	

DEPTH 10'	DEPTH 1" = 2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE / CORE RECOVERY	BLOWS PER FT.	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
		S-7A	1 3/8"	Rec 80%	1/1/1/1	3 1/4" Hollow Stem Auger Sampling by 1 3/8" ID split spoon sampler	Lt. red-brown cmf SAND, trace mf GRAVEL, trace SILT (wet, nonpl) loose SW
		S-7B					Lt. red brown m-f SAND, trace SILT (wet, nonpl) loose SP
12'		S-8	1 3/8"	100%	2/2/3/3		Similar Soils SP
14'		S-9	1 3/8"	100%	1/3		Med red-brown f SAND, little SILT (wet, nonpl) loose SP
16'		S-10	1 3/8"	100%	1/1/1/2		Similar Soils - SP
18'		S-11	1 3/8"	100%	3/3/4/6		Med. red SILT, trace f. SAND (wet, nonpl) loose ML
		S-12	1 3/8"	100%	4/3		Med red-brown mf SAND, little SILT (wet, nonpl) loose SP
20'		S-13	1 3/8"	70%	1/1/2/2	3.5-4.0 feet of flowing sand inside augers - flushed out with hose	Med red-brown cmf SAND, trace f. GRAVEL, trace SILT, (wet, nonpl) loose SW
22'		S-14	1 3/8"	75%	2/3/3/3		Similar Soils - SW (Note - sample lost due to container breakage)
24'		S-15	1 3/8"	80%	1/3	1.5 feet of flowing sand flushed out of augers	Med red-brown c-mf SAND, little SILT, trace mf GRAVEL (wet, nonpl) loose SP
26'		S-16	1 3/8"	50%	2/2/2/3		Med red-brown cmf SAND, trace f GRAVEL, trace SILT (wet, nonpl) loose SW

Site	Boring No.	Page 4 of 5
New Haven, CT	FD86-2	

DEPTH 27'	DEPTH 1"=2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE / CORE RECVY (DEC)	BLOWS PER FT.	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
28'		S-17	1 3/8"	80%	3/3/3/3	3 1/4" Hollow Stem Auger Sampling by 1 3/8" ID split spoon sampler	Similar Soils - SW (Note - sample lost due to container breakage
		S-18	1 3/8"	100%	4/3		Similar Soils - SW
30'		S-19	1 3/8"	40%	1/2/3/2	4' flowing sands flushed out of augers	Similar Soils - SW
32'		S-20	1 3/8"	0%	1/2/3/4		No Recovery
34'		S-21	1 3/8"	100%	1/2		Similar Soils - SW
36'		S-22	1 3/8"	60%	1/1/3/3		Similar Soils - SW (Note - sample lost due to container breakage)
38'		S-23	1 3/8"	25%	2/3/3/4		Similar Soils - SW
		S-24	1 3/8"	100%	2/3		Similar Soils - SW (Note - sample lost due to container breakage
40'						Boring Terminated at 40.0 Feet.	

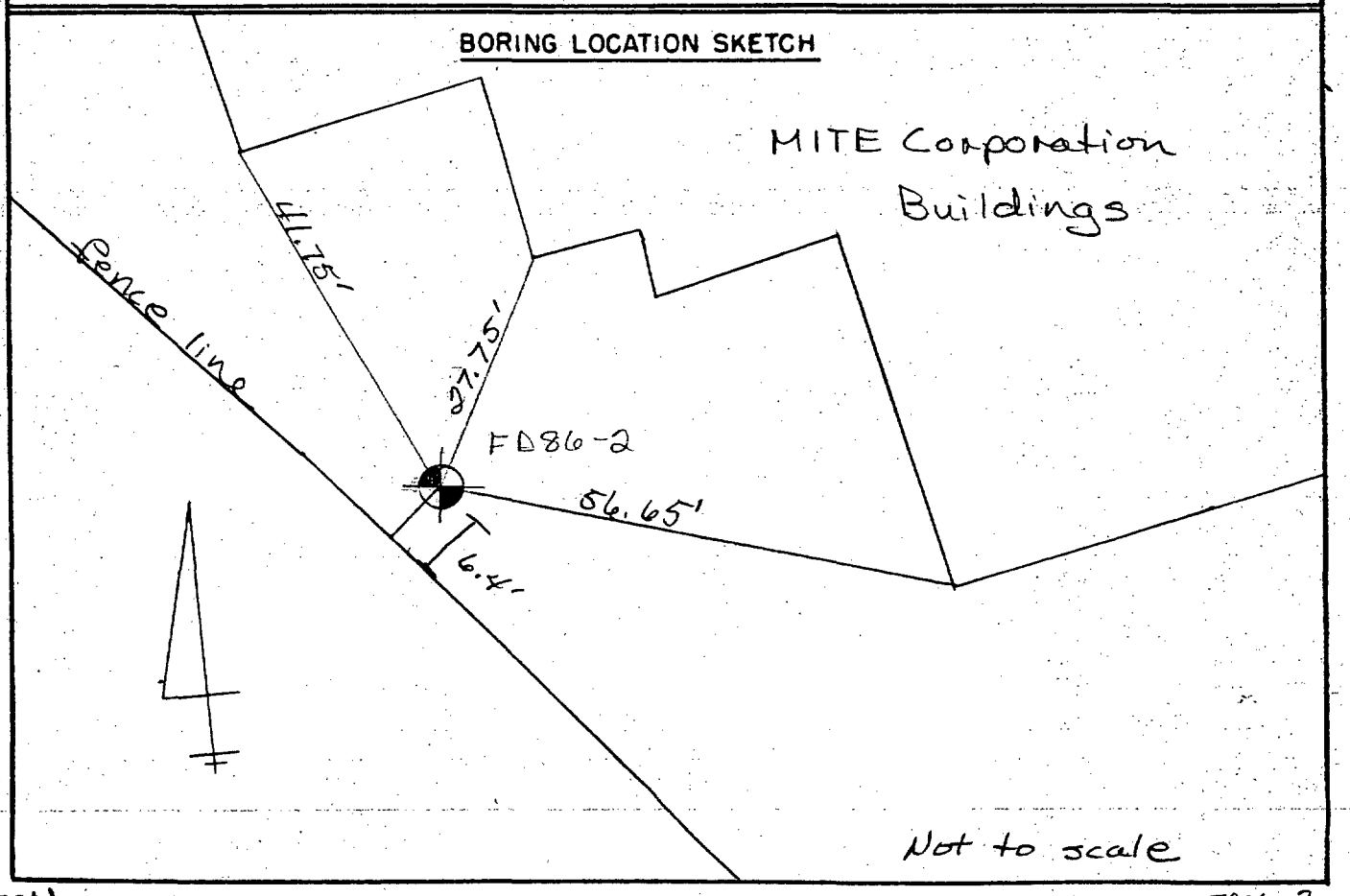
Site: New Haven, CT.
Boring No: FD86-2

SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION* WATER	REMARKS
7-1-86	16:30	35.0	40.0	7.2	3.1±	reading made upon termination of hole
		*elevations estimated from survey notes (CORPS)				

Note: Depths are in feet below original ground

BORING LOCATION SKETCH



D

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. DO #0013

Site New Haven, CT. — Page 1 of 5 Pages

Hole No. FD86-3 Diam. (Casing) 3 1/4" Hollow Stem Auger — Boring Started 7-7-86

Co-ordinates: N see E plan — Boring Completed 7-7-86

Drilled by Cambridge & Burnham — Report Submitted

Purpose of Exploration to provide information on foundation conditions for the design of floodwalls

Elevation Top of Hole 14.5± N.S.L.* — Casing Left in Place 0 Feet

Total Overburden Drilled 40.0 Feet

Elevation Top of Rock — N.S.L.

Elevation Bottom of Hole -26.5± N.S.L.

Total Rock Drilled 0 Feet

Total Depth of Hole 40.0 Feet

Core Recovered 0 %

Core Recovered 0 Ft.: — Diam. — in.

Soil Samples 1 3/8 in. Diam. 70 No.

Soil Samples — in. Diam. — No.

* elevations estimated from survey notes (CORPS)

Water Table Depth 13.0 ft.

Depth From	Depth To	Method of Drilling and Type of Bit Used
0.0	38.0	3 1/4" Hollow Stem Auger (augers washed out with hose)
38.0	40.0	1 3/8" ID Split Spoon Sampler

INDEX

Ground Water	~~Back of~~ Page	5
Boring Location Sketch	~~Back of~~ Page	5
Overburden Record	Page	2-4
Rock Drilling	Page	
	Page	
	Page	
	Page	

Prepared by TABeddoe — Field Data — Lab. Data

Submitted by Atlantic Testing Labs, Ltd

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U.S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site New Haven, CT. Page 2 of 5 Pages

Boring No. ED86-3 Desig. D Diam. (Casing) 3 1/4" Hollow Stem Auger

Co-ordinates: N see boring E location plan

Elevation Top of Boring 14.5± M.S.L.
Total Overburden Drilled 40.0 Feet
Elevation Top of Rock — M.S.L.
Total Rock Drilled 0 Feet
Elevation Bottom of Boring -25.5± M.S.L.
Total Depth of Boring 40.0 Feet
Core Recovered 0 % No. Boxes —
Core Recovered 0 Ft. — Diam. — In.
Soil Samples 1 3/8 In. Diam. 10 No.
Soil Samples — In. Diam. — No.

Hammer Wt. 140# Boring Started 7-7-86
Hammer Drop 30" Boring Completed 7-7-86
Casing Left no
Subsurface Water Data _____ Page 5
Obs. Well no
Drilled By Cambridge & Burnham
Mfg. Des. Drill truck-mounted CME 75
Inspected By: TABeddoe
Classification By: TABeddoe
Classification By: —

DEPTH 0' 1" = 2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE RECOVY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			REC	—	3 1/4" ID Hollow Stem Auger	5" ASPHALT
2'	S-1	1 3/8"	75%	7/12/16/7	sampling by 1 3/8" ID by 2' split spoon sampler. Augering easy 0'-5'	Dark Brown to Black c-mf SAND, trace f GRAVEL, trace SILT, trace ORGANICS (roots) (moist, nonplastic) slightly dense SP
4'						
6'	S-2	1 3/8"	60%	7/6/9/12	Augering slightly difficult 5-10 feet due to cobbles and coarse gravel	Med. Brown c-mf+ SAND, little c-m-f+ GRAVEL, trace SILT, (moist, nonplastic) slightly dense SP
8'						
10'						

GENERAL REMARKS:
elevations estimated from survey notes (CORPS)

NED FORM MAR 71 58 (Test)

Boring No. ED86-3

Site	Boring No.	Page 3 of 5
New Haven, CT.	FD 86-3	

DEPTH 10'	DEPTH 1"=2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE / REC	BLOWS PER 6" / CORE RECOVY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
		S-3	1 3/8"	50%	5/8/9/9	Augering easy below 10 feet. 13.0' water level 3 1/4" ID Hollow Stem Auger Sampling by 1 3/8" ID Split Spoon Sampler	Med red-brown cmf SAND, little cmf GRAVEL, trace SILT (wet, nonplastic) SW
12'							
14'							
16'		S-4	1 3/8"	100%	6/10/12/10		Med brown cmf SAND, trace mf GRAVEL, trace SILT (sat, nonplastic) SW
18'							
20'		S-5	1 3/8"	80%	5/2/3/4		Med grey-brown similar soils SW
22'							
24'							
26'		S-6A	1 3/8"	65%	1/3/5/8	flush 2 ft of flowing sands out of auger stem using a hose	Similar Soils SW
		S-6B					Dark red-brown c-m-f SAND, little SILT, trace f GRAVEL (sat, nonpl) SP

58A(Test)

Boring No. FD 86-3

Site	Boring No.	Page 4 of 5
New Haven, CT.	FD 86-3	

DEPTH 27'	DEPTH 1"=2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE / CORE REC %	BLOWS PER 6"	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				REC		3 1/4" ID Hollow Stem Auger Sampling by 1 3/8" ID Split Spoon Sampler	
28'							
30'		S-7	1 3/8"	65%	1/2/5/4	flush 2 ft of flowing sands out of augers	Med brown cmf SAND, trace c-mf GRAVEL, trace SILT (sat., nonplastic) loose SW
32'							
							change at 33.0 feet to denser soils
34'							
36'		S-8	1 3/8"	100%	20/30/28/15	flush 3 ft of sand out of auger stem	Med. brown cmf SAND, little c-mf GRAVEL, trace SILT (sat, nonplastic) dense SW
38'		S-9	1 3/8"	85%	3/5/4/8		Med brown cmf SAND, trace SILT (sat, nonplastic) loose SW
40'						Boring Terminated at 40.0 feet.	

Site: New Haven, CT.
Boring No: FD86-3

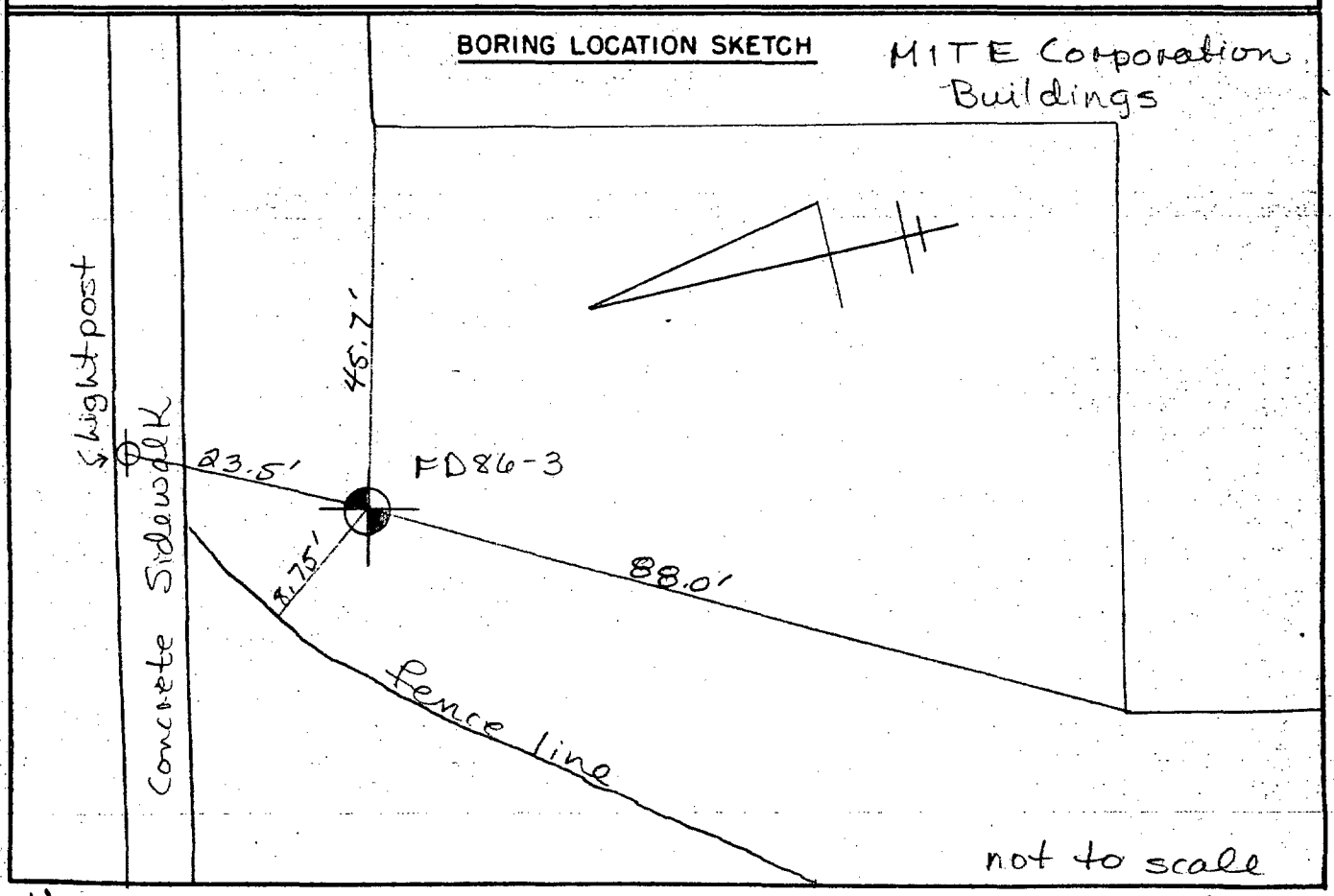
SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER*	REMARKS
7-7-86	14:45	38.0	40.0	13.0'	1.5±'	water level read after boring completed and water level stabilized

* elevations estimated from survey notes (CORPS)

Note: Depths are in feet below original ground

BORING LOCATION SKETCH



CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. D.O. #0013

Site West River, Newhaven, CT. — Page 1 of 5 Pages

Hole No. FD8e-4 Diam. (Casing) 3 1/4" Hollow Stem Auger — Boring Started 7-7-86

Co-ordinates: N see E plan — Boring Completed 7-8-86

Drilled by Cambridge & Burnham — Report Submitted

Purpose of Exploration to provide information on foundation conditions for the design of floodwalls

Elevation Top of Hole 10.4± M.S.L.*
Total Overburden Drilled 40.0 Feet
Elevation Top of Rock — M.S.L.
Elevation Bottom of Hole -29.6± M.S.L.
Total Rock Drilled 0 Feet
Total Depth of Hole 40.0 Feet
Core Recovered 0 %
Core Recovered 0 Ft.: — Diam. — In.
Soil Samples 1 3/8 In. Diam. 11 No.
Soil Samples — In. Diam. — No.

Casing Left in Place 0 Feet

*elevations estimated from survey notes (CORPS)

Water Table Depth 6.3 ft.

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	38.0	3 1/4" ID Hollow Stem Auger
		(augers washed out with hose
		and once with 2 15/16" roller bit
		(10-15'))
38.0	40.0	1 3/8" ID Split Spoon Sampler

INDEX

Ground Water — ~~Back of~~ Page 5
Boring Location Sketch — ~~Back of~~ Page 6
Overburden Record — Page 2-4
Rock Drilling — Page
Page
Page
Page

Prepared by [illegible] Field Data — Lab. Data

Submitted by Atlantic Testing Labs, Ltd

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site New Haven, CT — Page 2 of 5 Pages

Boring No. ED86-4 Desig. E Diam. (Casing) 3 1/4" Hollow Stem Auger

Co-ordinates: ☒ see boring ☒ location plan

Elevation Top of Boring 10.4± M.S.L.
Total Overburden Drilled 40.0 Feet
Elevation Top of Rock — M.S.L.
Total Rock Drilled 0 Feet
Elevation Bottom of Boring -29.6± M.S.L.
Total Depth of Boring 40.0 Feet
Core Recovered 0 % No. Boxes —
Core Recovered 0 Ft. — Diam. — In.
Soil Samples 1 3/8 In. Diam. 11 No.
Soil Samples — In. Diam. — No.

Hammer Wt. 140# Boring Started 7-7-86
Hammer Drop 30"
Boring Completed 7-8-86
Casing Left 0
Subsurface Water Data — Page 5
Obs. Well no
Drilled By Cambridge & Burnham
Mfg. Des. Drill truck-mounted CME 75
Inspected By: TBeddor
Classification By: TABeddor
Classification By: —

DEPTH 0'	DEPTH 1" = 2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
						3 1/4" ID Hollow Stem Auger	3" ASPHALT
		S-1	1 3/8"	26"	10/13/12/13	Sampling by 1 3/8" ID by 2' split spoon sampler	Dark brown c-mf+ SAND, trace c-f+ GRAVEL, trace DEBRIS, trace SILT (moist, non-plastic) slightly dense SP FILL
2'						Augering difficult due to cobbles and gravel from surface	
4'							
6'		S-2	1 3/8"	20"	7/11/17/33	-6.3' water level	Multicolored* mottled cmf SAND and cmf+ GRAVEL trace SILT, trace CLAY (esp. in green silty blebs) (wet, very slightly plastic) dense due to gravel SP
8'							* yellow, green, rust and brown mottles
10'							

GENERAL REMARKS:
elevations estimated from survey notes (CORPS)

NED FORM 58 (Test) MAR 71

Boring No. ED86-4

Site	Boring No.	Page 3 of 5
New Haven, CT.	FD 86-4	

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RUN / REC	BLOWS PER 6" / CORE RECOVERY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
10'	S-3	1 3/8"	REC 10%	10/13/16/16	3 1/4" ID Hollow Stem Auger Sampling by 1 3/8" ID Split Spoon Sampler	Brown c m f+ SAND, some c-f+ GRAVEL, trace SILT (saturated, nonplastic) moderately dense SP
12'						
14'					attempt to wash 5 ft sand out of auger stem using a hose - unsuccessful due to gravel advance roller bit 10' to 15' (2 15/16")	
16'	S-4	1 3/8"	50%	7/15/9/11		brown c m+f+ SAND, trace f GRAVEL, trace SILT (saturated, non-plastic) moderately dense SP
18'						
20'	S-5	1 3/8"	80%	8/5/7/10		Similar Soils - SP
22'					end of explorations 7/7/86 explorations continued 7/8/86	
24'						
26'	S-6A	1 3/8"	100%	4/7/16/40	wash 2 ft sand out of auger stem using a hose	Similar Soils - SP (wet)
	S-6B					Med. brown m f+ SAND, trace SILT (wet, non plastic) dense SP

Site	Boring No.	Page 4 of 5
New Haven, CT.	FD 86-4	

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH/RADIO	BLOWS PER 6" / CORE RECOVERY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
27'	1'=2'					3 1/4" ID Hollow Stem Auger Sampling by 1 3/8" ID Split Spoon Sampler	
28'							
30'		S-7 (A+B)	1 3/8"	100%	6/7/13/20	wash 2 ft sand out of auger stem using hose	alternating layers of soils similar to S-6A (S-7A) and to S-6B (S-7B)
32'		S-7C					Med red-brown SILT, trace f SAND (wet, nonplastic) moderately dense ML
34'							
36'		S-8	1 3/8"	0%	8/6/8/8	wash 3 ft sand out of auger stem using hose	No Recovery
38'		S-9	1 3/8"	5%	22/13/13/15	wash 2.5 ft sand out of auger stem using hose (sample was attempted 3 times in hopes of improving recovery)	Med. brown c-mf+ SAND, trace SILT (sat, nonplastic) moderately dense SP
40'						Boring Terminated at 40 feet.	

Site: New Haven, CT
Boring No: FD 86-4

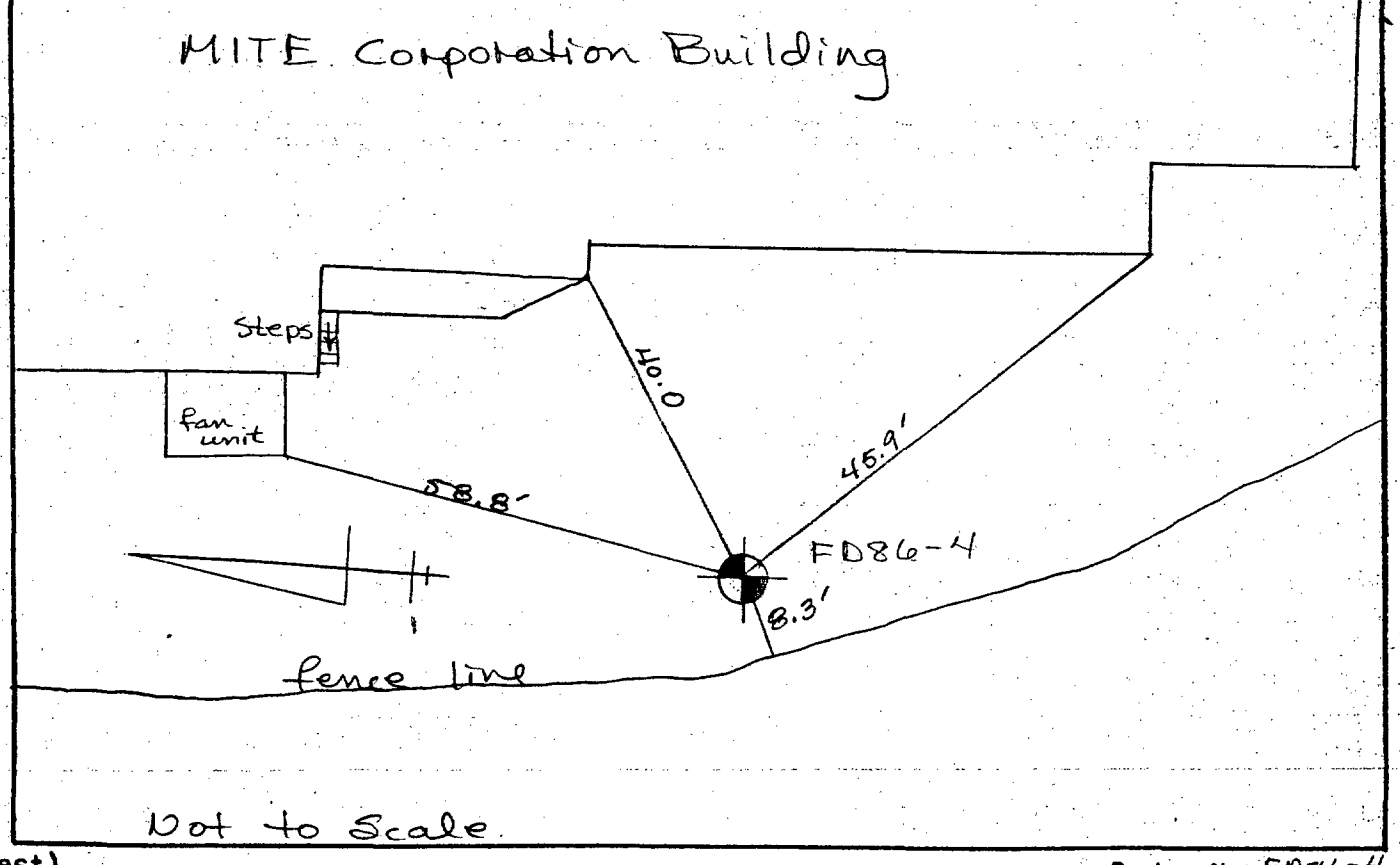
SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER*	REMARKS
7-7-86	16:45	18.0	22.0	7.5	2.9±	at end of explor. 7-7
7-8-86	6:30	18.0	22.0	6.3	4.1±	at beginning of explor. 7-8-86
7-8-86	9:00	38.0	40.0	6.4	4.0±	read after boring completed and water level stabilized.

*elevations estimated from survey notes (CORPS)

Note: Depths are in feet below original ground

BORING LOCATION SKETCH



CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. D.O. #0013

Site West River, New Haven, CT.

Page 1 of 5 Pages

Hole No. FD86-5 Diam. (Casing) 3¼" Hollow Stem Auger

Boring Started 7-8-86

Co-ordinates: ~~X~~ see ~~X~~ plan

Boring Completed 7-8-86

Drilled by Cambridge & Burnham

Report Submitted

Purpose of Exploration to provide information on foundation conditions for the design of floodwalls

Elevation Top of Hole 14.0± N.S.L.*

Total Overburden Drilled 40.0 Feet

Elevation Top of Rock — N.S.L.

Elevation Bottom of Hole -26.0± N.S.L.

Total Rock Drilled 0 Feet

Total Depth of Hole 40.0 Feet

Core Recovered 0 %

Core Recovered 0 Ft.; — Diam. — In.

Soil Samples 1 3/8 In. Diam. 9 No.

Soil Samples — In. Diam. — No.

Casing Left in Place 0 Feet

* elevations estimated from survey notes (CORPS)

Water Table Depth 6.4 ft

Depth From	Depth To	Method of Drilling and Type of Bit Used
0.0	38.0	3¼" ID Hollow Stem Auger (augers washed out with hose)
38.0	40.0	1 3/8" ID split spoon sampler

INDEX

Ground Water — ~~Back of~~ Page 5
Boring Location Sketch — ~~Back of~~ Page 5
Overburden Record — Page 2-4
Rock Drilling — Page
Page
Page
Page

Prepared by T.A. Reddoe
Field Data — Lab. Data

Submitted by Atlantic Testing Labs, Ltd.

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site New Haven, CT. Page 2 of 5 Pages

Boring No. FD86-5 Desig. H Diam. (Casing) 3 1/4" Hollow Stem Auger

Co-ordinates: N see boring E location plan

Elevation Top of Boring 14.0± M.S.L. Hammer Wt. 140# Boring Started 7-8-86

Total Overburden Drilled 40.0 Feet Hammer Drop 30" Boring Completed 7-8-86

Elevation Top of Rock — M.S.L. Casing Left 0

Total Rock Drilled 0 Feet Subsurface Water Data — Page 5

Elevation Bottom of Boring -26.0± M.S.L. Obs. Well no

Total Depth of Boring 40.0 Feet Drilled By Cambridge & Burnham

Core Recovered 0 % No. Boxes — Mfg. Des. Drill truck-mounted CME 75

Core Recovered 0 Ft. — Diam. — in. Inspected By: TABeddoe

Soil Samples 1 3/8 in. Diam. 9 No. Classification By: TABeddoe

Soil Samples — in. Diam. — No. Classification By: —

DEPTH 0'	DEPTH 1" = 2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE RECOVY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				REC	2/3/3/6	3 1/4" ID Hollow Stem Auger Sampling by 1 3/8" ID by 2' split spoon sampler	3" TOPSOIL Med brown c-m-f SAND, trace + SILT, trace - f GRAVEL, trace ORGANICS (roots, grass) (slightly moist, nonplastic) loose SP
		S-1	1 3/8"	46%			
2'						augering relatively difficult due to gravel and cobbles	
4'							
					35/35/50+		light brown c-m-f SAND, some c-m-f GRAVEL, trace SILT, trace ORGANICS (roots) (slightly moist, nonplastic) dense SP
6'		S-2	1 3/8"	70%		refusal due to cobble -6.4' water level	
						augering difficult	
8'							
10'						out of cobbly horizon at 9.0 ft augering easy	

GENERAL REMARKS:
elevations estimated from survey notes (CORPS)

Site	Boring No.	Page 3 of 5
New Haven, CT.	FD86-5	

DEPTH 10'	1' 2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE / REC	BLOWS PER 6" / CORE RECOVERY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
		S-3	1 3/8"	20%	4/5/7/10	3 1/4" Hollow Stem Auger sampling key 1 3/8" ID split spoon sampler	Dark brown c-m-f SAND, little SILT, trace f GRAVEL, trace ORGANICS (roots) (saturated, nonplastic) slightly dense SP
12'							
14'							
16'		S-4	1 3/8"	100%	3/6/6/7		Med brown c-m-f SAND, trace f GRAVEL, trace SILT (sat., nonplastic) loose SP
18'							
20'		S-5	1 3/8"	50%	8/6/8/7	wash 4 ft sand out of auger stem using water hose	Similar Soils - SP
22'							
24'							
26'		S-6	1 3/8"	30%	2/2/6/9	wash 2.5 ft sand out of auger stem using water hose	Similar Soils - SP

Site	Boring No.	Page 4 of 5
New Haven, CT.	FD 86-5	

DEPTH 27'	DEPTH 1'=2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE / CORE RECOVERY	BLOWS PER 6"	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
28'				REC		3 1/4" ID Hollow Stem Auger Sampling by 1 3/8" ID Split Spoon Sampler	
30'		S-7	1 3/8"	70%	3/5/8/10	one foot sand washed out of auger stem with water hose	Med brown cmf SAND, trace SILT (sat, non plastic) loose SW
32'							
34'							
36'		S-8	1 3/8"	5%	5/8/12/11	wash 2 ft sand out of auger stem with water hose	Med brown c-mf SAND, trace SILT (sat., non-plastic) medium dense SP
38'		S-9	1 3/8"	50%	6/7/9/10	wash 1 ft sand out of auger stem with water hose	Similar Soils SP
40'						Boring Terminated at 40.0 Feet	

Site: New Haven, CT.
Boring No: FD 86-5

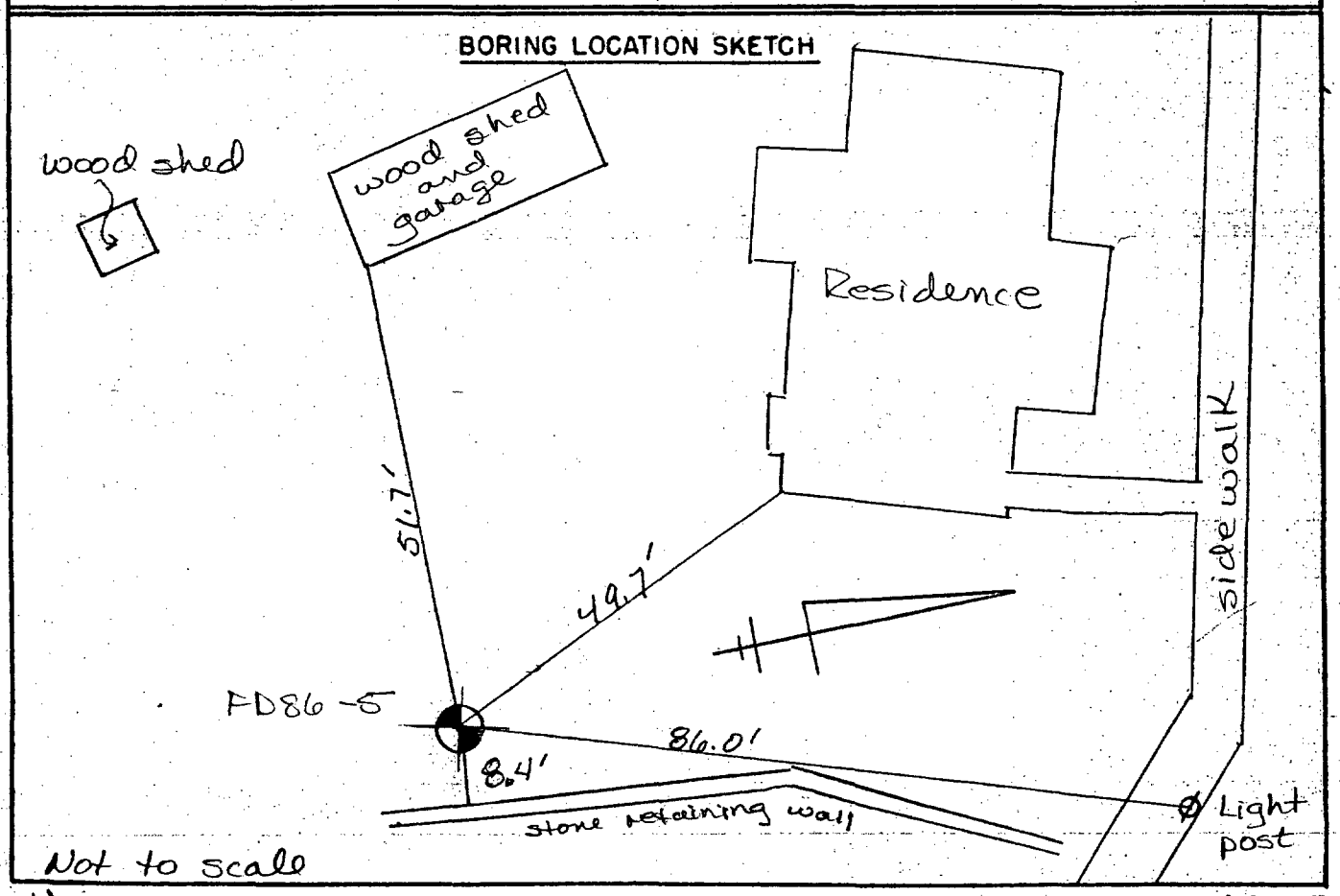
SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION* WATER	REMARKS
7-8-86	11:45	38.0	40.0	6.4	7.6±	read after drilling completed and water level stabilized
7-8-86	12:05	—	9.0 (caved here)	9.0	5.0±	read after pulling augers

*elevations estimated from survey notes (CORPS)

Note: Depths are in feet below original ground

BORING LOCATION SKETCH



CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. D.O. #0013

Site West River, New Haven, CT.

Page 1 of 5 Pages

Hole No. FD86-6 Diam. (Casing) 3¼" Hollow Stem Auger

Boring Started 7-8-86

Co-ordinates: ~~X~~ see ~~X~~ plan

Boring Completed 7-8-86

Drilled by Cambridge & Burnham

Report Submitted

Purpose of Exploration to provide information on foundation conditions for the design of floodwalls

Elevation Top of Hole 14.2± N.S.L.*

Total Overburden Drilled 40.0 Feet

Elevation Top of Rock — N.S.L.

Elevation Bottom of Hole -25.8± N.S.L.

Total Rock Drilled 0 Feet

Total Depth of Hole 40.0 Feet

Core Recovered 0 %

Core Recovered 0 Ft.; — Diam. — in.

Soil Samples 1 3/8 in. Diam. 8 No.

Soil Samples — in. Diam. — No.

Casing Left in Place 0 Feet

* elevations estimated from survey notes (CORPS)

Water Table Depth 10.1'

Depth From	Depth To	Method of Drilling and Type of Bit Used
0.0	38.0	3¼" ID Hollow Stem Auger
		(augers washed out with hose)
38.0	40.0	1 3/8" ID split spoon sampled

INDEX

Ground Water	~~Back of~~ Page 5
Boring Location Sketch	~~Back of~~ Page 5
Overburden Record	Page 2-4
Rock Drilling	Page
	Page
	Page
	Page

Prepared by T Beddoe
Field Data

Lab. Data

Submitted by Atlantic Testing Labs, Ltd.

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site New Haven, CT — Page 5 of 5 Pages

Boring No. ED86-6 Desig. C Diam. (Casing) 3 1/4" Hollow Stem Auger

Co-ordinates: N see boring E location plan

Elevation Top of Boring 14.2± M.S.L.
Total Overburden Drilled 40.0 Feet
Elevation Top of Rock — M.S.L.
Total Rock Drilled 0 Feet
Elevation Bottom of Boring -25.8± M.S.L.
Total Depth of Boring 40.0 Feet
Core Recovered 0 % No. Boxes —
Core Recovered 0 Ft: — Diam. — in.
Soil Samples 1 3/8 in. Diam. 8 No.
Soil Samples — in. Diam. — No.

Hammer Wt. 140# Boring Started 7-8-86
Hammer Drop 30"
Casing Left 0 Boring Completed 7-8-86
Subsurface Water Data _____ Page 5
Obs. Well no
Drilled By Cambridge & Burnham
Mfg. Des. Drill truck-mounted CME75
Inspected By: TABeddoe
Classification By: TABeddoe
Classification By: —

DEPTH 0'	DEPTH 1" = 2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE / REC	BLOWS PER 6" / CORE RECVY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				REC		3 1/4" ID Hollow Stem Auger Sampling by 1 3/8" ID by 2' split spoon sampler augering slightly difficult 0-2' augering easier after 2'	3" ASPHALT
		S-1	1 3/8"	15 9/16	20/30/50		Black c-mf+ SAND and c-mf+ GRAVEL, trace SILT trace CINDERS (slightly moist, non plastic) dense FILL SP
2'							
4'							
6'		S-2	1 3/8"	7 5/16	4/4/5/6		Med. brown c-mf+ SAND, trace mf+ GRAVEL, trace SILT, trace ORGANICS (roots) (slightly moist, nonplastic) loose SP
8'							
10'							

GENERAL REMARKS:
elevations estimated from survey notes (CORPS)

FORM R 71 58 (Test)

Boring No. ED86-6

Site	Boring No.	Page 3 of 5
New Haven, CT.	FD86-6	

DEPTH 10'	DEPTH 1" = 2'	CORE/SAMPLE NO.	SIZE	DEPTH RQD	BLOWS PER 6" / CORE RECOVY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
		S-3	1 3/8"	60%	17/15/9/7	10.1' water level 3 1/4" ID Hollow Stem Auger Sampling by 1 3/8" ID Split spoon sampler	cmf SAND, little c-mf GRAVEL, trace SILT (wet, non plastic) loose SW (from 10'-11' multi-colored [red, green, yellow pockets], from 11'-12' brown)
12'							
14'							
16'		S-4	1 3/8"	100%	5/4/4/5	wash 1 ft sand out of augers using water hose (note significant water loss)	Med. Brown cmf SAND, trace SILT (sat, non-plastic) loose SP
18'							
20'		S-5	1 3/8"	50%	5/5/7/5	wash sand out of augers using water hose (note continued water loss)	Med brown cmf SAND, trace mf GRAVEL, trace SILT (sat, nonplastic) loose SW
22'							
24'							
26'		S-6A S-6B	1 3/8"	30%	1/3/5/6	wash 3 ft sand out of augers using water hose (note continued water loss)	Soils similar to S-4 SP Med brown SILT, some mf SAND (sat, nonplastic) loose ML

58A (Test)

Boring No. FD86-6

Site	Boring No.	Page 4 of 5
New Haven, CT.	FD86-6	

DEPTH 27'	1" = 2'	CORE/SAMPLE NO.	SIZE	DEPTH/RADC REC	BLOWS PER 6" BORE RECOVY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
28'						3¼" ID Hollowstem Auger sampling by 1⅜" ID Split Spoon Sampler	
30'		S-7	1⅜"	30%	5/10/10/15	wash 1.5' sand from auger stem using water hose	Light brown c-m SAND, trace f. GRAVEL, trace SILT (sat., nonplastic) Slightly dense SW
32'							
34'							
36'		S-8	1⅜"	0%	4/5/6/7	wash sand from auger stem using water hose	No Recovery
38'		S-9	1⅜"	0%	5/7/8/9	wash 2' sand from auger stem using water hose - sample attempted twice	No Recovery
40'						Boring Terminated at 40 Feet	

Site: Deep Haven, CT.
Boring No: FD86-6

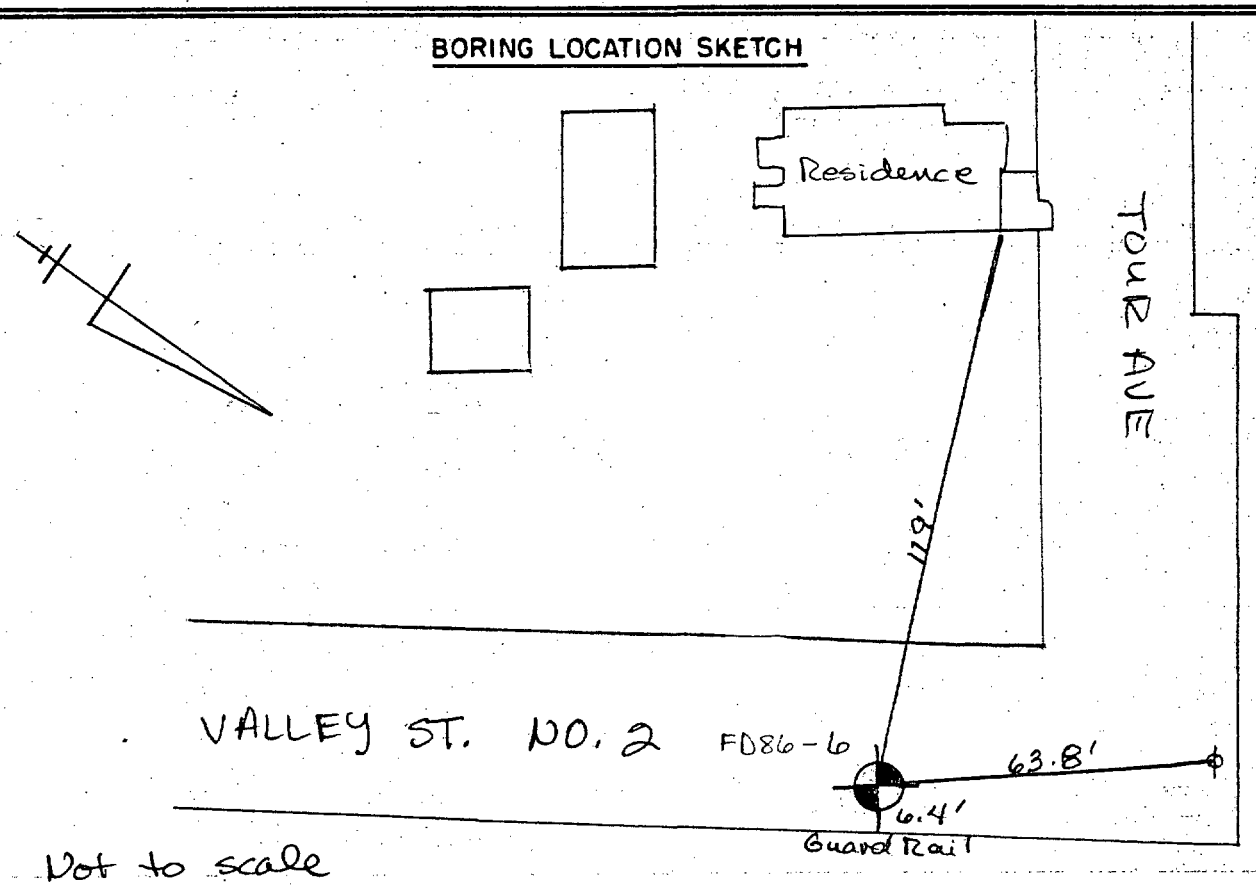
SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION* WATER	REMARKS
7-8-86	17:40	38.0	40.0	10.1	4.1±	reading made after boring complete and water level stabilized
7-8-86	18:00	—	40.0	8.0	6.2±	reading made after augers pulled

* elevations estimated from survey notes (CORPS)

Note: Depths are in feet below original ground

BORING LOCATION SKETCH



FORM 59 (Test)
MAR 71

Boring No. FD86-6

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. D.O. #0013

Site West River, New Haven, CT. — Page 1 of 5 Pages

Hole No. ED86-7 Diam. (Casing) 3¼" Hollow Stem Auger — Boring Started 7-9-86

Co-ordinates: N see E plan — Boring Completed 7-9-86

Drilled by Cambridge & Burnham — Report Submitted

Purpose of Exploration to provide information on foundation conditions for the design of floodwalls

Elevation Top of Hole 16.5± M.S.L.* — Casing Left in Place 0 Feet

Total Overburden Drilled 40.0 Feet

Elevation Top of Rock — M.S.L.

Elevation Bottom of Hole -23.5± M.S.L.

Total Rock Drilled 0 Feet

Total Depth of Hole 40.0 Feet

Core Recovered 0 %

Core Recovered 0 Ft.; — Diam. — in.

Soil Samples 1 3/8 in. Diam. 11 No.

Soil Samples — in. Diam. — No. — Water Table Depth 13.8 ft

* elevations estimated from survey notes (CORPS)

Depth From	Depth To	Method of Drilling and Type of Bit Used
0.0	38.0	3¼" ID Hollow Stem Auger (augers washed out with hose)
38.0	40.0	1 3/8" ID Split Spoon Sampler

INDEX

Ground Water	~~Back of~~ Page 5
Boring Location Sketch	~~Back of~~ Page 5
Overburden Record	Page 2-4
Rock Drilling	Page
	Page
	Page
	Page

Prepared by T. Reddoc — Field Data — Lab. Data

Submitted by Atlantic Testing Labs, Ltd.

NED FORM DEC 63 121 — REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site New Haven, CT. Page 2 of 5 Pages

Boring No. EDB6-7 Desig. A Diam. (Casing) 3¼" Hollow Stem Auger

Co-ordinates: N see boring E location plan

Elevation Top of Boring 16.5± M.S.L.
Total Overburden Drilled 40.0 Feet
Elevation Top of Rock — M.S.L.
Total Rock Drilled 0 Feet
Elevation Bottom of Boring -23.5± M.S.L.
Total Depth of Boring 40.0 Feet
Core Recovered 0 % No. Boxes —
Core Recovered 0 Ft. — Diam. — In.
Soil Samples 1 3/8 In. Diam. 11 No.
Soil Samples — In. Diam. — No.

Hammer Wt. 140# Boring Started 7-9-86
Hammer Drop 30" Boring Completed 7-9-86
Casing Left 0
Subsurface Water Data — Page 5
Obs. Well no
Drilled By Cambridge & Burnham
Mfg. Des. Drill truck mounted CME 75
Inspected By: JABeddoe
Classification By: JABeddoe
Classification By: —

DEPTH 0' 1" 2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE / REC	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			REC		3¼" ID Hollow Stem Auger sampling by 1 3/8" ID by 2' long split spoon sampler	2" ASPHALT
2'	S-1	1 3/8"	50%	35/35/65/82	augering difficult due to gravel and cobbles to approximately 14.5'	Light reddish brown c-m SAND, some c-m GRAVEL, trace SILT (slightly moist, nonplastic) dense FILL SP.
4'						
6'	S-2	1 3/8"	40%	30/22/20/12		Similar Soils - SP
8'						
10'						

GENERAL REMARKS:
elevations estimated from survey notes (CORPS)

Site	Boring No.	Page 3 of 5
New Haven, CT	FD86-7	

DEPTH 10'	1" 2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE / REC	BLOWS PER 6" / CORE RECOVY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
		S-3	1 3/8"	REC 50%	8/9/12/12	3 1/4" ID Hollow Stem Auger Sampling by 1 3/8" ID split spoon sampler	Reddish black c-mf SAND, little mf GRAVEL, trace SILT (moist, nonplastic) moderately dense FILL SP Note strong odor of petroleum product, sheen on water from spoon
12'							
14'					14'	-13.8' water level Hicone roller bit used to bypass boulder (less than 2"), followed by augers	(change may occur after boulder at 14'.
16'		S-4	1 3/8"	70%	9/17/17/24	augering easy for remainder of boring.	Dark red-brown cmf SAND, some c-mf GRAVEL, trace SILT (sat, nonplastic) moderately dense SW Note odor of petroleum product, occasional green and light grey pockets.
18'							
20'		S-5A	1 3/8"	80%	8/6/7/10		Grey Brown cmf SAND, trace f GRAVEL, trace SILT (sat., non pl) loose SW Note petroleum odor
22'		S-5B					Med red-brown c-mf SAND, trace f GRAVEL, trace SILT (sat, nonpl) loose SP Note petroleum odor.
24'							
26'		S-6A S-6B	1 3/8"	65%	8/7/10/10		Med brown cmf SAND, trace SILT (sat., nonpl) loose SW Note petroleum odor Soils similar to S-5B SP

Site	Boring No.	Page 4 of 5
New Haven, CT.	FD86-7	

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE / REC	BLOWS PER FT / CORE RECVY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
27'	1" 21						
28'				REC		3¼" ID Hollow Stem Auger sampling by 1 3/8" ID split spoon sampler	
30'		S-7	1 3/8"	20%	9/12/85/25	wash sand from augerstem using water hose.	Red brown cmf SAND, trace cm-f GRAVEL, trace SILT (sat, nonpl) dense (due to gravel) SW
32'							
34'							
36'		S-8	1 3/8"	75%	7/6/10/11	wash sand from auger stem using water hose	Similar Soils, SW
38'		S-9	1 3/8"	70%	24/14/10/16	wash sand from auger stem using water hose	Similar Soils, SW
40'						Boring Terminated at 40 feet. Boring Caved in at 14 ft.	

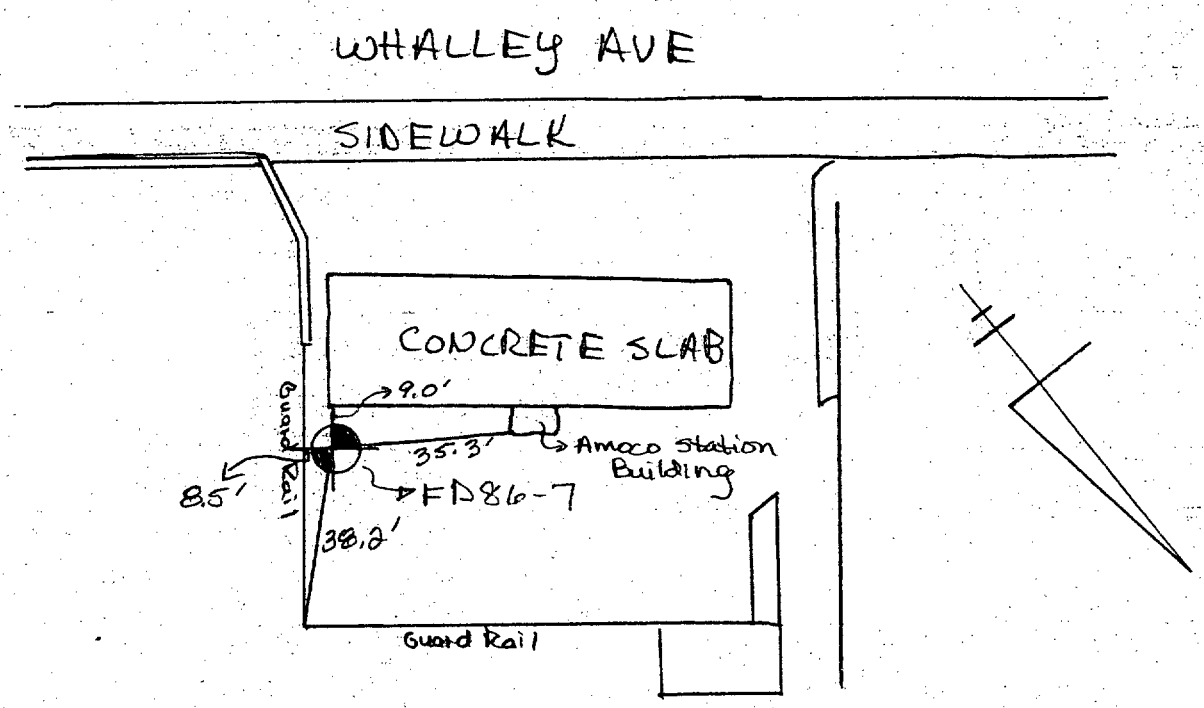
Site: New Haven, CT.
Boring No: FD86-7

SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION* WATER	REMARKS
7-9-86	10:20	38.0'	40.0'	13.8'	2.7±	read after boring completed and water table stabilized
		* elevations estimated from survey notes (CORPS)				

Note: Depths are in feet below original ground

BORING LOCATION SKETCH



Not to scale

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. D.O. #0013

Site: West River, New Haven, CT.

Page 1 of 5 Pages

Hole No. FD86-8 Diam. (Casing) 3 1/4" Hollow Stem Auger

Boring Started: 7-9-86

Co-ordinates: X see Y plan

Boring Completed: 7-9-86

Drilled by: Cambridge & Burnham

Report Submitted:

Purpose of Exploration: to provide information on foundation conditions for the design of floodwalls

Elevation Top of Hole: 12.9± M.S.L.*

Total Overburden Drilled: 40.0 Feet

Elevation Top of Rock: — M.S.L.

Elevation Bottom of Hole: -27.1± M.S.L.

Total Rock Drilled: 0 Feet

Total Depth of Hole: 40.0 Feet

Core Recovered: 0 %

Core Recovered: 0 Ft.; — Diam. — In.

Soil Samples: 1 3/8 In. Diam. 15 No.

Soil Samples: — In. Diam. — No.

Casing Left in Place: 0 Feet

* elevations estimated from survey notes (CORPS)

Water Table Depth: 10.7 ft

Depth From	Depth To	Method of Drilling and Type of Bit Used
0.0	38.0	3 1/4" I.D. Hollow Stem Auger
		(augers washed out with hose)
38.0	40.0	1 3/8" I.D. Split Spoon Sampler

INDEX

Ground Water	~~Back of~~ Page 5
Boring Location Sketch	~~Back of~~ Page 5
Overburden Record	Page 2-4
Rock Drilling	Page
	Page
	Page
	Page

Prepared by: T.A. Beddoe — Field Data — Lab. Data

Submitted by: Atlantic Testing Labs, Ltd.

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site New Haven, CT. Page 3 of 5 Pages

Boring No. ED86-8 Desig. B Diam. (Casing) 3¼" Hollow Stem Auger

Co-ordinates: N see boring E location plan

Elevation Top of Boring 12.9± M.S.L. Hammer Wt. 140# Boring Started 7-9-86

Total Overburden Drilled 40.0 Feet Hammer Drop 30" Boring Completed 7-9-86

Elevation Top of Rock — M.S.L. Casing Left 0

Total Rock Drilled 0 Feet Subsurface Water Date ____ Page 5

Elevation Bottom of Boring -27.1± M.S.L. Obs. Well no

Total Depth of Boring 40.0 Feet Drilled By Cambridge & Burnham

Core Recovered 0 % No. Boxes — Mfg. Des. Drill truck mounted CME 75

Core Recovered 0 Ft. — Diam. — In. Inspected By: 9 Beddoe

Soil Samples 1 3/8 In. Diam. 15 No. Classification By: 9 Beddoe

Soil Samples — In. Diam. — No. Classification By: —

DEPTH 0' 1" = 2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE RECOVERY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			REC		3¼" ID Hollow Stem Auger	3" ASPHALT
	S-1	1 3/8"	50%	10/15/19/3	Sampling by 1 3/8" ID by 2' split spoon sampler	Dark brown c-m-f+ SAND, some c-m-f+ GRAVEL, trace+ SILT, trace DEBRIS (cinders, brick, tar), trace ORGANICS (roots) (slightly moist, nonplastic) SP FILL loose
2'					Augering easy to 6'	
4'						
	S-2	1 3/8"	100%	4/50		Dark brown c-m-f+ SAND, trace c-m-f GRAVEL, trace SILT, trace DEBRIS (brick) slightly moist, nonplastic) loose SP FILL
6'					Augering difficult 6-7' due to cobbles	
8'					augering easy	
10'						

GENERAL REMARKS:
elevations estimated from survey notes (CORPS)
boring moved because of overhead lines

NED FORM 58 (Test) MAR 71

Boring No. ED86-8

Site	Boring No.	Page 4 of 5
New Haven, CT	FD86-8	

DEPTH 10'	DEPTH 20'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE RECVY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
		S-3A	1 3/8"	REC 75%	6/23/22/15	10.7' water level	Black c-mf SAND, trace f GRAVEL, trace SILT (moist, nonpl) loose SP FILL
		S-3B					Grey/brown mottled m-f SAND, trace SILT (wet, nonpl) dense SP
		S-3C				3 1/4" ID Hollow Stem Auger Sampling key 1 3/8" ID split spoon sampler	
12'							Grey/brown cmf GRAVEL and cmf SAND, trace SILT (sat, nonplastic) dense GW
14'							
		S-4A	1 3/8"	100%	7/10/18/20		Dark red-brown m-f SAND, little SILT (sat, nonplastic) loose SP
16'		S-4B					Dark red-brown f SAND, and SILT (sat., nonpl) mod. dense SP-SM
		S-4C					
18'							Med reddish brown cmf SAND, trace mf GRAVEL, trace SILT (saturated, nonplastic) moderately dense SW
20'						wash sand out of auger stem using hose	Similar Soils - SW
		S-5A	1 3/8"	60%	11/15/15/16		Med. reddish brown m-f SAND, little SILT (saturated, nonplastic) moderately dense SP
		S-5B					
22'							
24'							
						wash sand out of auger stem using hose	
26'		S-6	1 3/8"	25%	13/10/11/12		Med brown cmf SAND, little cf GRAVEL, trace SILT (saturated, nonplastic) loose SW

Site	Boring No.	Page 4 of 5
New Haven, CT.	FD86-8	

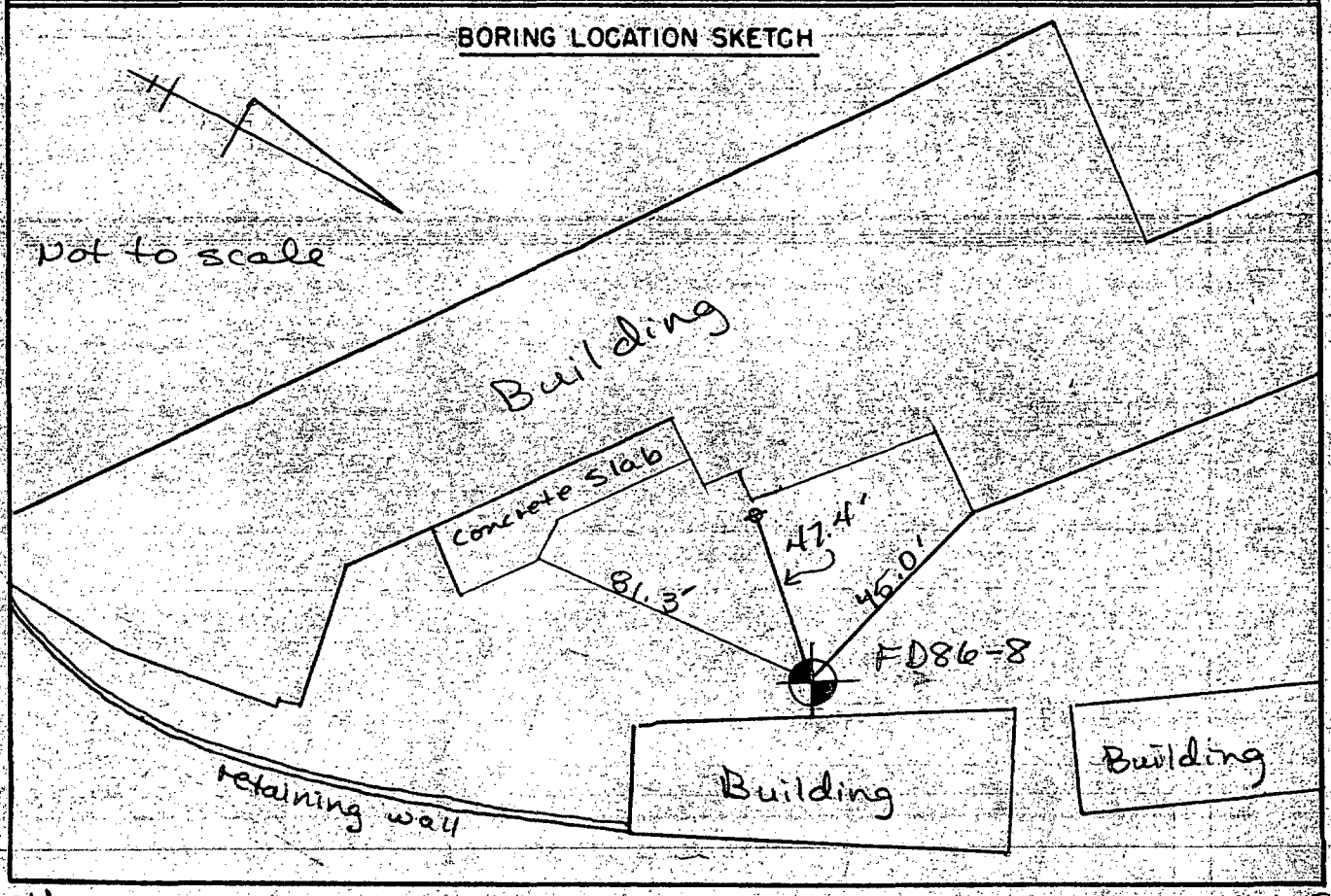
DEPTH 27'	DEPTH 1" = 2'	CORE/SAMPLE NO.	SIZE	DEPTH/RUN REC	BLOWS PER FT. / CORE RECV'Y	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				REC		3¼" ID Hollow Stem Auger	
28'						1 3/8" ID Split Spoon Sampler	
30'						wash sand out of auger using hose	No Recovery
		S-7	1 3/8"	0%	6/13/21/23		
32'						augered sands are tighter @ 32.5	
34'							
		S-8A	1 3/8"	65%	18/23/25/31	wash sand out of auger using hose	Med brown cmf SAND, trace f GRAVEL, trace SILT (sat, nonplastic) mod. dense SW
36'		S-8B					Med brown c-mf SAND, little c+m f GRAVEL, trace SILT (saturated, nonplastic) moderately dense SP
38'						wash sand out of auger using hose	
		S-9A	1 3/8"	100%	15/29/25/28		Med brown cmf SAND, trace SILT (sat, nonpl) dense SW
		S-9B					Med brown cmf SAND, trace mf GRAVEL, trace SILT (sat, nonpl) dense SW
40'						Boring terminated @ 40 Feet.	

Site: New Haven, CT.
Boring No: FD86-8

SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION* WATER	REMARKS
7-9-86	14:15	38.0	40.0	10.7	2.2±	reading after drilling complete and water level stabilized
7-9-86	14:45	—	40.0	9.5	3.4±	read after pulling augers

* elevations estimated from survey notes (CORPS)

Note: Depths are in feet below original ground

BORING LOCATION SKETCH