



US Army Corps
Of Engineers
Wilmington District

PUBLIC NOTICE

Issue Date: February 1, 2005
Comment Deadline: March 2, 2005
Corps Action ID #: 200500333

All interested parties are hereby advised that the Wilmington District, Corps of Engineers (Corps) has received an application for work within jurisdictional waters of the United States. Specific plans and location information are described below and shown on the attached plans. This Public Notice and all attached plans are also available on the Wilmington District Web Site at www.saw.usace.army.mil/wetlands

Applicant: Commanding General
Marine Corps Base, Camp Lejeune
C/o L.J. Readal, CDR/CEC/USN
1005 Michael Road
Camp Lejeune, North Carolina 28547

AGENT : Avolis Engineering, P.A.
C/o Kevin Avolis, P.E., Vice President
Post Office Box 15564
New Bern, North Carolina 28561

Authority

The Corps will evaluate this application and decide whether to issue, conditionally issue, or deny the proposed work pursuant to applicable procedures of Section 404 of the Clean Water Act (33 USC 1344) and Section 10 of the River and Harbor Act of 1899 (33USC 1344).

Location

There are two locations for the same type of project both located on Marine Corps Base-Camp Lejeune, Onslow County, NC. Camp Lejeune is located east of the New River bordered on the west by Hubert and to the north by Jacksonville. The Hospital Point project is located near the end of River Rd., which can be accessed via Holcomb Road, adjacent to Building H-1. The Hospital Point site is directly adjacent to the New River and can be located at 34 40.45 N and 77 22.24 W.

The second area, known as the Brewster Scout Camp site, can be accessed via Holcomb Blvd. to Brewster Blvd. and travel approximately 2 miles to the Creekfront. The

Brewster Scout Area is directly adjacent to Northeast Creek and can be located at 34 43.37 N and 77 23.41 W.

Existing Site Conditions

The Hospital Point area is situated between a shoreline stabilized with riprap and a stable marsh (*Spartina Cynosuriodes*) tributary to the New River. The Hospital Point shoreline has experienced bank erosion above the normal water level which in turn has created as much as a five foot high escarpment. The highground bank is vegetated with wax myrtle (*Myrica Cerifera*) and young loblolly pines (*Pinus Taeda*). There are numerous old pine stumps, which have been undercut still remaining being supported by old tap roots. Just landward of the aforementioned stumps remains small pockets of *Spartina Patens* residing at an elevation above the normal water level. Offshore and below the normal water level remains old riprap comprised of old brick, cinder blocks, and other masonry debris. The shoreline substrate is sandy with a thin lense of mud. The western adjacent shoreline, stabilized with marl, concrete, and other debris, appears fairly stable. The eastern adjacent shoreline does not appear to have any unexpected erosion. The erosion along the project area appears to be generated from storm events and high water conditions exacerbated by the fetch across the New River.

The Brewster Scout Camp site is an area along Northeast Creek experiencing erosion at the toe of the bank. The bank at this location drops from an elevation of 15'-20' to the normal water level in a matter of 15 linear feet at a 1:1 slope. The point of erosion is at the toe of the bank creating an approximate 3' escarpment. The escarpment varies from 10' above the normal water level to the existing water level. The Scout Camp shoreline contains riprap along the extreme eastern shore while the remainder of the shoreline has no stabilization measures. There are two places where the shoreline is recolonizing with marsh (*Juncus Roemarianus*) however this marsh is not widespread likely caused by the accretion of sand noted during the December 2004 site visit. The steep bank is vegetated with loblolly pines (*Pinus Taeda*) and other low shrubs and grasses. Offshore from the toe of the bank are relic pines and bald cypress (*Taxodium Distichum*). There are several trees that have fallen into the Creek and remain in place.

Applicant's Stated Purpose

The applicants stated purpose and need for the project is shoreline stabilization of both sites. The Base is exploring alternatives to traditional shoreline stabilization.

Project Description

Both project locations are proposed to be stabilized in the similar manners with varying lengths. The Hospital Points site would stabilize a total of 392' of shoreline with the proposed granite riprap sill structures. The Hospital Pointe shoreline would be armored with four sill sections 55', 90', 90', and 105' measured toe of rock to toe of rock. These sections would be 10' wide measured toe to toe. The sills are proposed offshore anywhere from 10' to 20' depending on the breaks in shoreline on the New River. The

sill structures would have three openings 20' wide with a 12" mat of oyster shell on the landward side of the openings. The plans call for the sill structure to be built to an elevation of 3.5' compared to the normal water level in the area at elevation 1.7'. The sill would be backfilled to 2.5' with sand from an on base borrow area. The sand backfill would be sprigged with *Spartina Alterniflora* on 18" centers.

The Brewster Scout Camp along North East Creek is proposed to be stabilized with a total of 1,018 linear feet of a detached granite riprap sill. The six sections of the proposed sill are 100', 140', 150', 155', 70', and 100' measured toe to toe. These sections also would be 10' wide. The sills are proposed to be placed on average 10' offshore from the normal water level along Northeast Creek. Where not separated by marsh the sills will be set 20' apart to allow for water circulation with the outer opening further stabilized by a 12" thick mat of oyster shell. According to plans the sills will be built to a height of 3.0' with a surrounding water level at elevation 1.7'. The sill is proposed to be backfilled to a height of 2.5' with sand obtained from the French Creek Borrow Pit on Base. The plans further call for the backfill to be sprigged with *Spartina Alterniflora* at 18" on center.

Both sill structures will be marked with 4' X 4' treated posts displaying 3" reflectors on the offshore side of the sill structures. The posts would be placed approximately 45' apart depending on sill openings. During the construction both sites are proposed to be encompassed by turbidity curtain to control sediment upsets.

Other Required Authorizations

This notice and all applicable application materials are being forwarded to the appropriate State agencies for review. The Corps will generally not make a final permit decision until the North Carolina Division of Water Quality (NCDWQ) issues, denies, or waives State certification required by Section 401 of the Clean Water Act (PL 92-500). The receipt of the application and this public notice in the NCDWQ Central Office in Raleigh serves as application to the NCDWQ for certification. A waiver will be deemed to occur if the NCDWQ fails to act on this request for certification within sixty days of the date of the receipt of this notice in the NCDWQ Central Office. Additional information regarding the Clean Water Act certification may be reviewed at the NCDWQ Central Office, 401 Oversight and Express Permits Unit, 2321 Crabtree Boulevard, Raleigh, North Carolina 27604-2260. All persons desiring to make comments regarding the application for certification under Section 401 of the Clean Water Act should do so in writing delivered to the North Carolina Division of Water Quality (NCDWQ), 1650 Mail Service Center, Raleigh, North Carolina 27699-1650 Attention: Mr. John Hennessy (NC Department of Transportation projects) or Ms Cyndi Karoly (all other projects) by February 23, 2005.

The applicant has certified that the proposed work complies with and will be conducted in a manner that is consistent with the approved North Carolina Coastal Zone Management Program. Pursuant to 33 CFR 325.2 (b)(2) the Corps is, by this notice, forwarding this certification to the North Carolina Division of Coastal Management

(NCDCM) and requesting its concurrence or objection. Generally, the Corps will not issue a Department of the Army (DA) permit until the NCDCM notifies the Corps that it concurs with the applicant's consistency certification.

Essential Fish Habitat

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The Corps' initial determination is that the proposed project may adversely impact EFH or associated fisheries managed by the South Atlantic or Mid Atlantic Fishery Management Councils or the National Marine Fisheries Service. The two projects collectively will impact over 14,000 ft² of shallow water habitat.

Cultural Resources

The Corps has consulted the latest published version of the National Register of Historic Places and is not aware that any registered properties, or properties listed as being eligible for inclusion therein are located within the project area or will be affected by the proposed work. Presently, unknown archeological, scientific, prehistoric, or historical data may be located within the project area and/or could be affected by the proposed work.

Endangered Species

The Corps has reviewed the project area, examined all information provided by the applicant and consulted the latest North Carolina Natural Heritage Database. Based on available information, the Corps has determined pursuant to the Endangered Species Act of 1973, that the proposed project will have no effect on federally listed endangered or threatened species or their formally designated critical habitat.

Evaluation

The decision whether to issue a permit will be based on an evaluation of the probable impacts, 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 benefit 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, flood hazards, flood plain values (in accordance with Executive Order 11988), land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. For activities involving the discharge of dredged or fill materials in waters of the United States, the evaluation of

the impact of the activity on the public interest will include application of the Environmental Protection Agency's 404(b)(1) guidelines.

Commenting Information

The Corps is soliciting 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 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 (EA) and/or an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA). Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. Requests for a public hearing shall be granted, unless the District Engineer determines that the issues raised are insubstantial or there is otherwise no valid interest to be served by a hearing.

Written comments pertinent to the proposed work, as outlined above, will be received by the Corps of Engineers, Wilmington District, until 5pm, March 2, 2005. Comments should be submitted to Brad Shaver, Regulatory Specialist at 910-251-4611.

ATTACHMENT

PROJECT DESCRIPTION AND JUSTIFICATION SHORELINE STABILIZATION BASEWIDE - PART 1 BREWSTER SCOUT CAMP

CONSTRUCTION CONTRACT N62470-02-B-3455

I. PROJECT DESCRIPTION

THIS PROJECT ENTAILS THE CONSTRUCTION OF A 1,018 FOOT LONG DETACHED RIP-RAP SILL IN THE BREWSTER SCOUT CAMP AREA OF MARINE CORP BASE, CAMP LEJEUNE, ONSLOW COUNTY, NORTH CAROLINA. THE SHORELINE TO BE PROTECTED IS LOCATED IMMEDIATELY ADJACENT TO AN EXISTING SCOUT CAMP AREA. THE SHORELINE IN THIS AREA HAS EXPERIENCED EXCESSIVE EROSION IN THE PAST. A PORTION OF THE SHORELINE IN THE AREA OF A SCOUT HUT/BUILDING HAS BEEN STABILIZED WITH RIP-RAP .

IT IS THE DESIRE OF MARINE CORPS BASE CAMP LEJEUNE TO INSTALL A DETACHED RIP-RAP SILL AS A METHOD OF SHORELINE STABILIZATION IN THIS GENERAL AREA. SPECIFICALLY, IT IS PROPOSED THAT A GRANITE RIP-RAP SILL BE INSTALLED APPROXIMATELY 10 FEET OFFSHORE OF THE MEAN HIGH WATER LINE. THE GRANITE SILL WILL BE BACKFILLED WITH A SANDY SOIL MATERIAL OBTAINED FROM THE FRENCH CREEK BORROW PIT AT MCB CAMP LEJEUNE TO AN ELEVATION OF APPROXIMATELY 1 FOOT ABOVE THE MEAN HIGH WATER LEVEL. THE FILLED AREA WILL BE VEGETATED WITH SMOOTH CORD GRASS (SPARTINA ALTERNIFLORA). GRASS SPRIGS WILL BE INSTALLED AT 18 INCHES ON CENTER BEHIND THE DETACHED RIP-RAP SILL. IT IS PROPOSED THAT OPENINGS, 20' FOOT WIDE, BE CONSTRUCTED IN THE DETACHED SILL AS SHOWN ON THE PROJECT PLANS.

ADDITIONALLY, SMALL PODS OF SPARTINA ALTERNIFLORA HAVE ESTABLISHED THEMSELVES NATURALLY ALONG THIS SECTION OF SHORELINE. THESE AREAS ARE DELINEATED ON THE PROJECT PLANS. IT IS PROPOSED THAT ALL EXISTING VEGETATION ALONG THE SHORELINE BE LEFT IN TACT.

THE ELEVATION OF THE FILL MATERIAL BEHIND THE DETACHED RIP-RAP SILL WAS ESTABLISHED BASED UPON A SURVEY OF ELEVATIONS IN THE GENERAL AREA WHERE SPARTINA ALTERNIFLORA HAS NATURALLY ESTABLISHED ITSELF. THE TOP OF SOIL ELEVATION OF 2.0 FEET SHOULD ALLOW FOR A FULLY SATURATED SOIL CONDITION DURING NORMAL WATER LEVELS.

II. CONSTRUCTION METHODS

ALL CONSTRUCTION CONTRACTS ISSUED BY MARINE CORPS BASE, CAMP LEJEUNE ARE ISSUED ON A COMPETITIVE BASIS. THE CONTRACTOR IS ALLOWED TO UTILIZE HIS DISCRETION IN DEVELOPING A WORK PLAN FOR EACH PROJECT AND TO DEVELOP A PROPOSED COURSE OF ACTION TO EXECUTE THE PROJECT.

THE CONSTRUCTION OF THE DETACHED RIP RAP SILL WILL LIKELY BE COMPLETED FROM THE WATER. THE UPLAND AREAS LOCATED ADJACENT TO THE PROJECT SHORELINE AREA ARE COVERED WITH MATURE TIMBER VEGETATION THAT IS TO REMAIN. DUE TO THE SHALLOW NATURE OF THE WATER IN THE PROJECT AREA, IT IS ANTICIPATED THAT RIP RAP MATERIAL WILL BE TRANSPORTED TO THE PROJECT SITE ON SMALL BARGES. HAND LABOR WILL BE UTILIZED TO PLACE THE GEO-TEXTILE AND GEO-GRID FABRICS. A TRACK HOE OR EXCAVATOR WILL BE UTILIZED TO PLACE THE RIP RAP MATERIAL. ADDITIONALLY, A TRACK HOE WILL BE UTILIZED TO PLACE SELECT BACKFILL MATERIAL LANDWARD OF THE DETACHED RIP RAP SILL. THE FINAL GRADING AND VEGETATING OF THE FILL MATERIAL WILL BE COMPLETED BY HAND LABOR.

EROSION AND SEDIMENTATION CONTROL DEVICES ARE PROPOSED TO BE UTILIZED DURING THE COURSE OF CONSTRUCTION TO PREVENT EROSION AND OFF-SITE TRANSPORT OF SEDIMENT. AS INDICATED ON THE PROJECT PLANS A TURBIDITY CURTAIN WILL BE INSTALLED AROUND THE PROJECT BOUNDARY WATERWARD OF THE PROPOSED DETACHED SILL. THE TURBIDITY CURTAIN WILL BE MAINTAIN FOR THE ENTIRE DURATION OF THE PROJECT.

ADDITIONALLY, ALL UPLAND AREAS DISTURBED AS A RESULT OF THE PROPOSED CONSTRUCTION WILL BE RE-ESTABLISHED WITH VEGETATION IN ACCORDANCE WITH THE VEGETATIVE SEEDING SCHEDULE PRESENTED ON THE PROJECT PLANS. FILTER FABRICS ARE PROPOSED TO BE PLACED ON THE DETACHED RIP RAP SILL TO RETAIN THE SELECT FILL MATERIAL. ALL CREATED WETLAND AREAS FILL WILL BE SPRIGGED WITH SMOOTH CORD GRASS (SPARTINA ALTERNIFLORA). THE PROPOSED EROSION AND SEDIMENTATION CONTROL PRACTICES WILL PREVENT THE TRANSPORT OF SEDIMENT OFF-SITE.

THE TOTAL PROPOSED DISTURBED AREA THIS PROJECT IS LESS THAN ONE ACRE. THEREFORE, NO EROSION AND SEDIMENTATION CONTROL PERMIT IS REQUIRED TO EXECUTE THE PROJECT.

III. ARCHEOLOGICAL RESOURCES

THE MARINE CORPS BASE, CAMP LEJEUNE MAINTAINS AN INVENTORY OF ALL ARCHEOLOGICALLY SIGNIFICANT SITES ON MARINE CORPS BASE, CAMP LEJEUNE. THE PROPOSED PROJECT BOUNDARIES ARE NOT LOCATED WITHIN ANY KNOWN AREA OF ARCHEOLOGICAL SIGNIFICANCE.

IV. WETLAND IMPACTS

THE PROJECT PLAN DEPICTS THE LIMITS OF THE COASTAL WETLAND LINE ON THE PROJECT SITE. THIS PROJECT DOES NOT INCLUDE THE PLACEMENT OF FILL ON ANY AREAS ABOVE THE NORMAL WATER LEVEL THAT WERE IDENTIFIABLE AS ADJACENT WETLAND AREAS. THE PROPOSED SELECT BACKFILL MATERIAL BEHIND THE DETACHED SILL WILL BE PLACED TO AN ELEVATION APPROXIMATELY EQUAL TO THE TOP OF THE ERODED BANK AS DEPICTED ON THE PROJECT PLANS. AS DEPICTED ON THE PROJECT PLANS, NO DISTURBANCE WILL OCCUR BETWEEN THE ERODED NORMAL LEVEL WATER BANK AND THE UPGRADE TOP OF BLUFF LIMIT.

V. SUBAQUATIC VEGETATION

THE PROPOSED PROJECT WILL IMPACT ANY SUBAQUATIC VEGETATION THAT EXISTS WITHIN THE FOOTPRINT AREA OF THE DETACHED RIP RAP SILL AND SELECT BACKFILL MATERIAL. IT IS PROPOSED THAT NONE OF THE EXISTING VEGETATION BE EXCAVATED AS A PART OF THE PROPOSED CONSTRUCTION. THE DETACHED RIP RAP SILL WILL BE PLACED ON THE EXISTING GRADE AND THE SELECT BACKFILL MATERIAL WILL BE PLACED ON THE EXISTING GRADE. ANY SUBAQUATIC VEGETATION THAT EXISTS WITHIN THE LIMITS OF THIS FILLING WILL BE IMPACTED.

VI. WATER QUALITY

THE LONG TERM WATER QUALITY WITHIN THE GENERAL VICINITY OF THE PROPOSED PROJECT WILL NOT BE IMPACTED ADVERSELY BY THE PROPOSED CONSTRUCTION. THE SHORT TERM WATER QUALITY MAY BE IMPACTED TO A LIMITED EXTENT BY THE PROPOSED CONSTRUCTION. EROSION AND SEDIMENTATION CONTROL DEVICES WILL BE UTILIZED TO PREVENT SEDIMENTATION AND EROSION FROM OCCURRING TO THE SURFACE WATERS.

IT IS PROPOSED THAT APPROXIMATELY 13,440 SQUARE FEET OF WETLAND VEGETATION BE ESTABLISHED BETWEEN THE DETACHED RIP RAP SILL AND MEAN HIGH WATER LEVEL. ONCE STABILIZED AND ALLOWED TO ESTABLISH, THIS WETLAND VEGETATION WILL PROVIDE A FILTERING MECHANISM AND HABITAT. ADDITIONALLY, THE DETACHED RIP RAP SILL AND WETLAND VEGETATION WILL PREVENT SHORELINE EROSION FROM CONTINUING TO OCCUR IN THIS AREA. THE LONG-TERM IMPACT ON THE SURFACE WATERS IN THE PROJECT AREA ARE ANTICIPATED TO BE IMPROVED AS A RESULT OF THE COMPLETION OF THIS PROJECT FROM THE PREVENTION OF SHORELINE EROSION AND RELATING SEDIMENTATION.

VII. NAVIGABILITY - PUBLIC TRUST WATERS

THE COMPLETION OF THIS PROJECT WILL RESULT IN THE DISTURBANCE OF APPROXIMATELY 30,000 SQUARE FOOT OF NAVIGATIBLE PUBLIC TRUST WATERS. THESE WATERS WILL BE IMPACTED BY THE PLACEMENT OF THE DETACHED RIP RAP SILL AND THE PLACEMENT OF BACKFILL MATERIAL TO CREATE WETLAND AREAS.

VIII. CONSISTENCY WITH PERMIT 42-00

CAMA MAJOR PERMIT 42-00 WAS ISSUED TO THE NORTH CAROLINA COASTAL FEDERATION ON MARCH 22, 2000. THE PERMIT WAS ISSUED AS A GENERAL PERMIT FOR THE CONSTRUCTION OF 30 DETACHED SILL PROJECTS AT UNDETERMINED LOCATIONS. THE DIVISION OF WATER QUALITY AND U.S. ARMY CORPS OF ENGINEERS REVIEWED THE PROJECT AS WELL. THE CAMA PROJECT CONTAINS 29 CONDITIONS RELATIVE TO THE PROPOSED CONSTRUCTION THAT MUST BE COMPLIED WITH. THE FOLLOWING INFORMATION IS PROVIDED TO DEMONSTRATE GENERAL CONFORMANCE WITH THE CAMA MAJOR PERMIT ISSUED FOR THESE SIMILAR PROJECTS. FOR CLARITY, ALL ITEMS ARE ENUMERATED AS THEY APPEAR ON THIS CAMA PERMIT.

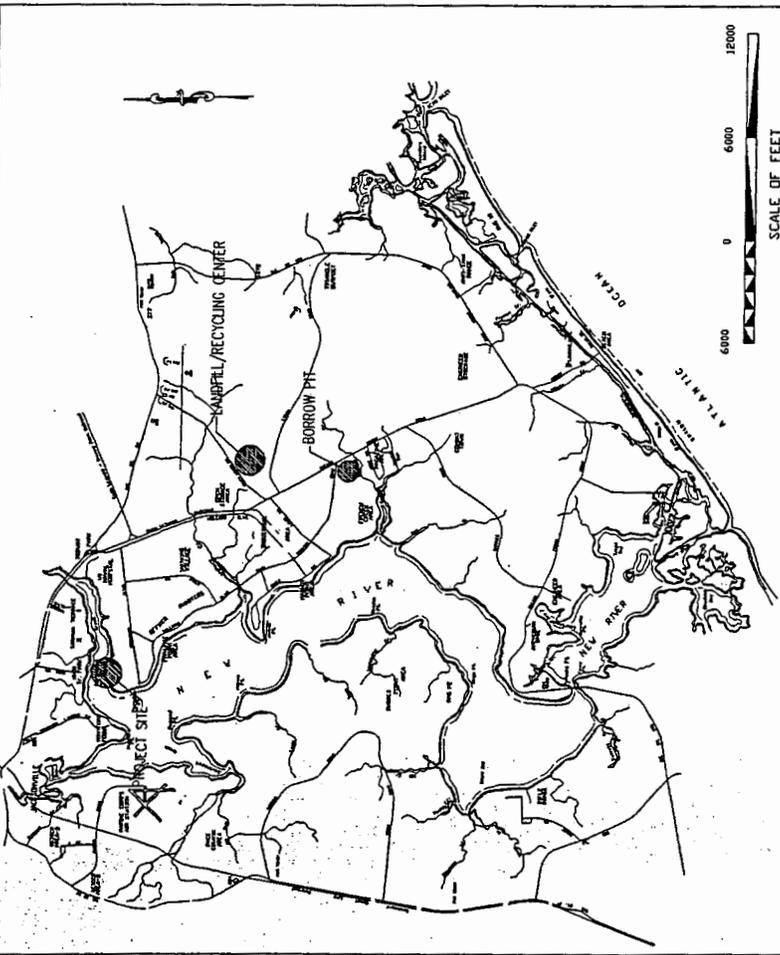
- ITEMS 1 - 4 IN COMPLIANCE
- ITEM 5 PENDING REVIEW
- ITEM 6 NO TIE BACK PROPOSED
- ITEM 7 IN COMPLIANCE
- ITEM 8 IN COMPLIANCE
- ITEM 9 IN COMPLIANCE
- ITEM 10 NOT IN COMPLIANCE - PROPOSED LENGTH IS 1,018 LINEAR FEET
- ITEM 11 IN COMPLIANCE
- ITEM 12 THE HEIGHT OF THE DETACHED RIP RAP SILL IS PROPOSED TO BE APPROXIMATELY 1.1 FEET ABOVE THE NORMAL HIGH WATER ELEVATION. THIS HEIGHT IS ASSIGNED TO PREVENT ANY SCOUR OR WASHING FROM OCCURRING AS A RESULT OF ANY WAVE ACTION ALONG THE PROJECT SHORELINE AND TO PROVIDE PROTECTION OF THE SELECT BACKFILL AND

REVISED	DATE	APPROVED

SHORELINE STABILIZATION BASEWIDE PART I, BREWSTER SCOUT CAMP MARINE CORPS BASE, CAMP LEJEUNE, NC



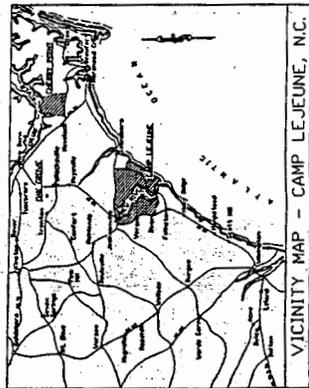
INDEX OF DRAWINGS	
SHEET NUMBER	TITLE
CS	LOCATION AND VICINITY MAP
C1	EXISTING SITE CONDITIONS
C2	SITE LAYOUT AND GRADING PLAN
C3	DETAILS



LOCATION MAP - U. S. MARINE CORPS BASE
CAMP LEJEUNE, NC

EXISTING	NEW
THICKNESS CURTAIN	
CENTURION	
MEAN HIGH WATER (MHW)	
EXISTING VEGETATION	
EXISTING ASP PAV	
STREET LIGHT	
REFLECTIVE SURVEY POST	
TEMPORARY BENCHMARK	
SPOT ELEVATION	+23.23

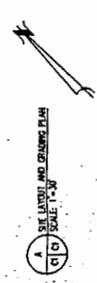
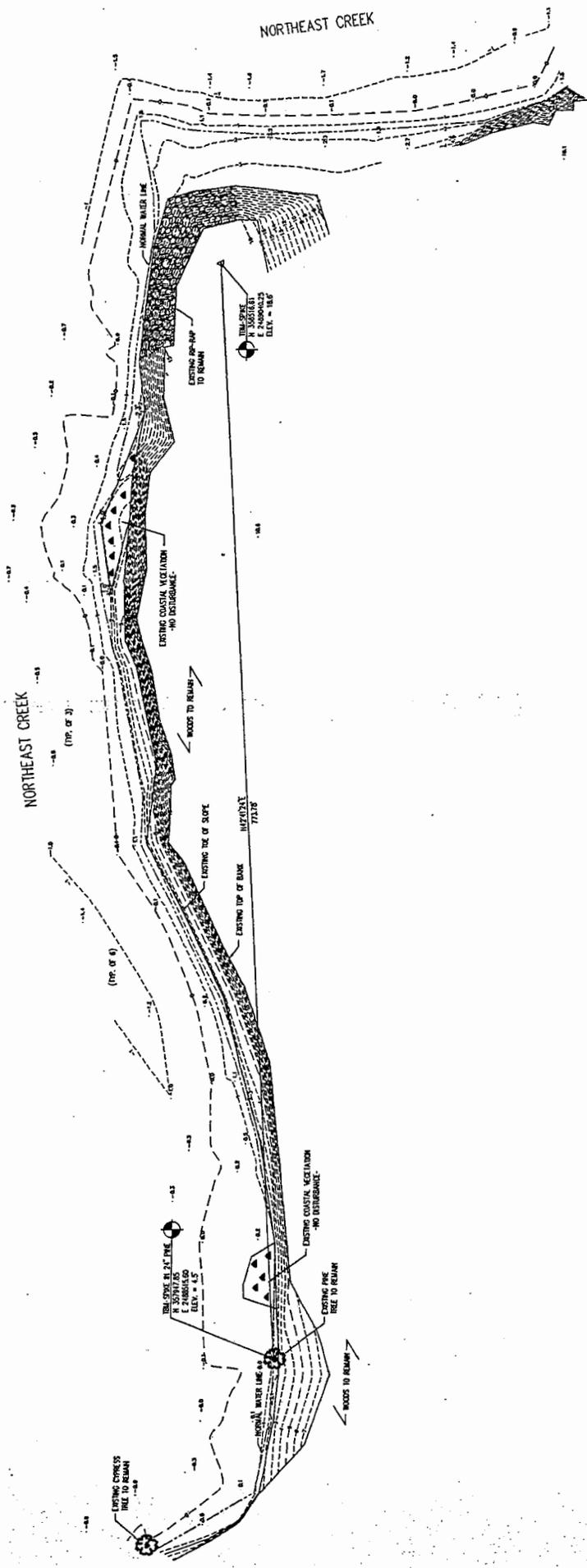
ABBREVIATIONS	
F	FILLING
ELEV	ELEVATION
MHW	MEAN HIGH WATER
EXIST	EXISTING
MHW	MEAN HIGH WATER
MHW	MEAN HIGH WATER
PHYS	PHYSICAL



90% SUBMITTAL		CS
AVOLIS ENGINEERING, P.A. 12101-1000, AVOLIS, NC 28520-1000 TEL: (919) 286-1000 FAX: (919) 286-1001		
MARINE CORPS BASE		
SHORELINE STABILIZATION BASEWIDE		
PART I, BREWSTER SCOUT CAMP		
LOCATION AND VICINITY MAP		
DATE	DATE	DATE
F	80091	NAVIG DRAWING NO.
SCALE NOTES	PROJECT NUMBER	PROJECT NUMBER
	100-89-3455	100-89-3455
		SHEET 1 OF 4

REVISED	DATE	BY

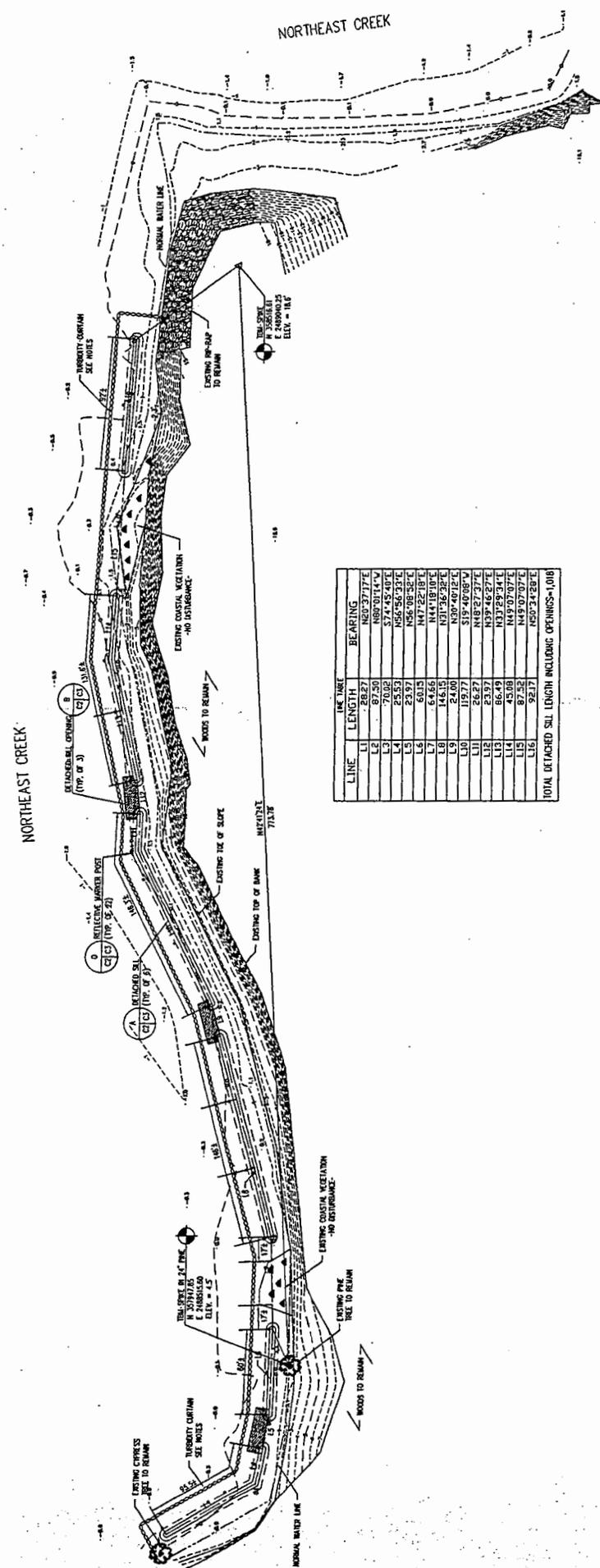
NOTES:
 1. CONTRACTOR SHALL INSTALL INHERENT CEMENT FIBER TO COMPLETE ANY PROJECT WORK.
 2. ANY DISTURBED AREAS SHALL BE REPAIRED UPON PROJECT COMPLETION.
 3. ALL USLAND AREAS DISTURBED BY CONSTRUCTION SHALL BE REPAIRED IN ACCORDANCE WITH THE VEGETATION PLAN.
 4. THE CONTRACTOR SHALL NOT REMOVE ANY VEGETATION ABOVE OR BELOW THE NORMAL WATER LEVEL.



90% SUBMITTAL		C1	
AVOLIS ENGINEERING, P.A. 1000 W. WASHINGTON AVENUE, SUITE 200 TAMPA, FLORIDA 33606 TEL: 813-281-1111 FAX: 813-281-1112			
MARINE CORPS BASE SHORELINE STABILIZATION BASEWIDE PART I, BREWSTER SCOUT CAMP			
PROJECT NO. 02-9-3153 SHEET NO. 02-9-3153-01		DATE: 02-9-3153 DRAWN BY: J. J. AVOLIS, P.E. CHECKED BY: J. J. AVOLIS, P.E.	
APPROVED FOR THE PROJECT: DATE: 02-9-3153 BY: J. J. AVOLIS, P.E.		EXISTING SITE CONDITIONS: DATE: 02-9-3153 BY: J. J. AVOLIS, P.E.	
APPROVED FOR THE PROJECT: DATE: 02-9-3153 BY: J. J. AVOLIS, P.E.		APPROVED FOR THE PROJECT: DATE: 02-9-3153 BY: J. J. AVOLIS, P.E.	

REV	DATE	APPROVED
1	02/10/04	J.A.
2		
3		

NOTES:
 1. CONTRACTOR SHALL INSTALL THURBITY CURTAIN PRIOR TO COMPLETING ANY PROJECT WORK.
 2. THURBITY CURTAIN SHALL BE REMOVED UPON PROJECT COMPLETION.
 3. ALL UPLAND AREAS DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION.
 4. VEGETATION SHALL BE REPLANTED IN ACCORDANCE WITH THE REVEGETATION PLAN.
 5. ALL WORK SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION PLAN.
 6. ALL WORK SHALL BE IN ACCORDANCE WITH THE PROTECTIVE PLAN.
 7. ALL WORK SHALL BE IN ACCORDANCE WITH THE EROSION CONTROL PLAN.
 8. ALL WORK SHALL BE IN ACCORDANCE WITH THE SLOPE PROTECTION PLAN.
 9. ALL WORK SHALL BE IN ACCORDANCE WITH THE STABILIZATION PLAN.
 10. ALL WORK SHALL BE IN ACCORDANCE WITH THE SHIELDING PLAN.
 11. ALL WORK SHALL BE IN ACCORDANCE WITH THE SLOPE PROTECTION PLAN.
 12. ALL WORK SHALL BE IN ACCORDANCE WITH THE STABILIZATION PLAN.
 13. ALL WORK SHALL BE IN ACCORDANCE WITH THE SHIELDING PLAN.



LINE	LENGTH	BEARING
L1	262.27	N50°37'77"E
L2	87.50	N89°01'14"W
L3	274.45	N74°45'40"E
L4	24.55	N74°45'40"E
L5	23.97	N256°08'52"E
L6	6.015	N47°22'18"E
L7	64.66	N44°18'10"E
L8	145.15	N31°36'28"E
L9	24.00	N39°40'12"E
L10	27.27	S15°40'08"W
L11	26.27	N39°46'27"E
L12	23.97	N39°46'27"E
L13	86.49	N33°29'34"E
L14	45.08	N49°07'07"E
L15	87.52	N49°07'07"E
L16	92.17	N50°34'28"E
TOTAL DETACHED SILL LENGTH INCLUDING OPENINGS=1,018		

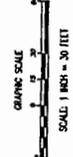
90% SUBMITTAL C2

AVOLIS ENGINEERING, P.A.
 12101-10000, AVON, MA 01901
 TEL: 978-235-1000 FAX: 978-235-1001
 DR. J.C. AVOLIS, P.E.
 DR. J.C. AVOLIS, P.E.

MARINE CORPS BASE
 SHORELINE STABILIZATION BASELINE
 PART 1, BREWSTER SCOUT CAMP

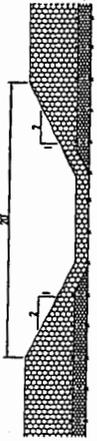
SITE LAYOUT AND GRADING PLAN

DATE: 02/10/04
 SCALE: 1" = 30' FT
 SHEET: 3 OF 4

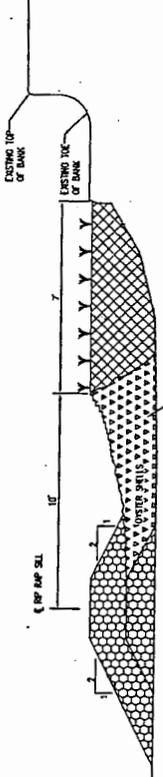


REVISIONS		DATE	APPROVED
1	CHANG COMMENTS		JJA

TOP OF DETACHED RPP RAP SILL = 3.0'
 NORMAL HIGH WATER ELEVATION = 1.7'
 NORMAL LOW WATER ELEVATION = 1.0'
 BOTTOM ELEVATION = WORKSHEET SCALE



SECTION A-A
NOT TO SCALE



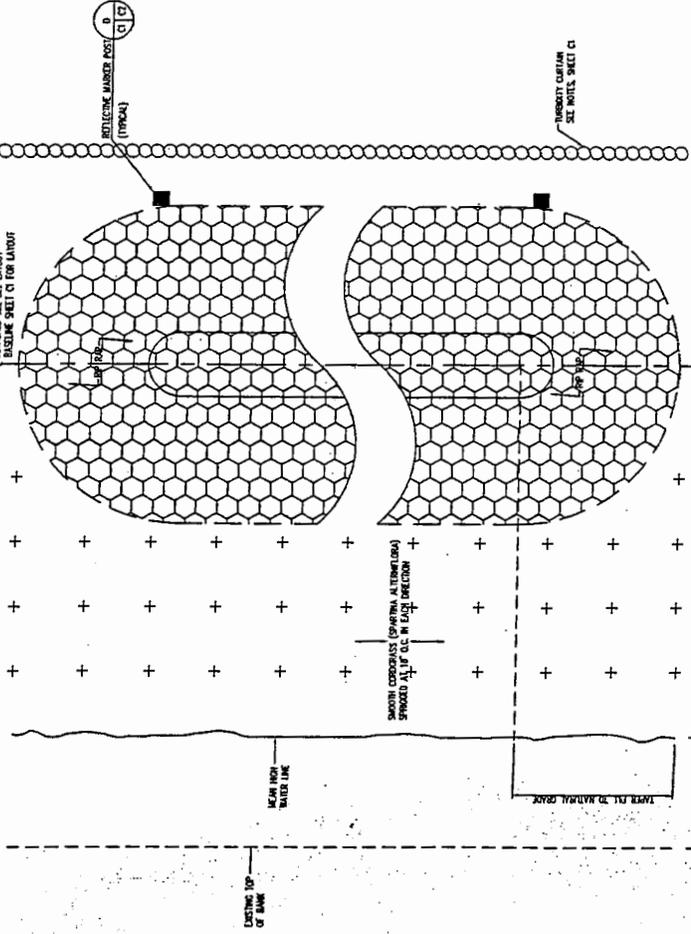
SECTION B-B
NOT TO SCALE

TOP OF DETACHED RPP RAP SILL = 3.0'
 NORMAL HIGH WATER ELEVATION = 1.7'
 NORMAL LOW WATER ELEVATION = 1.0'
 BOTTOM ELEVATION = WORKSHEET SCALE

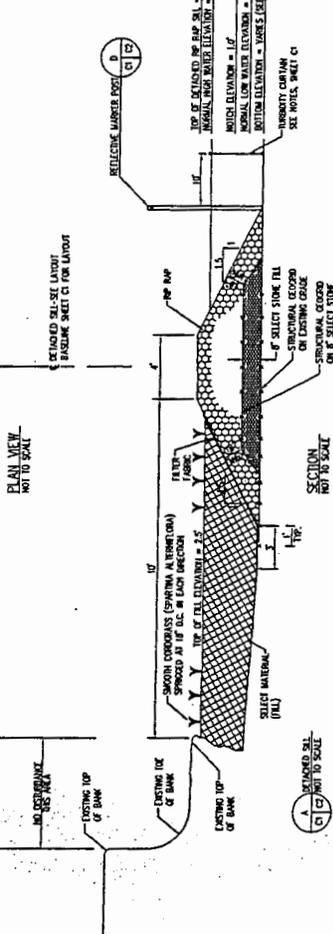
VEGETATIVE STABILIZATION
 AFTER COMPLETION OF GRADING ACTIVITIES AND THE CONSTRUCTION OF SHORES, ALL EXPOSED AREAS SHALL BE SEED TO THE FOLLOWING SPECIFICATIONS:
 SEED TYPE: BENTON
 RATE: 1-1/2 TON PER ACRE
 FERTILIZER: 50 LBS PER ACRE
 MULCH: 100 LBS PER ACRE
 PROTECTIVE COVER: 5 LBS PER ACRE
 PROCEEDURE: SHALL BE APPLIED AS A RHYTHMIC WILL BE APPLIED TO THE SEEDING OF THE SEEDING AREA. THE STRAW AND SOON SEED WILL BE LIMITED TO APPROXIMATELY 75% COVERAGE OF THE SEEDING TO ALLOWING THE VEGETATION TO ESTABLISH ITSELF. THE CONTRACTOR SHALL GUARANTEE A FULL STAND OF VEGETATION OVER THE ENTIRE SEEDING AREA. IF NECESSARY IN SECOND GROWTH OR IN AN AREA WHERE VEGETATION IS NOT ESTABLISHED, A SECOND SEEDING OF SEEDS WILL BE APPLIED AT LEAST SIX MONTHS AFTER THE FIRST SEEDING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SEEDING TO OBTAIN THE SPECIFIED STAND OF GRASS.

90% SUBMITTAL

90% SUBMITTAL		C3	
AVIGOR ENGINEERING, P.A. 1000 W. MARKET STREET, SUITE 200 CHARLOTTE, NC 28202-4000 TEL: 704.375.1515 FAX: 704.375.1500 WWW: WWW.AVIGOR.COM			
MARINE CORPS BASE SHORELINE STABILIZATION BASEWIDE PART I, BREWSTER SCOUT CAMP			
DATE	2/26/03	DATE	2/26/03
PROJECT NO.	80091	PROJECT NO.	80091
APPROVED BY	[Signature]	DATE	2/26/03
DESIGNED BY	[Signature]	DATE	2/26/03
CHECKED BY	[Signature]	DATE	2/26/03
SCALE	AS SHOWN	SCALE	AS SHOWN
SHEET 4 OF 4 PROJECT NO. 80091			

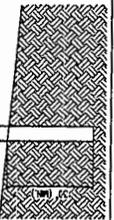


PLAN VIEW
NOT TO SCALE



SECTION C-C
NOT TO SCALE

REFLECTIVE MARKER POSTS
 37" HIGH REFLECTIVE SURFACE
 4" X 4" PRESSURE TREATED POST
 25' SPACING
 REFLECTIVE MARKER POSTS
 SHALL BE PLACED AT 25' SPACING
 ALONG THE ENTIRE LENGTH OF THE RAP SILL SEE
 PLAN FOR LOCATION



SECTION D-D
NOT TO SCALE

ATTACHMENT - MODIFIED OCTOBER 15, 2004

**PROJECT DESCRIPTION AND JUSTIFICATION
SHORELINE STABILIZATION BASEWIDE - PART 1
HOSPITAL POINT**

CONSTRUCTION CONTRACT N62470-01-B-2142

I. PROJECT DESCRIPTION

THIS PROJECT ENTAILS THE CONSTRUCTION OF A 392 FOOT LONG DETACHED RIP-RAP SILL IN THE HOSPITAL POINT AREA OF MARINE CORP BASE, CAMP LEJEUNE, ONSLOW COUNTY, NORTH CAROLINA. THE SHORELINE TO BE PROTECTED IS LOCATED IMMEDIATELY ADJACENT TO AN EXISTING HELICOPTER LANDING PAD. THE SHORELINE IN THIS AREA HAS EXPERIENCED EXCESSIVE EROSION IN THE PAST. A PORTION OF THE SHORELINE IN THE AREA OF THE ADJACENT ASPHALT PARKING LOT HAS BEEN STABILIZED WITH RIP-RAP .

IT IS THE DESIRE OF MARINE CORPS BASE CAMP LEJEUNE TO INSTALL A DETACHED RIP-RAP SILL AS A METHOD OF SHORELINE STABILIZATION IN THIS GENERAL AREA. SPECIFICALLY, IT IS PROPOSED THAT A GRANITE RIP-RAP SILL BE INSTALLED APPROXIMATELY 10 FEET OFFSHORE OF THE MEAN HIGH WATER LINE. THE GRANITE SILL WILL BE BACKFILLED WITH A SANDY SOIL MATERIAL OBTAINED FROM THE FRENCH CREEK BORROW PIT AT MCB CAMP LEJEUNE TO AN ELEVATION OF APPROXIMATELY 1 FOOT ABOVE THE MEAN HIGH WATER LEVEL. THE FILLED AREA WILL BE VEGETATED WITH SMOOTH CORD GRASS (SPARTINA ALTERNIFLORA). GRASS SPRIGS WILL BE INSTALLED AT 18 INCHES ON CENTER BEHIND THE DETACHED RIP-RAP SILL. IT IS PROPOSED THAT THREE OPENINGS, 20' FOOT WIDE, BE CONSTRUCTED IN THE DETACHED SILL AS SHOWN ON THE PROJECT PLANS.

SMALL QUANTITIES OF RIP RAP AND CONCRETE RUBBLE HAVE BEEN PLACED ALONG SECTIONS OF THIS SHORELINE OVER TIME. ADDITIONALLY, SMALL PODS OF SPARTINA ALTERNIFLORA HAVE ESTABLISHED THEMSELVES NATURALLY ALONG THIS SECTION OF SHORELINE. THESE AREAS ARE DELINEATED ON THE PROJECT PLANS. IT IS PROPOSED THAT ALL EXISTING VEGETATION AND RUBBLE ALONG THE SHORELINE BE LEFT IN TACT.

A SMALL STREAM FLOWS FROM AN EXISTING MARSH AREA ON THE EASTERN END OF THE PROJECT SITE. THE DETACHED RIP RAP SILL WILL BE ENDED APPROXIMATELY 24 FEET SHORT OF THE EDGE OF THIS EXISTING STREAM TO ALLOW FOR THE NATURAL PASSAGE OF WATER TO AND FROM THIS MARSH AREA.

THE ELEVATION OF THE FILL MATERIAL BEHIND THE DETACHED RIP-RAP SILL WAS ESTABLISHED BASED UPON A SURVEY OF ELEVATIONS IN THE GENERAL AREA WHERE SPARTINA ALTERNIFLORA HAS NATURALLY ESTABLISHED ITSELF. THE TOP OF SOIL ELEVATION OF 2.5 FEET SHOULD ALLOW FOR A FULLY SATURATED SOIL CONDITION DURING NORMAL WATER LEVELS.

II. CONSTRUCTION METHODS

ALL CONSTRUCTION CONTRACTS ISSUED BY MARINE CORPS BASE, CAMP LEJEUNE ARE ISSUED ON A COMPETITIVE BASIS. THE CONTRACTOR IS ALLOWED TO UTILIZE HIS DISCRETION IN DEVELOPING A WORK PLAN FOR EACH PROJECT AND TO DEVELOP A PROPOSED COURSE OF ACTION TO EXECUTE THE PROJECT.

THE CONSTRUCTION OF THE DETACHED RIP RAP SILL WILL LIKELY BE COMPLETED FROM THE UPLAND AREAS LOCATED ADJACENT TO THE PROJECT SHORELINE AREA. DUE TO THE SHALLOW NATURE OF THE WATER IN THE PROJECT AREA, IT IS NOT ANTICIPATED THAT RIP RAP MATERIAL WILL BE BARGED TO THE PROJECT SITE.

IT IS ANTICIPATED THAT THE RIP RAP MATERIAL WILL BE TRUCKED TO THE SITE AND PLACED FROM THE UPLAND BANK AREAS ON THE SITE. HAND LABOR WILL BE UTILIZED TO PLACE THE GEO-TEXTILE AND GEO-GRID FABRICS. A TRACK HOE OR EXCAVATOR WILL BE UTILIZED TO PLACE THE RIP RAP MATERIAL. ADDITIONALLY, A TRACK HOE WILL BE UTILIZED TO PLACE SELECT BACKFILL MATERIAL LANDWARD OF THE DETACHED RIP RAP SILL. THE FINAL GRADING AND VEGETATING OF THE FILL MATERIAL WILL BE COMPLETED BY HAND LABOR.

EROSION AND SEDIMENTATION CONTROL DEVICES ARE PROPOSED TO BE UTILIZED DURING THE COURSE OF CONSTRUCTION TO PREVENT EROSION AND OFF-SITE TRANSPORT OF SEDIMENT. AS INDICATED ON THE PROJECT PLANS A TURBIDITY CURTAIN WILL BE INSTALLED AROUND THE PROJECT BOUNDARY WATERWARD OF THE PROPOSED DETACHED SILL. THE TURBIDITY CURTAIN WILL BE MAINTAIN FOR THE ENTIRE DURATION OF THE PROJECT. ADDITIONALLY, ALL UPLAND AREAS DISTURBED AS A RESULT OF THE PROPOSED CONSTRUCTION WILL BE RE-ESTABLISHED WITH VEGETATION IN ACCORDANCE WITH THE VEGETATIVE SEEDING SCHEDULE PRESENTED ON THE PROJECT PLANS. FILTER FABRICS ARE PROPOSED TO BE PLACED ON THE DETACHED RIP RAP SILL TO RETAIN THE SELECT FILL MATERIAL. ALL CREATED WETLAND AREAS FILL WILL BE SPRIGGED WITH SMOOTH CORD GRASS (SPARTINA ALTERNIFLORA). THE PROPOSED EROSION AND SEDIMENTATION CONTROL PRACTICES WILL PREVENT THE TRANSPORT OF SEDIMENT OFF-SITE.

THE TOTAL PROPOSED DISTURBED AREA TO COMPLETE THIS PROJECT IS LESS THAN ONE ACRE. THEREFORE, NO EROSION AND SEDIMENTATION CONTROL PERMIT IS REQUIRED TO EXECUTE THE PROJECT.

III. ARCHEOLOGICAL RESOURCES

THE MARINE CORPS BASE, CAMP LEJEUNE MAINTAINS AN INVENTORY OF ALL ARCHEOLOGICALLY SIGNIFICANT SITES ON MARINE CORPS BASE, CAMP LEJEUNE. THE PROPOSED PROJECT BOUNDARIES ARE NOT LOCATED WITHIN ANY KNOWN AREA OF ARCHEOLOGICAL SIGNIFICANCE.

IV. WETLAND IMPACTS

THE PROJECT PLAN DEPICTS THE LIMITS OF THE COASTAL WETLAND LINE ON THE PROJECT SITE. THIS PROJECT DOES NOT INCLUDE THE PLACEMENT OF FILL ON ANY AREAS ABOVE THE NORMAL WATER LEVEL THAT WERE IDENTIFIABLE AS ADJACENT WETLAND AREAS. THE PROPOSED SELECT BACKFILL MATERIAL BEHIND THE DETACHED SILL WILL BE PLACED TO AN ELEVATION APPROXIMATELY EQUAL TO THE TOP OF THE ERODED BANK AS DEPICTED ON THE PROJECT PLANS. AS DEPICTED ON THE PROJECT PLANS, NO DISTURBANCE WILL OCCUR BETWEEN THE ERODED NORMAL LEVEL WATER BANK AND THE UPGRADIENT TOP OF BLUFF LIMIT.

V. SUBAQUATIC VEGETATION

THE PROPOSED PROJECT WILL IMPACT ANY SUBAQUATIC VEGETATION THAT EXISTS WITHIN THE FOOTPRINT AREA OF THE DETACHED RIP RAP SILL AND SELECT BACKFILL MATERIAL. THE AREA WITHIN THE PROJECT BOUNDARY HAS BEEN BACKFILLED ERRATICALLY OVER TIME WITH RIP RAP, CONCRETE RUBBLE, BRICKS AND OTHER MATERIAL. IT IS PROPOSED THAT NONE OF THIS EXISTING MATERIAL BE EXCAVATED AS A PART OF THE PROPOSED CONSTRUCTION. THE DETACHED RIP RAP SILL WILL BE PLACED ON THE EXISTING GRADE AND THE SELECT BACKFILL MATERIAL WILL BE PLACED ON THE EXISTING GRADE. ANY SUBAQUATIC VEGETATION THAT EXISTS WITHIN THE LIMITS OF THIS FILLING WILL BE IMPACTED.

VI. WATER QUALITY

THE LONG TERM WATER QUALITY WITHIN THE GENERAL VICINITY OF THE PROPOSED PROJECT WILL NOT BE IMPACTED ADVERSELY BY THE PROPOSED CONSTRUCTION. THE SHORT TERM WATER QUALITY MAY BE IMPACTED TO A LIMITED EXTENT BY THE PROPOSED CONSTRUCTION. EROSION AND SEDIMENTATION CONTROL DEVICES WILL BE UTILIZED TO PREVENT SEDIMENTATION AND EROSION FROM OCCURRING TO THE SURFACE WATERS.

IT IS PROPOSED THAT APPROXIMATELY 6,000 SQUARE FEET OF WETLAND VEGETATION BE ESTABLISHED BETWEEN THE DETACHED RIP RAP SILL AND MEAN HIGH WATER LEVEL. ONCE STABILIZED AND ALLOWED TO ESTABLISH, THIS WETLAND VEGETATION WILL PROVIDE A FILTERING MECHANISM AND HABITAT. ADDITIONALLY, THE DETACHED RIP RAP SILL AND WETLAND VEGETATION WILL PREVENT SHORELINE EROSION FROM CONTINUING TO OCCUR IN THIS AREA. THE LONG-TERM IMPACT ON THE SURFACE WATERS IN THE PROJECT AREA ARE ANTICIPATED TO BE IMPROVED AS A RESULT OF THE COMPLETION OF THIS PROJECT FROM THE PREVENTION OF SHORELINE EROSION AND RELATING SEDIMENTATION.

VII. NAVIGABILITY - PUBLIC TRUST WATERS

THE COMPLETION OF THIS PROJECT WILL RESULT IN THE DISTURBANCE OF APPROXIMATELY 12,000 SQUARE FOOT OF NAVIGATIBLE PUBLIC TRUST WATERS. THESE WATERS WILL BE IMPACTED BY THE PLACEMENT OF THE DETACHED RIP RAP SILL AND THE PLACEMENT OF BACKFILL MATERIAL TO CREATE WETLAND AREAS.

VIII. CONSISTENCY WITH PERMIT 42-00

CAMA MAJOR PERMIT 42-00 WAS ISSUED TO THE NORTH CAROLINA COASTAL FEDERATION ON MARCH 22, 2000. THE PERMIT WAS ISSUED AS A GENERAL PERMIT FOR THE CONSTRUCTION OF 30 DETACHED SILL PROJECTS AT UNDETERMINED LOCATIONS. THE DIVISION OF WATER QUALITY AND U.S. ARMY CORPS OF ENGINEERS REVIEWED THE PROJECT AS WELL. THE CAMA PROJECT CONTAINS 29 CONDITIONS RELATIVE TO THE PROPOSED CONSTRUCTION THAT MUST BE COMPLIED WITH. THE FOLLOWING INFORMATION IS PROVIDED TO DEMONSTRATE GENERAL CONFORMANCE WITH THE CAMA MAJOR PERMIT ISSUED FOR THESE SIMILAR PROJECTS. FOR CLARITY, ALL ITEMS ARE ENUMERATED AS THEY APPEAR ON THIS CAMA PERMIT.

ITEMS 1 - 4	IN COMPLIANCE
ITEM 5	PENDING REVIEW
ITEM 6	NO TIE BACK PROPOSED
ITEM 7	IN COMPLIANCE
ITEM 8	IN COMPLIANCE
ITEM 9	IN COMPLIANCE

- ITEM 10 IN COMPLIANCE - PROPOSED LENGTH IS 392 LINEAR FEET
(INCLUDING GAPS)
- ITEM 11 IN COMPLIANCE
- ITEM 12 THE HEIGHT OF THE DETACHED RIP RAP SILL IS PROPOSED TO
BE APPROXIMATELY 1.8 FEET ABOVE THE NORMAL HIGH
WATER ELEVATION. THIS HEIGHT IS ASSIGNED TO PREVENT
ANY SCOUR OR WASHING FROM OCCURRING AS A RESULT OF
ANY WAVE ACTION ALONG THE PROJECT SHORELINE AND TO
PROVIDE PROTECTION OF THE SELECT BACKFILL AND
WETLAND VEGETATION. THE ELEVATION OF THE SELECT
BACKFILL IS BASED UPON SURVEYED ELEVATIONS IN
ADJACENT WETLAND AREAS WHERE NATURAL VEGETATION
HAS ESTABLISHED ITSELF. BASED UPON WATER DEPTHS, IT IS
NOT POSSIBLE TO MAINTAIN THE BOTTOM WIDTH OF THE
SILL AT LESS THAN 15 FEET WHILE STILL PROVIDING STABLE
SIDE SLOPES. THE SIDE SLOPES HAVE BEEN INCREASED TO
THE MAXIMUM PRACTICAL.
- ITEM 13 IN COMPLIANCE
- ITEM 14 NO MARKINGS PROPOSED
- ITEM 15 IN COMPLIANCE
- ITEM 16 IN COMPLIANCE
- ITEM 17 IN COMPLIANCE
- ITEM 18 NOT APPLICABLE
- ITEM 19 PENDING REVIEW OF DIVISION OF MARINE FISHERIES
- ITEM 20 IN COMPLIANCE
- ITEM 21 IN COMPLIANCE
- ITEM 22 IN COMPLIANCE
- ITEM 23 NOT APPLICABLE
- ITEM 24 PROJECT MONITORING WILL BE COMPLETED BY MARINE
CORPS BASE ENVIRONMENTAL PERSONNEL
- ITEM 25 NOT APPLICABLE

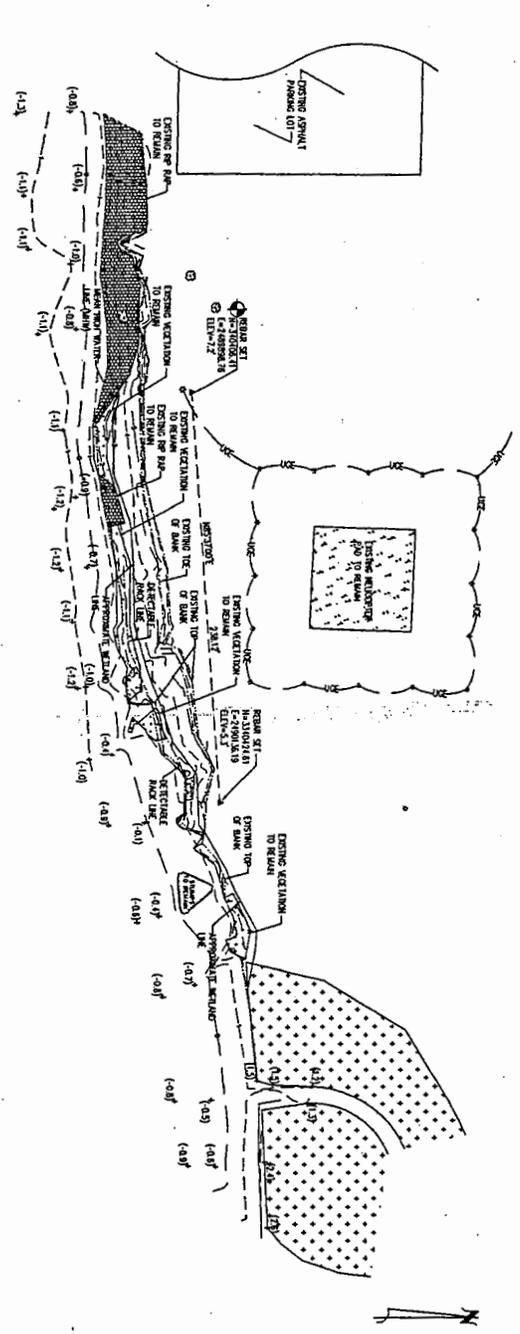
ITEM 26 IN COMPLIANCE

ITEM 27 IN COMPLIANCE

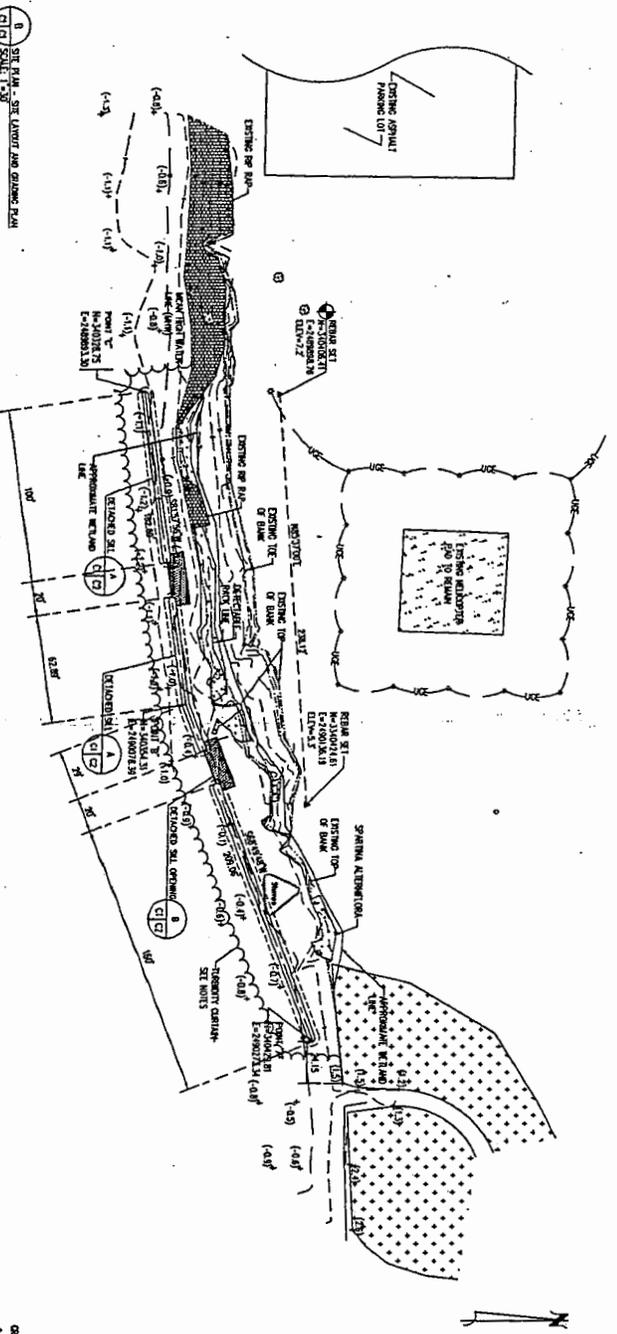
ITEM 28 IN COMPLIANCE

ITEM 29 IN COMPLIANCE

NO.	DATE	APPROVED	REVISIONS



1 SITE PLAN - EXISTING CONDITIONS
SCALE: 1" = 20' FT



0 SITE PLAN - EXISTING CONDITIONS
SCALE: 1" = 20' FT

NOTES:
1. CONTRACTOR SHALL MAINTAIN EXISTING UTILITIES TO REMAIN UNLESS OTHERWISE INDICATED.
2. EXISTING UTILITIES SHALL BE MAINTAINED UNLESS OTHERWISE INDICATED.
3. ALL UTILITIES SHALL BE MAINTAINED UNLESS OTHERWISE INDICATED.
4. ALL UTILITIES SHALL BE MAINTAINED UNLESS OTHERWISE INDICATED.
5. ALL UTILITIES SHALL BE MAINTAINED UNLESS OTHERWISE INDICATED.

MARINE CORPS BASE SHORELINE STABILIZATION BASELINE PART I, HOSPITAL POINT SITE PLAN - EXISTING CONDITIONS & SITE LAYOUT AND GRADING PLAN	
DATE	10/20/01
SCALE	1" = 20' FT
PROJECT NO.	80091
DESIGNER	AVOIDS ENGINEERING, P.A.
CHECKED BY	J.C. AVOIDS, P.E.
DATE	10/20/01
APPROVED BY	[Signature]
DATE	10/20/01
SCALE	1" = 20' FT
PROJECT NO.	80091
DESIGNER	AVOIDS ENGINEERING, P.A.
CHECKED BY	J.C. AVOIDS, P.E.
DATE	10/20/01
APPROVED BY	[Signature]
DATE	10/20/01

GRAPHIC SCALE
SCALE: 1" = 20' FT

WETLAND VEGETATION. THE ELEVATION OF THE SELECT BACKFILL IS BASED UPON SURVEYED ELEVATIONS IN ADJACENT WETLAND AREAS WHERE NATURAL VEGETATION HAS ESTABLISHED ITSELF.

- ITEM 13 IN COMPLIANCE
- ITEM 14 IN COMPLIANCE
- ITEM 15 IN COMPLIANCE
- ITEM 16 IN COMPLIANCE
- ITEM 17 IN COMPLIANCE
- ITEM 18 NOT APPLICABLE
- ITEM 19 PENDING REVIEW OF DIVISION OF MARINE FISHERIES
- ITEM 20 IN COMPLIANCE
- ITEM 21 IN COMPLIANCE
- ITEM 22 IN COMPLIANCE
- ITEM 23 NOT APPLICABLE
- ITEM 24 PROJECT MONITORING WILL BE COMPLETED BY MARINE CORPS BASE ENVIRONMENTAL PERSONNEL
- ITEM 25 NOT APPLICABLE
- ITEM 26 IN COMPLIANCE
- ITEM 27 IN COMPLIANCE
- ITEM 28 IN COMPLIANCE
- ITEM 29 IN COMPLIANCE