

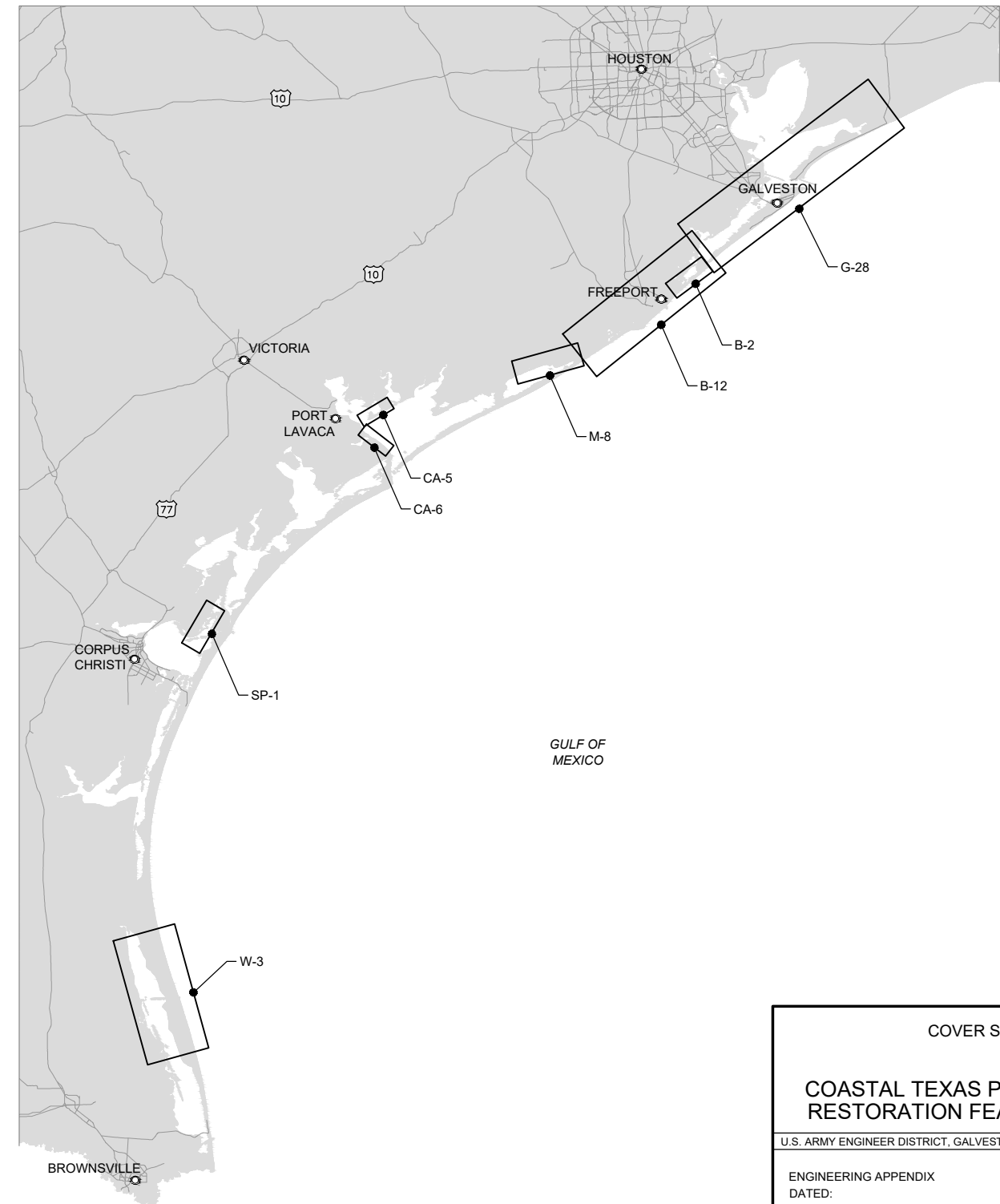
# COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY

## ECOSYSTEM RESTORATION CONCEPTUAL DRAWINGS



**VICINITY MAP**  
(NOT TO SCALE)

SHEET INDEX	
SHEET NO.	TITLE
1	COVER SHEET
2	B-2: FOLLETS ISLAND GULF BEACH & DUNE RESTORATION
3	G-28: BOLIVAR PENINSULA & WEST BAY GIWW SHORELINE & ISLAND PROTECTION (WEST)
4	G-28: BOLIVAR PENINSULA & WEST BAY GIWW SHORELINE & ISLAND PROTECTION (WEST)
5	G-28: BOLIVAR PENINSULA & WEST BAY GIWW SHORELINE & ISLAND PROTECTION (WEST)
6	G-28: BOLIVAR PENINSULA & WEST BAY GIWW SHORELINE & ISLAND PROTECTION (EAST)
7	G-28: BOLIVAR PENINSULA & WEST BAY GIWW SHORELINE & ISLAND PROTECTION (EAST)
8	B-12: BASTROP BAY, OYSTER LAKE, WEST BAY, & GIWW SHORELINE PROTECTION
9	B-12: BASTROP BAY, OYSTER LAKE, WEST BAY, & GIWW SHORELINE PROTECTION
10	M-8: EAST MATAGORDA BAY SHORELINE PROTECTION
11	M-8: EAST MATAGORDA BAY SHORELINE PROTECTION
12	M-8: EAST MATAGORDA BAY SHORELINE PROTECTION
13	CA-5: KELLER BAY RESTORATION
14	CA-6: POWDERHORN SHORELINE PROTECTION & WETLAND RESTORATION
15	CA-6: POWDERHORN SHORELINE PROTECTION & WETLAND RESTORATION
16	SP-1: REDFISH BAY PROTECTION & ENHANCEMENT
17	SP-1: REDFISH BAY PROTECTION & ENHANCEMENT
18	SP-1: REDFISH BAY PROTECTION & ENHANCEMENT
19	W-3: PORT MANSFIELD CHANNEL, ISLAND ROOKERY & HYDROLOGIC RESTORATION
20	W-3: PORT MANSFIELD CHANNEL, ISLAND ROOKERY & HYDROLOGIC RESTORATION



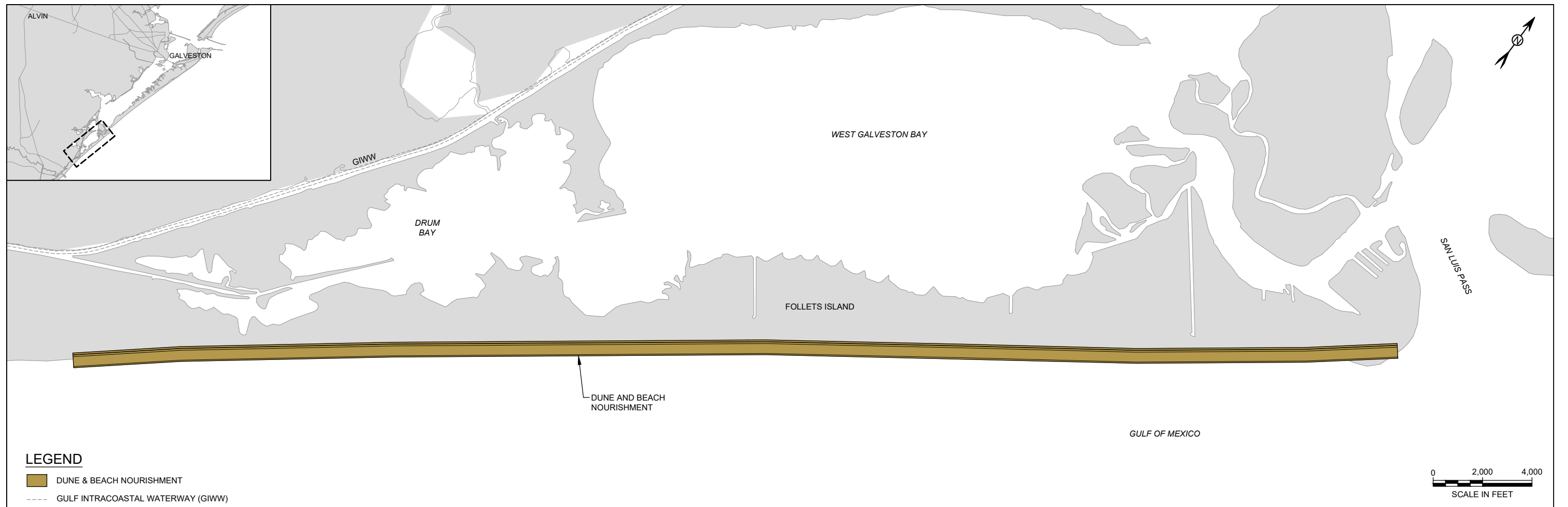
COVER SHEET

**COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY**

U.S. ARMY ENGINEER DISTRICT, GALVESTON, TEXAS

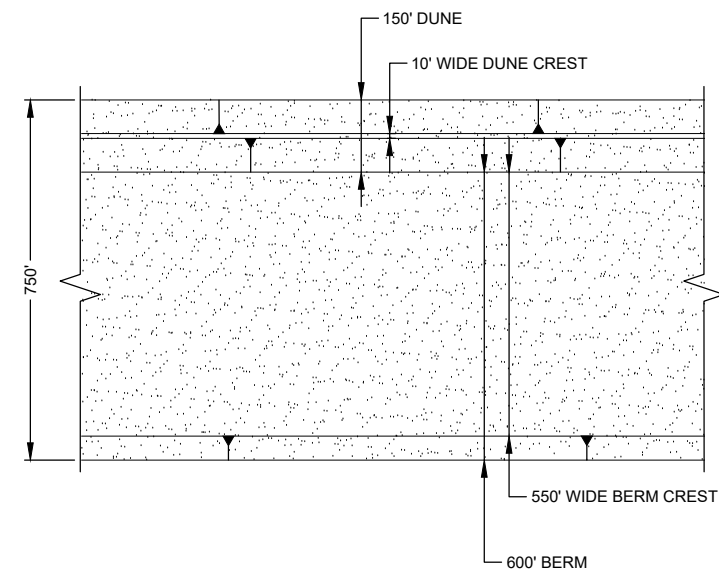
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ENGINEERING APPENDIX  
DATED:  
JULY 28, 2020  
MOTT MACDONALD

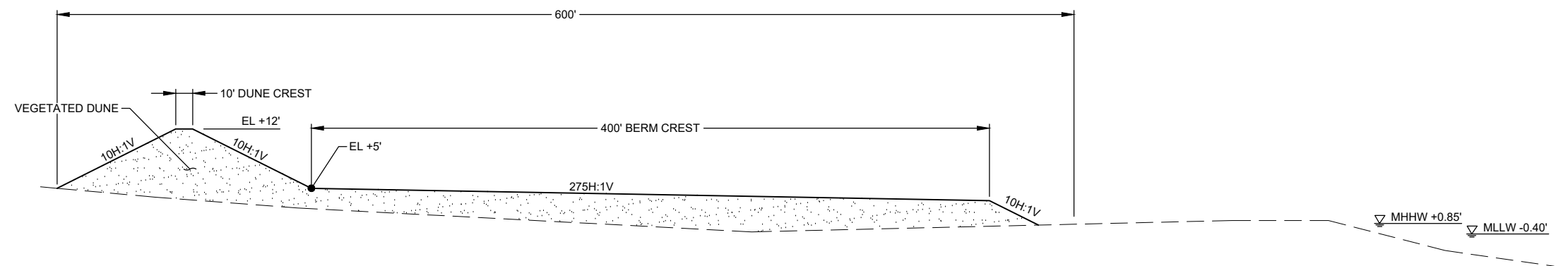


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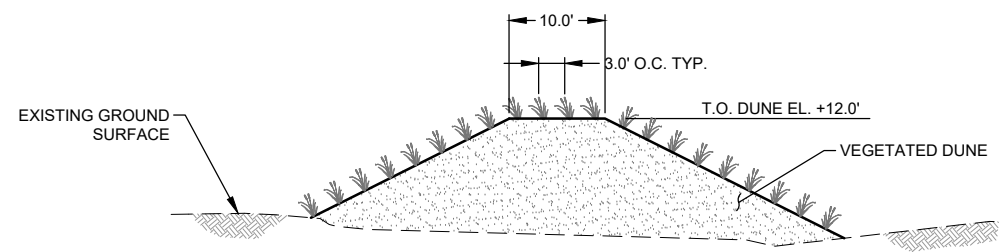
- DUNE & BEACH NOURISHMENT
- GULF INTRACOASTAL WATERWAY (GIWW)



**B-2 - DUNE & BEACH NOURISHMENT**  
SITE PLAN DETAIL



**B-2 - DUNE & BEACH NOURISHMENT**  
TYPICAL SECTION

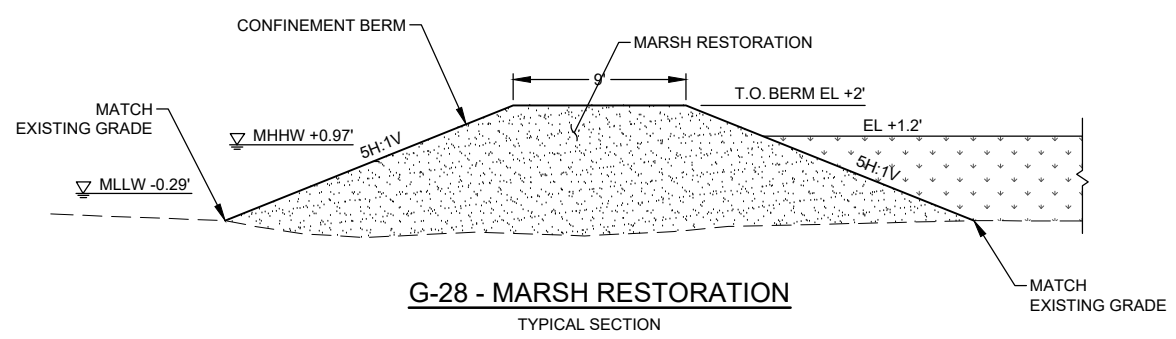
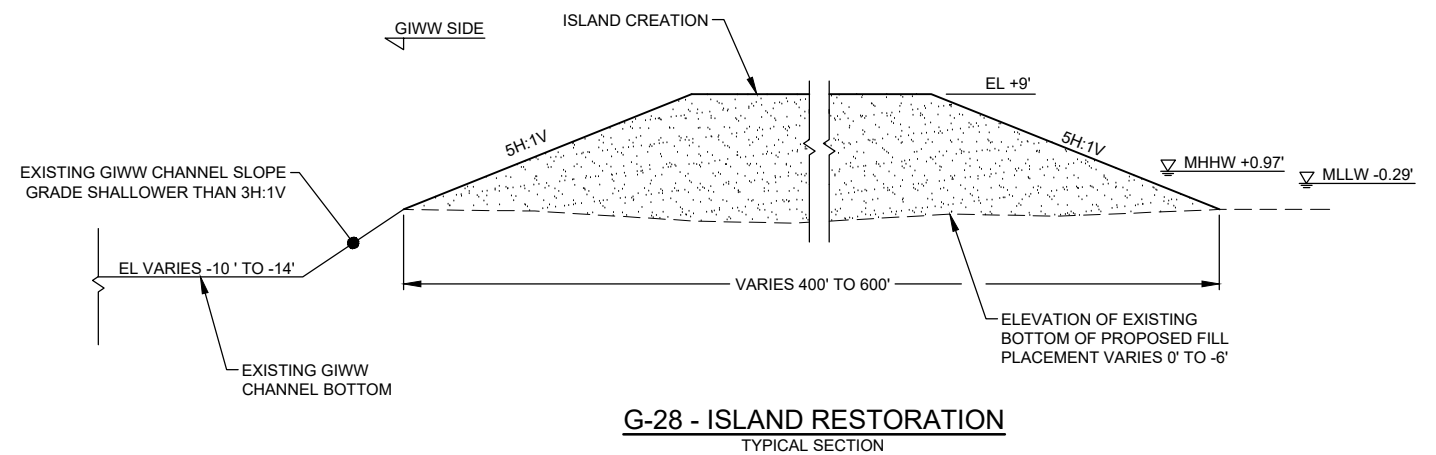
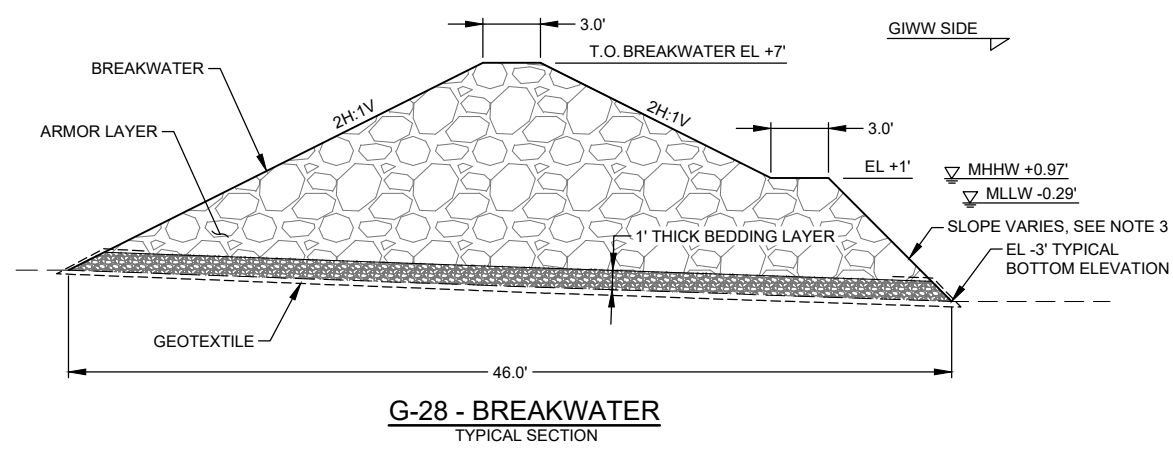
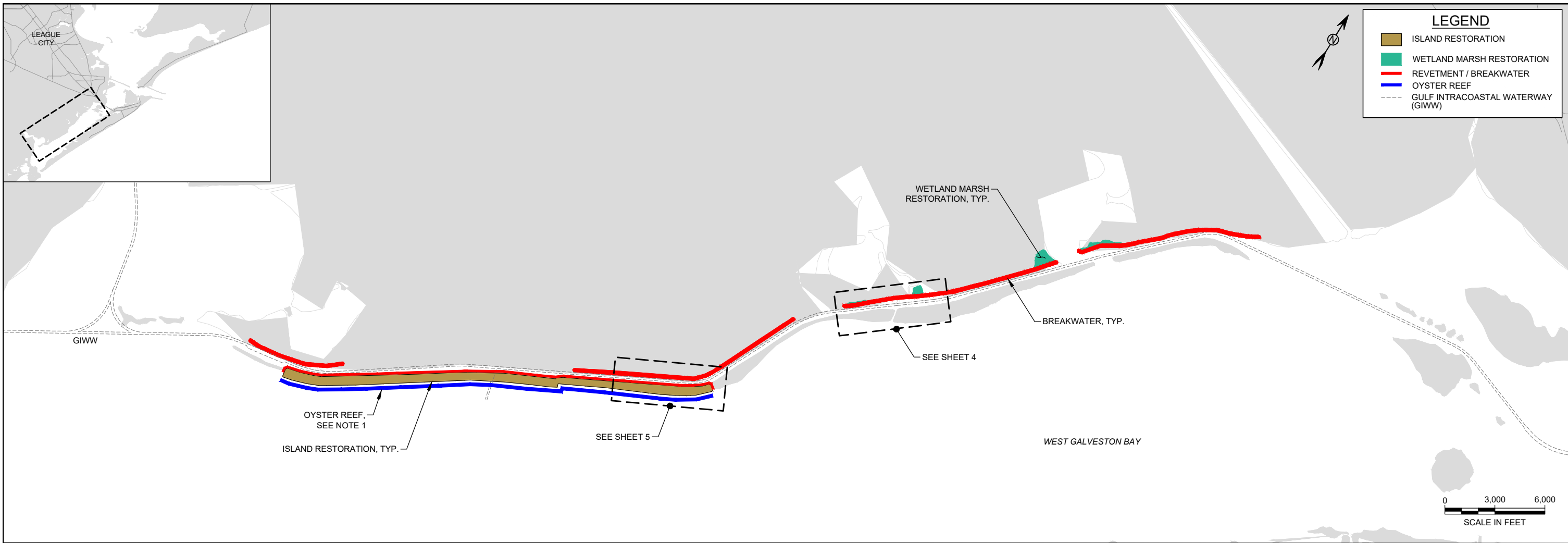


**TYPICAL VEGETATION SECTION**  
NOT TO SCALE

**NOTES:**

1. ALL ELEVATIONS IN FEET NAVD88.
2. DATUMS FROM NOAA GAGE 8771972, SAN LUIS PASS, TX.

<p><b>B2: FOLLET'S ISLAND GULF BEACH &amp; DUNE RESTORATION</b></p> <p><b>COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY</b></p> <p>U.S. ARMY ENGINEER DISTRICT, GALVESTON, TEXAS</p> <p>ENGINEERING APPENDIX DATED: JULY 28, 2020 MOTT MACDONALD</p>
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- NOTES:**
- OYSTER CULCH TO BE PLACED WITHIN OYSTER REEF TEMPLATE. FINAL ELEVATION AND SLOPES OF OYSTER CULCH PLACEMENT TO BE DETERMINED DURING FINAL DESIGN.
  - ALL ELEVATIONS IN FEET NAVD88.
  - DATUMS FROM NOAA GAGE 8771486 GALVESTON RAILROAD BRIDGE, TX

G-28: BOLIVAR PENINSULA & WEST BAY GIWW SHORELINE & ISLAND PROTECTION (WEST)

**COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY**

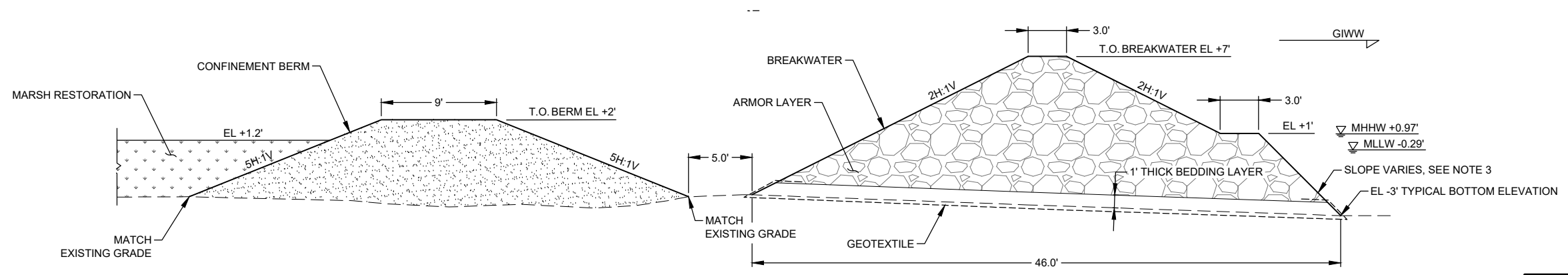
U.S. ARMY ENGINEER DISTRICT, GALVESTON, TEXAS

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MOTT MACDONALD





LEGEND	
<span style="color: green;">■</span>	WETLAND MARSH RESTORATION
<span style="color: red;">▬</span>	REVTMENT / BREAKWATER
<span style="color: gray;">---</span>	GULF INTRACOASTAL WATERWAY (GIWW)



**A**

**G-28: COMBINED BREAKWATER & MARSH RESTORATION SECTION**

TYPICAL SECTION

- NOTES:**
1. ALL ELEVATIONS IN FEET NAVD88.
  2. DATUMS FROM NOAA GAGE 8771486 GALVESTON RAILROAD BRIDGE, TX.

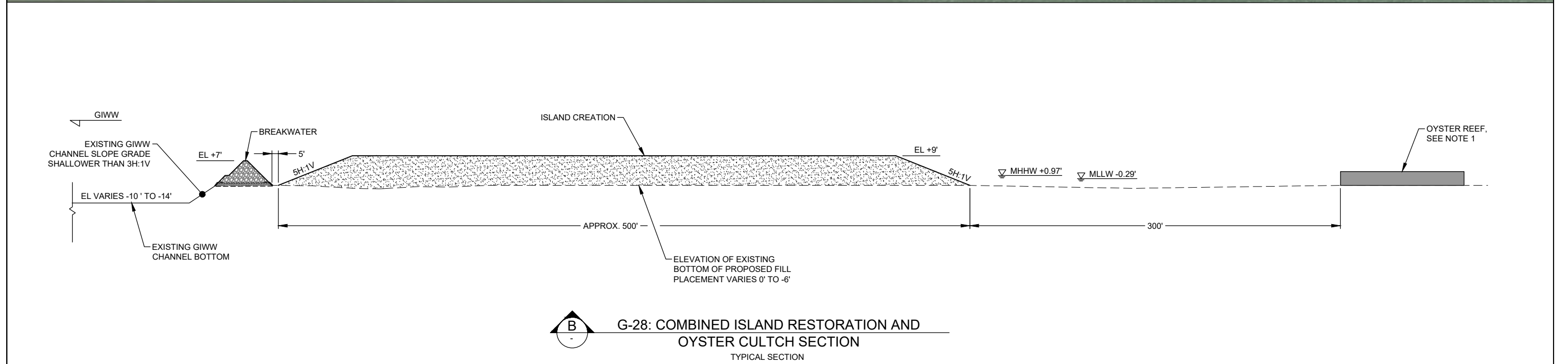
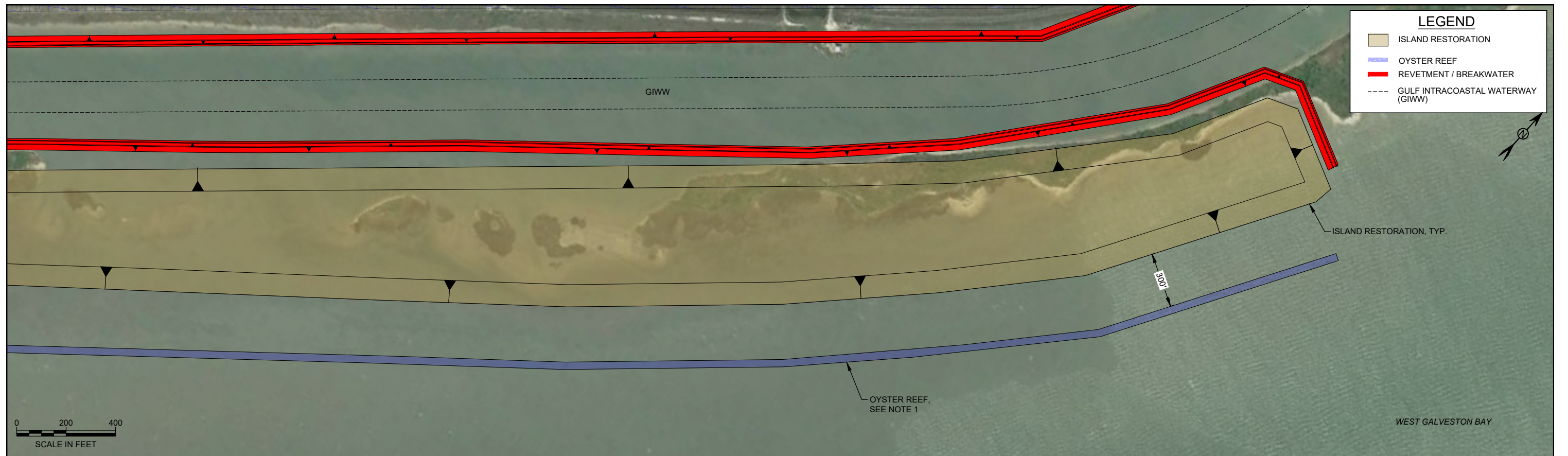
G-28: BOLIVAR PENINSULA & WEST BAY GIWW SHORELINE & ISLAND PROTECTION (WEST)

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**NOTES:**

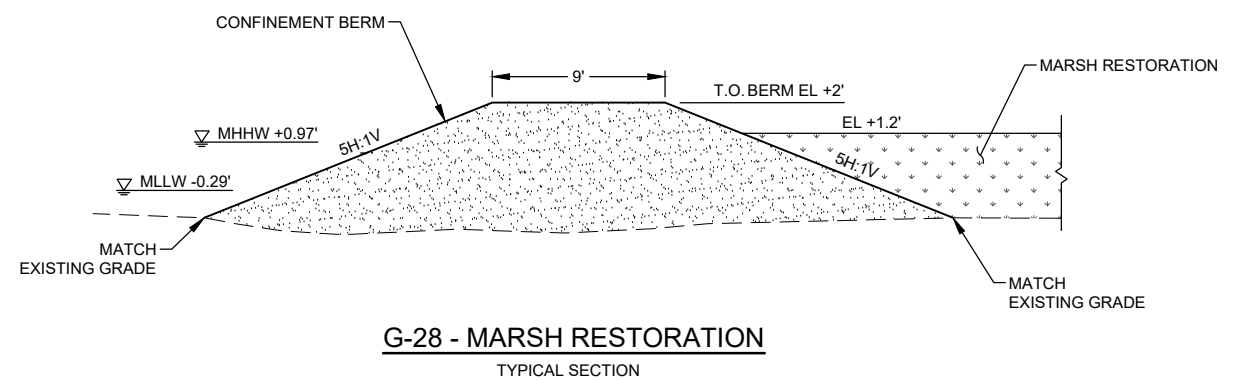
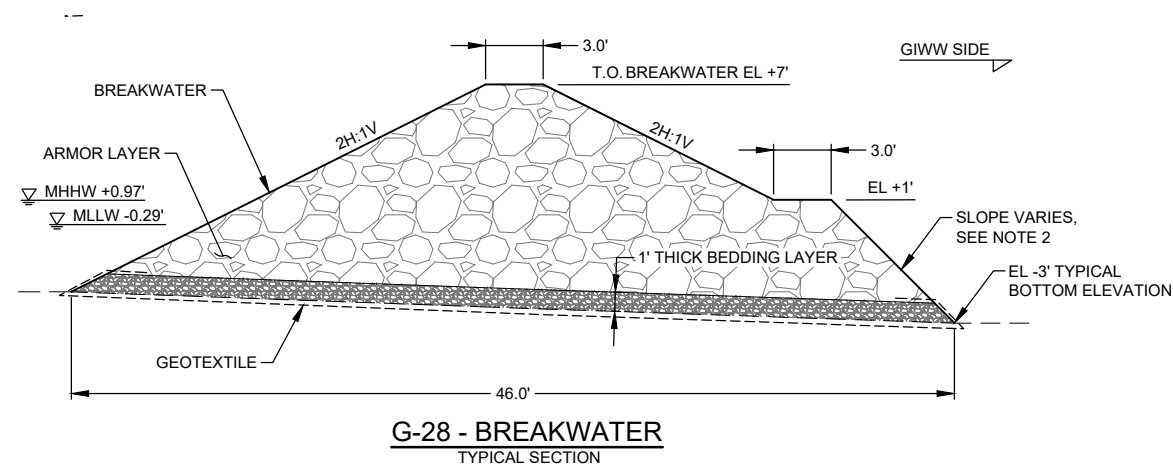
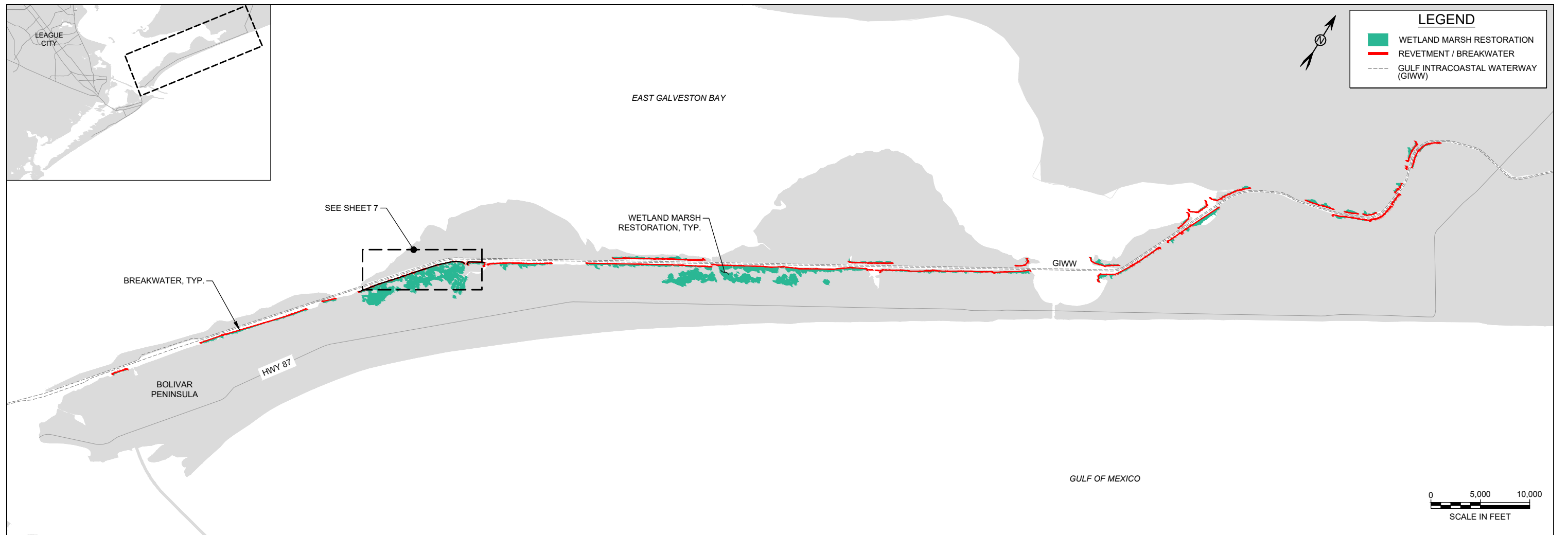
1. OYSTER CULCH TO BE PLACED WITHIN OYSTER REEF TEMPLATE. FINAL ELEVATION AND SLOPES OF OYSTER CULCH PLACEMENT TO BE DETERMINED DURING FINAL DESIGN.
2. ALL ELEVATIONS IN FEET NAVD88.

G-28: BOLIVAR PENINSULA & WEST BAY GIWW SHORELINE & ISLAND PROTECTION (WEST)

COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY

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**NOTES:**

1. ALL ELEVATIONS IN FEET NAVD88.
2. VARY SLOPE OF BREAKWATER TOE SO THAT STONE IS PLACED WITHIN THE 46.0' WIDE BREAKWATER TEMPLATE.
3. DATUMS FROM NOAA GAGE 8771486 GALVESTON RAILROAD BRIDGE, TX.

G-28: BOLIVAR PENINSULA & WEST BAY GIWW SHORELINE & ISLAND PROTECTION (EAST)

**COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY**

U.S. ARMY ENGINEER DISTRICT, GALVESTON, TEXAS

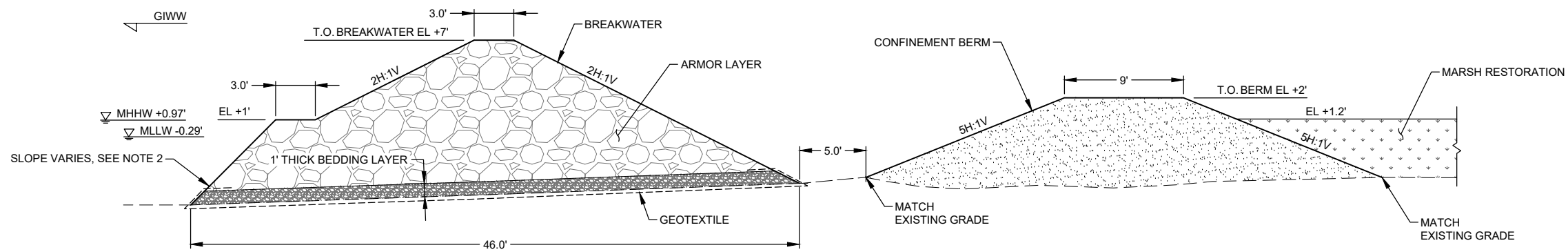
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**LEGEND**

- WETLAND MARSH RESTORATION
- REVETMENT / BREAKWATER
- GULF INTRACOASTAL WATERWAY (GIWW)



**G-28: COMBINED BREAKWATER & MARSH RESTORATION**  
 TYPICAL SECTION

**NOTES:**

1. ALL ELEVATIONS IN FEET NAVD88.
2. VARY SLOPE OF BREAKWATER TOE SO THAT STONE IS PLACED WITHIN THE 46.0' WIDE BREAKWATER TEMPLATE.
3. DATUMS FROM NOAA GAGE 8771486 GALVESTON RAILROAD BRIDGE, TX.

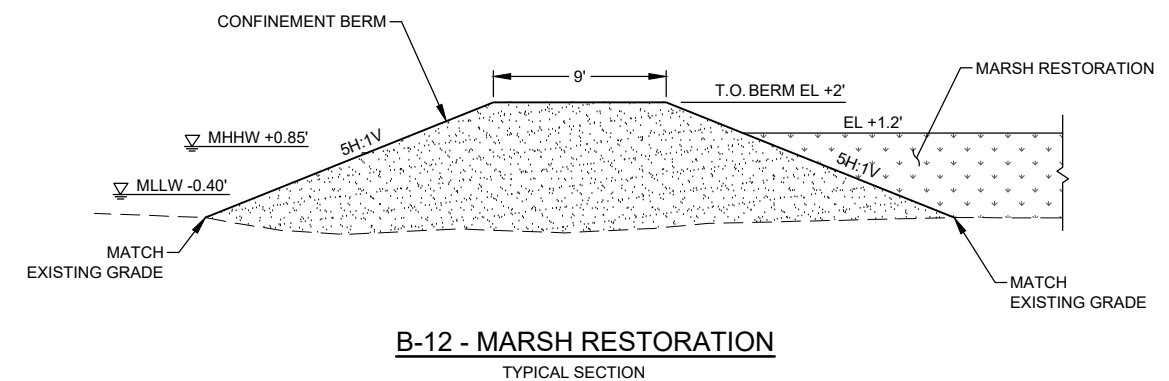
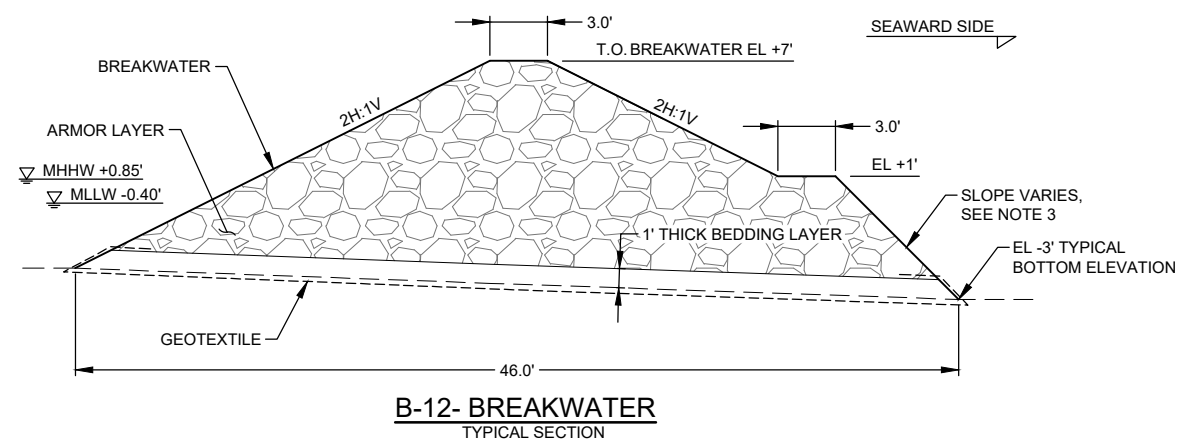
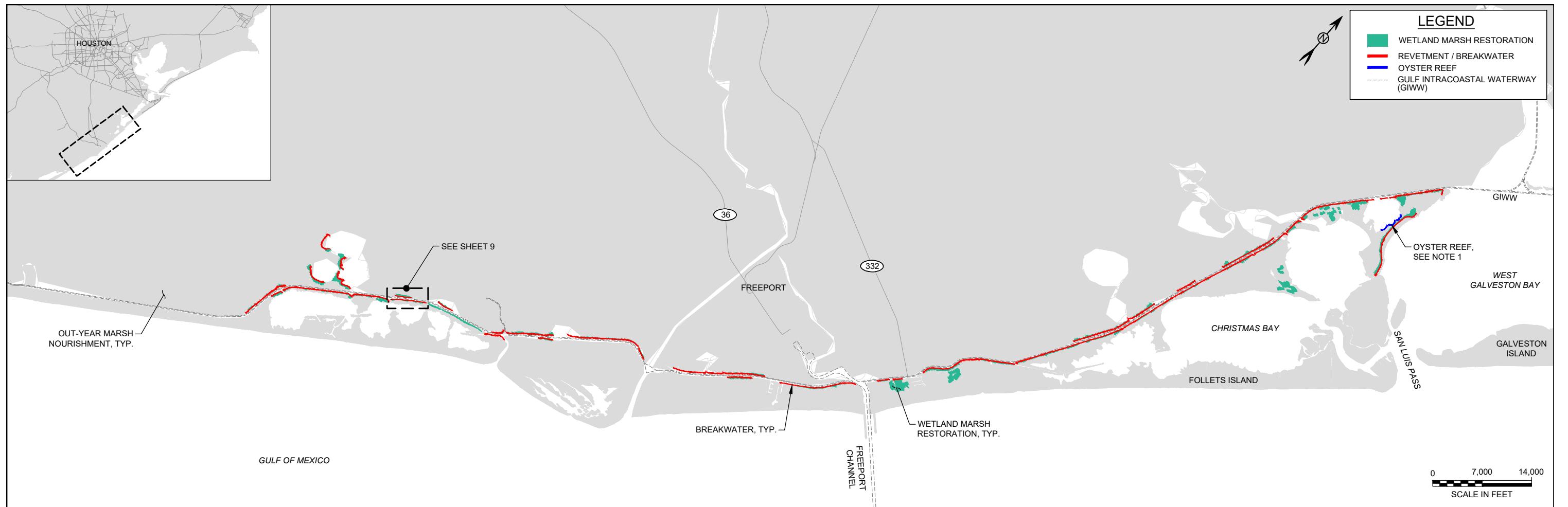
G-28: BOLIVAR PENINSULA & WEST BAY GIWW SHORELINE & ISLAND PROTECTION (EAST)

**COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY**

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**NOTES:**

- OYSTER CULCH TO BE PLACED WITHIN OYSTER REEF TEMPLATE. FINAL ELEVATION AND SLOPES OF OYSTER CULCH PLACEMENT TO BE DETERMINED DURING FINAL DESIGN.
- ALL ELEVATIONS IN FEET NAVD88.
- VARY SLOPE OF BREAKWATER TOE SO THAT STONE IS PLACED WITHIN THE 46.0' WIDE BREAKWATER TEMPLATE.
- DATUMS FROM NOAA GAGE 8771972, SAN LUIS PASS, TX.

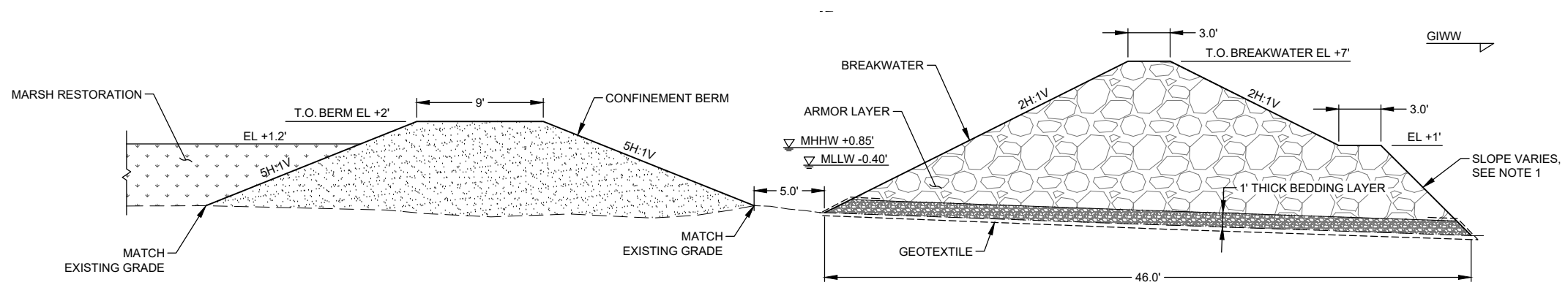
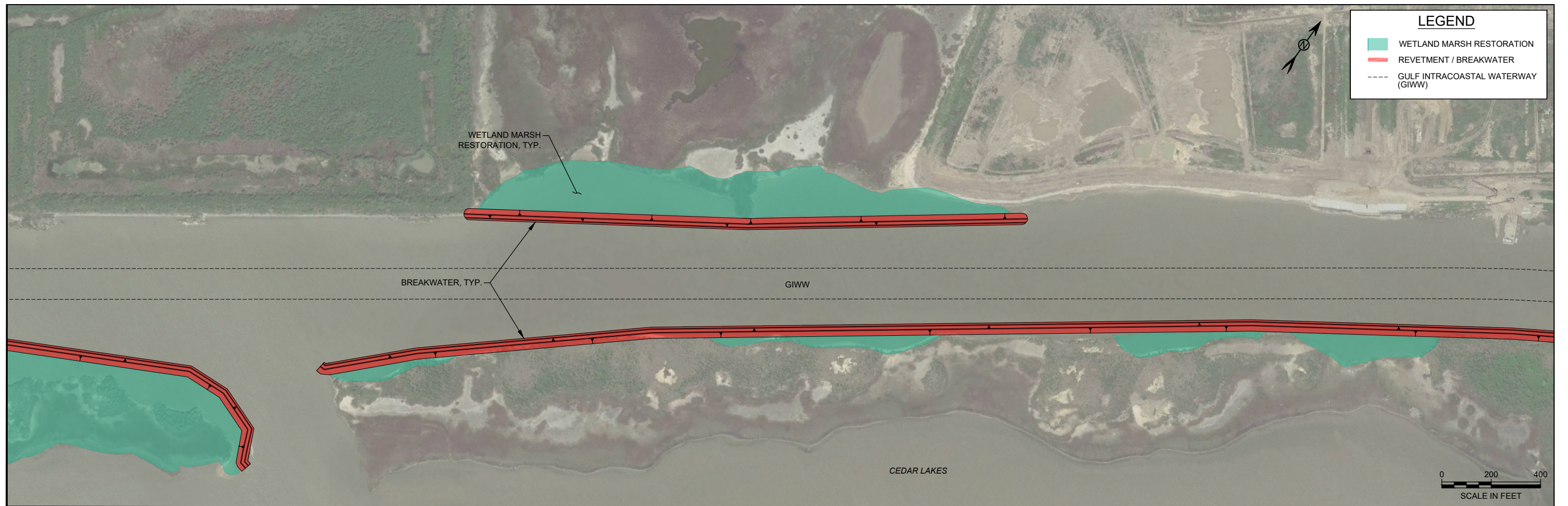
B-12: BASTROP BAY, OYSTER LAKE, WEST BAY, & GIWW SHORELINE PROTECTION

**COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY**

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**D** B-12: COMBINED BREAKWATER & MARSH RESTORATION  
TYPICAL SECTION

**NOTES:**

1. ALL ELEVATIONS IN FEET NAVD88.
2. VARY SLOPE OF BREAKWATER TOE SO THAT STONE IS PLACED WITHIN THE 46.0' WIDE BREAKWATER TEMPLATE.
3. DATUMS FROM NOAA GAGE 8771972, SAN LUIS PASS, TX.

B-12: BASTROP BAY, OYSTER LAKE, WEST BAY, & GIWW SHORELINE PROTECTION

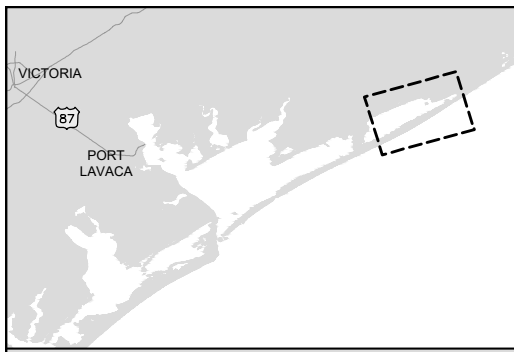
COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY

U.S. ARMY ENGINEER DISTRICT, GALVESTON, TEXAS

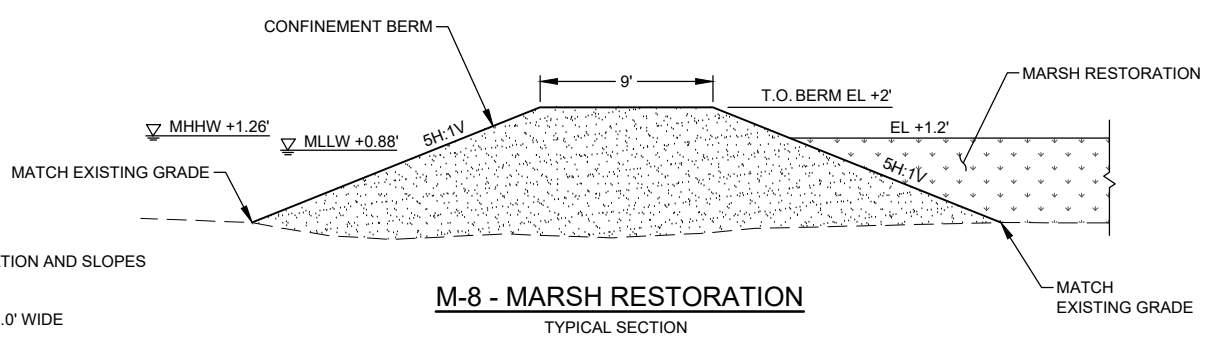
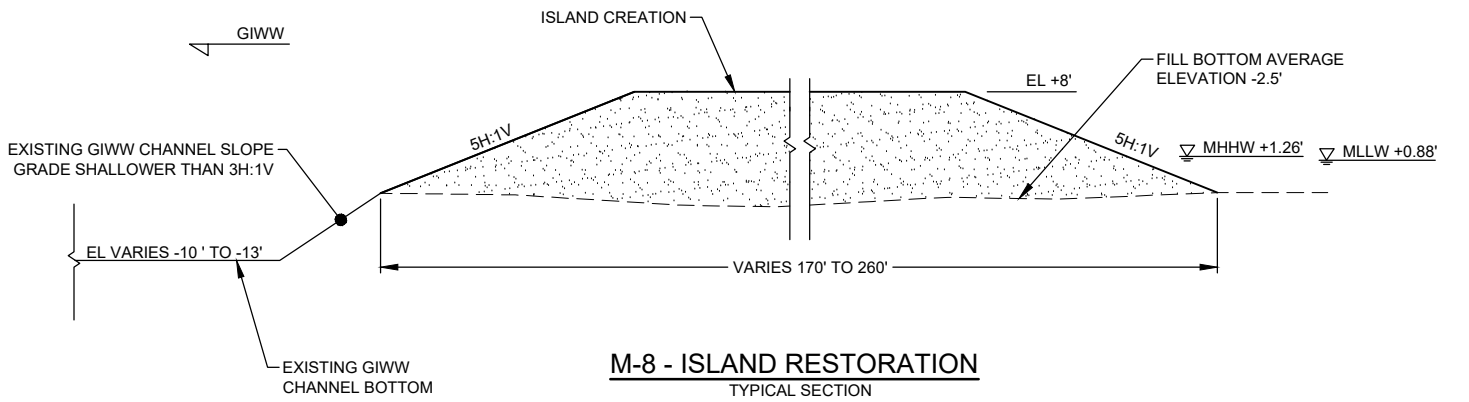
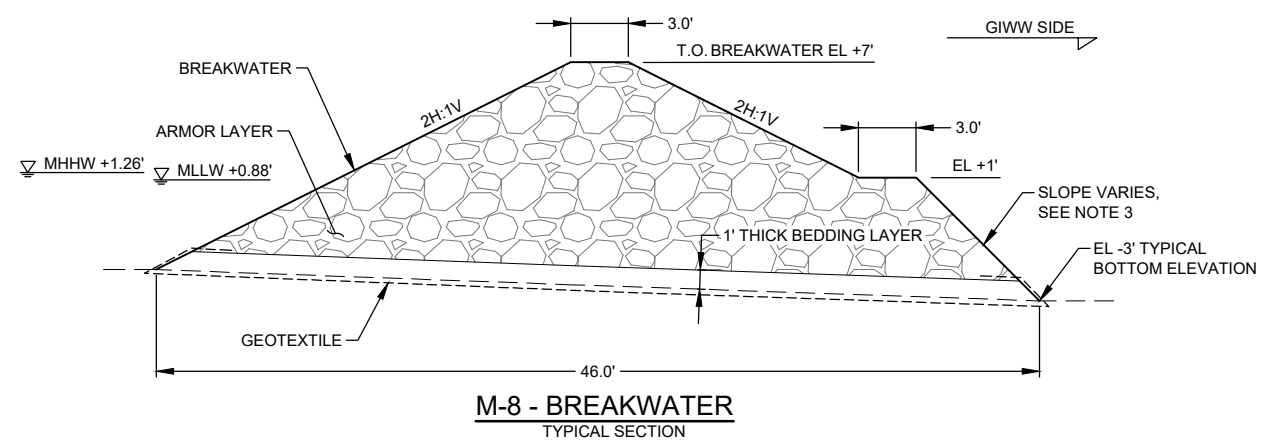
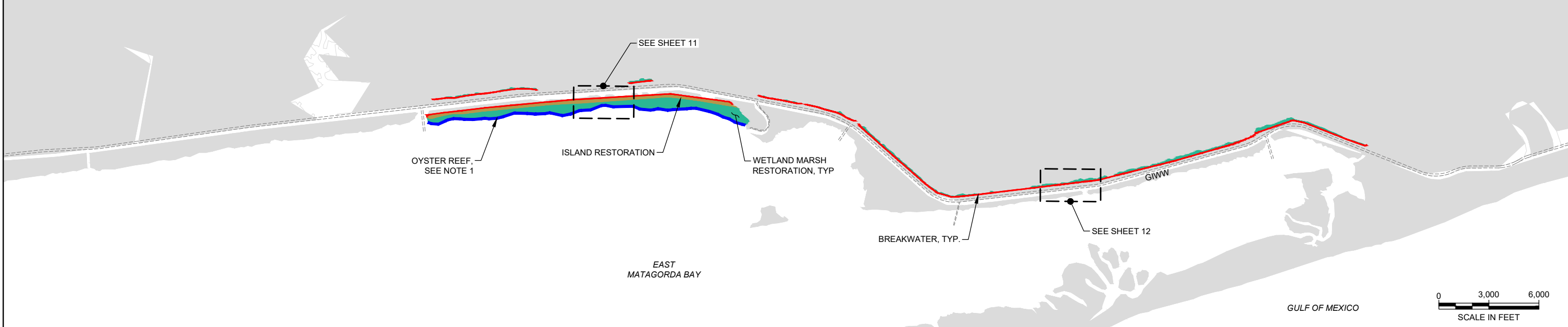
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LEGEND	
	ISLAND RESTORATION
	WETLAND MARSH RESTORATION
	REVTMENT / BREAKWATER
	OYSTER REEF
	GULF INTRACOASTAL WATERWAY (GIWW)



- NOTES:**
- OYSTER CULCH TO BE PLACED WITHIN OYSTER REEF TEMPLATE. FINAL ELEVATION AND SLOPES OF OYSTER CULCH PLACEMENT TO BE DETERMINED DURING FINAL DESIGN.
  - ALL ELEVATIONS IN FEET NAVD88.
  - VARY SLOPE OF BREAKWATER TOE SO THAT STONE IS PLACED WITHIN THE 46.0' WIDE BREAKWATER TEMPLATE.
  - DATUMS FROM NOAA GAGE 8773037 SEADRIFT, TX

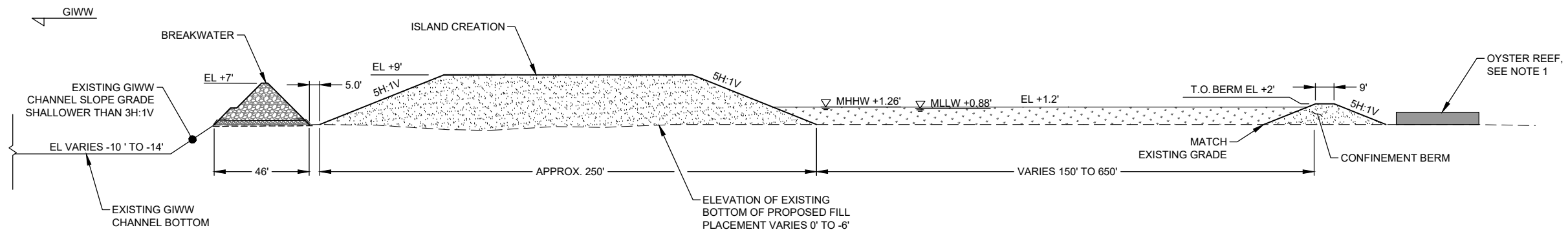
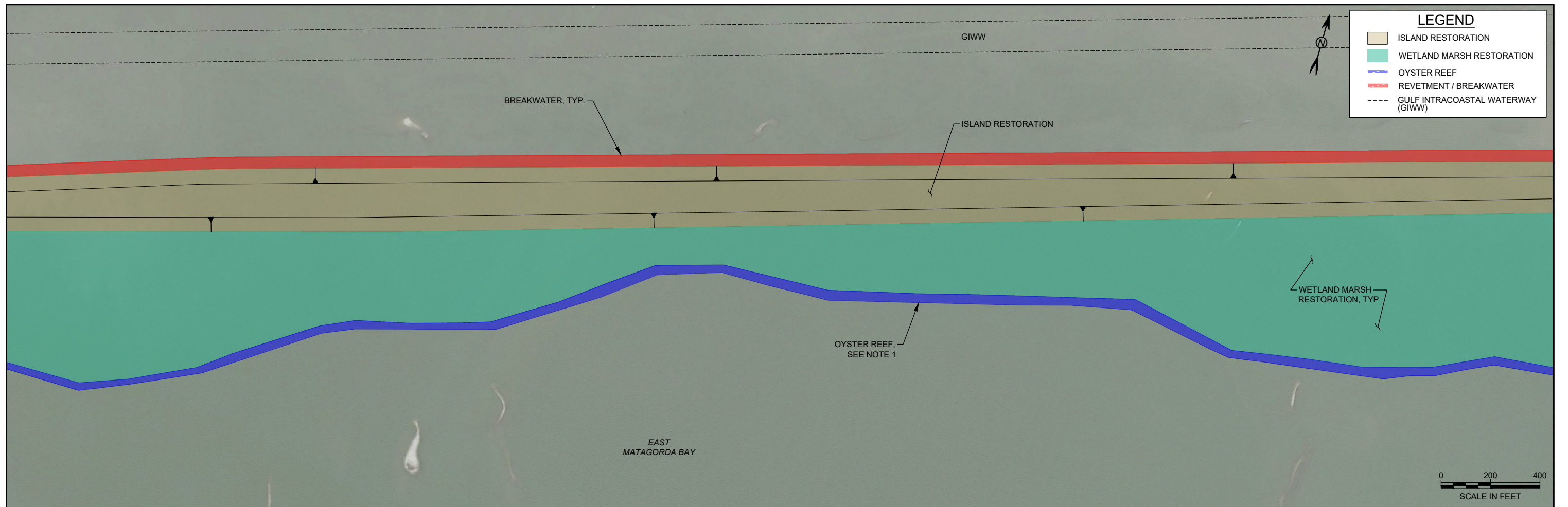
M-8: EAST MATAGORDA BAY SHORELINE PROTECTION

**COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY**

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**M-8: COMBINED ISLAND RESTORATION, MARSH RESTORATION, AND OYSTER CULTCH SECTION**  
TYPICAL SECTION

**NOTES:**

- OYSTER CULCH TO BE PLACED WITHIN OYSTER REEF TEMPLATE. FINAL ELEVATION AND SLOPES OF OYSTER CULCH PLACEMENT TO BE DETERMINED DURING FINAL DESIGN.
- ALL ELEVATIONS IN FEET NAVD88.
- VARY SLOPE OF BREAKWATER TOE SO THAT STONE IS PLACED WITHIN THE 46.0' WIDE BREAKWATER TEMPLATE.
- DATUMS FROM NOAA GAGE 8773037 SEADRIFT, TX

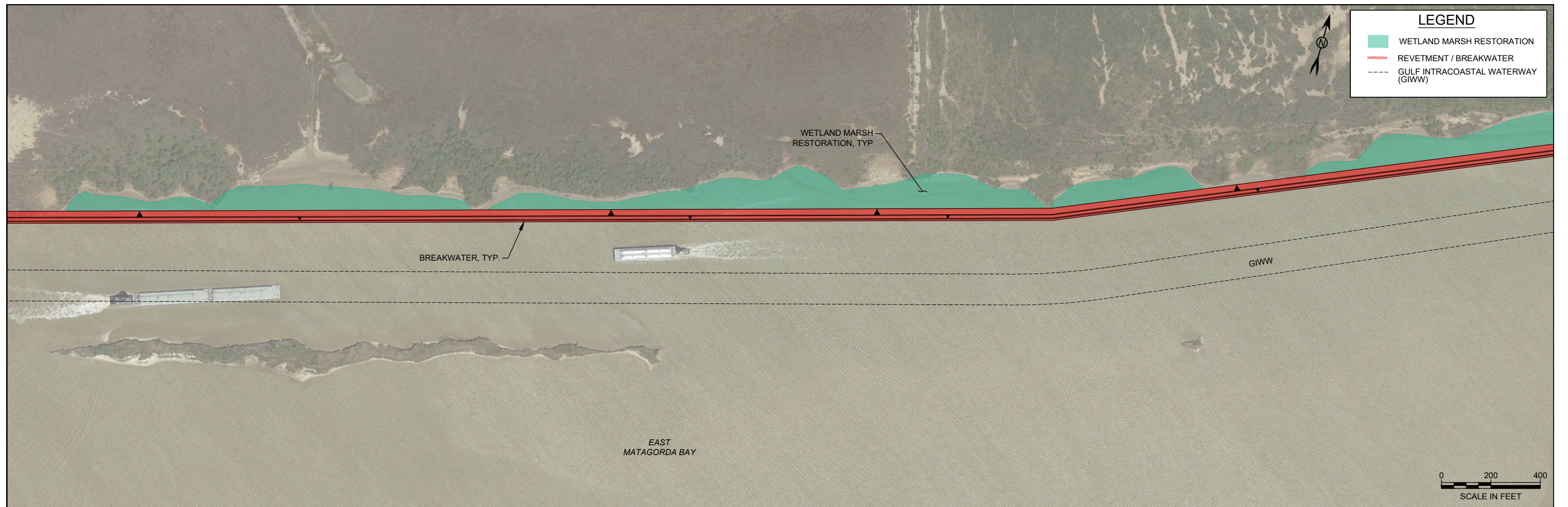
M-8: EAST MATAGORDA BAY SHORELINE PROTECTION

COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY

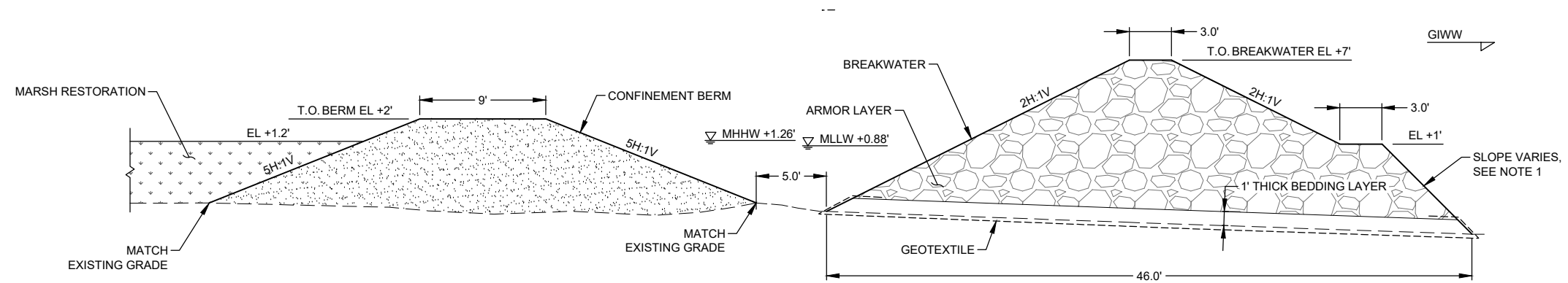
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MOTT MACDONALD





LEGEND	
<span style="color: green;">■</span>	WETLAND MARSH RESTORATION
<span style="color: red;">—</span>	REVETMENT / BREAKWATER
- - -	GULF INTRACOASTAL WATERWAY (GIWW)



**F** M-8: COMBINED BREAKWATER & MARSH RESTORATION  
TYPICAL SECTION

**NOTES:**

1. ALL ELEVATIONS IN FEET NAVD88.
2. VARY SLOPE OF BREAKWATER TOE SO THAT STONE IS PLACED WITHIN THE 46.0' WIDE BREAKWATER TEMPLATE.
3. DATUMS FROM NOAA GAGE 8773037 SEADRIFT, TX

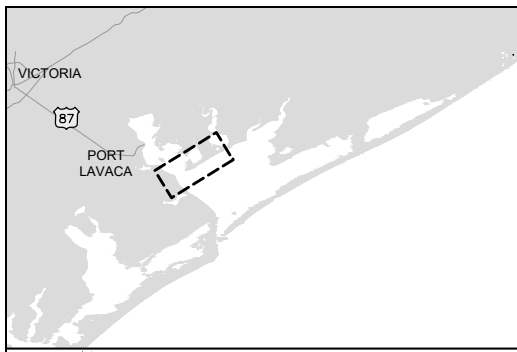
M-8: EAST MATAGORDA BAY SHORELINE PROTECTION

COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY

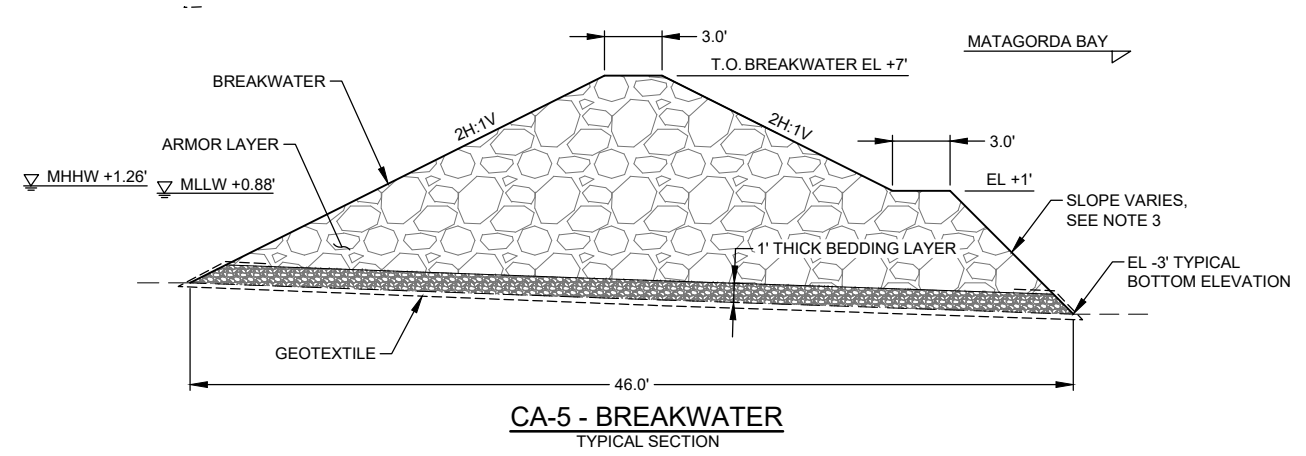
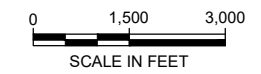
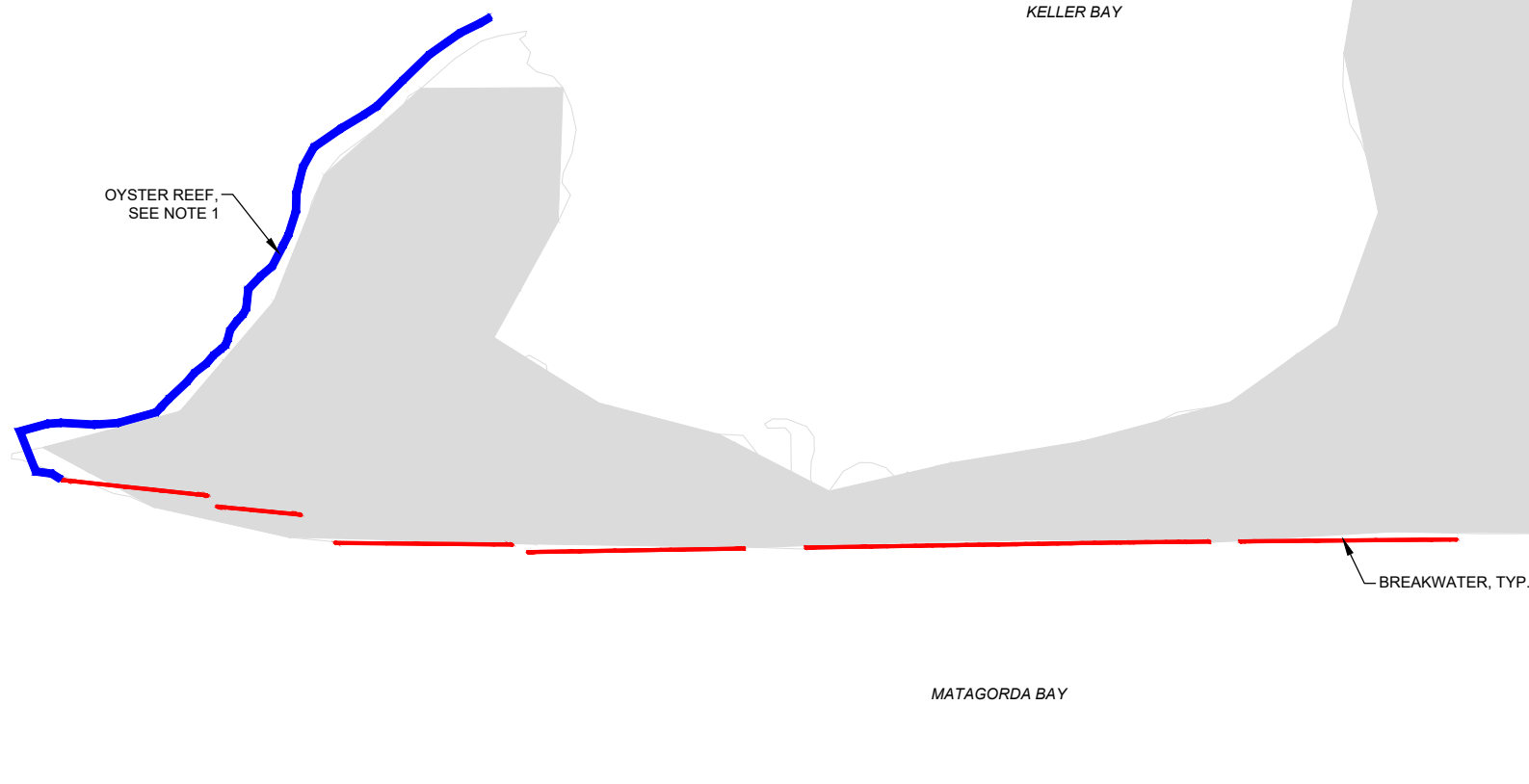
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MOTT MACDONALD





LEGEND	
<span style="color: red;">—</span>	REVTMENT / BREAKWATER
<span style="color: blue;">—</span>	OYSTER REEF
- - -	GULF INTRACOASTAL WATERWAY (GIWW)



**NOTES:**

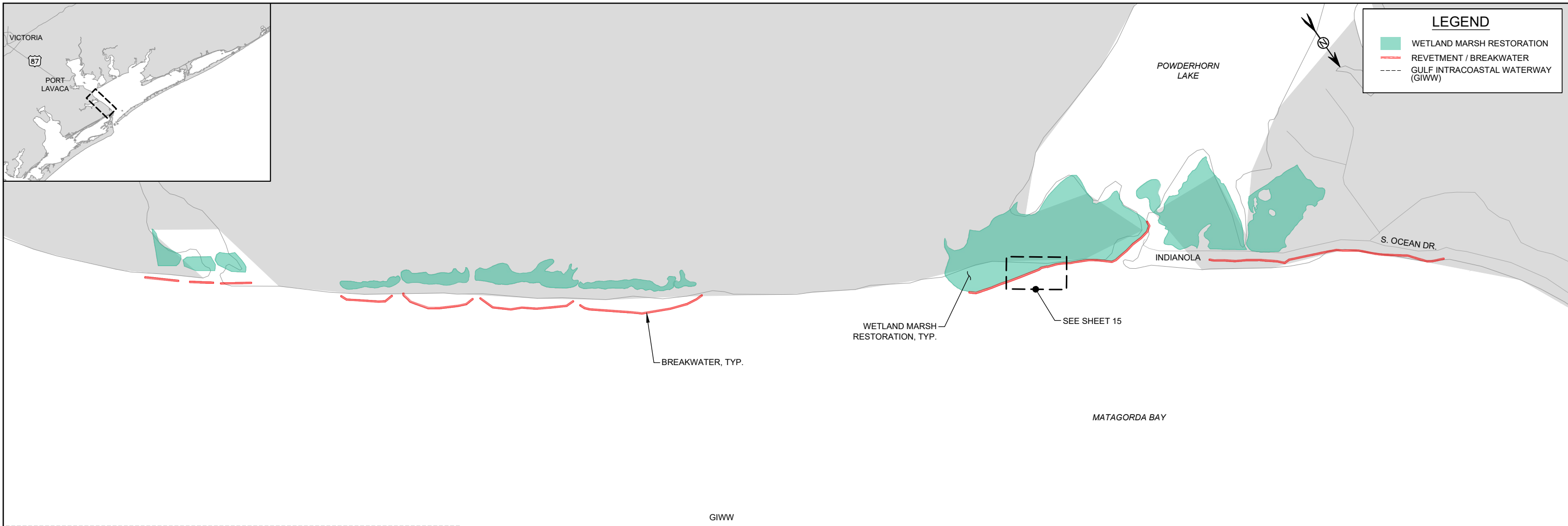
- OYSTER CULCH TO BE PLACED WITHIN OYSTER REEF TEMPLATE. FINAL ELEVATION AND SLOPES OF OYSTER CULCH PLACEMENT TO BE DETERMINED DURING FINAL DESIGN.
- ALL ELEVATIONS IN FEET NAVD88.
- VARY SLOPE OF BREAKWATER TOE SO THAT STONE IS PLACED WITHIN THE 46.0' WIDE BREAKWATER TEMPLATE.
- DATUMS FROM NOAA GAGE 8773037 SEADRIFT, TX

CA-5: KELLER BAY RESTORATION

**COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY**

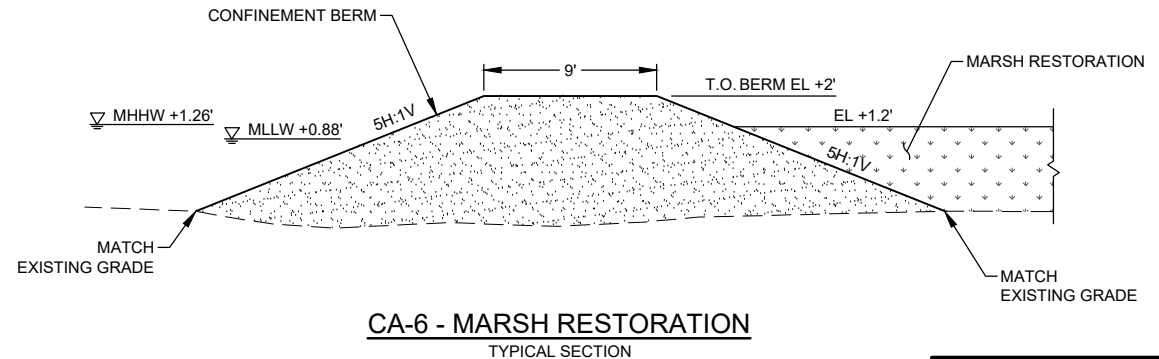
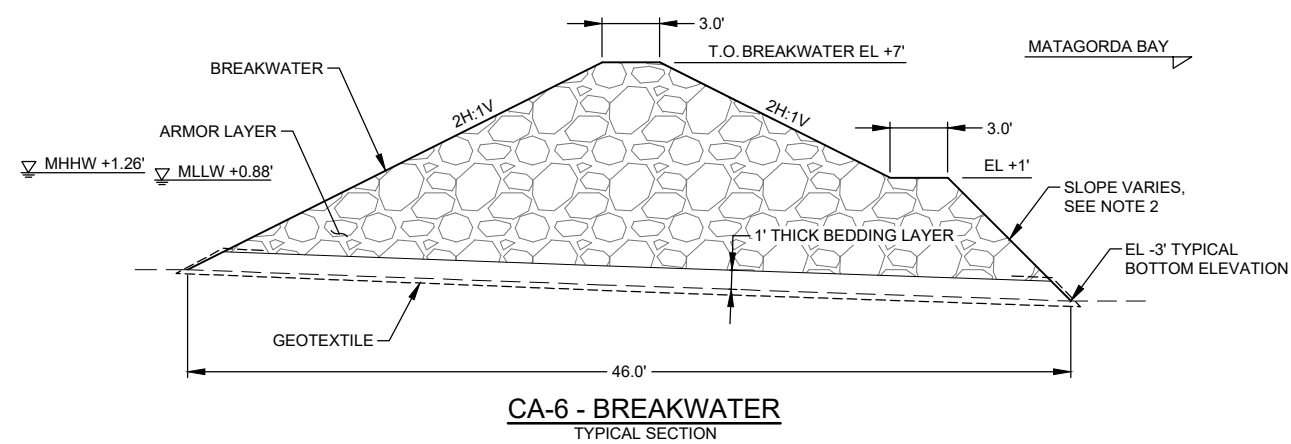
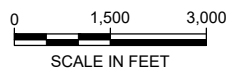
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**LEGEND**

- WETLAND MARSH RESTORATION
- REVETMENT / BREAKWATER
- GULF INTRACOASTAL WATERWAY (GIWW)



- NOTES:**
1. ALL ELEVATIONS IN FEET NAVD88.
  2. VARY SLOPE OF BREAKWATER TOE SO THAT STONE IS PLACED WITHIN THE 46.0' WIDE BREAKWATER TEMPLATE.
  3. DATUMS FROM NOAA GAGE 8773037 SEADRIFT, TX

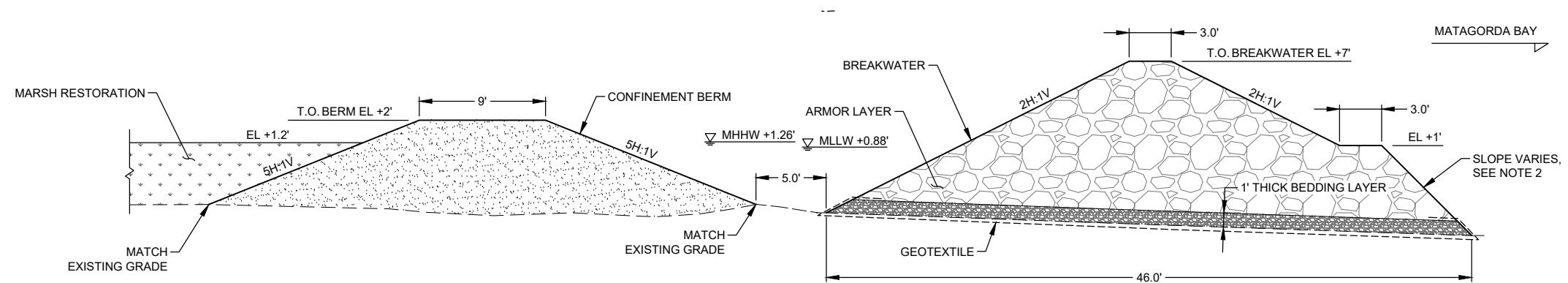
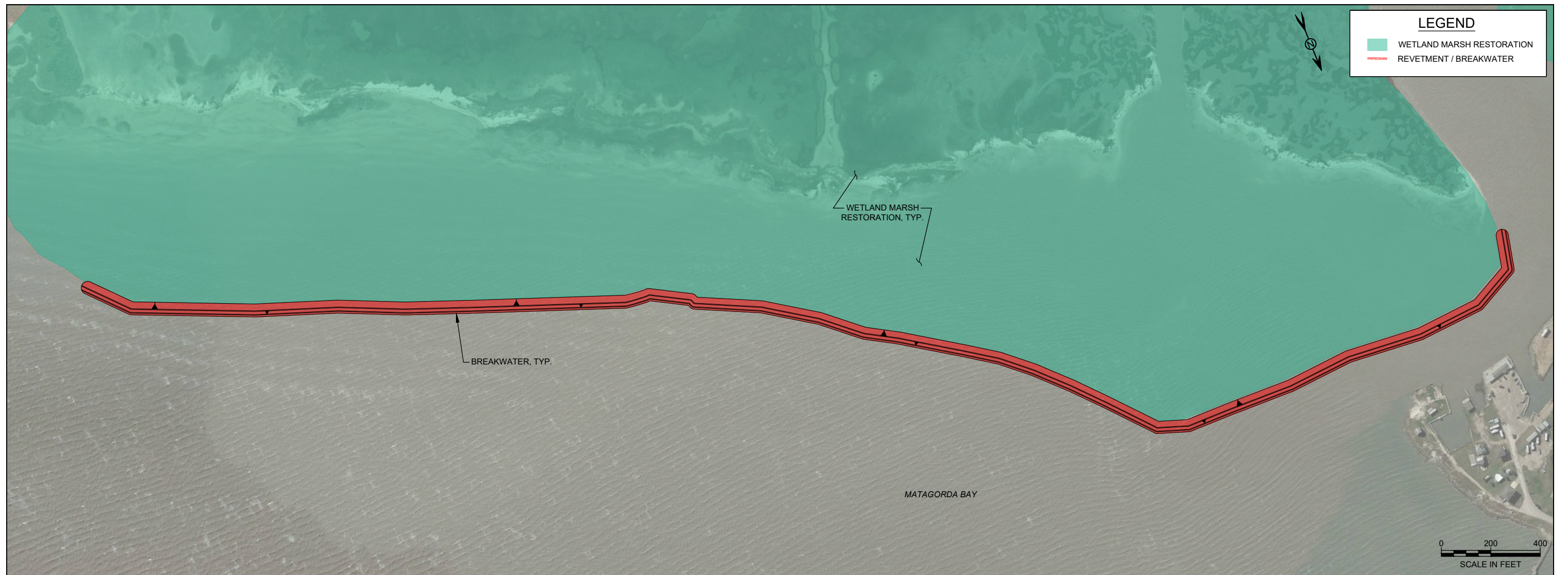
CA-6: POWDERHORN SHORELINE PROTECTION & WETLAND RESTORATION

**COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY**

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**G** CA-6: COMBINED BREAKWATER & MARSH RESTORATION  
TYPICAL SECTION

**NOTES:**

1. ALL ELEVATIONS IN FEET NAVD88.
2. VARY SLOPE OF BREAKWATER TOE SO THAT STONE IS PLACED WITHIN THE 46.0' WIDE BREAKWATER TEMPLATE.
3. DATUMS FROM NOAA GAGE 8773037 SEADRIFT, TX

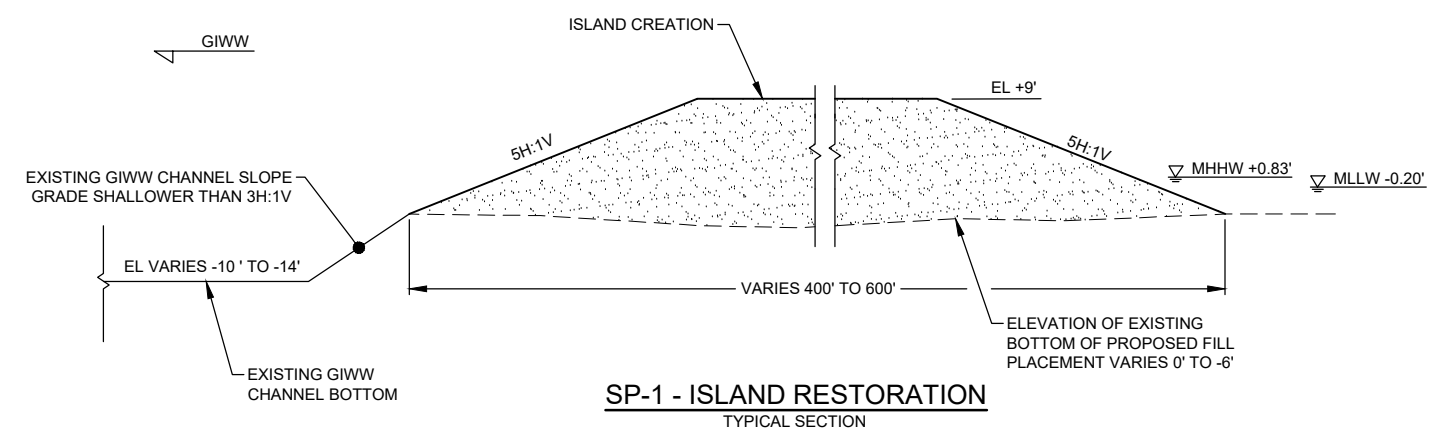
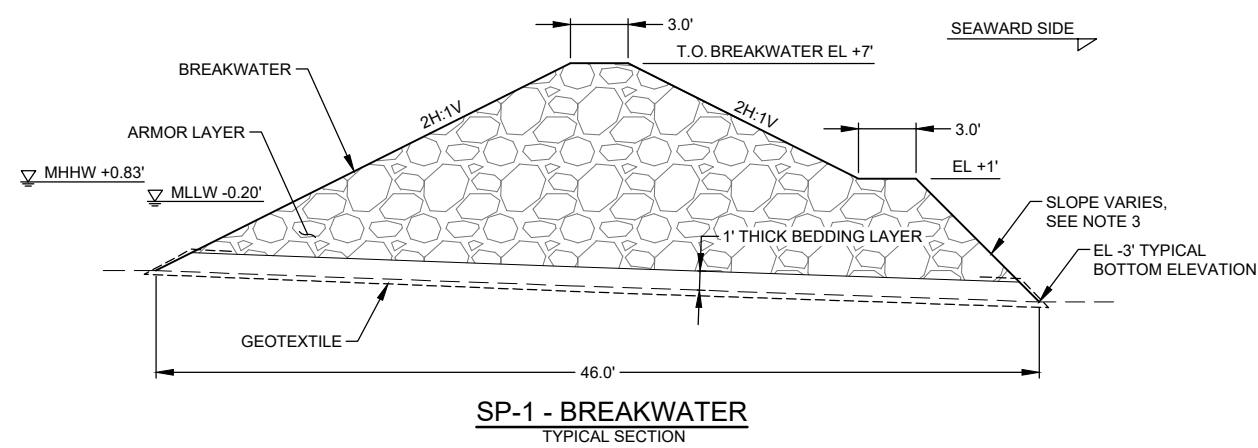
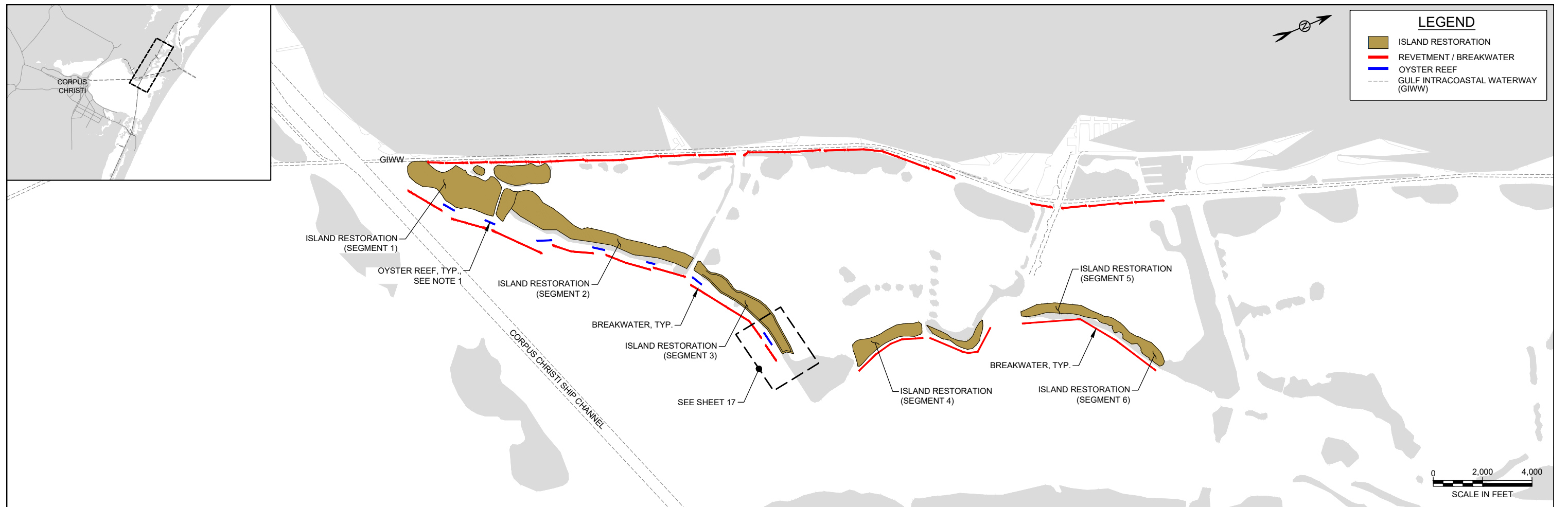
CA-6: POWDERHORN SHORELINE PROTECTION & WETLAND RESTORATION

COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY

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**NOTES:**

- OYSTER CULCH TO BE PLACED WITHIN OYSTER REEF TEMPLATE. FINAL ELEVATION AND SLOPES OF OYSTER CULCH PLACEMENT TO BE DETERMINED DURING FINAL DESIGN.
- ALL ELEVATIONS IN FEET NAVD88.
- VARY SLOPE OF BREAKWATER TOE SO THAT STONE IS PLACED WITHIN THE 46.0' WIDE BREAKWATER TEMPLATE.
- DATUMS FROM NOAA GAGE 8775237, PORT ARANSAS TX

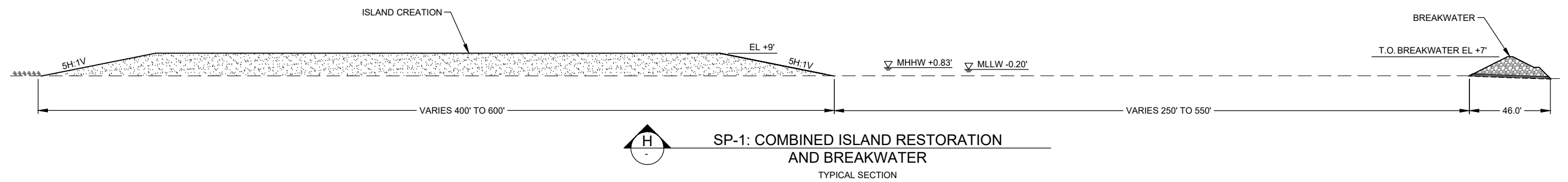
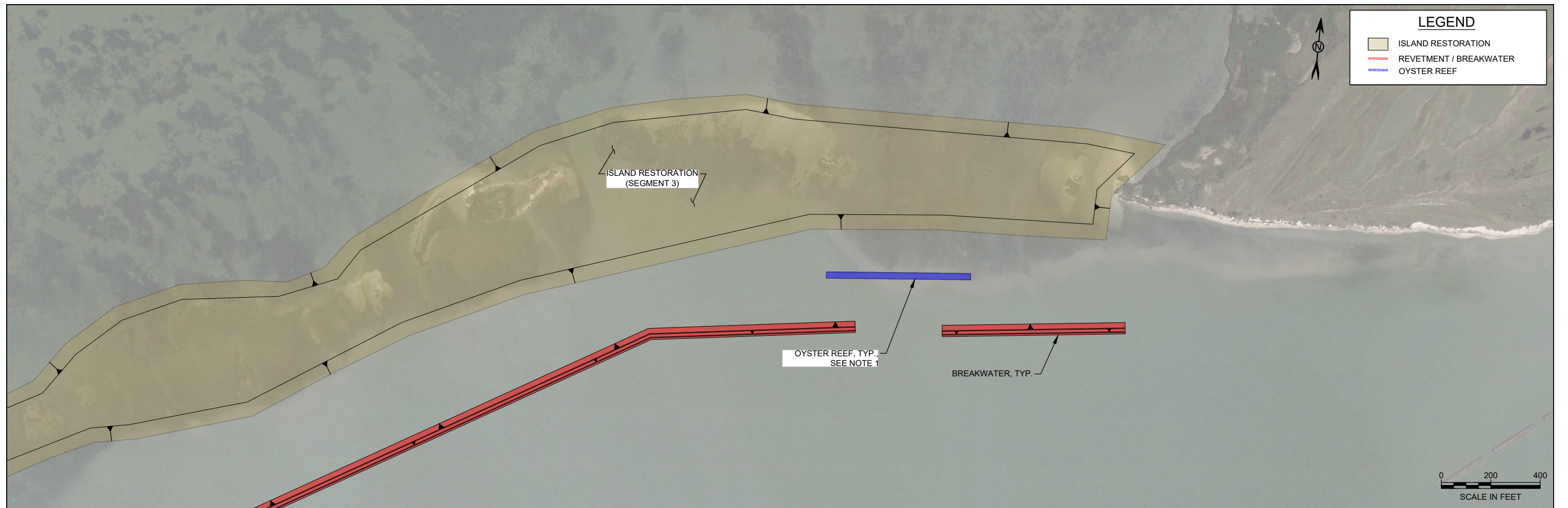
SP-1: REDFISH BAY PROTECTION & ENHANCEMENT

**COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY**

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ENGINEERING APPENDIX  
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 MOTT MACDONALD





**NOTES:**

1. OYSTER CULCH TO BE PLACED WITHIN OYSTER REEF TEMPLATE. FINAL ELEVATION AND SLOPES OF OYSTER CULCH PLACEMENT TO BE DETERMINED DURING FINAL DESIGN.
2. ALL ELEVATIONS IN FEET NAVD88.
3. VARY SLOPE OF BREAKWATER TOE SO THAT STONE IS PLACED WITHIN THE 46.0' WIDE BREAKWATER TEMPLATE.
4. DATUMS FROM NOAA GAGE 8775237, PORT ARANSAS TX

SP-1: REDFISH BAY PROTECTION & ENHANCEMENT

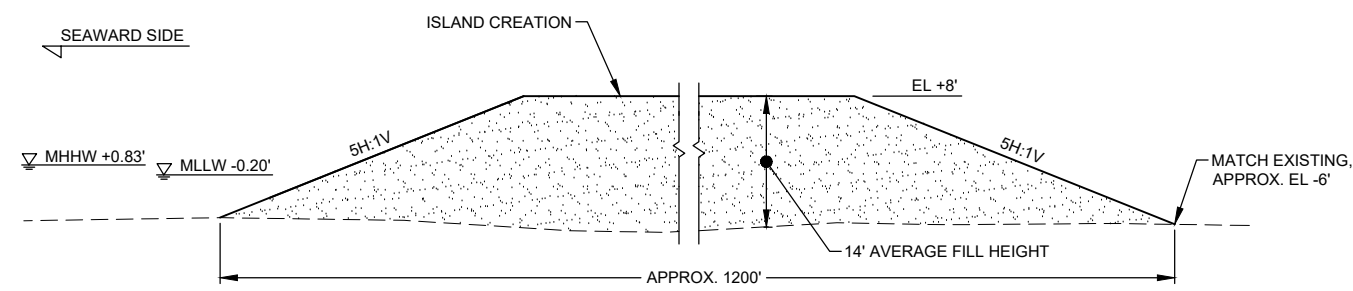
**COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY**

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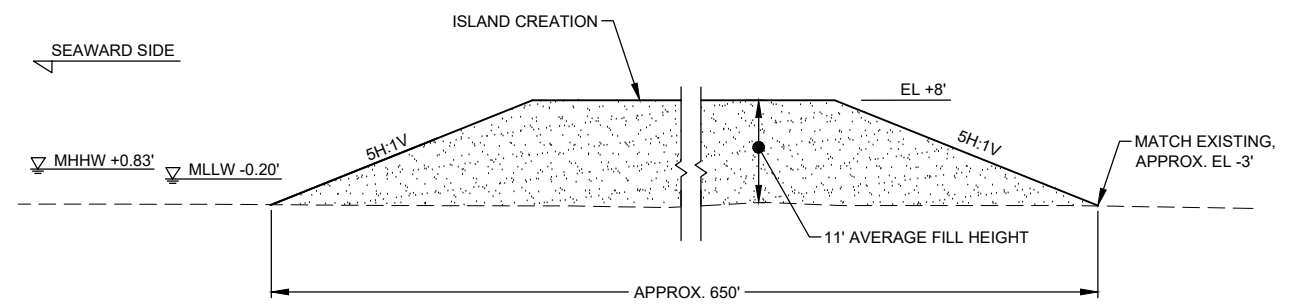
U.S. ARMY ENGINEER DISTRICT, GALVESTON, TEXAS

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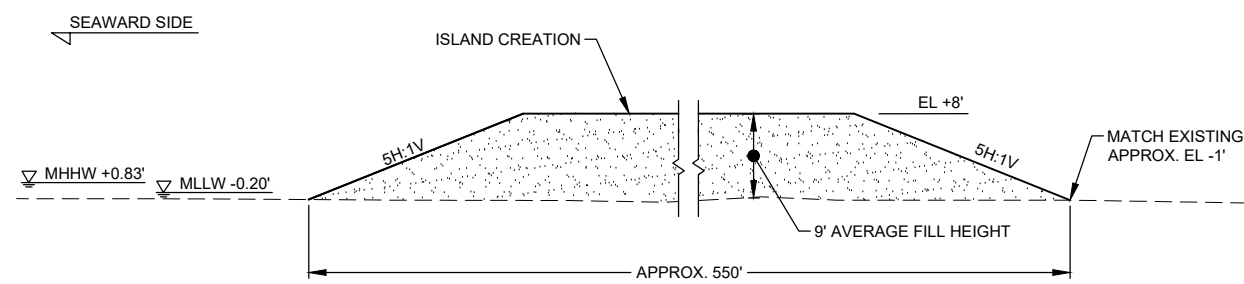
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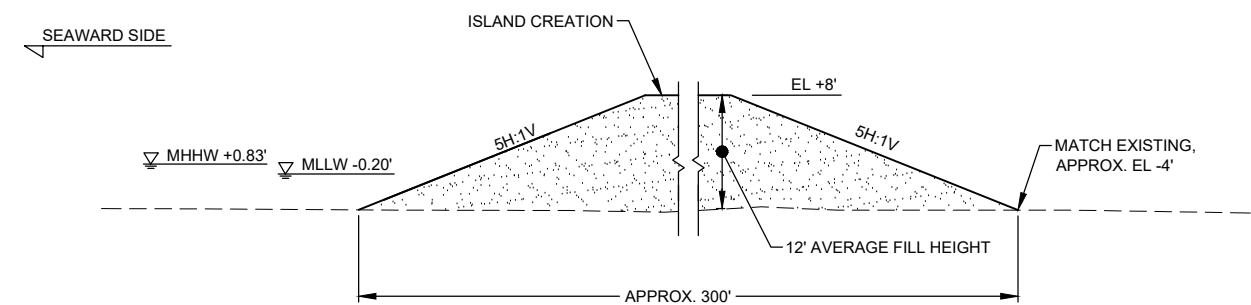
**SP-1 - ISLAND RESTORATION (SEGMENT 1)**  
TYPICAL SECTION



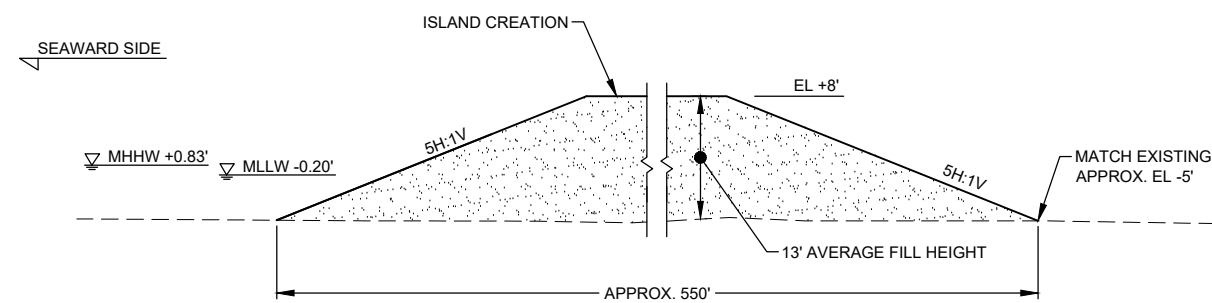
**SP-1 - ISLAND RESTORATION (SEGMENT 4)**  
TYPICAL SECTION



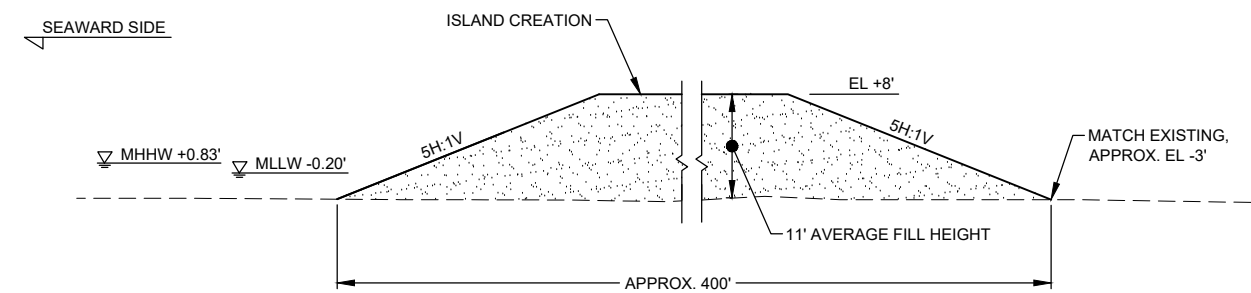
**SP-1 - ISLAND RESTORATION (SEGMENT 2)**  
TYPICAL SECTION



**SP-1 - ISLAND RESTORATION (SEGMENT 5)**  
TYPICAL SECTION



**SP-1 - ISLAND RESTORATION (SEGMENT 3)**  
TYPICAL SECTION



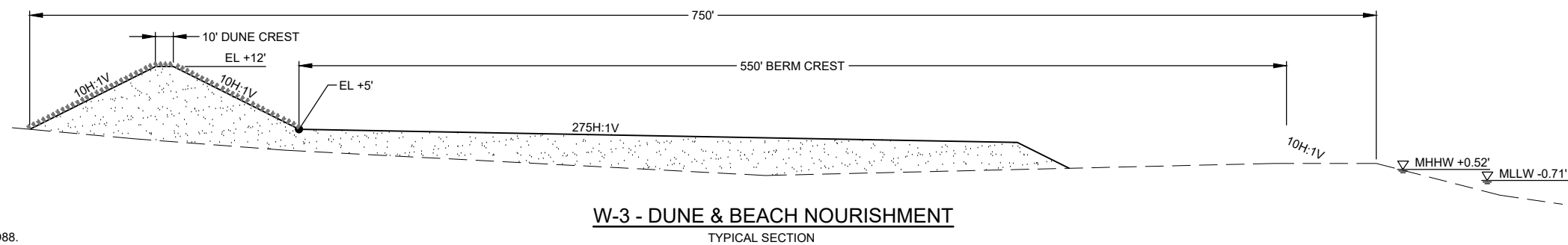
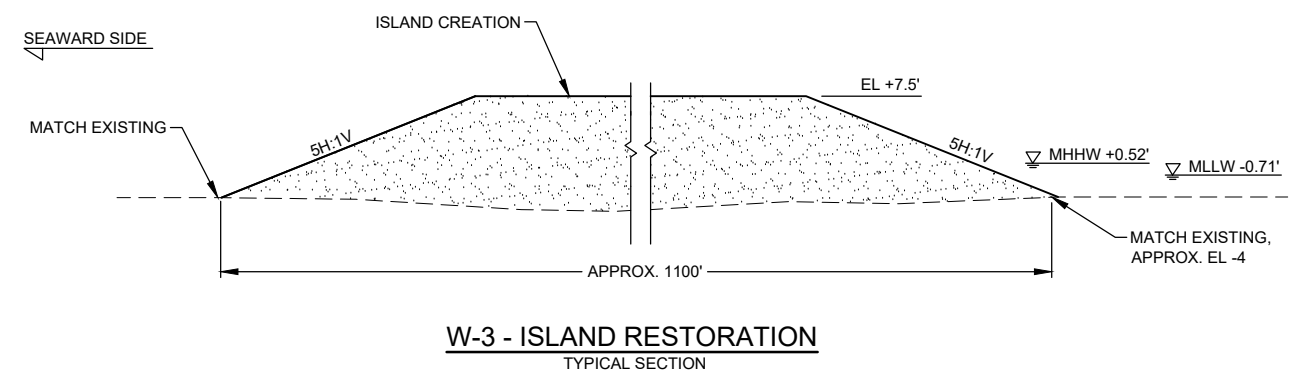
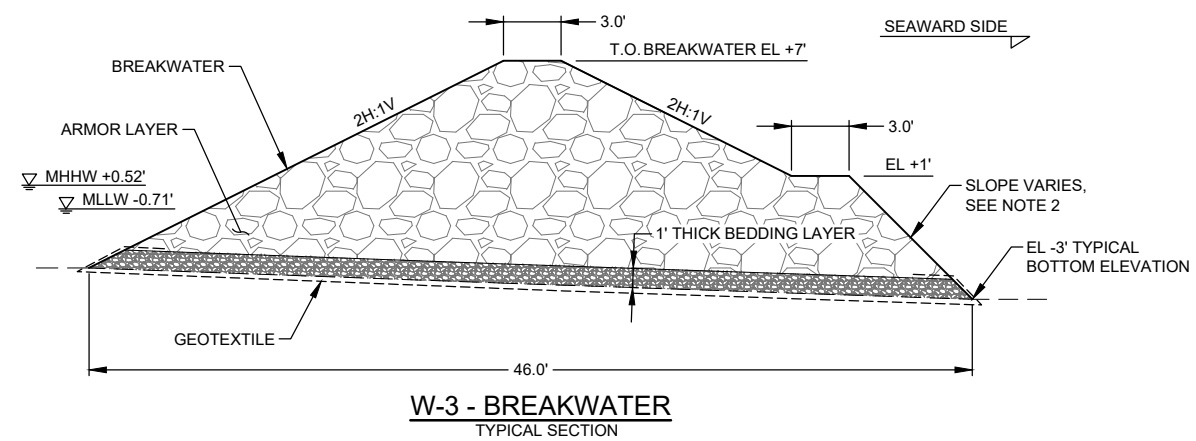
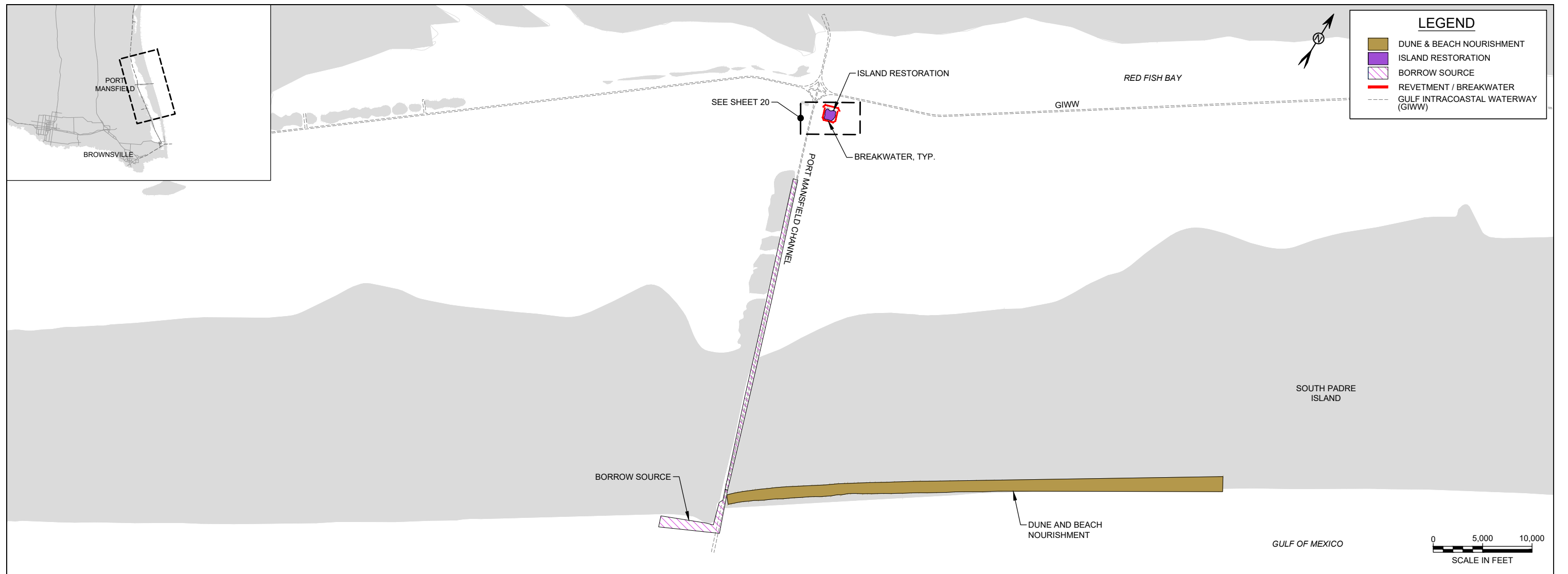
**SP-1 - ISLAND RESTORATION (SEGMENT 6)**  
TYPICAL SECTION

**NOTES:**

1. ALL ELEVATIONS IN FEET NAVD88.
2. DATUMS FROM NOAA GAGE 8775237, PORT ARANSAS TX

<p>SP-1: REDFISH BAY PROTECTION &amp; ENHANCEMENT</p> <p>COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY</p> <p>U.S. ARMY ENGINEER DISTRICT, GALVESTON, TEXAS</p> <p>ENGINEERING APPENDIX</p> <p>DATED: JULY 28, 2020</p> <p>MOTT MACDONALD</p>
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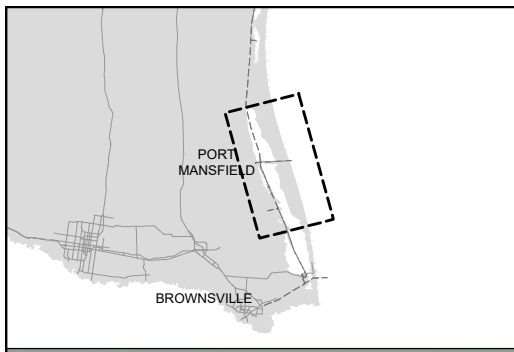
**NOTES:**

1. ALL ELEVATIONS IN FEET NAVD88.
2. VARY SLOPE OF BREAKWATER TOE SO THAT STONE IS PLACED WITHIN THE 46.0' WIDE BREAKWATER TEMPLATE.
3. DATUMS FROM NOAA GAGE 8779770, PORT ISABEL TX

W-3: PORT MANSFIELD CHANNEL, ISLAND ROOKERY & HYDROLOGIC RESTORATION  
COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY

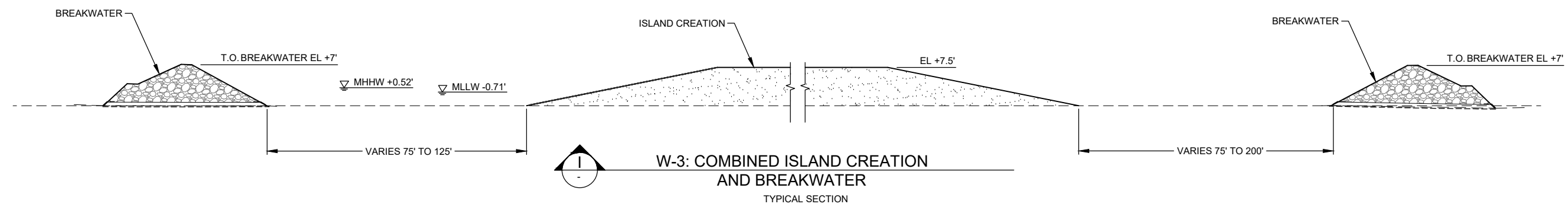
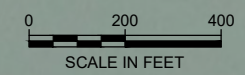
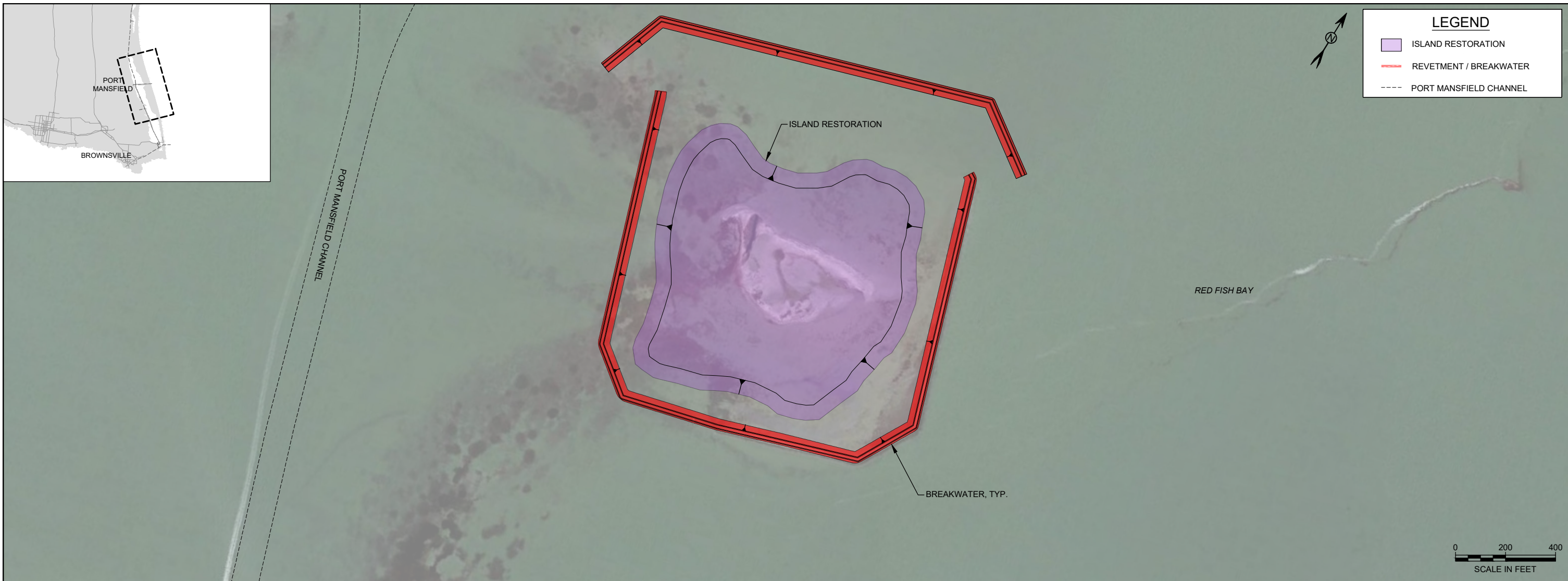
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**LEGEND**

- ISLAND RESTORATION
- REVETMENT / BREAKWATER
- PORT MANSFIELD CHANNEL



- NOTES:**
1. ALL ELEVATIONS IN FEET NAVD88.
  2. VARY SLOPE OF BREAKWATER TOE SO THAT STONE IS PLACED WITHIN THE 46.0' WIDE BREAKWATER TEMPLATE.
  3. DATUMS FROM NOAA GAGE 8779770, PORT ISABEL TX

W-3: PORT MANSFIELD CHANNEL, ISLAND ROOKERY & HYDROLOGIC RESTORATION

**COASTAL TEXAS PROTECTION AND RESTORATION FEASIBILITY STUDY**

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