

DOCTORS PASS
COMPREHENSIVE INLET MANAGEMENT PLAN

PREPARED FOR
THE CITY OF NAPLES
BY
SUBOCEANIC CONSULTANTS, INC.
IN ASSOCIATION WITH
TACKNEY AND ASSOCIATES, INC.

FEBRUARY 1994

EXECUTIVE SUMMARY

A detailed study of Doctors Pass and the adjacent beaches has been made for the purpose of developing an inlet management plan. A comprehensive inlet management plan for Doctors Pass is a prerequisite for obtaining a new 10-year maintenance dredging permit from the State of Florida DEP, Division of Beaches and Shores. The study objective was to develop a plan that would significantly improve inlet navigation as well as satisfy the States' statutory objectives for sediment bypassing. To accomplish this objective, the physical processes at the pass were investigated, natural resources were identified, and navigational improvement needs were assessed. From these investigations, management alternatives were identified and evaluated for technical feasibility, environmental impact, and costs. Maintenance dredging, fixed bypassing plants, structural impoundments, and an ebb shoal impoundment basin were considered. From these alternatives, a plan was formulated which provides the best method of bypassing sand, ensuring safe navigation, and preserving the natural resources in the area.

Approximately 10,000 cubic yards of sand must be bypassed at Doctors Pass on an average annual basis. Unrestricted navigation for most area boats can be provided by a minimum outer channel depth of 9 feet (MLLW) and by minimum pass and inner channel depths of 7 feet. Creation of an ebb shoal impoundment basin by conventional dredging and periodic maintenance dredging is the best method for meeting these requirements. Other methods are from 2 to 2 ½ times more costly and not as effective.

It is therefore recommended that the sediment bypassing requirements at Doctors Pass be met by dredging a sediment impoundment basin in the ebb tidal shoal area and periodically bypassing trapped sediments by conventional maintenance dredging techniques. The impoundment basin should have a sediment storage capacity of at least 40,000 cubic yards which would limit the need for maintenance dredging projects to once every three or four years. An impoundment area 200,000 square feet, dredged to a depth of 14 feet below NGVD, will provide the storage capacity needed. Sediments from the initial and subsequent dredgings of the impoundment basin should be deposited in nearshore spoil sites, as has been the practice at Doctors Pass for the past 10 years. No rock excavation will be required.

* Nourishment of the adjacent beaches will not reduce the effectiveness of this bypassing plan, providing that the north jetty is extended and the nearshore spoil sites are preserved. Ideally, the jetty should be extended prior to the initial dredging of the impoundment basin. The length and orientation of the jetty extension will dictate the location of the sediment impoundment basin. To accommodate future changes brought about by the beach nourishment project, it is recommended that the permitted dredge area in the ebb tidal shoal be modified as shown on the accompanying sketch. Dredge Area 1, as shown on this sketch, is larger than needed to meet bypassing

requirements, but it is not intended that the entire area be dredged. The larger area will provide the flexibility needed for future adjustment in the position of the impoundment basin without having to modify the maintenance dredging permits.

The desired depths in the pass and inner channels can be maintained by dredging, as needed, whenever the impoundment basin is dredged. The approved dredge areas in the pass and flood shoal should also be enlarged, as shown on the sketch. As is the case with the ebb shoal dredge area 1, it is not intended that these entire areas be dredged. Dredging within these areas would be done as necessary to help meet sediment bypassing requirements and to improve navigational safety. Continued flood shoal growth north of the pass causes the navigational channels to migrate outward toward the docks and seawalls, thus reducing their navigable widths and creating scouring currents along adjacent seawalls. Widening these inner channels will significantly improve both conditions.

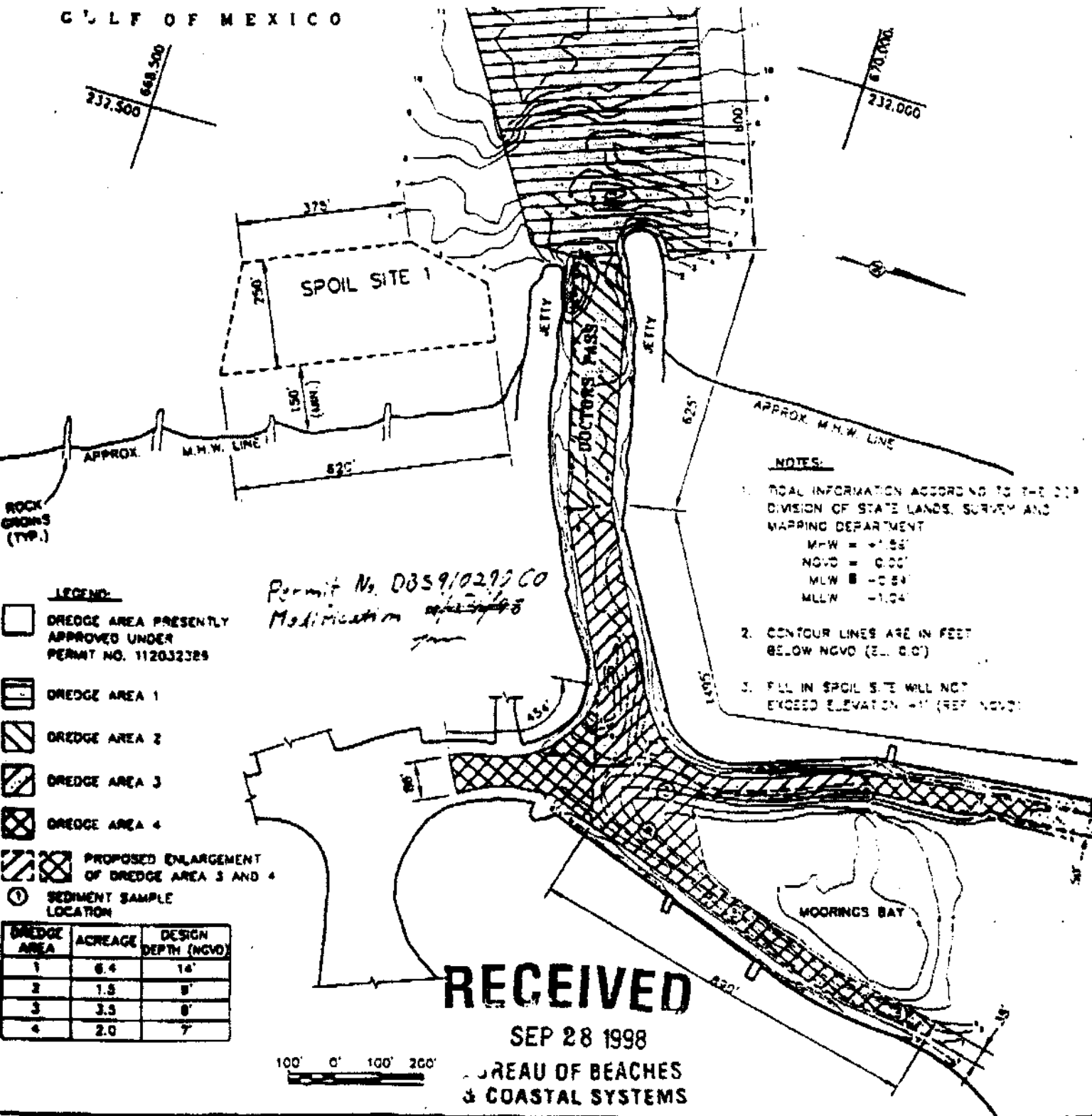
Although extending the dredging cycle to three or four years involves spoiling larger volumes of sediment in the nearshore spoil sites, this is not expected to have any adverse impact on the natural resources. During the spring and summer of 1991, over 45,000 cubic yards of sediment were deposited in these spoil sites without adverse impact on nearshore hard bottom areas or turtle nesting on the beach. New environmental monitoring programs have been instituted by the County and the City which will provide improved monitoring of the natural resources. Physical monitoring is also an important feature of this plan. Periodic bathymetric surveys are necessary to determine the effectiveness of sediment bypassing and to monitor channel depths.

Permitting requirements for this plan should be minimal. The proposed dredge areas are larger than those requested in the new applications, filed in 1991, but the depths are the same. It is expected that permit modifications can be obtained rather than going through a new application process.

The annual cost associated with this plan, inclusive of all dredging costs and all engineering and monitoring costs, is estimated to be \$88,000 or \$8.80 per cubic yard. This estimate is based on a separate contract for each dredging event. Award of a long term dredging contract, of 5 to 10 years, may reduce the annual cost by up to 10 percent. Further reduction in cost may be realized by combining Doctors Pass dredging and Wiggins Pass dredging under a single long term contract.

Due to permitting delays and uncertainties relating to the proposed beach nourishment project, it is not likely that this plan can be implemented until 1995. However, recent bathymetric surveys indicate a need for maintenance dredging prior to 1995. It is therefore recommended that a project of about 10,000 cubic yards be scheduled for this summer. The estimated cost for a project this size, inclusive of engineering and monitoring, is \$100,000.

GULF OF MEXICO



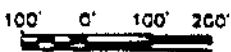
- NOTES:**
1. ALL INFORMATION ACCORDING TO THE 200 DIVISION OF STATE LANDS, SURVEY AND MAPPING DEPARTMENT
 MHW = +1.55'
 NGVD = 0.00'
 MLW = -0.54'
 MLLW = -1.04'
 2. CONTOUR LINES ARE IN FEET BELOW NGVD (E.L. 0.0')
 3. FILL IN SPOIL SITE WILL NOT EXCEED ELEVATION +1' (REF. NGVD)

*Permit No. 08591029200
 Modification 9/23/98*

RECEIVED
 SEP 28 1998
 BUREAU OF BEACHES
 & COASTAL SYSTEMS

- LEGEND:**
- DREDGE AREA PRESENTLY APPROVED UNDER PERMIT NO. 112032325
 - DREDGE AREA 1
 - DREDGE AREA 2
 - DREDGE AREA 3
 - DREDGE AREA 4
 - PROPOSED ENLARGEMENT OF DREDGE AREA 3 AND 4
 - SEDIMENT SAMPLE LOCATION

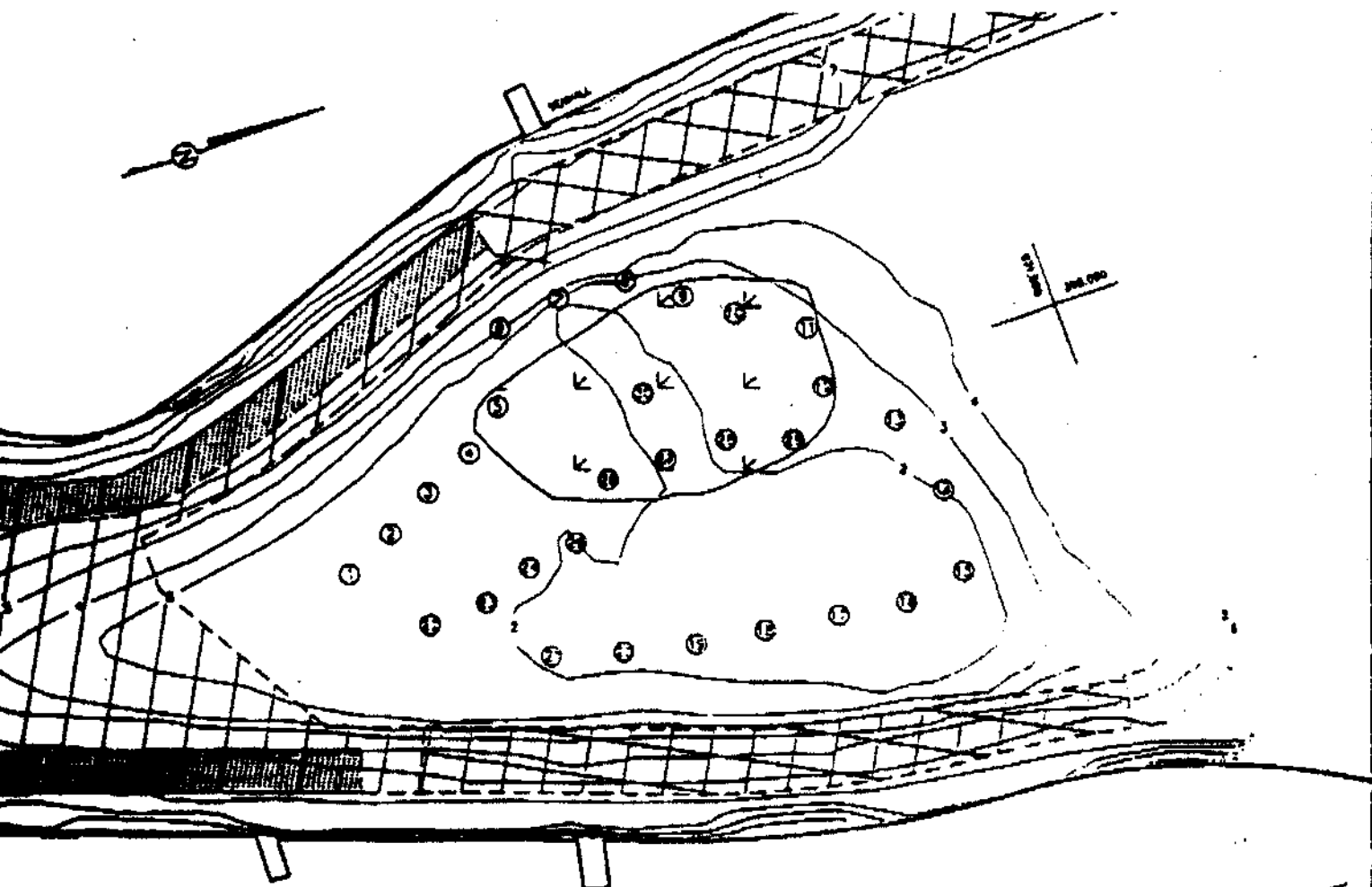
DREDGE AREA	ACREAGE	DESIGN DEPTH (NGVD)
1	6.4	14'
2	1.5	8'
3	3.3	8'
4	2.0	7'



PREPARED FOR:
 CITY OF NAPLES
 735 EIGHTH STREET SOUTH
 NAPLES, FLORIDA 34102
 SAVE THE BAYS ASSOCIATION, INC.
 P. O. BOX 1593
 NAPLES, FLORIDA 34106

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 277 AIRPORT ROAD SOUTH
 NAPLES, FLORIDA 34104
 (941) 261-2025

PROPOSED MAINTENANCE DREDGING AREAS AT DOCTORS PASS
 DATE 7-20-98 REVISION: 9-22-98
 SHEET 2 OF 6
 DWG. 9325-120



NOTES:

1. CONTOURS ARE IN FEET (REF. M.C.M.S.)
2. SURVEY DATE:
MAY, 1988 FOR PALS AND BAY
3. TIDE INFORMATION:
M.H.W. = +1.50'
M.L.W. = 0.00'
M.L.L.W. = -0.30'
L.L.W. = -1.00'






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BUREAU OF BEACHES
& COASTAL SYSTEMS

Permit No. DB5910290 CO
Modification 11/2/98
11/2/98

LEGEND

-  WADSWAS BCD
TOTAL AREA = 0.77 ACRES
-  EXISTING SPECIFIC AREA 3
-  EXISTING SPECIFIC AREA 4
-  PROPOSED ENLARGEMENT OF SPECIFIC AREA 3 AND 4
-  DETAILED EXAMINATION LOCATION



BIOLOGICAL SURVEY - LOCATIONS OF DETAILED EXAMINATION				
SCI		SUBOCEANIC CONSULTANTS INC. CIVIL, OCEAN, AND MARINE ENGINEERS - SURVEY MAPLE FLORIDA		SCI
PROJECT	DR.	DATE	JOB	
DB-12-2	R.A.C.	2/22/98	G.F.R.	
DB-12-2	SCALE: AS INDICATED			

DB5 290