

# Miami Beach 63<sup>rd</sup> St. “Hot Spot”

## National Shoreline Erosion Control Demonstration and Development Program



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**Engineering Research and Development Center**

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# Presentation Outline

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- **Background on Section 227 program**
- **Miami Beach 63<sup>rd</sup> St. “Hot Spot”**
- **Reef Ball offshore reef**



## *The National Shoreline Erosion Control Development and Demonstration Program*

- Authorized via *Section 227* of WRDA'96
- 6-year, \$21M R&D effort beginning FY00 via congressional add
- In cooperation with other Federal and non-Federal agencies to address coastal erosion challenges
- Focus: development and demonstration of innovative or non-traditional technologies

# Demo Project Criteria

## Requirements:

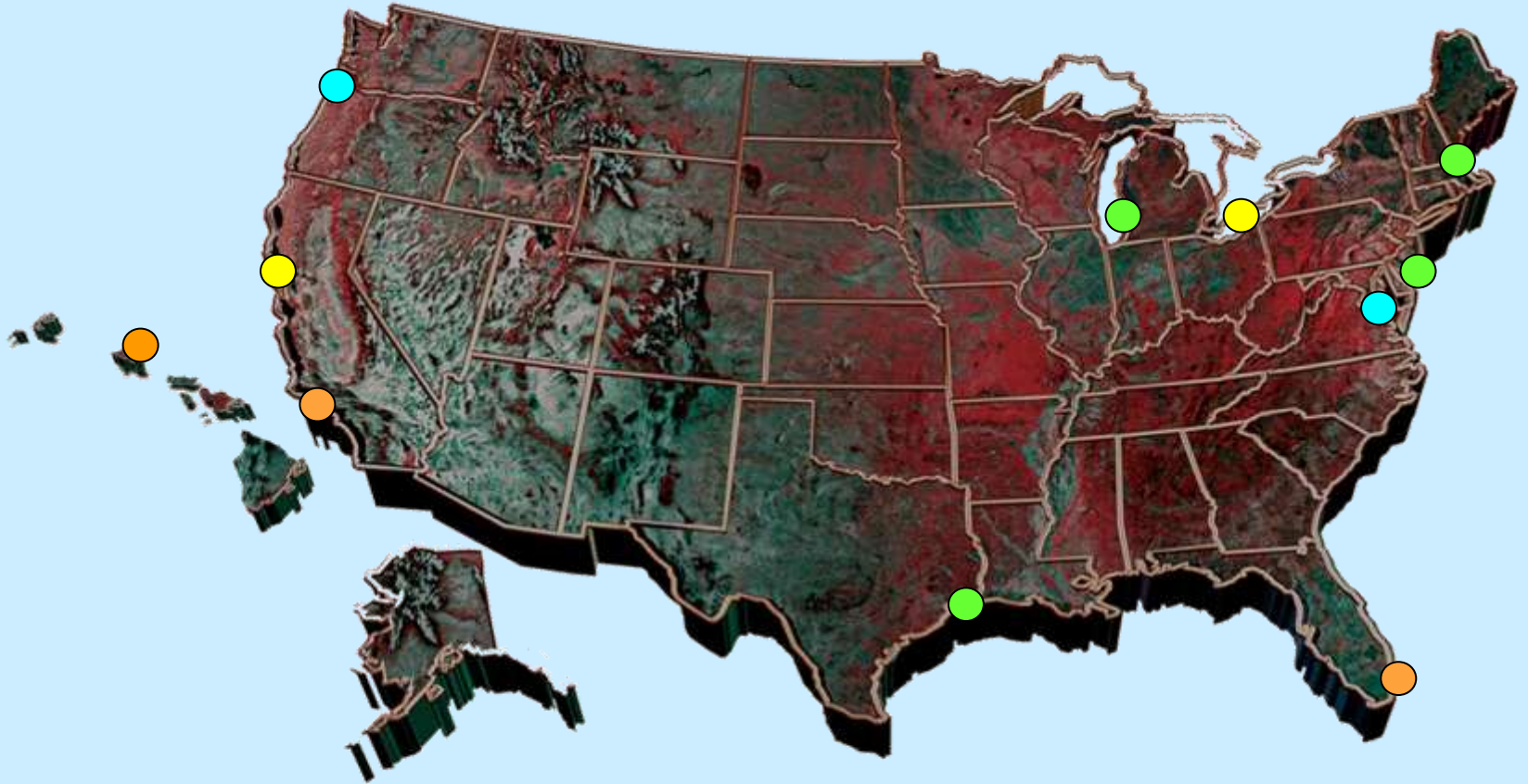
- Have substantial public access
- Be located on the open coast or on tidal waters
- Have not fewer than 2 sites on each of the Atlantic, Pacific and Great Lakes shores, and 1 on the Gulf of Mexico
- Have a non-Federal partner to assume O&M



# Current Status

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# Post-2005

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- 10-yr extension to Section 227
- Congress included a similar program as Section 2038 in WRDA '07



# WRDA '96 vs WRDA '07

## WRDA '96

- 6-yr Program
- \$21M Funding
- Removal the responsibility of Federal partner

## WRDA '07

- No expiration date
- Funding by Congressional add with cap of \$10M annually
- Authorizes COE to cost-share project removal

*Note: Section 2038 has been Authorized, but not yet Implemented.*



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**49,000 ft  
of  
seawalls  
with  
abutting  
groins**

**27,500 ft  
had little  
or no  
beach**



# Miami Beach, FL

**1968 – Flood Control Act authorized BEC&HP**

**1974 – Modifications for Miami Beach**



**1977 – 1982 BEC&HP constructed with over 12.2 million cubic yards of sand.**



# Erosional Areas

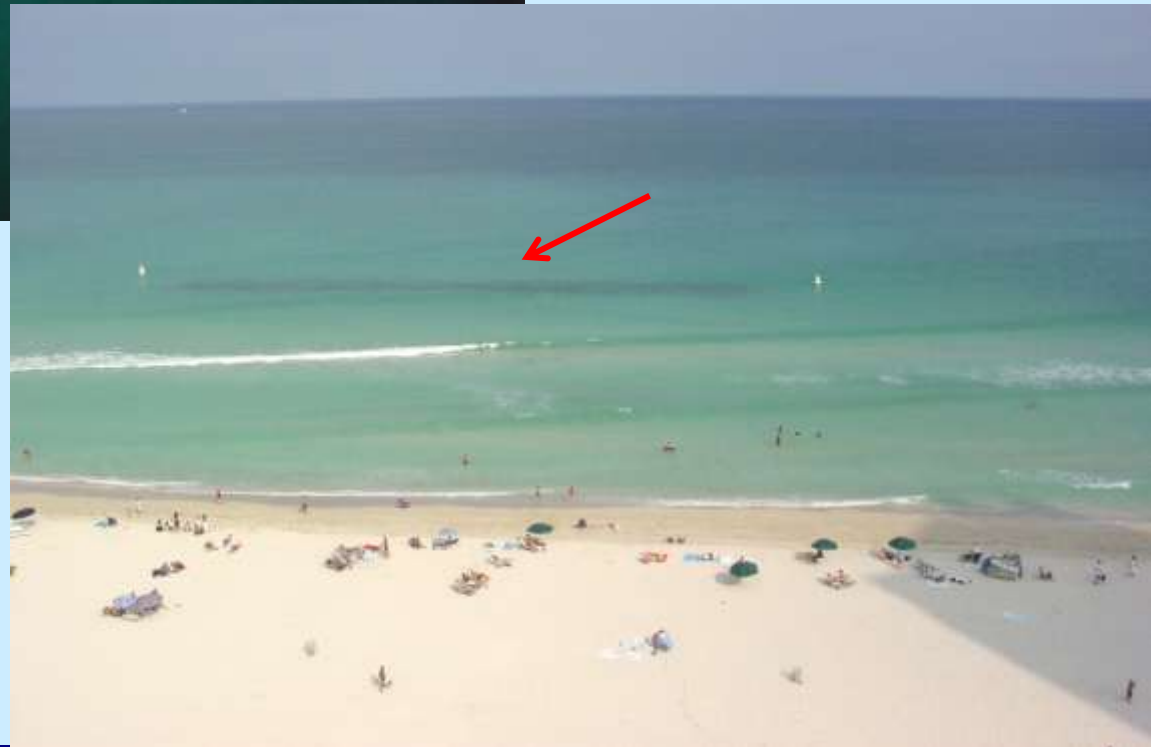
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**Sunny Isles: Detached Submerged BW's**

**32<sup>nd</sup> Street:  
Headland BW's**



# 63<sup>rd</sup> Street Miami Beach

- Problem: erosional “hot spot”
- Conducted in partnership among:
  - ERDC
  - Jacksonville District COE
  - Miami-Dade Department of Resources Management



Feb 2009

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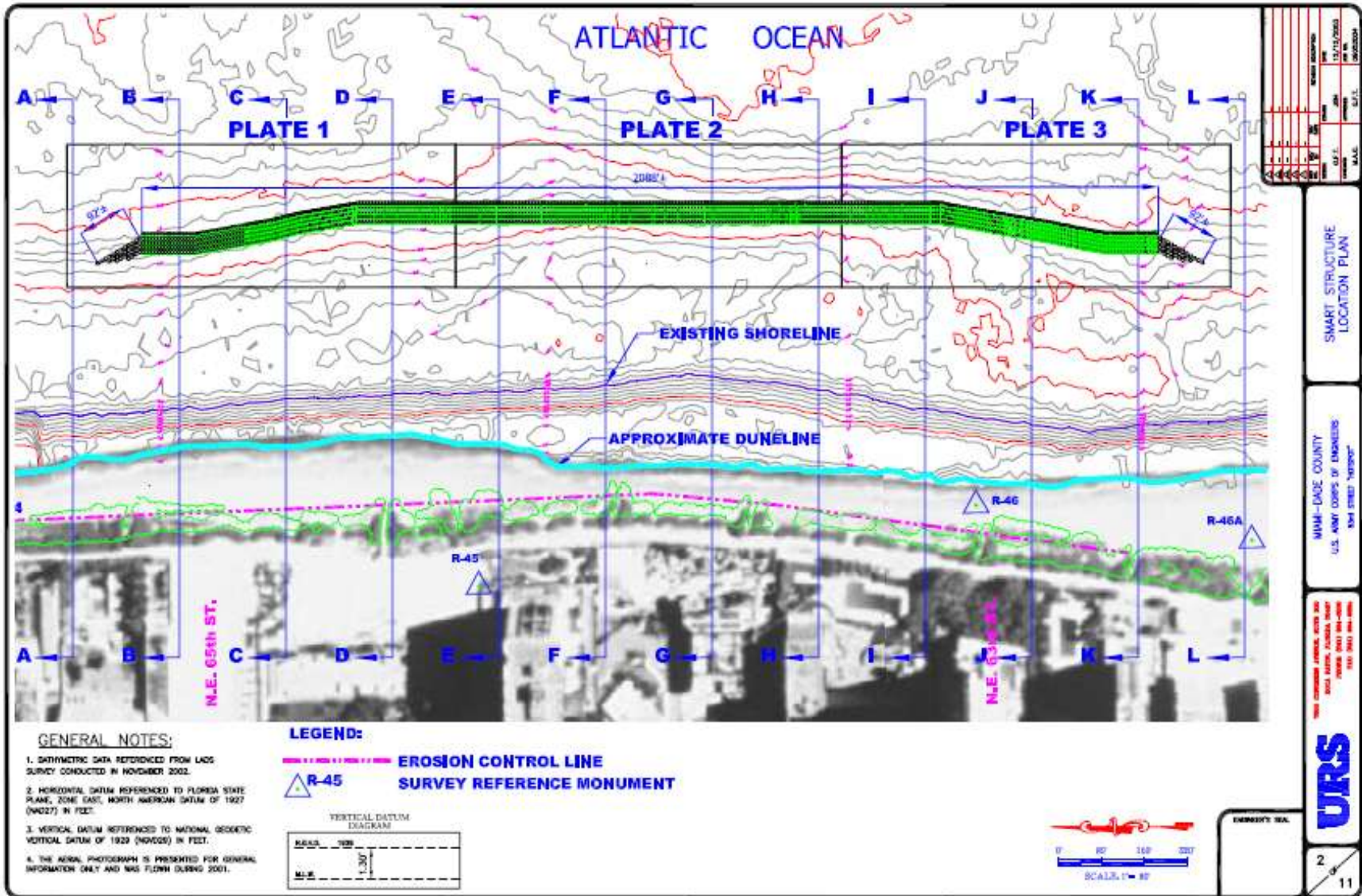
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# 63<sup>rd</sup> St., Miami Beach, FL

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# Reef Ball™

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# Miami Beach, FL

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# Wave Energy Dissipation Study

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# Wave Energy Dissipation Study

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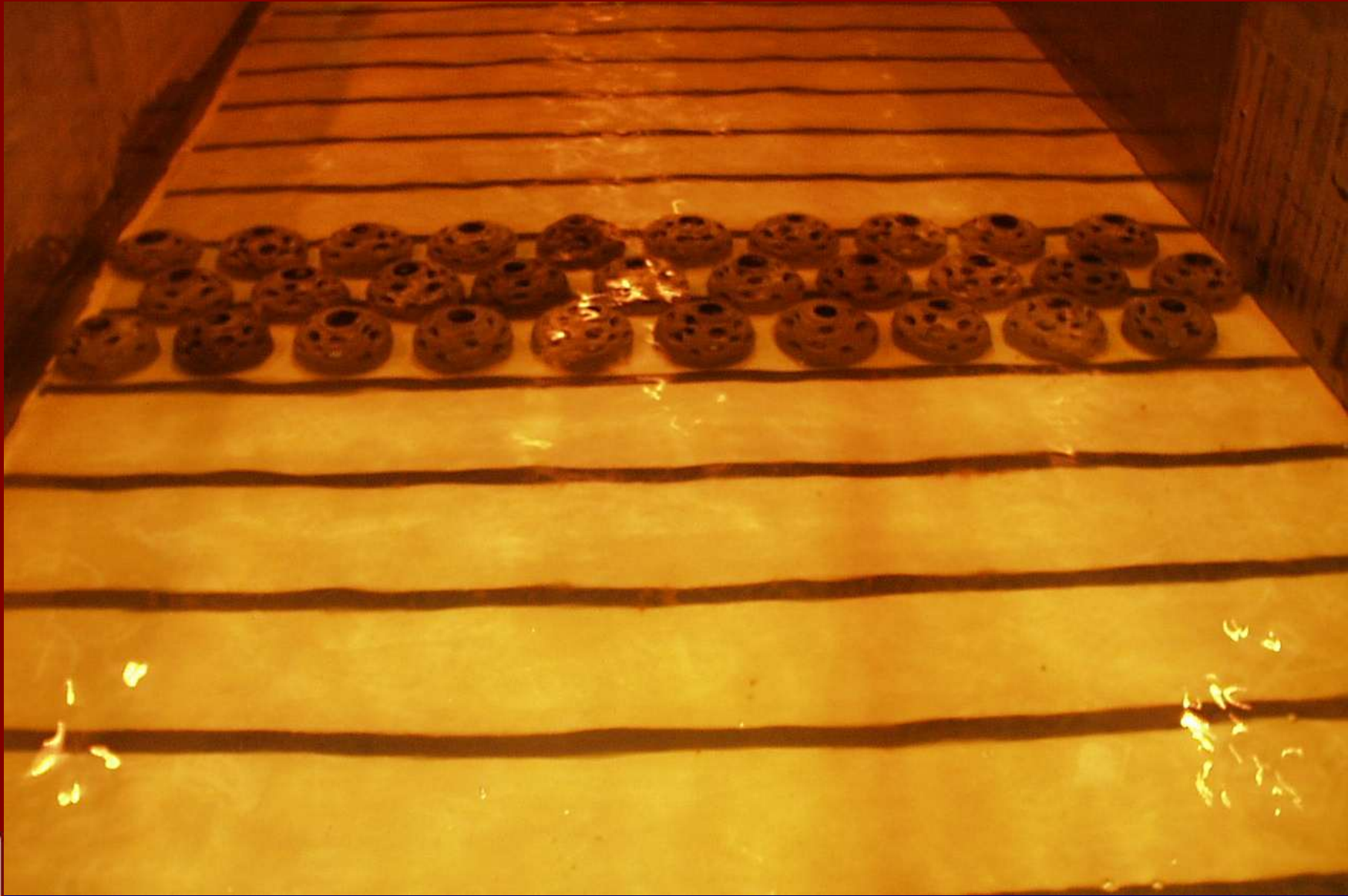
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# Wave Energy Dissipation Study

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# Wave Energy Dissipation Study

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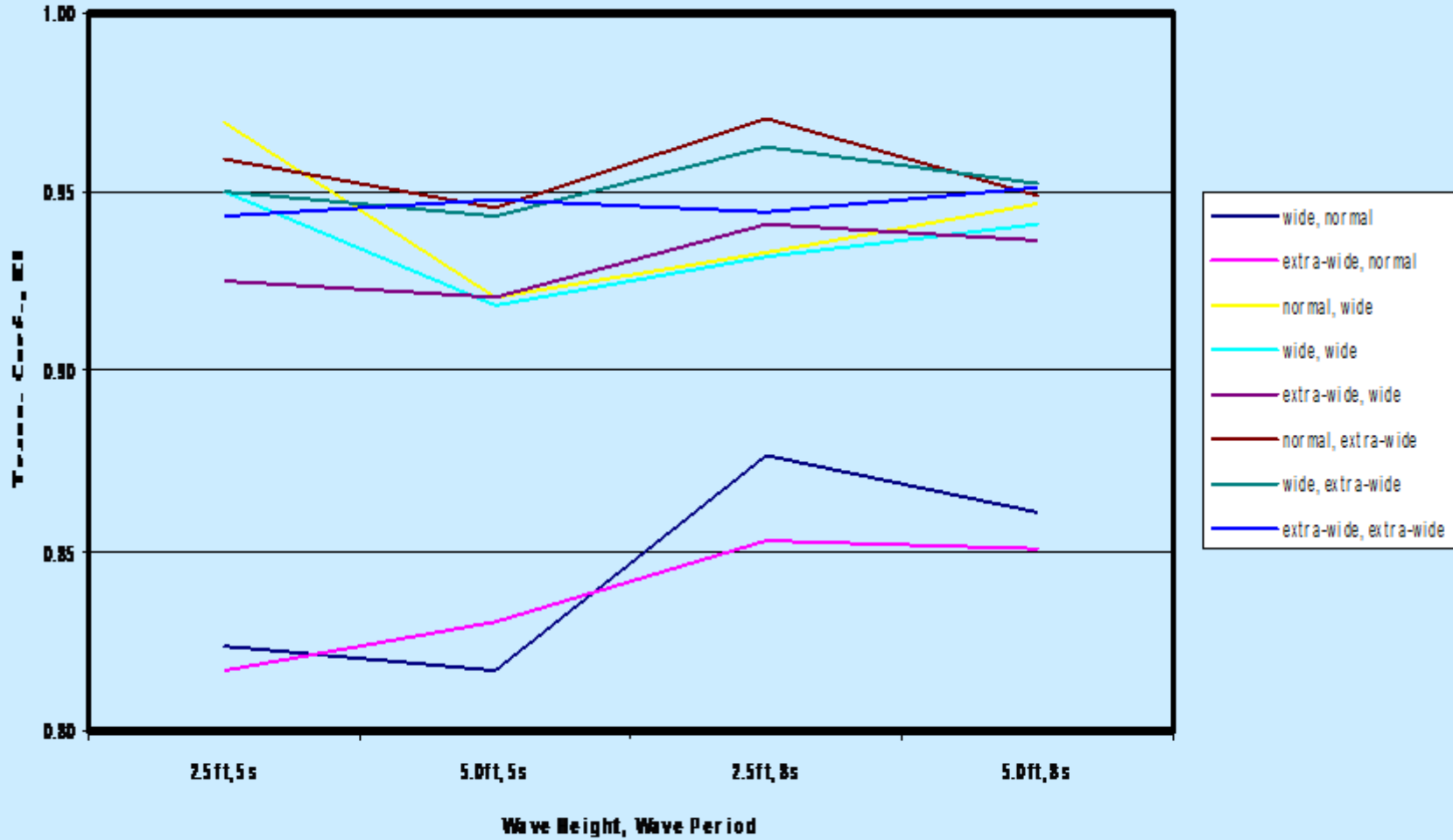
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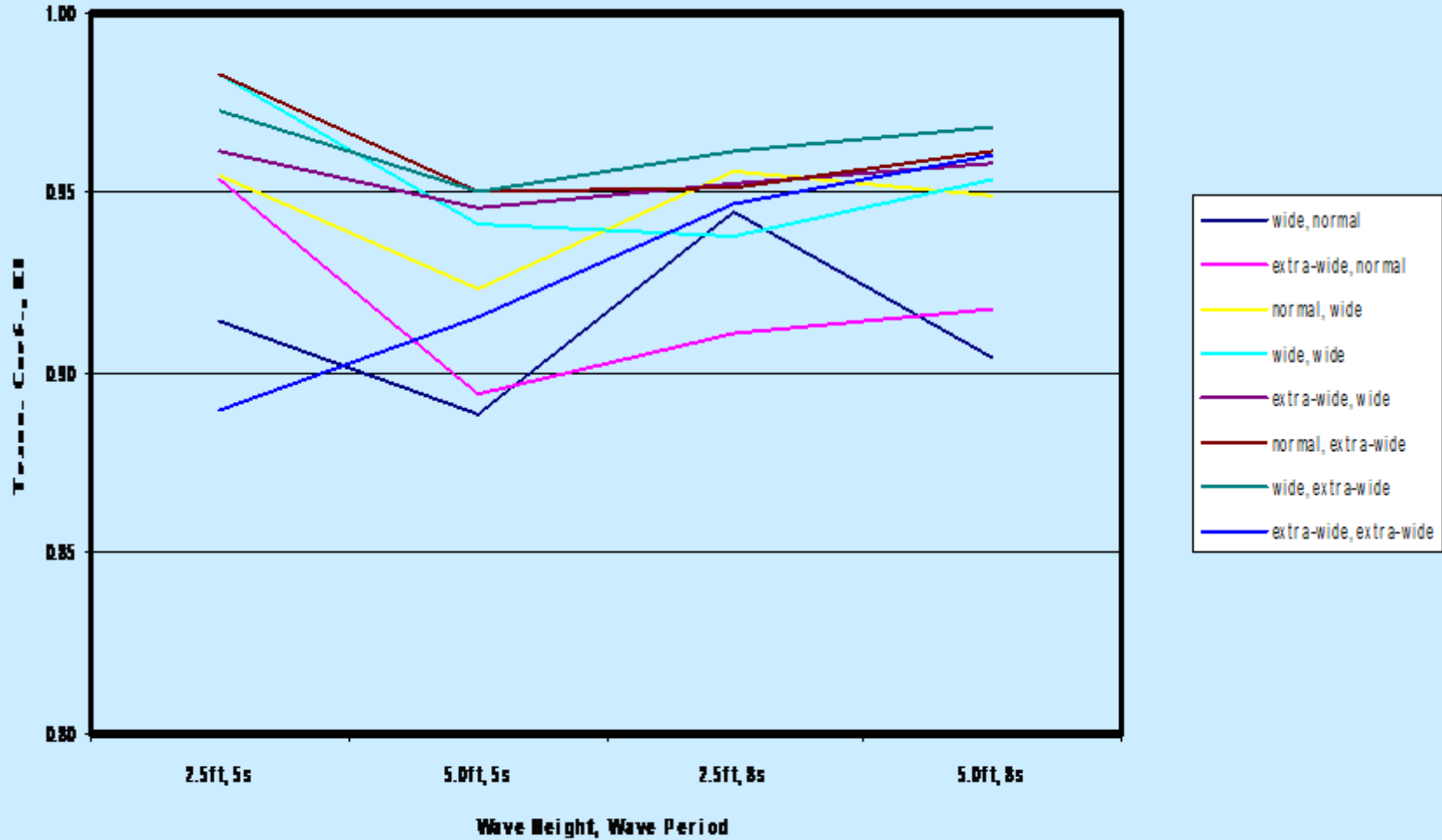
# Wave Energy Dissipation Study

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# Wave Energy Dissipation Study



# Typical Reef Balls

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## Maiden Island, Antigua

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# Concrete Articulated Mat

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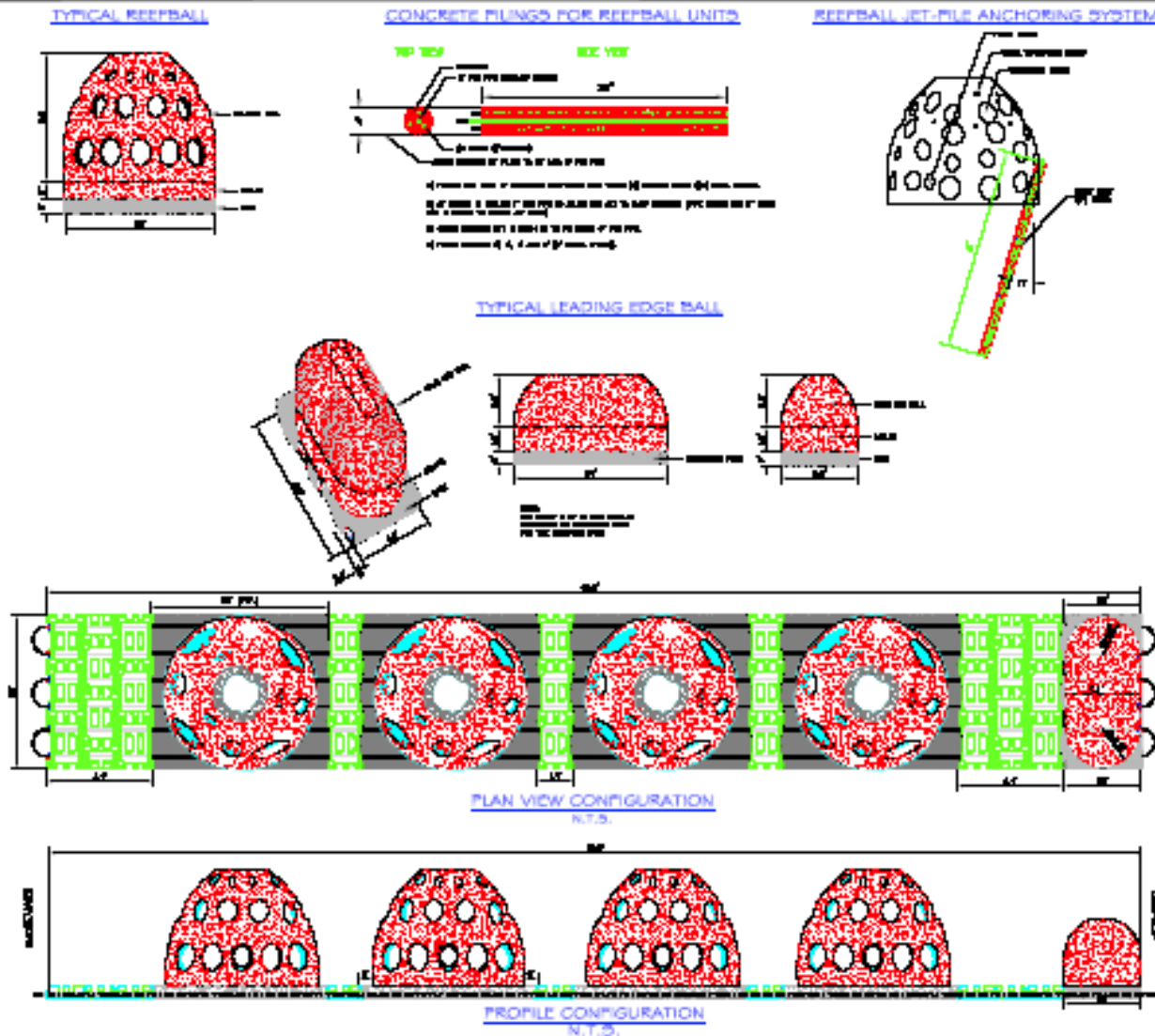
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# Reef Ball on ACM

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NO.	DESCRIPTION	UNIT	QTY	REMARKS
1	REEFBALL	CU YD	100	
2	CONCRETE PLING	CU YD	50	
3	JET-PILE	CU YD	20	
4	LEADING EDGE BALL	CU YD	10	

DIMENSIONS AND PARAMETERS OF REEF BALL

MANUFACTURED BY  
U.S. ARMY CORPS OF ENGINEERS  
WATERWAYS EXPERIMENT STATION



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# Miami Beach, FL

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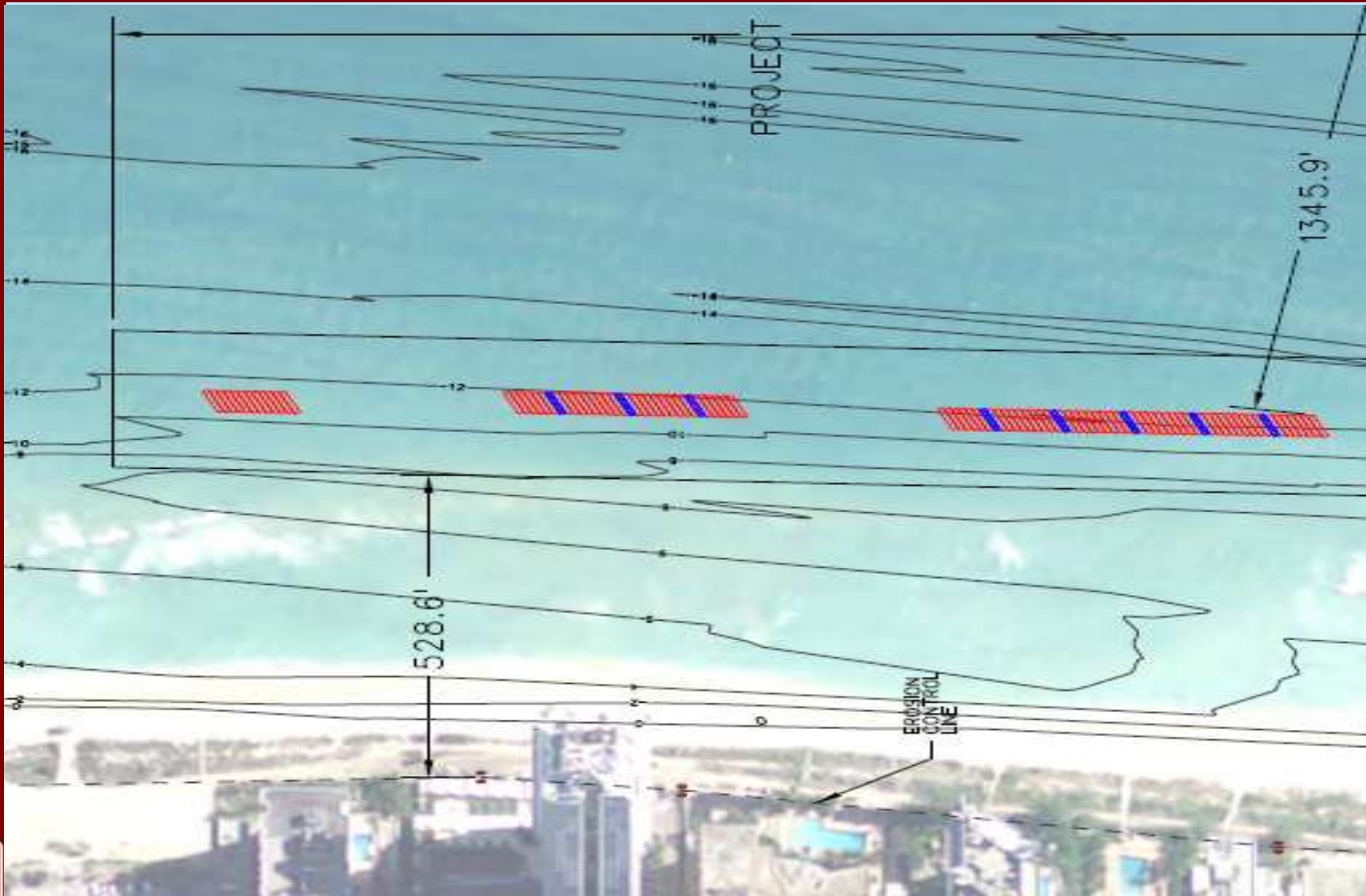




# 2009 Design

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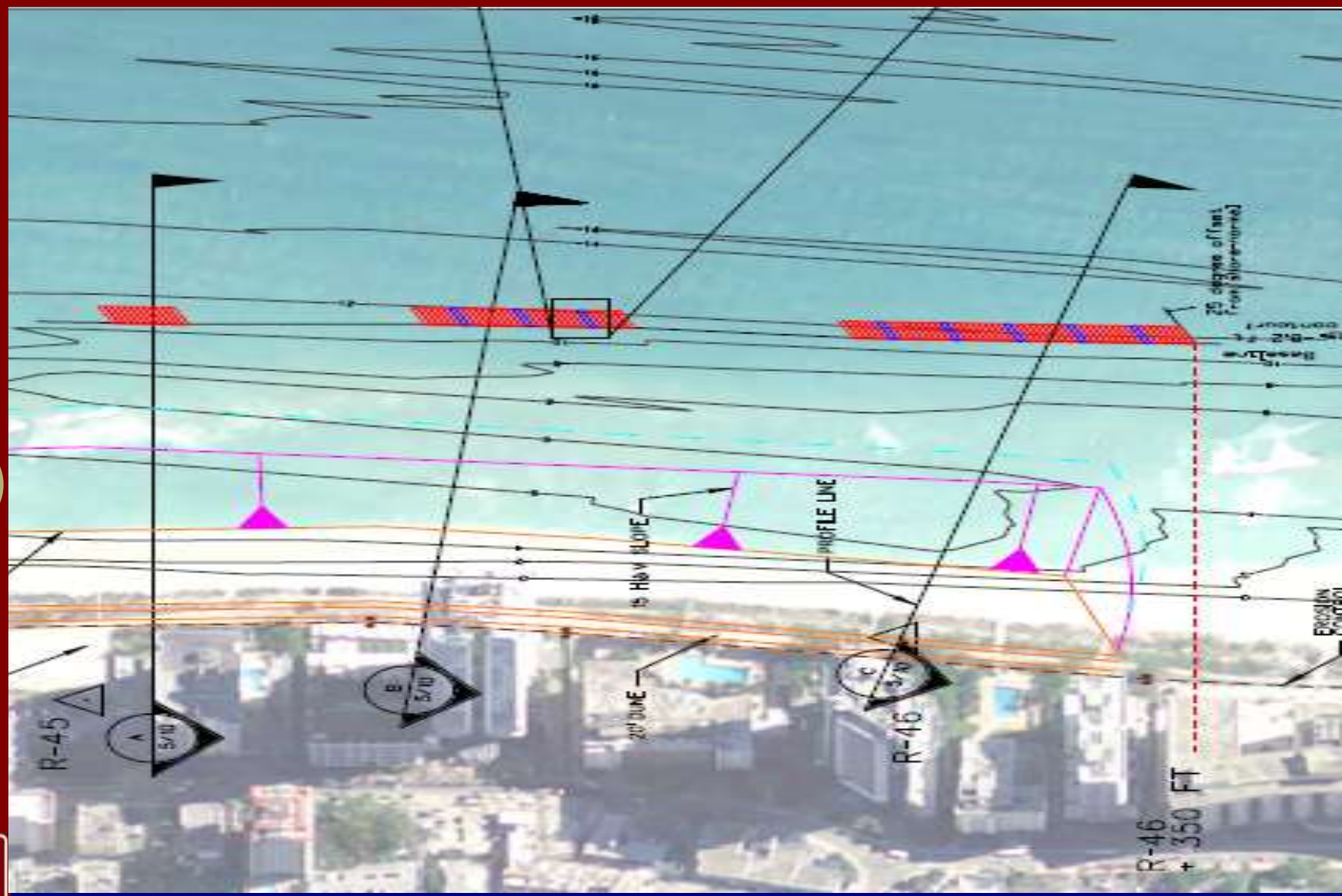
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# 2009 Design with Beach Nourishment

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**Thank You!**

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**Questions?**

