



# PUBLIC NOTICE

US Army Corps  
of Engineers  
New York District  
Jacob K. Javits Federal Building  
New York, N.Y. 10278-0090  
ATTN: Regulatory Branch

**In replying refer to:**

Public Notice Number: NAN-2003-913-WSC  
Issue Date: June 29, 2007  
Expiration Date: July 30, 2007

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To Whom It May Concern:

The New York District, of the U.S. Army Corps of Engineers (USACE) has received an application for a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403), Section 404 of the Clean Water Act (33 USC 1344), and Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended (33 USC 1413).

APPLICANT: Atlantic Salt, Inc.  
561 Richmond Terrace  
Staten Island, NY 10301

ACTIVITY: Dredge with placement of dredged material at the Historic Area Remediation Site (HARS) for the purpose of remediation, and at a State-approved upland placement site. Construct new steel bulkhead, install riprap and mooring dolphins.

WATERWAY: Kill Van Kull

LOCATION: Staten Island, Richmond County, New York

A detailed description and plans of the applicant's activity are enclosed to assist in your review.

The decision whether to issue a permit will be based on an evaluation of the probable impact, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, consideration of property ownership and, in general the needs and welfare of the people. The decision of whether to issue a Department of the Army Permit for placement of the dredged material at the Historic Area Remediation Site (HARS) will also be based on whether the material meets the requirements of applicable implementing regulations. This activity is also being evaluated to determine that the proposed placement of dredged material will not unreasonably degrade or endanger human health, welfare or amenities, the marine environment, ecological systems or economic potentialities.

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On September 26, 2000, the U.S. Environmental Protection Agency (USEPA) and U.S. Army Corps of Engineers (USACE) signed a joint Memorandum of Agreement (MOA) outlining the steps to be taken to ensure that remediation of the HARS continues in a manner appropriately protective of human health and the aquatic environment. In making the determination evaluating placement of dredged material, the criteria established by the USEPA will be applied, including the interim change to one matrix value for polychlorinated biphenyls (PCB's) as described in the joint MOA. In addition, based upon an evaluation of the potential effect which the failure to utilize this ocean site will have on navigation, economic, and industrial development, and foreign and domestic commerce of the United States, an independent determination will be made of the need to place the dredged material in ocean waters, other possible methods of disposal, and other appropriate locations.

USACE neither favors nor opposes permit issuance for the applicant's proposed activity. The purpose of this public notice is to solicit comments from the public; federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

ALL COMMENTS REGARDING THE PERMIT APPLICATION MUST BE PREPARED IN WRITING AND MAILED TO REACH THIS OFFICE BEFORE THE EXPIRATION DATE OF THIS NOTICE. otherwise, it will be presumed that there are no objections to the activity.

Any person may request, in writing, before this public notice expires, that a public hearing be held to collect information necessary to consider this application. Requests for public hearings shall state, with particularity, the reasons why a public hearing should be held. It should be noted that information submitted by mail is considered just as carefully in the permit decision process and bears the same weight as that furnished at a public hearing.

The proposed project was reviewed based upon the "Biological Assessment for the Closure of the Mud Dump Site and Designation of the Historic Area Remediation Site (HARS) in the New York Bight and Apex," (USEPA, 1997). Based upon this review, and a review of the latest public listing of threatened and endangered species, it has been preliminarily determined that the proposed placement activities for which authorization is sought herein, are not likely to affect the following federally threatened or endangered species (humpback whales, finback whales, right whales, loggerhead turtles, leatherback turtles, green turtles, Kemp's Ridley turtles, and shortnose sturgeon) or their critical habitat pursuant to Section 7 of the Endangered Species Act (ESA; 16 USC 1531). The USACE New York District is conducting informal consultations with the National Marine Fisheries Service in accordance with Section 7 of the Endangered Species Act. This consultation will be completed before a final permit decision will be made.

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The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires all federal agencies to consult with the National Marine Fisheries Act on all actions or proposed actions, that are either permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH). Based upon a review of the "Guide to Essential Fish Habitat Designations in the Northeastern United States," issued by the National Oceanic and Atmospheric Administration/National Marine Fisheries Service, the EFH for eleven aquatic species and their life stages could potentially be impacted by the proposed work. They are:

Red hake	Eggs, Larvae, Juveniles, Adults
Winter flounder	Eggs, Larvae, Juveniles, Adults, Spawning Adults
Windowpane flounder	Eggs, Larvae, Juveniles, Adults, Spawning Adults
Atlantic sea herring	Larvae, Juveniles, Adults
Bluefish	Juveniles, Adults
Atlantic butterfish	Larvae, Juveniles, Adults
Summer flounder	Larvae, Juveniles, Adults
Black sea bass	Juveniles, Adults
King mackerel	Eggs, Larvae, Juveniles, Adults
Spanish mackerel	Eggs, Larvae, Juveniles, Adults
Cobia	Eggs, Larvae, Juveniles, Adults

The primary effects on EFH and EFH-managed species would be a temporary increase in turbidity due to dredging and the disruption of demersal and pelagic habitat. Upland beneficial reuse of dredged materials would not have any effect on Essential Fish Habitat (EFH).

Impacts to EFH species at the Historic Area Remediation Site (HARS) would most likely emanate from the settling of the dredged material for remediation through the water column to the bottom. These events would also be short-lived and be episodic in nature over the several months the proposed placement at the HARS would take. The overall potential impact for all the work proposed at the HARS on EFH for designated species is small because of the temporary nature of the disturbance, the low abundance of most species for which this region is designated as EFH, and the apparent lack of viable existing conditions.

Based upon the foregoing, the New York District has made a preliminary determination that this site-specific adverse effect will not be substantial. Further consultation with National Marine Fisheries Service regarding EFH impacts and conservation recommendations is being conducted and will be concluded prior to a final decision on the application.

Based upon a review of the latest published version of the National Register of Historic Places, the only known wrecks on or eligible for inclusion on the National Register at the HARS are located in Primary Remediation Area Number 1. As noted in the designation of the HARS, Remediation Material would not be allowed to be placed within 0.27 nautical miles of the identified wrecks or other wrecks that might be found. Otherwise, there are no known sites eligible for, or included in, the National Register within the proposed permit area.

Reviews of the activity pursuant to Section 404 of the Clean Water Act will include application of the guidelines announced by the Administrator, US Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act. The applicant will obtain a water quality certificate or waiver from the appropriate state agency in accordance with Section 401 of the Clean Water Act prior to any final permit decision.

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Pursuant to Section 307(c) of the Coastal Zone Management Act of 1972 as amended [16 USC 1456(c)], for activities under consideration that are located within the coastal zone of a state which has a federally approved coastal zone management program, the applicant is responsible for ensuring that the proposed activity complies with, and will be conducted in a manner that is consistent with, the approved state coastal zone management program. By this public notice, we are requesting the States' view on the consistency of this project with the State CZM Program. For activities within the coastal zone of the State of New York, the applicant's certification and accompanying information is available from the Consistency Coordinator, New York State Department of State, Division of Coastal Resources and Waterfront Revitalization, Coastal Zone Management Program, 41 State Street, Albany, New York 12231, Telephone (518) 474-3642. Comments regarding the applicant's certification and copies of any letters addressed to this office commenting on this proposal, should be so addressed.

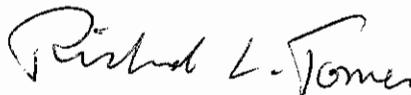
In addition to any required water quality certificate and coastal zone management program concurrence, the applicant has obtained or requested the following governmental authorization for the proposed activity under consideration:

A Protection of Waters Permit from the New York State Department of Environmental Conservation

The proposed work is being coordinated with the following federal, state, and local agencies:

US Environmental Protection Agency;  
US Department of the Interior, Fish and Wildlife Service;  
US Department of Commerce, National Marine Fisheries Service;  
US Coast Guard;  
New York State Department of Environmental Conservation, and  
New York State Department of State.

It is requested that you communicate the foregoing information concerning this activity to any persons known by you to be interested and who did not receive a copy of this notice. If you have any questions concerning this application, you may contact this office at (917) 790-8417 and ask for Mr. Steven Schumach. Comments or questions may be FAXED to (212) 264-4260, ATTN: Mr. Schumach. Questions about the HARS can be addressed to Mr. Douglas Pabst, Team Leader, Dredged Material Management Team, US Environmental Protection Agency, Region 2 at (212) 637-3797. For more information on the New York District Corps of Engineers programs, visit our website at <http://www.nan.usace.army.mil>



Richard L. Tomer  
Chief, Regulatory Branch

Enclosures

DESCRIPTION OF PROPOSED WORK

The applicant, Atlantic Salt, Inc., has requested Department of the Army authorization to construct shoreline stabilization with bulkhead and riprap, install mooring dolphins, and dredge with subsequent placement of the dredged material at the Historic Area Remediation Site (HARS), for the purpose of remediation, and at a suitable State-approved placement site. No barge overflow would occur at the dredging site for the dredged material that would be placed upland. Barge overflow for the dredging of HARS placement dredged material is proposed. The location of the work is in the Kill Van Kull at Staten Island, Richmond County, New York.

**Shoreline Stabilization:** Construct approximately 1,000 linear feet of steel sheetpile bulkhead with a tie back system. Approximately 6,500 cubic yards of fill material would be placed behind the bulkhead to grade the upland to the bulkhead. The details of the shoreline stabilization are as follows:

- a. At the extreme western end of the site, approximately 180 linear feet of shoreline would be protected with approximately 270 cubic yards of riprap, of which approximately 180 cubic yards would extend waterward of the existing spring high water line.
- b. Along 330 linear feet of western portion of the bulkhead, and along 150 feet of the eastern portion of the eastern shoreline, existing sheetpiles would be cut off at an elevation of +2 feet mean low water and the western shoreline behind it would be stabilized with approximately 490 cubic yards of riprap and the eastern shoreline behind it would be stabilized with approximately 230 cubic yards of riprap. The cutoff elevation of +2 feet mean low water was selected to place it as low as practicable while still allowing reasonable installation of the steel wale and tieback system at low tide.
- c. The central portion of the site consists of the construction of 520 linear feet of bulkhead that would serve as an unloading area.

The purpose of the shoreline stabilization is to prevent erosion, the collapse of the existing structures and to ensure a stable area for the offloading of salt:

**Dolphins:** The applicant proposes to install 9 mooring dolphins consisting of two steel piles driven into the bed and braced back to the bulkhead or concrete reaction blocks on the shoreline along with fender panels to assist in the docking of vessels.

**Dredging:** The applicant proposes to dredge approximately 97,000 cubic yards of material from an area of approximately 165,000 square feet to a maximum depth of 47 feet below mean low water plus a 2 foot overdepth. The upper sediments of approximately 28,500 cubic yards would be dredged by an environmental clamshell bucket, processed and then placed at a state approved upland site. The lower sediments consisting of approximately 68,500 cubic yards of Pleistocene glacial till would be placed in the Atlantic Ocean at the HARS as material for remediation. The proposed dredged material would be transported by bottom-opening barges to the HARS placement site. The dredging would be performed in accordance with a Material Separation Plan to ensure that only HARS-suitable materials will be transported to the HARS.

Should approval to the project be given, consideration is being given to the issuance of a ten-year maintenance dredging permit only for the dredged material that would be placed at a state-approved placement site, and not for HARS-placement of dredged material from the future maintenance dredging. The applicant estimates that approximately 6,000 cubic yards of material would be dredged twice over the ten year life of the upland placement portion of the permit, if issued.

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The purpose of the work is to stabilize the shoreline and provide adequate depth of safe navigation for the berthing and unloading of commercial vessels at the existing marine terminal.

INTRODUCTION TO THE HISTORIC AREA REMEDIATION SITE (HARS):

In 1972, the Congress of the United States enacted the Marine Protection, Research and Sanctuaries Act (MPRSA) to address and control the dumping of materials into ocean waters. Title I of the Act authorized the US Environmental Protection Agency (USEPA) and the US Army Corps of Engineers (USACE) to regulate dumping in ocean waters. The USEPA and the USACE share responsibility for MPRSA permitting and ocean disposal site management. Regulations implementing MPRSA can be found at 40 CFR Sections 220 through 229. With few exceptions, MPRSA prohibits the transportation of material from the United States for the purpose of ocean dumping except as may be authorized by a permit issued under the MPRSA. The MPRSA divides permitting responsibility between the USEPA and USACE. Under Section 102 of the MPRSA, USEPA has responsibility for issuing permits for all materials other than dredged material. Under Section 103 of MPRSA, the Secretary of the Army has the responsibility for issuing permits for dredged material. Determinations to issue MPRSA permits for dredged material are subject to USEPA concurrence.

In the fall of 1997, the USEPA de-designated and terminated the use of the New York Bight Dredged Material Disposal Site (commonly known as the Mud Dump Site or MDS). The MDS had been designated in 1984 for the disposal of up to 100 million cubic yards of dredged material from navigation channels and other port facilities within the Port of New York and New Jersey. Simultaneous with the closure of the MDS, the site and surrounding areas that had been used historically as disposal sites for dredged materials were redesignated as the HARS under authority of Section 102(c) of MPRSA at 40 CFR Sections 228.15(d)(6) (See 62 Fed. Reg. 46142 (August 29, 1997); 62 Fed. Reg. 26267 (May 13, 1997)). The HARS will be managed to reduce impacts of historic disposal activities at the site to acceptable levels in accordance with 40 CFR Section 228.11(c). The need to remediate the HARS is supported by the presence of toxic effects, dioxin bioaccumulation exceeding Category 1 levels in worm tissue (a definition of which appears in a memorandum reviewing the results of the applicant's testing), as well as TCDD/PCB contamination in area lobster stocks. Individual elements of those data do not establish that sediments within the Study Area are imminent hazards to the New York Bight Apex ecosystem, living resources, or human health. However, the collective evidence presents cause for concern, and justifies the need for remediation. Further information on the conditions in the Study Area and the surveys performed may be found in the Supplemental Environmental Impact Statement (USEPA, 1997).

The designation of the HARS identifies an area in and around the former Mud Dump Site (MDS) that has exhibited the potential for adverse ecological impacts. The HARS will be remediated with dredged material that meets current Category 1 standards and will not cause significant undesirable effects including through bioaccumulation or unacceptable toxicity, in accordance with 40 CFR 227.6. This dredged material is referred to as "Material for Historic Area Remediation Site (HARS)" or "HARS Material."

As of the end of May 2007, dredged materials from fifty-two different completed and ongoing private and federal dredging projects in the Port of New York and New Jersey have been dredged and placed as Remediation Material in the ocean at the HARS since the closure of the Mud Dump Site and designation of the HARS in 1997. This represents approximately 31,320,000 cubic yards of Remediation Material.

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The HARS, which includes the 2.2 square nautical mile area of the MDS, is an approximately 15.7 square nautical mile area located approximately 3.5 nautical miles east of Highlands, New Jersey and 7.7 nautical miles south of Rockaway, New York. The MDS is located approximately 5.3 nautical miles east of Highlands, New Jersey and 9.6 nautical miles south of Rockaway, New York. When determined by bathymetry (a map depicting the relative depths of water in a particular area) that capping is complete, the USEPA will take any necessary rulemaking to de-designate the HARS. The HARS includes the following three areas:

**Priority Remediation Area (PRA):** A 9.0 square nautical mile area to be remediated with at least 1 meter of Remediation Material. The PRA encompasses the area of degraded sediments as described in greater detail in the SEIS.

**Buffer Zone:** An approximately 5.7 square nautical mile area (0.27 nautical mile wide band around the PRA) in which no placement of the Material for Remediation will be allowed, but may receive Material for Remediation that incidentally spreads out of the PRA.

**No Discharge Zone:** An approximately 1.0 square nautical mile area in which no placement or incidental spread of Material for Remediation is allowed.

To improve management and monitoring of placement activities at the HARS, electronic monitoring equipment will be on-board any barges carrying Remediation Material to the HARS. This equipment records vessel positions and scow drafts throughout the duration of each trip to the HARS and during remediation operations. To improve communication reliability between tugs and scows, a prescribed formal communication procedure has been put in place (copies of this procedure are available upon request).

Additional information concerning the HARS can be obtained from Mr. Douglas Pabst of the USEPA, Dredged Material Management Team Leader, at (212) 637-3797.

**HARS SUITABILITY TESTING FOR GLACIAL TILL:**

In accordance with geological testing and assessment set forth in the July 17, 2004 joint US Environmental Protection Agency-Region 2 and the US Army Corps of Engineers, New York District standard operating procedures, it has been determined that the 68,500 cubic yards of dredged material are glacial till. A copy of the August 31, 2006 glacial till determination for this project may be requested from Steven Schumach, regulatory project manager for this permit application review process, at 917-790-8417.

Pleistocene age glacial till in the vicinity of this project in the Kill van Kull was previously tested to determine suitability for use as Remediation Material at the Historic Area Remediation Site (HARS). This testing of glacial till was conducted in accordance with test protocols for ocean placement established by the US Environmental Protection Agency-Region 2 and US Army Corps of Engineers, New York District. Public notice of previous Pleistocene age glacial till chemical analysis, toxicity, and 28-day bioaccumulation test results for a determination of suitability for HARS remediation purposes was provided in US Army Corps of Engineers, New York District Public Notice FP63-SKVK2-2004-A1 issued on 15 April 2004 for the NY and NJ Harbor Deepening, NY and NJ Channels Federal Navigation Project, Construction Area S-KVK-2; Contract Area 3, Reach 2. Those chemical analyses, toxicity and 28-day bioaccumulation test results are included in this public notice (attached Tables 2b, 3b and 4b) for informational purposes only.

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ALTERNATIVES TO HARS PLACEMENT:

Regarding ocean placement of dredged material, the Ocean Dumping Regulations [Title 40 CFR Sections 227.16(b)] states that ". . . alternative methods of disposal are practicable when they are available at reasonable incremental cost and energy expenditures which need not be competitive with the costs of ocean dumping, taking into account the environmental impacts associated with the use of alternatives to ocean dumping . . ." USACE, New York District has evaluated the regional practicability of potential disposal alternatives in the September, 1999 Draft "Implementation Report for the Dredged Material Management Plan for the Port of New York and New Jersey." The Recommended Plan within the report addresses both the long and short term dredged material placement options in two specific timeframes, heretofore referred to as the 2010 Plan and the 2040 Plan, respectively.

The 2010 Plan relies heavily on the creation, remediation, and restoration of a variety of existing degraded or impacted habitats in the region with material that would be considered unsuitable for HARS restoration. The remaining material is treated and stabilized, as needed, and then applied to remediate degraded and potentially polluting areas such as brownfields, landfills, and abandoned strip mines. Nearly all of the options considered in the 2010 Plan have a placement cost of \$29/cubic yard or higher.

Similar to the 2010 Plan, the 2040 Plan relies heavily upon the use of land remediation and decontamination methods for the management of HARS unsuitable material. As in the 2010 Plan, maximum use of all practicable alternatives to the HARS is envisioned.

Many of the dredged material management options presented in the 2010 Plan however, are not presently permitted and/or are presently under construction at this time and therefore considered unavailable for the purposes of this application. Other options are not available at reasonable incremental costs, thus leaving HARS placement as the preferred alternative. For more information on the New York District Corps of Engineers programs, visit our website at <http://www.nan.usace.army.mil>

CONCLUSIONS:

The U.S. Army Corps of Engineers New York District and the U.S. Environmental Protection Agency Region 2 have determined that this glacial till material proposed for dredging and ocean placement from the Atlantic Salt facility is Category I under USEPA Region 2/CENAN guidance, and is suitable for placement at the HARS under Section 228.15(d)(6) as Remediation Material, without need for further site-specific testing, in accordance with the 26 August 2003 US Environmental Protection Agency-Region 2 and US Army Corps of Engineers-New York District joint Memorandum for the Record, titled Joint Federal Position on Testing Glacial Till Dredged Materials from Selected Areas of New York Harbor.

Placement of this material at the HARS will serve to reduce impacts at the HARS to acceptable levels and improve benthic conditions. Unremediated sediments in the HARS have been found to adversely impact benthic marine organisms. Placement of project material over existing, unremediated HARS sediments would serve to remediate those areas. In addition, by covering the existing sediments at the HARS with this project material, surface dwelling organisms will be exposed to sediments exhibiting Category 1 qualities, which will ameliorate the existing sediment conditions.

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**COMMUNICATIONS:**

For additional information regarding this project or the HARS contact Mr. Steven Schumach, Regulatory Project Manager, USACE, New York District at (917) 790-8417 or Mr. Douglas Pabst, Team Leader, Dredged Material Management Team, USEPA, Region 2 at (212) 637-3797. If the determination is made to issue a permit, the permittee will contact the US Coast Guard with the details of the authorized work.

TABLE 2b: Results of Chemical Analysis Of Site Water and Elutriate

CONSTITUENTS	SITE WATER		ELUTRIATE	
	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION
<b>Metals</b>	ppb (ug/L)	ppb (ug/L)	ppb (ug/L)	ppb (ug/L)
Ag		0.0515		0.0384
Cd		NA		1.78
Cr		1.34		1.48
Cu		2.04		7.77
Hg		0.00802		0.00949
Ni		1.12		16.9
Pb		0.879		0.546
Zn		5.98		12.6
<b>Pesticides</b>	pptr (ng/L)	pptr (ng/L)	pptr (ng/L)	pptr (ng/L)
Aldrin	4.71	ND	0.74	ND
a-Chlordane	2.14	ND	0.35	ND
trans Nonachlor		0.32	0.41	ND
Dieldrin		1.52	0.54	ND
4,4'-DDT	2.01	ND	0.63	ND
2,4'-DDT	1.96	ND	2.29	ND
4,4'-DDD	1.48	ND	0.78	ND
2,4'-DDD		0.32	0.53	ND
4,4'-DDE		0.31	0.68	ND
2,4'-DDE	1.32	ND	1.37	ND
Total DDT		7.41		5.70
Endosulfan I	2.86	ND	0.48	ND
Endosulfan II	2.65	ND	1.07	ND
Endosulfan sulfate		0.81	0.44	ND
Heptachlor		1.58	0.36	ND
Heptachlor epoxide	2.07	ND	0.33	ND
<b>Industrial Chemicals</b>	pptr (ng/L)	pptr (ng/L)	pptr (ng/L)	pptr (ng/L)
PCB 8	3.24	ND	0.93	ND
PCB 18	4.13	ND	3.15	ND
PCB 28		1.28	1.43	ND
PCB 44		0.23	0.14	ND
PCB 49	3.52	ND	0.17	ND
PCB 52	6.06	ND	0.55	ND
PCB 66	4.12	ND	1.17	ND
PCB 77	3.89	ND	2.53	ND
PCB 87		0.71	1.61	ND
PCB 101		0.30	0.77	ND
PCB 105	3.54	ND	3.86	ND
PCB 118	3.06	ND	1.08	ND
PCB 128	2.94	ND	1.01	ND
PCB 138	3.46	ND	1.12	ND
PCB 153		0.30	2.40	ND
PCB 170		0.08	1.48	ND
PCB 180		0.28	1.40	ND
PCB 183	7.88	ND	0.88	ND
PCB 184		0.45	0.99	ND
PCB 187	3.10	ND	0.58	ND
PCB 195	3.19	ND	1.00	ND
PCB 206		0.04	1.62	ND
PCB 209		0.07	2.09	ND
Total PCBs		104	58.8	ND

Concentrations shown are the mean of three replicate analyses.

ND Not detected.

Total PCBs = 2(x), where x = sum of all PCB congeners detected.

Total DDT = sum of 2,4'- and 4,4'-DDD, DDE, and DDT

Means, total PCBs, and total DDT where determined using conservative estimates of concentrations of constituents below the detection limit.

TABLE 3b: Toxicity Test Results

Suspended Particulate Phase

Test Species	Test Duration	LC50/EC50	LPC (a)
<i>Meridia beryllina</i>	96 hours	(b) > 100%	1.000
<i>Mysidopsis bahia</i>	96 hours	(b) > 100%	1.000
<i>Mytilus galloprovincialis</i> (larval survival)	70 hours	(b) > 100%	1.000
<i>Mytilus galloprovincialis</i> (larval normal development)	70 hours	(c) > 100%	1.000

- (a) Limiting Permissible Concentration (LPC) is the LC50 or EC50 times 0.01.
- (b) Median Lethal Concentration (LC50) resulting in 50% mortality at test termination.
- (c) Median Effective Concentration (EC50) based on normal development to the D-cell, prodissoconch 1 stage.

Whole Sediment (10 days)

Test Species	% Survival in Reference	% Survival In Test	% Difference Reference - Test	Is difference statistically significant? ( $\alpha=0.05$ )
<i>Ampelisca abdita</i>	94%	89%	5%	NO
<i>Mysidopsis bahia</i>	98%	98%	0%	NO

TABLE 4b

PROJECT KVK-3 CONTRACT AREA 3, REACH 2  
28-DAY BIOACCUMULATION TEST RESULTS: CHEMICAL ANALYSIS OF TISSUE (In wet weight concentrations)

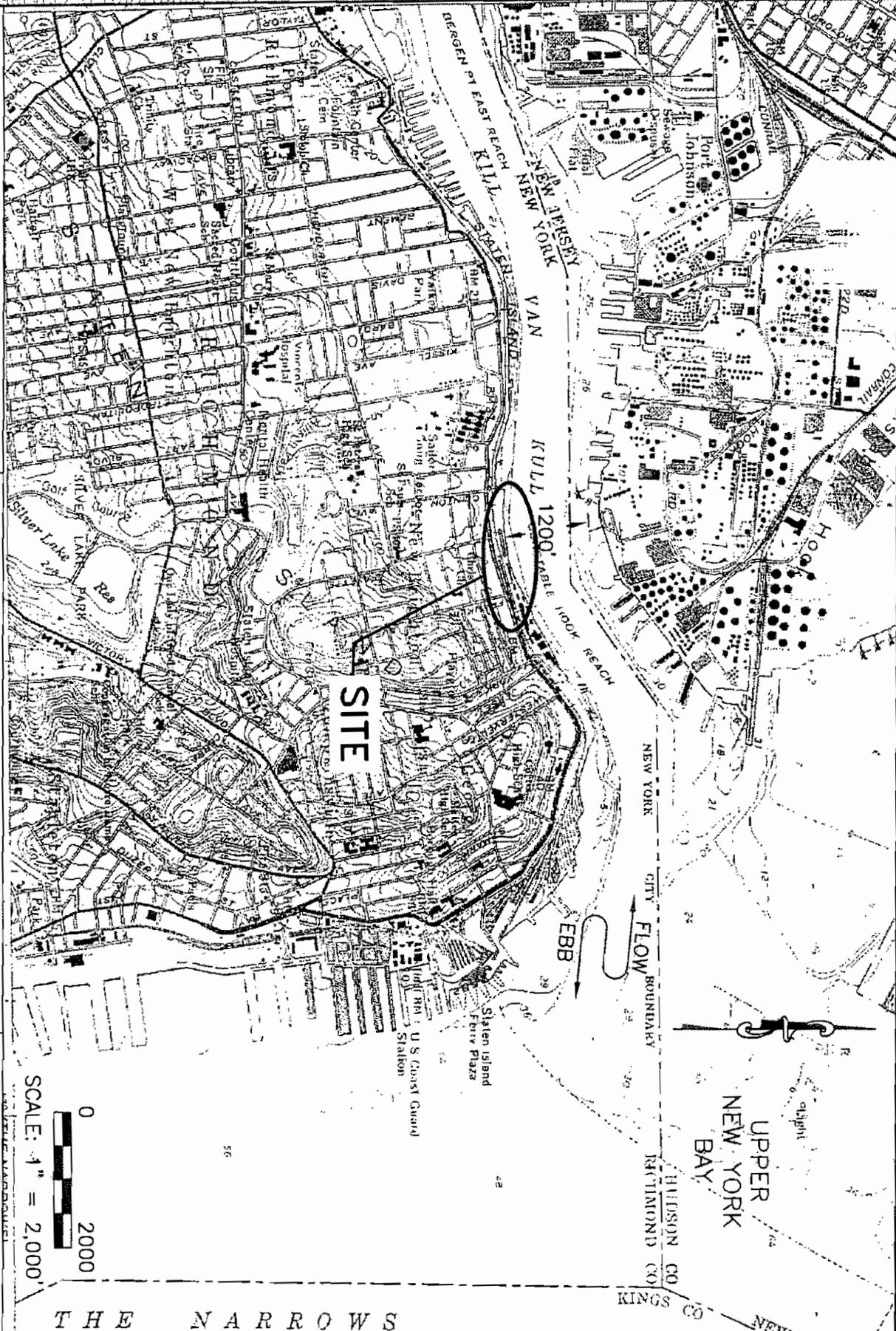
CONSTITUENTS	<i>Macoma nasuta</i>				<i>Nereis virens</i>			
	REFERENCE		TEST		REFERENCE		TEST	
	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION
<b>Metals</b>	(µg/g)	(µg/g)	(µg/g)	(µg/g)	(µg/g)	(µg/g)	(µg/g)	(µg/g)
Ag		0.04		0.04		0.03		0.02
As		2.73		3.12		2.36		2.50
Cd		0.04		0.05		0.05		0.04
Cr		0.27		0.43		0.10		0.12
Cu		2.06		2.02		0.87		1.32
Hg		0.02		0.02		0.02		0.02
Ni		0.40		0.62		0.08		0.17
Pb		0.20		0.42		0.10		0.11
Zn		13.2		14.7		7.03		7.62
<b>Pesticides</b>	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
ALDRIN	0.36	ND	0.11	ND	0.57	ND	0.11	ND
ALPHA CHLORDANE		0.08		0.41		0.12		0.24
TRANS-NONACHLOR		0.05		0.21		0.49		0.45
DIELDRIN		0.16		0.27		0.26		0.38
OP-DDD		0.04		0.44		0.27		0.42
OP-DDE	0.09	ND		0.23	0.90	ND		0.16
OP-DDT	0.32	ND		0.06		0.26		0.08
PP-DDD		0.09		1.05		0.36		0.72
PP-DDE		0.43		1.24		0.06		0.11
PP-DDT		0.04		0.14		0.03		0.07
TOTAL DDT		0.80		3.16		0.98		1.57
ENDOSULFAN I	0.10	ND		0.05	0.52	ND		0.07
ENDOSULFAN II	0.13	ND	0.11	ND	0.19	ND	0.14	ND
ENDOSULFAN SULFATE	0.09	ND	0.11	ND		0.11		0.10
HEPTACHLOR		0.06	0.21	ND	0.50	ND		0.04
HEPTACHLOR EPOXIDE	0.06	ND	0.17	ND	0.65	ND	0.11	ND
<b>Industrial Chemicals</b>	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
CL2_8		0.06	0.06	ND		0.60	0.32	ND
CL3_18		0.05	0.16	ND		0.06		0.07
CL3_28		0.05		0.18		0.05		0.12
CL4_44		0.02		0.10		0.10		0.20
CL4_49		0.09		0.36		0.30		0.34
CL4_52		0.29		0.66		1.11		1.34
CL4_66		0.03		0.32		0.08		0.17
CL4_77	0.13	ND	0.11	ND	0.74	ND		0.12
CL5_101		0.13		0.85		0.95		0.99
CL5_105		0.03		0.18		0.44		0.30
CL5_118		0.08		0.47		0.54		0.55
CL5_87		0.08		0.29		0.13		0.20
CL6_128		0.02		0.09		0.20		0.20
CL6_138		0.12		0.61		1.33		1.34
CL6_153		0.11		0.64		1.73		1.74
CL7_170		0.03		0.21		0.34		0.24
CL7_180		0.05		0.21		0.82		0.73
CL7_183	0.15	ND		0.05		0.24		0.47
CL7_184	0.12	ND	0.09	ND	0.31	ND	0.12	ND
CL7_187		0.09		0.17		0.80		0.66
CL8_195	0.08	ND		0.03		0.14		0.13
CL9_206	0.06	ND		0.04		0.21		0.24
CL10_209	0.09	ND		0.03		0.17		0.21
TOTAL PCBs		3.19		11.3		20.9		21.0
1,4-DICHLORO BENZENE		0.19		0.25		0.09		0.28

TABLE 4b(2)

PROJECT KVK-3 CONTRACT AREA 3, REACH 2  
 28-DAY BIOACCUMULATION TEST RESULTS: CHEMICAL ANALYSIS OF TISSUE (In wet weight concentrations)

CONSTITUENTS	<i>Macoma nasuta</i>				<i>Nereis virens</i>			
	REFERENCE		TEST		REFERENCE		TEST	
	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION
Dioxins and Furans	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)
2378-TCDD	0.42	ND	0.40	ND	0.50	ND	0.46	ND
12378-PeCDD	0.46	ND	0.41	ND	0.75	ND	0.44	ND
123478-HxCDD	0.25	ND	0.28	ND	0.36	ND	0.27	ND
123678-HxCDD	0.28	ND	0.31	ND	0.39	ND	0.30	ND
123789-HxCDD	0.21	ND	0.24	ND	0.49	ND	0.31	ND
1234678-HpCDD	0.48	ND		0.37		1.11		0.77
OCDD		1.02		* 2.47		3.85		3.42
2378-TCDF	0.42	ND		* 0.40		0.88		1.01
12378-PeCDF	0.34	ND	0.31	ND	0.10	ND	0.17	ND
23478-PeCDF	0.17	ND	0.13	ND	0.37	ND	0.24	ND
123478-HxCDF	0.26	ND	0.21	ND		0.14		0.20
123678-HxCDF	0.25	ND	0.21	ND	0.21	ND	0.32	ND
123789-HxCDF	0.44	ND	0.43	ND	0.44	ND	0.39	ND
234678-HxCDF	0.35	ND	0.40	ND	0.44	ND	0.25	ND
1234678-HpCDF	0.35	ND		0.24		0.32		0.33
1234789-HpCDF	0.55	ND	0.46	ND	0.46	ND	0.39	ND
OCDF	0.93	ND	0.86	ND	1.26	ND	0.87	ND
PAHs	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
NAPHTHALENE		2.08		1.87		4.07		5.17
ACENAPHTHYLENE	0.38	ND		0.30	4.06	ND		1.41
ACENAPHTHENE		0.17		* 0.63		1.14		0.68
FLUORENE		0.17		0.33	3.37	ND	1.74	ND
PHENANTHRENE		0.43		* 1.24		0.33		0.25
ANTHRACENE		0.35		* 0.78	2.47	ND		0.57
FLUORANTHENE		1.81		* 6.90		0.47		1.45
PYRENE		1.16		* 10.8		0.74		2.50
BENZO[A]ANTHRACENE		0.18		* 4.72	1.26	ND	0.56	ND
CHRYSENE		0.84		* 10.8		0.81		1.57
BENZO[B]FLUORANTHENE		0.35		* 6.57	2.03	ND		0.34
BENZO[K]FLUORANTHENE		0.27		* 4.91	1.76	ND		0.33
BENZO[A]PYRENE		0.17		* 6.69	0.95	ND		0.36
INDENO[1,2,3-C,D]PYRENE		0.87		* 1.43	1.31	ND	2.04	ND
DIBENZ[A,H]ANTHRACENE	1.07	ND		0.77	2.60	ND	2.16	ND
BENZO[G,H,I]PERYLENE		0.77		* 2.50	1.91	ND		0.59

Concentrations shown are the mean of 5 replicate analyses.  
 \* Statistically higher than reference at 95% confidence.  
 ND = Not detected.  
 Total PCB = sum of congeners reported \* 2.  
 Total DDT = sum of OP- and PP-ODD, DDE, and DDT.  
 Means and statistical comparisons were determined using conservative estimates of concentrations of replicates that were below the detection limits.



100 YR FLOOD	+11.3	NGVD	+2.3
MHW	+6.5	MLW	0.0
MHW	+4.9		

TITLE: LOCUS MAP

APPLICATION BY: ATLANTIC SALT INC.

IN: STATEN ISLAND  
 AT: KILL VAN KULL  
 COUNTY: RICHMOND  
 STATE: NY



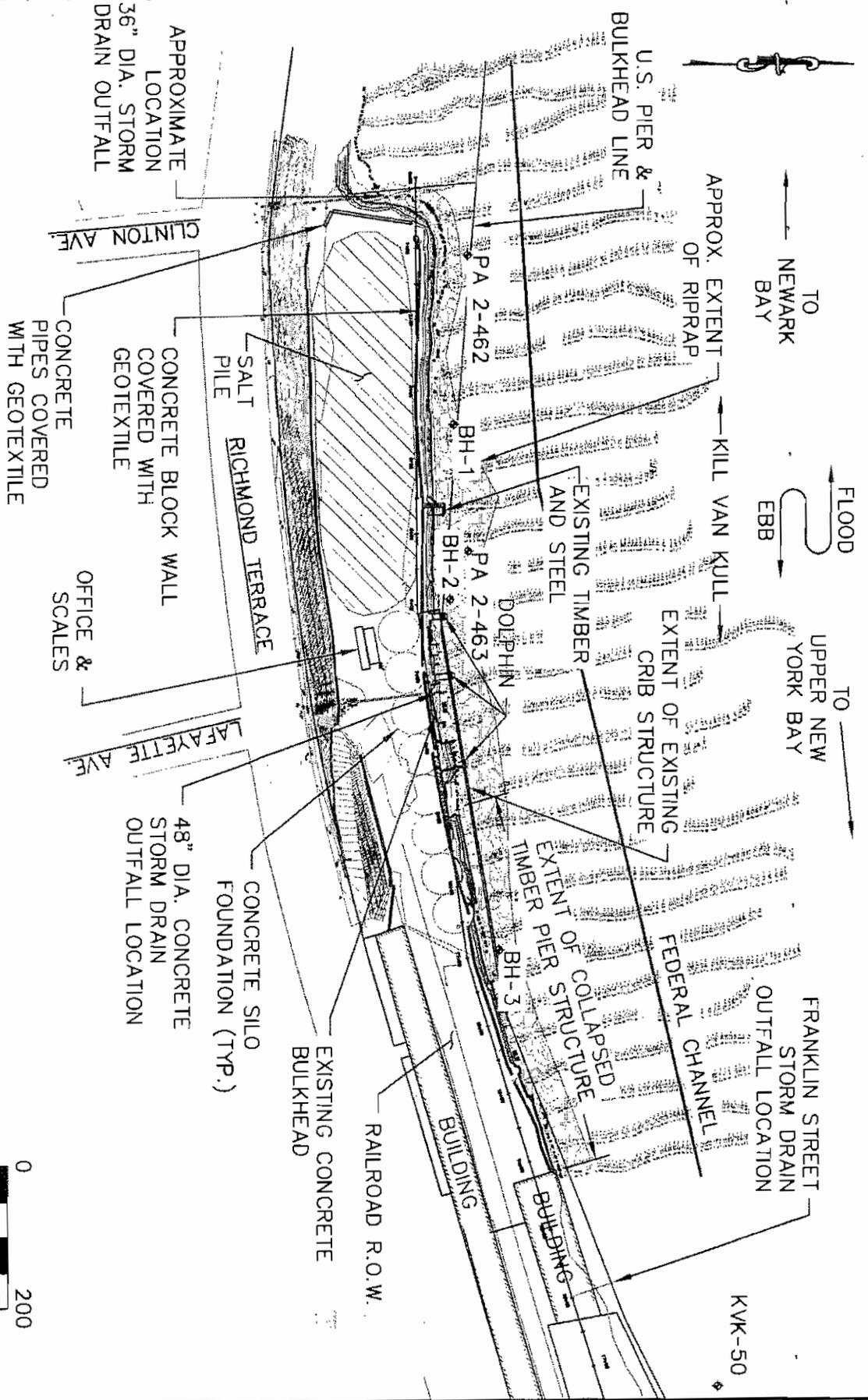
**Bourne Consulting Engineering**  
 120 Park Avenue  
 New York, NY 10017  
 Tel: (212) 692-4322 Fax: (212) 692-4322

PURPOSE: SHORELINE IMPROVEMENT

APPLICATION BY: ATLANTIC SALT INC.

SHEET 1 OF 17  
 DATE: 9/24/03  
 REVISED 7/7/06

THE NARROWS



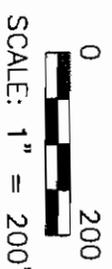
PA 2-462  
 EXISTING BORING LOCATION

100 YR FLOOD	+11.3	NGVD	+2.3
HTL	+6.5	MLW	0.0
MHW	+4.9		

TITLE:  
 EXISTING CONDITIONS PLAN

PURPOSE:  
 SHORELINE IMPROVEMENT

APPLICATION BY:  
 ATLANTIC SALT INC.

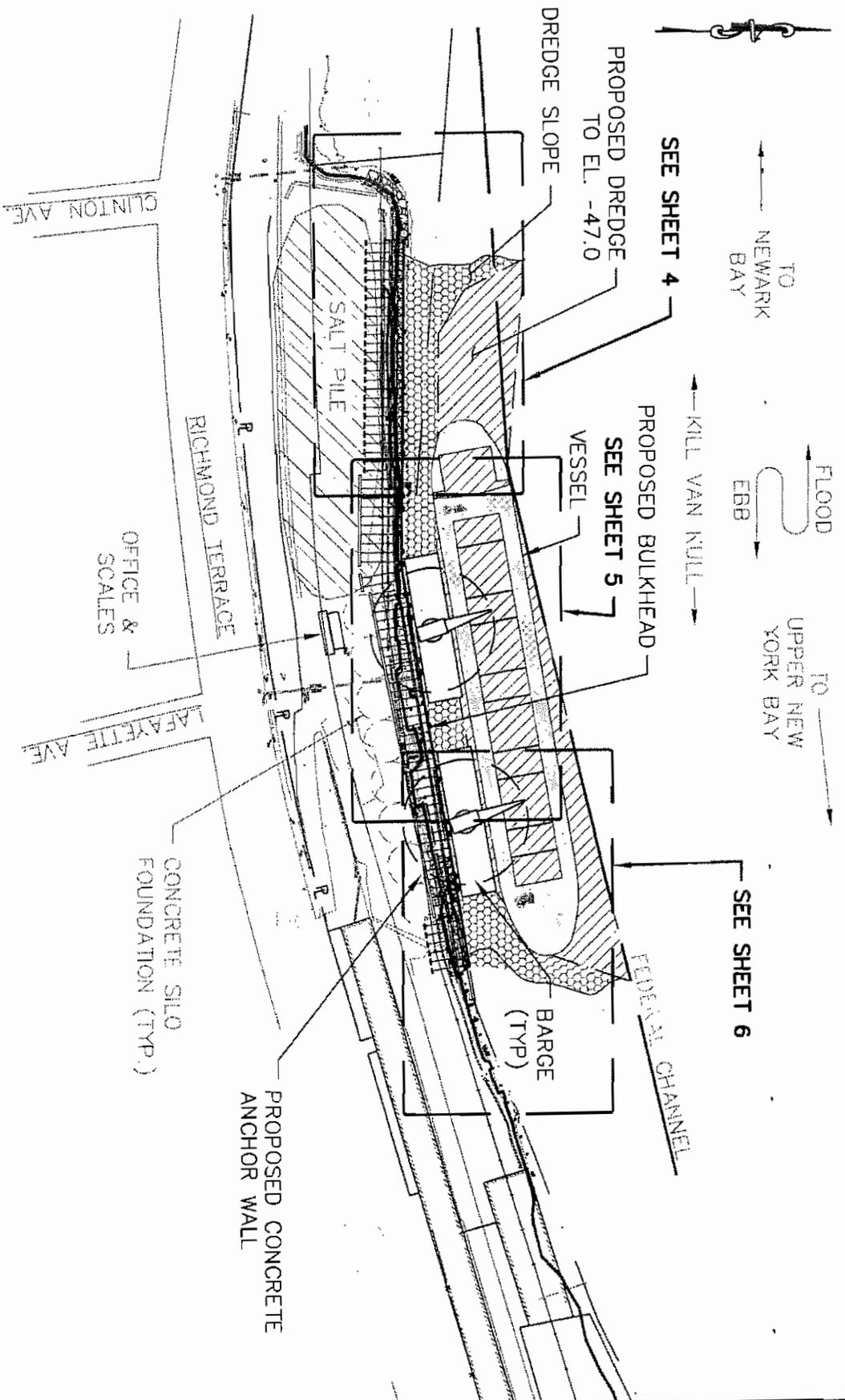


**BCE**  
 Bourne Consulting Engineering  
 140 East Street, Suite 200  
 Ft. Lister, NJ 07030  
 Tel: (908) 486-4122 Fax: (908) 486-4177

IN: STATEN ISLAND  
 AT: KILL VAN KULL  
 COUNTY: RICHMOND

SHEET 2 OF 17

DATE: 9/24/03  
 REVISIONS: 7/07/06



PA 2-462  
EXISTING BORING LOCATION

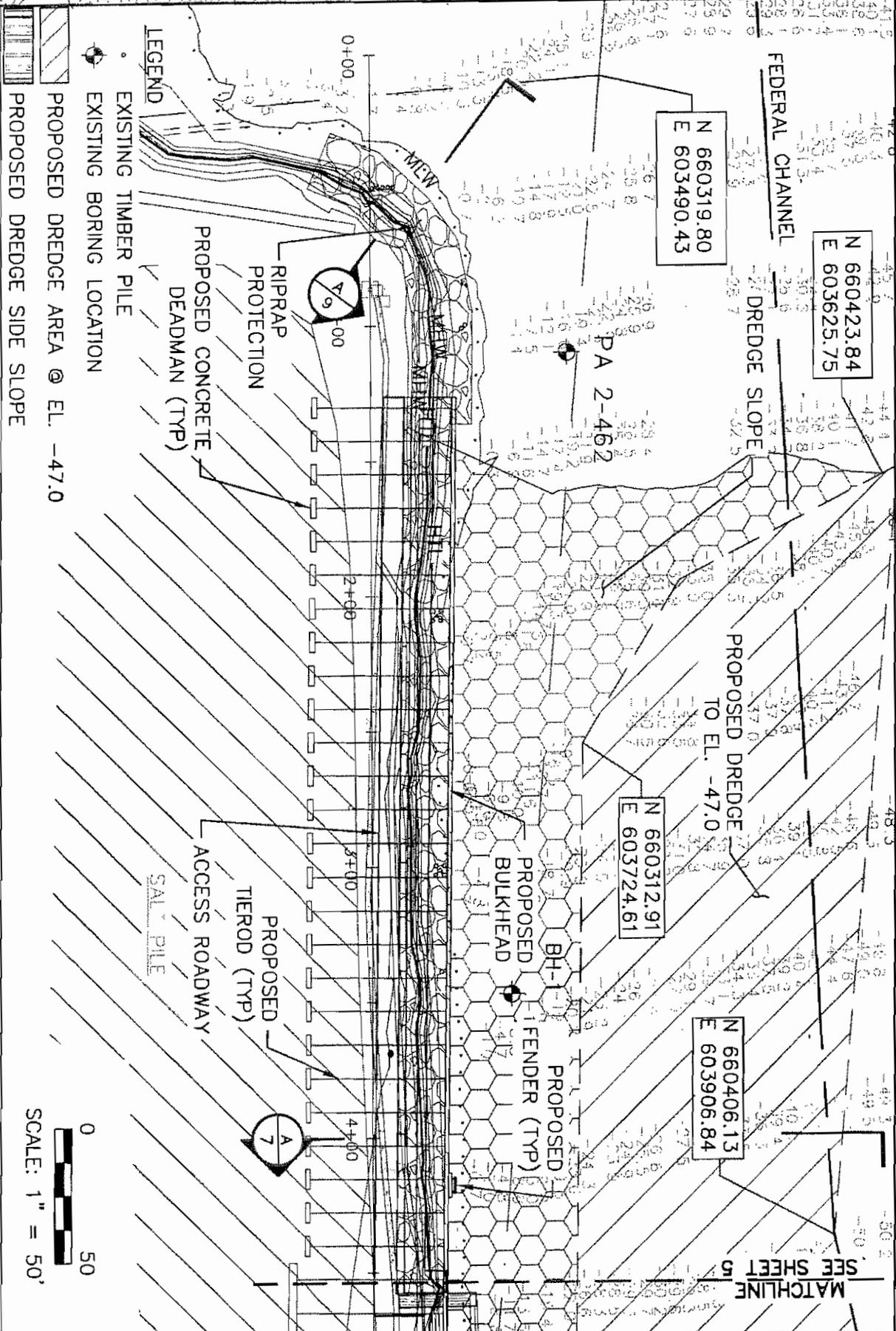
100 YR FLOOD	+11.3	NGVD	+2.3
HTL	+6.5	MLW	0.0
MHW	+4.9		

NOTE:  
VESSEL SHOWN IS THE "NIREFS",  
740' LONG x 105' BEAM.

SCALE: 1" = 200'

**BCE**  
*Boerne Consulting Engineering*  
144 East Central Expressway  
P.O. Box 418  
Boerne, TX 78006-0418

TITLE: <b>PROPOSED CONDITIONS PLAN - OVERALL</b>	PURPOSE: <b>SHORELINE IMPROVEMENT</b>	APPLICATION BY: <b>ATLANTIC SALT INC.</b>	IN: <b>STATEN ISLAND</b> AT: <b>KILL VAN KULL</b> COUNTY: <b>RICHMOND</b>	STATE: <b>NY</b>
			SHEET <b>3</b> OF <b>17</b>	REVISID <b>7/07/06</b>
			DATE: <b>9/24/03</b>	



N 660319.80  
E 603490.43

N 660423.84  
E 603625.75

N 660312.91  
E 603724.61

N 660406.13  
E 603906.84

PA 2-462

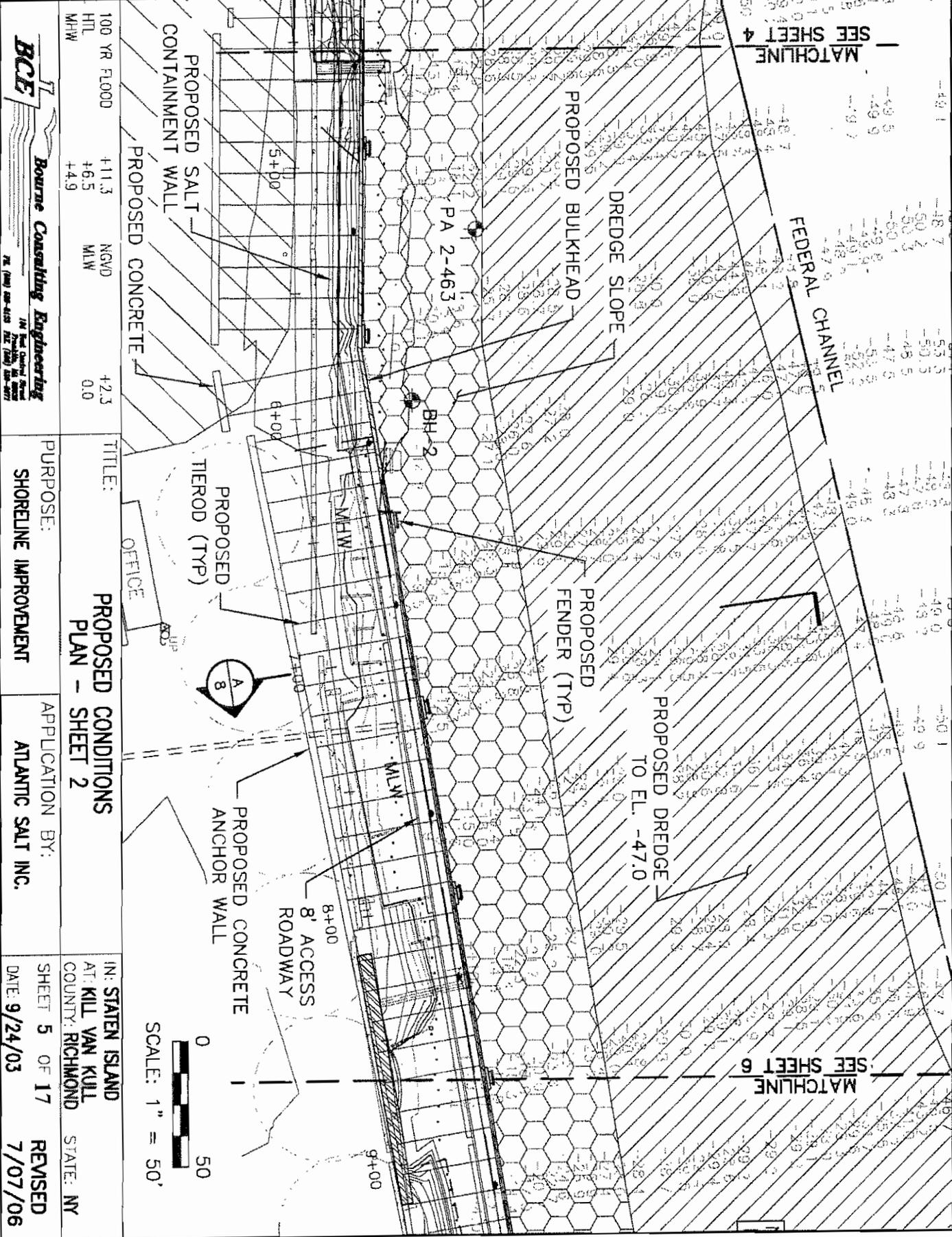
PROPOSED DREDGE TO EL. -47.0

SEE SHEET 5

- LEGEND**
- EXISTING TIMBER PILE
  - EXISTING BORING LOCATION
  - ▨ PROPOSED DREDGE AREA @ EL. -47.0
  - ▨ PROPOSED DREDGE SIDE SLOPE



<p><b>BCE</b> Bourne Consulting Engineering 144 First Colonial Street New Bedford, MA 01905 Tel: (508) 538-4135 Fax: (508) 538-4171</p>	100 YR FLOOD HTL MHW	+11.3 +6.5 +4.9	NGVD MLW	+2.3 0.0	TITLE: <b>PROPOSED CONDITIONS                  PLAN - SHEET 1</b>	PURPOSE: <b>SHORELINE IMPROVEMENT</b>	APPLICATION BY: <b>ATLANTIC SALT INC.</b>	IN: <b>STATEN ISLAND</b> AT: <b>KILL VAN KULL</b> COUNTY: <b>RICHMOND</b> STATE: <b>NY</b>
					SHEET <b>4</b> OF <b>17</b> DATE: <b>9/24/03</b>	REVISED <b>7/07/06</b>		



SEE SHEET 4  
MATCHLINE

SEE SHEET 6  
MATCHLINE

**BCE**  
*Bourne Consulting Engineering*  
 IN: Kill Van Kull  
 COUNTY: RICHMOND  
 STATE: NY  
 TEL: (718) 486-4433 FAX: (718) 486-4411

PURPOSE: SHORELINE IMPROVEMENT

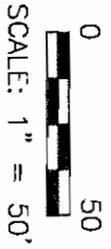
APPLICATION BY: ATLANTIC SALT INC.

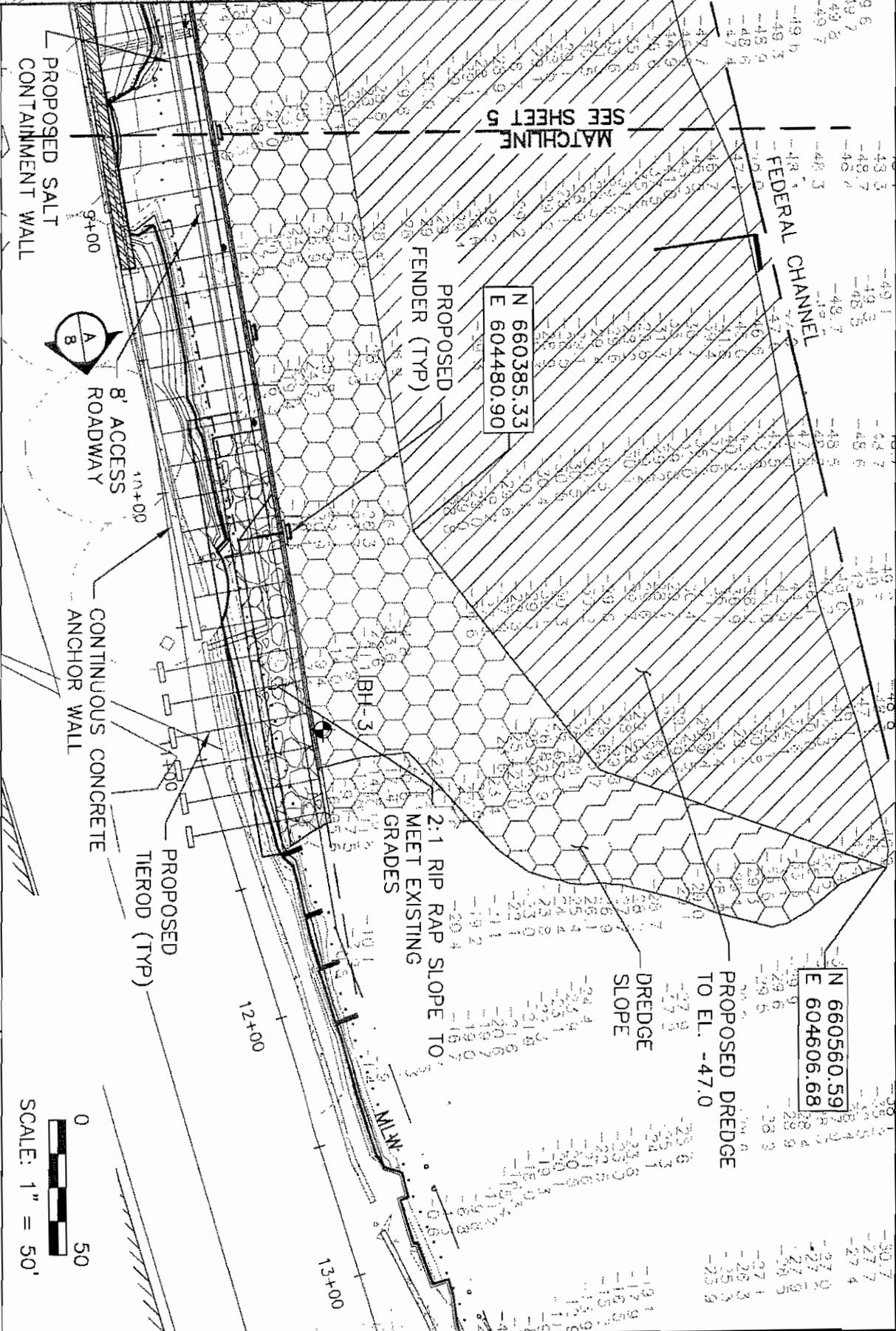
SHEET 5 OF 17  
 DATE: 9/24/03  
 REVISED 7/07/06

100 YR FLOOD +11.3  
 HTL +6.5  
 MHW +4.9  
 NGVD  
 MLW  
 +2.3  
 0.0

TITLE: PROPOSED CONDITIONS  
 PLAN - SHEET 2

IN: STATEN ISLAND  
 AT: KILL VAN KULL  
 COUNTY: RICHMOND  
 STATE: NY





SEE SHEET 5  
MATCHLINE

N 660385.33  
E 604480.90

N 660560.59  
E 604606.68

PROPOSED SALT CONTAINMENT WALL

8' ACCESS ROADWAY

CONTINUOUS CONCRETE ANCHOR WALL

PROPOSED TIEROD (TYP)

PROPOSED FENDER (TYP)

2:1 RIP RAP SLOPE TO MEET EXISTING GRADES

PROPOSED DREDGE TO EL. -47.0

DREDGE SLOPE

100 YR FLOOD	+11.3	NGVD	+2.3
HIL	+6.5	MLW	0.0
MHW	+4.9		

**BCE**  
Bourne Consulting Engineering  
116 Paul Gaudin Street  
P.O. Box 442  
P.O. Box 442  
P.O. Box 442  
P.O. Box 442

TITLE:  
**PROPOSED CONDITIONS  
PLAN - SHEET 3**

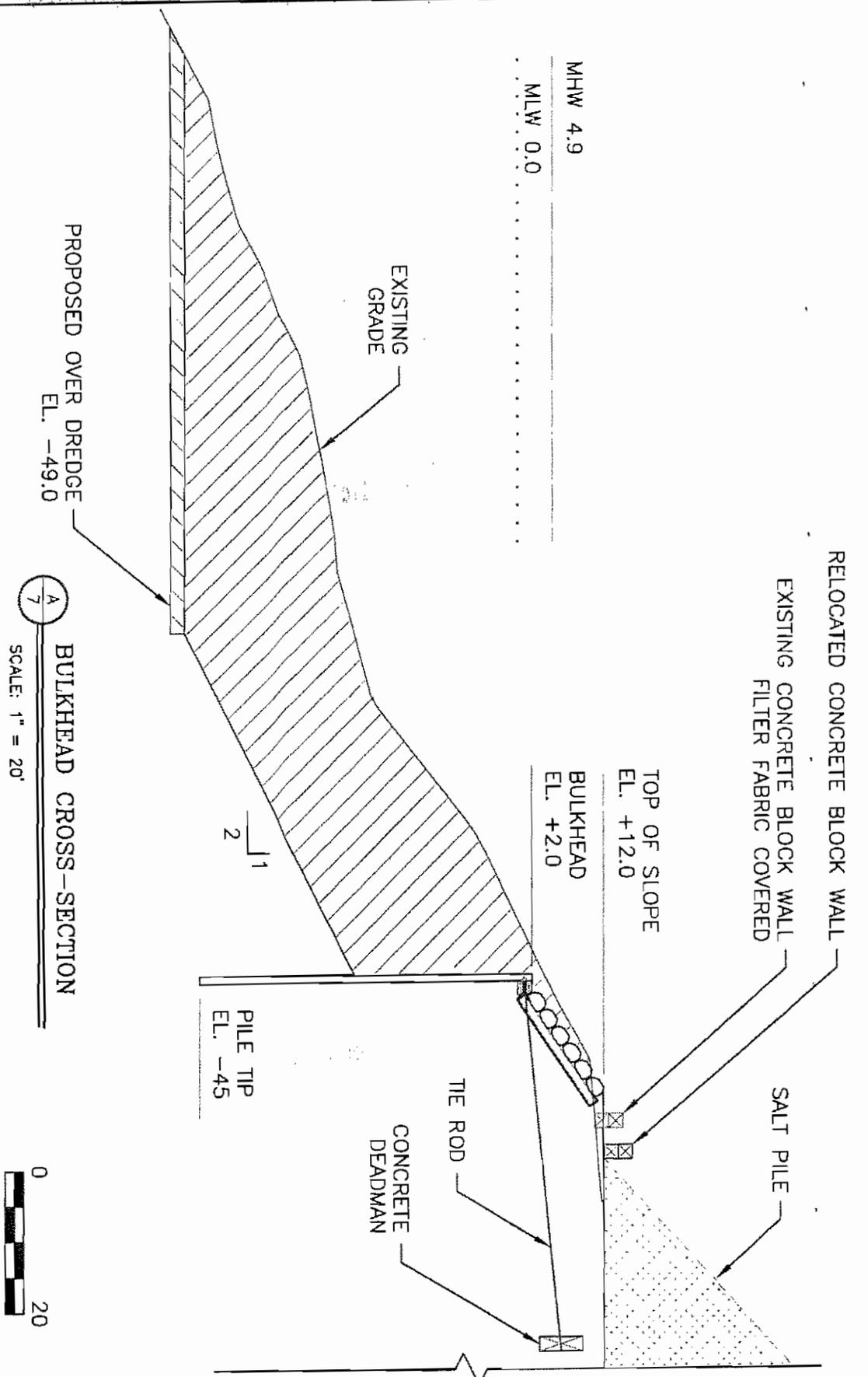
PURPOSE:  
**SHORELINE IMPROVEMENT**

APPLICATION BY:  
**ATLANTIC SALT INC.**

IN: **STATEN ISLAND**  
AT: **KILL VAN KULL**  
COUNTY: **RICHMOND**  
STATE: **NY**

SHEET **6** OF **17**  
DATE: **9/24/03**  
REVISED **7/07/06**





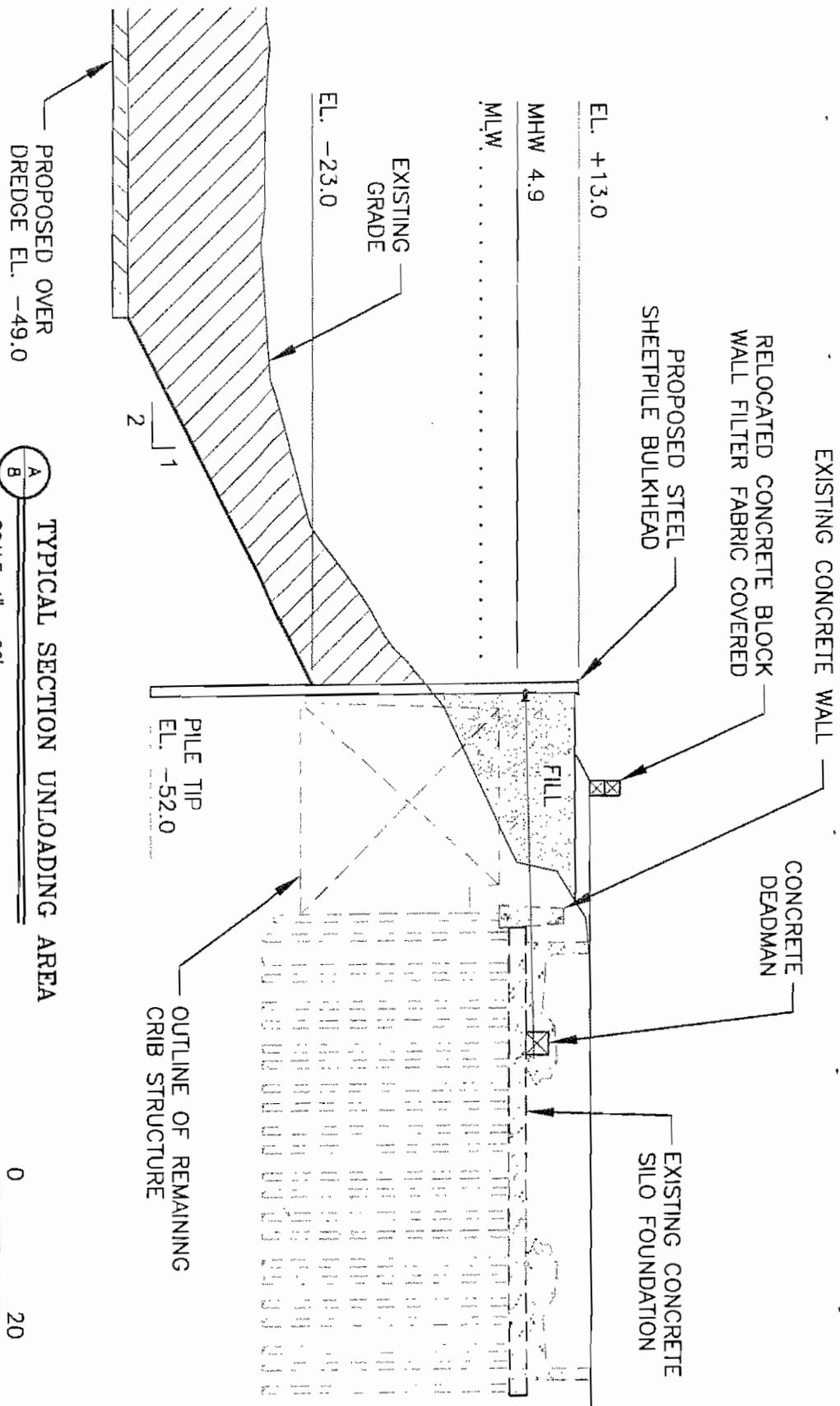
100 YR FLOOD	+11.3	NGVD	+2.3
HLL	+6.5	MLW	0.0
MHW	+4.9		

**BCE**  
 Bourne Consulting Engineering  
 100 West Commercial Street  
 New Bedford, MA 01905  
 Tel: (508) 538-4122 Fax: (508) 538-4121

TITLE: TYPICAL BULKHEAD CROSS-SECTION  
 PURPOSE: SHORELINE IMPROVEMENT  
 APPLICATION BY: ATLANTIC SALT INC.

IN: STATE: ISLAND  
 AT: KILL VAN KULL  
 COUNTY: RICHMOND  
 STATE: NY  
 SHEET 7 OF 17  
 DATE: 9/24/03  
 REVISED 7/07/06





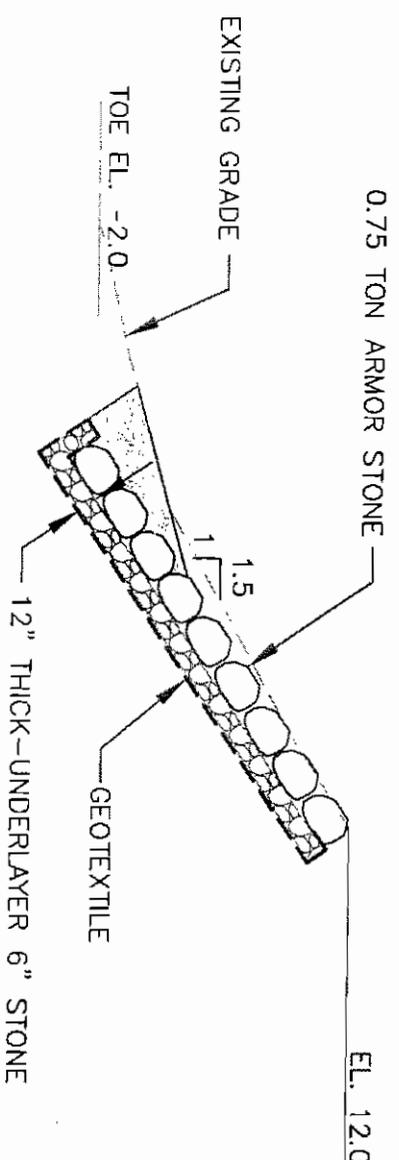
NOTE:  
SECTION BB SIMILAR

100 YR FLOOD	+11.3	NCVD	+2.3
HTL	+6.5	MLW	0.0
MHW	+4.9		

TYPICAL SECTION UNLOADING AREA  
SCALE: 1" = 20'



TITLE:	TYPICAL SECTION UNLOADING AREA
PURPOSE:	SHORELINE IMPROVEMENT
APPLICATION BY:	ATLANTIC SALT INC.
IN: STATEN ISLAND	AT: KILL VAN KULL
COUNTRY: RICHMOND	STATE: NY
SHEET 8 OF 17	REVISIONS
DATE: 9/24/03	7/07/06



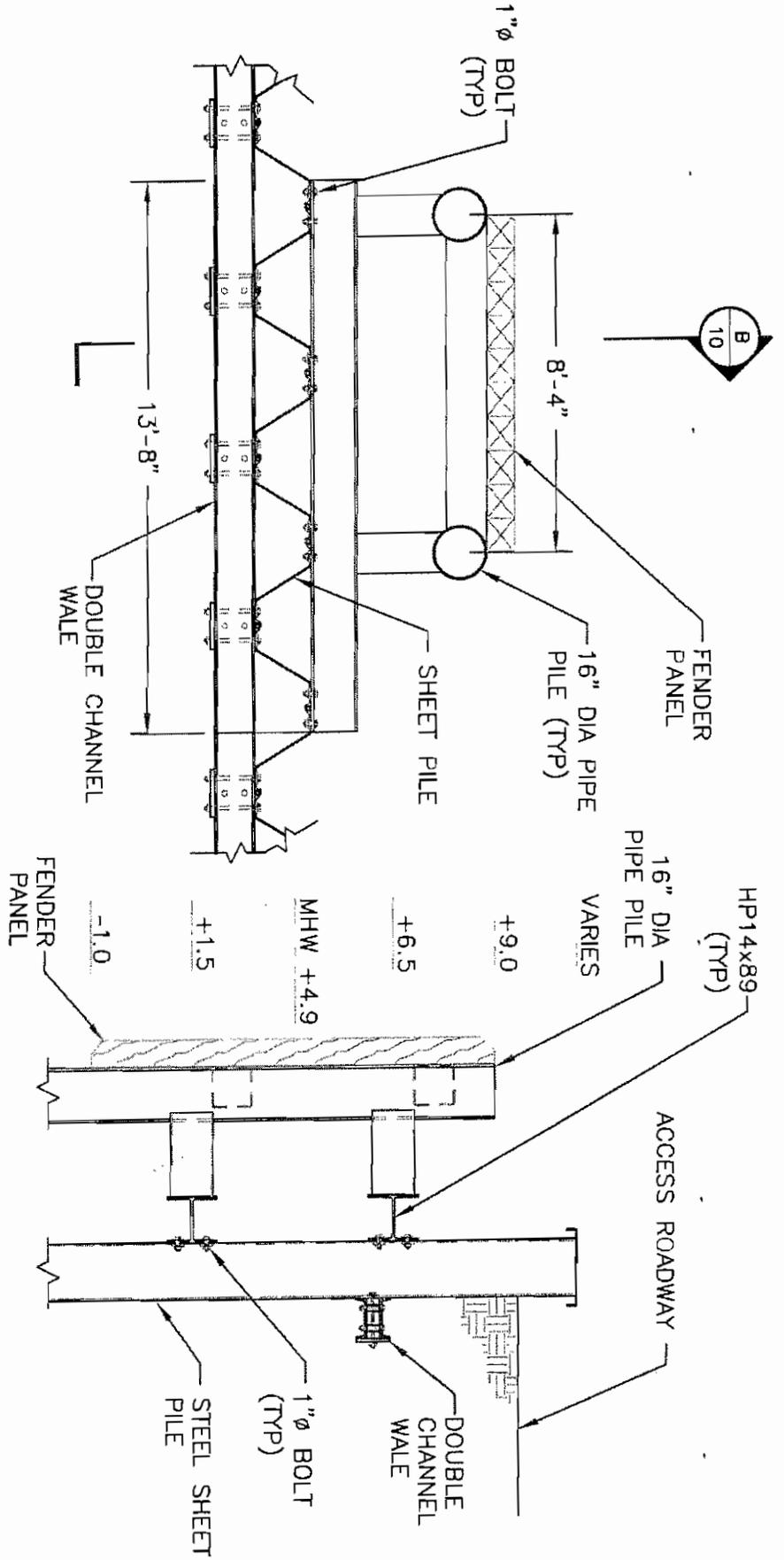
**A**  
**9**  
**WEST END RIP RAP SECTION**  
SCALE: 1" = 10'



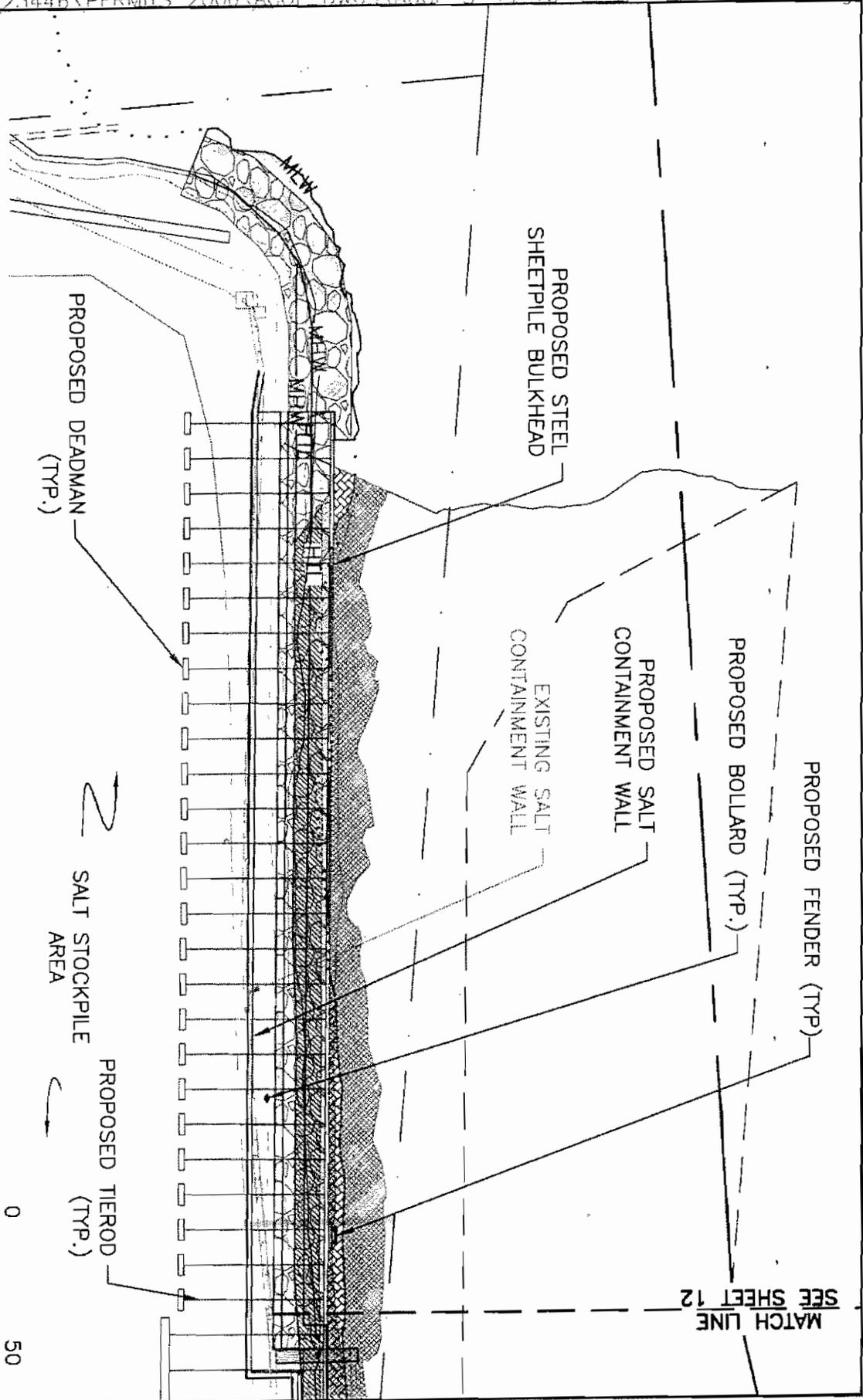
100 YR FLOOD	+11.3	NGVD	+2.3
HLL	+6.5	MLW	0.0
MHW	+4.9		

**BCE**  
**Bourne Consulting Engineering**  
114 West Grand Street  
New York, NY 10014  
Tel: (212) 269-4100 Fax: (212) 269-0771

TITLE: <b>RIP RAP CROSS SECTION</b>	APPLICATION BY: <b>ATLANTIC SALT INC.</b>	IN: <b>STATEN ISLAND</b> AT: <b>KILL VAN KULL</b> COUNTY: <b>RICHMOND</b> STATE: <b>NY</b>
PURPOSE: <b>SHORELINE IMPROVEMENT</b>		SHEET <b>9</b> OF <b>17</b> DATE: <b>9/24/03</b>
		REVISED <b>7/07/06</b>



100 YR FLOOD	+11.3	NSVD	+2.3	TITLE:	PROPOSED	APPLICATION BY:	IN: STATEN ISLAND
HIL	+6.5	MLW	0.0	FENDER DETAILS	ATLANTIC SALT INC.		AT: KILL VAN KULL
MHW	+4.9			SHORELINE IMPROVEMENT			COUNTY: RICHMOND
							STATE: NY
<b>Bourne Consulting Engineering</b> 274 Road Central Avenue Hicksville, NY 11801 Tel: (516) 486-4118 Fax: (516) 486-4117				SHEET 10 OF 17 DATE: 9/24/03 REVISED 7/07/06			



SEE SHEET 12  
MATCH LINE

100 YR FLOOD	+11.3	NGVD	+2.3
HTL	+6.5	MLW	0.0
MHW	+4.9		

**BCE**  
*Bourne Consulting Engineering*  
 140 East Campbell Road  
 The Woodlands, TX 77380  
 Tel: (281) 298-4123 Fax: (281) 298-4111

TITLE: **RESOURCE AREA IMPACT PLAN - SHEET 1**

PURPOSE: **SHORELINE IMPROVEMENT**

APPLICATION BY: **ATLANTIC SALT INC.**

IN: **STATEN ISLAND**

AT: **KILL VAN KULL**

COUNTY: **RICHMOND**

STATE: **NY**

SHEET **11** OF **17**

DATE: **9/24/03**

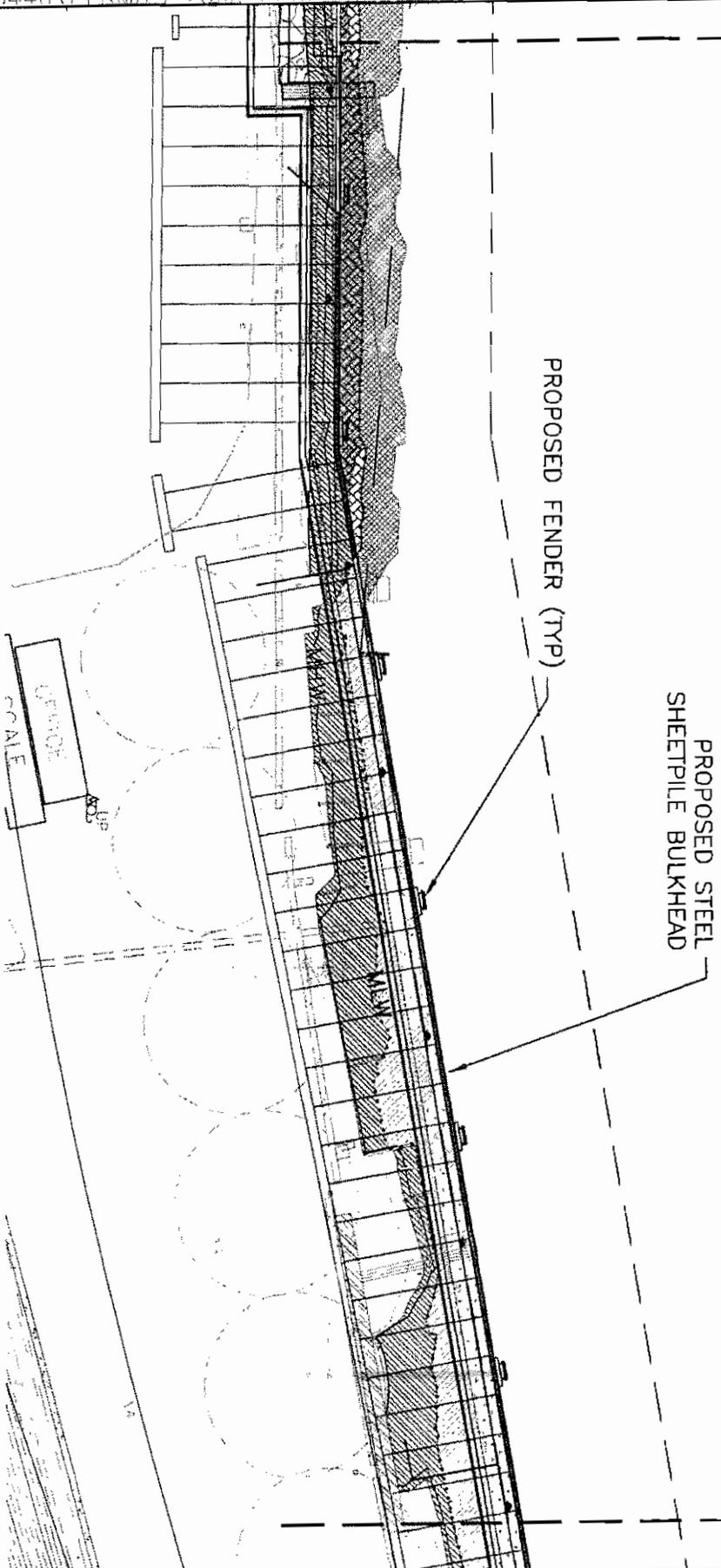
REvised **7/07/06**

SCALE: 1" = 50'



MATCH LINE  
SEE SHEET 11

MATCH LINE  
SEE SHEET 13

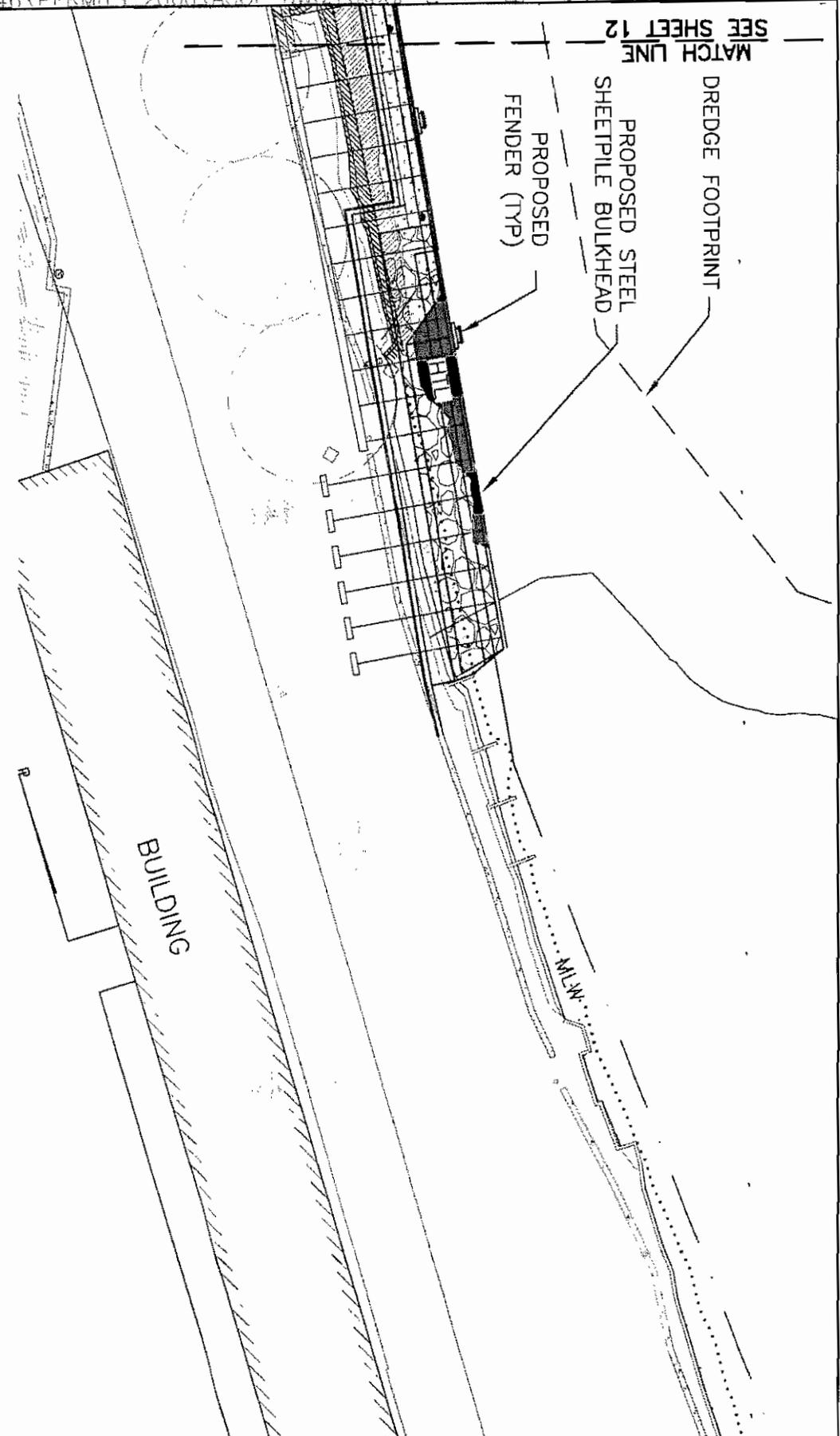


100 YR FLOOD	+11.3	NGVD	+2.3
HTL	+6.5	MLW	0.0
MHW	+4.9		

TITLE:	RESOURCE AREA IMPACT PLAN - SHEET 2
PURPOSE:	SHORELINE IMPROVEMENT
APPLICATION BY:	ATLANTIC SALT INC.
IN: STATEN ISLAND AT: KILL VAN KULL COUNTY: RICHMOND	STATE: NY
SHEET 12 OF 17 DATE: 9/24/03	REVISED 5/18/05



SEE SHEET 12  
MATCH LINE



100 YR FLOOD	+11.3	NGVD	+2.3
HTL	+6.5	MLW	0.0
MHW	+4.9		

TITLE: **RESOURCE AREA IMPACT PLAN - SHEET 3**

PURPOSE: **SHORELINE IMPROVEMENT**

APPLICATION BY: **ATLANTIC SALT INC.**

IN: **STATEN ISLAND**

AT: **KILL VAN KULL**

COUNTY: **RICHMOND**

STATE: **NY**

SHEET **13** OF **17**

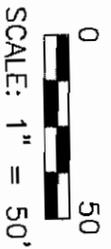
DATE: **9/24/03**

REMOVED **5/18/05**

**BCE**

**Bourne Consulting Engineering**

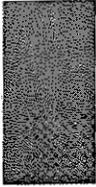
140 West Campbell Avenue  
 Westbury, NY 11591  
 Tel: (516) 338-4100 Fax: (516) 338-4071



EXISTING RESOURCE AREA IMPACTS			
	FILL (sf)	DREDGE (sf)	TOTAL AREA AFFECTED (sf)
INTERTIDAL ZONE	11,795	1,845	13,640
LITTORAL ZONE (MLW TO -6.0)	4,935	5,645	10,580
BELOW -6.0	3,170	157,140	160,310
TOTAL AREA AFFECTED (sf)	19,900	164,630	

RESOURCE AREA CREATED	
INTERTIDAL ZONE	5,200 (sf)

LEGEND OF RESOURCE AREAS

-  INTERTIDAL ZONE FILL
-  INTERTIDAL ZONE DREDGE
-  FILL FROM MLW TO EL. -6.0
-  INTERTIDAL ZONE FILL (RIP RAP)
-  FILL FROM MLW TO EL. -6.0 (RIP RAP)
-  FILL BELOW EL. -6.0 (RIP RAP)
-  INTERTIDAL ZONE - CREATED



100 YR FLOOD +11.3 NGVD +2.3  
 HTL +6.5 MLW 0.0  
 MHW +4.9



**BCE**  
 Bourne Consulting Engineering  
 100 First Central Avenue  
 P.O. Box 4125  
 Ft. Lauderdale, FL 33309  
 Tel: (954) 586-4125 Fax: (954) 586-4171

TITLE: RESOURCE AREA IMPACT NOTES - SHEET 4  
 PURPOSE: SHORELINE IMPROVEMENT  
 APPLICATION BY: ATLANTIC SALT INC.

IN: STATE ISLAND  
 AT: KILL VAN KULL  
 COUNTY: RICHMOND STATE: NY  
 SHEET 14 OF 17  
 DATE: 9/24/03  
 REVISED 5/18/05

NOTES:

1. TOPOGRAPHIC ELEVATIONS AND CONTOURS SHOWN REFER TO MLW DATUM.
2. SOUNDINGS AND ELEVATIONS ARE SHOWN IN FEET AND TENTHS BASED ON A MEAN LOW WATER DATUM. POSITIVE VALUES REPRESENT DEPTH ABOVE THAT SAME PLANE.
3. COORDINATES AND BEARINGS ARE BASED ON THE NEW JERSEY MERCATOR COORDINATE SYSTEM NAD 83 AND ARE EXPRESSED IN FEET.
4. UTILITIES SHOWN ARE APPROXIMATE AND BASED ON EVIDENCE OBSERVABLE AT THE TIME OF SURVEY. LOCATION OF EXISTING UNDERGROUND UTILITIES BEYOND THOSE SHOWN IS UNKNOWN.
5. SHORELINE TOPOGRAPHIC DATA SHOWN HEREON WAS COLLECTED ON AUGUST 6 & 8, 2003 BY BOURNE CONSULTING ENGINEERING OF FRANKLIN, MASSACHUSETTS, AND CAN ONLY REFLECT CONDITIONS AS THEY EXISTED DURING THE TIME OF THE SURVEY. OTHER TOPOGRAPHIC DATA TAKEN FROM 1994 ZANETAKOS PLAN, SEE REFERENCE 3.
6. HYDROGRAPHIC DATA SHOWN HEREON WAS COLLECTED ON AUGUST 6 & 8, 2003 BY BOURNE CONSULTING ENGINEERING OF FRANKLIN, MASSACHUSETTS, AND CAN ONLY REFLECT CONDITIONS AS THEY EXISTED DURING THE TIME OF THE SURVEY.
7. BASED ON A DIVE INSPECTION BY BCE ON AUGUST 7, 2003, THERE ARE NO AREAS OF AQUATIC VEGETATION WITHIN THE DREDGE AREA.
8. THE ESTIMATED QUANTITY OF DREDGING AND AREA OF IMPACT IS AS FOLLOWS:

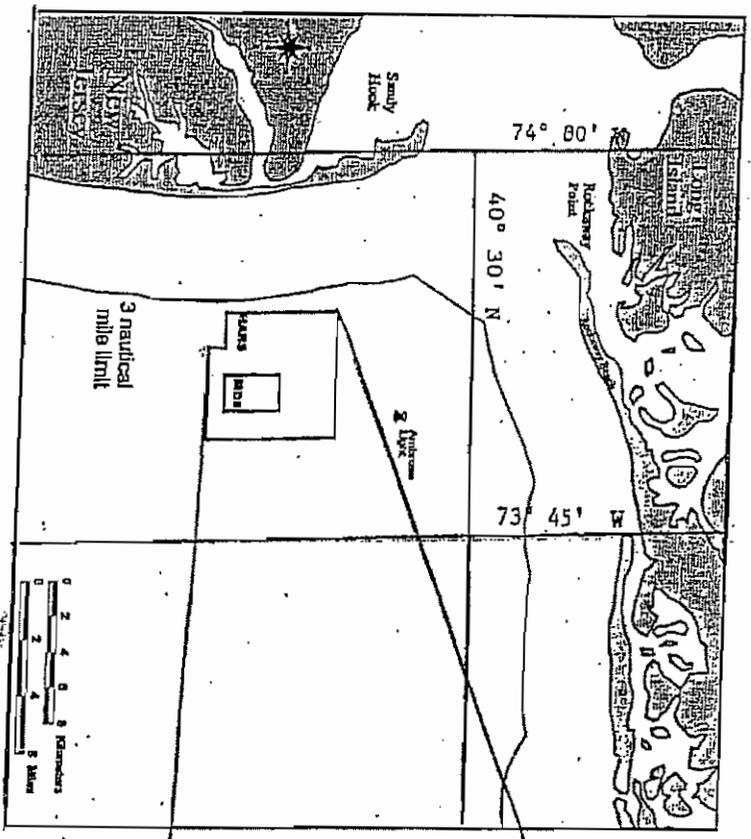
TOTAL DREDGE AREA IS	164,630SF
<u>DREDGE VOLUMES:</u>	
DREDGE TO EL. -47	89,073 CY
DREDGE TO EL. -49	7,939 CY
<b>TOTAL:</b>	<b>97,012 CY</b>

REFERENCES:

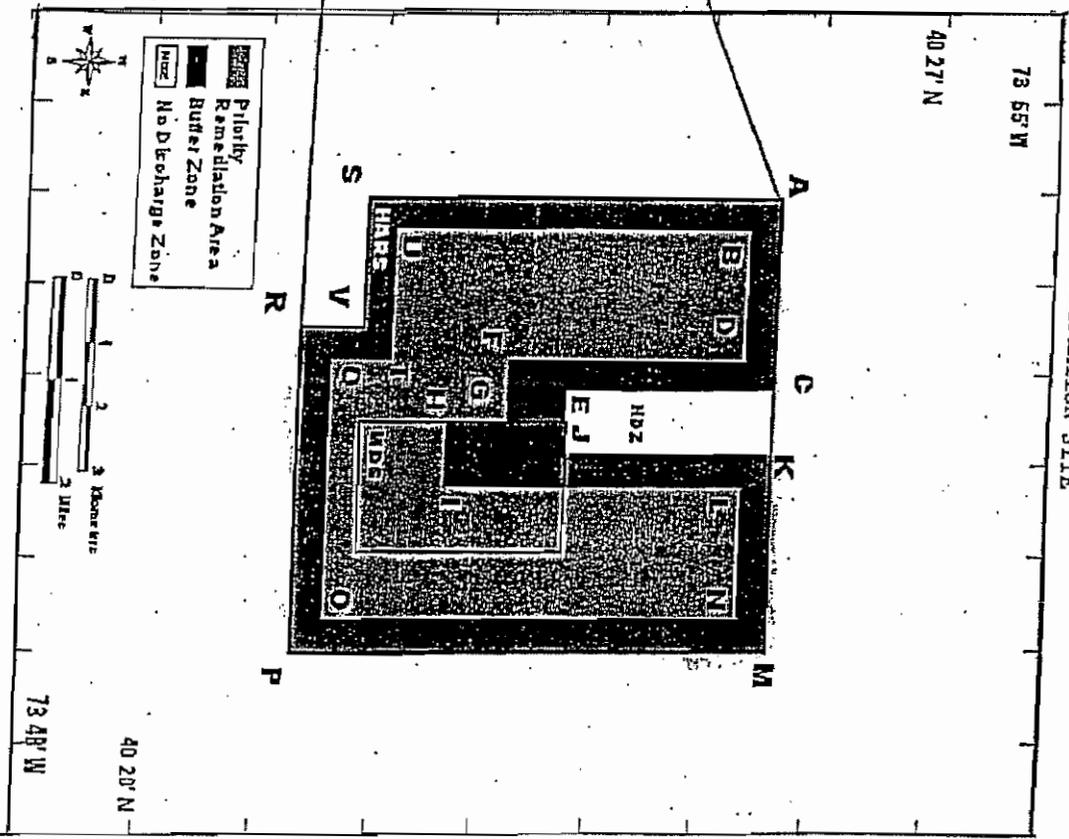
1. "MAP OF SURVEY OF PROPERTY IN BOROUGH OF STATEN ISLAND," PREPARED BY ANTHONY A. LOBIANCO, DATED AUGUST 23, 1977, NO. 1123.
2. RIGHT OF WAY, PROPERTY, AND MONUMENTATION MAPS ON FILE IN THE BOROUGH OF STATEN ISLAND TOPOGRAPHIC DIVISION.
3. "TOPOGRAPHIC SURVEY PREPARED FOR ATLANTIC SALT IN THE BOROUGH OF STATEN ISLAND, RICHMOND COUNTY, NEW YORK," PREPARED BY JOHN ZANETAKOS ASSOCIATES, INC., DATED JUNE 3, 1994, JOB 8447, SH. 1 OF 1.

100 YR FLOOD	+11.3	NGVD	+2.3	TITLE:	<b>GENERAL NOTES</b>		IN: STATEN ISLAND	
HTL	+6.5	MLW	0.0	PURPOSE:	APPLICATION BY:		AT: KILL VAN KILL	
MLW	+4.9			SHORELINE IMPROVEMENT	ATLANTIC SALT INC.		COUNTY: RICHMOND	
 <b>Bourne Consulting Engineering</b> <small>INC. Equal Opportunity Employer                  76 (200) 886-4122 FAX (200) 886-8977</small>				SHEET 15 OF 17 DATE: 9/24/03 REVISED 7/07/06				STATE: NY

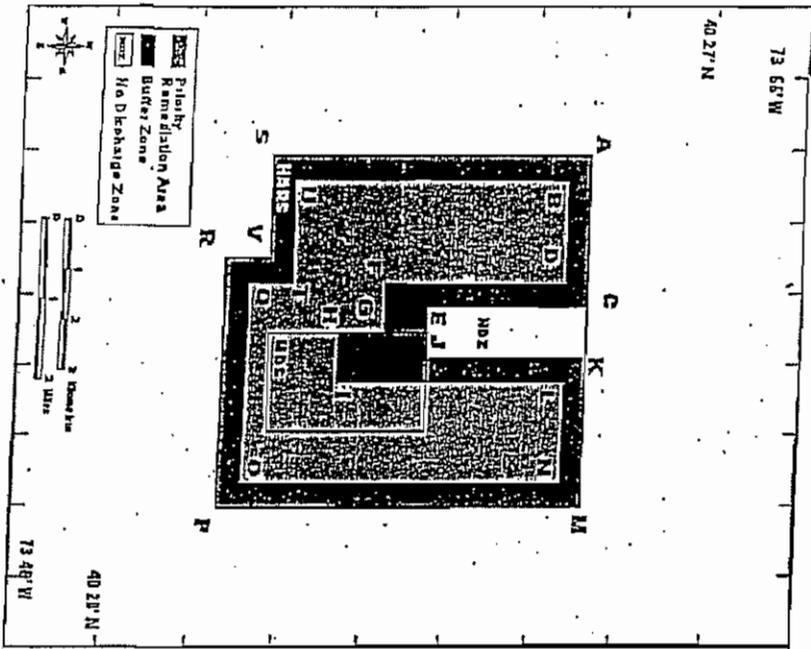
HISTORIC AREA REMEDIATION SITE LOCATION MAP



LOCATION OF PRIMARY REMEDIATION AREA WITHIN THE HISTORIC AREA REMEDIATION SITE



00900 ATT. A-2



Priority Remediation Area (PRA): 9.0 square nautical mile area to be remediated with at least one meter of Remediation Material, bounded by the following coordinates:

Point	Latitude DMS *	Longitude DMS	Latitude DDM **	Longitude DDM
B	40° 25' 23" N	73° 53' 34" W	40° 25.38' N	73° 53.57' W
D	40° 25' 22" N	73° 52' 08" W	40° 25.37' N	73° 52.13' W
F	40° 23' 13" N	73° 52' 09" W	40° 23.22' N	73° 52.15' W
G	40° 23' 13" N	73° 51' 28" W	40° 23.22' N	73° 51.47' W
H	40° 22' 41" N	73° 51' 28" W	40° 22.68' N	73° 51.47' W
I	40° 22' 41" N	73° 50' 43" W	40° 22.68' N	73° 50.72' W
L	40° 25' 22" N	73° 50' 44" W	40° 25.37' N	73° 50.73' W
N	40° 25' 22" N	73° 49' 19" W	40° 25.37' N	73° 49.32' W

\* = Degrees, Minutes, Seconds

\*\* = Degrees, Minutes, Decimal Minutes