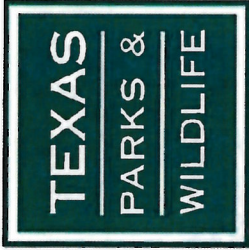


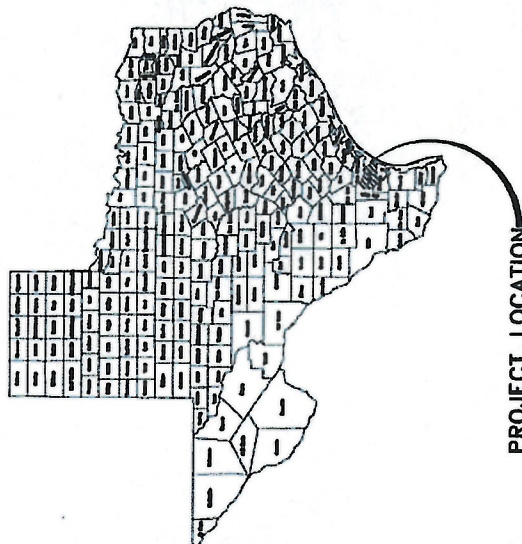
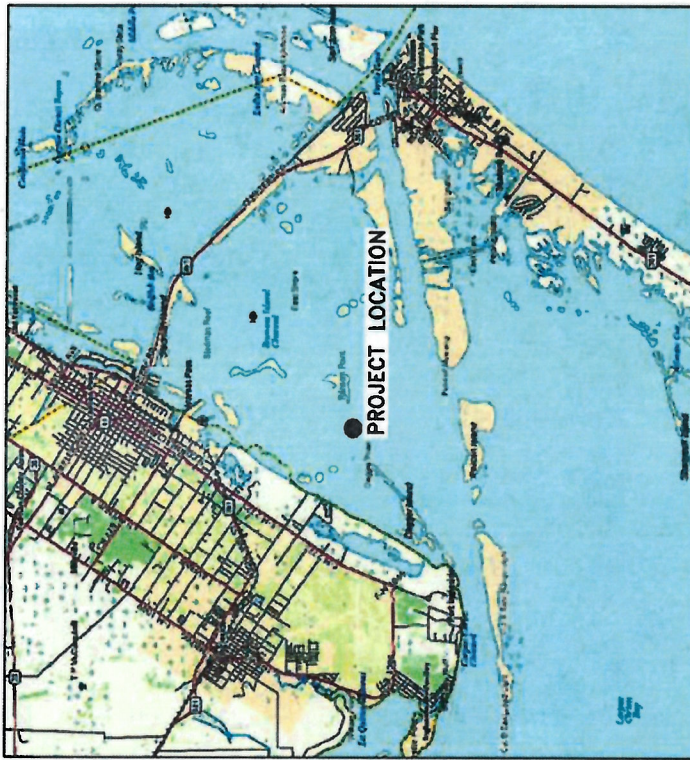
# DAGGER ISLAND PROTECTION & RESTORATION

NUECES COUNTY, TX  
IN COOPERATION WITH  
TEXAS PARKS & WILDLIFE DEPARTMENT  
COASTAL BEND BAYS & ESTUARIES PROGRAM



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**DUCKS UNLIMITED INC.**  
1833 FRESH MEADOWS DRIVE, SUITE E  
HOUSTON, TEXAS 77057  
CORP. REG. 001117 EXPIRES: 9/29/18

PROJECT NO. DU-TX-171-2  
**DAGGER ISLAND  
PROTECTION & RESTORATION**  
COVER SHEET  
SHEET 1 OF 14

**CAUTION:**  
The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.



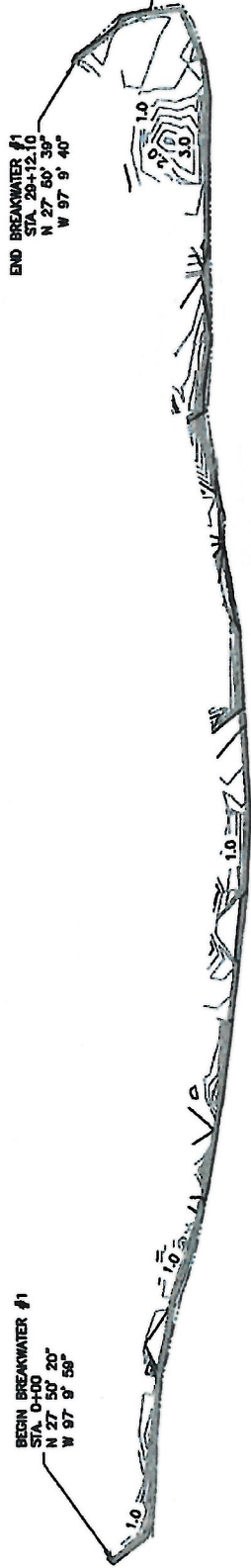


PROJECT NO. DU-TX-171-2  
**DAGGER ISLAND**  
**PROTECTION & RESTORATION**  
 VICINITY MAP  
 SHEET 2 OF 14

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 108 Business Park Drive, Suite E  
 Edgewood, TX 79117  
 PHONE: 817-231-1112 FAX: 817-231-1112

**GENERAL NOTES:**  
 Horizontal survey control is Texas State Plane Coordinates: South Central Zone, NAD83; and Vertical control is NAVD88(Geoid09).  
 Based on NGS OPUS post-processed solution from CORS data collected at autonomous Base position.





END BREAKWATER #1  
STA. 29+12.10  
N 27 50' 39"  
W 97 9' 40"

- LEGEND**
- PROPOSED BREAKWATER
  - EXISTING SEAGRASS BOUNDARY



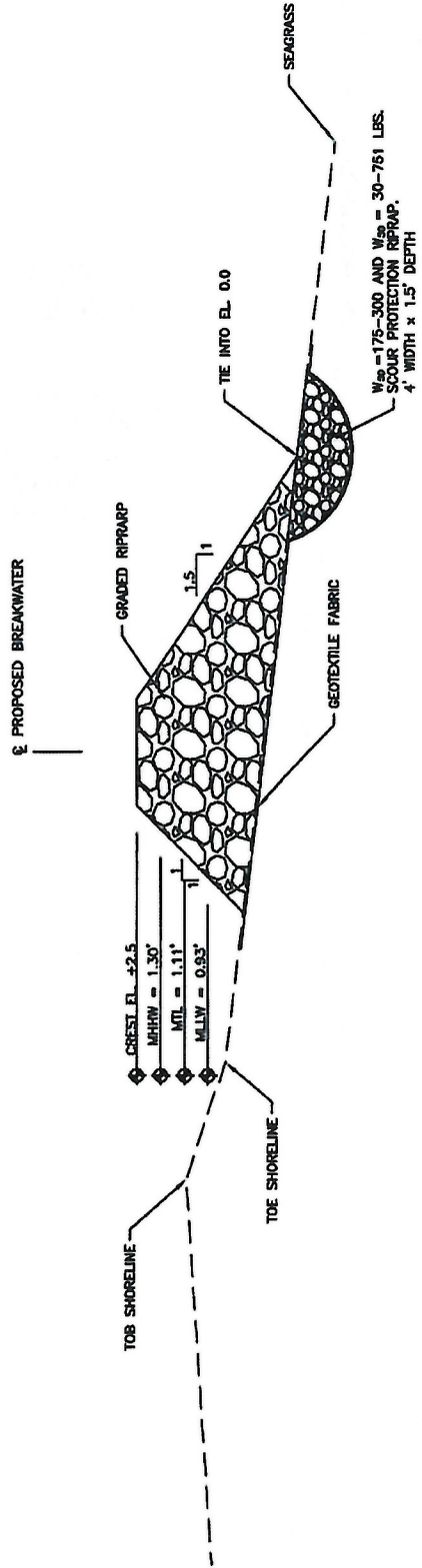
NOTE: SEE SHEETS 5 - 7 OF 14 FOR CROSS SECTIONS

**GENERAL NOTES:**

Horizontal survey control is Texas State Plane Coordinates, South Central Zone, NAD83; and Vertical control is NAVD88(Geoid09). Based on NCS OPUS post-processed solution from CORS data collected at autonomous Base position.

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 E.O.B. MAY 2011 EXPIRES 9/29/16

PROJECT NO. DU-TX-171-2  
**DAGGER ISLAND**  
**PROTECTION & RESTORATION**  
 AREA #1 PLAN VIEW  
 SHEET 3 OF 14



TYPICAL SECTION OF BREAKWATER #1  
NOT TO SCALE

TOTAL AREA #1 QUANTITIES	
AREA #1 NEARSHORE BREAKWATER #1	2,188 TONS 1,465 CUBIC YARDS
AREA #1 SCOUR PROTECTION #1	905 TONS 603 CUBIC YARDS



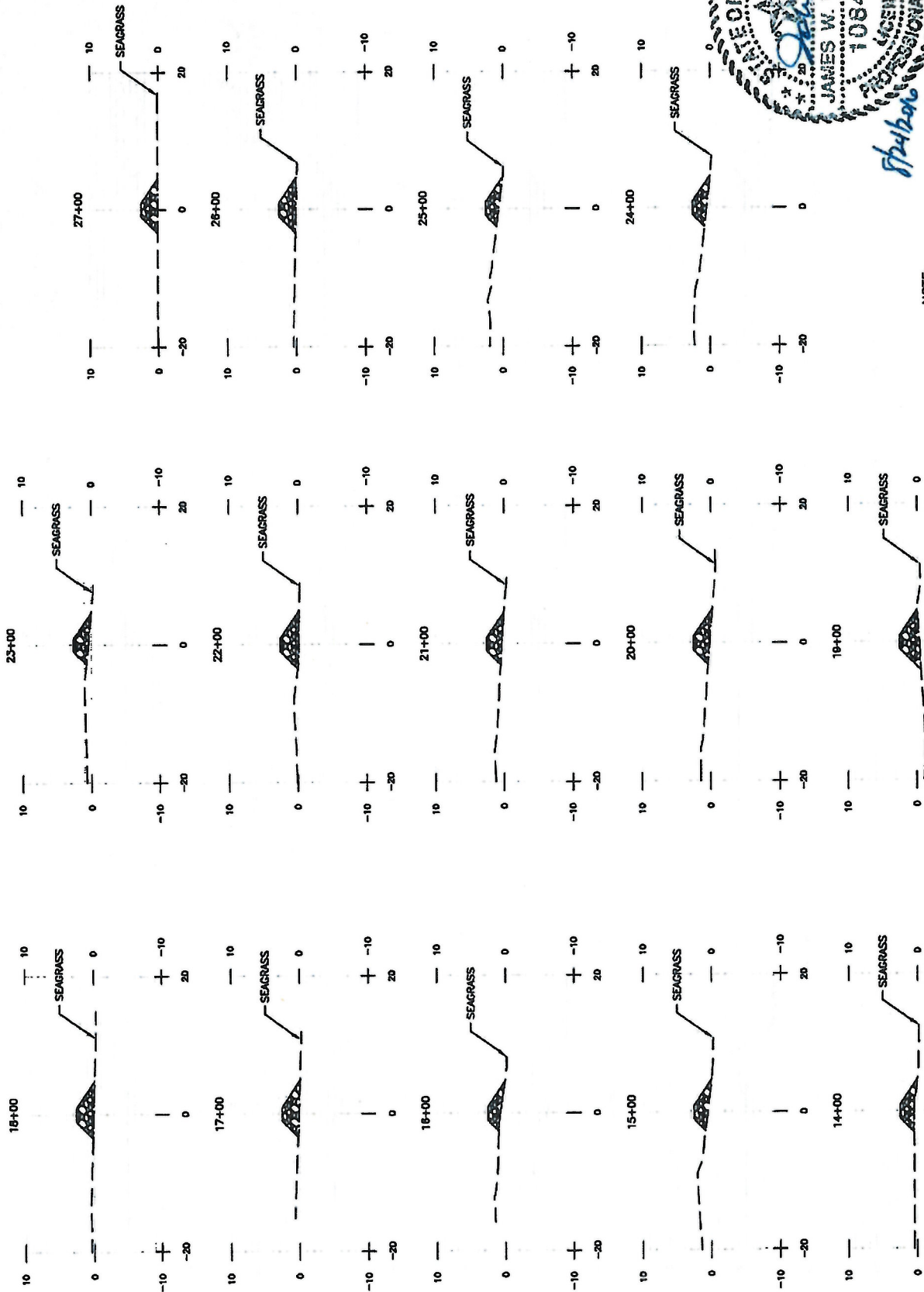
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SOUTHERN REGIONAL OFFICE  
1833 Bushy Branch Park Drive, Suite E  
Killeen, TX 76744 | 800.112.8288 | 9/20/15

PROJECT NO. DU-TX-171-2  
**DAGGER ISLAND PROTECTION & RESTORATION AREA #1 TYPICAL DETAILS**  
SHEET 4 OF 14



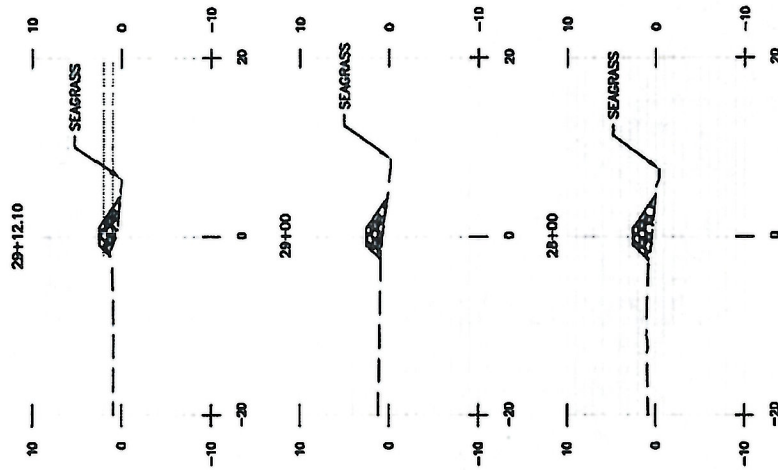


NOTE: TOE SCOUR PROTECTION NOT SHOWN FOR CLARITY.



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**DUCKS UNLIMITED INC.**  
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 Columbus, MS 39211-2299  
 PHONE: 662-921-1112 FAX: 662-921-1115

**DAGGER ISLAND PROTECTION & RESTORATION BREAKWATER #1 CROSS SECTIONS SHEET 6 OF 14**

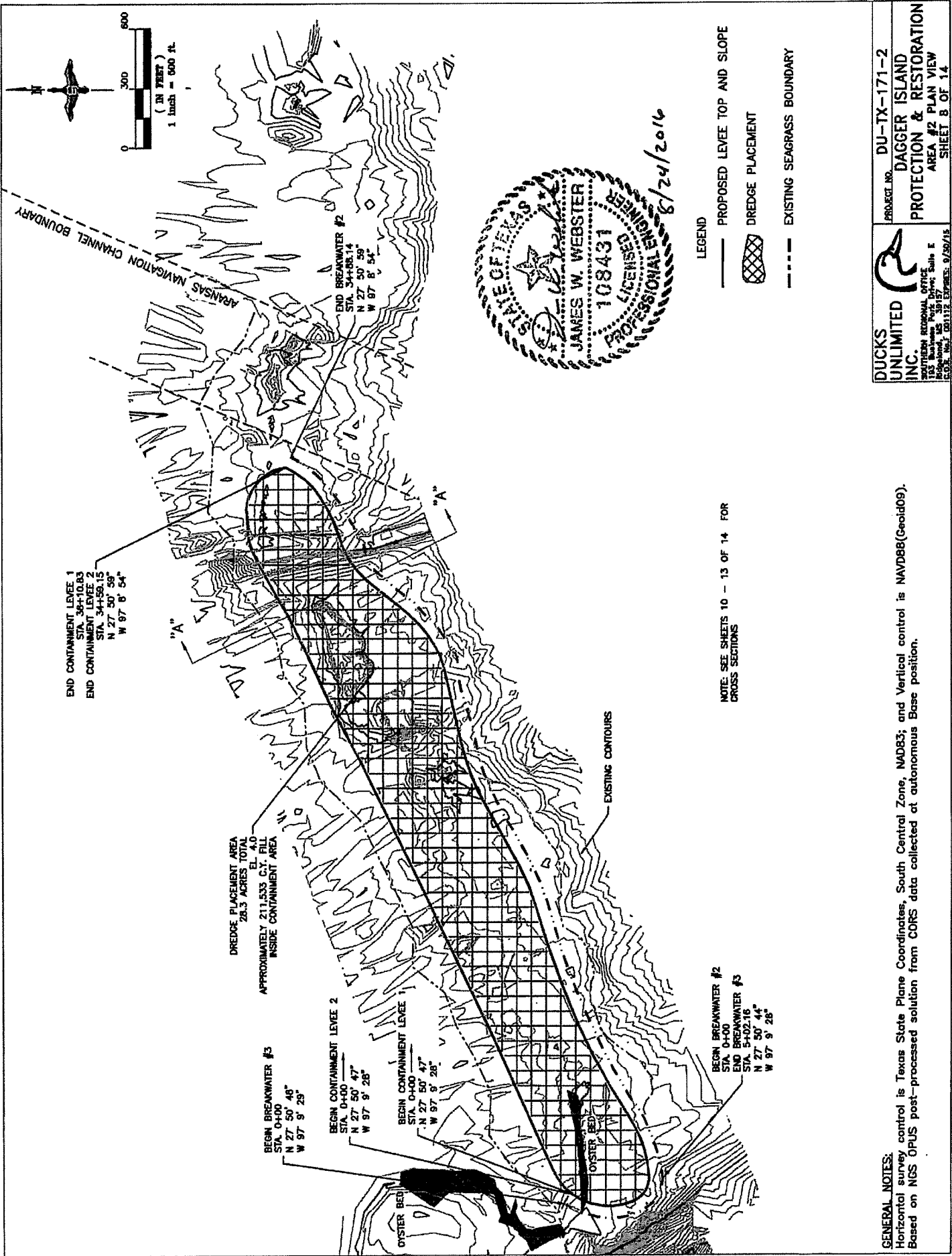


NOTE:  
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 153 Business Park Drive, Suite E  
 Houston, TX 77057  
 CO. NO. 001172 EXPIRES: 9/30/15

PROJECT NO. DU-TX-171-2  
**DAGGER ISLAND PROTECTION & RESTORATION**  
 BREAKWATER #1 CROSS SECTIONS  
 SHEET 7 OF 14





END CONTAINMENT LEVEL 1  
STA. 34+83.03  
N 27° 50' 59"  
W 97° 8' 54"

END CONTAINMENT LEVEL 2  
STA. 34+53.15  
N 27° 50' 59"  
W 97° 8' 54"

DREDGE PLACEMENT AREA  
28.3 ACRES TOTAL  
EL. 4.0  
APPROXIMATELY 211,533 C.Y. FILL  
INSIDE CONTAINMENT AREA

BEGIN BREAKWATER #3  
STA. 0+00  
N 27° 50' 48"  
W 97° 9' 29"

BEGIN CONTAINMENT LEVEL 2  
STA. 0+00  
N 27° 50' 47"  
W 97° 9' 28"

BEGIN CONTAINMENT LEVEL  
STA. 0+00  
N 27° 50' 47"  
W 97° 9' 28"

BEGIN BREAKWATER #2  
STA. 0+00  
END BREAKWATER #3  
STA. 5+02.16  
N 27° 50' 44"  
W 97° 9' 28"

END BREAKWATER #2  
STA. 34+86.14  
N 27° 50' 59"  
W 97° 8' 54"



- LEGEND
- PROPOSED LEVEE TOP AND SLOPE
  - ▨ DREDGE PLACEMENT
  - - - EXISTING SEAGRASS BOUNDARY

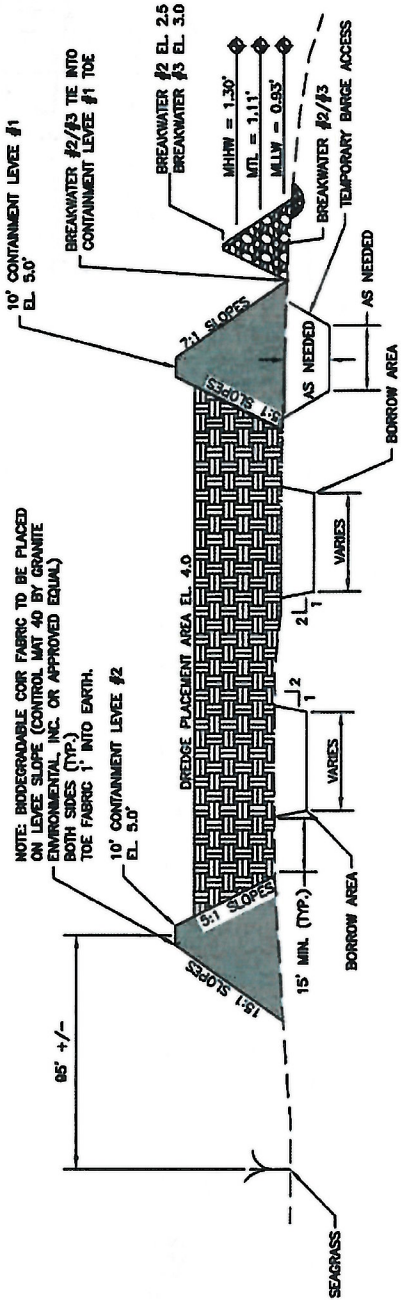
NOTE: SEE SHEETS 10 - 13 OF 14 FOR CROSS SECTIONS

**GENERAL NOTES:**  
Horizontal survey control is Texas State Plane Coordinates, South Central Zone, NAD83; and Vertical control is NAVD83(Geoid09).  
Based on NGS 0PUS post-processed solution from CORS data collected at autonomous Base position.

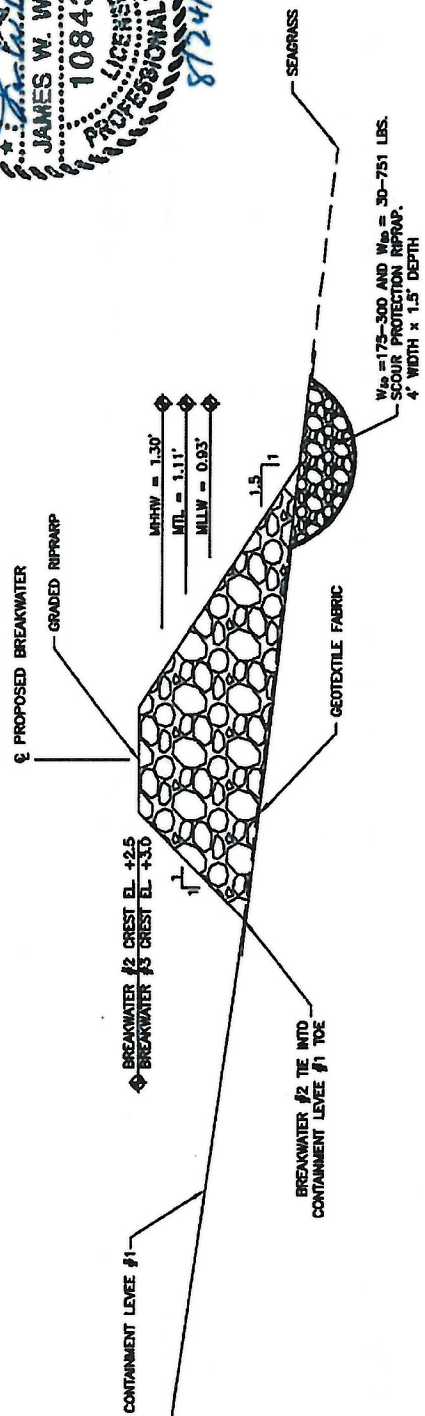
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Columbus, MS 39112, PHONE: 662/925-1111

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**DAGGER ISLAND PROTECTION & RESTORATION AREA #2 PLAN VIEW**  
SHEET 8 OF 14





SECTION "A-A" - HABITAT RESTORATION AREA  
NOT TO SCALE

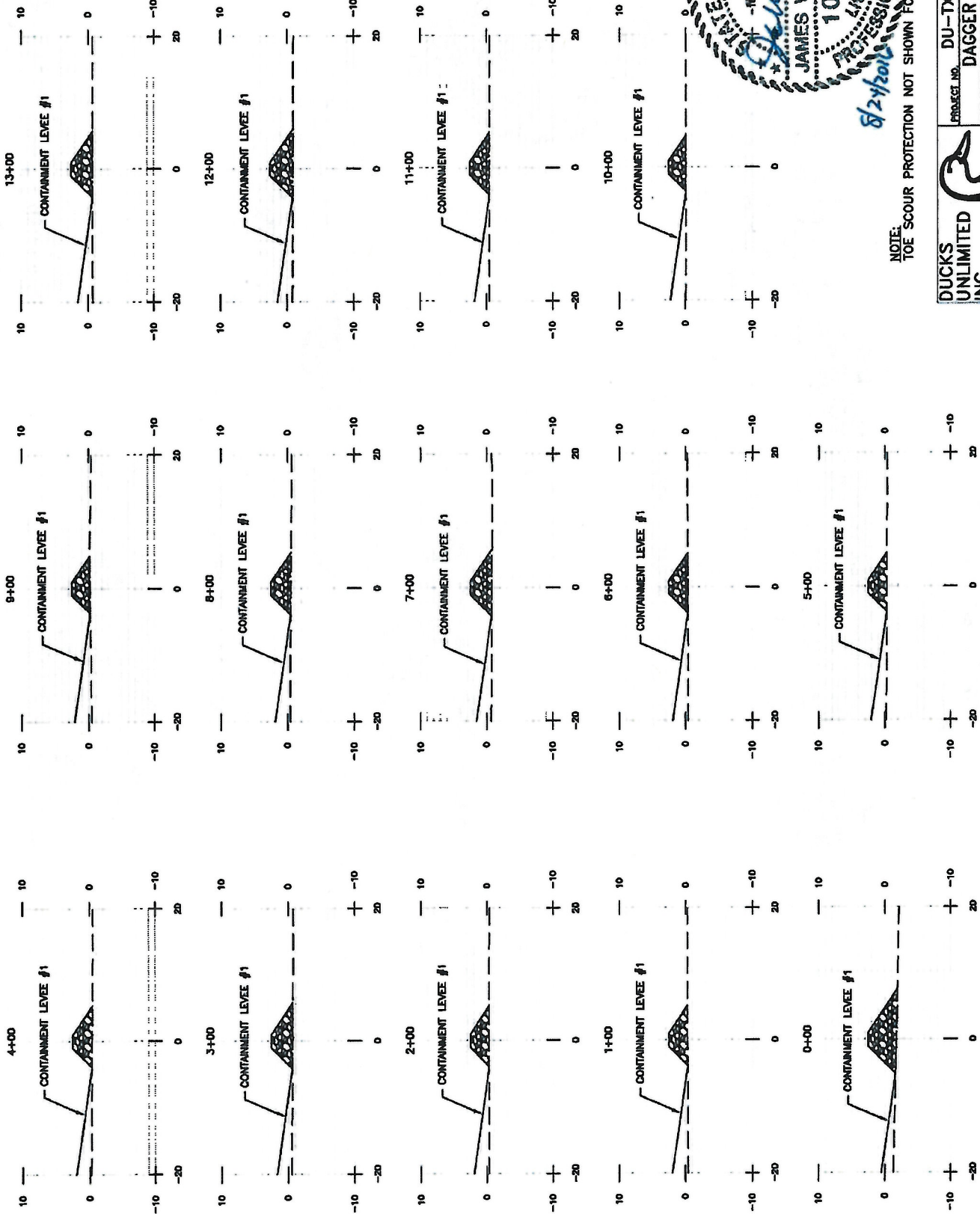


TYPICAL SECTION OF BREAKWATER #2 & #3  
NOT TO SCALE

TOTAL AREA #2 QUANTITIES		
AREA #2 BREAKWATER #2	5,510 TONS	3,673 CUBIC YARDS
AREA #2 SCOUR PROTECTION #2	1,065 TONS	723 CUBIC YARDS
AREA #2 BREAKWATER #3	870 TONS	590 CUBIC YARDS
AREA #2 SCOUR PROTECTION #3	156 TONS	104 CUBIC YARDS
AREA #2 CONTAINMENT LEVEL	97,028 C.Y.	
AREA #2 DREDGE FILL EMBANKMENT	423,068 C.Y.	
AREA #2 DREDGE FILL QUANTITY CALCULATIONS INCLUDE ASSUMED 2:1 CUT/FILL RATIO TO FILL CONTAINMENT LEVEL BORROW AREA.		

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PROJECT NO. DU-TX-171-2  
PROTECTION & RESTORATION  
AREA #2 TYPICAL DETAILS  
SHEET 9 OF 14



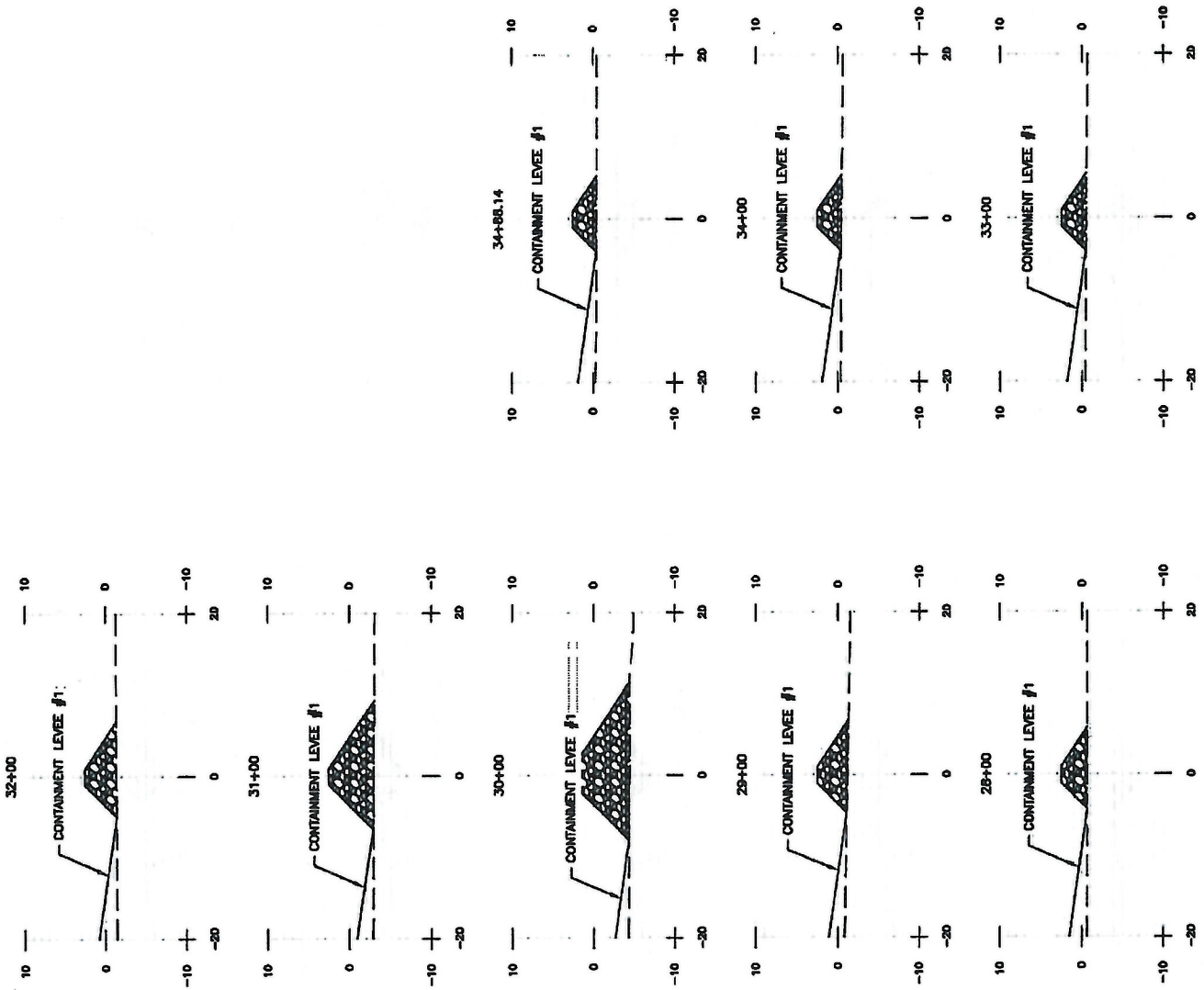
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PROJECT NO. DU-TX-171-2  
**DAGGER ISLAND**  
PROTECTION & RESTORATION  
BREAKWATER #2 CROSS SECTION  
SHEET 10 OF 14



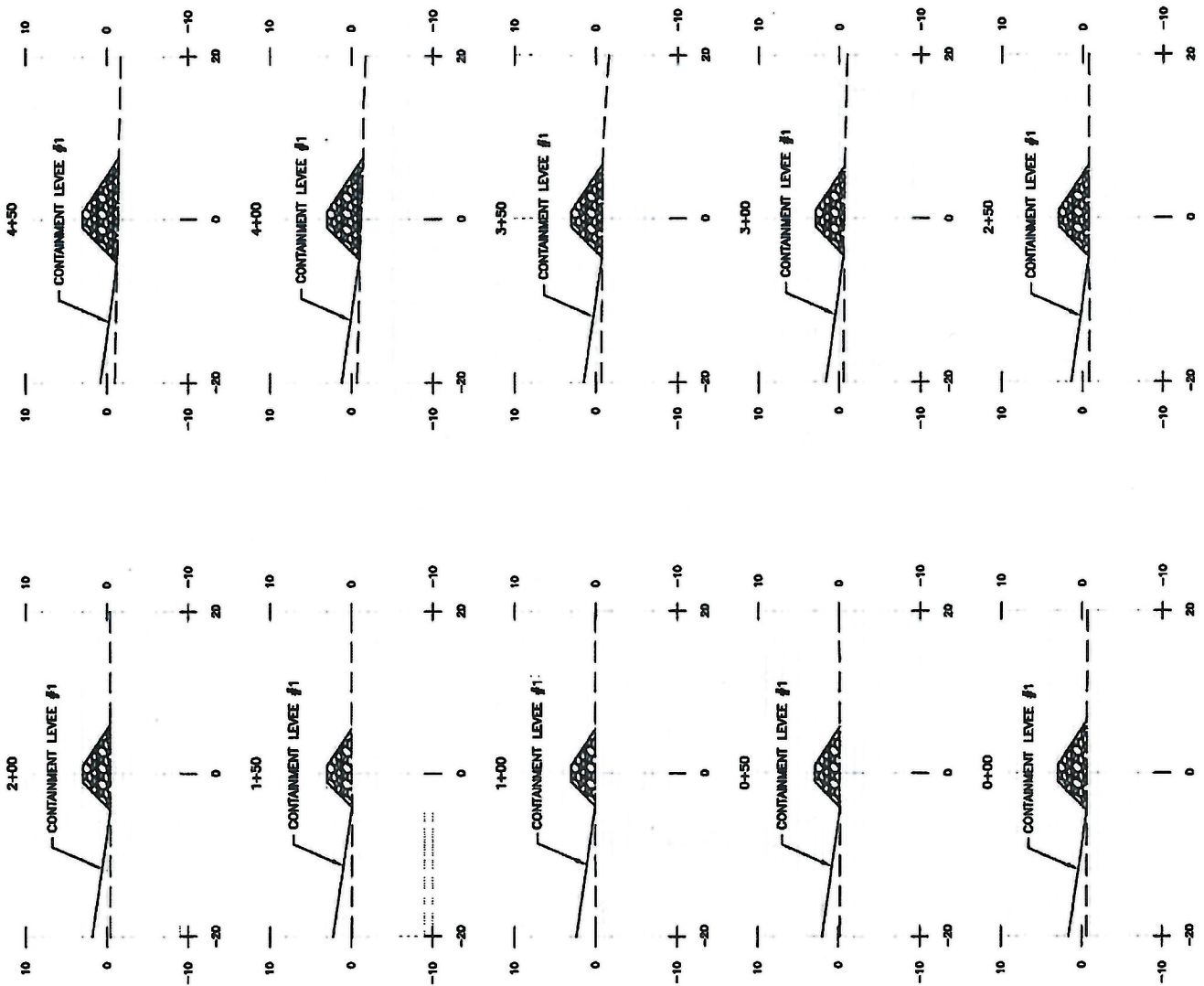




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1242 Washington Post Drive, Suite E  
Columbus, MS 39217-5795, 661/321-9755, 9/29/15

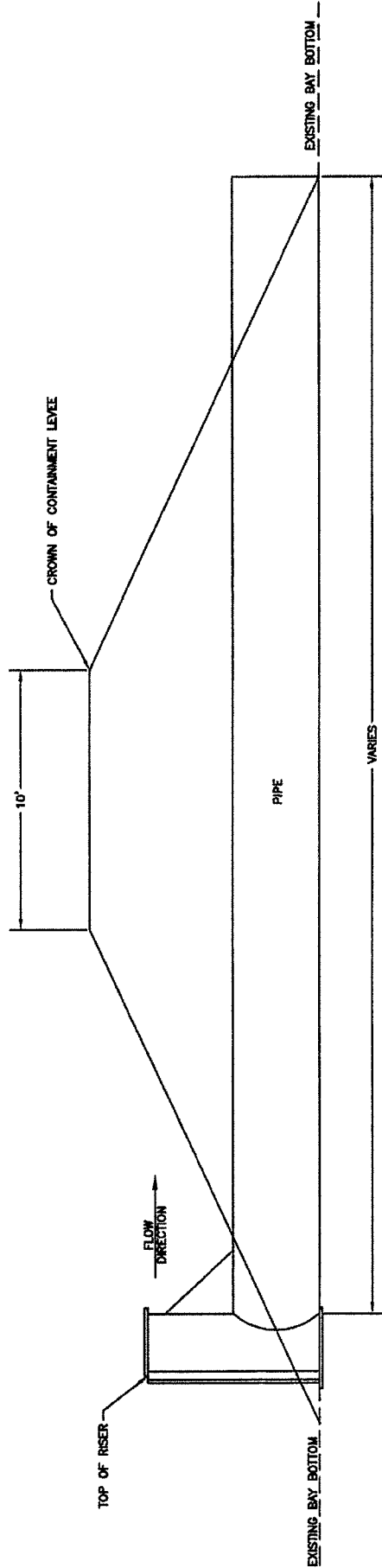
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DAGGER ISLAND  
PROTECTION & RESTORATION  
BREAKWATER #2 CROSS SECTIONS  
SHEET 12 OF 14



NOTE:  
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**DAGGER ISLAND PROTECTION & RESTORATION**  
BREAKWATER #3 CROSS SECTIONS  
SHEET 13 OF 14



TYPICAL SECTION OF TEMPORARY DECANT STRUCTURE

NOT TO SCALE

NOTES

1. LOCATIONS TO BE FIELD DETERMINED.
2. Dewatered dredged material shall be in place a minimum of 3 weeks prior to decanting water structure removal.



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 P.O. No. 001112 EXPRESS 9/29/15

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**DAGGER ISLAND PROTECTION & RESTORATION**  
 TEMPORARY DECANT STRUCTURE  
 SHEET 14 OF 14