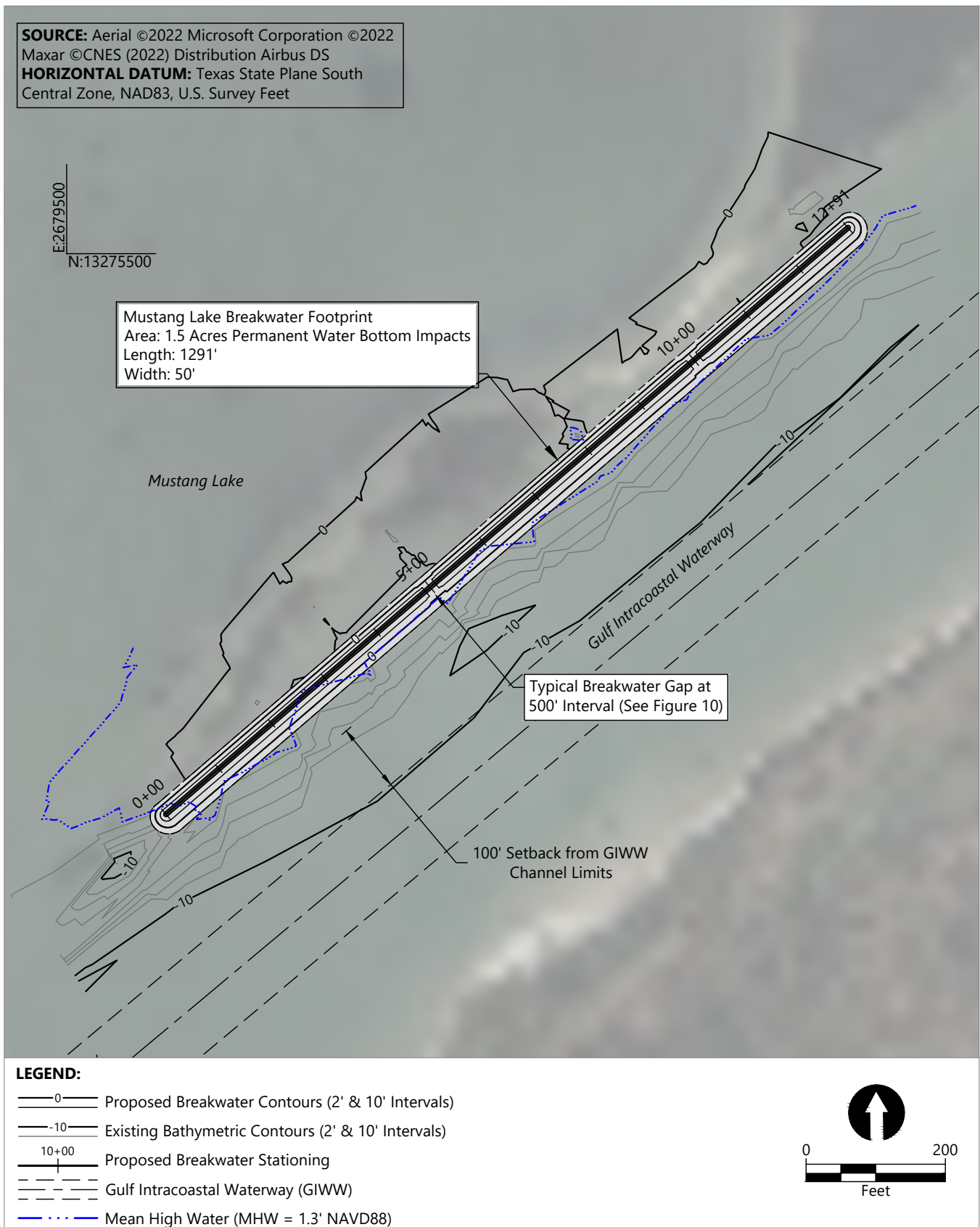


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Filepath: K:\Projects\0737-Coastal Bend Bays and Estuaries Project\GIWW Shoreline Protection at Aransas NWR\0737-PMT-002 (GIWW-Vicinity).dwg | Figure 1



Figure 1
Vicinity Map

Protection of the GIWW Shoreline at the Aransas National Wildlife Refuge
Coastal Bend Bays & Estuaries Program



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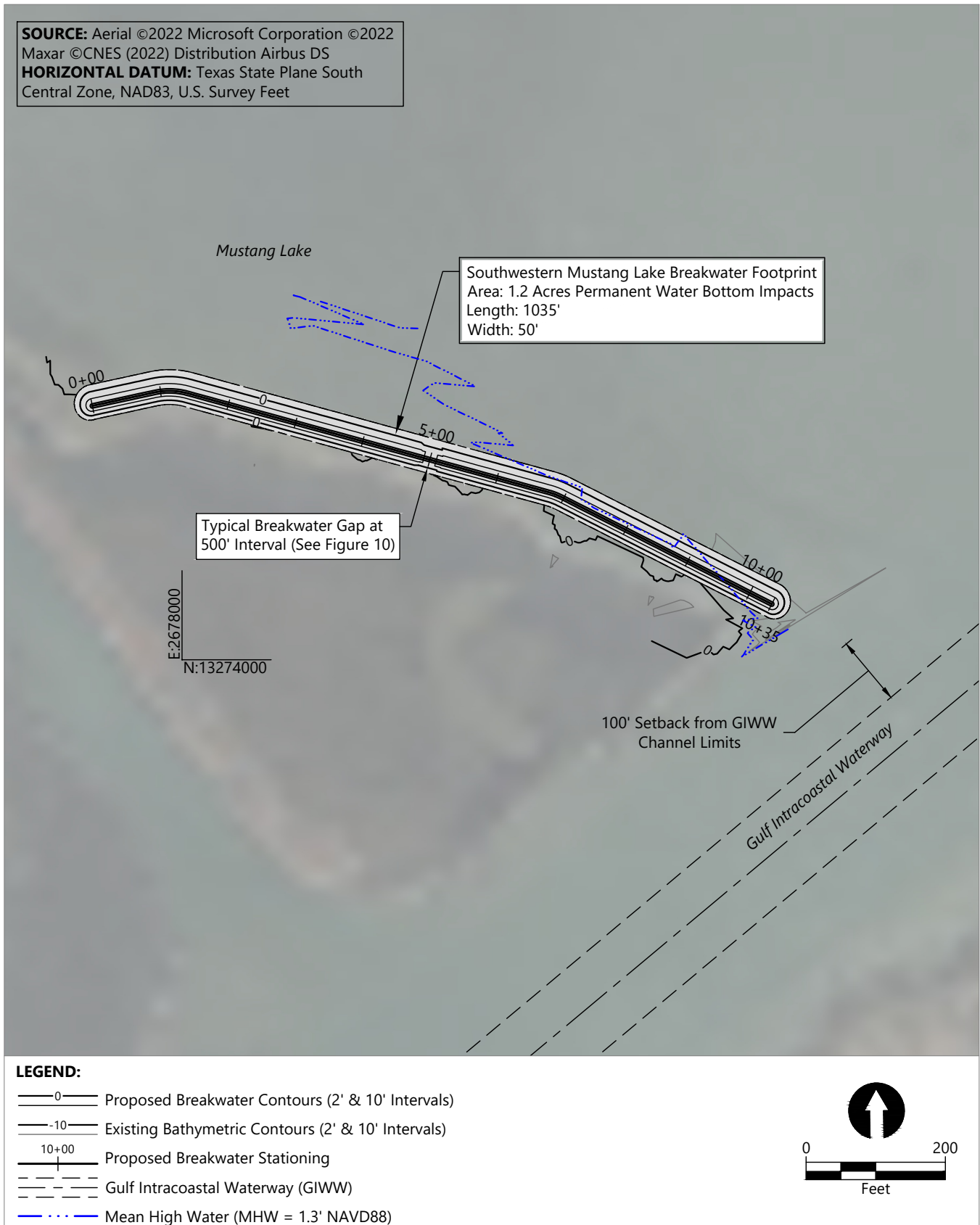
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Figure 2
Proposed Mustang Lake Breakwater

Protection of the GIWW Shoreline at the Aransas National Wildlife Refuge
 Coastal Bend Bays & Estuaries Program

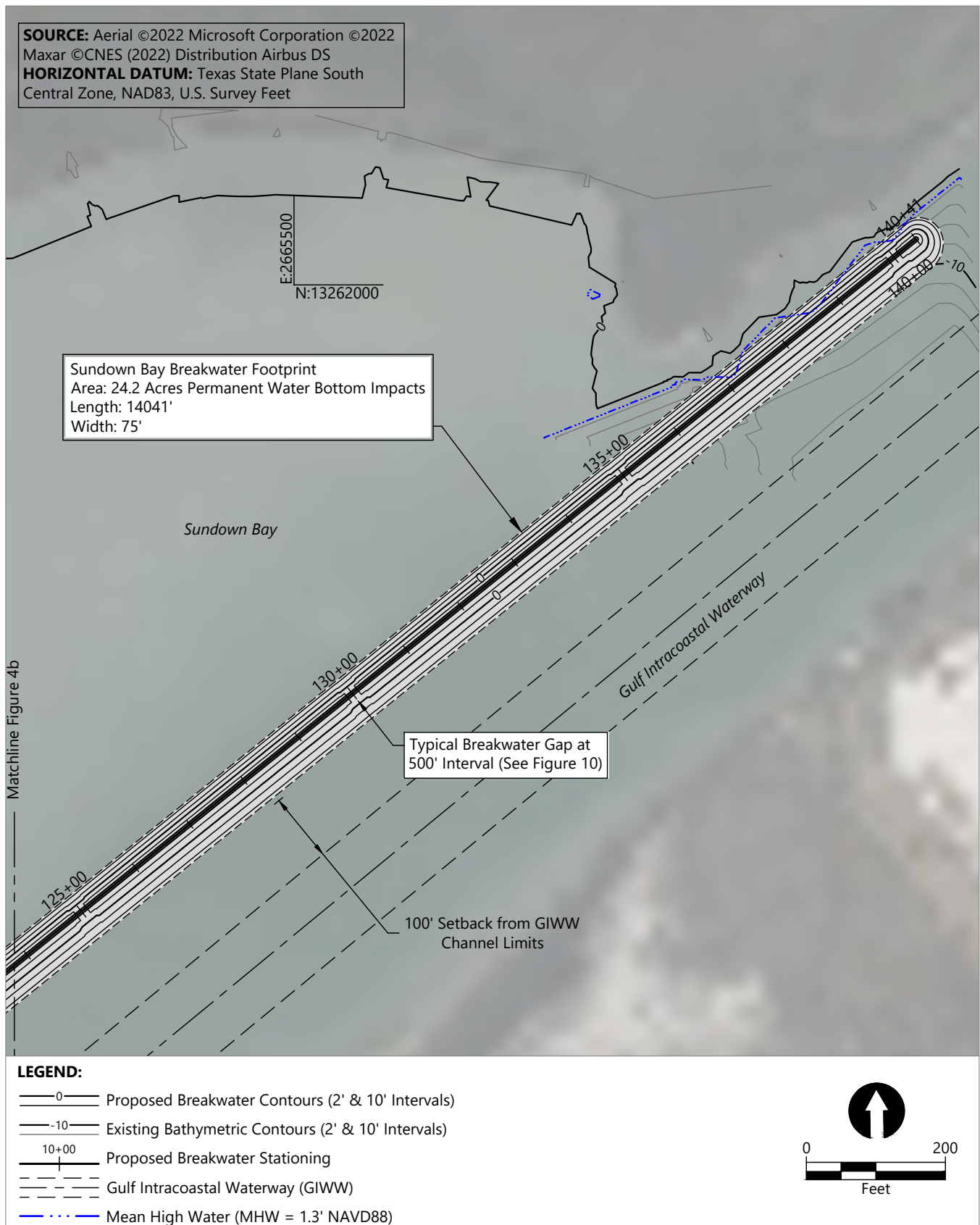
SOURCE: Aerial ©2022 Microsoft Corporation ©2022 Maxar ©CNES (2022) Distribution Airbus DS
HORIZONTAL DATUM: Texas State Plane South Central Zone, NAD83, U.S. Survey Feet



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Figure 3
Proposed Southwestern Mustang Lake Breakwater
 Protection of the GIWW Shoreline at the Aransas National Wildlife Refuge
 Coastal Bend Bays & Estuaries Program

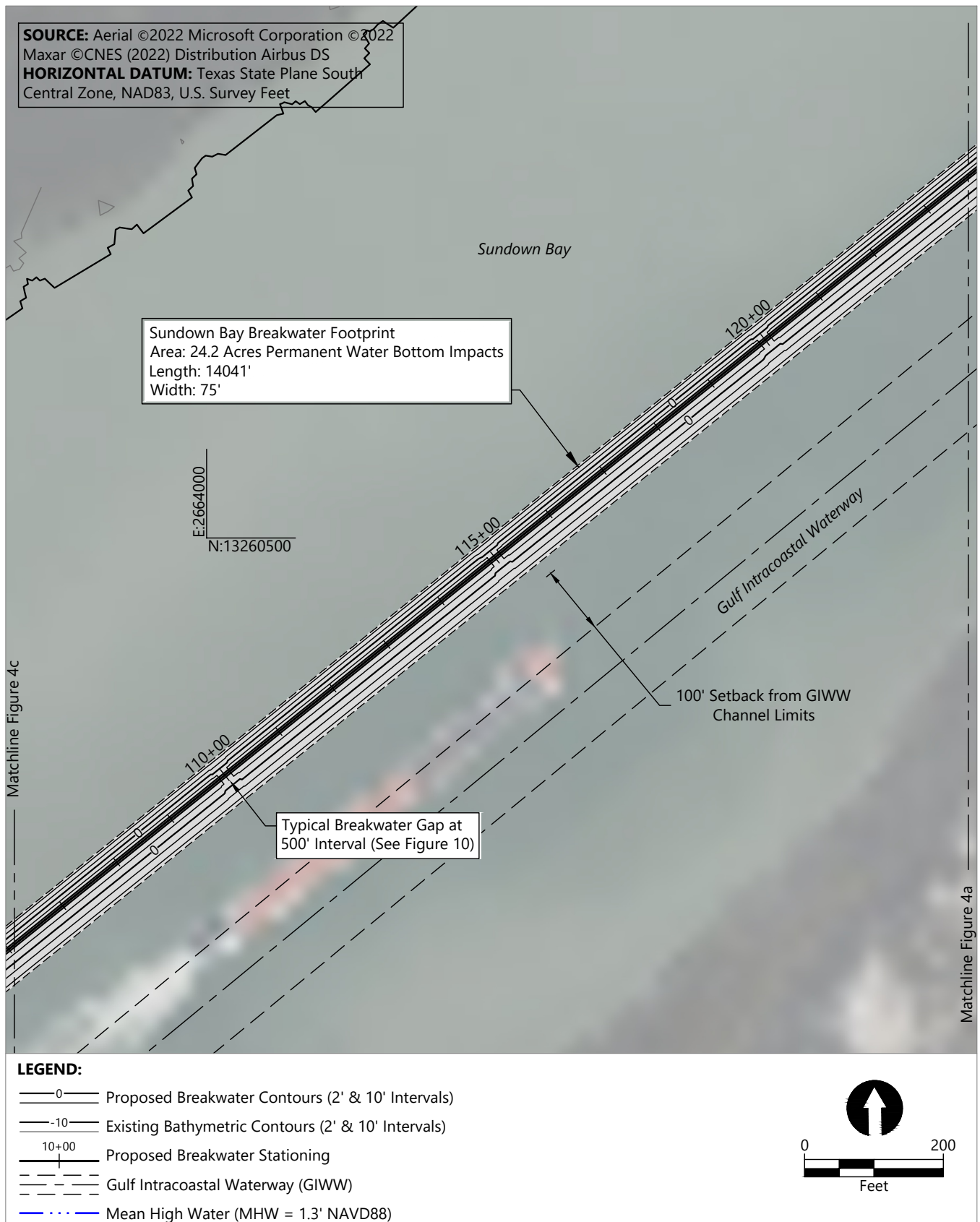


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Figure 4a
Proposed Southwest Sundown Bay Breakwater

Protection of the GIWW Shoreline at the Aransas National Wildlife Refuge
 Coastal Bend Bays & Estuaries Program

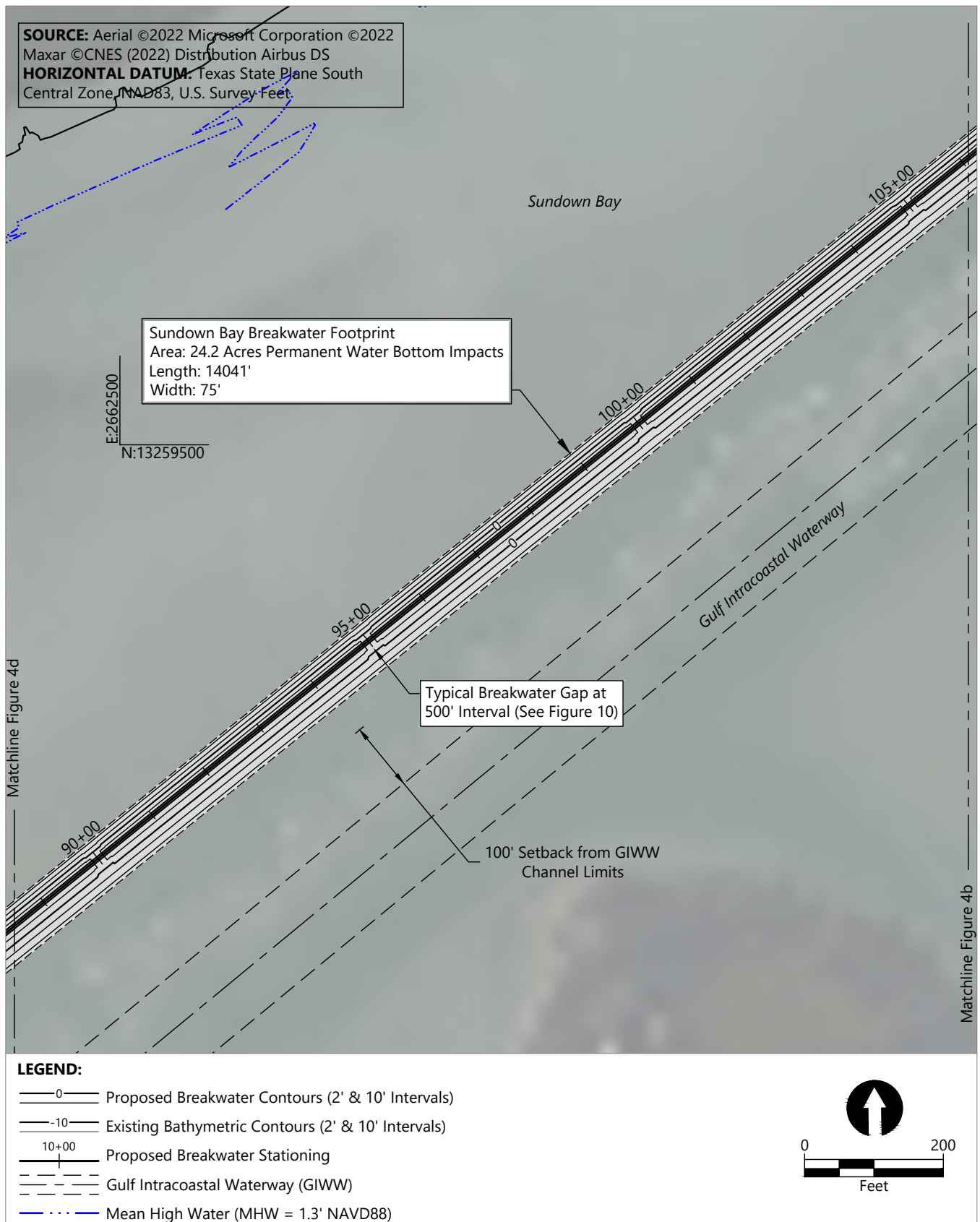


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Figure 4b
Proposed Southwest Sundown Bay Breakwater

Protection of the GIWW Shoreline at the Aransas National Wildlife Refuge
 Coastal Bend Bays & Estuaries Program

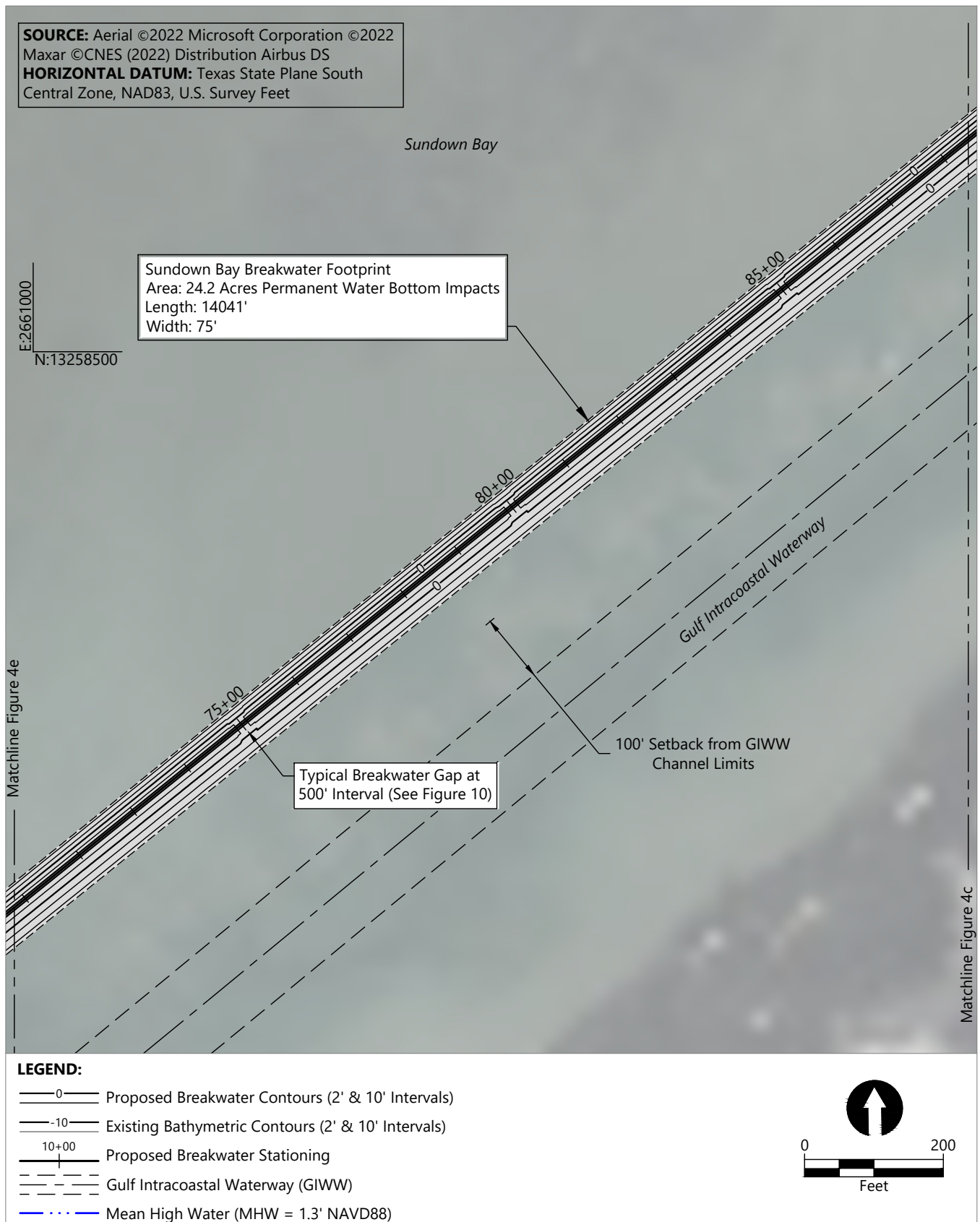


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 Filepath: K:\Projects\0737-Coastal Bend Bays and Estuaries Project\GIWW Shoreline Protection at Aransas NWR\0737-PMT-001 (GIWW BWTRS).dwg | Figure 4c



Figure 4c
Proposed Southwest Sundown Bay Breakwater

Protection of the GIWW Shoreline at the Aransas National Wildlife Refuge
 Coastal Bend Bays & Estuaries Program

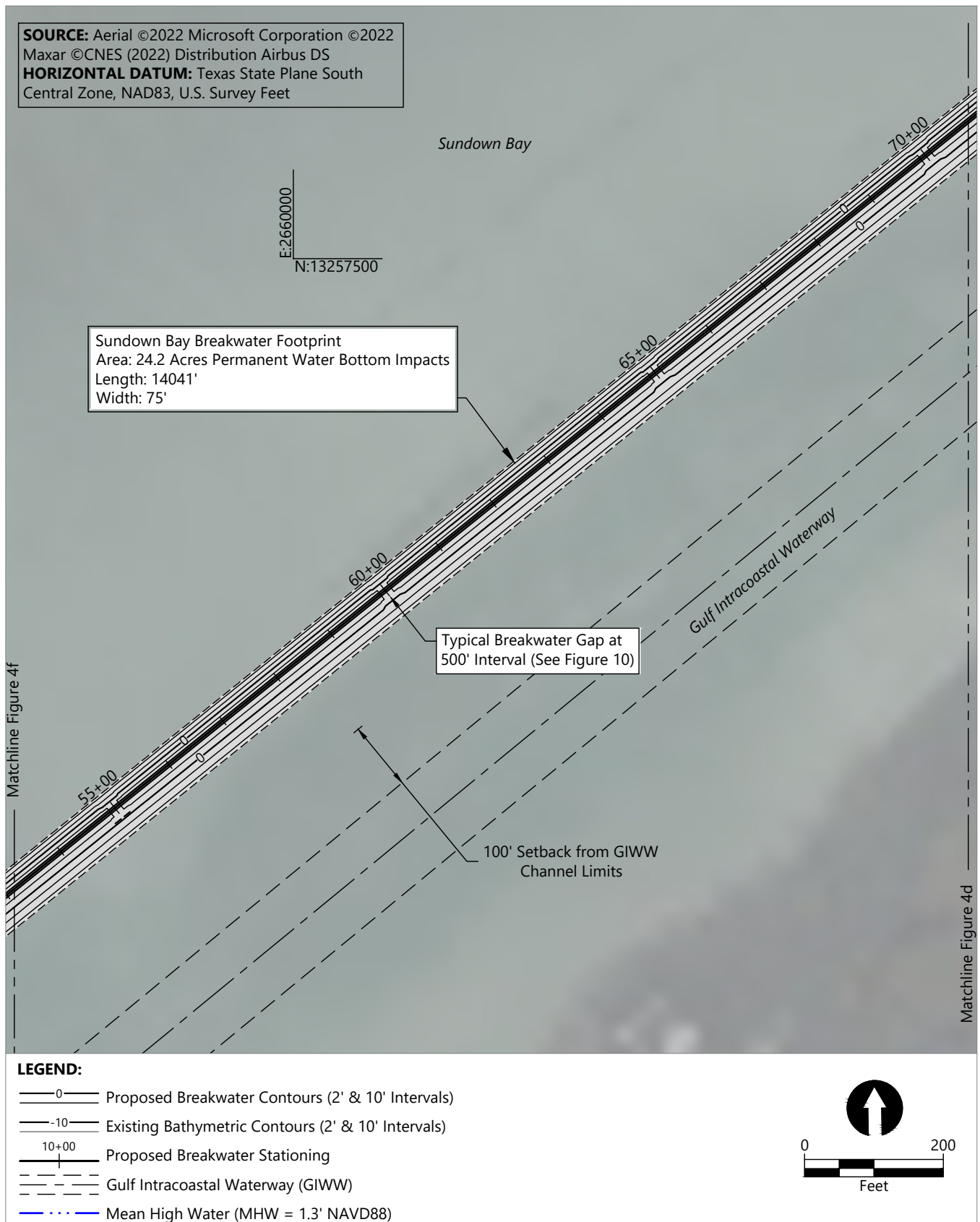


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Figure 4d
Proposed Southwest Sundown Bay Breakwater

Protection of the GIWW Shoreline at the Aransas National Wildlife Refuge
 Coastal Bend Bays & Estuaries Program

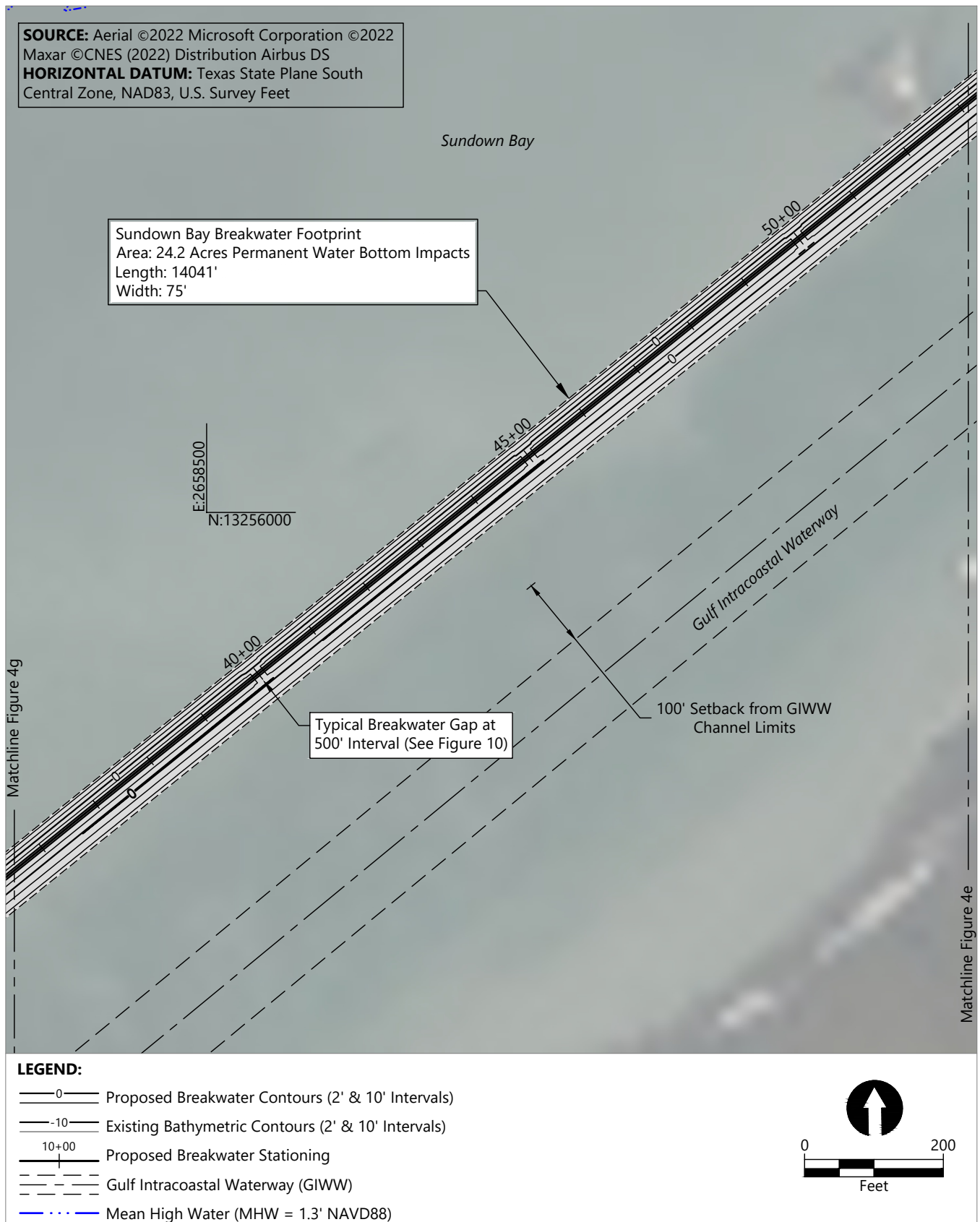


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 Filepath: K:\Projects\0737-Coastal Bend Bays and Estuaries Project\GIWW Shoreline Protection at Aransas NWR\0737-PMT-001 (GIWW BWTRS).dwg | Figure 4e



Figure 4e
Proposed Southwest Sundown Bay Breakwater

Protection of the GIWW Shoreline at the Aransas National Wildlife Refuge
 Coastal Bend Bays & Estuaries Program

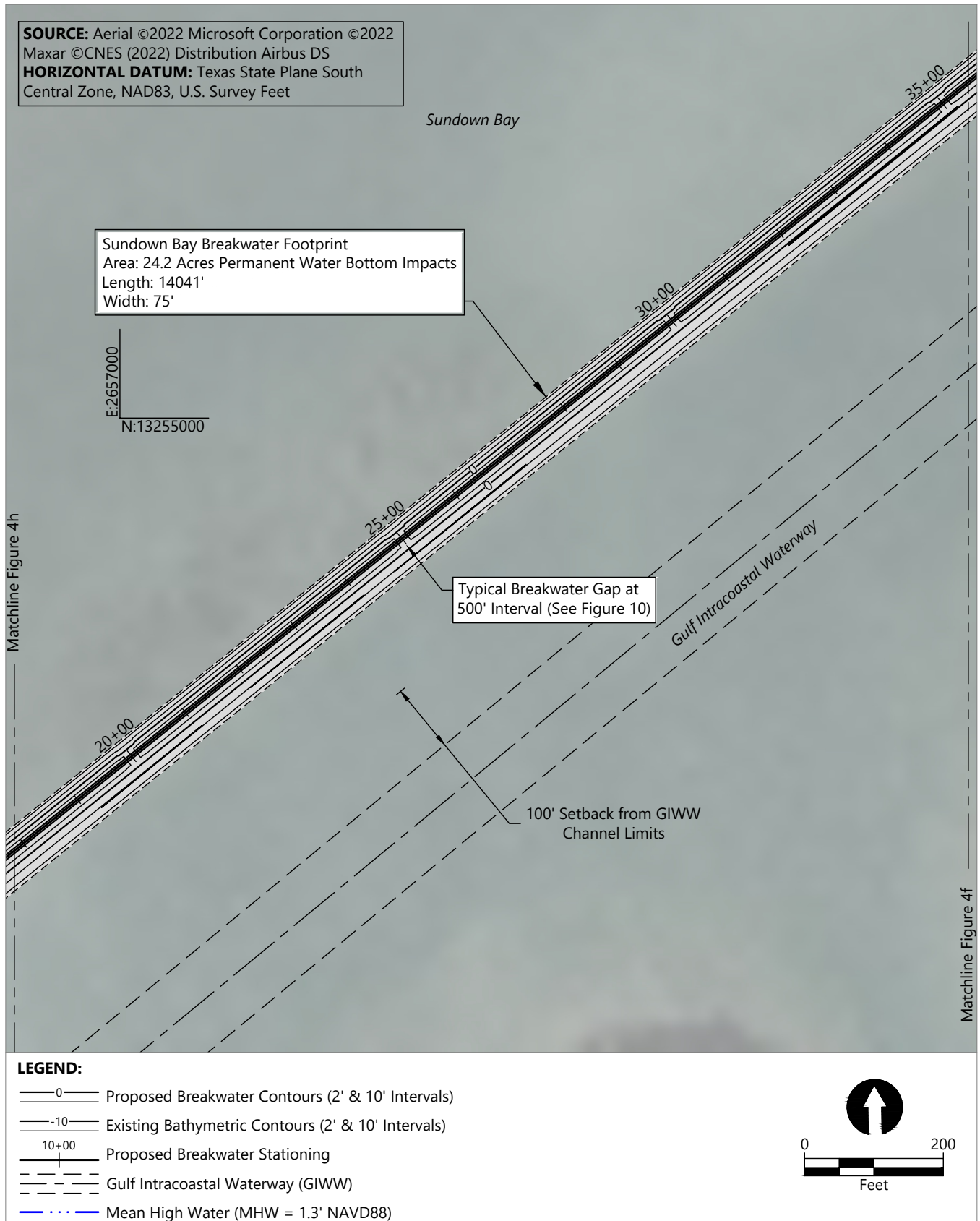


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Figure 4f
Proposed Southwest Sundown Bay Breakwater

Protection of the GIWW Shoreline at the Aransas National Wildlife Refuge
 Coastal Bend Bays & Estuaries Program

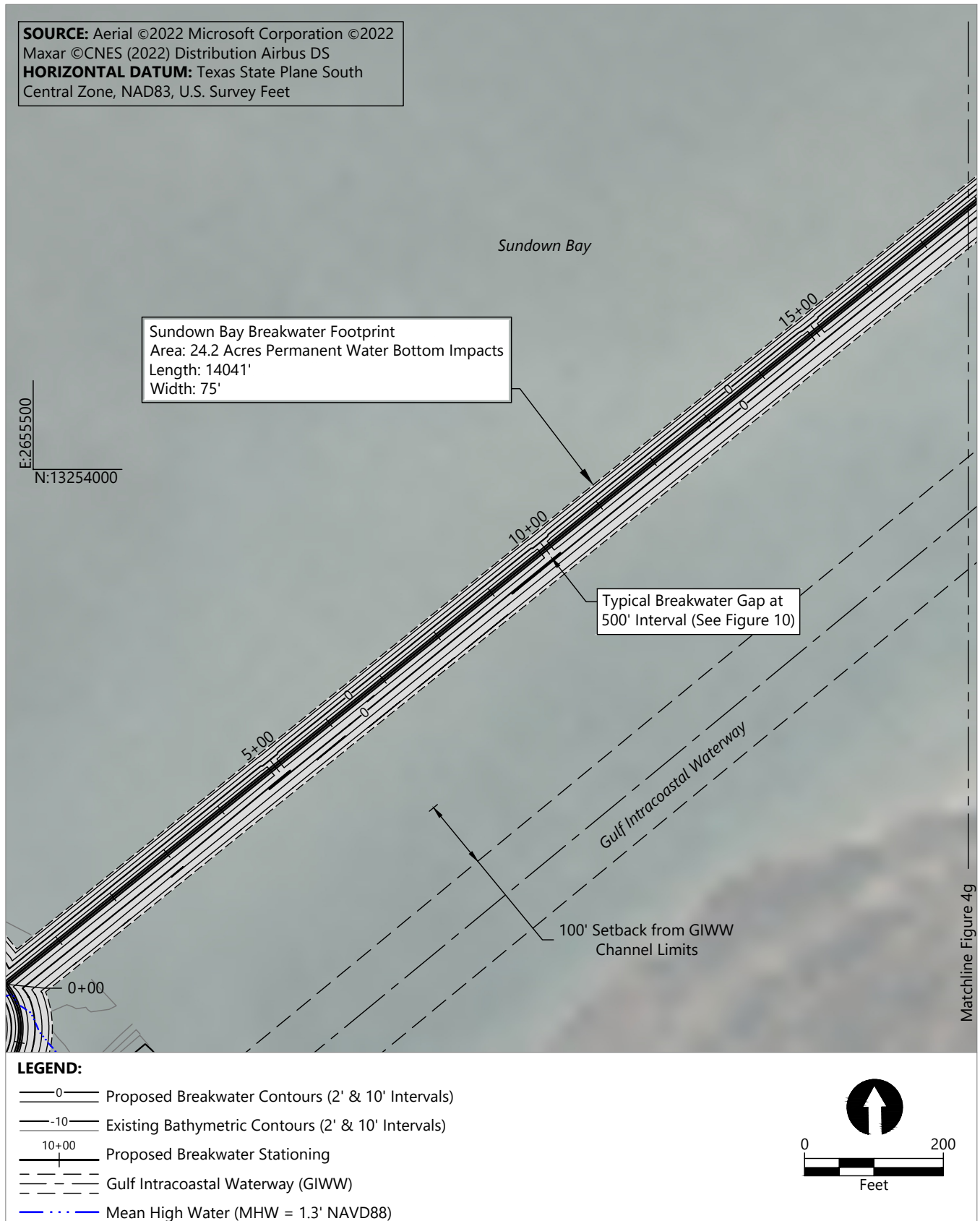


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Figure 4g
Proposed Southwest Sundown Bay Breakwater

Protection of the GIWW Shoreline at the Aransas National Wildlife Refuge
 Coastal Bend Bays & Estuaries Program

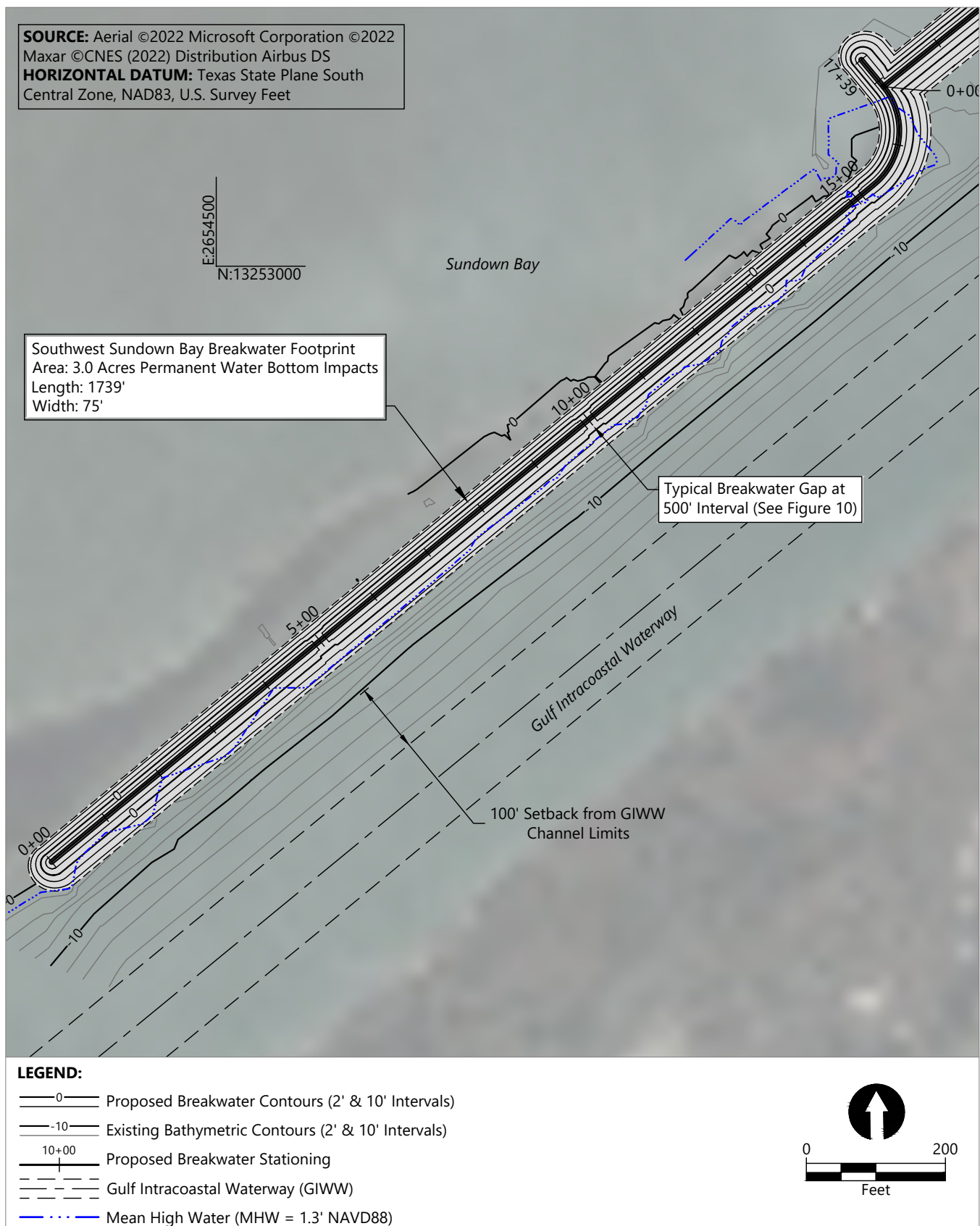


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Figure 4h
Proposed Southwest Sundown Bay Breakwater

Protection of the GIWW Shoreline at the Aransas National Wildlife Refuge
 Coastal Bend Bays & Estuaries Program



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Figure 5
Proposed Southwest Sundown Bay Breakwater

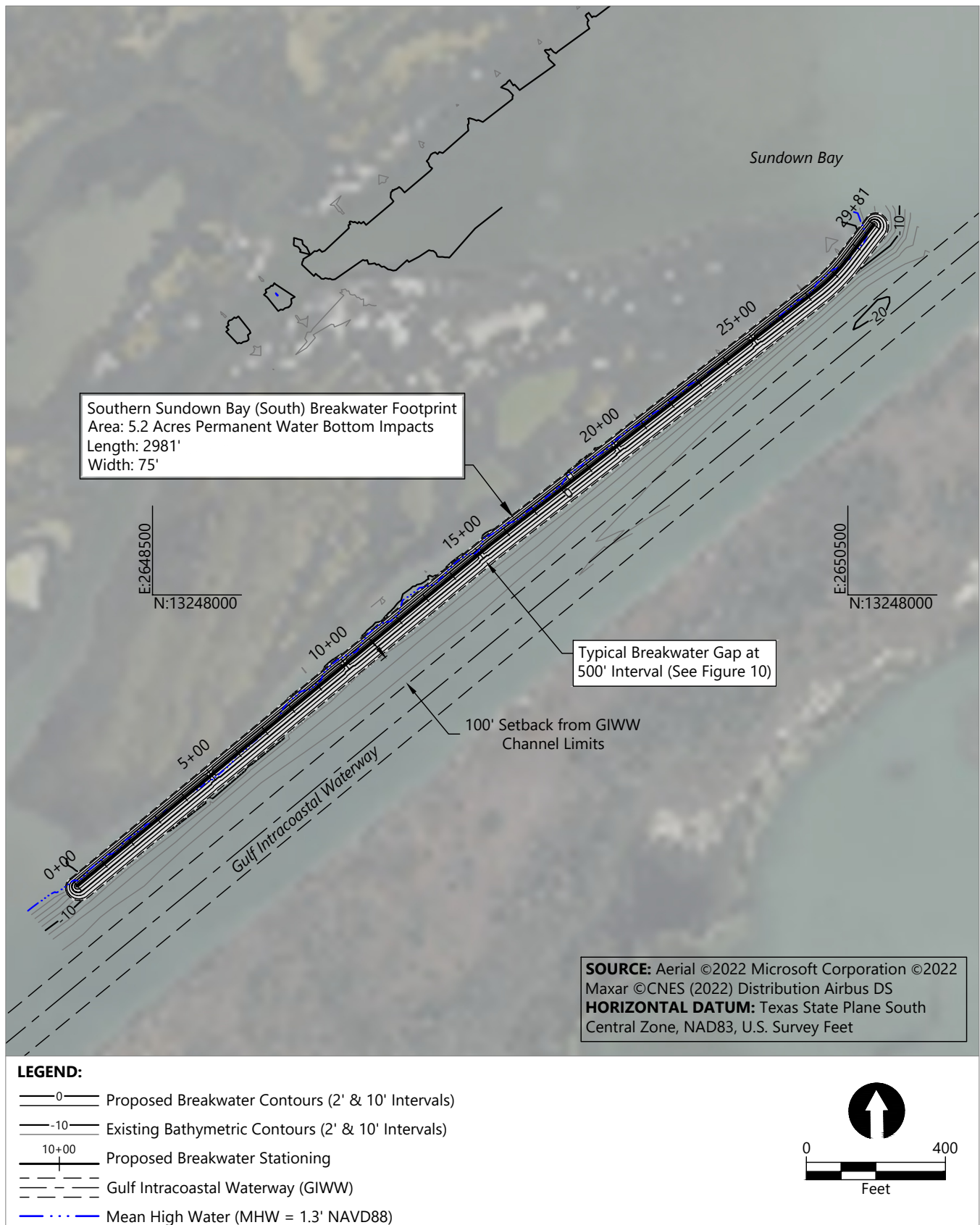
Protection of the GIWW Shoreline at the Aransas National Wildlife Refuge
 Coastal Bend Bays & Estuaries Program

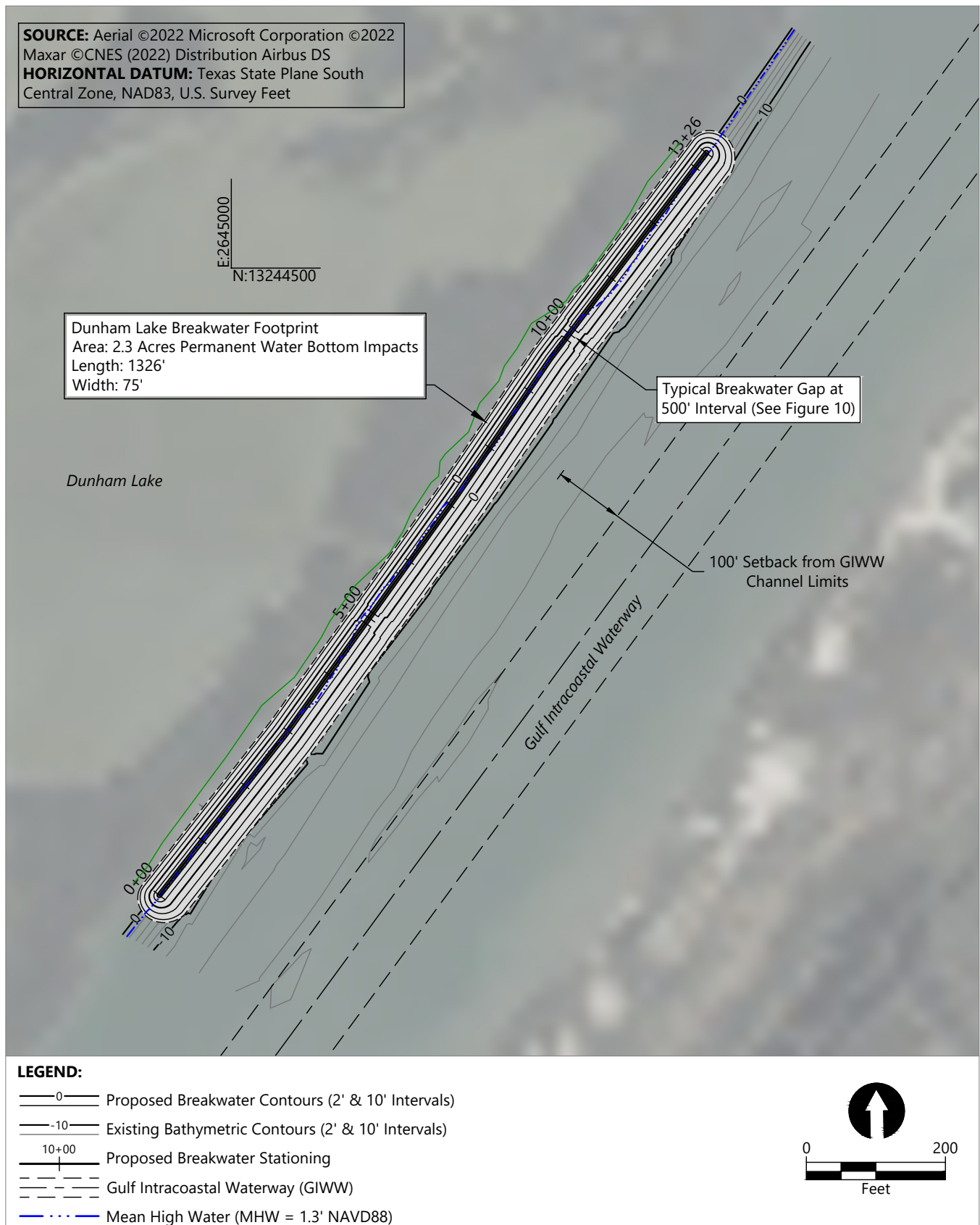


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Filepath: K:\Projects\0737-Coastal Bend Bays and Estuaries Project\GIWW Shoreline Protection at Aransas NWR\0737-PMT-001 (GIWW BWTRS).dwg | Figure 6



Figure 6
Proposed Southern Sundown Bay (North) Breakwater
Protection of the GIWW Shoreline at the Aransas National Wildlife Refuge
Coastal Bend Bays & Estuaries Program





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Figure 8
Proposed Dunham Lake Breakwater

Protection of the GIWW Shoreline at the Aransas National Wildlife Refuge
 Coastal Bend Bays & Estuaries Program

SOURCE: Aerial ©2022 Microsoft Corporation ©2022 Maxar ©CNES (2022) Distribution Airbus DS
HORIZONTAL DATUM: Texas State Plane South Central Zone, NAD83, U.S. Survey Feet

Southern ANWR Boundary Breakwater Footprint
 Area: 2.4 Acres Permanent Water Bottom Impacts
 Length: 1405'
 Width: 75'

Typical Breakwater Gap at 500' Interval (See Figure 10)

E:2641500
 N:13239500

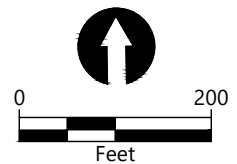
Dunham Bay

100' Setback from GIWW Channel Limits

Gulf Intracoastal Waterway

LEGEND:

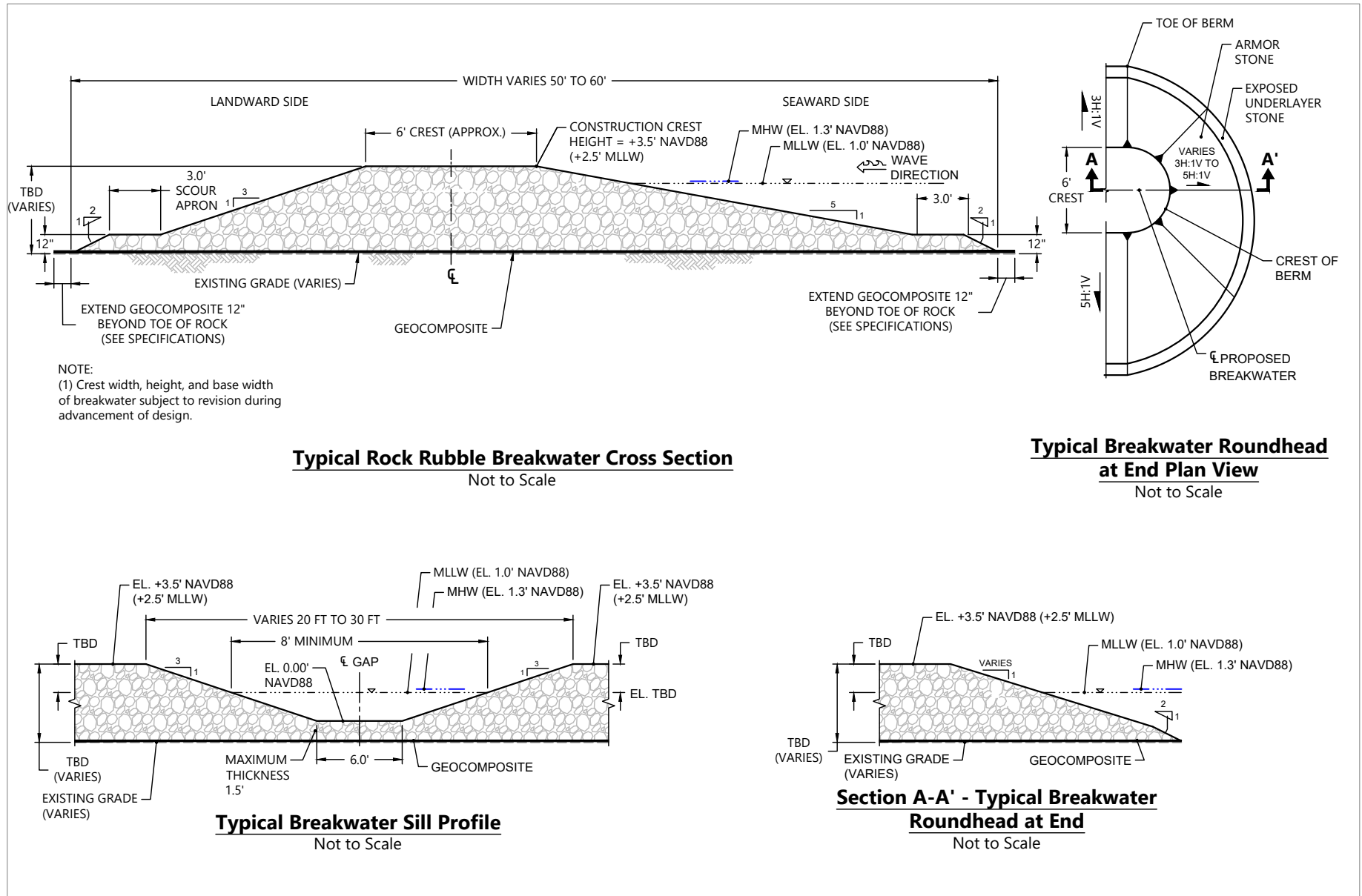
- 0— Proposed Breakwater Contours (2' & 10' Intervals)
- 10— Existing Bathymetric Contours (2' & 10' Intervals)
- 10+00 Proposed Breakwater Stationing
- Gulf Intracoastal Waterway (GIWW)
- · · — Mean High Water (MHW = 1.3' NAVD88)



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 Filepath: K:\Projects\0737-Coastal Bend Bays and Estuaries Project\GIWW Shoreline Protection at Aransas NWR\0737-PMT-001 (GIWW BWTRS).dwg | Figure 9



Figure 9
Proposed Southern ANWR Boundary Breakwater
 Protection of the GIWW Shoreline at the Aransas National Wildlife Refuge
 Coastal Bend Bays & Estuaries Program



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 Filepath: K:\Projects\0737-Coastal Bend Bays and Estuaries Project\GIWW Shoreline Protection at Aransas NWR\0737-PMT-003 (GIWW Details).dwg Figure 10



Figure 10
Typical Rock Rubble Breakwater Details

Protection of the GIWW Shoreline at the Aransas National Wildlife Refuge Permit
 Coastal Bend Bays & Estuaries Program