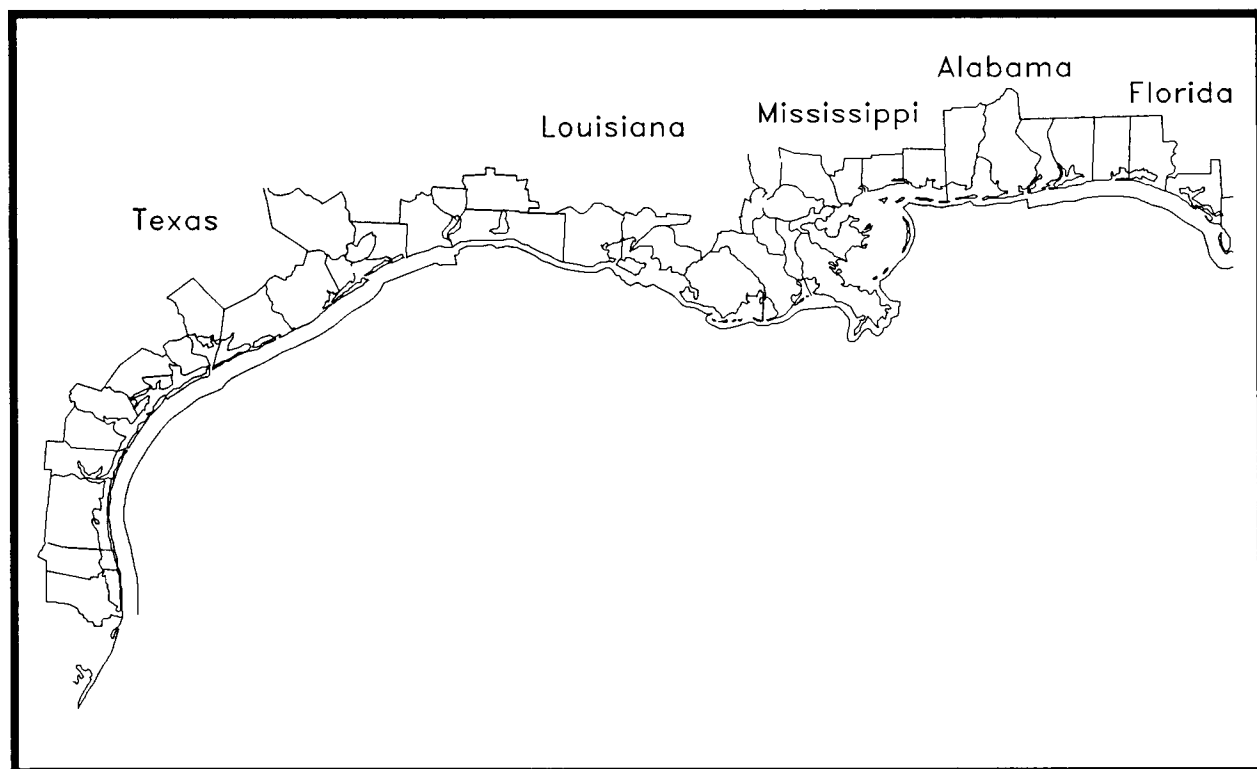


An Analysis of Outer Continental Shelf Impacts

# Pipelines, Navigation Channels, and Facilities in Sensitive Coastal Habitats

## Coastal Gulf of Mexico

Volume II: Atlas of Physical, Cultural, and  
Biological Parameters



U.S. Department of the Interior  
Minerals Management Service  
Gulf of Mexico OCS Region

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and Facilities in Sensitive  
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**Volume II: Atlas of Physical, Cultural, and  
Biological Parameters**

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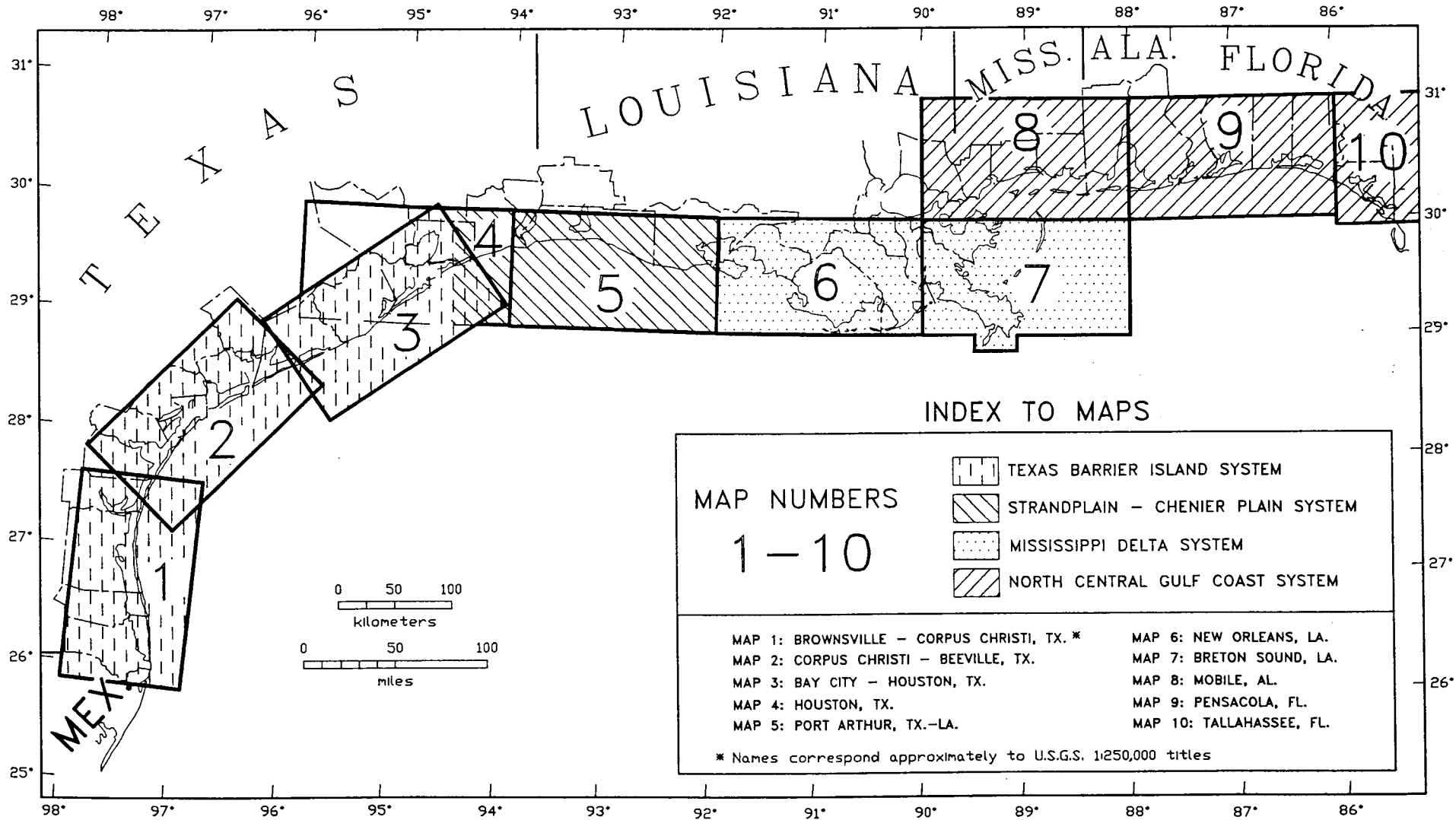
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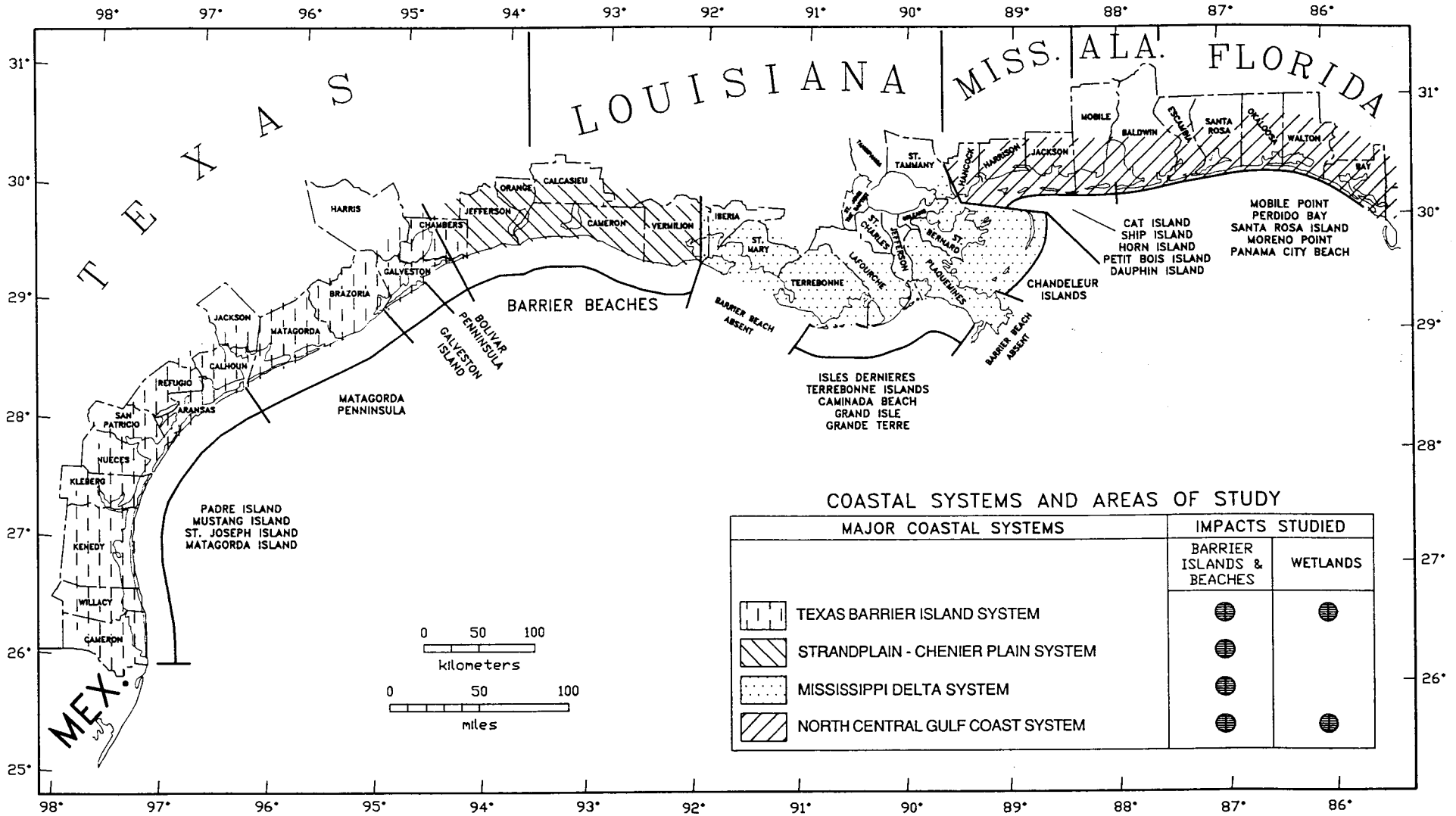
Wicker, K.M., R.E. Emmer, D. Roberts, and J. van Beek. 1989. Pipelines, Navigation Channels, and Facilities in Sensitive Coastal Habitats, An Analysis of Outer Continental Shelf Impacts, Coastal Gulf of Mexico. Volume II: Atlas of physical, cultural, and biological parameters. OCS Report/MMS 89-0052. U.S. Dept. of the Interior, Minerals Mgmt. Service, Gulf of Mexico OCS Regional Office, New Orleans, La. 83 pp.

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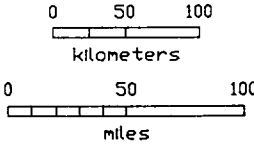
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COASTAL SYSTEMS AND AREAS OF STUDY

MAJOR COASTAL SYSTEMS	IMPACTS STUDIED	
	BARRIER ISLANDS & BEACHES	WETLANDS
TEXAS BARRIER ISLAND SYSTEM		
STRANDPLAIN - CHENIER PLAIN SYSTEM		
MISSISSIPPI DELTA SYSTEM		
NORTH CENTRAL GULF COAST SYSTEM		

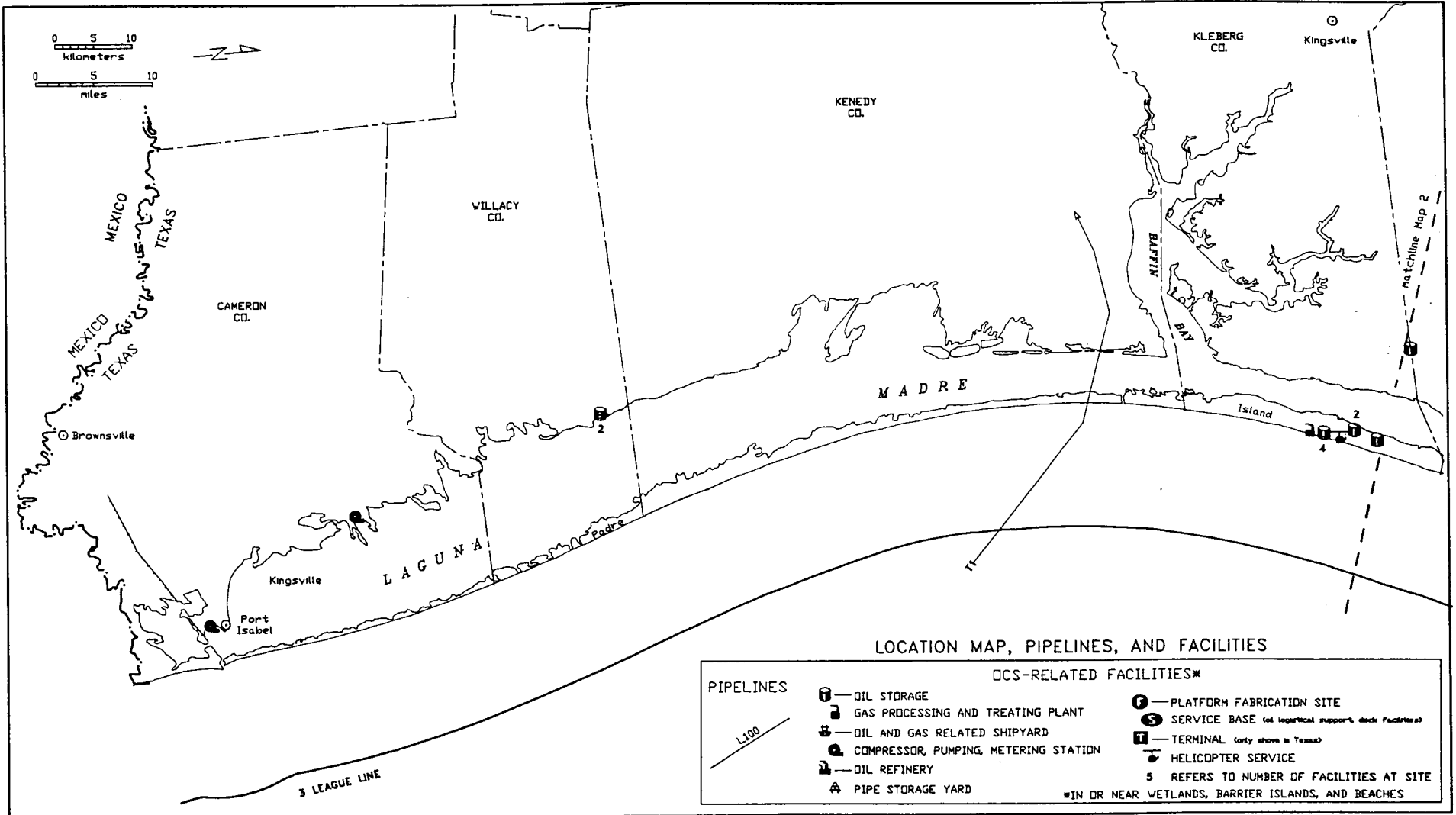


Maps 1A - 10A

**LOCATION MAP, PIPELINES, AND OCS-RELATED FACILITIES**



# BROWNSVILLE / CORPUS CHRISTI

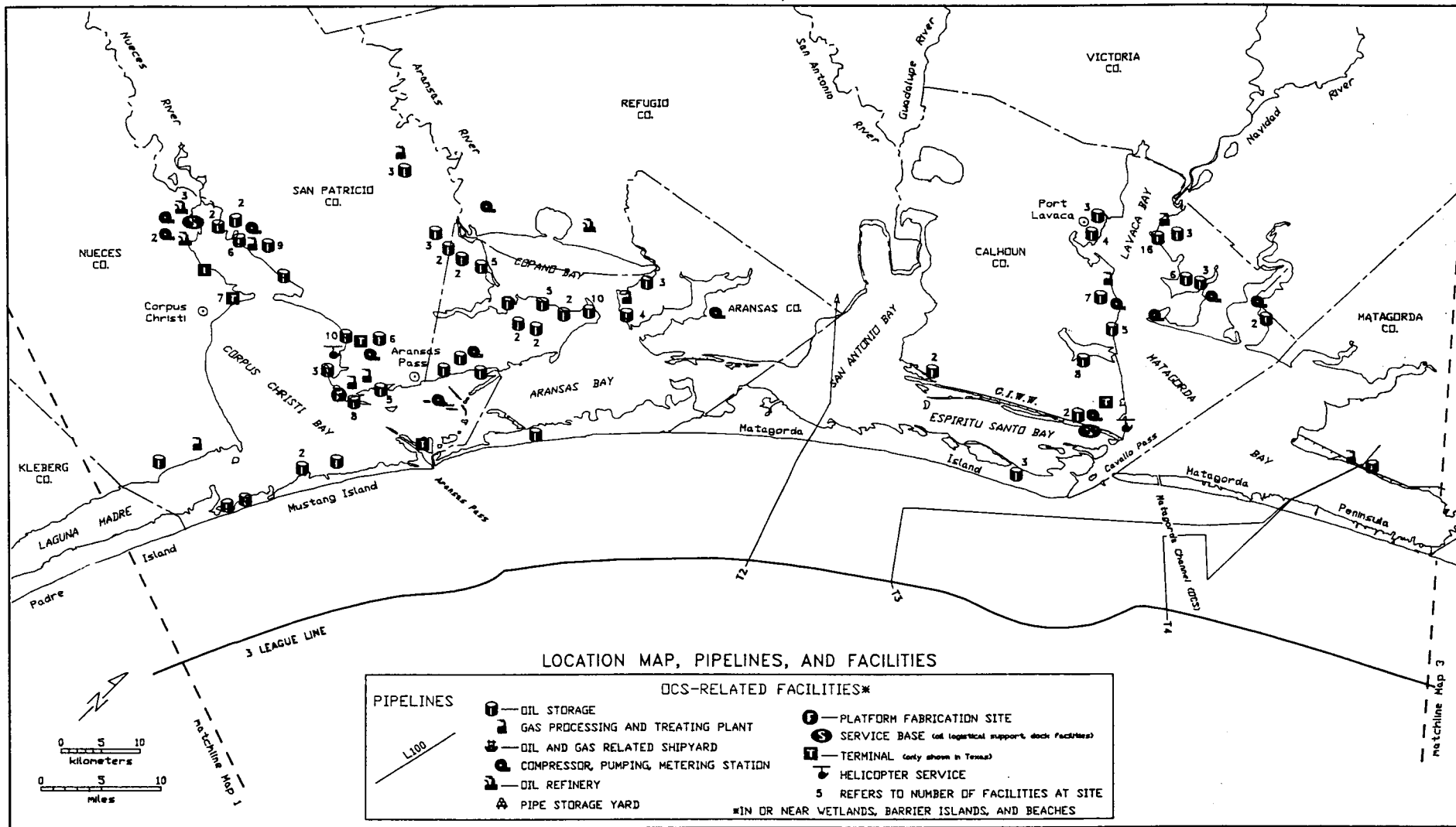


LOCATION MAP, PIPELINES, AND FACILITIES

PIPELINES		OCS-RELATED FACILITIES*	
	L100		OIL STORAGE
			GAS PROCESSING AND TREATING PLANT
			OIL AND GAS RELATED SHIPYARD
			COMPRESSOR, PUMPING, METERING STATION
			OIL REFINERY
			PIPE STORAGE YARD
			PLATFORM FABRICATION SITE
			SERVICE BASE (of logistical support, deck facilities)
			TERMINAL (only shown in Texas)
			HELICOPTER SERVICE
			5 REFERS TO NUMBER OF FACILITIES AT SITE
		*IN OR NEAR WETLANDS, BARRIER ISLANDS, AND BEACHES	

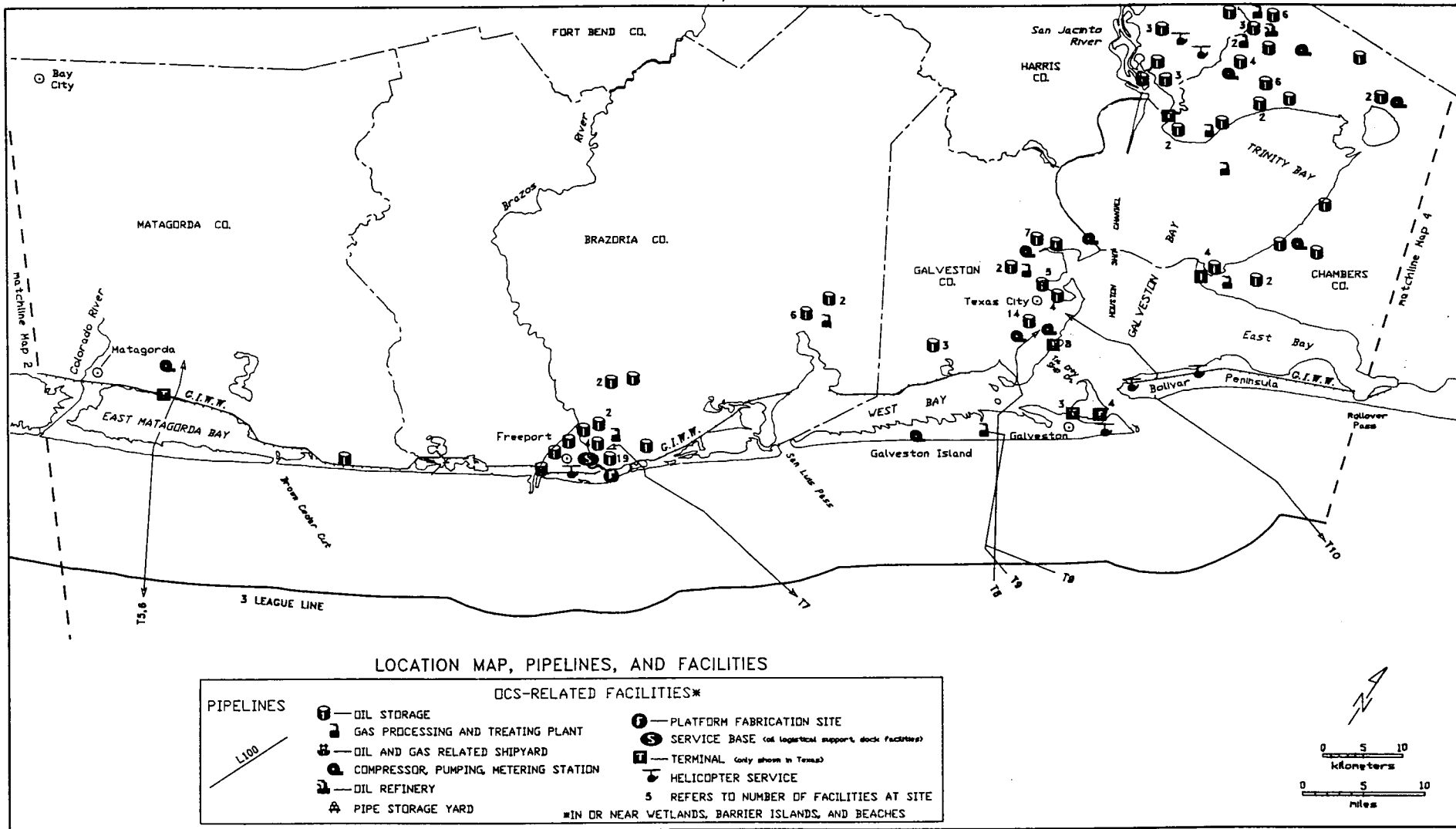
Map 1 - A

# CORPUS CHRISTI / BEEVILLE

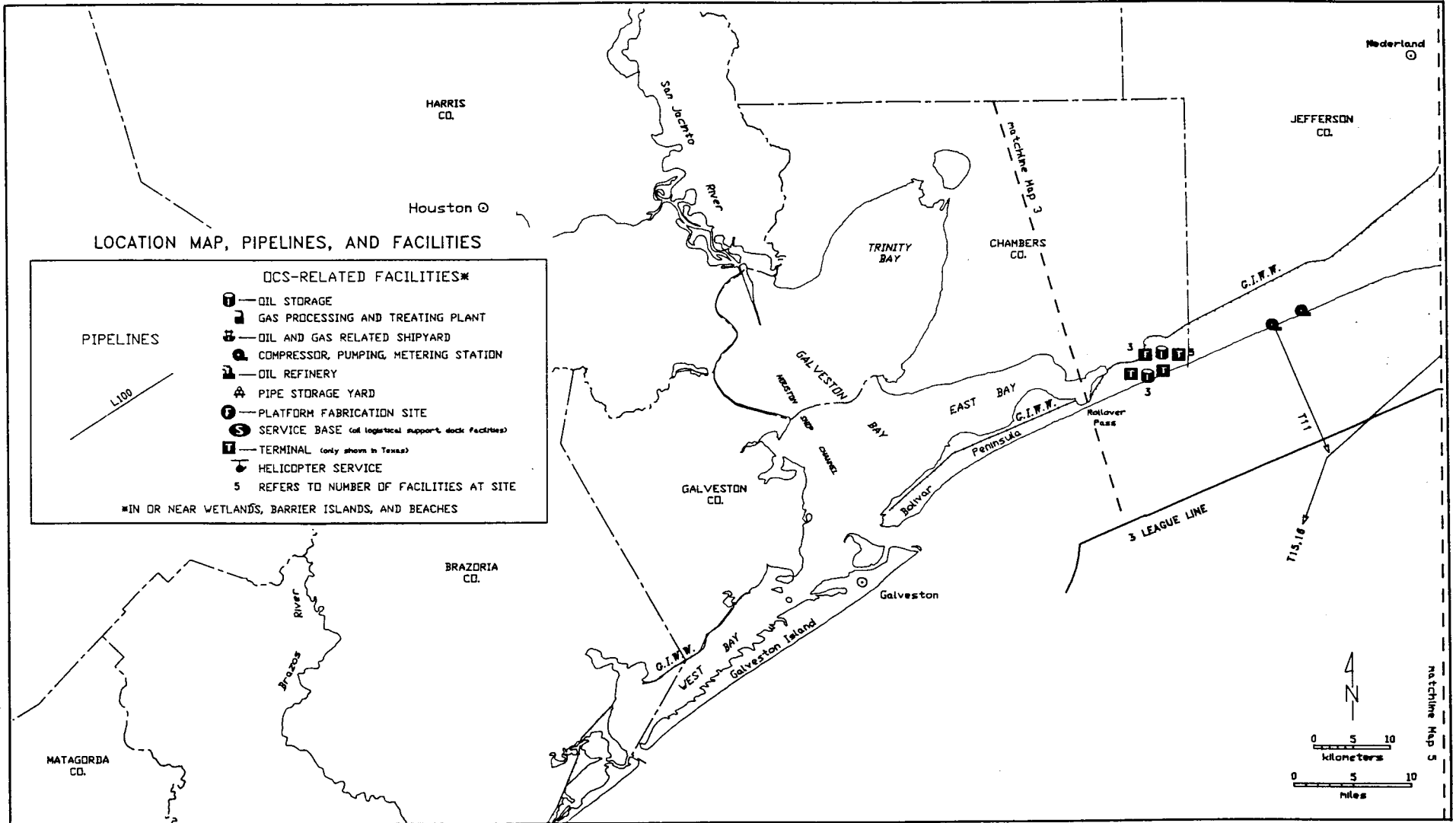


Map 2 - A

# BAY CITY / HOUSTON

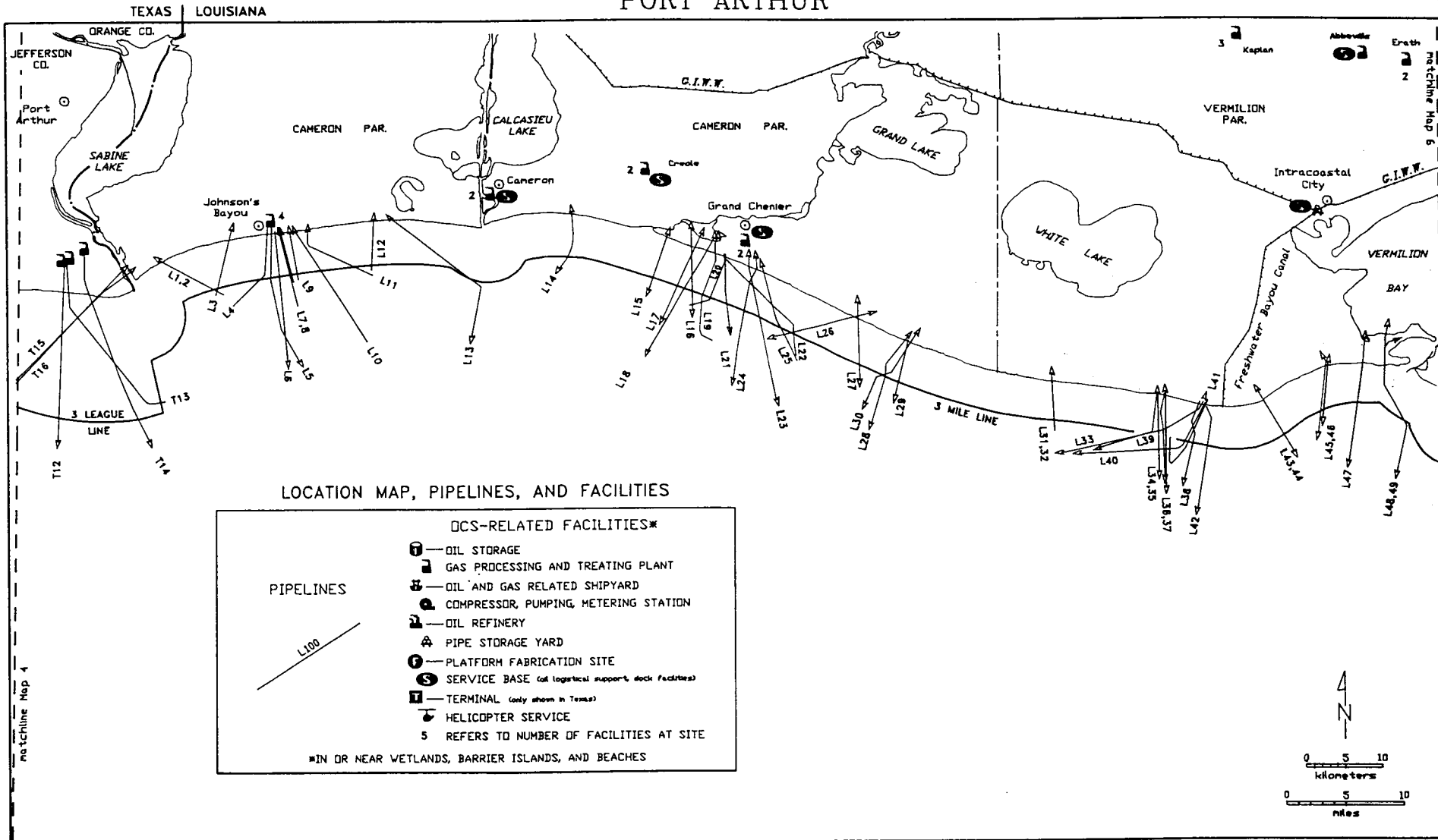


Map 3 - A



Map 4 - A

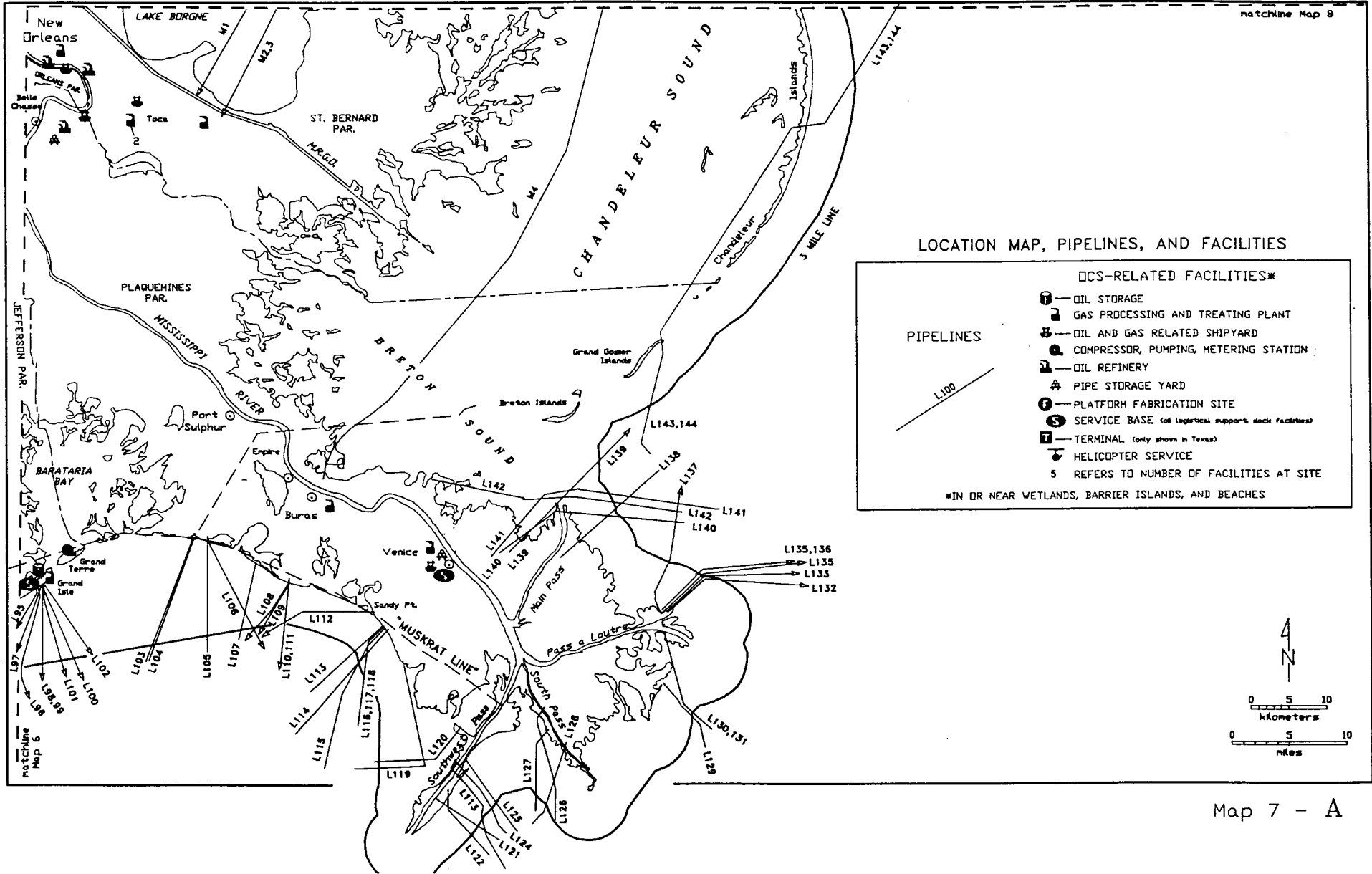
# PORT ARTHUR



Map 5 - A



# BRETON



## LOCATION MAP, PIPELINES, AND FACILITIES

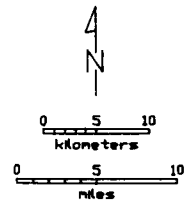
**DCS-RELATED FACILITIES\***

- OIL STORAGE
- GAS PROCESSING AND TREATING PLANT
- OIL AND GAS RELATED SHIPYARD
- COMPRESSOR, PUMPING, METERING STATION
- OIL REFINERY
- PIPE STORAGE YARD
- PLATFORM FABRICATION SITE
- SERVICE BASE (not logistical support dock facilities)
- TERMINAL (only shown in Texas)
- HELICOPTER SERVICE
- 5 REFERS TO NUMBER OF FACILITIES AT SITE

**PIPELINES**

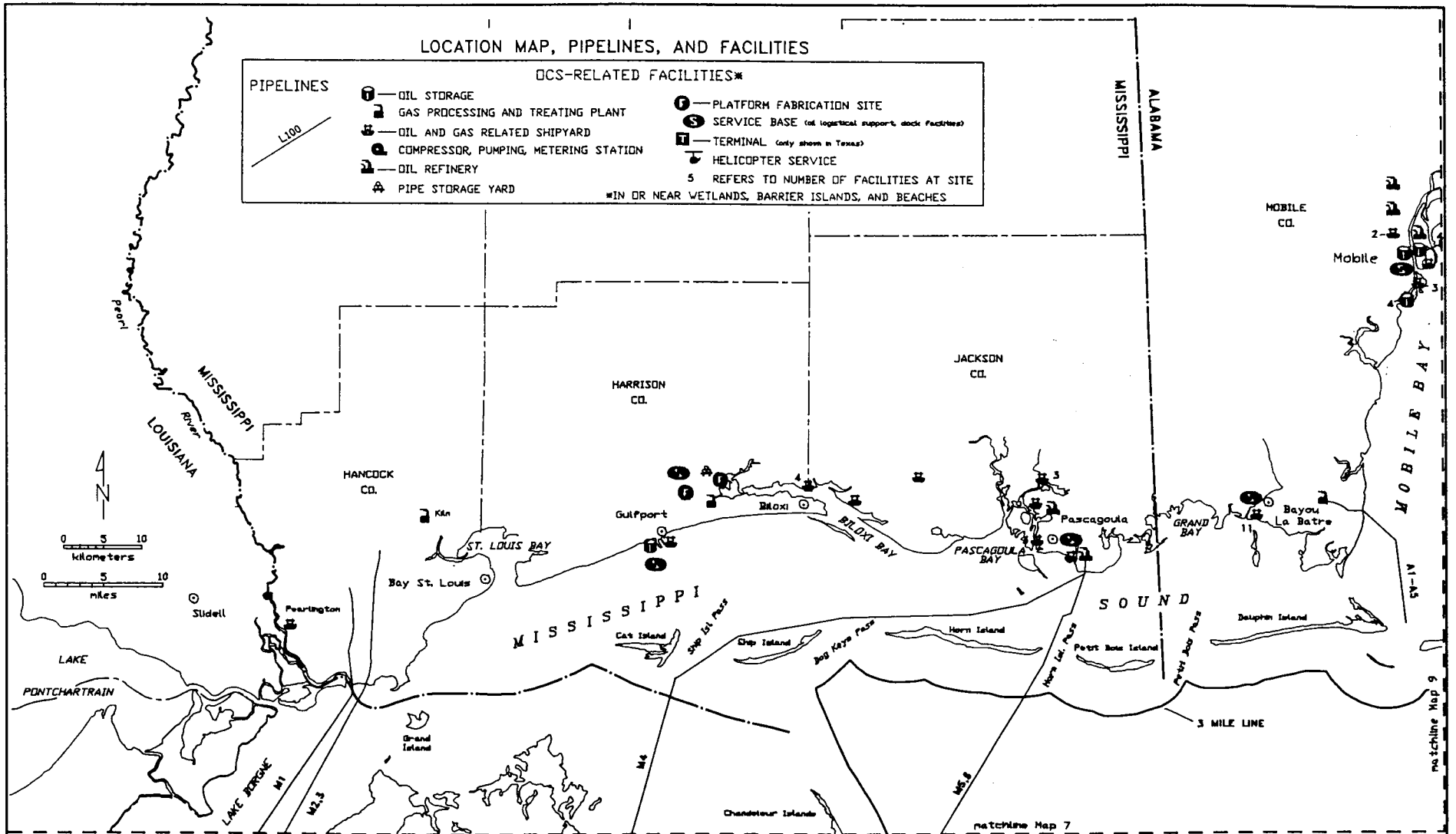
L100

\*IN OR NEAR WETLANDS, BARRIER ISLANDS, AND BEACHES



Map 7 - A

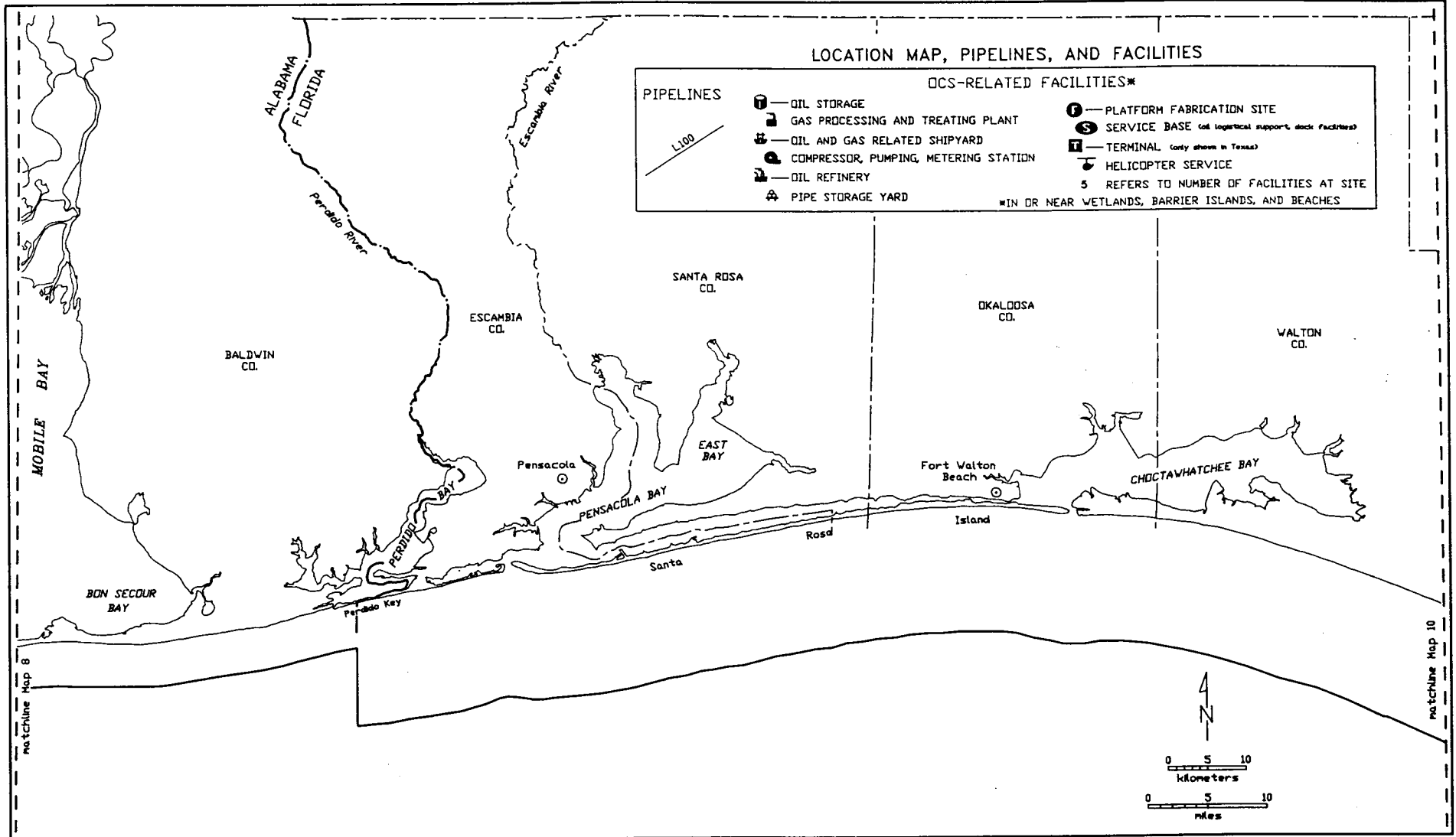
# MOBILE



Map 8 - A

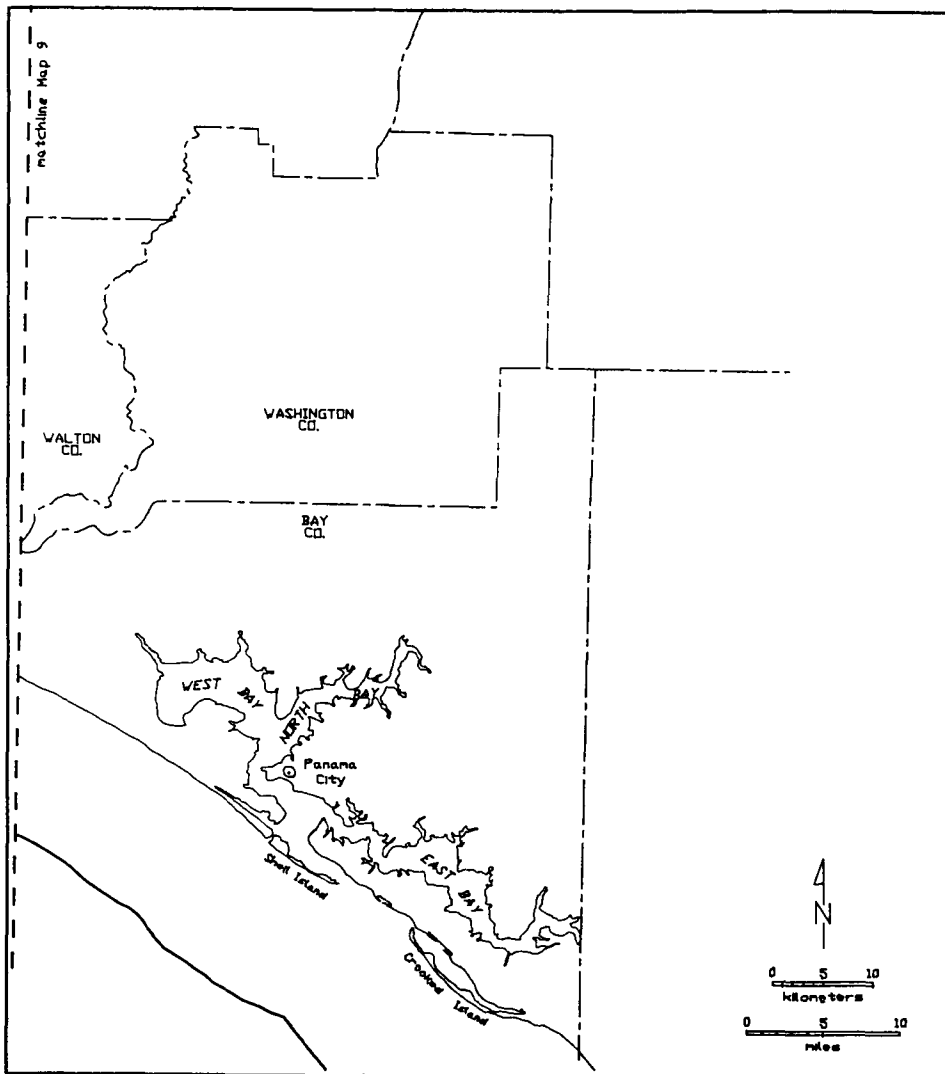


# PENSACOLA

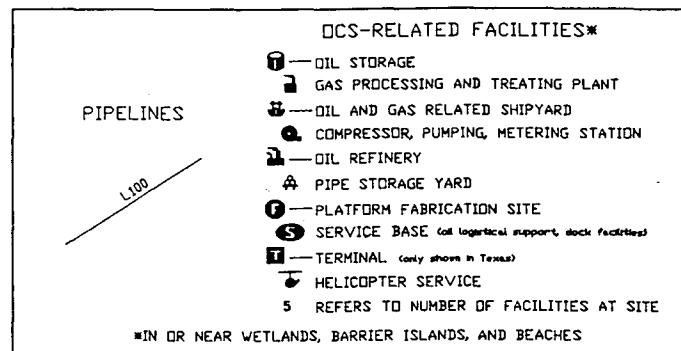


Map 9 - A

# TALLAHASSEE



## LOCATION MAP, PIPELINES, AND FACILITIES

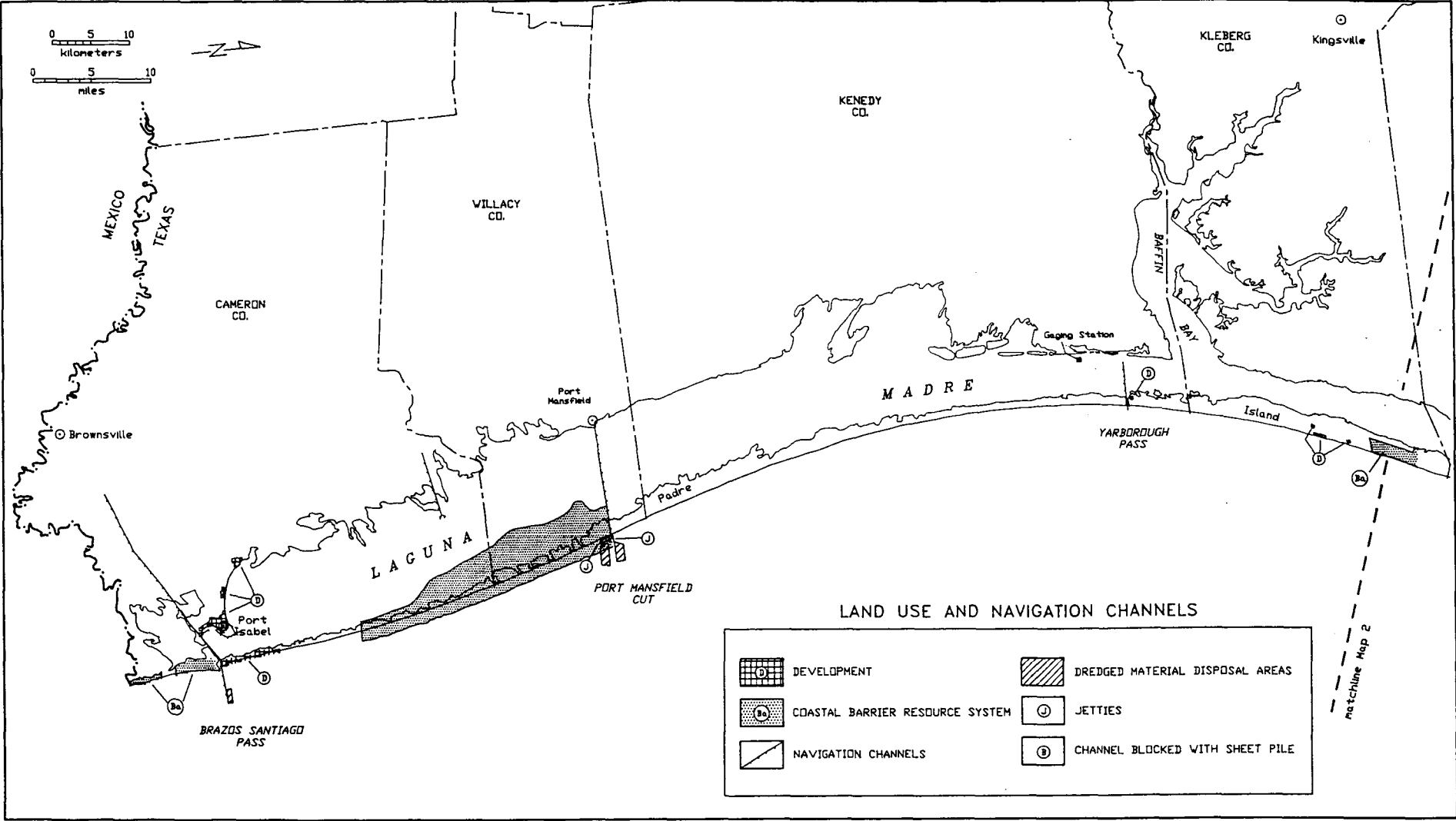


Map 10 - A

Maps 1B - 10B

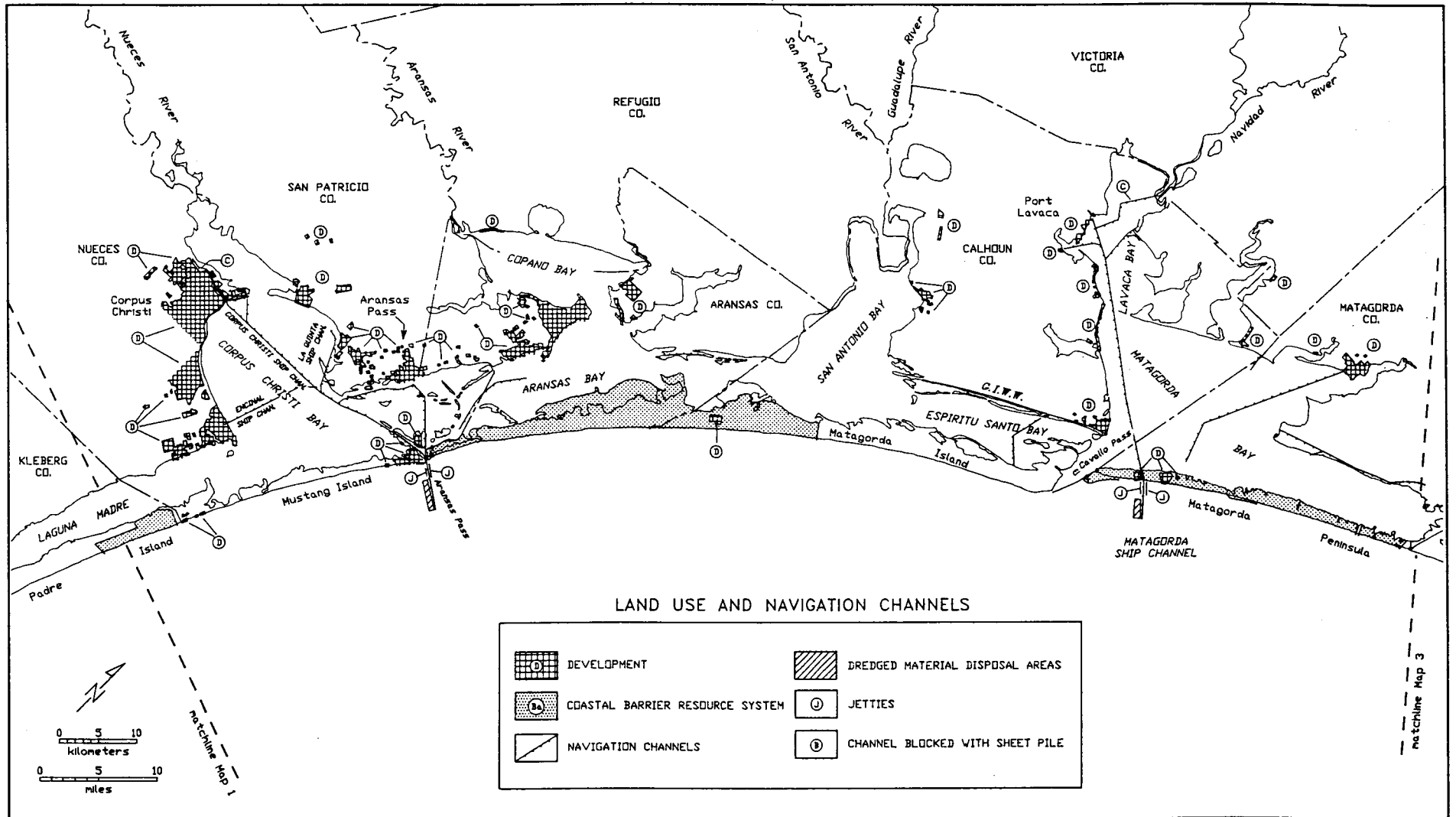
LAND USE AND NAVIGATION CHANNELS

# BROWNSVILLE / CORPUS CHRISTI



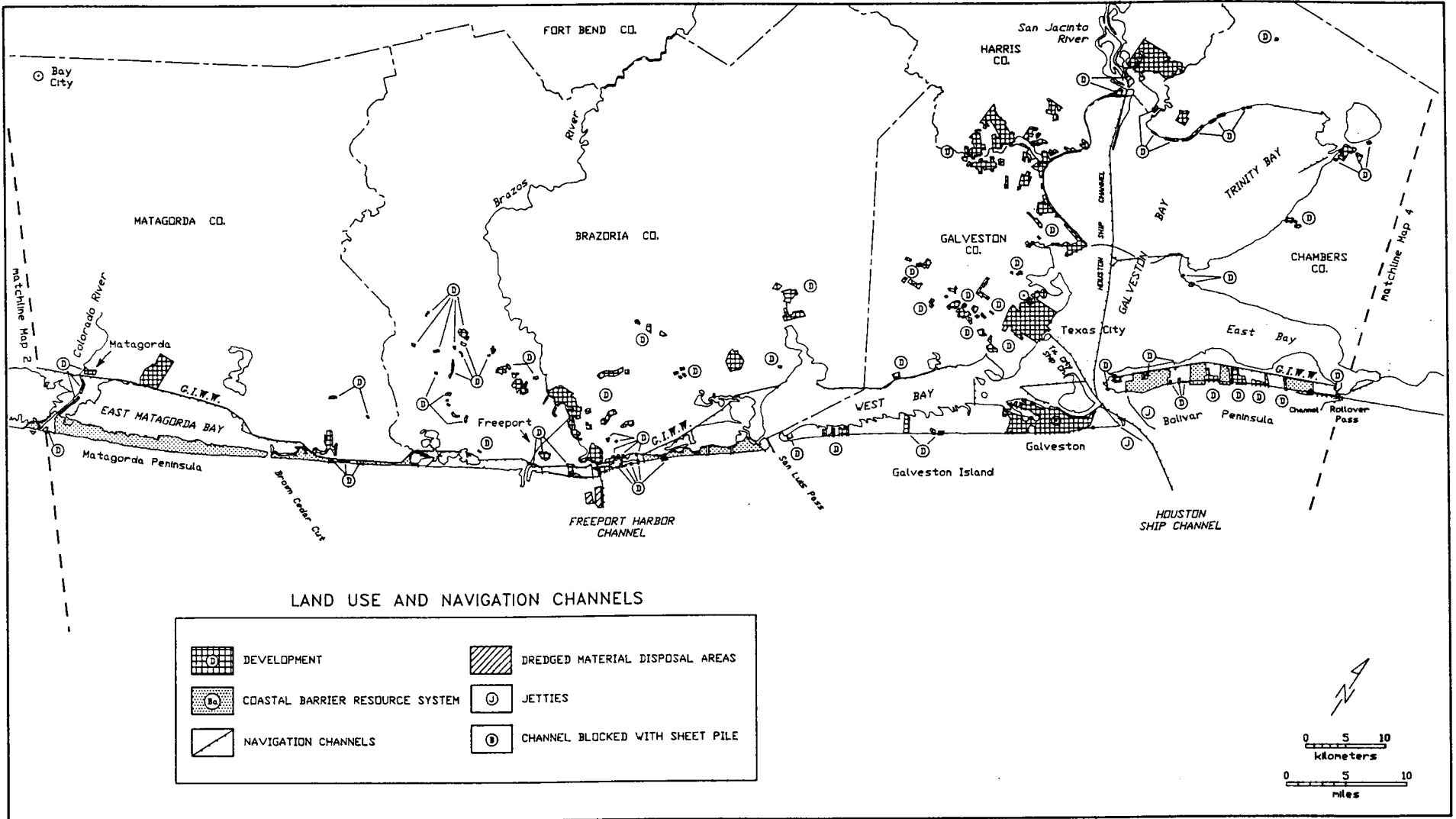
Map 1 - B

# CORPUS CHRISTI / BEEVILLE









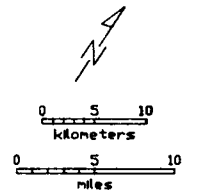
Map 2 - B

# BAY CITY / HOUSTON



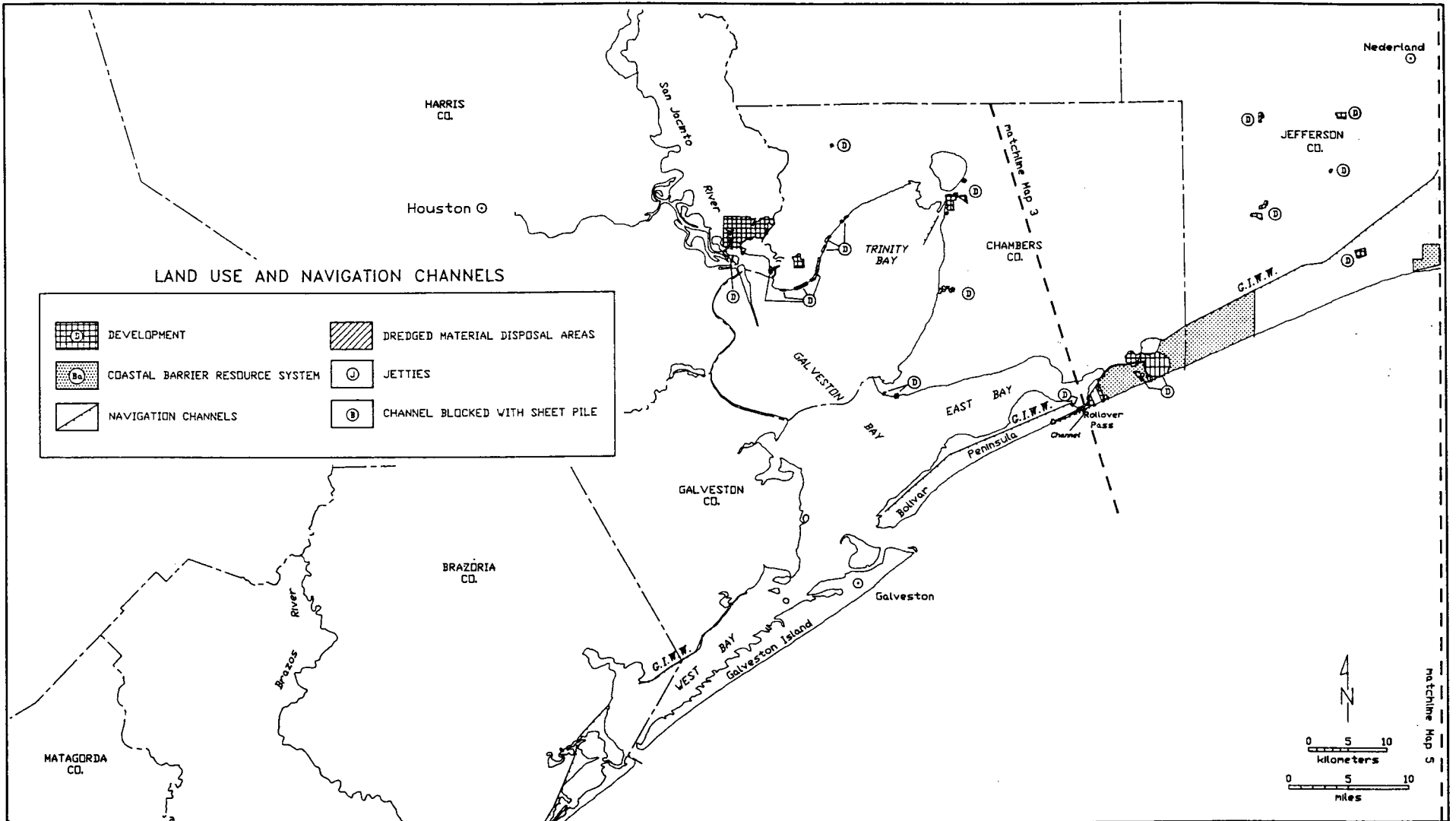
## LAND USE AND NAVIGATION CHANNELS

	DEVELOPMENT		DREDGED MATERIAL DISPOSAL AREAS
	COASTAL BARRIER RESOURCE SYSTEM		JETTIES
	NAVIGATION CHANNELS		CHANNEL BLOCKED WITH SHEET PILE



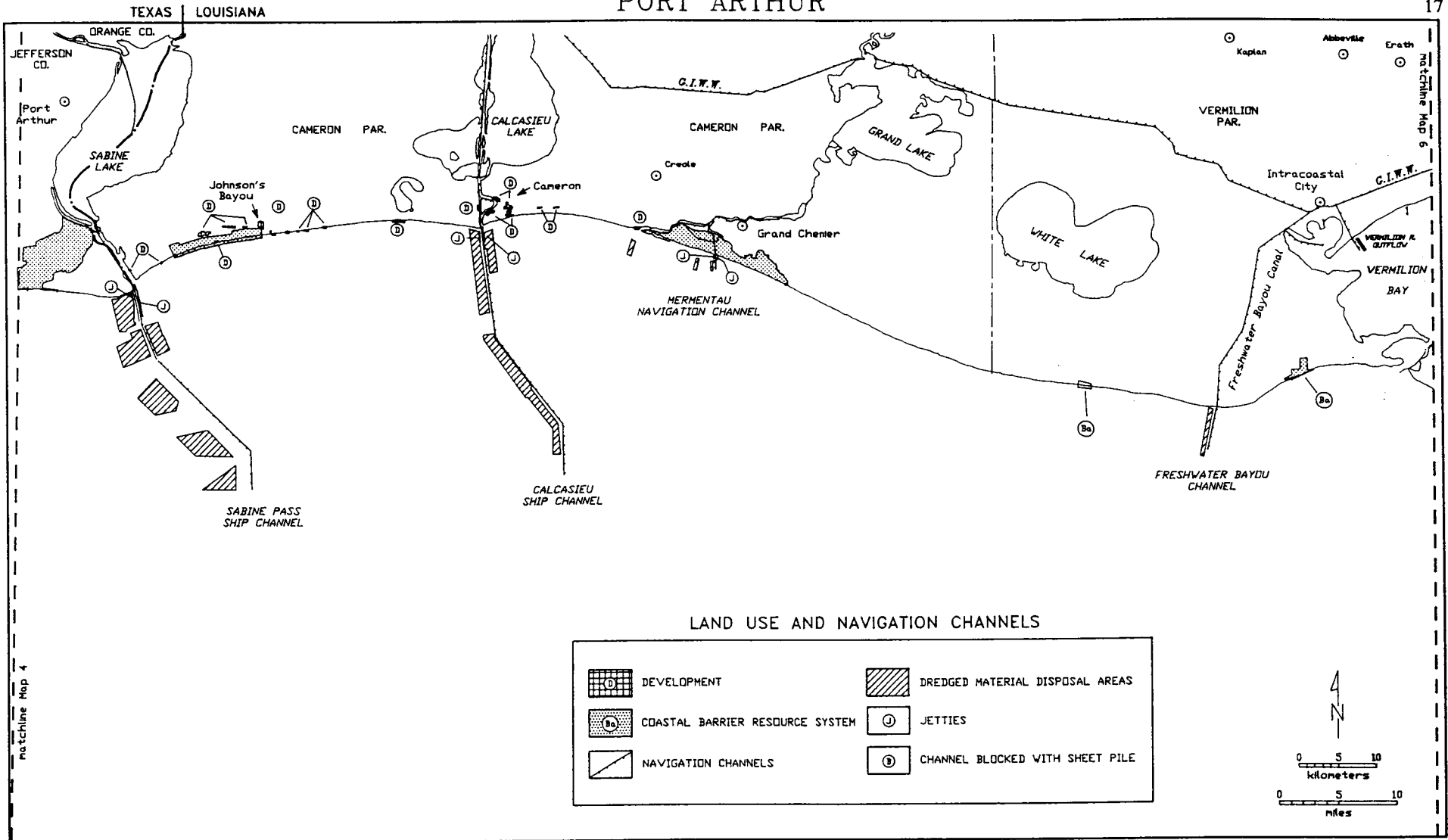
Map 3 - B

# HOUSTON









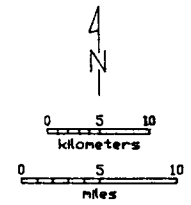
Map 4 - B

# PORT ARTHUR



## LAND USE AND NAVIGATION CHANNELS

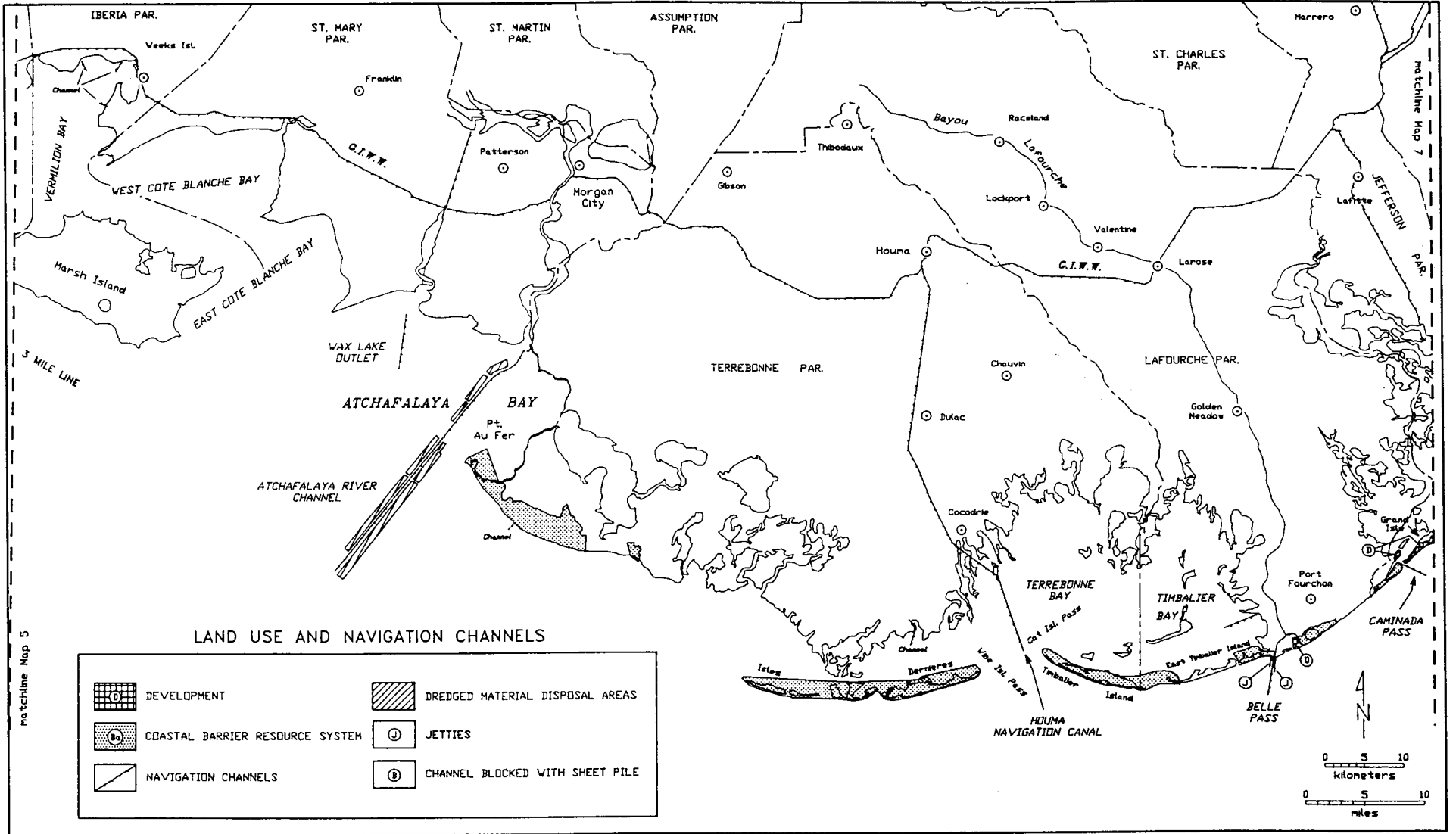
	DEVELOPMENT		DREDGED MATERIAL DISPOSAL AREAS
	COASTAL BARRIER RESOURCE SYSTEM		JETTIES
	NAVIGATION CHANNELS		CHANNEL BLOCKED WITH SHEET PILE



Map 5 - B

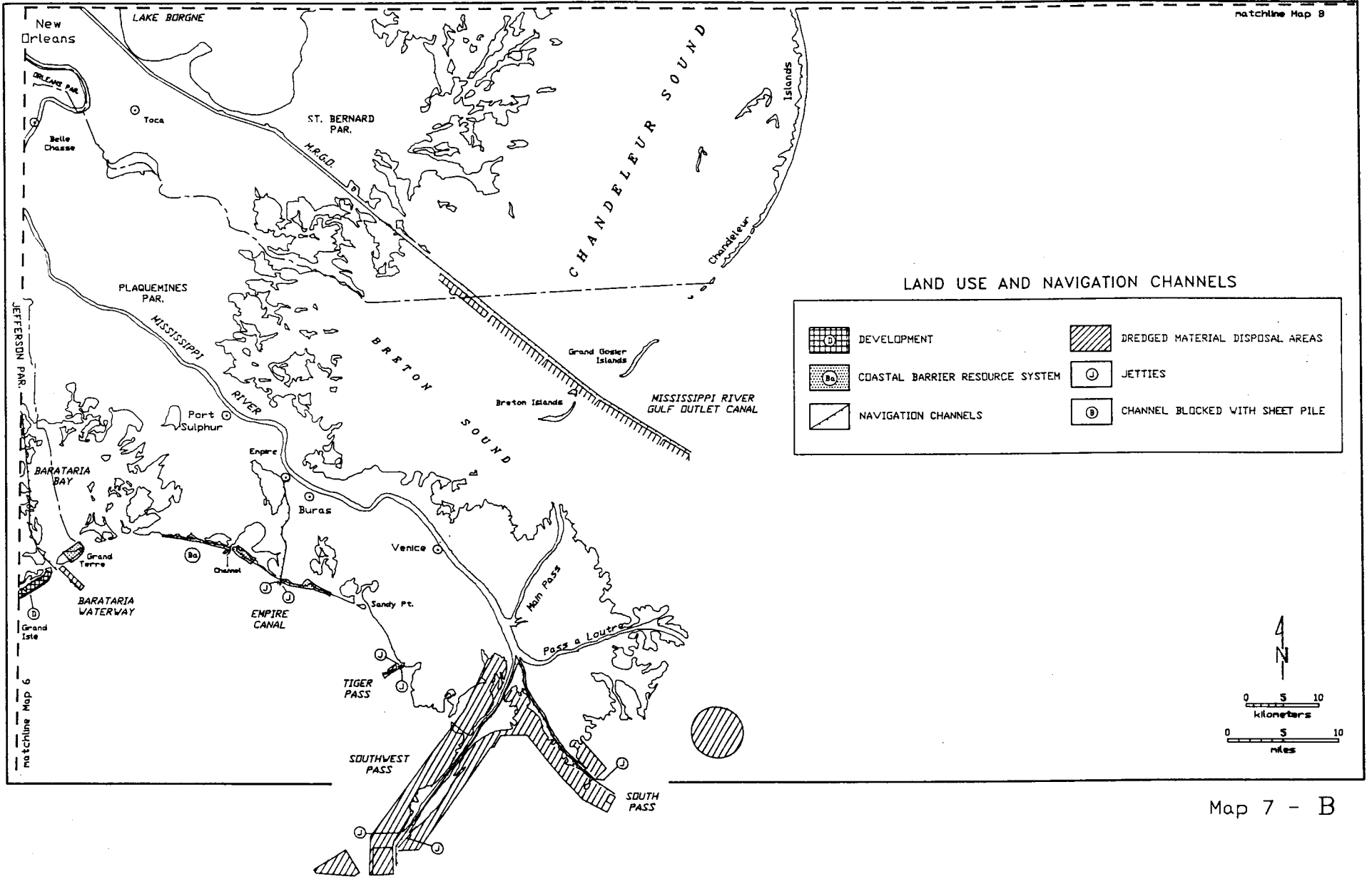


# NEW ORLEANS



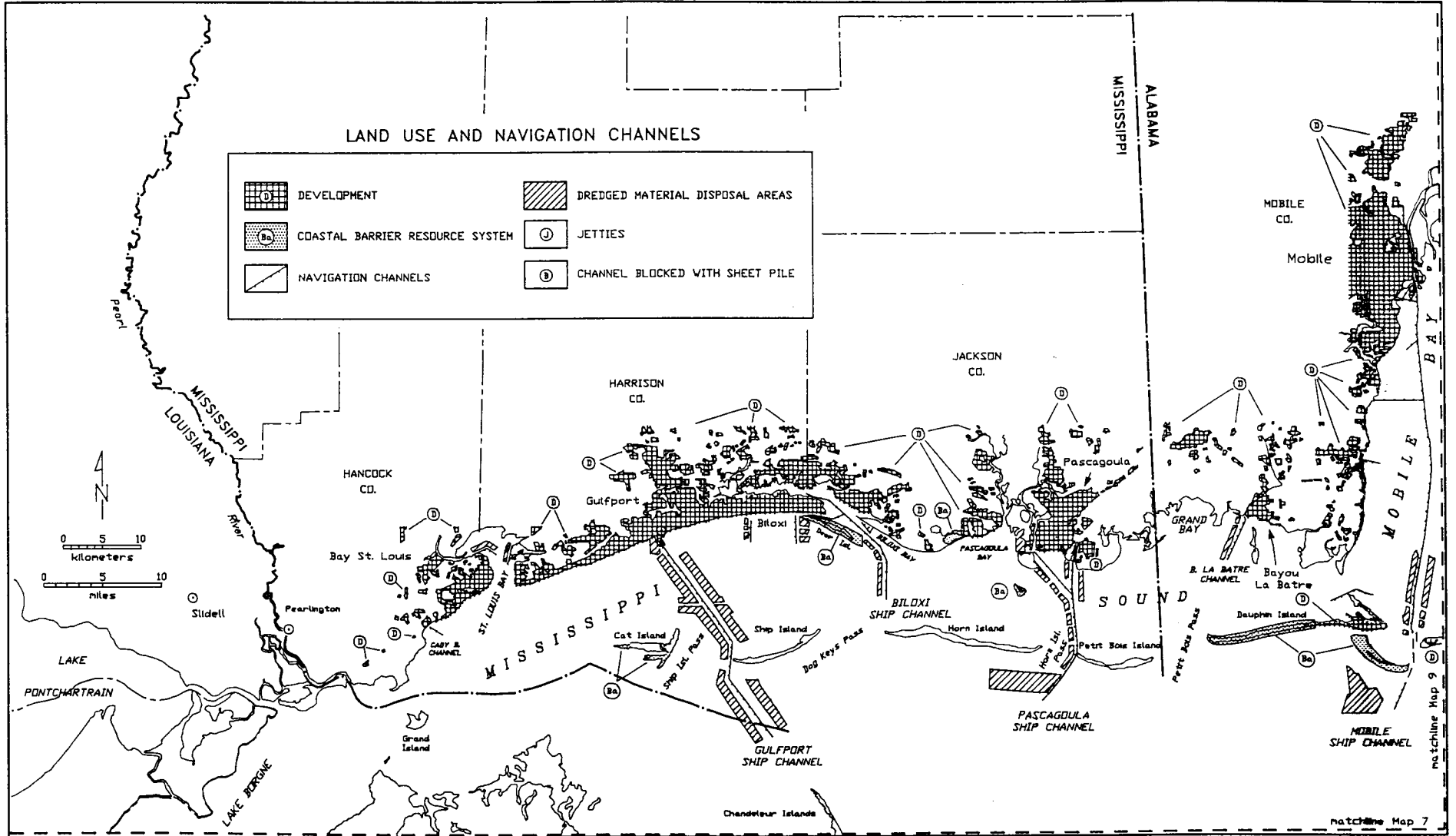
Map 6 - B

# BRETON



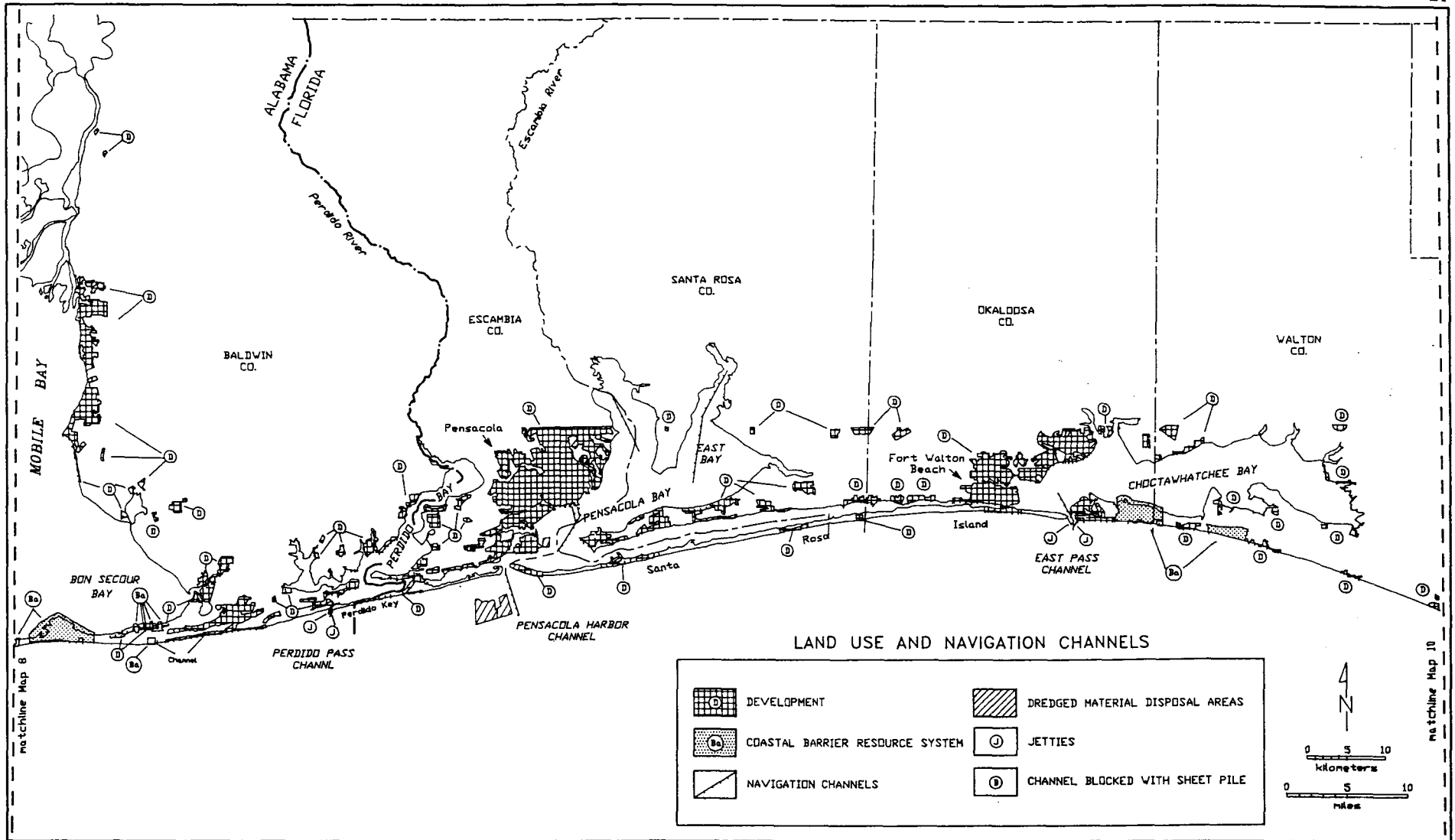
Map 7 - B

# MOBILE



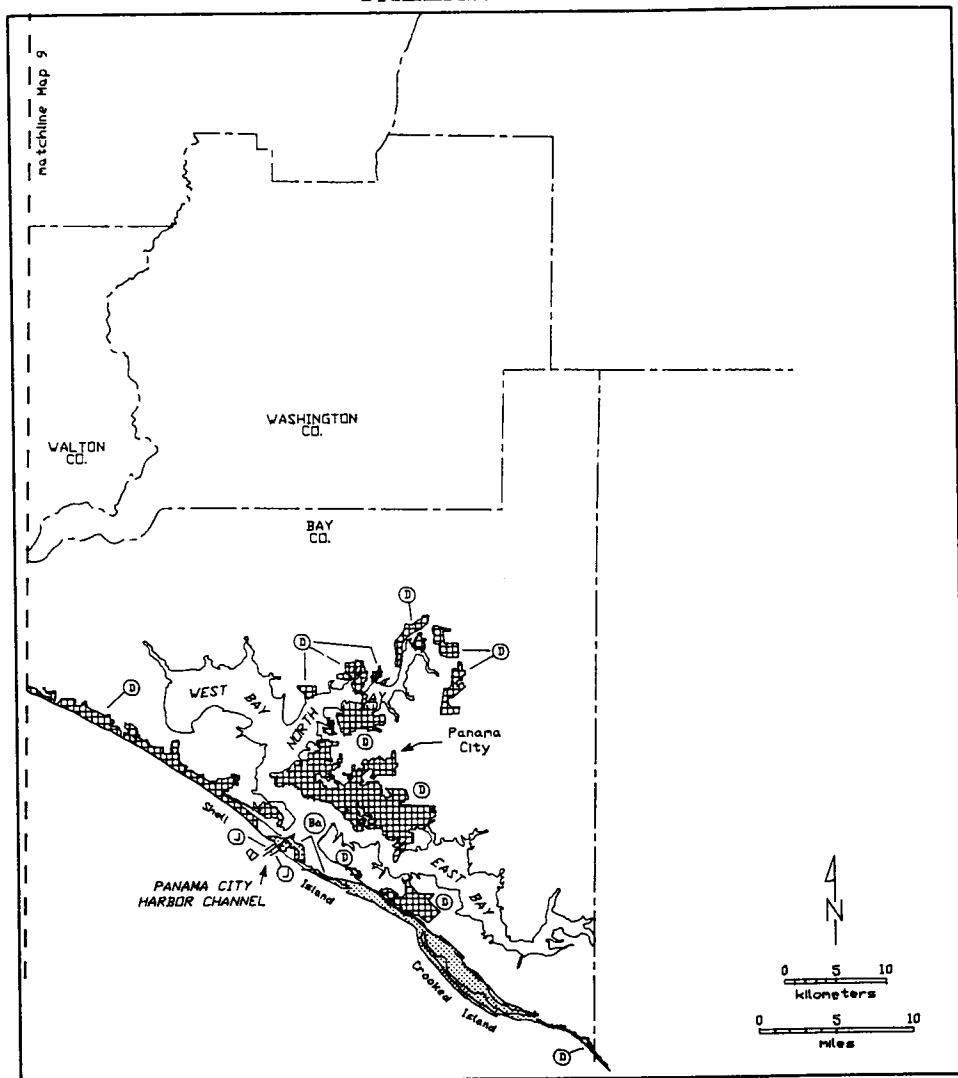
Map 8 - B

# PENSACOLA

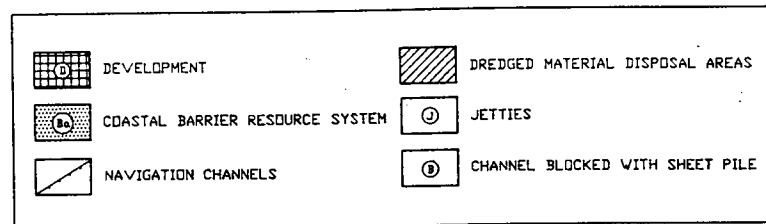


Map 9 - B

# TALLAHASSEE



## LAND USE AND NAVIGATION CHANNELS

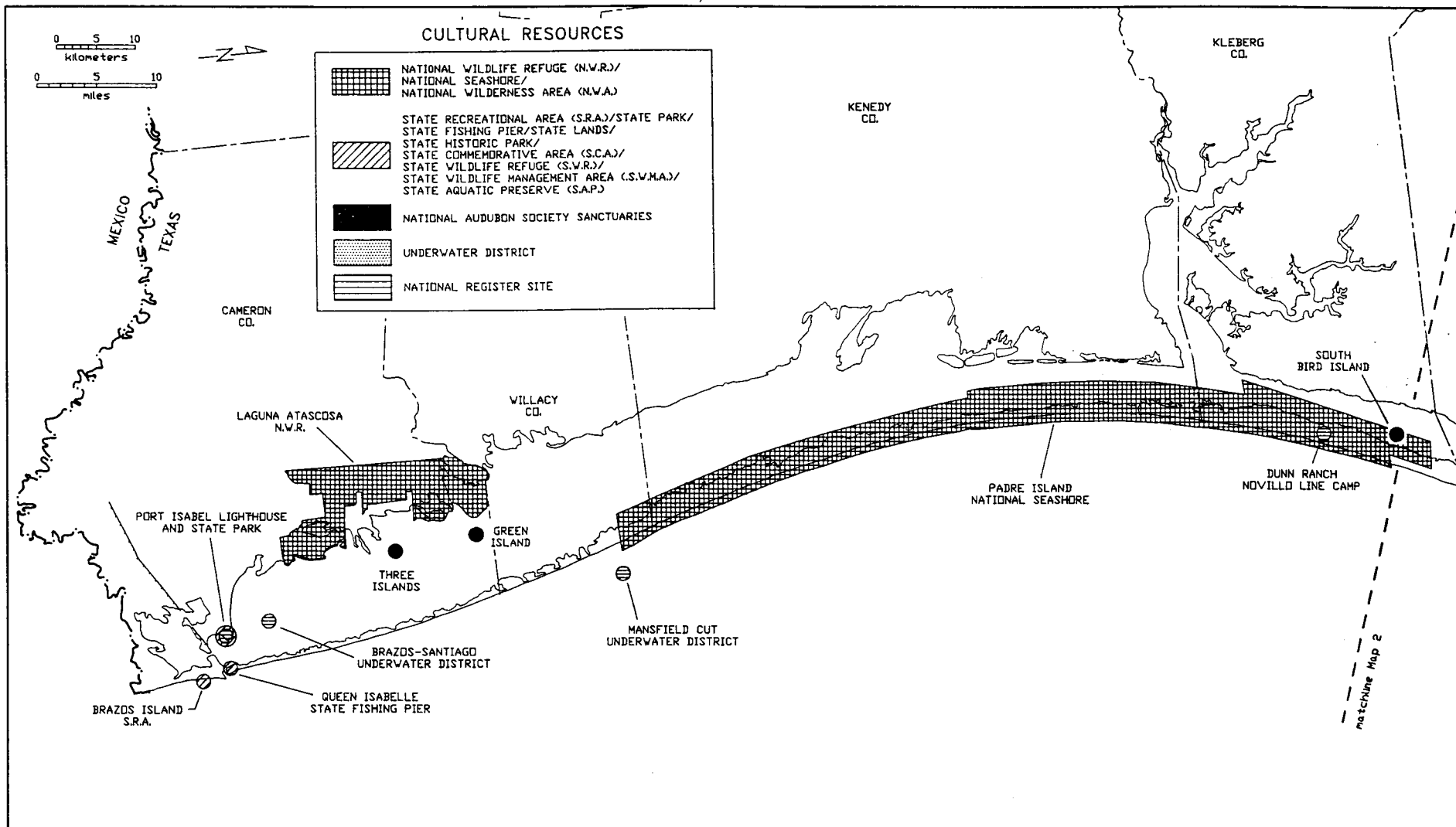


Map 10 - B

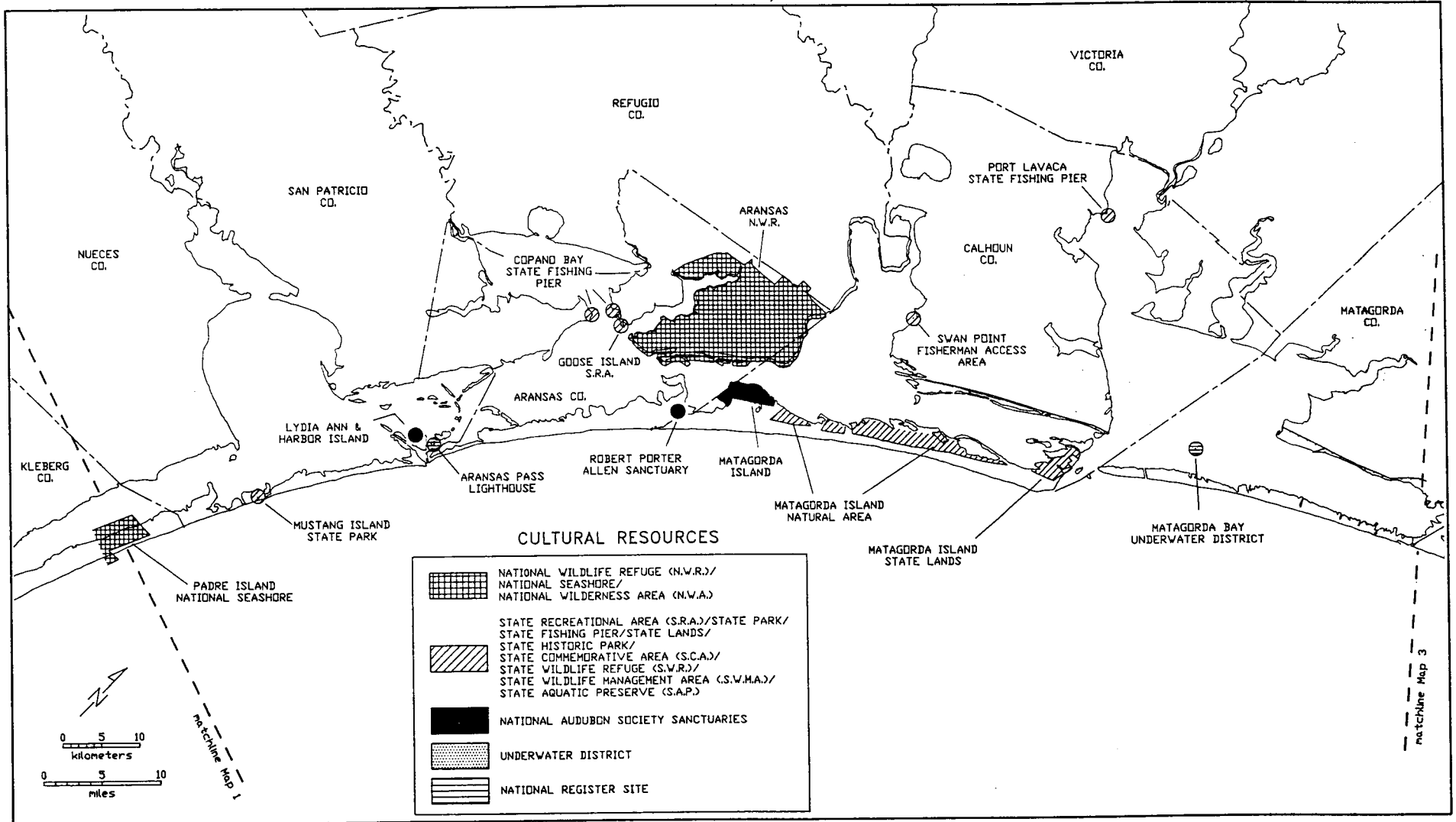
Maps 1C - 10C

CULTURAL RESOURCES

# BROWNSVILLE / CORPUS CHRISTI

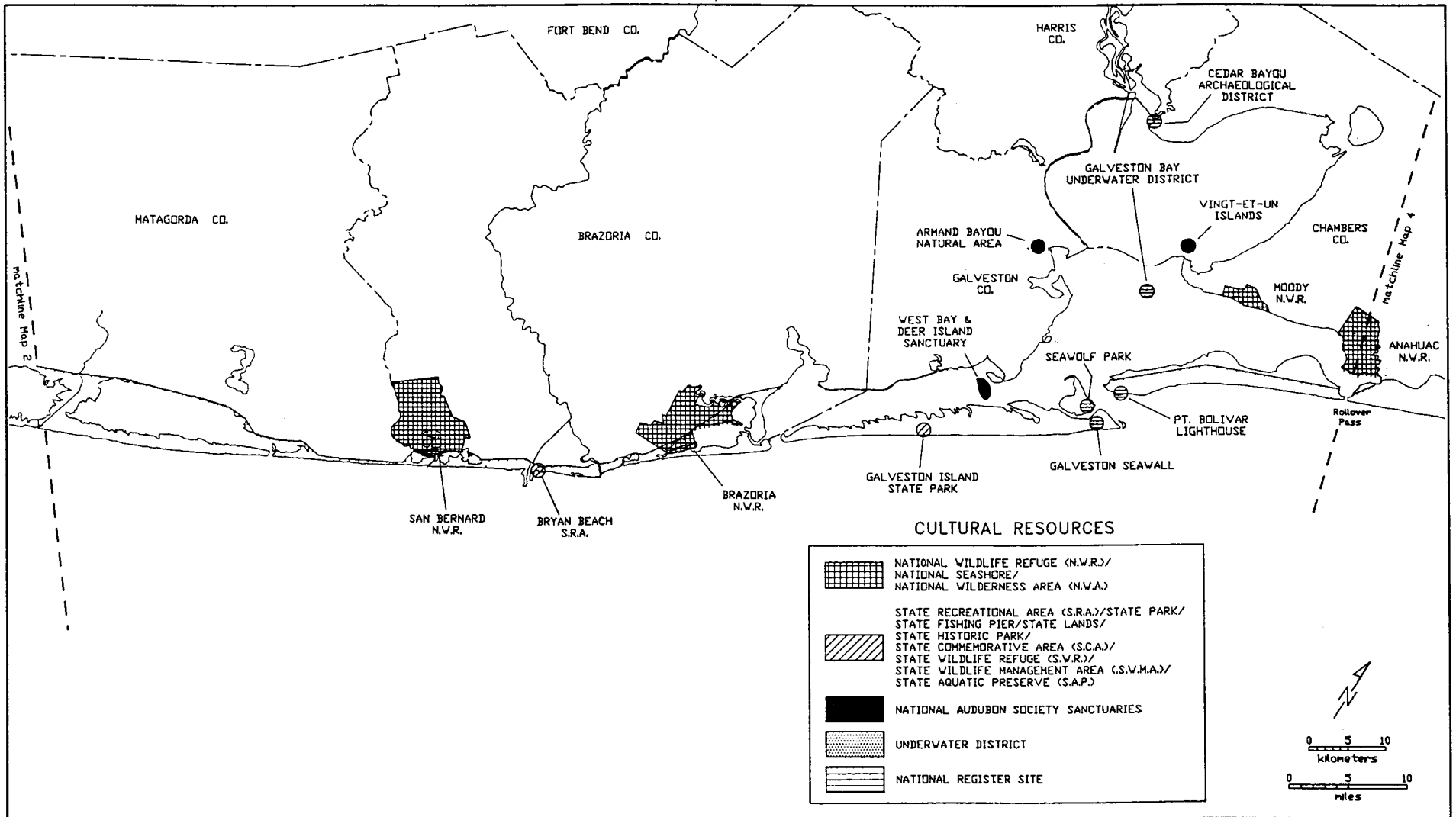


Map 1 - C



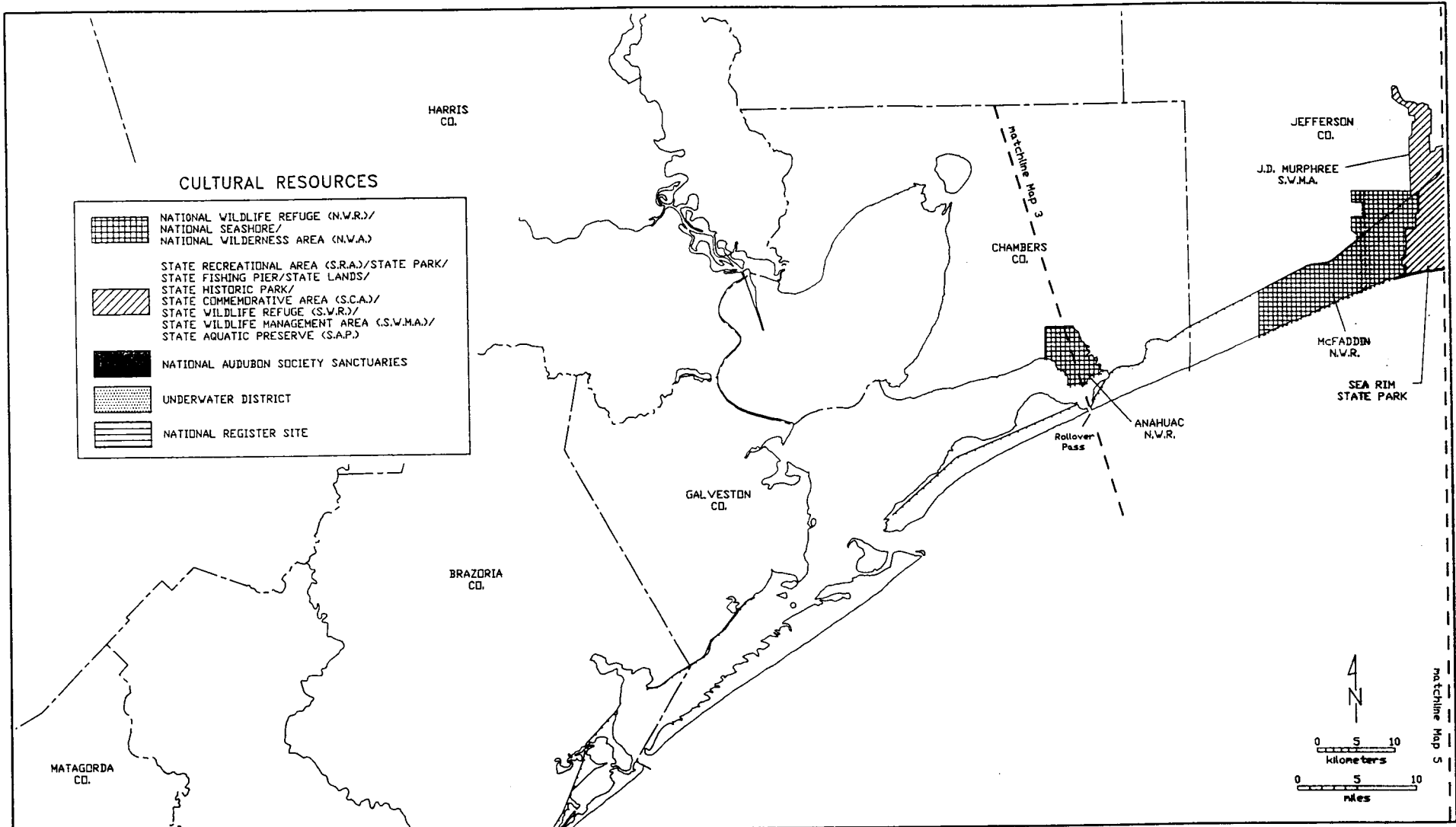
Map 2 - C





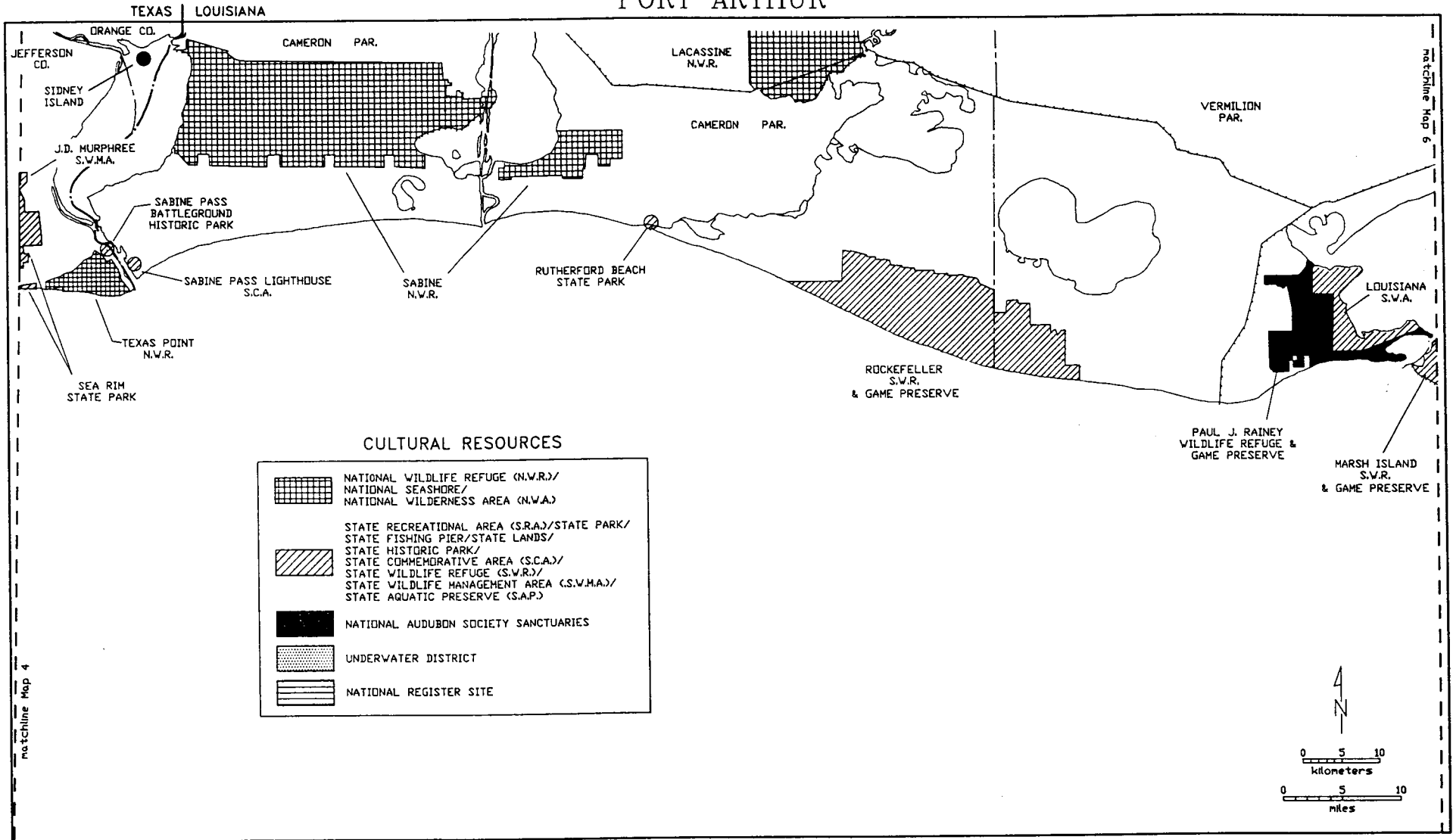
Map 3 - C

# HOUSTON



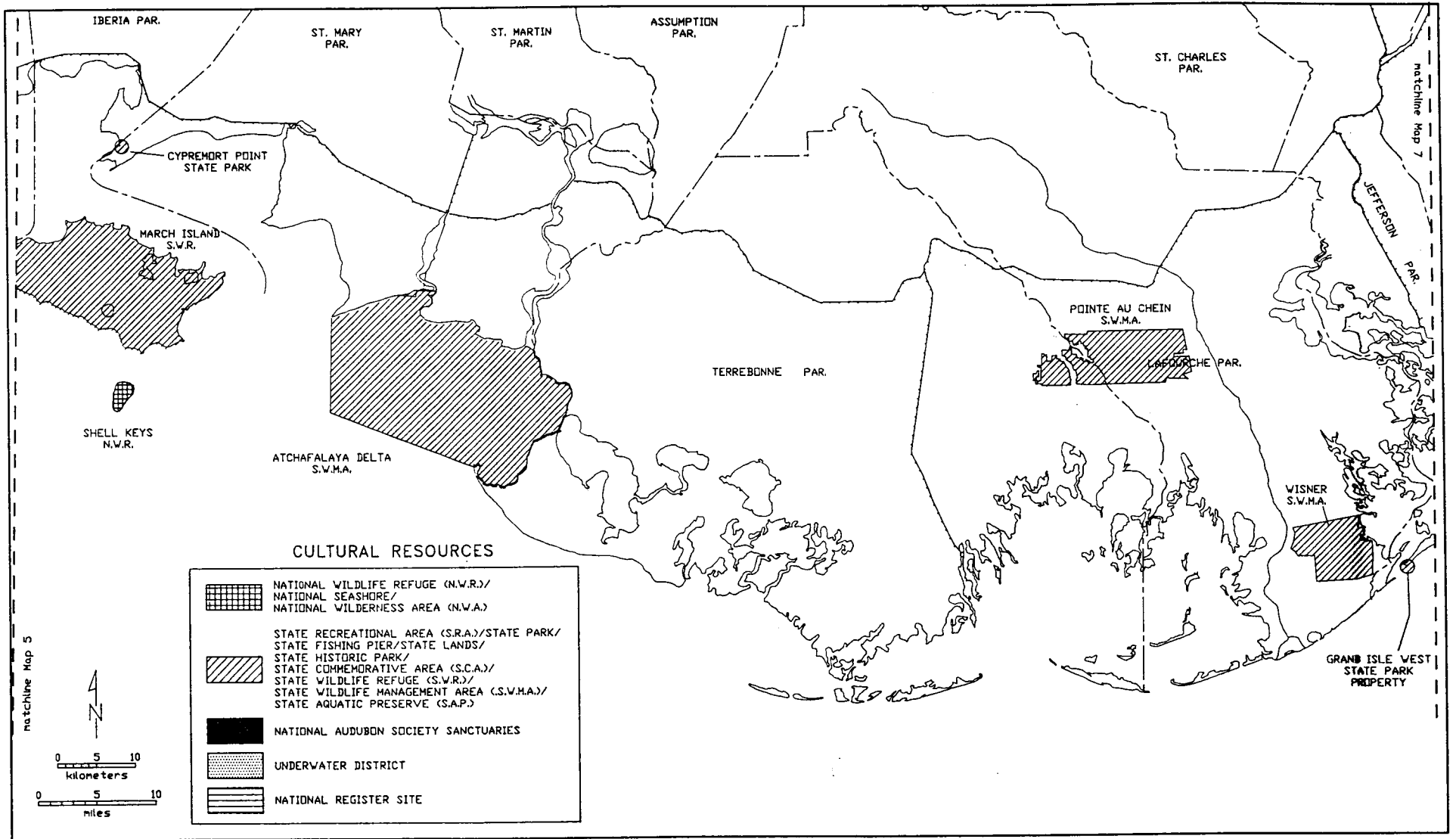
Map 4 - C

# PORT ARTHUR



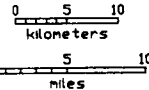
Map 5 - C

# NEW ORLEANS

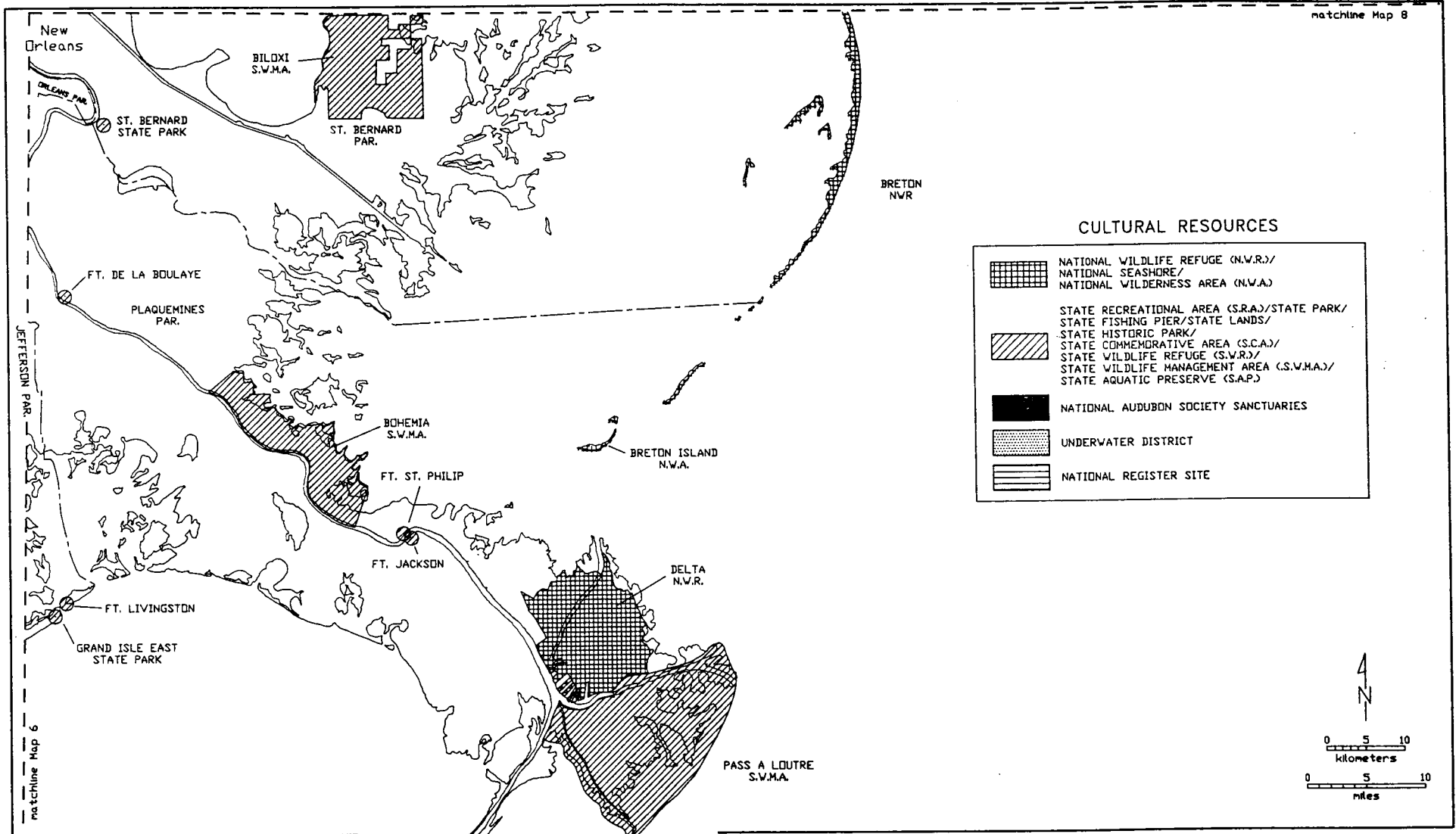


## CULTURAL RESOURCES

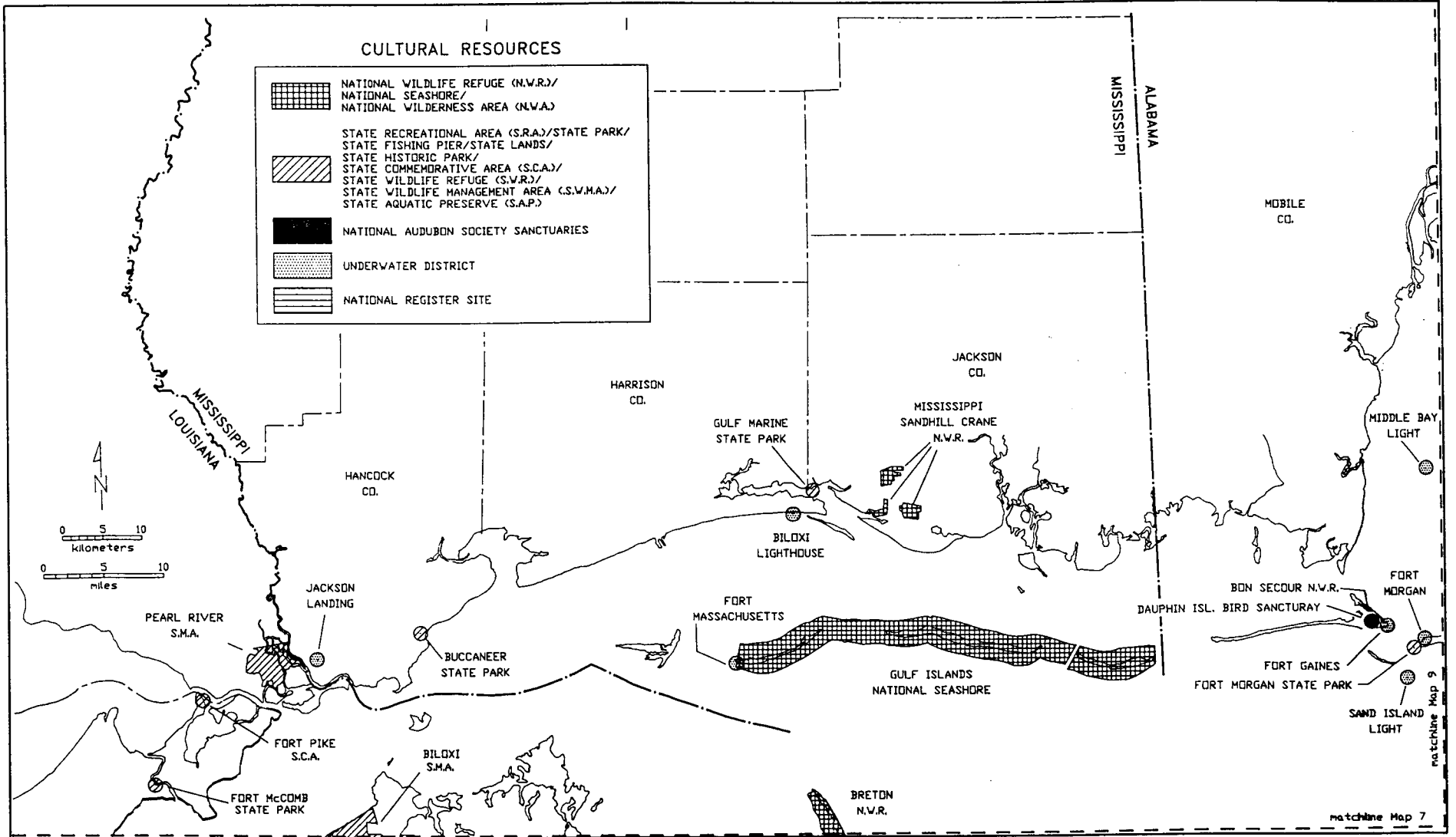
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	STATE RECREATIONAL AREA (S.R.A.)/STATE PARK/ STATE FISHING PIER/STATE LANDS/ STATE HISTORIC PARK/ STATE COMMEMORATIVE AREA (S.C.A.)/ STATE WILDLIFE REFUGE (S.W.R.)/ STATE WILDLIFE MANAGEMENT AREA (S.W.M.A.)/ STATE AQUATIC PRESERVE (S.A.P.)
	NATIONAL AUDUBON SOCIETY SANCTUARIES
	UNDERWATER DISTRICT
	NATIONAL REGISTER SITE



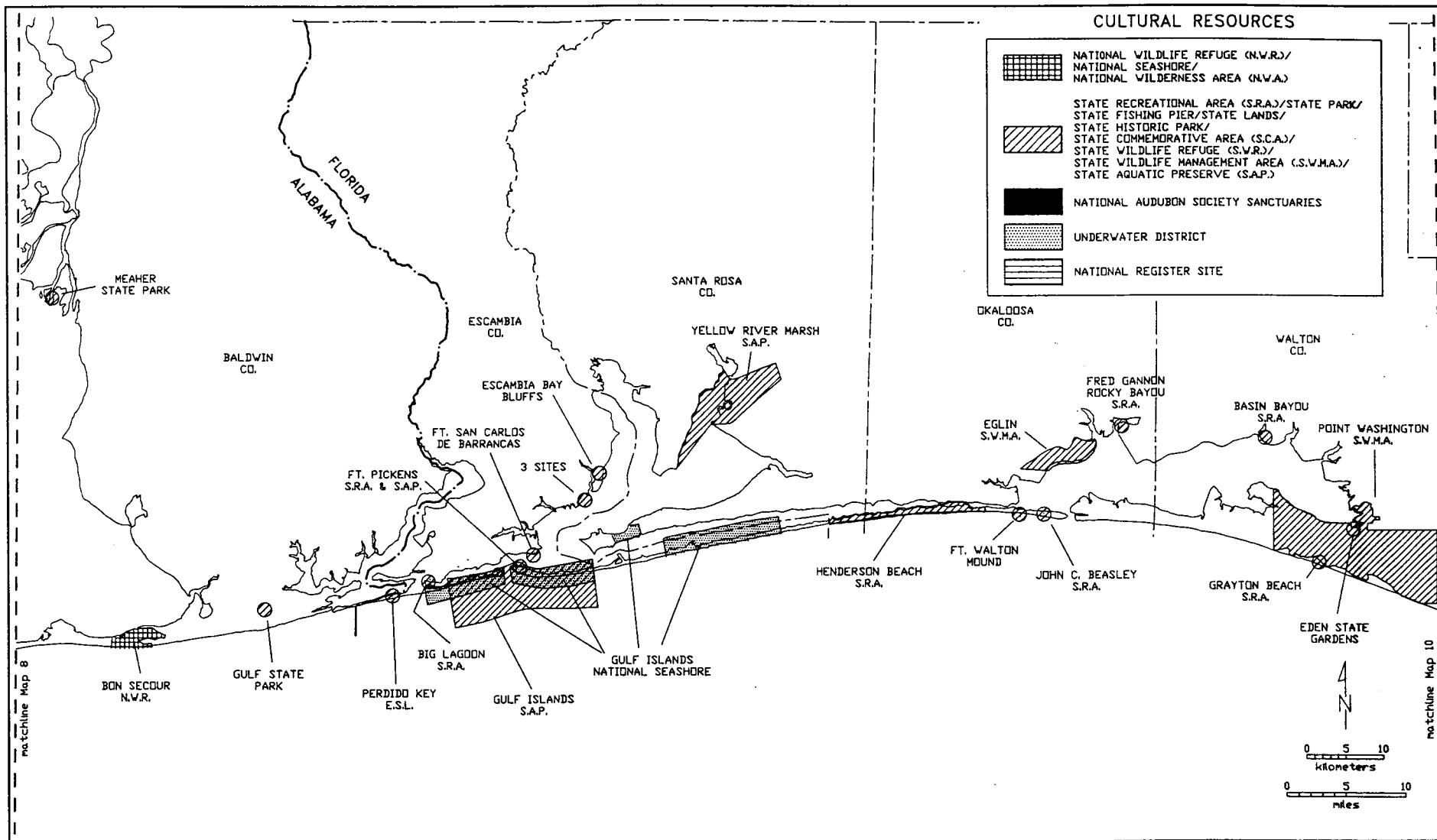
Map 6 - C



Map 7 - C

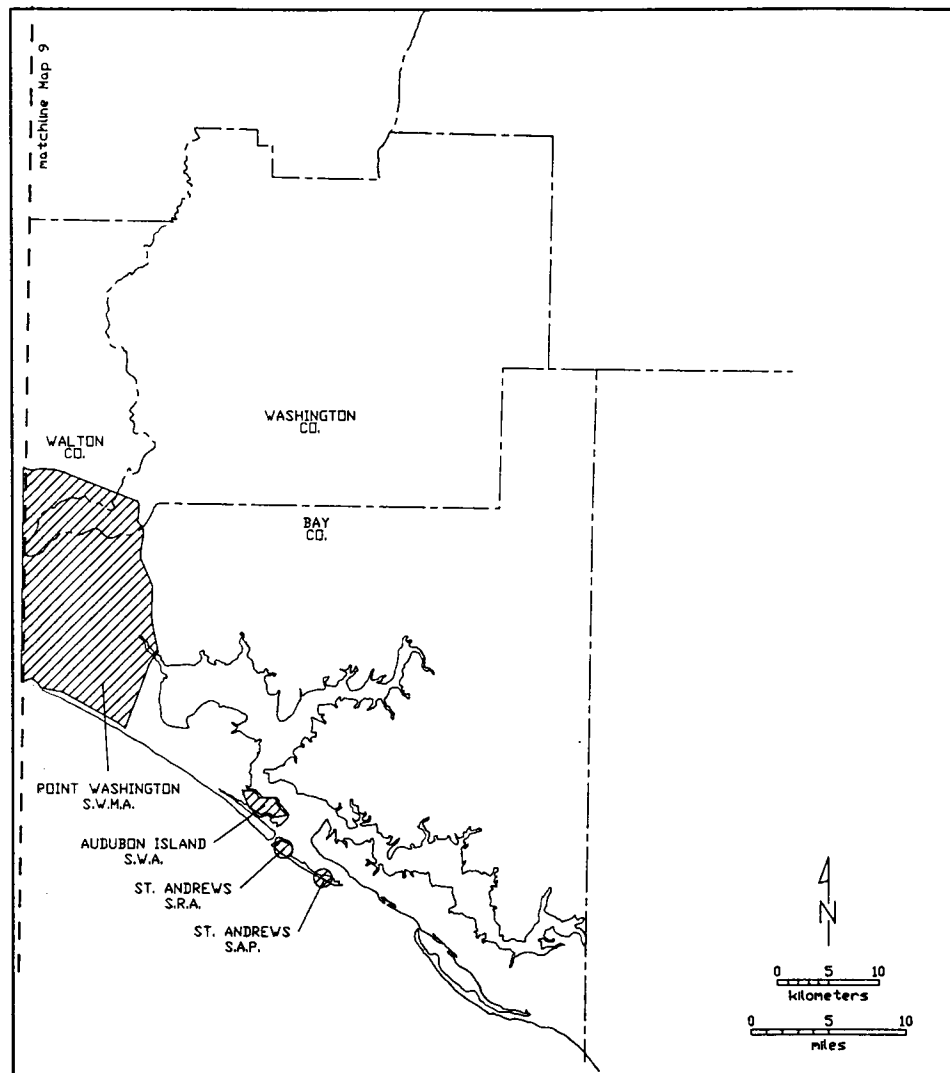


Map 8 - C

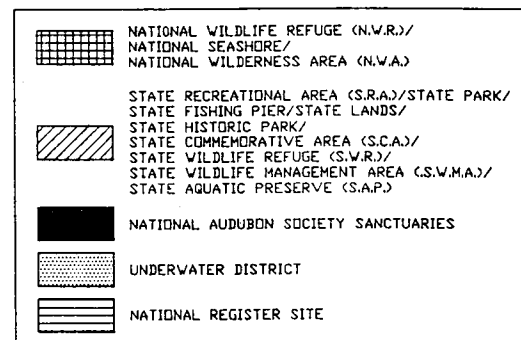


Map 9 - C

# TALLAHASSEE



## CULTURAL RESOURCES



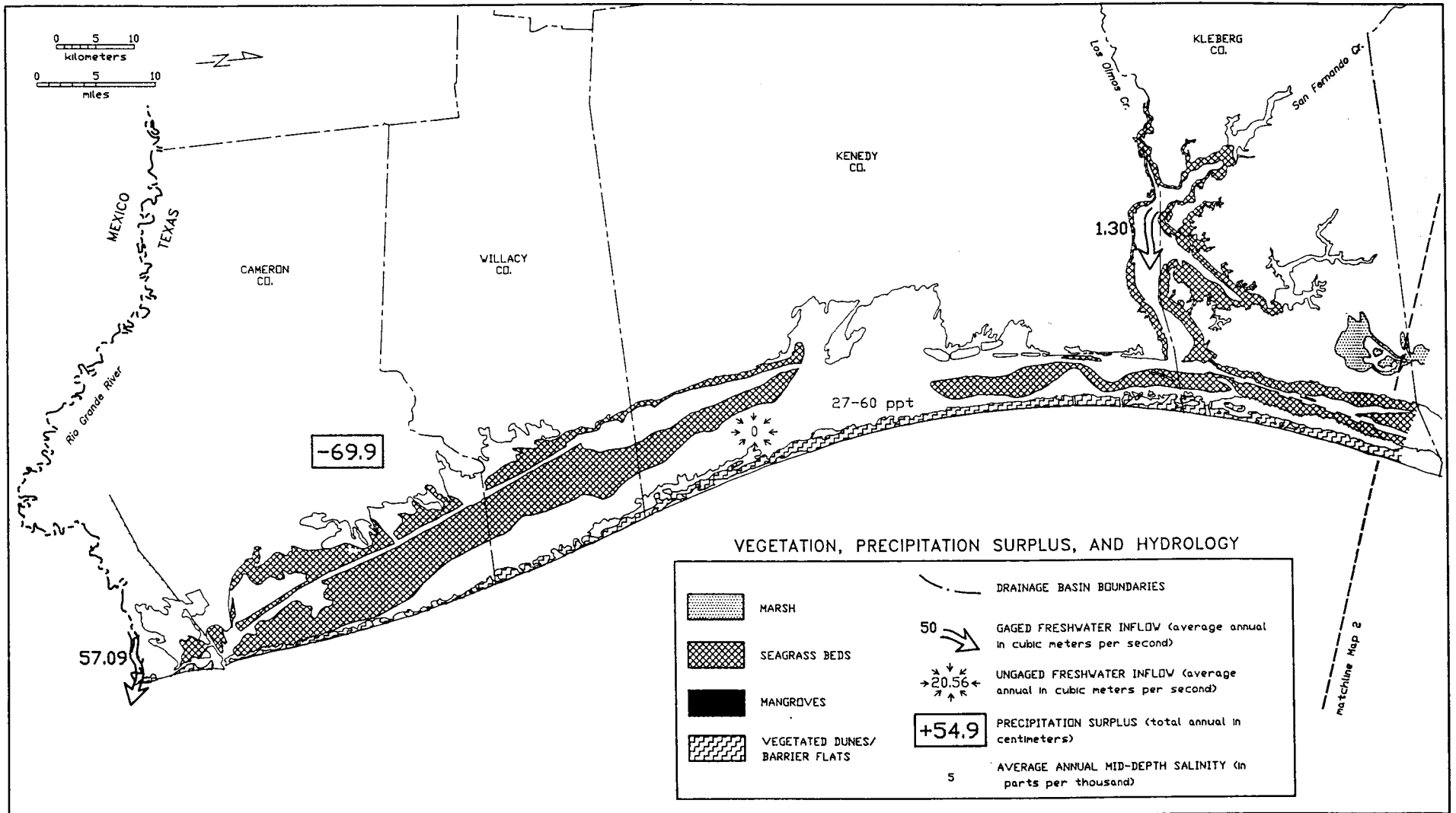
Map 10 - C

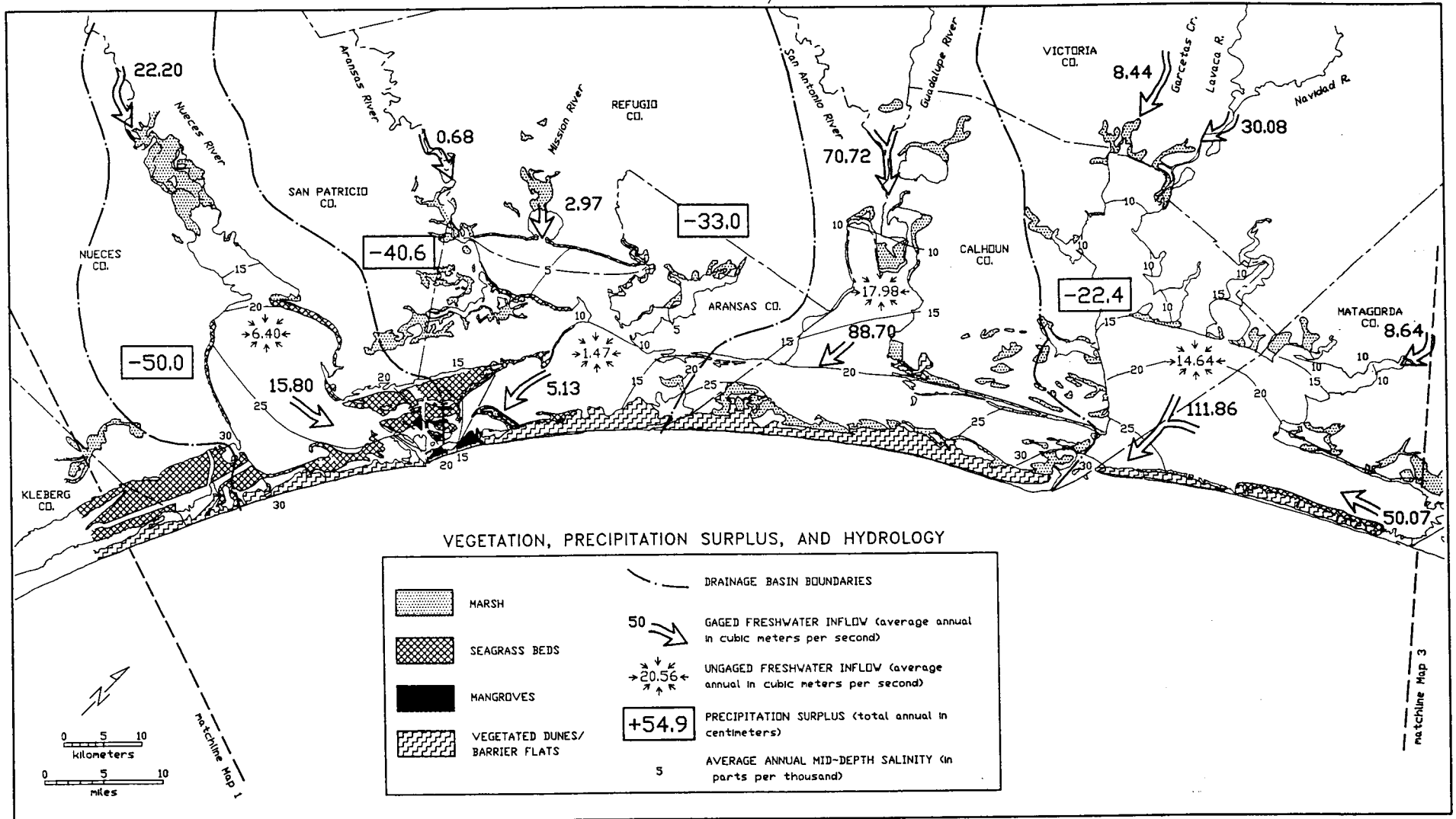


Maps 1D - 10D

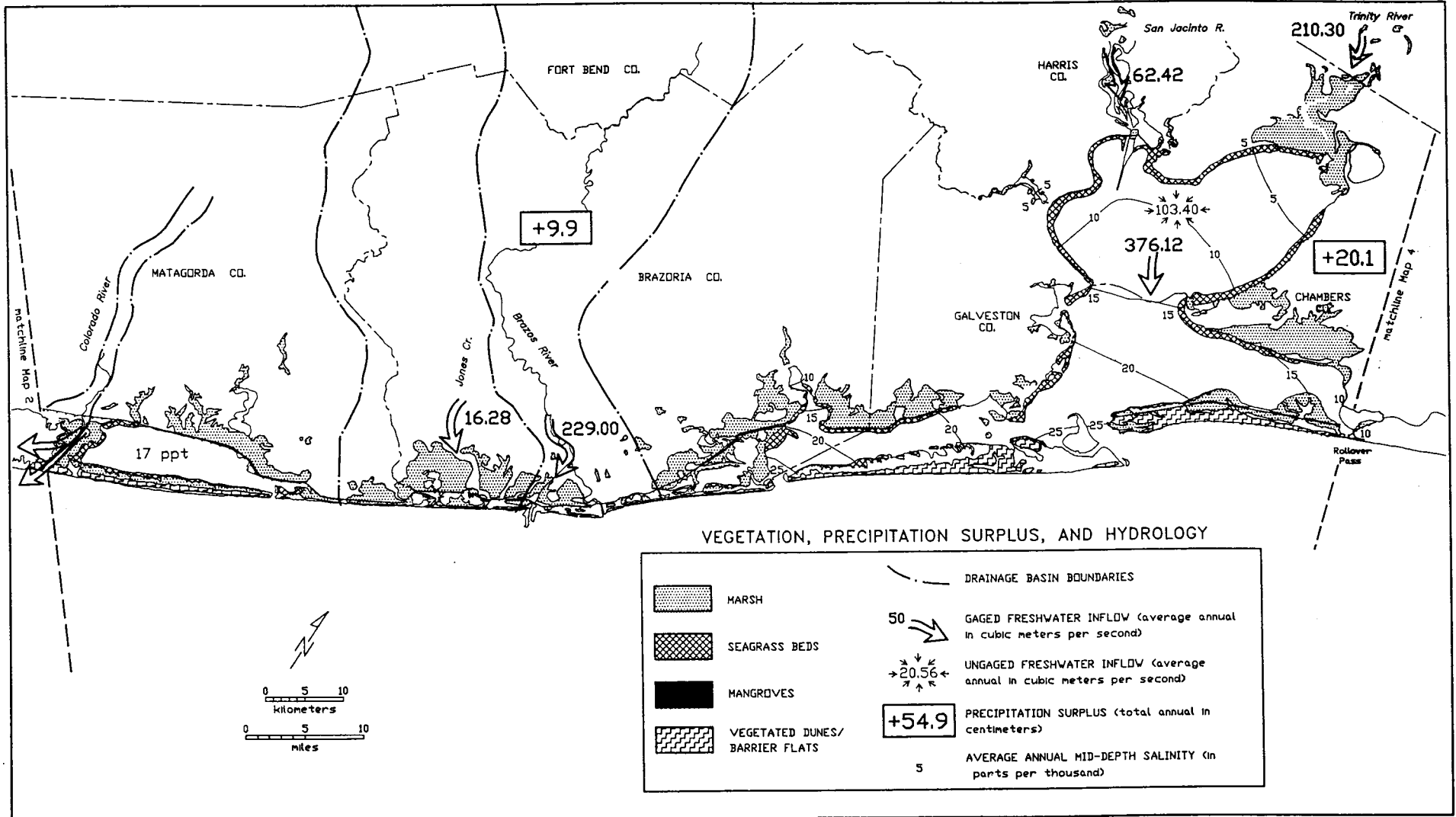
VEGETATION, PRECIPITATION SURPLUS, AND HYDROLOGY

# BROWNSVILLE / CORPUS CHRISTI

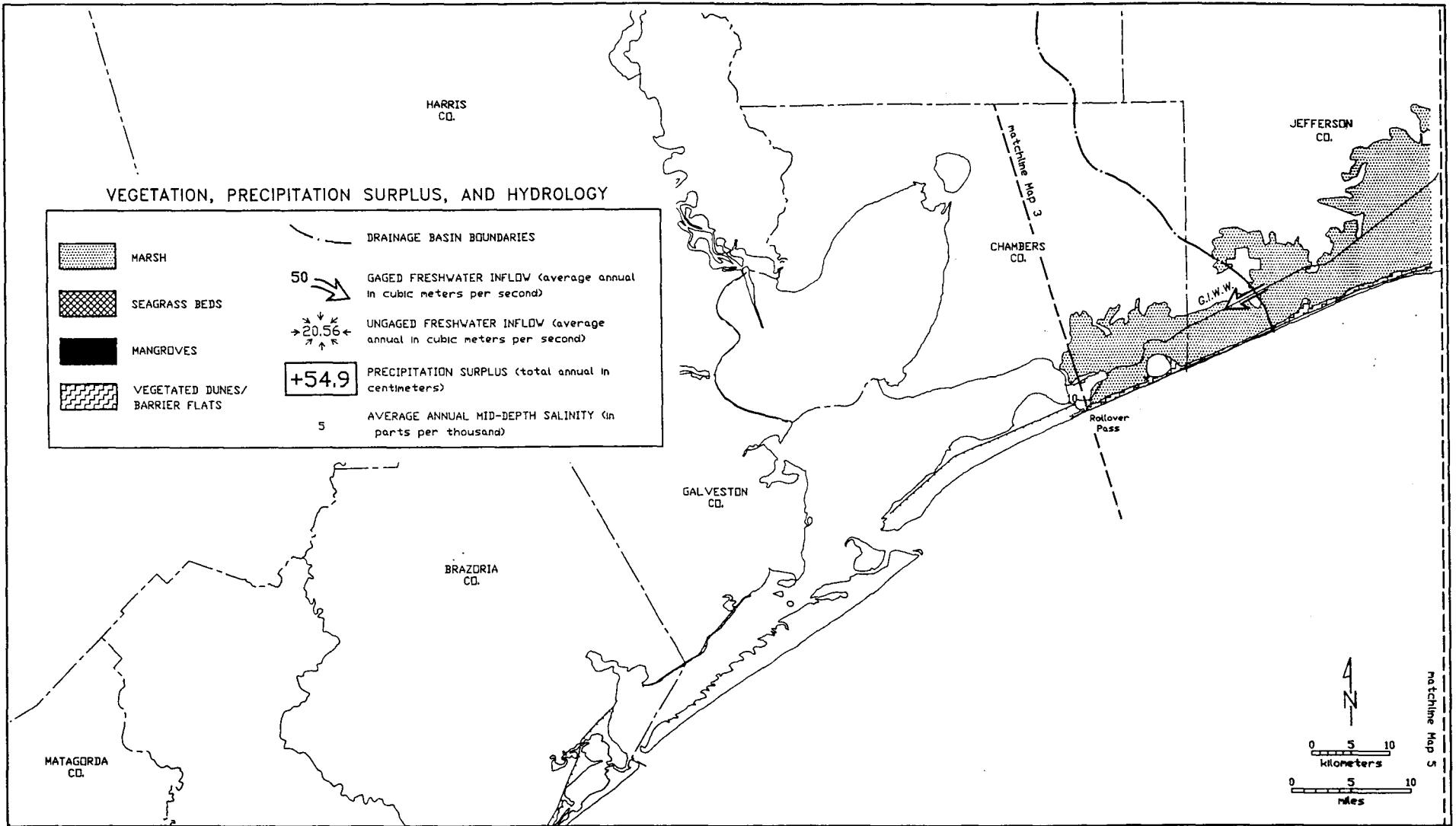




Map 2 - D

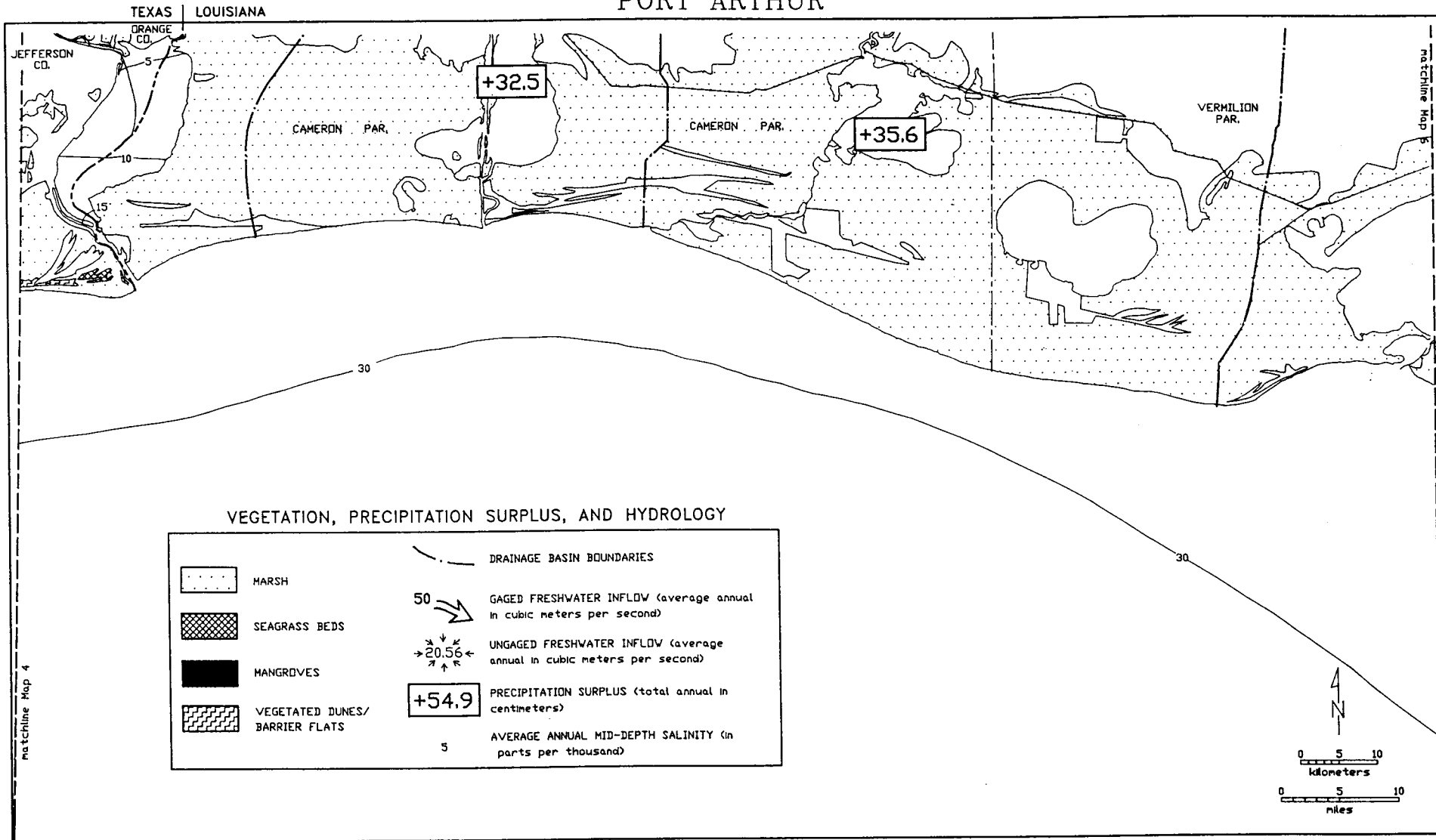


Map 3 - D

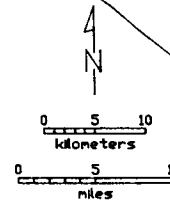
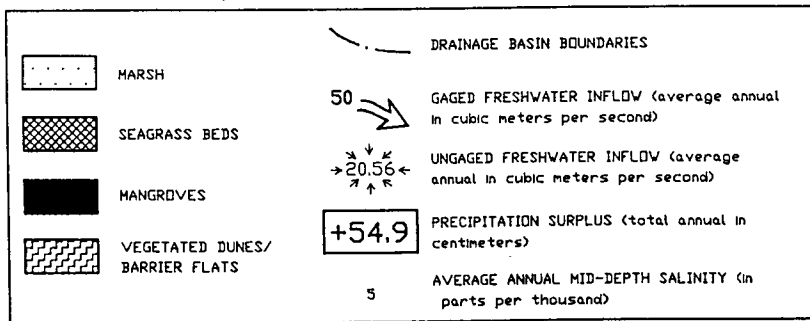


Map 4 - D

# PORT ARTHUR

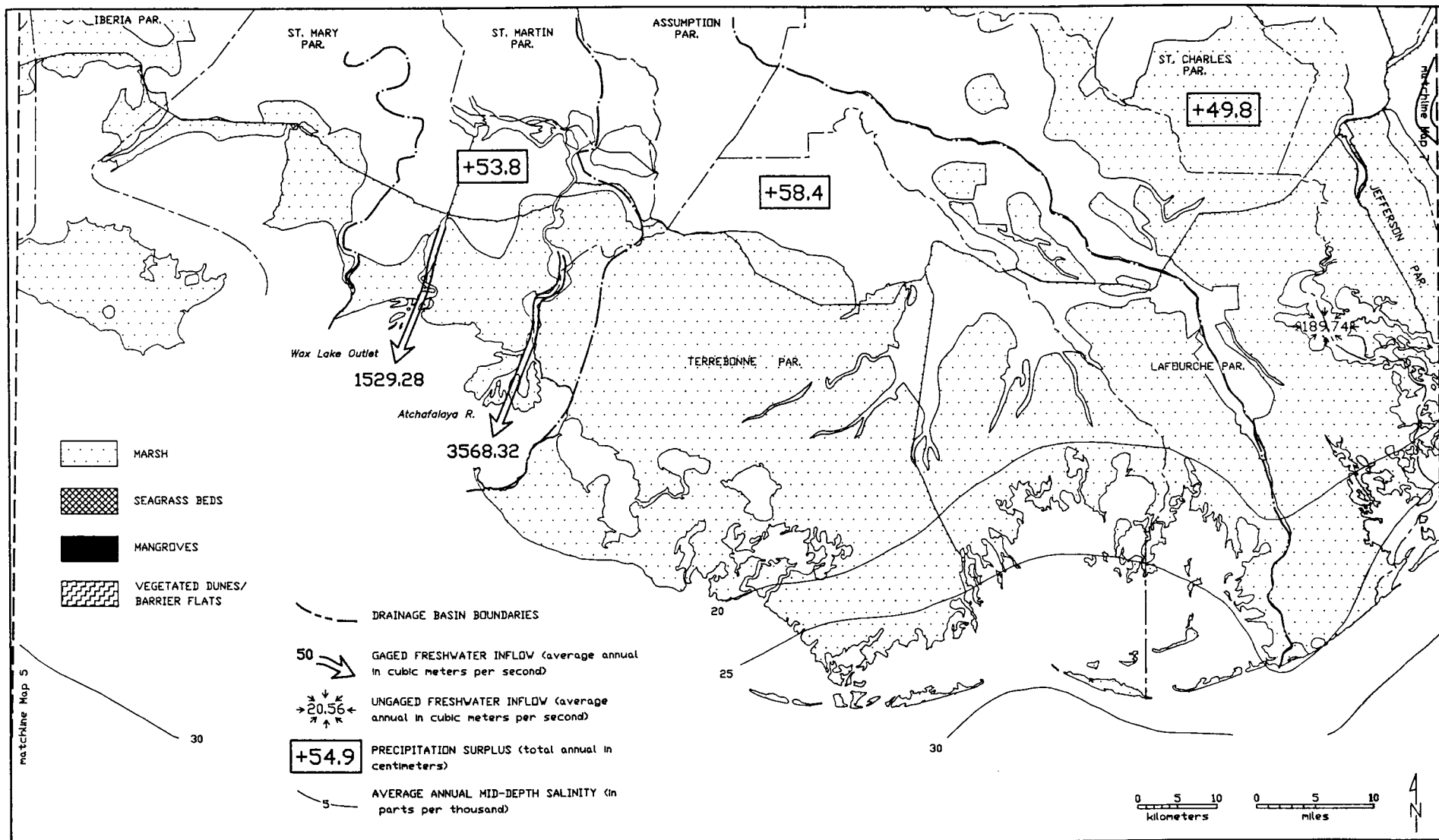


## VEGETATION, PRECIPITATION SURPLUS, AND HYDROLOGY



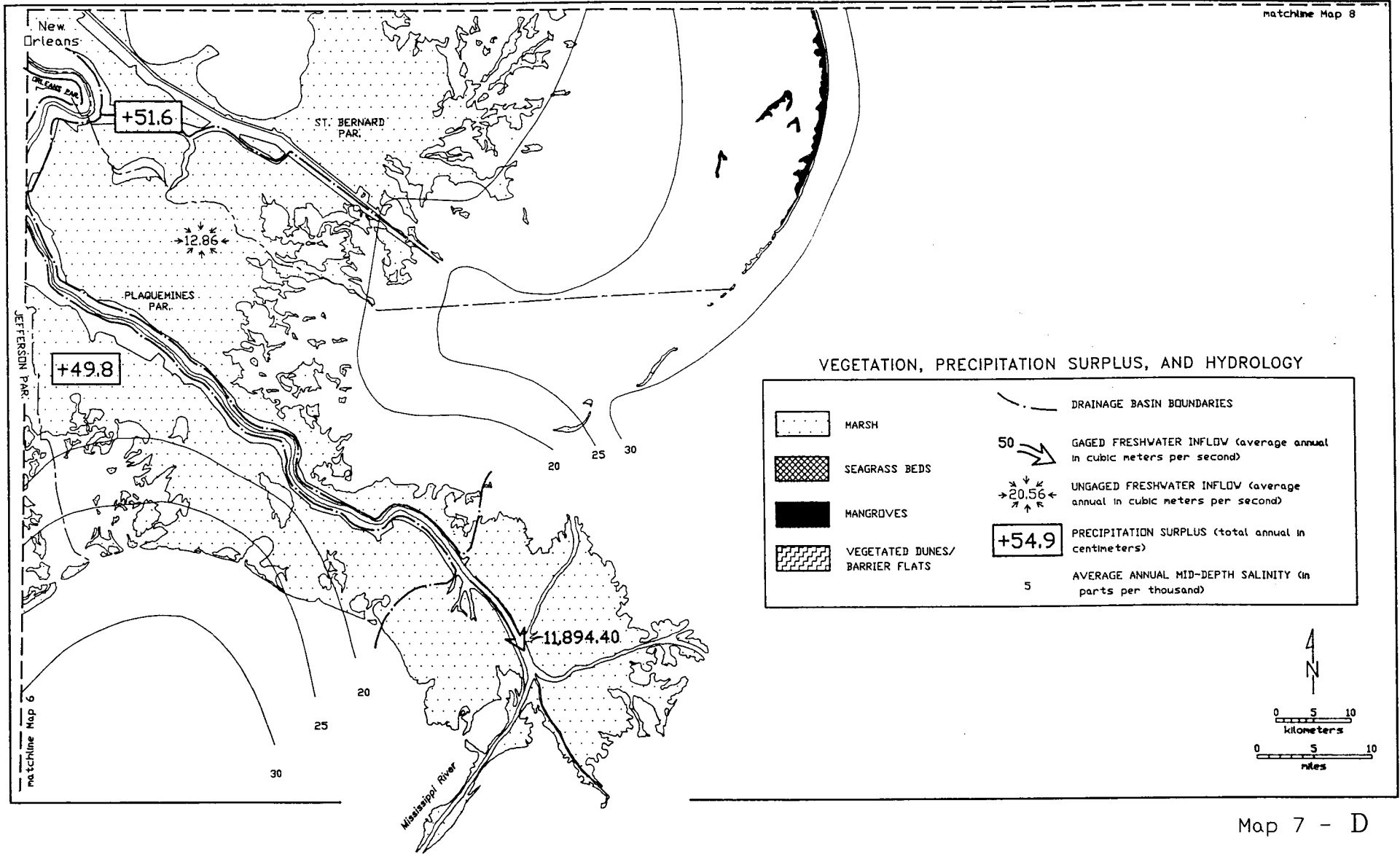
Map 5 - D

# NEW ORLEANS



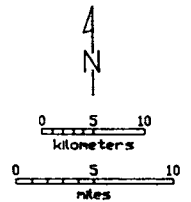
VEGETATION, PRECIPITATION SURPLUS, AND HYDROLOGY

Map 6 - D



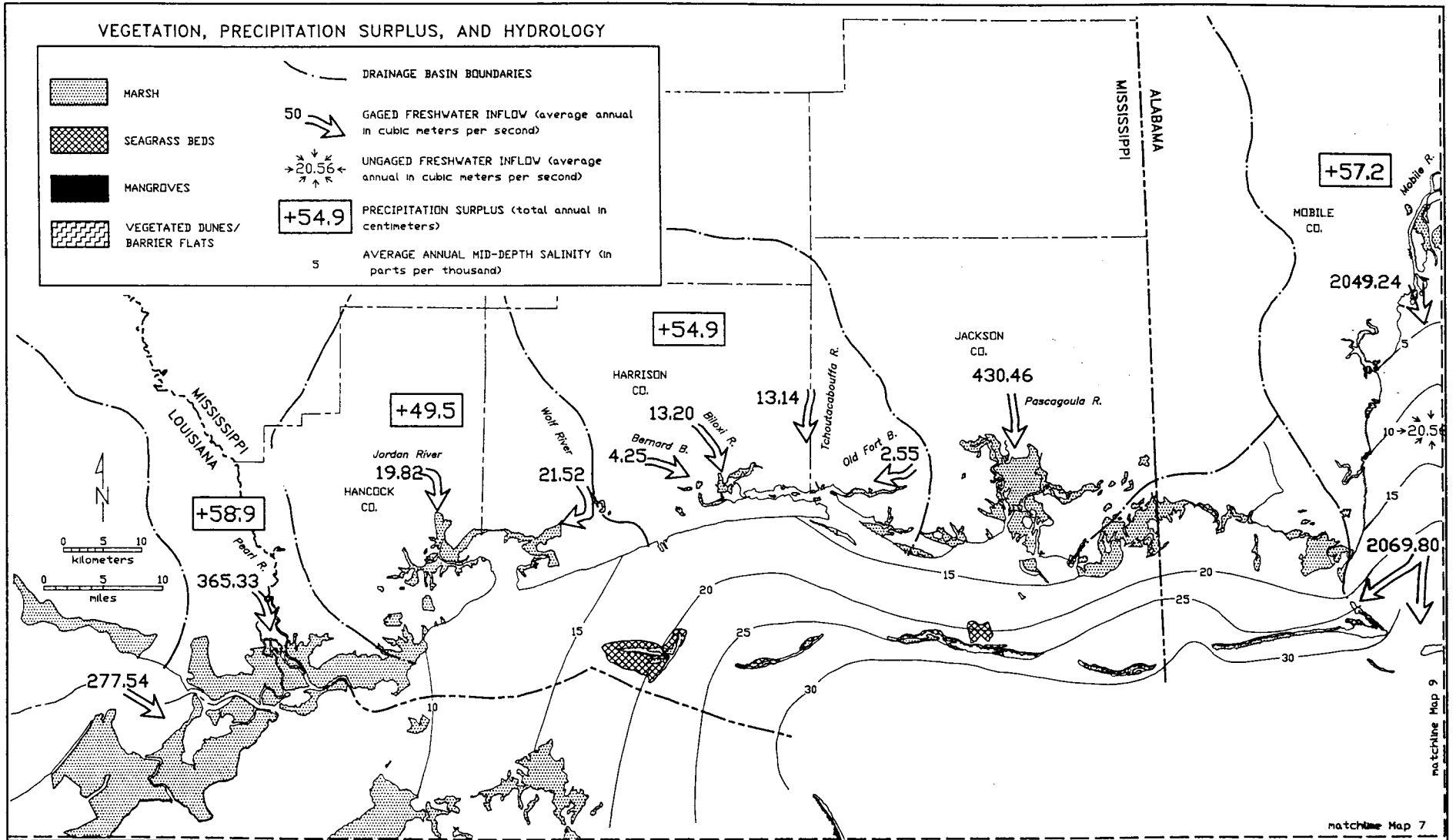
VEGETATION, PRECIPITATION SURPLUS, AND HYDROLOGY

	MARSH		DRAINAGE BASIN BOUNDARIES
	SEAGRASS BEDS	50	GAGED FRESHWATER INFLOW (average annual in cubic meters per second)
	MANGROVES		UNGAGED FRESHWATER INFLOW (average annual in cubic meters per second)
	VEGETATED DUNES/ BARRIER FLATS		PRECIPITATION SURPLUS (total annual in centimeters)
		5	AVERAGE ANNUAL MID-DEPTH SALINITY (in parts per thousand)

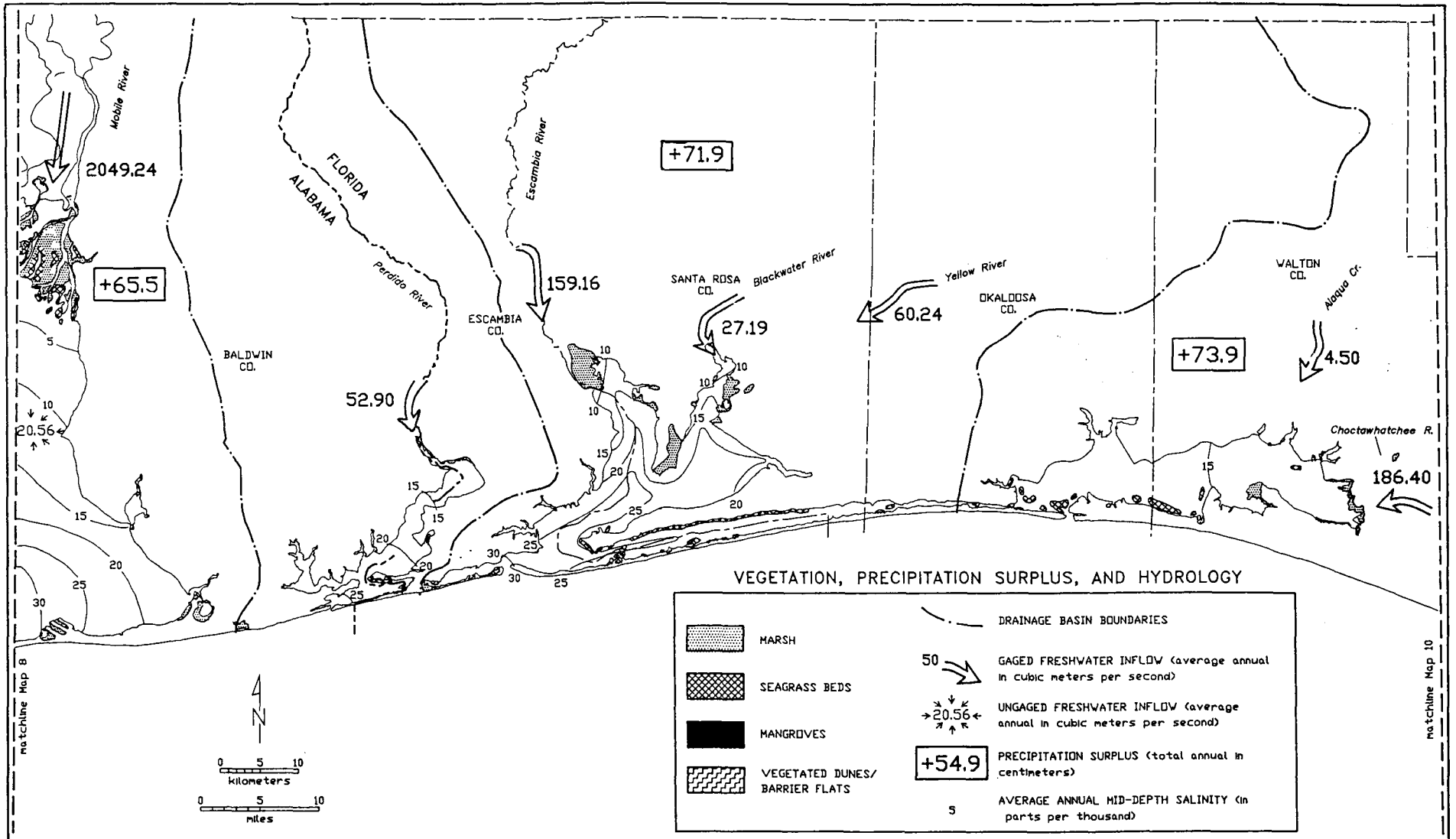


Map 7 - D

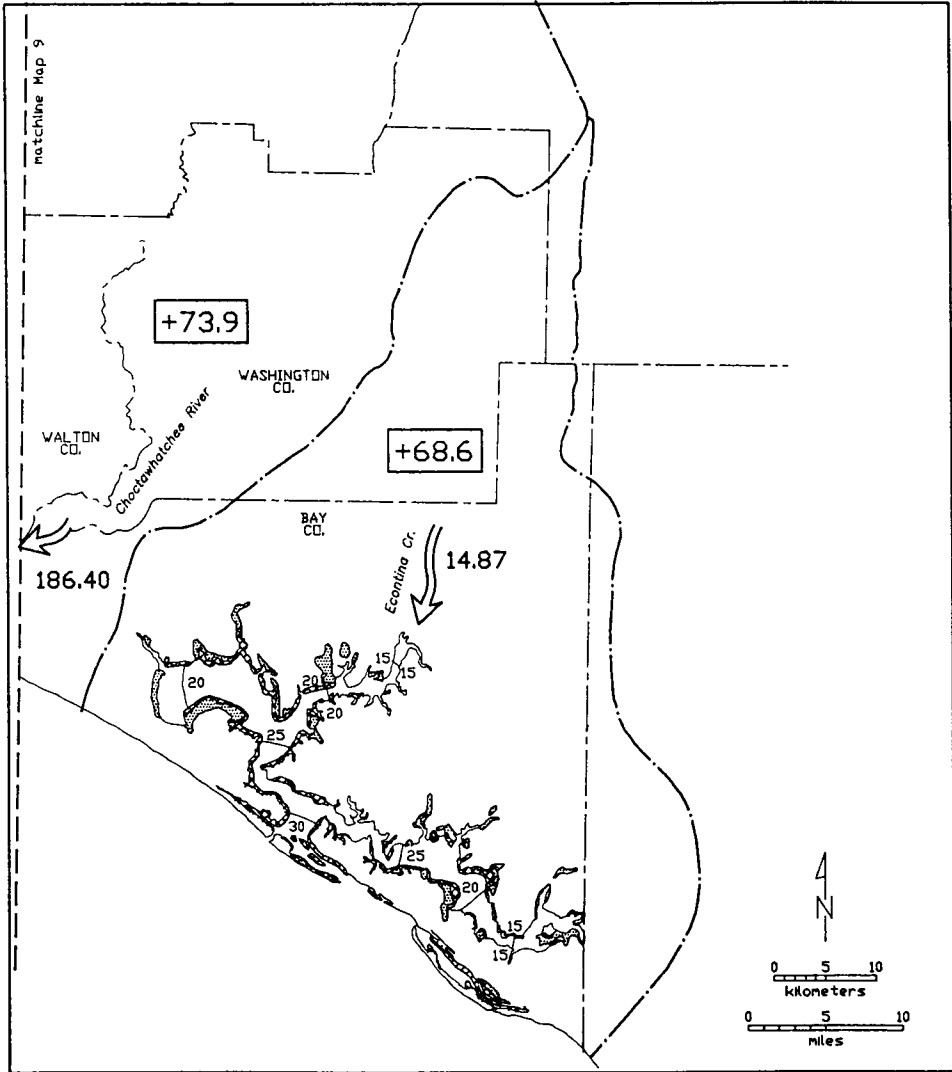




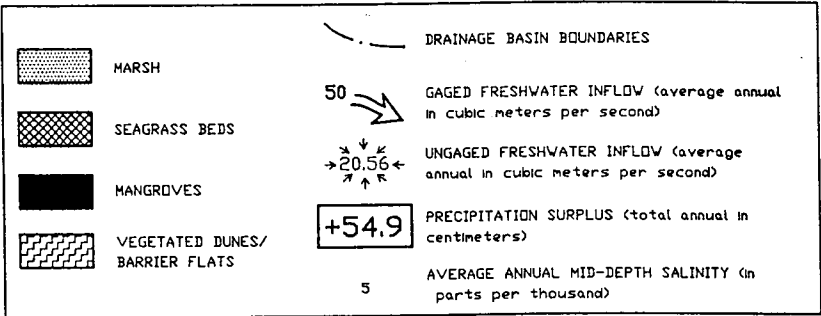
Map 8 - D



# TALLAHASSEE



## VEGETATION, PRECIPITATION SURPLUS, AND HYDROLOGY

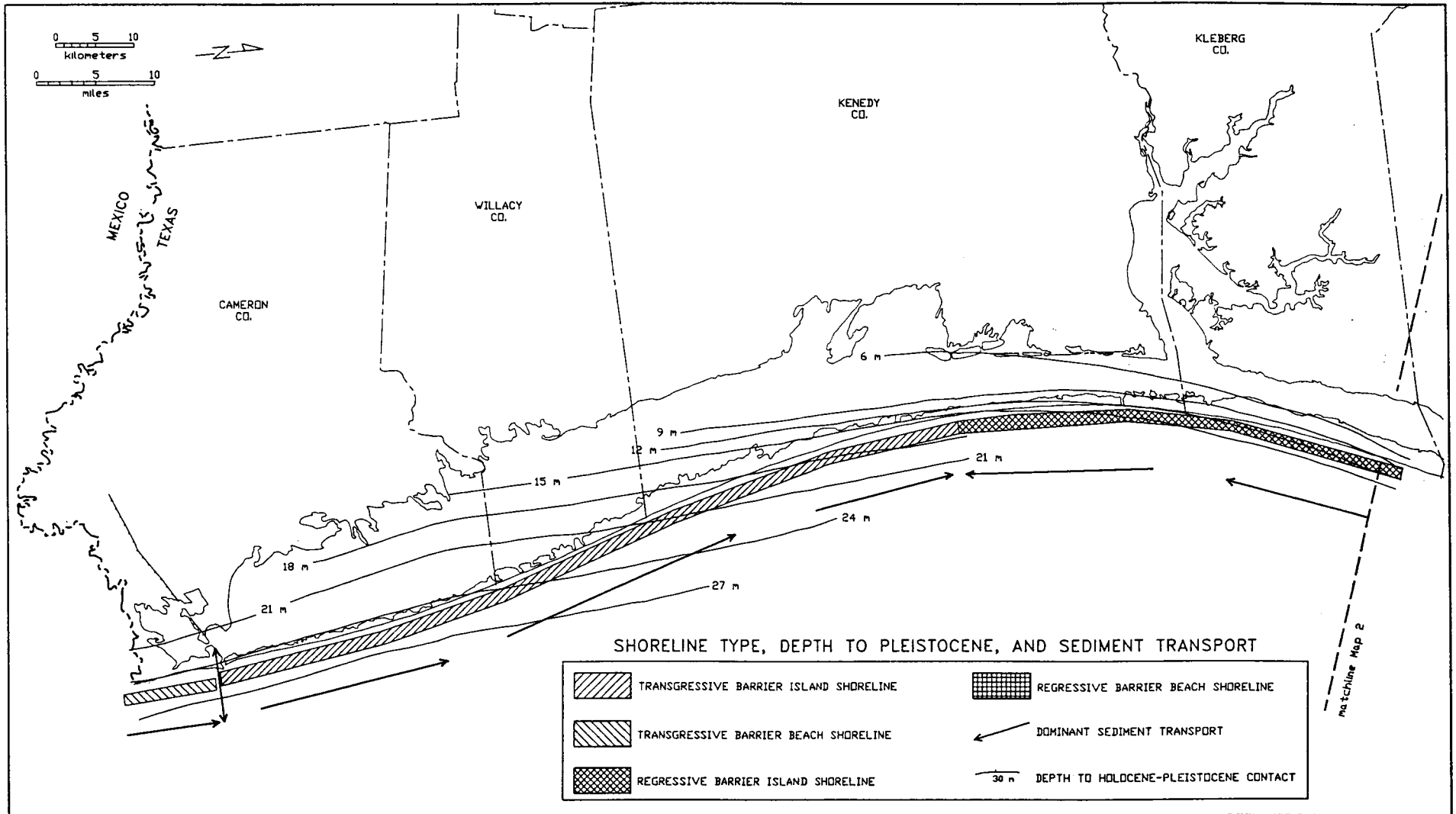


Map 10 - D

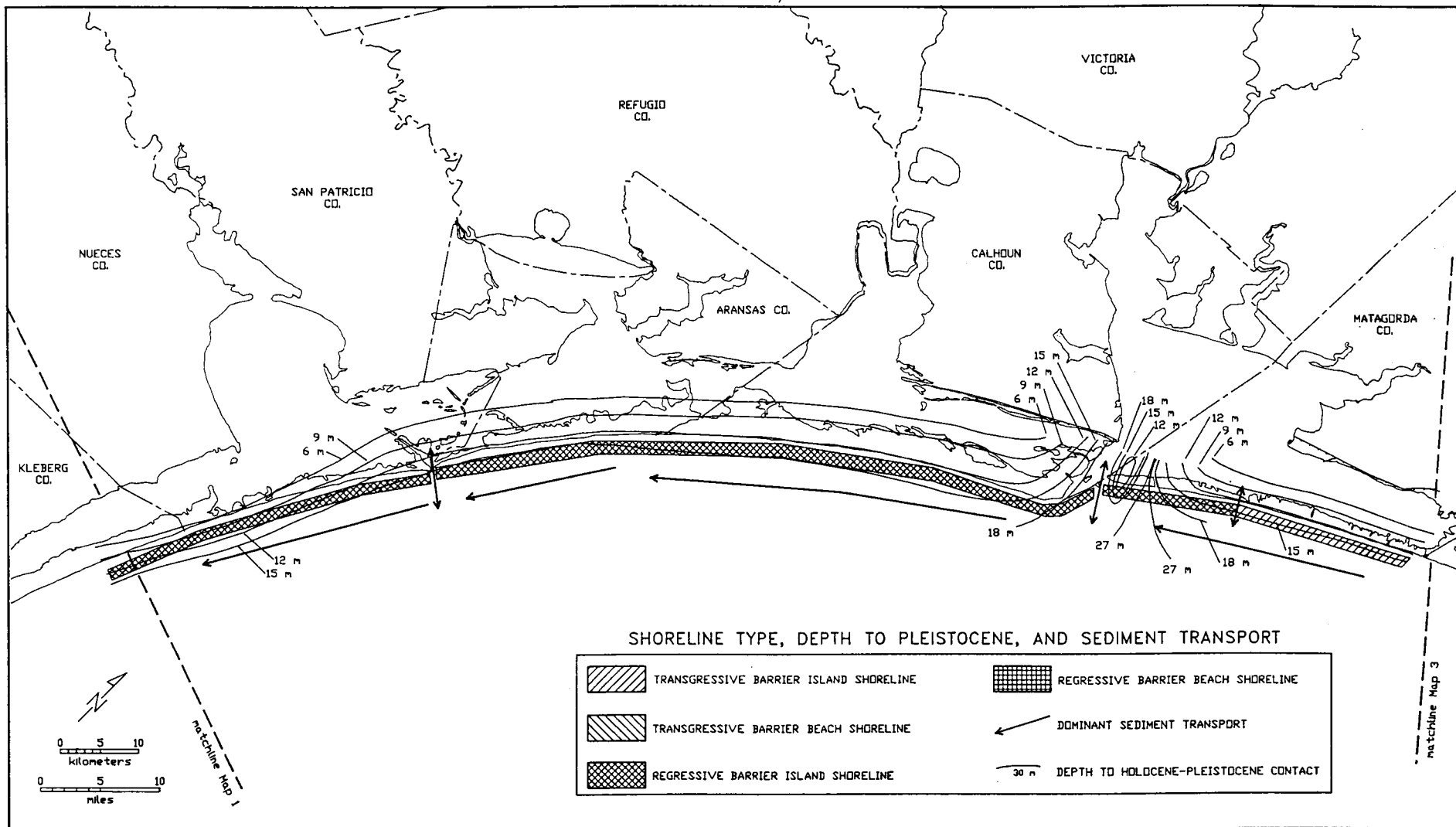
Maps 1E - 10E

SHORELINE TYPE, DEPTH TO PLEISTOCENE, AND  
SEDIMENT TRANSPORT

# BROWNSVILLE / CORPUS CHRISTI

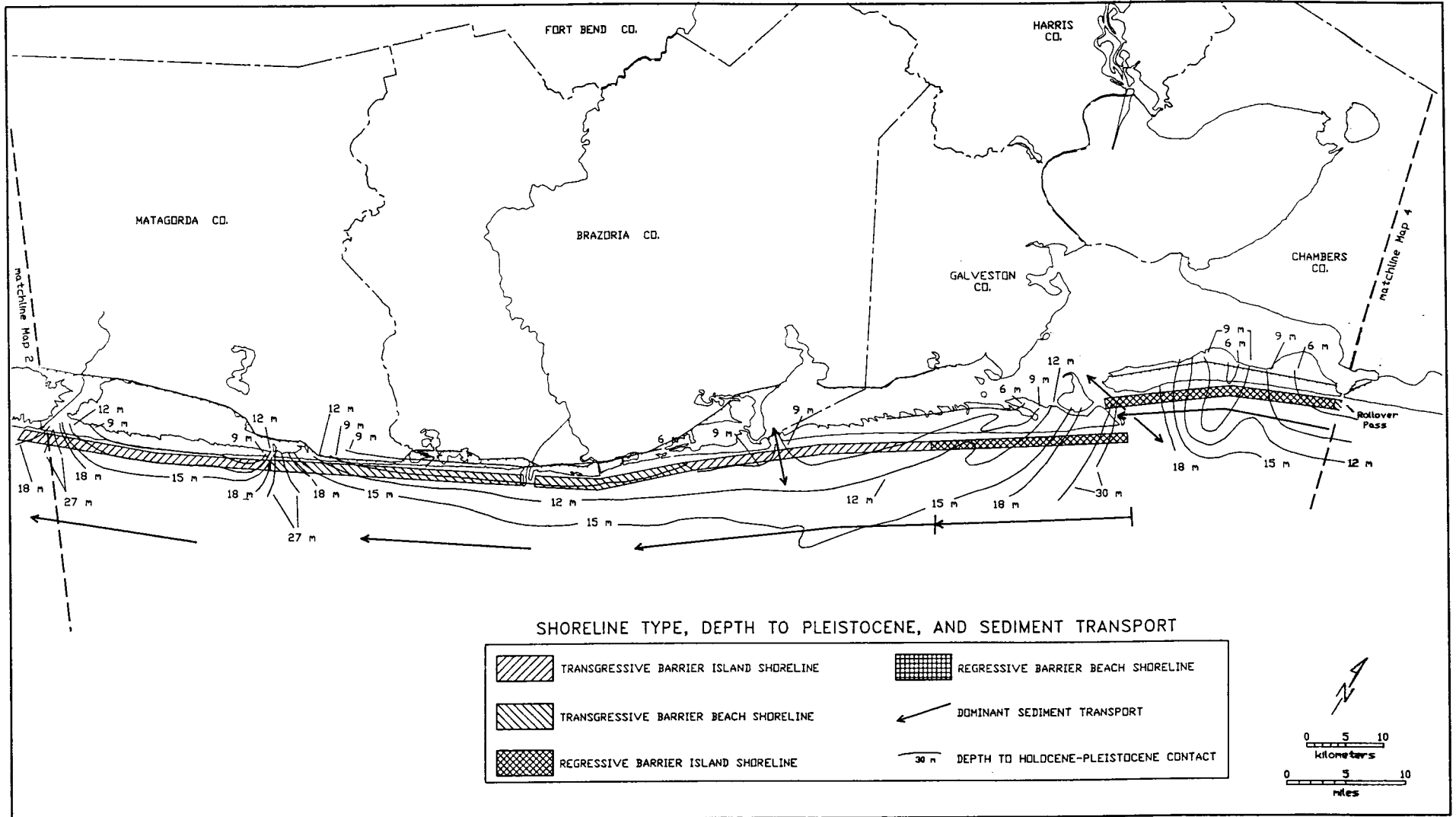


CORPUS CHRISTI / BEEVILLE



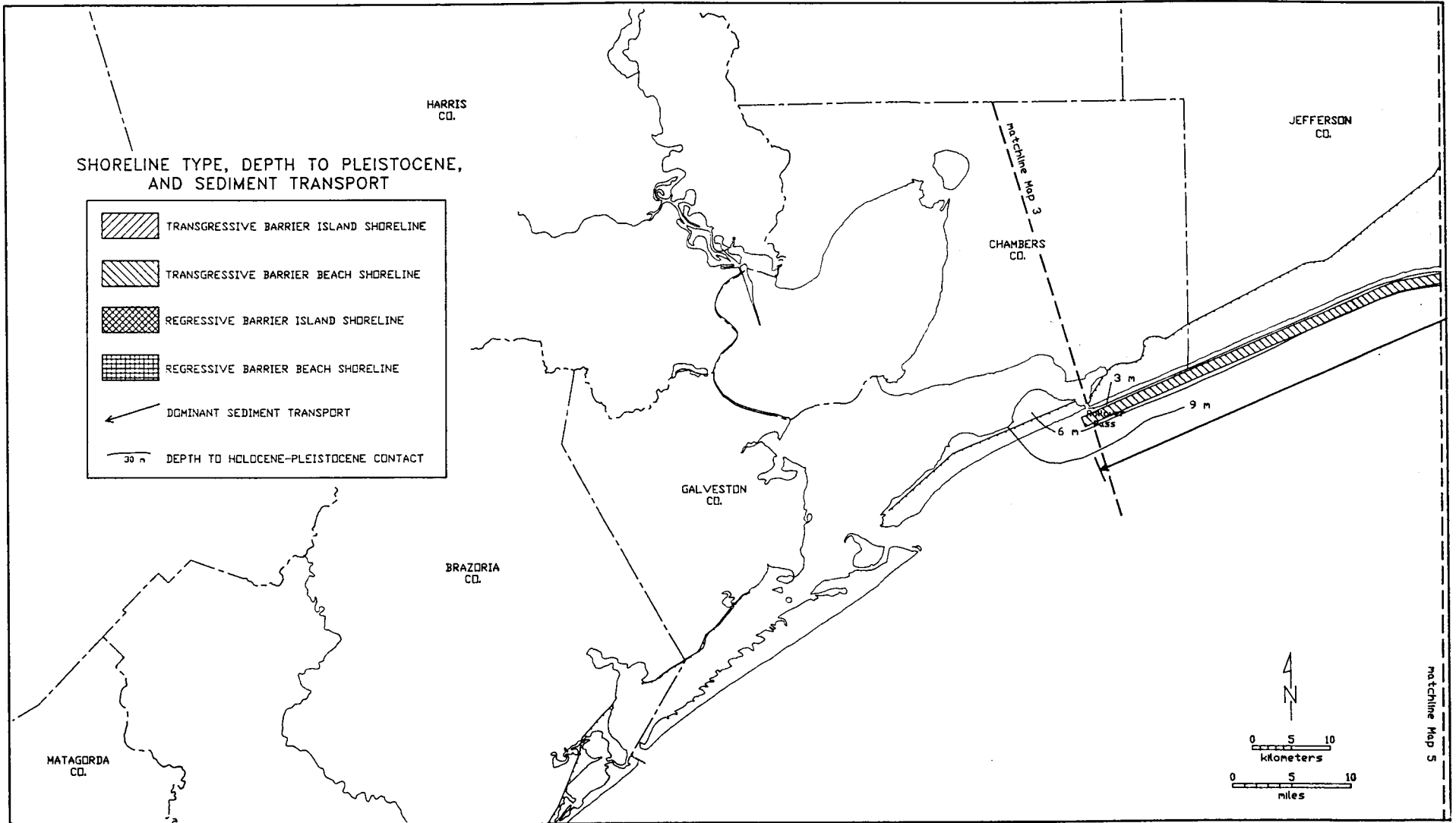
Map 2 - E

# BAY CITY / HOUSTON



Map 3 - E

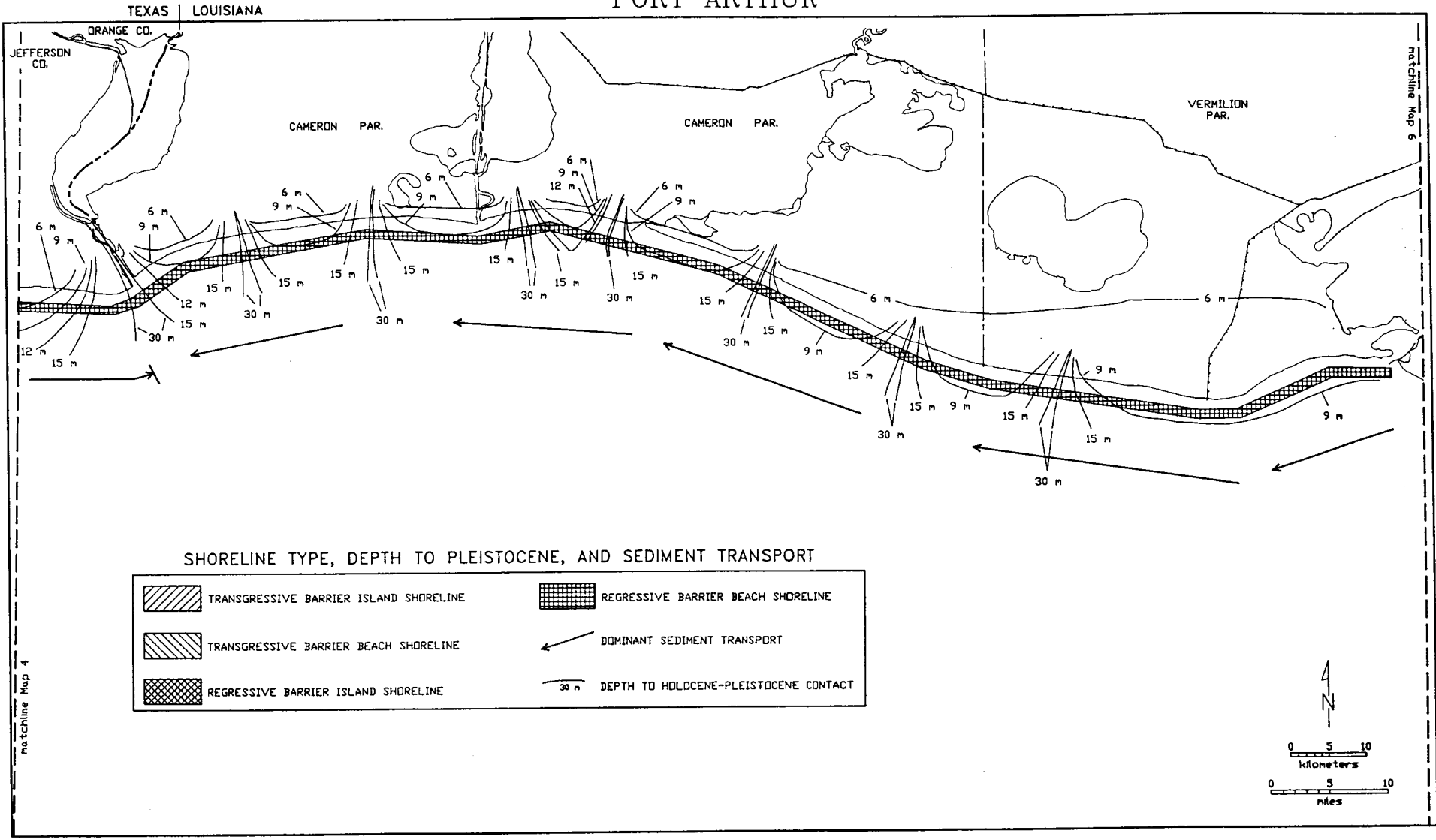
# HOUSTON



Map 4 - E

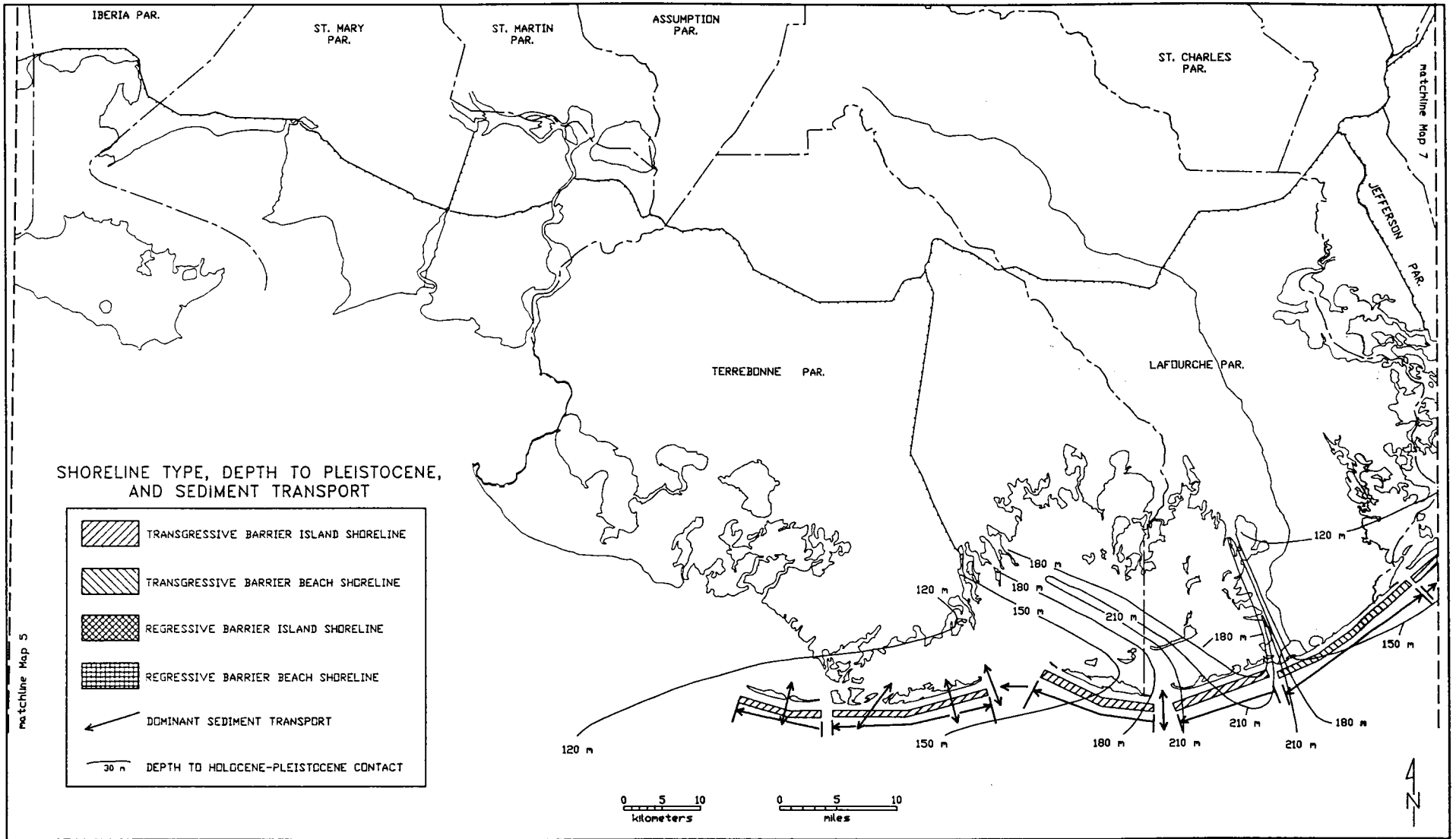


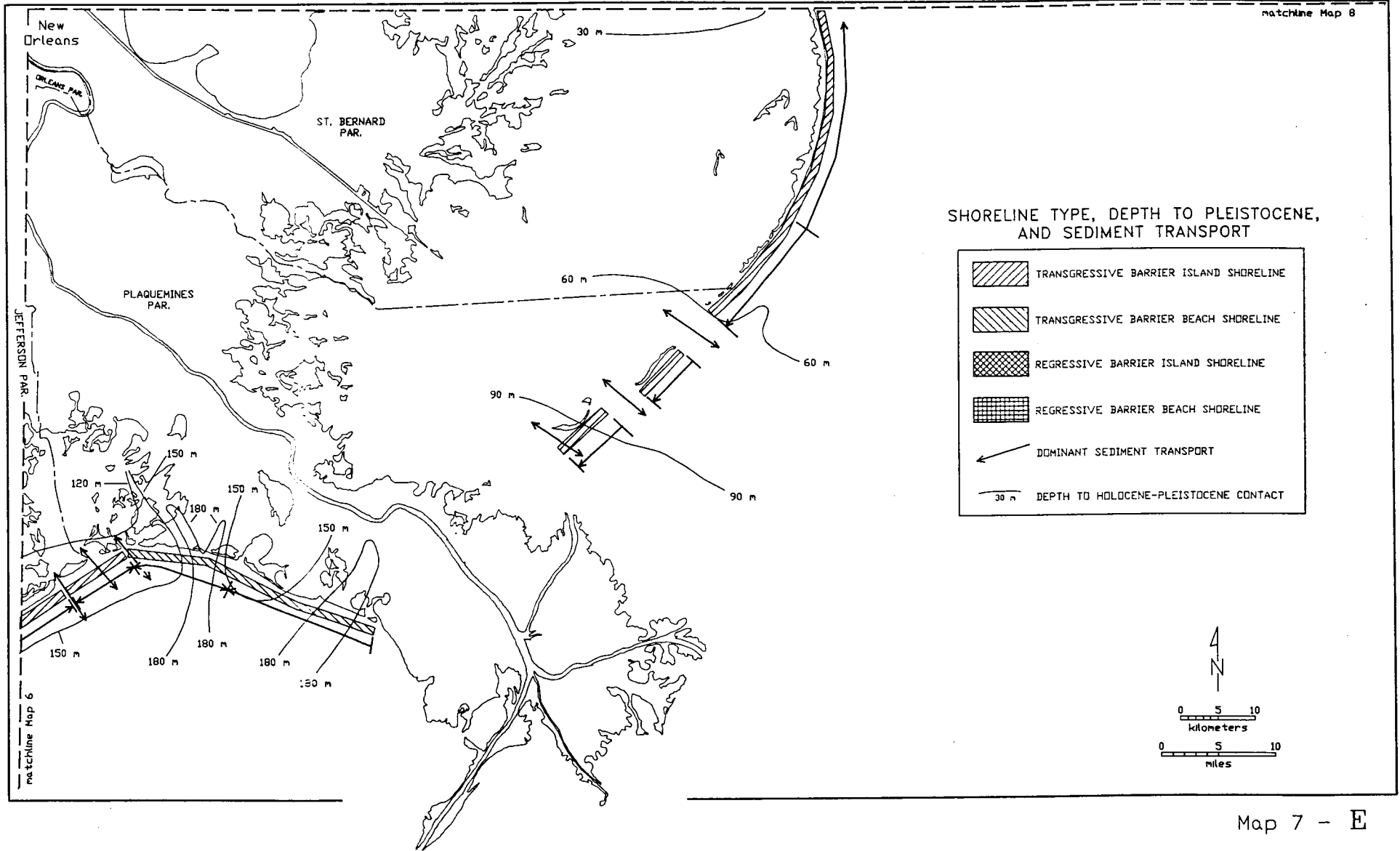
# PORT ARTHUR



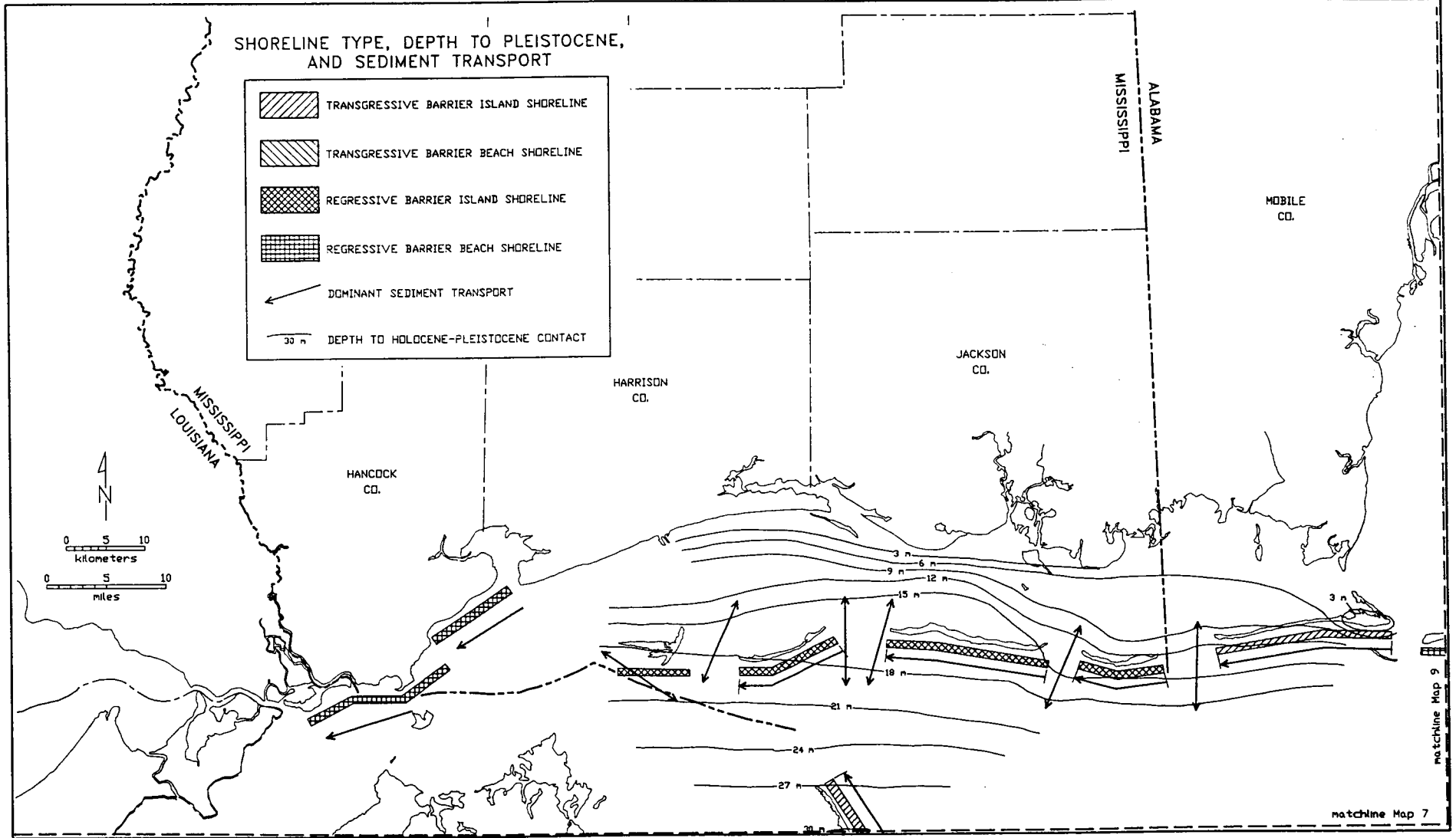
Map 5 - E

# NEW ORLEANS

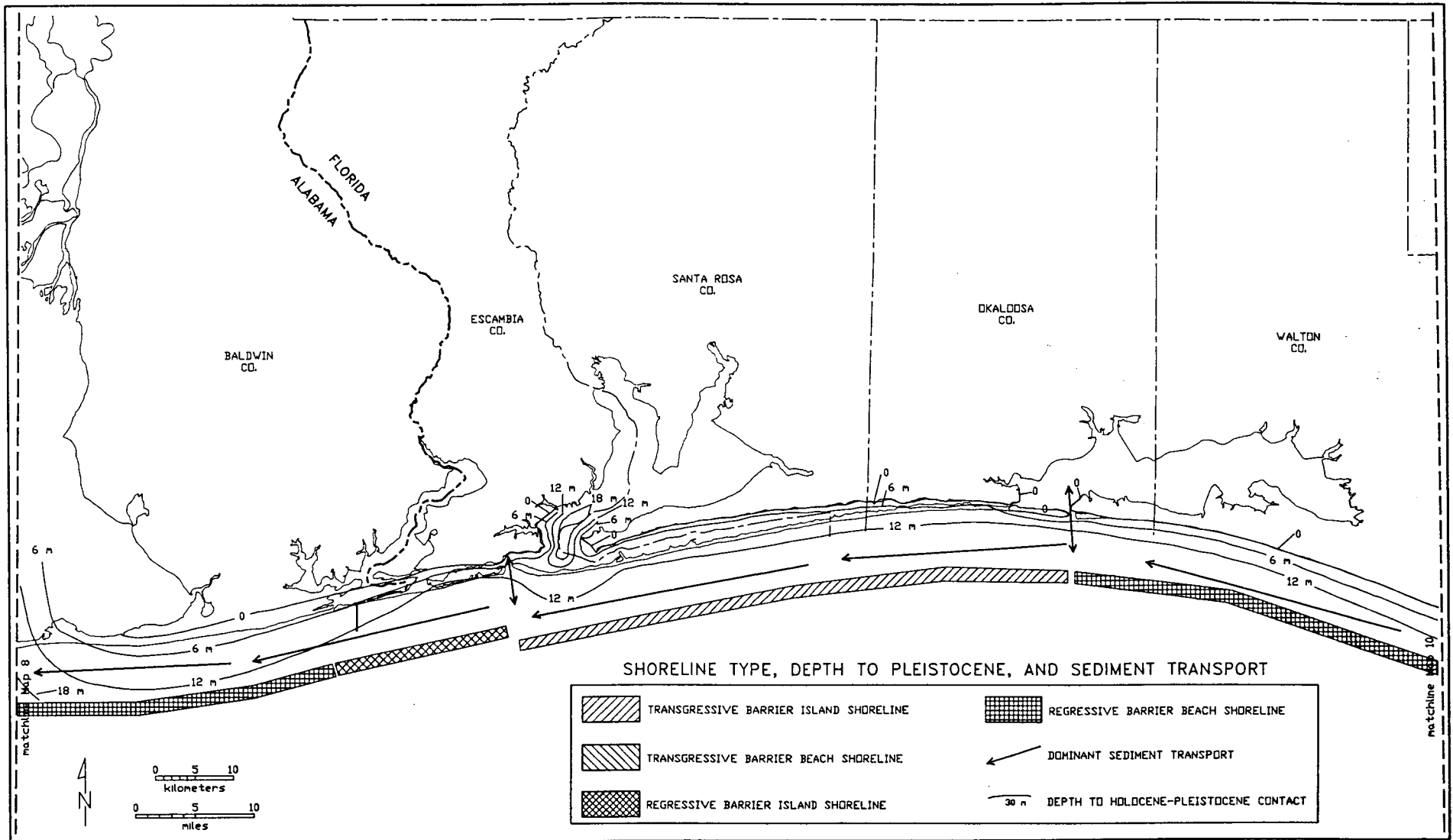




Map 7 - E

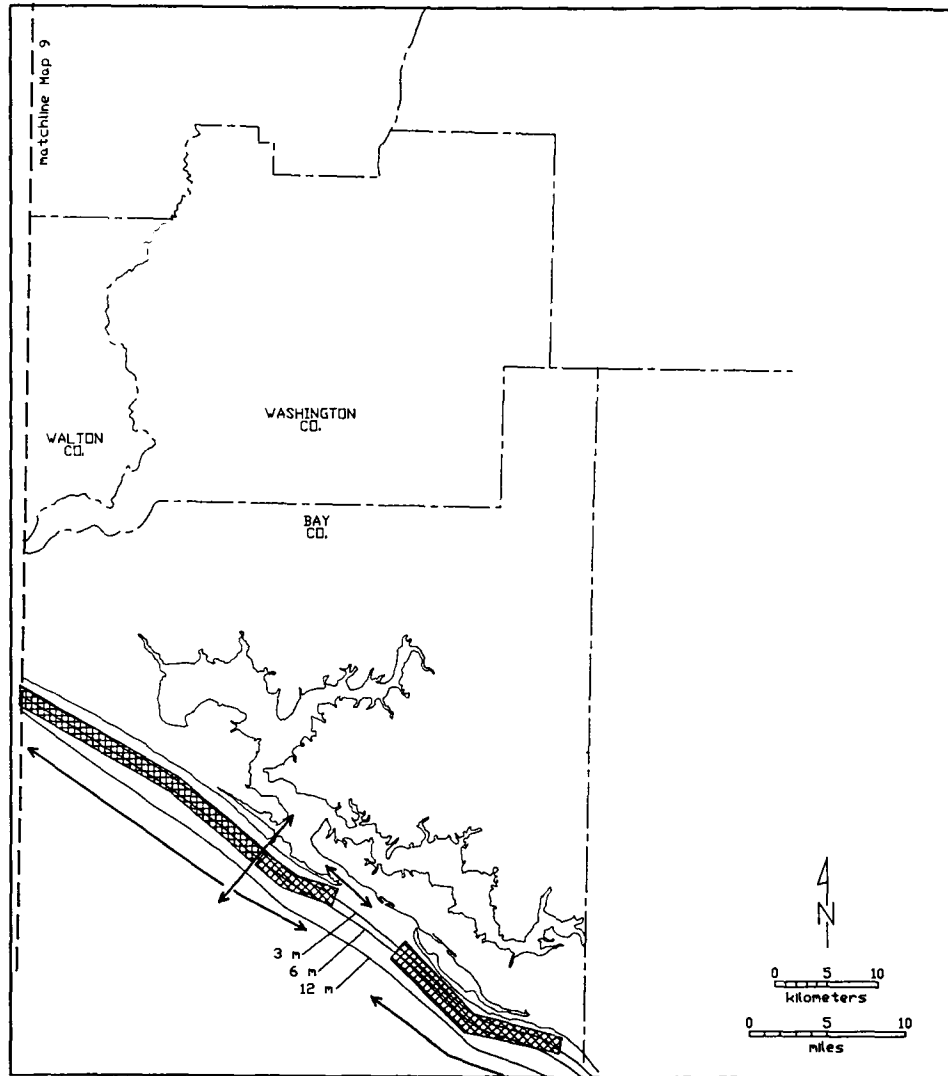


Map 8 - E

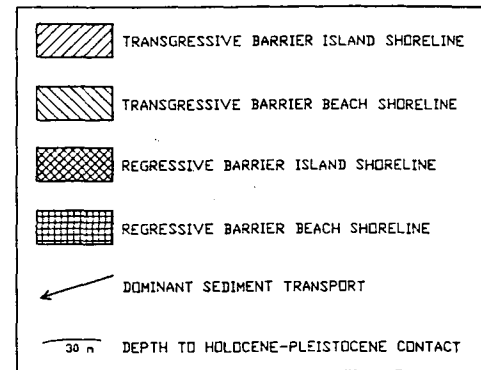


Map 9 - E

# TALLAHASSEE



## SHORELINE TYPE, DEPTH TO PLEISTOCENE, AND SEDIMENT TRANSPORT

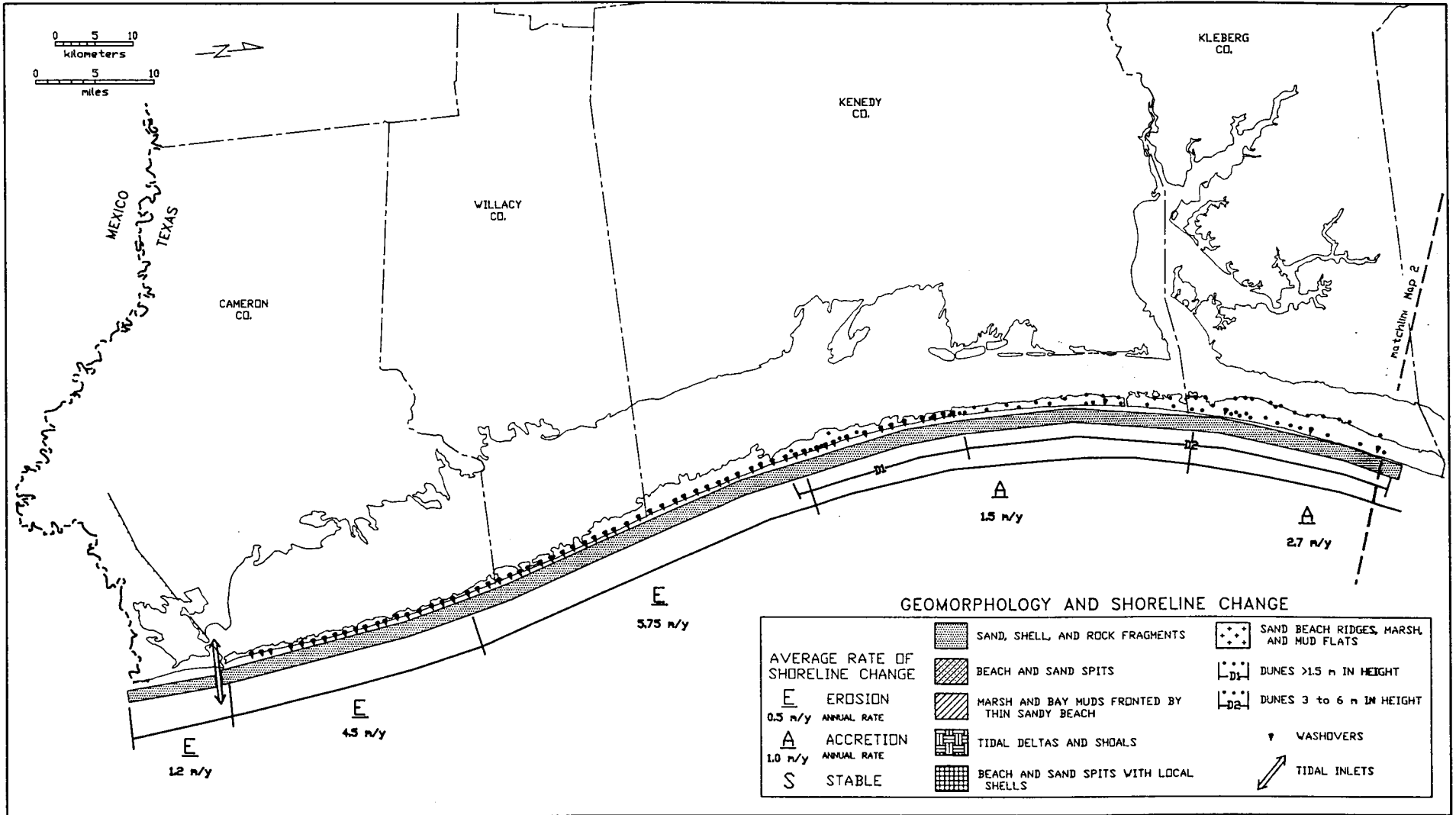


Map 10 - E

Maps 1F - 10F

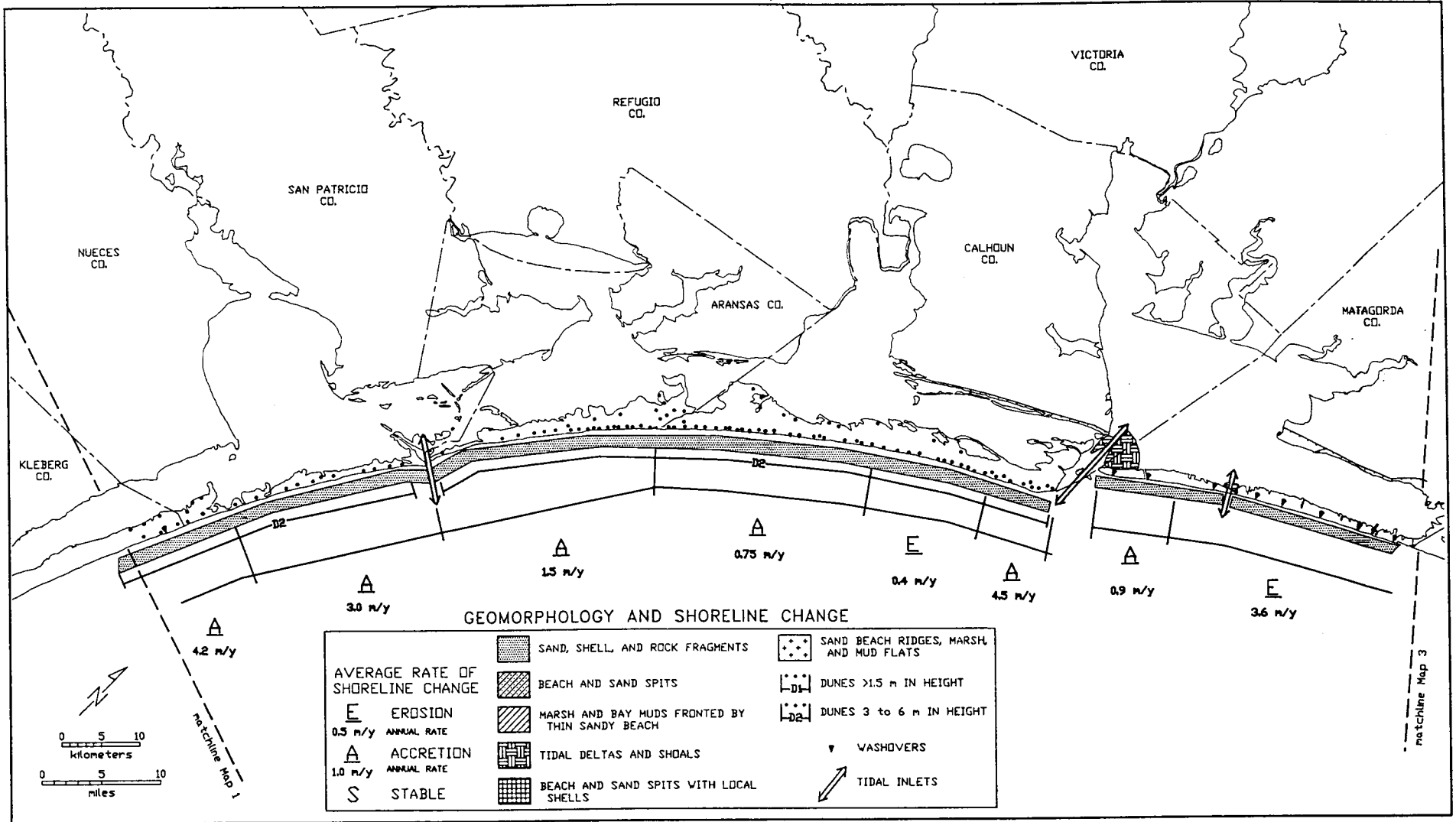
GEOMORPHOLOGY AND SHORELINE CHANGE

# BROWNSVILLE / CORPUS CHRISTI



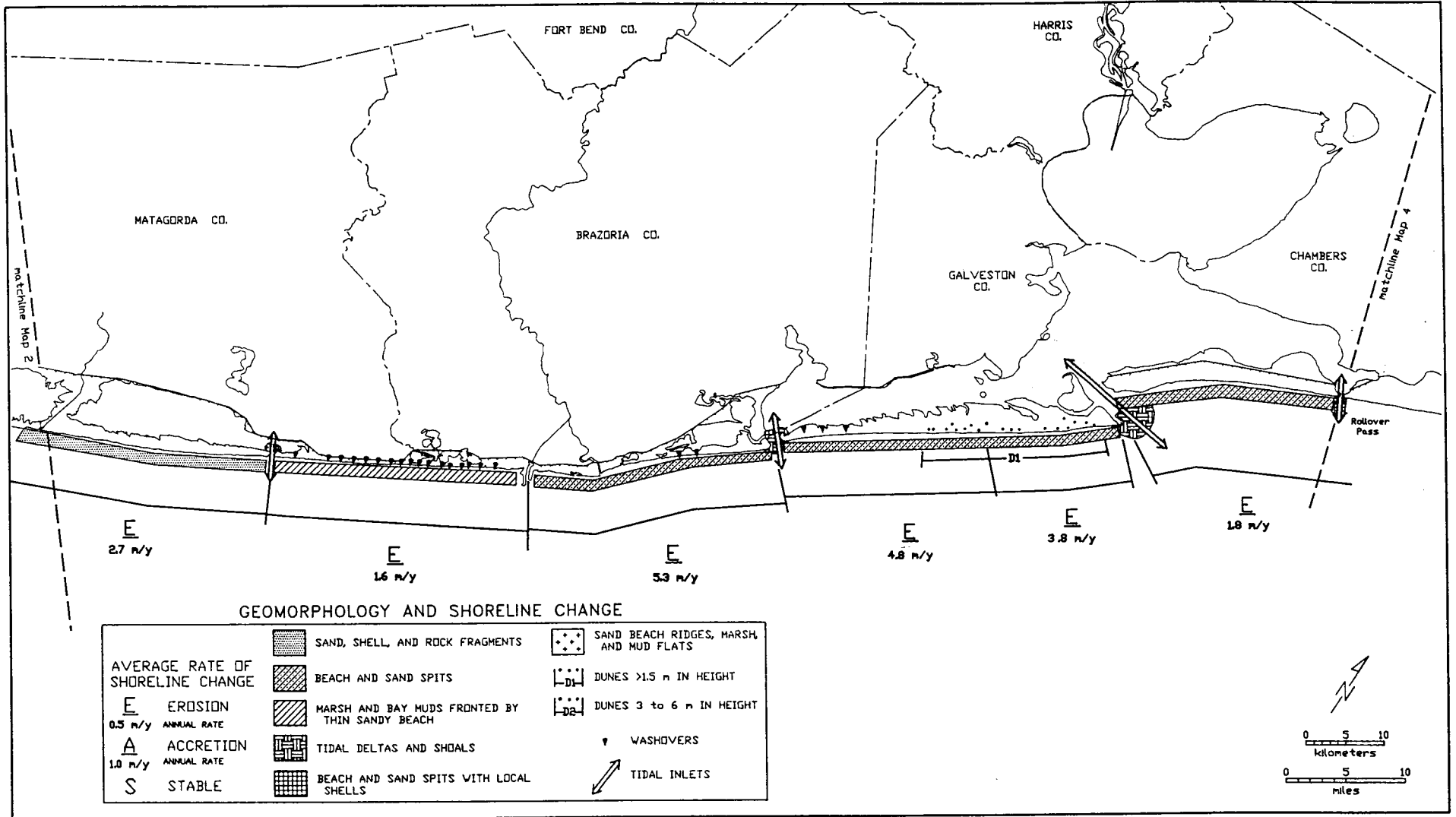
Map 1 - F



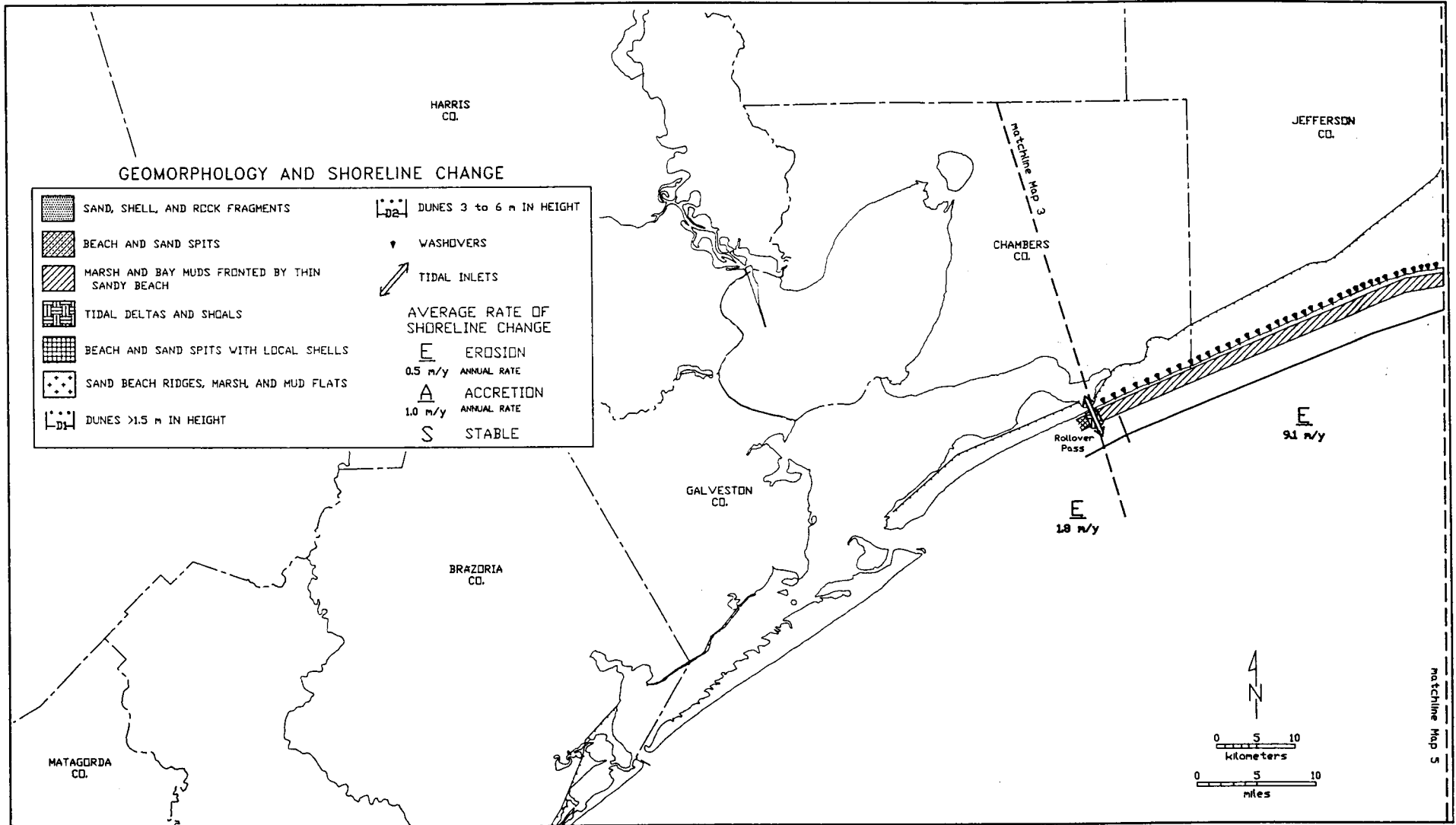


Map 2 - F

# BAY CITY / HOUSTON

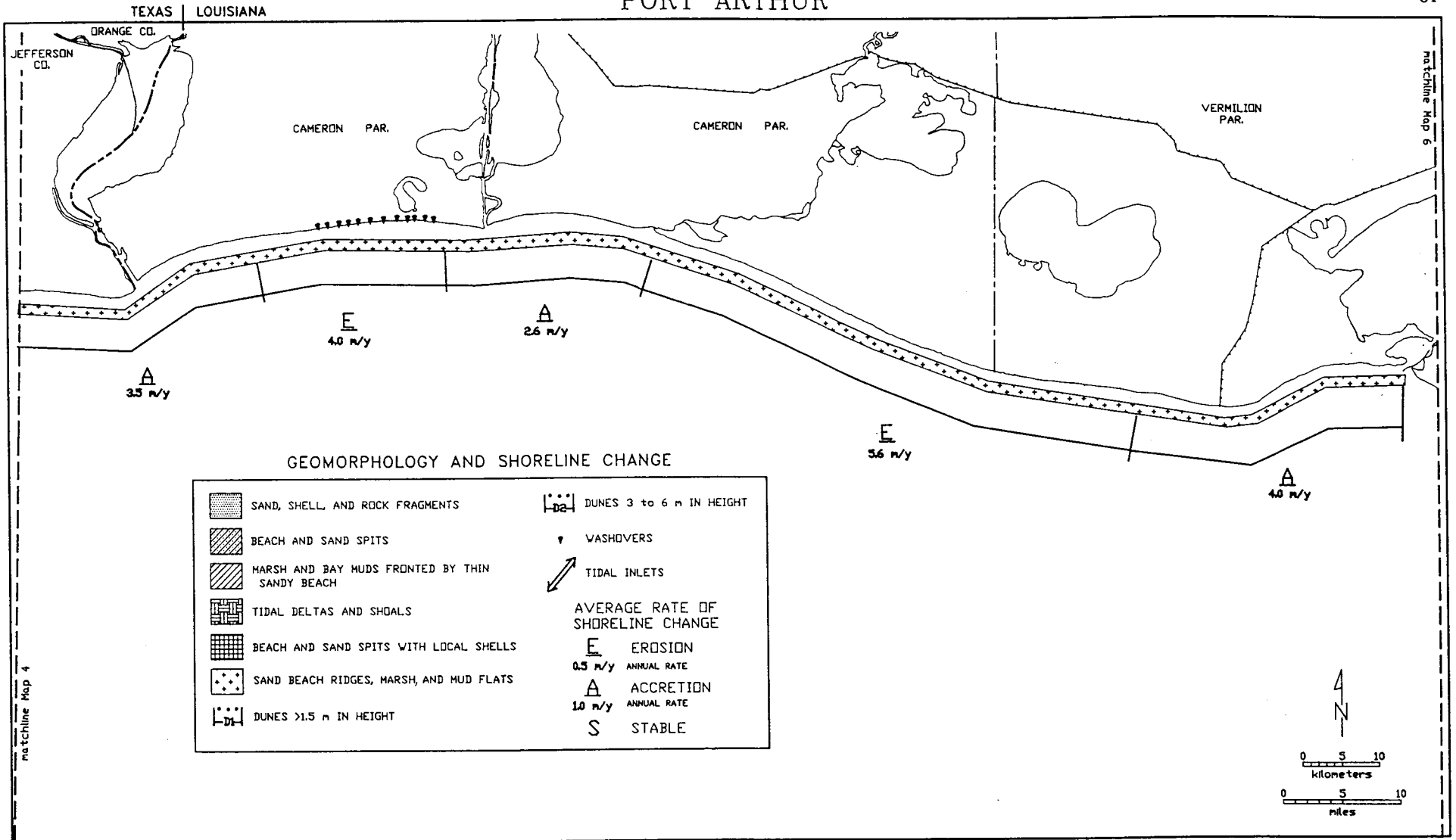


Map 3 - F'



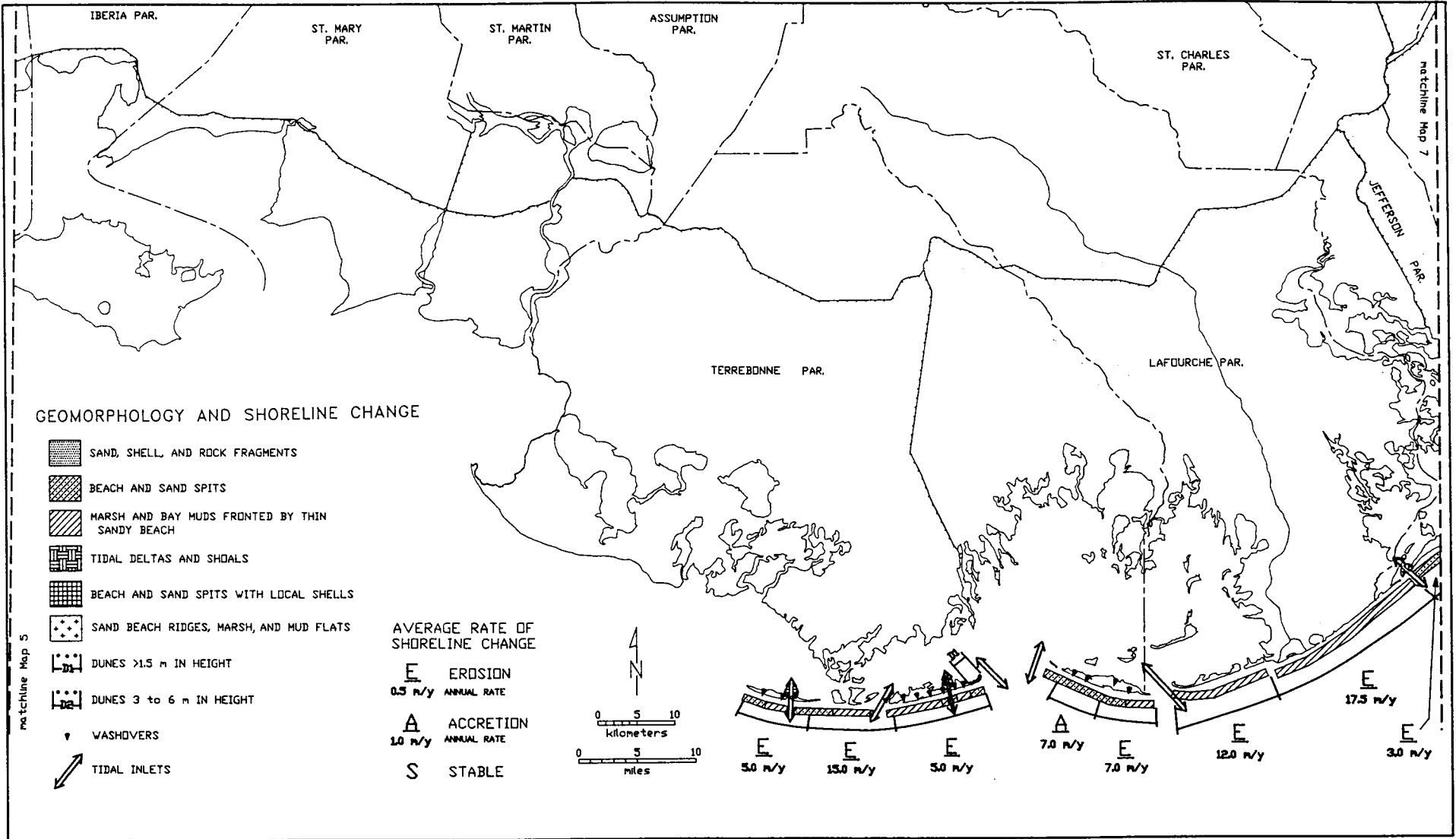
Map 4 - F

# PORT ARTHUR

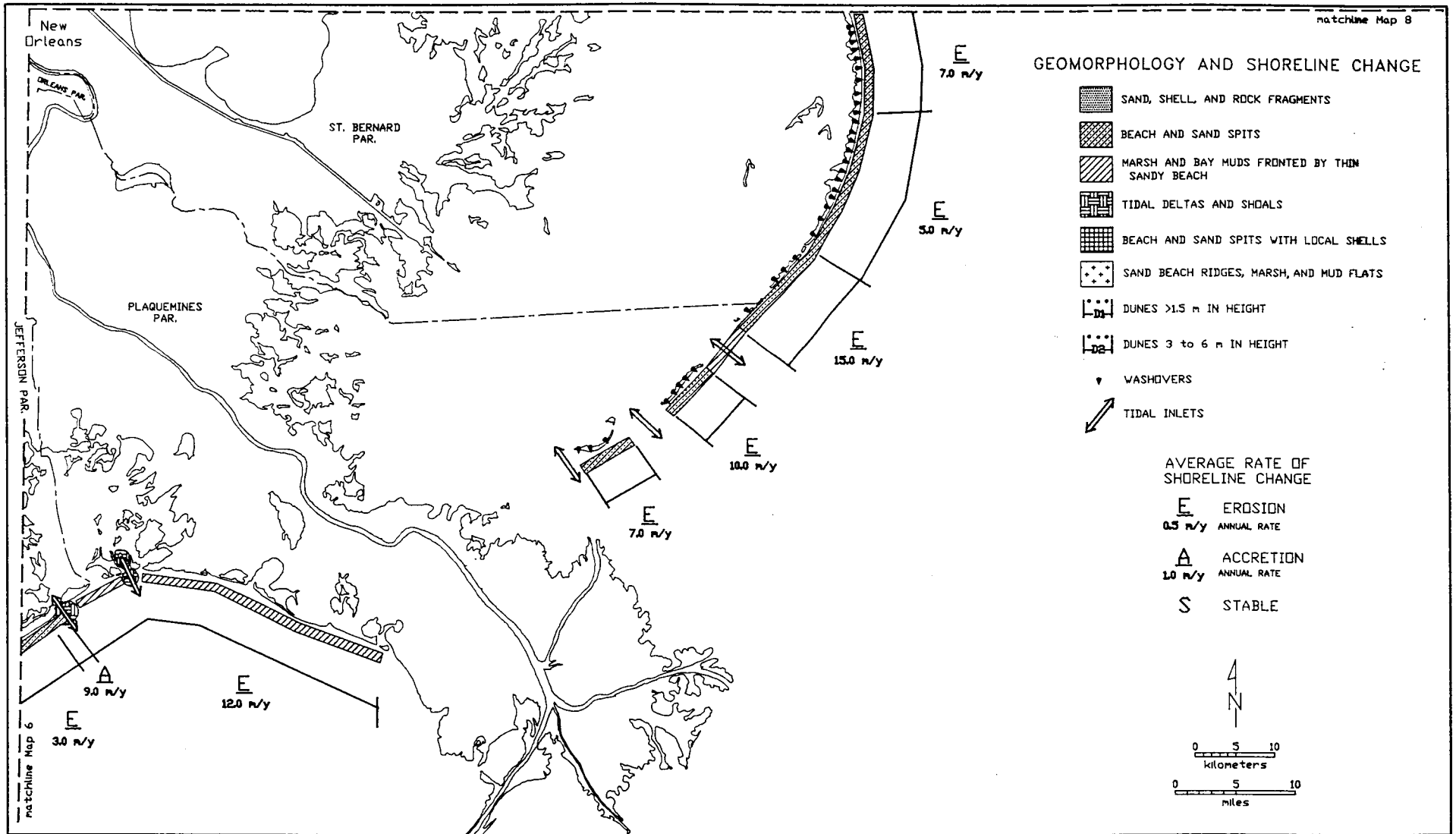


Map 5 - F

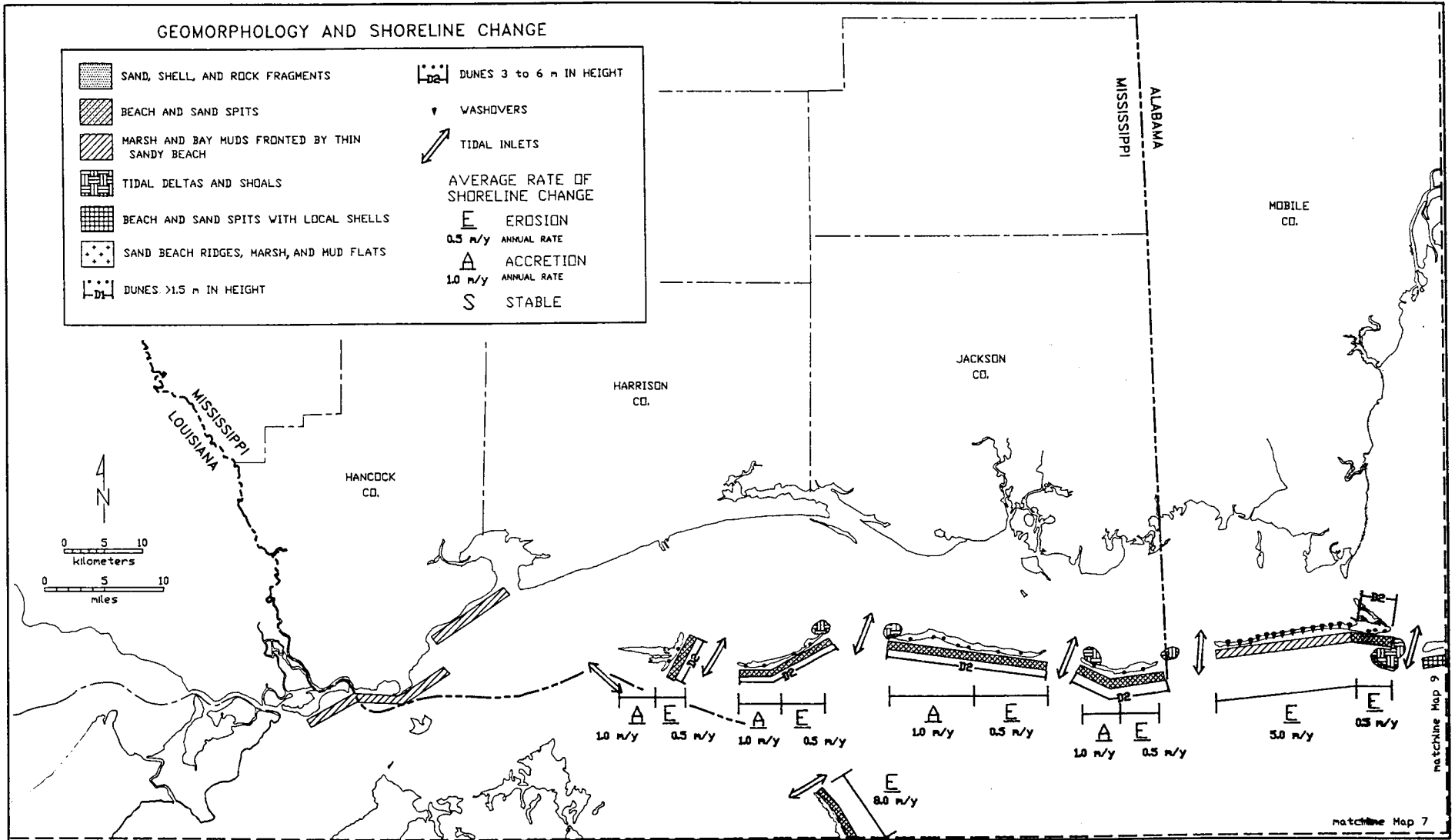
# NEW ORLEANS



Map 6 - F

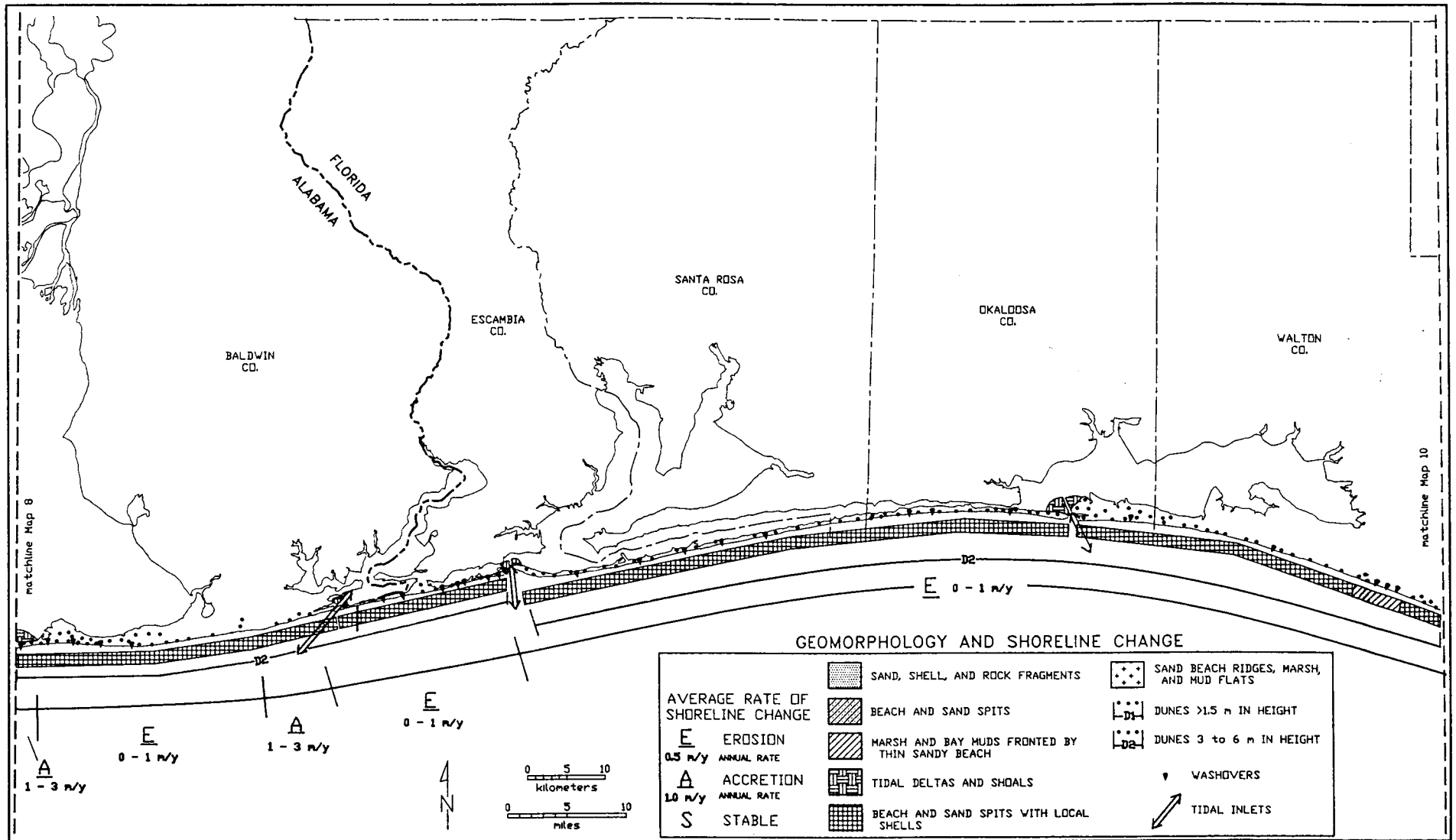


Map 7 - F



Map 8 - F'

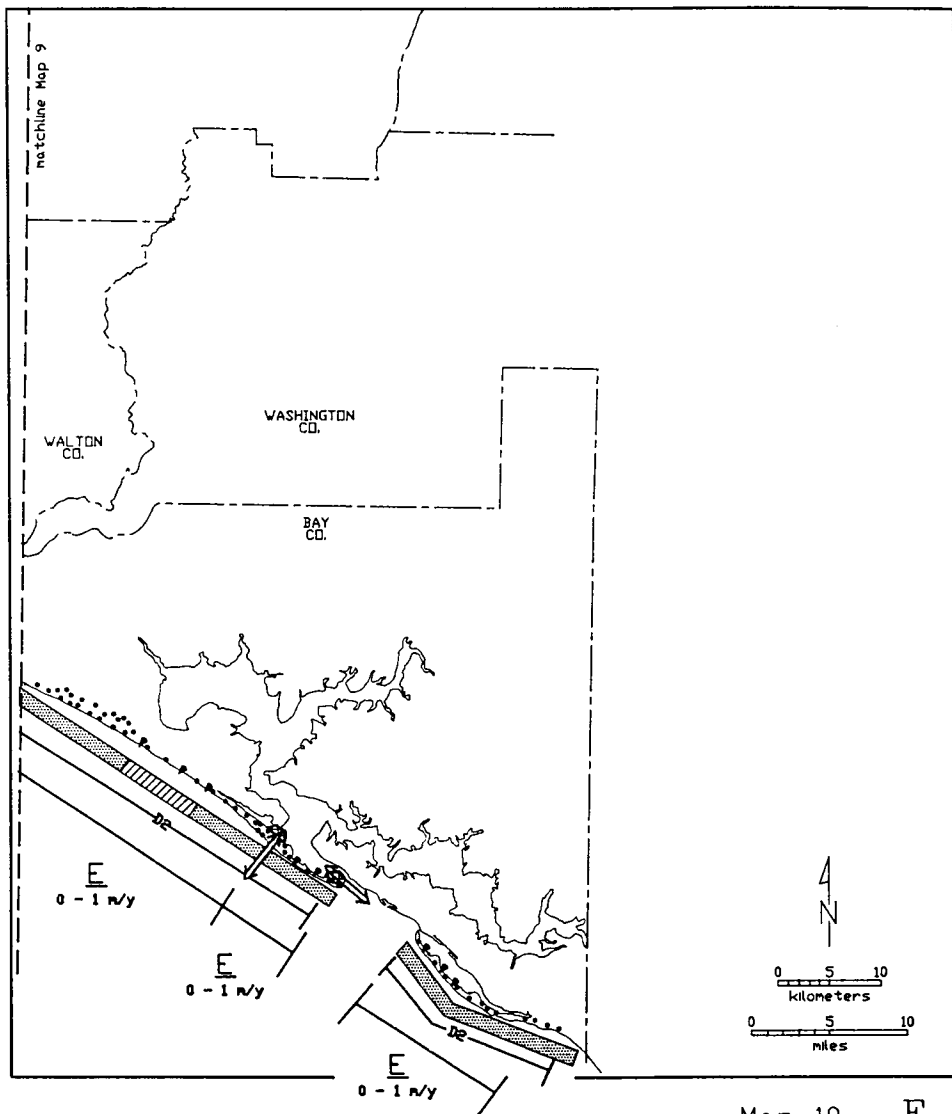
# PENSACOLA



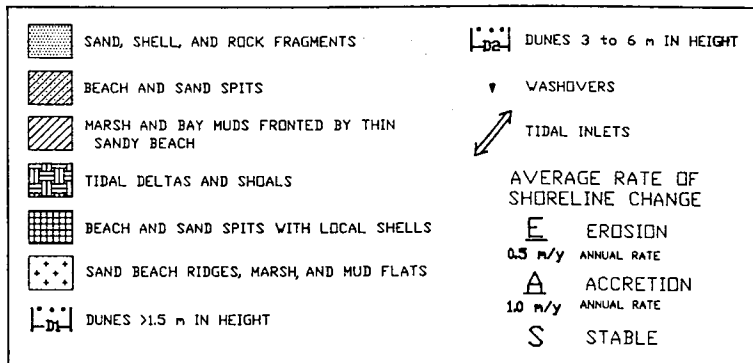
Map 9 - F



# TALLAHASSEE



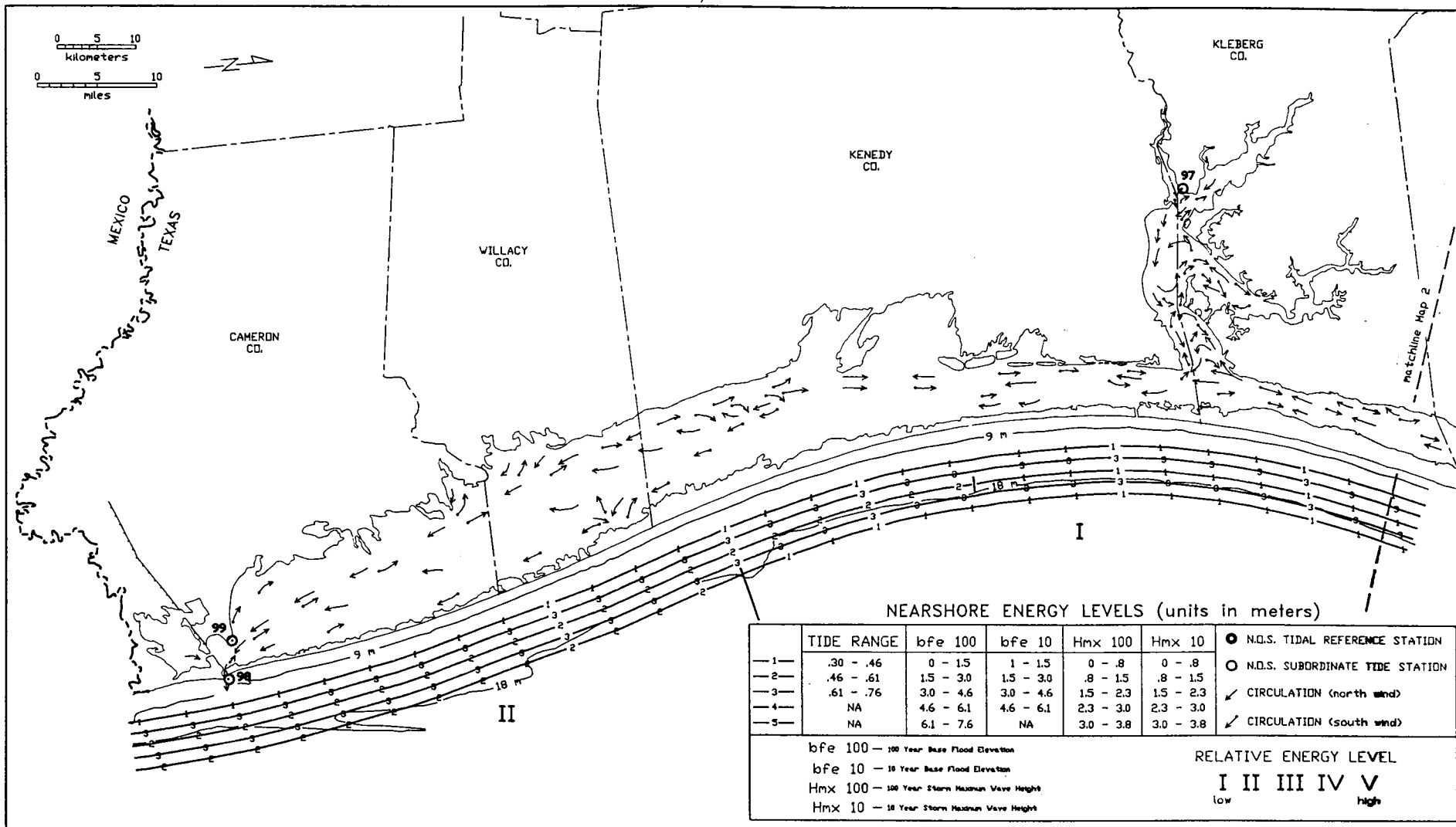
## GEOMORPHOLOGY AND SHORELINE CHANGE



Maps 1G - 10G

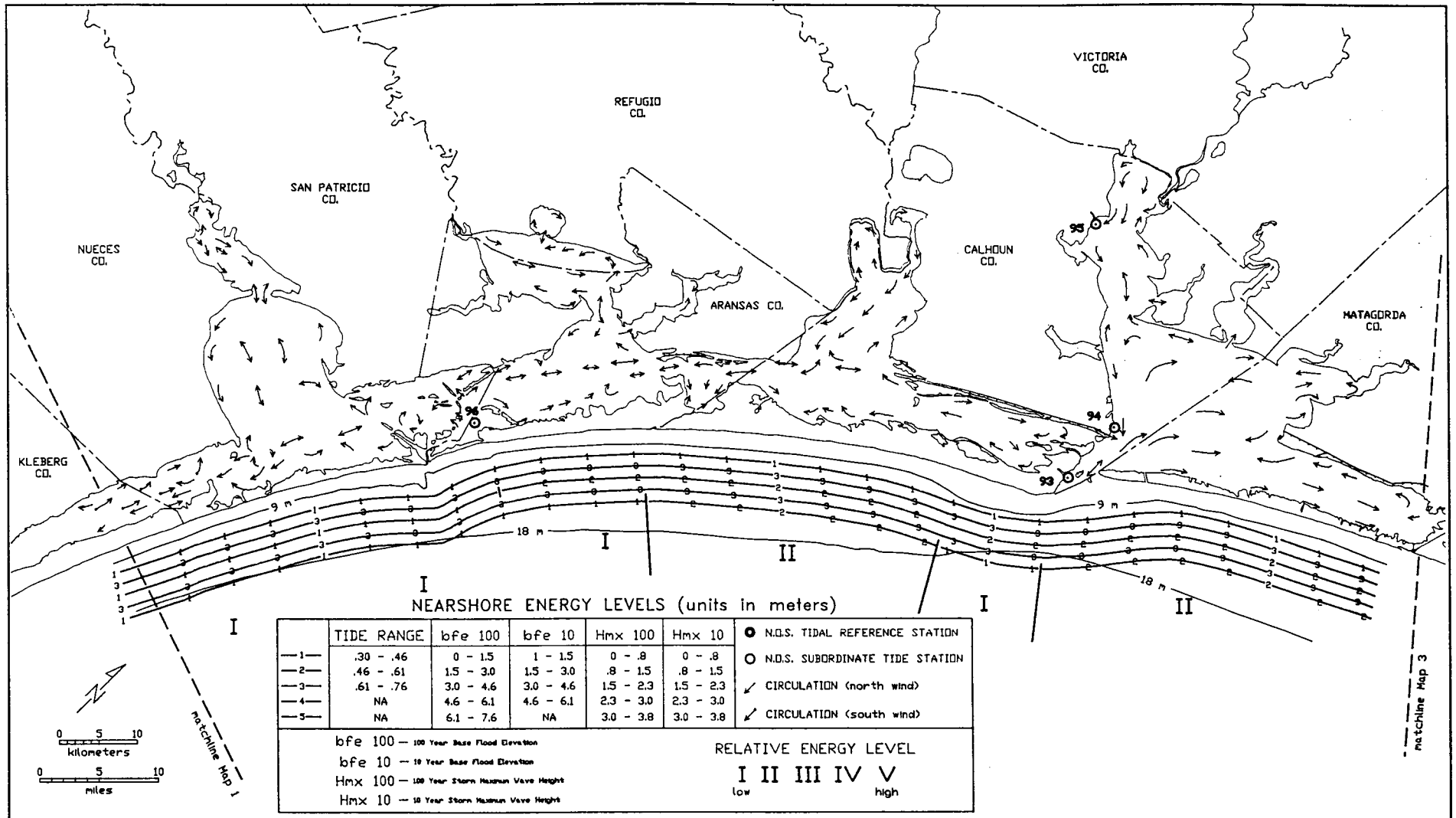
NEARSHORE ENERGY LEVELS

# BROWNSVILLE / CORPUS CHRISTI



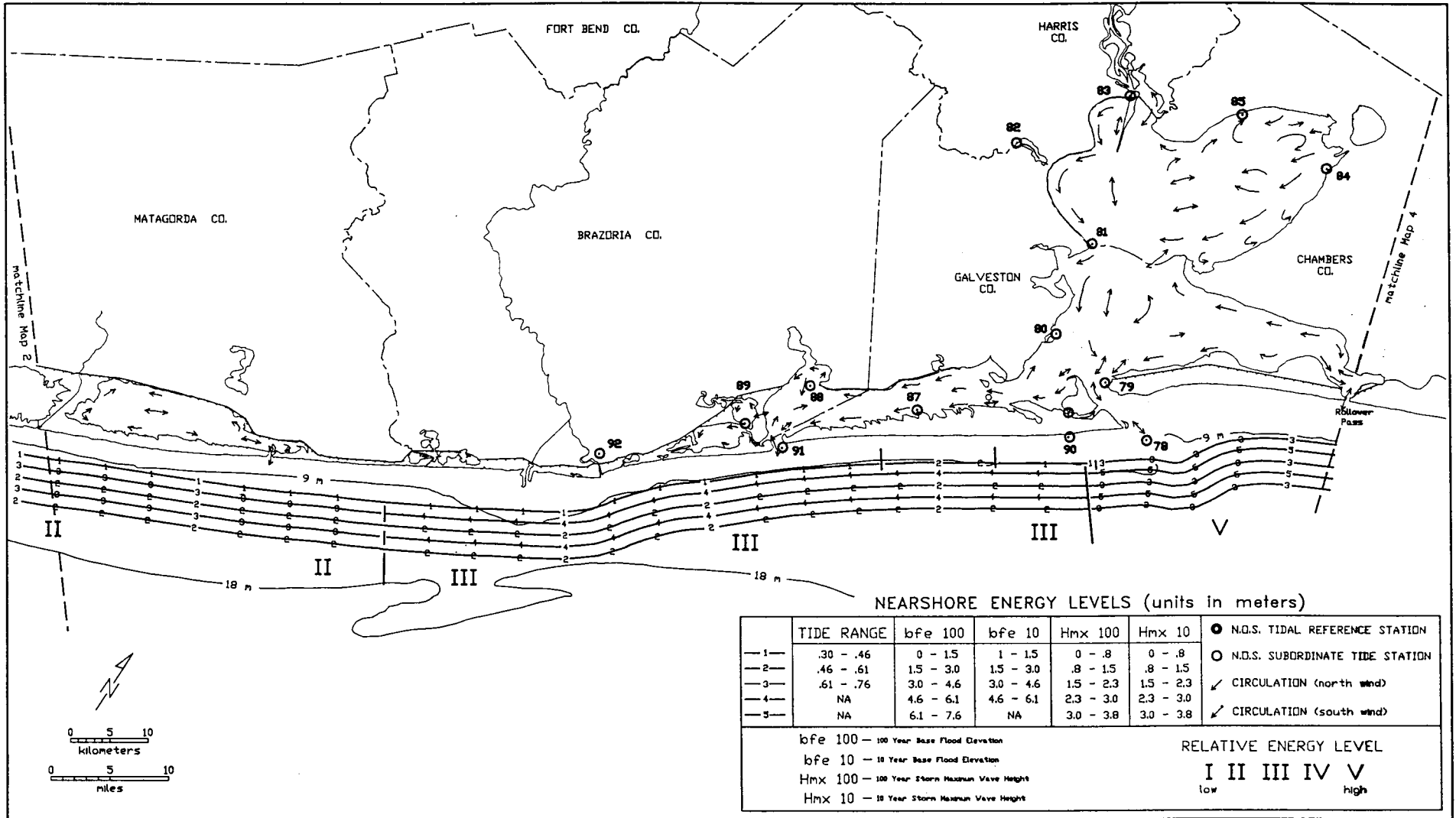
Map 1 - G

# CORPUS CHRISTI / BEEVILLE



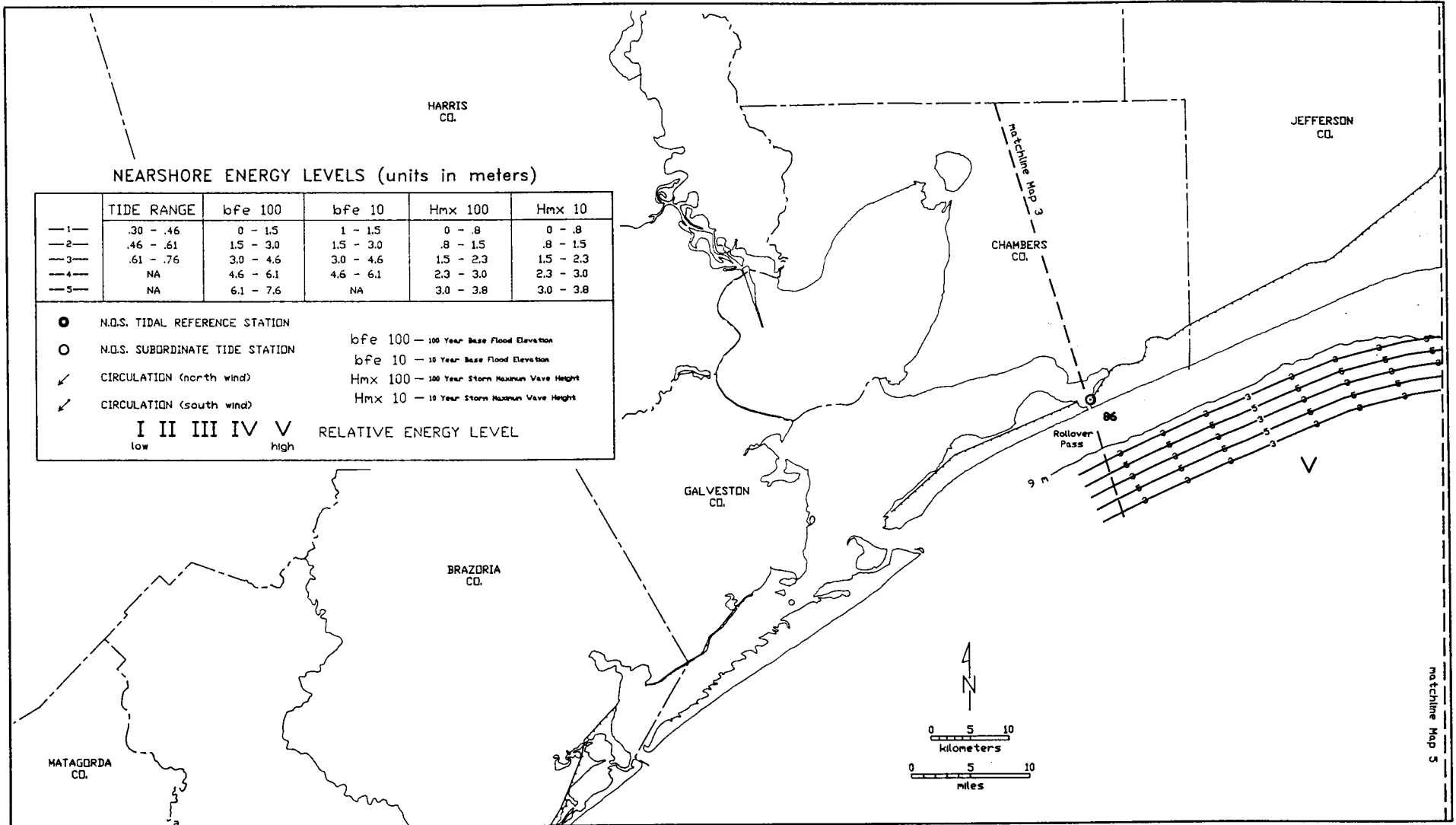
Map 2 - G

# BAY CITY / HOUSTON



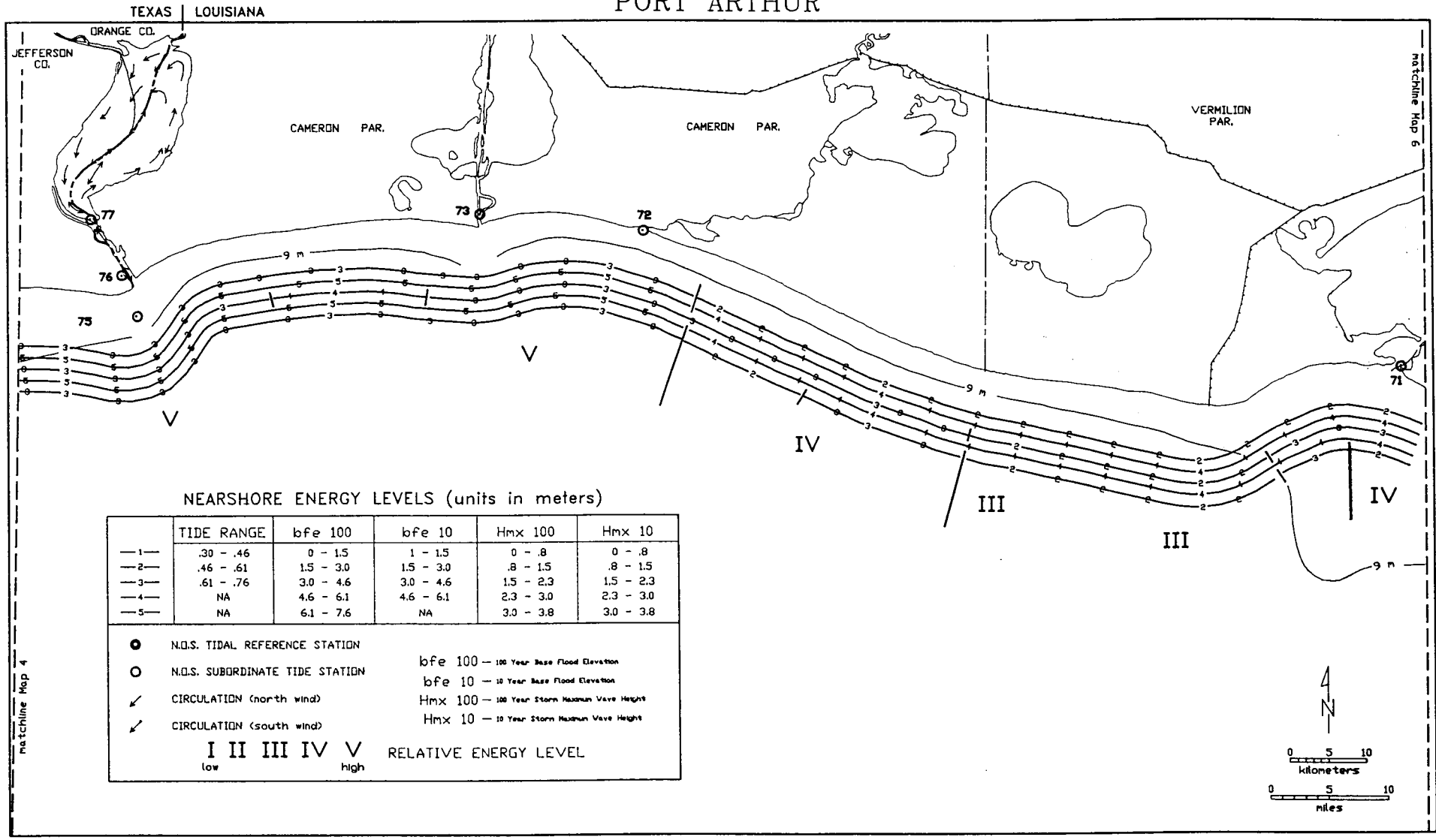
Map 3 - G

# HOUSTON



Map 4 - G

# PORT ARTHUR

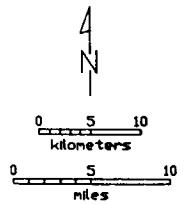


NEARSHORE ENERGY LEVELS (units in meters)

	TIDE RANGE	bfe 100	bfe 10	Hmx 100	Hmx 10
—1—	.30 - .46	0 - 1.5	1 - 1.5	0 - .8	0 - .8
—2—	.46 - .61	1.5 - 3.0	1.5 - 3.0	.8 - 1.5	.8 - 1.5
—3—	.61 - .76	3.0 - 4.6	3.0 - 4.6	1.5 - 2.3	1.5 - 2.3
—4—	NA	4.6 - 6.1	4.6 - 6.1	2.3 - 3.0	2.3 - 3.0
—5—	NA	6.1 - 7.6	NA	3.0 - 3.8	3.0 - 3.8

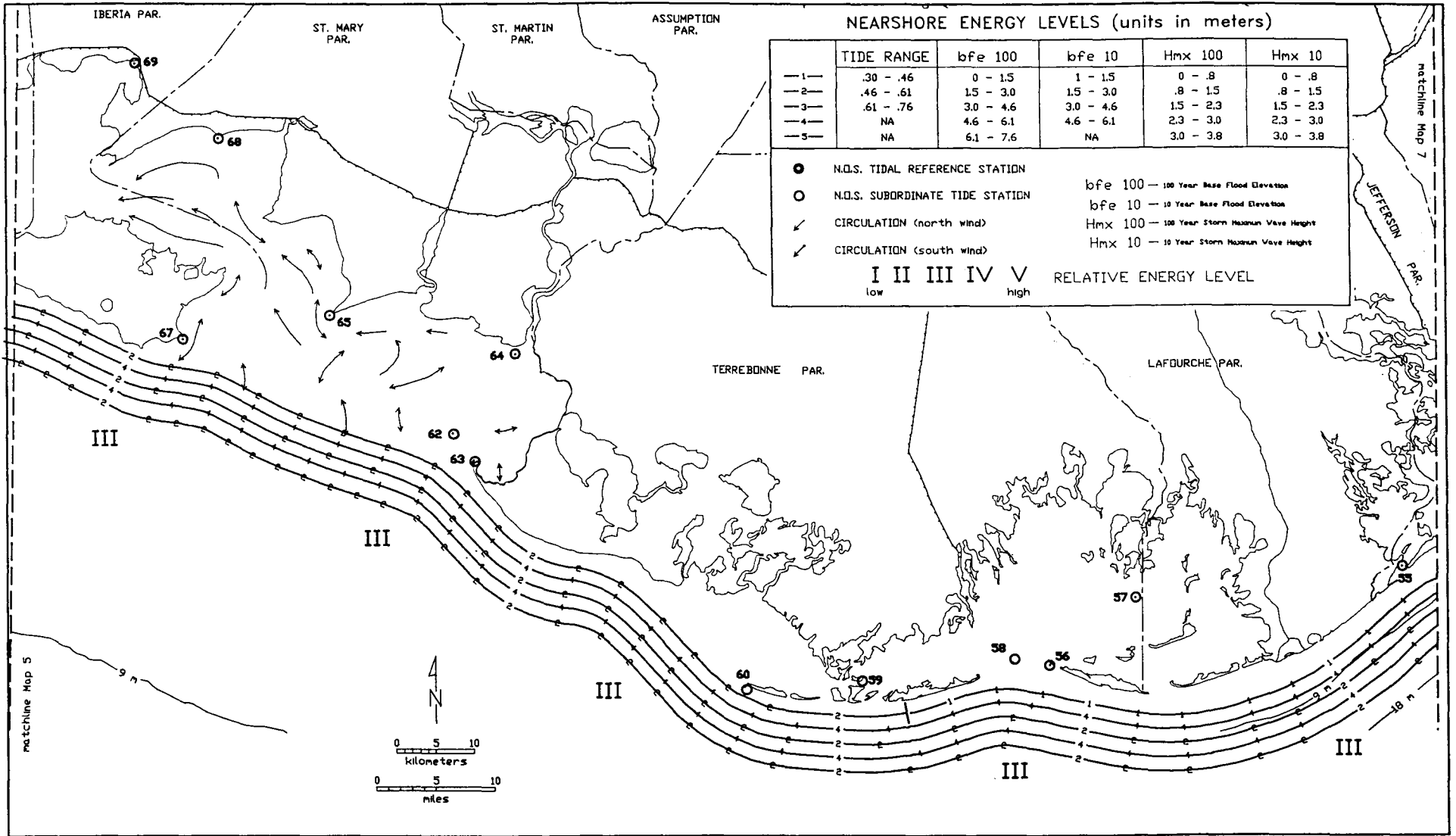
- N.O.S. TIDAL REFERENCE STATION
- N.O.S. SUBORDINATE TIDE STATION
- ↙ CIRCULATION (north wind)
- ↘ CIRCULATION (south wind)
- bfe 100 — 100 Year Base Flood Elevation
- bfe 10 — 10 Year Base Flood Elevation
- Hmx 100 — 100 Year Storm Maximum Wave Height
- Hmx 10 — 10 Year Storm Maximum Wave Height

I II III IV V RELATIVE ENERGY LEVEL  
low high



Map 5 - G

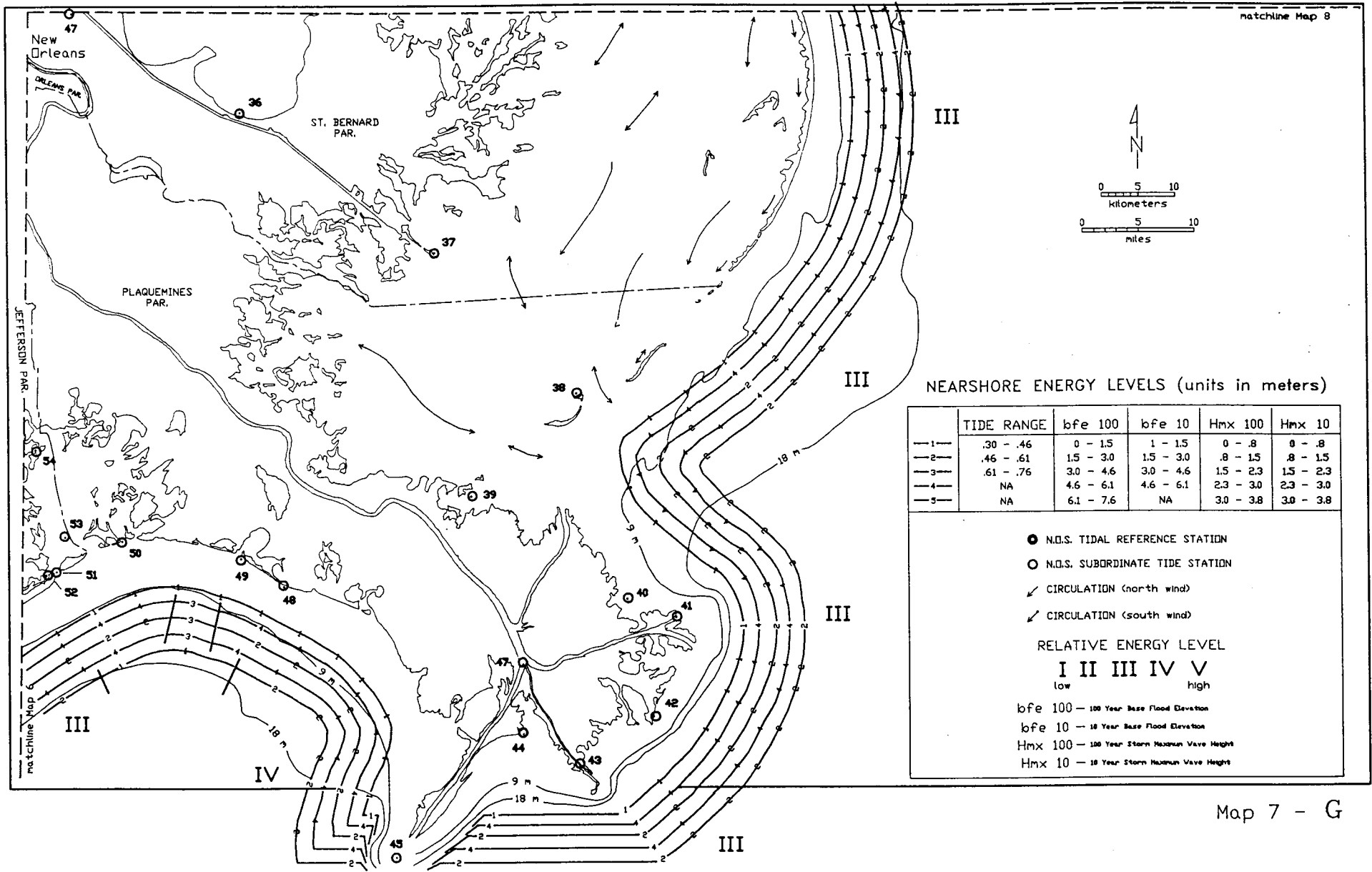
# NEW ORLEANS



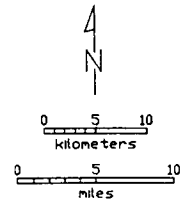
Map 6 - G



# BRETON



matchline Map 8



### NEARSHORE ENERGY LEVELS (units in meters)

	TIDE RANGE	bfe 100	bfe 10	Hmx 100	Hmx 10
1	.30 - .46	0 - 1.5	1 - 1.5	0 - .8	0 - .8
2	.46 - .61	1.5 - 3.0	1.5 - 3.0	.8 - 1.5	.8 - 1.5
3	.61 - .76	3.0 - 4.6	3.0 - 4.6	1.5 - 2.3	1.5 - 2.3
4	NA	4.6 - 6.1	4.6 - 6.1	2.3 - 3.0	2.3 - 3.0
5	NA	6.1 - 7.6	NA	3.0 - 3.8	3.0 - 3.8

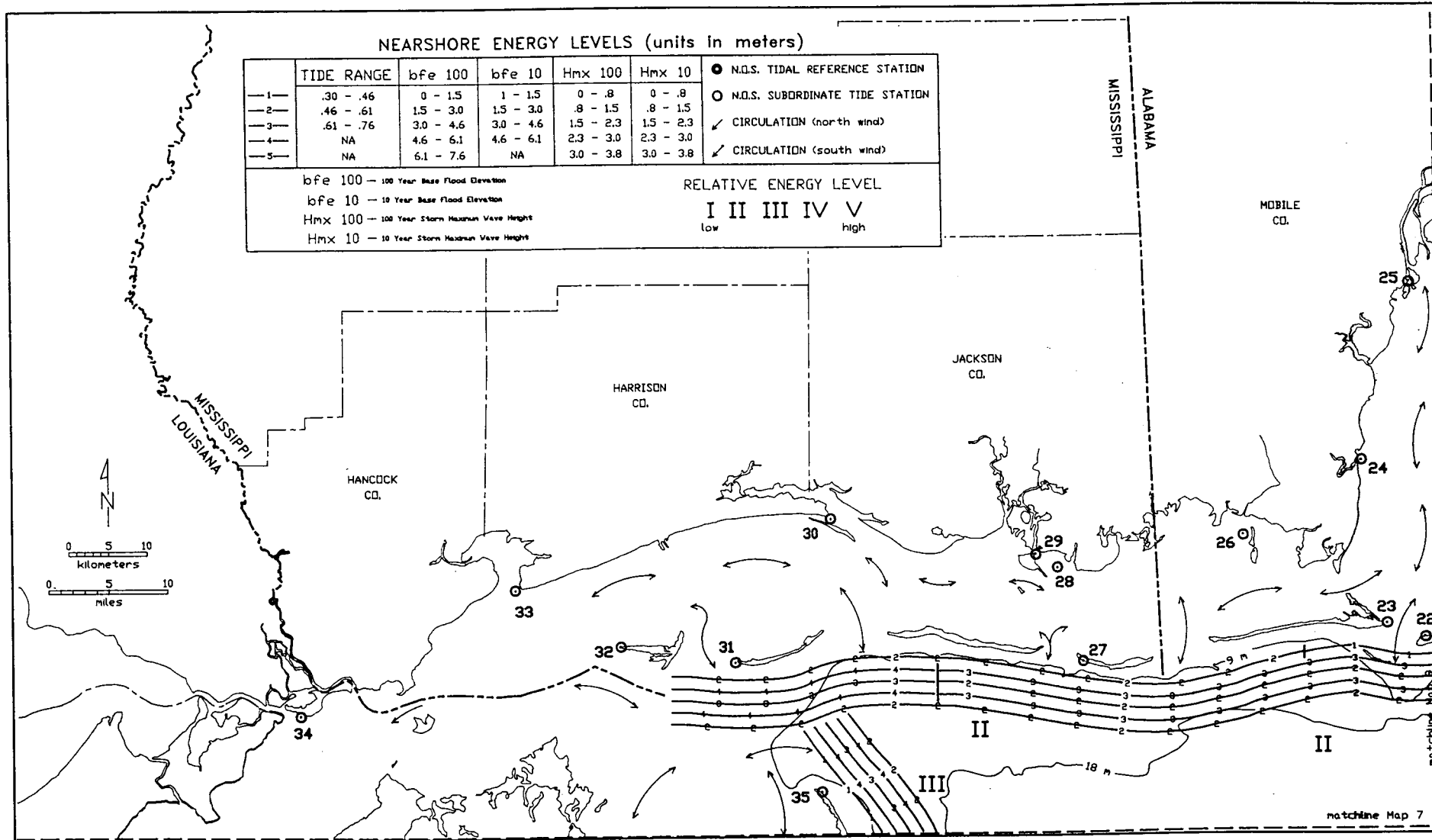
- N.O.S. TIDAL REFERENCE STATION
- N.O.S. SUBORDINATE TIDE STATION
- ↙ CIRCULATION (north wind)
- ↘ CIRCULATION (south wind)

RELATIVE ENERGY LEVEL  
 I II III IV V  
 low high

bfe 100 - 100 Year Base Flood Elevation  
 bfe 10 - 10 Year Base Flood Elevation  
 Hmx 100 - 100 Year Storm Maximum Wave Height  
 Hmx 10 - 10 Year Storm Maximum Wave Height

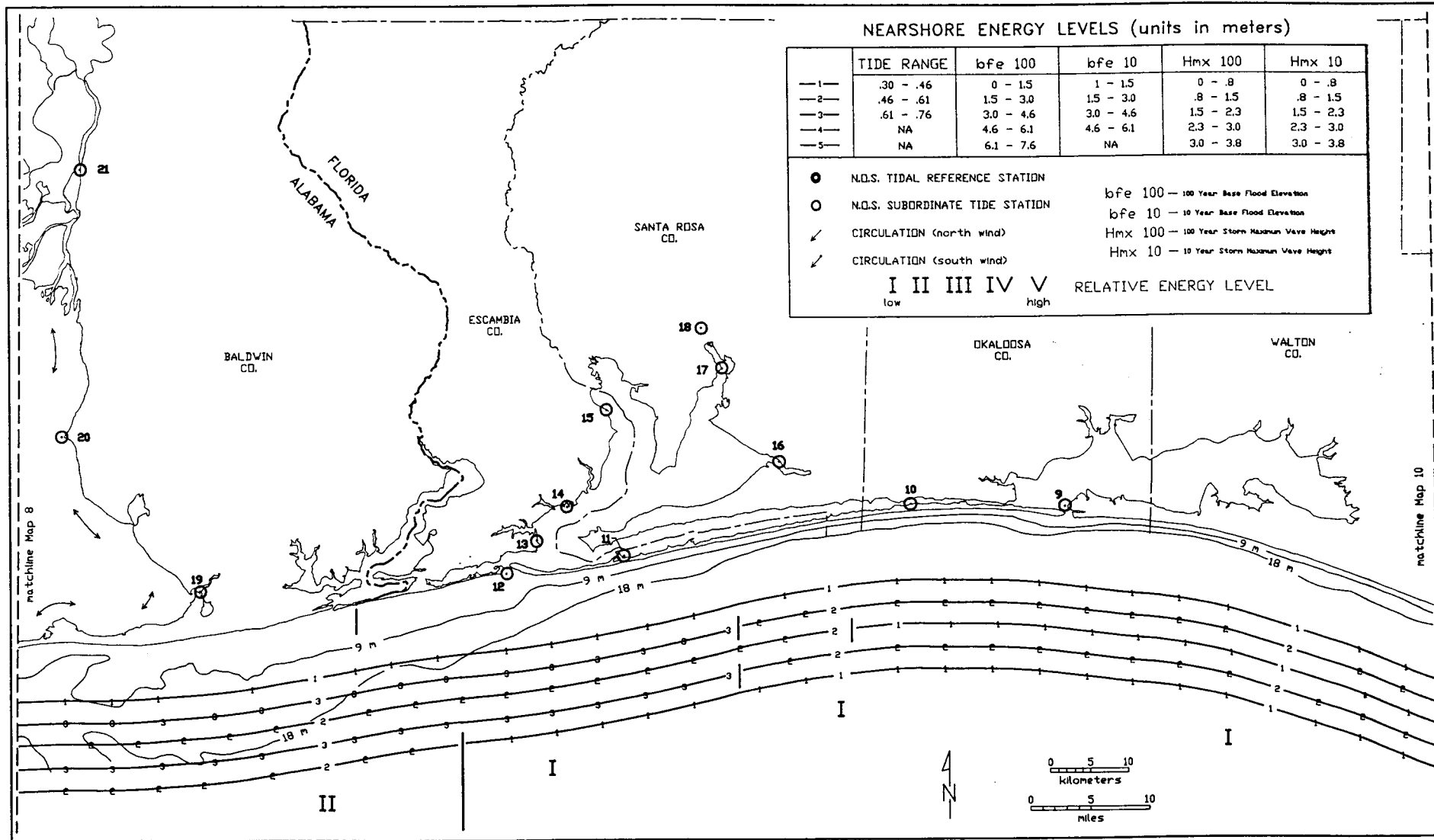
Map 7 - G

# MOBILE



Map 8 - G

# PENSACOLA



**NEARSHORE ENERGY LEVELS (units in meters)**

TIDE RANGE	bfe 100	bfe 10	Hmx 100	Hmx 10
—1—	.30 - .46	0 - 1.5	1 - 1.5	0 - .8
—2—	.46 - .61	1.5 - 3.0	1.5 - 3.0	.8 - 1.5
—3—	.61 - .76	3.0 - 4.6	3.0 - 4.6	1.5 - 2.3
—4—	NA	4.6 - 6.1	4.6 - 6.1	2.3 - 3.0
—5—	NA	6.1 - 7.6	NA	3.0 - 3.8

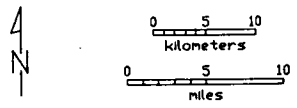
- N.O.S. TIDAL REFERENCE STATION
- N.O.S. SUBORDINATE TIDE STATION
- ↙ CIRCULATION (north wind)
- ↘ CIRCULATION (south wind)

bfe 100 — 100 Year Base Flood Elevation	bfe 10 — 10 Year Base Flood Elevation
Hmx 100 — 100 Year Storm Maximum Wave Height	Hmx 10 — 10 Year Storm Maximum Wave Height

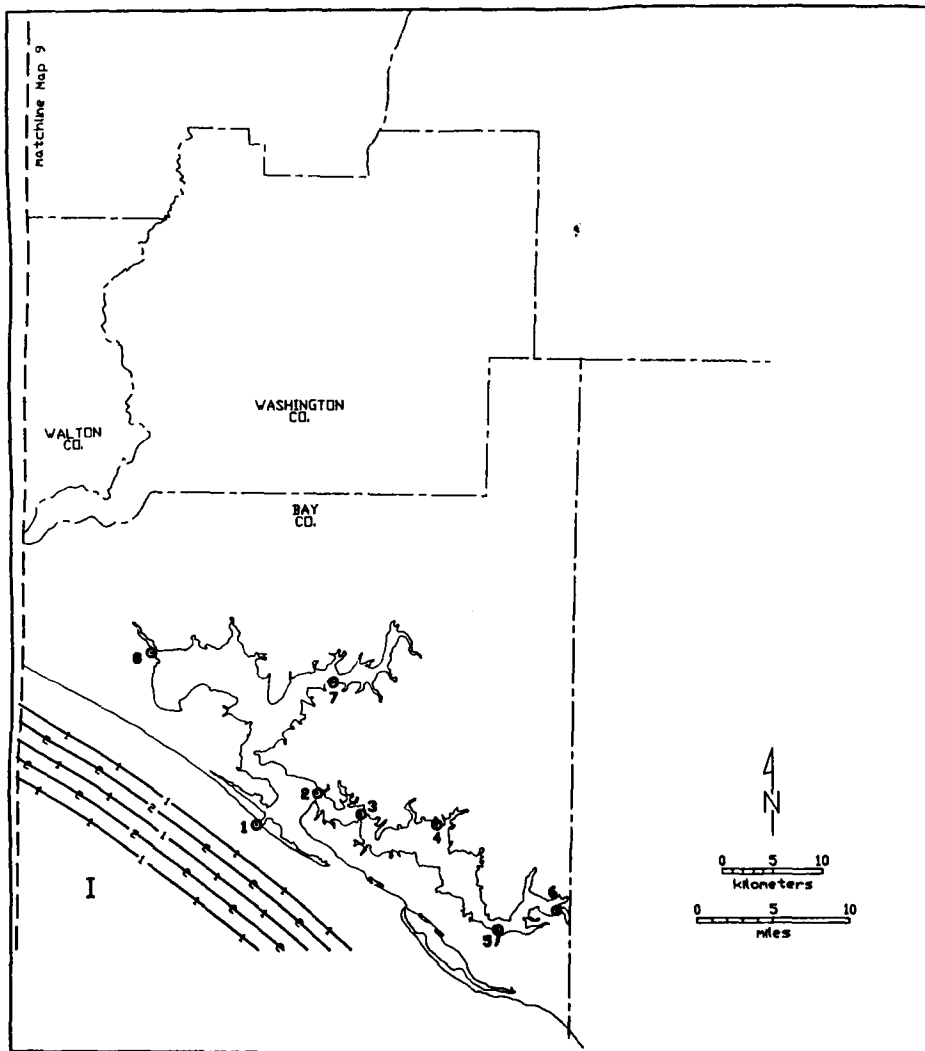
  

I II III IV V
RELATIVE ENERGY LEVEL  
low
high



Map 9 - G

# TALLAHASSEE



## NEARSHORE ENERGY LEVELS (units in meters)

	TIDE RANGE	bfe 100	bfe 10	Hmx 100	Hmx 10
—1—	.30 - .46	0 - 1.5	1 - 1.5	0 - .8	0 - .8
—2—	.46 - .61	1.5 - 3.0	1.5 - 3.0	.8 - 1.5	.8 - 1.5
—3—	.61 - .76	3.0 - 4.6	3.0 - 4.6	1.5 - 2.3	1.5 - 2.3
—4—	NA	4.6 - 6.1	4.6 - 6.1	2.3 - 3.0	2.3 - 3.0
—5—	NA	6.1 - 7.6	NA	3.0 - 3.8	3.0 - 3.8

●	N.G.S. TIDAL REFERENCE STATION	bfe 100 - 100 Year Base Flood Elevation
○	N.G.S. SUBORDINATE TIDE STATION	bfe 10 - 10 Year Base Flood Elevation
↙	CIRCULATION (north wind)	Hmx 100 - 100 Year Storm Maximum Wave Height
↘	CIRCULATION (south wind)	Hmx 10 - 10 Year Storm Maximum Wave Height

I	II	III	IV	V	RELATIVE ENERGY LEVEL
low				high	

Map 10 - G

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. Administration.

