W912WJ-05-B-0010

US Army Corps
of Engineers ®
New England District

Maintenance Dredging, Norwalk Harbor 6, 10 and 12-Foot Channels 6 and 10-Foot Anchorages 10-FootTurning Basin

Construction Solicitation And Specifications

July 2005

Maintenance Dredging, 6, 10, and 12-Foot Channels, 6 and 10-Foot Anchorages, 10-Foot Turning Basin, Norwalk Harbor, Norwalk, CT

DESIGN AUTHENTICATION

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This project was designed for/by the New England District of the U.S. Army Corps of Engineers. The initials or signatures and registration designations of individuals appear on these project documents within the scope of their employment as required by ER1110-1-8152.

SOLICITATION, OFFER, AND AWARD *(Construction, Alteration, or Repair)*	1. SOLICITATION NO. W912WJ-05-B-0010	2. TYPE OF SOLICITATION [X] SEALED BID (IFB) [ ] NEGOTIATED *(RFP)*	3. DATE ISSUED 01-Jul-2005	PAGE OF PAGES 1 OF 38

IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.

4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO. W13G86-5151-5636	6. PROJECT NO.

7. ISSUED BY CODE W912WJ	8. ADDRESS OFFER TO *(If Other Than Item 7)* CODE
U S ARMY ENGR DISTRICT, NEW ENGLAND 696 VIRGINIA RD CONCORD MA 01742-2751	**See Item 7**
TEL: FAX: 978-318-8207	TEL: FAX:

9. FOR INFORMATION CALL:	A. NAME	B. TELEPHONE NO. *(Include area code)* *(NO COLLECT CALLS)*
	RACHAEL RAPOSA	978-318-8249

SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS *(Title, identifying no., date):*

SPECIFICATIONS titled, "MAINTENANCE DREDGING, NORWALK HARBOR 6, 10 AND 12-FOOT CHANNELS, 6 AND 10-FOOT ANCHORAGES, 10-FOOT TURNING BASIN" Dated JULY 2005

DRAWINGS as listed in SECTION 00800, paragraph titled, "CONTRACT DRAWINGS AND SPECIFICATIONS"

SECTION 00700, CONTRACT CLAUSES, and SECTION 00800, SPECIAL CONTRACT REQUIREMENTS

NOTE TO BIDDERS: Please pay special attention to Section 00600, Contract Clause 52.204-8, Annual Representations and Certifications (Jan 2005). All bidders must complete the annual representations and certifications electronically via the Online Representations and Certifications Application (ORCA) website at http://orca.bpn.gov. Please ensure your firm is registered in the Contractor Central Registration (CCR) database prior to completing the ORCA requirements.

The applicable NAICS Code and Size Standard for this procurement are as follows:
NAICS Code: 237990
Size Standard: $17,020,000.00

THIS SOLICITATION IS ISSUED UNRESTRICTED PURSUANT TO PUBLIC LAW 100-656, SMALL BUSINESS COMPETITIVENESS DEMONSTRATION PROGRAM

11. The Contractor shall begin performance within 15 calendar days and complete it within _____ calendar days after receiving [ ] award, [X] notice to proceed. This performance period is [X] mandatory, [ ] negotiable. *(See* Par 1.1 00800 *.)*

12 A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? *(If "YES," indicate within how many calendar days after award in Item 12B.)* [X] YES [ ] NO	12B. CALENDAR DAYS 10

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 2 copies to perform the work required are due at the place specified in Item 8 by 02:00 PM *(hour)* local time 01 Aug 2005 *(date).* If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee [X] is, [ ] is not required.

C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.

D. Offers providing less than 60 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

SOLICITATION, OFFER, AND AWARD (Continued)

(Construction, Alteration, or Repair)

OFFER ***(Must be fully completed by offeror)***

14. NAME AND ADDRESS OF OFFEROR *(Include ZIP Code)*		15. TELEPHONE NO. *(Include area code)*
		16. REMITTANCE ADDRESS *(Include only if different than Item 14)* **See Item 14**
CODE	FACILITY CODE	

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due. *(Insert any number equal to or greater than the minimum requirements stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)*

AMOUNTS	SEE SCHEDULE OF PRICES

18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the solicitation -- give number and date of each)

AMENDMENT NO.										
DATE										

20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER *(Type or print)*	20B. SIGNATURE	20C. OFFER DATE

AWARD ***(To be completed by Government)***

21. ITEMS ACCEPTED:

22. AMOUNT	23. ACCOUNTING AND APPROPRIATION DATA

24. SUBMIT INVOICES TO ADDRESS SHOWN IN *(4 copies unless otherwise specified)*	**ITEM**	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO ☐ 10 U.S.C. 2304(c) ☐ 41 U.S.C. 253(c)
26. ADMINISTERED BY CODE		27. PAYMENT WILL BE MADE BY: CODE

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

☐ 28. NEGOTIATED AGREEMENT *(Contractor is required to sign this document and return _____ copies to issuing office.)* Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications or incorporated by reference in or attached to this contract.

☐ 29. AWARD *(Contractor is not required to sign this document.)* Your offer on this solicitation, is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.

30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN *(Type or print)*		31A. NAME OF CONTRACTING OFFICER *(Type or print)* TEL: EMAIL:
30B. SIGNATURE	30C. DATE	31B. UNITED STATES OF AMERICA BY	31C. AWARD DATE

Section 00010 - Solicitation Contract Form

BASE BID – PHASE 1

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001	MOBILIZATION & DEMOBILIZATION FOR DREDGING AND DISPOSAL FOR BASE BID WORK	1	Lump Sum	N/A	$_____

ITEM NO	SUPPLIES/SERVICES
0002	MAINTENANCE DREDGING 10-FOOT CHANNEL WITH OCEAN DISPOSAL OF SUITABLE DREDGED MATERIAL

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002AA	FIRST 41,500 CY	41,500	Cubic Yard	$_____	$_____

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002AB	OVER 41,500 CY	35,800	Cubic Yard	$_____	$_____

ITEM NO	SUPPLIES/SERVICES
0003	CONSTRUCTION OF TWO CONFINED AQUATIC DISPOSAL (CAD) CELLS WITH OCEAN DISPOSAL OF DREDGED MATERIAL

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003AA		43,000	Cubic Yard	$_____	$_____
	FIRST 43,000 CY				

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003AB		10,800	Cubic Yard	$_____	$_____
	OVER 43,000 CY				

ITEM NO	SUPPLIES/SERVICES
0004	MAINTENANCE DREDGING 10 FOOT CHANNEL WITH CAD DISPOSAL OF UNSUITABLE DREDGED MATERIAL

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0004AA		20,700	Cubic Yard	$_____	$_____
	FIRST 20,700 CY				

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0004AB		15,800	Cubic Yard	$_____	$_____
	OVER 20,700 CY				

ITEM NO	SUPPLIES/SERVICES
0005	MAINTENANCE DREDING FOR CAD CELL CAP USING SUITABLE DREDGED MATERIAL

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0005AA		7,500	Cubic Yard	$_____	$_____
	FIRST 7,500 CY				

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0005AB		1,800	Cubic Yard	$_____	$_____
	OVER 7,500 CY				

TOTAL ESTIMATED AMOUNT - BASE BID **$_____**

OPTIONAL BID ITEMS – PHASE 2

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0006		1	Lump Sum	N/A	$_____
OPTION	MOBILIZATION & DEMOBILIZATION FOR DREDGING AND DISPOSAL FOR OPTION BID ITEM				

ITEM NO	SUPPLIES/SERVICES
0007	
OPTION	MAINTENANCE DREDGING 6 & 12 FOOT CHANNEL AND 6 & 10 FOOT ANCHORAGE WITH OCEAN DISPOSAL OF DREDGED MATERIAL

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0007AA		176,200	Cubic Yard	$_____	$_____
OPTION	FIRST 176,200 CY				

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0007AB		150,300	Cubic Yard	$_____	$_____
OPTION	OVER 176,200 CY				

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0008		75,000	Cubic Yard	$_____	$_____
OPTION	CAPPING OF THE DREDGED MATERIAL PLACED IN THE CENTRAL LONG ISLAND SOUND DISPOSAL SITE				

Note 1: The work will be awarded as a whole to one bidder, including the option items, if exercised by the Government. Bidders must bid all items. The low bid will be determined by evaluating Line Items 0001 through Line Item 0005 only, excluding Optional Line Item 0006 through line item 0008. The minimum work awarded will be the Base Bid Item work.

Note 2: Any of the Option Bid Item Numbers 0006, 0007 and 0008 may, at the option of the Government, be exercised at any time after receipt by the Contractor of the Notice to Proceed for the Base Bid Item work up to January 31, 2006. If any of the Option Bid Item are exercised by the Government, all work for the exercised Option Items shall be completed within the time specified in Section 00800, SPECIAL CONTRACT REQUIREMENTS, Article 1.1. The exercise of Option Item Number 0007 for the second dredging season will include the exercise of Option Item Number 0006.

Note 3: Item Numbers 0002, 0003, 0004, 0005, and 0007 are subdivided into two estimated quantities and are to be separately priced. The Government will evaluate each of these items on the basis of the total price of its sub-items. See SPECIAL CONTRACT REQUIREMENTS, Clause "VARIATIONS IN ESTIMATED QUANTITIES - SUBDIVIDED ITEMS" (EFAR 52.211-5001).

Section 00100 - Bidding Schedule/Instructions to Bidders

CLAUSES INCORPORATED BY REFERENCE

52.214-3	Amendments To Invitations For Bids	DEC 1989
52.214-4	False Statements In Bids	APR 1984
52.214-5	Submission Of Bids	MAR 1997
52.214-6	Explanation To Prospective Bidders	APR 1984
52.214-7	Late Submissions, Modifications, and Withdrawals of Bids	NOV 1999
52.214-18	Preparation of Bids-Construction	APR 1984
52.214-19	Contract Award-Sealed Bidding-Construction	AUG 1996
52.225-10	Notice of Buy American Act Requirement--Construction Materials	MAY 2002
52.232-38	Submission of Electronic Funds Transfer Information with Offer	MAY 1999

CLAUSES INCORPORATED BY FULL TEXT

52.003-4002 BIDS RECEIVING DESK

Bids, if submitted in person or by messenger, shall be delivered to the Bids Receiving Desk (so identified), Building 1, Contracts Branch, Contracting Division, at the above address, prior to the time fixed for opening of bids. Bidders who attend the bid opening may deliver bids directly to the Contracting Officer in the New Hampshire Conference Room.

52.003-4014 INQUIRIES

Telephone inquiries relating to this solicitation should be directed as follows:

New England District, Corps of Engineers
Procurement of Plans and Specifications,
Prospective Bidders List, Bid Results,
and Award Information ……. 978-318-8429

Technical Inquiries on Plans and
Specifications …… 978-318-8249

52.003-4015 MAGNITUDE OF PROJECT

The estimated cost of the work is bewteen $1,000,000 and $5,000,000.

52.003-4021 PLACE OF BID OPENING

Bids will be publicly opened at the appointed time at the U. S. Army Engineer District, New England, 696 Virginia Road, Concord, MA 01742-2751, in the New Hampshire Conference Room.

52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a Firm Fixed Price contract resulting from this solicitation.

(End of clause)

52.233-2 SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from Contracting Officer, U.S. Army Corps of Engineer District, New England, 696 Virginia Road, Concord, MA 01742-2751.

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

52.236-27 SITE VISIT (CONSTRUCTION) (FEB 1995)

(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are urged and expected to inspect the site where the work will be performed.

(b) Site visits may be arranged during normal duty hours by contacting:
Name: Maurice Beaudoin
Address: 103 Sawyer Street, New Bedford, MA
Telephone: (978) 318-8223

(End of provision)

52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es):

http://www.arnet.gov/far

http://farsite.hill.af.mil
http://www.hq.usace.army.mil/cepr/asp/library/efar.asp
http://acqnet.saalt.army.mil/LIBRARY

(End of provision)

Section 00600 - Representations & Certifications

CLAUSES INCORPORATED BY FULL TEXT

52.204-3 TAXPAYER IDENTIFICATION (OCT 1998)

(a) Definitions.

Common parent, as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

Taxpayer Identification Number (TIN), as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(b) All offerors must submit the information required in paragraphs (d) through (f) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(d) Taxpayer Identification Number (TIN).

___ TIN:.----------

___ TIN has been applied for.

___ TIN is not required because:

___ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

___ Offeror is an agency or instrumentality of a foreign government;

___ Offeror is an agency or instrumentality of the Federal Government.

(e) Type of organization.

___ Sole proprietorship;

___ Partnership;

___ Corporate entity (not tax-exempt);

___ Corporate entity (tax-exempt);

___ Government entity (Federal, State, or local);

___ Foreign government;

___ International organization per 26 CFR 1.6049-4;

___ Other----------

(f) Common parent.

___ Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this provision.

___ Name and TIN of common parent:

Name----------

TIN----------

(End of provision)

52.204-8 ANNUAL REPRESENTATIONS AND CERTIFICATIONS (JAN 2005)

(a)(1) If the clause at 52.204-7, Central Contractor Registration, is included in this solicitation, paragraph (b) of this provision applies.

(2) If the clause at 52.204-7 is not included in this solicitation, and the offeror is currently registered in CCR, and has completed the ORCA electronically, the offeror may choose to use paragraph (b) of this provision instead of completing the corresponding individual representations and certifications in the solicitation. The offeror shall indicate which option applies by checking one of the following boxes:

(__) Paragraph (b) applies.

(__) Paragraph (b) does not apply and the offeror has completed the individual representations and certifications in the solicitation.

(b) The offeror has completed the annual representations and certifications electronically via the Online Representations and Certifications Application (ORCA) website at http://orca.bpn.gov. After reviewing the ORCA database information, the offeror verifies by submission of the offer that the representations and certifications currently posted electronically have been entered or updated within the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer and are incorporated in this offer by reference (see FAR 4.1201); except for the changes identified below [offeror to insert changes, identifying change by clause number, title, date]. These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

FAR Clause	Title	Date	Change

Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted on ORCA.

(End of Provision)

52.219-4 NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS (OCT 2004)

(a) Definition. HUBZone small business concern, as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

(b) Evaluation preference. (1) Offers will be evaluated by adding a factor of 10 percent to the price of all offers, except--

(i) Offers from HUBZone small business concerns that have not waived the evaluation preference;

(ii) Otherwise successful offers from small business concerns;

(iii) Otherwise successful offers of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is exceeded (see 25.402 of the Federal Acquisition Regulation (FAR)); and

(iv) Otherwise successful offers where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government.

(2) The factor of 10 percent shall be applied on a line item basis or to any group of items on which award may be made. Other evaluation factors described in the solicitation shall be applied before application of the factor.

(3) A concern that is both a HUBZone small business concern and a small disadvantaged business concern will receive the benefit of both the HUBZone small business price evaluation preference and the small disadvantaged business price evaluation adjustment (see FAR clause 52.219-23). Each applicable price evaluation preference or adjustment shall be calculated independently against an offeror's base offer.

These individual preference amounts shall be added together to arrive at the total evaluated price for that offer.

(c) Waiver of evaluation preference. A HUBZone small business concern may elect to waive the evaluation preference, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply if the offeror has waived the evaluation preference.

___ Offeror elects to waive the evaluation preference.

(d) Agreement. A HUBZone small business concern agrees that in the performance of the contract, in the case of a contract for

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(e) A HUBZone joint venture agrees that in the performance of the contract, the applicable percentage specified in paragraph (d) of this clause will be performed by the HUBZone small business participant or participants.

(f) A HUBZone small business concern nonmanufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

252.209-7001 DISCLOSURE OF OWNERSHIP OR CONTROL BY THE GOVERNMENT OF A TERRORIST COUNTRY (SEP 2004)

(a) "Definitions."

As used in this provision --

(a) "Government of a terrorist country" includes the state and the government of a terrorist country, as well as any political subdivision, agency, or instrumentality thereof.

(2) "Terrorist country" means a country determined by the Secretary of State, under section 6(j)(1)(A) of the Export Administration Act of 1979 (50 U.S.C. App. 2405(j)(i)(A)), to be a country the government of which has repeatedly provided support for such acts of international terrorism. As of the date of this provision, terrorist countries subject to this provision include: Cuba, Iran, Libya, North Korea, Sudan, and Syria.

(3) "Significant interest" means --

(i) Ownership of or beneficial interest in 5 percent or more of the firm's or subsidiary's securities. Beneficial interest includes holding 5 percent or more of any class of the firm's securities in "nominee shares," "street names," or some other method of holding securities that does not disclose the beneficial owner;

(ii) Holding a management position in the firm, such as a director or officer;

(iii) Ability to control or influence the election, appointment, or tenure of directors or officers in the firm;

(iv) Ownership of 10 percent or more of the assets of a firm such as equipment, buildings, real estate, or other tangible assets of the firm; or

(v) Holding 50 percent or more of the indebtness of a firm.

(b) "Prohibition on award."

In accordance with 10 U.S.C. 2327, no contract may be awarded to a firm or a subsidiary of a firm if the government of a terrorist country has a significant interest in the firm or subsidiary or, in the case of a subsidiary,

the firm that owns the subsidiary, unless a waiver is granted by the Secretary of Defense.

(c) "Disclosure."

If the government of a terrorist country has a significant interest in the Offeror or a subsidiary of the Offeror, the Offeror shall disclosure such interest in an attachment to its offer. If the Offeror is a subsidiary, it shall also disclose any significant interest the government of a terrorist country has in any firm that owns or controls the subsidiary. The disclosure shall include --

(1) Identification of each government holding a significant interest; and

(2) A description of the significant interest held by each government.

(End of provision)

252.225-7031 SECONDARY ARAB BOYCOTT OF ISRAEL (APR 2003)

(a) Definitions. As used in this provision--

(1) Foreign person means any person (including any individual, partnership, corporation, or other form of association) other than a United States person.

(2) United States person is defined in 50 U.S.C. App. 2415(2) and means--

(i) Any United States resident or national (other than an individual resident outside the United States who is employed by other than a United States person);

(ii) Any domestic concern (including any permanent domestic establishment of any foreign concern); and

(iii) Any foreign subsidiary or affiliate (including any permanent foreign establishment) of any domestic concern that is controlled in fact by such domestic concern.

(b) Certification. If the offeror is a foreign person, the offeror certifies, by submission of an offer, that it--

(1) Does not comply with the Secondary Arab Boycott of Israel; and

(2) Is not taking or knowingly agreeing to take any action, with respect to the Secondary Boycott of Israel by Arab countries, which 50 U.S.C. App. 2407(a) prohibits a United States person from taking.

(End of provision)

252.247-7022 REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (AUG 1992)

(a) The Offeror shall indicate by checking the appropriate blank in paragraph (b) of this provision whether transportation of supplies by sea is anticipated under the resultant contract. The term supplies is defined in the Transportation of Supplies by Sea clause of this solicitation.

(b) Representation. The Offeror represents that it:

____ (1) Does anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

____ (2) Does not anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

(c) Any contract resulting from this solicitation will include the Transportation of Supplies by Sea clause. If the Offeror represents that it will not use ocean transportation, the resulting contract will also include the Defense FAR Supplement clause at 252.247-7024, Notification of Transportation of Supplies by Sea.

(End of provision)

Section 00700 - Contract Clauses

CLAUSES INCORPORATED BY REFERENCE

52.202-1	Definitions	JUL 2004
52.203-3	Gratuities	APR 1984
52.203-5	Covenant Against Contingent Fees	APR 1984
52.203-7	Anti-Kickback Procedures	JUL 1995
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity	JAN 1997
52.203-10	Price Or Fee Adjustment For Illegal Or Improper Activity	JAN 1997
52.203-12	Limitation On Payments To Influence Certain Federal Transactions	JUN 2003
52.204-4	Printed or Copied Double-Sided on Recycled Paper	AUG 2000
52.204-7	Central Contractor Registration	OCT 2003
52.209-6	Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment	JAN 2005
52.211-18	Variation in Estimated Quantity	APR 1984
52.214-26	Audit and Records--Sealed Bidding	OCT 1997
52.214-27	Price Reduction for Defective Cost or Pricing Data - Modifications - Sealed Bidding	OCT 1997
52.214-28	Subcontracting Cost Or Pricing Data--Modifications--Sealed Bidding	OCT 1997
52.219-4	Notice of Price Evaluation Preference for HUBZone Small Business Concerns	OCT 2004
52.219-8	Utilization of Small Business Concerns	MAY 2004
52.219-9 Alt I	Small Business Subcontracting Plan (Jan 2002) Alternate I	OCT 2001
52.219-16	Liquidated Damages-Subcontracting Plan	JAN 1999
52.219-25	Small Disadvantaged Business Participation Program--Disadvantaged Status and Reporting	OCT 1999
52.222-3	Convict Labor	JUN 2003
52.222-4	Contract Work Hours and Safety Standards Act - Overtime Compensation	SEP 2000
52.222-6	Davis Bacon Act	FEB 1995
52.222-7	Withholding of Funds	FEB 1988
52.222-8	Payrolls and Basic Records	FEB 1988
52.222-9	Apprentices and Trainees	FEB 1988
52.222-10	Compliance with Copeland Act Requirements	FEB 1988
52.222-11	Subcontracts (Labor Standards)	FEB 1988
52.222-12	Contract Termination-Debarment	FEB 1988
52.222-13	Compliance with Davis-Bacon and Related Act Regulations.	FEB 1988
52.222-14	Disputes Concerning Labor Standards	FEB 1988
52.222-15	Certification of Eligibility	FEB 1988
52.222-21	Prohibition Of Segregated Facilities	FEB 1999
52.222-26	Equal Opportunity	APR 2002
52.222-27	Affirmative Action Compliance Requirements for Construction	FEB 1999
52.222-35	Equal Opportunity For Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans	DEC 2001
52.222-36	Affirmative Action For Workers With Disabilities	JUN 1998

52.222-37	Employment Reports On Special Disabled Veterans, Veterans Of The Vietnam Era, and Other Eligible Veterans	DEC 2001
52.223-6	Drug-Free Workplace	MAY 2001
52.223-14	Toxic Chemical Release Reporting	AUG 2003
52.225-13	Restrictions on Certain Foreign Purchases	MAR 2005
52.226-1	Utilization Of Indian Organizations And Indian-Owned Economic Enterprises	JUN 2000
52.227-1	Authorization and Consent	JUL 1995
52.227-2	Notice And Assistance Regarding Patent And Copyright Infringement	AUG 1996
52.227-4	Patent Indemnity-Construction Contracts	APR 1984
52.228-2	Additional Bond Security	OCT 1997
52.228-5	Insurance - Work On A Government Installation	JAN 1997
52.228-11	Pledges Of Assets	FEB 1992
52.228-12	Prospective Subcontractor Requests for Bonds	OCT 1995
52.228-13	Alternative Payment Protections	JUL 2000
52.228-14	Irrevocable Letter of Credit	DEC 1999
52.228-15	Performance and Payment Bonds--Construction	JUL 2000
52.229-3	Federal, State And Local Taxes	APR 2003
52.232-5	Payments under Fixed-Price Construction Contracts	SEP 2002
52.232-17	Interest	JUN 1996
52.232-23 Alt I	Assignment of Claims (Jan 1986) - Alternate I	APR 1984
52.232-27	Prompt Payment for Construction Contracts	OCT 2003
52.232-33	Payment by Electronic Funds Transfer--Central Contractor Registration	OCT 2003
52.233-1	Disputes	JUL 2002
52.233-3	Protest After Award	AUG 1996
52.236-2	Differing Site Conditions	APR 1984
52.236-3	Site Investigation and Conditions Affecting the Work	APR 1984
52.236-5	Material and Workmanship	APR 1984
52.236-6	Superintendence by the Contractor	APR 1984
52.236-7	Permits and Responsibilities	NOV 1991
52.236-8	Other Contracts	APR 1984
52.236-9	Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements	APR 1984
52.236-10	Operations and Storage Areas	APR 1984
52.236-11	Use and Possession Prior to Completion	APR 1984
52.236-12	Cleaning Up	APR 1984
52.236-13 Alt I	Accident Prevention (Nov 1991) - Alternate I	NOV 1991
52.236-15	Schedules for Construction Contracts	APR 1984
52.236-17	Layout of Work	APR 1984
52.236-21	Specifications and Drawings for Construction	FEB 1997
52.236-26	Preconstruction Conference	FEB 1995
52.242-13	Bankruptcy	JUL 1995
52.242-14	Suspension of Work	APR 1984
52.243-4	Changes	AUG 1987
52.244-6	Subcontracts for Commercial Items	DEC 2004
52.246-12	Inspection of Construction	AUG 1996
52.246-21	Warranty of Construction	MAR 1994
52.248-3	Value Engineering-Construction	FEB 2000
52.249-2 Alt I	Termination for Convenience of the Government (Fixed-Price) (May 2004) - Alternate I	SEP 1996
52.249-10	Default (Fixed-Price Construction)	APR 1984

52.253-1	Computer Generated Forms	JAN 1991
252.201-7000	Contracting Officer's Representative	DEC 1991
252.203-7001	Prohibition On Persons Convicted of Fraud or Other Defense-Contract-Related Felonies	DEC 2004
252.203-7002	Display Of DOD Hotline Poster	DEC 1991
252.204-7003	Control Of Government Personnel Work Product	APR 1992
252.204-7004 Alt A	Central Contractor Registration (52.204-7) Alternate A	NOV 2003
252.205-7000	Provision Of Information To Cooperative Agreement Holders	DEC 1991
252.209-7001	Disclosure of Ownership or Control by the Government of a Terrorist Country	SEP 2004
252.209-7004	Subcontracting With Firms That Are Owned or Controlled By The Government of a Terrorist Country	MAR 1998
252.219-7003	Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan (DOD Contracts)	APR 1996
252.223-7004	Drug Free Work Force	SEP 1988
252.225-7012	Preference For Certain Domestic Commodities	JUN 2004
252.225-7031	Secondary Arab Boycott Of Israel	APR 2003
252.226-7001	Utilization of Indian Organizations and Indian-Owned Economic Enterprises, and Native Hawaiian Small Business Concerns	SEP 2004
252.227-7033	Rights in Shop Drawings	APR 1966
252.231-7000	Supplemental Cost Principles	DEC 1991
252.236-7000	Modification Proposals-Price Breakdown	DEC 1991
252.236-7008	Contract Prices-Bidding Schedules	DEC 1991
252.242-7000	Postaward Conference	DEC 1991
252.243-7001	Pricing Of Contract Modifications	DEC 1991
252.243-7002	Requests for Equitable Adjustment	MAR 1998
252.247-7023	Transportation of Supplies by Sea	MAY 2002
252.247-7024	Notification Of Transportation Of Supplies By Sea	MAR 2000

CLAUSES INCORPORATED BY FULL TEXT

52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade
6.9%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor

shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the --

(1) Name, address, and telephone number of the subcontractor;

(2) Employer's identification number of the subcontractor;

(3) Estimated dollar amount of the subcontract;

(4) Estimated starting and completion dates of the subcontract; and

(5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is Litchfield County, Norwalk, Connecticut

(End of provision)

52.225-9 BUY AMERICAN ACT—CONSTRUCTION MATERIALS (JAN 2005)

(a) Definitions. As used in this clause--

Component means an article, material, or supply incorporated directly into a construction material.

Construction material means an article, material, or supply brought to the construction site by the Contractor or a subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

Cost of components means--

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the construction material (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the construction material.

Domestic construction material means--

(1) An unmanufactured construction material mined or produced in the United States; or

(2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.

Foreign construction material means a construction material other than a domestic construction material.

United States means the 50 States, the District of Columbia, and outlying areas.

(b) Domestic preference. (1) This clause implements the Buy American Act (41 U.S.C. 10a-10d) by providing a preference for domestic construction material. The Contractor shall use only domestic construction material in performing this contract, except as provided in paragraphs (b)(2) and (b)(3) of this clause.

(2) This requirement does not apply to the construction material or components listed by the Government as follows:

NONE

(3) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(2) of this clause if the Government determines that

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the requirements of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent;

(ii) The application of the restriction of the Buy American Act to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) Request for determination of inapplicability of the Buy American Act. (1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(3) of this clause shall include adequate information for Government evaluation of the request, including--

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(3)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act applies, use of foreign construction material is noncompliant with the Buy American Act.

(d) Data. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Construction Materials Price Comparison

Construction material description	Unit of measure	Quantity	Price (dollars) \1\
Item 1			
Foreign construction material....	.....	.....	.....
Domestic construction material...	.....	.....	.....
Item 2			
Foreign construction material....	.....	.....	.....
Domestic construction material...	.....	.....	.....

Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).
List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.
Include other applicable supporting information.

(End of clause)

52.227-5001 PARTICIPATION OF FOREIGN NATIONALS IN USACE CONTRACTS

All contractor employees (U.S. Citizens and Non-U.S. Citizens) working under this contract who require access to Automated Information Systems (AIS), (stand alone computers, network computers/systems, email) shall, at a minimum, be designated into an ADP-III position (non sensitive) in accordance with DoD 5220-22-R, Industrial Security Regulation. The investigative requirements for an ADP – III position are favorable National Agency Check (NAC), SF-85P, Public Trust Position. The contractor shall have each applicable employee complete a SF-85P and submit to the U.S. Army Engineer District, New England, 696 Virginia Road, Concord, MA 01742-2751, Security Officer, within three (3) working days after award of any contract or task order, and shall be submitted prior to the individual being permitted to access AIS. Contractors that have a commercial or government entity (CAGE) Code and Facility Security Clearance through the Defense Security Service shall process the NAC's and forward visit requests/results of NAC to the U.S. Army Engineer District, New England, 696 Virginia Road, Concord, MA 01742-2751 – Security Officer. For those contractors that do not have a Cage Code or Facility Security Clearance, the U.S. Army Engineer District, New England – Bldg 1, 696 Virginia Road, Concord, MA 01742-2751, Security Officer will process the investigation in coordination with the Contractor and contract employees.

In accordance with Engineering Regulation, ER-380-1-18, Section 4, foreign nationals who work on Corps of Engineers' contracts or task orders shall be approved by HQUSACE Foreign Disclosure Officer or higher before beginning work on the contract/task order. This regulation includes subcontractor employees. (NOTE: exceptions to the above requirement include foreign nationals who perform janitorial and/or grounds maintenance services.) The contractor shall submit to the U.S. Army Engineer District, New England, Contracting Division, the names of all foreign nationals proposed for performance under this contract/task order, along with documentation to verify that he/she was legally admitted into the United States and has authority to work and/or go to school in the US. Such documentation may include a U.S. Passport, Certificate of U.S. Citizenship (INS Form N-560 or N-561), Certificate of Naturalization (INS Form N-550 or N-570), foreign passport with I-551 stamp or attached INS From I-94 indicating employment authorization, Alien Registration Receipt Card with photograph (INS From I-151 or I-551), Temporary Resident Card (INS From I688), Employment Authorization Card (INS Form I-688A), Reentry Permit (INS Form I-327), Refugee Travel Document (INS From I-571), Employment Authorization Document issued by INS which contains a photograph (INS Form I-688B).

52.231-5000 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE
MAR 1995)--EFARS

(a) This clause does not apply to terminations. See 52.249-5000, Basis for Settlement of Proposals and FAR Part 49.

(b) Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series equipment from the contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, Construction Equipment Ownership and Operating Expense Schedule, Region ____. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the contracting officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time the work was performed shall apply.

(c) Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.

(d) When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet.

(End of clause)

52.232-5002 CONTINUING CONTRACTS (ALTERNATE) (MAR 1995)--EFARS

(a) Funds are not available at the inception of this contract to cover the entire contract price. The sum $100,000.00 of has been reserved for this contract and is available for payment to the contractor during the current fiscal year. it is expected that Congress will make appropriations for future fiscal years from which additional funds, together with funds provided by one or more non-federal project sponsors will be reserved for this contract. The liability of the United States for payments beyond the funds reserved for this contract is contingent on the reservation of additional funds.

(b) Failure to make payments in excess of the amount currently reserved, or that may be reserved form time to time, shall not be considered a breach of this contract, and shall not entitle the contractor to a price adjustment under the terms of this contract except as specifically provided in paragraphs (e) and (h) below.

(c) The Government may at any time reserve additional funds for payments under the contract if there are funds available for such purpose. The contracting officer will promptly notify the contractor of any additional funds reserved for the contract by issuing an administrative modification to the contract.

(d) If earnings will be such that funds reserved for the contract will be exhausted before the end of any fiscal year, the contractor shall give written notice to the contracting officer of the estimated date of exhaustion and the amount of additional funds which will be needed to meet payments due or to become due under this contract during that fiscal year. This notice shall be given not less than 45 nor more than 60 days prior to the estimated date of exhaustion.

(e) No payments will be make after exhaustion of funds except to the extent that additional funds are reserved for the contract. If and when sufficient additional funds are reserved, the contractor shall be entitled to simple interest on any payment that the contracting officer determines was actually earned under the terms of this contract and would have been made except for exhaustion of funds. Interest shall be computed from the time such payment would otherwise have been made until actually or constructively made, and shall be at the rate established by the Secretary of the Treasury pursuant to Public Law 92-41, 85 STAT 97, as in effect on the first day of the delay in such payment.

(f) Any suspension, delay, or interruption of work arising from exhaustion or anticipated exhaustion of funds shall riot constitute a breach of this contract and shall not entitle the contractor to any price adjustment under a "Suspension of Work" or similar clause or in any other manner under this contract.

(g) An equitable adjustment in performance time shall be made for any increase in the time required for performance of any part of the work arising from exhaustion of funds or the reasonable anticipation of exhaustion of funds.

(h) If, upon the expiration of sixty (60) days after the beginning of the fiscal year following an exhaustion of funds, the Government has failed to reserve sufficient additional funds to cover payments other vise due, the contractor, by written notice delivered to the contracting officer at any time before such additional funds are reserved, may elect to treat his right to proceed with the work as having been terminated. Such a termination shall be at no cost to the Government, except that, to the extent that additional funds to make payment therefore are allocated to this contract, it may be treated as a termination for the convenience of the Government.

(i) If at any time it becomes apparent that the funds reserved for any fiscal year are in excess of the funds required to meet all payments due or to become due the contractor because of work performed and to be performed under this contract during the fiscal year, the Government reserves the right, after notice to the contractor, to reduce said reservation by the amount of such excess.

(j) The term "Reservation" means monies that have been set aside and made available for payments under this contract.

(End of clause)

52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

http://www.arnet.gov/far
http://farsite.hill.af.mil
http://www.hq.usace.army.mil/cepr/asp/library/efar.asp
http://acqnet.saalt.army.mil/LIBRARY

(End of clause)

SPECIAL CLAUSES

SECTION 00800

SPECIAL CONTRACT REQUIREMENTS

02/95

1.1 COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK (APR 1984) FAR 52.211-10

a. The Contractor shall be required to--

(1) commence work under this contract within 15 calendar days after the date the Contractor receives the notice to proceed,

(2) prosecute the work diligently, and

(3) complete the entire **Base Bid Item** work shown on the Bidding Schedule ready for use not later than January 31, 2006, and .

(4) complete the **Option Bid Item** work, exercised by the Government, ready for use not later than March 31, 2007.

b. The times stated for completion shall include final cleanup of the premises. See Article, "CONDUCT OF DREDGING WORK" in Section 02325 SUMMARY OF WORK.

c. Due to environmental restrictions, dredging operations at the project site will only be permitted in accordance with Table 1 "Areas Of Norwalk Harbor To Be Dredged And Their Associated Environmental Windows" attached at the end of this Section.

d. The work is expected to extend through two dredging seasons if the Option Bid Items shown on the Bidding Schedule are exercised by the Government. In the event that notice to proceed is issued when dredging at the site is not permitted, the Contractor shall promptly place all orders, award subcontracts, process required submittals and details to ensure effective action when construction operations at the site are required to commence.

e. For the **Base Bid Item** work shown on the Bidding Schedule, actual dredging operations at the site shall commence within 15 days after receipt of notice to proceed and after September 30, 2005

f. If any of the **Option Bid Items** shown on the Bidding Schedule are exercised by the Government, actual dredging operations at the site for the Option Bid Item work shall commence on October 01, 2006.

1.2 TIME EXTENSIONS (SEPT 2000) FAR 52.211-13

Time extensions for contract changes will depend upon the extent, if any, by which the changes cause delay in the completion of the various elements of construction. The change order granting the time extension may provide that the contract completion date will be extended only for those specific elements related to the changed work and that the remaining contract completion dates for all other portions of the work will not be altered. The change order also may provide an equitable readjustment of liquidated damages under the new completion schedule.

1.3 LIQUIDATED DAMAGES - CONSTRUCTION (SEPT 2000) FAR 52.211-12

(a) If the Contractor fails to complete the work within the time periods specified in the contract, the Contractor shall pay liquidated damages to the Government in the amounts specified below until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

(c) **Base Bid Items**: For failure to complete the **Base Bid Item** work by the date established in Article 1.1.a. (3) above, the sum of $1,400.00 for each calendar day of delay beyond the established date until the **Base Bid Item** work is completed or accepted.

(d) **Option Bid Items**: For failure to complete the **Option Bid Item** work, if Option Work is exercised by the Government, by the date established in Article 1.1.a. (4) above, the sum of $1,400.00 for each calendar day of delay beyond the established date until the **Option Bid Item** work is completed or accepted.

1.4 CONTRACT DRAWINGS AND SPECIFICATIONS (AUG 2000) DFARS 252.236-7001

(a) The Government will provide to the Contractor, without charge, one set of contract drawings and specifications, except publications incorporated into the technical provisions by reference The drawings will be provided to the Contractor in electronic or paper media as chosen by the Contracting Officer.

(b) The Contractor shall-

(1) Check all drawings furnished immediately upon receipt;

(2) Compare all drawings and verify the figures before laying out the work;

(3) Promptly notify the Contracting Officer of any discrepancies;

(4) Be responsible for any errors that might have been avoided by complying with this paragraph (b); and

(5) Reproduce and print contract drawings and specifications as needed.

(c) In general--

(1) Large-scale drawings shall govern small-scale drawings; and

(2) The Contractor shall follow figures marked on drawings in preference to scale measurements.

(d) Omissions from the drawings or specifications or the misdescription of details of work that are manifestly necessary to carry out the intent of the drawings and specifications, or that are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work. The Contractor shall perform such details as if fully and correctly set forth and described in the drawings and specifications.

(e) The work shall conform to the specifications, and to the contract drawings identified on the following index of drawings:

Sheet No.	Design File.	Title

			MAINTENANCE DREDGING 6, 10, AND 12 FOOT CHANNELS AND 6 AND 10 FOOT ANCHORAGES NORWALK HARBOR NORWALK, CONNECTICUT
2	C-1	NWHC101.S01	Key Plan, Tidal Datum, Legend, General Notes, Index to Drawings & Index to Navigation Aids

1.5 DESIGNATED BILLING OFFICE

Reference Contract Clause titled "PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS" located in SECTION 00700, CONTRACT CLAUSES. The "designated billing office" will be the Construction Area Engineer, Resident Engineer or project office where the Contracting Officer Representative for this contract is located. The Contractor will be notified of the exact location of this office at the project preconstruction conference specified in Section 01110 SUMMARY OF WORK.

1.6 BID GUARANTEE (SEP 1996) FAR 52.228-1

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

(b) The bidder shall furnish a bid guarantee in the form of a firm commitment, e.g., bid bond supported by good and sufficient surety or sureties acceptable to the Government, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Contracting Officer will return bid guarantees, other than bid bonds, (1) to unsuccessful bidders as soon as practicable after the opening of bids, and (2) to the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the bid as accepted.

(c) The amount of the bid guarantee shall be twenty percent of the bid price or $3,000,000, whichever is less.

(d) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or furnish executed bond(s) within 10 days after receipt of the forms by the bidder, the Contracting Officer may terminate the contract for default.

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference.

1.7 PERFORMANCE OF WORK BY THE CONTRACTOR (APR 1984) FAR 52.236-1

The Contractor shall perform on the site, and with its own organization, work equivalent to at least twenty percent (20%) of the total amount of work to be performed under the contract. This percentage may be reduced by a supplemental agreement to this contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government.

1.8 OBSTRUCTION OF NAVIGABLE WATERWAYS DFAR 252.236-7002(DEC 1991)

(a) The Contractor shall-

(1) Promptly recover and remove any material, plant, machinery, or appliance which the contractor loses, dumps, throws overboard, sinks, or misplaces, and which, in the opinion of the Contracting Officer, may be dangerous to or obstruct navigation;

(2) Give immediate notice, with description and locations of any such obstructions, to the Contracting Officer; and

(3) When required by the Contracting Officer, mark or buoy such obstructions until the same are removed.

(b) The Contracting Officer may-

(1) Remove the obstructions by contract or otherwise should the Contractor refuse, neglect, or delay compliance with paragraph (a) of this clause; and

(2) Deduct the cost of removal from any monies due or to become due to the Contractor; or

(3) Recover the cost of removal under the Contractor's bond.

(c) The Contractor's liability for the removal of a vessel wrecked or sunk without fault or negligence is limited to that provided in Sections 15, 19, and 20 of the River and Harbor Act of March 3, 1899 (33 U.S.C. 410 et.seq.).

1.9 PAYMENT FOR MOBILIZATION AND DEMOBILIZATION (DEC 1991) DFARS 252.236-7004.

a. The Government will pay all costs for the mobilization and demobilization of all of the Contractor's plant and equipment at the contract lump sum price for this item.

(1) Sixty percent of the lump sum price upon completion of the Contractor's mobilization at the work site.

(2) The remaining 40 percent upon completion of demobilization.

b. The Contracting Officer may require the Contractor to furnish cost data to justify this portion of the bid if the Contracting Officer believes that the percentages in paragraphs a(1) and a(2) of this clause do not bear a reasonable relation to the cost of the work in this contract.

(1) Failure to justify such price to the satisfaction of the Contracting Officer will result in payment, as determined by the Contracting Officer, of --

(i) Actual mobilization costs at completion of mobilization;

(ii) Actual demobilization costs at completion of demobilization; and

(iii) The remainder of this item in the final payment under this contract.

(2) The Contracting Officer's determination of the actual costs in paragraph b(1) of this clause is not subject to appeal.

1.10 QUANTITY SURVEYS. (APR 1984) ALTERNATE 1 FAR 52.236-16

a) Quantity surveys shall be conducted, and the data derived from these surveys shall be used in computing the quantities of work performed and the actual construction completed and in place.

(b) The Government shall conduct the original and final surveys and make the computations based on them. The Contractor shall conduct the surveys for any periods for which progress payments are requested and shall make the computations based on these surveys. All surveys conducted by the Contractor shall be conducted under the direction of a representative of the Contracting Officer, unless the Contracting Officer waives this requirement in a specific instance.

(c) Promptly upon completing a survey, the Contractor shall furnish the originals of all field notes and all other records relating to the survey or to the layout of the work to the Contracting Officer, who shall use them as necessary to determine the amount of progress payments. The Contractor shall retain copies of all such material furnished to the Contracting Officer.

1.11 VARIATIONS IN ESTIMATED QUANTITIES SUBDIVIDED ITEMS (MAR 1995) EFARS 52.211-5001

This variation in estimated quantities clause is applicable only to Item Numbers 0002, 0003, 0004, 0005, and 0007

(a) Variation from the estimated quantity in the actual work performed under any second or subsequent sub-item or elimination of all work under such a second or subsequent sub-item will not be the basis for an adjustment in contract unit price.

(b) Where the actual quantity of work performed for Item Numbers 0002, 0003, 0004, 0005, and 0007 is less than 85% of the quantity of the first sub-item listed under such item, the contractor will be paid at the contract unit price for that sub-item for the actual quantity of work performed and, in addition, an equitable adjustment shall be made in accordance with the clause FAR 52.211-18, Variation in Estimated Quantities.

(c) If the actual quantity of work performed under Item Numbers 0002, 0003, 0004, 0005, and 0007 exceeds 115% or is less than 85% of the total estimated quantity of the sub-item under that item and/or if the quantity of the work performed under the second sub-item or any subsequent sub-item under Item Numbers 0002, 0003, 0004, 0005, and 0007 exceeds 115% or is less than 85% of the estimated quantity of any such sub-item, and if such variation causes an increase or a decrease in the time required for performance of this contract the contract completion time will be adjusted in accordance with the clause FAR 52.211-18, Variation in Estimated Quantities.

-- End of Document --

Table 1. Areas of Norwalk Harbor to be dredged and their associated environmental windows. (• = dredging allowed; **X** = dredging not allowed).

Area	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Main Channel												
Head of Navigation - 1,000' south of I-95 bridge	•	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	•	•	•
1,000' south of I-95 bridge – Gregory Point	•	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	•	•	•
Gregory Point – Long Beach Island	•	•	•	**X**	**X**	**X**	**X**	**X**	**X**	•	•	•
Long Beach Island – Entrance	•	•	•	•	•	**X**	**X**	**X**	**X**	•	•	•
North Anchorage Channel and Anchorage												
Fitch Point – Anchorage Basin	•	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	•	•	•

WAGE DETERMINATION

General Decision Number: CT030008 05/06/2005 CT8

Superseded General Decision Number: CT020008

State: Connecticut

Construction Types: Heavy Dredging

Counties: Connecticut Statewide.

CONNECTICUT

ALL DREDGING, EXCEPT SELF-PROPELLED HOPPER DREDGES, ON THE ATLANTIC OCEAN AND TRIBUTARY WATERS EMPTYING INTO THE ATLANTIC OCEAN.

Modification Number	Publication Date
0	06/13/2003
1	05/21/2004
2	12/03/2004
3	05/06/2005

* ENGI0025-001 10/01/2004

STATEWIDE

	Rates	Fringes
Company Lead Dredgeman		
Lead Dredgeman	$ 28.97	7.80+a+b
Dipper & Clamshell Dredge		
Boat Captain	$ 23.05	7.20+a+b
Boat Master	$ 24.14	7.80+a+b
Deckhand, Tug Deckhand	$ 18.83	6.60+a+b
Engineer	$ 25.37	7.80+a+b
Maintenance Engineer	$ 24.49	7.20+a+b
Mate	$ 22.89	7.20+a+b
Oiler	$ 19.29	6.60+a+b
Operator	$ 28.97	7.80+a+b
Scowman	$ 18.78	6.60+a+b
Welder	$ 24.12	7.20+a+b
Diver		
Diver	$ 41.53	6.87+a+b
Standby Diver	$ 27.85	6.87+a+b
Standby Tender	$ 23.26	6.27+a+b
Tender	$ 32.11	6.87+a+b
Drag Bucket Dredge		
Deckhand	$ 16.17	5.25+a+b
Engineer	$ 21.41	6.45+a+b
Maintenance Engineer	$ 21.21	5.85+a+b
Mate	$ 19.82	5.85+a+b

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   Operator.....................$ 25.09         6.45+a+b
Dredging Pipeline Cable-Laying
   Control Tower Operator......$ 25.55         6.87+a+b
   Diver Tender................$ 26.58         6.87+a+b
   Diver.......................$ 42.42         6.87+a+b
   Leverman....................$ 28.83         6.87+a+b
   Line up Operator, End Prep..$ 18.47         5.67+a+b
   Rigger......................$ 19.07         5.67+a+b
Drill Boats
   Blaster.....................$ 23.81         6.45+a+b
   Core Driller................$ 19.00         5.25+a+b
   Driller.....................$ 23.55         6.45+a+b
   Engineer....................$ 23.54         6.45+a+b
   Machinist...................$ 23.30         5.85+a+b
   Oiler.......................$ 20.46         5.25+a+b
   Tug Captain.................$ 19.53         5.85+a+b
   Tug Deckhand................$ 15.97         5.25+a+b
   Tug Master..................$ 20.48         6.45+a+b
   Welder......................$ 23.30         5.85+a+b
Engineer
   1st.........................$ 25.55         6.87+a+b
   2nd, 3rd and 4th............$ 25.23         6.87+a+b
   Electrician.................$ 25.68         6.87+a+b
   Electro Hydro Technician....$ 20.79         6.27+a+b
   Tug Captain.................$ 23.44         6.87+a+b
   Tug Master..................$ 26.80         6.87+a+b
Hydraulic Dredge
   Asst. Fill Placer...........$ 22.70         7.80+a+b
   Boat Captain................$ 23.05         7.20+a+b
   Boat Master.................$ 24.13         7.80+a+b
   Chief Mate..................$ 24.72         7.80+a+b
   Chief Welder................$ 25.38         7.80+a+b
   Deckhand....................$ 19.23         6.60+a+b
   Engineer....................$ 24.82         7.80+a+b
   Fill Placer.................$ 24.72         7.80+a+b
   Janitor/Porter..............$ 18.39         6.60+a+b
   Leverman....................$ 28.97         7.80+a+b
   Maintenance Engineer........$ 24.49         7.20+a+b
   Mate........................$ 22.89         7.20+a+b
   Messman.....................$ 18.39         6.60+a+b
   Night Cook..................$ 18.90         6.60+a+b
   Oiler.......................$ 19.29         6.60+a+b
   Shoreman....................$ 18.80         6.60+a+b
   Spider Barge Operator.......$ 23.91         7.20+a+b
   Steward.....................$ 22.84         7.80+a+b
   Welder-Dredge...............$ 24.11         7.20+a+b
Tug Boats over 1000 H.P.
   with master or captain
   having license endorsed
   for 200 miles off shore
    Tug Captain................$ 24.59         7.80+a+b
    Tug Chief Engineer.........$ 23.85         7.20+a+b
    Tug Deckhand...............$ 19.23         6.60+a+b
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Tug Engineer.....$ 23.38 7.20+a+b

PREMIUMS: Additional 20% for hazardous material work

FOOTNOTES APPLICABLE TO ABOVE CRAFTS:

a. PAID HOLIDAYS: New Year's Day, Martin Luther King, Jr.'s Birthday, Memorial Day, Good Friday, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day and Christmas Day

b. VACATION: Seven percent (7%) of the straight time rate multiplied by the total hours worked.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal

process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations

Wage and Hour Division

U.S. Department of Labor

200 Constitution Avenue, N.W.

Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator

U.S. Department of Labor

200 Constitution Avenue, N.W.

Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board

U.S. Department of Labor

200 Constitution Avenue, N.W.

Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

PLANT AND EQUIPMENT LIST

The bidder must complete the following plant and equipment list by listing the plant available to the Bidder and proposed to be used on the work of this contract. Add additional pages as necessary. Attach the completed list to the BIDDING SCHEDULE and submit the list with the bid. Failure to complete this list and submit it with the BIDDING SCHEDULE may be cause for the rejection of the bid. Prior to commencement of work at the site, the Contractor will be required to submit for review copies of all applicable current inspections, certificates and surveys for all floating plant

BUCKET DREDGES (Clamshell/Dipper/Excavator/Dragline)

Dredge Name and Type	Manufacturer and Age	Bucket Size and Swings/Hour	Capacity – Cubic Yards/Month*	Type and HP of Engine

HYDRAULIC/SUCTION/HOPPER DREDGE

Dredge Name and Type	Manufacturer and Age	Inside Diameter of Discharge Pipe	Capacity – Cubic Yards/Month*	Type and HP of Pump Engine

BARGES/SCOWS

Name And Type	Manufacturer And Age	Length & Beam	Draft - Light	Draft – Loaded	Capacity (Cubic Yards)	Number and Size Of Drills

ATTENDANT PLANT (Give columnar information pertinent to items listed, if to be used)

	Name	Manufacturer And Age	Type and HP Of Engine	Length & Beam	Remarks
Tug					
Tug					
Launch					

(*) When working materials similar to those anticipated to be encountered in the performance of work

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DOCUMENTS 00 - INTRODUCTORY, BIDDING, AND CONTRACT REQUIREMENTS

DOCUMENT 00320

GEOTECHNICAL DATA

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1.3 EXAMINATION OF SAMPLES
1.4 EXISTING REPORTS AND HISTORICAL DATA
1.5 SOIL CLASSIFICATION
1.6 INTERPRETATION
1.7 LABORATORY TESTS

-- End of Document Table of Contents --

DOCUMENT 00320

GEOTECHNICAL DATA

PART 1 GENERAL

1.1 SUMMARY

The surface conditions indicated on the contract drawings and in the specifications are the result of site surveys, borings, and laboratory tests. Copies of the logs of explorations, laboratory test results, and locations at the site where subsurface investigations were performed are located in the Appendix at the end of the specifications.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referenced to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 422	(1963; R 1998) Particle-Size Analysis of Soils
ASTM D 854	(2000) Test Methods for Specific Gravity of Soil Sands by Water Pycnometer
ASTM D 2216	(1998)Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock
ASTM D 2487	(2000) Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 2488	(2000) Description and Identification of Soils (Visual-Manual Procedure)
ASTM D 2974	(2000) Test method for Moisture, Ash and Organic Matter of Peat and Organic Soil

1.3 EXAMINATION OF SAMPLES

Subsurface explorations were performed by the Corps of Engineers. Pertinent subsurface information in the Appendix attached to the specifications. Maintenance and native materials obtained from the subsurface explorations are available for examination. Arrangements to view the samples may be made with Robert Patev of the Corps of Engineers Geotechnical Engineering Section, telephone number (978) 318-8394. Two working days prior notice is required in order that samples can be removed from storage and set up for examination.

1.4 EXISTING REPORTS AND HISTORICAL DATA

Existing reports and historical data, relative to the dredging of the Norwalk Harbor are available for viewing at the Corps of Engineers New England District, 696 Virginia Road, Concord, MA. Advance arrangements to view the reports may be made with Mr. Edward O'Donnell, (978)318-8375.

1.5 SOIL CLASSIFICATION

The soil classification of the Corps of Engineers soil samples was done in accordance with ASTM D 2488 in the field and ASTM D 2487 in the laboratory.

1.6 INTERPRETATION

Subsurface investigation data are provided only for information purposes and for the convenience of the Contractor. The data shown on the boring logs is for the specific locations indicated only and no assurance is given that these conditions are representative of conditions between borings or areas adjacent thereto. The responsibility lies with the Contractor to interpret subsurface conditions that may affect his work.

1.7 LABORATORY TESTS

Laboratory tests were generally performed in accordance with the following test methods:

a. Moisture Content: ASTM D 2216.
b. Organic Content: ASTM D 2974.
c. Particle-Size Analysis: ASTM D 422.
d. Specific Gravity: ASTM D 854.

Note: Not all samples were tested in the laboratory using all the methods described above.

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SECTION 01110

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PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

-- End of Section Table of Contents --

SECTION 01110

SUMMARY OF WORK

PART 1 GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

a. The general description below is given to indicate the approximate scope of this project only. It does not limit the work required under the project drawings and specifications.

b. The work of this project consists of maintenance dredging of the Norwalk Harbor Federal navigation channel and anchorage areas, as indicated on the drawings. All dredged material shall be removed mechanically by clamshell bucket. The project has been divided into two Phases and will extend through two dredging seasons if the Option Bid Items shown on the Bidding Schedule are exercised by the Government. The first Phase, referred to as "Base Bid Item" work, consists of dredging the northern reaches of the project and construction of two Confined Aquatic Disposal (CAD) cells. Suitable dredged material shall be dredged using a conventional clamshell bucket and disposed at the Central Long Island Sound Disposal Site (CLISDS), approximately 35 nautical miles from the work site. Dredged material from the CAD cells shall be used to cap the suitable material dredged from the 10 foot channel disposed at the CLISDS. Dredged material identified on the drawings as unsuitable for disposal at the CLISDS shall be dredged using an clamshell bucket and disposed in the CAD cells. The CAD cells shall be capped using some of the suitable material from either the 12 foot or the 6 foot channel, as approved by the Contacting Officer. The second Phase of the work, referred to as "Option" work, consists of dredging the southern reaches of the project with disposal at CLISDS and capping the disposed material using Contractor furnished suitable dredged material from offsite sources.

c. The seasonal environmental windows for dredging operations are located in the Water Quality Certification (WQC) issued by the Connecticut Department of Environmental Protection, attached at the end of Section 01355 ENVIRONMENTAL PROTECTION. See also Table 1 "Areas Of Norwalk Harbor To Be Dredged And Their Associated Environmental Windows" attached at the end of Section 00800 SPECIAL CONTRACT REQUIREMENTS.

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Progress Schedule; G, RO.

In accordance with the contract clauses, the Contractor shall, within ten

(10) days after receipt of notice to proceed or as otherwise determined by the Contracting Officer, submit for approval a practicable progress schedule. When changes are authorized that result in contract time extensions, Contractor shall submit a modified chart for approval by the Contracting Officer.

1.3 PROJECT/SITE CONDITIONS

1.3.1 Physical Data

Data and information furnished or referred to below is for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

a. Site Conditions: The indications of physical conditions on the drawings and in the specifications are the result of site investigations and surveys. The conditions represented prevailed at the time the investigations and surveys were made. Before commencing work at the site, the Contractor shall verify the existing conditions indicated on the drawings and in the specifications. See CONTRACT CLAUSE entitled "SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK."

b. Weather Conditions: The monthly normal mean temperature and the monthly normal mean precipitation for the site may be obtained by the Contractor from the nearest U.S. National Weather Service Office. There is potential for ice accumulation in the upper reaches of the Norwalk Harbor during the winter months.

c. Conditions of Channel and Anchorage: Maintenance dredging was last performed in 1980-1981. The soundings shown on the contract drawings are the results of surveys conducted during the time period indicated on the drawings.

f. Channel Traffic: The channel and the anchorage areas are mainly used by small recreation and commercial craft, which may cause interference with contract operations. Also, Devine Brothers and O&G Industries have occasional barge traffic during the dredging season. Consult with the Harbor Master to determine the extent of interference with contract operations. The Government will not undertake to keep the channel free from vessels or other obstructions, except to the extent of applicable regulations. The Contractor will be required to conduct the work in such a manner as to obstruct navigation as little as possible, and in the event the Contractor's plant so obstructs the channel as to make difficult or endanger the passage of any vessels, the plant shall be promptly moved on the approach of any vessel to such an extent as may be necessary to afford a practicable passage.

1.4 SEQUENCING AND SCHEDULING

1.4.1 Hours of Operations

The Contractor will be allowed to perform work 24 hours per day, seven days per week, including holidays, for the entire performance period.

1.4.2 Work Sequence

1.4.3 General

There are certain essential criteria relative to the preparation of a work sequence and time schedule which the Contractor will be required to implement and follow during the prosecution of the work. See Section 02325 for the required order of work. Minor variations in the sequence of the items of work as approved may be made by the Contractor, provided such variations do not conflict with critical elements of the schedule. Proposed minor variations shall be noted on the progress charts submittal required by CONTRACT CLAUSE, entitled "SCHEDULES FOR CONSTRUCTION CONTRACTS." Variations shall be approved by the Contracting Officer prior to implementation.

1.4.3.1 Progress Schedule

The progress schedule shall be in the form of a chart graphically indicating the sequence proposed to accomplish each work feature or operation. The chart shall be prepared to show the starting and completion dates of all work features on a linear horizontal time scale beginning with date of Notice to Proceed and indicating calendar days to completion. Contractor shall indicate on the chart the important work features or operations that are critical to the timely overall completion of the project. Key dates for such important work features and portions of work features are milestone dates and shall be so indicated on the chart. This schedule will be the medium through which the timeliness of the Contractor's construction effort is appraised. Anticipated adverse weather delay days shall be included in the schedule.

1.4.4 Organization at the Site

1.4.4.1 General

The Contractor shall employ ample personnel and sufficient equipment to accomplish the work of this contract in the least amount of time, within the prosecution period specified in Section 00800 SPECIAL CONTRACT REQUIREMENTS, Paragraph 1.

1.4.4.2 Rate of Progress

Should the Contractor fail to maintain a satisfactory rate of progress, the Contracting Officer may require that additional personnel and equipment be placed on the work and weekend and overtime work be performed, in order that the work be brought up to schedule and maintained.

1.5 CONTRACTOR USE OF PREMISES

1.5.1 Storage Areas

See Section 01500 TEMPORARY FACILITIES AND CONTROLS.

1.5.1.1 Work Limits

The limits of work consist of the shoaled areas of the channel and anchorage as shown on the contract drawings and the side slope areas which must be dredged to obtain the required depth.

1.5.2 Contractor's Receipt of Supplies

The Contractor shall be responsible for all arrangements for the receipt of materials and supplies at the job site. Government personnel are not permitted to receive or sign for items delivered to the site.

1.5.3 Access to Work Site

Water access to the project site is limited as shown on the drawings.

1.6 COORDINATION

1.6.1 Notice to Mariners

Before beginning dredging operations, the Contractor shall coordinate with the U.S. Coast Guard (USCG) to issue a "Notice to Mariners" regarding the work to be performed and the Contractor's proposed operations.

The Corps of Engineers and the USCG have agreed to phraseology when issuing navigational bulletins and notices. The information furnished shall be consistent with USCG Broadcast Notice to Mariners and Local Notice to Mariners. When requesting local USCG offices to issue navigational information for Corps of Engineers work involving marine construction, the following terminology shall be used, as applicable:

For cautionary areas: "Mariners are urged to use extreme caution in the area."

For dredging and work operations: "Mariners are urged to transit at their slowest safe speed to minimize wake and proceed with caution after passing arrangements have been made."

1.6.2 Aids to Navigation

Aids to navigation have been placed by the Coast Guard. The Contractor shall coordinate with the Coast Guard in advance of any dredging work to provide for any necessary relocation or movement of aids to navigation. The Contractor shall also contact the Coast Guard at the completion of all work and the removal of all dredging plant from the Harbor.

1.6.3 Moorings

The City of Norwalk will be responsible for the removal and replacement of moorings in the anchorage areas at no cost to the Contractor. The Contractor shall coordinate the time schedule necessary for the removal of the moorings with the Harbor Master.

1.6.4 Points of Contact

a. Coast Guard: John Mauro (617) 223-8355 and Andrew Logman (203) 468 4429.

b. Harbor Master: Michael Griffin, Office (203) 849-8823, Cell (203) 829 8892.

c. Recreation and Parks Department: Mike Mocciae (203) 854 7806.

d. Metro-North Railroad: Hong McConnell (203) 337-3601.

e. CT DOT: Gary Verbanic or Steve Keedy (203) 878-6300.

1.7 PRECONSTRUCTION CONFERENCE

The Contracting Officer will conduct a preconstruction conference with key Contractor personnel. The purpose of the conference is to review contract requirements and to establish a working relationship between the Contractor's Staff and the Corps Of Engineers personnel who will be closely associated with the project. During the conference, the Contracting Officer will inform the Contractor concerning Job Safety, Quality Control, Labor Relations, and Environmental Protection. The Contractor's Superintendent and Quality Control Representative shall attend this conference. All submittals which are ready for submission prior to start of work may be brought to the conference and given to the Contracting Officer's representative.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

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SECTION 01270

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1.6.2 Item No's. 0002, 0003, 0004 and 0005
1.7 OPTION BID ITEMS
1.7.1 Item No. 0006, "Mobilization And Demobilization For Dredging And Disposal For Option Bid Item Work"
1.7.2 Item No. 0007, "Maintenance Dredging 6 And 12 Foot Channel And 6 And 10 Foot Anchorage With Ocean Disposal Of Dredged Material"
1.7.3 Item No. 0008, "Capping Of The Dredged Material Placed In The Central Long Island Sound Disposal Site"

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

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SECTION 01270

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 REFERENCES (Not Applicable)

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-05 Design Data

Quantity Surveys

Submit originals of all field notes and all other records relating to the quantity surveys.

1.3 LUMP SUM PAYMENT ITEMS

Payment items for the work of this contract for which contract lump sum payments will be made are listed in the BIDDING SCHEDULE and described below. The lump sum price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for which separate payment is not otherwise provided.

1.4 UNIT PRICE PAYMENT ITEMS

Payment items for the work of this contract on which the contract unit price payments will be made are listed in the BIDDING SCHEDULE and described below. The unit price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for each of the unit price items. Submit originals of all field notes and all other records relating to Quantity Surveys.

1.5 BIDDING SCHEDULE - PAYMENT ITEMS

Payment items for the work of this contract on which the contract progress payments will be based are listed in the BIDDING SCHEDULE and are described below. All costs for items of work, which are not specifically mentioned to be included in a particular Bidding Schedule lump sum or unit price payment item, shall be included in the listed lump sum item most closely associated with the work involved.

1.6 **BASE BID ITEMS**

1.6.1 Item No. 0001, "Mobilization And Demobilization For Dredging And Disposal For Base Bid Work"

a. Payment will be made for costs associated with mobilization and demobilization for dredging operations, as defined in Special Contract Requirements clause "PAYMENT FOR MOBILIZATION AND DEMOBILIZATION."

b. Unit of measure: lump sum.

1.6.2 Item No's. 0002, 0003, 0004 and 0005

Item No. 0002 "Maintenance Dredging 10 Foot Channel With Ocean Disposal Of Suitable Dredged Material"

Item No. 0003, "Construction Of Two Confined Aquatic Disposal (CAD)Cells With Ocean Disposal Of Dredged Material." (See Sub-Article "f" below.)

Item No. 0004 "Maintenance Dredging 10 Foot Channel With CAD Disposal Of Unsuitable Dredged Material"

Item No. 0005 "Maintenance Dredging For CAD Cell Cap Using Suitable Dredged Material"

a. The contract price per cubic yard for the Bidding Schedule Payment Items listed above shall include all cost of removal and disposal of all materials encountered from the indicated areas of the Federal Channels and anchorages.

b. The total amount of material removed and paid for under the contract for these Items will be measured by the cubic yard in place by computing the volume between the bottom surface shown by soundings of the last pre-dredge survey made before dredging begins and the bottom surface shown by the soundings of a post-dredge survey made as soon as practicable after the removal of the material. Dredged material will be included that is within the limits of the side slopes and specified channel overdepth as described in Section 02325 DREDGING, paragraph OVERDEPTH AND SIDE SLOPES, less any deductions that may be required for misplaced material described in paragraph DISPOSAL OF EXCAVATED MATERIAL.

c. The contract drawings listed in Special Contract Requirements, Paragraph "Contract Drawings, Maps and Specifications" are believed to accurately represent conditions existing on the date of the survey shown on the drawings, but the depths and the specific areas to be dredged shown thereon may be verified and corrected by soundings taken by the Government before dredging begins. Determination of quantities removed and the deductions made to determine quantities after having once been made by the Contracting Officer, will not be reopened, except on evidence of collusion, fraud, or obvious error.

d. Monthly partial payments will be based on approximate quantities determined by Contractor quality control surveys. The pre-dredge survey made immediately before dredging, and the post-dredge survey made as soon as practicable after the removal of the material, will be performed by the Government at no cost to the Contractor.

e. No separate measurement or payment will be made for "Debris Management"

specified in Section 02325 DREDGING.

f. Measurement of Item No. 0003, "Construction Of Two Confined Aquatic Disposal (CAD)Cells With Ocean Disposal Of Dredged Material", will be made using an assumed top elevation at each CAD cell of -11 feet MLLW. For construction of CAD cells, overdepth measurement and payment will not be made for material excavated below the indicated cell limits, including sideslopes.

g. Unit of measure: Cubic Yard.

1.7 **OPTION BID ITEMS**

1.7.1 Item No. 0006, "Mobilization And Demobilization For Dredging And Disposal For Option Bid Item Work"

a. Payment will be made for costs associated with mobilization and demobilization for dredging operations, as defined in Special Contract Requirements clause "PAYMENT FOR MOBILIZATION AND DEMOBILIZATION."

b. Unit of measure: lump sum.

1.7.2 Item No. 0007, "Maintenance Dredging 6 And 12 Foot Channel And 6 And 10 Foot Anchorage With Ocean Disposal Of Dredged Material"

a. The contract price per cubic yard for Item No. 0007, "Maintenance Dredging 6 And 12 Foot Channel And 6 And 10 Foot Anchorage With Ocean Disposal Of Dredged Material" shall include all cost of removal and disposal of all materials encountered from these areas as indicated on contract drawings.

b. The total amount of material removed and paid for under the contract for these Items will be measured by the cubic yard in place by computing the volume between the bottom surface shown by soundings of the last pre-dredge survey made before dredging begins and the bottom surface shown by the soundings of a post-dredge survey made as soon as practicable after the removal of the material. Dredged material will be included that is within the limits of the side slopes and specified channel overdepth as described in Section 02325 DREDGING, paragraph OVERDEPTH AND SIDE SLOPES, less any deductions that may be required for misplaced material described in paragraph DISPOSAL OF EXCAVATED MATERIAL.

c. The contract drawings listed in Special Contract Requirements, Paragraph "Contract Drawings, Maps and Specifications" are believed to accurately represent conditions existing on the date of the survey shown on the drawings, but the depths and the specific areas to be dredged shown thereon may be verified and corrected by soundings taken by the Government before dredging begins. Determination of quantities removed and the deductions made to determine quantities after having once been made by the Contracting Officer, will not be reopened, except on evidence of collusion, fraud, or obvious error.

d. Monthly partial payments will be based on approximate quantities determined by Contractor quality control surveys. The pre-dredge survey made immediately before dredging, and the post-dredge survey made as soon as practicable after the removal of the material, will be performed by the Government at no cost to the Contractor.

e. Unit of measure: Cubic Yard.

1.7.3 Item No. 0008, "Capping Of The Dredged Material Placed In The Central Long Island Sound Disposal Site"

a. Payment will be made for costs associated with "Capping Of The Dredged Material Placed In The Central Long Island Sound Disposal Site" with approximately 75,000 cubic yards placed uniformly over the material dredged from the Norwalk Federal Channel and anchorages as directed. This item includes Contractor furnished cap material certified by the CT DEP to be suitable for unconfined open water disposal at the Central Long Island Sound Disposal Site (CLISDS) and approved by the Contracting Officer. The contract price shall include all costs for obtaining permits, testing, and approvals.

b. The total amount of capping material provided by the Contractor from off site will be measured at the source of the Contractor furnished material. Measurement of this Item will be by the cubic yard in place by computing the volume between the bottom surface shown by soundings of a pre-dredge survey made before dredging of the capping material begins and the bottom surface shown by the soundings of a post-dredge survey made as soon as practicable after the removal of the material. Surveys for measurement and payment of this item will be performed by the Government at no cost to the Contractor.

c. Unit of measure: Cubic Yard.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

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SECTION 01312

QUALITY CONTROL SYSTEM (QCS)

PART 1 GENERAL

1.1 GENERAL

The Government will use the Resident Management System for Windows (RMS) to assist in its monitoring and administration of this contract. The Contractor shall use the Government-furnished Construction Contractor Module of RMS, referred to as QCS, to record, maintain, and submit various information throughout the contract period. The Contractor module, user manuals, updates, and training information can be downloaded from the RMS web site. This joint Government-Contractor use of RMS and QCS will facilitate electronic exchange of information and overall management of the contract. QCS provides the means for the Contractor to input, track, and electronically share information with the Government in the following areas:

Administration
Finances
Quality Control
Submittal Monitoring
Scheduling
Import/Export of Data

1.1.1 Correspondence and Electronic Communications

For ease and speed of communications, both Government and Contractor will, to the maximum extent feasible, exchange correspondence and other documents in electronic format. Correspondence, pay requests and other documents comprising the official contract record shall also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

1.1.2 Other Factors

Particular attention is directed to Contract Clause, "Schedules for Construction Contracts", Contract Clause, "Payments", Section 01330, SUBMITTAL PROCEDURES, and Section 01451, CONTRACTOR QUALITY CONTROL, which have a direct relationship to the reporting to be accomplished through QCS. Also, there is no separate payment for establishing and maintaining the QCS database; all costs associated therewith shall be included in the contract pricing for the work.

1.2 QCS SOFTWARE

QCS is a Windows-based program that can be run on a stand-alone personal computer or on a network. The Government will make available the QCS software to the Contractor after award of the construction contract. Prior to the Pre-Construction Conference, the Contractor shall be responsible to download, install and use the latest version of the QCS software from the Government's RMS Internet Website. Upon specific justification and request by the Contractor, the Government can provide QCS on 3-1/2 inch

high-density diskettes or CD-ROM. Any program updates of QCS will be made available to the Contractor via the Government RMS Website as they become available.

1.3 SYSTEM REQUIREMENTS

The following is the minimum system configuration that the Contractor shall have to run QCS:

RMS Server

Hardware

IBM-compatible PC with 1000 MHz Pentium or higher processor

1000+ MB RAM

1 GB free disk space

3 1/2 inch high-density floppy drive

Compact Disk (CD) Reader 8x speed or higher

TCP/IP Network/Internet Connection

Software

Windows 2000 or higher

Oracle 8i Server

Virus protection software that is regularly upgraded with all issued manufacturer's updates

Personnel

Oracle Database Administrator (DBA)

RMS Workstation

Hardware

IBM-compatible PC with 1000 MHz Pentium or higher processor

256+ MB RAM for workstation

500 MB free disk space

3 1/2 inch high-density floppy drive

Compact Disk (CD) Reader 8x speed or higher

SVGA or higher resolution monitor (1024x768, 256 colors)

Mouse or other pointing device

Windows compatible printer. (Laser printer must have 4 MB+ of RAM)

TCP/IP Network/Internet Connection

Software

MS Windows 2000 or higher

Oracle 8i Client

Word Processing software: MS Word 2000 or newer

Latest version of: Netscape Navigator, Microsoft Internet Explorer, or other browser that supports HTML 4.0 or higher

Electronic mail (E-mail) MAPI compatible

Virus protection software that is regularly upgraded with all issued manufacturer's updates

QCS and QAS System

Hardware

IBM-compatible PC with 1000 MHz Pentium or higher processor

256+ MB RAM for workstation / 512+ MB RAM for server

1 GB hard drive disk space for sole use by the QCS system

3 1/2 inch high-density floppy drive

Compact Disk (CD) Reader 8x speed or higher

SVGA or higher resolution monitor (1024x768, 256 colors)

Mouse or other pointing device

Windows compatible printer. (Laser printer must have 4 MB+ of RAM)

Connection to the Internet, minimum 56k BPS

Software

MS Windows 2000 or higher

QAS-Word Processing software: MS Word 2000 or newer

Latest version of: Netscape Navigator, Microsoft Internet Explorer, or other browser that supports HTML 4.0 or higher

Electronic mail (E-mail) MAPI compatible

Virus protection software that is regularly upgraded with all issued manufacturer's updates

1.4 RELATED INFORMATION

1.4.1 QCS User Guide

After contract award, the Contractor shall download instructions for the installation and use of QCS from the Government RMS Internet Website; the Contractor can obtain the current address from the Government. In case of justifiable difficulties, the Government will provide the Contractor with a CD-ROM containing these instructions.

1.4.2 Contractor Quality Control(CQC) Training

The use of QCS will be discussed with the Contractor's QC System Manager during the mandatory CQC Training class.

1.5 CONTRACT DATABASE

Prior to the pre-construction conference, the Government shall provide the Contractor with basic contract award data to use for QCS. The Government will provide data updates to the Contractor as needed, generally by files attached to E-mail. These updates will generally consist of submittal reviews, correspondence status, QA comments, and other administrative and QA data.

1.6 DATABASE MAINTENANCE

The Contractor shall establish, maintain, and update data for the contract in the QCS database throughout the duration of the contract. The Contractor shall establish and maintain the QCS database at the Contractor's site office. Data updates to the Government shall be submitted by E-mail with file attachments, e.g., daily reports, schedule updates, payment requests. If permitted by the Contracting Officer, a data diskette or CD-ROM may be used instead of E-mail (see Paragraph DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM). The QCS database typically shall include current data on the following items:

1.6.1 Administration

1.6.1.1 Contractor Information

The database shall contain the Contractor's name, address, telephone numbers, management staff, and other required items. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver Contractor administrative data in electronic format via E-mail.

1.6.1.2 Subcontractor Information

The database shall contain the name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor must be listed separately for each trade to be performed. Each subcontractor/trade shall be assigned a unique Responsibility Code, provided in QCS. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver subcontractor administrative data in electronic format via E-mail.

1.6.1.3 Correspondence

All Contractor correspondence to the Government shall be identified with a serial number. Correspondence initiated by the Contractor's site office

shall be prefixed with "S". Letters initiated by the Contractor's home (main) office shall be prefixed with "H". Letters shall be numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C".

1.6.1.4 Equipment

The Contractor's QCS database shall contain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

1.6.1.5 Management Reporting

QCS includes a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the quality of the data input, and is maintained in the various sections of QCS. Among these reports are: Progress Payment Request worksheet, QA/QC comments, Submittal Register Status, Three-Phase Inspection checklists.

1.6.2 Finances

1.6.2.1 Pay Activity Data

The QCS database shall include a list of pay activities that the Contractor shall develop in conjunction with the construction schedule. The sum of all pay activities shall be equal to the total contract amount, including modifications. Pay activities shall be grouped by Contract Line Item Number (CLIN), and the sum of the activities shall equal the amount of each CLIN. The total of all CLINs equals the Contract Amount.

1.6.2.2 Payment Requests

All progress payment requests shall be prepared using QCS. The Contractor shall complete the payment request worksheet and include it with the payment request. The work completed under the contract, measured as percent or as specific quantities, shall be updated at least monthly. After the update, the Contractor shall generate a payment request report using QCS. The Contractor shall submit the payment requests with supporting data by E-mail with file attachment(s). If permitted by the Contracting Officer, a data diskette may be used instead of E-mail. A signed paper copy of the approved payment request is also required, which shall govern in the event of discrepancy with the electronic version.

1.6.3 Quality Control (QC)

QCS provides a means to track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and support other contractor QC requirements. The Contractor shall maintain this data on a daily basis. Entered data will automatically output to the QCS generated daily report. The Contractor shall provide the Government a Contractor Quality Control (CQC) Plan within the time required in Section 01451, CONTRACTOR QUALITY CONTROL. Within seven calendar days of Government acceptance, the Contractor shall submit a data diskette or CD-ROM reflecting the information contained in the accepted CQC Plan: schedule, pay activities, features of work, submittal register, QC requirements, and equipment list.

1.6.3.1 Daily Contractor Quality Control (CQC) Reports.

QCS includes the means to produce the Daily CQC Report. The Contractor may use other formats to record basic QC data. However, the Daily CQC Report generated by QCS shall be the Contractor's official report. Data from any supplemental reports by the Contractor shall be summarized and consolidated onto the QCS-generated Daily CQC Report. Daily CQC Reports shall be submitted as required by Section 01451, CONTRACTOR QUALITY CONTROL. Reports shall be submitted electronically to the Government using E-mail or diskette within 24 hours after the date covered by the report. Use of either mode of submittal shall be coordinated with the Government representative. The Contractor shall also provide the Government a signed, printed copy of the daily CQC report.

1.6.3.2 Deficiency Tracking.

The Contractor shall use QCS to track deficiencies. Deficiencies identified by the Contractor will be numerically tracked using QC punch list items. The Contractor shall maintain a current log of its QC punch list items in the QCS database. The Government will log the deficiencies it has identified using its QA punch list items. The Government's QA punch list items will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of both QC and QA punch list items.

1.6.3.3 Three-Phase Control Meetings

The Contractor shall maintain scheduled and actual dates and times of preparatory and initial control meetings in QCS.

1.6.3.4 Accident/Safety Tracking.

The Government will issue safety comments, directions, or guidance whenever safety deficiencies are observed. The Government's safety comments will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of the safety comments. In addition, the Contractor shall utilize QCS to advise the Government of any accidents occurring on the jobsite. This brief supplemental entry is not to be considered as a substitute for completion of mandatory reports, e.g., ENG Form 3394 and OSHA Form 300.

1.6.3.5 Features of Work

The Contractor shall include a complete list of the features of work in the QCS database. A feature of work may be associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

1.6.3.6 QC Requirements

The Contractor shall develop and maintain a complete list of QC testing, transferred and installed property, and user training requirements in QCS. The Contractor shall update all data on these QC requirements as work progresses, and shall promptly provide this information to the Government via QCS.

1.6.4 Submittal Management

The Government will provide the initial submittal register in electronic format. Thereafter, the Contractor shall maintain a complete list of all submittals, including completion of all data columns. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. The Contractor shall use QCS to track and transmit all submittals. ENG Form 4025, submittal transmittal form, and the submittal register update shall be produced using QCS. RMS will be used to update, store and exchange submittal registers and transmittals, but will not be used for storage of actual submittals.

1.6.5 Schedule

The Contractor shall develop a construction schedule consisting of pay activities, in accordance with Contract Clause "Schedules for Construction Contracts". This schedule shall be input and maintained in the QCS database either manually or by using the Standard Data Exchange Format (SDEF). The updated schedule data shall be included with each pay request submitted by the Contractor.

1.6.6 Import/Export of Data

QCS includes the ability to export Contractor data to the Government and to import submittal register and other Government-provided data, and schedule data using SDEF.

1.7 IMPLEMENTATION

Contractor use of QCS as described in the preceding paragraphs is mandatory. The Contractor shall ensure that sufficient resources are available to maintain its QCS database, and to provide the Government with regular database updates. QCS shall be an integral part of the Contractor's management of quality control.

1.8 DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM

The Government-preferred method for Contractor's submission of updates, payment requests, correspondence and other data is by E-mail with file attachment(s). For locations where this is not feasible, the Contracting Officer may permit use of computer diskettes or CD-ROM for data transfer. Data on the disks or CDs shall be exported using the QCS built-in export function. If used, diskettes and CD-ROMs will be submitted in accordance with the following:

1.8.1 File Medium

The Contractor shall submit required data on 3-1/2 inch double-sided high-density diskettes formatted to hold 1.44 MB of data, capable of running under Microsoft Windows 95 or newer. Alternatively, CD-ROMs may be used. They shall conform to industry standards used in the United States. All data shall be provided in English.

1.8.2 Disk or CD-ROM Labels

The Contractor shall affix a permanent exterior label to each diskette and CD-ROM submitted. The label shall indicate in English, the QCS file name, full contract number, contract name, project location, data date, name and telephone number of person responsible for the data.

1.8.3 File Names

The Government will provide the file names to be used by the Contractor with the QCS software.

1.9 MONTHLY COORDINATION MEETING

The Contractor shall update the QCS database each workday. At least monthly, the Contractor shall generate and submit an export file to the Government with schedule update and progress payment request. As required in Contract Clause "Payments", at least one week prior to submittal, the Contractor shall meet with the Government representative to review the planned progress payment data submission for errors and omissions. The Contractor shall make all required corrections prior to Government acceptance of the export file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will be returned. The Government will not process progress payments until an acceptable QCS export file is received.

1.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification.

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SECTION 01330

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 DEFINITIONS

1.1.1 Submittal

Contract Clauses "FAR 52.236-5, Material and Workmanship," paragraph (b) and "FAR 52.236-21, Specifications and Drawings for Construction," paragraphs (d), (e), and (f) apply to all "submittals."

1.1.2 Submittal Descriptions (SD)

Submittals requirements are specified in the technical sections. Submittals are identified by SD numbers and titles as follows.

SD-01 Preconstruction Submittals

Certificates of insurance.
Surety bonds.
List of proposed subcontractors.
List of proposed products.
Construction Progress Schedule.
Submittal register.
Schedule of prices.
Health and safety plan.
Work plan.
Quality control plan.
Environmental protection plan.

SD-02 Shop Drawings

Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work.

Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the Contractor for integrating the product or system into the project.

Drawings prepared by or for the Contractor to show how multiple systems and interdisciplinary work will be coordinated.

SD-05 Design Data

Calculations, mix designs, analyses or other data pertaining to a part of work.

SD-06 Test Reports

Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified

requirements. (Testing must have been within three years of date of contract award for the project.)

Report which includes findings of a test required to be performed by the Contractor on an actual portion of the work or prototype prepared for the project before shipment to job site.

Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.

Investigation reports.

Daily checklists.

Final acceptance test and operational test procedure.

1.1.3 Approving Authority

Office authorized to approve submittal.

1.1.4 Work

As used in this section, on- and off-site construction required by contract documents, including labor necessary to produce submittals, construction, materials, products, equipment, and systems incorporated or to be incorporated in such construction.

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Submittal register; G, RO

1.3 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.3.1 Government Approved

Government approval is required for extensions of design, critical materials, deviations, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings."

1.3.2 Information Only

All submittals not requiring Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

1.4 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Contractor Quality Control (CQC) requirements of this contract is responsible for the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.5 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

1.6 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

1.7 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) System Manager and each item shall be stamped, signed, and dated by the CQC System Manager indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

1.8 SUBMITTAL REGISTER

At the end of this section is a submittal register showing items of equipment and materials for which submittals are required by the specifications; this list may not be all inclusive and additional submittals may be required. The Contractor shall maintain a submittal register for the project in accordance with Section 01312 QUALITY CONTROL

SYSTEM (QCS).

1.9 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 21 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals.

1.10 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms are included in the QCS software that the Contractor is required to use for this contract. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

1.11 SUBMITTAL PROCEDURE

Submittals shall be made as follows:

1.11.1 Procedures for Review Copies

Submit seven (7) copies of each submittal item with an attached ENG FORM 4025 Transmittal Form. The Contractor will be informed at the pre-construction conference to send all submittals to either the project Resident Office or to the project Area Engineer Office, as applicable.

a. Construction/Operations Division ("RO" Reviewer): An "RO" in column "f" indicates that the submittal review action is by New England District Construction/Operations Division.

b. Engineering/Planning Division ("DO" Reviewer): An "DO" on the attached submittal register, column "f" indicates that the submittal review action is by the New England District, Engineering/Planning Division.

c. A "G" followed by "A" on the attached submittal register, column "f" indicates that the submittal review action is by the New England District, Construction/Operations Division and that the submittal requires Government acceptance.

1.11.2 Information on Submittal Status

All Contractor requests for current status of submittal reviews shall be made through the Resident Engineer.

1.11.3 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and

annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

1.12 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

1.13 GOVERNMENT APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. Five copies of the submittal will be retained by the Contracting Officer and two copies of the submittal will be returned to the Contractor.

1.14 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

1.15 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

CONTRACTOR

(Firm Name)

_____ Approved

_____ Approved with corrections as noted on submittal data and/or attached sheets(s).

SIGNATURE: _____

TITLE: _____

DATE: _____

-- End of Section --

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE *(Read instructions on the reverse side prior to initiating this form)*	DATE	TRANSMITTAL NO.

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS *(This section will be initiated by the contractor)*

TO:	FROM:	CONTRACT NO.	CHECK ONE: ☐ THIS IS A NEW TRANSMITTAL ☐ THIS IS A RESUBMITTAL OF TRANSMITTAL _____
SPECIFICATION SEC. NO. *(Cover only one section with each transmittal)*	PROJECT TITLE AND LOCATION		CHECK ONE: THIS TRANSMITTAL IS FOR ☐ FIO ☐ GOV'T. APPROVAL

ITEM NO. *a.*	DESCRIPTION OF ITEM SUBMITTED *(Type size, model number/etc.)* *b.*	MFG OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. *(See instruction no. 8)* *c.*	NO. OF COPIES *d.*	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE CODE *g.*	VARIATION *(See instruction No. 6)* *h.*	FOR CE USE CODE *i.*
				SPEC. PARA. NO. *e.*	DRAWING SHEET NO. *f.*			

REMARKS

I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as other wise stated.

_____

NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED *(List by Item No.)*	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.

2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.

3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.

4. Submittals requiring expeditious handling will be submitted on a separate form.

5. Separate transmittal form will be used for submittals under separate sections of the specifications.

6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".

7. Form is self-transmittal, letter of transmittal is not required.

8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.

9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

A -- Approved as submitted.

B -- Approved, except as noted on drawings.

C -- Approved, except as noted on drawings. Refer to attached sheet resubmission required.

D -- Will be returned by separate correspondence.

E -- Disapproved (See attached).

F -- Receipt acknowledged.

FX -- Receipt acknowledged, does not comply as noted with contract requirements.

G -- Other *(Specify)*

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

SUBMITTAL REGISTER

CONTRACT NO.
W912WJ-05-B-0010

TITLE AND LOCATION
MAINTENANCE DREDGING NORWALK HARBOR, CT

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY					MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01110	SD-01 Preconstruction Submittals															
			Progress Schedule	1.4.3.1	G	RO												
		01270	SD-05 Design Data															
			Quantity Surveys															
		01330	SD-01 Preconstruction Submittals															
			Submittal register		G	RO												
		01355	SD-01 Preconstruction Submittals															
			Environmental Protection Plan	1.7	G	RO												
		01500	SD-01 Preconstruction Submittals															
			Site Plan		G	RO												
			SD-02 Shop Drawings															
			Temporary Electrical System		G	RO												
		01525	SD-01 Preconstruction Submittals															
			Accident Prevention Plan (APP)	1.10	G	A												
			Activity Hazard Analysis (AHA)	1.11	G	A												
			SD-06 Test Reports															
			Reports	1.15														
			Accident Reports	1.15.1														
			Monthly Exposure Reports	1.15.3														
			Regulatory Citations and	1.15.4														
			Violations															
			Crane Reports	1.15.5														
			Certificate of Compliance	1.15.6														
		01545	SD-01 Preconstruction Submittals															
			Plant and Equipment															
		01723	SD-01 Preconstruction Submittals															

SUBMITTAL REGISTER

CONTRACT NO.
W912WJ-05-B-0010

TITLE AND LOCATION
MAINTENANCE DREDGING NORWALK HARBOR, CT

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY					MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01723	Survey Plans		G	RO												
			Layout Plan		G	RO												
			Charts															
			Survey Personnel	3.1.1														
			SD-05 Design Data															
			Field Survey Data															
			Electronic Tracking System	1.7														
		02325	SD-01 Preconstruction Submittals															
			Work Plan for 'Base Bid Items'		G	DO												
			Debris Management Plan	1.9														
			Inspection of Disposal	1.11														
			Scows	3.1.3														
			SD-05 Design Data															
			Equipment and Performance Data															
			Daily/Monthly Report of															
			Operations															
			Cap Thickness and Coverage		G	DO												
			Determination Data															
			SD-01 Preconstruction Submittals															
			Work Plan for 'Option Bid Items'		G	DO												
			Capping Material for CLISDS	2.1	G	DO												
			Cap Thickness and Coverage		G	DO												
			Determination Data															

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SECTION 01355

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SECTION 01355

ENVIRONMENTAL PROTECTION

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

33 CFR 328	Definitions
40 CFR 68	Chemical Accident Prevention Provisions
40 CFR 279	Standards for the Management of Used Oil
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 355	Emergency Planning and Notification

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2003) U.S. Army Corps on Engineers Safety and Health Requirements Manual

1.2 DEFINITIONS

1.2.1 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally and/or historically.

1.2.2 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2.3 Contractor Generated Hazardous Waste

Contractor generated hazardous waste means materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e. methyl ethyl ketone, toluene etc.), waste thinners,excess paints, excess solvents, waste solvents, and excess pesticides, and contaminated pesticide equipment rinse water.

1.2.4 Waters of the United States

All waters which are under the jurisdiction of the Clean Water Act, as defined in 33 CFR 328.

1.3 GENERAL REQUIREMENTS

The Contractor shall minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract. The Contractor shall comply with all applicable environmental Federal, State, and local laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations.

1.4 SUBCONTRACTORS

The Contractor shall ensure compliance with this section by subcontractors.

1.5 PAYMENT

No separate payment will be made for work covered under this section. The Contractor shall be responsible for payment of fees associated with environmental permits, application, and/or notices obtained by the Contractor. All costs associated with this section shall be included in the contract price. The Contractor shall be responsible for payment of all fines/fees for violation or non-compliance with Federal, State, Regional and local laws and regulations.

1.6 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Environmental Protection Plan; G, RO

The environmental protection plan.

1.7 ENVIRONMENTAL PROTECTION PLAN

Prior to commencing construction activities or delivery of materials to the

site, the Contractor shall submit an Environmental Protection Plan for review and approval by the Contracting Officer. The purpose of the Environmental Protection Plan is to present a comprehensive overview of known or potential environmental issues which the Contractor must address during construction. Issues of concern shall be defined within the Environmental Protection Plan as outlined in this section. The Contractor shall address each topic at a level of detail commensurate with the environmental issue and required construction task(s). Topics or issues which are not identified in this section, but which the Contractor considers necessary, shall be identified and discussed after those items formally identified in this section. Prior to submittal of the Environmental Protection Plan, the Contractor shall meet with the Contracting Officer for the purpose of discussing the implementation of the initial Environmental Protection Plan; possible subsequent additions and revisions to the plan including any reporting requirements; and methods for administration of the Contractor's Environmental Plans. The Environmental Protection Plan shall be current and maintained onsite by the Contractor.

1.7.1 Compliance

No requirement in this Section shall be construed as relieving the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During Construction, the Contractor shall be responsible for identifying, implementing, and submitting for approval any additional requirements to be included in the Environmental Protection Plan.

1.7.2 Contents

The environmental protection plan shall include, but shall not be limited to, the following:

a. Name(s) of person(s) within the Contractor's organization who is(are) responsible for ensuring adherence to the Environmental Protection Plan.

b. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.

c. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel.

d. Description of the Contractor's environmental protection personnel training program.

e. The Spill Control plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. The Spill Control Plan supplements the requirements of EM 385-1-1. This plan shall include as a minimum:

1. The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Contracting Officer and the local Fire Department in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. The plan

shall contain a list of the required reporting channels and telephone numbers.

2. The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup.

3. Training requirements for Contractor's personnel and methods of accomplishing the training.

4. A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.

5. The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency.

6. The methods and procedures to be used for expeditious contaminant cleanup.

f. A non-hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including debris collected during dredging operations. The Contractor shall identify any subcontractors responsible for the transportation and disposal of solid waste. Licenses or permits shall be submitted for solid waste disposal sites that are not a commercial operating facility. Evidence of the disposal facility's acceptance of the solid waste shall be attached to this plan during the construction.

g. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become air borne and travel off the project site.

h. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials. In accordance with EM 385-1-1, a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given time shall be included in the contaminant prevention plan. As new hazardous materials are brought on site or removed from the site, the plan shall be updated.

1.7.3 Appendix

Copies of all environmental permits, permit application packages, approvals to construct, notifications, certifications, reports, and termination documents shall be attached,as an appendix, to the Environmental Protection Plan.

1.8 PROTECTION FEATURES

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. Prior to start of any onsite construction activities, the Contractor and the Contracting Officer shall make a joint condition survey. Immediately

following the survey, the Contractor shall prepare a brief report including a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. This survey report shall be signed by both the the Contractor and the Contracting Officer upon mutual agreement as to its accuracy and completeness. The Contractor shall protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the Contractor's work under the contract.

1.9 SPECIAL ENVIRONMENTAL REQUIREMENTS

The Contractor shall comply with the special environmental requirements included below. These special environmental requirements are an outgrowth of environmental commitments made by the Government during the project development.

1.10 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations, requested by the Contractor, from the drawings,plans and specifications which may have an environmental impact will be subject to approval by the Contracting Officer and may require an extended review, processing, and approval time. The Contracting Officer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Contracting Officer determines that the proposed alternate method will have an adverse environmental impact.

1.11 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with Federal, State or local environmental laws or regulations, permits, and other elements of the Contractor's Environmental Protection plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or equitable adjustments allowed to the Contractor for any such suspensions. This is in addition to any other actions the Contracting Officer may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 ENVIRONMENTAL PERMITS AND COMMITMENTS

a..Except as specified below for Contractor furnished capping material, this Article supplements the Contractor's responsibility under the contract clause PERMITS AND RESPONSIBILITIES to the extent that the Government has already obtained the listed environmental permits issued for this project. A Water Quality Certification (WQC) issued by the Connecticut Department of Environmental Protection and a Coastal Zone Consistency Determination have been obtained for this project. The Contractor shall comply with permit terms and conditions that are applicable to this contract. Such applicable

terms and conditions have been extracted from the permits and are specified in the various sections of these specifications and on the contract drawings. The above referenced documents shall not be relied on for contract requirements. In the event a discrepancy is discovered between the reference documents and these specifications or the contract drawings, the Contractor shall notify the Contracting Officer for clarification. The Contracting Officer will rely on permit requirements and conditions to resolve perceived conflicts. A copy of the WQC and Coastal Zone Consistency Determination are included at the end of this section for reference only.

b. Contractor furnished capping material for the Central Long Island Disposal Site (CLISDS) shall be dredged material as certified by the CT DEP to be suitable for unconfined open water disposal. The Contractor shall be responsible for obtaining and complying with all environmental permits and commitments required by Federal, State, Regional, and local environmental laws and regulations for this material.

Due to environmental restrictions, dredging operations at the project site will only be permitted in accordance with Table 1 "Areas Of Norwalk Harbor To Be Dredged And Their Associated Environmental Windows" attached at the end of Section 00800 SPECIAL CONTRACT REQUIREMENTS.

3.2 WATER RESOURCES

The Contractor shall keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters.

3.3 AIR RESOURCES

Equipment operation, activities, or processes performed by the Contractor shall be in accordance with all Federal and State air emission and performance laws and standards.

3.3.1 Particulates

Dust particles; aerosols and gaseous by-products from construction activities shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall comply with all State and local visibility regulations.

3.3.2 Odors

Odors from construction activities shall be controlled at all times. The odors shall not cause a health hazard and shall be in compliance with State regulations and/or local ordinances.

3.3.3 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise. The Contractor shall comply with the provisions of the State of Connecticut rules.

3.4 CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

Disposal of wastes shall be as directed below, unless otherwise specified in other sections and/or shown on the drawings.

3.4.1 Solid Wastes

Solid wastes shall be placed in containers which are emptied on a regular schedule. Handling, storage, and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. The Contractor shall transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. The Contractor shall verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate. The Contractor shall comply with Federal, State, and local laws and regulations pertaining to the use of landfill areas.

3.4.2 Fuel and Lubricants

Storage, fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spill and evaporation. Fuel, lubricants and oil shall be managed and stored in accordance with all Federal, State, Regional, and local laws and regulations. Used lubricants and used oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed in accordance with 40 CFR 279, State, and local laws and regulations. Storage of fuel on the project site shall be accordance with all Federal, State, and local laws and regulations.

3.5 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

If during excavation or other construction activities any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, the Contractor shall immediately notify the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in impact to or the destruction of these resources. The Contractor shall secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

3.6 BIOLOGICAL RESOURCES

The Contractor shall minimize interference with, disturbance to, and damage to fish, wildlife, and plants including their habitat. The Contractor shall be responsible for the protection of threatened and endangered animal and plant species including their habitat in accordance with Federal, State, Regional, and local laws and regulations.

3.7 PREVIOUSLY USED EQUIPMENT

The Contractor shall clean all previously used construction equipment prior to bringing it onto the project site. The Contractor shall ensure that the equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, and plant seeds. The Contractor shall consult with the USDA jurisdictional office for additional cleaning requirements.

3.8 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

3.9 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection and pollution control. The Contractor shall conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. Additional meetings shall be conducted for new personnel and when site conditions change. The training and meeting agenda shall include: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

3.10 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction in accordance with Contract Clause: "Cleaning Up". The Contractor shall, unless otherwise instructed in writing by the Contracting Officer, obliterate all signs of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. The disturbed area shall be graded, filled and the entire area seeded unless otherwise indicated.

-- End of Section --

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

January 6, 2004

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Ed O'Donnell
U.S. Army Corps of Engineers, NED
696 Virginia Road
Concord, MA 01742-2751

SUBJECT: WQC NO. 200201943-SJ
U.S. Army Corps of Engineers
City of Norwalk

Dear Mr. O'Donnell:

Enclosed is the signed certificate which constitutes the approval of your application to conduct regulated activities. Your attention is directed to the conditions of the enclosed certificate. Construction or work must conform to that which is authorized.

If you have any questions concerning your certificate, please contact staff of the Permit section at (860)424-3034.

Sincerely,

Susan Jacobson, Environmental Analyst
Office of Long Island Sound Programs

SJ/ko

Enc.

Sent Certified Mail, Return Receipt Requested to: Commissioner of Transportation; Adjacent Property Owners; All Parties; the Mayor, First Selectman or Town Manager; Shellfish Commission; the Planning and Zoning Commissions; and the Harbor Management Commission.

Copies Furnished to:

Conservation Commission
DEP/Wildlife Division
DEP/Fisheries Division
Dept. of Agriculture/Aquaculture Division
DEP/Water Mgt. Bureau
DOT/Bureau of Aeronautics and Ports
File No. 200201943-SJ
Desk Copy

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

WATER QUALITY CERTIFICATE

Certificate No: 200201943-SJ

City: Norwalk

Work Area: Norwalk Harbor

Certificate Holder: U.S. Army Corps of Engineers, NED
696 Virginia Road
Concord, MA 01742-2751

Pursuant to section 401 of the Federal Clean Water Act, as amended, Section 307 of the Federal Coastal Zone Management Act and volume 15 of the Code of Federal Regulations, Part 930, Federal Consistency with Approved Coastal Management Programs; and in accordance with section 22a-98 of the Connecticut General Statutes (General Statutes), and the Connecticut Water Quality Standards dated December 2002, a water quality certificate (certificate) and federal coastal zone management consistency concurrence are hereby granted by the Commissioner of Environmental Protection (Commissioner) to conduct maintenance dredging for improved navigation and create two confined aquatic disposal cells as is more specifically described below in the SCOPE OF AUTHORIZATION, off property identified as the "work area" above.

*****NOTICE TO CERTIFICATE HOLDERS AND CONTRACTORS*****

FAILURE TO CONFORM TO THE TERMS AND CONDITIONS OF THIS CERTIFICATE MAY SUBJECT THE CERTIFICATE HOLDER AND ANY CONTRACTOR TO ENFORCEMENT ACTIONS, INCLUDING PENALTIES AND INJUNCTIONS, AS PROVIDED BY LAW.

SCOPE OF AUTHORIZATION

The Certificate Holder is hereby authorized to conduct the following work as described in application 200201943-SJ including 23 sheets of plans submitted by the Certificate Holder to the Commissioner and attached hereto:

1. maintenance dredge, by clamshell bucket, approximately 550,000 cubic yards of material from federally authorized 12-, 10- and 6-foot depth channels, 10- and 6-foot depth anchorages and a 10-foot depth turning basin;

2. dredge, by clamshell bucket, approximately 69,000 cubic yards of material to create two confined aquatic disposal (CAD) cells as shown on plan sheet 19 of 23;

3. dispose of approximately 40,000 cubic yards of material unsuitable for unconfined open water disposal from the area indicated on plan sheets 17 and 18 of 23 in the CAD cells in accordance with SPECIAL TERMS AND CONDITIONS #1 of this certificate;

4. dispose of and cap the remaining 579,000 cubic yards of material at the Central Long

Island Sound Disposal Area or at such alternative disposal site as determined by the Commissioner, in accordance with SPECIAL TERMS AND CONDITIONS #4 of this certificate.

UPON INITIATION OF ANY WORK AUTHORIZED HEREIN, THE CERTIFICATE HOLDER ACCEPTS AND AGREES TO COMPLY WITH ALL TERMS AND CONDITIONS OF THIS CERTIFICATE.

SPECIAL TERMS AND CONDITIONS

1. The approximately 40,000 cubic yards of material described in SCOPE OF AUTHORIZATION #3, above, is unsuitable for open water disposal at the Central Long Island Sound Disposal Area. This material must be capped with a minimum of 1½' of material suitable for unconfined open water disposal. No later than 30 days prior to the date of commencement of dredging of this material, the Certificate Holder shall submit to the Commissioner, for his review and written approval, a schedule/sequencing plan for disposal of this material in the CAD cells and indicate the source of the cap material. No dredging of this material shall occur until the Certificate Holder has received written approval from the Commissioner.

2. Unconfined in-water excavation, dredging, filling or removal of material described in SCOPE OF AUTHORIZATION #1 through #3, above, **and** from a point 1000 feet south of the I-95 bridge to the northernmost extent of the proposed activity is prohibited February 1st through July 31st, inclusive, of any year unless otherwise authorized in writing by the Commissioner. The specific closure dates are as follows: February 1st through May 15th in order to protect winter flounder early life-stage development; April 1st through June 30th in order to protect anadromous fish migration; and June 1st through August 1st in order to protect spawning shellfish.

3. Unconfined in-water excavation, dredging, filling or removal of debris or other material from August 1st through September 30th from a point 1000 feet south of the I-95 bridge to the northernmost extent of the proposed activity shall be suspended for a 24 hour period following a ½" or more of rainfall in 6 or less hours, unless otherwise authorized in writing by the Commissioner.

4. The approximately 579,000 cubic yards of material described in SCOPE OF AUTHORIZATION #4, above, shall be disposed of and capped with an appropriate quantity of dredged sediment suitable for unconfined open water disposal at the Central Long Island Sound Disposal Area or at such alternative disposal areas as determined by the Commissioner. The capping volume will be determined during the final capping plan review as follows:

    a. No later than two weeks prior to the intended commencement of dredging, the Certificate Holder shall submit to the Commissioner for his review and written approval a detailed written capping plan. The plan shall, at a minimum, include

the following information:

i. Demonstration that sufficient dredged sediment suitable for unconfined open water disposal is available for use as cap. This demonstration shall include a description of the source of the cap sediment, a certification as to the volume of sediment available, documentation of appropriate authorization for dredging the cap sediment, assurances that such sediment will be reserved for cap pursuant to this certificate and will not be disposed of in another manner, and sediment test data showing that this sediment is suitable for use as cap;

ii. A work schedule including the estimated starting date and time required to complete disposal of contaminated sediments; and the estimated starting date and time required to complete the capping of the contaminated sediments. Such work schedule shall incorporate sufficient time to allow for inclement weather, wave conditions and/or equipment failures; and

iii. Disposal barge capacity, dredge bucket capacity, planned hours of operation, and the anticipated number of barge trips per day.

b. In the event that suitable sediment is directed by the Commissioner for use to cap the sediment authorized to be dredged herein, and such direction results in actual increased costs to the Certificate Holder who is providing the sediment to be used as cap, the Certificate Holder shall be responsible for any actual additional costs incurred by the direction of suitable cap sediments to the disposal site authorized herein.

5. **No dredging shall be conducted until the Certificate Holder has received written approval of the capping plan required pursuant to <u>SPECIAL TERMS AND CONDITIONS</u> #1 and #4, above, from the Commissioner.**

6. Unconfined in-water excavation, dredging, filling or removal of debris or other material from a point 1000 feet south of the I-95 bridge to the southernmost extent of the proposed activity is prohibited as follows in the specified locations unless otherwise authorized in writing by the Commissioner:

a. February 1st through May 15th prohibition in order to protect winter flounder spawning and early life-stage development - all areas north of Gregory Point.

b. April 1st through June 30th prohibition in order to protect anadromous fish migration - all areas north of Long Beach Island except the North Anchorage Basin and Entrance Channel starting at Fitch Point.

c. June 1st through September 30th prohibition in order to protect spawning shellfish - 1000 feet south of the I-95 bridge to the southernmost extent of the proposed activity

d. February 15th through August 15th prohibition in order to avoid interfering with NRG

entrainment studies - south of Long Beach Island. The Certificate Holder may coordinate around the NRG sampling schedule and submit a revised plan to the Commissioner for his review and written approval.

7. The Certificate Holder may submit in writing, project modification requests to the Commissioner for his review and written approval.

8. The Commissioner in his sole discretion may modify the disposal site authorized herein and direct dredged sediment to an alternate site for use as cap material, provided that no modification will take effect if such modification imposes uncompensated additional costs solely attributable to such modification on the Certificate Holder.

9. Sediment dredged pursuant to this authorization shall not be sold nor shall any fee for its use be charged without the express prior written authorization of the Commissioner and payment of a $4.00 per yard royalty to the State of Connecticut Department of Environmental Protection, pursuant to section 22a-361(e) of the General Statutes.

10. Not later than sixty (60) days following receipt of this authorization to conduct dredging, the Certificate Holder shall submit to the Commissioner a proposed schedule for the dredging project.

11. Dragging the bottom with a spoil barge, scow, vessel, beam or similar equipment outside of the area authorized by this certificate to be dredged or excavated is prohibited.

12. Sidecasting or in-water rehandling of dredged or excavated material is prohibited.

13. Spoil scows or barges shall be loaded and navigated in a manner which prevents uncontrollable motion or spillage and washout of dredged or excavated materials.

14. The Certificate Holder shall not dispose of dredged or excavated material as authorized herein unless ~~said disposal is supervised~~ and witnessed by an on-board inspector assigned ~~by~~ the United States Army Corps of Engineers-New England District.

15. Spoil scows or barges used by the Certificate Holder for disposal of dredged or excavated material as authorized hereunder shall travel to and from the Central Long Island Sound Disposal Site and approved CAD cell location utilizing sea lanes delineated by the United States Army Corps of Engineers-New England District.

16. The Certificate Holder shall point-dump dredged or excavated materials at a specified buoy or set of coordinates identified by United States Army Corps of Engineers-New England District within the disposal area authorized by this certificate.

17. The Certificate Holder shall establish a minimum of a 10 foot setback from any wetlands or watercourses in and adjacent to the area where work is to be conducted or areas which are to be used for access to the work area. Such setback area(s) shall be flagged so as to be readily identifiable by contractor personnel until the work authorized hereunder is completed.

18. Except as specifically authorized by this certificate, no equipment or material, including but not limited to, fill, construction materials, excavated material or debris shall be deposited, placed or stored in any wetland or watercourse on or off-site, or within any delineated setback area, nor shall any wetland, watercourse or delineated setback area be used as a staging area or accessway other than as provided herein.

19. Not later than three weeks prior to the commencement of any dredging authorized herein, the Certificate Holder shall submit to both the Department of Agriculture/Bureau of Aquaculture and the Department of Environmental Protection/OLISP, on the form attached hereto as Appendix A, the name(s) and address(es) of any contractor(s) employed to conduct such work and the expected date for commencement and completion of such work.

20. On or before (a) 90 days after completion of the work authorized herein, or (b) upon expiration of the work completion date or any authorized one year extension thereof, whichever is earlier, the Certificate Holder shall submit to the Commissioner "as dredged" survey of the work area showing contours, bathymetries, and tidal datums prepared and sealed by a licensed engineer, licensed surveyor or licensed architect, as applicable, of the work area showing all contours, bathymetries, tidal datums and structures.

GENERAL TERMS AND CONDITIONS

1. All work authorized by this certificate shall be completed within three years from date of issuance of this certificate ("work completion date") in accordance with all conditions of this certificate and any other applicable law.

    a. The Certificate Holder may request a one-year extension of the work completion date. Such request shall be in writing and shall be submitted to the Commissioner at least 30 days prior to said work completion date. Such request shall describe the work done to date, work which still needs to be completed and the reason for such extension. The Commissioner shall grant or deny such request in his sole discretion.

    b. Any work authorized herein conducted after said work completion date or any authorized one year-extension thereof is a violation of this certificate and may subject the Certificate Holder to enforcement action, including penalties, as provided by law.

2. In conducting the work authorized herein, the Certificate Holder shall not deviate from the attached plans, as may be modified by this certificate. The Certificate Holder shall not make de minimis changes from said plans without prior written approval of the Commissioner.

3. Prior to the commencement of any work authorized hereunder, the Certificate Holder shall cause a copy of this certificate to be given to any contractor(s) employed to conduct such work. At the work area the Certificate Holder shall, whenever work is being performed, make available for inspection a copy of this certificate and the final plans for the work authorized herein.

4. The Certificate Holder shall notify the Commissioner in writing of the commencement of any work and completion of all work authorized herein no later than three days prior to the commencement of such work and no later than seven days after the completion of such work.

5. The Certificate Holder shall dispose of aquatic sediments in accordance with the terms and conditions of this certificate. All waste material generated by the performance of the work authorized herein shall be disposed of by the Certificate Holder.

6. In undertaking the work authorized hereunder, the Certificate Holder shall not cause or allow pollution of wetlands or watercourses, including pollution resulting from sedimentation and erosion. For purposes of this certificate, "pollution" means "pollution" as that term is defined by section 22a-423 of the General Statutes.

7. Upon completion of any work authorized herein, the Certificate Holder shall restore all areas impacted by construction, or used as a staging area or accessway in connection with such work, to their condition prior to the commencement of such work.

8. Any document required to be submitted to the Commissioner under this certificate or any contact required to be made with the Commissioner shall, unless otherwise specified in writing by the Commissioner, be directed to:

   Certificate Section
   Office of Long Island Sound Programs
   Department of Environmental Protection
   79 Elm Street
   Hartford, Connecticut 06106-5127
   (860) 424-3034
   Fax # (860) 424-4054

9. The date of submission to the Commissioner of any document required by this certificate shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under this certificate, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in this certificate, the word "day" as used in this certificate means calendar day. Any document or action which is required by this certificate to be submitted or performed by a date which falls on a Saturday, Sunday or a Connecticut or federal holiday shall be submitted or performed on or before the next day which is not a Saturday, Sunday, or a Connecticut or federal holiday.

10. The work specified in the <u>SCOPE OF AUTHORIZATION</u> is authorized solely for the purpose set out in this certificate. No change in the purpose or use of the authorization work or facilities as set forth in this certificate may occur without the prior written authorization of the Commissioner. The Certificate Holder shall, prior to undertaking or allowing any change in use or purpose from that which is authorized by this certificate, request authorization from the Commissioner for such change. Said request shall be in writing and shall describe the

proposed change and the reason for the change.

11. This certificate may be revoked, suspended, or modified in accordance with applicable law.

12. This certificate is not transferable without prior written authorization of the Commissioner. A request to transfer a certificate shall be submitted in writing and shall describe the proposed transfer and the reason for such transfer. The Certificate Holder's obligations under this certificate shall not be affected by the passage of title to the work area to any other person or municipality until such time as a transfer is authorized by the Commissioner.

13. The Certificate Holder shall allow any representative of the Commissioner to inspect the work authorized herein at reasonable times to ensure that it is being or has been accomplished in accordance with the terms and conditions of this certificate.

14. In granting this certificate, the Commissioner has relied on representations of the Certificate Holder, including information and data provided in support of the Certificate Holder's application. Neither the Certificate Holder's representations nor the issuance of this certificate shall constitute an assurance by the Commissioner as to the structural integrity, the engineering feasibility or the efficacy of such design.

15. In the event that the Certificate Holder becomes aware that he did not or may not comply, or did not or may not comply on time, with any provision of this certificate or of any document required hereunder, the Certificate Holder shall immediately notify the Commissioner and shall take all reasonable steps to ensure that any noncompliance or delay is avoided or, if unavoidable, is minimized to the greatest extent possible. In so notifying the Commissioner, the Certificate Holder shall state in writing the reasons for the noncompliance or delay and propose, for the review and written approval of the Commissioner, dates by which compliance will be achieved, and the Certificate Holder shall comply with any dates which may be approved in writing by the Commissioner. Notification by the Certificate Holder shall not excuse noncompliance or delay and the Commissioner's approval of any compliance dates proposed shall not excuse noncompliance or delay unless specifically stated by the Commissioner in writing.

16. In evaluating the application for this certificate the Commissioner has relied on information and data provided by the Certificate Holder and on the Certificate Holder's representations concerning site conditions, design specifications and the proposed work authorized herein, including but not limited to representations concerning the commercial, public or private nature of the work or structures authorized herein, the water-dependency of said work or structures, its availability for access by the general public, and the ownership of regulated structures or filled areas. If such information proves to be false, deceptive, incomplete or inaccurate, this certificate may be modified, suspended or revoked, and any unauthorized activities may be subject to enforcement action.

17. The Certificate Holder may not conduct work waterward of the high tide line or in tidal wetlands at this certificate site other than the work authorized herein, unless otherwise authorized by the Commissioner pursuant to section 22a-359 et. seq. and/or section 22a-32 et.

seq. of the General Statutes.

18. The issuance of this certificate does not relieve the Certificate Holder of his obligations to obtain any other approvals required by applicable federal, state and local law.

19. Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under this certificate shall be signed by the Certificate Holder and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense."

20. This certificate is subject to and does not derogate any present or future property rights or powers of the State of Connecticut, and conveys no property rights in real estate or material nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the property or activity affected hereby.

Issued on January 5, 2004.

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Arthur J. Rocque, Jr.
Commissioner

Certificate Application No. 200201943-SJ
U.S. Army Corps of Engineers, NED

Certified Mail #_____

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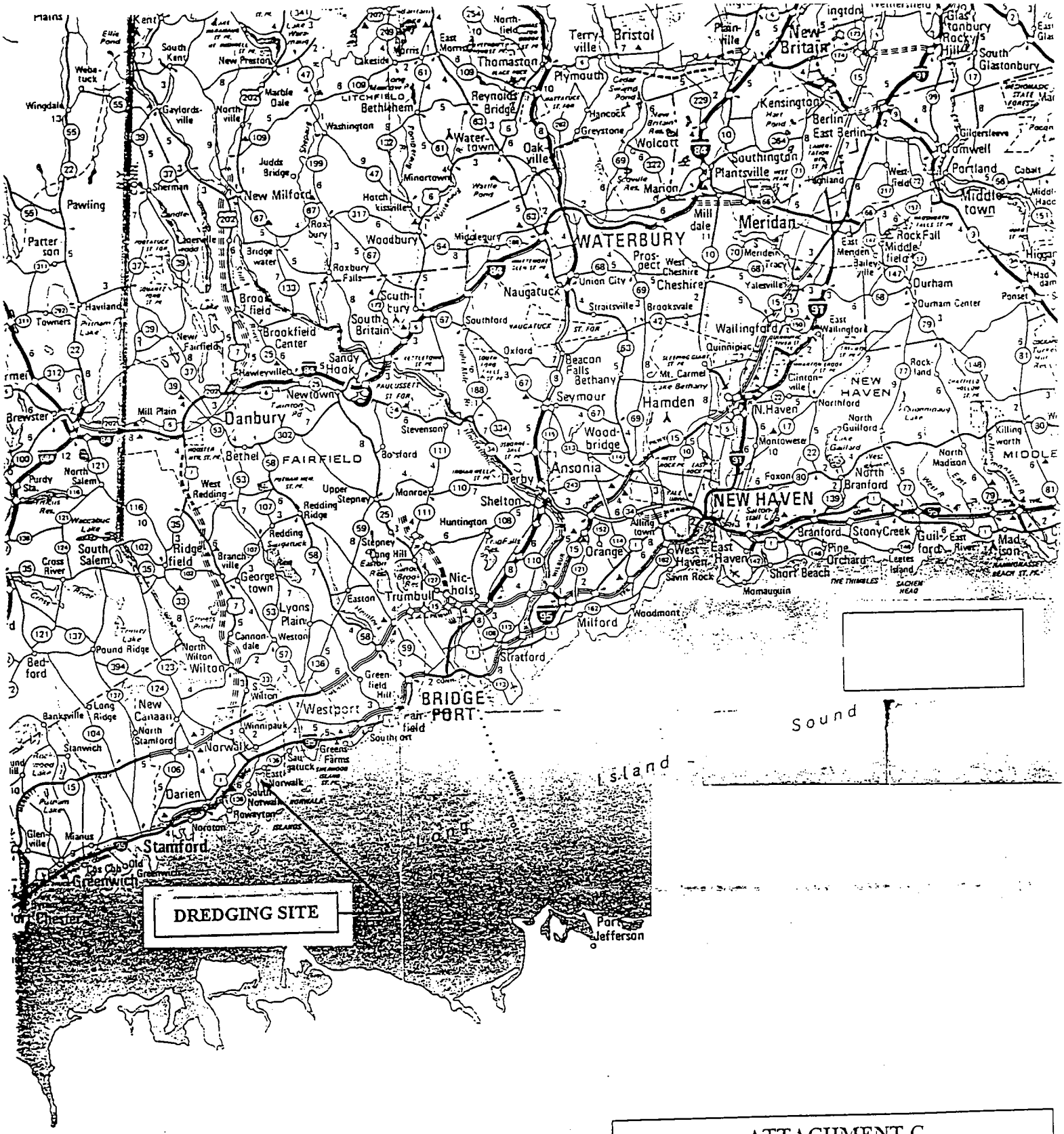
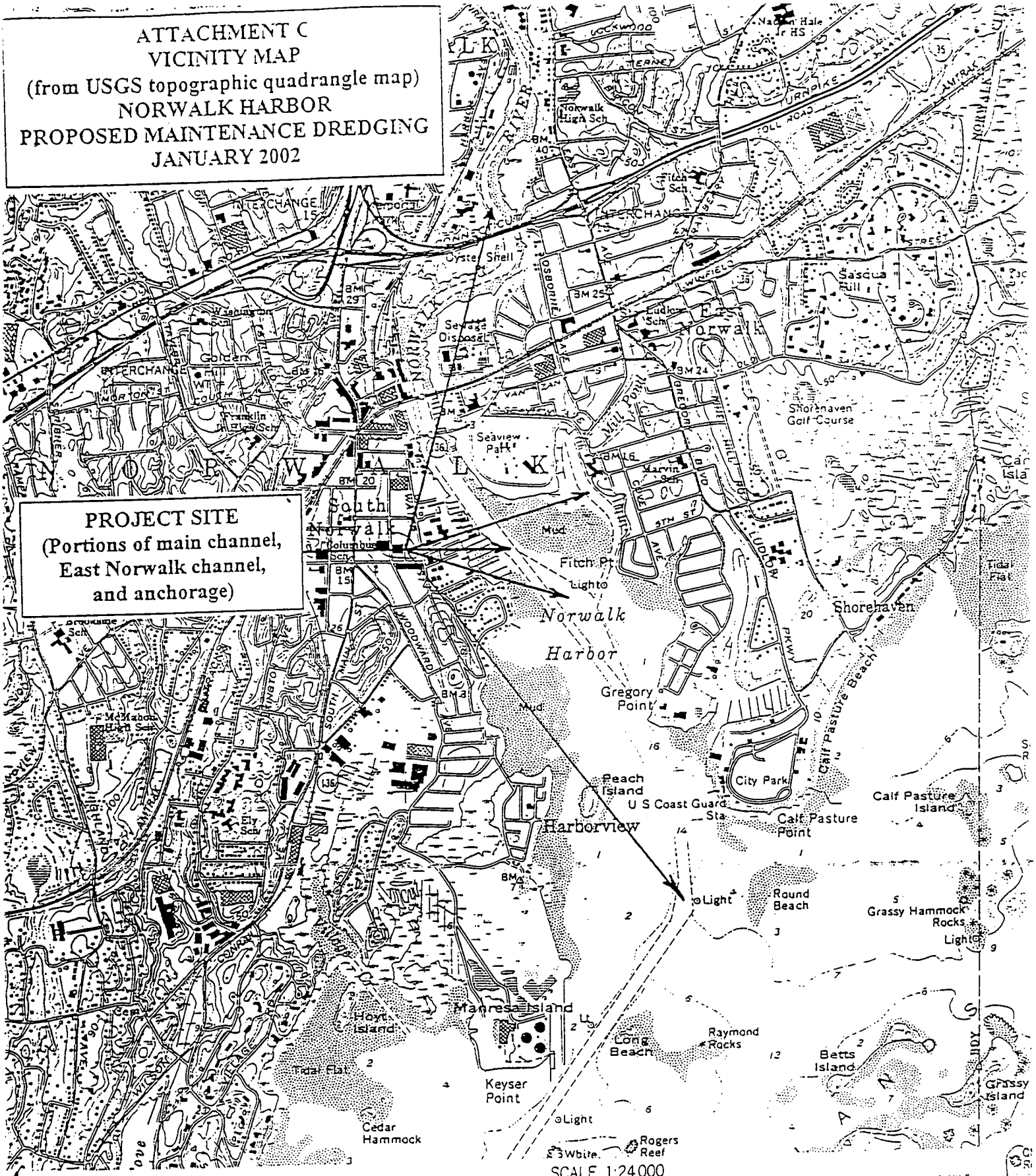


ATTACHMENT C
VICINITY MAP
NORWALK HARBOR
PROPOSED MAINTENANCE DREDGING
JANUARY 2002

1 of 23

Scale in Miles 5 0 5 10 15
Scale in Kilometers 5 0 5 10 15
ONE INCH EQUALS APPROXIMATELY 7 MILES OR 11.3 KILOMETERS

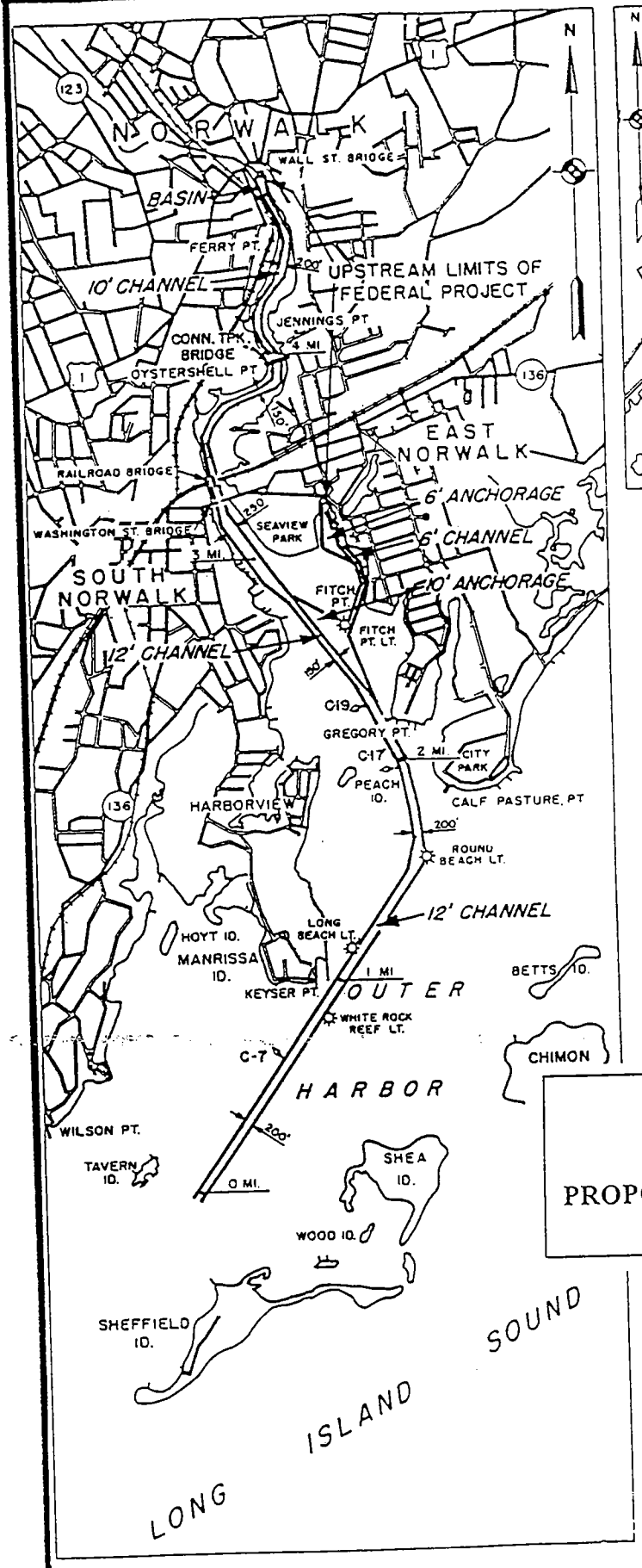
ATTACHMENT C
VICINITY MAP
(from USGS topographic quadrangle map)
NORWALK HARBOR
PROPOSED MAINTENANCE DREDGING
JANUARY 2002

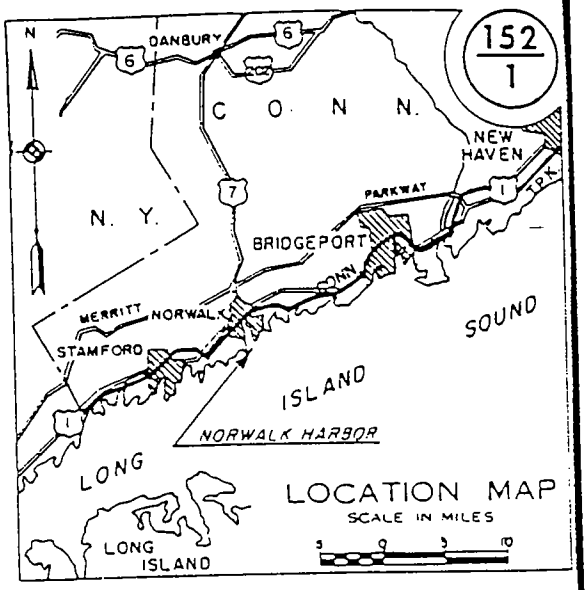


CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER
THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER

CORPS OF ENGINEERS

U. S. ARMY





BRIDGE CLEARANCES

WASHINGTON STREET BRIDGE (BASCULE)
Hor. 70 ft.
VERT. 8.3 ft. M.H.W.

RAILROAD BRIDGE (SWING)
Hor. 55. left draw
58.4 right draw
Vert. 16.2 ft. M.H.W

CONN. TURNPIKE BRIDGE (FIXED)
HOR. 100 FT.
VERT. 60 FT. M.L.W.

FOR ENLARGEMENT OF EAST NORWALK CHANNEL SEE 152/2

ATTACHMENT C
GENERAL PLAN VIEW
NORWALK HARBOR
PROPOSED MAINTENANCE DREDGING
JANUARY 2002

NORWALK HARBOR
CONN.

3 of 23

SCALE IN FEET
2000 4000 6000

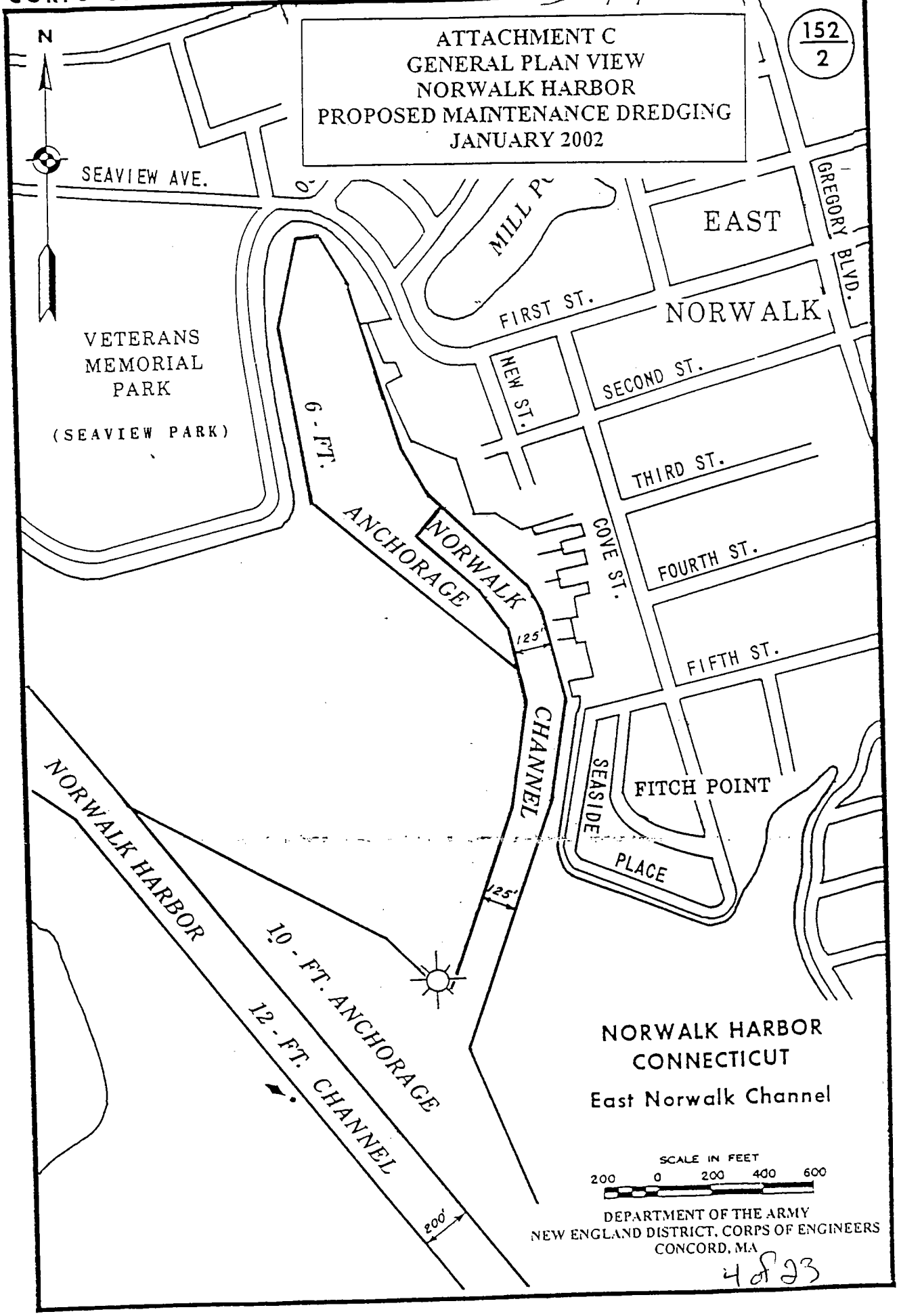
DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
CONCORD, MA

CORPS OF EN .NEERS

U. S. ARMY

152/2

ATTACHMENT C
GENERAL PLAN VIEW
NORWALK HARBOR
PROPOSED MAINTENANCE DREDGING
JANUARY 2002



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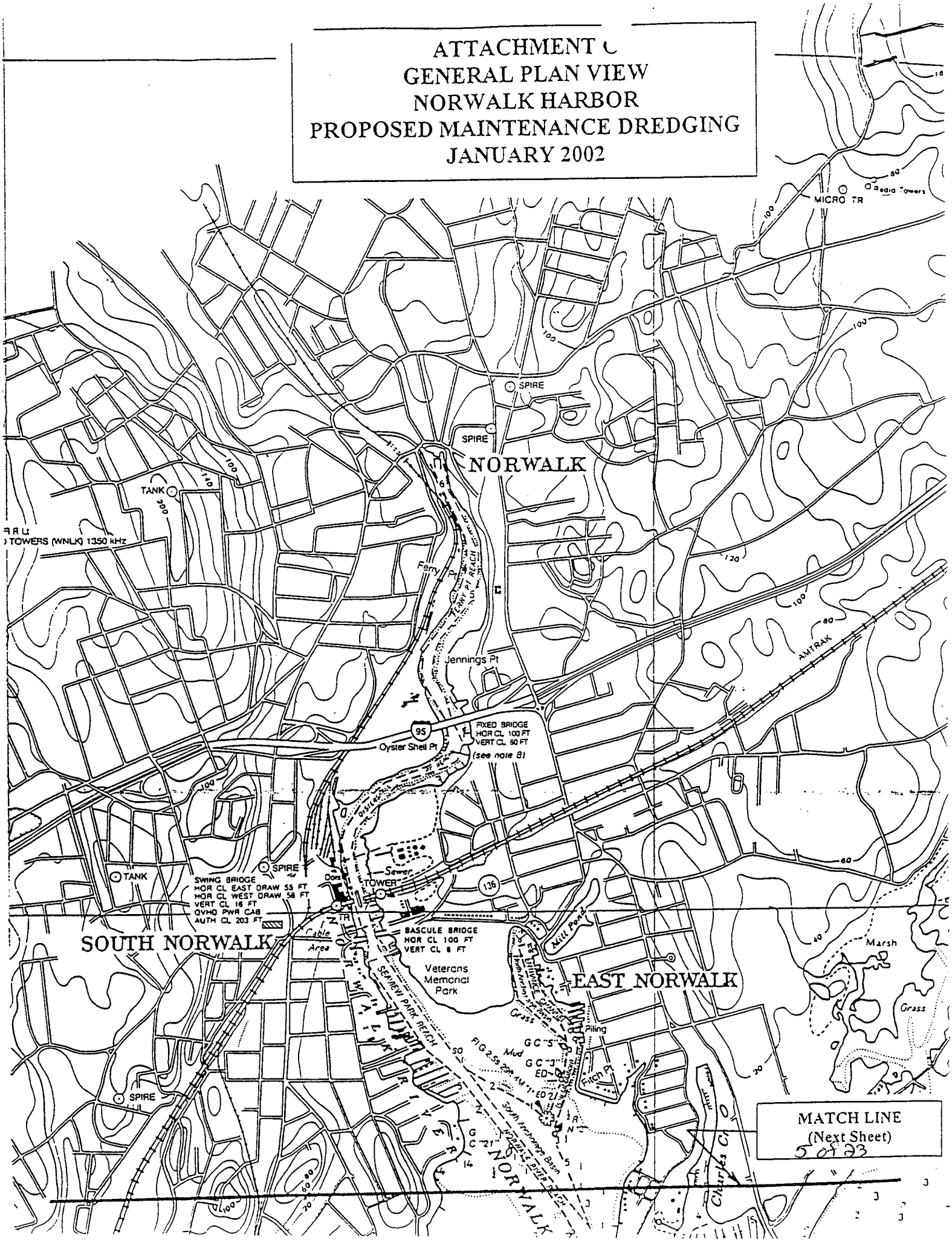
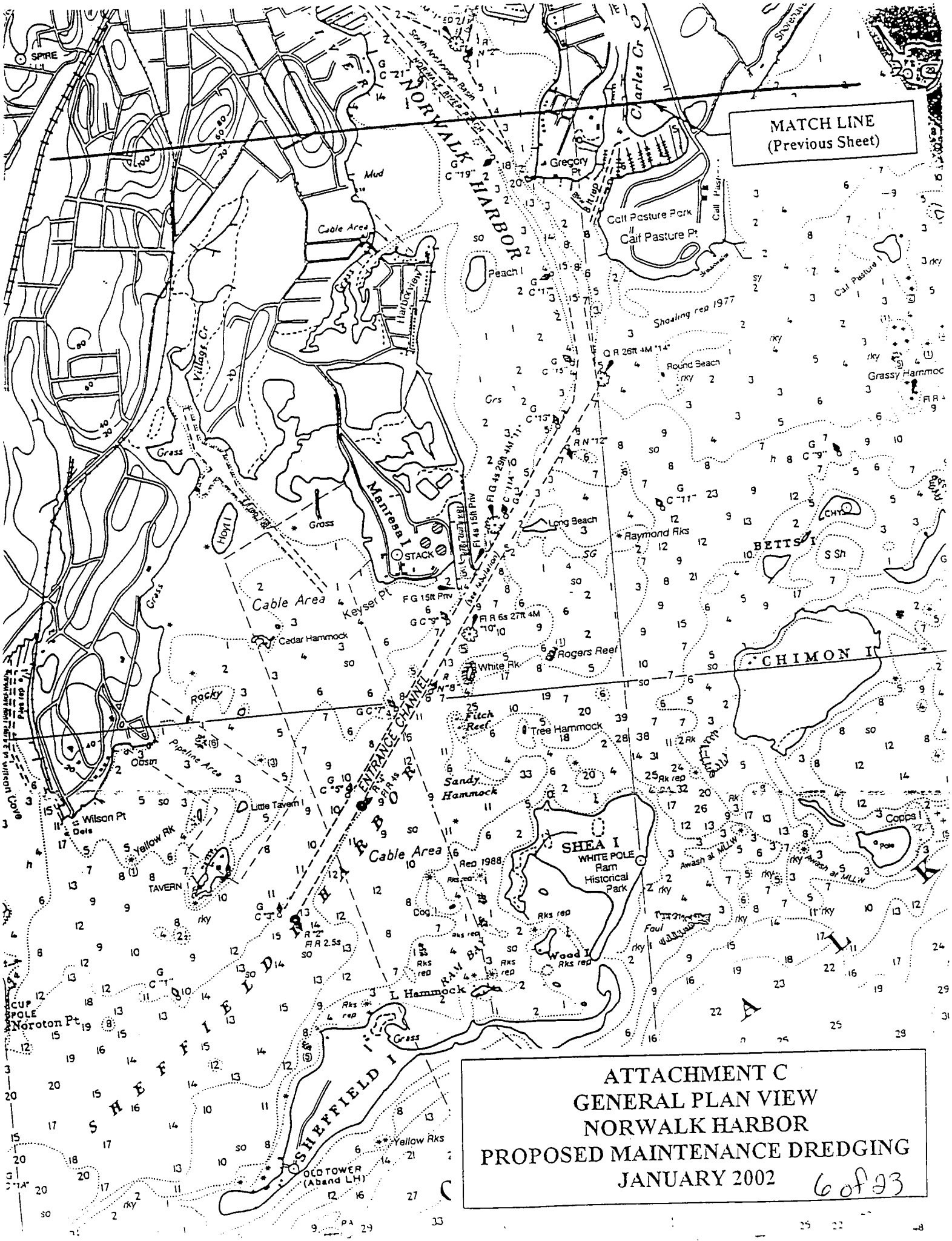
ATTACHMENT C
GENERAL PLAN VIEW
NORWALK HARBOR
PROPOSED MAINTENANCE DREDGING
JANUARY 2002





ATTACHMENT C
GENERAL PLAN VIEW
NORWALK HARBOR
PROPOSED MAINTENANCE DREDGING
JANUARY 2002

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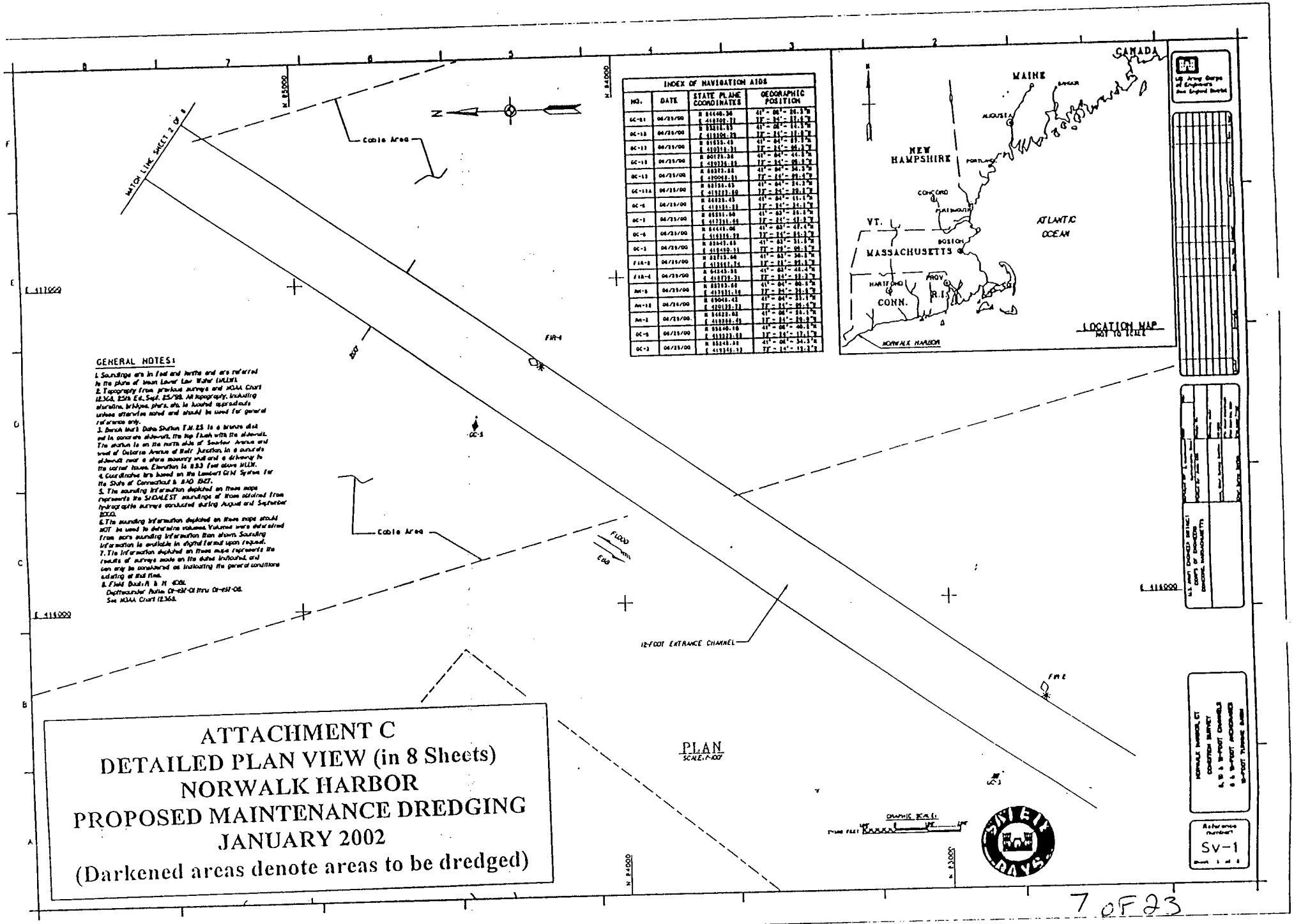

ATTACHMENT C
DETAILED PLAN VIEW (in 8 Sheets)
NORWALK HARBOR
PROPOSED MAINTENANCE DREDGING
JANUARY 2002
(Darkened areas denote areas to be dredged)

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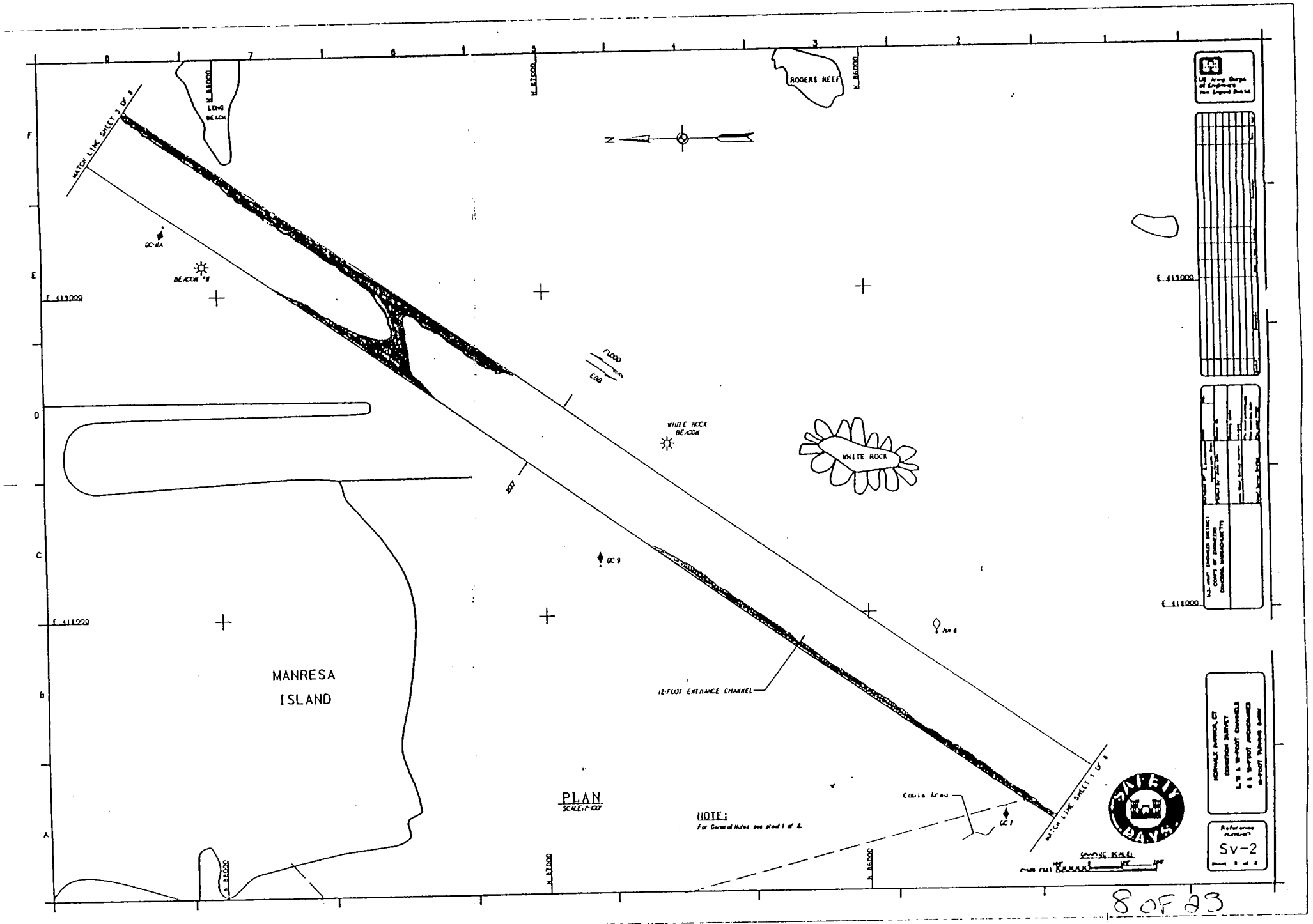

8 OF 23

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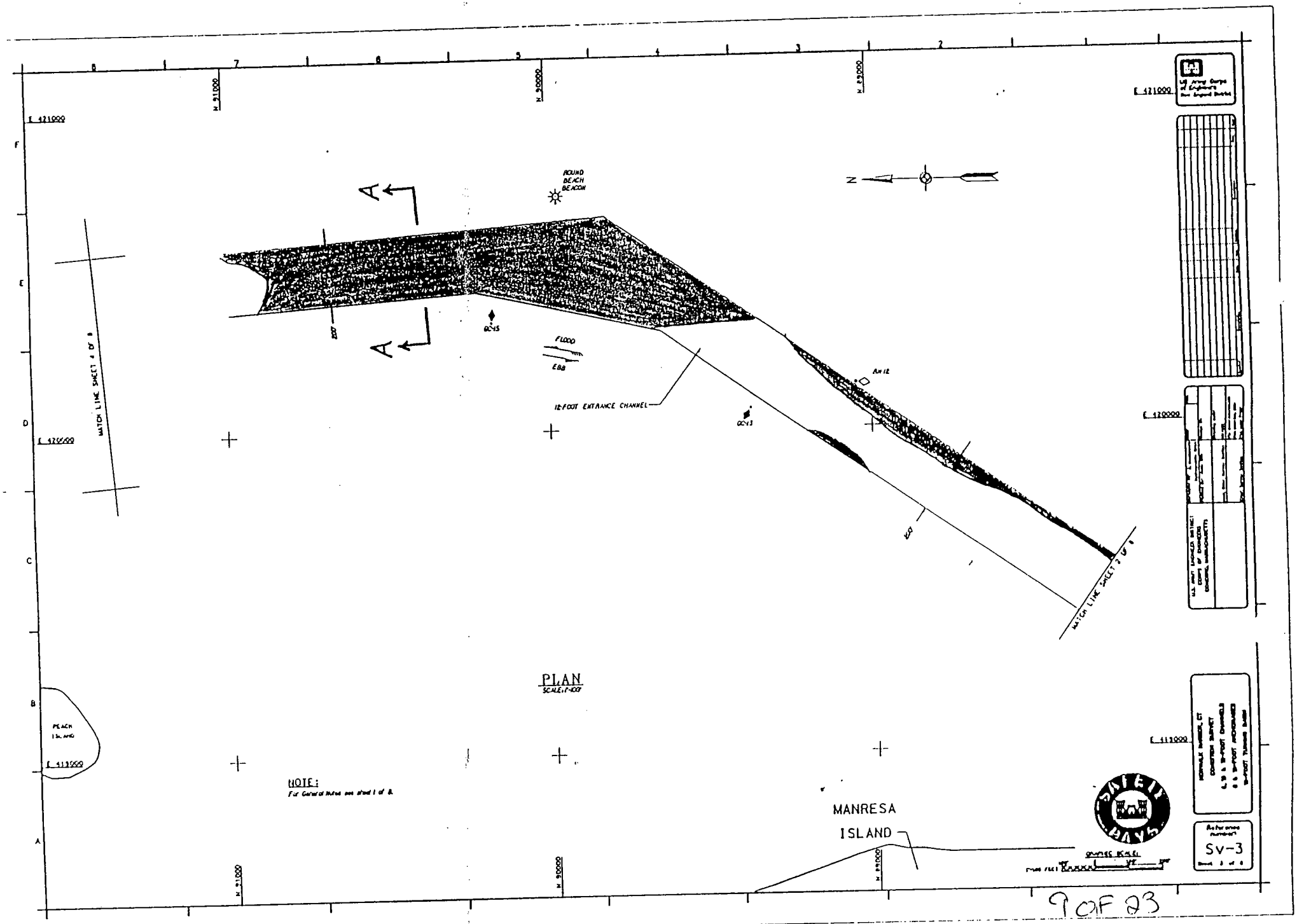

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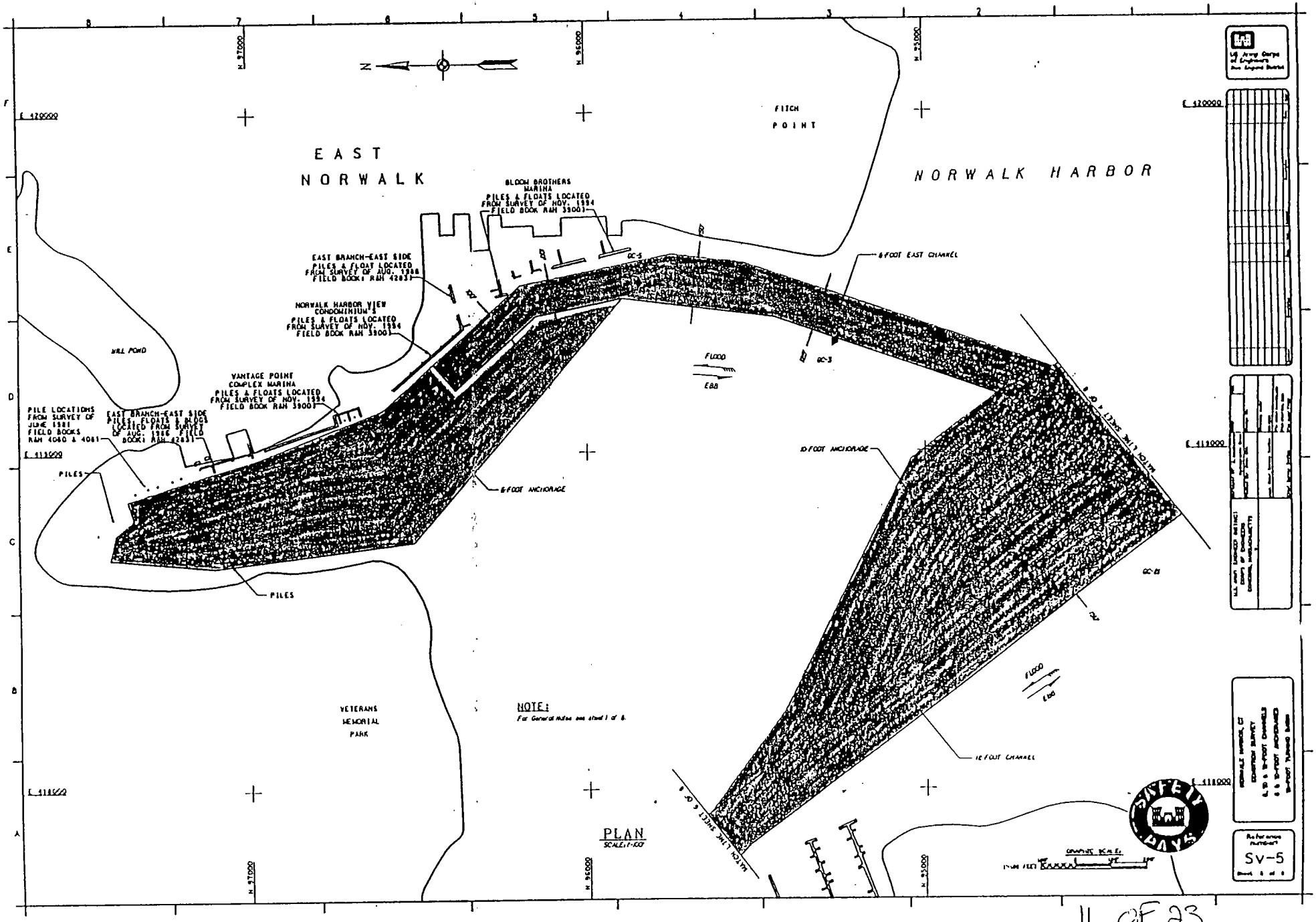
EAST
NORWALK
GREGORY
POINT
GALE PASTURE PARK
N
MATCH LINE SHEET 3 OF 8
MATCH LINE SHEET 5 OF 8
10-FOOT ANCHORAGE
12-FOOT ENTRANCE CHANNEL
FLOOD
EBB
NORWALK HARBOR
PEACH
ISLAND
HARBORVIEW
E 120000
E 112000
N 94000
N 93000
N 92000
PLAN
SCALE: 1"=100'
NOTE:
Sv-4
10 OF 83



11 OF 23

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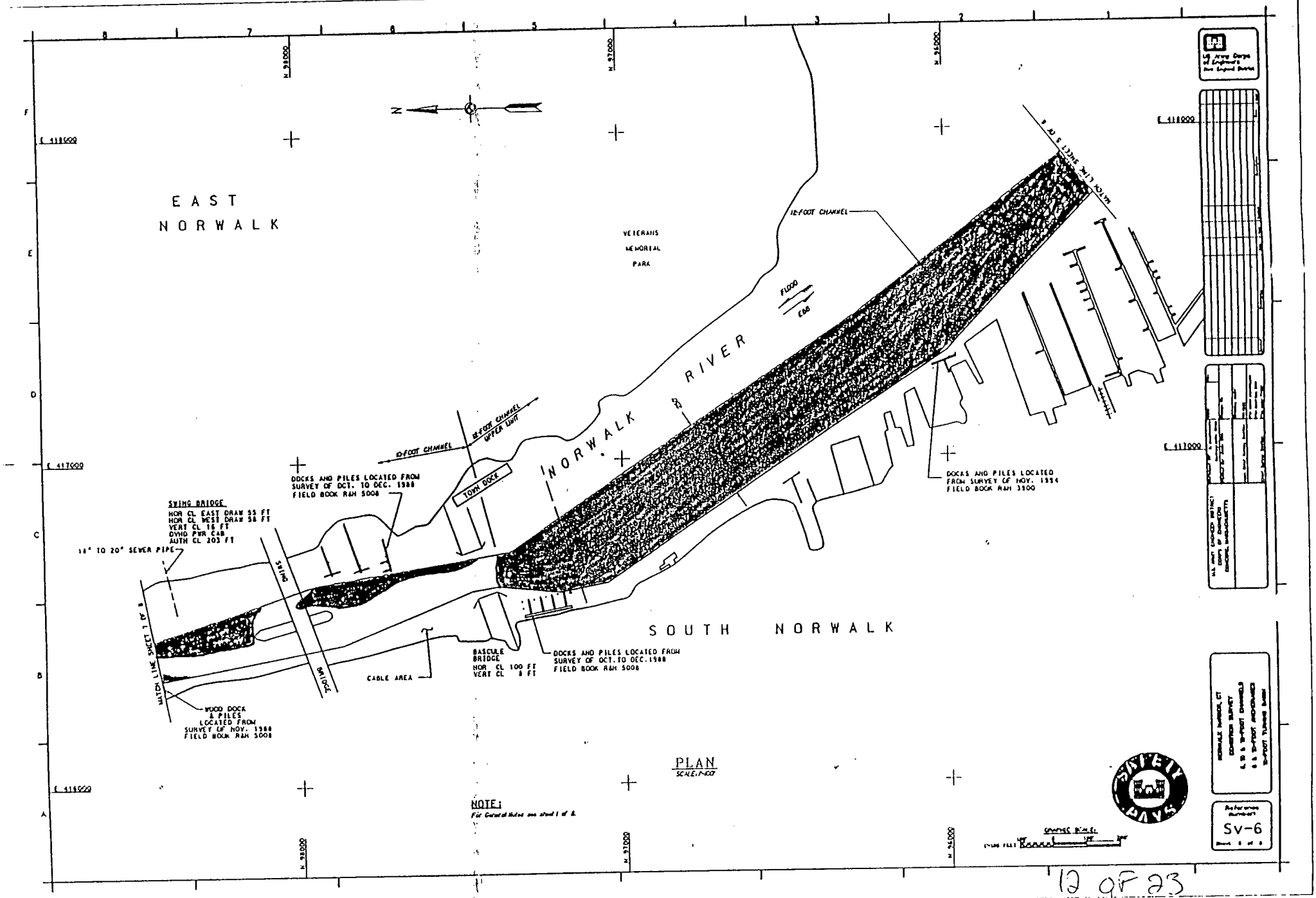

12 OF 23

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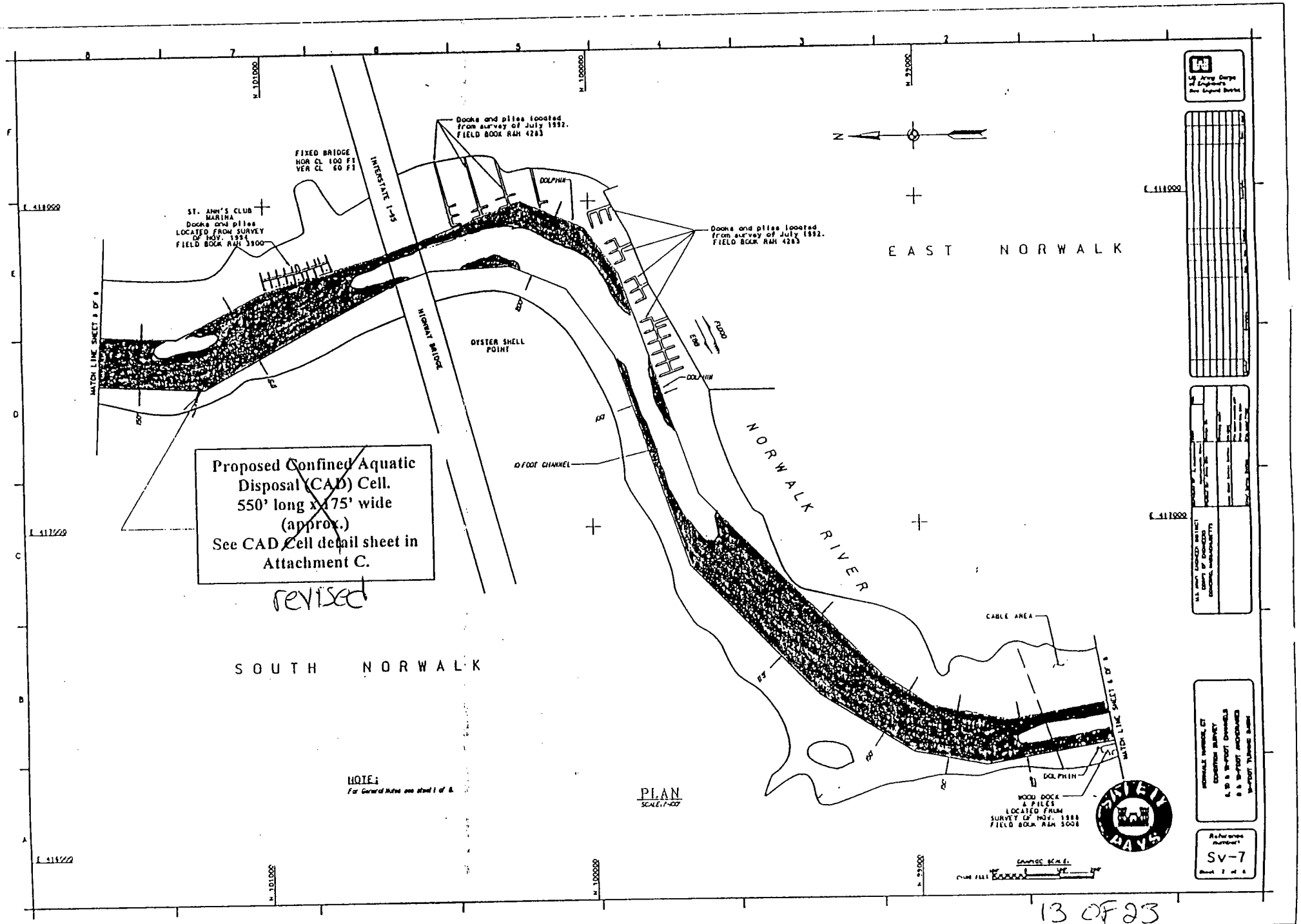
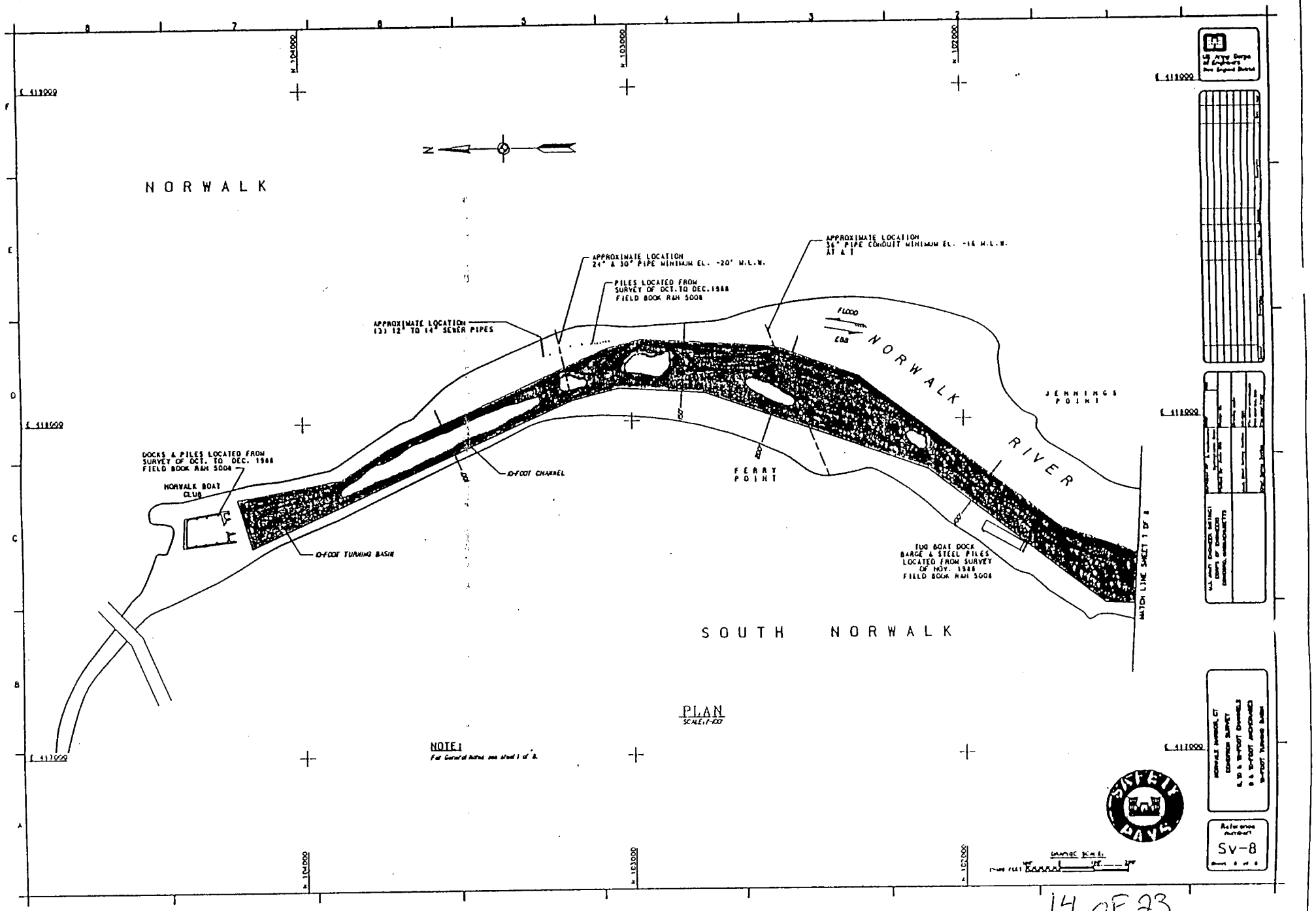

Docks and piles located from survey of July 1992. FIELD BOOK RAH 4283
FIXED BRIDGE HOR CL 100 FT VER CL 60 FT
INTERSTATE I-95
ST. ANN'S CLUB MARINA Docks and piles LOCATED FROM SURVEY OF NOV. 1991 FIELD BOOK RAH 3900
DOLPHIN
Docks and piles located from survey of July 1992. FIELD BOOK RAH 4283
EAST NORWALK
MATCH LINE SHEET 5 OF 8
HIGHWAY BRIDGE
OYSTER SHELL POINT
FLOOD
EBB
DOLPHIN
10 FOOT CHANNEL
NORWALK RIVER
Proposed Confined Aquatic Disposal (CAD) Cell. 550' long x 175' wide (approx.) See CAD Cell detail sheet in Attachment C.
revised
SOUTH NORWALK
CABLE AREA
MATCH LINE SHEET 6 OF 8
DOLPHIN
WOOD DOCK & PILES LOCATED FROM SURVEY OF NOV. 1988 FIELD BOOK RAH 3008
NOTE:
PLAN
SCALE: 1"=50'
SAFE HAVEN
Sv-7
13 OF 23


NORWALK
SOUTH NORWALK
NORWALK RIVER
JENNINGS POINT
FERRY POINT
FLOOD
EBB
APPROXIMATE LOCATION 24" & 30" PIPE MINIMUM EL. -20' M.L.W.
PILES LOCATED FROM SURVEY OF OCT. TO DEC. 1988 FIELD BOOK RAH 5008
APPROXIMATE LOCATION 36" PIPE CONDUIT MINIMUM EL. -16 M.L.W. AT A T
APPROXIMATE LOCATION (3) 12" TO 14" SEWER PIPES
DOCKS & PILES LOCATED FROM SURVEY OF OCT. TO DEC. 1988 FIELD BOOK RAH 5004
NORWALK BOAT CLUB
10-FOOT CHANNEL
10-FOOT TURNING BASIN
TUG BOAT DOCK BARGE & STEEL PILES LOCATED FROM SURVEY OF NOV. 1988 FIELD BOOK RAH 5008
MATCH LINE SHEET 1 OF 8
PLAN
SCALE: 1"=100'
NOTE:
Sv-8

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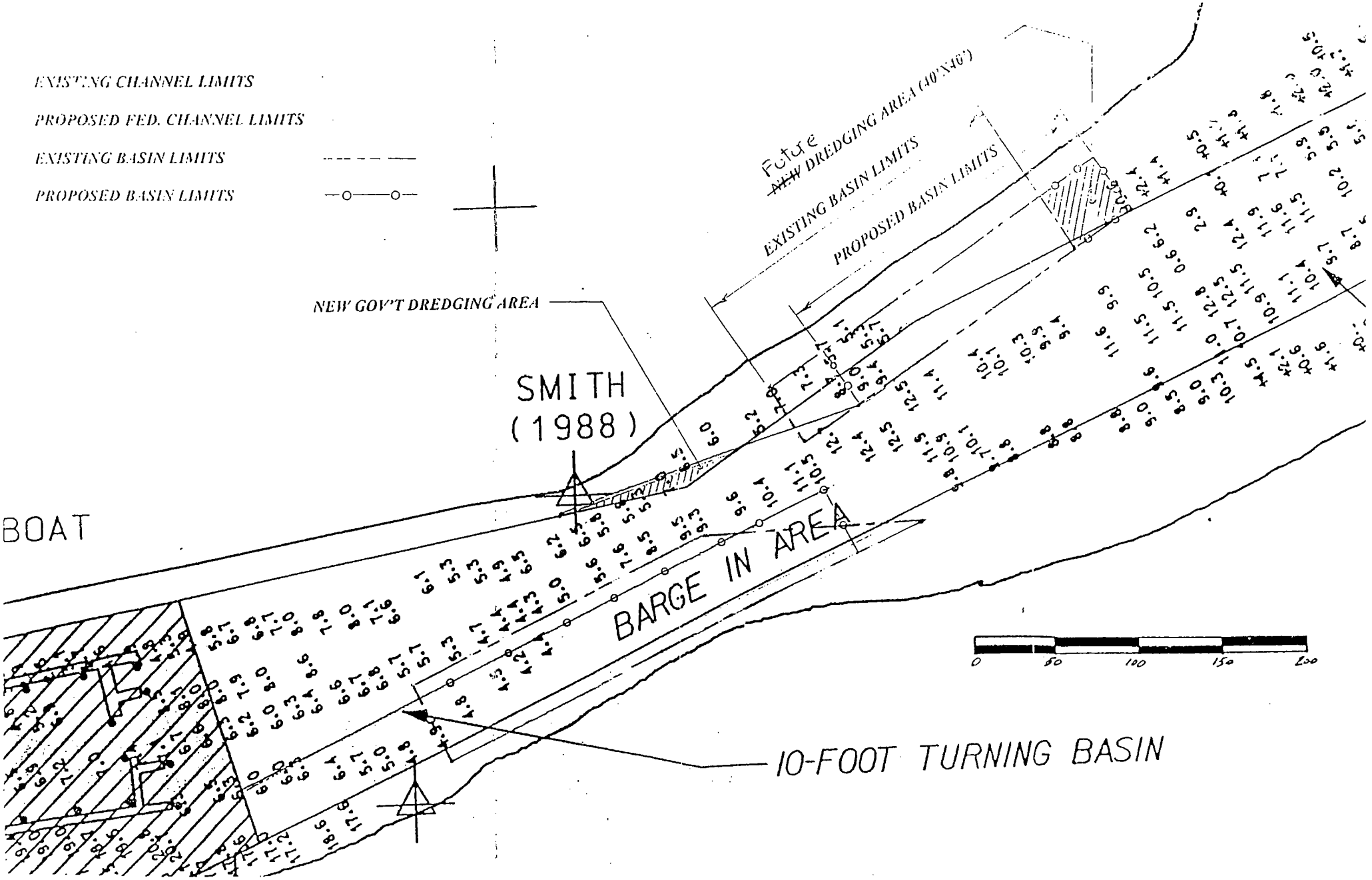

EXISTING CHANNEL LIMITS
PROPOSED FED. CHANNEL LIMITS
EXISTING BASIN LIMITS
PROPOSED BASIN LIMITS
Future
~~NEW~~ DREDGING AREA (40'X40')
EXISTING BASIN LIMITS
PROPOSED BASIN LIMITS
NEW GOV'T DREDGING AREA
SMITH
(1988)
BOAT
BARGE IN AREA
10-FOOT TURNING BASIN
0
50
100
150
200

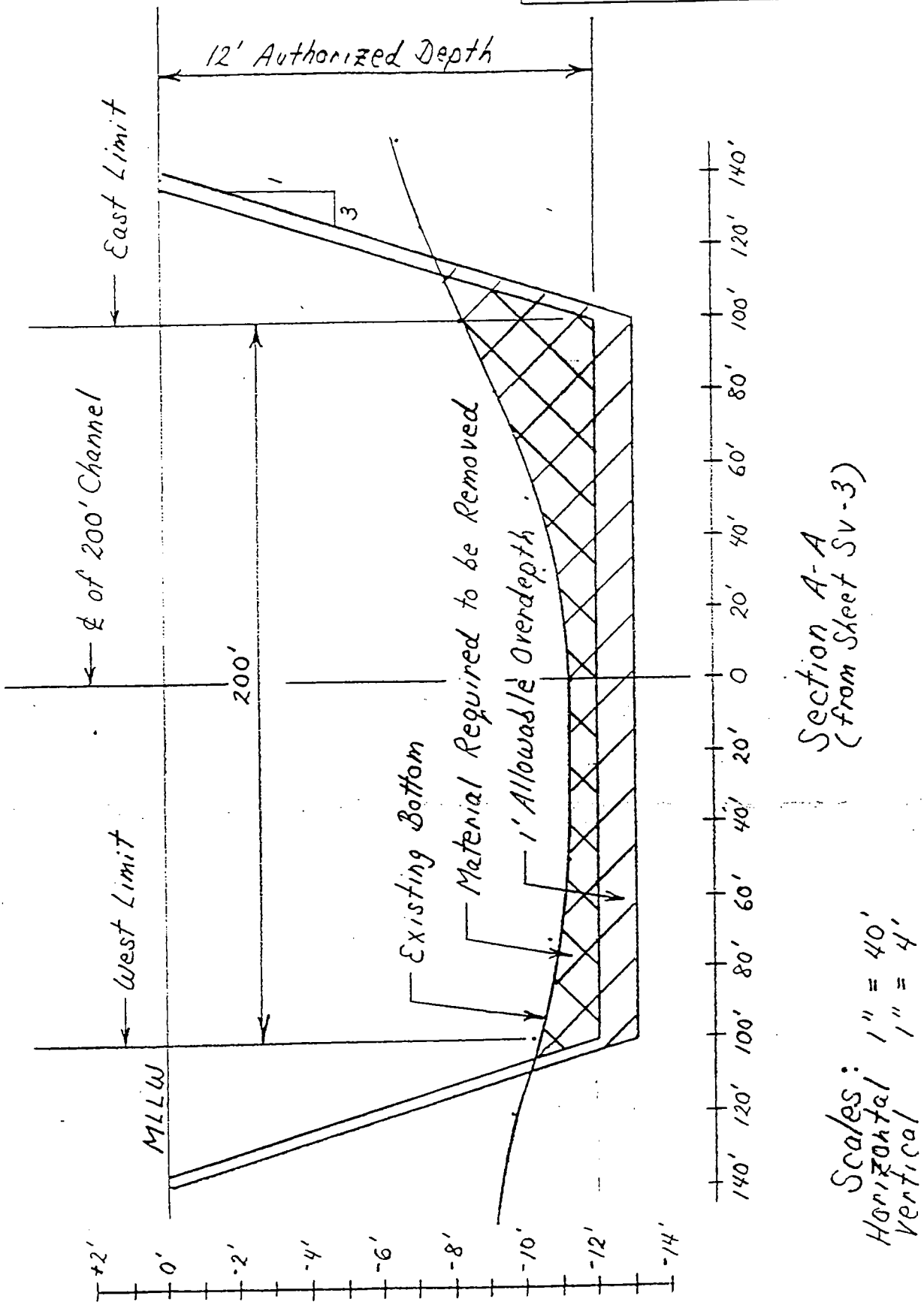
NED FORM 223
27 Sept 49

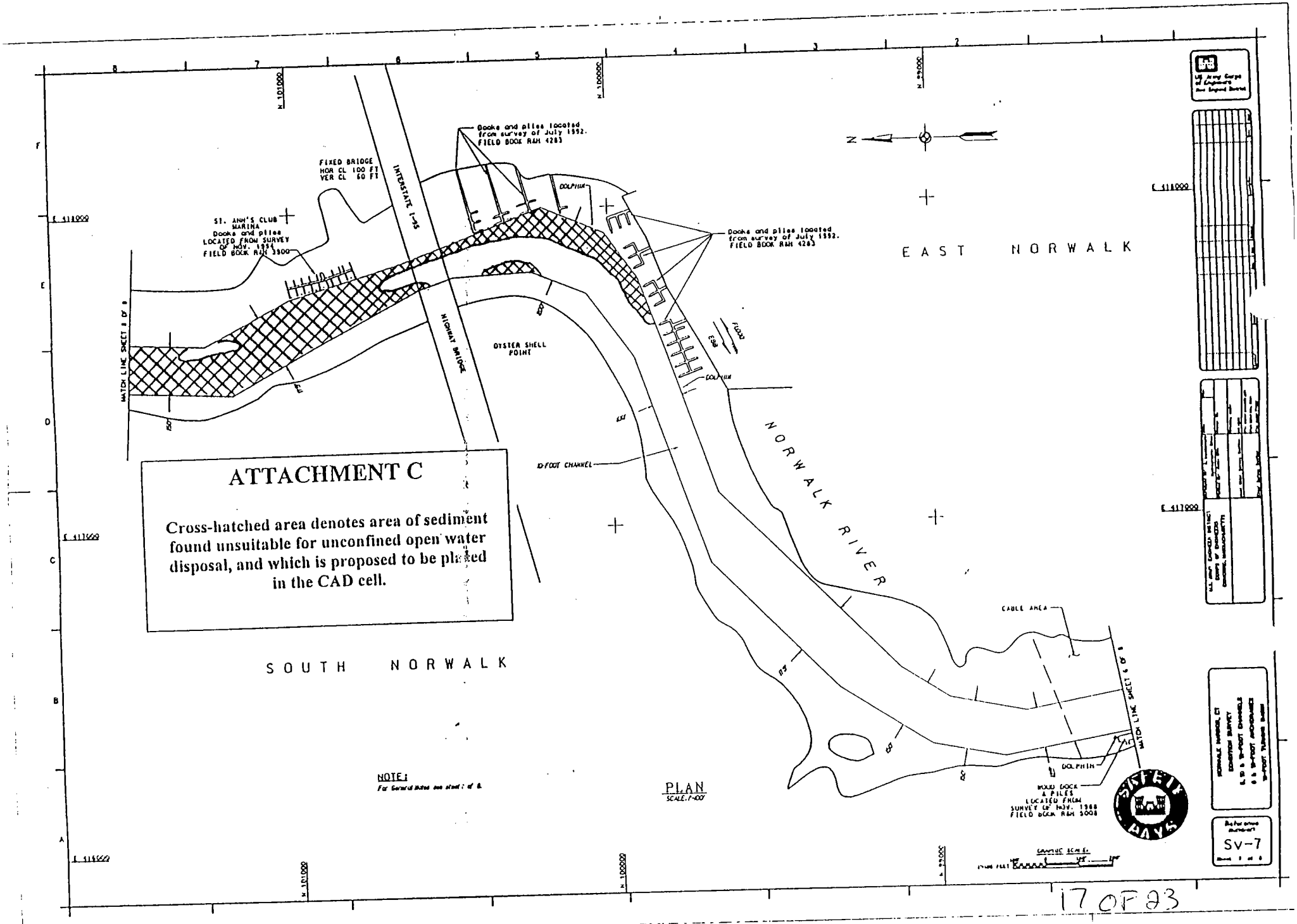
NEW ENGLAND
CORPS OF ENGINEERS

SUBJECT
COMPUTATION
COMPUTED BY CHECKED BY

ATTACHMENT C
CROSS-SECTION
NORWALK HARBOR
PROPOSED MAINTENANCE DREDGING

16 OF 23





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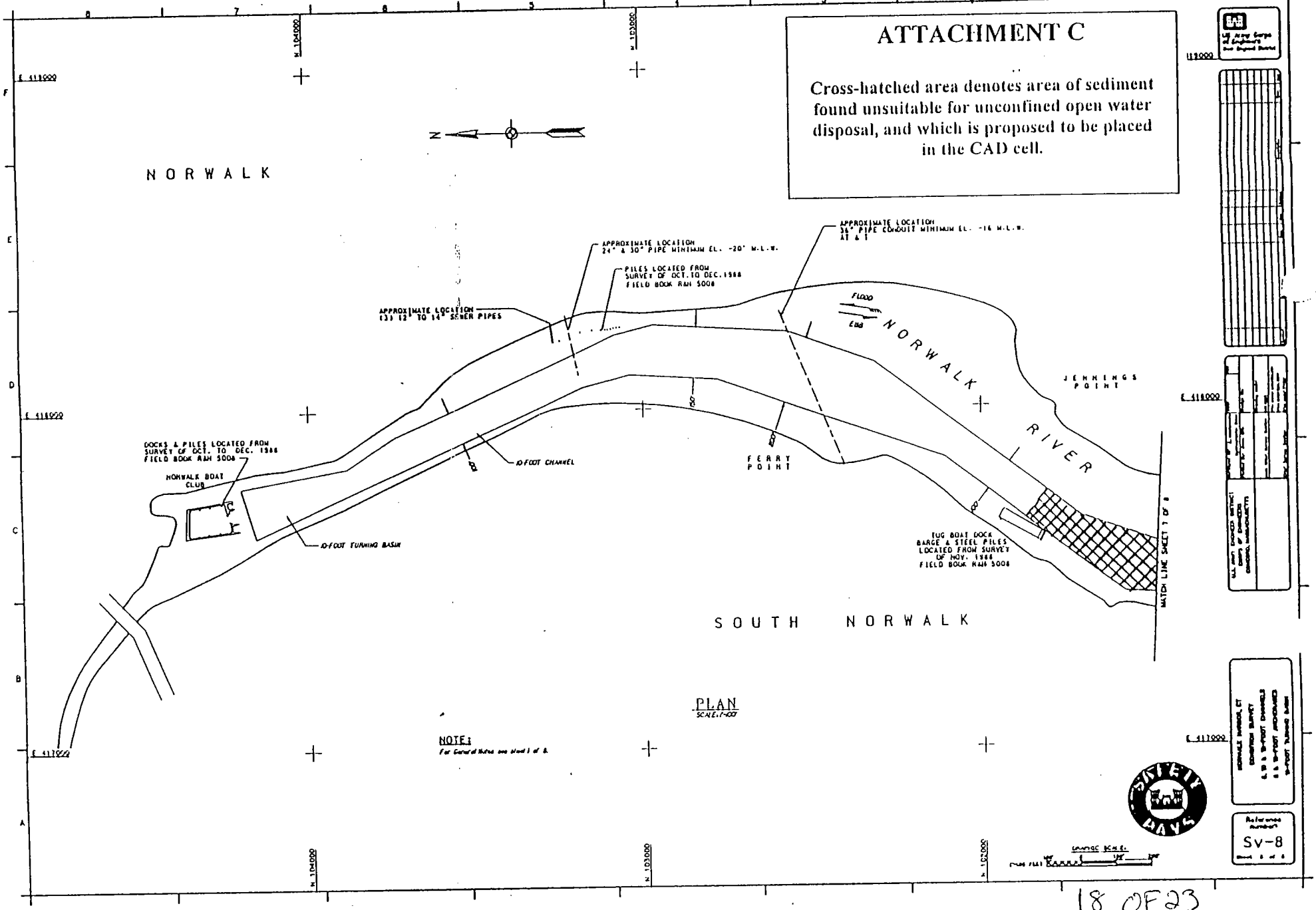
ATTACHMENT C

Cross-hatched area denotes area of sediment found unsuitable for unconfined open water disposal, and which is proposed to be placed in the CAD cell.



18 OF 23

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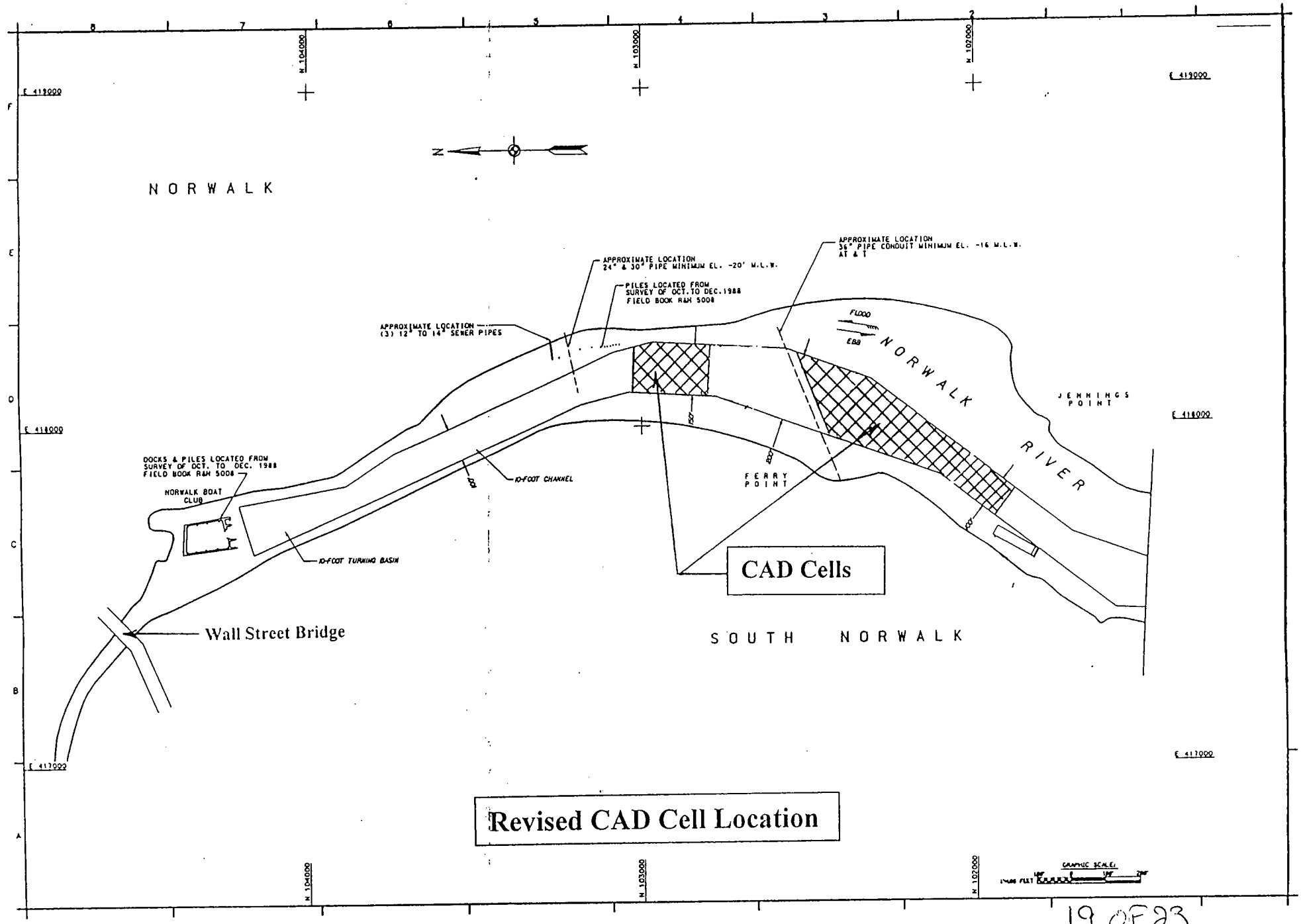


Revised CAD Cell Location

19 OF 23

ATTACHMENT

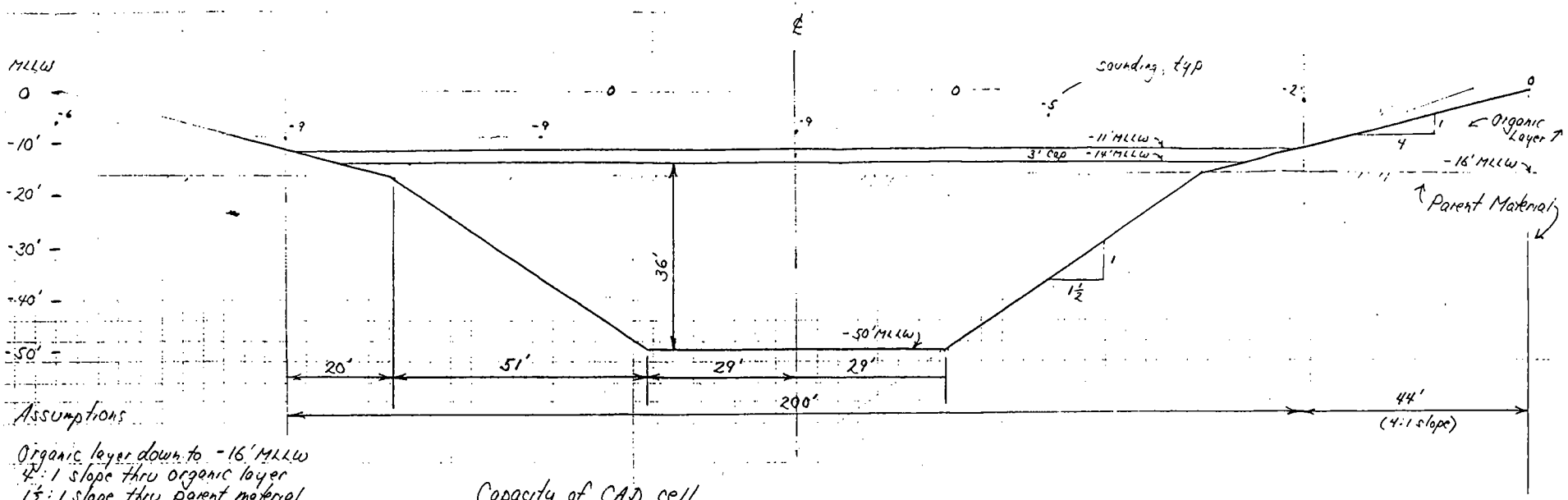
NED FORM 223
27 Sept 49

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY

SUBJECT COMPUTATION

COMPUTED BY CHECKED BY DATE 8-8-03

PAGE 1



Assumptions

Organic layer down to -16' MLLW
4:1 slope thru organic layer
1½:1 slope thru parent material

32,000 CY of contaminated sediment
× 1.3 bulking factor
41,600 CY

Say 42,000 CY

Capacity of CAD cell

51' × 36' = 1836 SF
58' × 36' = 2088 SF
3924 SF per 1' length

∴ $\frac{42{,}000 \text{ CY} \times 27}{3924 \text{ SF}}$ = 290' req'd if 200' channel width

29' + 20' additional if keep cap on 1½:1 slope

NED FORM 223
27 Sept 49

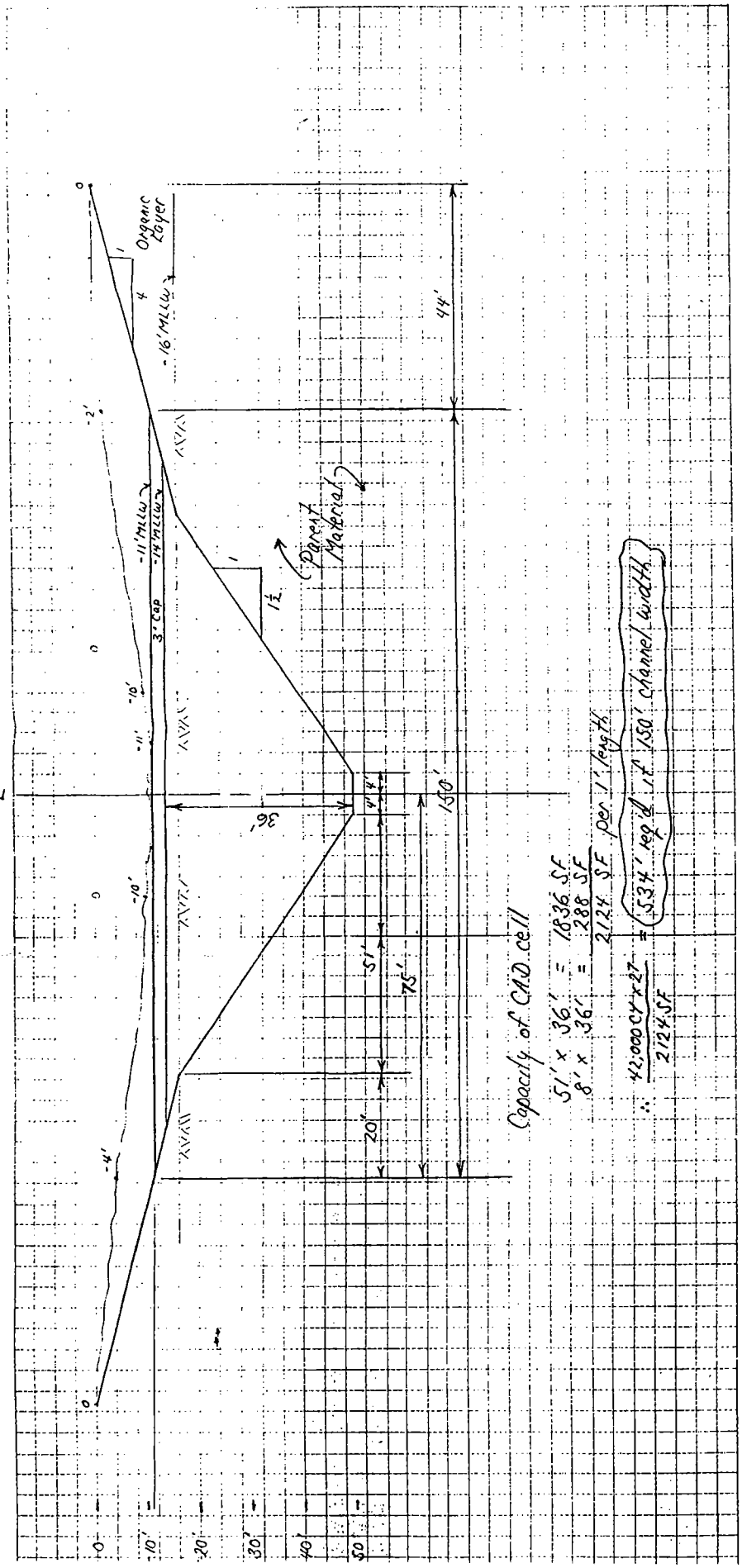
NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY

PAGE 2

SUBJECT

COMPUTATION

COMPUTED BY CHECKED BY DATE F 8-8-03



Capacity of CAD cell

51' x 36' = 1836 SF
8' x 36' = 288 SF
2124 SF per 1' length

∴ 42,000 CY x 27 / 2124 SF = 534' req'd l.f. 150' channel width

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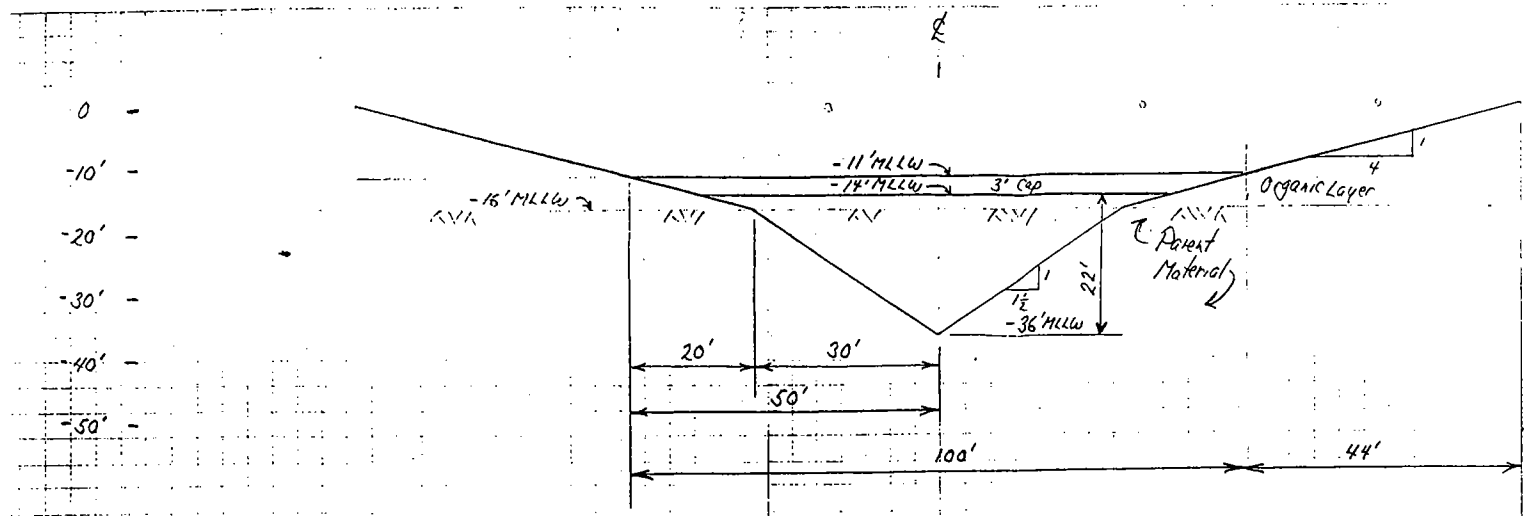
NED FORM 223
27 Sept 49

NEW ENGLAND DIVISION
CORPS OF ENGS, U.S. ARMY

SUBJECT _____ COMPUTATION _____ PAGE 3

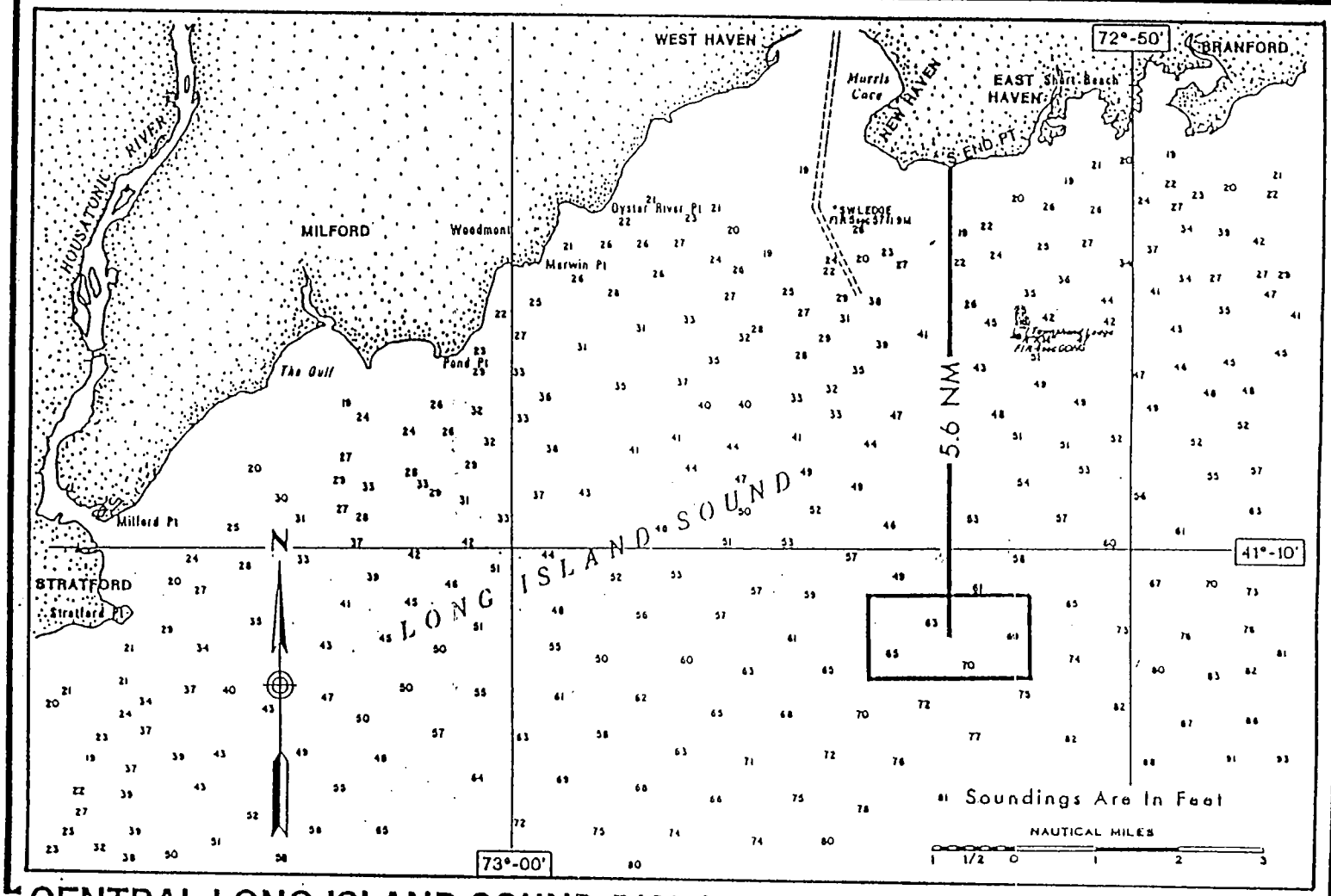
COMPUTED BY _____ CHECKED BY _____ DATE 5 8 03



Capacity of CAD cell

30' × 22' = 660 SF per 1' length

$\therefore \frac{42{,}000\ CY \times 27}{660\ SF}$ = 1718' req'd if 100' channel width



CENTRAL LONG ISLAND SOUND DISPOSAL SITE

Description: This site is a two nautical miles long by one nautical mile wide with the major axis running true east-west and center at 41°-08.95'N latitude and 72°-52.85'W longitude. From the center, Southwest Ledge Light bears true 345° at 10,750 yards and Townshend Ledge Lighted Gong Buoy No. "10-A" bears true 13° at 7,400 yards. This site is approximately 5.6 nautical miles off South End Point, East Haven. Depth Range: 49-75 feet MLW. The authorized disposal point (within the overall disposal area) is specified for each dredging project in other documents.

NOTE: The map depicts the disposal site's location in relation to landmarks. It is not intended for use in navigation.

OFFICE OF LONG ISLAND SOUND PROGRAMS

APPENDIX A

TO: **Permit Section**
Department of Environmental Protection
Office of Long Island Sound Programs **fax 860-424-4054**
79 Elm Street
Hartford, CT 06106-5127

Director
Department of Agriculture
Bureau of Aquaculture **fax 203-783-9976**
190 Rogers Ave.
Milford, CT 06460

CERTIFICATE HOLDER: U.S. Army Corps of Engineers, NED
696 Virginia Road Concord, MA 01742-2751

Certificate No: 200201943-SJ, Norwalk Harbor Federal Project

CONTRACTOR 1: _____

Address: _____

_____

Telephone #: _____

CONTRACTOR 2: _____

Address: _____

_____

Telephone #: _____

CONTRACTOR 3: _____

Address: _____

_____

Telephone #: _____

EXPECTED DATE OF COMMENCEMENT OF WORK: _____

EXPECTED DATE OF COMPLETION OF WORK: _____

CERTIFICATE HOLDER: _____
(signature) (date)

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01420

SOURCES FOR REFERENCE PUBLICATIONS

1.1 REFERENCES
1.2 ORDERING INFORMATION

-- End of Section Table of Contents --

SECTION 01420

SOURCES FOR REFERENCE PUBLICATIONS

1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the standards producing organization, (e.g. ASTM B 564 Nickel Alloy Forgings). However, when the standards producing organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

1.2 ORDERING INFORMATION

The addresses of the standards publishing organizations whose documents are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided. Documents listed in the specifications with numbers which were not assigned by the standards producing organization should be ordered from the source by title rather than by number.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
1819 L Street, NW, 6th Floor
Washington, DC 20036
Ph: 202-293-8020
Fax: 202-293-9287
E-mail: info@ansi.org
Internet: http://www.ansi.org/

Note --- ANSI documents beginning with the letter "S" can be ordered from:

Acoustical Society of America (ASA)
2 Huntington Quadrangle, Suite 1NO1
Melville, NY 11747-4502
Ph: 516-576-2360
Fax: 516-576-2377
E-mail: asa@aip.org
Internet: http://asa.aip.org

ASME INTERNATIONAL (ASME)
Three Park Avenue
New York, NY 10016-5990
Ph: 212-591-7722
Fax: 212-591-7674
E-mail: infocentral@asme.org
Internet: http://www.asme.org

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
1 Batterymarch Park
Quincy, MA 02169-7471

Ph: 617-770-3000
Fax: 617-770-0700
E-mail: webmaster@nfpa.org
Internet: http://www.nfpa.org

U.S. ARMY CORPS OF ENGINEERS (USACE)
Order CRD-C DOCUMENTS from:
U.S. Army Engineer Waterways Experiment Station
ATTN: Technical Report Distribution Section, Services Branch, TIC
3909 Halls Ferry Road
Vicksburg, MS 39180-6199
Ph: 601-634-2664
Fax: 601-634-2388
E-mail: mtc-info@erdc.usace.army.mil
Internet: http://www.wes.army.mil/SL/MTC/handbook.htm

Order Other Documents from:
USACE Publications Depot
Attn: CEIM-IM-PD
2803 52nd Avenue
Hyattsville, MD 20781-1102
Ph: 301-394-0081
Fax: 301-394-0084
E-mail: pubs-army@usace.army.mil
Internet: http://www.usace.army.mil/publications
or http://www.hnd.usace.army.mil/techinfo/engpubs.htm

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)
8601 Adelphi Road
College Park, MD 20740-6001
Ph: 866-272-6272
Fax: 301-837-0483
Internet: http://www.archives.gov

Order documents from:
Superintendent of Documents
U.S.Government Printing Office (GPO)
732 North Capitol Street, NW
Washington, DC 20401
Ph: 888-293-6498 or 202-512-1530
Fax: 202-512-1262
E-mail: gpoaccess.gov
Internet: http://www.gpoaccess.gov

-- End of Section --

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01451

CONTRACTOR QUALITY CONTROL

PART 1 GENERAL

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PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS
3.2 QUALITY CONTROL PLAN
3.2.1 Content of the CQC Plan
3.2.2 Acceptance of Plan
3.2.3 Notification of Changes
3.3 COORDINATION MEETING
3.4 QUALITY CONTROL ORGANIZATION
3.4.1 Personnel Requirements
3.4.2 CQC System Manager
3.4.3 Additional Requirement
3.4.4 Organizational Changes
3.5 SUBMITTALS AND DELIVERABLES
3.6 CONTROL
3.6.1 Preparatory Phase
3.6.2 Initial Phase
3.6.3 Follow-up Phase
3.6.4 Additional Preparatory and Initial Phases
3.7 COMPLETION INSPECTION
3.7.1 Final Acceptance Inspection
3.8 DOCUMENTATION
3.9 SAMPLE FORMS
3.10 NOTIFICATION OF NONCOMPLIANCE

-- End of Section Table of Contents --

SECTION 01451

CONTRACTOR QUALITY CONTROL

PART 1 GENERAL

1.1 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The site project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.

3.2 QUALITY CONTROL PLAN

The Contractor shall furnish for review by the Government, not later than 20 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 30 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

3.2.1 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all

construction operations, both onsite and offsite, including work by subcontractors:

a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.

b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.

c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.

d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.

e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities must be approved by the Contracting Officer.)

f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.

h. Reporting procedures, including proposed reporting formats.

i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

3.2.2 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on

satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.3 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 10 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health Manager shall receive direction and authority from the CQC System Manager and shall serve as a member of the CQC staff. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. The Contractor shall provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, show drawing submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a construction person with a

minimum of 3 years in related work. This CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned as System Manager but may have duties as project superintendent in addition to quality control. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

3.4.3 Additional Requirement

In addition to the above experience requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors". This course is periodically offered at the US Army Corps of Engineers, New England District Office at 696 Virginia Rd, Concord, MA.

3.4.4 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements.

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of the construction work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

a. A review of each paragraph of applicable specifications, reference codes, and standards. A copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field shall be made available by the Contractor at the preparatory inspection. These copies shall be maintained in the field and available for use by Government personnel until final acceptance of the work.

b. A review of the contract drawings.

c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.

d. Review of provisions that have been made to provide required

control inspection and testing.

e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.

f. A review of the appropriate activity hazard analysis to assure safety requirements are met.

g. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.

h. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.

i. Discussion of the initial control phase.

k. The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.

b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspections.

c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards.

d. Resolve all differences.

e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.

f. The Government shall be notified at least 48 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if: the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.7 COMPLETION INSPECTION

3.7.1 Final Acceptance Inspection

See Section 01723 FIELD ENGINEERING FOR DREDGING.

3.8 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

a. Contractor/subcontractor and their area of responsibility.

b. Operating plant/equipment with hours worked, idle, or down for repair.

c. Work performed each day, giving location, description, and by whom.

d. The control phase shall be identified (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.

e. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.

f. Job safety evaluations stating what was checked, results, and instructions or corrective actions.

g. Instructions given/received and conflicts in plans and/or specifications.

j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features. The original and one copy of these records in report form shall be furnished to the Government daily within 24 hours after the

date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.9 SAMPLE FORMS

Sample forms enclosed at the end of this section.

3.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

Contractor/Sub. Name _____

DAILY CONSTRUCTION QUALITY CONTROL REPORT FOR WORK IN FEDERAL CHANNEL

Date:_____
Day:_____

Contract No:_____
Description and Location of Work:_____
_____
Tide:(high) (low) (high) (low) Sea Condition:
Weather:Temp: Cloud condition Wind speed/direction
Environmental Protection:
Management Area of responsibility
a. Consultant - _____
b. Contractor - _____
c. Subcontractor - _____
d. Surveyor - _____
e. Supplier - _____
f. Technical Support - _____

1. WORK PERFORMED TODAY (Indicate location and description of work performed. Refer to work performed by individuals listed by letter above.)_____
_____
_____
_____
_____
_____
_____

2. Results of Surveillance (Include satisfactory work completed, or deficiencies with action to be taken.)

a. Preparatory Inspection:_____
_____
_____
_____

b. Initial Inspection: _____
_____
_____
_____

c. Follow-up Inspection:_____
_____
_____
_____

3. Tests Required by Specifications, Performed, and the Results:

a. _____
b. _____
c. _____

4. Verbal Instruction Received; (List any instructions given by Government personnel on construction deficiencies, retesting required, etc. and action.)

_____
_____
_____
_____

5. Remarks: (Cover all conflicts in plans, specifications, or instructions.)

_____
_____
_____
_____

6. Safety Inspection (Report violations, corrective instruction given; and corrective actions taken.)

_____
_____
_____
_____

7. Quantities Completed;

Item #	Item #
Quantity:	Quantity:
Item #	Item #
Quantity:	Quantity:

8. Time

#	LABOR	HOURS	EQUIPMENT

9. Additional Comments:

_____
_____
_____
_____
_____
_____

Contractor's Verification: The above report is complete and correct and all material and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

_____
Contractor Quality Control Representative

Contractor/Sub. Name _____

-- End of Section --

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01500

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1.5 SANITATION
1.6 TELEPHONE SERVICE
1.7 PLANT COMMUNICATION
1.8 BULLETIN BOARD
1.8.1 Bulletin Board
1.9 CONTRACTOR'S TEMPORARY FACILITIES
1.9.1 Administrative Field Offices
1.9.2 Storage Areas
1.9.3 Supplemental Storage Area
1.9.4 Appearance of Trailers
1.9.5 Maintenance of Storage Area
1.9.6 Security Provisions
1.10 GOVERNMENT FIELD OFFICE
1.10.1 Resident Engineer's Office
1.10.2 Trailer-Type Mobile Office
1.11 CLEANING DURING CONSTRUCTION
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1.11.2 On-Site Container
1.11.3 Removal of Waste
1.11.4 Burning
1.12 CLEANUP
1.13 RESTORATION OF STORAGE AREA
1.14 REMOVAL OF TEMPORARY MATERIALS AND EQUIPMENT

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

-- End of Section Table of Contents --

SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Site Plan; G, RO.

Sketch of the proposed location and dimensions of any area to be used by the Contractor for storage and staging, the number of trailers to be used, avenues of ingress/egress to the areas and details of improvements.

SD-02 Shop Drawings

Temporary Electrical System; G, RO.

Sketch of the proposed temporary electrical system.

1.2 SITE PLAN

The Contractor shall prepare a site plan indicating the proposed location and dimensions of any staging area to be used by the Contractor, the number of trailers to be used, avenues of ingress/egress to the area, and details of the fence installation if used. Any areas which may have to be graveled to prevent the tracking of mud shall also be identified. The Contractor shall also indicate if the use of a supplemental or other staging area is desired.

1.3 EMPLOYEE PARKING

Contractor employees shall park privately owned vehicles in an area approved by the Contracting Officer. Contractor employee parking shall not interfere with existing and established parking requirements of the facility.

1.4 AVAILABILITY OF UTILITIES

Provide service required for construction operations. All water and electricity that may be required in the prosecution of the work shall be furnished by the Contractor at his own expense. There will be no Government furnished water and electricity at the project site.

1.5 SANITATION

Adequate sanitary conveniences of a type approved for the use of persons

employed on the work shall be provided, properly secluded from public observation, and maintained by the Contractor in such a manner as required or approved by the Contracting Officer. These conveniences shall be maintained at all times without nuisance. Upon completion of the work, the conveniences shall be removed by the Contractor from the premises, leaving the premises clean and free from nuisance.

1.6 TELEPHONE SERVICE

Provide telephone service to field offices. Provide and maintain a telephone or equal means of communication which will be in an easily accessible location at each of the large construction areas on the project. Such means of communication shall be accessible during all work hours.

1.7 PLANT COMMUNICATION

Whenever the Contractor has the individual elements of its plant so located that operation by normal voice between these elements is not satisfactory, the Contractor shall install a satisfactory means of communication, such as telephone or other suitable devices. The devices shall be made available for use by Government personnel.

1.8 BULLETIN BOARD

1.8.1 Bulletin Board

Immediately upon beginning of work, the Contractor shall provide a weatherproof glass-covered bulletin board not less than 36 by 48 inches in size for displaying the Equal Employment Opportunity poster, a copy of the wage decision contained in the contract, Wage Rate Information poster, and other information approved by the Contracting Officer. The bulletin board shall be located at the project site in a conspicuous place easily accessible to all employees, as approved by the Contracting Officer. Legible copies of the aforementioned data shall be displayed until work is completed. Upon completion of work the bulletin board shall be removed by and remain the property of the Contractor.

1.9 CONTRACTOR'S TEMPORARY FACILITIES

1.9.1 Administrative Field Offices

The Contractor shall provide and maintain administrative field office facilities within the construction area at the designated site.

1.9.2 Storage Areas

Area is available for use by the Contractor, for work, storage of equipment, materials and trailers during the life of this contract. The Contractor's storage area will be on the north side of Veteran's Memorial Park along Washington street. The contractor will have use of the Town Boat Ramp and Floating Docks for crew boat access to the dredge. The Contractor shall confine his storage areas to the limits as designated or approved by the Contracting Officer and shall be responsible for the security of the areas. Upon completion of the contract, the Contractor shall remove all equipment and materials, except as otherwise specified, and restore the site to its original condition as approved by the Contracting Officer at no additional cost to the Government.

1.9.3 Supplemental Storage Area

Upon Contractor's request, the Contracting Officer will designate another or supplemental area for the Contractor's use and storage of trailers, equipment, and materials. This area may not be in close proximity of the construction site. The Contractor shall be responsible for cleanliness and orderliness of the area used and for the security of any material or equipment stored in this area. Utilities will not be provided to this area by the Government.

1.9.4 Appearance of Trailers

Trailers utilized by the Contractor for administrative or material storage purposes shall present a clean and neat exterior appearance and shall be in a state of good repair. Trailers which, in the opinion of the Contracting Officer, require exterior painting or maintenance will not be allowed on the site.

1.9.5 Maintenance of Storage Area

Should the Contractor elect to traverse, with construction equipment or other vehicles, grassed or unpaved areas which are not established roadways, such areas shall be covered with a layer of gravel as necessary to prevent rutting and the tracking of mud onto paved or established roadways; gravel gradation shall be at the Contractor's discretion.

1.9.6 Security Provisions

Adequate outside security lighting shall be provided at the Contractor's temporary facilities. The Contractor shall be responsible for the security of its own equipment.

1.10 GOVERNMENT FIELD OFFICE

1.10.1 Resident Engineer's Office

The Contractor shall provide the Government Resident Engineer with an office, approximately 200 square feet in floor area, located where directed and providing space heat, electric light and power, and toilet facilities consisting of one lavatory and one water closet complete with connections to water and sewer mains. A portable toilet may be substituted for the water closet. Provide a telephone line for telephone, and a TCP/IP Network/Internet Connection. A mail slot in the door or a lockable mail box mounted on the surface of the door shall be provided. At completion of the project, the office shall remain the property of the Contractor and shall be removed from the site. Utilities shall be connected and disconnected in accordance with local codes and to the satisfaction of the Contracting Officer.

1.10.2 Trailer-Type Mobile Office

The Contractor may, at its option, furnish and maintain a trailer-type mobile office acceptable to the Contracting Officer and providing as a minimum the facilities specified above. The trailer shall be securely anchored to the ground at all four corners to guard against movement during high winds.

1.11 CLEANING DURING CONSTRUCTION

1.11.1 Daily Cleaning

Execute daily cleaning to keep the work, the site, and adjacent properties free from accumulation of waste materials, rubbish, and windblown debris, resulting from construction operations.

1.11.2 On-Site Container

Provide on-site containers for the collection of waste materials, debris, and rubbish.

1.11.3 Removal of Waste

Remove waste materials, debris, and rubbish from the site periodically and dispose of off Government property in accordance with applicable laws and regulations.

1.11.4 Burning

No burning of brush or debris will be permitted at the site.

1.12 CLEANUP

Construction debris, waste materials, packaging material and the like shall be removed from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways shall be cleaned away. Stored material not in trailers, whether new or salvaged, shall be neatly stacked when stored.

1.13 RESTORATION OF STORAGE AREA

Areas used by the Contractor for the storage of equipment or material, or other use, shall be restored to the original or better condition. Gravel used to traverse grassed areas shall be removed and the area restored to its original condition, including top soil and seeding as necessary.

1.14 REMOVAL OF TEMPORARY MATERIALS AND EQUIPMENT

Remove temporary materials, equipment, services, and construction prior to completion of work. Clean and repair damage caused by installation or use of temporary facilities. Return site to pre-construction condition.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

-- End of Section --

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SECTION 01525

SAFETY AND OCCUPATIONAL HEALTH REQUIREMENTS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z359.1	(1991) Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ASME INTERNATIONAL (ASME)

ASME B30.5	(2000) Mobile and Locomotive Cranes
ASME B30.8	(2000) Floating Cranes and Floating Derricks
ASME B30.22	(2000) Articulating Boom Cranes

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1910.94	Ventilation
29 CFR 1910.120	Hazardous Waste Operations and Emergency Response
29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1926.65	Hazardous Waste Operations and Emergency Response
29 CFR 1926.500	Fall Protection

U. S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2003) Safety and Health Requirements Manual

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10	(1998) Portable Fire Extinguishers

NFPA 241 (2000) Safeguarding Construction, Alteration, and Demolition Operations

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Accident Prevention Plan (APP); G, A

Activity Hazard Analysis (AHA); G, A

SD-06 Test Reports

Reports

Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Reports."

Accident Reports

Monthly Exposure Reports

Regulatory Citations and Violations

Crane Reports

Certificate of Compliance (Crane)

1.3 DESCRIPTION OF WORK

This section requires the Contractor to implement practices and procedures for working safely and in compliance with OSHA and USACE regulation while performing maintenance dredging activities. The sediment material indicated on the drawings and in the specifications as "unsuitable" contains several contaminants, including polyaromatic hydrocarbons (PAHs) and metals. See "Chemical Analysis Results, Norwalk Harbor, Norwalk, Connecticut" attached at the end of this section.. The Contractor is required to properly protect all on site personnel from these contaminates while dredging and disposing this "unsuitable" material.

The Norwalk Harbor Maintenance Dredging Project does not fall under the scope of 29 CFR 1910, Section .120, "Hazardous Waste Operations and Emergency Response". However, due to the presence of high concentrations of several contaminants, including polyaromatic hydrocarbons (PAHs) and metals, there is a need to ensure those individuals involved in the project, the public, and the environment are protected.

1.4 DEFINITIONS

a. Certified Safety Professional (CSP). An individual who is currently

certified by the Board of Certified Safety Professionals.

b. Certified Safety Trained Supervisor (STS). An individual who is currently certified by the Board of Certified Safety Professionals.

c. High Visibility Accident. Any mishap which may generate publicity and/or high visibility.

d. Medical Treatment. Treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even through provided by a physician or registered personnel.

e. Multi-Employer Work Site (MEWS). A multi-employer work site, as defined by OSHA, is one in which many employers occupy the same site. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the subcontractors.

f. Operating Envelope. The area surrounding any crane. Inside this "envelope" is the crane, the operator, riggers, rigging gear between the hook and the load, the load and the crane's supporting structure (ground, rail, etc.).

g. Recordable Injuries or Illnesses. Any work-related injury or illness that results in:

(1) Death, regardless of the time between the injury and death, or the length of the illness;

(2) Days away from work;

(3) Restricted work;

(4) Transfer to another job;

(5) Medical treatment beyond first aid;

(6) Loss of consciousness; or

(7) A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (1) through (6) above.

h. Site Safety and Health Officer (SSHO). The superintendent or other qualified or competent person who is responsible for the on-site safety and health required for the project.

i. Weight Handling Equipment (WHE) Accident. A WHE accident occurs when any one or more of the six elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing resulting in personnel injury or death; material or equipment damage; dropped load; derailment; two-blocking; overload; and collision, including unplanned contact between the load, crane, and/or other objects. A dropped load, derailment, two-blocking, overload and collision are considered accidents even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped boom, dropped

load, roll over, etc.).

1.5 REGULATORY REQUIREMENTS

In addition to the detailed requirements included in the provisions of this contract, work performed shall comply with USACE EM 385-1-1, and the federal, state, and local, laws, ordinances, criteria, rules and regulations. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply.

1.6 TASK SPECIFIC HAZARDS, PERSONAL PROTECTIVE EQUIPMENT (PPE), AND TRAINING APPLICABILITY

When working with "unsuitable" dredge material, personnel exposed to such material will be required to wear modified Level D PPE. It is the Contractor's responsibility to reevaluate occupational safety and health hazards as the work progresses and to adjust the PPE and onsite operations, if necessary, so that the work is performed safely.

1.7 DRUG PREVENTION PROGRAM

Conduct a proactive drug and alcohol use prevention program for all workers, prime and subcontractor, on the site. Ensure that no employee uses illegal drugs or consumes alcohol during work hours. Ensure there are no employees under the influence of drugs or alcohol during work hours. After accidents, collect blood, urine, or saliva specimens and test the injured and involved employees for the influence of drugs and alcohol. A copy of the test shall be made available to the Contracting Officer upon request.

1.8 STAFF ORGANIZATION, QUALIFICATION AND RESPONSIBILITIES

1.8.1 Safety and Health Manager

Provide a Safety and Health Manager who shall oversee the project implementation.

1. The Safety and Health Manager shall have the following additional qualifications:

    a. A minimum of 3 years experience in developing and implementing safety and health programs at construction sites.

    b. Documented experience in supervising professional and technician level personnel.

    c. Documented experience in developing worker personal protective equipment (PPE) programs.

    d. Working knowledge of state and Federal occupational safety and health regulations.

2. The Safety and Health Manager shall:

    a. Be responsible for the development, implementation, oversight, and enforcement of the APP.

b. Sign and date the APP prior to submittal.

c. Visit the site as needed to audit the effectiveness of the APP.

d. Be available for emergencies.

e. Provide consultation as needed to ensure the APP is fully implemented.

f. Coordinate any modifications to the APP with the Site Superintendent, the SSHO, and the Contracting Officer.

g. Review accident reports and results of daily inspections.

1.8.2 Site Safety and Health Officer (SSHO)

Site Safety and Health Officer (SSHO) shall be provided at the work site at all times to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor. The SSHO shall have the following qualifications:

a. A minimum of 3 years safety work on construction projects.

b. 30-hour OSHA construction safety class or equivalent within last 3 years.

c. Documented experience in construction and dredging techniques and related safety procedures.

d. Training in PPE program implementation.

Competent person training as needed.

1.8.3 Persons Certified in First Aid and CPR

At least two persons who are currently certified in first aid and CPR by the American Red Cross or other approved agency shall be onsite at all times during site operations. They shall be trained in universal precautions and the use of PPE as described in the Bloodborne Pathogens Standard of 29 CFR 1910, Section .1030. These persons may perform other duties but shall be immediately available to render first aid when needed.

1.8.4 Crane Operators

Crane operators shall meet the requirements in USACE EM 385-1-1, Appendix G.

1.8.5 Personnel Duties

1.8.5.1 Site Safety and Health Officer (SSHO)/Superintendent

a. Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Safety inspection logs shall be attached to the Contractors' daily quality control report.

b. Conduct mishap investigations and complete required reports. Maintain the OSHA Form 300 and Daily Production reports for prime and

sub-contractors.

c. Maintain applicable safety reference material on the job site.

d. Attend the pre-construction conference, pre-work meetings including preparatory inspection meeting, and periodic in-progress meetings.

e. Implement and enforce accepted APPS and AHAs.

f. Maintain a safety and health deficiency tracking system that monitors outstanding deficiencies until resolution. A list of unresolved safety and health deficiencies shall be posted on the safety bulletin board.

g. Ensure sub-contractor compliance with safety and health requirements.

Failure to perform the above duties will result in dismissal of the superintendent and/or SSHO, and a project work stoppage. The project work stoppage will remain in effect pending approval of a suitable replacement.

1.8.6 Meetings

1.8.6.1 Preconstruction Conference

a. The Contractor will be informed, in writing, of the date of the preconstruction conference. The purpose of the preconstruction conference is for the Contractor and the Contracting Officer's representatives to become acquainted and explain the functions and operating procedures of their respective organizations and to reach mutual understanding relative to the administration of the overall project's APP before the initiation of work.

b. Contractor representatives who have a responsibility or significant role in accident prevention on the project shall attend the preconstruction conference. This includes the project superintendent, site safety and health officer, quality control supervisor, or any other assigned safety and health professionals who participated in the development of the APP (including the AHAs and special plans, program and procedures associated with it).

c. The Contractor shall discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated activity hazard analyses (AHAs) that will be developed and implemented during the performance of the contract. This list of proposed AHAs will be reviewed at the conference and an agreement will be reached between the Contractor and the Contracting Officer's representative as to which phases will require an analysis. In addition, a schedule for the preparation, submittal, review, and acceptance of AHAs shall be established to preclude project delays.

d. Deficiencies in the submitted APP will be brought to the attention of the Contractor at the preconstruction conference, and the Contractor shall revise the plan to correct deficiencies and re-submit it for acceptance. Work shall not begin until there is an accepted APP.

1.8.6.2 Weekly Safety Meetings

Conduct weekly safety meetings at the project site for all employees. The

Contracting Officer will be informed of the meeting in advance and be allowed attendance. Minutes showing contract title, signatures of attendees and a list of topics discussed shall be attached to the Contractors' daily quality control report.

1.8.6.3 Work Phase Meetings

The appropriate AHA shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection. The analysis should be used during daily inspections to ensure the implementation and effectiveness of safety and health controls.

1.9 TRAINING

1.9.1 New Employee Indoctrination

New employees (prime and sub-contractor) will be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site.

1.9.2 Periodic Training

Provide Safety and Health Training in accordance with USACE EM 385-1-1 and the accepted APP. Ensure all required training has been accomplished for all onsite employees.

1.9.3 Training on Activity Hazard Analysis (AHA)

Prior to beginning a new phase, training will be provided to all affected employees to include a review of the AHA to be implemented.

1.10 ACCIDENT PREVENTION PLAN (APP)

The Contractor shall develop and implement the written site-specific APP. Prepare the APP in accordance with the format and requirements of USACE EM 385-1-1 and as supplemented herein. Cover all paragraph and subparagraph elements in USACE EM 385-1-1, Section 01.A.11, Appendix A ("Minimum Basic Outline for Preparation of Accident Prevention Plan"). Where a paragraph or subparagraph element is not applicable to the work to be performed indicate "Not Applicable" next to the heading. Specific requirements for some of the APP elements are described below. The APP shall be job-specific and shall address any unusual or unique aspects of the project or activity for which it is written. The APP shall interface with the Contractor's overall safety and health program. Any portions of the Contractor's overall safety and health program referenced in the APP shall be included in the applicable APP element and made site-specific. The APP shall include a hazard evaluation as specified in EM 385-1-1, Section 6 HAZARDOUS SUBSTANCES, AGENTS, AND ENVIRONMENTS. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP shall be signed by the Safety and Health Manager preparing the APP, the Contractor, the on-site superintendent, and the designated site safety and health officer.

Submit the APP to the Contracting Officer 15 calendar days prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP. The Contracting Officer reviews and comments on the Contractor's submitted APP and accepts it when it meets the requirements of the contract provisions.

Once accepted by the Contracting Officer, the APP and attachments will be enforced as part of the contract. Disregarding the provisions of this contract or the accepted APP will be cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified.

Once work begins, changes to the accepted APP shall be made with the knowledge and concurrence of the Safety and Health Manager, Site Safety and Health Officer, project superintendent, and the Contracting Officer. Should any unforeseen hazard become evident during the performance of work, the project SSHO shall inform the Contracting Officer, both verbally and in writing, for resolution as soon as possible. In the interim, all necessary action shall be taken by the Contractor to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public, and the environment.

Copies of the accepted plan will be maintained at the resident engineer's office and at the job site. The APP shall be continuously reviewed and amended, as necessary, throughout the life of the contract. Unusual or high-hazard activities not identified in the original APP shall be incorporated in the plan as they are discovered.

1.10.1 EM 385-1-1 Contents

In addition to the requirements outlines in Appendix A of USACE EM 385-1-1, the following is required:

a. Names and qualifications (resumes including education, training, experience and certifications) of all site safety and health personnel designated to perform work on this project to include the designated site safety and health officer and other competent and qualified personnel to be used such as CSPs, CIHs, STSs, CHSTs. The duties of each position shall be specified.

b. Qualifications of competent and of qualified persons. As a minimum, competent persons shall be designated and qualifications submitted for each of the following major areas: excavation; scaffolding; fall protection; hazardous energy; confined space; health hazard recognition, evaluation and control of chemical, physical and biological agents; personal protective equipment and clothing to include selection, use and maintenance.

c. Alcohol and Drug Abuse Plan

(1) Describe plan for random checks and testing with pre-employment screening in accordance with the DFAR Clause subpart 252.223-7004, "Drug Free Work Force."

(2) Description of the on-site prevention program

1.10.2 Acceptance and Modifications

Prior to submittal, the APP shall be signed and dated by the Safety and Health Manager and the Site Safety and Health Officer

(SSHO)/Superintendent. Deficiencies in the APP will be discussed at the preconstruction safety conference, and the APP shall be revised to correct the deficiencies and resubmitted for acceptance. Onsite work involving "Unsuitable" materials shall not begin until the plan has been accepted. A copy of the written APP shall be maintained onsite. Changes and modifications to the accepted APP shall be made with the knowledge and concurrence of the Safety and Health Manager, the Site Safety and Health Officer (SSHO)/Superintendent, and the Contracting Officer. Should any unforeseen hazard become evident during the performance of the work, the Site Safety and Health Officer (SSHO)/Superintendent shall bring such hazard to the attention of the Safety and Health Manager, and the Contracting Officer, both verbally and in writing, for resolution as soon as possible. In the interim, necessary action shall be taken to re-establish and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public, and the environment. Disregard for the provisions of this specification or the accepted APP shall be cause for stopping of work until the matter has been rectified.

1.11 ACTIVITY HAZARD ANALYSIS (AHA)

The Activity Hazard Analysis (AHA) format shall be in accordance with USACE EM 385-1-1, Section 01.A10 and Figure 1-1. Submit the AHA for review at least 15 calendar days prior to the start of each phase. Format subsequent AHA as amendments to the APP. An AHA will be developed by the Contractor for every operation involving a type of work presenting hazards not experienced in previous project operations or where a new work crew or subcontractor is to perform work. The analysis must identify and evaluate hazards and outline the proposed methods and techniques for the safe completion of each phase of work. At a minimum, define activity being performed, sequence of work, specific safety and health hazards anticipated, control measures (to include personal protective equipment) to eliminate or reduce each hazard to acceptable levels, equipment to be used, inspection requirements, training requirements for all involved, and the competent person in charge of that phase of work. For work with fall hazards, including fall hazards associated with scaffold erection and removal, identify the appropriate fall arrest systems. For work with materials handling equipment, address safeguarding measures related to materials handling equipment. For work requiring excavations, include requirements for safeguarding excavations. An activity requiring an AHA shall not proceed until the AHA has been accepted by the Contracting Officer's representative and a meeting has been conducted by the Contractor to discuss its contents with everyone engaged in the activity, including on-site Government representatives. The Contractor shall document meeting attendance at the preparatory, initial, and follow-up phases of quality control inspection. The AHA shall be continuously reviewed and, when appropriate, modified to address changing site conditions or operations. The analysis should be used during daily inspections to ensure the implementation and effectiveness of the activity's safety and health controls.

The AHA list will be reviewed periodically (at least monthly) at the Contractor supervisory safety meeting and updated as necessary when procedures, scheduling, or hazards change.

Activity hazard analyses shall be updated as necessary to provide an effective response to changing work conditions and activities. The on-site superintendent, site safety and health officer and competent persons used to develop the AHAs, including updates, shall sign and date the AHAs before they are implemented.

1.12 DISPLAY OF SAFETY INFORMATION

Within 10 calendar days after commencement of work, erect a safety bulletin board at the job site. The following information shall be displayed on the safety bulletin board in clear view of the on-site construction personnel, maintained current, and protected against the elements and unauthorized removal:

a. Map denoting the route to the nearest emergency care facility.

b. Emergency phone numbers.

c. Copy of the most up-to-date APP.

d. AHA(s).

e. OSHA 300A Form.

f. A sign indicating the number of hours worked since last lost workday accident.

g. OSHA Safety and Health Protection-On-The-Job Poster.

h. Safety and Health Warning Posters.

1.13 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project, including those listed in the article "References." Maintain applicable equipment manufacturer's manuals.

1.14 EMERGENCY MEDICAL TREATMENT

Contractors will arrange for their own emergency medical treatment. Government has no responsibility to provide emergency medical treatment.

1.15 REPORTS

1.15.1 Accident Reports

a. For recordable injuries and illnesses, and property damage accidents resulting in at least $2,000 in damages, the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the USACE Accident Report Form 3394 and provide the report to the Contracting Officer within 2 calendar day(s) of the accident. The Contracting Officer will provide copies of any required or special forms.

b. For a weight handling equipment accident the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the WHE Accident Report form and provide the report to the Contracting Officer within 30 calendar days of the accident. The Contracting Officer will provide a blank copy of the accident report form.

1.15.2 Accident Notification

Notify the Contracting Officer as soon as practical, but not later than

four hours, after any accident meeting the definition of Recordable Injuries or Illnesses or High Visibility Accidents, property damage equal to or greater than $2,000, or any weight handling equipment accident involving a overturned crane, collapsed boom, or any other major damage to the crane or adjacent property. Information shall include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (to include type of construction equipment used, PPE used, etc.). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on site and Government investigation is conducted.

1.15.3 Monthly Exposure Reports

Monthly exposure reporting to the Contracting Officer is required to be attached to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor. The Contracting Officer will provide copies of any special forms.

1.15.4 Regulatory Citations and Violations

Contact the Contracting Officer immediately of any OSHA or other regulatory agency inspection or visit, and provide the Contracting Officer with a copy of each citation, report, and contractor response. Correct violations and citations promptly and provide written corrective actions to the Contracting Officer.

1.15.5 Crane Reports

Submit crane inspection reports required in accordance with USACE EM 385-1-1, Appendix H and as specified herein with Daily Reports of Inspections.

1.15.6 Certificate of Compliance

The Contractor shall provide a Certificate of Compliance for each crane entering an activity under this contract. Certificate shall state that the crane and rigging gear meet applicable OSHA regulations (with the Contractor citing which OSHA regulations are applicable, e.g., cranes used in construction, demolition, or maintenance shall comply with 29 CFR 1926 and USACE EM 385-1-1 section 16 and Appendix H. Certify on the Certificate of Compliance that the crane operator(s) is qualified and trained in the operation of the crane to be used. The Contractor shall also certify that all of its crane operators working on the DOD activity have been trained in the proper use of all safety devices (e.g., anti-two block devices). These certifications shall be posted on the crane.

1.16 HOT WORK

Prior to performing "Hot Work" (welding, cutting, etc.) or operating other flame-producing/spark producing devices, shall require a written permit. The Contractor will provide at least two (2) twenty (20) pound 4A:20 BC rated extinguishers for normal "Hot Work". All extinguishers shall be current inspection tagged, approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity. The Fire Watch shall be trained in accordance with NFPA 51B and remain on-site for a minimum of 30 minutes after completion of the task or as specified on the hot work permit.

Obtain services from a NFPA Certified Marine Chemist for "HOT WORK" within or around flammable materials (such as fuel systems, welding/cutting on fuel pipes) or confined spaces (such as barges, manholes, vaults, etc.) that have the potential for flammable or explosive atmospheres.

PART 2 PRODUCTS

PART 3 EXECUTION

3.1 CONSTRUCTION AND/OR OTHER WORK

The Contractor shall comply with USACE EM 385-1-1, NFPA 241, the APP, the AHA, and other related submittals and activity fire and safety regulations.

3.1.1 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with EM 385-1-1 such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocynates, lead-based paint are prohibited. The Contracting Officer, upon written request by the Contractor, may consider exceptions to the use of any of the above excluded materials.

3.1.2 Unforeseen Hazardous Material

If material that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Contracting Officer immediately. Within 5 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to "FAR 52.243-4, Changes" and "FAR 52.236-2, Differing Site Conditions."

3.2 FALL HAZARD PROTECTION AND PREVENTION PROGRAM

The Contractor shall establish a fall protection and prevention program, for the protection of all employees exposed to fall hazards. The program shall include company policy, identify responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and evacuation procedures.

3.2.1 Training

The Contractor shall institute a fall protection training program. As part of the Fall Hazard Protection and Prevention Program, the Contractor shall provide training for each employee who might be exposed to fall hazards. A competent person for fall protection shall provide the training. Training requirements shall be in accordance with USACE EM 385-1-1, section 21.A.16.

3.2.2 Fall Protection Equipment and Systems

The Contractor shall enforce use of the fall protection equipment and

systems designated for each specific work activity in the Fall Protection and Prevention Plan and/or AHA at all times when an employee is exposed to a fall hazard. Employees shall be protected from fall hazards as specified in EM 385-1-1, section 21. In addition to the required fall protection systems, safety skiff, personal floatation devices, life rings etc., are required when working above or next to water in accordance with USACE EM 385-1-1, paragraphs 05.H. and 05.I. Personal fall arrest systems are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall arrest systems are required when operating other equipment such as scissor lifts if the work platform is capable of being positioned outside the wheelbase. The need for tying-off in such equipment is to prevent ejection of the employee from the equipment during raising, lowering, or travel. Fall protection must comply with 29 CFR 1926.500, Subpart M, USACE EM 385-1-1 and ANSI A10.32.

3.2.2.1 Personal Fall Arrest Equipment

Personal fall arrest equipment, systems, subsystems, and components shall meet ANSI Z359.1. Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest body support device. Body belts may only be used as a positioning device system (for uses such as steel reinforcing assembly and in addition to an approved fall arrest system). Harnesses shall have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Only locking snap hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber. The maximum free fall distance when using fall arrest equipment shall not exceed 1.8 m (6 feet). The total fall distance and any swinging of the worker (pendulum-like motion) that can occur during a fall shall always be taken into consideration when attaching a person to a fall arrest system.

3.2.3 Fall Protection for Roofing Work

Fall protection controls shall be implemented based on the type of roof being constructed and work being performed. The roof area to be accessed shall be evaluated for its structural integrity including weight-bearing capabilities for the projected loading.

a. Low Sloped Roofs:

(1) For work within 1.8 m (6 feet) of an edge, on low-slope roofs, personnel shall be protected from falling by use of personal fall arrest systems, guardrails, or safety nets. A safety monitoring system is not adequate fall protection and is not authorized.

(2) For work greater than 1.8 m (6 feet) from an edge, warning lines shall be erected and installed in accordance with 29 CFR 1926.500 and USACE EM 385-1-1.

b. Steep-Sloped Roofs: Work on steep-sloped roofs requires a personal fall arrest system, guardrails with toe-boards, or safety nets. This requirement also includes residential or housing type construction.

3.2.4 Existing Anchorage

Existing anchorages, to be used for attachment of personal fall arrest

equipment, shall be certified (or re-certified) by a qualified person for fall protection in accordance with ANSI Z359.1. Exiting horizontal lifeline anchorages shall be certified (or re-certified) by a registered professional engineer with experience in designing horizontal lifeline systems.

3.2.5 Horizontal Lifelines

Horizontal lifelines shall be designed, installed, certified and used under the supervision of a qualified person for fall protection as part of a complete fall arrest system which maintains a safety factor of 2 (29 CFR 1926.500).

3.2.6 Guardrails and Safety Nets

Guardrails and safety nets shall be designed, installed and used in accordance with EM 385-1-1 and 29 CFR 1926 Subpart M.

3.2.7 Rescue and Evacuation Procedures

When personal fall arrest systems are used, the contractor must ensure that the mishap victim can self-rescue or can be rescued promptly should a fall occur. A Rescue and Evacuation Plan shall be prepared by the contractor and include a detailed discussion of the following: methods of rescue; methods of self-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility. The Rescue and Evacuation Plan shall be included in the Activity Hazard Analysis (AHA) for the phase of work, in the Fall Protection and Prevention (FP&P) Plan, and the Accident Prevention Plan (APP).

3.3 EQUIPMENT

3.3.1 Weight Handling Equipment

b. The Contractor shall notify the Contracting Officer 15 days in advance of any cranes entering the activity so that necessary quality assurance spot checks can be coordinated. Contractor's operator shall remain with the crane during the spot check.

c. The Contractor shall comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Erection shall be performed under the supervision of a designated person (as defined in ASME B30.5). All testing shall be performed in accordance with the manufacturer's recommended procedures.

d. The Contractor shall comply with ASME B30.5 for mobile cranes, ASME B30.22 for articulating boom cranes and ASME B30.8 for floating cranes and floating derricks.

e. The presence of Government personnel does not relieve the Contractor of an obligation to comply with all applicable safety regulations. The Government will investigate all complaints of unsafe or unhealthful working conditions received in writing from contractor employees, federal civilian employees, or military personnel.

f. Each load shall be rigged/attached independently to the hook/master-link in such a fashion that the load cannot slide or

otherwise become detached. Christmas-tree lifting (multiple rigged materials) is not allowed.

h. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and shall follow the requirements of USACE EM 385-1-1 section 11 and ASME B30.5 or ASME B30.22 as applicable.

i. Crane suspended personnel work platforms (baskets) shall not be used unless the Contractor proves that using any other access to the work location would provide a greater hazard to the workers or is impossible. Personnel shall not be lifted with a line hoist or friction crane.

j. A fire extinguisher having a minimum rating of 10BC and a minimum nominal capacity of 5lb of extinguishing agent shall be available at all operator stations or crane cabs. Portable fire extinguishers shall be inspected, maintained, and recharged as specified in NFPA 10, Standard for Portable Fire Extinguishers.

k. All employees shall be kept clear of loads about to be lifted and of suspended loads.

l. A weight handling equipment operator shall not leave his position at the controls while a load is suspended.

m. Only Contractor crane operators who have met the requirements of 29 CFR 1910.94, 29 CFR 1910.120, 29 CFR 1926.65, 29 CFR 1926.500, USACE EM 385-1-1, ASME B30.5, and ASME B30.22 and other local and state requirements shall be authorized to operate the crane.

n. The Contractor shall use cribbing when performing lifts on outriggers.

o. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.

p. A physical barricade must be positioned to prevent personnel from entering the counterweight swing (tail swing) area of the crane.

q. A substantial and durable rating chart containing legible letters and figures shall be provided with each crane and securely mounted onto the crane cab in a location allowing easy reading by the operator while seated in the control station.

r. Certification records which include the date of inspection, signature of the person performing the inspection, and the serial number or other identifier of the crane that was inspected shall always be available for review by Contracting Officer personnel.

s. Written reports listing the load test procedures used along with any repairs or alterations performed on the crane shall be available for review by Contracting Officer personnel.

t. The Contractor shall certify that all crane operators have been trained in proper use of all safety devices (e.g. anti-two block devices).

3.3.2 Equipment and Mechanized Equipment

a. Equipment shall be operated by designated qualified operators. Proof of qualifications shall be kept on the project site for review.

b. Manufacture specifications or owner's manual for the equipment shall be on site and reviewed for additional safety precautions or requirements that are sometimes not identified by OSHA or USACE EM 385-1-1. Such additional safety precautions or requirements shall be incorporated into the AHAs.

c. Equipment and mechanized equipment shall be inspected in accordance with manufacturer's recommendations for safe operation by a competent person prior to being placed into use.

d. Daily checks or tests shall be conducted and documented on equipment and mechanized equipment by designated competent persons.

3.4 HOUSEKEEPING

3.4.1 Clean-Up

All debris in work areas shall be cleaned up daily or more frequently if necessary. Construction debris may be temporarily located in an approved location, however garbage accumulation must be removed each day.

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SECTION 01545

DREDGING PLANT AND EQUIPMENT

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

CORPS OF ENGINEERS (COE)

EM 385-1-1	(2003) Safety and Health Requirements Manual

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Plant and Equipment

Submit a schedule of the plant and equipment the Contractor will employ in the performance of the work of this contract. Submit also copies of all applicable inspections and certifications for all floating plant and equipment.

1.3 PLANT AND EQUIPMENT

1.3.1 Sufficient Capacity

The Contractor shall keep on the job sufficient plant and equipment to meet the requirements of the work. The plant and equipment shall be in satisfactory operating condition and be capable of safely and efficiently performing the work. The plant and equipment shall be subject to inspection by the Contracting Officer and/or his representatives at all times.

1.3.2 Minimum Capacity

The plant and equipment listed on the Plant and Equipment Schedule submitted with the Contractor's bid is the minimum which the Contractor shall place and keep on the job unless otherwise determined by the Contracting Officer. The listing of plant and equipment is not to be construed as an agreement on the part of the Government that the equipment is adequate to perform the required work.

1.3.3 Reduction in Capacity

No reduction in the capacity of the plant and equipment employed on the work shall be made except by written permission of the Contracting Officer. The measure of the capacity of the plant and equipment shall be its actual performance on the work covered by this contract.

1.3.4 Inspections and Certifications

Prior to commencement of work at the site, the Contractor shall make available to the Contracting Officer Representative for review, copies of all applicable inspections and certifications of floating plant and equipment as required by Federal, State and local laws and regulations. See also EM 385-1-1, Sections 16, 19, and 20. Such inspections and certifications shall be current and maintained in force for the duration of this contract. Each item of floating plant and equipment shall have on board a waste oil management plan which details the intended disposal method for waste oil.

1.4 LICENSE REQUIREMENTS

Each vessel exceeding twenty-six feet in length, excluding sheer, which is used for pushing, hauling alongside, or any other method of towing, and not required by law to have a valid Certificate of Inspection by the U.S. Coast Guard, shall be under the actual direction and control of a person licensed for towing in the geographic area of the work by the U.S. Coast Guard. Licensed persons shall not perform command or other duties in excess of twelve hours in any consecutive twenty-four hour period except in an emergency.

PART 2 PRODUCTS (Not Used)

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SECTION 01723

FIELD ENGINEERING FOR DREDGING

PART 1 GENERAL

1.1 SUMMARY

1.1.1 Engineering Services

The Contractor shall furnish the required personnel, equipment, instruments, and transportation, as necessary to accomplish all required surveys. Reports and other data together with supporting material developed during the prosecution of the work shall be furnished to the Contracting Officer. The Contractor shall also provide adequate professional supervision and quality control to assure the accuracy, quality, completeness, and progress of the work.

The Contractor shall provide and pay for the following field engineering services for the project:

a. Hydrographic and other survey work specified or required in execution of this project, except for surveys performed by the Government, as indicated in these specifications.

b. Civil, structural or other professional engineering services specified, or required to execute Contractor's construction methods.

1.2 REFERENCES

The publications listed below form a part of this section to the extent referenced. The publications are referenced in the text by basic designation only. The Army Corps of Engineers references below may be viewed or downloaded free of charge via the Internet (http://www.hnd.usace.army.mil/techinfo/).

U.S. ARMY CORPS OF ENGINEERS

EM 1110-1-1002	(1996) SURVEY MARKERS AND MONUMENTATIONS
EM 1110-2-1003	(2002) HYDROGRAPHIC SURVEYING
EM 1110-1-2909	(1998; Chg 2) Geospatial Data and Systems

1.3 DEFINITIONS

1.3.1 Survey Datum

The contract drawings refer to Mean Lower Low Water (MLLW). The Government will and the Contractor shall perform all surveys using the Mean Lower Low Water (MLLW) datum. The Contractor shall calibrate GPS equipment to the Corps of Engineers existing horizontal control net indicated on the drawings.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Survey Plans; G, RO.

The Contractor shall submit, as part of the Quality Control Plan, a detailed plan describing the survey methods to be used during the work. The plan shall include the equipment to be utilized, tidal data, general site plan map, line designation map, calibration procedures to be used, expected horizontal and vertical accuracies, and pertinent information to describe the methods, and results to be obtained. Field surveys shall not begin until these plans are approved.

Layout Plan; G, RO.

A complete plan of the dredging areas showing the horizontal layout of all physical and electronic ranges to be used for horizontal control. The drawings shall be drawn at a scale sufficiently large to show all pertinent details. The drawings shall be submitted as blue or black lines on a white background.

Charts..

Current and tide charts to be used for the areas being dredged shall be submitted.

Survey Personnel.

Furnish a listing of the personnel who will perform the survey work required by this contract. The listing shall include a brief summary of the hydrographic survey experience of each person. The list shall be submitted prior to the preconstruction conference.

SD-05 Design Data

Field Survey Data.

Submit field data; depth sounder rolls, corrected for tide, and corresponding boat plots; daily logs; and quantity computations. Submit data sufficient for the Government to reproduce the Contractor's survey plot by referring only to this field data.

The electronic field data, including XY coordinates (points), and Z depths (elevations) in ASCII file format, shall be submitted on a daily basis with the CQC reports. Deficiencies shall be corrected and a re-survey of the area shall be performed, as necessary to ensure correction has been achieved. Data shall be submitted in a readable and usable format, utilizing industry recognized standard file formats and extensions. Data shall be submitted with a commercially available software program and technical support to provide the on-site capability to read and print the data.

Electronic Tracking System.

The Contractor shall furnish required discs, CD-ROM, and charts to the Contracting Officer.

1.5 GENERAL HYDROGRAPHIC SURVEY REQUIREMENTS

All hydrographic surveys for this project shall follow the mandatory criteria given in EM 1110-2-1003 for the "Navigation and Dredging Support Surveys" class of survey as a minimum.

Survey lines may be run either perpendicular to the channel limits at 50 foot offsets or longitudinal at 25 foot offsets. The lines shall clearly identify the toe and extend out to a minimum of three times the project depth to accurately depict the side slope.

1.6 HORIZONTAL POSITIONING PROCEDURES AND ACCURACIES

a. Vessel positioning systems utilized on this contract shall conform to the allowable horizontal positioning criteria in EM 1110-2-1003. The positioning system used shall be capable of meeting or exceeding the accuracy requirements and shall not exceed the allowable ranges where indicated. The Contractor may be required to demonstrate to the Government that its positioning system is capable of meeting or exceeding the accuracy requirements in EM 1110-2-1003.

b. All dredges, all survey vessels, and all towing equipment engaged in transport of dredged material, shall be equipped with automated electronic positioning and progress track-plotting equipment having a degree of accuracy commensurate with EM 1110-2-1003. In addition, dredges shall have production recording and efficiency optimizing data collection equipment; capable of storing, plotting, and printing in-situ operational data.

1.7 ELECTRONIC TRACKING SYSTEM (ETS) FOR DREDGING AND OCEAN DISPOSAL VESSELS

The Contractor shall furnish an Electronic Tracking System (ETS) for surveillance of the movement and disposition of dredged material during excavation, ocean transit and disposal. This ETS shall be established,operated and maintained by the Contractor to continuously track in real-time the horizontal location and draft condition of the disposal vessel for the entire dredging cycle, including dredging area and disposal area.

1.7.1 ETS Standards

The Contractor shall provide an automated computer system and components to perform in accordance with EM 1110-1-2909. A copy of the EM can be downloaded at http://www.usace.army.mil/inet/usace-docs/eng-manuals. Horizontal location shall have an accuracy equal to +/- 10 feet (horizontal repeatability). Vertical (draft) data shall have an accuracy of +/- 0.5 foot. Horizontal location and vertical data shall be collected in sets and each data set shall be referenced in real-time to date and local time (to nearest minute), and shall be referenced to the same state plane coordinate system used for the survey(s) shown in the contract plans. The ETS shall be calibrated as required, in the presence of the Contracting Officer at the work location before disposal operations have started, and at 30-day intervals while work is in progress. The Contracting Officer shall have access to the ETS in order to observe its operation. Disposal operations

will not commence until the ETS to be used by the Contractor is certified by the Contracting Officer to be operational and within acceptable accuracy. It is the Contractor's responsibility to select a system that will operate properly at the work location. The complete system shall be subject to the Contracting Officer's approval.

1.7.2 Data Requirements and Submissions

All data shall be collected and stored on 3-1/2 inch disks or CD-ROM in ASCII format using IBM-compatible MS-DOS 5.0 or later version. Data shall include date, time, trip ID number, vessel name and name of vessel's captain, location and draft of disposal vessel every 500 feet (at least) during loading cycle and during travel to disposal area, and every minute (at least) or every 200 feet of travel, whichever is smaller, while approaching within 1000 feet and within limits of disposal area. Data collected while the disposal vessel is in the vicinity of the disposal area shall also be plotted in chart form, in 200-foot intervals, to show the track and draft of the disposal vessel approaching, traversing, and leaving the disposal area. More than one disposal area trip may be stored on a single disk or CD ROM as long as trip data is indexed and clearly identifiable. The completed, original disk or CD- ROM shall be furnished to the Contracting Officer within 24 hours. Plotted charts shall be organized and maintained at a central work location for inspection on a daily basis by the Contracting Officer. Plotted charts shall be organized as directed, bound and submitted weekly to the Contracting Officer for permanent file record.

1.7.3 ETS

The ETS for each disposal vessel shall be in operation for all dredging and disposal activities and shall record the full round trip for each loading and disposal cycle. The Contracting Officer shall be notified immediately in the event of ETS failure and all dredging operations for the vessel shall cease until the ETS is fully operational. Any delays resulting from ETS failure shall be at the Contractor's expense.

1.8 REFERENCE HORIZONTAL CONTROL DATA

At the preconstruction conference, the Contracting Officer will provide project control from which hydrographic surveys may be extended. This control shall be presumed to meet the accuracy requirements in EM 1110-2-1003. The Contractor shall immediately notify the Contracting Officer if existing control points have been disturbed. In the event new station monumentation is required to perform the work, new stations shall be monumenteted in accordance with EM 1110-1-1002 criteria, and an equitable adjustment will be made to the contract.

1.9 DEPTH MEASUREMENT PROCEDURES AND CALIBRATION

1.9.1 Depth Measurement Precision and Accuracy

Depth measurements including depth observation precision and resolution shall meet the vertical accuracy standards prescribed in EM 1110-2-1003.

1.10 VERTICAL REFERENCE DATUMS

Depth measurements shall be reduced to the specified datum using concurrent staff/gage readings, as described in EM 1110-2-1003. Tide staffs/gages shall be constructed, referenced, maintained, stilled, and read in

accordance with the criteria in EM 1110-2-1003.

1.11 FIELD DATA RECORDING, REDUCTIONS, ARCHIVING, AND PLOTTING REQUIREMENTS.

The data format fields for submitting reduced hydrographic data to the District is x y z. The topographic and feature data shall conform to the intergraph general 3D design file formats specified in the reference. Digital data shall be contained on a 3.5 inch floppy disk or CD-ROM.

1.12 VOLUME COMPUTATIONS

The Contractor shall have the capability to compute excavation quantities from work performed under this contract. The Contracting Officer will furnish construction templates and limits from which volumes are to be computed using any of the techniques given in EM 1110-2-1003. Section drawings shall be made at the horizontal and vertical scales given in EM 1110-2-1003.

1.13 MISCELLANEOUS QUALITY CONTROL PROCEDURES

1.13.1 Automated System Synchronization Checks

Each automated hydrographic survey system shall be checked to insure adequacy of correlation between position and depth. Methods for performing this check are given in EM 1110-2-1003.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 CONTRACTOR SURVEYS

3.1.1 Survey Personnel

The Contractor survey work to be performed under this contract shall be accomplished by, or reviewed and approved by a surveyor familiar with and having personal experience with hydrographic surveys. In addition, the survey personnel shall also be familiar with and have personal experience with hydrographic surveys.

3.1.2 Contractor Quality Control Surveys

The Contractor shall examine his work by conducting hydrographic surveys at no more than 30-day intervals, upon completion of separable portions of the work, and upon completion of the entire work. Contractor quality control surveys shall also be performed and submitted to the Contracting Officer prior to any request for a Government survey for final acceptance. The Contractor shall prepare survey maps based on the results of these surveys. These maps shall be used, by the Contractor, to satisfy himself of the effectiveness of his operations. Attainment of contract depth shall be verified, and a comparison of actual progress and in-place quantities dredged with scheduled progress shall be performed. Contractor surveys will not be used for final payment or acceptance. See Section 02325 DREDGING for additional Contractor survey requirements.

3.1.3 Contractor Progress Payment Surveys

The Contractor shall conduct surveys for any periods for which progress payments are requested. The Contractor will make the computations based on

these surveys. All surveys accomplished by the Contractor shall be conducted under the direction of the Contracting Officer, unless the Contracting Officer waives this requirement for each specific instance. Promptly upon completing a survey, the Contractor shall furnish all data relating to the survey to the Contracting Officer, who will use the data as necessary to determine the amount of progress payments.

3.2 GOVERNMENT SURVEYS

3.2.1 Government Quantity Surveys

The Contracting Officer will conduct the original and final surveys for all dredging areas and make all quantity computations based on those surveys. The surveys will be performed at no expense to the Contractor, except as noted in paragraph "Final Examination and Acceptance" below and as specified in Section 02325 DREDGING. The Contractor shall give a minimum of 3 days notice before completion of a portion of the work requiring a post-dredge survey. A minimum of 2 days will be required by the Government for completion of each of the post-dredge surveys at the site and another 10 to 15 days for calculation of quantities removed and verification of completion of work.

All quantity estimates for dredged material removed will be determined using either single beam or multi-beam survey technology. If single beam technology is used, all edited sounding information obtained from Government pre and post dredge surveys will be used in determining the payable quantity of dredged material removed. If multi-beam survey technology is used, then a 3-foot by 3-foot matrix using the sounding closest to cell center (shot depth) will be generated from the edited multi-beam data and used in determining the payable quantity of dredged material removed. A Digital Terrain Model (DTM) will be created from each of the pre and post dredge surveys. A channel design template will be created at the required dredging depth and at the total allowable overdepth. Each of the channel design templates will be compared with the pre dredge DTM to determine the available quantity of required dredge material and available quantity of overdepth material. The same channel design templates will be compared to the post dredge DTM to determine the quantity of material remaining above the required dredging depth and the quantity of material remaining above the total allowable overdepth. The quantity of required dredged material removed will be derived from these comparisons. If the "box-cutting method of dredging is used to remove dredge material contained in side slopes where "box-cutting is permitted, the channel design templates will be modified to include a "box-cut" width. In all cases, the same channel design templates will be used to determine both the pre and post dredge quantities. Material removed below the total allowable overdepth will not be included in the payable quantity of material.

3.2.2 Final Examination by the Government

a. Submission of all Contractor quality control survey data, including plots, is required prior to performance of final examination and acceptance surveys by the Government.

b. As soon as practicable after completion of the entire work or any section thereof such work will be thoroughly examined at the expense of the Government by sounding or sweeping, or both, as determined by the Contracting Officer. Should any shoals, lumps, or other lack of contract depth be disclosed by this examination the Contractor will be required to

remove the shoals by dredging at the contract rate for dredging. If the bottom is soft and the shoal areas are small and form no material obstruction to navigation, the removal of such shoal may be waived at the discretion of the Contracting Officer. Dragging the bottom to remove lack of contract depth will not be permitted. The Contractor will be notified when soundings and/or sweepings are to be made, and may be permitted to accompany the survey party if approved by the Contracting Officer. When the area is found to be in a satisfactory condition, it will be accepted finally. Should more than one sounding or sweeping operation by the Government over an area be necessary by reason of work for removal of shoals disclosed by a prior sounding or sweeping, the cost of such second and any subsequent sounding or sweeping operations will be charged against the Contractor. The rate for each day in which the Government survey plant is engaged in such sounding or sweeping operations and/or is en route to or from the site, or is held, for the Contractor's convenience at or near the site for these operations, shall be $2,400.00.

3.2.3 Final Acceptance by the Government

Final acceptance of the whole or any part of the work, and the deductions or corrections of deductions made thereon will not be reopened after having once been made, except on evidence of collusion, fraud, or obvious error.

-- End of Section --

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SECTION 02325

DREDGING

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

CORPS OF ENGINEERS (COE)

COE EM-385-1-1	(2003) Safety and Health Requirements Manual

1.2 RELATED WORK SPECIFIED ELSEWHERE

1.2.1 Environmental Protection Requirements

Provide and maintain during the life of the contract, environmental protective measures. Also, provide environmental protective measures required to correct conditions, such as oil spills or debris, that occur during the dredging operations. Comply with Federal, State, and local regulations pertaining to water, air, and noise pollution. See Section 01355 ENVIRONMENTAL PROTECTION.

1.2.2 Underwater Diving Operations

In the event that underwater diving operations become necessary due to the work of this contract, such operations shall be conducted in accordance with CORPS OF ENGINEERS (COE) COE EM-385-1-1 Section 30.

1.3 DEFINITIONS

1.3.1 Suitable Maintenance Material

a. Suitable maintenance material is defined as organic silty sediments, that have accumulated within the areas to be dredged since the last maintenance dredging project, that are suitable for open water disposal. The suitable maintenance material also includes accumulated silty sediment material that sloughs off the side slopes in the designated areas of suitable dredge material.

b. Suitable material for capping the Central Long Island Sound Disposal Site (CLISDS) at the completion of all other work is defined below in Article "Contractor Furnished Suitable Capping Material."

1.3.2 Unsuitable Maintenance Material

Unsuitable maintenance material is defined as organic silty sediments, that have accumulated within the areas to be dredged since the last maintenance dredging project, that are unsuitable for open water disposal. Areas of

unsuitable maintenance material dredging are designated on the drawings. The unsuitable material also includes sediment material that sloughs off the side slopes from the indicated zones of unsuitable material. The unsuitable maintenance material shall be dredged and disposed in the CAD cells excavated by the Contractor.

1.3.3 Native Material

Native material is defined as the inorganic silts, sands, and gravel generally located under the maintenance material. Native material shall be removed during the construction of the In-Channel Confined Aquatic Disposal (CAD) cells, as indicated on the contract drawings.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals for "**Base Bid Items**"

Work Plan for "Base Bid Items"; G, DO.

The Contractor shall submit a work plan for accomplishing the "Base Bid Item" dredging work of this contract, indicated on the Bidding Schedule, not later than 15 calendar days after the date the Contractor receives the notice to proceed. The following items shall be considered, at a minimum, for inclusion in the "Base Bid Item" work plan:

a. Anticipated plant and equipment.

b. Expected coordination requirements.

c. Survey requirements.

d. Proposed measures to avoid over dredging.

e. A work plan for construction of the in-channel disposal cells and dredging and disposal of unsuitable materials in the in-channel disposal cells, including anticipated equipment, cell locations and capacity, scow positioning and drop operations to minimize spillage and mud waves from cells shall be included in the work plan.

f. Submit a cell capping plan for the in-channel disposal cells describing the complete sequence and time schedule of events, proposed equipment to be used, proposed location of suitable materials to be used, and the methods to be employed to ensure the proper capping of cells with minimal disturbance to the unsuitable materials as specified. The plan shall also include the Contractor's proposed methodology for cap thickness and coverage determination.

(1) The detailed plan outlining the methods to be used to ensure disposal barges are within the boundaries of the disposal cells during sediment discharge must be submitted to the Contracting Officer.

Debris Management Plan.

A debris management plan shall be developed as specified in this section and submitted to the Contracting Officer for review.

Inspection of Disposal.

Submit names of inspectors certified by the Corps of Engineers to be used for monitoring disposal activities for the Government at the Central Long Island Sound Disposal Site (CLISDS).

Scows.

Submit scow cards for each scow to be used for contract work. Scow cards shall have information specified in paragraph "Scows."

SD-05 Design Data

Equipment and Performance Data.

The Contractor shall furnish proof of electronic positioning equipment calibration to the Contracting Officer.

Daily/Monthly Report of Operations

The Contractor shall prepare and submit two (2) copies of the Daily Report of Operations, using ENG Form No. 4267, for each dredge. This report shall be submitted on a daily basis. A copy of this form is appended to the end of this Section. In addition to the daily report, the Contractor shall prepare a Monthly Report of Operations for each month or partial month's work on ENG Form No. 4267. The monthly report shall be submitted to the Contracting Officer on or before the 7th of each month, consolidating the previous month's work. Upon completion of the project, the Contractor shall submit a consolidated project report, combining the monthly reports.

Additionally, one copy of the reports shall be maintained by the Contractor on each dredge for the Contracting Officer's inspection purpose. Further instructions on the preparation of the reports will be furnished at the Preconstruction Conference.

Cap Thickness and Coverage Determination Data; G, DO.

Submit cell capping thickness and coverage determination data for each cell capped, within 14 days of completion of data collection. Include data collection methods and results obtained. Provide a certification for each cell that the cell construction is in compliance with the performance requirements of these specifications. If a cell is not in compliance, then state the materials and methods proposed to achieve compliance.

SD-01 Preconstruction Submittals for "**Option Bid Items**"

The submittals listed below shall be submitted within 60 days of award of any of the "Option Bid Items."

Work Plan for "Option Bid Items"; G, DO.

The Contractor shall submit a work plan for accomplishing the "Option Bid Item" dredging work of this contract indicated on the Bidding Schedule.

The following items shall be considered, at a minimum, for inclusion in the work plan for "Option Bid Item" work:

a. Anticipated plant and equipment.

b. Expected coordination requirements.

c. Survey requirements.

d. Proposed measures to avoid over dredging.

e. If Option Bid Item No. 0008 is awarded, submit a capping plan for the capping of the dredged material disposed in the Central Long Island Sound Disposal Site (CLISDS) describing the complete sequence and time schedule of events, planned hours of operation, proposed equipment to be used, including barge capacity and anticipated number of trips per day, proposed location of contractor furnished materials to be used, and the methods to be employed to ensure the proper capping of the dredged material at CLISDS as specified. The plan shall also include the Contractor's proposed methodology for cap thickness and coverage determination.

f. Submit a disposal positioning plan, which details the method proposed to position the scows over the Central Long Island Sound Disposal Site, and to locate the limits of the disposal area at the Central Long Island Sound Disposal Site. Positioning methods may include DGPS, laser technology or other means of identifying the scows position and orientation before disposal. A means of visually verifying location, such as computer imaging, shall be integral with the positioning system.

(1) The detailed plan outlining the methods to be used to ensure disposal barges are within the boundaries of the designated area within the Central Long Island Sound Disposal Site during sediment discharge must be submitted.

Capping Material for CLISDS; G, DO.

If Option Bid Item No. 0008 is awarded, evidence that sufficient dredged sediment suitable for unconfined openwater disposal is available for use as a cap for the material disposed at the CLISDS. Submit a description of the cap sediment, a certification as to the volume of sediment available, documentation of appropriate authorization for dredging the cap sediment, assurances that such sediments will be reserved for the cap and will not be disposed in another manner, and sediment test data showing that this sediment is suitable for use as cap.

Cap Thickness and Coverage Determination Data; G, DO.

If Option Bid Item No. 0008 is awarded, submit CLISDS capping thickness and coverage determination data for the CLISDS, within 14 days of completion of data collection. Include data collection methods and results obtained. Provide a certification that construction is in compliance with the performance requirements of these specifications. If a capping work is not in compliance, then state the materials and methods proposed to achieve compliance.

1.5 NOTIFICATIONS

1.5.1 Notice of Misplaced Material

The Contractor shall notify the Contracting Officer and the U.S. Coast Guard Marine Safety Office of any misplaced material.

1.5.2 Notice of Need for Dredging Survey

The Contractor shall give advance notice to the Contracting Officer of the need for a after-dredging survey for final acceptance for each acceptance section. See Section 01723FIELD ENGINEERING FOR DREDGING, Article GOVERNMENT SURVEYS.

1.5.3 Relocation of Navigation Aids

The Contractor shall not remove, change the location of, obstruct, willfully damage, make fast to, or interfere with any aid to navigation. The Contractor shall notify the Coast Guard District Commander, in writing, with a copy to the Contracting Officer, 30 days in advance of the time he plans to dredge adjacent to any aids which require relocation to facilitate the dredging operation. A copy of the notification shall be provided to the Contracting Officer.

1.5.4 Coordination For Dredging Under The Washington St. Bridge And The RR Swing Bridge

a. To reduce the impact on rush hour traffic, transit through the Washington St. bridge and the RR swing bridge that requires opening the bridges to navigation will be prohibited as listed in the CFR excerpt attached at the end of this Section. The "restricted dredge" area under the Washington St. bridge shall be dredged only as coordinated with the State of Connecticut Department of Transportation a minimum of 30 days in advance of dredging operations. These structures cannot be closed to vehicular traffic for any substantial time during the day due to traffic volume. Dredging in the vicinity of the bridges shall be at night, as specified below. A public notice shall also be coordinated with the local State of Connecticut Department of Transportation and Metro-North Railroad.

b. Opening of the railroad swing bridge requires coordination with Metro-North Railroad.

c. If more than 3" of snow has accumulated on the Washington street bridge, the bridge will not open to vessel traffic until it has been cleared of snow by the State DOT.

1.6 MATERIAL TO BE DREDGED

1.6.1 Character of Materials to be Removed

Dredged material is referred to in these specifications as either suitable maintenance material, unsuitable material, or native material. The material to be removed to accomplish the specified dredging work is anticipated to be organic silt and clays, inorganic silts and clays, sands, and gravel. The Contractor is expected to examine the site of the work and determine the character of the materials to be dredged.

1.6.2 Results of Subsurface Explorations

Subsurface explorations to determine the character of materials to be removed have been made by the Government. The locations of the borings, typical cross sections and strip logs of the borings are located in the Appendix at the end of the specifications. Although the results of such explorations are representative of subsurface conditions at their respective locations and for their respective vertical reaches, local variations in the subsurface materials are to be expected and, if encountered, will not be considered materially different within the purview of the contract.

1.7 WORK AREA

1.7.1 Access

The Contractor shall be responsible for providing and maintaining access necessary for his equipment and plant to and from the work site, mooring areas, and the disposal areas. The Contractor shall ascertain the environmental conditions which can affect the access such as climate, winds, currents, waves, depths, shoaling, and scouring tendencies.

1.7.2 Protection of Existing Waterways

The Contractor shall conduct his operations in such a manner that material or other debris are not pushed outside of dredging limits or otherwise deposited in existing side channels, basins, docking areas, or other areas being utilized by vessels. The Contractor will be required to change his method of operations as may be required to comply with the above requirements. Should any bottom material or other debris be pushed into areas described above, as a result of the Contractor's operations, the material must be promptly removed.

1.7.3 Adjacent Property and Structures

a. The Contractor shall conduct the dredging operation, within the channel and including the side slopes, such that it does not undermine, weaken or otherwise impair existing structures located in or near the areas to be dredged. The Contractor shall investigate the existing structures at the site and plan the dredging work accordingly. Exercise care in dredging near wharfs, piers and abutments so as not to over dredge to such an extent as to undermine the structures or in any way impair the stability of such structures.

b. Damage to private or public property or structures resulting from the dredging or disposal operations shall be repaired promptly by the Contractor at his expense. Damage to structures resulting from the Contractor's negligence will result in suspension of dredging and require prompt repair at the Contractor's expense as a prerequisite to the resumption of dredging.

1.7.4 Artificial Obstructions

The Contractor may encounter bottom debris such as, but not limited to, pieces of broken cable, rope, miscellaneous metal, and broken and derelict moorings. The Government has no knowledge of other existing wrecks, wreckage, or other artificial obstructions of such size or character as to require the use of explosives or special means for its removal. During dredging operations, the Contractor shall remove all debris encountered.

Floating debris removed from the dredging area shall be separated and stockpiled for upland disposal. Disposal in accordance with local, Federal, and State laws and regulations shall be the responsibility of the Contractor. In case the actual conditions differ from those stated or shown, or both, an adjustment in contract price or time of completion, or both, will be made in accordance with "FAR 52.236-2, Differing Site Conditions."

1.7.5 No Spud Zones

When dredging adjacent to the "No Spud Zones" indicated on the drawings, the Contractor shall install buoys delineating the outline of the no spud areas to be protected. "No Spud" areas are marked on the contract drawings for protection of known utilities.

1.7.6 Protection of Utility Lines

Existing utility lines that are shown on the drawings or the locations of which are made known to the Contractor prior to dredging, and that are to be retained, shall be protected from damage during dredging, and if damaged, shall be satisfactorily repaired by the Contractor at no additional cost to the Government. Prior to commencement of dredging, the Contractor shall coordinate with the Contracting Officer and the applicable utility company to mark the locations of existing utilities, and establish in detail the proposed method of protecting the existing utilities. In the event that the Contractor damages any existing utility lines that are not shown on the drawings or the locations of which are not known to the Contractor, report shall be made immediately to the Contracting Officer. If the Contracting Officer determines that repairs shall be made by the Contractor, such repairs will be ordered under the Contract Clause entitled "DIFFERING SITE CONDITIONS."

1.8 OVERDEPTH AND SIDE SLOPES

1.8.1 Required Depth

The material actually removed from within the specific areas to be dredged to a depth of not more than the required depth shown on the drawings, plus the allowable overdepth, will be estimated and paid for in accordance with the provisions contained in Section 01270 MEASUREMENT AND PAYMENT. For construction of CAD cells, overdepth measurement and payment will not be made for material excavated below the indicated cell limits, including sideslopes.

1.8.2 Allowable Overdepth

To cover unavoidable inaccuracies of dredging processes, material removed to the overdepth shown on the drawings and within the dredging limits will be measured and paid for under the contract price.

1.8.3 Side Slopes

Dredging on side slopes shall follow, as closely as practicable, the lines indicated on the drawings, without affecting the stability of any structures within the side slopes. An allowance will be made for dredging beyond the lines indicated or specified for side slopes. The allowance will be determined by projecting a line upwards, paralleling the project design side slopes, from the intersection of the overdepth dredging limit (at a point located vertically below the limit of dredging at the top of

slope). The amount of material excavated from side slopes will be determined by either cross-sections or computer, or both.

1.8.4 Excessive Dredging

Material taken from beyond the indicated overdepth will be deducted from the total amount dredged as excessive overdepth dredging, or excessive side-slope overdepth dredging for which payment will not be made.

1.9 DEBRIS MANAGEMENT PLAN

A debris management plan shall be developed, reviewed by the Contracting Officer and followed by the Contractor. Debris removed from the bottom during dredging operations, which is not suitable for disposal at the Central Long Island Sound Disposal Site, shall be collected and removed from the site. Unsuitable materials include large items such as timbers, pilings, sections of piers, and metallic debris. Generally, all floating debris and bottom debris larger than 10 feet in any dimension will be considered unsuitable for disposal in CAD cells or ocean dumping. Each day during dredging operations, the Contractor shall use a boat to collect and remove floating debris resulting from project activities. Floating debris shall also be removed from within barges, if applicable. Debris removed from the bottom during dredging operations, shall also be collected and removed from the site. Abandoned piles shall be cut or broken off below the required excavation depth, rather than extracted. Sediment removal during such activity shall be minimized to the greatest extent practicable. Containers for temporary storage of the collected debris shall be maintained on the dredge or support barge.

1.10 INSPECTION

Inspect the work, keep records of work performed, and ensure that gages, targets, ranges, and other markers are in place and usable for the intended purpose. See Section 01451 CONTRACTOR QUALITY CONTROL.

1.10.1 Method of Communication

Provide a system of communication between the dredge crew, towboats, the disposal inspector, and the Contracting Officer. Portable two-way marine radios are acceptable.

1.10.2 Transportation

The Contractor shall furnish, at the request of the Government Representative, the use of such boats, boatmen, laborers, and material forming a part of the ordinary and usual equipment and crew of the equipment or marine plant as may be reasonably necessary in inspecting and monitoring the work. The Contractor shall furnish, on the request of the Government Representative, suitable transportation from all points on shore designated by the Contracting Officer to and from the various pieces of plant, and the work site.

1.11 INSPECTION OF DISPOSAL

a. No disposal shall be done at the Central Long Island Sound Disposal Site (CLISDS)unless a Corps of Engineers Certified Inspector is present. The inspector shall be available on a full-time basis to cover all phases of operations in connection with disposal of the dredged materials at the Central Long Island Sound Disposal Site (CLISDS).

b. The Contractor shall be responsible for and provide qualified disposal inspection services at no additional cost to the Government. The Contractor shall notify the Contracting Officer of the names of the Corps of Engineers Certified inspectors to be used prior to commencement of work. Every discharge of dredge material at the Central Long Island Sound Disposal Site (CLISDS) must be officially witnessed and properly documented by an onboard inspector who has been trained by, and who holds a current certification from the New England District, Army Corps of Engineers. Failure to adhere to this requirement will be considered a serious violation of this contract and cause for an immediate stop-work order by the Contracting Officer and which could precipitate substantial penalties including but not necessarily limited to fines, withholding of funds and non-payment due to misplaced materials.

1.12 MOORINGS

1.12.1 Active Moorings and Floating Docks

The City of Norwalk will be responsible for the removal and replacement of active moorings and any floating docks in the anchorage areas at no cost to the Contractor. The moorings and docks will be removed by the City prior to the commencement of dredging operations. Moorings and docks removed by the City will not be replaced until the the area is dredged by the Contractor and accepted by the Government. The Contractor shall coordinate and confirm the time schedule necessary for the removal of the moorings and docks with the local harbor master.

1.12.2 Derelict Moorings

Derelict moorings located by the Contractor during dredging operations, or otherwise made known to the Contractor, shall be reported to the Contracting Officer. The Contracting Officer will verify the location of the moorings and any potential hazards to navigation. Such moorings shall be removed and disposed by the Contractor under the contract price for dredging.

PART 2 PRODUCTS

2.1 Contractor Furnished Capping Material for CLISDS

The material shall be dredged sediment as certified by the CT DEP to be suitable for unconfined open water disposal at the Central Long Island Sound Disposal Site (CLISDS) and as approved by the Contracting Officer. The Contractor shall obtain all necessary permits, testing, and approvals for use of the dredged sediment.

PART 3 EXECUTION

3.1 DREDGING PLANT AND ASSOCIATED EQUIPMENT

3.1.1 Dredging Plant

All dredging under this contract shall be performed using a mechanical type dredge. Dredge all unsuitable maintenance material from all reaches of the Federal channel and harbor using an clamshell bucket dredge. Overflow of scows while dredging the unsuitable material will not be permitted. Overflow of scows will be permitted while dredging the native CAD cell materials and the suitable maintenance material. Hydraulic dredging will

not be permitted.

3.1.2 Tow Boats

All tow boats used for towing to disposal areas shall be equipped with DGPS navigational equipment, radar, corrected compass, marine radio, and depth sounding equipment which is to be maintained in operating condition during each tow. The tow boats utilized by the Contractor for this purpose shall be of a size adequate for towing in heavy seas and shall have necessary reserve power for maneuvering with scows in rough seas and under emergency conditions as well as for control of scows at the disposal point.

3.1.3 Scows

a. Water and dredged materials shall not be permitted to overflow or spill out of scows when dredging unsuitable material. Failure to repair leaks or change the method of operation which is resulting in overflow or spillage will result in suspension of dredging operations and require prompt repair or change of operation to prevent overflow or spillage as a prerequisite to the resumption of dredging. Overflow of scows will be permitted when dredging native materials for construction of CAD cells and the suitable maintenance material.

b. The Contractor shall provide and maintain markings on all scows clearly indicating the draft of the scow and shall provide scow cards for each scow used on the contract work. The scow cards shall show dimensions and volumes of individual pockets of scows and total volumes for varying depths below coaming or top of pockets. This is to enable Government personnel to make a determination of scow volume and corresponding drafts under partial and full load conditions. These measurements are to be made at the time of initial use of each scow. This information will then be furnished to disposal inspectors to enable them to estimate scow volume from draft of scows for each scow being towed to the the Central Long Island Sound Disposal Site (CLISDS) disposal area. The scow volume estimates are for use in connection with disposal area monitoring studies and are not intended to be used in determining quantities dredged. At the beginning of the work and as additional scows arrive on the project, sufficient time shall be allowed by the Contractor and assistance of Contractor personnel shall be made available by the Contractor for the purpose of obtaining the measurements of each scow under various partial and full load conditions. During the entire period of contract work, the Contractor shall provide and maintain sufficient spot or floodlights to permit the reading of the draft on the sides of scows at bow and stern from the tow boat at night and when visibility is impaired. The draft readings and each pocket/compartment measurement will be required for each scow towed to the disposal area and will be made by the disposal inspector. Measurements are to be taken and recorded prior to departure from the dredge site and upon arrival at the immediate disposal location. The Contractor shall ensure that adequate time is allowed by the tow boat captain for these readings to be obtained.

c. Due to the fine nature of the dredged material, the Contractor shall achieve proper closure and watertightness of pocket doors to eliminate seepage or leakage of material. The use of plastic material to cover cracks in scow pockets will not be allowed.

3.1.4 Signal Lights

Each night, between sunset and sunrise and during periods of restricted visibility, provide lights for floating plants, ranges, and markers. Also,

provide lights for buoys that could endanger or obstruct navigation. When night work is in progress, maintain lights from sunset to sunrise for the observation of dredging operations. Lighting shall conform to United States Coast Guard requirements for visibility and color.

3.2 CONDUCT OF DREDGING WORK

3.2.1 Order of Work

a. The Government reserves the right to change the order of work at any time. The Contractor shall fully coordinate all work with the Harbor Master. The Contractor shall prepare and submit to the Contracting Officer for review and approval a progress schedule in accordance with Section 01110, Paragraph "Work Sequence."

b. The contractor shall commence work at the upstream end of the project, at the Washington Street Bridge.

For Base Bid Item Work (Phase 1)

a. Dredging of the suitable maintenance material from the 10 foot channel and disposal of the material at the Central Long Island Sound Disposal Site (CLISDS).

b. Dredging of the CAD cells with disposal of native materials at the Central Long Island Sound Disposal Site (CLISDS). This dredged material shall be disposed uniformly over the suitable maintenance material dredged and disposed from the 10 foot channel.

c. Dredging of the unsuitable maintenance material from the 10 foot channel with disposal in the CAD cells.

d. After last disposal into each CAD cell, allow the unsuitable maintenance materials in each CAD cell to consolidate for a minimum of 30 days, or a time period as directed, before each of the caps are placed. The CAD cells shall be capped with approximately 3 feet of suitable material dredged from either the 6 foot or the 12 foot channel, as directed by the Contracting Officer.

For Option Item Work (Phase 2)

a. Dredge all suitable maintenance materials from all remaining reaches of the Federal Channel and anchorage areas and dispose the materials at the CLISDS.

b. Cap the CLISDS uniformly using not less than 75,000 cubic yards of Contractor furnished suitable sediment material.

3.2.2 Method of Disposal

a. Disposal of material dredged for construction of the in channel CAD cells shall be at the Central Long Island Sound Disposal Site. Disposal of unsuitable material dredged from the areas indicated shall be in the Contractor constructed CAD cells indicated on the drawings. Disposal of suitable material dredged from the down stream areas indicated shall be at the CAD cell caps, and the remainder at the Central Long Island Sound Disposal Site. The disposal area at the CLISDS shall be capped uniformly as directed by the Contracting Officer using using not less than 75,000 cubic yards of Contractor furnished suitable material. A map of the

disposal site is attached at the end of this Section. The haul route to the disposal area will be subject to the approval of the Contracting Officer. Every discharge of dredged material at the Central Long Island Sound Disposal Site (CLISDS) shall be witnessed by an inspector who has been trained and certified by the New England District, Corps of Engineers to insure that disposal occurs at the designated site.

b. Provide for safe transportation and disposal of dredged materials. Dredged material transported and disposed at the Central Long Island Sound Disposal Site will be at one or more taut wire buoys.

c. Deposit dredged material by self-dumping scow or barge. Do not remove loaded or partially loaded scows or barges from the dredge area until the load has been measured by the Contracting Officer. Notify the Contracting Officer when scows or barges are returned to the dredge area.

d. Buoy positions at the Central Long Island Sound Disposal Site (CLISDS) will be documented and monitored by Government inspectors during the course of the work. The disposal points will be marked by one or more buoys. Coordinates of the buoys locations will be specified at the time a disposal inspector is approved by the Contracting Officer. All disposal shall be done at the buoys with the scow at a complete halt. This requirement must be followed except when weather or sea state create unsafe conditions, in which case disposal within 100 feet of the buoy with the scow moving only fast enough to maintain safe control (generally less than one knot) will be permitted. Disposal shall not be attempted if the above conditions cannot be met. Anticipated weather conditions shall be determined prior to departing for the disposal site.

3.2.3 Alternative Disposal Sites

Bids received shall be based on utilizing only the above described areas. Alternate areas will not be considered until after the award of the contract. If, after the award of the contract, a disposal area other than that stipulated in these specifications is proposed, its acceptance will be subject to the approval of the Contracting Officer after an adjustment of the contract price if found necessary by the Contracting Officer to protect the Government interest. The Contractor shall obtain the written consent of the owners of the substitute grounds and furnish evidence thereof to the Contracting Officer. All expenses incurred in connection with providing and making available such disposal areas shall be borne by the Contractor, and all materials deposited thereon, and all operations in connection therewith, shall be at the Contractors risk. Comply with rules and regulations of local port and harbor governing authorities.

3.2.4 Misplaced Material Disposal

Material that is deposited elsewhere than in locations designated or approved by the Contracting Officer will not be paid for and the Contractor shall be required to remove such misplaced material and deposit it where directed at his expense.

3.2.5 Interference with Navigation

Minimize interference with the use of channels and passages. The Contracting Officer will direct the shifting or moving of dredges or the interruption of dredging operations to accommodate the movement of vessels and floating equipment, if necessary. The Contractor shall comply with all requests from the Contracting Officer to move or interrupt dredging

operations for a reasonable time period at on no additional cost to the Government.

3.2.6 Ranges, Gages, and Lines

Furnish, set, and maintain ranges, buoys, and markers needed to define the work and to facilitate inspection. Establish and maintain gages in locations observable from each part of the work so that the depth may be determined. Suspend dredging when the gages or ranges cannot be seen or followed. The Contracting Officer will furnish, upon request by the Contractor, survey lines, points, and elevations necessary for the setting of ranges, gages, and buoys.

3.2.7 Debris Management

Debris removed from the bottom during dredging operations, which is not suitable for disposal at the Central Long Island Sound Disposal Site, shall be collected and removed from the site. Unsuitable materials include large items such as timbers, pilings, sections of piers, and metallic debris. A debris management plan shall be developed, reviewed by the Contracting Officer and followed by the Contractor. Each day during dredging operations, the Contractor shall use a boat to collect and remove floating debris resulting from project activities. Floating debris shall also be removed from within scows or barges. Containers for temporary storage of the collected debris shall be maintained on the dredge or support barge.

3.3 SHOALING

If, before the contract is completed, shoaling occurs in any section previously accepted, including shoaling in the finished channel because of the natural lowering of the side slopes, redredging at contract price, within the limits of available funds may be done if agreeable to both the Contractor and the Contracting Officer.

3.4 FINAL CLEANUP

Final cleanup shall include the removal of all the Contractor's plant and equipment. Plant, equipment, and materials to be disposed of shall only be disposed in a manner and at locations approved by the Contracting Officer. Unless otherwise approved by the Contracting Officer, the Contractor will not be permitted to abandon any equipment in the disposal area or other areas adjacent to the worksite.

Failure to promptly remove all plant, equipment, and materials upon completion of the dredging will be considered a delay in the completion of the final cleanup and demobilization work. In such case, the Government will exercise its right to remove any plant, equipment, and materials at the Contractor's expense.

-- End of Section --

QUALITY CONTROL REPORT- BUCKET/PIPELINE DREDGE

CONTRACT NO.	CONTRACT TITLE	CONTRACTOR	DATE	REPORT NO.

CHARACTER OF WORK: ☐ MAINTENANCE ☐ NEW WORK ☐ ENVIROMENTAL

DREDGE

NAME	SIZE	PIPELINE	DIPPER OR BUCKET SIZE

HORSEPOWER OF	DREDGE PUMP	SUCTION PIPE JET	CUTTER OR BUDGET

NO. OF CREW MEMBERS	DREDGE	SHORE	OTHER PLANT	TOTAL	WORK SCHEDULE	SHIFTS PER DAY	DAYS PER WEEK

LOCATION/CHANNEL OF WORK

LOCATION OF WORK

REACH DREDGED STATION. TO STATION	DISPOSAL AREA USED	QTY DEPOSITED GROSS (CY)	CUMULATIVE AND QTY DEPOSIT FOR DA (CY)

CHARACTER OF MATERIAL (%)

GRAVEL____	SAND_____	CLAY_____	MUD_____	SILT_____
HARDPAN_____	STONE_____	SHELL_____	OTHER_____	

CHANNEL CONDITION: AVERAGE DEPTH | BEFORE DREDGING_____ | AFTER DREDGING_____

RIVER/TIDE STAGE

MIN	TIME	MAX	TIME	GAGE LOCATION
MIN	TIME	MAX	TIME	GAGE DATUM

WEATHER CONDITION

WEATHER	TEMP	VISIBILITY	WIND

WORK PERFORMED

ITEM	UNIT	QUANTITY
AVERAGE WIDTH OF CUT	FT	
TOTAL ADVANCE THIS PERIOD	FT	
TOTAL ADVANCE PREVIOUSLY	FT	
TOTAL ADVANCE TO DATE	FT	

FLOATING PIPE_____ | SHORE PIPE_____ | SUBMERGED PIPE_____

TOTAL LENGTH OF DISCHARGE PIPE | FT | |

_____H.P. BOOSTER ADDED @_____FT TO DA_____

_____H.P. BOOSTER ADDED @_____FT TO DA_____

CUBIC YARDS REMOVED	GROSS	CREDITED
AMOUNT DREDGED THIS DATE		
AMOUNT PREVIOUSLY REPORTED		
TOTAL AMOUNT DREDGED TO DATE		
AMOUNT DREGGED PER PUMPING/CUTTING HR		

OPERATING SUPPLIES

COMMODITY		CONSUMED	CREDITED
ITEM	UNIT	QUANTITY	QUANTITY
FUEL	BBL		
ELECTRICITY	KW		
LUBRICANTS	GAL		

MOB DATE:_____ | DREDGE START:_____ | DEMOB DATE:_____

DISTRIBUTION OF WORK

EFFECTIVE WORKING TIME (CHARGEABLE TO COST OF WORK)	HR.	MIN.
PUMPING OR DREDGING		
PCT OF EFFECTIVE TIME %		
BOOSTER (IN LINE)		
NON-EFFECTIVE WORKING TIME (CHARGEABLE COST TO WORK)		
HANDLING PIPE LINES		
HANDLING ANCHOR LINES		
CLEARING PUMP AND PIPE LINES		
CLEARING CUTTER OR SUCTION HEAD		
WAITING FOR SCOWS		
TO AND FROM WHARF OR ANCHORAGE		
CHANGING LOCATION OF PLANT ON JOB		
LOSS DUE TO OPPOSING NATURAL ELEMENTS		
SHORE LINE AND SHORE WORK		
WAITING FOR BOOSTER		
MINOR OPERATING REPAIRS (EXPLAIN IN REMARKS)		
WAITING FOR ATTENDENT PLANT		
PREPARATION AND MAKING UP TOW		
TRANSFERRING PLANT BETWEEN WORKS		
LAY TIME OFF SHIFT AND SATURDAYS		
SUNDAYS AND HOLIDAYS		
FIRE DRILL		
MOVING OUT OF WAY OF TRAFFIC		
MISCELLANEOUS (EXPLAIN IN REMARKS)		
TOTAL NON-EFFECTIVE TIME		
PCT. OF NON-EFFECTIVE %		
TOTAL EFFECTIVE AND NON-EFFECTIVE TIME (CHARGEABLE TO COST OF WORK)		

QUALITY CONTROL REPORT-PIPELINE DREDGE

CONTRACT NO.	CONTRACT TITLE	CONTRACTOR	DATE	REPORT NO.

ATTENDANT PLANT

ITEM	NAME OR NUMBER	H.P.	HOURS

LOST TIME

(NOT CHARGEABLE TO COST OF WORK)

MAJOR REPAIRS AND ALTERATIONS		
CESSATION		
COLLISIONS		
MISCELLANEOUS		
TOTAL LOST TIME		
PERCENTAGE OF TOTAL TIME	%	
TOTAL TIME IN PERIOD		

NARRATIVES

down vertically a number of times in full sight of the vessel.

(2) When the draw cannot be opened immediately, or is open and must close, a red flag by day or a red light by night, swung back and forth horizontally in full sight of the vessel, to be repeated until acknowledged by the vessel by the same signal.

[CGD 82-025, 49 FR 43459, Oct. 29, 1984, as amended by CGD3 85-42, 50 FR 26711, June 28, 1985]

§ 117.215 Niantic River.

(a) The draw of the Amtrak bridge, mile 0.0 at Niantic, shall open on signal; except that, from April 1 through October 31 from 8 p.m. to 4 a.m. and from November 1 through March 31 from 6 p.m. to 6 a.m., the draw shall open on signal if at least one hour notice is given. When a train scheduled to cross the bridge without stopping has entered the drawbridge block, a delay in opening the draw may occur until the train has cleared the block.

(b) The draw of the S156 Bridge, mile 0.1, at Niantic, shall open on signal; except that, from 7 a.m. to 8 a.m., and 4 p.m. to 5 p.m., Monday through Friday, except holidays, the draw shall open only for the passage of commercial vessels. From December 1 through March 31, from 8 p.m. to 4 a.m., the draw shall open on signal if at least six hours notice is given by calling the number posted at the bridge.

[CGD 82-025, 49 FR 17452, Apr. 24, 1984; 49 FR 37381, Sept. 24, 1984; CGD01-99-087, 64 FR 61519, Nov. 12, 1999]

§ 117.217 Norwalk River.

(a) The draw of the Washington Street S136 bridge, mile 0.0 at Norwalk, shall open on signal; except that, from 7 a.m. to 8:45 a.m., 11:45 a.m. to 1:15 p.m., and 4 p.m. to 6 p.m. Monday through Friday except holidays, the draw need not be opened for the passage of vessels that draw less than 14 feet of water. The opening signal is three short blasts. Vessels drawing 14 feet of water or more shall add one prolonged blast after the three short blasts.

(b) The draw of the Metro-North "WALK" bridge, mile 0.1 at Norwalk, shall open on signal as follows:

(1) From 5 a.m. to 9 p.m., except that, from Monday through Friday excluding holidays, the draw need not be opened from 7 a.m. to 8:45 a.m. and 4 p.m. to 6 p.m., unless an emergency exists.

(2) Only once in any 60-minute period from 5:45 a.m. to 7 a.m. and 6 p.m. to 7:45 p.m.

(3) From 9 p.m. to 5 a.m., if at least four hours notice is given.

(4) A delay of up to 20 minutes may be expected if a train is approaching so closely that it may not be safely stopped.

[CGD 82-025, 49 FR 17452, Apr. 24, 1984, as amended by CGD3 85-42, 50 FR 26711, June 28, 1985]

§ 117.219 Pequonnock River.

(a) Public vessels of the United States and vessels in distress shall be passed through the draw of each bridge as soon as possible.

(b) The Stratford Avenue Bridge, mile 0.1, at Bridgeport, shall open on signal; except that, from 6:45 a.m. to 7:15 a.m., 7:45 a.m. to 8:15 a.m., 11:45 a.m. to 1:15 p.m., and 4:30 p.m. to 6:10 p.m., the draw need not open for the passage of vessels. From December 1 through March 31, from 8 p.m. to 4 a.m., the draw shall open on signal if at least six-hours notice is given by calling the number posted at the bridge.

(c) The draw of the Metro-North "PECK" bridge, mile 0.3 at Bridgeport, shall open on the signal of three blasts as follows:

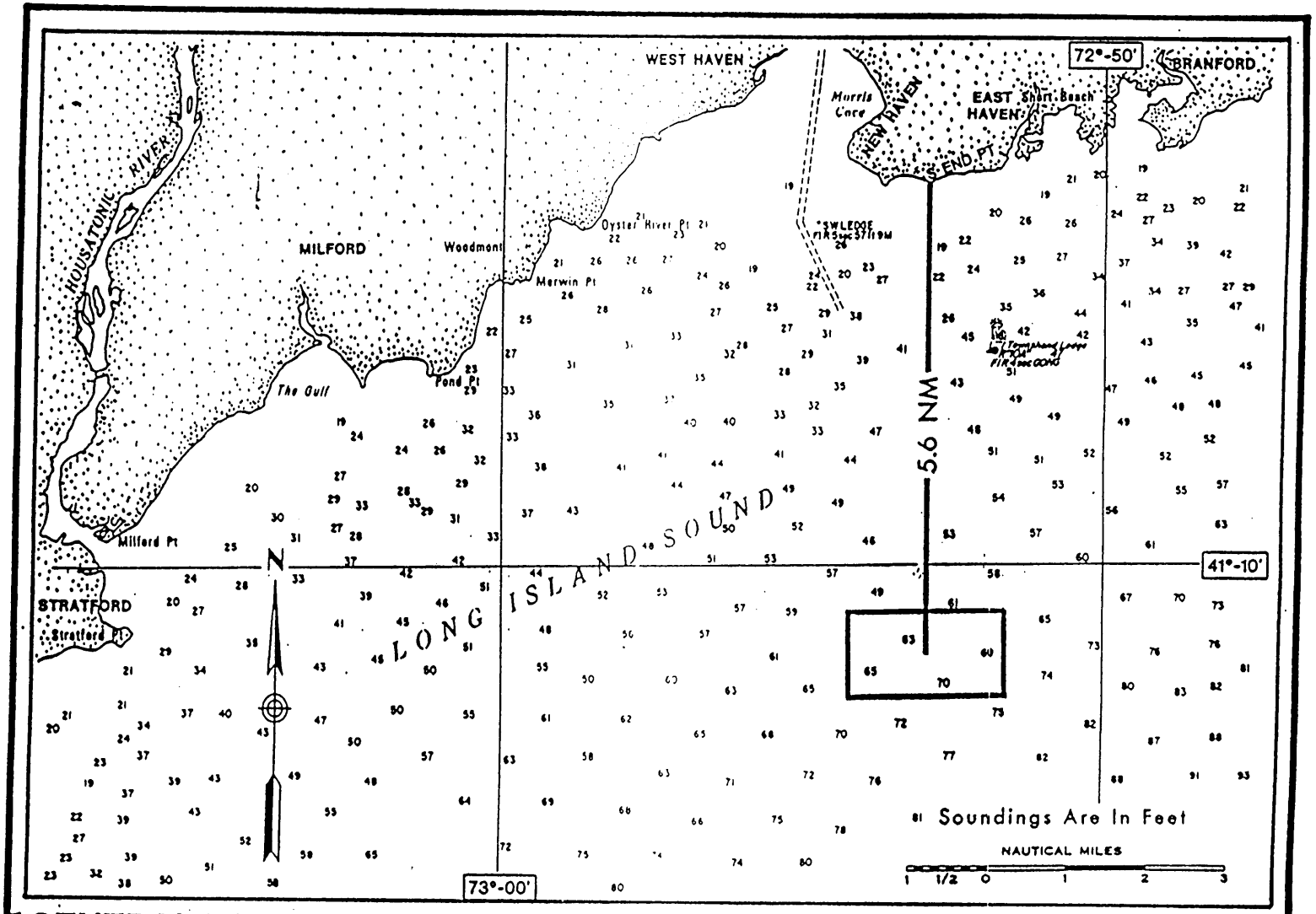
(1) From 5:45 a.m. to 9 p.m. except:

(i) From Monday through Friday, excluding holidays or emergencies, the draw need not be opened from 6:45 a.m. to 7:15 a.m., 7:45 a.m. to 8:15 a.m., and 4:30 p.m. to 6:10 p.m.

(ii) From Monday through Friday, excluding holidays or emergencies, the draws need not be opened more than once during the periods 5:45 a.m. to 6:45 a.m., 7:15 a.m. to 7:45 a.m., 8:15 a.m. to 9 a.m., and 6:10 p.m. to 8:15 p.m.

(2) From 9 p.m. to 5:45 a.m., the draws shall open on signal if at least eight hours notice is given.

(3) The draw need not open on signal if a train is approaching so closely that it may not be safely stopped; however, the delay in opening the draw shall not exceed 7 minutes from time of the request.



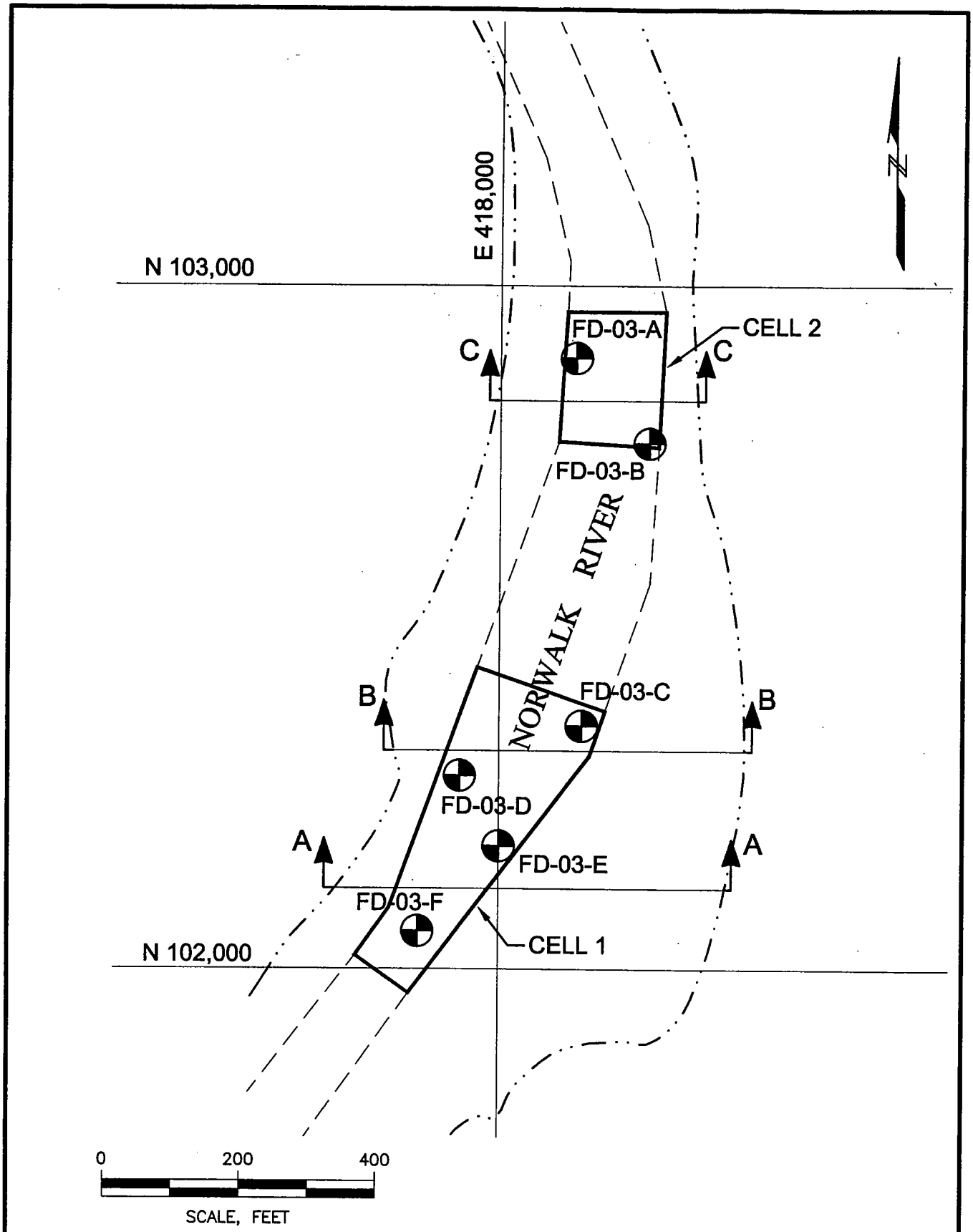
CENTRAL LONG ISLAND SOUND DISPOSAL SITE

Description: This site is a two nautical miles long by one nautical mile wide with the major axis running true east-west and center at 41°-08.95'N latitude and 72°-52.85'W longitude. From the center, Southwest Ledge Light bears true 345° at 10,750 yards and Townshend Ledge Lighted Gong Buoy No. "10-A" bears true 13° at 7,400 yards. This site is approximately 5.6 nautical miles off South End Point, East Haven. Depth Range: 49-75 feet MLW. The authorized disposal point (within the overall disposal area) is specified for each dredging project in other documents.

NOTE: The map depicts the disposal site's location in relation to landmarks. It is not intended for use in navigation.

Appendix

Logs of Explorations



U.S. Army Corp of Engineers Norwalk, Connecticut	Norwalk Harbor CAD Cell	BORING LOCATION PLAN
GEI Consultants, Inc.	Project 03019	November 2003 Fig. 1

03019-01 djm 11/25/03

GEI Consultants, Inc. 1021 Main Street Winchester, MA 01890	Project: Norwalk Harbor CAD Cell Location: Norwalk, CT	Boring No.: FD-03-A

Client:	U.S. Army Corp of Engineers	Boring Location:	41d 06' 50.1" N 73d 24' 34.6" W	Drilling Method:	CWB
Driller:	Hardiman Co. & Associates	Mudline Elevation (ft.):	-9.6	Casing ID/OD:	HW 4.0"/4.5"
Operator:	T. Hardiman (III)	Datum:	MLLW	Sampler:	2-1/2" I.D. Split Spoon
Logged By:	S. DiBartolo	Total Depth (ft.):	37.0	Hammer Wt./Fall:	300#/ 18"
Date Start/Finish:	05/06/03-05/06/03	Water Level:	Standing Water		

ABBREVIATIONS:
S = Split Spoon Sample
A = Auger Sample
U = Thin Wall Tube Sample
C = Rock Core Sample
NX,BX = Rock Coring
n/a,n/m = not Applicable, not Measured
HSA = Hollow Stem Auger Boring
SSA = Solid Stem Auger Boring
CWB = Cased Wash Boring
Open = Open Hole Boring
Pen. = Penetration length
Rec. = Recovery Length
WOC = weight of casing
WOR = weight of rods
WOH = weight of 300lb. hammer
RQD = Rock Quality Designation
S_u = Insitu Field Vane Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
S_v = Pocket Torvane Shear Strength (tsf)
Q_p = Pocket Penetrometer Unconfined Compressive Strength (tsf)

Elevation (ft.)	Casing Blows (/1 ft.)	Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-value	Top Elevation (ft.)	Water Level*	Graphic Log	USCS Visual Descriptions and Remarks	Stratum
		0										
-10	WOC											
	WOC		U1	24/10	1.0 - 3.0	PUSH	PUSH	-10.6			U1 - ORGANIC SOIL (OL) Trimming Classification; mostly organic fines; ≅5% fine sand; strong organic odor; twigs; root fibers; black.	ORGANIC SEDIMENT
	WOC											
	WOC		U2	24/24	3.0 - 5.0	PUSH	PUSH	-12.6			U2 - ORGANIC SOIL (OL) Trimming Classification; mostly homogeneous, slightly plastic to nonplastic organic fines; ≅5-10% fine sand; organic odor; black.	ORGANIC SEDIMENT
	WOC											
		5										
-15	WOC		S1	24/22	5.0 - 7.0	WOR-WOR-WOR-5	WOR	-14.6			S1 (0-12") - ORGANIC SOIL (OL); mostly slightly plastic to nonplastic organic fines; ≅10-15% fine to medium sand; <5% fine, subangular gravel, max size ≅1/2"; medium sand lenses intermittent; leaves; twigs; root fibers; strong organic/petroleum odor; black.	ORGANIC SEDIMENT
	54											
	117										6.5 FEET/ El. -16.1 FEET	SAND AND GRAVEL
	68										S1 (12-22") - NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); mostly medium sand; ≅35-40% fine to coarse, subrounded to subangular gravel, max size ≅1-1/4"; ≅5-10% nonplastic fines; petroleum odor; gray.	
	68										Note: Obstruction @ ≅7-9'; possibly wood.	
		10										
-20	18		S2	24/12	10.0 - 12.0	11-23-17-51	40	-19.6			S2 - WIDELY GRADED GRAVEL WITH SAND (GW); mostly fine to coarse, subrounded to angular gravel, max size ≅2"; ≅15-20% fine to coarse sand; ≅5% nonplastic fines; some severely to completely weathered gravel; brown-dark brown mottled gold with multicolored gravel.	SAND AND GRAVEL
	47											
	37											
	57											
	52											
		15										
-25	32		S3	24/6	15.0 - 17.0	32-48-19-20	67	-24.6			S3 - Similar to S2; except max size ≅2-1/4"; brown mottled gold with multicolored rocks.	SAND AND GRAVEL
	61											
	72											
	63											
	51											
		20										
-30	12		S4	24/6	20.0 - 22.0	17-11-10-8	21	-29.6			S4 - Similar to S2; except ≅20-25% fine to coarse sand; max size ≅2-1/4".	SAND AND GRAVEL
	18											
	25											
	28											
	47											
		25										
-35	14		S5	24/6	25.0 - 27.0	9-5-6-9	11	-34.6			S5 - WIDELY GRADED GRAVEL WITH SAND (GW); mostly fine to coarse, subrounded to angular gravel, max size ≅2"; ≅20-25% fine to coarse sand; ≅5% nonplastic fines; some severely to completely weathered gravel; brown mottled gold with multicolored rocks.	SAND AND GRAVEL
	28											
	47											
	43											
	34											

Remarks:

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

Project No.: 03019-0

GEI Consultants, Inc. 1021 Main Street Winchester, MA 01890	Project: Norwalk Harbor CAD Cell Location: Norwalk, CT	Boring No.: FD-03-A

Client:	U.S. Army Corp of Engineers	**Boring Location:**	41d 06' 50.1" N 73d 24' 34.6" W	**Drilling Method:**	CWB
Driller:	Hardiman Co. & Associates	**Mudline Elevation (ft.):**	-9.6	**Casing ID/OD:**	HW 4.0"/4.5"
Operator:	T. Hardiman (III)	**Datum:**	MLLW	**Sampler:**	2-1/2" I.D. Split Spoon
Logged By:	S. DiBartolo	**Total Depth (ft.):**	37.0	**Hammer Wt./Fall:**	300#/ 18"
Date Start/Finish:	05/06/03-05/06/03	**Water Level:**	Standing Water		

ABBREVIATIONS:
S = Split Spoon Sample
A = Auger Sample
U = Thin Wall Tube Sample
C = Rock Core Sample
NX,BX = Rock Coring
n/a,n/m = not Applicable, not Measured
HSA = Hollow Stem Auger Boring
SSA = Solid Stem Auger Boring
CWB = Cased Wash Boring
Open = Open Hole Boring
Pen. = Penetration length
Rec. = Recovery Length
WOC = weight of casing
WOR = weight of rods
WOH = weight of 300lb. hammer
RQD = Rock Quality Designation
S_u = Insitu Field Vane Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
S_v = Pocket Torvane Shear Strength (tsf)
Q_p = Pocket Penetrometer Unconfined Compressive Strength (tsf)

Elevation (ft.)	Casing Blows (/1 ft.)	Depth (ft.)	Sample Information: Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-value	Top Elevation (ft.)	Water Level*	Graphic Log	USCS Visual Descriptions and Remarks	Stratum
-40	36	30	S6	24/12	30.0 - 32.0	42-23-22-22	45	-39.6			S6 - WIDELY GRADED GRAVEL WITH SAND (GW); mostly fine to coarse subrounded to angular gravel, max size ≅2-1/4"; ≅15-20% fine to coarse sand; ≅5% slightly plastic to nonplastic fines; some severely to completely weathered gravel; brown mottled gold and black with multicolored gravel.	SAND AND GRAVEL
	43											
	34										—32.5 FEET/ El. -42.1 FEET—	
	43											
	56											
-45		35	S7	24/2	35.0 - 37.0	17-21-25-18	46	-44.6			S7 - SILTY SAND WITH GRAVEL (SM); fine to coarse sand; ≅25-30% gravel, max size ≅2-1/2"; ≅15-20% slightly plastic to nonplastic fines; piece of gravel stuck in split spoon tip; brown.	SILTY GRAVEL AND SAND
								-46.6			BOTTOM OF BOREHOLE, 37.0 FEET/ EL. -46.6 FEET.	
-50		40										
-55		45										
-60		50										
-65		55										

Remarks:

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

Project No.: 03019-0

GEI Consultants, Inc. 1021 Main Street Winchester, MA 01890	Project: Norwalk Harbor CAD Cell Location: Norwalk, CT	Boring No.: FD-03-B

Client:	U.S. Army Corp of Engineers	**Boring Location:**	41d 06' 48.9" N 73d 24' 33.2" W	**Drilling Method:**	CWB
Driller:	Hardiman Co. & Associates	**Mudline Elevation (ft.):**	-5.1	**Casing ID/OD:**	HW 4.0"/4.5"
Operator:	T. Hardiman (III)	**Datum:**	MLLW	**Sampler:**	2-1/2" I.D. Split Spoon
Logged By:	S. DiBartolo	**Total Depth (ft.):**	36.0	**Hammer Wt./Fall:**	300#/ 18"
Date Start/Finish:	05/05/03-05/05/03	**Water Level:**	Standing Water		

ABBREVIATIONS:
S = Split Spoon Sample
A = Auger Sample
U = Thin Wall Tube Sample
C = Rock Core Sample
NX,BX = Rock Coring
n/a,n/m = not Applicable, not Measured
HSA = Hollow Stem Auger Boring
SSA = Solid Stem Auger Boring
CWB = Cased Wash Boring
Open = Open Hole Boring
Pen. = Penetration length
Rec. = Recovery Length
WOC = weight of casing
WOR = weight of rods
WOH = weight of 300lb. hammer
RQD = Rock Quality Designation
S_u = Insitu Field Vane Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
S_v = Pocket Torvane Shear Strength (tsf)
Q_p = Pocket Penetrometer Unconfined Compressive Strength (tsf)

Elevation (ft.)	Casing Blows (/1 ft.)	Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-value	Top Elevation (ft.)	Water Level*	Graphic Log	USCS Visual Descriptions and Remarks	Stratum
	WOC	0	S1	24/8	0.0 - 2.0	WOR-WOR-WOR-WOR	WOR				S1 - ORGANIC SOIL (OL); mostly homogeneous, nonplastic organic fines; ≅5% fine to coarse sand; leaves; twigs; strong organic odor; black.	ORGANIC SEDIMENT
	WOC											
	WOC		U1	24/24	2.0 - 4.0	PUSH	PUSH	-7.1			U1 - Trimmings Classification, Similar to S1; except ≅5-10% fine to coarse sand.	ORGANIC SEDIMENT
	WOC											
-10	WOC	5	S2	24/16	4.0 - 6.0	WOR-WOR-WOR-WOR	WOR	-9.1			S2 - ORGANIC SOIL (OL); mostly homogeneous slightly plastic to nonplastic organic fines; ≅10-15% fine to coarse sand; <5% fine, subrounded gravel, max size ≅1/2"; leaves; twigs; strong organic odor; black.	ORGANIC SEDIMENT
	WOC											
	WOC		S3	24/24	6.0 - 8.0	WOR-WOR-WOR-WOR	WOR	-11.1			S3 - Similar to S2; except medium sand lens @ 12".	ORGANIC SEDIMENT
	WOC											
	WOC		S4	24/9	8.0 - 10.0	WOR-WOR-WOR-WOR	WOR	-13.1			S4 - Similar to S2.	ORGANIC SEDIMENT
	WOC											
-15	WOC	10	S5	24/18	10.0 - 12.0	WOR-WOR-WOR-4	WOR	-15.1			S5 (0-13") - Similar to S2; except slightly plastic @ 10-13".	ORGANIC SEDIMENT
	46										11.5 FEET/ El. -16.6 FEET	
	33		S6	24/15	12.0 - 14.0	13-13-15-15	28	-17.1			S5 (13-18") - SANDY ORGANIC SOIL WITH GRAVEL (OL); slight to low plasticity fines; ≅15-20% fine to medium sand; ≅10-15% fine to coarse subrounded to subangular gravel, max size ≅2-1/4"; sand and gravel mostly @ 15-18"; wood fragments; roots; organic odor; gray.	SAND AND GRAVEL
	29										S6 (0-7") - WIDELY GRADED GRAVEL WITH SAND (GW); mostly fine to coarse, subangular to angular gravel, max size ≅2"; ≅15-20% fine to coarse sand; <5% nonplastic fines; some severely to completely weathered gravel; brown with multicolored gravel.	SAND AND GRAVEL
-20	29	15	S7	24/15	14.0 - 16.0	15-19-16-17	35	-19.1			S6 (7-15") - WIDELY GRADED GRAVEL WITH SILT AND SAND (GW-GM); mostly fine to coarse, subrounded to subangular gravel, max size ≅2"; ≅15-20% fine to coarse sand; ≅10% nonplastic fines; some severely to completely weathered gravel; light brown with some gold mottling.	SAND AND GRAVEL
	30											
	42											
	31											
	40											
-25	20	20	S8	24/10	19.0 - 21.0	12-14-15-19	29	-24.1			S7 - Similar to S6 (7-15"); except ≅25-30% fine to coarse sand mostly @ 0-6"; one piece of severely to completely weathered gravel @ 13-15". S8 - Similar to S6 (7-15"); except ≅25-30% fine to coarse sand; subrounded to subangular gravel, max size ≅2".	SAND AND GRAVEL
	35											
	47											
	80											
	44											
-30	45	25	S9	24/13	24.0 - 26.0	13-21-12-17	33	-29.1			S9 - Similar to S6 (7-15"); except ≅25-30% fine to coarse sand; subrounded to subangular gravel, max size ≅2-1/4"; severely to completely weathered gravel @ 7-13".	SAND AND GRAVEL
	44											
	47											
	38											
	42											
-35	38		S10	24/5	29.0 - 31.0	15-20-30-31	50	-34.1			S10 - Similar to S6 (7-15"); except max size ≅1-1/2"; multicolored gravel.	SAND AND

Remarks:

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

Project No.: 03019-0

GEI Consultants, Inc. 1021 Main Street Winchester, MA 01890	Project: Norwalk Harbor CAD Cell Location: Norwalk, CT	Boring No.: FD-03-B

Client:	U.S. Army Corp of Engineers	Boring Location:	41d 06' 48.9" N 73d 24' 33.2" W	Drilling Method:	CWB
Driller:	Hardiman Co. & Associates	Mudline Elevation (ft.):	-5.1	Casing ID/OD:	HW 4.0"/4.5"
Operator:	T. Hardiman (III)	Datum:	MLLW	Sampler:	2-1/2" I.D. Split Spoon
Logged By:	S. DiBartolo	Total Depth (ft.):	36.0	Hammer Wt./Fall:	300#/ 18"
Date Start/Finish:	05/05/03-05/05/03	Water Level:	Standing Water		

ABBREVIATIONS:
S = Split Spoon Sample
A = Auger Sample
U = Thin Wall Tube Sample
C = Rock Core Sample
NX,BX = Rock Coring
n/a,n/m = not Applicable, not Measured
HSA = Hollow Stem Auger Boring
SSA = Solid Stem Auger Boring
CWB = Cased Wash Boring
Open = Open Hole Boring
Pen. = Penetration length
Rec. = Recovery Length
WOC = weight of casing
WOR = weight of rods
WOH = weight of 300lb. hammer
RQD = Rock Quality Designation
S_u = Insitu Field Vane Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
S_v = Pocket Torvane Shear Strength (tsf)
Q_p = Pocket Penetrometer Unconfined Compressive Strength (tsf)

Elevation (ft.)	Casing Blows (/1 ft.)	Depth (ft.)	Sample No.		Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-value	Top Elevation (ft.)	Water Level*	Graphic Log	USCS Visual Descriptions and Remarks	Stratum
	42	30											GRAVEL
	67												
	54												
	43												
-40		35	S11		24/5	34.0 - 36.0	33-13-9-8	22	-39.1			S11 - Similar to S6 (7-15"); except ≅20-25% fine to coarse sand; max size ≅1-1/4".	SAND AND GRAVEL
									-41.1			BOTTOM OF BOREHOLE, 36.0 FEET/ EL. -41.1 FEET.	
-45		40											
-50		45											
-55		50											
-60		55											

Remarks:

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

Project No.: 03019-0

GEI Consultants, Inc.

1021 Main Street
Winchester, MA 01890

Project: Norwalk Harbor CAD Cell
Location: Norwalk, CT

Boring No.: FD-03-C

Client:	U.S. Army Corp of Engineers	**Boring Location:**	41d 06' 44.8" N 73d 24' 36.8" W	**Drilling Method:**	CWB
Driller:	Hardiman Co. & Associates	**Mudline Elevation (ft.):**	-6.0	**Casing ID/OD:**	HW 4.0"/4.5"
Operator:	T. Hardiman (III)	**Datum:**	MLLW	**Sampler:**	2-1/2" I.D. Split Spoon
Logged By:	S. DiBartolo	**Total Depth (ft.):**	52.0	**Hammer Wt./Fall:**	300#/ 18"
Date Start/Finish:	05/01/03-05/02/03	**Water Level:**	Standing Water		

ABBREVIATIONS:
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C = Rock Core Sample
NX,BX = Rock Coring
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HSA = Hollow Stem Auger Boring
SSA = Solid Stem Auger Boring
CWB = Cased Wash Boring
Open = Open Hole Boring
Pen. = Penetration length
Rec. = Recovery Length
WOC = weight of casing
WOR = weight of rods
WOH = weight of 300lb. hammer
RQD = Rock Quality Designation
S_u = Insitu Field Vane Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
S_v = Pocket Torvane Shear Strength (tsf)
Q_p = Pocket Penetrometer Unconfined Compressive Strength (tsf)

Elevation (ft.)	Casing Blows (/1 ft.)	Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-value	Top Elevation (ft.)	Water Level*	Graphic Log	USCS Visual Descriptions and Remarks	Stratum
	WOC	0	S1	24/24	0.0 - 2.0	WOR-WOR-WOR-WOR	WOR				S1 - ORGANIC SOIL (OL); mostly homogeneous, nonplastic organic fines; <5% fine sand; leaves; root fibers; twigs; slightly plastic fines in pockets; strong organic odor; black.	ORGANIC SEDIMENT
	WOC											
	WOC		S2	24/20	2.0 - 4.0	WOR-WOR-WOR-WOR	WOR	-8.0			S2 - Similar to S1; except slightly plastic to nonplastic organic fines; ≅5% fine sand; wood fragments.	ORGANIC SEDIMENT
	WOC											
-10	WOC	5	U1	24/21	4.0 - 6.0	PUSH	PUSH	-10.0			U1 - Trimmings Classification, Similar to S2.	ORGANIC SEDIMENT
	WOC											
	WOC		S3	24/21	6.0 - 8.0	WOR-WOR-WOR-WOR	WOR	-12.0			S3 (0-8") - Similar to S2; except petroleum odor.	ORGANIC SEDIMENT
	WOC										S3 (8-21") - SILT (ML); mostly homogeneous, low plasticity fines; root fibers and organic matter throughout; medium dry strength; slight petroleum/ organic odor; gray.	ORGANIC SEDIMENT
	52		S4	24/16	8.0 - 10.0	WOR-WOR-83-31	83	-14.0			S4 (0-9") - Similar to S3 (8-21"); except organic odor.	ORGANIC SEDIMENT
-15	84	10									9.0 FEET/ El. -15.0 FEET	
	64										S4 (9-16") - SILTY GRAVEL WITH SAND (GM); mostly fine to coarse subrounded to subangular gravel, max size ≅1-1/2"; ≅30-35% fine to coarse sand; ≅10-15% nonplastic fines; medium sand lens @ 9-10"; light gray @ 9-11", light brown mottled with light gray @ 11-16".	SAND AND GRAVEL
	30											
	31											
	40											
-20	40											
	20	15	S5	24/8	15.0 - 17.0	19-34-15-24	49	-21.0			S5 (0-4") - WASH MATERIAL; mostly coarse sand; <5% nonplastic fines; multicolored particles with light brown tint.	SAND AND GRAVEL
	41										S5 (4-8") - WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); mostly fine to coarse sand; ≅30-35% fine to coarse, subrounded to subangular gravel, max size ≅1-1/2"; ≅10% nonplastic fines; some severely to completely weathered gravel; reddish-brown mottled gold.	
	48											
	33											
-25	29											
	26	20	S6*	24/3	20.0 - 22.0	20-22-16-15	38	-26.0			S6 - NARROWLY GRADED SAND WITH GRAVEL (SP) mostly medium sand; ≅10-15% fine, subrounded to subangular gravel, max size ≅1/4"; <5% nonplastic fines; brown mottled gold with multicolored gravel.	SAND AND GRAVEL
	19											
	16											
	16											
-30	34											
	15	25	S7	24/5	25.0 - 27.0	16-16-11-6	27	-31.0			S7 - NARROWLY GRADED GRAVEL WITH SILT AND SAND (GP-GM); mostly fine to coarse, subrounded to subangular gravel, max size ≅1-1/2"; ≅30-35% fine to coarse sand; ≅10% nonplastic fines; some severely weathered gravel; brown with multicolored gravel.	SAND AND GRAVEL
	19											
	15											
	17											
-35	17											

Remarks:

S6* - No recovery first attempt. Redrove sampler over same interval for 3 inches of recovery.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

Project No.: 03019-0

GEI Consultants, Inc. 1021 Main Street Winchester, MA 01890	Project: Norwalk Harbor CAD Cell Location: Norwalk, CT	Boring No.: FD-03-C

Client:	U.S. Army Corp of Engineers	**Boring Location:**	41d 06' 44.8" N 73d 24' 36.8" W	**Drilling Method:**	CWB
Driller:	Hardiman Co. & Associates	**Mudline Elevation (ft.):**	-6.0	**Casing ID/OD:**	HW 4.0"/4.5"
Operator:	T. Hardiman (III)	**Datum:**	MLLW	**Sampler:**	2-1/2" I.D. Split Spoon
Logged By:	S. DiBartolo	**Total Depth (ft.):**	52.0	**Hammer Wt./Fall:**	300#/ 18"
Date Start/Finish:	05/01/03-05/02/03	**Water Level:**	Standing Water		

ABBREVIATIONS:
S = Split Spoon Sample
A = Auger Sample
U = Thin Wall Tube Sample
C = Rock Core Sample
NX,BX = Rock Coring
n/a,n/m = not Applicable, not Measured
HSA = Hollow Stem Auger Boring
SSA = Solid Stem Auger Boring
CWB = Cased Wash Boring
Open = Open Hole Boring
Pen. = Penetration length
Rec. = Recovery Length
WOC = weight of casing
WOR = weight of rods
WOH = weight of 300lb. hammer
RQD = Rock Quality Designation
S_u = Insitu Field Vane Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
S_v = Pocket Torvane Shear Strength (tsf)
Q_p = Pocket Penetrometer Unconfined Compressive Strength (tsf)

Elevation (ft.)	Casing Blows (/1 ft.)	Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-value	Top Elevation (ft.)	Water Level*	Graphic Log	USCS Visual Descriptions and Remarks	Stratum
	13	30	S8	24/9	30.0 - 32.0	27-15-20-18	35	-36.0			S8 - Similar to S7; except no weathered gravel; max size ≅2".	SAND AND GRAVEL
	25											
	50											
	50											
-40	93											
	160	35	S9	6/0	35.0 - 35.5	50/6"	50/6"	-41.0			S9 - No Recovery; Spoon Bouncing.	
	89											
	65											
	40											
-45	39											
	2	40	S10	24/2	40.0 - 42.0	51-33-49-20	82	-46.0			S10 - WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); mostly fine to coarse sand; ≅35-40% fine, subangular to angular gravel, max size ≅1/2"; ≅10% nonplastic fines; some completely weathered gravel; light brown mottled black-light gray with multicolored gravel.	SAND AND GRAVEL
	51											
	36											
	51											
-50	55											
	23	45	S11	24/14	45.0 - 47.0	17-11-17-17	28	-51.0			S11 - WIDELY GRADED GRAVEL WITH SILT AND SAND (GW-GM); mostly fine to coarse, subrounded to angular gravel, max size ≅2-1/2" stuck in spoon shoe; ≅35-40% fine to coarse sand; ≅10% nonplastic fines; some severely to completely weathered gravel; reddish-brown mottled gold.	SAND AND GRAVEL
	52											
	56											
	52											
-55	68											
		50	S12	24/21	50.0 - 52.0	14-22-28-15	50	-56.0			S12 - WIDELY GRADED GRAVEL WITH SILT AND SAND (GW-GM); mostly fine to coarse, subrounded to angular gravel, max size ≅1-1/2"; ≅35-40% fine to coarse sand; ≅10% nonplastic fines; pockets of silty fine sand; some severely to completely weathered gravel in pockets; seams of medium sand intermittent; brown mottled reddish-brown and gold with multicolored gravel.	SAND AND GRAVEL
								-58.0			BOTTOM OF BOREHOLE, 52.0 FEET/ EL. -58.0 FEET.	
-60		55										
-65												

Remarks:

S6* - No recovery first attempt. Redrove sampler over same interval for 3 inches of recovery.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

Project No.: 03019-0

GEI Consultants, Inc. 1021 Main Street Winchester, MA 01890	Project: Norwalk Harbor CAD Cell Location: Norwalk, CT	Boring No.: FD-03-D

Client:	U.S. Army Corp of Engineers	Boring Location:	41d 06' 41.1" N 73d 24' 36.8" W	Drilling Method:	CWB
Driller:	Hardiman Co. & Associates	Mudline Elevation (ft.):	-13.0	Casing ID/OD:	HW 4.0"/4.5"
Operator:	T. Hardiman (III)	Datum:	MLLW	Sampler:	2-1/2" I.D. Split Spoon
Logged By:	S. DiBartolo	Total Depth (ft.):	52.0	Hammer Wt./Fall:	300#/ 18"
Date Start/Finish:	04/29/03-04/30/03	Water Level:	Standing Water		

ABBREVIATIONS:
S = Split Spoon Sample
A = Auger Sample
U = Thin Wall Tube Sample
C = Rock Core Sample
NX,BX = Rock Coring
n/a,n/m = not Applicable, not Measured
HSA = Hollow Stem Auger Boring
SSA = Solid Stem Auger Boring
CWB = Cased Wash Boring
Open = Open Hole Boring
Pen. = Penetration length
Rec. = Recovery Length
WOC = weight of casing
WOR = weight of rods
WOH = weight of 300lb. hammer
RQD = Rock Quality Designation
S_u = Insitu Field Vane Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
S_v = Pocket Torvane Shear Strength (tsf)
Q_p = Pocket Penetrometer Unconfined Compressive Strength (tsf)

Elevation (ft.)	Casing Blows (/1 ft.)	Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-value	Top Elevation (ft.)	Water Level*	Graphic Log	USCS Visual Descriptions and Remarks	Stratum
	WOC	0	S1	24/8	0.0 - 2.0	WOH-WOH-WOH-WOH	WOH				S1 - ORGANIC SOIL (OL); mostly homogeneous, nonplastic organic fines, slightly plastic organic fines @ 5-8"; ≅5% fine sand; <5% fine, subrounded gravel, max size ≅1/2"; leaves; twigs; root fibers; organic odor; dark gray-black.	ORGANIC SEDIMENT
	WOC											
-15	12		S2	24/24	2.0 - 4.0	WOR-WOR-5-6	5	-15.0			S2 (0-15") - ORGANIC SOIL (OL); mostly organic soil, nonplastic @ 0-11" and slightly plastic @ 11-15"; ≅20% fine sand, mostly @ 8-11"; occasional gravel, max size ≅1/2"; leaves, wood fragments, and root fibers @ 0-8"; wood and shell fragments @ 8-11"; organic odor; black @ 0-8", light gray mottled white @8-11", light gray @ 11-15".	ORGANIC SEDIMENT
	9										3.0 FEET/ El. -16.0 FEET	SAND AND GRAVEL
	55	5									S2 (15-24") - WIDELY GRADED SAND (SP); mostly medium sand; ≅10% fine, subrounded to subangular gravel, max size ≅1/2"; ≅5-10% nonplastic fines; slight petroleum odor; light gray @ 15-22", light brown @ 22-24".	
	58											
-20	90											
	58											
	68											
	59	10										
	23		S3	24/14	10.0 - 12.0	15-22-23-20	45	-23.0			S3 (0-7") - WASH MATERIAL; mostly fine, subrounded to subangular gravel, max size ≅1/2"; ≅20-25% medium to coarse sand, some fine sand; <5% nonplastic fines; light brown-gray with multicolored gravel. (WASH MATERIAL)	SAND AND GRAVEL
	48										S3 (7-14") - WIDELY GRADED GRAVEL WITH SILT AND SAND (GW-GM); mostly fine to coarse, subrounded to subangular gravel, max size ≅2"; ≅35-40% fine to coarse sand; ≅10% nonplastic fines; some severely to completely weathered gravel; increasing gravel @ 10-14".	
-25	76											
	118											
	62	15										
	51		S4	24/4	15.0 - 17.0	9-11-15-13	26	-28.0			S4 - Similar to S3 (0-7"); except ≅5% nonplastic fines. (WASH MATERIAL)	
	52											
-30	110											
	96											
	85	20										
	43		S5	24/10	20.0 - 22.0	13-18-17-13	35	-33.0			S5 - SILTY SAND WITH GRAVEL (SM); mostly fine to coarse sand; ≅30% fine to coarse, subrounded to subangular gravel, max size ≅1-1/2"; ≅15-20% slightly plastic to nonplastic fines; some severely to completely weathered gravel; brown mottled gold and red with multicolored gravel.	SAND AND GRAVEL
	30											
-35	39											
	31											
	25	25										
	23		S6	24/8	25.0 - 27.0	19-13-12-9	25	-38.0			S6 - Similar to S5; except ≅35-40% fine to coarse, subrounded to subangular gravel, max size ≅2"; no red mottling.	SAND AND GRAVEL
	24											
-40	27											
	23											
	30											

Remarks:

S7* - No recovery first attempt. Redrove sampler over same interval for 12 inches of recovery.
S10* - No recovery first attempt. Redrove sampler over same interval for 3 inches of recovery.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

Project No.: 03019-0

GEI Consultants, Inc. 1021 Main Street Winchester, MA 01890	Project: Norwalk Harbor CAD Cell Location: Norwalk, CT	Boring No.: FD-03-D

Client:	U.S. Army Corp of Engineers	Boring Location:	41d 06' 41.1" N 73d 24' 36.8" W	Drilling Method:	CWB
Driller:	Hardiman Co. & Associates	Mudline Elevation (ft.):	-13.0	Casing ID/OD:	HW 4.0"/4.5"
Operator:	T. Hardiman (III)	Datum:	MLLW	Sampler:	2-1/2" I.D. Split Spoon
Logged By:	S. DiBartolo	Total Depth (ft.):	52.0	Hammer Wt./Fall:	300#/ 18"
Date Start/Finish:	04/29/03-04/30/03	Water Level:	Standing Water		

ABBREVIATIONS:
S = Split Spoon Sample
A = Auger Sample
U = Thin Wall Tube Sample
C = Rock Core Sample
NX,BX = Rock Coring
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HSA = Hollow Stem Auger Boring
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RQD = Rock Quality Designation
S_u = Insitu Field Vane Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
S_v = Pocket Torvane Shear Strength (tsf)
Q_p = Pocket Penetrometer Unconfined Compressive Strength (tsf)

Elevation (ft.)	Casing Blows (/1 ft.)	Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-value	Top Elevation (ft.)	Water Level*	Graphic Log	USCS Visual Descriptions and Remarks	Stratum
		30										
	21		S7*	24/12	30.0 - 32.0	16-8-9-13	17	-43.0			S7 - NARROWLY GRADED SAND (SP); mostly fine to coarse sand; ≅5% fine, subangular gravel, max size ≅1/4"; <5% nonplastic fines; less gravel @ 7-12"; ≅2-1/2" piece of gravel with severely to completely weathered gravel attached to it found in spoon shoe; brown.	
	23											
-45	33											
	41											
	44											
	32	35	S8	24/10	35.0 - 37.0	55-15-14-14	29	-48.0			S8 - WIDELY GRADED GRAVEL WITH SILT AND SAND (GW-GM); mostly fine to coarse, rounded to subangular gravel, max size ≅2"; ≅35-40% fine to medium sand; ≅10% nonplastic fines; some severely to completely weathered gravel; tight structure; brown mottled black with multicolored gravel.	SAND AND GRAVEL
	43											
-50	43											
	65											
	101											
	45	40	S9	24/11	40.0 - 42.0	12-15-15-11	30	-53.0			S9 (0-5") - NARROWLY GRADED SAND (SP); mostly fine sand; ≅5% nonplastic fines; <5% fine, subrounded to subangular gravel, max size ≅1/2"; brown.	SAND AND GRAVEL
	37										S9 (5-11") - WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); mostly fine to coarse sand; ≅35-40% fine to coarse, subangular gravel, max size ≅2"; ≅5-10% nonplastic fines; some severely to completely weathered gravel; brown.	SAND AND GRAVEL
-55	41											
	39											
	45											
	47	45	S10*	24/3	45.0 - 47.0	19-9-8-8	17	-58.0			S10 - WIDELY GRADED SAND WITH GRAVEL (SW); mostly fine to coarse sand; ≅20% fine, subangular gravel, max size ≅1/4"; <5% nonplastic fines; brown with multicolored particles.	SAND AND GRAVEL
	36											
-60	38											
	49											
	59											
		50	S11	24/18	50.0 - 52.0	12-11-13-10	24	-63.0			S11 - WIDELY GRADED SAND WITH GRAVEL (SW); mostly fine to coarse sand; ≅25- 30% fine to coarse, subrounded to subangular gravel, max size ≅2-1/2"; <5% nonplastic fines; tight structure; some severely to completely weathered gravel; brown with multicolored particles.	SAND AND GRAVEL
-65								-65.0			BOTTOM OF BOREHOLE, 52.0 FEET/ EL. -65.0 FEET.	
		55										
-70												

Remarks:

S7* - No recovery first attempt. Redrove sampler over same interval for 12 inches of recovery.
S10* - No recovery first attempt. Redrove sampler over same interval for 3 inches of recovery.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

Project No.: 03019-0

GEI Consultants, Inc. 1021 Main Street Winchester, MA 01890	Project: Norwalk Harbor CAD Cell Location: Norwalk, CT	Boring No.: FD-03-E

Client:	U.S. Army Corp of Engineers	**Boring Location:**	41d 06' 43.0" N 73d 24' 36.0" W	**Drilling Method:**	CWB
Driller:	Hardiman Co. & Associates	**Mudline Elevation (ft.):**	-6.1	**Casing ID/OD:**	HW 4.0"/4.5"
Operator:	T. Hardiman (III)	**Datum:**	MLLW	**Sampler:**	2-1/2" I.D. Split Spoon
Logged By:	S. DiBartolo	**Total Depth (ft.):**	51.0	**Hammer Wt./Fall:**	300#/ 18"
Date Start/Finish:	04/28/03-04/28/03	**Water Level:**	Standing Water		

ABBREVIATIONS:
S = Split Spoon Sample
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U = Thin Wall Tube Sample
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CWB = Cased Wash Boring
Open = Open Hole Boring
Pen. = Penetration length
Rec. = Recovery Length
WOC = weight of casing
WOR = weight of rods
WOH = weight of 300lb. hammer
RQD = Rock Quality Designation
S_u = Insitu Field Vane Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
S_v = Pocket Torvane Shear Strength (tsf)
Q_p = Pocket Penetrometer Unconfined Compressive Strength (tsf)

Elevation (ft.)	Casing Blows (/1 ft.)	Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-value	Top Elevation (ft.)	Water Level*	Graphic Log	USCS Visual Descriptions and Remarks	Stratum
	WOC	0	S1	24/10	0.0 - 2.0	WOR-WOR-WOR-WOR	WOR				S1 - ORGANIC SOIL (OL); mostly homogeneous, nonplastic organic fines; ≅5% fine sand; trace leaves and root fibers; strong organic odor; dark gray black.	ORGANIC SEDIMENT
	WOC											
	WOC		S2	24/15	2.0 - 4.0	WOR-WOR-WOR-WOR	WOR	-8.1			S2 - Similar to S1; except slightly plastic organic fines @ 11-14"; gray.	ORGANIC SEDIMENT
	WOC											
-10	WOC		S3	24/24	4.0 - 6.0	WOR-WOR-WOR-WOR	WOR	-10.1			S3 - ORGANIC SOIL (OL); mostly homogeneous, slightly plastic to nonplastic organic fines; ≅5-10% fine sand; leaves; wood fragments; root fibers; ≅1/2"-thick brown fine sand layer @ 16"; strong organic odor; dark gray-gray.	ORGANIC SEDIMENT
	WOC	5										
	WOC		S4	24/24	6.0 - 8.0	WOH-WOH-WOH-WOH	WOH	-12.1			S4 - ORGANIC SOIL (OL); mostly homogeneous, slightly plastic to nonplastic organic fines; ≅5-10% fine sand; leaves; root fibers; pockets of clay and fine to medium sand @ 0-9"; organic odor; dark gray-gray, brown @ 4-9", dark gray-black @ 14-24".	ORGANIC SEDIMENT
	12											
-15	41		S5	24/11	8.0 - 10.0	3-6-15-20	21	-14.1			8.0 FEET/ El. -14.1 FEET S5 (0-3") - GRAVELLY ORGANIC SOIL (OL); mostly slightly plastic to nonplastic organic fines; ≅20% fine to coarse, subangular gravel, max size ≅1"; ≅5-10% fine to medium sand; petroleum odor; dark gray-black. S5 (3-11") - WIDELY GRADED GRAVEL WITH SAND (GW); mostly fine to coarse, subrounded to subangular gravel, max size ≅1"; ≅35-40% medium to coarse sand, mostly @ 3-6"; ≅5% nonplastic fines; slight petroleum odor; light brown @ 3-4"; brown with red tint @ 4-6"; reddish-brown @ 6-11".	SAND AND GRAVEL SAND AND GRAVEL
	42	10										
	52											
	26											
	30											
-20	27											
	34											
	18	15	S6	24/12	15.0 - 17.0	15-14-13-12	27	-21.1			S6 (0-9") - WASH MATERIAL; mostly fine, subrounded to subangular gravel, max size ≅1/4"; ≅10-15% fine to coarse sand; <5% nonplastic fines; light brown-gray with multicolored gravel. S6 (9-12") - WIDELY GRADED GRAVEL WITH SILT AND SAND (GW-GM); mostly fine to coarse, subrounded to subangular gravel, max size ≅2"; ≅35-40% fine to coarse sand; ≅5-10% nonplastic fines; brown mottled gold.	SAND AND GRAVEL
	48											
	75											
-25	38											
	62											
	25	20	S7	24/15	20.0 - 22.0	13-20-17-36	37	-26.1			S7 (0-7") - Similar to S6 (0-9"); except ≅5% nonplastic fines. (WASH MATERIAL) S7 (7-15") - WIDELY GRADED GRAVEL WITH SAND (GM); mostly fine to coarse, subangular to angular gravel, max size ≅2"; ≅20-25% fine to coarse sand; ≅10% nonplastic fines; brown mottled gold.	SAND AND GRAVEL
	55											
	56											
-30	47											
	54											
	41	25	S8	24/10	25.0 - 27.0	9-13-13-15	26	-31.1			S8 - WIDELY GRADED GRAVEL WITH SILT AND SAND (GW-GM); mostly fine to coarse, subrounded to subangular gravel, max size ≅1-3/4"; ≅40-45% fine to coarse sand; ≅5-10% nonplastic fines; brown with multicolored gravel and trace gold mottling.	SAND AND GRAVEL
	36											
	44											
-35	45											
	43											

Remarks:

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

Project No.: 03019-0

GEI Consultants, Inc. 1021 Main Street Winchester, MA 01890	Project: Norwalk Harbor CAD Cell Location: Norwalk, CT	Boring No.: FD-03-E

Client:	U.S. Army Corp of Engineers	**Boring Location:**	41d 06' 43.0" N 73d 24' 36.0" W	**Drilling Method:**	CWB
Driller:	Hardiman Co. & Associates	**Mudline Elevation (ft.):**	-6.1	**Casing ID/OD:**	HW 4.0"/4.5"
Operator:	T. Hardiman (III)	**Datum:**	MLLW	**Sampler:**	2-1/2" I.D. Split Spoon
Logged By:	S. DiBartolo	**Total Depth (ft.):**	51.0	**Hammer Wt./Fall:**	300#/ 18"
Date Start/Finish:	04/28/03-04/28/03	**Water Level:**	Standing Water		

ABBREVIATIONS:
S = Split Spoon Sample
A = Auger Sample
U = Thin Wall Tube Sample
C = Rock Core Sample
NX,BX = Rock Coring
n/a,n/m = not Applicable, not Measured
HSA = Hollow Stem Auger Boring
SSA = Solid Stem Auger Boring
CWB = Cased Wash Boring
Open = Open Hole Boring
Pen. = Penetration length
Rec. = Recovery Length
WOC = weight of casing
WOR = weight of rods
WOH = weight of 300lb. hammer
RQD = Rock Quality Designation
S_u = Insitu Field Vane Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
S_v = Pocket Torvane Shear Strength (tsf)
Q_p = Pocket Penetrometer Unconfined Compressive Strength (tsf)

Elevation (ft.)	Casing Blows (/1 ft.)	Depth (ft.)	Sample Information: Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-value	Top Elevation (ft.)	Water Level*	Graphic Log	USCS Visual Descriptions and Remarks	Stratum
	35 66 69 65 60	30	S9	24/11	30.0 - 32.0	9-14-16-17	30	-36.1			S9 - WIDELY GRADED GRAVEL WITH SILT AND SAND (GW-GM); mostly fine to coarse, subrounded to subangular gravel, max size ≅2-1/4"; ≅25-30% fine to coarse sand; ≅10% nonplastic fines; brown-dark brown mottled gold.	SAND AND GRAVEL
-40	41 52 51 63 42	35	S10	24/7	35.0 - 37.0	12-22-17-15	39	-41.1			S10 - Similar to S9; except pocket of black fine sand.	SAND AND GRAVEL
-45	31 29 35 54 57	40	S11	24/10	40.0 - 42.0	12-16-6-6	22	-46.1			S11 - WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); mostly fine to coarse sand; ≅40-45% fine to coarse, subrounded to subangular gravel, max size ≅1-3/4"; ≅10% nonplastic fines; pockets of severely to completely weathered gravel; brown mottled gold with multicolored gravel.	SAND AND GRAVEL
-50	38 48 57 50 63	45	S12	24/12	45.0 - 47.0	14-8-7-11	15	-51.1			S12 - WIDELY GRADED GRAVEL WITH SILT AND SAND (GW-GM); mostly fine to coarse, subrounded to subangular gravel, max size ≅2"; ≅40-45% fine to coarse sand; ≅5-10% nonplastic fines; granite cobbles; brown mottled black-gold and reddish-brown with multicolored gravel.	SAND AND GRAVEL
-55		50	S13	12/0	50.0 - 51.0	18-50/6"	50/6"	-56.1			S13 - No Recovery; Spoon Bouncing.	
-60		55						-57.1			BOTTOM OF BOREHOLE, 51.0 FEET/ EL. -57.1 FEET.	
-65												

Remarks:

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

Project No.: 03019-0

GEI Consultants, Inc. 1021 Main Street Winchester, MA 01890	Project: Norwalk Harbor CAD Cell Location: Norwalk, CT	Boring No.: FD-03-F

Client:	U.S. Army Corp of Engineers	**Boring Location:**	41d 06' 41.9' N 73d 24' 37.9" W	**Drilling Method:**	CWB
Driller:	Hardiman Co. & Associates	**Mudline Elevation (ft.):**	-9.2	**Casing ID/OD:**	HW 4.0"/4.5"
Operator:	T. Hardiman (III)	**Datum:**	MLLW	**Sampler:**	2-1/2" I.D. Split Spoon
Logged By:	S. DiBartolo	**Total Depth (ft.):**	35.2	**Hammer Wt./Fall:**	300#/ 18"
Date Start/Finish:	04/24/03-04/25/03	**Water Level:**	Standing Water		

ABBREVIATIONS:
S = Split Spoon Sample
A = Auger Sample
U = Thin Wall Tube Sample
C = Rock Core Sample
NX,BX = Rock Coring
n/a,n/m = not Applicable, not Measured
HSA = Hollow Stem Auger Boring
SSA = Solid Stem Auger Boring
CWB = Cased Wash Boring
Open = Open Hole Boring
Pen. = Penetration length
Rec. = Recovery Length
WOC = weight of casing
WOR = weight of rods
WOH = weight of 300lb. hammer
RQD = Rock Quality Designation
S_u = Insitu Field Vane Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
S_v = Pocket Torvane Shear Strength (tsf)
Q_p = Pocket Penetrometer Unconfined Compressive Strength (tsf)

Elevation (ft.)	Casing Blows (/1 ft.)	Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-value	Top Elevation (ft.)	Water Level*	Graphic Log	USCS Visual Descriptions and Remarks	Stratum
		0										
-10	WOC		S1	24/7	0.0 - 2.0	WOR-WOR-WOR-WOR	WOR				S1 - ORGANIC SOIL (OL); mostly nonplastic organic fines; ≅5% fine sand; <5% fine, subangular gravel, max size ≅1/2"; wood fragments; root fibers; leaves; strong organic odor; dark gray-black.	ORGANIC SEDIMENT
	WOC											
	WOC		S2	24/15	2.0 - 4.0	WOR-WOR-WOR-WOR	WOR	-11.2			S2 - Similar to S1; except slightly plastic.	ORGANIC SEDIMENT
	WOC											
	80		S3	22/18	4.0 - 5.8	WOR-4-14-50/4"	18	-13.2			S3 (0-11"); Similar to S1; except slightly plastic @ 8-10.5" with <1/2"-thick brown silt @ 6" and 10.5-11".	ORGANIC SEDIMENT
	30	5									5.1 FEET/ El. -14.3 FEET	
-15	65										S3 (11-18") - WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); mostly fine to coarse sand; ≅30% fine to coarse, subrounded to subangular gravel, max size ≅2"; ≅5-10% nonplastic fines; moderately to severely weathered gravel @ 11-14"; quartz in spoon shoe; brown.	SAND AND GRAVEL
	46											
	65											
	31											
	71	10	S4	24/10	10.0 - 12.0	15-30-25-26	55	-19.2			S4 (0-7") - NARROWLY GRADED GRAVEL WITH SAND (GP); mostly fine, subrounded to subangular gravel, max size ≅1/4"; ≅15-20% fine to coarse sand; ≅5% nonplastic fines; light brown-gray with multicolored gravel.	SAND AND GRAVEL
-20	51										S4 (7-10") - WIDELY GRADED GRAVEL WITH SILT AND SAND (GW-GM); mostly fine to coarse, subrounded to subangular gravel, max size ≅2"; ≅35-40% fine to coarse sand; ≅10% nonplastic fines; most fines are severely to completely weathered gravel; brown.	SAND AND GRAVEL
	54											
	52											
	38											
	18	15	S5*	24/16	15.0 - 17.0	17-11-8-7	19	-24.2			S5 (0-7") - NARROWLY GRADED SAND WITH SILT (SP); mostly fine to medium sand; ≅5-10% nonplastic fines: dark brown mottled gold.	SAND AND GRAVEL
-25	38										S5 (7-11") - WIDELY GRADED SAND WITH SILT (SW); mostly medium to coarse sand, some fine sand; ≅5-10% nonplastic fines; <5% fine gravel; dark brown mottled gold with multicolored gravel.	SAND AND GRAVEL
	66										S5 (11-16") - NARROWLY GRADED GRAVEL WITH SILT AND SAND (GP-GM); mostly fine to coarse, subrounded to subangular gravel, max size ≅1"; ≅20-25% fine to coarse sand; ≅10% nonplastic fines; dark brown.	SAND AND GRAVEL
	44											
	25											
	14	20	S6	24/7	20.0 - 22.0	13-11-4-4	15	-29.2			S6 - NARROWLY GRADED GRAVEL (GP); mostly fine, subrounded to subangular gravel, max size ≅1/2"; ≅20-25% fine to coarse sand; ≅5% nonplastic fines; multicolored gravel with light brown tint. (POSSIBLE WASH MATERIAL)	
-30	21											
	31											
	29											
	30											
	18	25	S7	24/7	25.0 - 27.0	12-11-10-9	21	-34.2			S7 - Similar to S6; except subangular gravel; ≅15-20% fine to coarse sand. (POSSIBLE WASH MATERIAL)	
-35	30											
	44											
	63											
	143											

Remarks:

S5* - No recovery first and second attempts. Redrove sampler over same interval for 16 inches of recovery.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

Project No.: 03019-0

GEI Consultants, Inc. 1021 Main Street Winchester, MA 01890	Project: Norwalk Harbor CAD Cell Location: Norwalk, CT	Boring No.: FD-03-F

Client:	U.S. Army Corp of Engineers	**Boring Location:**	41d 06' 41.9' N 73d 24' 37.9" W	**Drilling Method:**	CWB
Driller:	Hardiman Co. & Associates	**Mudline Elevation (ft.):**	-9.2	**Casing ID/OD:**	HW 4.0"/4.5"
Operator:	T. Hardiman (III)	**Datum:**	MLLW	**Sampler:**	2-1/2" I.D. Split Spoon
Logged By:	S. DiBartolo	**Total Depth (ft.):**	35.2	**Hammer Wt./Fall:**	300#/ 18"
Date Start/Finish:	04/24/03-04/25/03	**Water Level:**	Standing Water		

ABBREVIATIONS:
S = Split Spoon Sample
A = Auger Sample
U = Thin Wall Tube Sample
C = Rock Core Sample
NX,BX = Rock Coring
n/a,n/m = not Applicable, not Measured
HSA = Hollow Stem Auger Boring
SSA = Solid Stem Auger Boring
CWB = Cased Wash Boring
Open = Open Hole Boring
Pen. = Penetration length
Rec. = Recovery Length
WOC = weight of casing
WOR = weight of rods
WOH = weight of 300lb. hammer
RQD = Rock Quality Designation
S_u = Insitu Field Vane Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
S_v = Pocket Torvane Shear Strength (tsf)
Q_p = Pocket Penetrometer Unconfined Compressive Strength (tsf)

Elevation (ft.)	Casing Blows (/1 ft.)	Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-value	Top Elevation (ft.)	Water Level*	Graphic Log	USCS Visual Descriptions and Remarks	Stratum
		30										
-40			S8 NX1	2/0 60/18	30.0 - 30.2 30.2 - 35.2	60/2" RQD = 19%	60/2" 19%	-39.2 -39.4			S8 - No Recovery; Spoon Bouncing. NX1 (0-4") - White and dark gray GNEISS. NX1 (4-15") - Dark gray GABBRO-DIORITE with thin white bands, containing plain feldspar and hornblend. NX1 (15-18") Pink-white GRANITE. 34.2 FEET/ El. -43.4 FEET Note: Core run break through @ 34.2'.	BOULDER
		35										
-45								-44.4			BOTTOM OF BOREHOLE, 35.2 FEET/ EL. -44.4 FEET.	
		40										
-50												
		45										
-55												
		50										
-60												
		55										
-65												

Remarks:

S5* - No recovery first and second attempts. Redrove sampler over same interval for 16 inches of recovery.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

Project No.: 03019-0

KEY TO SYMBOLS

Symbol	Description
Strata symbols	
	Low plasticity organic silts
	Narrowly graded sand with silt
	Obstruction
	Well graded gravel
	Silty sand
	Low plasticity organic silts
	Well graded gravel with silt
	Silt
	Silty gravel
	Well graded sand with silt
	Narrowly graded sand

Symbol	Description
	Narrowly graded gravel with silt
	Well graded sand
	Narrowly graded gravel
	Cobbles/ Boulders
Misc. Symbols	
	Boring continues
Soil Samplers	
	Undisturbed Tube Sampling
	Split Spoon Sampling
	Rock coring

Notes:

1. Exploratory borings were drilled on 04/24/03-04/25/03 using a 4-inch diameter flush-jointed casing advanced using drive-and-wash drilling techniques.

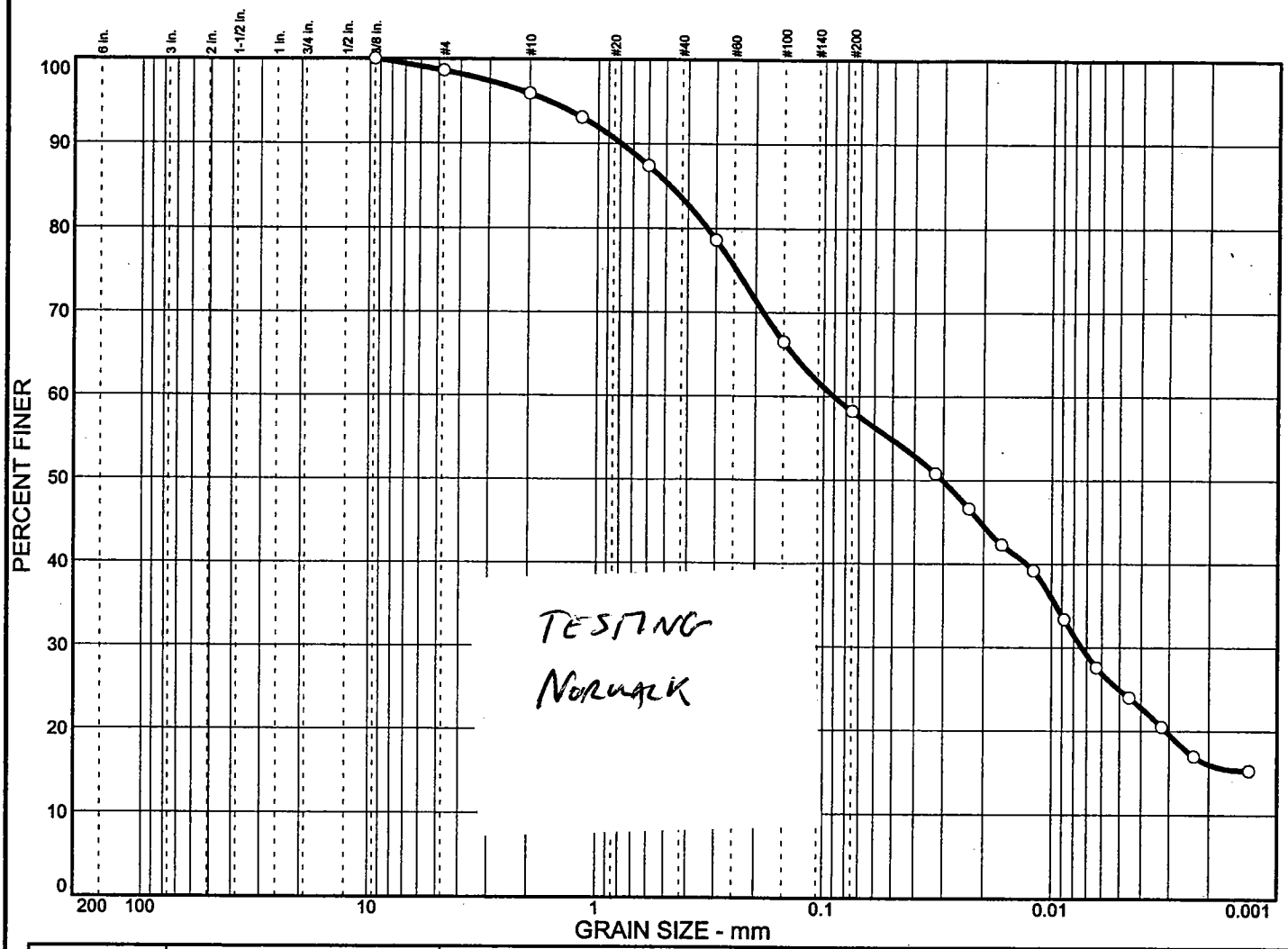
2. Borings were performed on a barge in the Norwalk River.

3. Boring were located using GPS technique and mudline elevations were established from a tide gage and depth to mudline.

4. These logs are subject to the limitations, conclusions, and recommendations in this report.

5. Results of tests conducted on samples recovered are reported on the logs.

GRAIN SIZE DISTRIBUTION TEST REPORT



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	1.4	40.4	33.3	24.9

X	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	106	47	0.480	0.0904	0.0303	0.0074				

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sandy elastic SILT	MH	

Project No. 03019-2 **Client:** USACE New England District

Project: NORWALK HARBOR CAD CELL

○ **Source:** FD-03-A **Sample No.:** U2 **Elev./Depth:** 3.0'-5.0'

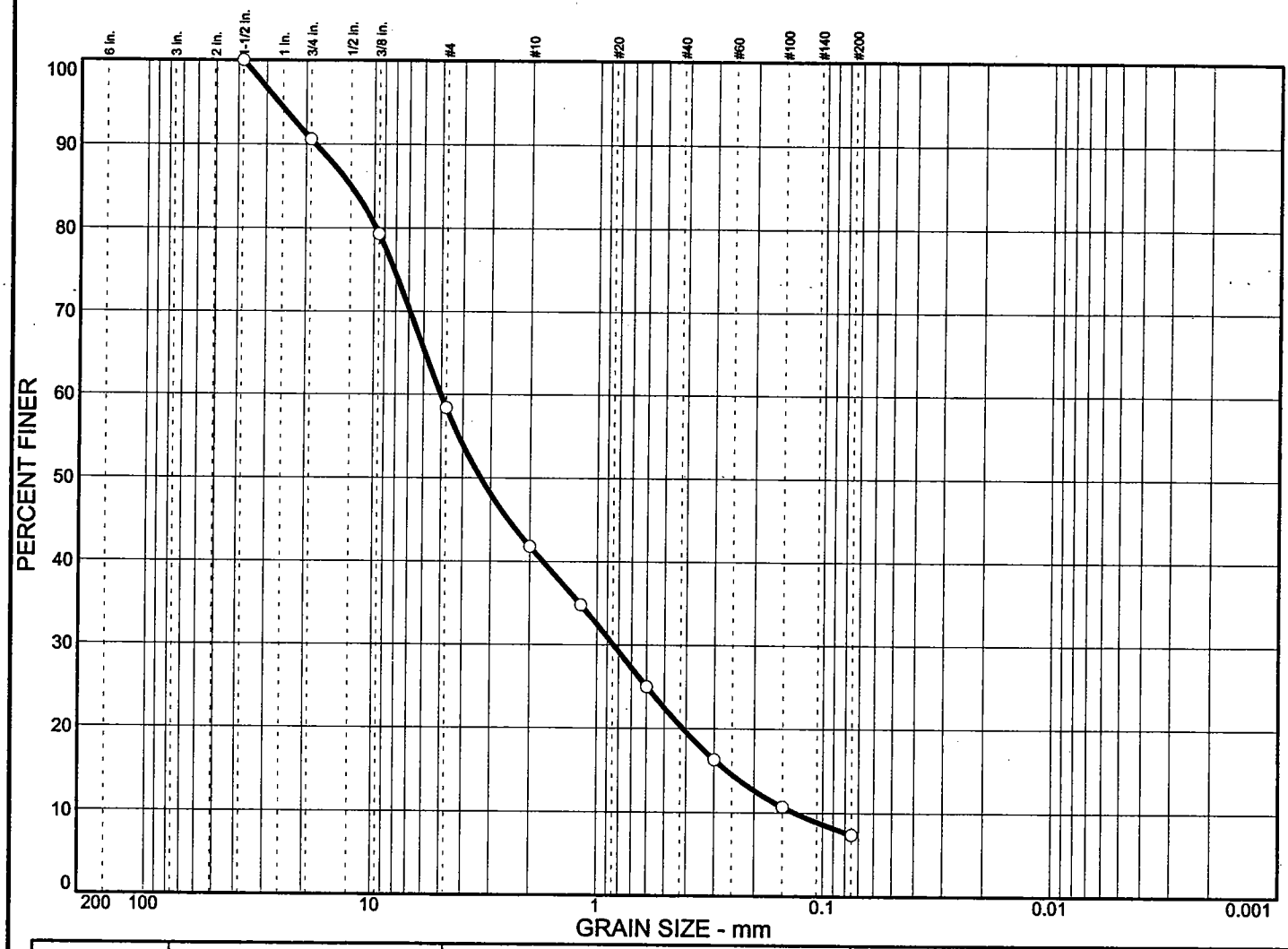
Remarks:

○ w=111% (natural)

GEI Consultants, Inc.

Fig.

GRAIN SIZE DISTRIBUTION TEST REPORT



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	41.6	51.0	7.4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			12.7	5.02	3.32	0.845	0.263	0.133	1.07	37.87

MATERIAL DESCRIPTION	USCS	AASHTO
○ Widely graded SAND with silt and gravel	SW-SM	

Project No. 03019-2 **Client:** USACE New England District

Project: NORWALK HARBOR CAD CELL

○ **Source:** FD-03-A **Sample No.:** S4 **Elev./Depth:** 20'-22'

Remarks:

○ w=16.2% (natural)

Oversize gravel not sampled.

Overall sample classification GW.

GEI Consultants, Inc.

Fig.

GRAIN SIZE DISTRIBUTION TEST REPORT

	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	3.0	15.8	39.9	41.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	128	59	0.118	0.0121	0.0077	0.0019				

MATERIAL DESCRIPTION	USCS	AASHTO
○ Elastic SILT with sand	MH	

Project No. 03019-2 **Client:** USACE New England District

Project: NORWALK HARBOR CAD CELL

○ **Source:** FD-03-B **Sample No.:** U1 **Elev./Depth:** 2.0-4.0

Remarks:

○ w=150% (natural)

GEI Consultants, Inc.

Fig.

GRAIN SIZE DISTRIBUTION TEST REPORT

	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	3.6	41.8	18.9	35.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	42	20	0.894	0.156	0.0191	0.0030				

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sandy lean CLAY	CL	

Project No. 03019-2 **Client:** USACE New England District

Project: NORWALK HARBOR CAD CELL

○ **Source:** FD-03-B **Sample No.:** S5 **Elev./Depth:** 10'-12'

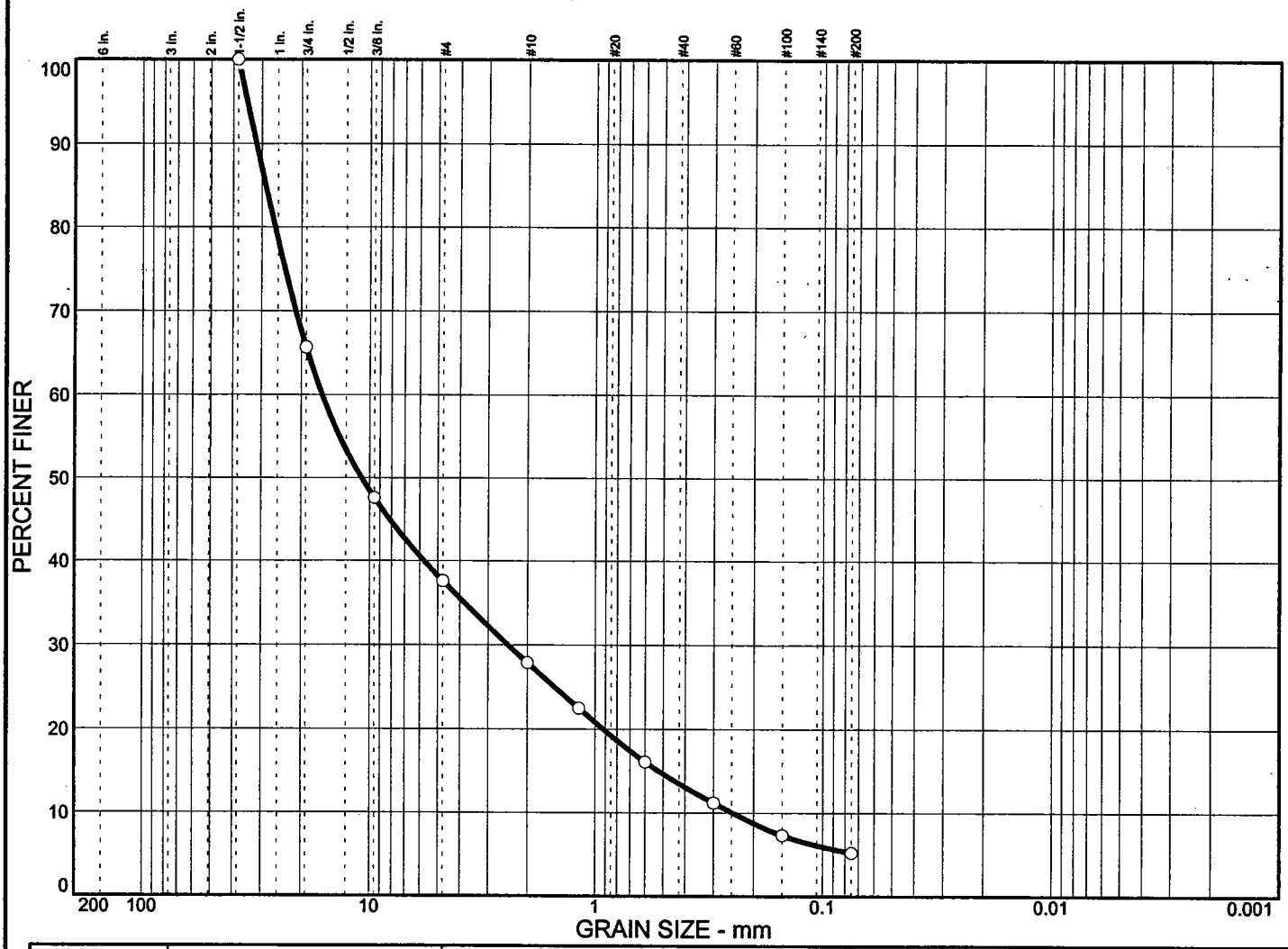
Remarks:

○

GEI Consultants, Inc.

Fig.

GRAIN SIZE DISTRIBUTION TEST REPORT



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	62.4	32.4	5.2	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			28.9	16.2	10.8	2.44	0.523	0.248	1.48	65.28

MATERIAL DESCRIPTION	USCS	AASHTO
○ Widely graded GRAVEL with silt and sand	GW-GM	

Project No. 03019-2 **Client:** USACE New England District

Project: NORWALK HARBOR CAD CELL

○ **Source:** FD-03-B **Sample No.:** S11 **Elev./Depth:** 34'-36'

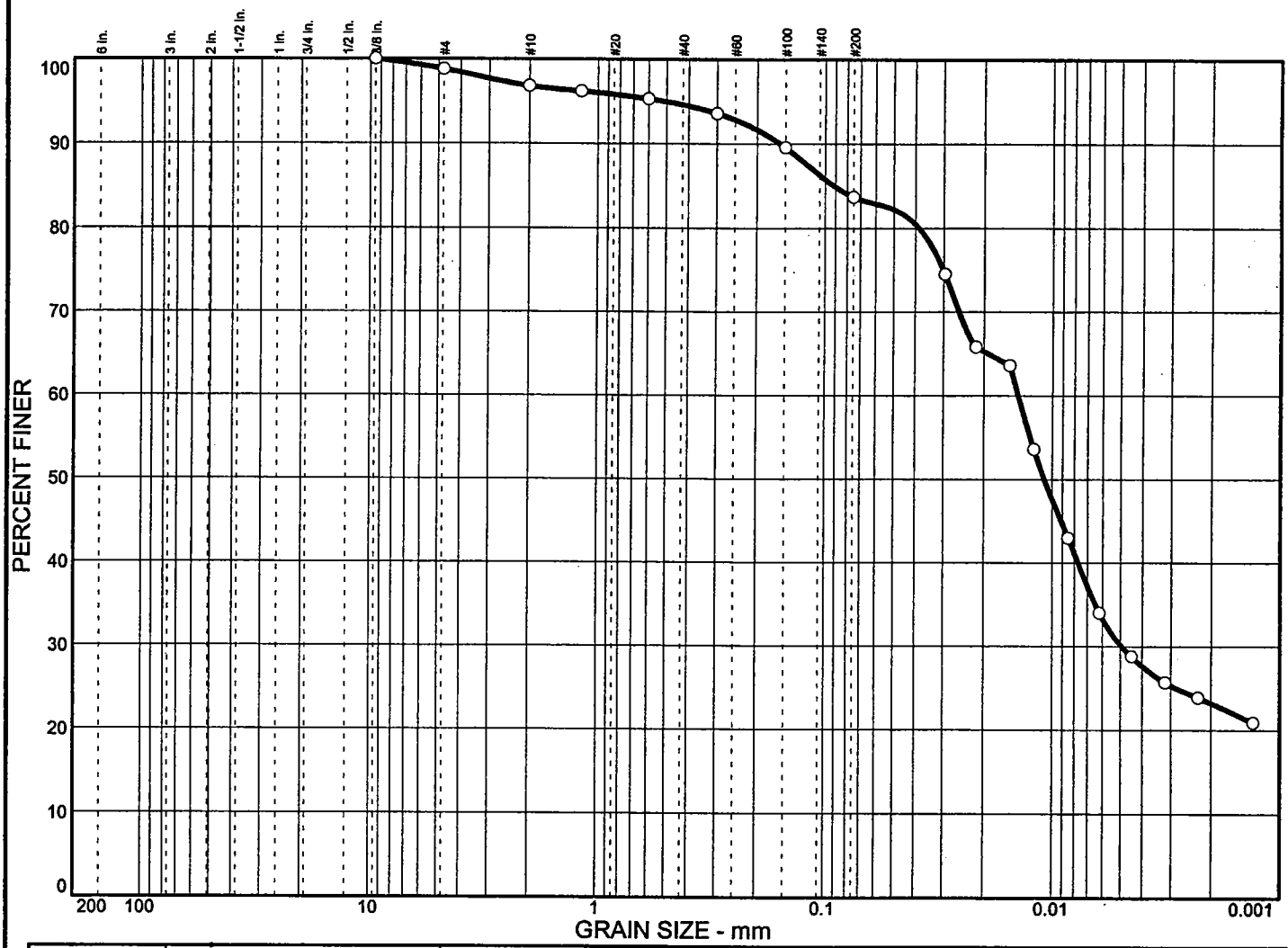
Remarks:

○ w=9.6% (natural)

GEI Consultants, Inc.

Fig.

GRAIN SIZE DISTRIBUTION TEST REPORT



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	1.2	15.1	53.5	30.2

X	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	104	44	0.0912	0.0142	0.0108	0.0049				

MATERIAL DESCRIPTION	USCS	AASHTO
○ Elastic SILT with sand	MH	

Project No. 03019-2 **Client:** USACE New England District

Project: NORWALK HARBOR CAD CELL

○ **Source:** FD-03-C **Sample No.:** U1 **Elev./Depth:** 4'-6'

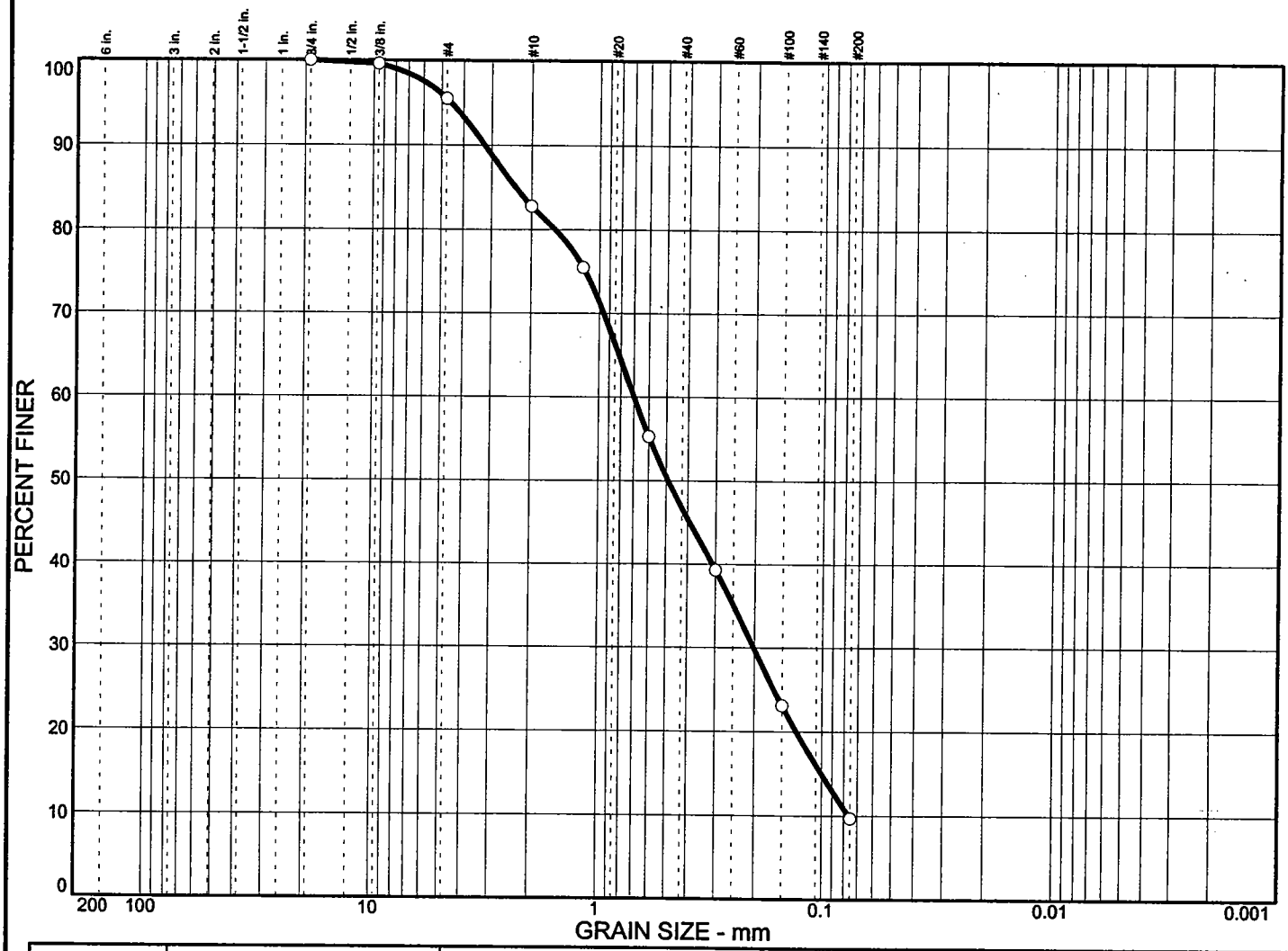
Remarks:

○ w=123% (natural)

GEI Consultants, Inc.

Fig.

GRAIN SIZE DISTRIBUTION TEST REPORT



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	4.5	85.8	9.7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.35	0.699	0.490	0.202	0.100	0.0763	0.76	9.17

MATERIAL DESCRIPTION	USCS	AASHTO
○ Narrowly graded SAND with silt	SP-SM	

Project No. 03019-2 **Client:** USACE New England District

Project: NORWALK HARBOR CAD CELL

○ **Source:** FD-03-C **Sample No.:** S6 **Elev./Depth:** 20'-22'

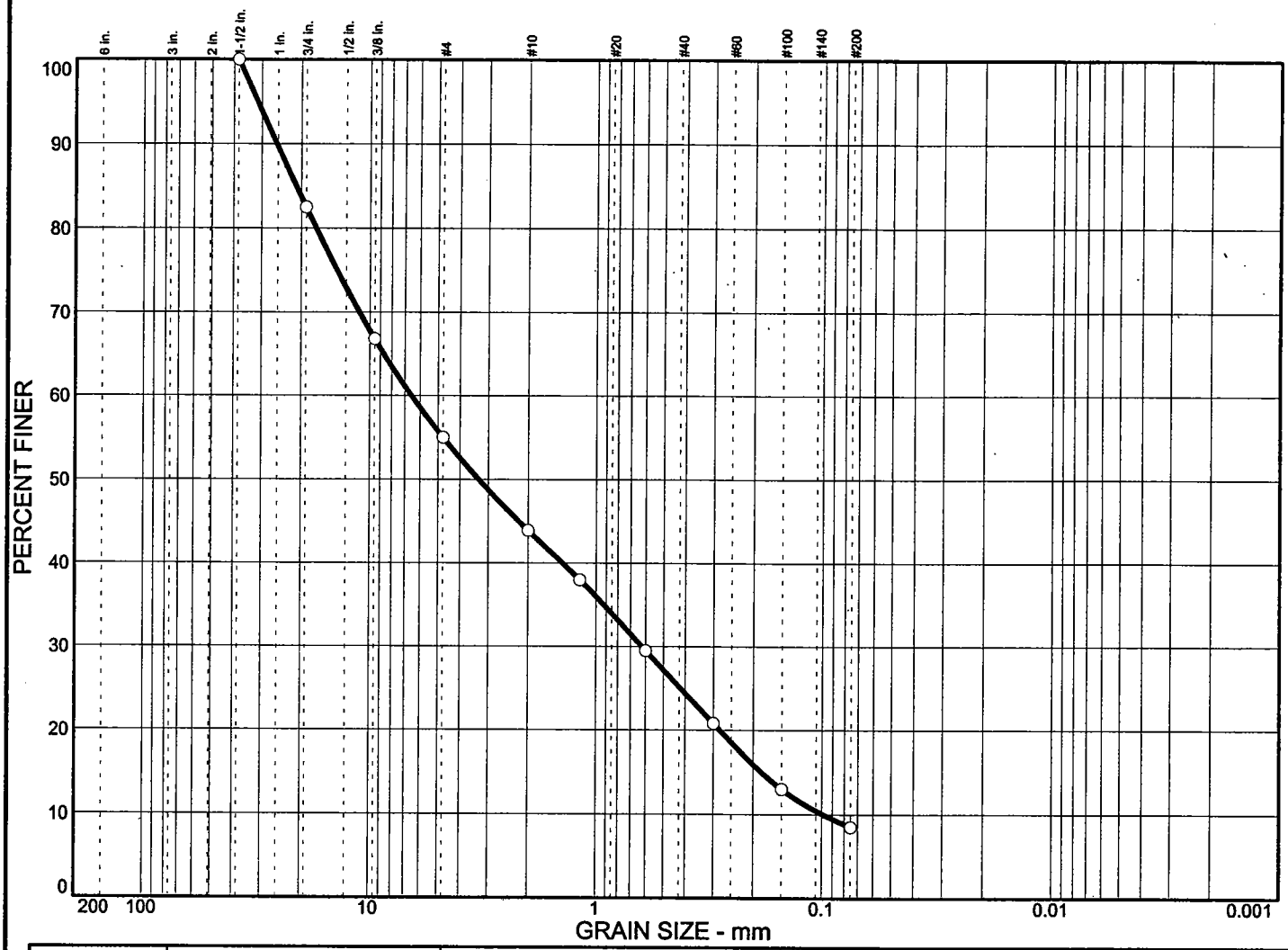
Remarks:

○ w=23.9% (natural)

GEI Consultants, Inc.

Fig.

GRAIN SIZE DISTRIBUTION TEST REPORT



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	45.0	46.5	8.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			21.1	6.55	3.31	0.624	0.184	0.0986	0.60	66.45

MATERIAL DESCRIPTION	USCS	AASHTO
○ Narrowly graded SAND with silt and gravel	SP-SM	

Project No. 03019-2 **Client:** USACE New England District

Project: NORWALK HARBOR CAD CELL

○ **Source:** FD-03-C **Sample No.:** S11 **Elev./Depth:** 45'-47'

Remarks:

○ w=10.0% (natural)

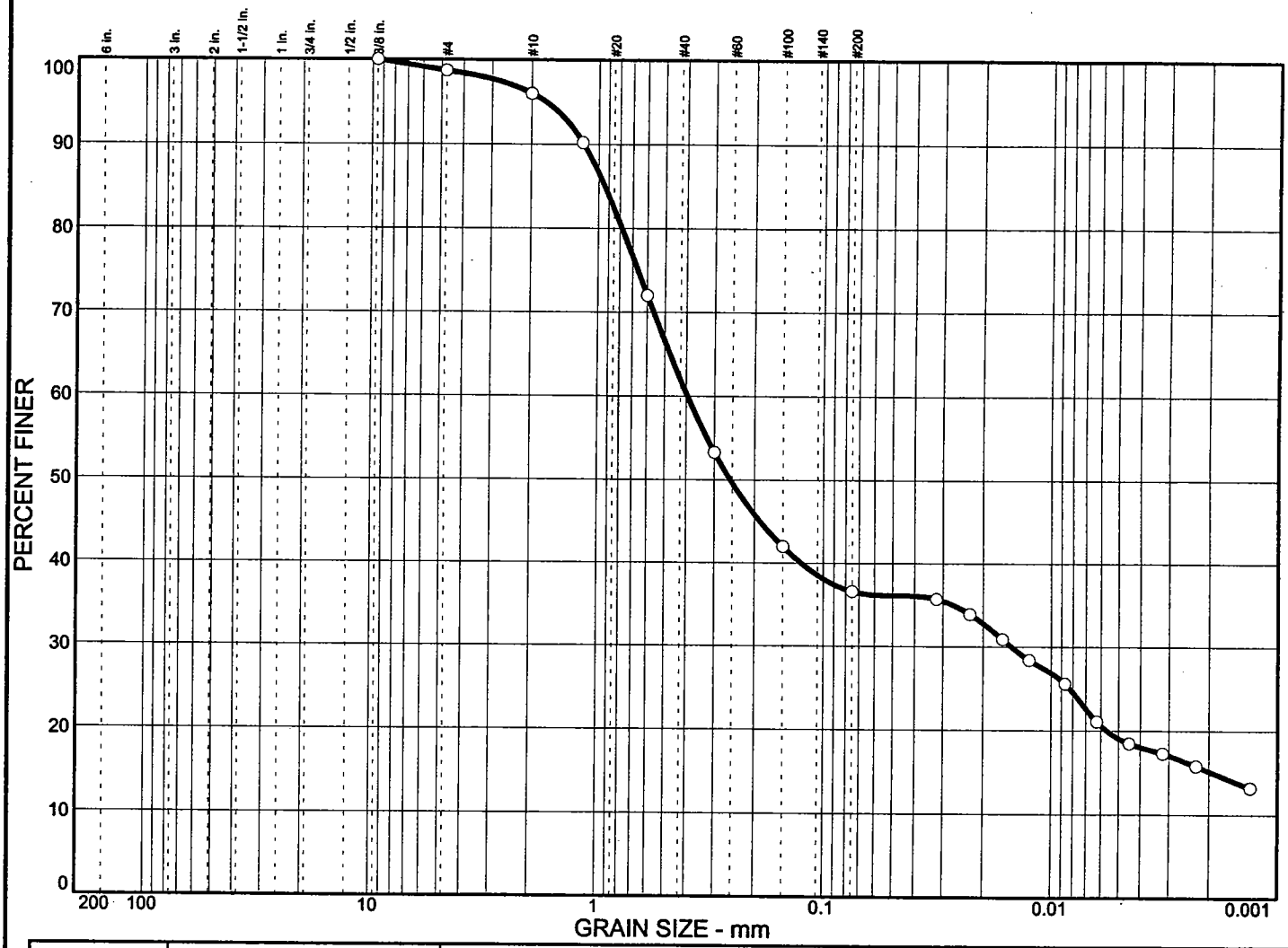
Oversize gravel not sampled.

Overall sample classification GW-GM.

GEI Consultants, Inc.

Fig.

GRAIN SIZE DISTRIBUTION TEST REPORT



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	1.3	62.1	17.5	19.1

X	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	85	41	0.937	0.395	0.255	0.0150	0.0019			

MATERIAL DESCRIPTION	USCS	AASHTO
○ Silty SAND	SM	

Project No. 03019-2 **Client:** USACE New England District

Project: NORWALK HARBOR CAD CELL

○ **Source:** FD-03-D **Sample No.:** S2 **Elev./Depth:** 2'-4'

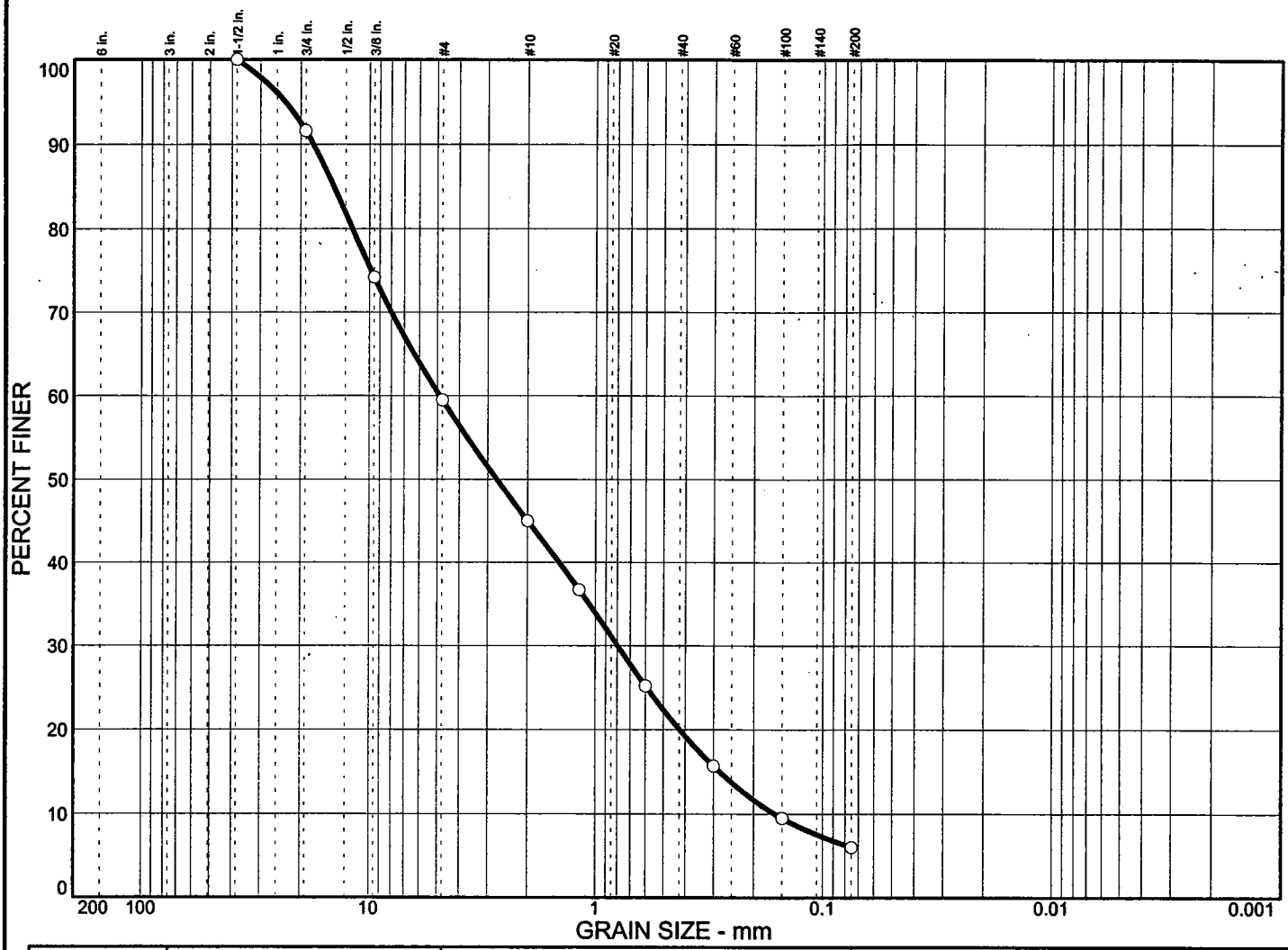
Remarks:

○

GEI Consultants, Inc.

Fig.

GRAIN SIZE DISTRIBUTION TEST REPORT



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	40.5	53.5	6.0	

X	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			14.3	4.88	2.74	0.798	0.282	0.161	0.81	30.25

MATERIAL DESCRIPTION	USCS	AASHTO
○ Narrowly graded SAND with silt and gravel	SP-SM	

Project No. 03019-2 **Client:** USACE New England District

Project: NORWALK HARBOR CAD CELL

○ **Source:** FD-03-D **Sample No.:** S6 **Elev./Depth:** 25'-27'

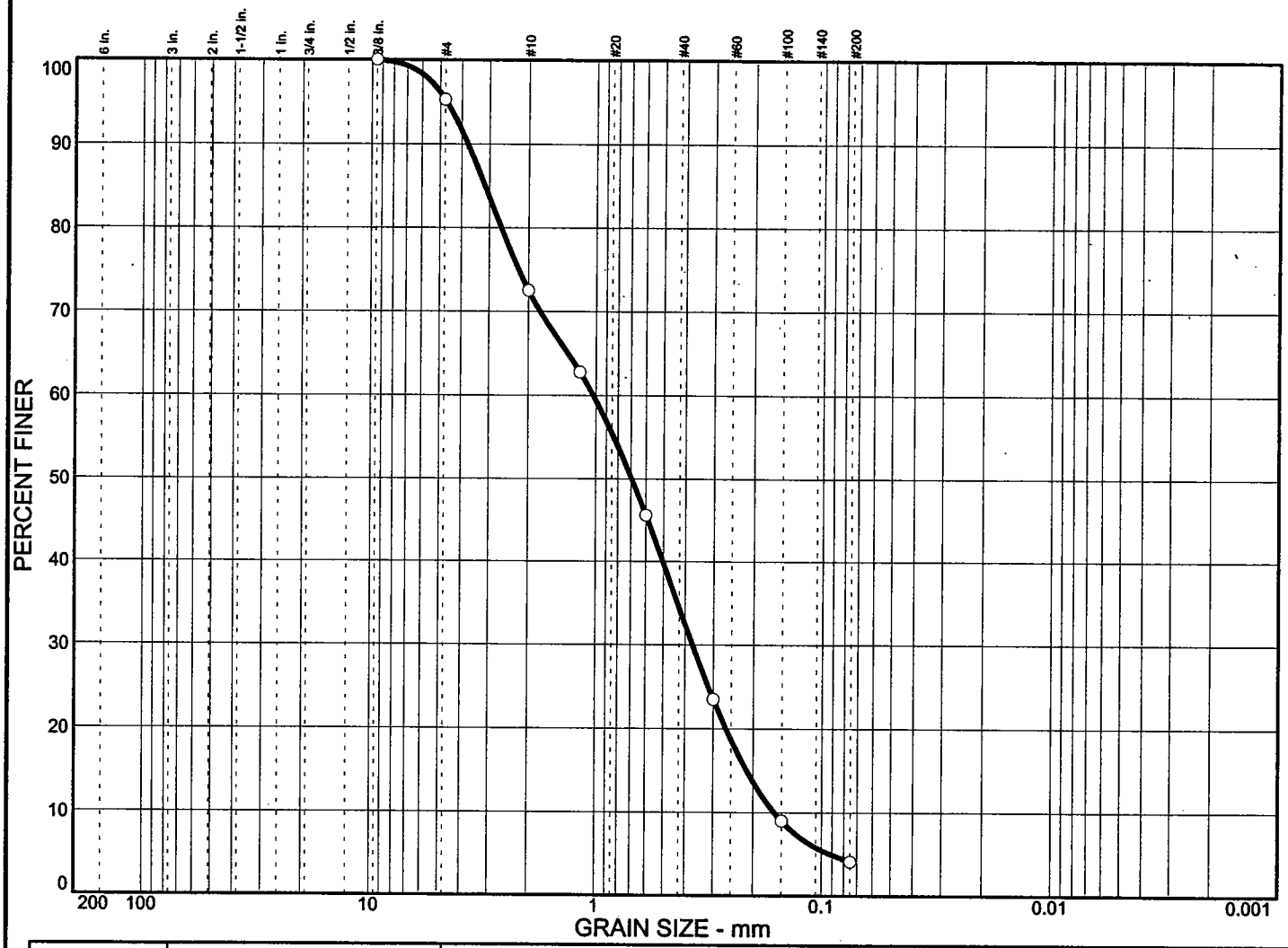
Remarks:

○ w=10.3% (natural)

GEI Consultants, Inc.

Fig.

GRAIN SIZE DISTRIBUTION TEST REPORT



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	4.7	91.2	4.1	

X	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.14	1.03	0.695	0.371	0.213	0.161	0.83	6.38

MATERIAL DESCRIPTION	USCS	AASHTO
○ Narrowly graded SAND	SP	

Project No. 03019-2 **Client:** USACE New England District

Project: NORWALK HARBOR CAD CELL

○ **Source:** FD-03-D **Sample No.:** S10 **Elev./Depth:** 45'-47'

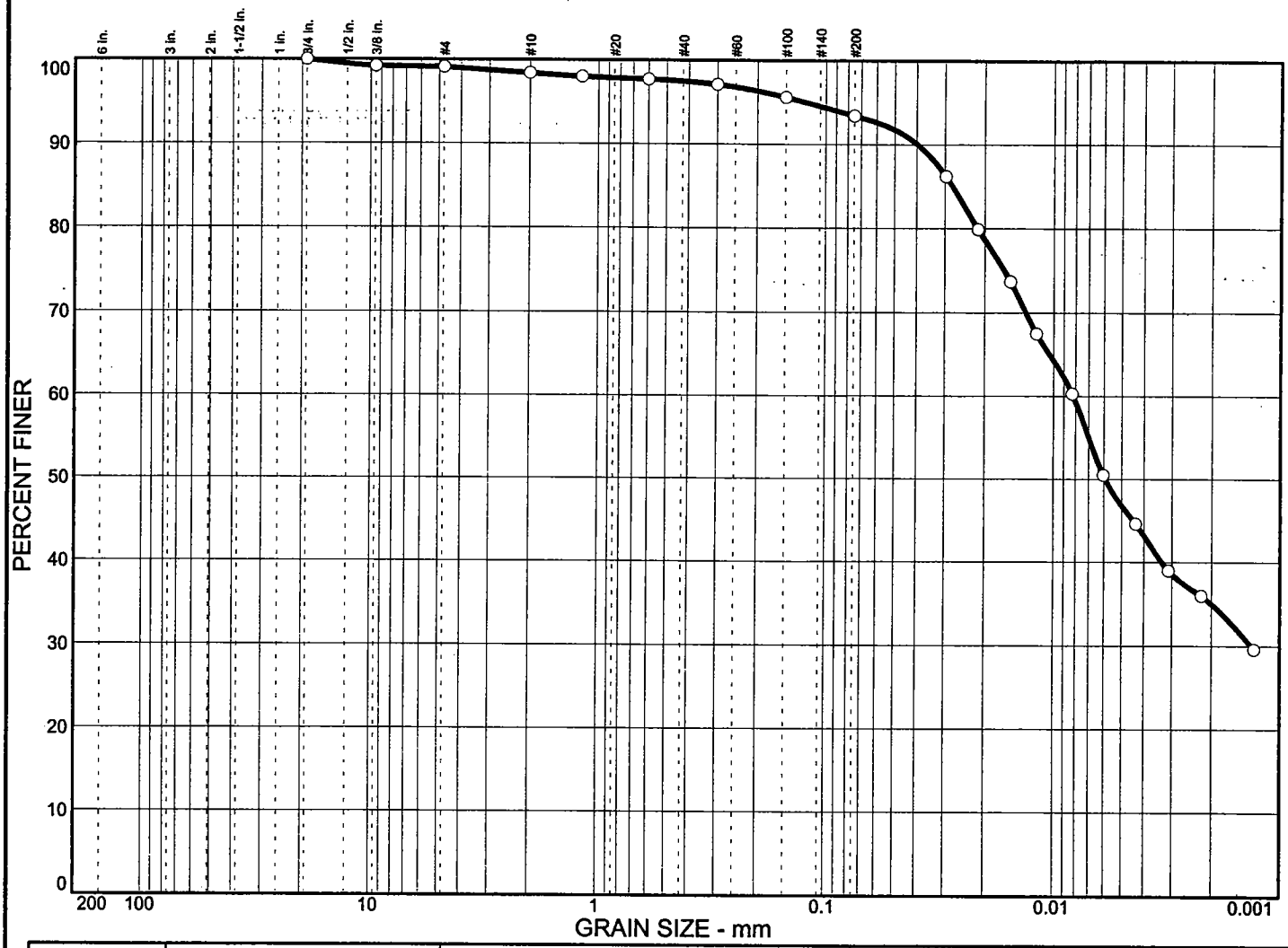
Remarks:

○ w=18.7% (natural)

GEI Consultants, Inc.

Fig.

GRAIN SIZE DISTRIBUTION TEST REPORT



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.9	5.7	46.6	46.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	133	63	0.0278	0.0082	0.0059	0.0013				

MATERIAL DESCRIPTION	USCS	AASHTO
○ Elastic SILT	MH	

Project No. 03019-2 **Client:** USACE New England District

Project: NORWALK HARBOR CAD CELL

○ **Source:** FD-03-E **Sample No.:** S2 **Elev./Depth:** 2'-4'

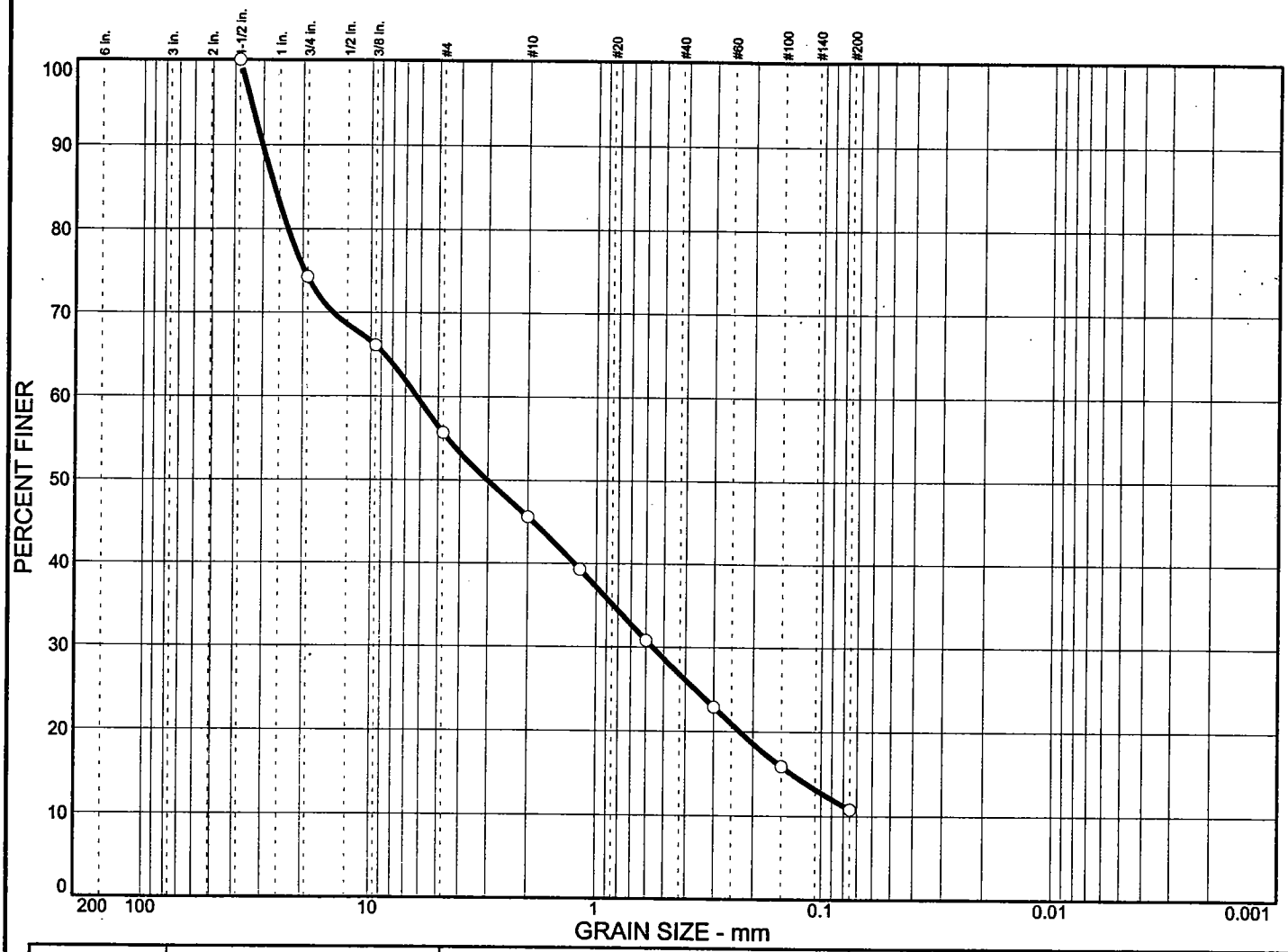
Remarks:

○

GEI Consultants, Inc.

Fig.

GRAIN SIZE DISTRIBUTION TEST REPORT



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	44.3	44.9	10.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			26.7	6.22	3.02	0.561	0.135			

MATERIAL DESCRIPTION	USCS	AASHTO
○ Narrowly graded SAND with silt and gravel	SP-SM	

Project No. 03019-2 **Client:** USACE New England District

Project: NORWALK HARBOR CAD CELL

○ **Source:** FD-03-E **Sample No.:** S10 **Elev./Depth:** 35'-37'

Remarks:

○ w=8.6% (natural)

Oversize gravel not sampled.

Overall sample classification GW-GM.

GEI Consultants, Inc.

Fig.

GRAIN SIZE DISTRIBUTION TEST REPORT

	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	2.0	29.0	34.2	34.8

☒	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	95	40	0.471	0.0191	0.0110	0.0027				

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sandy fat CLAY	CH	

Project No. 03019-2 **Client:** USACE New England District

Project: NORWALK HARBOR CAD CELL

○ **Source:** FD-03-F **Sample No.:** S3 **Elev./Depth:** 4'-5.6'

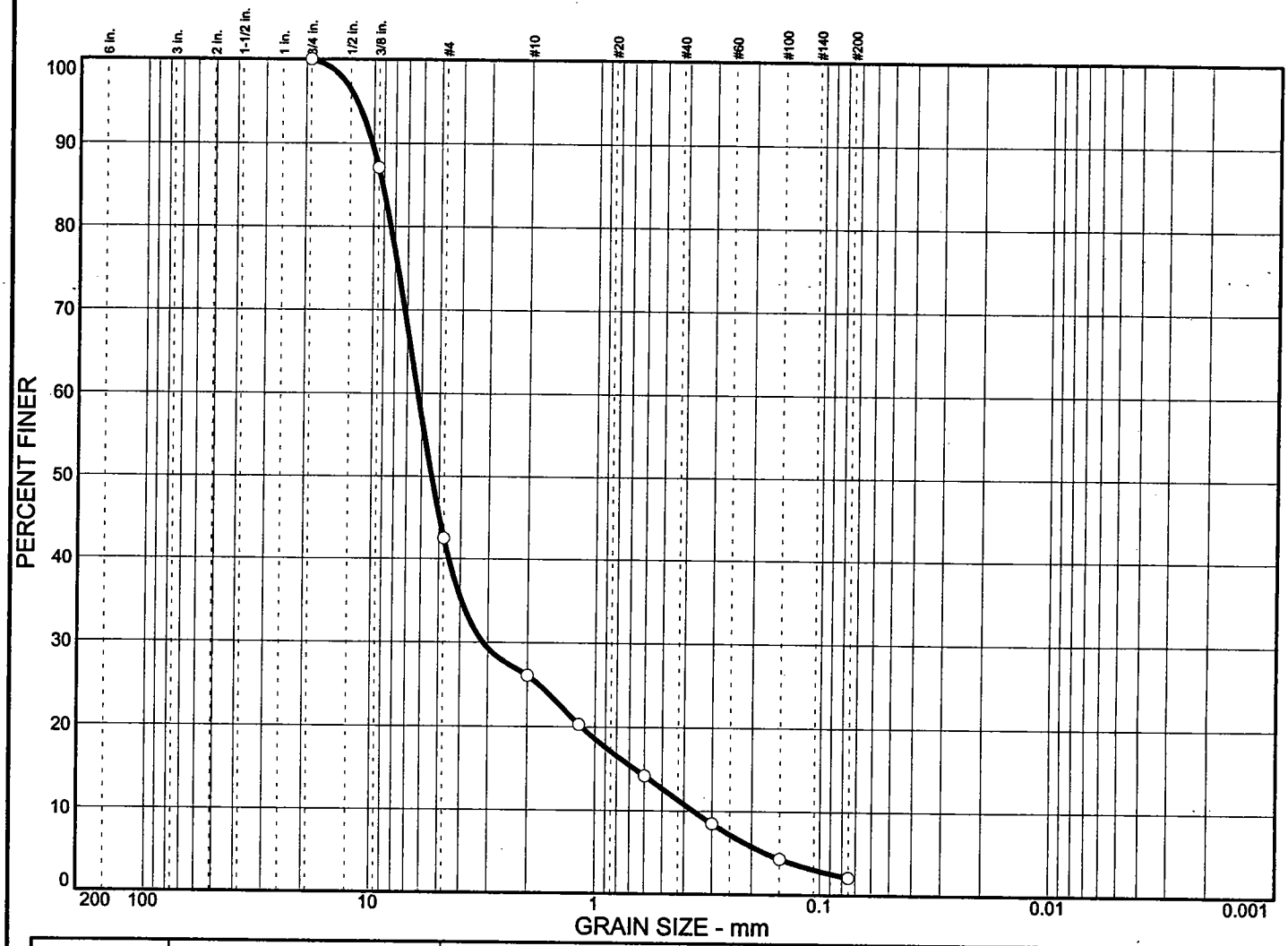
Remarks:

○

GEI Consultants, Inc.

Fig.

GRAIN SIZE DISTRIBUTION TEST REPORT



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	57.5	40.4	2.1	

X	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			9.14	6.27	5.41	3.16	0.662	0.363	4.37	17.27

MATERIAL DESCRIPTION	USCS	AASHTO
○ Narrowly graded GRAVEL with sand	GP	

Project No. 03019-2 **Client:** USACE New England District

Project: NORWALK HARBOR CAD CELL

○ **Source:** FD-03-F **Sample No.:** S6 **Elev./Depth:** 20'-22'

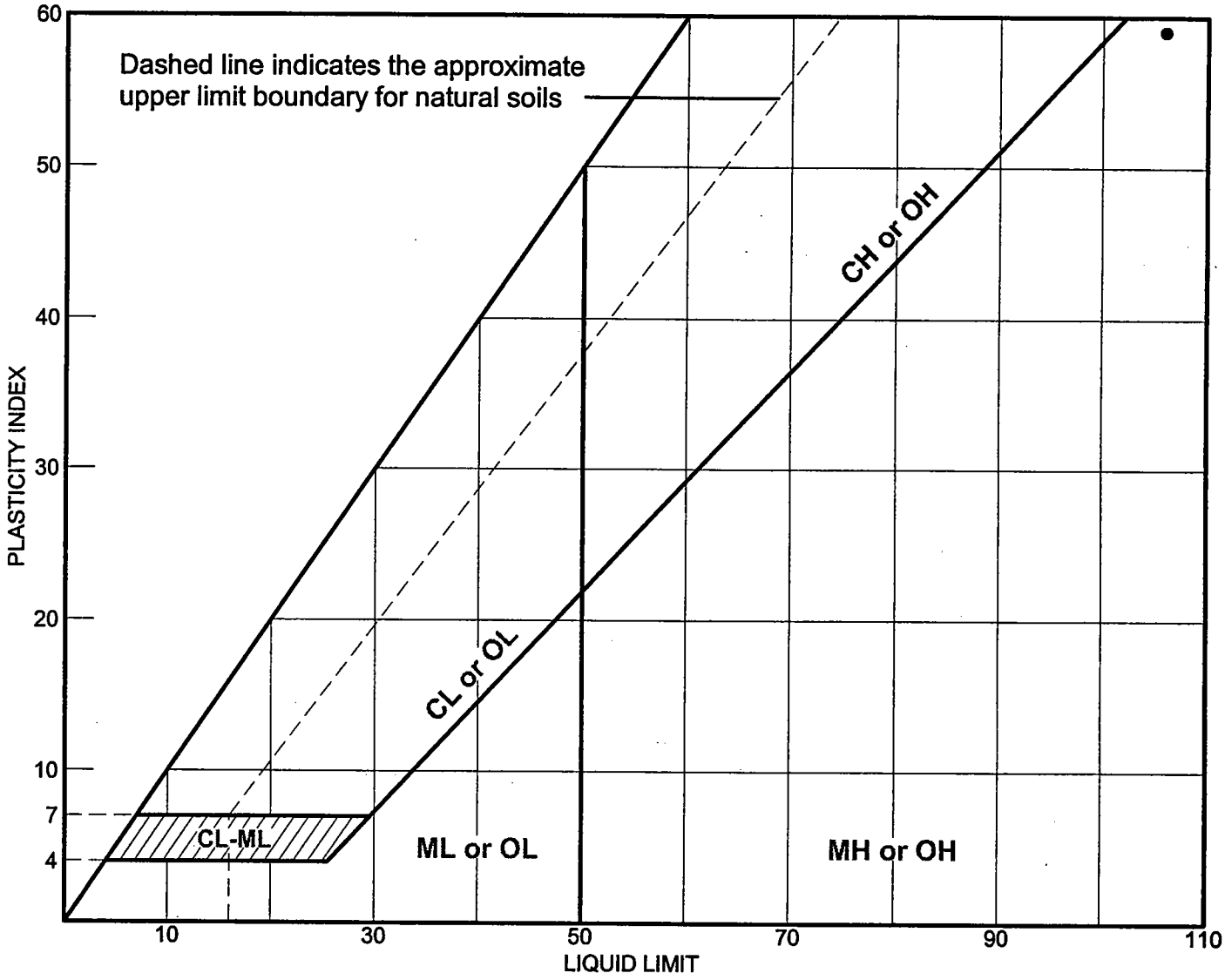
Remarks:

○ w=8.1% (natural)

GEI Consultants, Inc.

Fig.

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	FD-03-A	U2	3.0'-5.0'	111	47	106	59	MH

LIQUID AND PLASTIC LIMITS TEST REPORT

GEI Consultants, Inc.

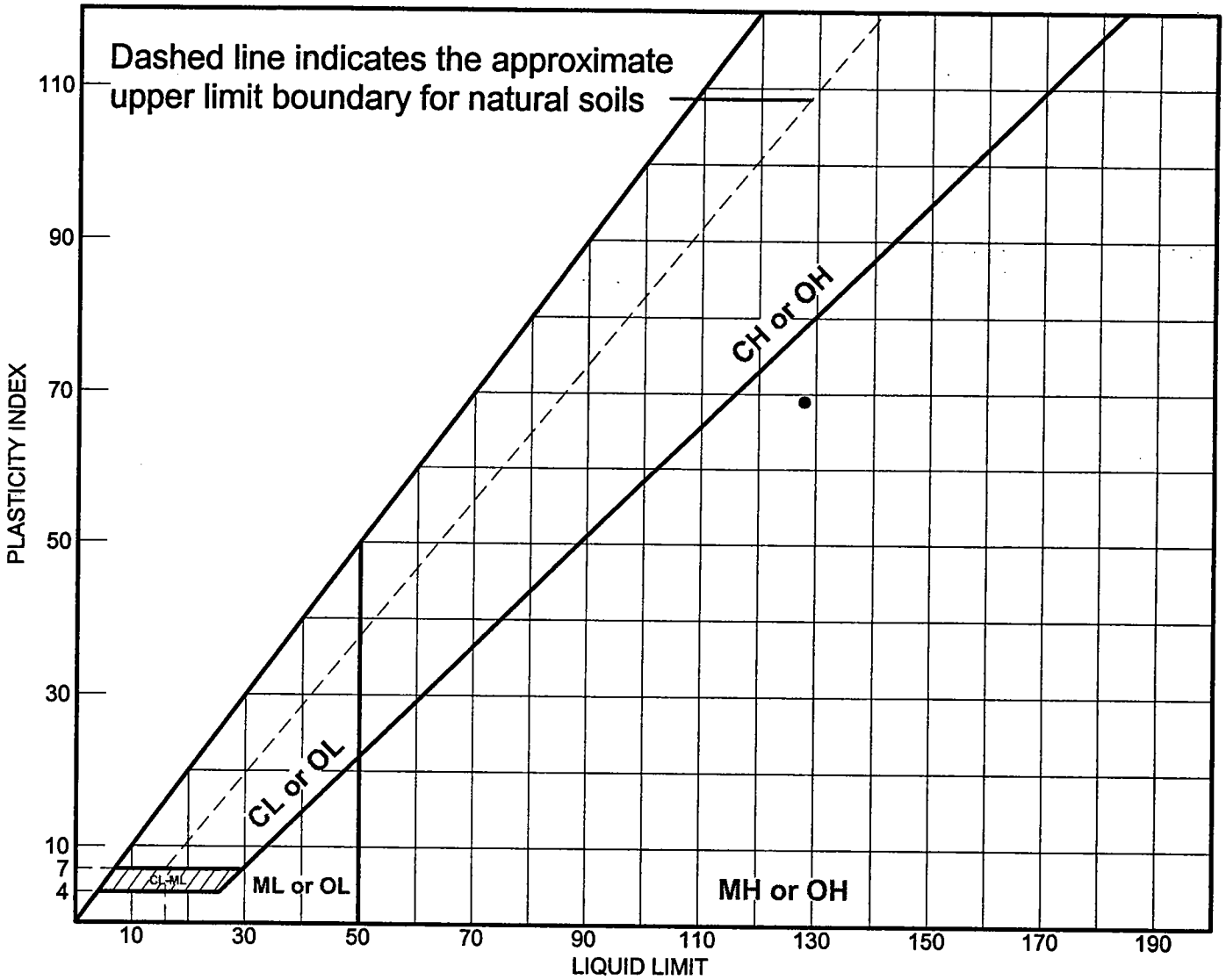
Client: USACE New England District

Project: NORWALK HARBOR CAD CELL

Project No.: 03019-2

Fig.

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	FD-03-B	U1	2.0-4.0	150	59	128	69	MH

LIQUID AND PLASTIC LIMITS TEST REPORT

GEI Consultants, Inc.

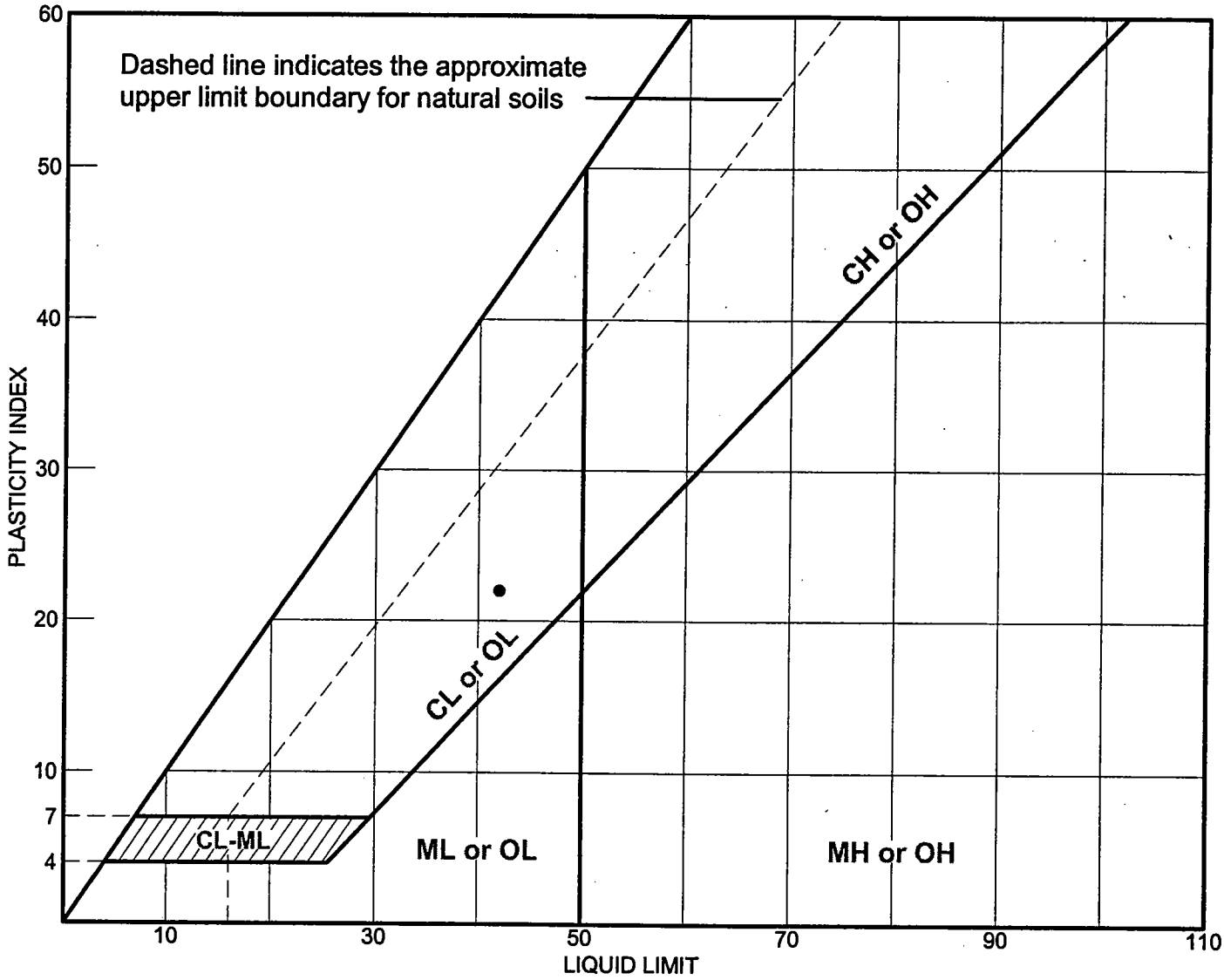
Client: USACE New England District

Project: NORWALK HARBOR CAD CELL

Project No.: 03019-2

Fig.

LIQUID AND PLASTIC LIMITS TEST REPORT

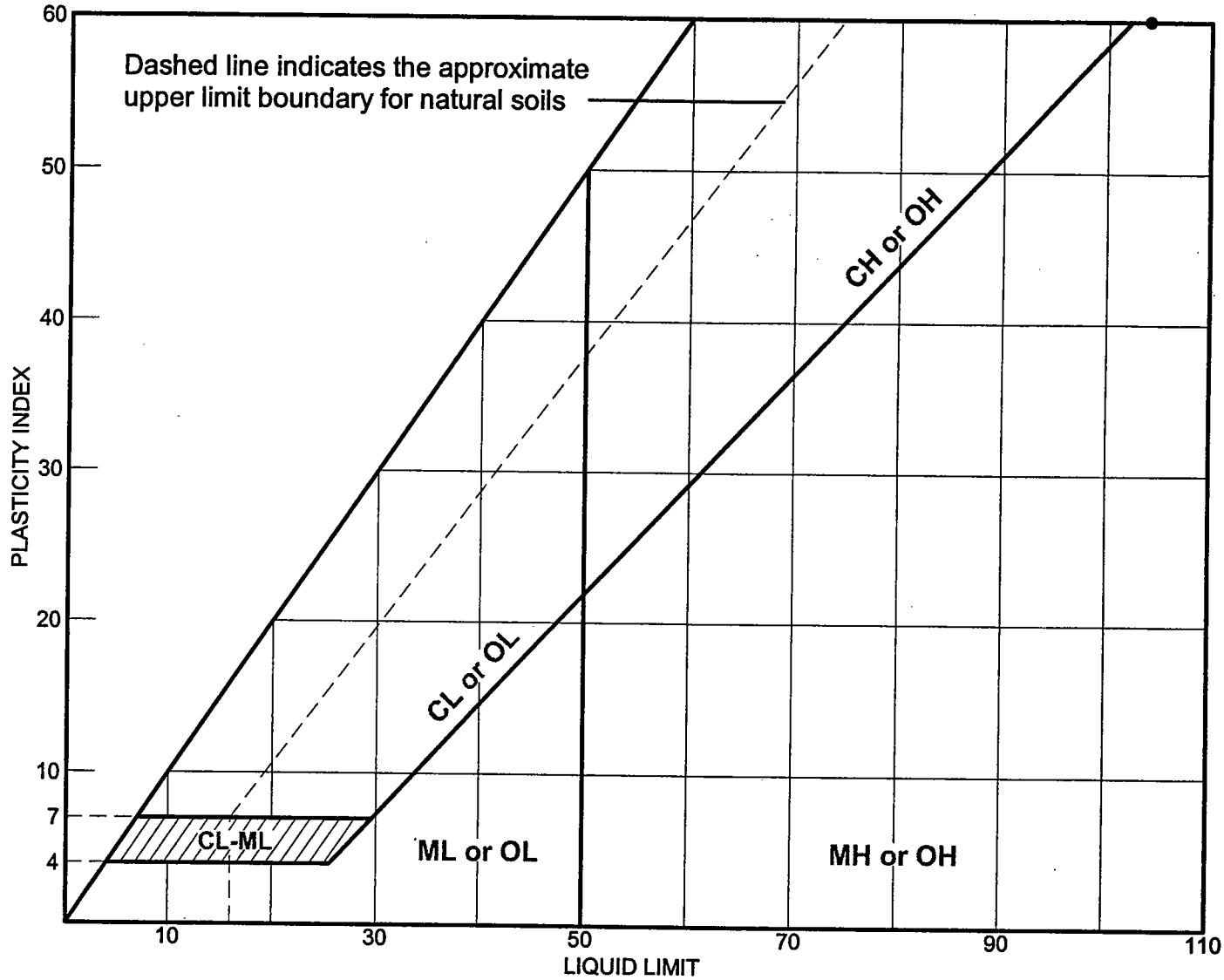


SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	FD-03-B	S5	10'-12'		20	42	22	CL

LIQUID AND PLASTIC LIMITS TEST REPORT **GEI Consultants, Inc.**	**Client:** USACE New England District **Project:** NORWALK HARBOR CAD CELL **Project No.:** 03019-2 **Fig.**

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	FD-03-C	U1	4'-6'	123	44	104	60	MH

LIQUID AND PLASTIC LIMITS TEST REPORT

GEI Consultants, Inc.

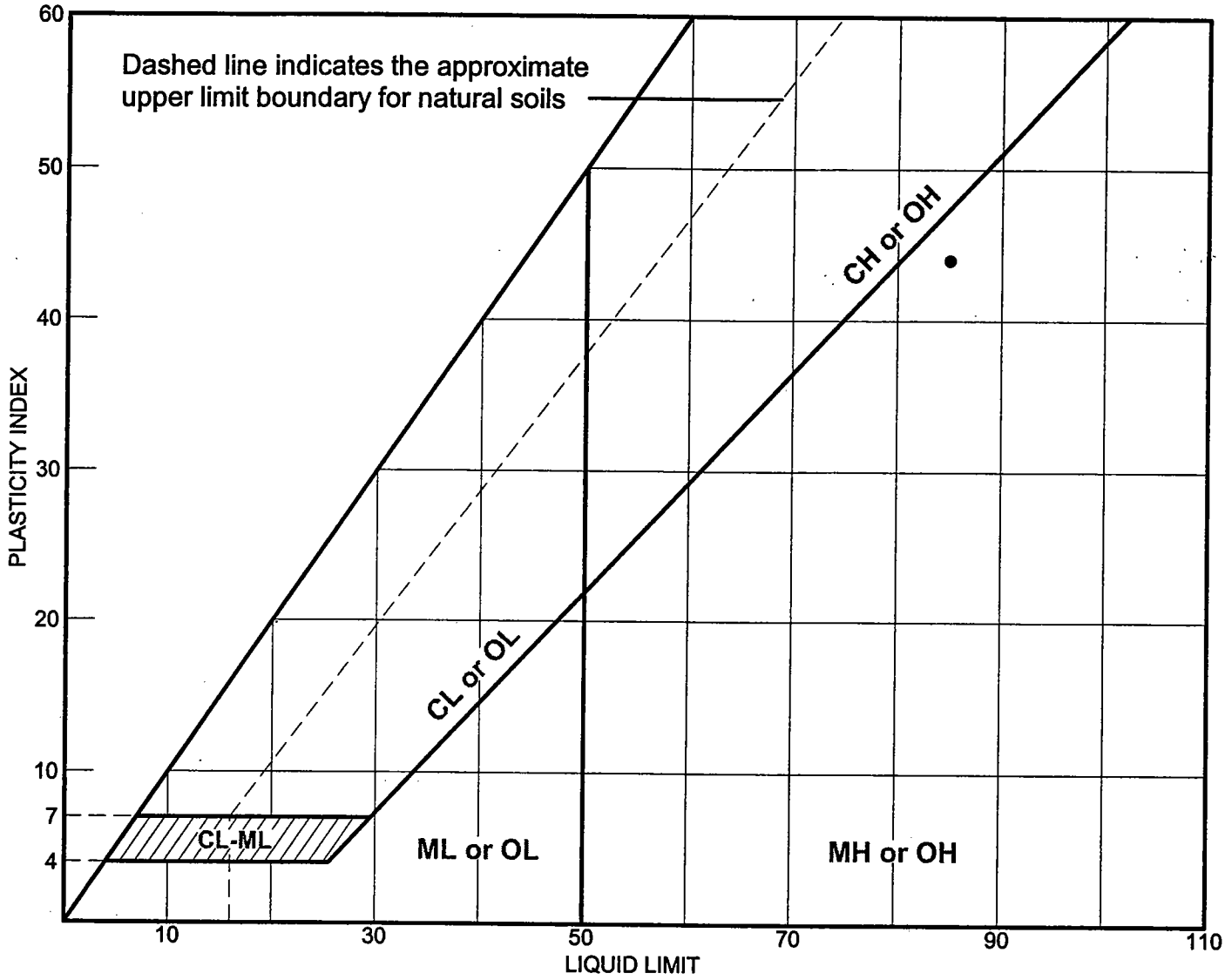
Client: USACE New England District

Project: NORWALK HARBOR CAD CELL

Project No.: 03019-2

Fig.

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	FD-03-D	S2	2'-4'		41	85	44	SM

LIQUID AND PLASTIC LIMITS TEST REPORT

GEI Consultants, Inc.

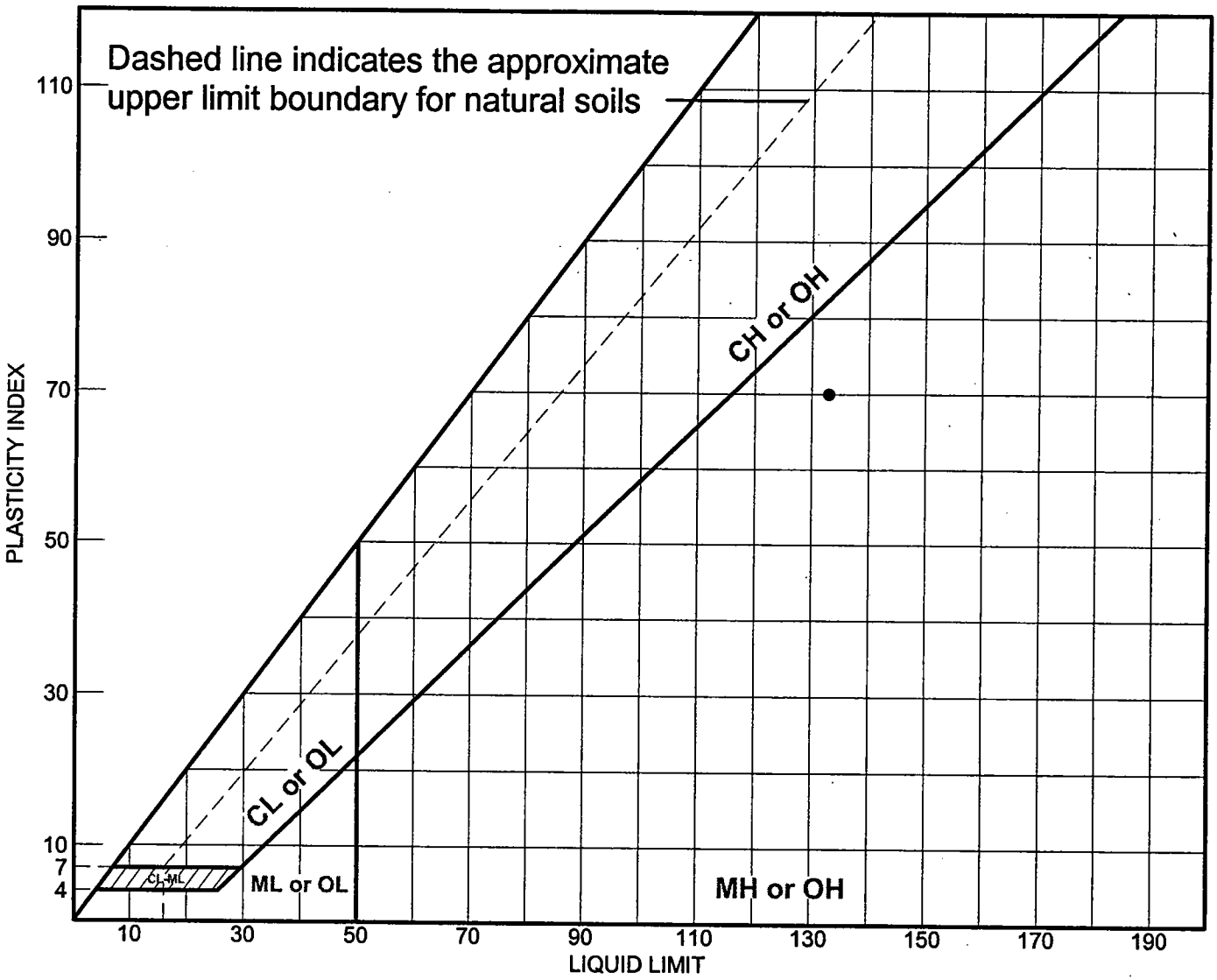
Client: USACE New England District

Project: NORWALK HARBOR CAD CELL

Project No.: 03019-2

Fig.

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	FD-03-E	S2	2'-4'		63	133	70	MH

LIQUID AND PLASTIC LIMITS TEST REPORT

GEI Consultants, Inc.

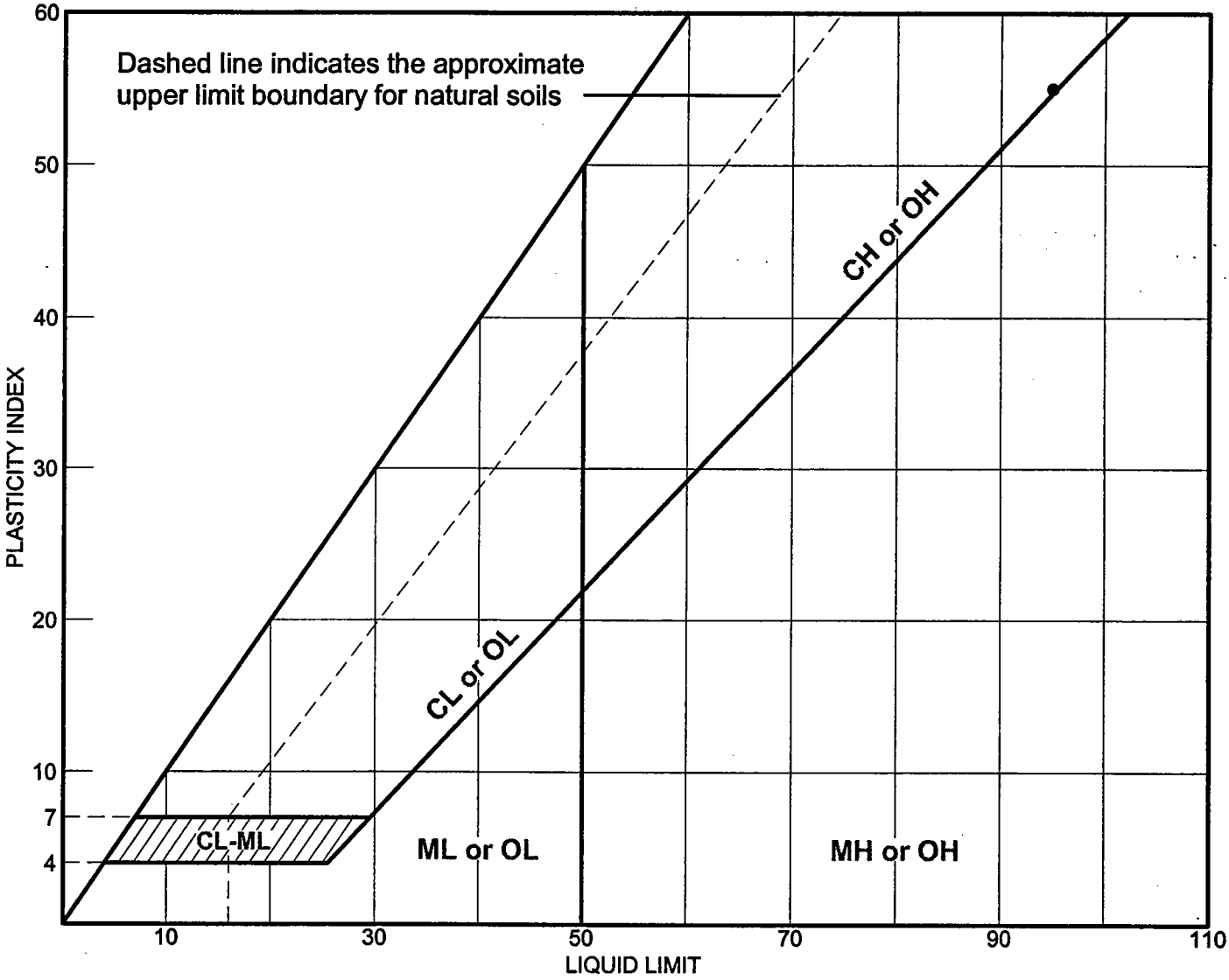
Client: USACE New England District

Project: NORWALK HARBOR CAD CELL

Project No.: 03019-2

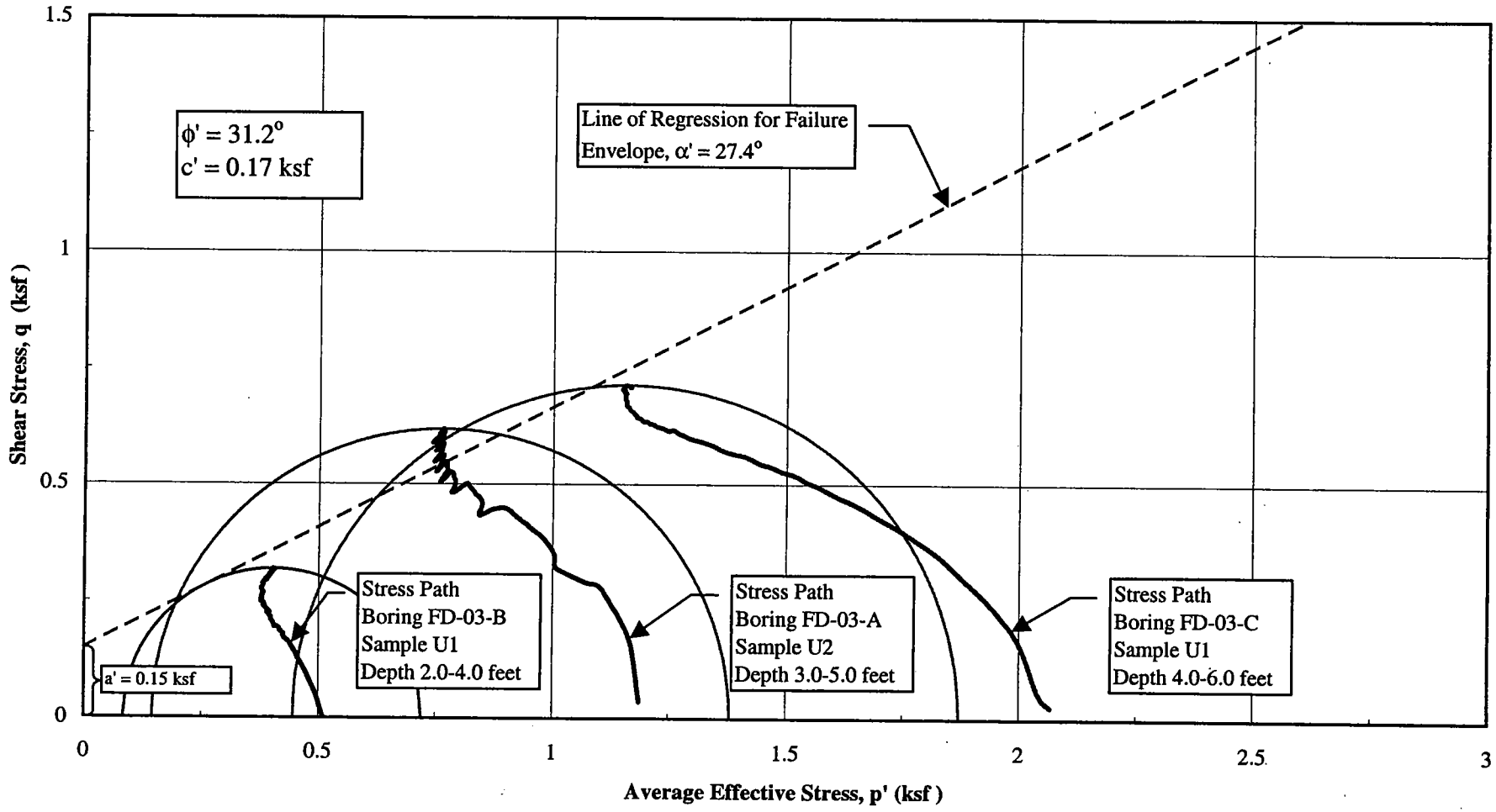
Fig.

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	FD-03-F	S3	4'-5.6'		40	95	55	CH

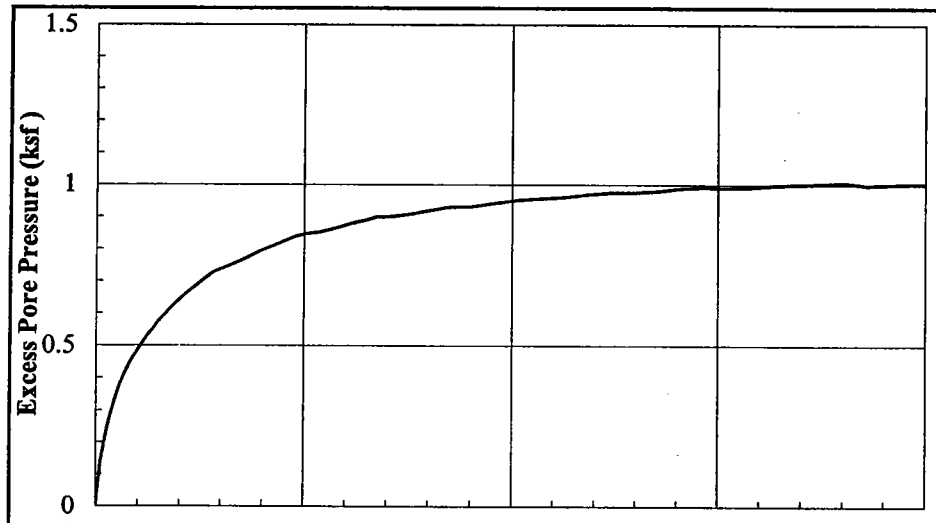
LIQUID AND PLASTIC LIMITS TEST REPORT **GEI Consultants, Inc.**	**Client:** USACE New England District **Project:** NORWALK HARBOR CAD CELL **Project No.:** 03019-2 **Fig.**



Test by: M. Cole
Test Date: 7/2/2003
Checked by: K., Wood

U.S. Army Corps of Engineers New England District	Norwalk Harbor Lab Testing	CONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION with Pore Pressure Measurements
GEI Consultants, Inc.	Project 03019	November 2003 Fig. 5

11/26/2003

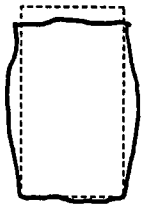


SAMPLE INFORMATION
Boring: FD-03-A Depth: 3.0-5.0 feet
Type: 3-inch diameter tube sample
Description: Sandy Elastic SILT (MH)
LL = 106 PL = 47 PI = 59

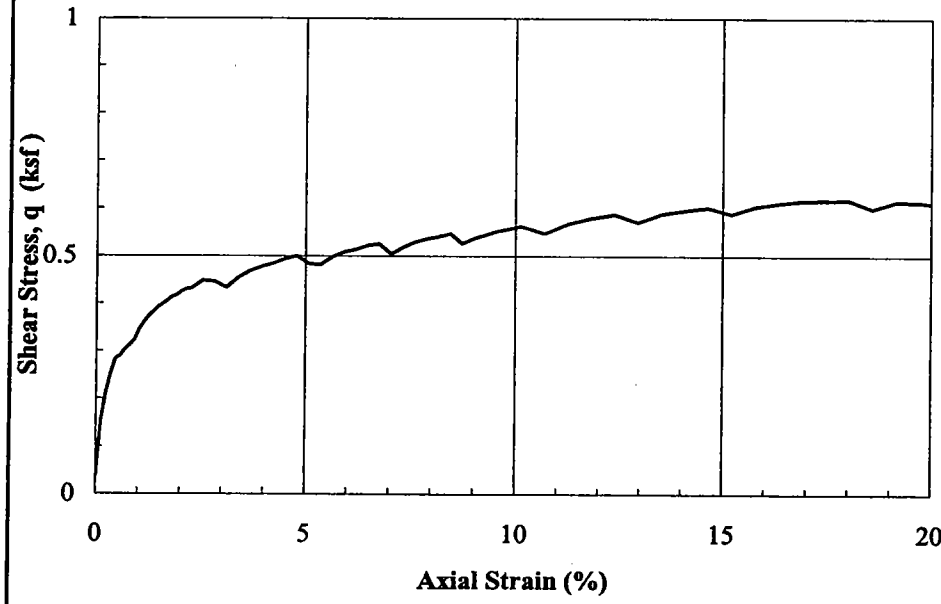
SPECIMEN INFORMATION (After saturation)
Height: 4.84 inch Diameter: 2.52 inch Area: 4.99 in²
Water Content: 105.1 % Total Unit Weight: 86.2 pcf

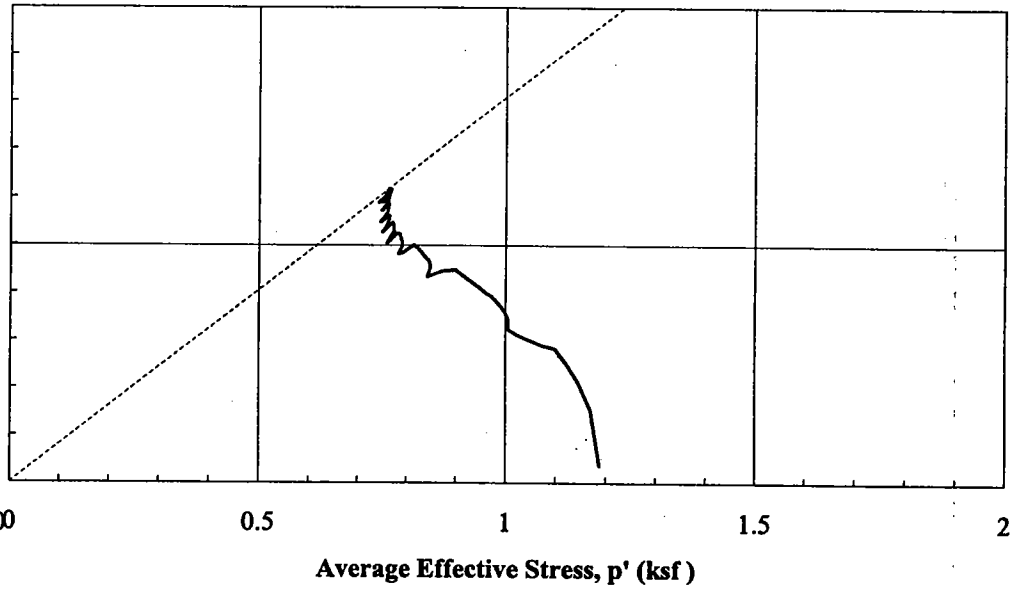
TEST SUMMARY (End of Test)
Consolidation Stresses: 1.2 ksf vertical, 1.2 ksf lateral
Water Content: 104.5 % Total Unit Weight: 86.3 pcf
B Coefficient: 0.95 Strain Rate: 0.027 %/min
Peak Shear Strength: 0.62 ksf @ 18.0 % Strain
Effective Friction Angle: 54.1°

REMARKS:



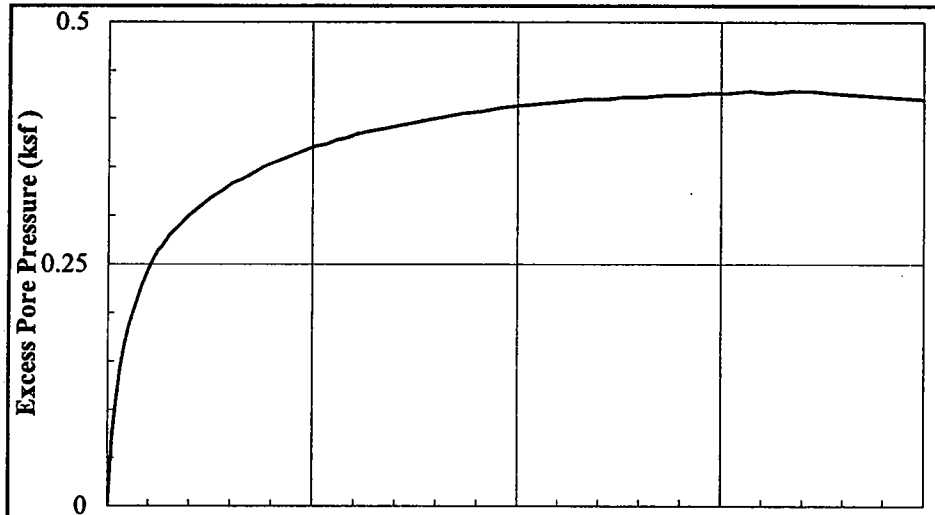
Failure Sketch





Test by: M. Cole	US Army Corps of Engineers New England District	Norwalk Harbor Lab Testing	CONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION with Pore Pressure Measurements
Test Date: 7/14/2003	GEI Consultants, Inc.		Boring: FD-03-A Depth: 3.0-5.0 feet
Checked by: K. Wood		Project 03019-2	August 2003 Fig.

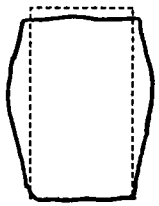
8/21/2003



SAMPLE INFORMATION
Boring: FD-03-B Depth: 2.0-4.0 feet
Type: 3-inch diameter tube sample
Description: Elastic SILT with sand (MH)
LL = 128 PL = 59 PI = 69

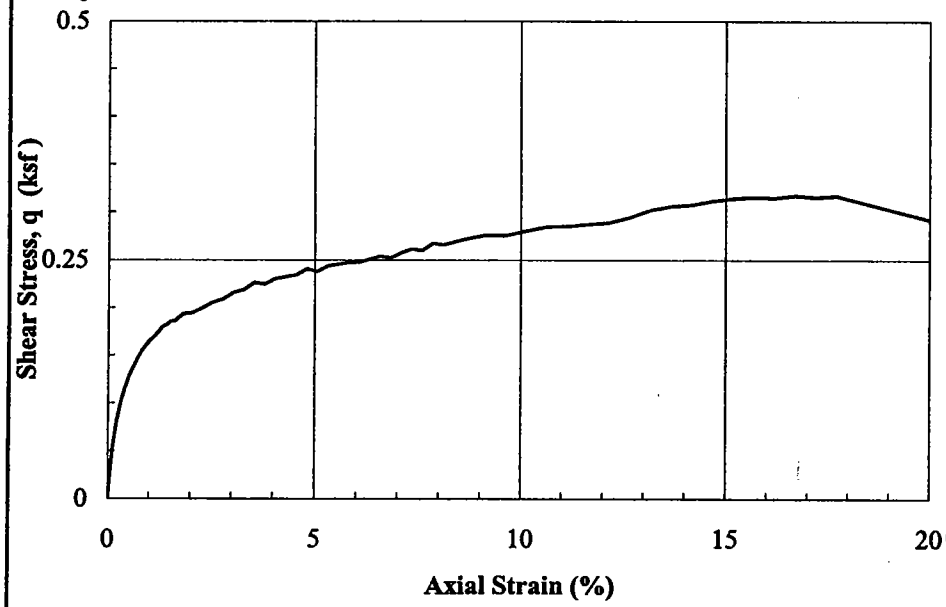
SPECIMEN INFORMATION (After saturation)
Height: 6.16 inch Diameter: 2.62 inch Area: 5.40 in²
Water Content: 97.0 % Total Unit Weight: 87.5 pcf

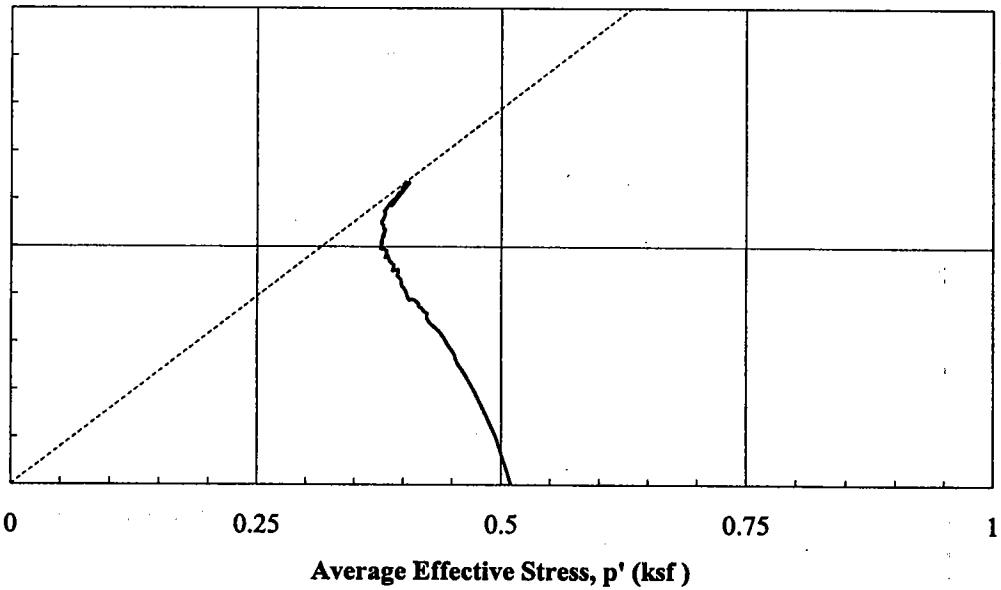
TEST SUMMARY (End of Test)
Consolidation Stresses: 0.5 ksf vertical, 0.5 ksf lateral
Water Content: 97.0 % Total Unit Weight: 87.5 pcf
B Coefficient: 0.95 Strain Rate: 0.050 %/min
Peak Shear Strength: 0.32 ksf @ 16.7 % Strain
Effective Friction Angle: 52.1°



Failure Sketch

REMARKS:





Test by: M. Cole
Test Date: 7/2/2003
Checked by: K. Wood

US Army Corps of Engineers
New England District

GEI Consultants, Inc.

Norwalk Harbor Lab Testing

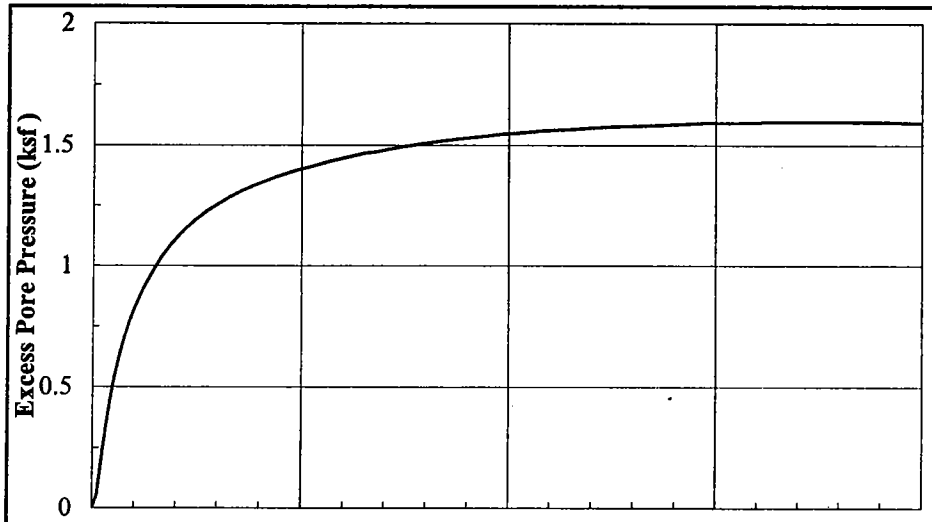
Project 03019-2

CONSOLIDATED-UNDRAINED
TRIAXIAL COMPRESSION
with Pore Pressure Measurements

Boring: FD-03-B Depth: 2.0-4.0 feet

August 2003 Fig.

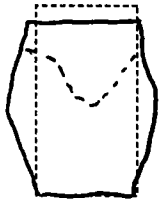
8/21/2003



SAMPLE INFORMATION
Boring: FD-03-C Depth: 4.0-6.0 feet
Type: 3-inch diameter tube sample
Description: Elastic SILT with sand (MH)
LL = 104 PL = 44 PI = 60

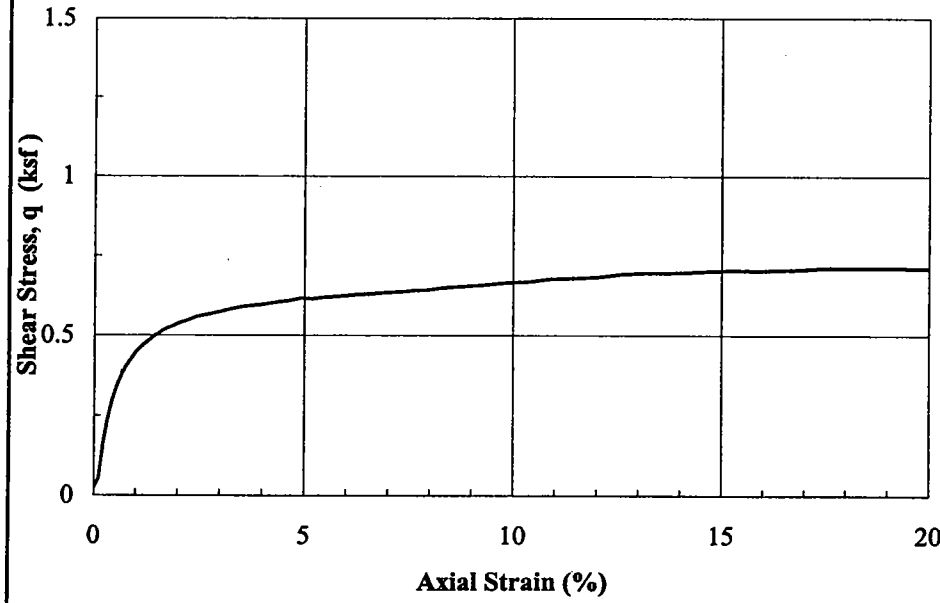
SPECIMEN INFORMATION (After saturation)
Height: 6.01 inch Diameter: 2.73 inch Area: 5.84 in²
Water Content: 77.4 % Total Unit Weight: 77.8 pcf

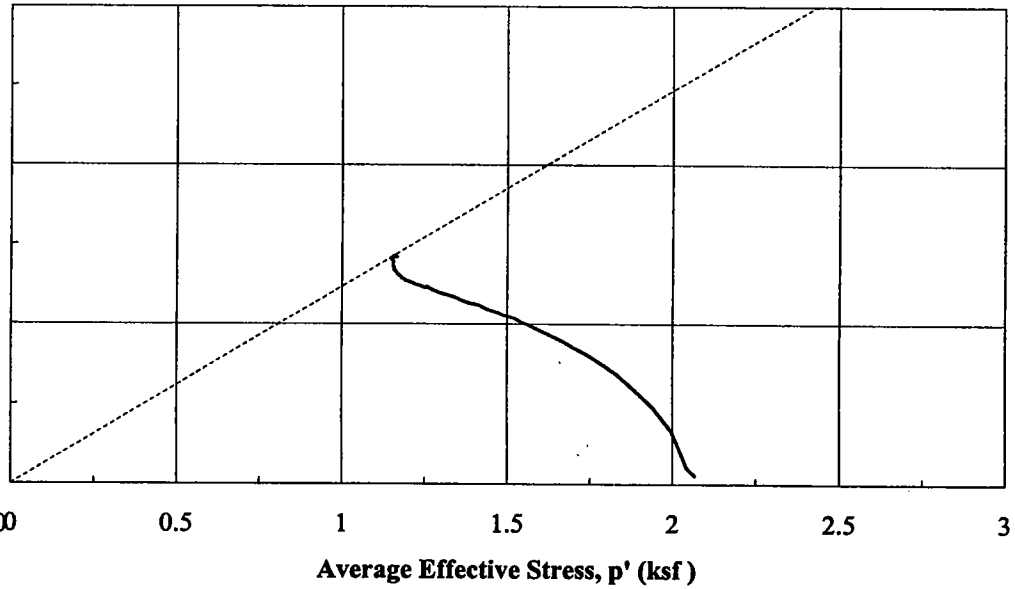
TEST SUMMARY (End of Test)
Consolidation Stresses: 2.1 ksf vertical, 2.0 ksf lateral
Water Content: 76.1 % Total Unit Weight: 78.0 pcf
B Coefficient: 0.95 Strain Rate: 0.054 %/min
Peak Shear Strength: 0.71 ksf @ 19.1 % Strain
Effective Friction Angle: 38.1°



Failure Sketch

REMARKS:





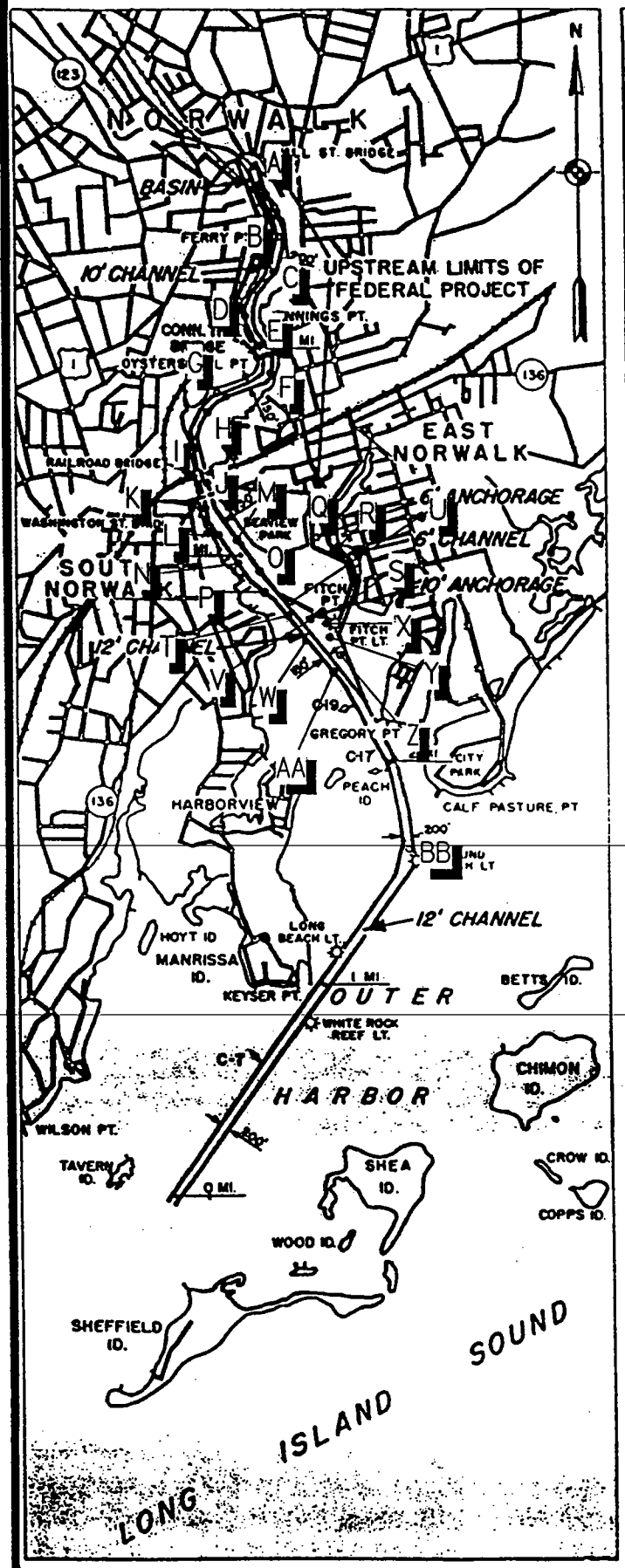
Test by: M. Cole	US Army Corps of Engineers New England District	Norwalk Harbor Lab Testing	CONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION with Pore Pressure Measurements
Test Date: 7/11/2003	GEI Consultants, Inc.		Boring: FD-03-C Depth: 4.0-6.0 feet
Checked by: K. Wood		Project 03019-2	August 2003 Fig.

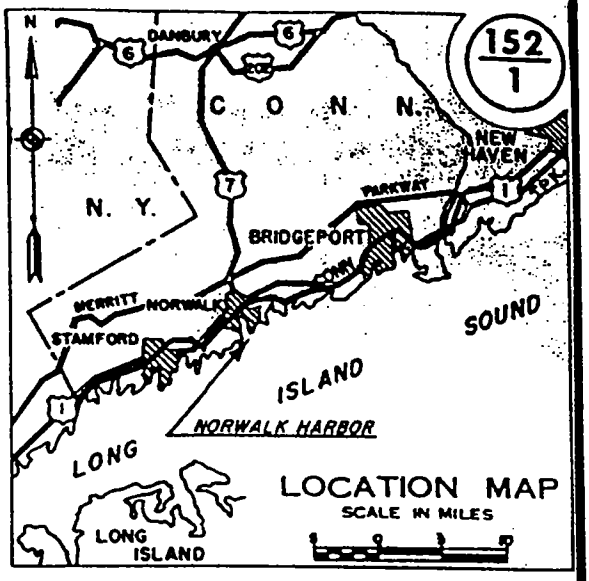
8/21/2003

Sampling Station Coordinates for Norwalk Harbor, CT

Coordinates based on the Lambert Grid System for CT NAD 1927 Grid System (feet)

Station	Location	Northing	Easting
NOR-A	10' Channel	104013	417750
NOR-B	10' Channel	102971	418220
NOR-C	10' Channel	102322	418125
NOR-D	10' Channel	101174	417465
NOR-E	10' Channel	100698	417715
NOR-F	10' Channel	100210	417975
NOR-G	10' Channel	99682	416913
NOR-H	10' Channel	99373	416770
NOR-I	10' Channel	98835	416290
NOR-J	10' Channel	97884	416604
NOR-K	12' Channel	97206	416624
NOR-L	12' Channel	96880	416766
NOR-M	12' Channel	96754	417073
NOR-N	12' Channel	96365	417102
NOR-O	12' Channel	96246	417420
NOR-P	12' Channel	95715	417650
NOR-Q	6' Anchorage	96586	418858
NOR-R	6' Anchorage	96062	419306
NOR-S	6' Channel	95082	419296
NOR-T	12' Channel	95057	418230
NOR-U	10' Anchorage	95217	418468
NOR-V	10' Anchorage	94984	418726
NOR-W	12' Channel	94700	418520
NOR-X	10' Anchorage	94970	418978
NOR-Y	10' Anchorage	94748	419010
NOR-Z	10' Anchorage	94454	419246
NOR-AA	12' Channel	94100	418962
NOR-BB	12' Channel	89842	420598





BRIDGE CLEARANCES

WASHINGTON STREET BRIDGE (BASCULE)
Hor. 70 ft.
VERT. 8.3 ft. M.H.W.

RAILROAD BRIDGE (SWING)
Hor. 55. left draw
58.4 right draw
Vert. 16.2 ft. M.H.W

CONN. TURNPIKE BRIDGE (FIXED)
HOR. 100 FT.
VERT. 60 FT. M.L.W.

FOR ENLARGEMENT OF EAST NORWALK CHANNEL SEE 152/2

NORWALK HARBOR
SAMPLING AND TESTING
LOCATION MAP
2000

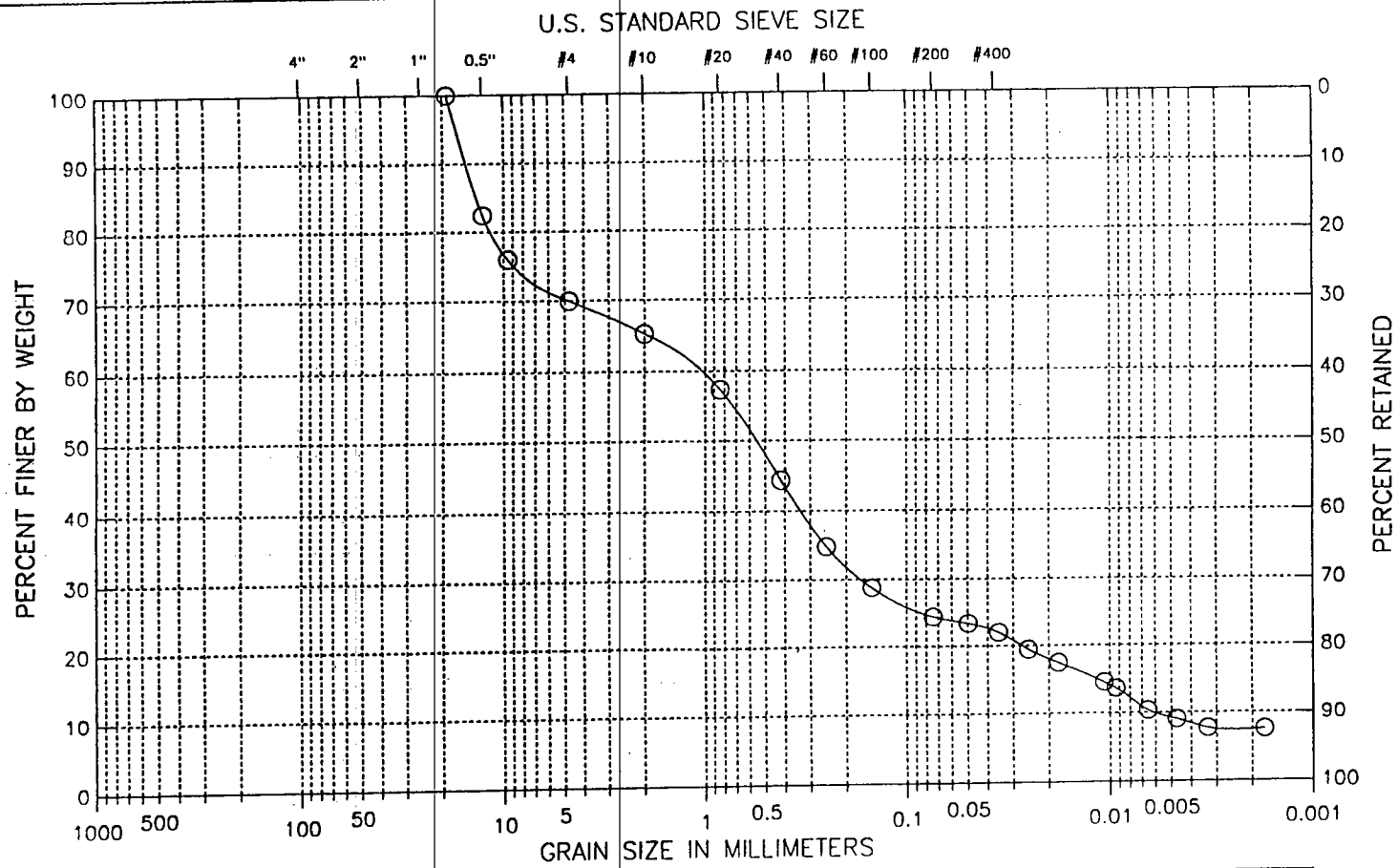
NORWALK HARBOR CONN.

30 SEPTEMBER 1988

SCALE IN FEET
2000' 0 2000' 4000' 6000'

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

Boring No. : ---	Project : USACOE
Sample No.: NOR-A	Project No.: GTX-1965
Test Method ASTM D 422	Location: CT
Filename : NOR-A	Date : Thu Sep 10 1998



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

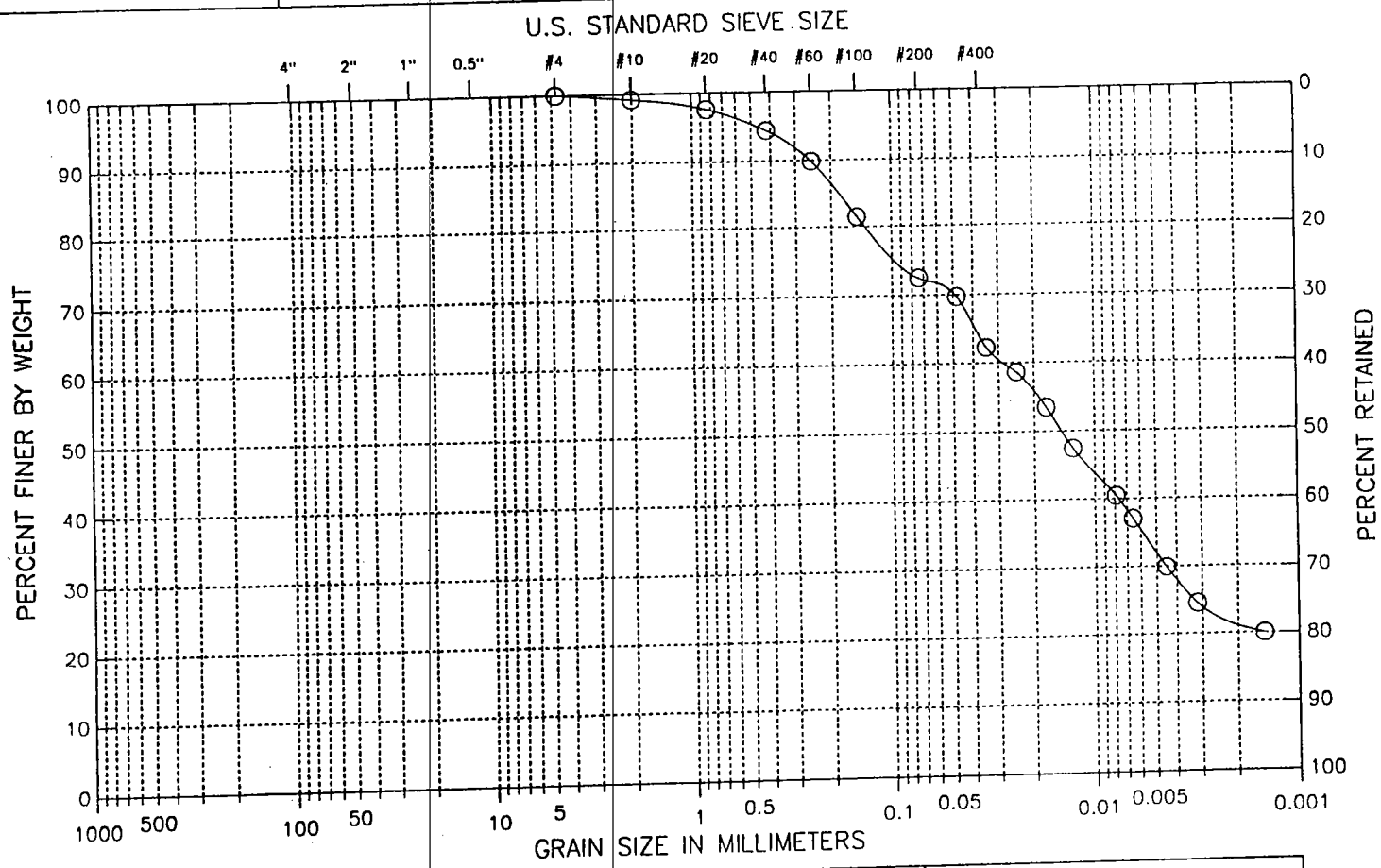
Classification :

Visual Description :
Wet, black silty sand with gravel

Remarks :

Figure 1

Boring No. : ---	Project : USACOE
Sample No.: NOR-B	Project No.: GTX-1965
Test Method ASTM D 422	Location: CT
Filename : NOR-B	Date : Thu Sep 10 1998



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

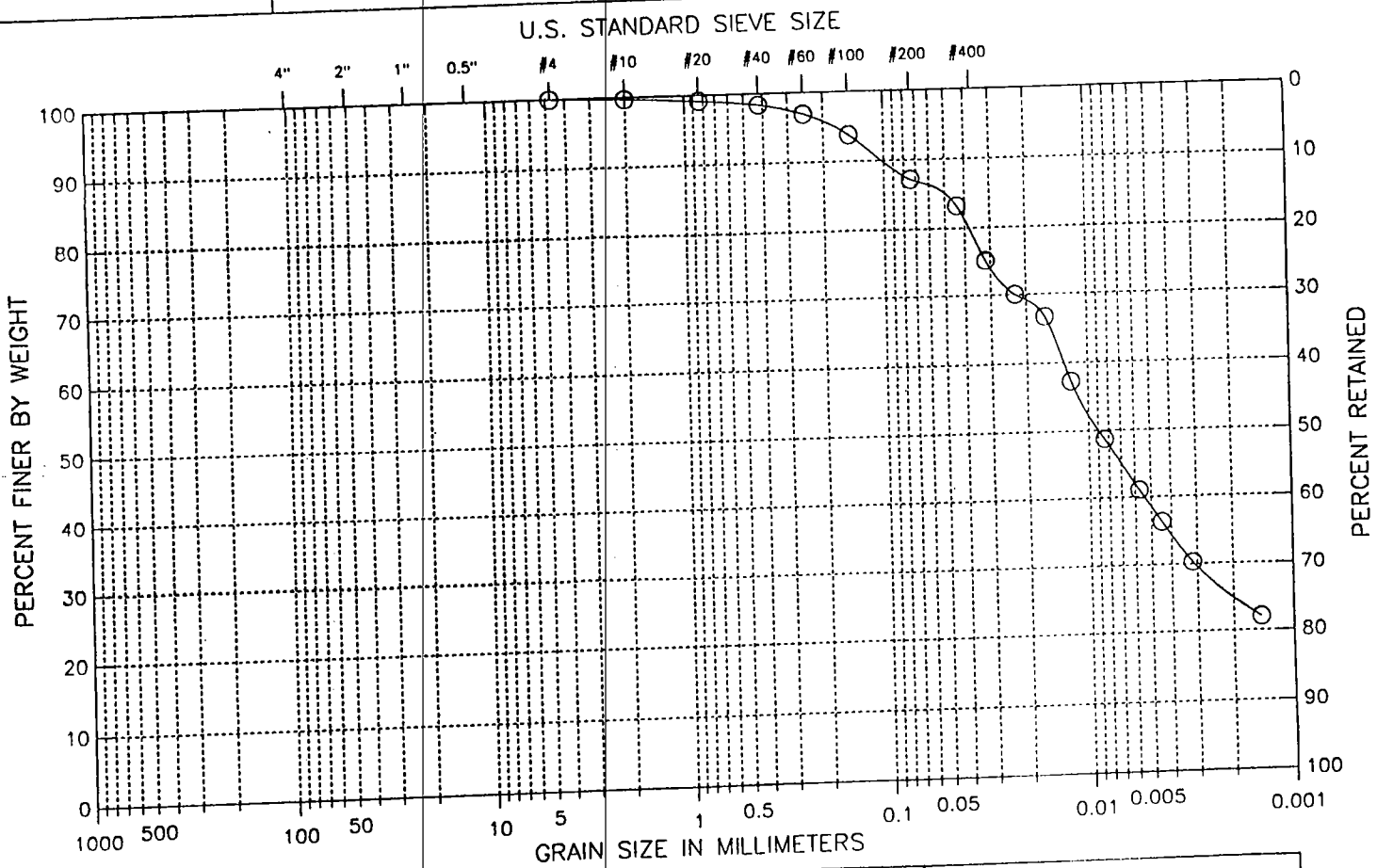
Remarks :

Classification :

Visual Description :
Wet, black sandy clay

Figure 3

Boring No. : ---	Project : USACOE
Sample No.: NOR-C	Project No.: GTX-1965
Test Method ASTM D 422	Location: CT
Filename : NOR-C	Date : Thu Sep 10 1998



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Remarks :

Classification :

Visual Description :
Wet, black organic silt

Figure 5

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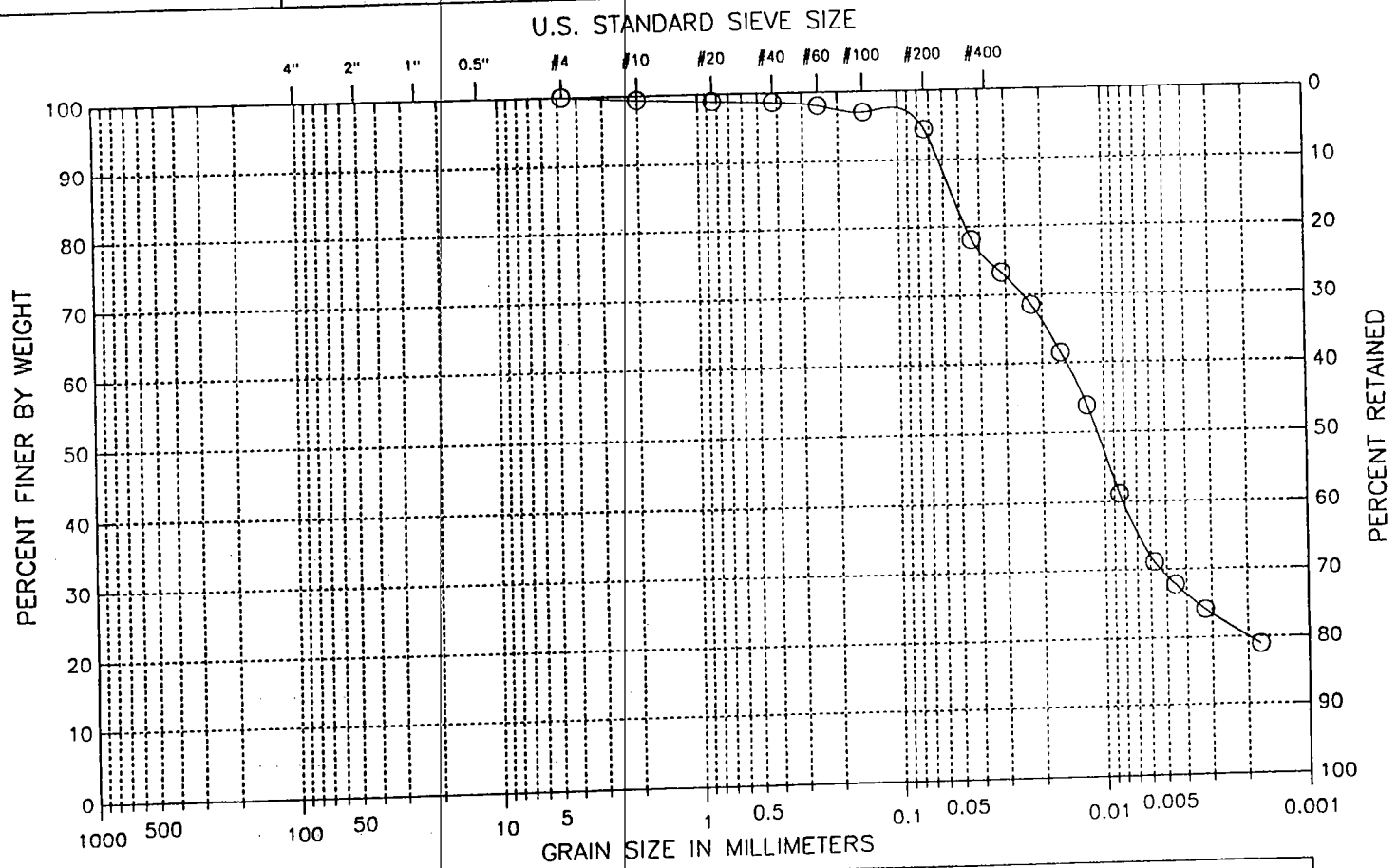
Boring No. : ---
Sample No: NOR-D
Test Method ASTM D 422
Filename : NOR-D

Project : USACOE
Project No.: GTX-1965
Location: CT
Date : Thu Sep 10 1998



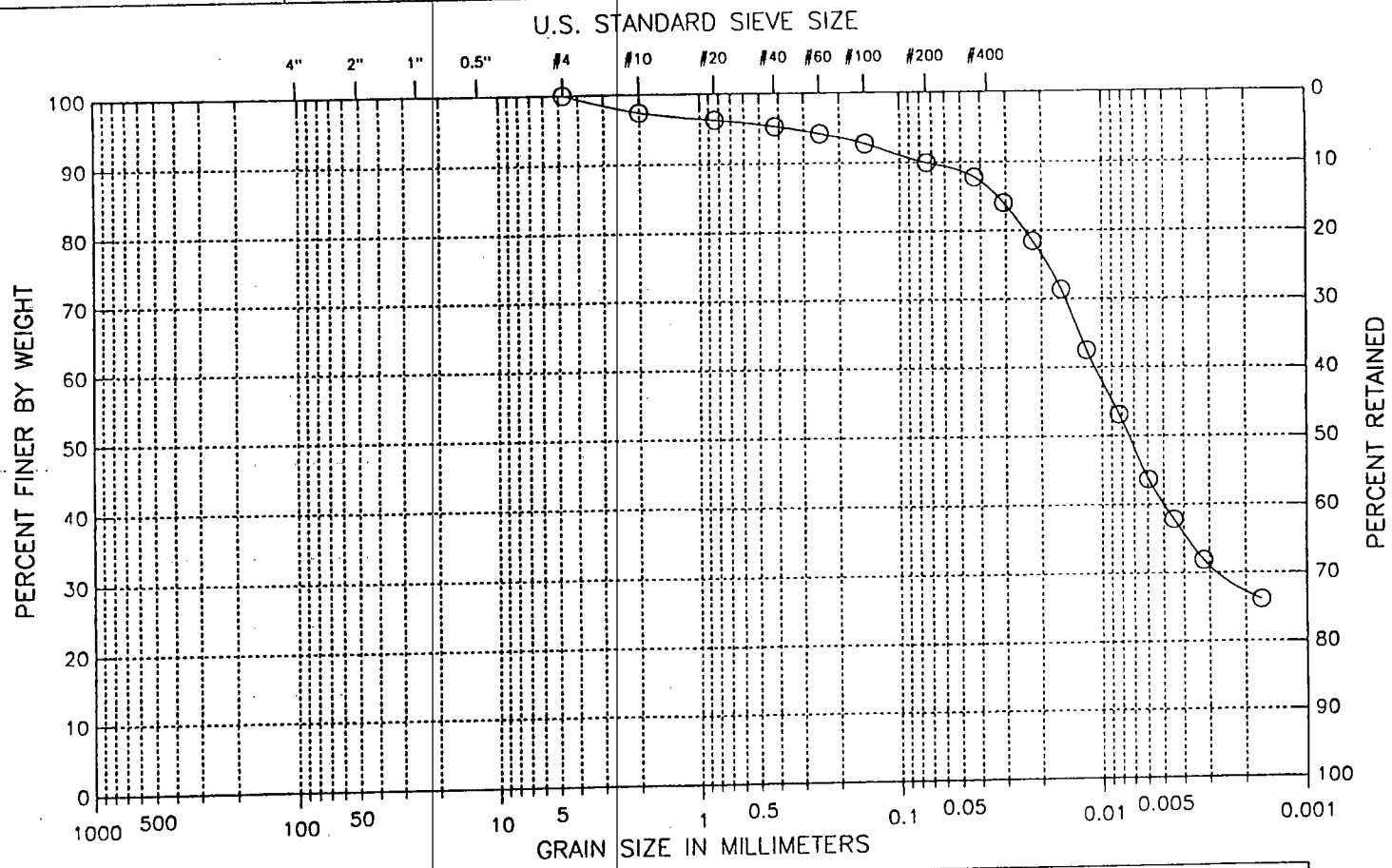
Remarks :

Classification :

Visual Description :
Wet, black organic silt

Figure 6

Boring No. : ---	Project : USACOE
Sample No.: NOR-E	Project No.: GTX-1965
Test Method ASTM D 422	Location: CT
Filename : NOR-E	Date : Thu Sep 10 1998



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

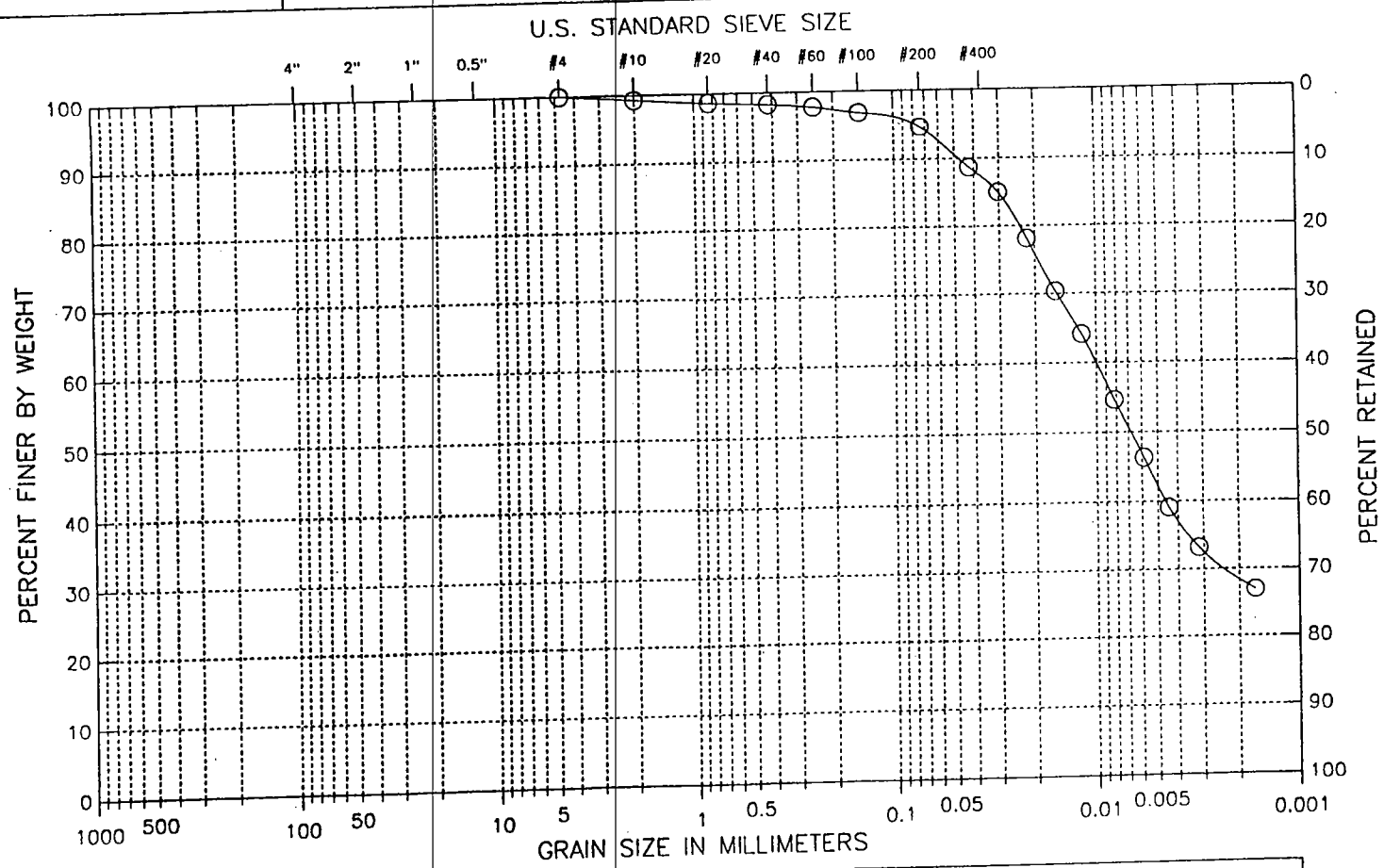
Classification :

Visual Description :
Wet, black organic silt

Remarks :

Figure 7

Boring No. : ---	Project : USACOE
Sample No.: NOR-F	Project No.: GTX-1965
Test Method ASTM D 422	Location: CT
Filename : NOR-F	Date : Thu Sep 10 1998



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

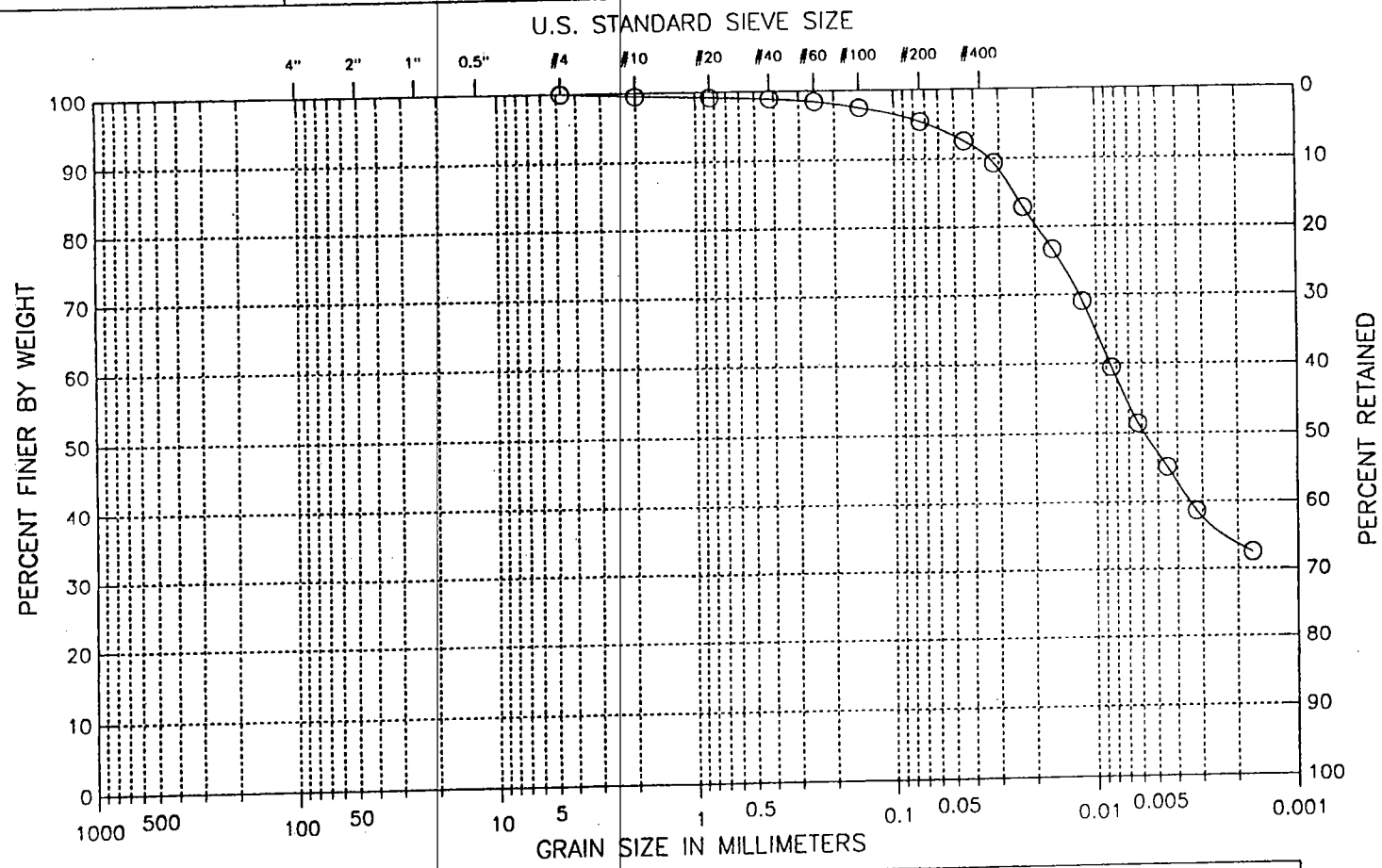
Classification :

Visual Description :
Wet, black organic silt

Remarks :

Figure 8

Boring No. : ---	Project : USACOE
Sample No.: NOR-G	Project No.: GTX-1965
Test Method ASTM D 422	Location: CT
Filename : NOR-G	Date : Thu Sep 10 1998



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

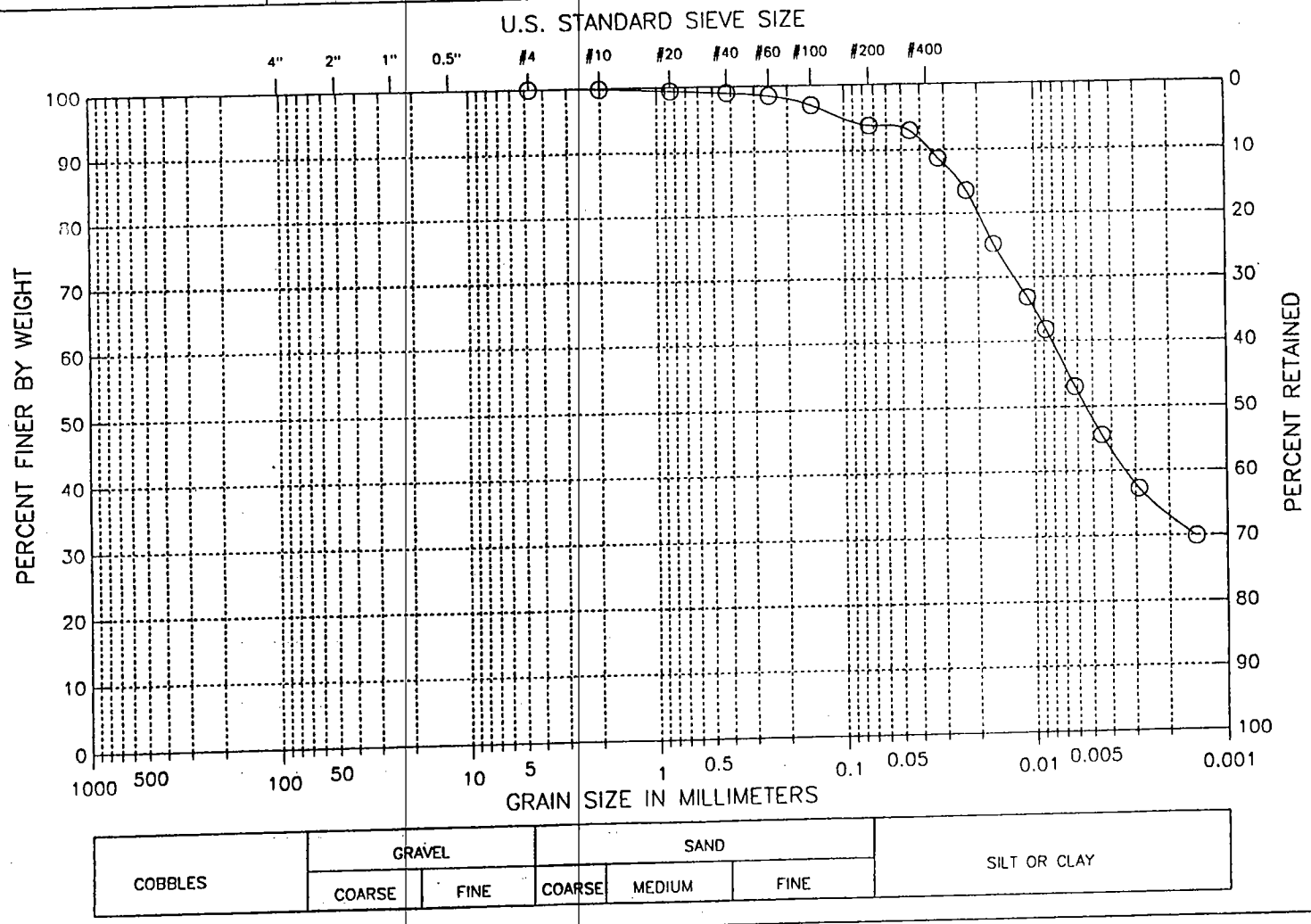
Classification :

Visual Description :
Wet, black organic silt

Remarks :

Figure 9

Boring No. : ---	Project : USACOE
Sample No.: NOR-H	Project No.: GTX-1965
Test Method: ASTM D 422	Location: CT
Filename : NOR-H	Date : Thu Sep 10 1998



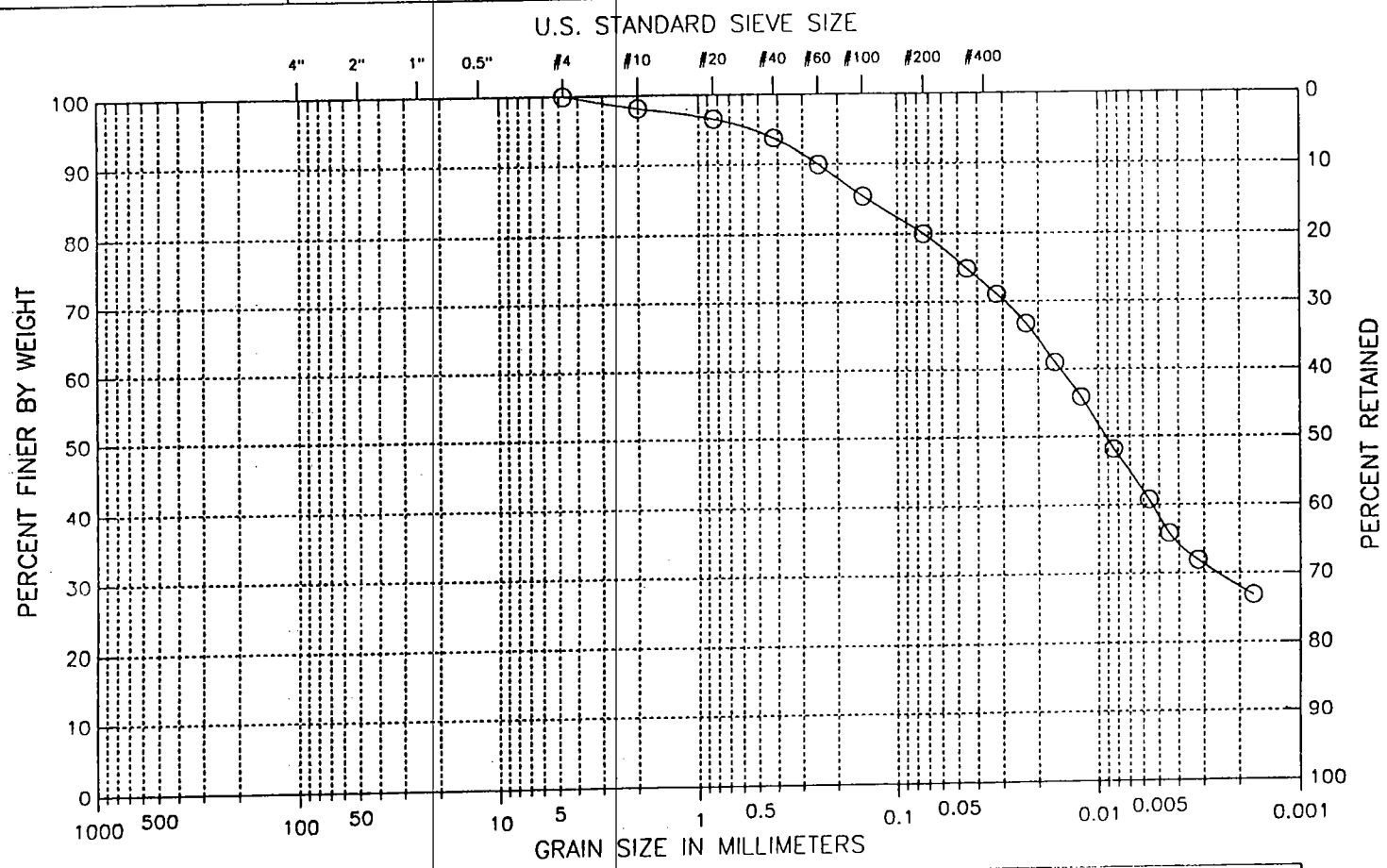
Remarks :

Classification :

Visual Description :
Wet, black organic silt

Figure 10

Boring No. : ---	Project : USACOE
Sample No.: NOR-I	Project No.: GTX-1965
Test Method ASTM D 422	Location: CT
Filename : NOR-I	Date : Thu Sep 10 1998



Classification :

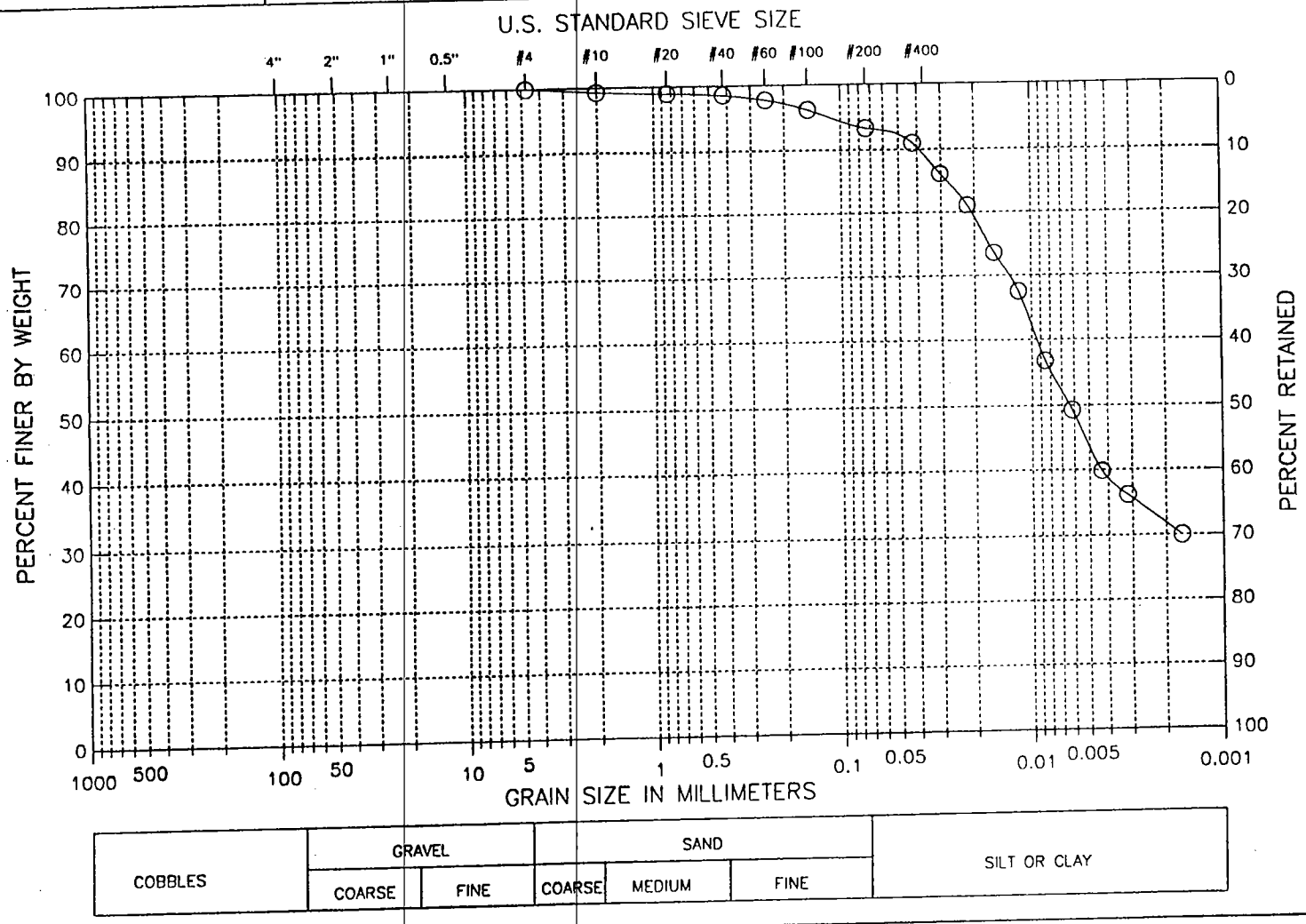
Visual Description :
Wet, black sandy organic silt

Remarks :

Figure 11

Boring No. : ---
Sample No.: NOR-J
Test Method ASTM D 422
Filename : NOR-J

Project : USACOE
Project No.: GTX-1965
Location: CT
Date : Thu Sep 10 1998



Classification :

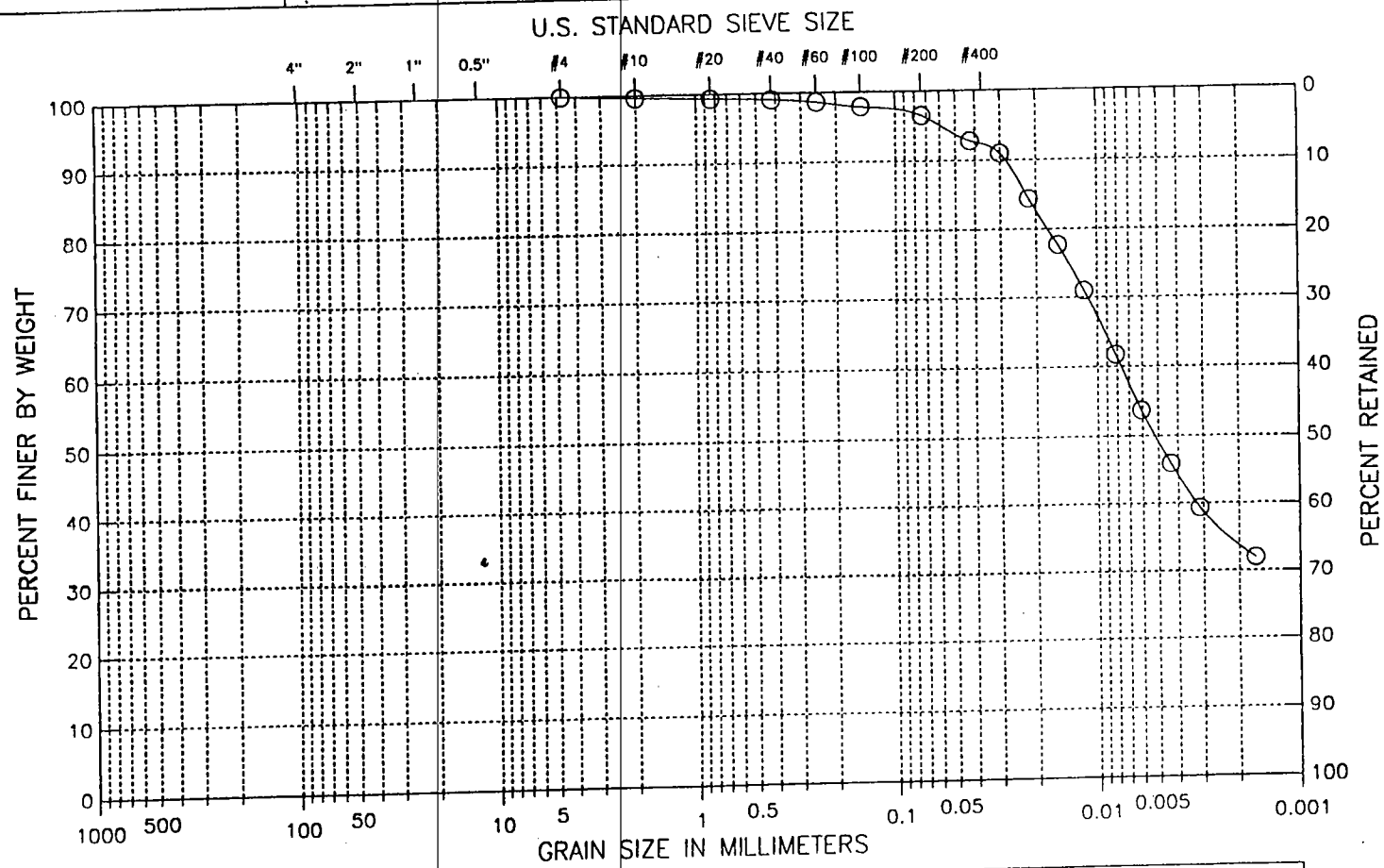
Visual Description :
Wet, black organic silt

Remarks :

Figure 12

Boring No. : ---
Sample No.: NOR-K
Test Method ASTM D 422
Filename : NOR-K

Project : USACOE
Project No.: GTX-1965
Location: CT
Date : Thu Sep 10 1998



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

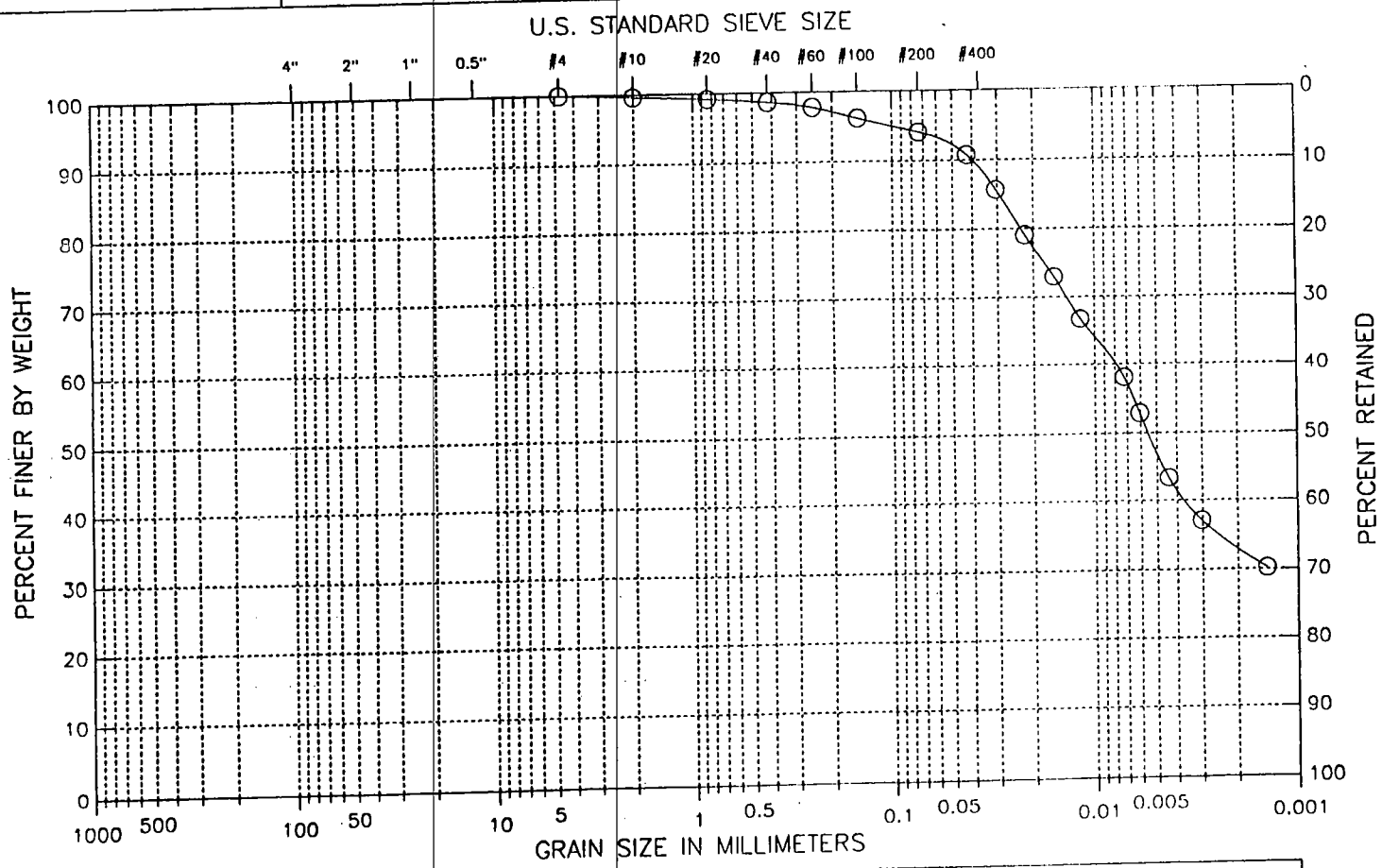
Remarks :

Classification :

Visual Description :
Wet, black organic silt

Figure 14

Boring No. : ---	Project : USACOE
Sample No: NOR-L	Project No.: GTX-1965
Test Method ASTM D 422	Location: CT
Filename : NOR-L	Date : Thu Sep 10 1998



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Classification :

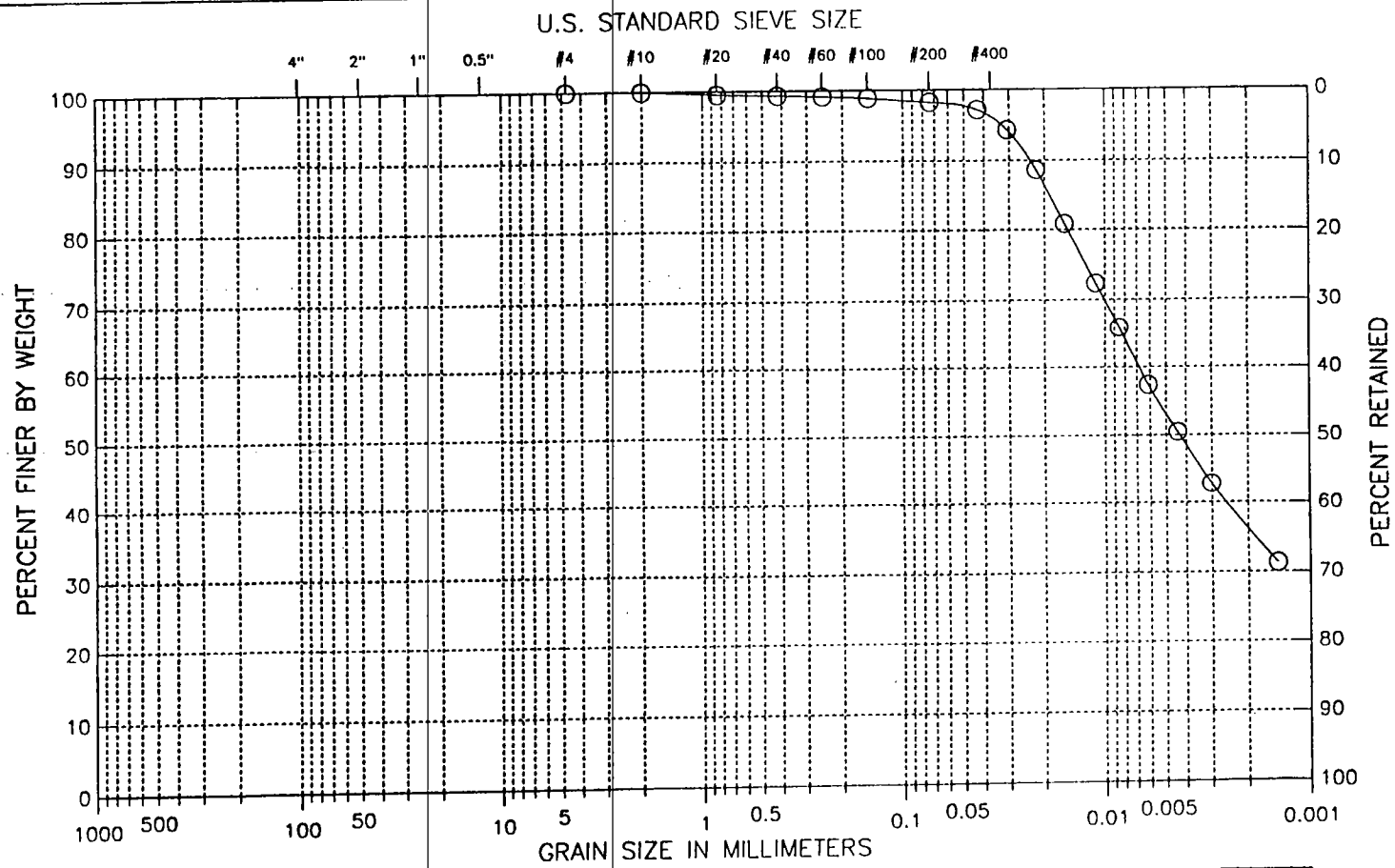
Visual Description :
Wet, black organic silt

Remarks :

Figure 15

Boring No. : ---
Sample No.: NOR-M
Test Method ASTM D 422
Filename : NOR-M

Project : USACOE
Project No.: GTX-1965
Location: CT
Date : Thu Sep 10 1998



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

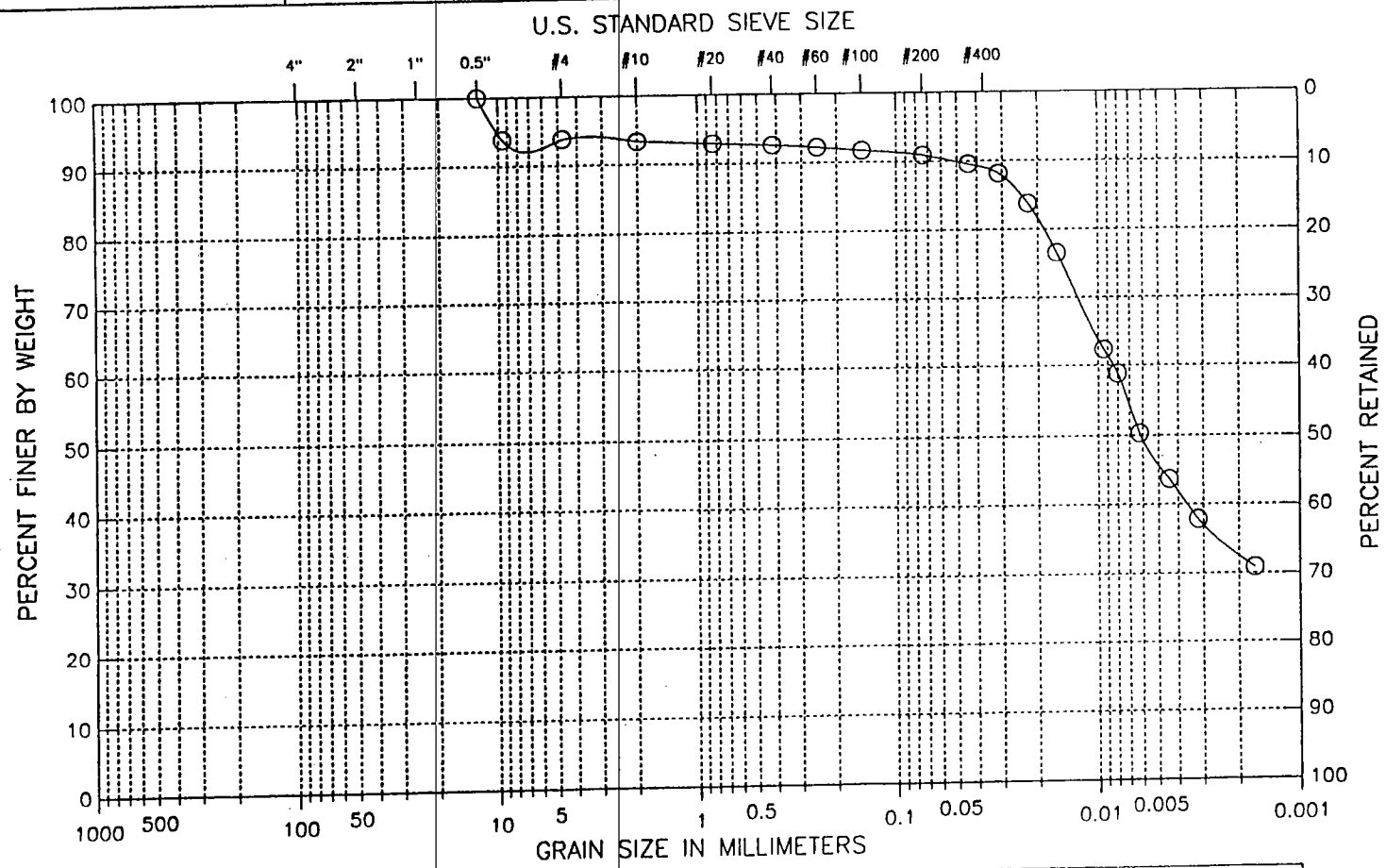
Classification :

Visual Description :
Wet, black organic silt

Remarks :

Figure 16

Boring No. : ---	Project : USACOE
Sample No.: NOR-N	Project No.: GTX-1965
Test Method ASTM D 422	Location: CT
Filename : NOR-N	Date : Thu Sep 10 1998



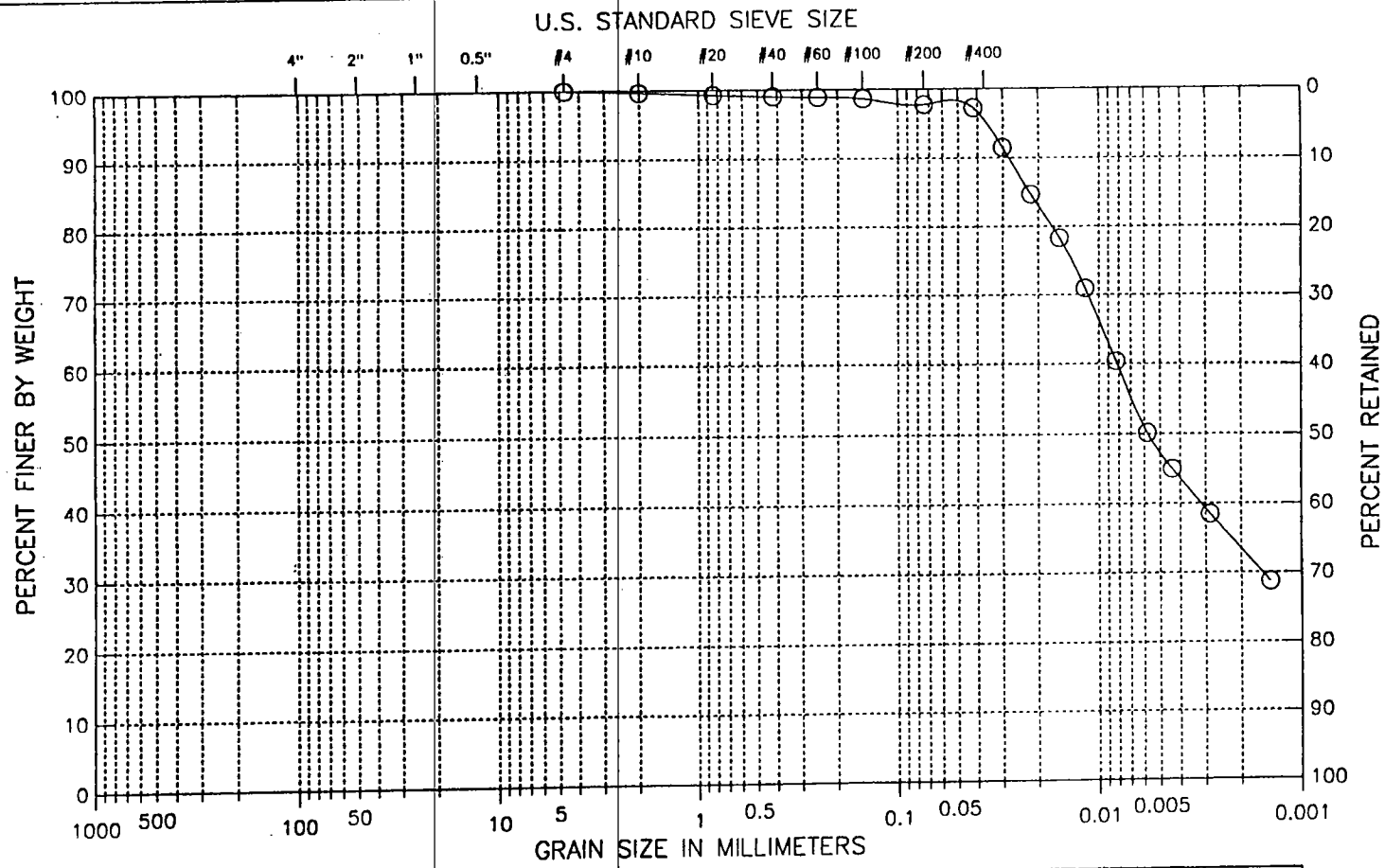
Classification :

Visual Description :
Wet, black organic silt

Remarks :

Figure 17

Boring No. : ---	Project : USACOE
Sample No.: NOR-O	Project No.: GTX-1965
Test Method ASTM D 422	Location: CT
Filename : NOR-O	Date : Thu Sep 10 1998



Classification :

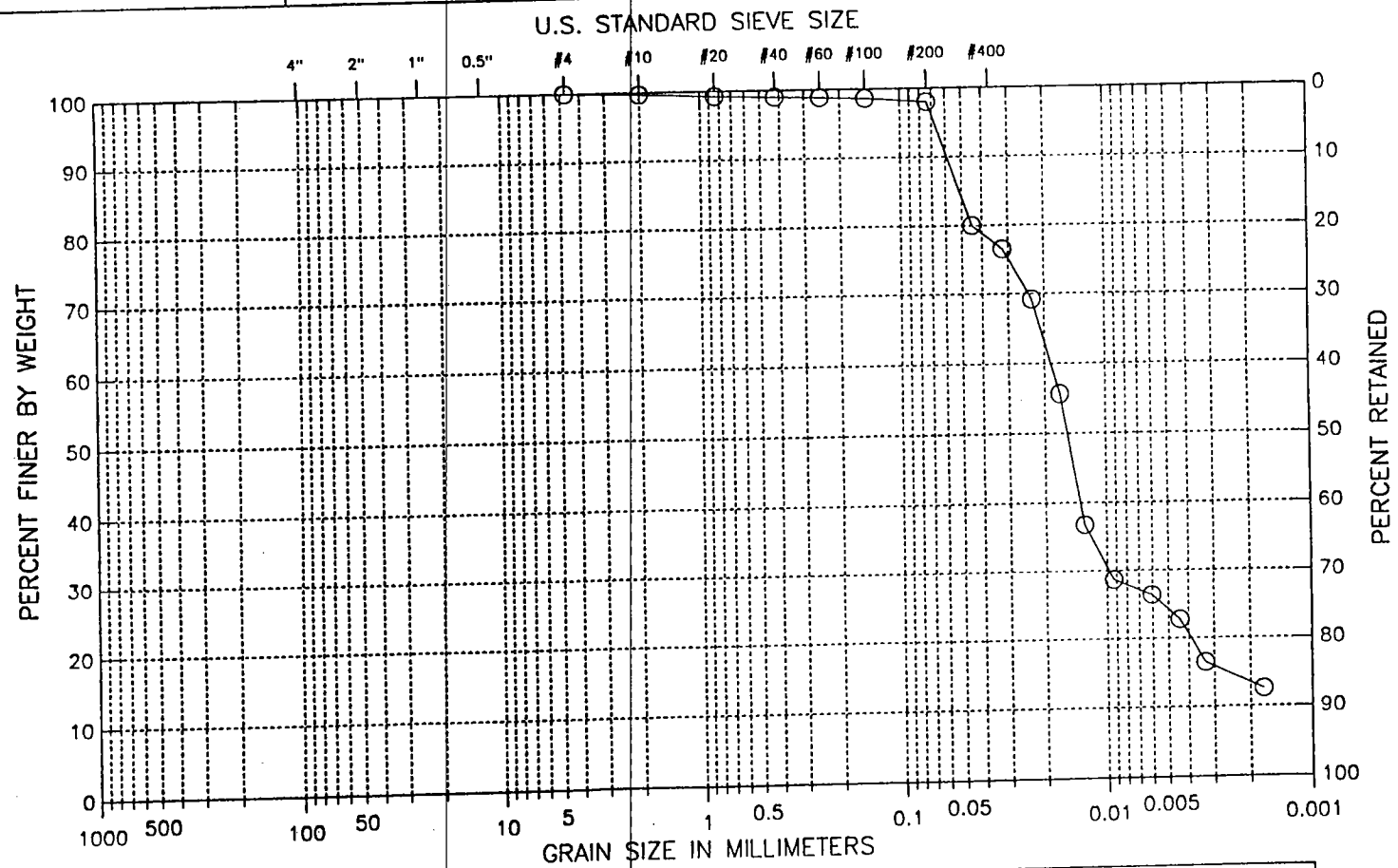
Visual Description :
Wet, black organic silt

Remarks :

Figure 18

Boring No. : ---
Sample No.: NOR-P
Test Method ASTM D 422
Filename : NOR-P

Project : USACOE
Project No.: GTX-1965
Location: CT
Date : Thu Sep 10 1998



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Classification :

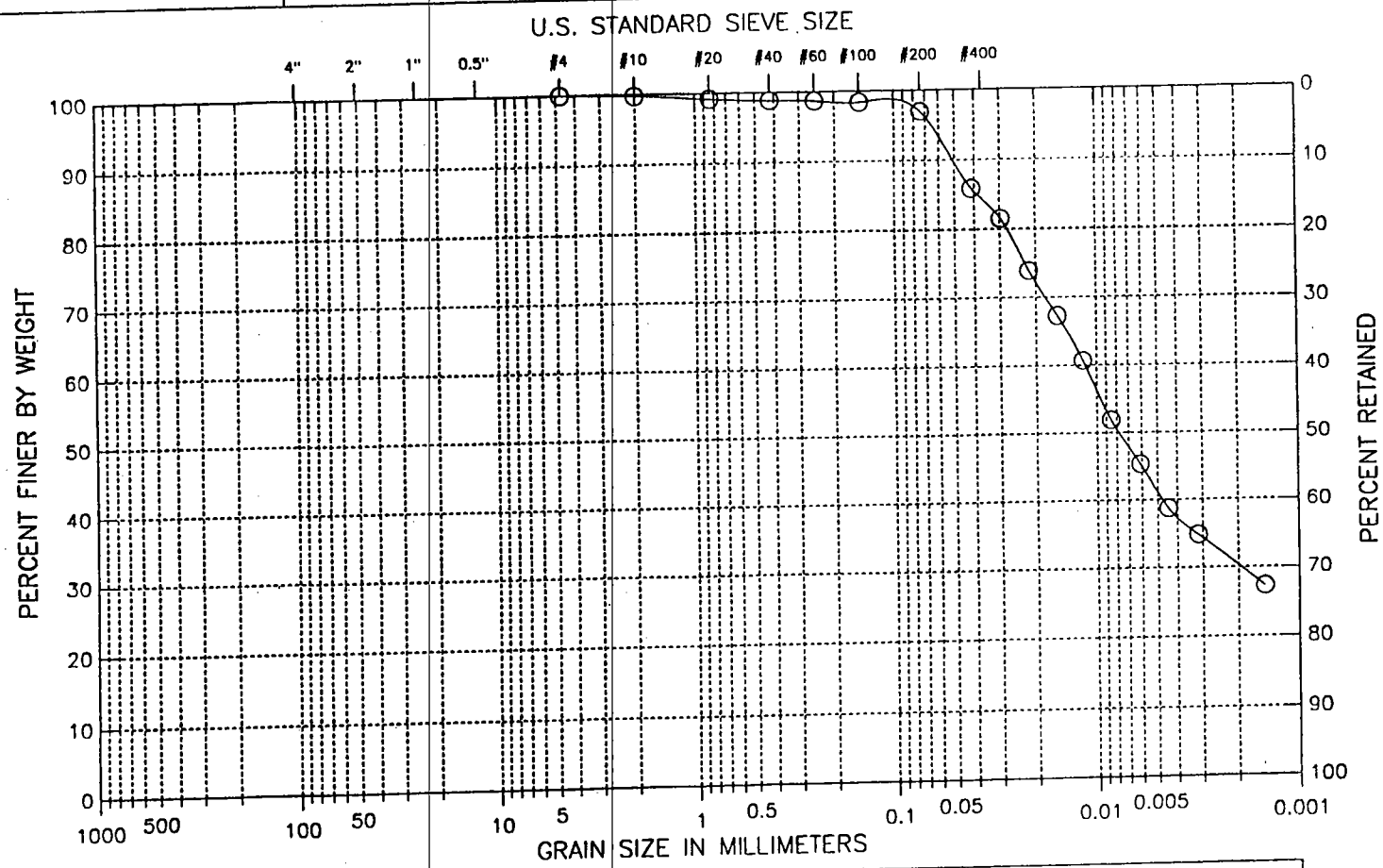
Visual Description :
Wet, black organic silt

Remarks :

Figure 19

Boring No. : ---
Sample No.: NOR-Q
Test Method ASTM D 422
Filename : NOR-Q

Project : USACOE
Project No.: GTX-1965
Location: CT
Date : Thu Sep 10 1998



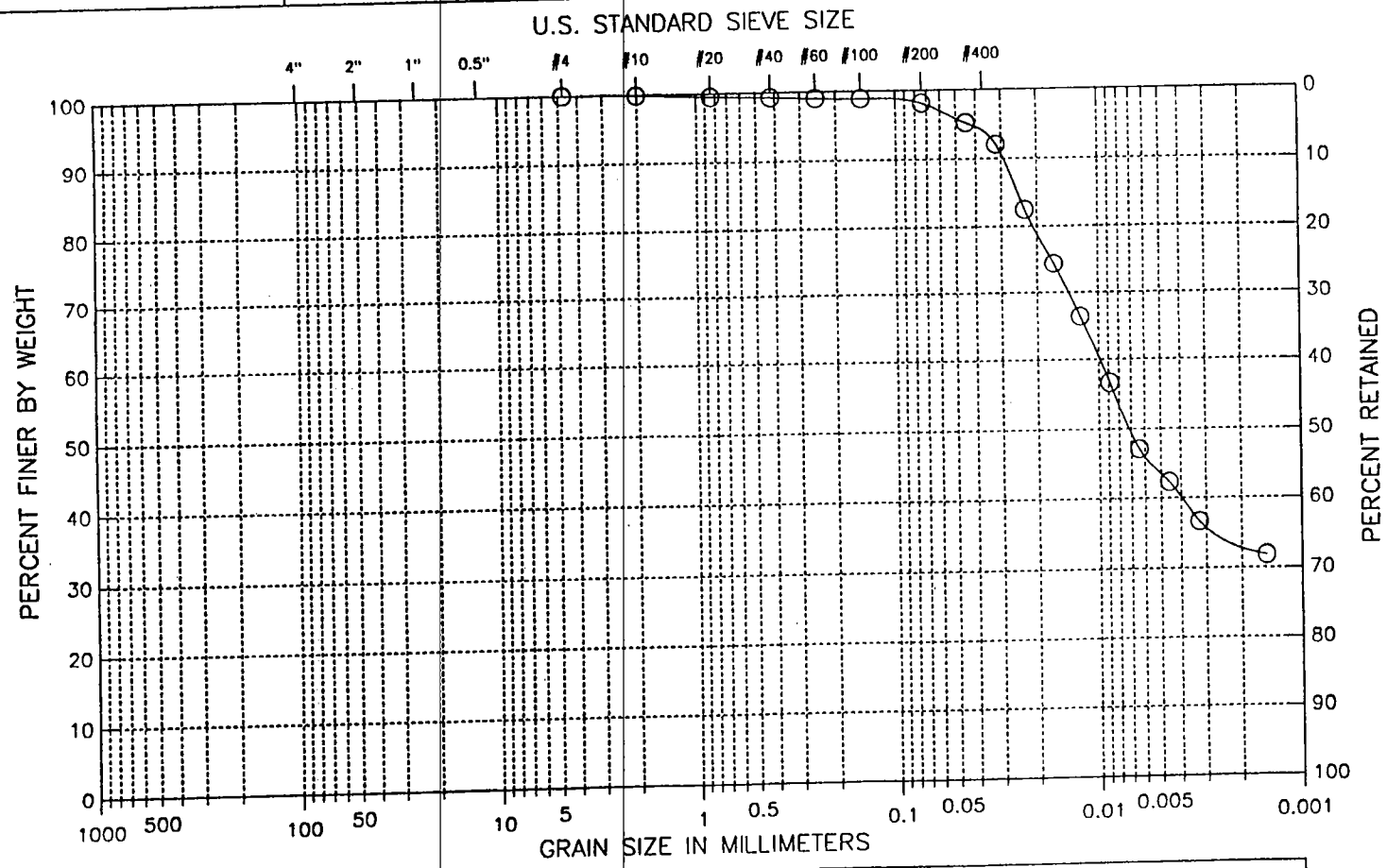
Classification :

Visual Description :
Wet, black organic silt

Remarks :

Figure 20

Boring No. : ---	Project : USACOE
Sample No: NOR-R	Project No.: GTX-1965
Test Method ASTM D 422	Location: CT
Filename : NOR-R	Date : Thu Sep 10 1998



Classification :

Visual Description :
Wet, black organic silt

Remarks :

Figure 21

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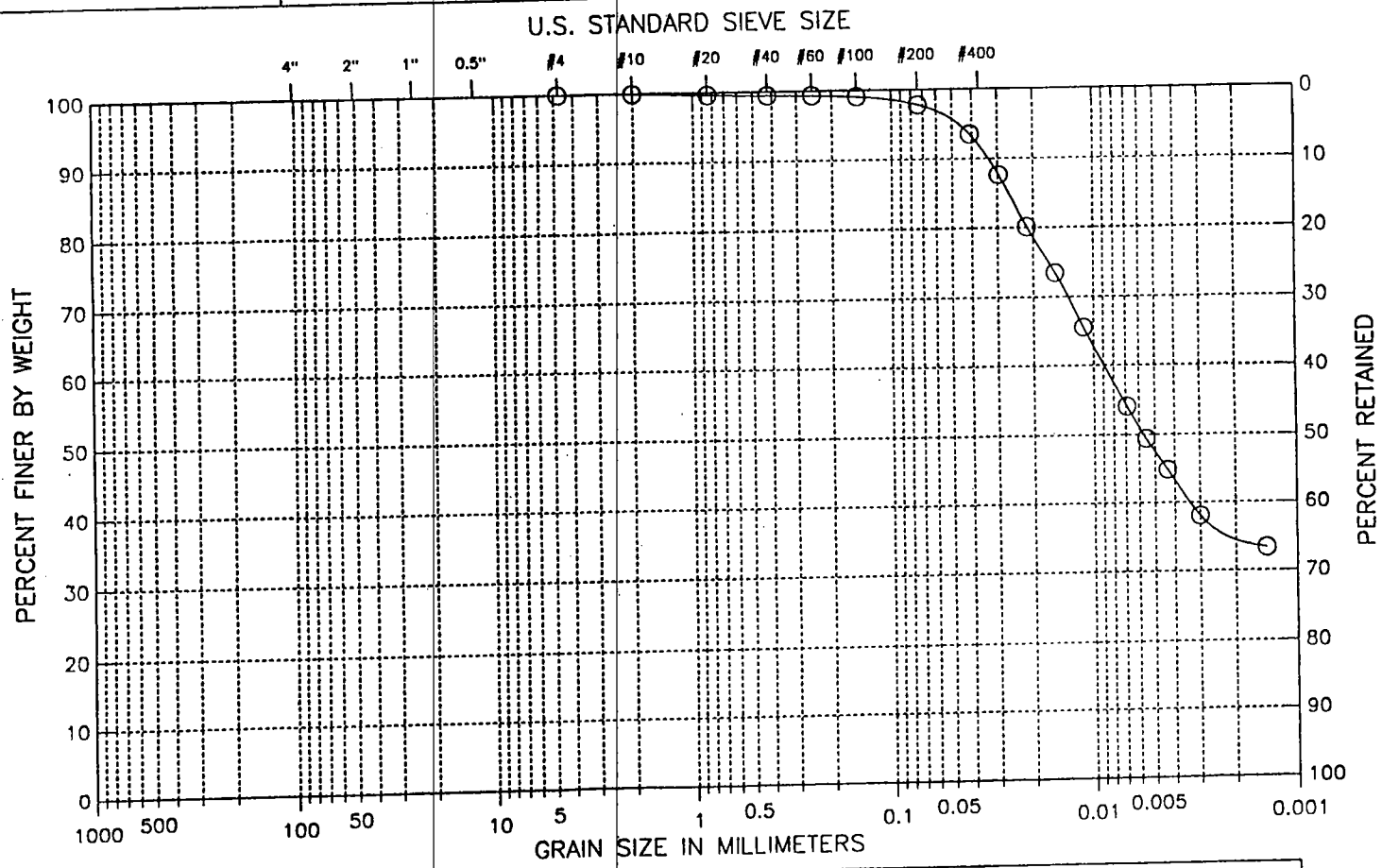
Boring No. : ---	Project : USACOE
Sample No.: NOR-S	Project No.: GTX-1965
Test Method ASTM D 422	Location: CT
Filename : NOR-S	Date : Thu Sep 10 1998



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

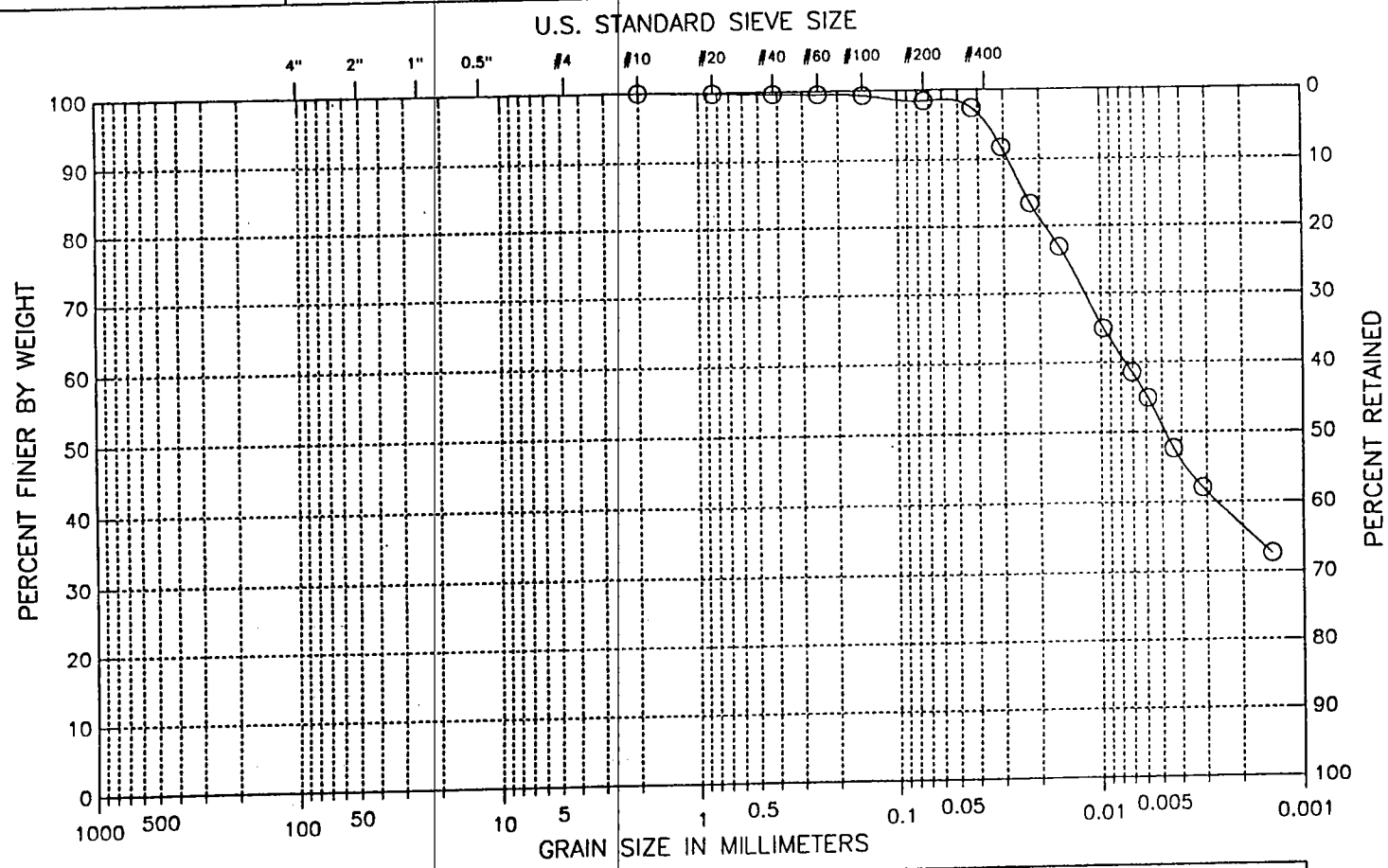
Classification :

Visual Description :
Wet, black organic silt

Remarks :

Figure 22

Boring No. : ---	Project : USACOE
Sample No.: NOR-T	Project No.: GTX-1965
Test Method ASTM D 422	Location: CT
Filename : NOR-T	Date : Thu Sep 10 1998



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Classification :

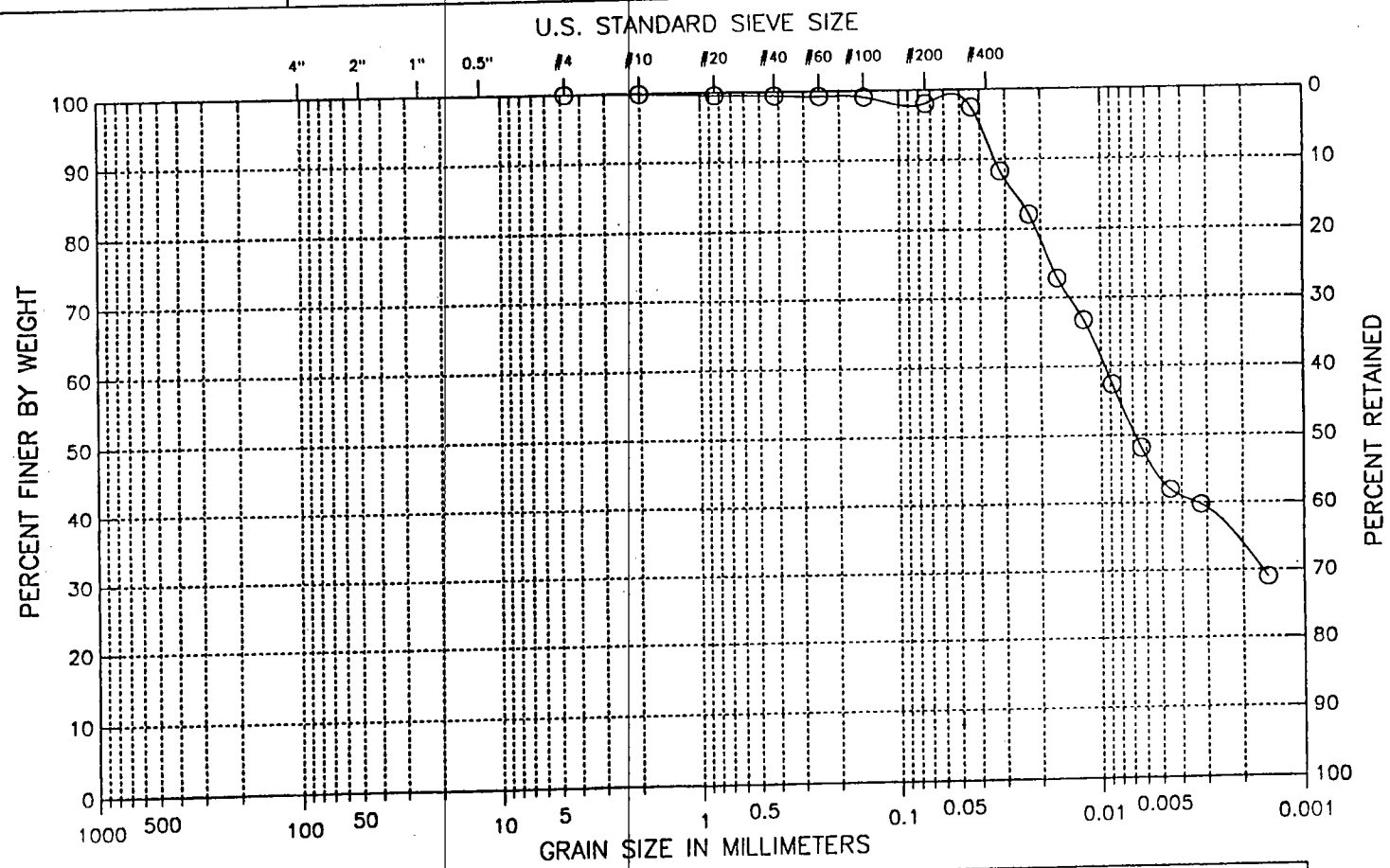
Visual Description :
Wet, black organic silt

Remarks :

Figure 23

Boring No. : ---
Sample No: NOR-U
Test Method ASTM D 422
Filename : NOR-U

Project : USACOE
Project No.: GTX-1965
Location: CT
Date : Thu Sep 10 1998



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Classification :

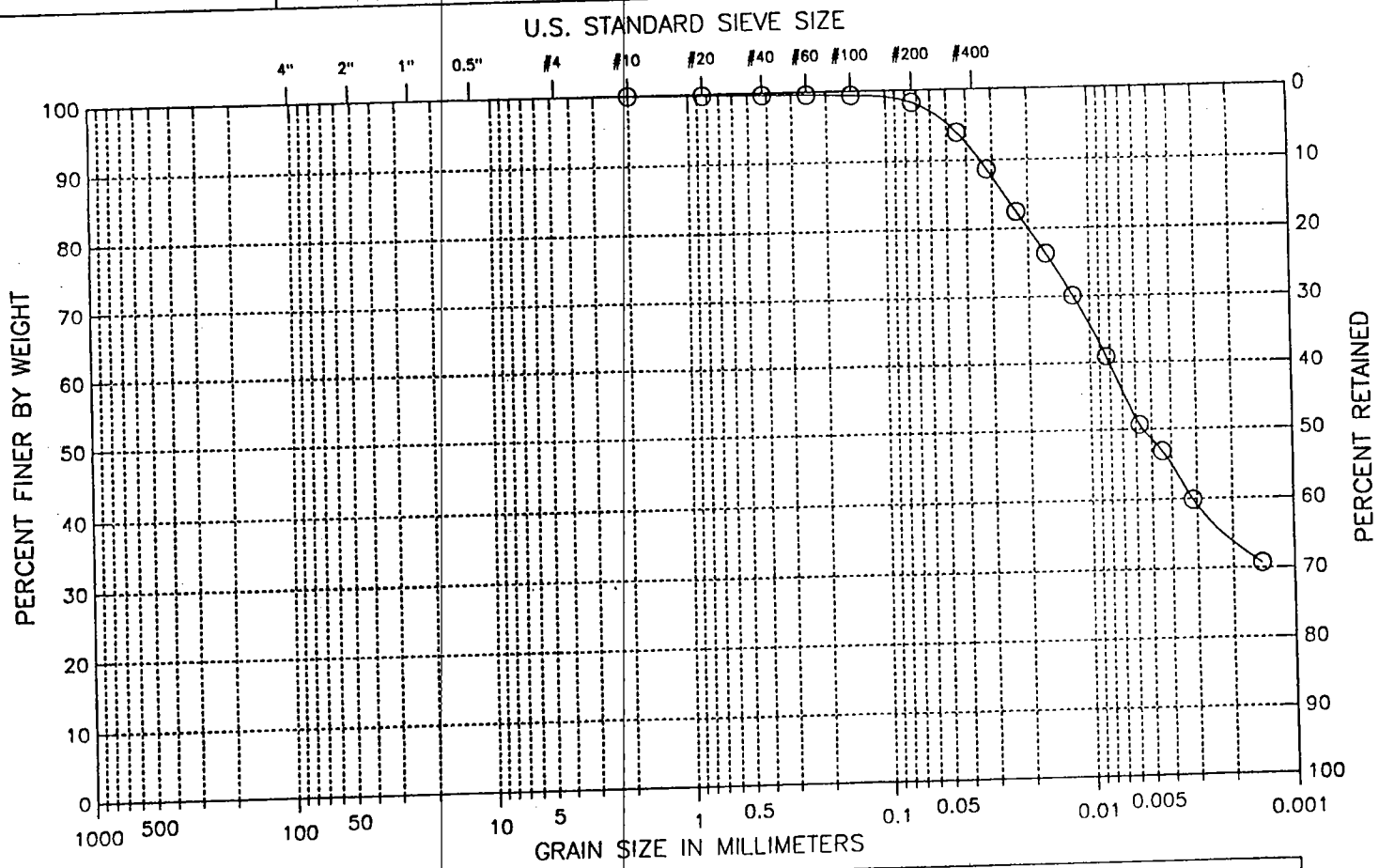
Visual Description :
Wet, black organic silt

Remarks :

Figure 24

Boring No. : ---
Sample No.: NOR-V
Test Method ASTM D 422
Filename : NOR-V

Project : USACOE
Project No.: GTX-1965
Location: CT
Date : Thu Sep 10 1998



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Remarks :

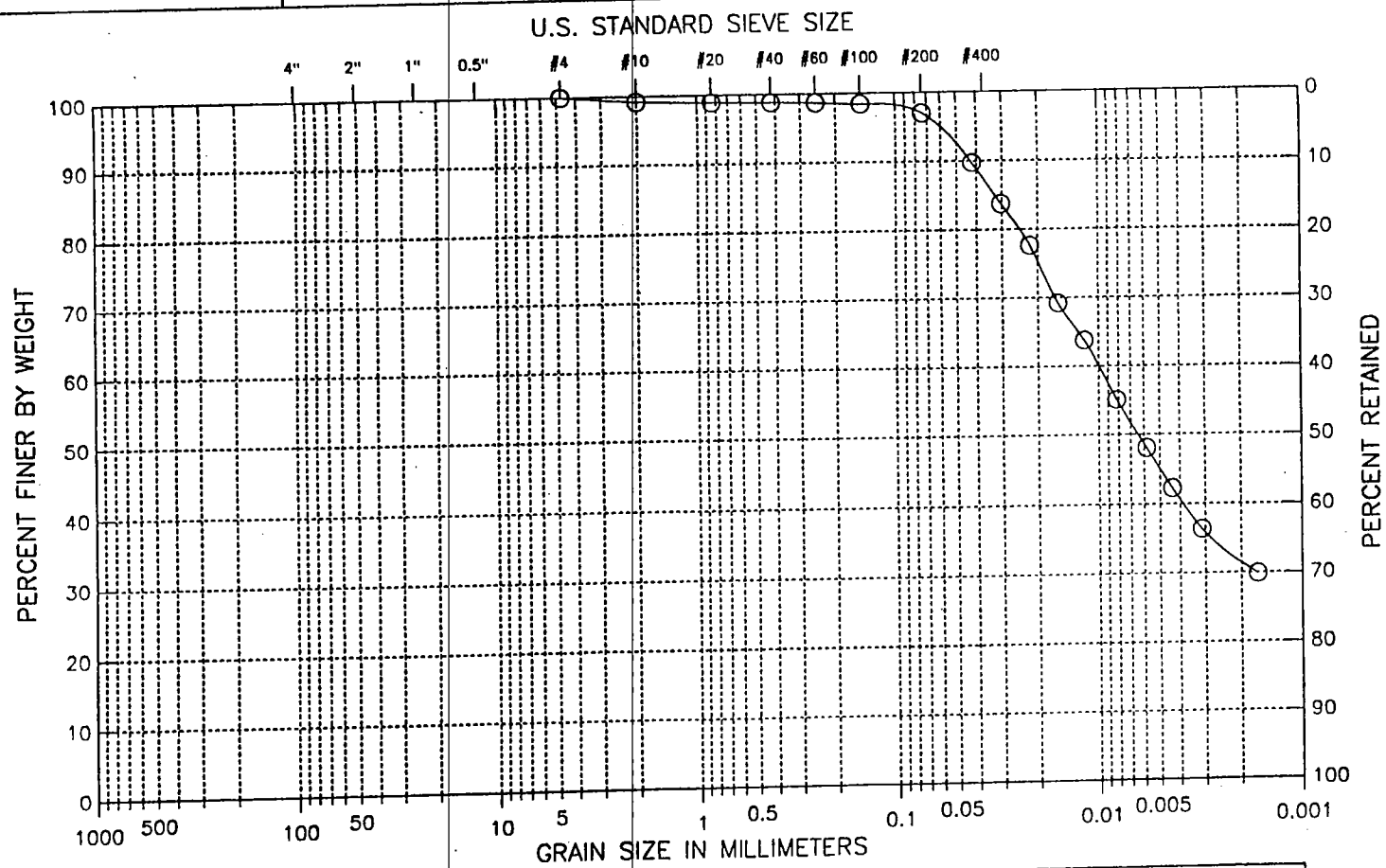
Classification :

Visual Description :
Wet, black organic silt

Figure 25

Boring No. : ---
Sample No.: NOR-W
Test Method ASTM D 422
Filename : NOR-W

Project : USACOE
Project No.: GTX-1965
Location: CT
Date : Thu Sep 10 1998



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Classification :

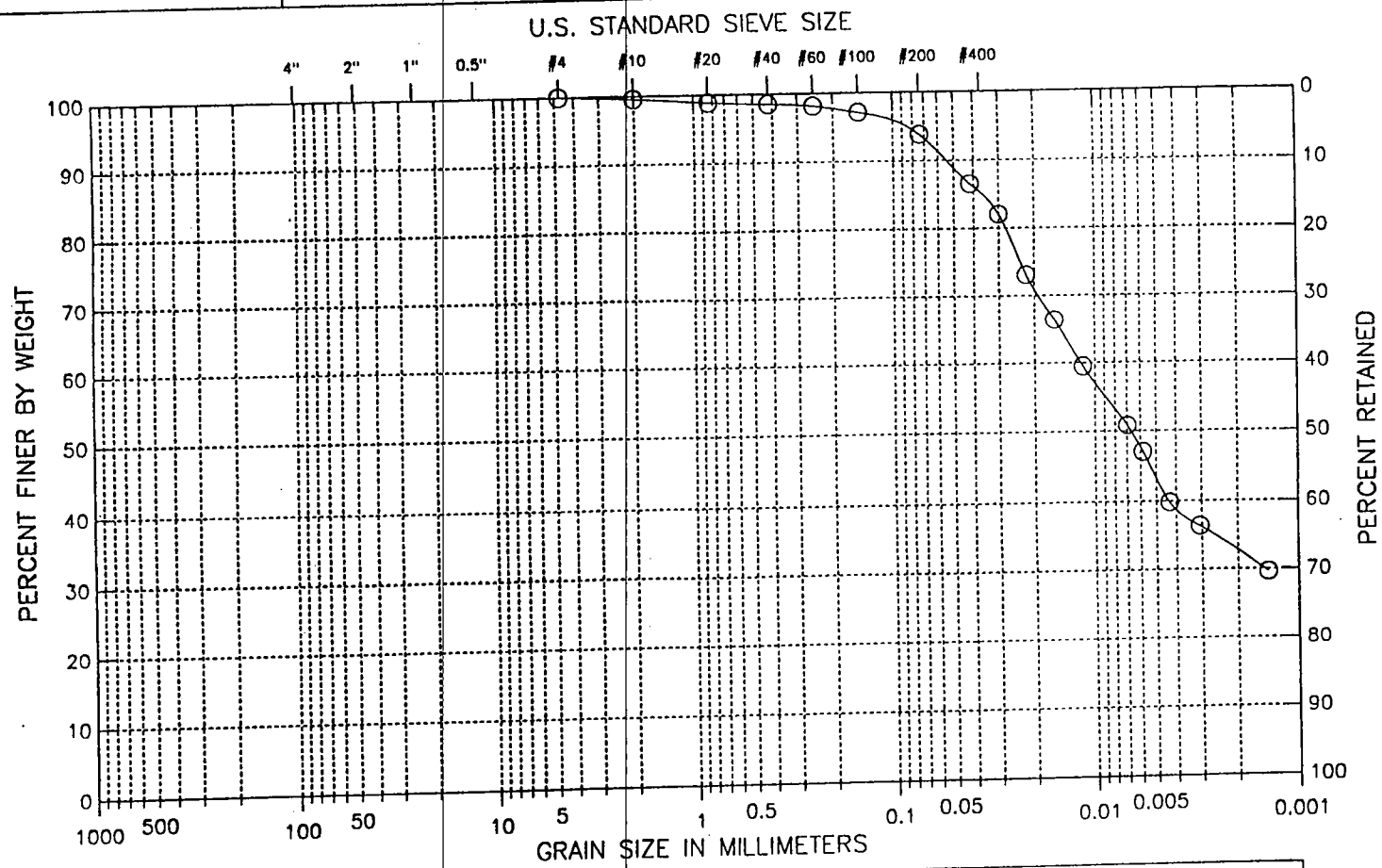
Visual Description :
Wet, black organic silt

Remarks :

Figure 26

Boring No. : ---
Sample No.: NOR-X
Test Method ASTM D 422
Filename : NOR-X

Project : USACOE
Project No.: GTX-1965
Location: CT
Date : Thu Sep 10 1998



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Classification :

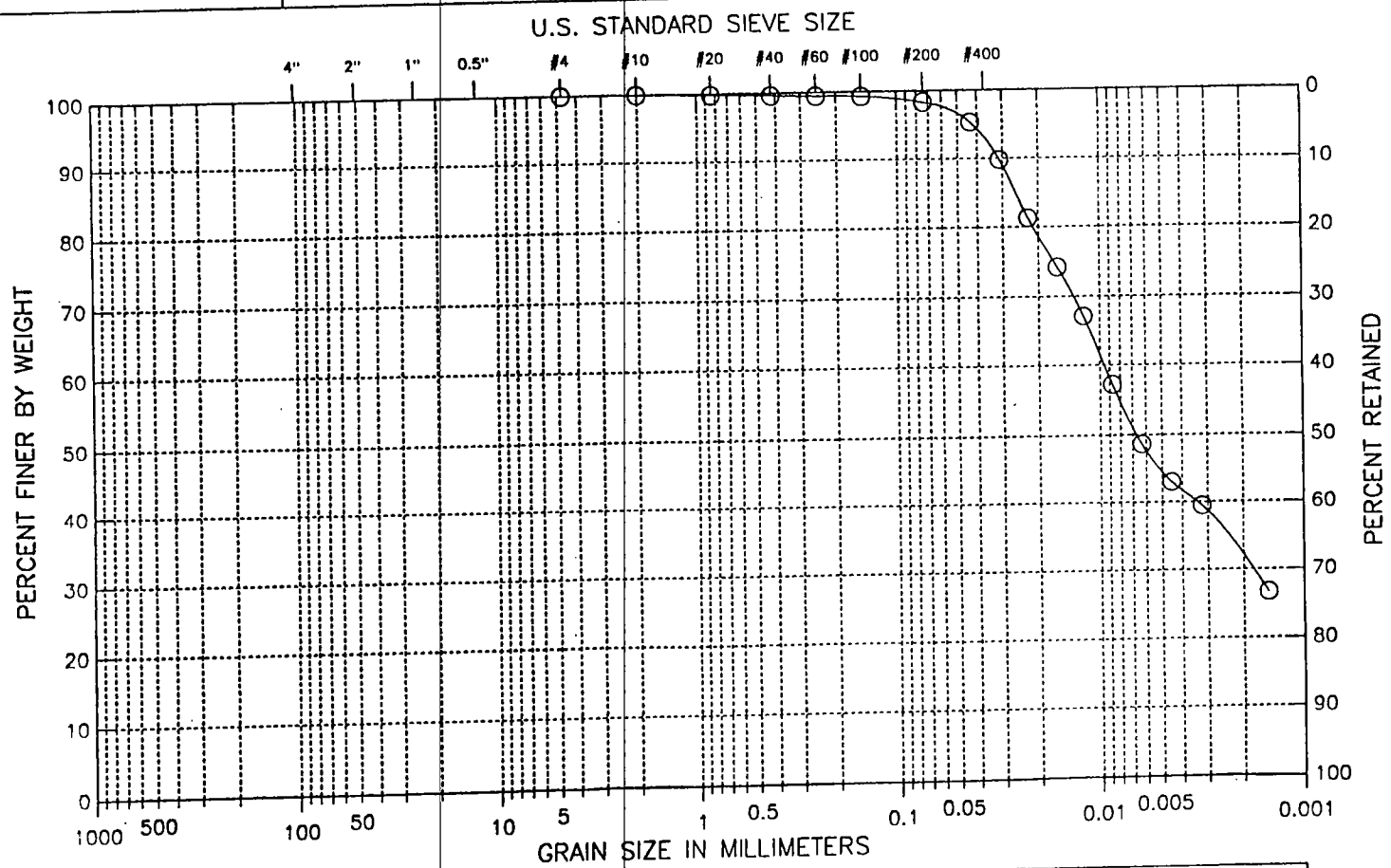
Visual Description :
Wet, black organic silt

Remarks :

Figure 27

Boring No. : ---
Sample No: NOR-Y
Test Method ASTM D 422
Filename : NOR-Y

Project : USACOE
Project No.: GTX-1965
Location: CT
Date : Thu Sep 10 1998



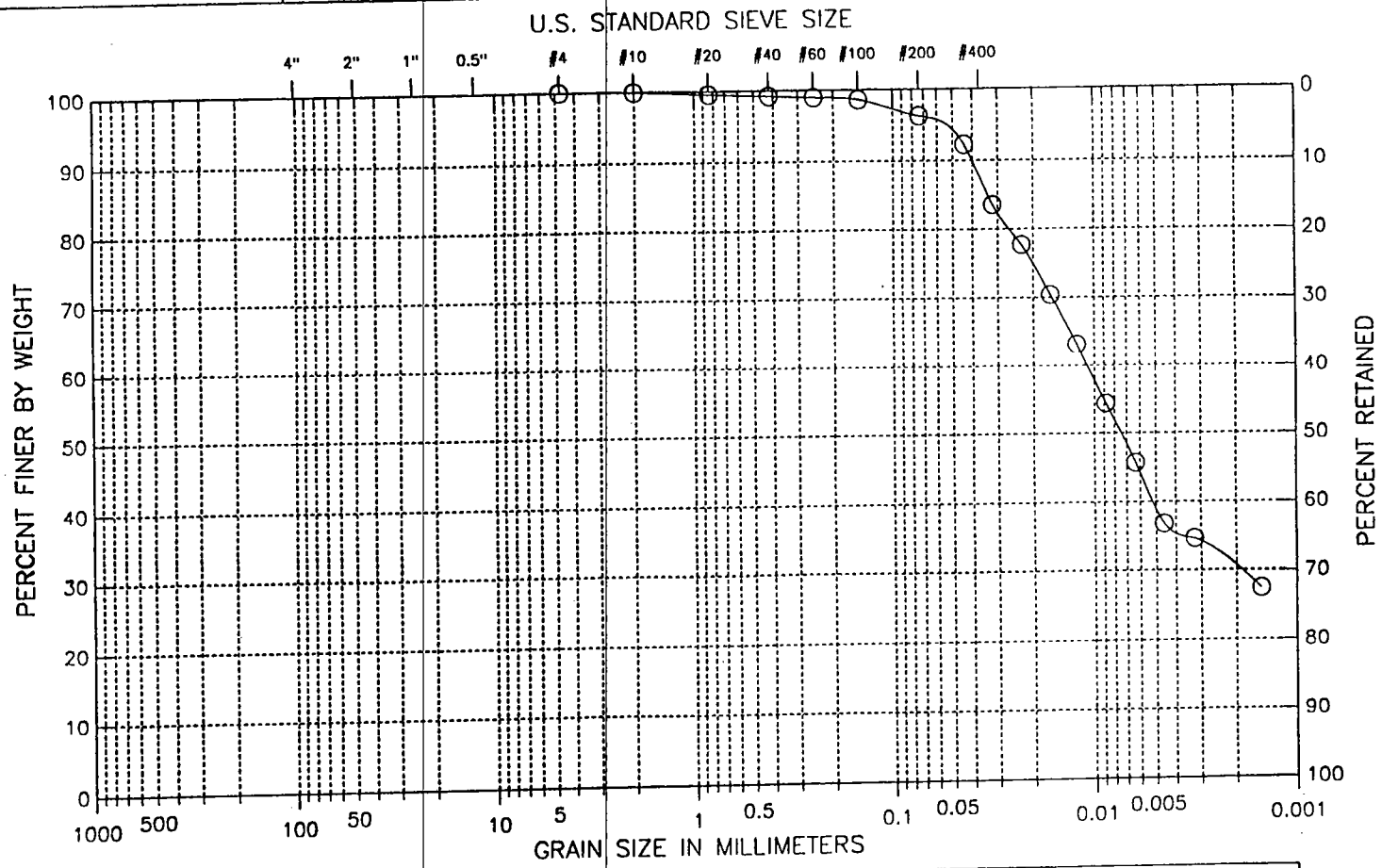
Classification :

Visual Description :
Wet, black organic silt

Remarks :

Figure 28

Boring No. : ---	Project : USACOE
Sample No.: NOR-Z	Project No.: GTX-1965
Test Method ASTM D 422	Location: CT
Filename : NOR-Z	Date : Thu Sep 10 1998



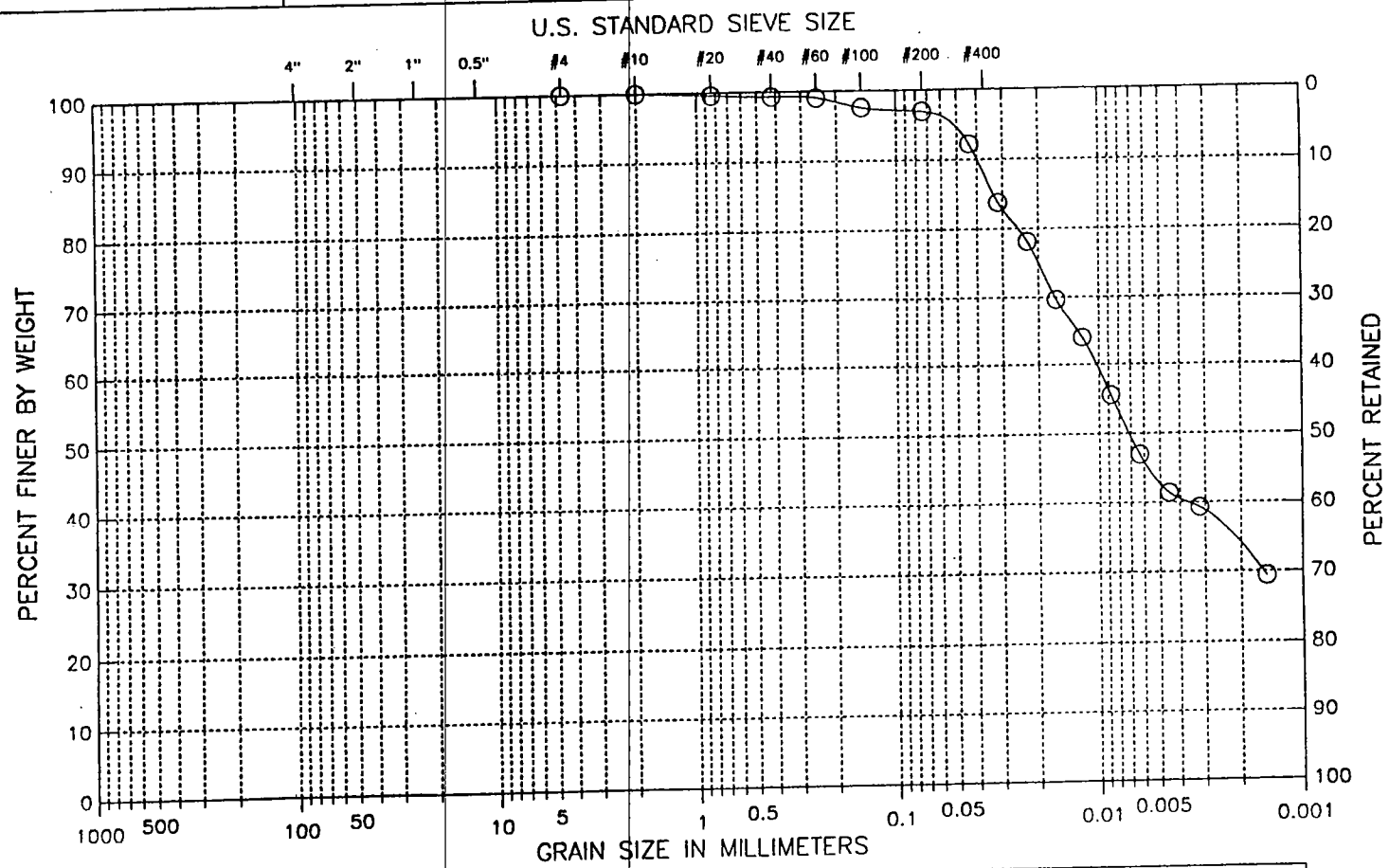
Classification :

Visual Description :
Wet, black organic silt

Remarks :

Figure 29

Boring No. : ---	Project : USACOE
Sample No: NOR-AA	Project No.: GTX-1965
Test Method ASTM D 422	Location: CT
Filename : NOR-AA	Date : Thu Sep 10 1998



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Classification :

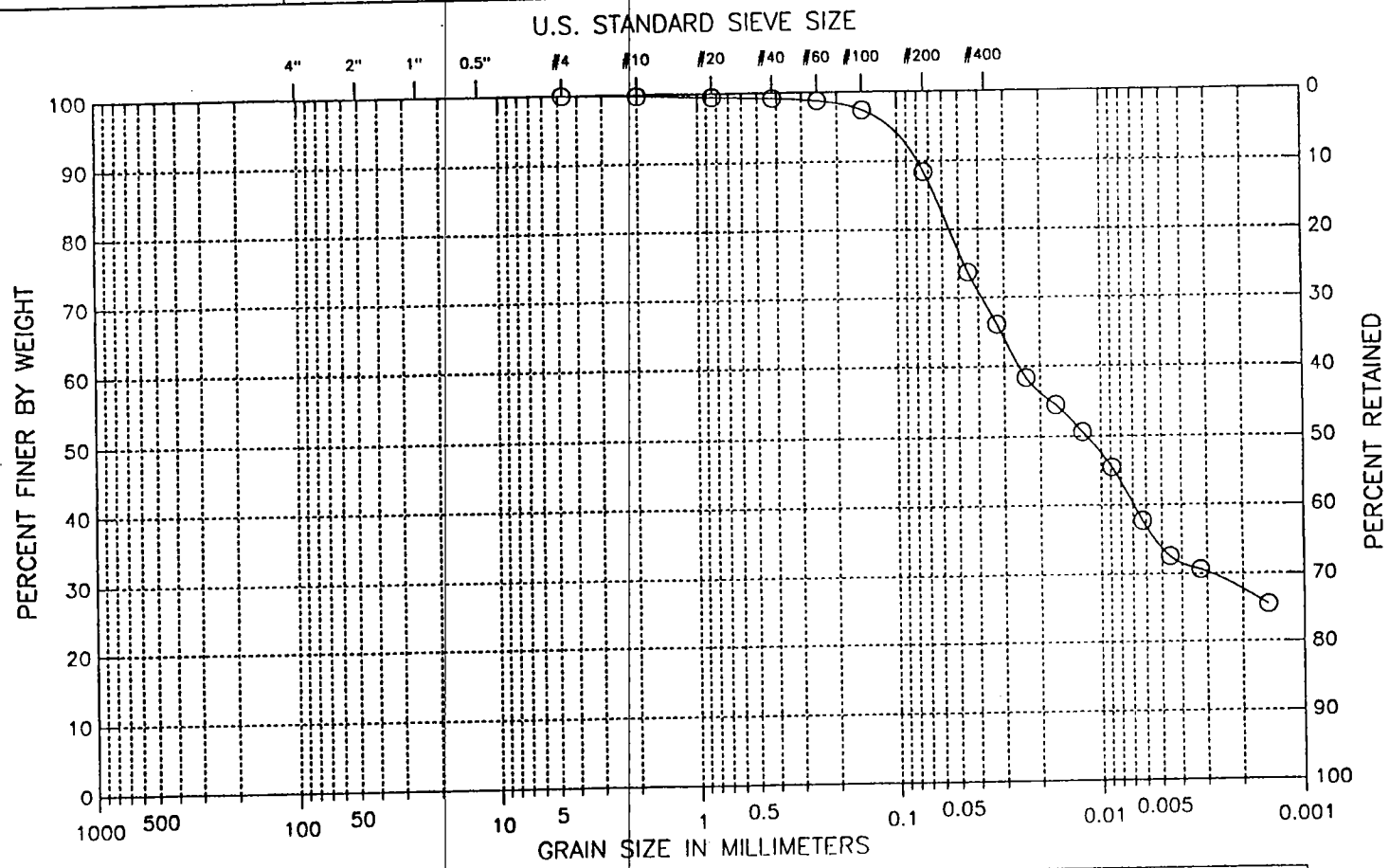
Remarks :

Visual Description :
Moist, black organic silt

Figure 2

Boring No. : ---
Sample No.: NOR-BB
Test Method ASTM D 422
Filename : NOR-BB

Project : USACOE
Project No.: GTX-1965
Location: CT
Date : Thu Sep 10 1998



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Classification :

Visual Description :
Wet, black organic silt

Remarks :

Figure 4

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Norwalk Harbor, CT

Grain Size
(% Percent Passing by Weight)

Sieve Mesh	Sieve Openings Inches	Sieve Openings Millimeters	Sample ID NOR-A	NOR-B	NOR-C	NOR-D	NOR-E	NOR-F	NOR-G
0.750"	0.748	19.00	100						
0.500"	0.500	12.70	82						
0.375"	0.374	9.51	76						
#4	0.187	4.75	70	100	100	100	100	100	100
#10	0.079	2.00	65	99	100	99	97	99	100
#20	0.033	0.84	57	98	99	99	96	99	99
#40	0.017	0.42	44	94	98	99	95	98	99
#60	0.010	0.25	35	90	97	98	94	98	98
#100	0.006	0.15	29	81	94	97	93	97	97
#200	0.003	0.07	24	73	87	94	90	95	95
Pan			0	0	0	0	0	0	0
Moisture Content (%)			68.96	202.99	153.29	136.66	148.05	162.85	172.04
Hydrometer			Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)
			0.050 / 23	0.048 / 70	0.044 / 83	0.044 / 78	0.043 / 88	0.042 / 89	0.045 / 93
			0.035 / 22	0.034 / 62	0.032 / 75	0.031 / 73	0.031 / 84	0.030 / 85	0.032 / 89
			0.025 / 19	0.025 / 59	0.023 / 70	0.023 / 69	0.022 / 78	0.022 / 78	0.023 / 83
			0.018 / 18	0.017 / 53	0.016 / 67	0.016 / 62	0.016 / 71	0.016 / 70	0.016 / 77
			0.011 / 15	0.013 / 47	0.012 / 57	0.012 / 54	0.012 / 62	0.012 / 64	0.012 / 69
			0.009 / 14	0.008 / 40	0.008 / 49	0.008 / 41	0.008 / 53	0.008 / 55	0.008 / 59
			0.007 / 10	0.007 / 37	0.006 / 41	0.006 / 31	0.006 / 44	0.006 / 46	0.006 / 51
			0.005 / 09	0.004 / 30	0.004 / 36	0.005 / 28	0.004 / 38	0.004 / 39	0.004 / 45
			0.003 / 08	0.003 / 25	0.003 / 30	0.003 / 24	0.003 / 32	0.003 / 33	0.003 / 39
			0.002 / 08	0.001 / 20	0.001 / 22	0.002 / 19	0.002 / 26	0.002 / 27	0.002 / 33

Sieve Mesh	Sieve Openings Inches	Sieve Openings Millimeters	Sample ID NOR-H	NOR-I	NOR-J	NOR-K	NOR-L	NOR-M	NOR-N
0.750"	0.748	19.00							100
0.500"	0.500	12.70							94
0.375"	0.374	9.51							94
#4	0.187	4.75	100	100	100	100	100	100	93
#10	0.079	2.00	100	98	99	100	100	100	93
#20	0.033	0.84	99	97	99	99	100	100	93
#40	0.017	0.42	99	94	99	99	99	99	92
#60	0.010	0.25	99	90	98	99	98	99	92
#100	0.006	0.15	97	85	96	98	96	99	91
#200	0.003	0.07	94	80	93	97	94	98	0
Pan			0	0	0	0	0	0	178.79
Moisture Content (%)			174.84	146.56	161.14	175.52	136.94	181.01	
Hydrometer			Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)
			0.045 / 93	0.045 / 75	0.042 / 91	0.042 / 93	0.043 / 91	0.043 / 97	0.044 / 90
			0.032 / 89	0.032 / 71	0.030 / 86	0.030 / 91	0.031 / 86	0.031 / 94	0.031 / 88
			0.023 / 84	0.023 / 67	0.022 / 81	0.022 / 84	0.022 / 79	0.022 / 89	0.022 / 84
			0.017 / 75	0.017 / 61	0.016 / 74	0.016 / 78	0.016 / 73	0.016 / 81	0.016 / 77
			0.011 / 67	0.012 / 56	0.012 / 67	0.012 / 71	0.012 / 67	0.011 / 72	0.009 / 62
			0.009 / 62	0.008 / 48	0.009 / 57	0.008 / 62	0.007 / 58	0.009 / 66	0.008 / 59
			0.006 / 53	0.006 / 41	0.006 / 49	0.006 / 54	0.006 / 53	0.006 / 57	0.006 / 50
			0.004 / 46	0.004 / 36	0.004 / 40	0.004 / 46	0.004 / 43	0.004 / 50	0.004 / 44
			0.003 / 37	0.003 / 32	0.003 / 36	0.003 / 39	0.003 / 37	0.003 / 43	0.003 / 38
			0.001 / 30	0.002 / 27	0.002 / 30	0.002 / 32	0.001 / 30	0.001 / 31	0.002 / 31

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Norwalk Harbor, CT

Grain Size
(% Percent Passing by Weight)

Sieve Mesh	Sieve Openings Inches	Sieve Openings Millimeters	Sample ID NOR-O	NOR-P	NOR-Q	NOR-R	NOR-S	NOR-T	NOR-U
0.0750"	0.748	19.00							
0.500"	0.500	12.70							
0.375"	0.374	9.51							
#4	0.187	4.75	100	100	100	100	100	100	100
#10	0.079	2.00	100	100	100	100	100	100	100
#20	0.033	0.84	99	99	99	100	100	100	100
#40	0.017	0.42	99	99	99	99	99	100	99
#60	0.010	0.25	99	99	99	99	99	99	99
#100	0.006	0.15	99	99	98	99	99	99	99
#200	0.003	0.07	98	98	97	98	98	98	98
Pan			0	0	0	0	0	0	0
Moisture Content (%)			163.02	142.45	122.16	174.34	132.54	142.63	157.58
Hydrometer			Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)
			0.042 / 97	0.045 / 80	0.041 / 86	0.045 / 95	0.041 / 93	0.043 / 97	0.044 / 97
			0.030 / 91	0.032 / 76	0.030 / 82	0.032 / 92	0.030 / 88	0.031 / 92	0.037 / 88
			0.022 / 85	0.023 / 69	0.022 / 74	0.023 / 82	0.022 / 80	0.022 / 83	0.023 / 82
			0.016 / 78	0.017 / 56	0.016 / 67	0.017 / 74	0.016 / 74	0.016 / 77	0.017 / 73
			0.012 / 71	0.013 / 37	0.012 / 61	0.012 / 66	0.011 / 66	0.010 / 65	0.012 / 67
			0.008 / 60	0.009 / 29	0.009 / 52	0.009 / 57	0.007 / 54	0.007 / 59	0.009 / 57
			0.006 / 50	0.006 / 26	0.006 / 45	0.006 / 47	0.006 / 49	0.006 / 55	0.006 / 48
			0.004 / 45	0.004 / 23	0.004 / 39	0.005 / 42	0.004 / 45	0.004 / 48	0.005 / 42
			0.003 / 38	0.003 / 17	0.003 / 35	0.003 / 37	0.003 / 38	0.003 / 42	0.003 / 40
			0.001 / 29	0.002 / 13	0.001 / 27	0.002 / 32	0.001 / 33	0.001 / 33	0.002 / 29

Sieve Mesh	Sieve Openings Inches	Sieve Openings Millimeters	Sample ID NOR-V	NOR-W	NOR-X	NOR-Y	NOR-Z	NOR-AA	NOR-BB
0.750"	0.748	19.00							
0.500"	0.500	12.70							
0.375"	0.374	9.51							
#4	0.187	4.75	100	100	100	100	100	100	100
#10	0.079	2.00	100	99	100	100	100	100	100
#20	0.033	0.84	100	99	99	100	100	100	99
#40	0.017	0.42	100	99	99	100	99	99	99
#60	0.010	0.25	100	99	98	99	99	99	99
#100	0.006	0.15	99	98	97	99	99	98	97
#200	0.003	0.07	98	97	94	98	96	97	88
Pan			0	0	0	0	0	0	0
Moisture Content (%)			160.86	148.36	123.49	159.34	156.96	160.42	123.03
Hydrometer			Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)	Particle Size (mm)/ Percent Finer (%)
			0.045 / 94	0.042 / 90	0.042 / 87	0.043 / 95	0.044 / 92	0.044 / 92	0.045 / 74
			0.032 / 89	0.030 / 84	0.030 / 82	0.031 / 90	0.032 / 84	0.032 / 84	0.033 / 66
			0.023 / 82	0.022 / 78	0.022 / 73	0.023 / 81	0.023 / 78	0.023 / 78	0.024 / 58
			0.016 / 76	0.016 / 69	0.016 / 66	0.016 / 74	0.016 / 70	0.016 / 70	0.017 / 54
			0.012 / 70	0.012 / 64	0.012 / 60	0.012 / 67	0.012 / 63	0.012 / 64	0.012 / 51
			0.008 / 61	0.008 / 55	0.007 / 51	0.009 / 57	0.009 / 54	0.009 / 56	0.009 / 45
			0.006 / 51	0.006 / 48	0.006 / 47	0.006 / 49	0.006 / 46	0.006 / 47	0.006 / 38
			0.004 / 47	0.004 / 42	0.004 / 40	0.005 / 43	0.005 / 37	0.005 / 41	0.005 / 33
			0.003 / 40	0.003 / 36	0.003 / 36	0.003 / 39	0.003 / 35	0.003 / 39	0.003 / 31
			0.001 / 31	0.002 / 30	0.001 / 30	0.002 / 27	0.002 / 27	0.002 / 29	0.002 / 25

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Chemical An[illegible]'s Results
Norwalk Harbo[illegible], Norwalk, CT

Sample ID: Date Collected:	NOR-BB 8/26/98	NOR-M/NOR-L 8/27/98	NOR-K 8/27/98	NOR-J 8/27/98	NOR-F 8/27/98	NOR-F* 8/27/98
PAHs (ug/kg)						
Naphthalene	16	41	59	230	530	500 D
2-Methylnaphthalene	13 U	21	25	95	720	660 D
1-Methylnaphthalene	13 U	16 U	19	110	720	690 D
Biphenyl	13 U	16 U	17 U	33	80	76 D
2,6-Dimethylnaphthalene	13 U	21	26	130	730	580 D
Acenaphthylene	26	83	120	360	970	1000 D
Acenaphthene	13 U	31	45	240	1200	1100 D
Fluorene	13 U	24	33	110	270	290 D
Phenanthrene	75	280	430	1100	2500	2500 D
Anthracene	29	110	210	520	1300	1300 D
1-Methylphenanthrene	13 U	35	47	160	360	540 D
Fluoranthene	170	690	1100	2300	3200	3200 D
Pyrene	150	580	900	2000	4100 E	4100 D
Benzo(a)anthracene	76	340	550	1200	2000	1900 D
Chrysene	78	300	570	1100	1800	1900 D
Benzo(b)fluoranthene	110	310	470	1300	1600	1600 D
Benzo(k)fluoranthene	50	310	500	510	1100	1200 D
Benzo(e)pyrene	63	220	340	580	1100	1100 D
Benzo(a)pyrene	79	300	480	960	1700	1700 D
Perylene	23	94	120	230	380	370 D
Indeno[1,2,3-cd]pyrene	56	230	360	730	1200	1100 D
Dibenz[a,h]anthracene	13 U	31	48	110	200	210 D
Benzo[g,h,i]perylene	47	180	270	460	890	810 D
2,3,5-Trimethylnaphthalene	13 U	16 U	17 U	70	250	230 D
PESTICIDES (ug/kg)						
Alpha-BHC	5.6 U	7.0 U	7.6 U	7.4 U	7.6 U	NA
Gamma-BHC	5.6 U	7.0 U	7.6 U	7.4 U	7.6 U	NA
Beta-BHC	5.6 U	7.0 U	7.6 U	7.4 U	7.6 U	NA
Delta-BHC	5.6 U	7.0 U	7.6 U	7.4 U	7.6 U	NA
Heptachlor	5.6 U	7.0 U	7.6 U	7.4 U	7.6 U	NA
Aldrin	5.6 U	7.0 U	7.6 U	7.4 U	7.6 U	NA
Heptachlor Epoxide	5.6 U	7.0 U	7.6 U	7.4 U	7.6 U	NA
Gamma Chlordane	5.6 U	7.0 U	12	8.1 I	7.6 U	NA
Alpha Chlordane	5.6 U	7.0 U	7.6 U	7.4 U	7.6 U	NA
Endosulfan I	5.6 U	7.0 U	7.6 U	7.4 U	7.6 U	NA
4,4'-DDE	5.6 U	7.0 U	7.6 U	7.4 U	7.6 U	NA
Dieldrin	5.6 U	7.0 U	7.6 U	7.4 U	7.6 U	NA
Endrin	5.6 U	7.0 U	7.6 U	7.4 U	7.6 U	NA
4,4'-DDD	5.6 U	7.0 U	7.6 U	7.4 U	19 I	NA
Endosulfan II	5.6 U	7.0 U	7.6 U	7.4 U	31	NA
4,4'-DDT	5.6 U	7.0 U	7.6 U	7.4 U	7.6 U	NA
Endrin Aldehyde	5.6 U	7.0 U	7.6 U	7.4 U	7.6 U	NA
Endosulfan Sulfate	5.6 U	7.0 U	7.6 U	7.4 U	7.6 U	NA
Methoxychlor	5.6 U	7.5 IB	7.6 U	10 IB	7.6 U	NA
Toxaphene	56 U	70 U	76 U	73 U	75 U	NA

All results are reported on a dry weight basis.

I =Greater than 40% difference for detected concentrations between the two GC columns; the lower value is reported due to matrix interference. NA= Not analyzed

E (organics) = Concentration exceeded the upper level of the calibration range. B = Also detected in laboratory blank.

U = Not detected at specified detection limit. D = Result reported is from diluted analysis. * = This sample analyzed at 2x dilution.

Chemical Analysis Results
Norwalk Harbor, Norwalk, CT

Sample ID: Date Collected:	NOR-AA 8/26/98	NOR-Z/NOR-Y/NOR-X 8/26/98	NOR-W/NOR-T 8/26/98	NOR-V/NOR-U 8/26/98	NOR-S 8/26/98	NOR-R/NOR-Q 8/26/98
PAHs (ug/kg)						
Naphthalene	21	23	21	37	34	25
2-Methylnaphthalene	16 U	16 U	16 U	21	18	15
1-Methylnaphthalene	16 U	16 U	16 U	16 U	15 U	15 U
Biphenyl	16 U	16 U	16 U	16 U	15 U	15 U
2,6-Dimethylnaphthalene	16 U	16 U	16 U	16 U	15 U	15 U
Acenaphthylene	29	34	34	60	49	33
Acenaphthene	16 U	16 U	16 U	17	15	15 U
Fluorene	16 U	16 U	16 U	16 U	15 U	15 U
Phenanthrene	85	99	110	200	170	120
Anthracene	31	40	40	69	58	45
1-Methylphenanthrene	16 U	16 U	16 U	25	21	16
Fluoranthene	210	240	240	450	350	270
Pyrene	190	220	220	400	320	250
Benzo(a)anthracene	110	120	120	210	170	130
Chrysene	94	110	110	190	150	130
Benzo(b)fluoranthene	110	110	120	200	160	120
Benzo(k)fluoranthene	120	110	120	200	170	140
Benzo(e)pyrene	83	95	95	150	120	96
Benzo(a)pyrene	100	120	110	200	160	120
Perylene	30	38	33	52	48	41
Indeno[1,2,3-cd]pyrene	83	90	94	150	120	94
Dibenz[a,h]anthracene	16 U	16 U	16 U	22	17	15 U
Benzo[g,h,i]perylene	65	69	69	120	94	71
2,3,5-Trimethylnaphthalene	16 U	16 U	16 U	16 U	15 U	15 U
PESTICIDES (ug/kg)						
Alpha-BHC	7.1 U	6.7 U	7.0 U	7.0 U	6.5 U	6.6 U
Gamma-BHC	7.1 U	6.7 U	7.0 U	7.0 U	6.5 U	6.6 U
Beta-BHC	7.1 U	6.7 U	7.0 U	7.0 U	6.5 U	6.6 U
Delta-BHC	7.1 U	6.7 U	7.0 U	7.0 U	6.5 U	6.6 U
Heptachlor	7.1 U	6.7 U	7.0 U	7.0 U	6.5 U	6.6 U
Aldrin	7.1 U	6.7 U	7.0 U	7.0 U	6.5 U	6.6 U
Heptachlor Epoxide	7.1 U	6.7 U	7.0 U	7.0 U	6.5 U	6.6 U
Gamma Chlordane	7.1 U	6.7 U	7.0 U	7.0 U	6.5 U	6.6 U
Alpha Chlordane	7.1 U	6.7 U	7.0 U	7.0 U	6.5 U	6.6 U
Endosulfan I	7.1 U	6.7 U	7.0 U	7.0 U	6.5 U	6.6 U
4,4'-DDE	7.1 U	6.7 U	7.0 U	7.0 U	6.5 U	6.6 U
Dieldrin	7.1 U	6.7 U	7.0 U	7.0 U	6.5 U	6.6 U
Endrin	7.1 U	6.7 U	7.0 U	7.0 U	6.5 U	6.6 U
4,4'-DDD	7.1 U	6.7 U	7.0 U	7.0 U	6.5 U	6.6 U
Endosulfan II	7.1 U	6.7 U	7.0 U	7.0 U	6.5 U	6.6 U
4,4'-DDT	7.1 U	6.7 U	7.0 U	7.0 U	6.5 U	6.6 U
Endrin Aldehyde	7.1 U	6.7 U	7.0 U	7.0 U	6.5 U	6.6 U
Endosulfan Sulfate	7.1 U	6.7 U	7.0 U	7.0 U	6.5 U	6.6 U
Methoxychlor	7.1 U	6.7 U	7.0 U	17 IB	14 IB	17 B
Toxaphene	71 U	67 U	69 U	70 U	66 U	66 U

All results are reported on a dry weight basis.

I =Greater than 40% difference for detected concentrations between the two GC columns; the lower value is reported due to matrix interference.

B = Also detected in laboratory blank.

U = Not detected at specified detection limit. D = Result reported is from diluted analysis.

Chemical Ana[illegible] Results
Norwalk Harbor, Norwalk, CT

Sample ID: Date Collected:	NOR-P 8/27/98	NOR-O/NOR-N 8/27/98	NOR-I 8/27/98	NOR-I* 8/27/98	NOR-E/NOR-D 8/27/98	NOR-E/NOR-D* 8/27/98
PAHs (ug/kg)						
Naphthalene	30	37	630	600 D	850	820 D
2-Methylnaphthalene	18 U	21	110	95 D	150	140 D
1-Methylnaphthalene	18 U	17 U	460	430 D	600	570 D
Biphenyl	18 U	17 U	38	37 D	53	51 D
2,6-Dimethylnaphthalene	18 U	23	190	180 D	380	330 D
Acenaphthylene	40	97	720	760 D	690	700 D
Acenaphthene	18 U	30	500	500 D	970	970 D
Fluorene	18 U	22	110	100 D	140	140 D
Phenanthrene	120	280	1500	1400 D	1800	1800 D
Anthracene	47	140	820	810 D	810	910 D
1-Methylphenanthrene	18	33	89	170 D	180	220 D
Fluoranthene	320	770	3700 E	3900 D	3900 E	3700 D
Pyrene	300	670	3900 E	3800 D	3800 E	3800 D
Benzo(a)anthracene	170	350	1900	2100 D	1700	1700 D
Chrysene	150	310	1700	1700 D	1700	1800 D
Benzo(b)fluoranthene	150	350	1900	1900 D	1700	1700 D
Benzo(k)fluoranthene	170	350	1400	1600 D	1500	1400 D
Benzo(e)pyrene	120	260	1300	1400 D	1200	1200 D
Benzo(a)pyrene	150	340	1800	1800 D	1700	1600 D
Perylene	37	89	390	390 D	330	330 D
Indeno[1,2,3-cd]pyrene	120	270	1400	1500 D	1400	1300 D
Dibenz[a,h]anthracene	18 U	35	230	240 D	210	210 D
Benzo[g,h,i]perylene	92	210	1000	1100 D	900	900 D
2,3,5-Trimethylnaphthalene	18 U	17 U	69	62 D	160	150 D
PESTICIDES (ug/kg)						
Alpha-BHC	7.8 U	7.5 U	6.7 U	NA	6.9 U	NA
Gamma-BHC	7.8 U	7.5 U	6.7 U	NA	6.9 U	NA
Beta-BHC	7.8 U	7.5 U	6.7 U	NA	6.9 U	NA
Delta-BHC	7.8 U	7.5 U	6.7 U	NA	6.9 U	NA
Heptachlor	7.8 U	7.5 U	6.7 U	NA	6.9 U	NA
Aldrin	7.8 U	7.5 U	6.7 U	NA	6.9 U	NA
Heptachlor Epoxide	7.8 U	7.5 U	6.7 U	NA	6.9 U	NA
Gamma Chlordane	7.8 U	7.5 U	6.7 U	NA	17 I	NA
Alpha Chlordane	7.8 U	7.5 U	25	NA	6.9 U	NA
Endosulfan I	7.8 U	7.5 U	6.7 U	NA	6.9 U	NA
4,4'-DDE	7.8 U	7.5 U	14	NA	15 I	NA
Dieldrin	7.8 U	7.5 U	6.7 U	NA	6.9 U	NA
Endrin	7.8 U	7.5 U	6.7 U	NA	6.9 U	NA
4,4'-DDD	7.8 U	7.5 U	97	NA	54	NA
Endosulfan II	7.8 U	7.5 U	6.7 U	NA	6.9 U	NA
4,4'-DDT	7.8 U	7.5 U	6.7 U	NA	31	NA
Endrin Aldehyde	7.8 U	7.5 U	6.7 U	NA	6.9 U	NA
Endosulfan Sulfate	7.8 U	7.5 U	6.7 U	NA	6.9 U	NA
Methoxychlor	7.8 U	7.5 U	18 IB	NA	6.9 U	NA
Toxaphene	77 U	75 U	67 U	NA	70 U	NA

All results are reported on a dry weight basis.

I =Greater than 40% difference for detected concentrations between the two GC columns; the lower value is reported due to matrix interference. NA= Not analyzed

E (organics) = Concentration exceeded the upper level of the calibration range. B = Also detected in laboratory blank.

U = Not detected at specified detection limit. D = Result reported is from diluted analysis. * = This sample analyzed at 2x dilution.

Chemical Analysis Results
Norwalk Harbor, Norwalk, CT

Sample ID: Date Collected:	NOR-C/NOR-B 8/27/98	NOR-C/NOR-B** 8/27/98	NOR-A 8/27/98	NOR-A** 8/27/98	NOR-H/NOR-G 8/27/98
PAHs (ug/kg)					
Naphthalene	600	560 D	180	170 D	490
2-Methylnaphthalene	310	270 D	99	96 D	340
1-Methylnaphthalene	530	480 D	61	64 D	320
Biphenyl	58	69 D	31	46 U	55
2,6-Dimethylnaphthalene	490	430 D	78	62 D	180
Acenaphthylene	1200	1100 D	480	450 D	300
Acenaphthene	1100	1000 D	280	250 D	360
Fluorene	260	260 D	130	150 D	100
Phenanthrene	3200	3000 D	2000	1900 D	930
Anthracene	1400	1400 D	660	740 D	380
1-Methylphenanthrene	340	410 D	110	120 D	62
Fluoranthene	7400 E	6600 D	5200 E	4800 D	1800
Pyrene	6200 E	6700 D	3900 E	4300 D	1800
Benzo(a)anthracene	3700 E	3100 D	2100	1800 D	860
Chrysene	2800	3300 D	1900	2100 D	880
Benzo(b)fluoranthene	4100 E	3400 D	2800 E	2400 D	1100
Benzo(k)fluoranthene	1600	2300 D	1000	1400 D	560
Benzo(e)pyrene	2000	2000 D	1300	1300 D	570
Benzo(a)pyrene	3100	2900 D	1900	1800 D	850
Perylene	660	690 D	410	450 D	210
Indeno[1,2,3-cd]pyrene	2400	2500 D	1600	1600 D	720
Dibenz[a,h]anthracene	360	340 D	230	220 D	110
Benzo[g,h,i]perylene	1700	1700 D	1000	1000 D	460
2,3,5-Trimethylnaphthalene	210	190 D	39	46 U	49
PESTICIDES (ug/kg)					
Alpha-BHC	7.6 U	NA	5.1 U	NA	7.4 U
Gamma-BHC	7.6 U	NA	5.1 U	NA	7.4 U
Beta-BHC	7.6 U	NA	5.1 U	NA	7.4 U
Delta-BHC	7.6 U	NA	5.1 U	NA	7.4 U
Heptachlor	7.6 U	NA	5.1 U	NA	7.4 U
Aldrin	7.6 U	NA	5.1 U	NA	7.4 U
Heptachlor Epoxide	7.6 U	NA	5.1 U	NA	7.4 U
Gamma Chlordane	20 I	NA	8.3 I	NA	15 I
Alpha Chlordane	34	NA	16	NA	7.4 U
Endosulfan I	7.6 U	NA	7.1	NA	7.4 U
4,4'-DDE	22	NA	6.4 I	NA	7.4 U
Dieldrin	7.6 U	NA	5.1 U	NA	7.4 U
Endrin	7.6 U	NA	5.1 U	NA	7.4 U
4,4'-DDD	60	NA	28 I	NA	36
Endosulfan II	7.6 U	NA	5.1 U	NA	7.4 U
4,4'-DDT	8.4 I	NA	6.5	NA	7.4 U
Endrin Aldehyde	7.6 U	NA	5.1 U	NA	7.4 U
Endosulfan Sulfate	7.6 U	NA	5.1 U	NA	7.4 U
Methoxychlor	7.6 U	NA	5.1 U	NA	17 IB
Toxaphene	76 U	NA	51 U	NA	74 U

All results are reported on a dry weight basis.

I =Greater than 40% difference for detected concentrations between the two GC columns; the lower value is reported due to matrix interference. NA= Not analyzed

E (organics) = Concentration exceeded the upper level of the calibration range. B = Also detected in laboratory blank.

U = Not detected at specified detection limit. D = Result reported is from diluted analysis. ** = This sample analyzed at 4x dilution.

Chemical Ana , Results
Norwalk Harbor, Norwalk, CT

Sample ID: Date Collected:	NOR-BB 8/26/98	NOR-M/NOR-L 8/27/98	NOR-K 8/27/98	NOR-J 8/27/98	NOR-F 8/27/98	NOR-H/NOR-G 8/27/98
PCBs (ug/kg)						
BZ 8	2.8 U	3.5 U	3.8 U	3.7 U	81	14 I
BZ 18	2.8 U	3.5 U	3.8 U	6.8 I	3.8 U	23 I
BZ 28	2.8 U	3.5 U	3.8 U	3.7 U	120	36
BZ 44	2.8 U	3.5 U	3.8 U	3.7 U	42	16
BZ 49	2.8 U	3.5 U	3.8 U	3.7 U	24 I	15
BZ 52	2.8 U	3.5 U	3.8 U	3.7 U	57	16 I
BZ 66	2.8 U	3.5 U	3.8 U	3.7 U	58 I	22
BZ 87	2.8 U	3.5 U	3.8 U	6.2	38	19
BZ 101	2.8 U	3.5 U	3.8 U	3.7 U	45 I	15
BZ 105	2.8 U	3.5 U	3.8 U	3.7 U	21 I	9.8
BZ 118	2.8 U	3.5 U	3.8 U	3.7 U	8.4 I	4.0 I
BZ 128	2.8 U	3.5 U	3.8 U	3.7 U	5.9	3.7 U
BZ 138	2.8 U	3.5 U	3.8 U	3.7 U	24	12
BZ 153	2.8 U	3.5 U	3.8 U	3.7 U	21	8.2
BZ 170	2.8 U	3.5 U	3.8 U	3.7 U	10	3.7 U
BZ 180	2.8 U	3.5 U	3.8 U	3.7 U	6.2	3.7 U
BZ 183	2.8 U	3.5 U	3.8 U	3.7 U	3.8 U	3.7 U
BZ 184	2.8 U	3.5 U	3.8 U	3.7 U	60	24
BZ 187	2.8 U	3.5 U	3.8 U	3.7 U	6.1	3.7 U
BZ 195	2.8 U	3.5 U	3.8 U	3.7 U	3.8 U	3.7 U
BZ 206	2.8 U	3.5 U	3.8 U	3.7 U	3.8 U	3.7 U
BZ 209	2.8 U	3.5 U	3.8 U	3.7 U	3.8 U	3.7 U
TOTAL ORGANIC CARBON (mg/kg)	18000	28000	28000	56000	52000	47000
% SOLIDS	46.2	37.8	34.9	36.5	35.8	35.7
METALS (mg/kg)						
Arsenic	7.4 N	8.9 N	8.7 N	11.3 N	12.6 N	11.4 N
Cadmium	1.1 N	1.9 N	2.1 N	2.9 N	3.3 N	3.4 N
Chromium	81.7	90.9	99.4	102.0	106.0	158.0
Copper	128.0	213.0	266.0	349.0	312.0	520.0
Lead	60.6	112.0	120.0	175.0	226.0	326.0
Mercury	0.29 N	1.5 N	0.73 N	8.9 N	5.1 N	2.3 N
Nickel	23.6	28.0	38.8	34.1	35.1	53.0
Zinc	184.0	275.0	318.0	390.0	453.0	634.0

All results are reported on a dry weight basis.
N = MS and/or MSD recovery not within control limits.
I =Greater than 40% difference for detected concentrations between the two GC columns; the lower value is reported due to matrix interference.
U = Not detected at specified detection limit..

Chemical Analysis Results
Norwalk Harbor, Norwalk, CT

Sample ID: Date Collected:	NOR-AA 8/26/98	NOR-AA+ 8/26/98	NOR-Z/NOR-Y/NOR-X 8/26/98	NOR-W/NOR-T 8/26/98	NOR-V/NOR-U 8/26/98	NOR-S 8/26/98
PCBs (ug/kg)						
BZ 8	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
BZ 18	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
BZ 28	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
BZ 44	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
BZ 49	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
BZ 52	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
BZ 66	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
BZ 87	3.5 U	3.5 U	3.4 U	3.5 U	4.3	3.2 U
BZ 101	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
BZ 105	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
BZ 118	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
BZ 128	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
BZ 138	3.5 U	3.9 I	3.4 U	3.5 U	3.5 U	3.2 U
BZ 153	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
BZ 170	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
BZ 180	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
BZ 183	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
BZ 184	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
BZ 187	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
BZ 195	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
BZ 206	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
BZ 209	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.2 U
TOTAL ORGANIC CARBON (mg/kg)	22000	NA	21000	22000	23000	23000
% SOLIDS	38.0	NA	39.8	38.7	38.2	40.4
METALS (mg/kg)						
Arsenic	7.8 N	NA	7.5 N	9.0 N	8.9 N	9.4 N
Cadmium	1.1 N	NA	1.2 N	1.2 N	1.6 N	1.9 N
Chromium	76.5	NA	85.5	88.2	107.0	109.0
Copper	133.0	NA	158.0	166.0	199.0	205.0
Lead	62.5	NA	72.9	74.3	98.9	97.1
Mercury	0.35 N	NA	0.44 N	0.40 N	0.48 N	0.60 N
Nickel	23.2	NA	24.7	25.9	29.2	29.2
Zinc	206.0	NA	218.0	227.0	252.0	261.0

All results are reported on a dry weight basis.
+ = Analysis of pre GPC-cleaned extact due to low surrogate recoveries in initial analysis.
N = MS and/or MSD recovery not within control limits.
U = Not detected at specified detection limit.

Chemical Ana Results
Norwalk Harbor, Norwalk, CT

Sample ID: Date Collected:	NOR-R/NOR-Q 8/26/98	NOR-P 8/27/98	NOR-O/NOR-N 8/27/98	NOR-I 8/27/98	NOR-E/NOR-D 8/27/98	NOR-C/NOR-B 8/27/98	NOR-A 8/27/98
PCBs (ug/kg)							
BZ 8	3.3 U	3.9 U	3.7 U	12 I	28 I	12 I	9.4 I
BZ 18	3.3 U	3.9 U	3.7 U	20 I	3.4 U	30	14 I
BZ 28	3.3 U	3.9 U	3.7 U	26 I	64 I	24	9.7
BZ 44	3.3 U	3.9 U	3.7 U	13	37	14	8.2
BZ 49	3.3 U	3.9 U	3.7 U	17	39	21	6.7 I
BZ 52	3.3 U	3.9 U	3.7 U	15 I	37 I	15 I	9.2 I
BZ 66	3.3 U	3.9 U	3.7 U	12 I	45	16 I	7.0 I
BZ 87	3.3 U	3.9 U	3.7 U	17 I	29 I	34	20
BZ 101	3.3 U	3.9 U	3.7 U	20	35	21	14
BZ 105	3.3 U	3.9 U	3.7 U	14	26	3.8 U	2.6 U
BZ 118	3.3 U	3.9 U	3.7 U	27	16 I	20	15
BZ 128	3.3 U	3.9 U	3.7 U	4.7	8.1	7.8	5.6
BZ 138	3.3 U	3.9 U	3.7 U	18	30	19	12
BZ 153	3.3 U	3.9 U	3.7 U	13	22	11	6.8
BZ 170	3.3 U	3.9 U	3.7 U	4.4	7.6	4.7	3.4
BZ 180	3.3 U	3.9 U	3.7 U	8.0	14	7.0	4.2
BZ 183	3.3 U	3.9 U	3.7 U	3.3 U	3.4 U	3.8 U	2.6 U
BZ 184	3.3 U	3.9 U	3.7 U	34	50	36	22
BZ 187	3.3 U	3.9 U	3.7 U	3.8	7.0	3.8 U	3.2
BZ 195	3.3 U	3.9 U	3.7 U	3.3 U	3.4 U	3.8 U	2.6 U
BZ 206	3.3 U	3.9 U	3.7 U	3.3 U	3.4 U	3.8 U	2.6 U
BZ 209	3.3 U	3.9 U	3.7 U	3.3 U	3.4 U	3.8 U	2.6 U
TOTAL ORGANIC CARBON (mg/kg)	23000	26000	28000	52000	59000	54000	36000
% SOLIDS	40.4	34.7	35.9	40.0	38.3	34.9	52.8
METALS (mg/kg)							
Arsenic	8.0 N	7.9 N	8.9 N	14.4 N	14.6 N	10.7 N	5.5 N
Cadmium	1.0 N	1.2 N	1.9 N	4.4 N	4.4 N	2.6 N	0.97 N
Chromium	66.1	86.1	102.0	153.0	132.0	80.2	37.2
Copper	119.0	161.0	224.0	315.0	299.0	191.0	73.9
Lead	59.2	72.6	109.0	246.0	270.0	214.0	120.0
Mercury	0.82 N	0.38 N	0.56 N	4.6 N	3.3 N	1.7 N	0.52 N
Nickel	22.6	27.0	29.8	44.7	44.3	34.1	19.7
Zinc	191.0	238.0	285.0	453.0	517.0	440.0	237.0

All results are reported on a dry weight basis.
N = MS and/or MSD recovery not within control limits.
I =Greater than 40% difference for detected concentrations between the two GC columns; the lower value is reported due to matrix interference.
U = Not detected at specified detection limit.

Chemical Analysis Results
Equipment Blank Samples

Sample ID Sample Date	ICT BLANK 8/24/98	Georges River 8/14/98
PCBs (ug/L)		
BZ 8	0.0050 U	0.0051 U
BZ 18	0.0050 U	0.0051 U
BZ 28	0.0050 U	0.0051 U
BZ 44	0.0050 U	0.0051 U
BZ 49	0.0050 U	0.0051 U
BZ 52	0.0050 U	0.0051 U
BZ 66	0.0050 U	0.0051 U
BZ 87	0.0050 U	0.0051 U
BZ 101	0.0050 U	0.0051 U
BZ 105	0.0050 U	0.0051 U
BZ 118	0.0050 U	0.0051 U
BZ 128	0.0050 U	0.0051 U
BZ 138	0.0050 U	0.0051 U
BZ 153	0.0050 U	0.0051 U
BZ 170	0.0050 U	0.0051 U
BZ 180	0.0050 U	0.0051 U
BZ 183	0.0050 U	0.0051 U
BZ 184	0.0050 U	0.0051 U
BZ 187	0.0050 U	0.0051 U
BZ 195	0.0050 U	0.0051 U
BZ 206	0.0050 U	0.0051 U
BZ 209	0.0050 U	0.0051 U
TOTAL ORGANIC CARBON (mg/L)	1 U	1 U
METALS (ug/L)		
Arsenic	2.0 U	2.0 U
Cadmium	1.0 U	1.0 U
Chromium	10.0 U	10.0 U
Copper	10.0 U	10.0 U
Lead	5.0 U	5.0 U
Mercury	0.40 U	0.40 U
Nickel	20.0 U	20.0 U
Zinc	10.0 U	11.4
DIOXIN/FURAN CONGENERS (pg/L)		
2,3,7,8-Cl4-Dibenzofuran (DB5)	8.9 B	NA
2,3,7,8-Cl4-Dibenzo-p-dioxin	9 B	NA
1,2,3,7,8-Cl5-Dibenzofuran	2.6 U	NA
2,3,4,7,8-Cl5-Dibenzofuran	8.6 B	NA
1,2,3,7,8-Cl5-Dibenzo-p-dioxin	2.8 B	NA
1,2,3,4,7,8-Cl6-Dibenzofuran	0.53 U	NA
1,2,3,6,7,8-Cl6-Dibenzofuran	0.75 B	NA
2,3,4,6,7,8-Cl6-Dibenzofuran	1.3 B	NA
1,2,3,7,8,9-Cl6-Dibenzofuran	0.55 U	NA
1,2,3,4,7,8-Cl6-Dibenzo-p-dioxin	0.73 B	NA
1,2,3,6,7,8-Cl6-Dibenzo-p-dioxin	0.76 B	NA
1,2,3,7,8,9-Cl6-Dibenzo-p-dioxin	0.47 U	NA
1,2,3,4,6,7,8-Cl7-Dibenzofuran	0.99	NA
1,2,3,4,7,8,9-Cl7-Dibenzofuran	0.56 U	NA
1,2,3,4,6,7,8-Cl7-Dibenzo-p-dioxin	2.2 B	NA
1,2,3,4,6,7,8,9-Cl8-Dibenzofuran	11	NA
1,2,3,4,6,7,8,9-Cl8-Dibenzo-p-dioxin	16 B	NA
2,3,7,8-Cl4-Dibenzofuran (DB225)	8.1 B	NA

NA = Not analyzed.

U = Not detected at specified detection limit.

B = Also detected in the laboratory blank.

Chemical Analysis Results
Equipment Blank Samples

Sample ID Sample Date	GT BLANK 8/24/98	Georges River 8/14/98
PCBs (ug/L)		
BZ 8	0.0050 U	0.0051 U
BZ 18	0.0050 U	0.0051 U
BZ 28	0.0050 U	0.0051 U
BZ 44	0.0050 U	0.0051 U
BZ 49	0.0050 U	0.0051 U
BZ 52	0.0050 U	0.0051 U
BZ 66	0.0050 U	0.0051 U
BZ 87	0.0050 U	0.0051 U
BZ 101	0.0050 U	0.0051 U
BZ 105	0.0050 U	0.0051 U
BZ 118	0.0050 U	0.0051 U
BZ 128	0.0050 U	0.0051 U
BZ 138	0.0050 U	0.0051 U
BZ 153	0.0050 U	0.0051 U
BZ 170	0.0050 U	0.0051 U
BZ 180	0.0050 U	0.0051 U
BZ 183	0.0050 U	0.0051 U
BZ 184	0.0050 U	0.0051 U
BZ 187	0.0050 U	0.0051 U
BZ 195	0.0050 U	0.0051 U
BZ 206	0.0050 U	0.0051 U
BZ 209	0.0050 U	0.0051 U
TOTAL ORGANIC CARBON (mg/L)	1 U	1 U
METALS (ug/L)		
Arsenic	2.0 U	2.0 U
Cadmium	1.0 U	1.0 U
Chromium	10.0 U	10.0 U
Copper	10.0 U	10.0 U
Lead	5.0 U	5.0 U
Mercury	0.40 U	0.40 U
Nickel	20.0 U	20.0 U
Zinc	10.0 U	11.4
DIOXIN/FURAN CONGENERS (pg/L)		
2,3,7,8-Cl4-Dibenzofuran (DB5)	8.9 B	NA
2,3,7,8-Cl4-Dibenzo-p-dioxin	9 B	NA
1,2,3,7,8-Cl5-Dibenzofuran	2.6 U	NA
2,3,4,7,8-Cl5-Dibenzofuran	8.6 B	NA
1,2,3,7,8-Cl5-Dibenzo-p-dioxin	2.8 B	NA
1,2,3,4,7,8-Cl6-Dibenzofuran	0.53 U	NA
1,2,3,6,7,8-Cl6-Dibenzofuran	0.75 B	NA
2,3,4,6,7,8-Cl6-Dibenzofuran	1.3 B	NA
1,2,3,7,8,9-Cl6-Dibenzofuran	0.55 U	NA
1,2,3,4,7,8-Cl6-Dibenzo-p-dioxin	0.73 B	NA
1,2,3,6,7,8-Cl6-Dibenzo-p-dioxin	0.76 B	NA
1,2,3,7,8,9-Cl6-Dibenzo-p-dioxin	0.47 U	NA
1,2,3,4,6,7,8-Cl7-Dibenzofuran	0.99	NA
1,2,3,4,7,8,9-Cl7-Dibenzofuran	0.56 U	NA
1,2,3,4,6,7,8-Cl7-Dibenzo-p-dioxin	2.2 B	NA
1,2,3,4,6,7,8,9-Cl8-Dibenzofuran	11	NA
1,2,3,4,6,7,8,9-Cl8-Dibenzo-p-dioxin	16 B	NA
2,3,7,8-Cl4-Dibenzofuran (DB225)	8.1 B	NA

NA = Not analyzed.

U = Not detected at specified detection limit.

B = Also detected in the laboratory blank.