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ZONE J BACKGROUND INFORMATION AND CORRESPONDENCE 1997 CNC CHARLESTON SC
12/1/1997
NAVFAC SOUTHERN

ZONE J

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF OCEAN RESOURCES CONSERVATION AND ASSESSMENT
HAZARDOUS MATERIALS RESPONSE AND ASSESSMENT DIVISION
COASTAL RESOURCES COORDINATION BRANCH
c/o US EPA, Region 4, Waste Management Division
100 Alabama Street, SW
Atlanta, GA 30303

March 7, 1997

Mr. Jay Bassett, Remedial Project Manager
EPA Region 4, Federal Facilities Section
100 Alabama Street, SW
Atlanta, GA 30303

Dear Jay:

The U.S. Department of Commerce/National Oceanic and Atmospheric Administration (NOAA) appreciates the opportunity to review and comment on the November 20, 1996, EnSafe/Allen & Hoshall document entitled Final Zone J RFI Work Plan, Naval Base Charleston, Charleston, South Carolina. This document was prepared for the Department of the Navy, Southern Division in Charleston, South Carolina.

As you are aware, NOAA represents the federal resource trustee interests of the Department of Commerce and carries out those trustee responsibilities by participating in the evaluation of the effects of exposure of contaminants on resources under the trusteeship of NOAA, and by providing technical assistance during all phases of the clean-up process. We have a great deal of experience in working with DOD as a co-trustees and providing technical assistance that has been instrumental in focusing assessments to obtain pertinent data and containing costs associated with those investigations.

NOAA has identified trustee resources that are present at Naval Base Charleston (NAVBASE) and is interested in participating in the evaluation and clean-up process that is ongoing at the base. The living and non-living resources under NOAA's trusteeship include:

- all life stages, wherever they occur, of fishery resources of the Exclusive Economic Zone (EEZ) and continental shelf;
- anadromous and catadromous species throughout their ranges;
- rivers and tributaries which historically support anadromous species;
- federally endangered and threatened species, including designated critical habitat and marine mammals for which NOAA has assigned responsibility;
- tidal wetlands, salt marshes, estuaries, and other important habitat supporting fishery and marine resources; and
- living and non-living resources of National Marine Sanctuaries and National Estuarine Research Reserves

Summary

The document provides a strategy to address ecological and human health risks in Zone J (the water bodies and wetlands surrounding Naval Base Charleston) that have resulted from base activities.

Eight ecological study areas (ESAs) were created for the Zone J RFI:

ESA I: Defense Reutilization and Marketing Office (DRMO)/Warehouse Area
ESA II: Noisette Creek/Golf Course/Officer Housing
ESA III: Northern Industrial Area
ESA IV: Southen Industrial Area
ESA V: Southern End of Base
ESA VI: Cooper River
ESA VII: Shipyard Creek
ESA VIII: Clouter Island Areas of Concern

The water bodies of interest to NOAA are the Cooper River (ESA VI), which forms the eastern border of NAVBASE; Noisette Creek, a small tributary to the Cooper River in the northern portion of the base (ESA II); and Shipyard Creek (ESA VII), a drainage creek southwest of NAVBASE. Also of interest are the wetland habitats surrounding the Zone K areas of concern on the southwest shoreline of Clouter Island (ESA VIII).

The Zone J RFI will implement a phased approach to data collection that will ultimately be used to determine if cause-effect relationships exist between contaminants concentrations at Areas of Concern (AOCs) and Solid Waste Management Units (SWMUs) and the observed impacts to potential receptors in the NAVBASE water bodies. The document notes that the progress of the Zone J investigation will largely depend on the availability of AOC or SWMU specific contaminant information obtained during related zone investigations such as the Zone L assessment of the numerous outfalls along the naval base's shoreline. The assessment of the Cooper River and Shipyard Creek will coordinate closely with the other zone specific RFIs (especially the more industrialized Zones L, E, and A) which are also investigating the inland portions and outfalls of many of these pathways.

General Comments

- The document states that sampling locations proposed for Cooper River and associated wetlands (ESA VI), Shipyard Creek and associated wetlands (ESA VII), and Noisette Creek (ESA II) are tentative until all the information from other investigations that may impact these water bodies (e.g., the Zone L investigation for example) are available. This approach seems sound, particularly since the Zone J investigation will essentially be focusing on potential impacts from contaminant migration to aquatic habitats adjacent to or flowing through the naval base rather than on potential sources of these contaminants.

- The document should provide more justification and references for the "2x rule", more details on how background locations will be found, and an explanation of how the background concentrations will be used. Depending on how the background concentrations are used in the investigation, 2x the background may eliminate contaminants that may be of ecological concern. It is possible that the "2x" concentrations may be higher for certain metals than concentrations that have been found to be harmful to species of concern to NOAA (e.g., ER-L concentrations). Inorganics should not be ruled out based solely on the background concentration or the "2x rule". Toxic effects, properties of

the specific chemical from the literature, and information from site-specific investigations should also be considered as part of the COPC selection process.

• The document should be more clear on whether the investigation is differentiating between background and reference and, if so, the document should explain how they are defined for the purposes of the investigation and exactly how they will be used.

• A number of other investigations, including the Charleston Harbor Study (CHS), have been conducted in this area that would be helpful for locating and determining background and/or reference locations for this site. Appropriate reference locations for the specific habitats of concern in Zone J, particularly estuarine emergent intertidal wetlands, palustrine forested wetlands, and tributaries such as Noisette Creek and Shipyard Creek should be identified. It is possible that suitable reference areas may be found in the wetland and open water habitats of the Ashley or Wando rivers. In addition, the state of South Carolina may have specific guidance or information on background and reference locations in the Charleston Estuary.

• The document should be more clear on exactly how and when constituents of potential concern (COPCs) attributable to NAVBASE will be determined and how and when these COPCs will be differentiated from constituents associated with possible off-site sources. The document stated that these determinations are an important objective of the RFI but it did not provide sufficient detail on how these determinations will be made. NOAA would be interested in participating in the determination of COPCs for the areas of concern to NOAA.

• In Section 3, the document discussed how data collected during this and other investigations will be used to develop a Preliminary Risk Characterization (PRC) and how the PRC will then be used to determine the need for further ecological work (e.g., development of assessment and measurement endpoints and general problem formulation for an ecological risk assessment). NOAA would like to participate in the development of the risk assessment approach, including the selection of aquatic receptors, assessment and measurement endpoints, and appropriate screening values that will be used to predict potential effects on the selected receptors.

• NOAA would like to review the detailed sampling plans when they are developed. These plans should include a list of all analytes to be measured and the detection limits. In order for the data to be useful for determining the risk to ecological receptors, detection limits should be below concentrations that have been found to have negative effects on the aquatic species known to utilize the NAVBASE area.

Recommendations for sampling locations in the Cooper River

Based on Figure 4-11, which shows the tentative sampling locations for the Cooper River characterization, NOAA has identified some additional sampling locations that would improve the characterization and fill what appear to be several data gaps.

• There are no sampling locations in the estuarine emergent marsh adjacent to the Cooper River and the Dredged Materials Area (DMA). NOAA recommends that at least two stations be located in the marsh adjacent to the DMA.

• There are no sampling locations downstream of the mouth of Shipyard Creek in the Cooper River (or at least the figure does not show these locations). NOAA recommends at least three stations be located downstream of the mouth of Shipyard Creek in depositional areas of the Cooper River.

• There is only one sampling location immediately adjacent to the Dredge Disposal Area off Clouter Island. NOAA recommends at least three more stations be located adjacent to the Dredge Disposal Area (DDA) off Clouter Island in the fringing marsh or groundwater seep areas. These locations should help better characterize potential off-site impacts to the Cooper River from the dredge disposal area, which has received considerable material (about 937,399 cubic meters per year according to the information presented in the document).

Recommendations for sampling locations in Shipyard Creek

Based on Figure 4-12, which shows the tentative sampling locations for the Shipyard Creek characterization, NOAA recommends that several additional samples be considered for the characterization of Shipyard Creek and its associated wetlands.

• There are no sampling locations in the emergent marsh at the tip of the DMA, adjacent to the mouth of Shipyard Creek. It is recommended that at least one more station be located in the creek channel upstream of station CR13.

• There are few sampling locations in the emergent marsh adjacent to the creek. Most of the stations in the marsh are located immediately adjacent to Least Tern Road at the edge of the marsh. A sampling station should be located in the creek channel across the creek from the dry dock area.

• There are no stations in the creek offshore of the AOC near the mouth in an area of the creek that appears to be a depositional area. The only station in this area is immediately adjacent to the shore. An additional station should be located in the creek channel further offshore from the AOC.

• There are few stations in the creek upstream of the shipyard with dry dock. The stations upstream of this location are generally in the marsh adjacent to Least Tern Road. A station should be located in the emergent marsh off the tip of the DMA near the mouth and at least two more stations should be located in the marsh adjacent to the creek but away from Least Tern Road.

Recommendations for sampling locations in Noisette Creek

Based on Figure 4-3 which shows the tentative sampling locations for the Noisette Creek characterization, NOAA recommends that the following additional sampling locations be considered.

• There are no sampling locations in the estuarine intertidal emergent marsh at the mouth of Noisette Creek and adjacent to the Cooper River. It is recommended that at least two samples, preferably three, be located in the marsh adjacent to the mouth of the creek - one in the marsh adjacent to the creek and two in the marsh adjacent to the Cooper River, with one of these adjacent to Outfall 8 as shown on Figure 1-2 (Sheet 1) in the document.

• There are no sampling locations in the emergent marsh further upstream on Noisette Creek. NOAA recommends that at least two samples be located in the estuarine emergent marsh adjacent to Noisette Creek further upstream and just outside the ESA II boundary line on the south side of the creek, and in the wetland north of the creek below the pipeline. These wetland areas may provide valuable habitat for NOAA trust species and should be characterized during this investigation.

Conclusion

In general, the phased approach presented in the Zone J RFI work plan appears to be an acceptable strategy for the site characterization. There are several issues, as discussed in this letter, that should be addressed or considered before a sampling and analysis plan is developed or any field work is begun. NOAA would be happy to meet with you and the Navy representatives to discuss these comments and recommendations. Again, thank you for the opportunity to comment on this document. If you would like to speak with me, I may be reached at (404) 562-8639.

Sincerely,

Denise M. Klimas

Denise M. Klimas
Coastal Resources Coordinator

cc: Diane Duncan, USFWS
Priscilla Wendt, SCDNR
David Trimm, EnSafe
Zachary Key, EPA IAG

GENERAL ENGINEERING

A Division of General Engineering Laboratories, Inc.

June 18, 1997

Mr. Mike Dangerfield
Charleston District, Corps of Engineers
Post Office Box 919
Charleston, South Carolina 29402-0919

Re: Proposed Sediment Sampling
Maintenance Dredging Under Department of the Army Permit #96-1D-022
Pier Hotel (south), and in front of Dry Docks 1, 2, and 5
Detyens Shipyards, Inc.
Former Charleston Naval Shipyard
North Charleston, South Carolina

Dear Mr. Dangerfield:

On behalf of Detyens Shipyards, Inc. (Detyens), General Engineering is submitting notification that Detyens intends to conduct maintenance dredging of the above referenced areas at the former Charleston Naval Shipyard. This dredging will be conducted under Department of the Army Permit #96-1D-022, which was issued by the Charleston District, Corps of Engineers (COE) on March 7, 1996, to the Charleston Naval Complex Redevelopment Authority. A copy of this permit is attached. Detyens proposes to dispose of the dredged material at the Highway Cell of the Clouter Creek disposal area.

Based on our June 18, 1997, telephone conversation, the COE will require sampling and analysis of the proposed dredged material to determine its suitability for disposal in the Highway Cell of the Clouter Creek disposal area. To expedite the sampling and analysis process, Detyens would like to proceed with the collection of the sediment samples. The proposed dredge areas and sample locations are shown on the attached figures. The proposed project depths in these areas are presented below.

Table 1
Proposed Project Depths

Dredge Area	Project Depth
Dry Docks 1 & 2	-27 MLW
Dry Dock 5	-27 MLW
Pier Hotel (South)	-44 MLW

Notes: MLW – Mean Low Water

General Engineering proposes to collect the following types and number of sediment samples from each project area. All of the samples will be collected using vibracore equipment down to the proposed respective project area depths.

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(803) 769-7378 • Fax (803) 769-7397

Dry Dock 1
Collect 2 sediment samples, DD1-A and DD1-B, as shown on the attached figure. The samples will be composited into one sample, DD1, and submited for analysis.

Dry Dock 2
Collect 2 sediment samples, DD2-A and DD2-B, as shown on the attached figure. The samples will be composited into one sample, DD2, and submited for analysis.

Dry Dock 5
Collect 2 sediment samples, DD5-A and DD5-B, as shown on the attached figure. The samples will be composited into one sample, DD5, and submited for analysis.

Pier Hotel (South)
Collect 2 sediment samples, PHS-A and PHS-B, as shown on the attached figure. The samples will be composited into one sample, PHS1, and submited for analysis.

General Engineering acknowledges that the proposed types and numbers of samples are subject to modification by the COE. The samples will be collected in accordance with the COE's sampling and analysis plan for material proposed for disposal in a COE disposal area. In addition, the samples will be analyzed in accordance with the analytical methods in the COE plan. For your convenience, a copy of the proposed detection limits for these methods is attached.

As stated earlier, the purpose of this letter is to expedite the sampling and analysis process. An additional letter summarizing the estimated dredge volumes and cross sections of the proposed dredge areas will be sent to the COE in the near future.

I would like to thank you for your timely attention to this matter. Should you have any questions regarding this information or any other aspect of the proposed maintenance dredging activities, please do not hesitate to call me at (803) 769-7378, extension 4447.

Yours very truly,

J. Edward Buxton
Project Scientist I

enclosures

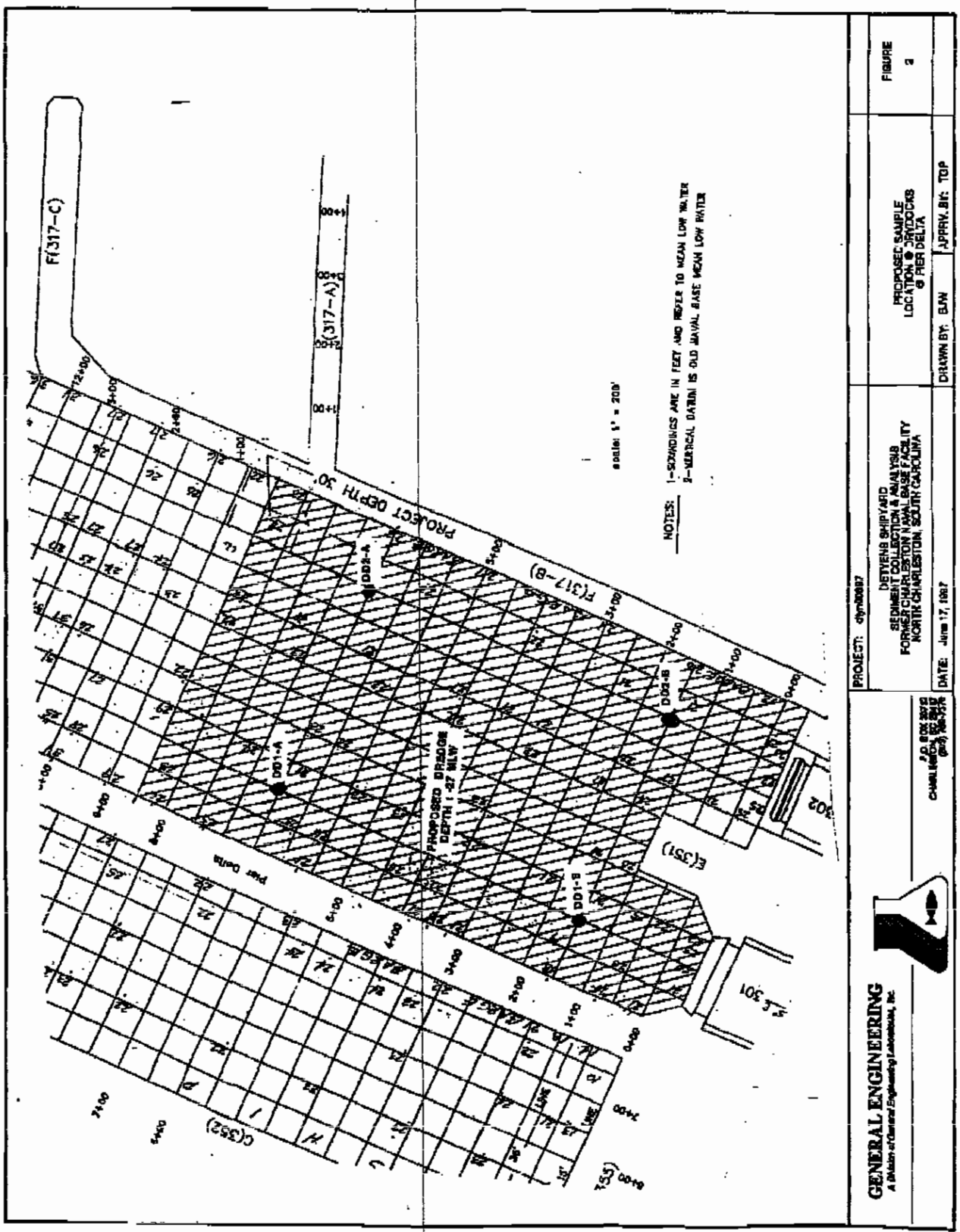
cc: Mr. Loy Stewart
Detyens Shipyards, Inc.

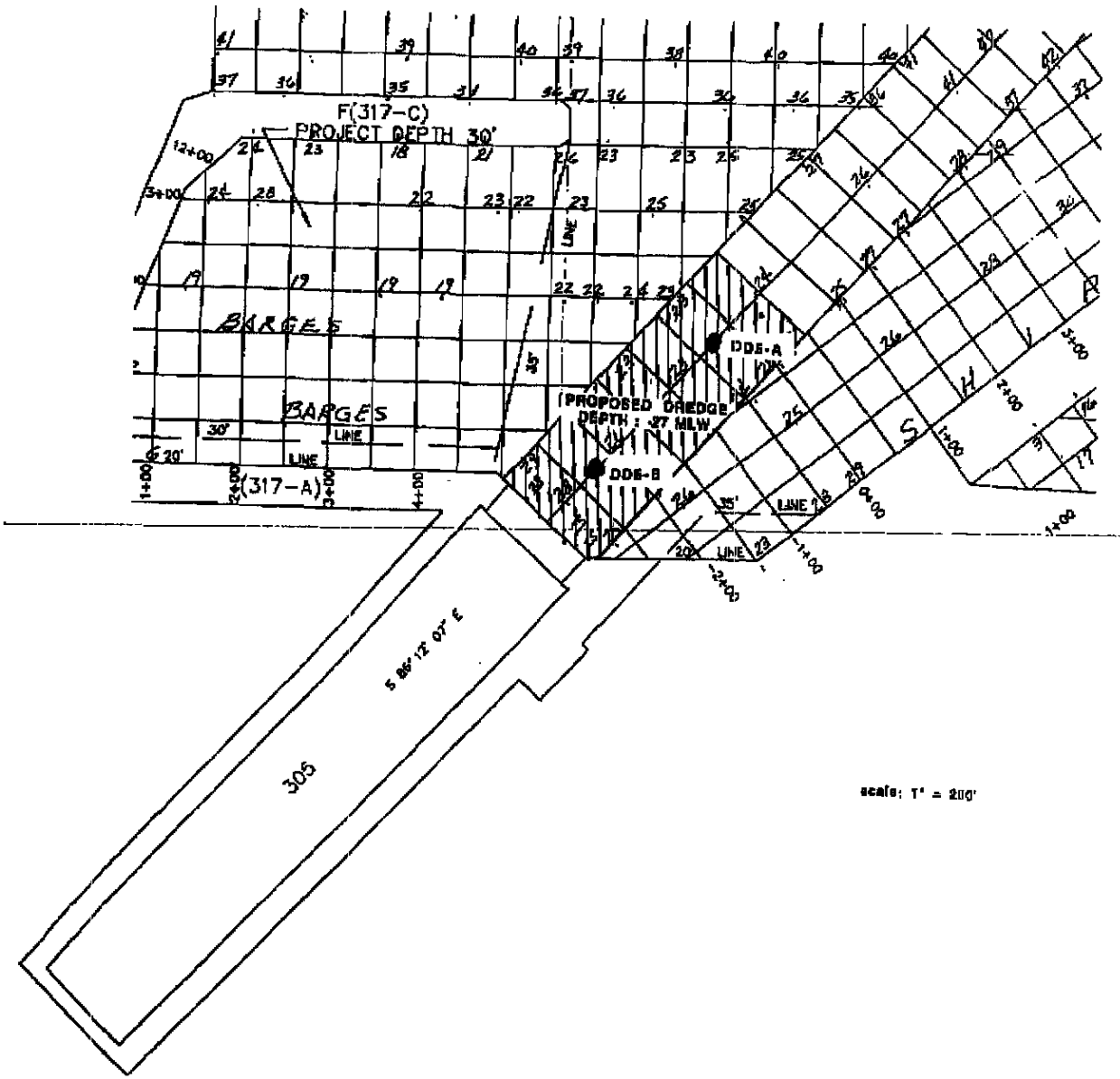
Mr. Robert Ryan
Director of Economic Development
Charleston Naval Complex Redevelopment Authority

Mr. Billy Drawdy
Supervisor, Environmental Engineer
Caretakers Site Office
Southern Division Naval Facilities Engineering Command

fc: dryn00897.061897.ltr

GENERAL ENGINEERING
P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(803) 769-7378 • Fax (803) 769-7397


F(317-C)
F(317-A)
F(317-B)
PROJECT DEPTH 30'
NOTES: 1-SOUNDINGS ARE IN FEET AND REFER TO MEAN LOW WATER
2-VERTICAL DATUM IS OLD NAVAL BASE MEAN LOW WATER
scale: 1" = 200'
DD2-4
DD2-6
DD1-4
DD1-5
PROPOSED DREDGE DEPTH -27 MLW
E(351)
C(352)
Pier Delta
PROJECT: dyn80687
DETYENS SHIPYARD
SEDIMENT COLLECTION & ANALYSIS
FORMER CHARLESTON NAVAL BASE FACILITY
NORTH CHARLESTON, SOUTH CAROLINA
DATE: June 17, 1997
PROPOSED SAMPLE LOCATION @ DRYDOCKS @ PIER DELTA
DRAWN BY: BJW
APPRV. BY: TDP
FIGURE 2
GENERAL ENGINEERING
A Division of General Engineering Laboratories, Inc.



GENERAL ENGINEERING
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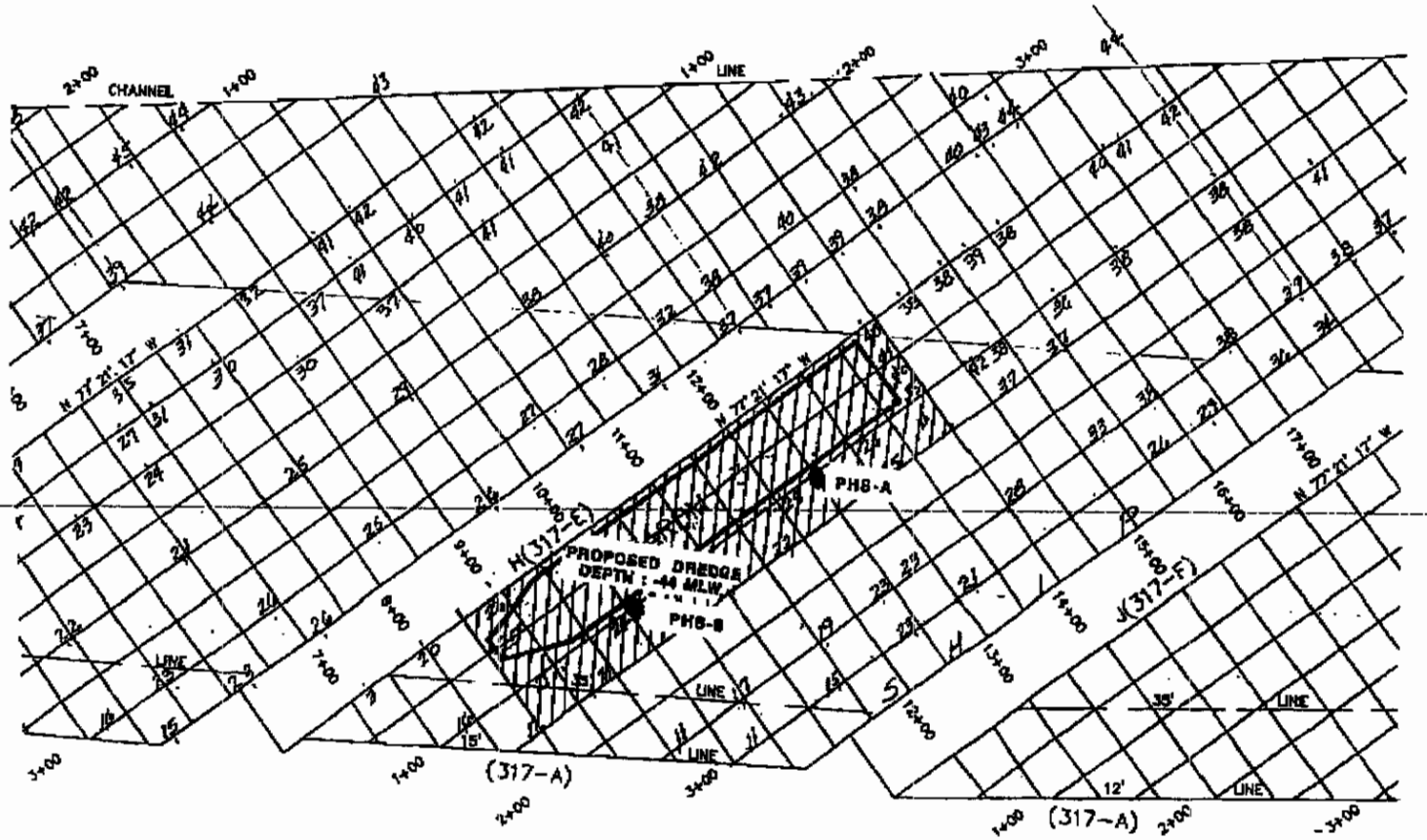
P.O. BOX 30712
CHARLESTON, SC 29417
(803) 769-7379

PROJECT: dlyn00897			
DETYENS SHIPYARD SEDIMENT COLLECTION & ANALYSIS FORMER CHARLESTON NAVAL BASE FACILITY NORTH CHARLESTON, SOUTH CAROLINA	PROPOSED SAMPLE LOCATION @ DRYDOCK #5		FIGURE 1
DATE: June 17, 1997	DRAWN BY: BJW	APPRV. BY: TGP	



scale: 1" = 200'

ERAL ENGINEERING *...n of General Engineering Laboratories, Inc.* P.O. BOX 30712 CHARLESTON, SC 29417 (803) 766-7378	PROJECT: dlyn00897		
	DETYENS SHIPYARD SEDIMENT COLLECTION & ANALYSIS FORMER CHARLESTON NAVAL BASE FACILITY NORTH CHARLESTON, SOUTH CAROLINA	PROPOSED SAMPLE LOCATION @ SOUTH SIDE OF PIER	FIGURE 3
	DATE: June 17, 1997	DRAWN BY: BJW / APPRV. BY: TGP	


GEN

Parameters, Methods, and Detection Limits

Parameter	Method	Detection Limit
Antimony	EPA 6010A	0.50 ppm
Arsenic	EPA 6010A	0.50 ppm
Cadmium	EPA 6010A	0.10 ppm
Chromium	EPA 6010A	0.10 ppm
Copper	EPA 6010A	0.10 ppm
Lead	EPA 6010A	0.10 ppm
Nickel	EPA 6010A	0.11 ppm
Selenium	EPA 6010A	0.20 ppm
Silver	EPA 6010A	0.10 ppm
Zinc	EPA 6010A	0.50 ppm
Mercury	EPA 7471	0.05 ppm
Tributyltin	Uhler and Durrel 1989	0.01 ppm
4,4'-DDD	EPA 8080	3.3 ppb
4,4'-DDE	EPA 8080	3.3 ppb
4,4'-DDT	EPA 8080	3.3 ppb
Aldrin	EPA 8080	3.3 ppb
Chlordane & derivatives	EPA 8080	1.7 ppb
Dieldrin	EPA 8080	3.3 ppb
Endrin	EPA 8080	3.3 ppb
Endrin Aldehyde	EPA 8080	3.3 ppb
Heptachlor	EPA 8080	3.3 ppb
Heptachlor epoxide	EPA 8080	3.3 ppb
Toxaphene	EPA 8080	170 ppb
alpha-BHC	EPA 8080	3.3 ppb
beta-BHC	EPA 8080	3.3 ppb
delta-BHC	EPA 8080	3.3 ppb
gamma-BHC	EPA 8080	3.3 ppb
PCB-1016	EPA 8080	33 ppb
PCB-1221	EPA 8080	67 ppb
PCB-1232	EPA 8080	33 ppb
PCB-1242	EPA 8080	33 ppb
PCB-1248	EPA 8080	33 ppb
PCB-1254	EPA 8080	33 ppb
PCB-1260	EPA 8080	33 ppb
Acenaphthene	EPA 8310	16.7 ppb
Acenaphthylene	EPA 8310	16.7 ppb
Anthracene	EPA 8310	16.7 ppb
Benzo (a) anthracene	EPA 8310	3.3 ppb

Parameters, Methods, and Detection Limits
(Continued)

Parameter	Method	Detection Limit
Benzo (a) pyrene	EPA 8310	3.3 ppb
Benzo (b) flouranthane	EPA 8310	3.3 ppb
Benzo (ghi) perylene	EPA 8310	3.3 ppb
Benzo (k) flouranthene	EPA 8310	3.3 ppb
Chrysene	EPA 8310	3.3 ppb
Dibenzo (a,h) anthracene	EPA 8310	3.3 ppb
Flouranthene	EPA 8310	3.3 ppb
Flourene	EPA 8310	16.7 ppb
Indeno (1,2,3-c,d) pyrene	EPA 8310	3.3 ppb
Naphthalene	EPA 8310	16.7 ppb
Phenanthrene	EPA 8310	16.7 ppb
Pyrene	EPA 8310	3.3 ppb
1-methylnaphthalene	EPA 8310	16.7 ppb
2-methylnaphthalene	EPA 8310	16.7 ppb
Dioxins/Furans	EPA 8290	1.0 ppt

Notes: ppm-parts per million
ppb-parts per billion
ppt-parts per trillion

These detection limits are based on a wet-weight basis. The Charleston District, Corps of Engineers has requested that the results be reported on a dry-weight basis. Achieved detection limits reported on a dry-weight basis will vary depending on the water content of the samples.

These detection limits meet or exceed the United States Environmetal Protection Agency's (USEPA) detection limits established in the "USEPA Contract Laboratory Program" manual, Version OLMO2.0, including revision OLMO2.1. These detection levels also meet or exceed the screening values established by USEPA Region 4 in the *Supplemental Guidance to RAGS: Region 4 Bulletins, Ecological Screening Values, Ecological Risk Assessment, Bulletin No. 2, November 1995, Draft.*

COPY

DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 919
CHARLESTON, S.C. 29402-0919

REPLY TO ATTENTION OF

March 7, 1996

Regulatory Branch

Charleston Naval Complex
Redevelopment Authority
1690 Turnbull Lane, Suite NH 47
Charleston, South Carolina 29408

Gentlemen:

This is in response to your application requesting a Department of the Army permit.

Enclosed is your Department of the Army Permit #96-ID-022. It authorizes you to perform the work specified on the attached drawings. This permit is issued under the provisions of the Federal laws for the protection and preservation of the navigable waters of the United States.

Please notify this office promptly, in writing, when you start and complete the work. The enclosed cards may be used for that purpose. You should also be aware that a special condition has been included in this permit which requires that a copy of the permit and drawings must be available at the work site during the entire time of construction.

Respectfully,

Elmer W. Schwingen
Acting Chief, Regulatory Branch

Enclosures

DEPARTMENT OF THE ARMY PERMIT
MODIFICATION

PERMITTEE: CHARLESTON NAVAL COMPLEX REDEVELOPMENT AUTHORITY

1690 TURNBULL LANE, SUITE NH 47
CHARLESTON, SOUTH CAROLINA 29408-1955

Permit No. 96-1D-022

Issuing Office CHARLESTON DISTRICT

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description:

To perform maintenance dredging to maintain adequate depths for ships and associated activities in accordance with the attached drawings entitled: Proposed Dredging in Cooper River, Charleston County, South Carolina. Sheets 1 thru 4 of 4 Revised 8 February 1996.

Project Location:

This project is located in the Cooper River at the Charleston Naval Complex, Charleston County, South Carolina.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on 31 March 1999. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

SEE PAGE 4.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

James C. Bryan
(PERMITTEE)
CHARLESTON NAVAL COMPLEX RDA

3/5/96
(DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

E. W. Schuringen
(DISTRICT ENGINEER)
THOMAS F. JULICH, LTC
or his Designee
Elmer W. Schuringen
Acting Chief, Regulatory Branch

MAR 0 7 1996
(DATE)

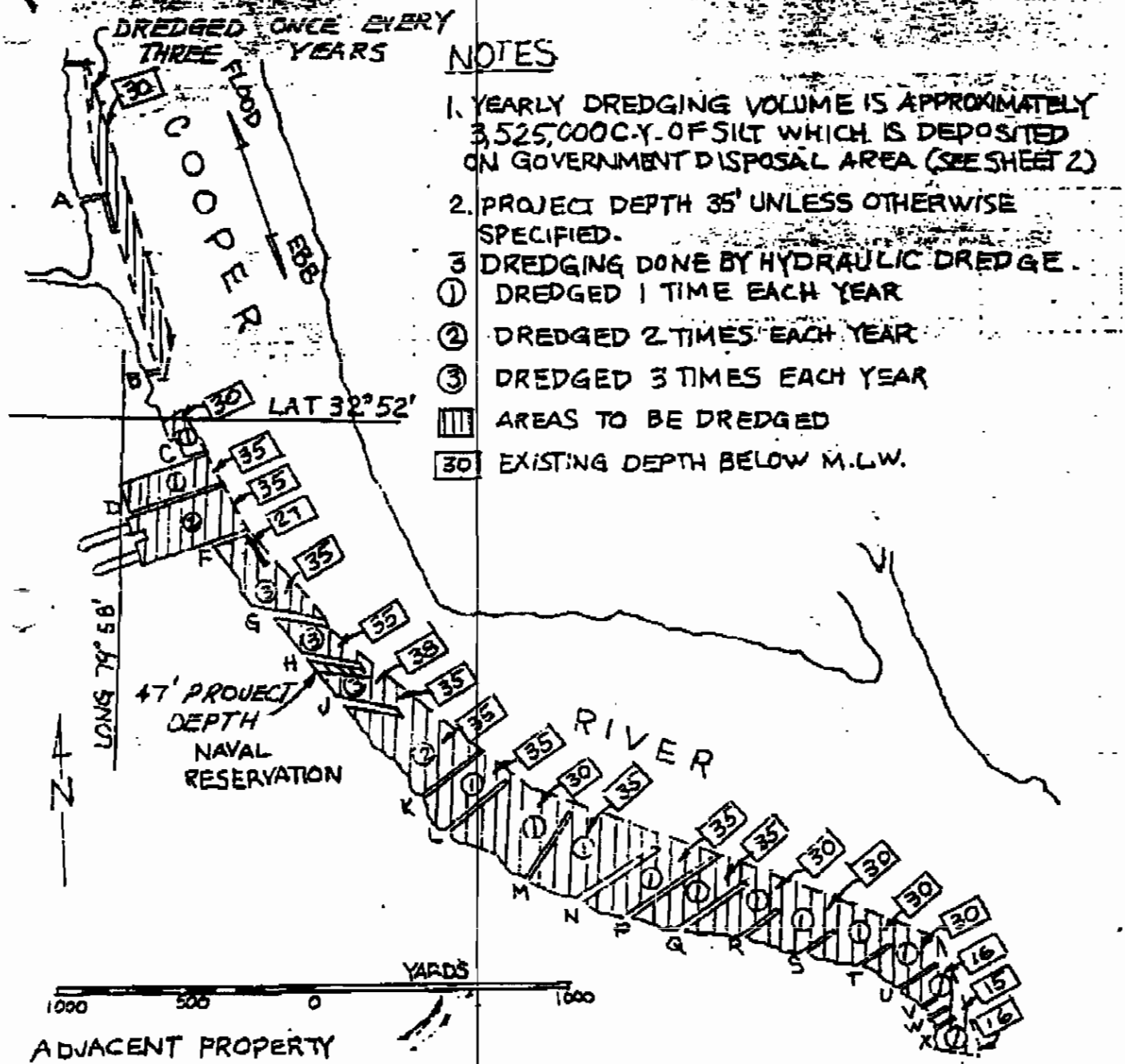
When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFEREE) (DATE)

CONDITIONS FOR P/N #96-1D-022:

a. That the permittee agrees to provide all contractors associated with construction of the authorized activity a copy of the permit and drawings. A copy of the permit will be available at the construction site at all times.

b. That the permittee must advise the District Engineer, in writing, thirty (30) days prior to commencement of the maintenance dredging activity authorized by this document.



NOTES

1. YEARLY DREDGING VOLUME IS APPROXIMATELY 3,525,000 C.Y. OF SILT WHICH IS DEPOSITED ON GOVERNMENT DISPOSAL AREA (SEE SHEET 2)
2. PROJECT DEPTH 35' UNLESS OTHERWISE SPECIFIED.
3. DREDGING DONE BY HYDRAULIC DREDGE.

① DREDGED 1 TIME EACH YEAR

② DREDGED 2 TIMES EACH YEAR

③ DREDGED 3 TIMES EACH YEAR

AREAS TO BE DREDGED

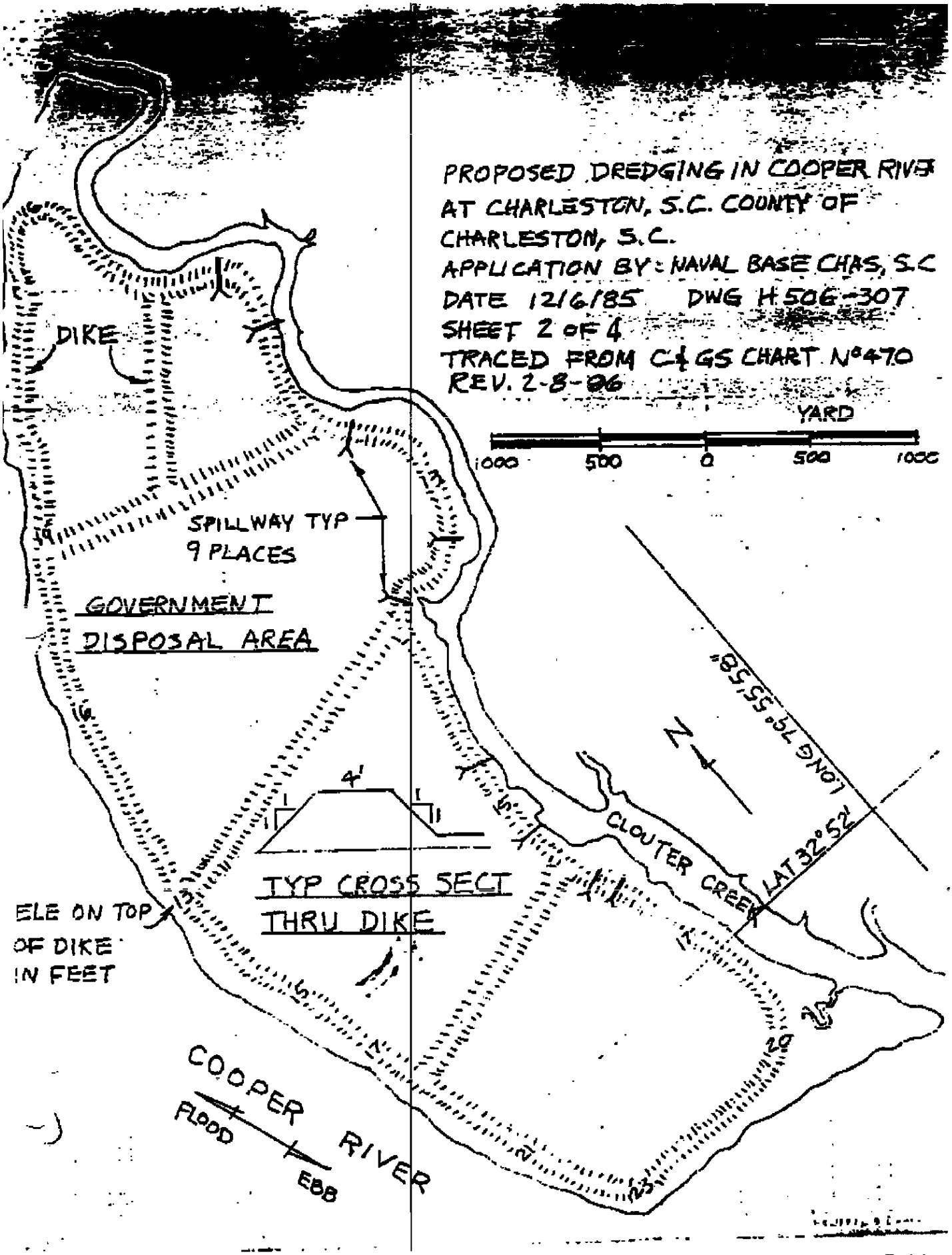
30 EXISTING DEPTH BELOW M.L.W.

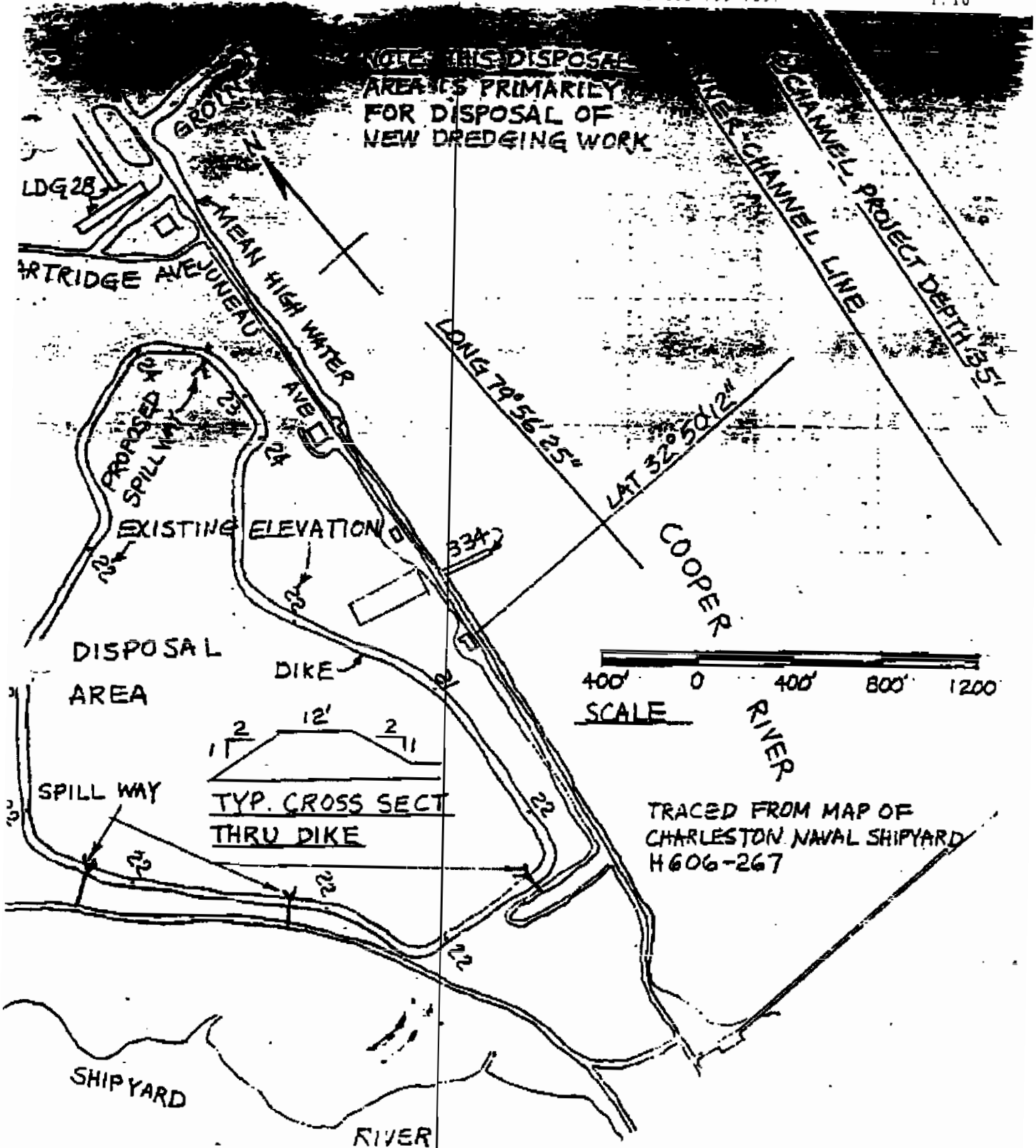
ADJACENT PROPERTY OWNERS

NORTH: HESS OIL CO.

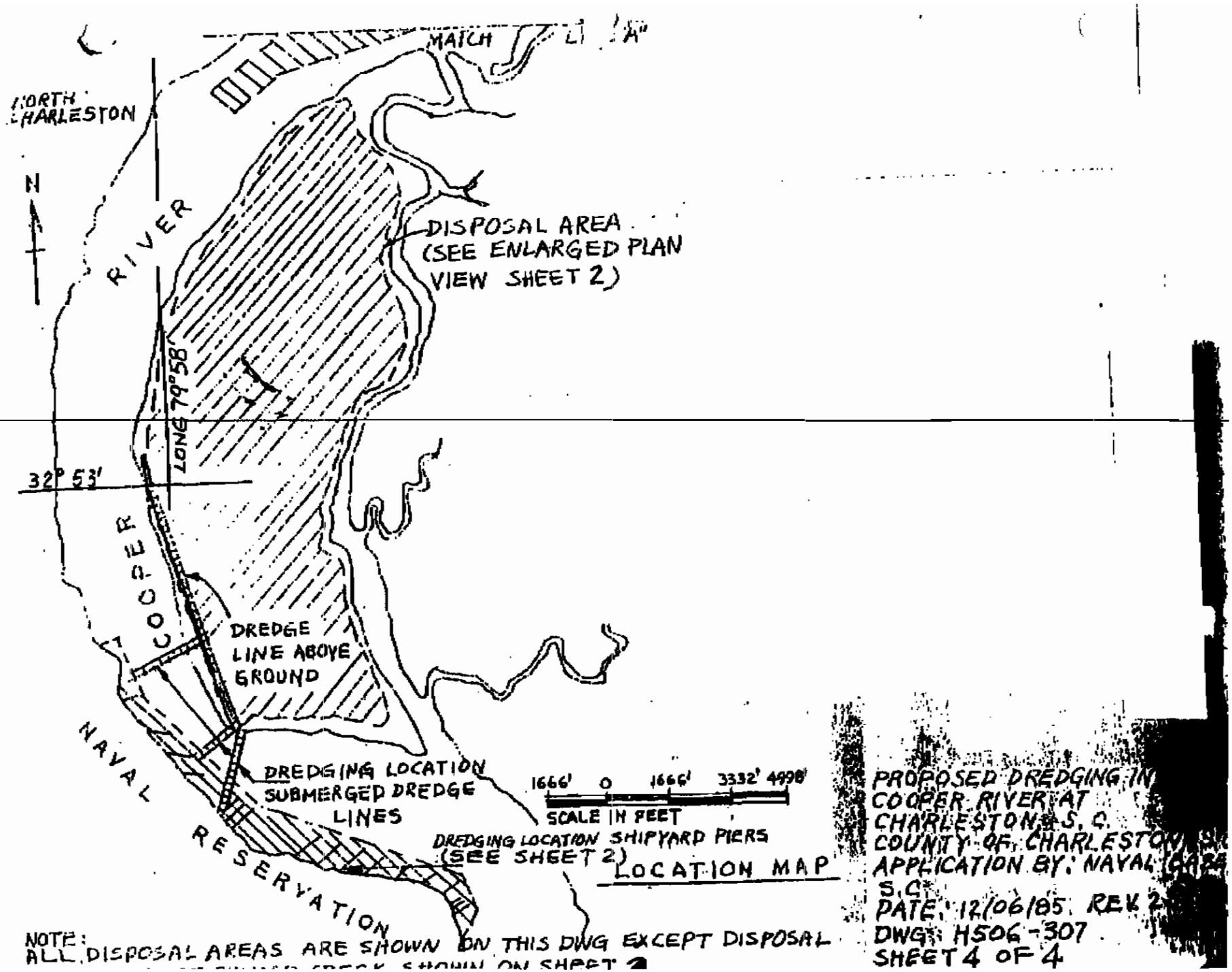
SOUTH: MASSEY COAL TERMINAL

PROPOSED DREDGING
IN COOPER RIVER
AT CHARLESTON, S.C.
COUNTY OF CHARLESTON, SC.
APPLICATION BY: NAVAL BASE CHAS. SC.
DATE 12/6/95 DWG # 306-307
SHEET 1 OF 4
TRACED FROM C & G.S N° 470
REV. 2-8-96


PROPOSED DREDGING IN COOPER RIVER
AT CHARLESTON, S.C. COUNTY OF
CHARLESTON, S.C.
APPLICATION BY: NAVAL BASE CHAS, S.C
DATE 12/6/85 DWG H-506-307
SHEET 2 OF 4
TRACED FROM C&GS CHART N°470
REV. 2-8-96
YARD
1000 500 0 500 1000
DIKE
SPILLWAY TYP
9 PLACES
GOVERNMENT
DISPOSAL AREA
4'
1
1
TYP CROSS SECT
THRU DIKE
ELE ON TOP
OF DIKE
IN FEET
"85,55 79° LONG
CLOUTER CREEK
LAT 32°52'
COOPER RIVER
FLOOD
EBB



PROPOSED DREDGING IN COOPER RIVER AT CHARLESTON, S.C. COUNTY OF CHARLESTON, S.C. APPLICATION BY : NAVAL BASE, S.C.
DATE: 12/06/85 DWG. H506-307 SHEET 3 OF 4
REV: 2-8-96


MATCH LINE "A"
NORTH CHARLESTON
N
RIVER
DISPOSAL AREA (SEE ENLARGED PLAN VIEW SHEET 2)
LONG 79°58'
32°53'
COOPER
DREDGE LINE ABOVE GROUND
NAVAL RESERVATION
DREDGING LOCATION SUBMERGED DREDGE LINES
DREDGING LOCATION SHIPYARD PIERS (SEE SHEET 2)
1666' 0 1666' 3332' 4998'
SCALE IN FEET
LOCATION MAP
PROPOSED DREDGING IN COOPER RIVER AT CHARLESTON, S. C.
COUNTY OF CHARLESTON
APPLICATION BY: NAVAL
S.C.
DATE: 12/06/85 REV 2
DWG: H506-307
SHEET 4 OF 4
NOTE:
ALL DISPOSAL AREAS ARE SHOWN ON THIS DWG EXCEPT DISPOSAL

DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 919
CHARLESTON, S.C. 29402-0919

REPLY TO ATTENTION OF

CESAC-CO-P

June 22, 1992

TO WHOM IT MAY CONCERN:

In issuing this permit, this office has acted with reliance on the plans which you submitted. As you proceed with your project, please exercise every caution to insure the work is performed exactly as shown on the approved plans and specifications, as deviations of any nature are expressly prohibited without the "prior" authorization of this office.

With this in mind, you will find this office cooperative in authorizing minor deviations if they are clearly within the scope of the original permit; however, you are also placed on notice that any "unauthorized" deviation from the approved plans will be construed as a violation of Federal law and, at a minimum, you will be required to submit as-built plans of any deviations. These as-built plans will have to be prepared by professionals and endorsed by a registered land surveyor. You will not be required to submit as-built drawings unless an "unauthorized" deviation is detected by this office or such submittals are required by a special condition in the permit (i.e., certified as-built plans are commonly required for utility crossings). If, upon demand, you fail to provide this office with such drawings in the requisite format, this office will request the U.S. Attorney to seek appropriate civil or criminal sanctions in order to maintain the integrity of the Department of the Army permit program.

I trust the foregoing has made the position of this office clear in regards to deviations from the approved plans. In closing, let me reiterate that you will find the Corps of Engineers receptive to minor deviations from the approved plans as long as such deviations are approved prior to commencement of work.

Clarence A. Ham
Chief, Regulatory Branch

NOTICE OF COMMENCEMENT OR COMPLETION OF WORK AUTHORIZED BY PERMIT

_____
DATE

WORK AUTHORIZED BY DEPARTMENT OF THE ARMY PERMIT 96-ID-052

DATED _____

PERFORM WORK IN _____
(WATERBODY NAME)

WAS COMMENCED
ON _____
WAS COMPLETED (DATE)

(check appropriate box)

_____
SIGNATURE

FL 130
5 MAR. 79

NOTICE OF COMMENCEMENT OR COMPLETION OF WORK AUTHORIZED BY PERMIT

_____
DATE

WORK AUTHORIZED BY DEPARTMENT OF THE ARMY PERMIT 96-ID-023

DATED _____

PERFORM WORK IN _____
(WATERBODY NAME)

WAS COMMENCED
ON _____
WAS COMPLETED (DATE)

(check appropriate box)

_____
SIGNATURE

EN SAFE ENVIRONMENTAL AND SAFETY DESIGNS, INC.

935 Houston Northcutt Boulevard
Mt. Pleasant, South Carolina 29464

Phone (803) 884-0029
Fax (803) 856-0107

FAX

To:	From:	Date:
TONY HUNT	JAY CORNELIUS	~~6-5-97~~ 6-20-97

Fax to Number: 820-5563 Number of Pages: ~~4~~ 6

Remarks:

TONY-

HERE IS THE FIGURES AND ~~LETTER RE: SURFACE H_2O SAMPLES IN ZONE J.~~

PLEASE CALL IF YOU HAVE QUESTIONS OR COMMENTS.

I WILL BE IN CHARLESTON ~~WITH WEDNESDAY THE 11TH~~ ON JULY 7TH!

THANKS!

JAY

EnSafe/Allen & Hoshall

A Joint Venture for Professional Services

DATE: June 20, 1997

TO: Tony Hunt, SOUTHDIV
Engineer in Charge, NAVBASE Charleston

FROM: Jay Cornelius, EnSafe/Allen & Hoshall
Zone J Project Manager

RE: Response to USEPA Concerns on the Proposed Revisions to Zone J Surface Water Samples

Mr. Hunt:

On June 17, EnSafe/Allen & Hoshall received an electronic mail message from Jay Bassett (USEPA) regarding the Navy's proposed revisions to the surface water sampling scheme for the ongoing Zone J RFI. This message expressed the concerns/issues of both the USEPA and NOAA.

First, an explanation of why three surface water samples (top, middle, and bottom depths) per location were proposed in the Zone J RFI Work Plan. This multiple-depth surface water sampling methodology was first presented in the Final Comprehensive Sampling and Analysis Plan (CSAP, E/A&H, August 30, 1994) and at the time was considered a reasonable technique to determine the stratification and concentration of various physical and chemical parameters in the water bodies associated with Naval Base Charleston (which included several isolated wetlands). While this multi-depth sampling technique is an effective tool to assess a column of water (especially in non-flowing systems such as ponds and lakes), the strong flow and tidal conditions found to be present in the Zone J water bodies, stratification determinations of any kind are considered useless and could not provide any definitive surface water data on potential NAVBASE contaminant sources.

As stated by the USEPA, the primary concerns for the assessment of Zone J surface water are impacts from contaminated sediment and contributions from NAVBASE outfalls. Therefore, E/A&H strongly agrees with the USEPA and NOAA recommendation that the Zone J RFI omit all top water and most mid-depth surface water samples as proposed in the final work plan and collect instead only one surface water sample at a depth approximately 6 inches of the bottom substrate (sediment). If, however, a surface water sampling location is near a NAVBASE outfall or other identified NAVBASE point source, an additional mid-depth sample will be collected.

As suggested by the USEPA, this surface water/sediment interface sampling methodology will

be considered for all future projects of this type, for it is considered a logical and effective method to reduce overall project time and costs yet will generate equally valuable data for the decision-making process.

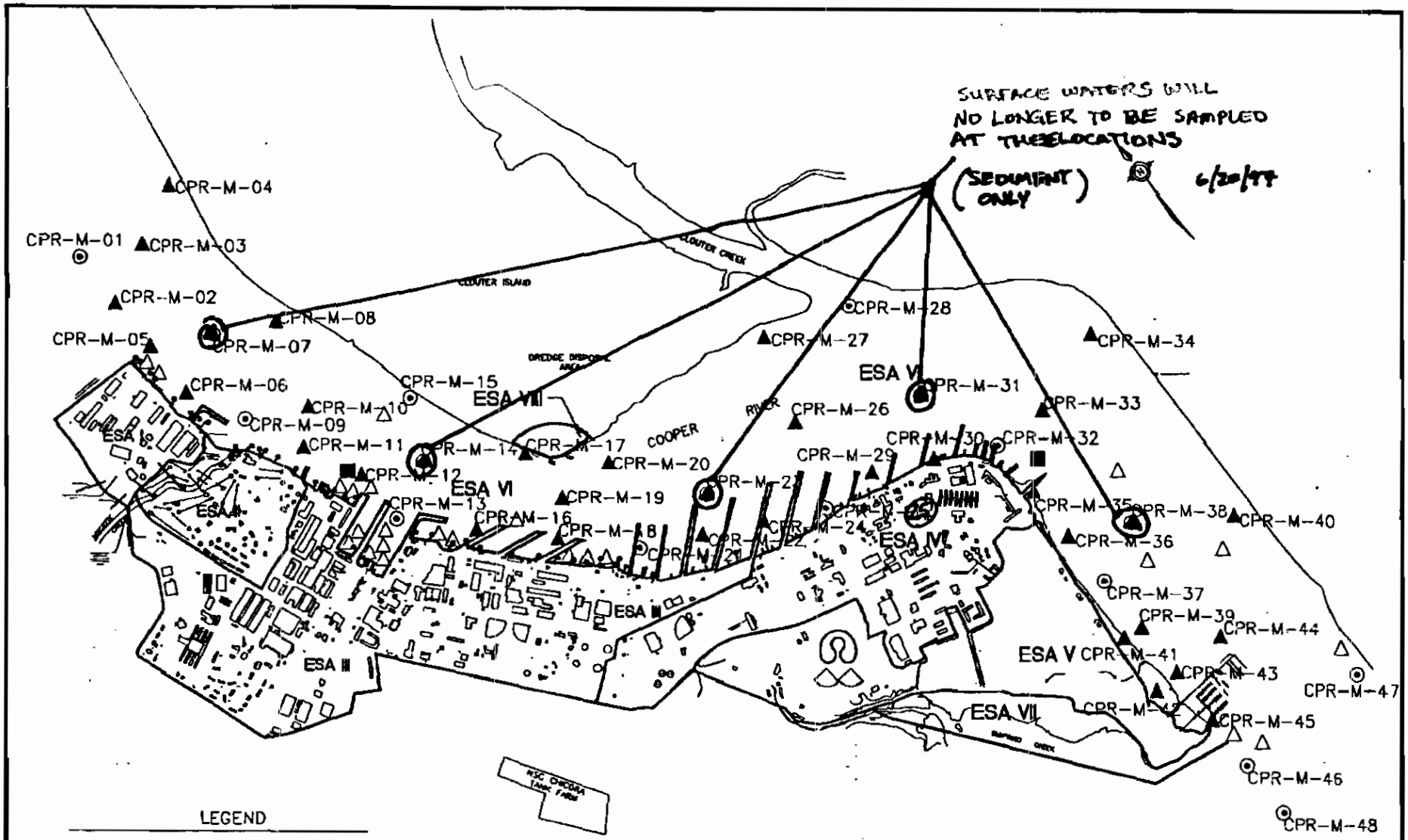
The second item in the USEPA's message was their and NOAA's concurrence with the Navy's proposed deletion of all center channel surface water samples. Therefore, at the five proposed sediment/surface water samples in the center of the Cooper River, only sediment samples will be collected. Please see the attached Figure 4-11 which presents this change to the Cooper River's sampling strategy.

The USEPA and NOAA representatives also tentatively agreed with the deletion of the surface water sampling locations (sediment sampling locations are unchanged) as outlined in the Navy's July 5 memorandum. Please see the attached Figures 4-3 and 4-12 for clarification of these locations.

Finally, a rationale for the reported volume of water required for each sample was requested. The following table presents the Zone J laboratory's requested minimum volume for each surface water parameter (note that the laboratory's "desired" volume is considerably more).

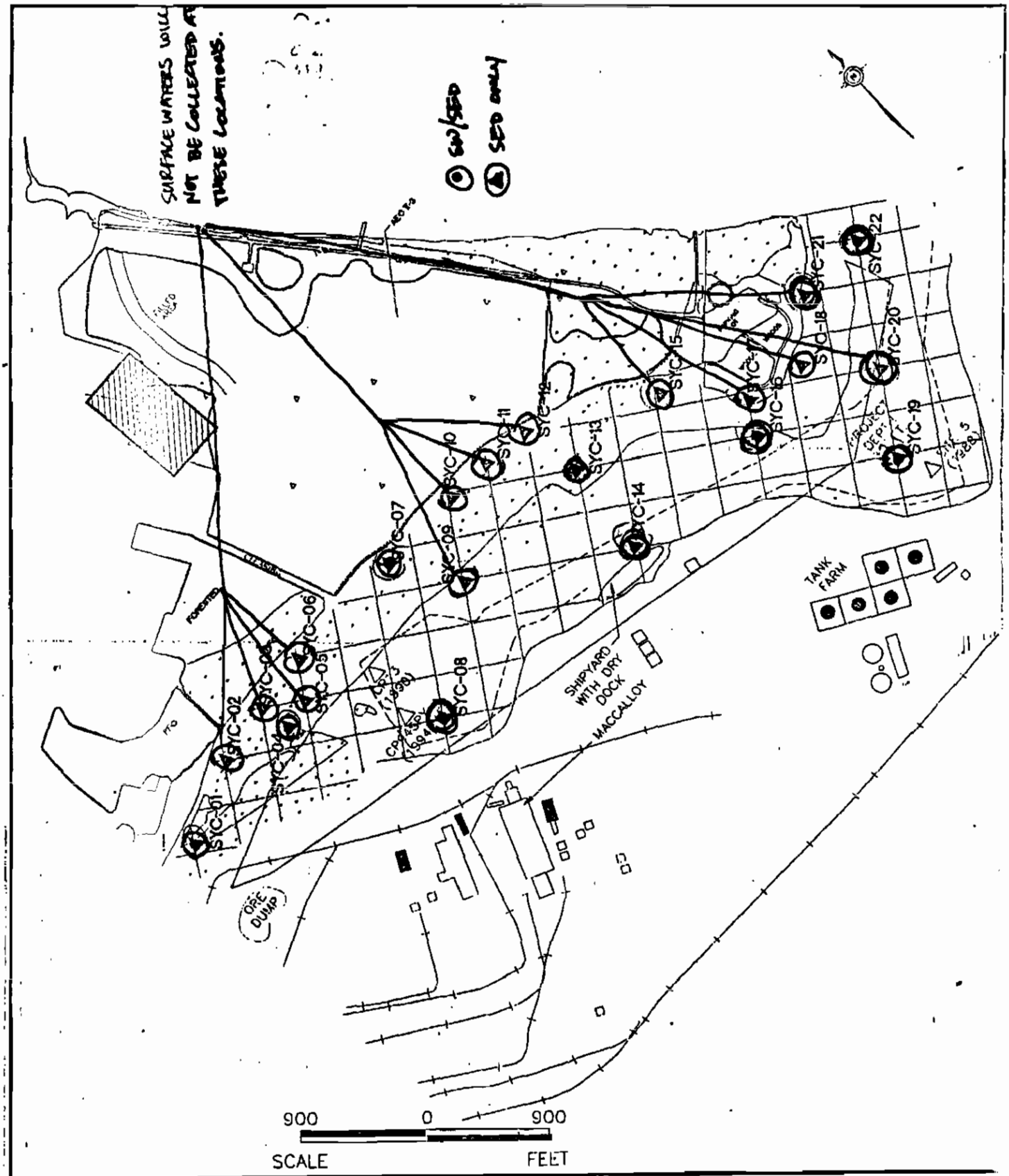
Zone J Surface Water Parameters and Minimum Sample Volume	
VOA	2 x 40 ml vials
SVOA	1 liter amber glass
Pest/PCB	1 liter amber glass
Organotins	1 liter amber glass
Metals	1 liter poly
Cyanide	4 oz. poly
pH, alkalinity, chlorides, hexachrome	16 oz. poly
TOC	4 oz. amber
BOD	16 oz. poly
COD, nitrates/nitrites, TKN, phosphates	16 oz. poly
TSS	16 oz. poly

If there are any further questions or comments, please call Jay Cornelius at the Charleston Field Office [(803) 747-0336] or on my mobile [(803) 860-5439].



ZONE J
RFI WORKPLAN

FIGURE 4-11
COOPER RIVER



ZONE J
RFI WORKPLAN
NAVAL BASE CHARLESTON

FIGURE 4-12
SHIPYARD CREEK
AND SURROUNDINGS

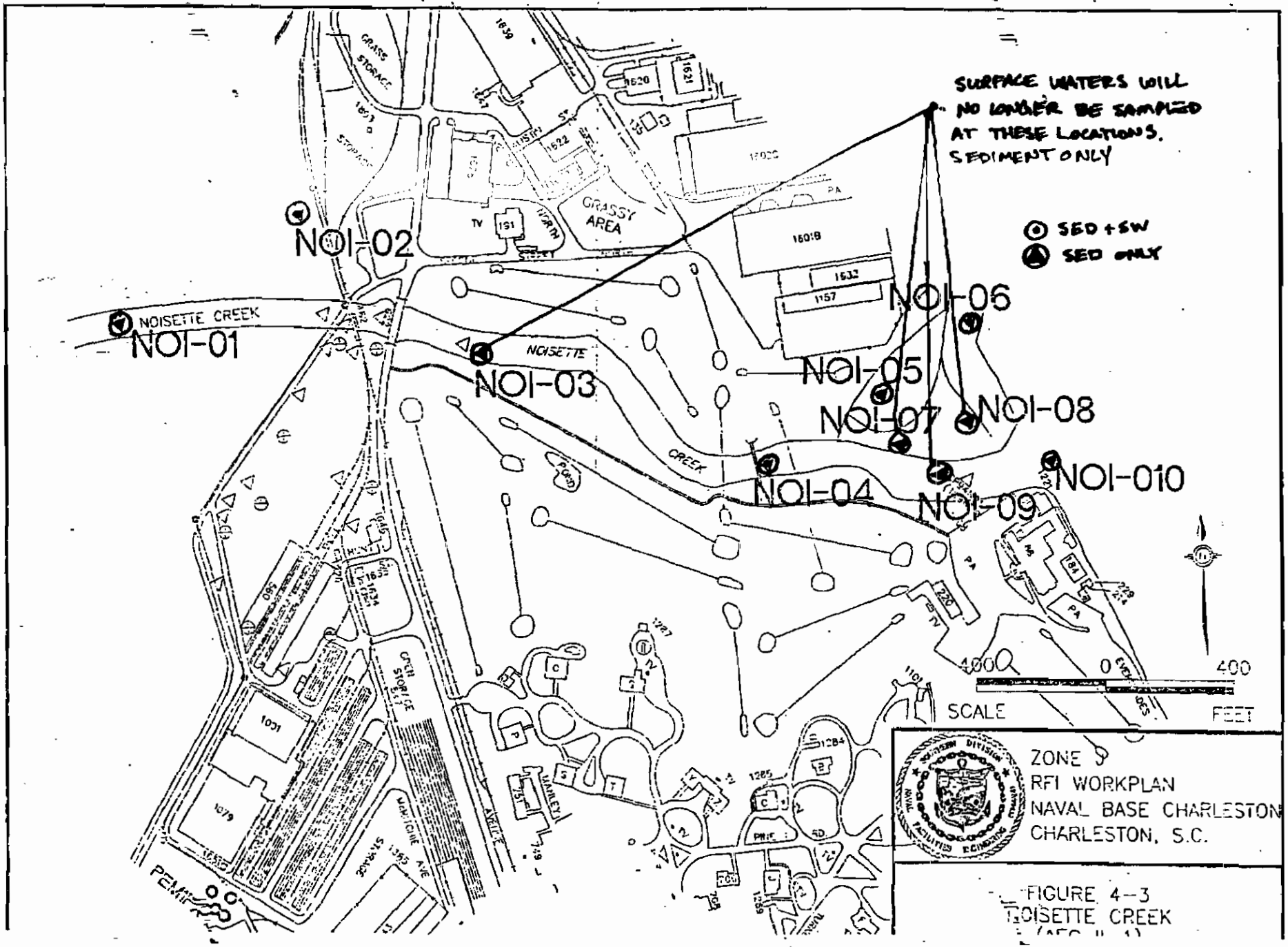


FIGURE 4-3
NOISETTE CREEK