Deep Draft Navigation Channel Improvements
Sabine Neches Waterway, Texas

ENGINEERING APPENDIX
FOR
CHANNEL IMPROVEMENT STUDY
SABINE NECHES WATERWAY
48' PROJECT

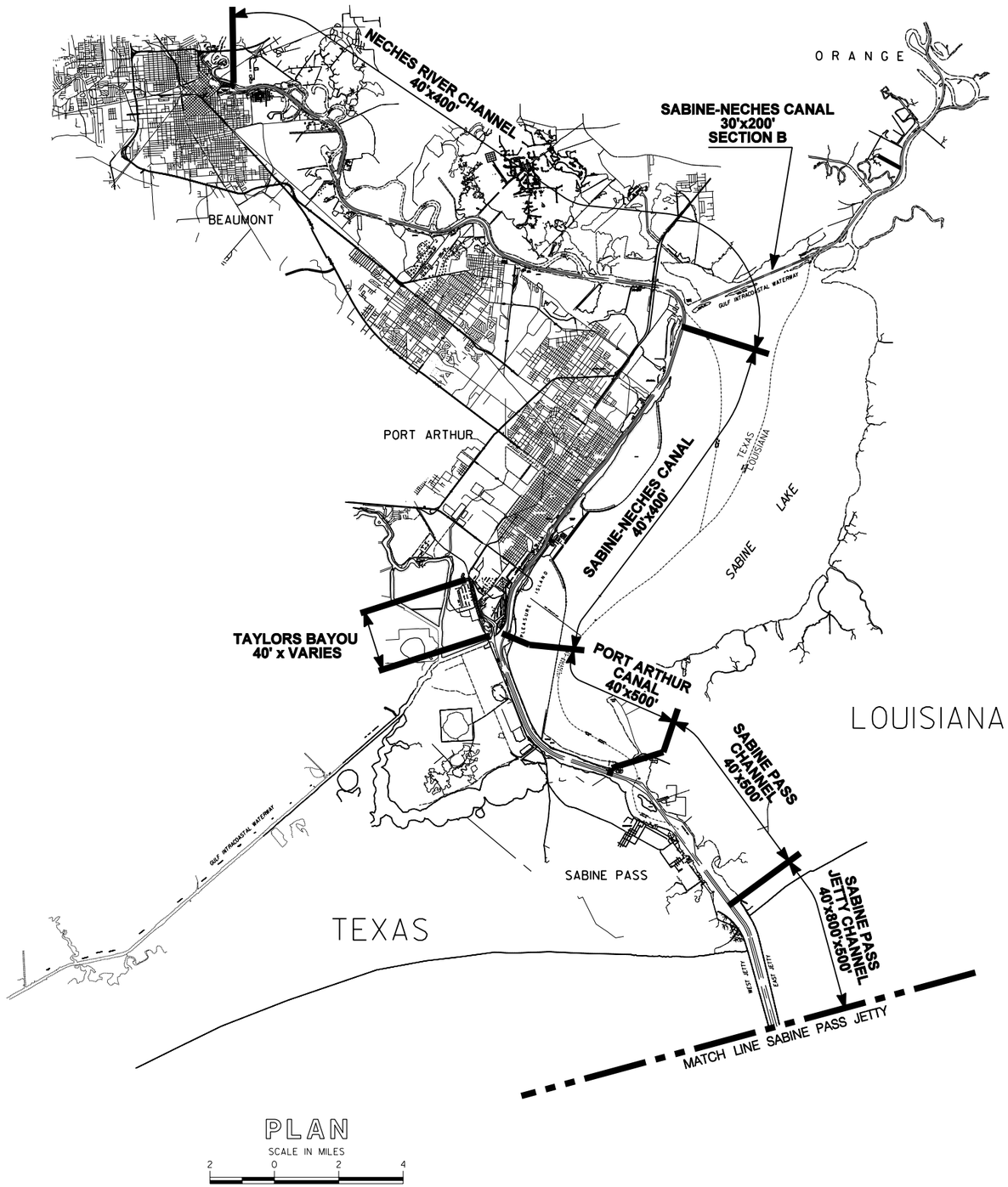
Center of Excellence

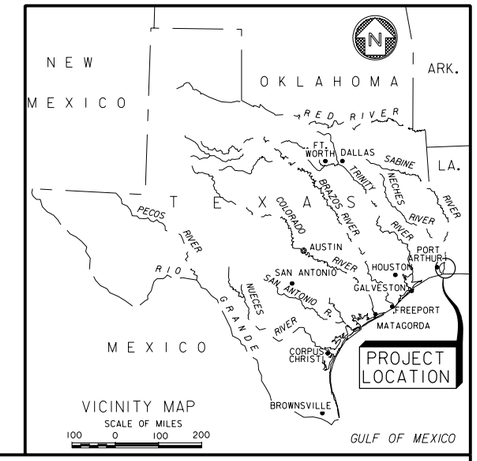
Coastal Navigation and Environmental Restoration

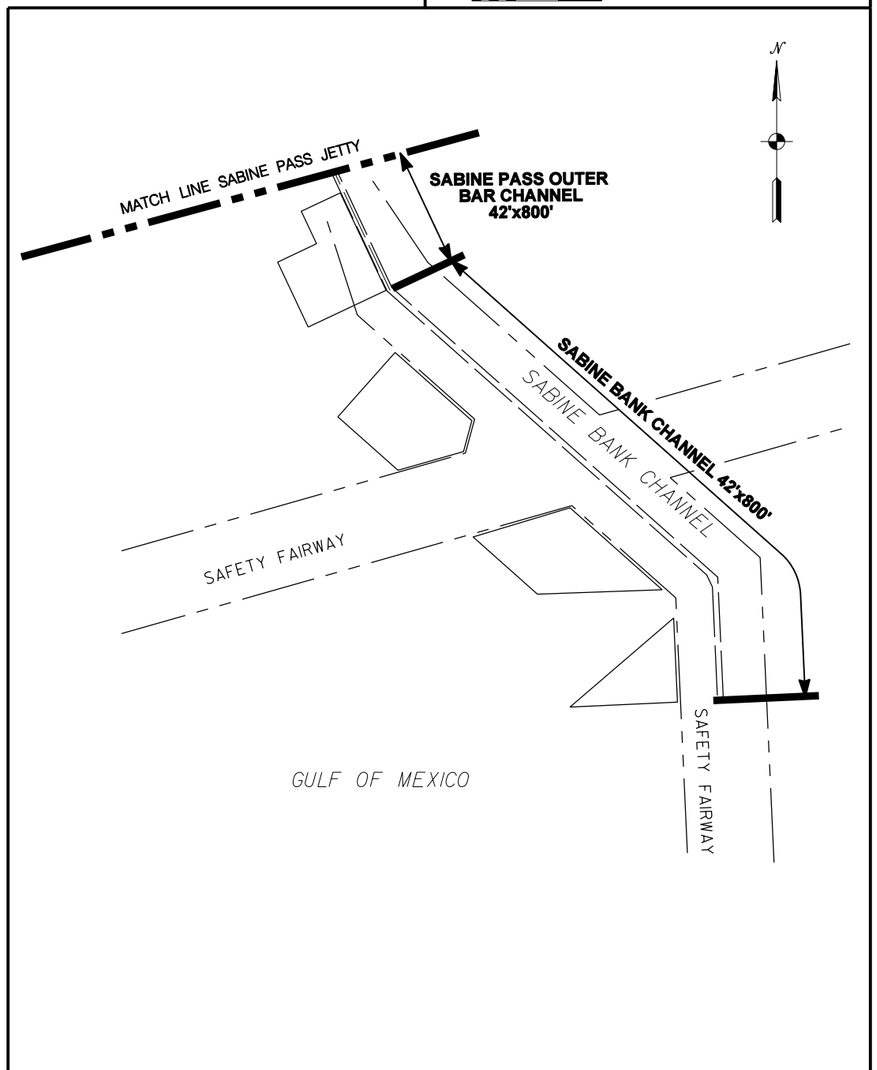
Office of the District Engineer
U. S. Army Engineer District, Galveston
Corps of Engineers
Galveston, Texas
May 2008

GALVESTON DISTRICT
TOTAL ARMY QUALITY

PRINTED ON RECYCLED PAPER







US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Chief, General Engineering Section
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Rev.
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch

U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

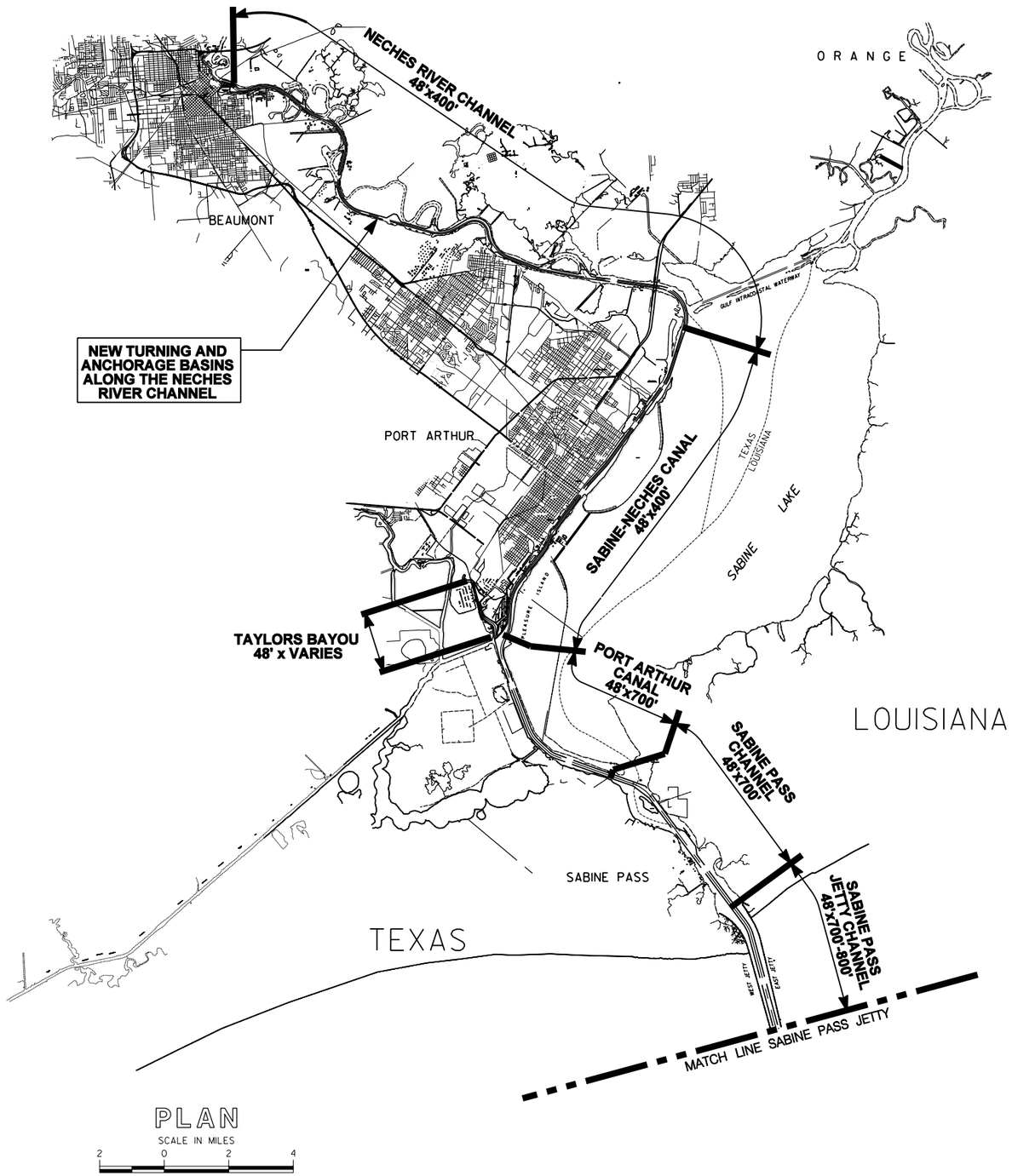
PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

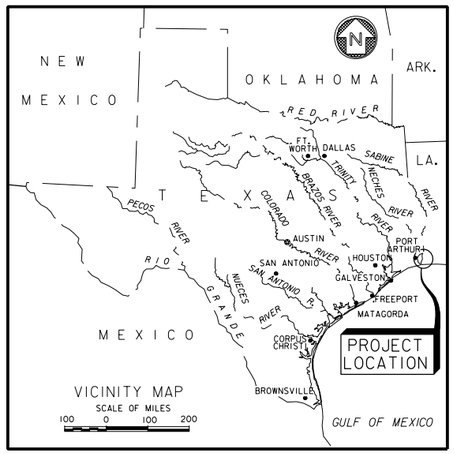
SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

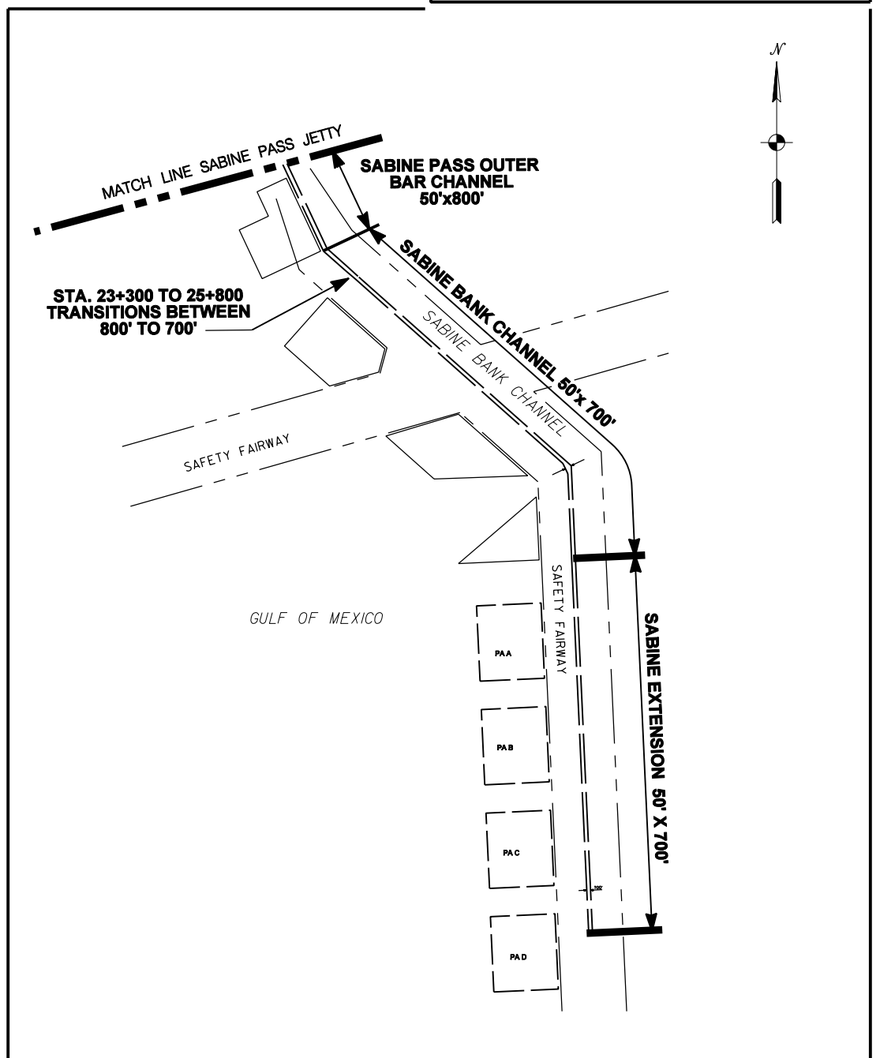
LOCATION PLAN
EXISTING WATERWAY

Drawing No.:
G-01

5/14/2008 12:22:11 PM w:\cadd\projects\sn\snww feas\plates\ea pl\0g-01 83.dgn







US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Chief, Engineering Section
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch
Rev.

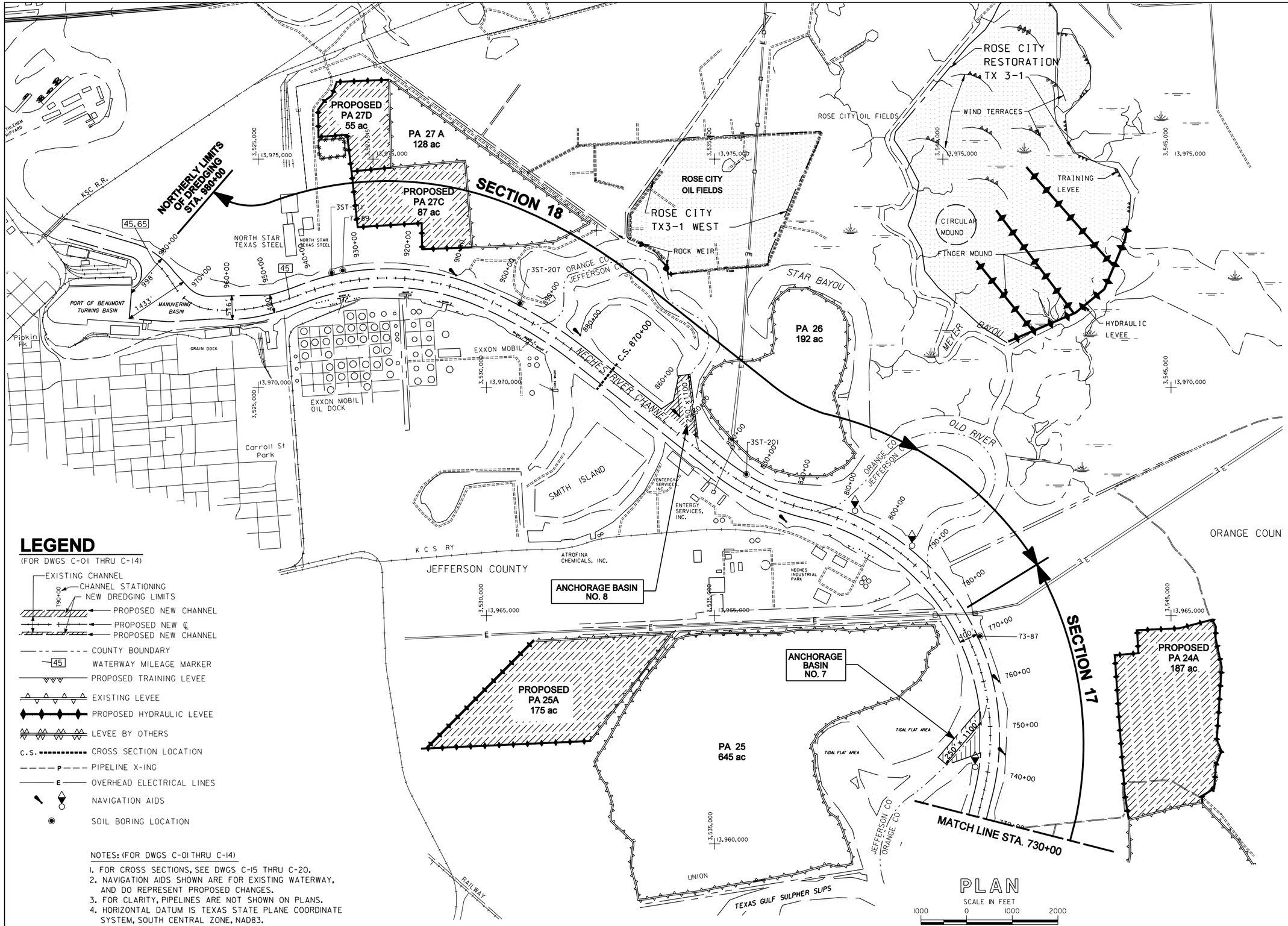
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

LOCATION PLAN
PROPOSED WATERWAY

Drawing No.:
G-02



LEGEND

(FOR DWGS C-01 THRU C-14)

- EXISTING CHANNEL
- CHANNEL STATIONING (790+00)
- NEW DREDGING LIMITS
- PROPOSED NEW CHANNEL
- PROPOSED NEW ℄
- PROPOSED NEW CHANNEL
- COUNTY BOUNDARY
- WATERWAY MILEAGE MARKER (45)
- PROPOSED TRAINING LEVEE
- EXISTING LEVEE
- PROPOSED HYDRAULIC LEVEE
- LEVEE BY OTHERS
- C.S. CROSS SECTION LOCATION
- P PIPELINE X-ING
- E OVERHEAD ELECTRICAL LINES
- NAVIGATION AIDS
- SOIL BORING LOCATION

NOTES: (FOR DWGS C-01 THRU C-14)

1. FOR CROSS SECTIONS, SEE DWGS C-15 THRU C-20.
2. NAVIGATION AIDS SHOWN ARE FOR EXISTING WATERWAY, AND DO REPRESENT PROPOSED CHANGES.
3. FOR CLARITY, PIPELINES ARE NOT SHOWN ON PLANS.
4. HORIZONTAL DATUM IS TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD83.

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Det. General Engineering Section
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch
Rev.

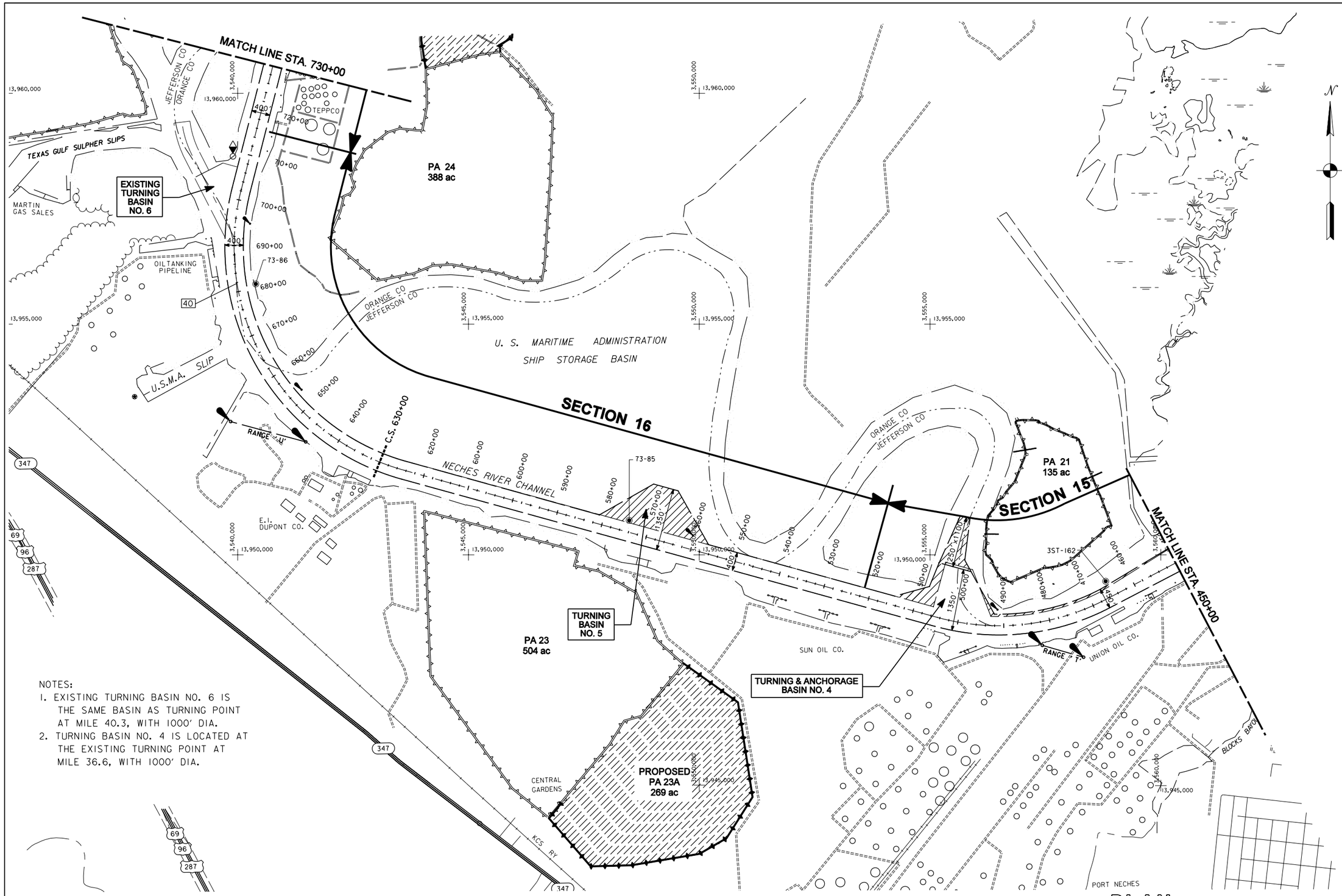
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF DAVID C. WESTON, Col., C.E., DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

DREDGING PLAN
NECHES RIVER CHANNEL
STA. 980+00 TO STA. 730+00

Drawing No.:
C-01



NOTES:
1. EXISTING TURNING BASIN NO. 6 IS THE SAME BASIN AS TURNING POINT AT MILE 40.3, WITH 1000' DIA.
2. TURNING BASIN NO. 4 IS LOCATED AT THE EXISTING TURNING POINT AT MILE 36.6, WITH 1000' DIA.

PLAN
SCALE IN FEET
1000 0 1000 2000

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

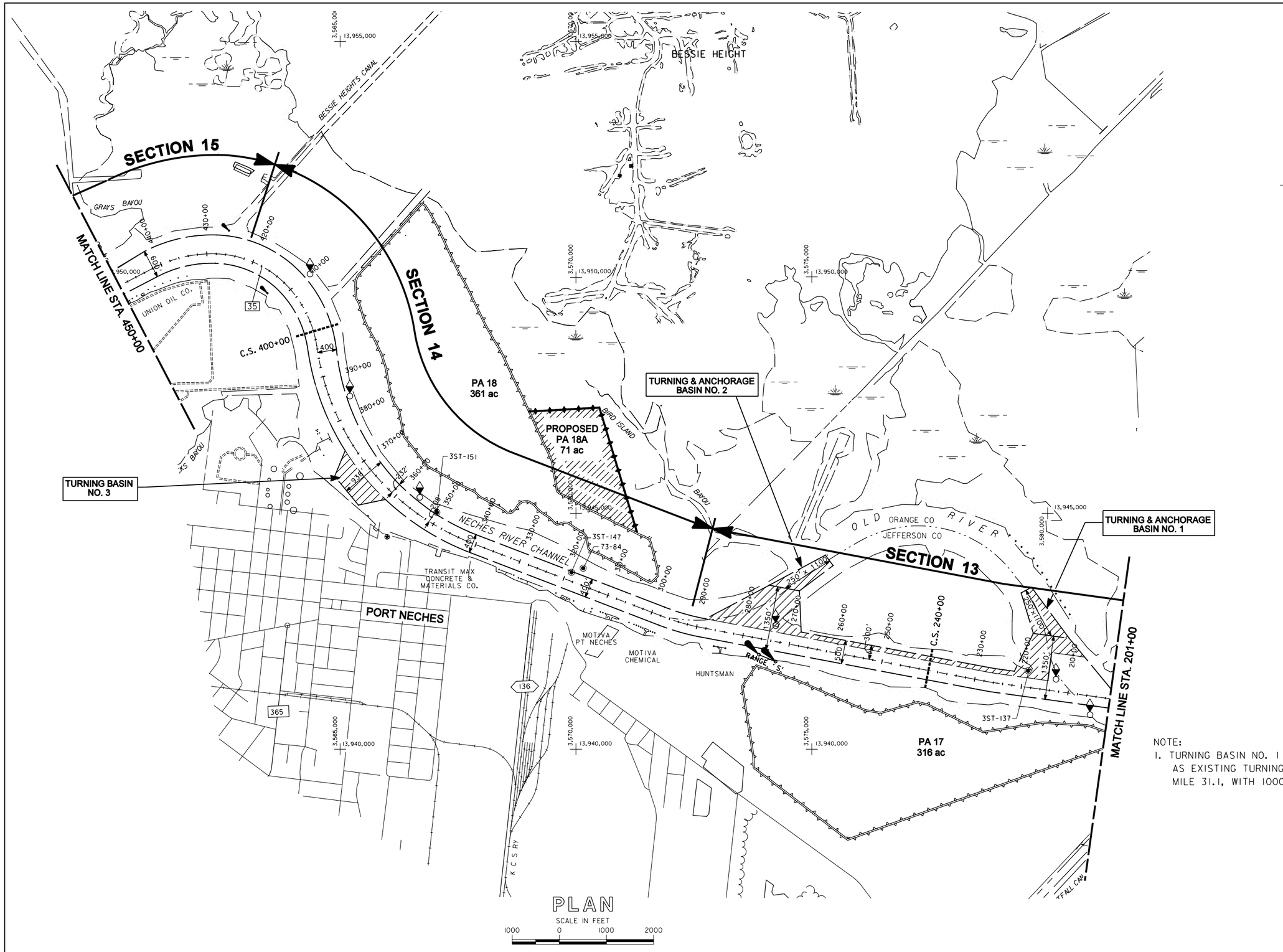
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, Col., C.E.,
DISTRICT COMMANDER

Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Dist.Generalbyineering Section Chief
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch
Rev.

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT
DREDGING PLAN
NECHES RIVER CHANNEL
STA. 730+00 TO STA. 450+00

Drawing No.:
C-02



PLAN

SCALE IN FEET

1000 0 1000 2000

NOTE:

1. TURNING BASIN NO. 1 IS THE SAME AS EXISTING TURNING POINT AT MILE 31.1, WITH 1000' DIA.

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Chief, Geneal Engineering Section
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Scales: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch
Rev.

U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

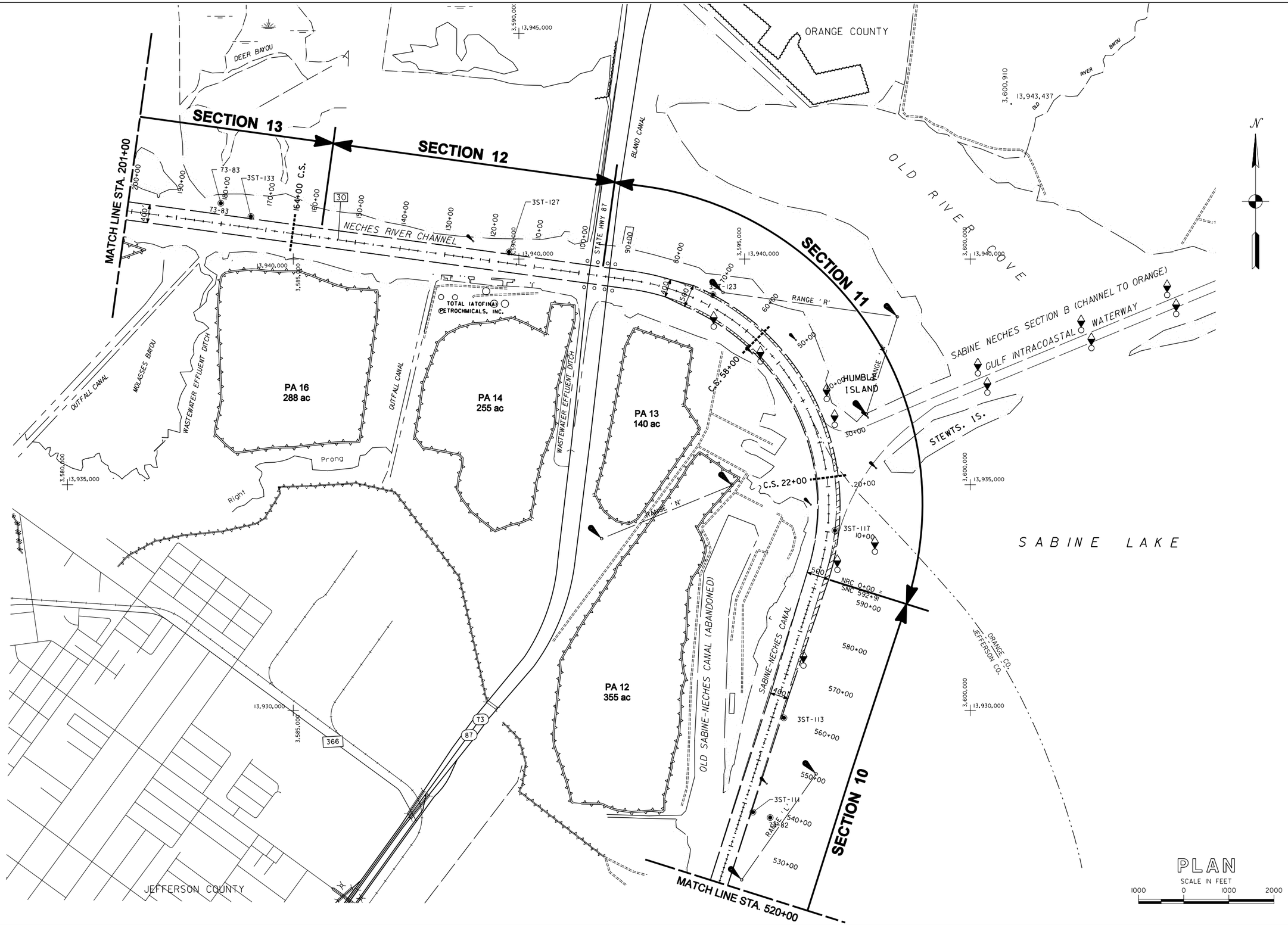
PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

DREDGING PLAN
NECHES RIVER CHANNEL
STA. 450+00 TO STA. 201+00

Drawing No.:
C-03

5/14/2008 12:23:05 PM w:\cadd\projects\sn\snww feas\plates\ea pl\c03 83.dgn



US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Chief, Engineering Section
Date: MAY 2008
Rev.
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division

U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

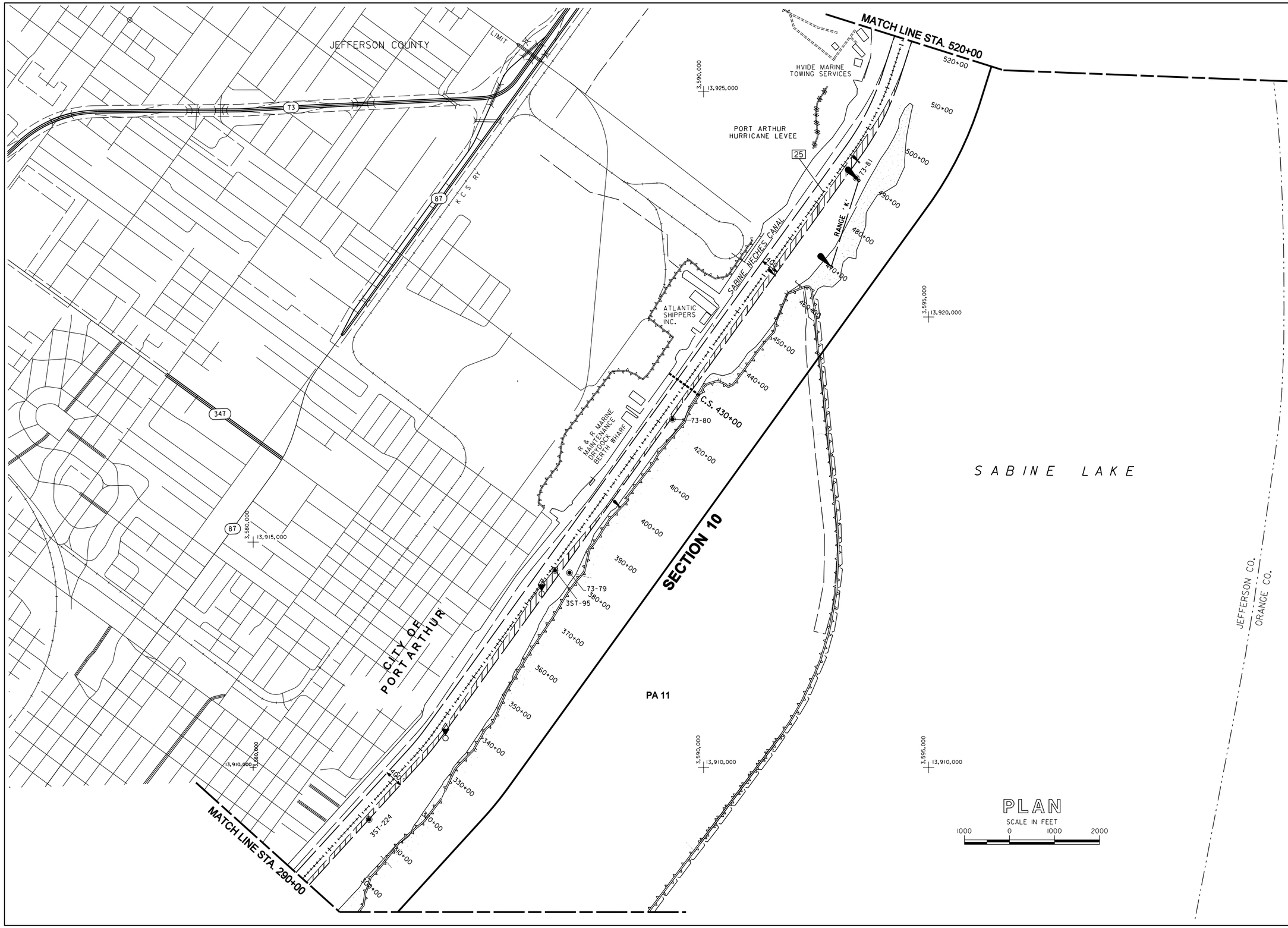
PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL, C.E.,
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

DREDGING PLAN
NRC STA. 201+00 TO
SNC STA. 520+00

Drawing No.:
C-04

5/14/2008 12:23:09 PM w:\cadd\projects\sn\snww feas\plates\ea pl\c04 83.dgn



PLAN

SCALE IN FEET

1000 0 1000 2000

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

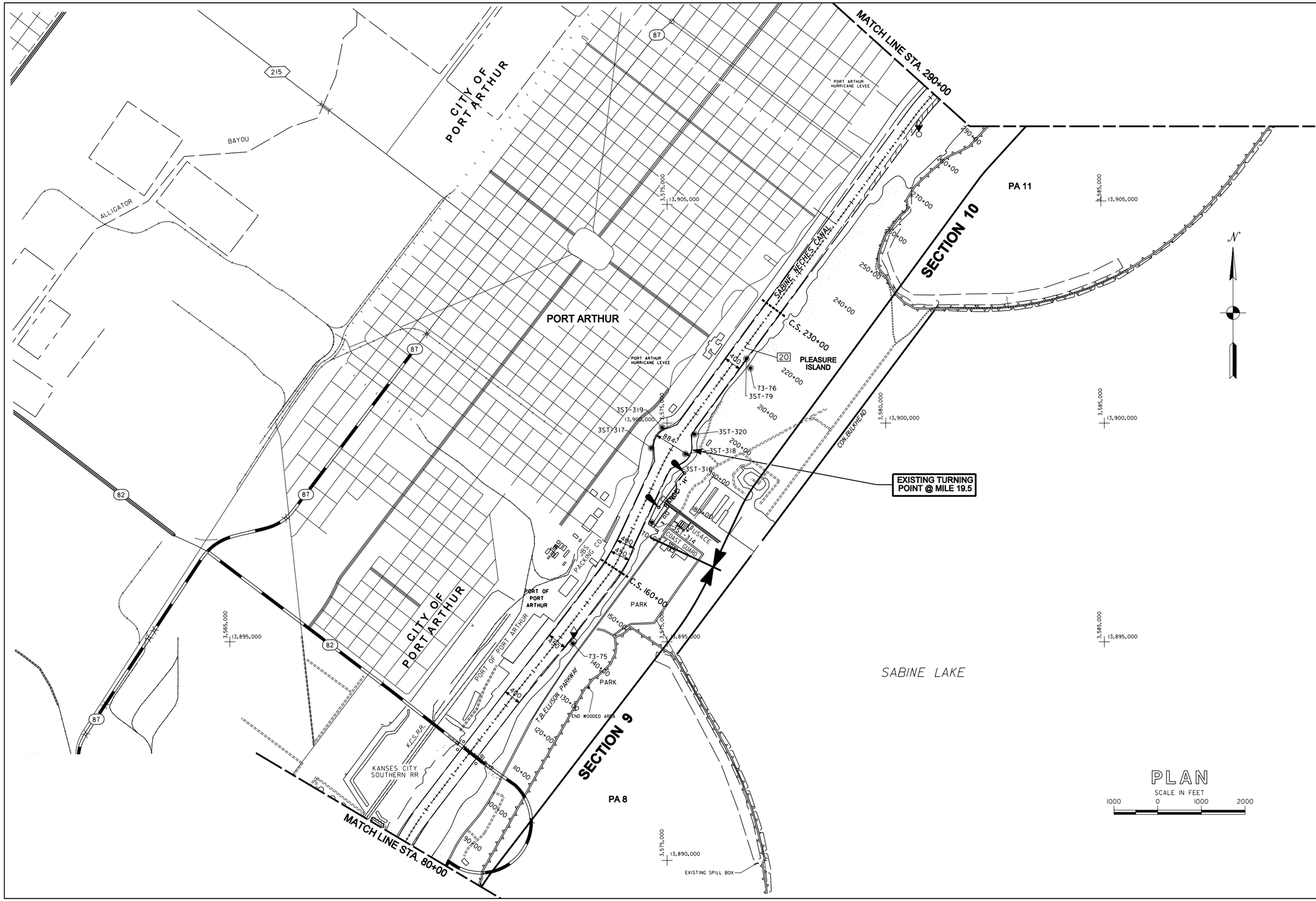
Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by:
DAVID R. BROWN, P.E.
Chief, Generalbgineering Section
Approved by:
PETE G. PEREZ, P.E.
Chief, Engineering and Construction Division

Date: MAY 2008
Rev.
Scale: AS SHOWN
Approval Recommended:
HARRISON T. SUTCLIFF, PE
Chief, Engineering Branch

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

DREDGING PLAN
SABINE NECHES CANAL
STA. 520+00 TO. STA. 290+00

Drawing No.:
C-05



US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, Col., C.E.
DISTRICT COMMANDER

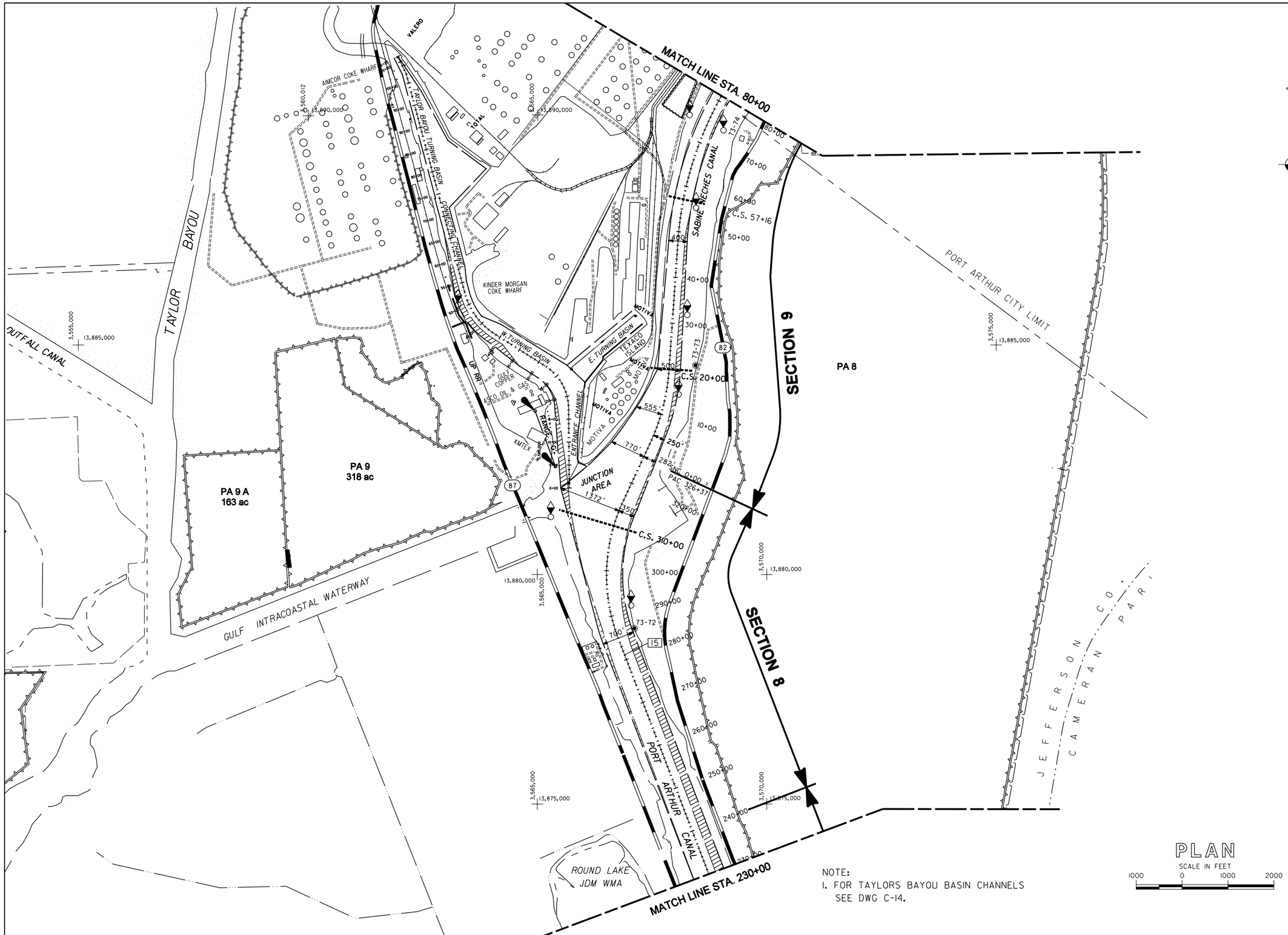
Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Chief, Engineering Section
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Rev.
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

DREDGING PLAN
SABINE NECHES CANAL
STA. 290+00 TO STA. 80+00

Drawing No.:
C-06

5/14/2008 12:23:17 PM w:\cadd\projects\sn\snww feas\plates\ea pl\c06 83.dgn



NOTE:
1. FOR TAYLORS BAYOU BASIN CHANNELS SEE DWG C-14.

PLAN
SCALE IN FEET
1000 0 1000 2000

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by: ESR/NCY	Date: MAY 2008
Designed by: NCY	Rev.
Checked by: MD	Scale: AS SHOWN
Submitted by: DAVID R. BROWN, P.E. Chief, General Engineering Section	Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division	

U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

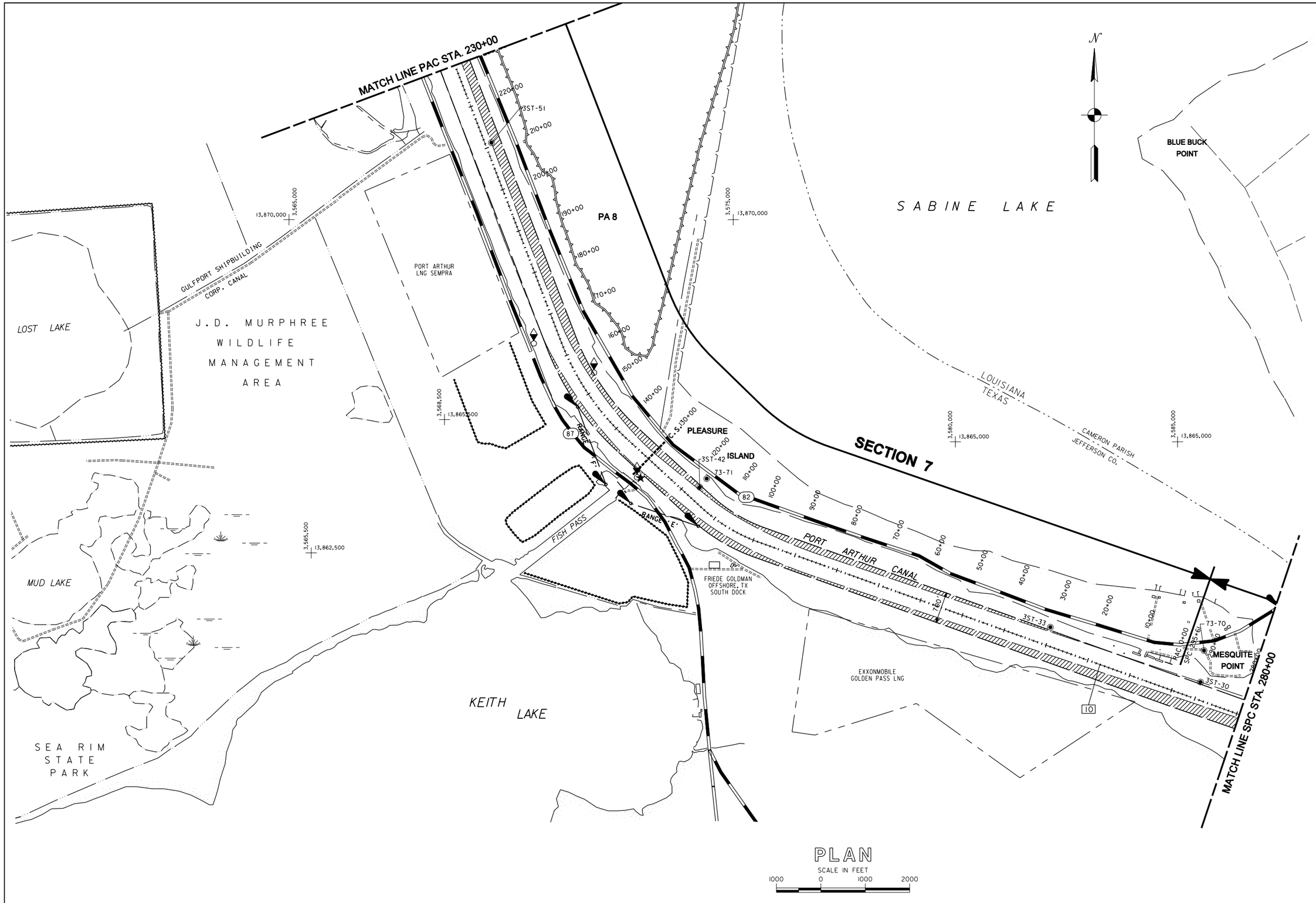
PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

DREDGING PLAN
SNC STA. 80+00
TO PAC STA. 230+00

Drawing No.:
C-07

5/14/2008 12:23:25 PM w:\cadd\projects\sn\snww feas\plates\ea pl\c07 83.dgn



PLAN

SCALE IN FEET

1000 0 1000 2000

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Chief, Geraldingineering Section
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Rev.
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE

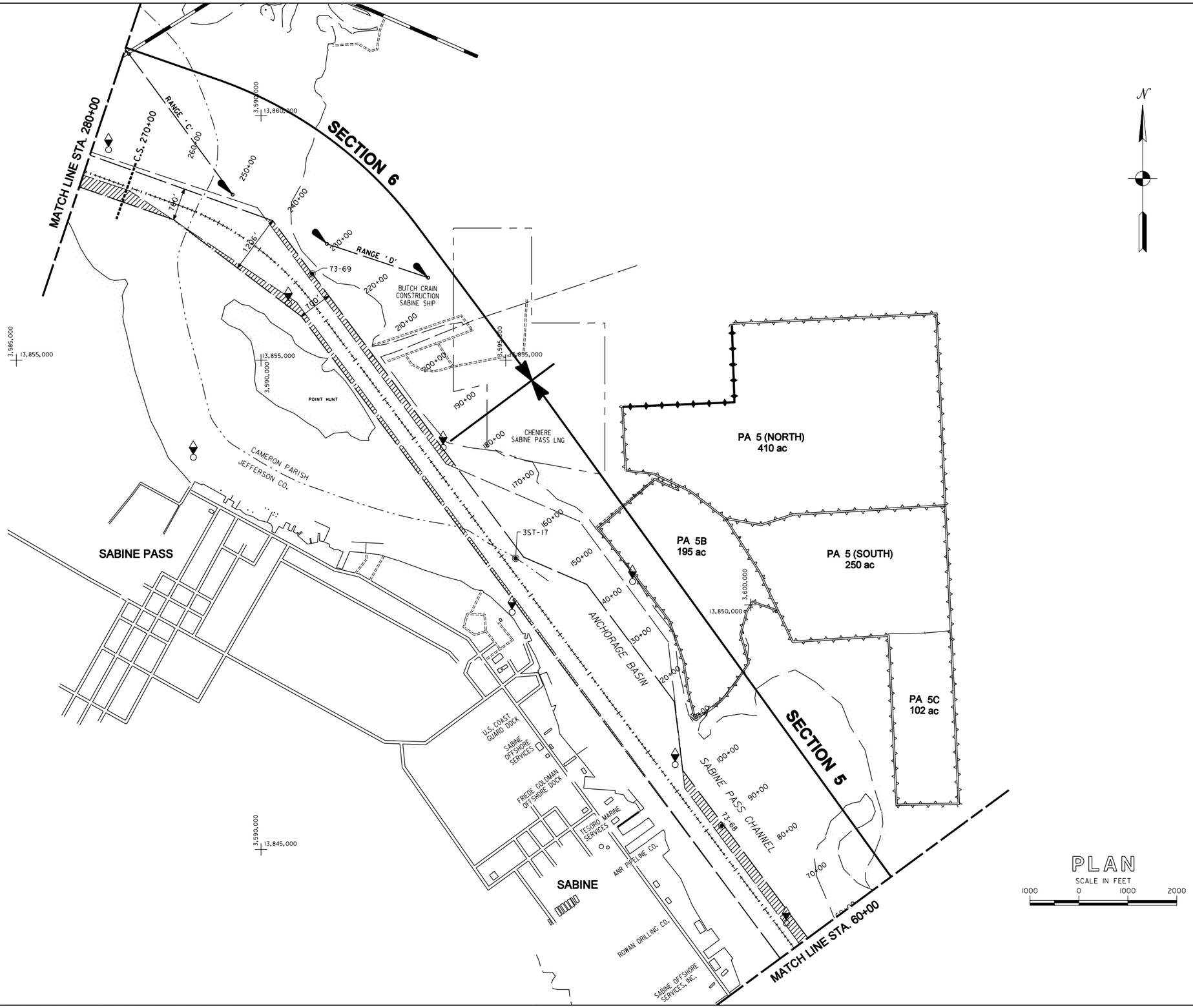
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

DREDGING PLAN
PAC STA. 230+00
TO SPC STA. 280+00

Drawing No.:
C-08



US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Chief, Geoengineering Section
Approved by: JOSE C. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch
Rev.

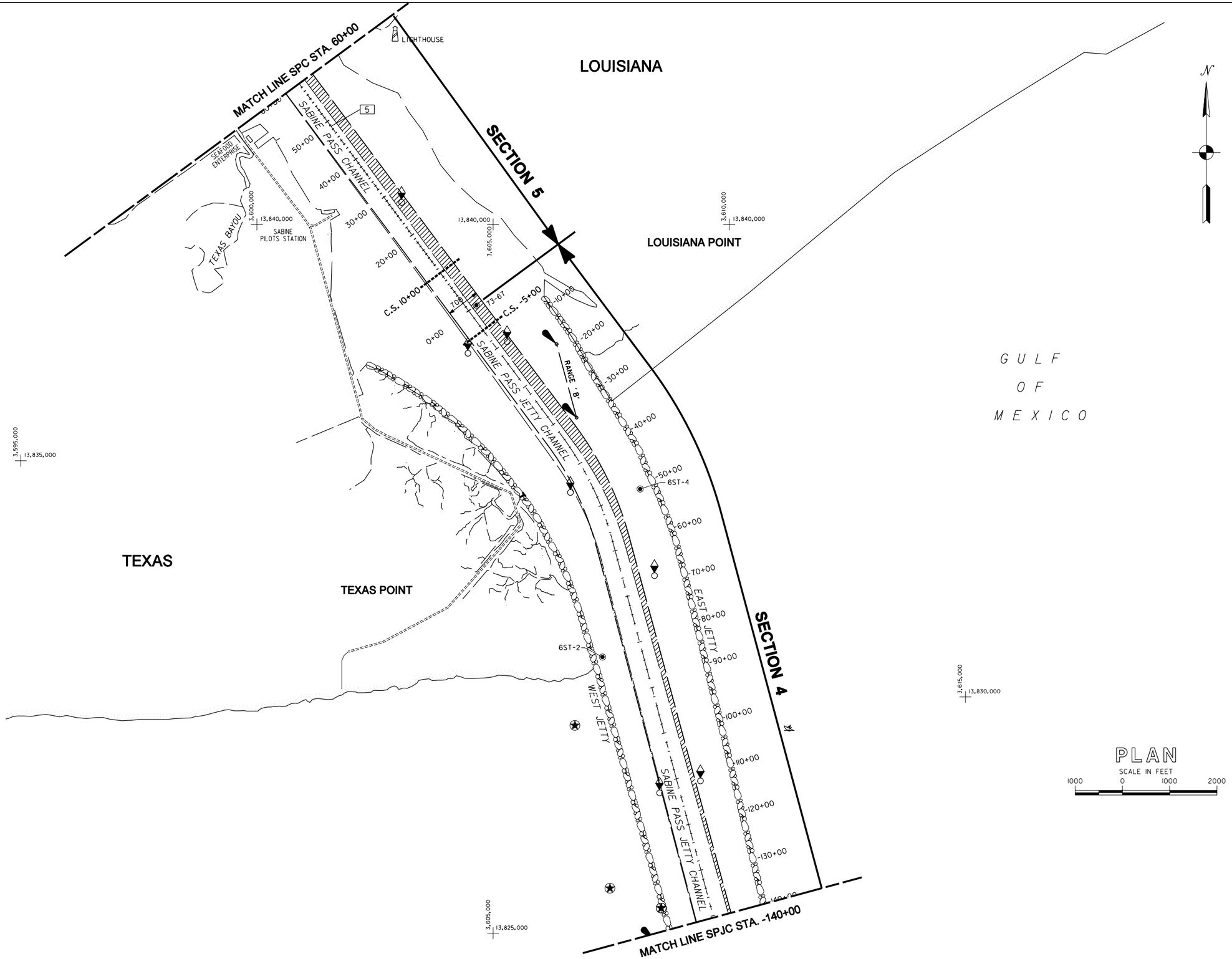
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

DREDGING PLAN
SABINE PASS CHANNEL
STA. 280+00 TO STA. 60+00

Drawing No.:
C-09



PLAN

SCALE IN FEET

1000 0 1000 2000

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by: ESR/NCY	Date: MAY 2008
Designed by: NCY	Rev.
Checked by: MD	Scale: AS SHOWN
Submitted by: DAVID R. BROWN, P.E. Chief, General Engineering Section	Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division	

U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

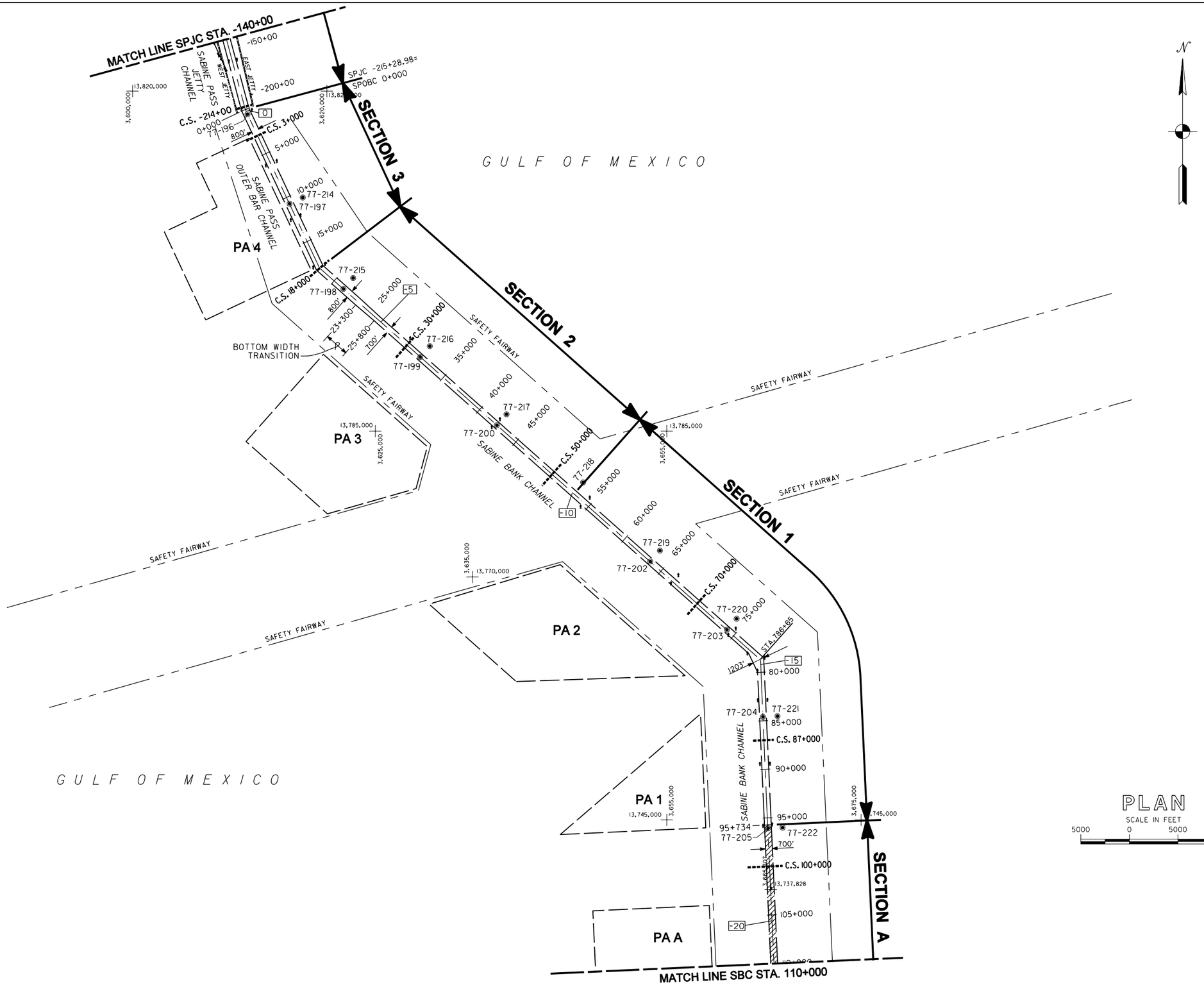
PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

DREDGING PLAN
SPC STA. 60+00
TO SPJC STA. -140+00

Drawing No.:
C-10

5/14/2008 12:23:38 PM w:\cadd\projects\sn\snww feas\plates\ea pl\c10 83.dgn



US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Chief, Dredging Section
Approved by: PETER G. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Rev.
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch

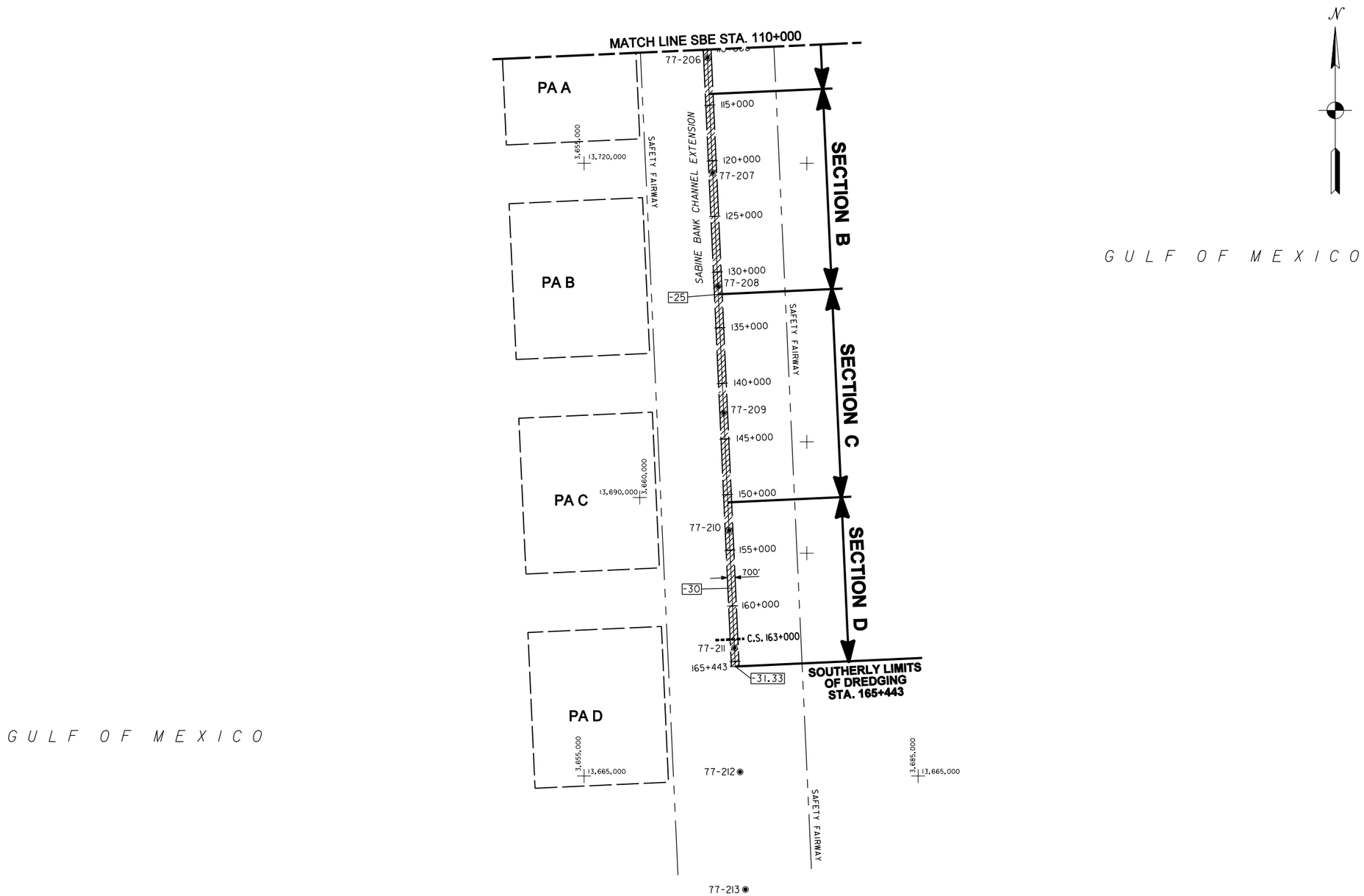
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

DREDGING PLAN
SPJC STA. -140+00
TO SBC STA. 110+000

Drawing No.:
C-11



PLAN

SCALE IN FEET

5000 0 5000 10,000

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Chief, Geneal Engineering Section
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE

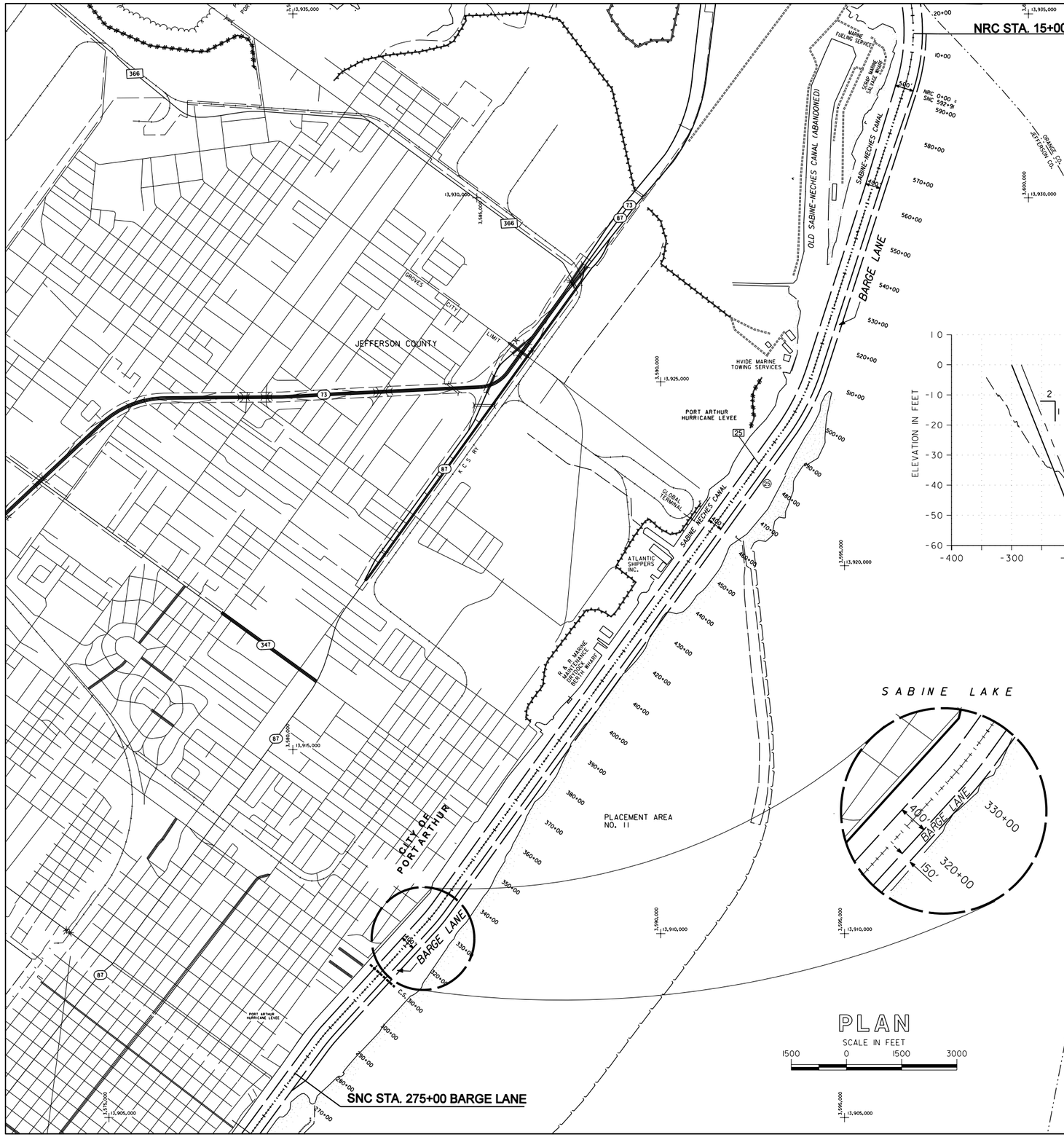
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

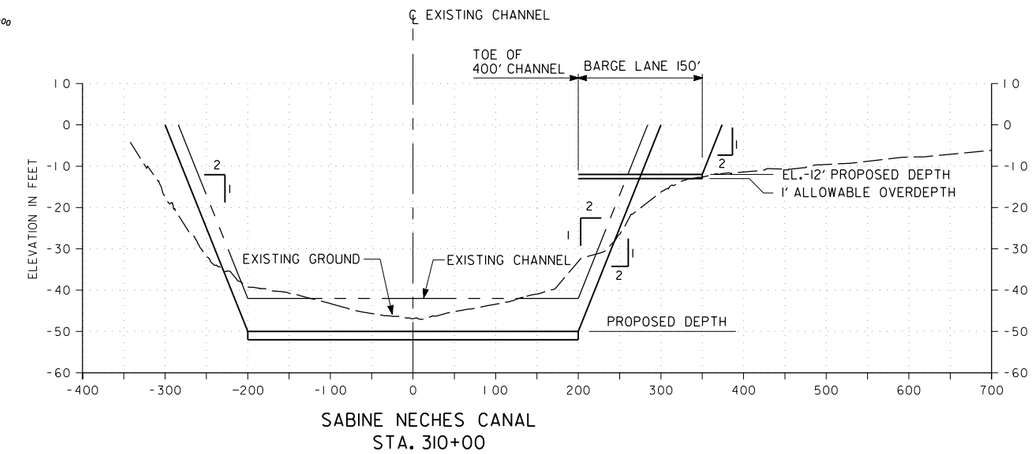
PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

DREDGING PLAN
SABINE BANK CHANNEL EXTENSION
STA. 110+000 TO STA. 165+000

Drawing No.:
C-12





NOTE: THE BARGE LANE WAS REJECTED AND IS NOT A FEATURE OF THE NED PLAN.

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

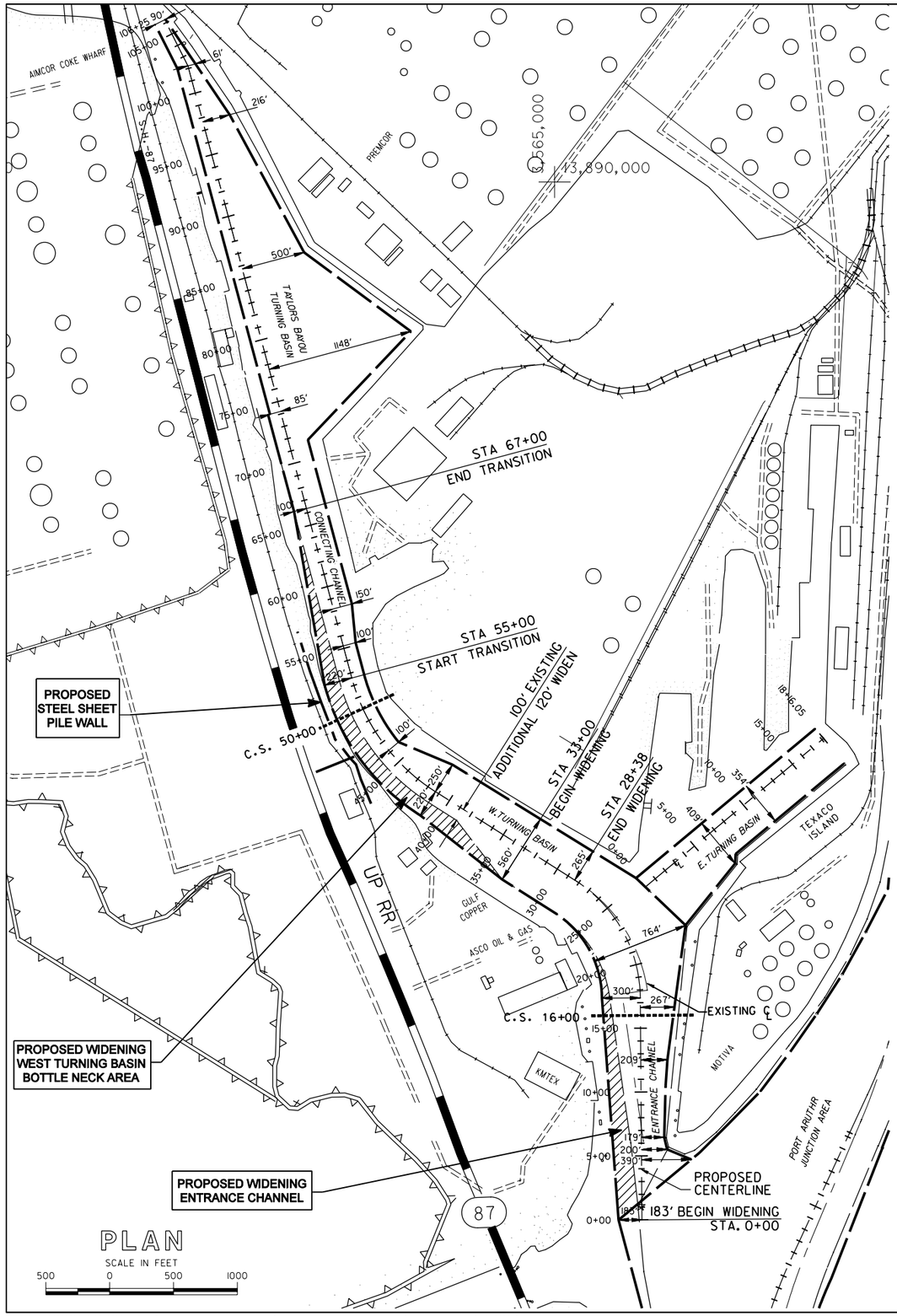
Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E.
Chief, General Engineering Section
Approved by: PETE G. PEREZ, P.E.
Chief, Engineering and Construction Division
Date: MAY 2008
Scale: AS SHOWN
Rev.
Approval Recommended: HARRISON T. SUTCLIFF, PE
Chief, Engineering Branch

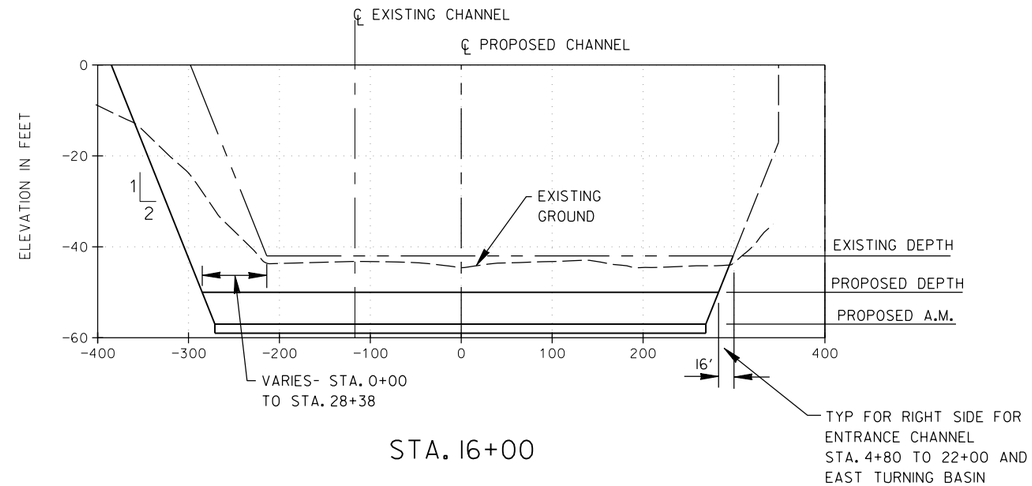
SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

BARGE LANE PLAN
& CROSS SECTION

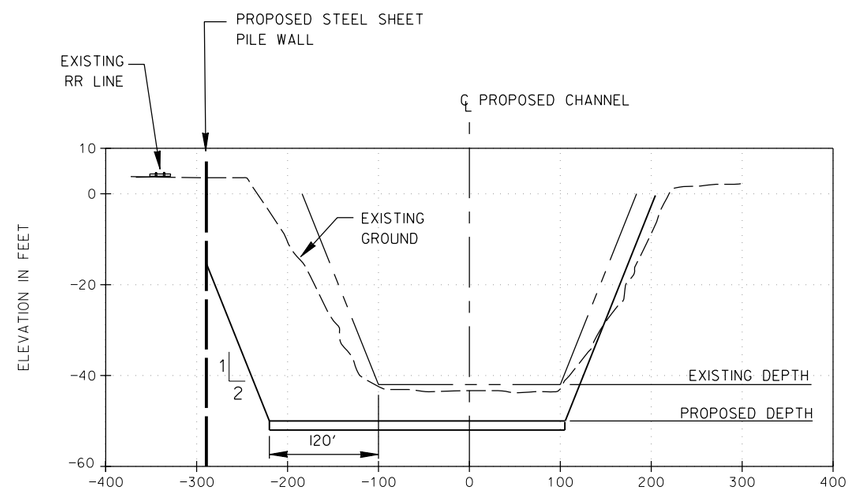
Drawing No.:
C-13

5/14/2008 12:23:47 PM w:\cadd\projects\sn\snww feas\plates\ea pl\c13 83 bargelane.dgn





STA. 16+00



STA. 50+00

NOTES:
1. NEW STATIONING WITH NEW ALIGNMENT. WILL NOT MATCH EXISTING CHANNEL STATIONING.
2. EXISTING GROUND AS SHOWN IS APPROXIMATE.
3. CHANNEL SIDE SLOPES REMAIN THE SAME.
4. FOR ADVANCE MAINTENANCE DETAILS, SEE DWG C-21.
5. REFER TO DWG C-01 FOR LEGEND.

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Chief, General Engineering Section
Approved by: FRED E. PETTE, G. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Scale: AS SHOWN
Rev.
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch

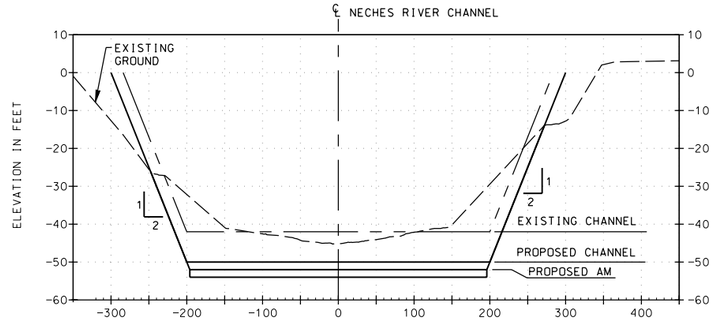
PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL, C.E.,
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

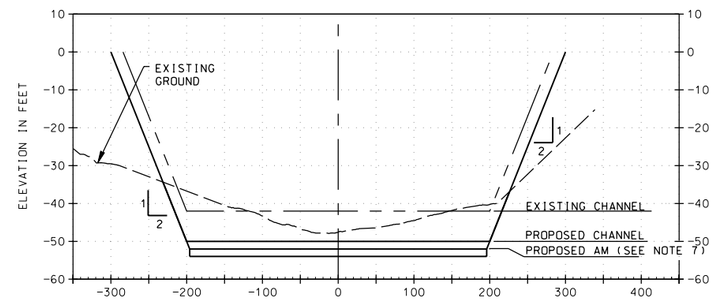
TAYLORS BAYOU
PROPOSED CURVE
AND MOUTH WIDENING

Drawing No.:
C-14

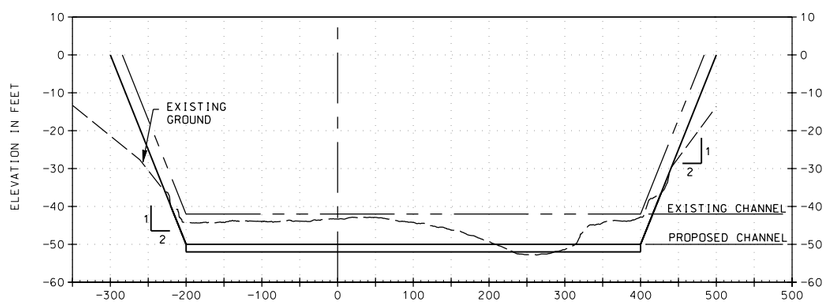
5/14/2008 12:23:51 PM w:\cadd\projects\sn\snww feas\plates\ea pl\c14 83 tb plan.dgn



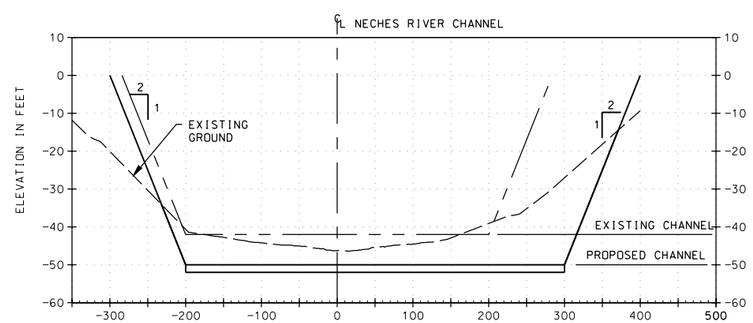
NRC STA. 870+00



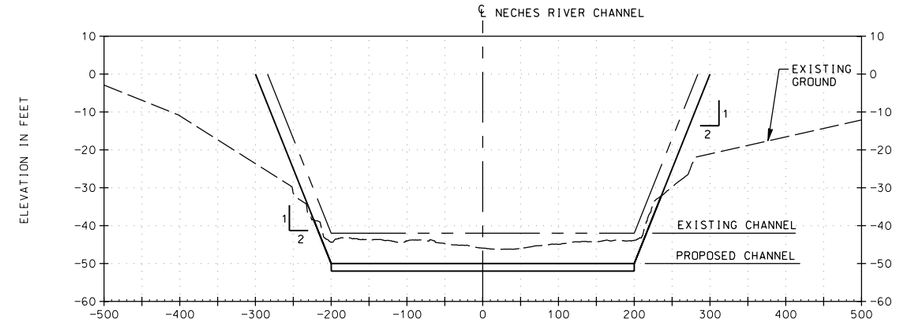
NRC STA. 630+00



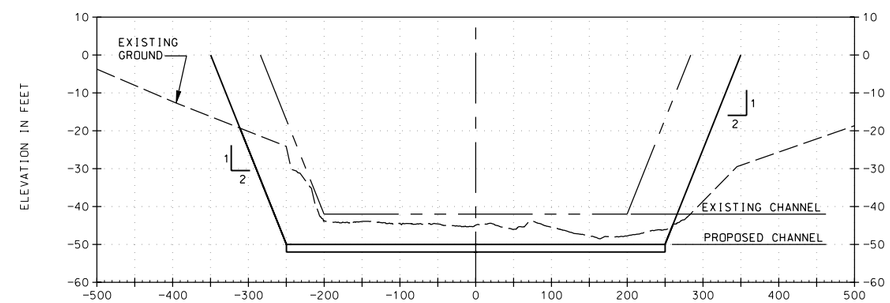
NRC STA. 400+00



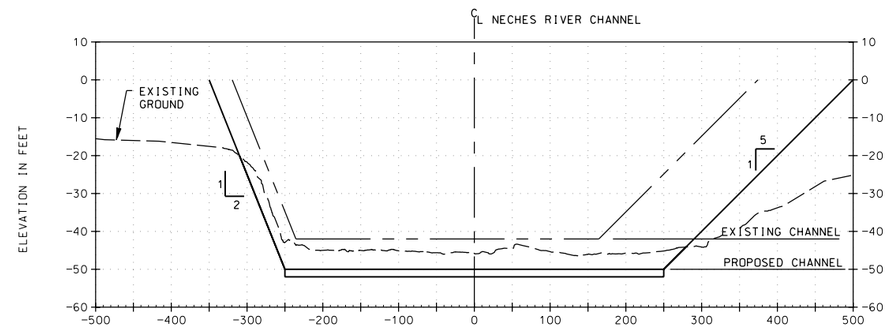
NRC STA. 240+00



NRC STA. 164+00



NRC STA. 58+00



NRC STA. 22+00

NOTES: (FOR DWGS C-13 THRU C-20)

1. EXISTING GROUND IS REPRESENTATIVE OF ACTUAL CONDITIONS AFTER DREDGING UP TO -30 ELEVATION.
2. CROSS SECTIONS WERE GENERATED FROM A DIGITAL TERRAIN MODEL (DTM) AND MAY NOT REFLECT ACTUAL BANK TOPO ABOVE -30 ELEVATION.
3. CROSS SECTIONS ARE SHOWN LOOKING UPSTREAM AND ARE PERPENDICULAR TO CENTERLINE.
4. REFER TO PLAN VIEWS FOR CROSS SECTION LOCATIONS.
5. CENTERLINE SHOWN IS FOR PROPOSED CHANNEL AND DOES NOT ALWAYS MATCH WITH EXISTING CHANNEL CENTERLINE.
6. VERTICAL DATUM SHOWN IS MEAN LOW TIDE (MLT).
7. THE FIRST TWO FEET OF ADVANCE MAINTENANCE IS INCLUDED WITHIN THE NEW TEMPLATE. ADDITIONAL REQUIRED ADVANCE MAINTENANCE IS BELOW THIS FIRST 2 FEET, AND IS CALCULATED TO BE DOWN THE SIDE SLOPE TO THE NEEDED DEPTH. THIS IS A TYPICAL APPLICATION FOR ALL CROSS SECTIONS WITH ADVANCE MAINTENANCE MORE THAN 2'.

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Chief, General Engineering Section
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Rev. --
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch

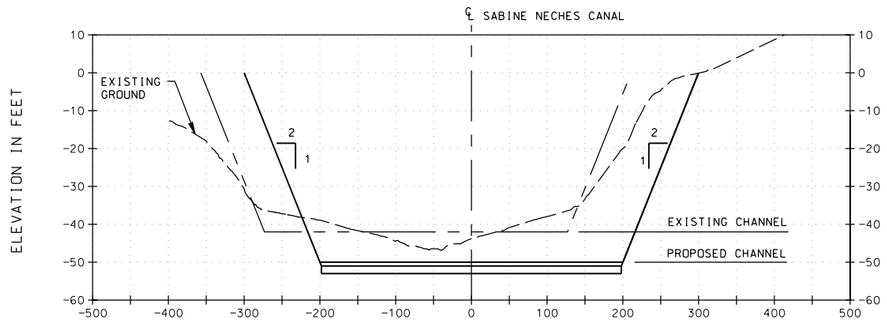
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

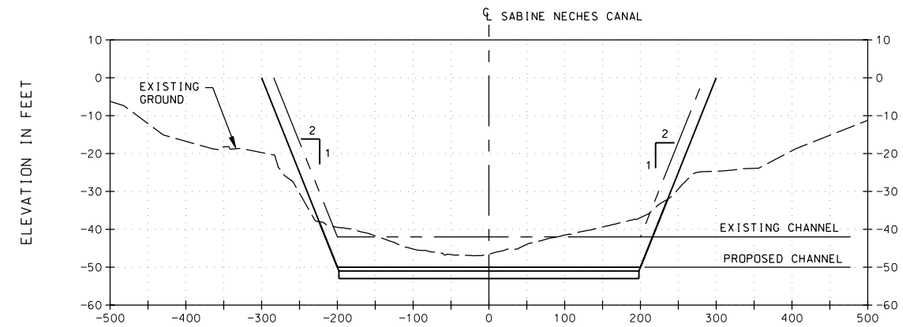
SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

NECHES RIVER CHANNEL
CROSS SECTIONS

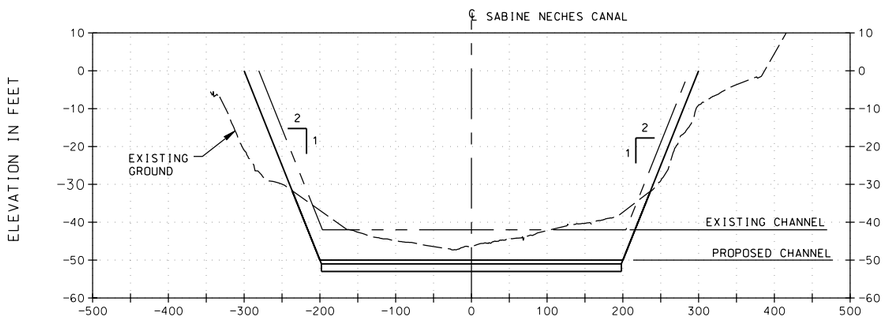
Drawing No.:
C-15



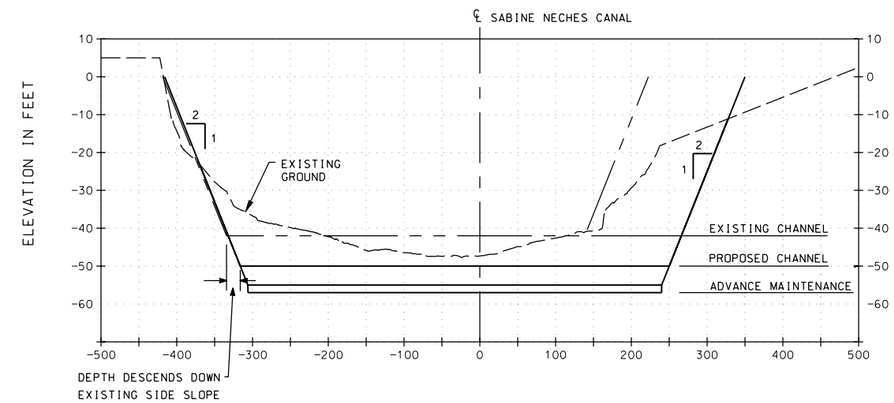
SNC STA. 430+00



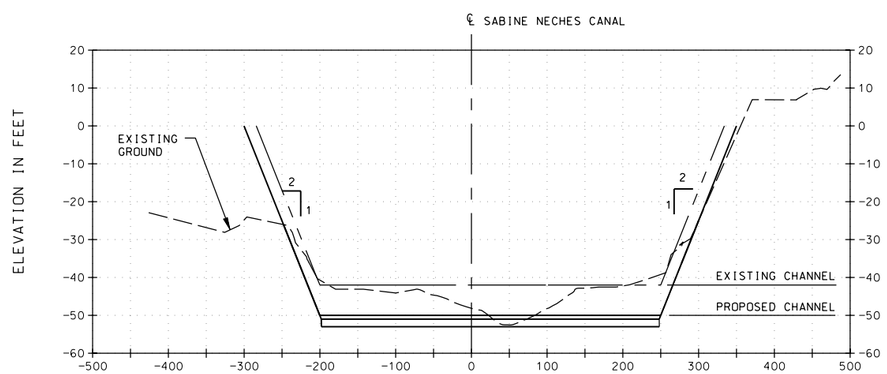
SNC STA. 57+16



SNC STA. 230+00



SNC STA. 20+00



SNC STA. 160+00

NOTES: (FOR DWGS C-16 THRU C-21)

1. THE FIRST TWO FEET OF ADVANCE MAINTENANCE IS INCLUDED WITHIN THE NEW TEMPLATE. ADDITIONAL REQUIRED ADVANCE MAINTENANCE IS BELOW THIS FIRST 2 FEET, AND IS CALCULATED TO BE DOWN THE SIDE SLOPE TO THE NEEDED DEPTH. THIS IS A TYPICAL APPLICATION FOR ALL CROSS SECTIONS WITH ADVANCE MAINTENANCE MORE THAN 2'.

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

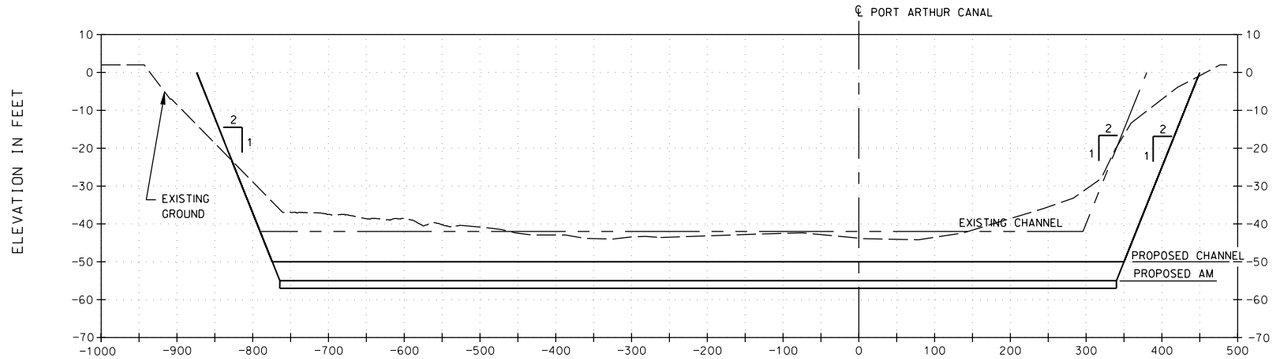
Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Chief, Geoengineering Section
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Rev. --
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

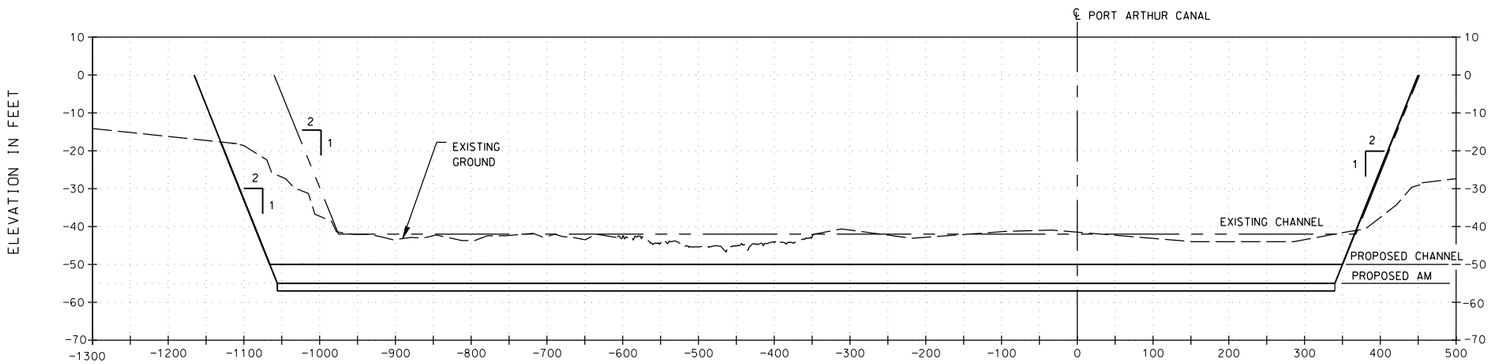
SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

SABINE-NECHES CANAL
CROSS SECTIONS

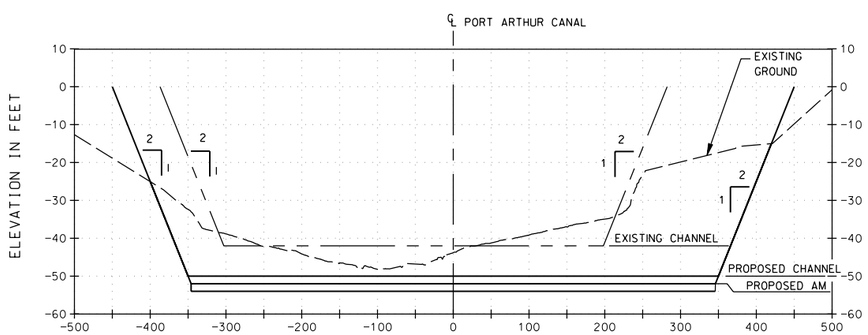
Drawing No.:
C-16



PAC STA. 326+37



PAC STA. 310+00



PAC STA. 130+00

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by: ESR/NCY
Designed by: NCY
Date: MAY 2008
Rev. --
Checked by: MD
Scale: AS SHOWN
Submitted by: DAVID R. BROWN, P.E. Chief, Engineering Section
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch
Approved by: PETER G. PEREZ, P.E. Chief, Engineering and Construction Division

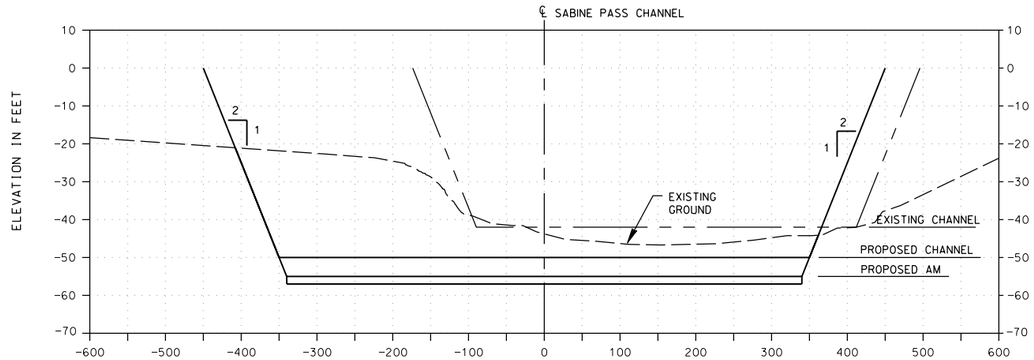
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

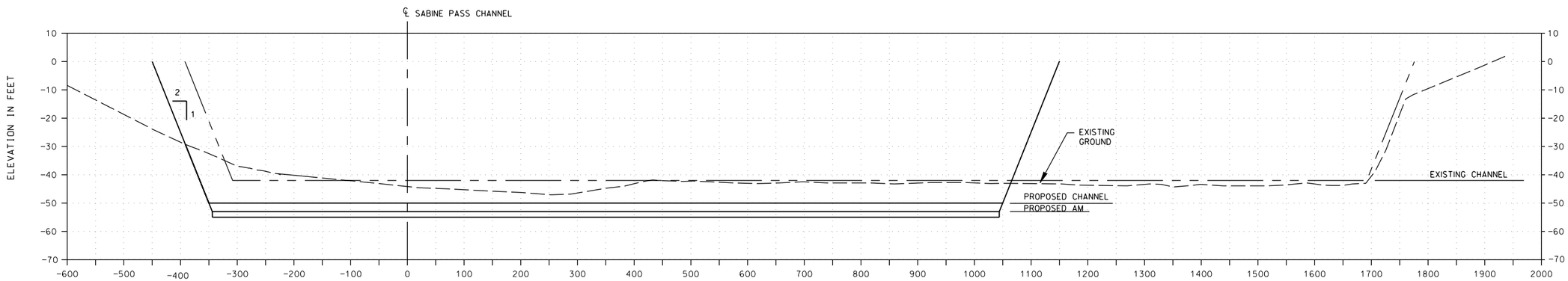
SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

PORT ARTHUR CANAL
CROSS SECTIONS

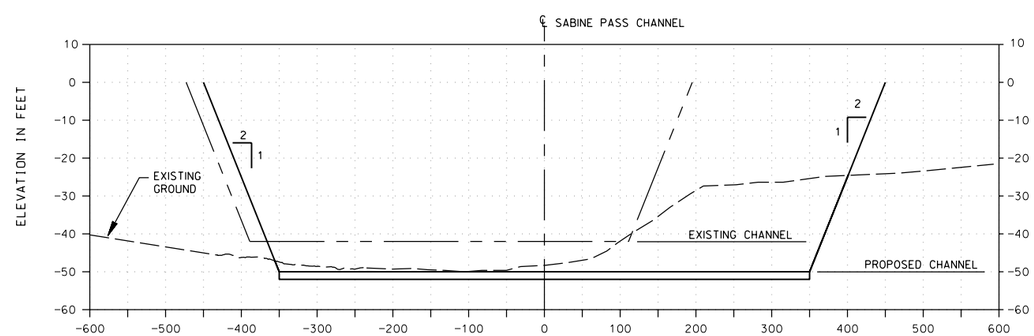
Drawing No.:
C-17



SPC STA. 270+00



SPC STA. 140+00



SPC STA. 10+00

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Chief, Geraldingering Section
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Rev. --
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch

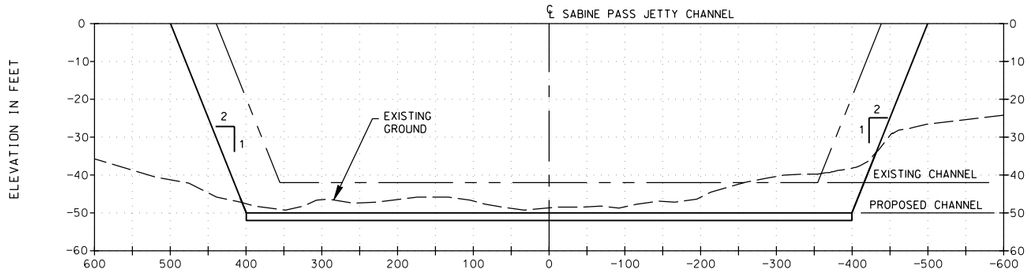
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, Col., C.E.,
DISTRICT COMMANDER

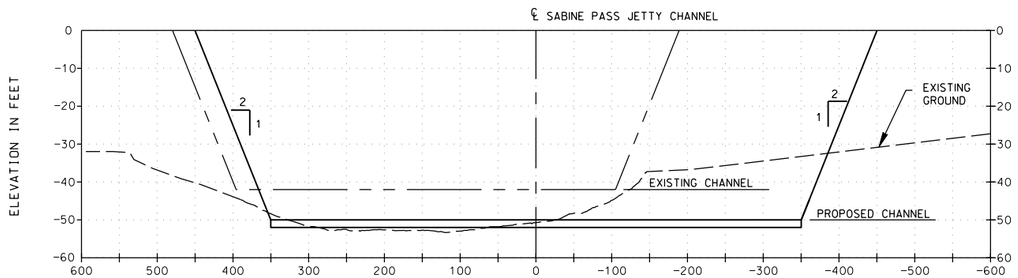
SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

SABINE PASS CHANNEL
CROSS SECTIONS

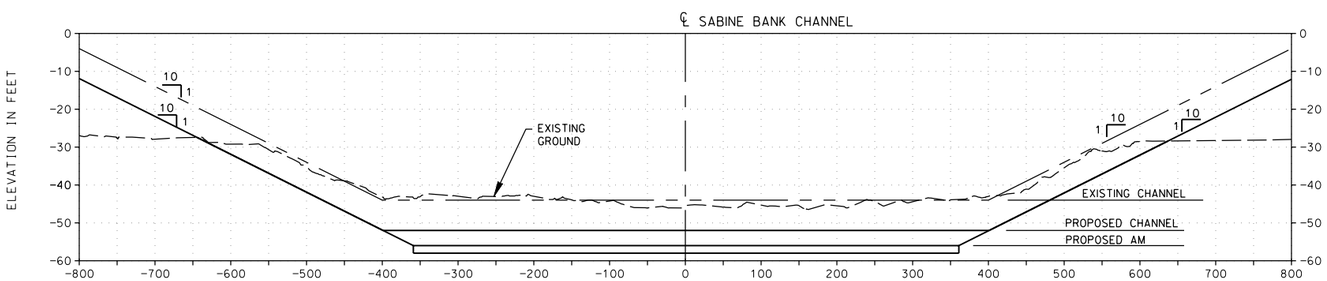
Drawing No.:
C-18



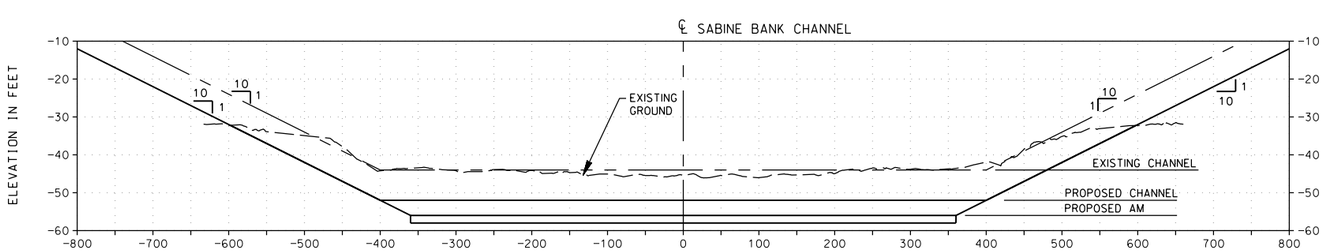
SPJ STA. -214+00



SPJ STA. -0+50



SABINE OUTER BAR STA. 3+000



SABINE OUTER BAR STA. 18+000

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

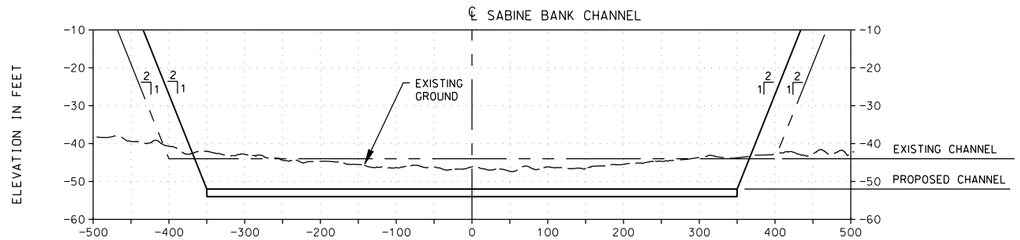
Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by:
DAVID R. BROWN, P.E.
Chief, Generalist Engineering Section
Approved by:
PETE G. PEREZ, P.E.
Chief, Engineering and Construction Division

Date: MAY 2008
Rev. --
Scale: AS SHOWN
Approval Recommended:
HARRISON T. SUTCLIFF, PE
Chief, Engineering Branch

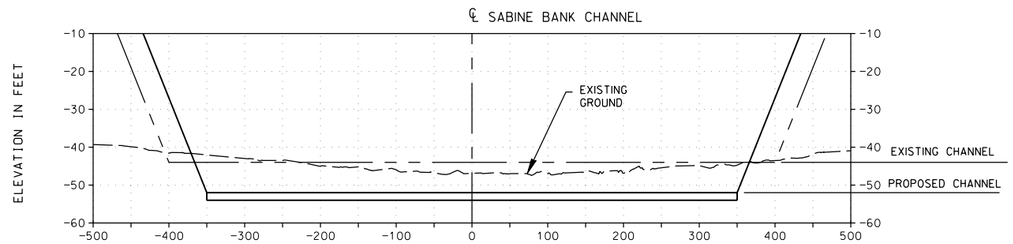
SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

SABINE PASS JETTY &
SABINE PASS OUTER BAR CHANNELS
& CROSS SECTIONS

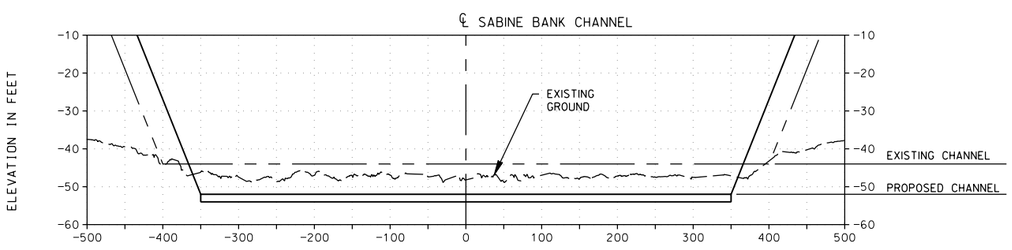
Drawing No.:
C-19



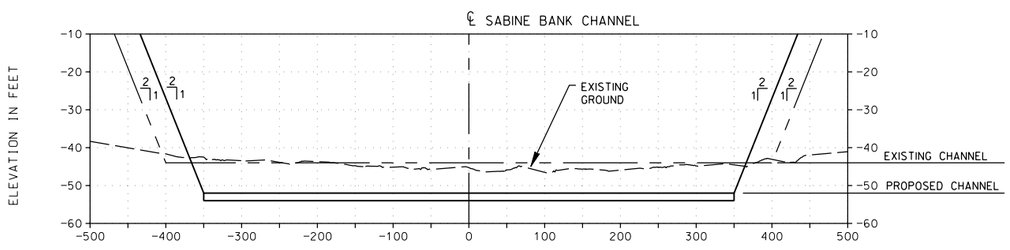
SBC STA. 30+000



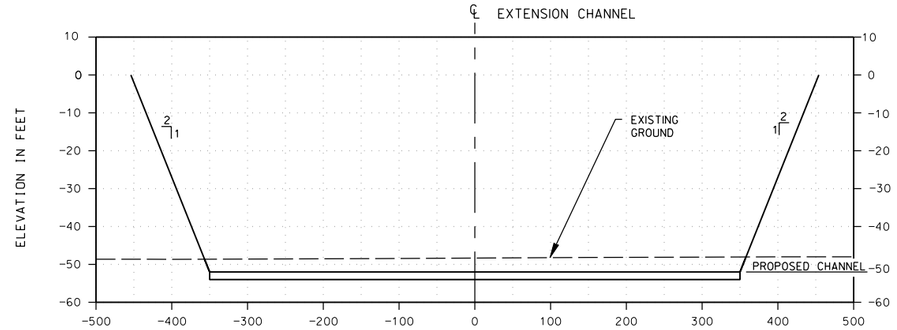
SBC STA. 50+000



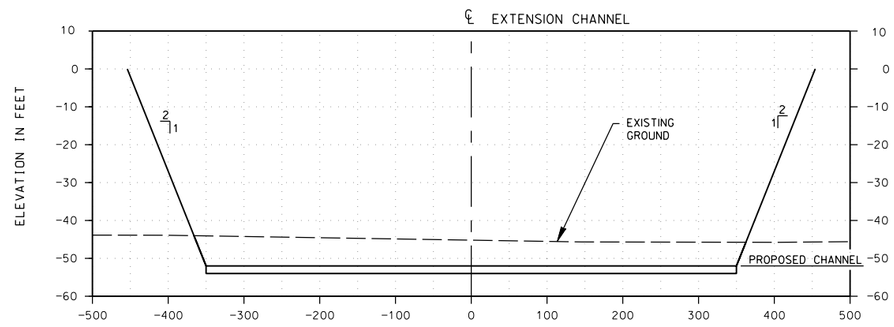
SBC STA. 70+000



SBC STA. 87+000



SNWW EXT STA. 163+000



SNWW EXT STA. 100+000

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Date: MAY 2008
Rev. --
Scale: AS SHOWN
Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Chief, Geotechnical Engineering Section
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division

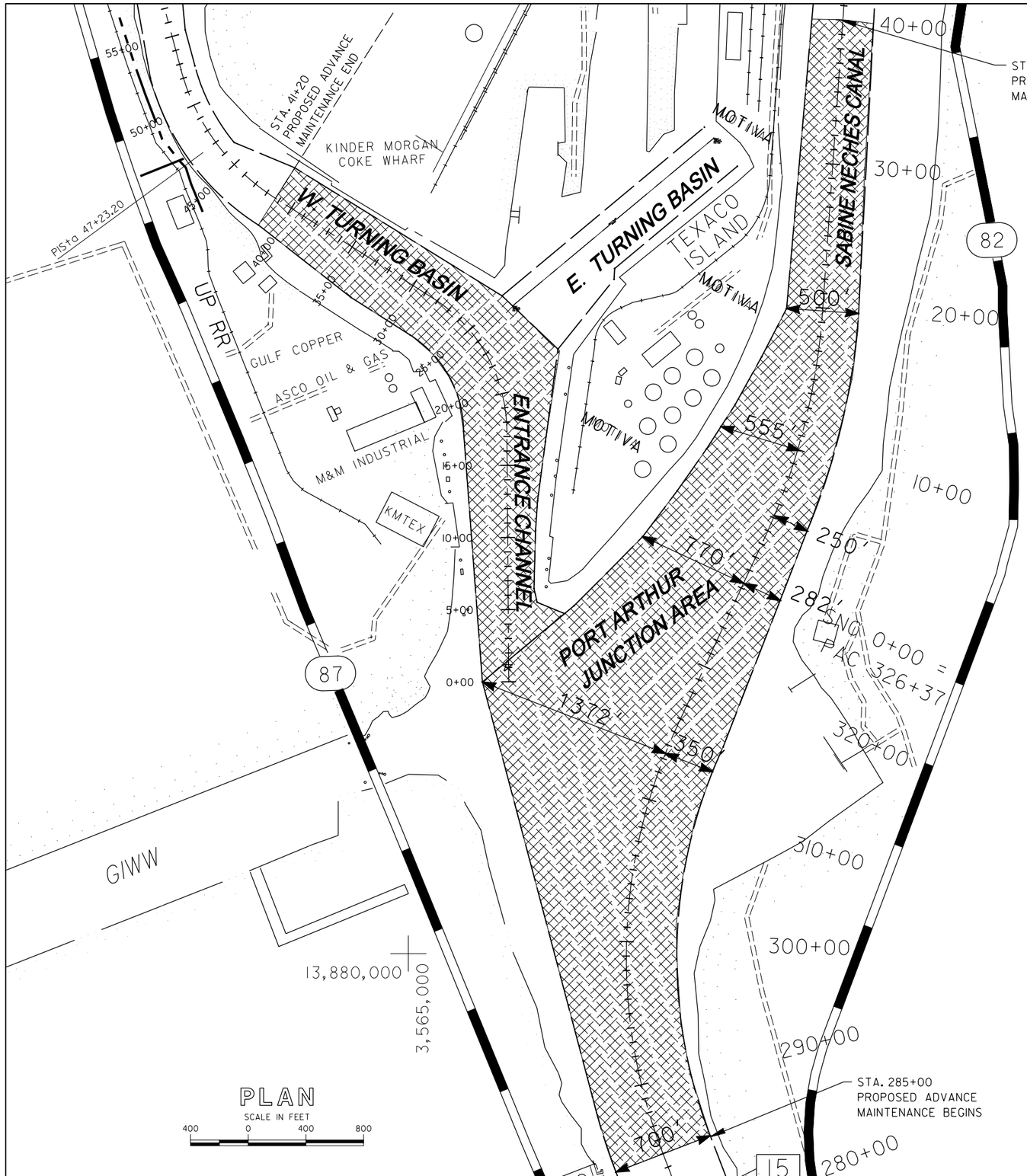
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, Col., C.E.,
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

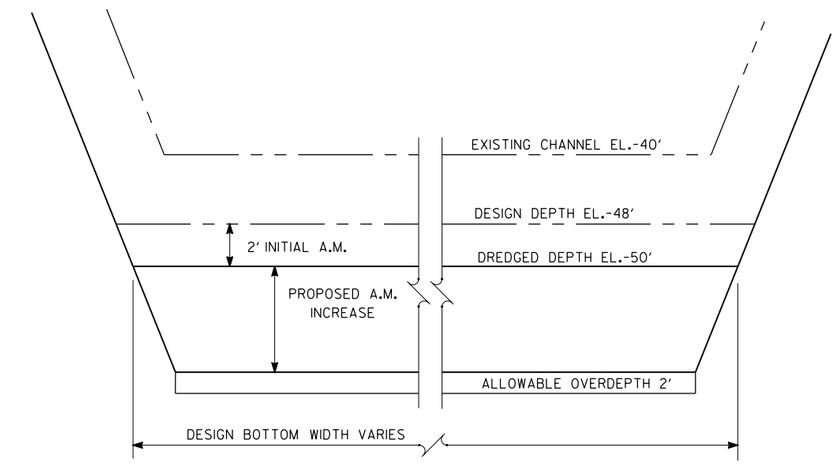
SABINE BANK
& EXTENSION CHANNELS
CROSS SECTIONS

Drawing No.:
C-20



NOTES:

1. NEW STATIONING WITH NEW ALIGNMENT, WILL NOT MATCH EXISTING CHANNEL STATIONING.
2. THE FIRST 2 FEET OF ADVANCE MAINTENANCE IS INCLUDED WITHIN THE NEW TEMPLATE. THIS IS A TYPICAL APPLICATION, AND STANDARD PRACTICE.
3. FOR ADVANCE MAINTENANCE OVER 2 FEET, THE DEPTH WILL DESCEND ALONG THE SIDE SLOPES, REDUCING THE BOTTOM CHANNEL WIDTH AS IT DESCENDS. THE PROPOSED CHANNEL WILL BE THE DESIGN WIDTH AT 50' DEPTH.
4. REFER TO PREVIOUS PLANS FOR LEGENDS.



TYPICAL SECTION DETAIL
NTS

PORT ARTHUR JUNCTION AREA
ADVANCE MAINTENANCE LIMITS

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Date: MAY 2008
Scale: AS SHOWN
Submitted by: DAVID R. BROWN, P.E. Chief, Geotechnical Engineering Section
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division

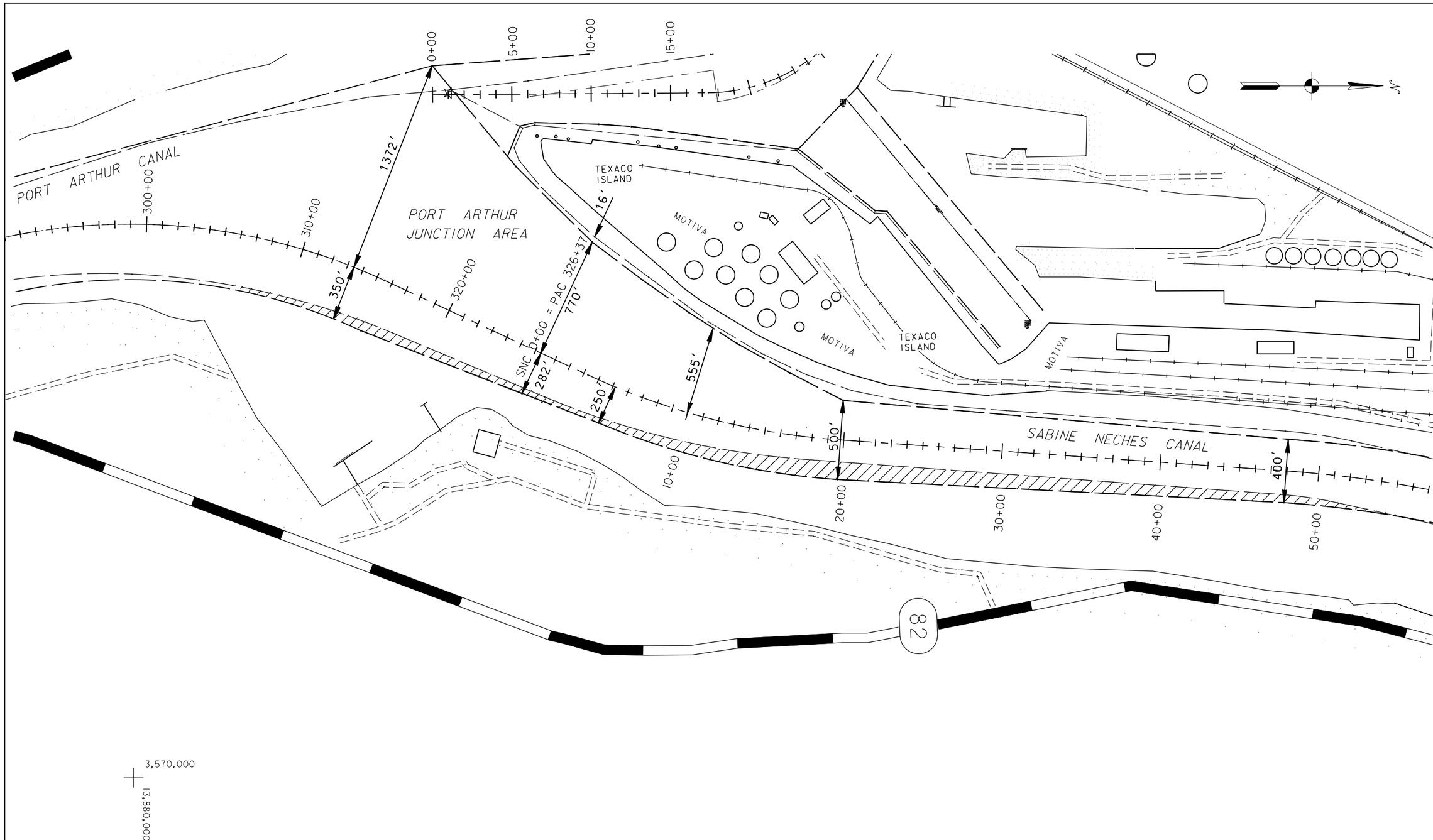
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

PORT ARTHUR JUNCTION AREA
PROPOSED ADVANCE
MAINTENANCE LIMITS

Drawing No.:
C-21



PLAN

SCALE IN FEET

300 0 300 600

NOTES:

1. FOR LEGEND REFER TO DWG C-01.

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Chief, Engineering Section
Approved by: PETER G. PEREZ, P.E. Chief, Engineering and Construction Division

Date: MAY 2008
Rev.
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch

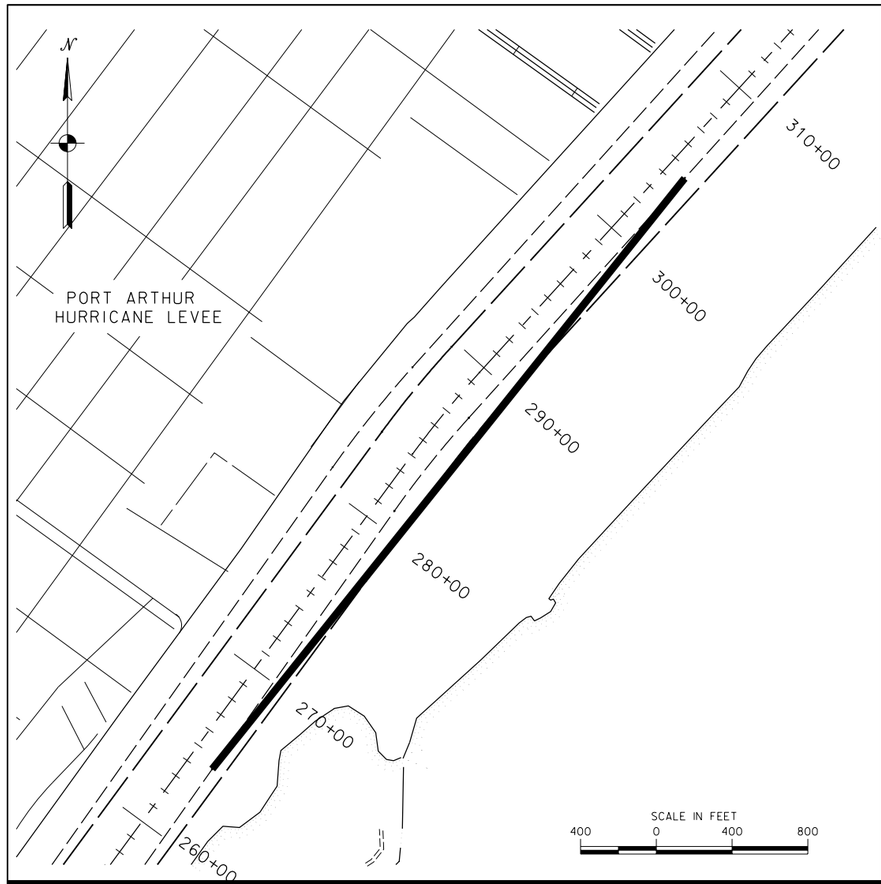
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

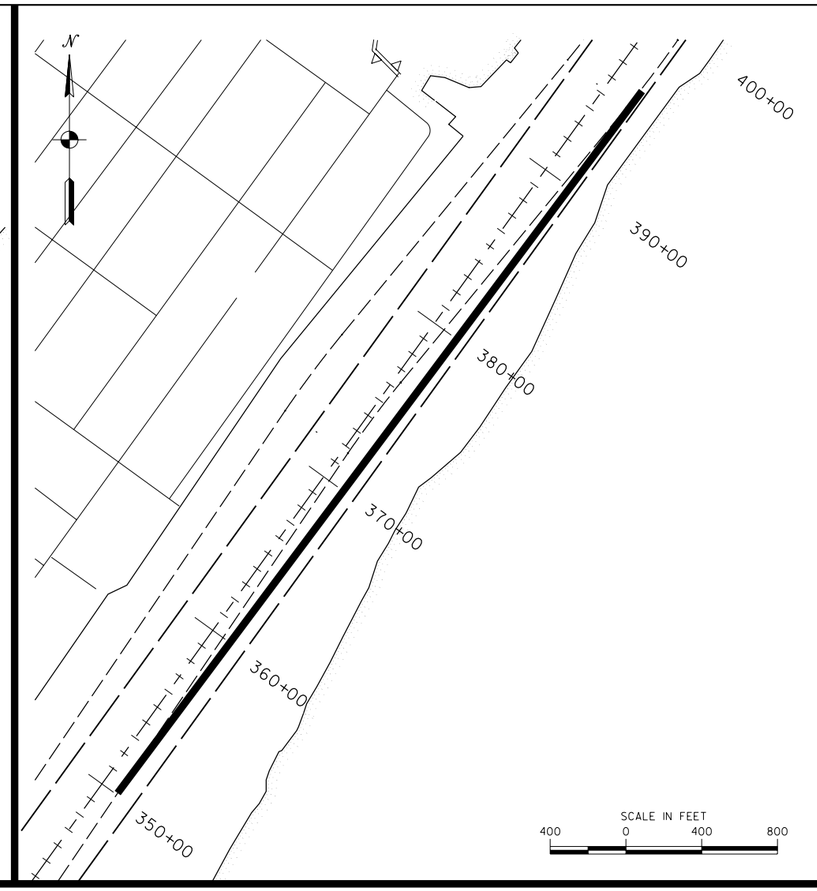
SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

BEND EASING
PORT ARTHUR &
SABINE NECHES CANALS

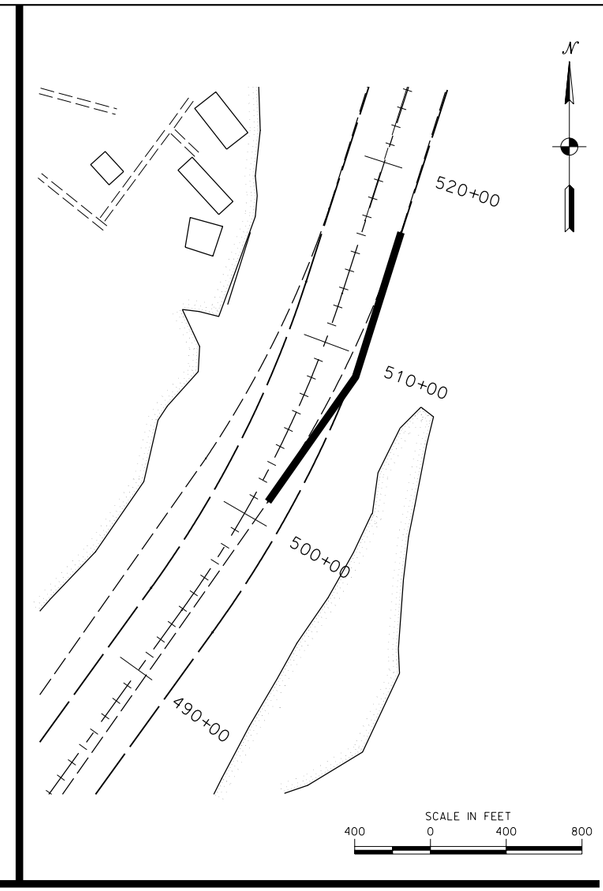
Drawing No.:
C-22



SABINE NECHES CANAL
BEND EASING
STA. 260+00 TO STA. 350+00

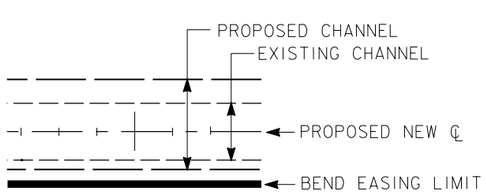


SABINE NECHES CANAL
BEND EASING
STA. 350+00 TO STA. 396+00



SABINE NECHES CANAL
BEND EASING
STA. 501+00 TO STA. 515+00

LEGEND



NOTE:
1. BEND EASING LIMITS RECOMMENDED BY ERDC. REFER TO SHIP SIMULATION REPORT.

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Chief, Engineering Section
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Scale: AS SHOWN
Rev.

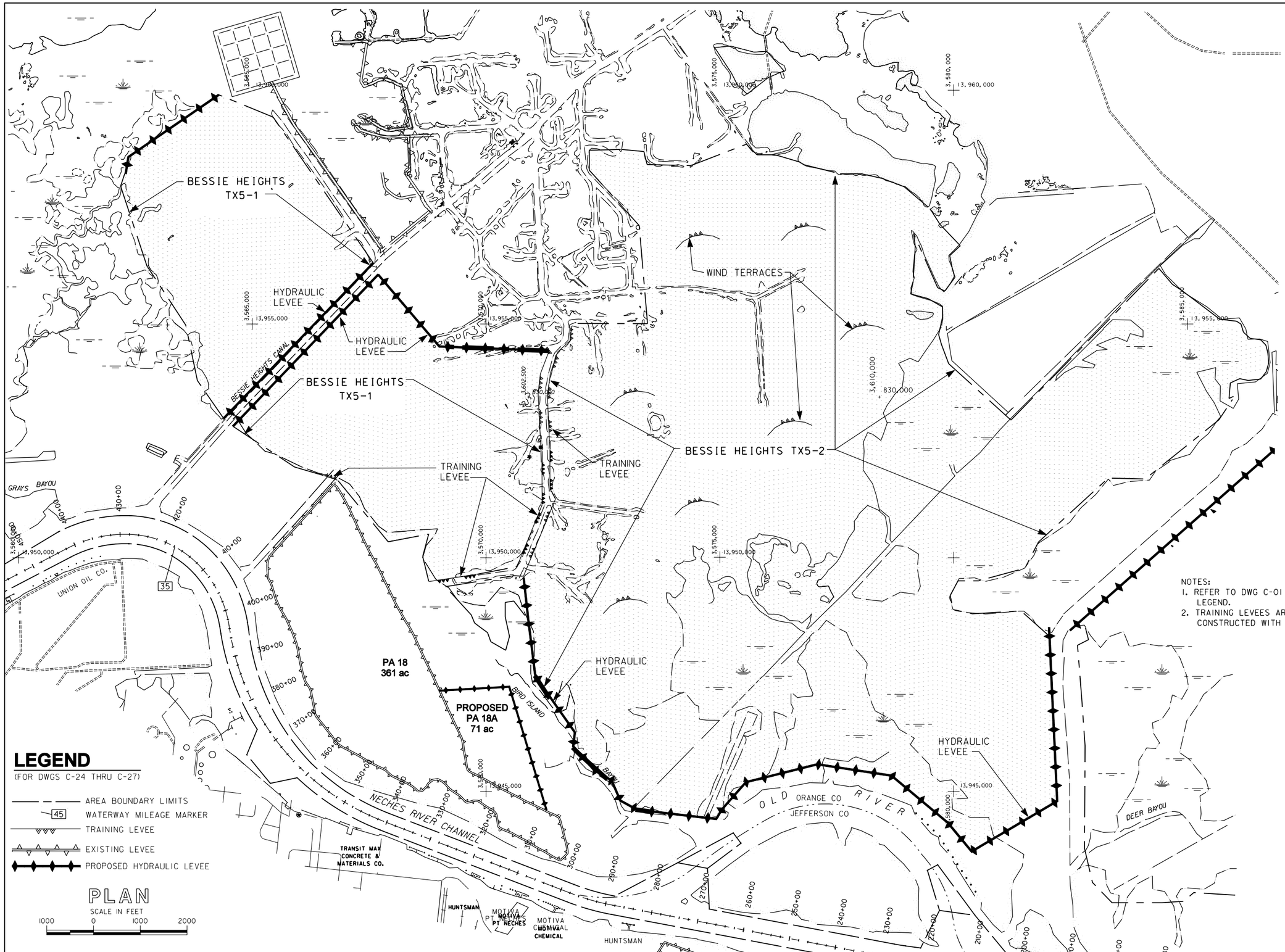
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

SABINE NECHES CANAL
BEND EASINGS

Drawing No.:
C-23



NOTES:
1. REFER TO DWG C-01 FOR ADDITIONAL LEGEND.
2. TRAINING LEVEES ARE MECHANICALLY CONSTRUCTED WITH SIDE BORROW MATERIAL.

LEGEND
(FOR DWGS C-24 THRU C-27)

- AREA BOUNDARY LIMITS
- 45 WATERWAY MILEAGE MARKER
- TRAINING LEVEE
- EXISTING LEVEE
- PROPOSED HYDRAULIC LEVEE

PLAN
SCALE IN FEET
1000 0 1000 2000

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

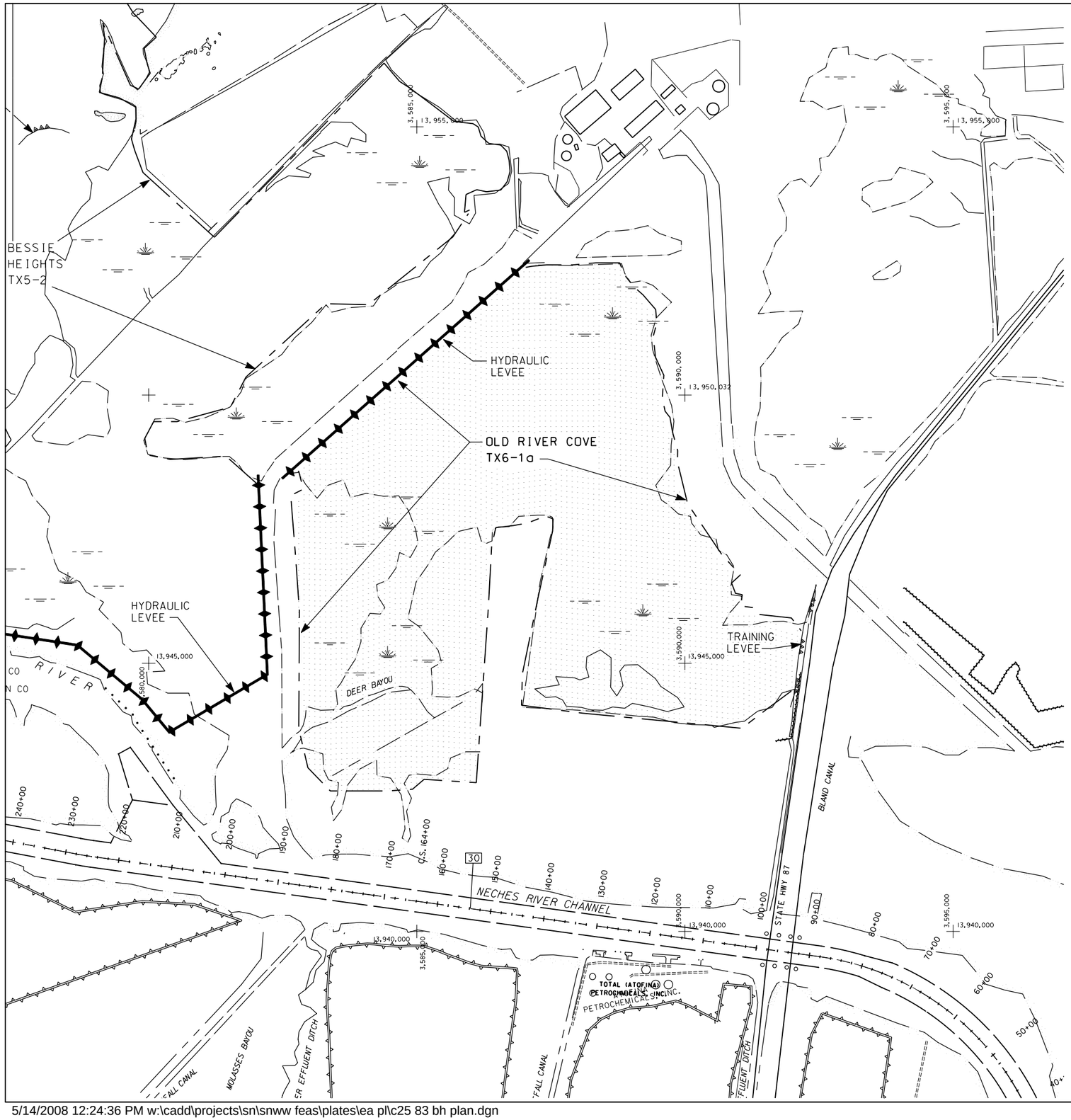
Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by:
DAVID R. BROWN, P.E.
Chief, Geneering Section
Approved by:
PETE G. PEREZ, P.E.
Chief, Engineering and Construction Division

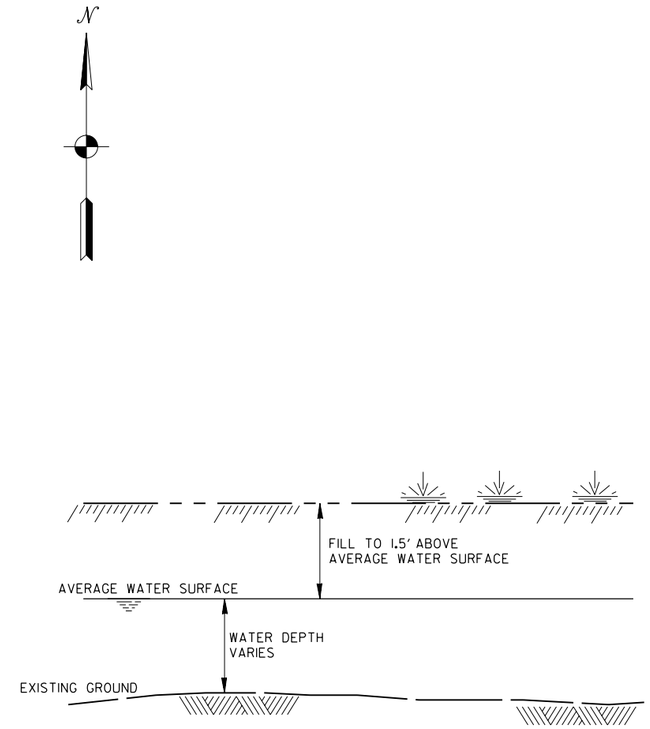
Date: MAY 2008
Rev.
Scale: AS SHOWN
Approval Recommended:
HARRISON T. SUTCLIFF, PE
Chief, Engineering Branch

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

BESSIE HEIGHTS PLAN
TEXAS

Drawing No.:
C-24





TYPICAL MARSH RESTORATION SECTION

NOT TO SCALE

PLAN

SCALE IN FEET

1000 0 1000 2000

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Chief, Generalist Engineering Section
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division

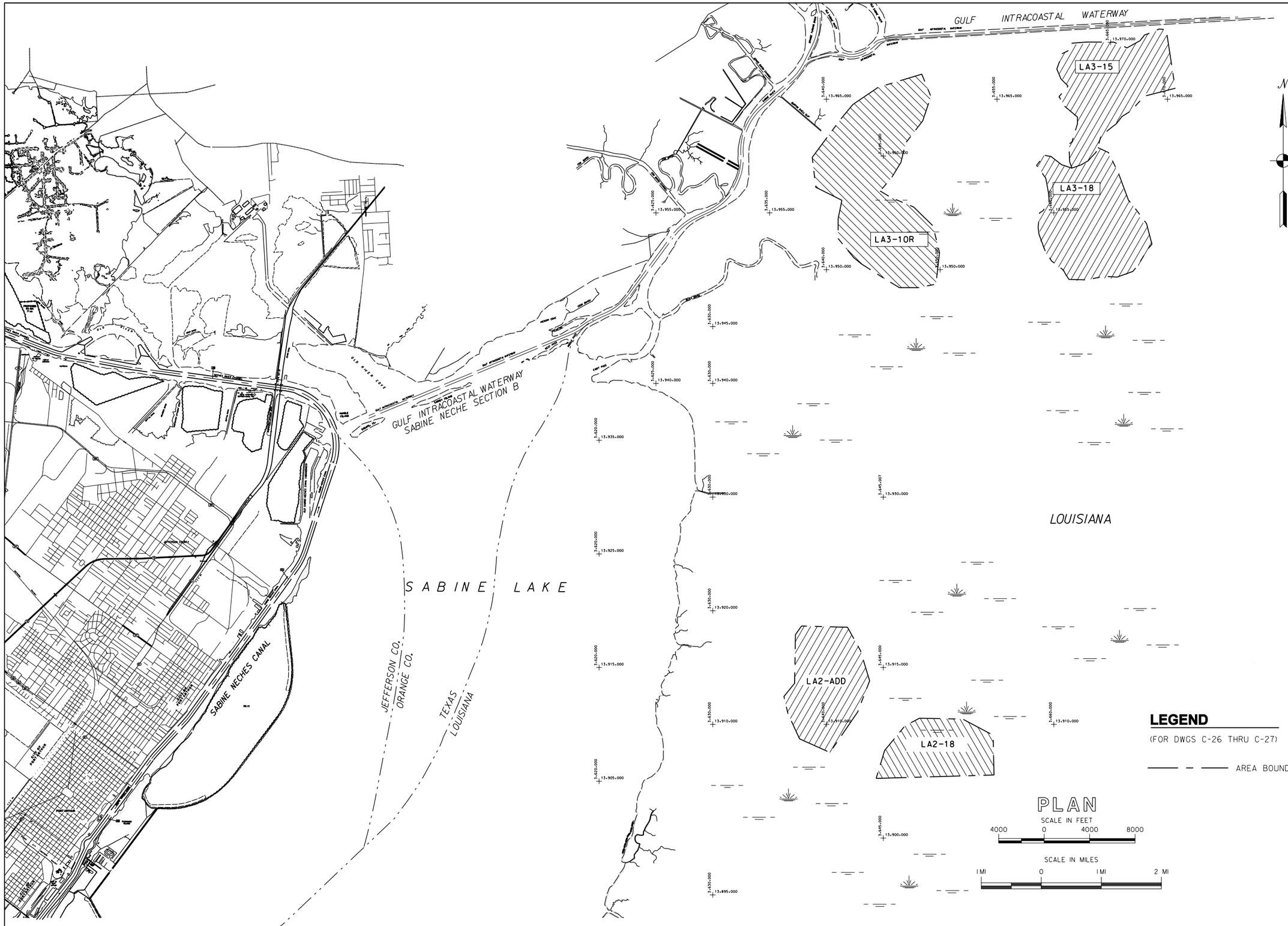
Date: MAY 2008
Rev.
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE

PREPARED UNDER THE DIRECTION OF DAVID C. WESTON, Col., C.E., DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

OLD RIVER COVE PLAN
TEXAS

Drawing No.:
C-25



US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by: ESR/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Chief, General Engineering Section
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Scales: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch

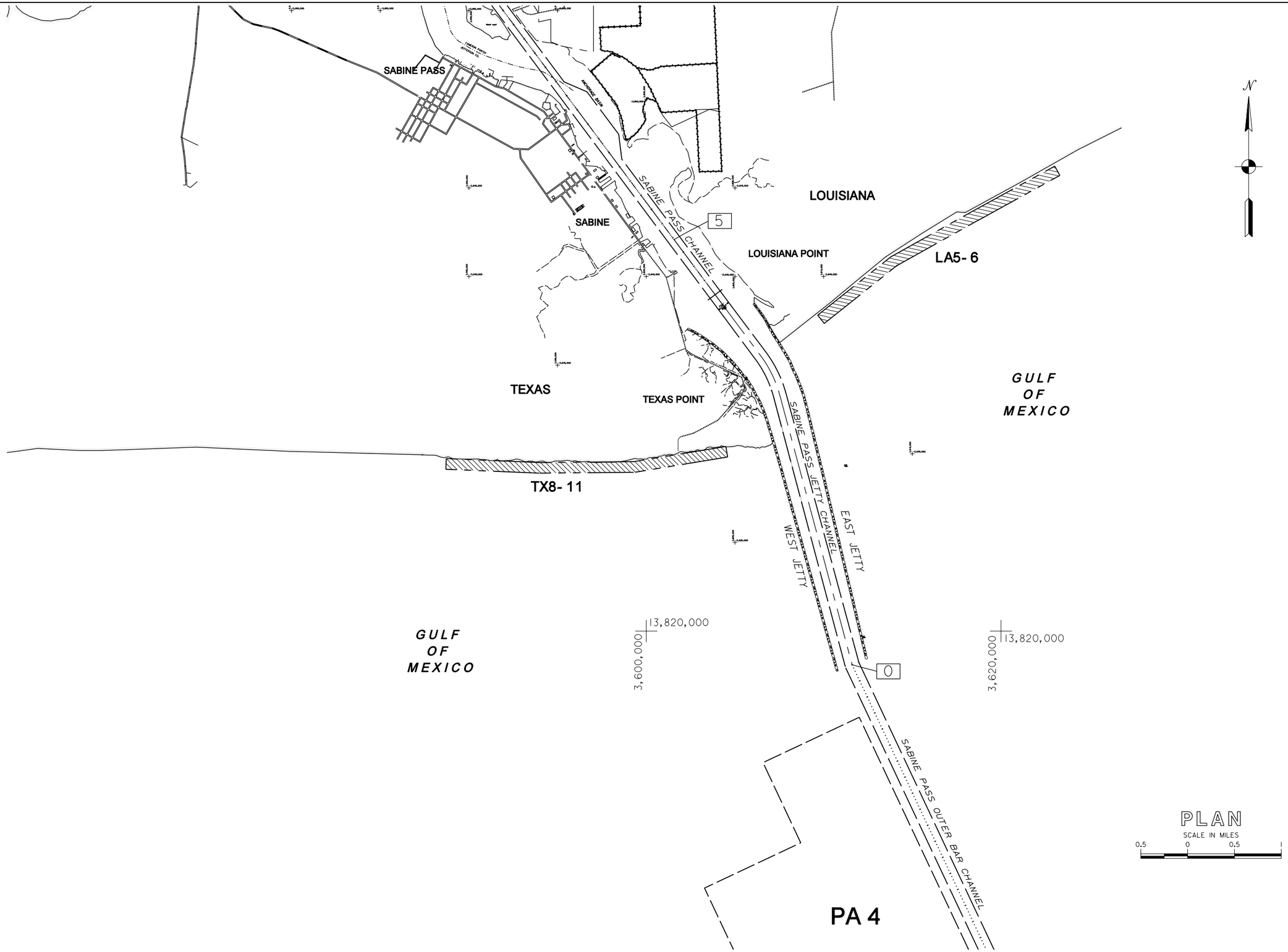
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

LOUISIANA PLAN

Drawing No.:
C-26



US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by: ESK/NCY
Designed by: NCY
Checked by: MD
Submitted by: DAVID R. BROWN, P.E. Dist.Generalsgineering Section
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch
Rev.

U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

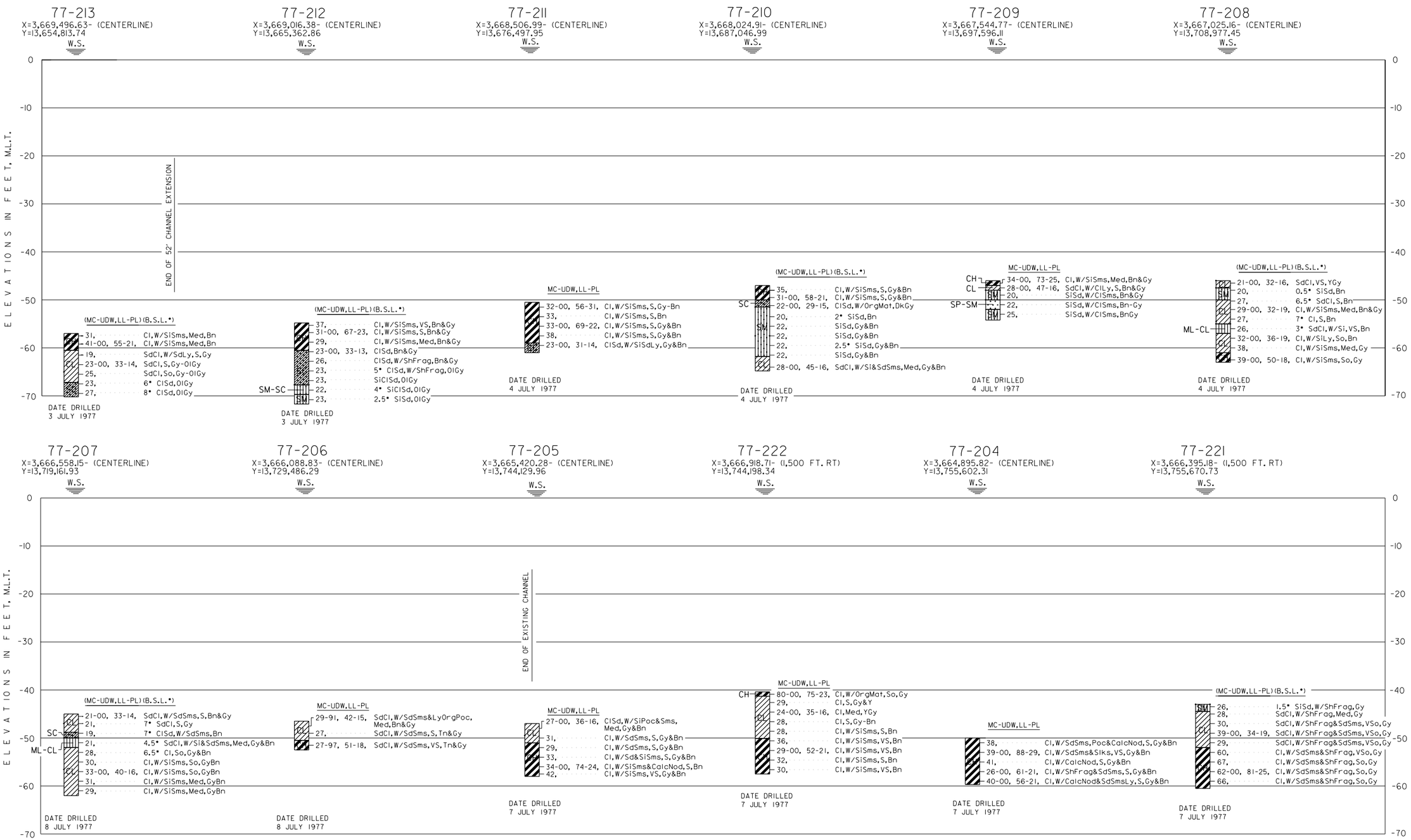
PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, Col., C.E.,
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

GULF SHORE
SHORELINE NOURISHMENT
PLAN

Drawing No.:
C-27

5/14/2008 12:24:59 PM w:\cadd\projects\sn\snww feas\plates\ea pl\c27 83 shoreln.dgn



NOTES: TO BORINGS

1. DIRECTIONS LEFT AND RIGHT OF CENTERLINE ARE AS VIEWED LOOKING UPSTREAM (TOWARD INCREASING STATION)
2. SEE DRAWING C-11 AND C-12 FOR BORING LOCATIONS.
3. SEE DRAWING F-6 FOR BORING NOTES AND LEGEND.

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by:
Designed by: X
Checked by: X
Submitted by: LORI K. THOMAS, P.E. Chief, Geotech/Structure Section
Approved by: FELIX C. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Rev.
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch

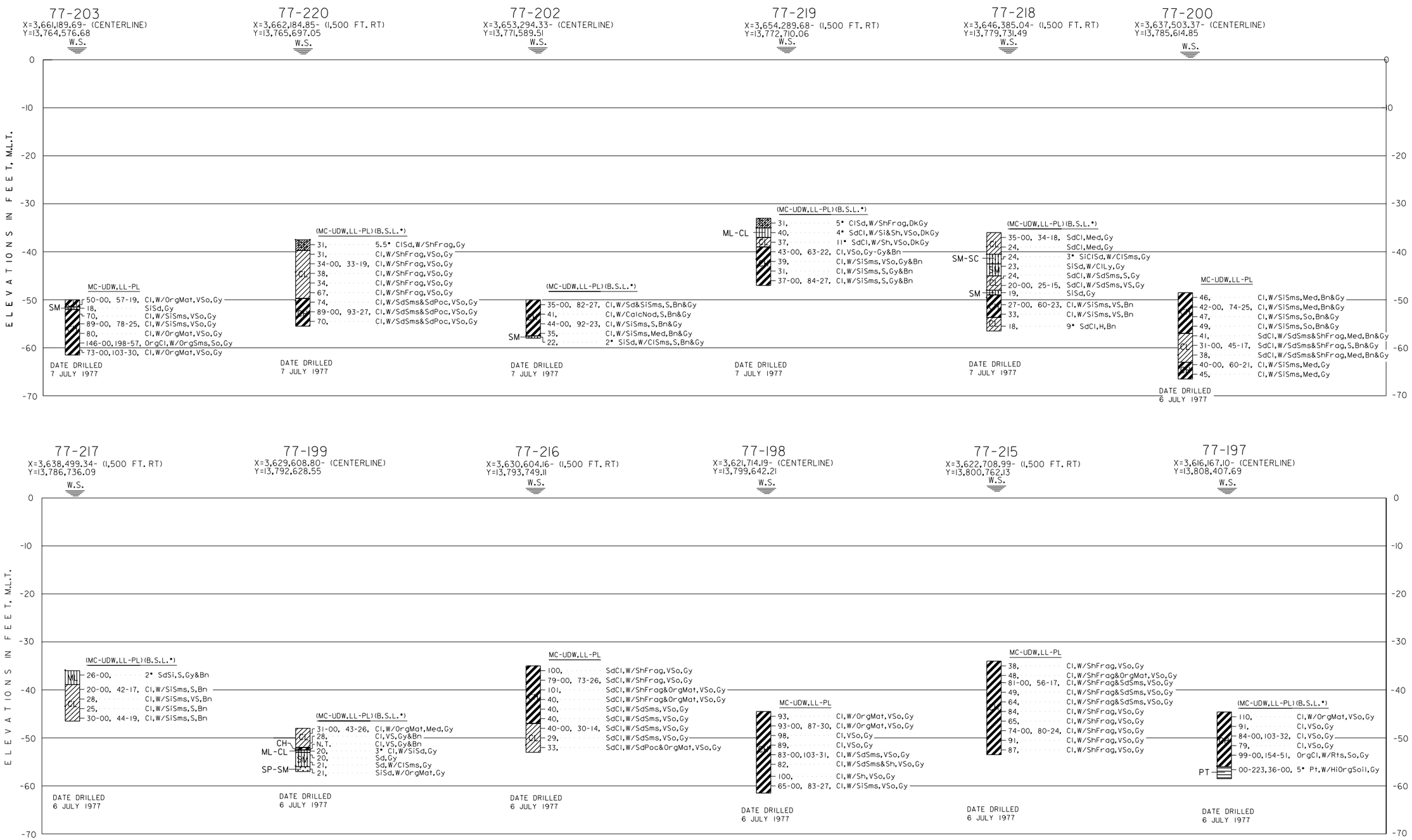
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

LOGS OF BORINGS
77-204 TO 77-222

Drawing No.:
F-1



NOTES: TO BORINGS

1. DIRECTIONS LEFT AND RIGHT OF CENTERLINE ARE AS VIEWED LOOKING UPSTREAM (TOWARD INCREASING STATION)
2. SEE DRAWING C-11 FOR BORING LOCATIONS.
3. SEE DRAWING F-6 FOR BORING NOTES AND LEGEND.

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Date: MAY 2008 | Rev.
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch
Drawn by:
Designed by: X
Checked by: X
Submitted by: LORIK, THOMAS, P.E. Chief, Design/Structure Section
Approved by: PETER C. PEREZ, P.E. Chief, Engineering and Construction Division

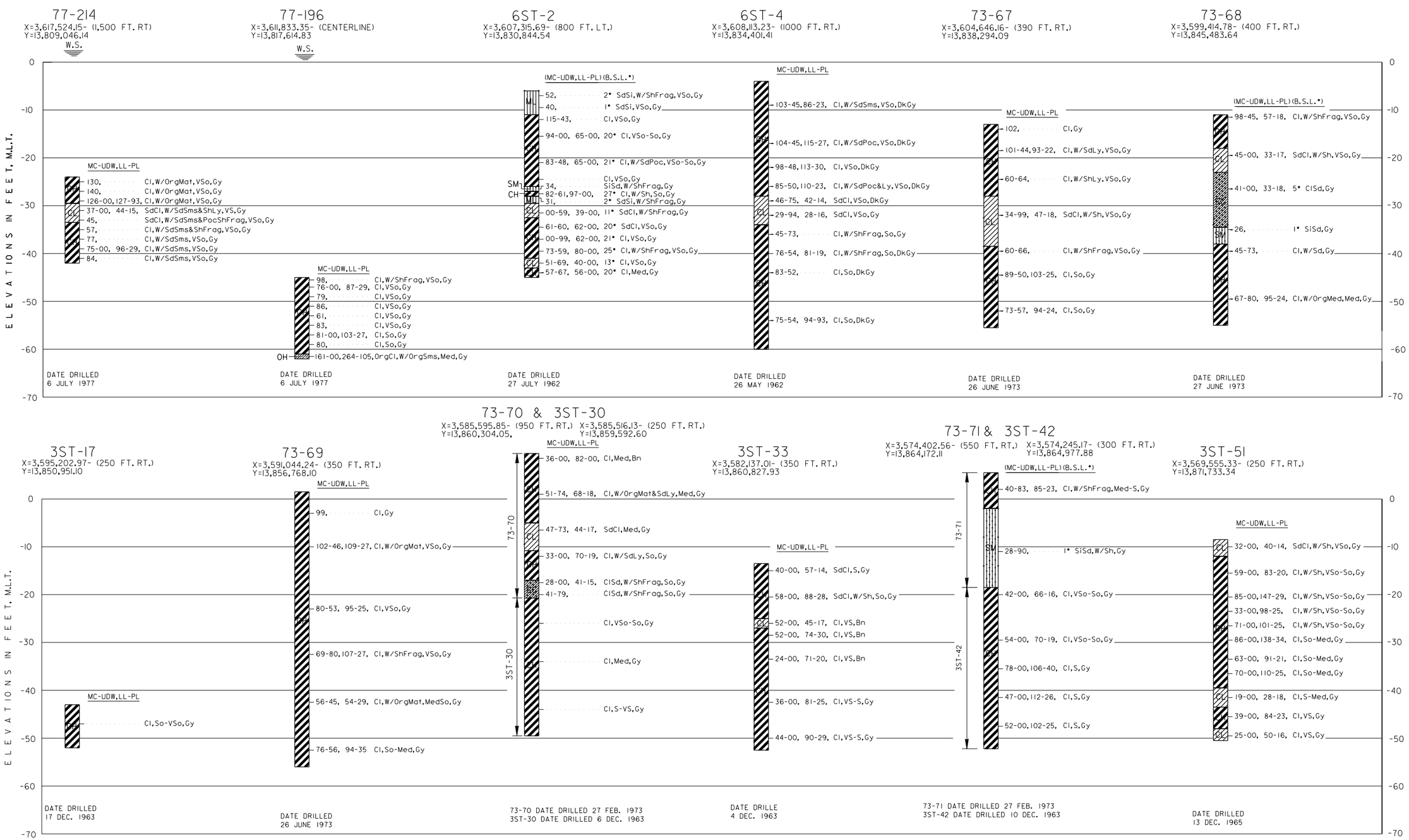
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL, C.E.,
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

LOGS OF BORINGS
77-203 TO 77-197

Drawing No.:
F-2



NOTES: TO BORINGS

1. DIRECTIONS LEFT AND RIGHT OF CENTERLINE ARE AS VIEWED LOOKING UPSTREAM (TOWARD INCREASING STATION)
2. SEE DRAWINGS C-08, C-09, C-10 AND C-11 FOR BORING LOCATIONS.
3. SEE DRAWING F-6 FOR BORING NOTES AND LEGEND.

US Army Corps of Engineers
Galveston District

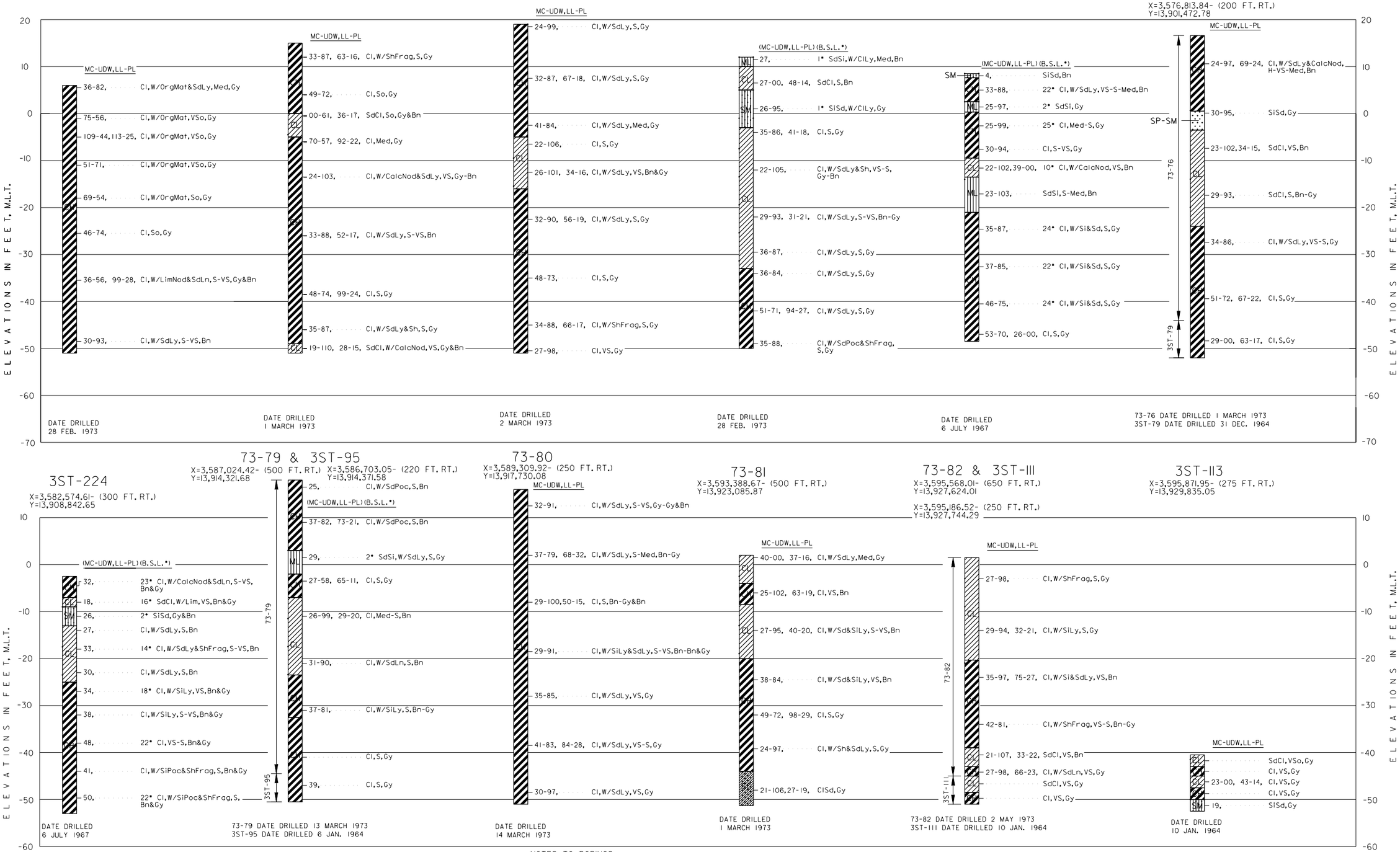
Rev.	Description	Date	By

Date: MAY 2008
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch
Drawn by:
Designed by: X
Checked by: X
Submitted by: LORIK, THOMAS, P.E. Chief, Geotech/Structure Section
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS
PREPARED UNDER THE DIRECTION OF DAVID C. WESTON, COL, C.E., DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

LOGS OF BORINGS
77-214 TO 3ST-51

Drawing No.:
F-3



NOTES: TO BORINGS

1. DIRECTIONS LEFT AND RIGHT OF CENTERLINE ARE AS VIEWED LOOKING UPSTREAM (TOWARD INCREASING STATION)
2. SEE DRAWINGS C-07, C-06, C-05 AND C-04 FOR BORING LOCATIONS.
3. SEE DRAWING F-6 FOR BORING NOTES AND LEGEND.

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by:
Designed by: X
Checked by: X
Submitted by:
LORIK. THOMAS, P.E.
Chief, Geteech/Structure Section
Approved by:
RICHARD C. PEREZ, P.E.
Chief, Engineering and Construction Division

Date: MAY 2008
Rev.
Scale: AS SHOWN
Approval Recommended:
HARRISON T. SUTCLIFF, PE
Chief, Engineering Branch

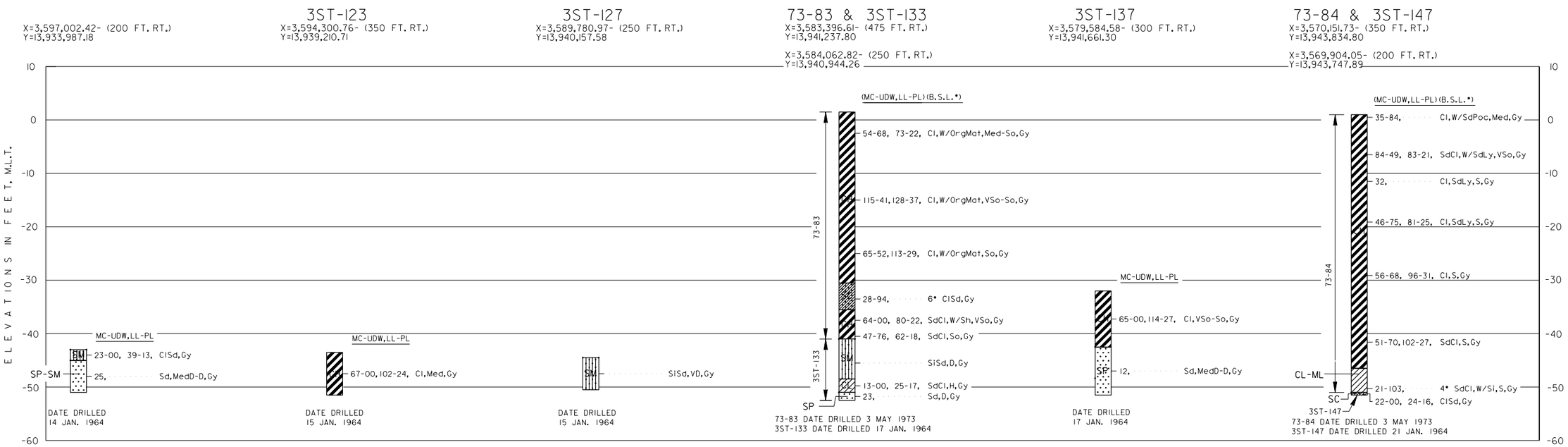
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

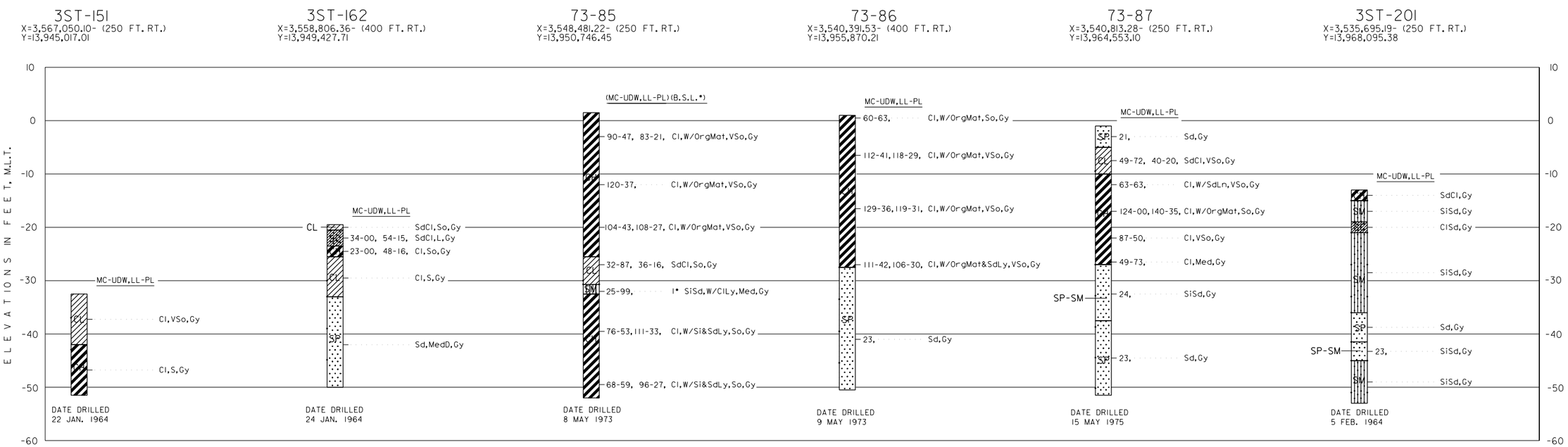
PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.,
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

LOGS OF BORINGS
73-72 TO 3ST-113

Drawing No.:
F-4





NOTES: TO BORINGS

1. DIRECTIONS LEFT AND RIGHT OF CENTERLINE ARE AS VIEWED LOOKING UPSTREAM (TOWARD INCREASING STATION)
2. SEE DRAWINGS C-01, C-02, C-03 AND C-04 FOR BORING LOCATIONS.
3. SEE DRAWING F-6 FOR BORING NOTES AND LEGEND.

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by:
Designed by: X
Checked by: X
Submitted by: LORIK, THOMAS, P.E. Chief, Geotech/Structure Section
Approved by: PETER C. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch

U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL, C.E.,
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

LOGS OF BORINGS
3ST-117 TO 3ST-201

Drawing No.:
F-5

LABORATORY CLASSIFICATION

- CH INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS.
- CL INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, LEAN CLAYS. CL-ML CLAY-SILT OF LOW PLASTICITY.
- ML INORGANIC SILTS AND VERY FINE SANDS, WITH SLIGHT PLASTICITY.
- SC CLAYEY SANDS, SAND-CLAY MIXTURES.
- SM SILTY SANDS, SAND-SILT MIXTURES.
- SP POORLY GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES. SP-SM POORLY-GRADED SAND W/SILT.
- OH ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS.
- PT PEAT AND OTHER HIGHLY ORGANIC SOILS.

NOTES;

1. SOILS HAVE BEEN CLASSIFIED IN ACCORDANCE WITH ASTM D-2487-93 "CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES (UNIFIED SOIL CLASSIFICATION SYSTEM) "." CONSISTENCY OF SOILS SUCH AS SOFT, MEDIUM, HARD, LOOSE, DENSE, ETC., ARE RELATIVE TERMS BASED ON ESTIMATED UNDISTURBED SHEAR STRENGTH OF THE MATERIAL AS DETERMINED BY VISUAL CLASSIFICATION POCKET PENETROMETER TESTS AND PENETRATION RESISTANCE DURING SAMPLING.
2. FIGURES TO THE RIGHT OF BORING LOGS ARE WATER CONTENTS IN IN PERCENT OF THE DRY WEIGHT, DRY DENSITY, LIQUID LIMIT, PLASTIC LIMIT AND BAR LINER SHRINKAGE. (MC-UDW,LL-PL) (B.L.S.*). FIGURES TO THE LEFT OF BORING LOGS ARE BLOWS PER FOOT PENETRATION FROM STANDARD PENETRATION TESTING.
3. BORINGS WERE DRILLED USING WET ROTARY DRILLING TECHNIQUES AND UNDISTURBED SAMPLES WHERE RECOVERED WITH A 3-INCH DIAMETER THIN WALL SAMPLER WHERE COHESIVE MATERIALS WERE ENCOUNTERED. WHERE COHESIONLESS MATERIALS WERE ENCOUNTERED, DISTURBED SAMPLES WERE TAKEN WITH A SPLIT SPOON SAMPLER DURING PERFORMANCE OF STANDARD PENETRATION TESTING.

VISUAL CLASSIFICATIONS

Bn Brown(ish)	Ly Layer(s)	Si Silty
Calc Calcareous	Mat Material	Slks Slicken Sides
Cl Clay(ey)	Med Medium	Sms Seams
D Dense	Nod Nodules	So Soft
Dk Dark	N.T. No Test	Soil Soils
Frag Fragment(s)	Ol Olive	S Stiff
Gy Gray(ish)	Org Organic	Tn Tan(nish)
H Hard	Prt Parting(s)	V Very
Hi Highly	PT Peat	W.S. Water Surface
Lim Limonites	Rts Root(s)	W With
L Loose	Sd Sand(y)	Y Yellow(ish)
Ln Lense(s)	Sh Shell(y)	

NOTES: TO BORINGS

1. DIRECTIONS LEFT AND RIGHT OF CENTERLINE ARE AS VIEWED LOOKING UPSTREAM (TOWARD INCREASING STATION)
2. SEE DRAWING C-01 FOR BORING LOCATIONS.
3. SEE DRAWING F-6 FOR BORING NOTES AND LEGEND.

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by:
Designed by: X
Checked by: X
Submitted by: LORI K. THOMAS, P.E. Chief, Geotech/Structure Section
Approved by: FELIX C. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Rev.
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch

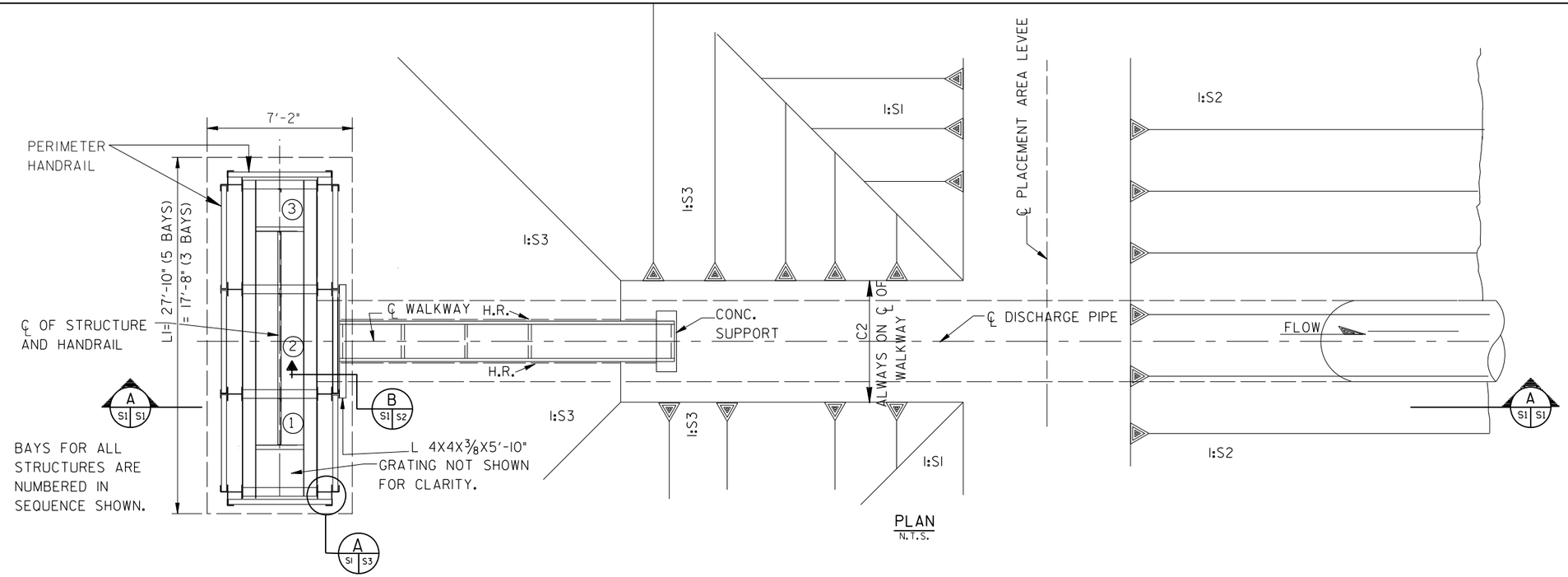
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL, C.E.
DISTRICT COMMANDER

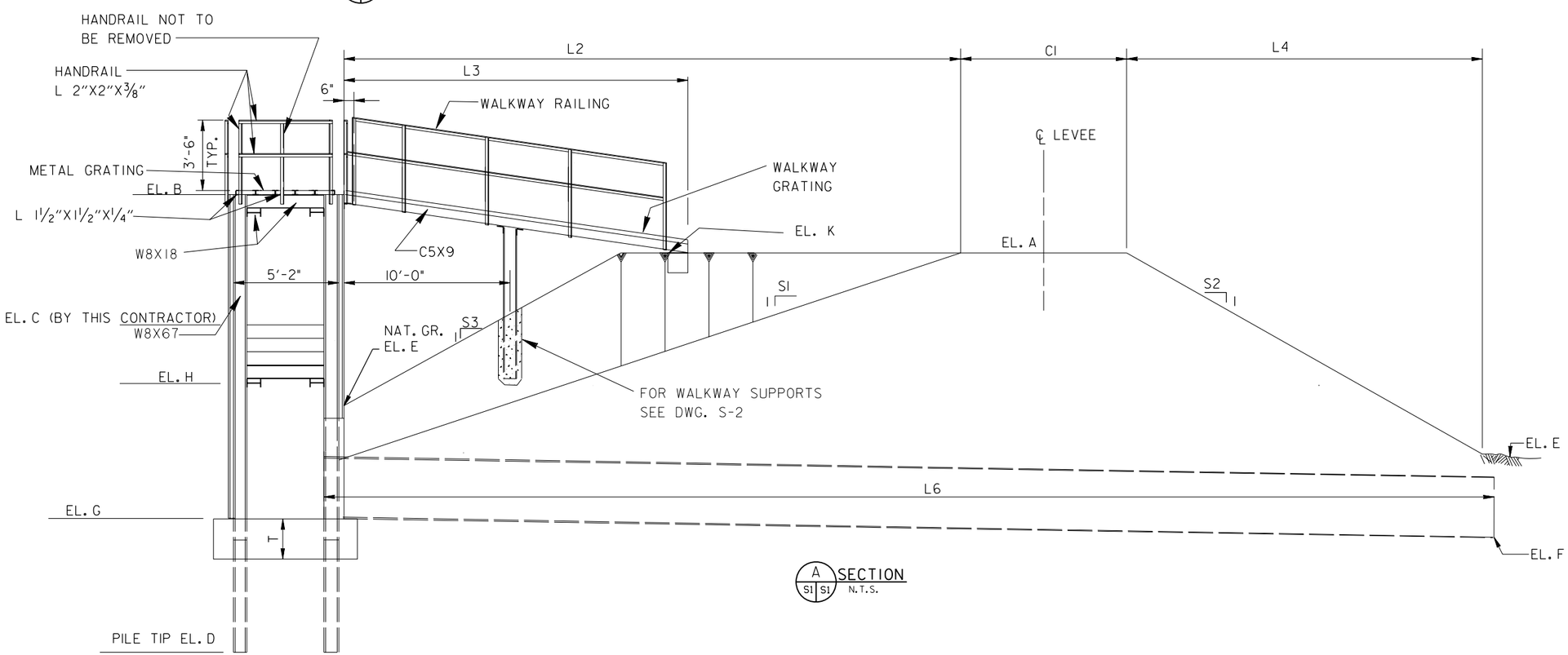
SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

LOGS OF BORINGS
3ST-207 TO 3ST-211

Drawing No.:
F-6



PLAN
N.T.S.



SECTION
N.T.S.

REF: 7.1.7 MODIFICATIONS TO DROP-OUTLETS

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by:
Designed by: X
Checked by: X
Submitted by: LORIK, THOMAS, P.E. Chief, Geotech/Structure Section
Approved by: ROBERT C. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Rev. --
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch

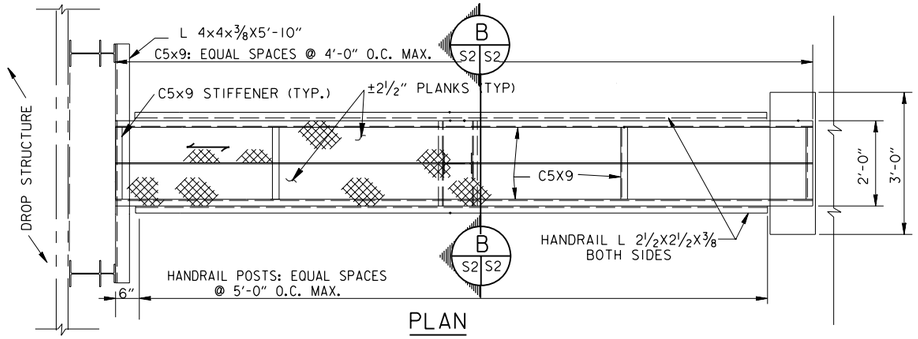
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL, C.E.
DISTRICT COMMANDER

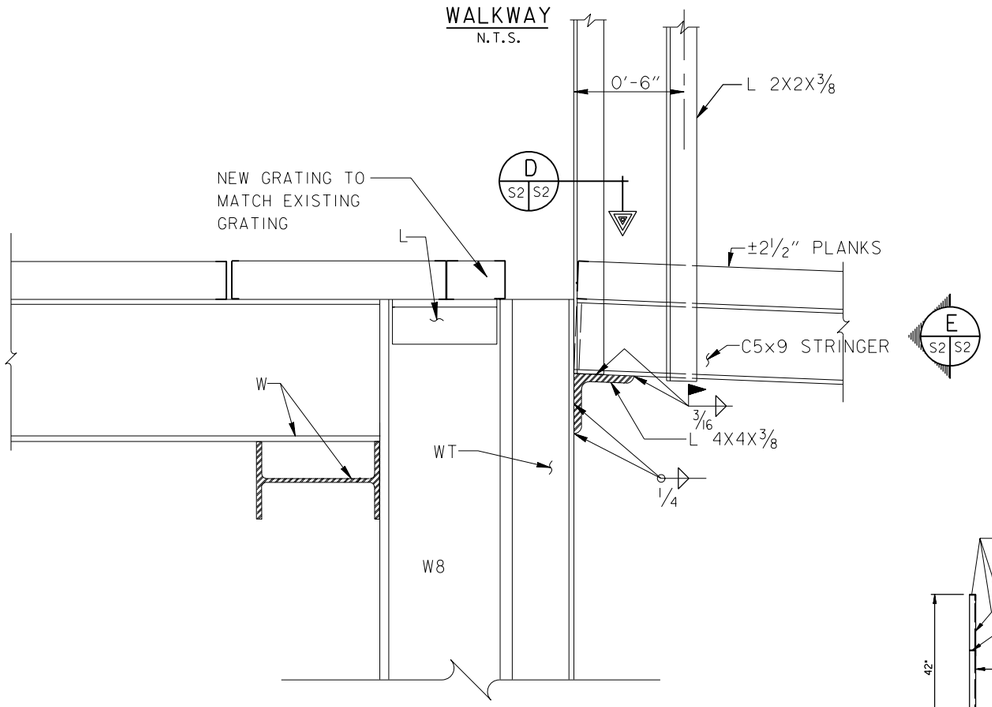
SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

DROP OUTLET STRUCTURE
PLAN AND ELEVATION

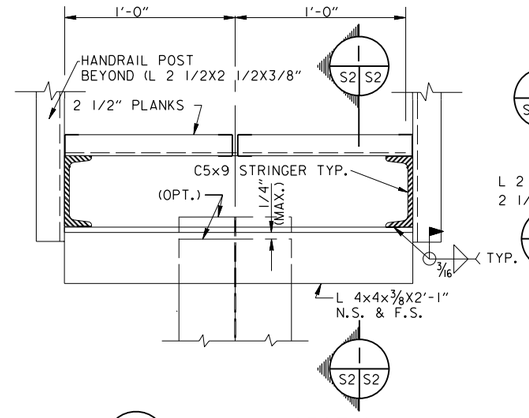
Drawing No.:
S-1



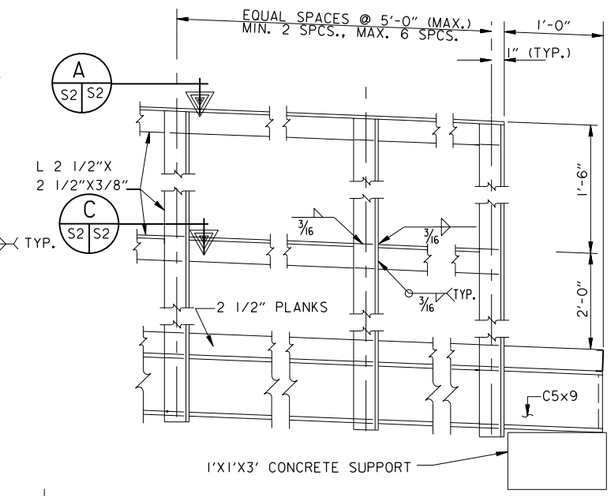
PLAN
WALKWAY
N.T.S.



B S1 S2 SECTION
N.T.S.

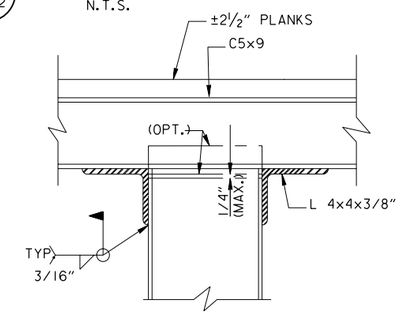


B S2 S2 WALKWAY SECTION
N.T.S.

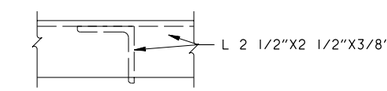


INTERMEDIATE POST END POST

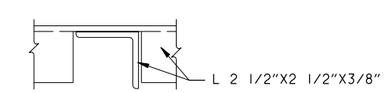
ELEVATION WALKWAY HANDRAIL
N.T.S.



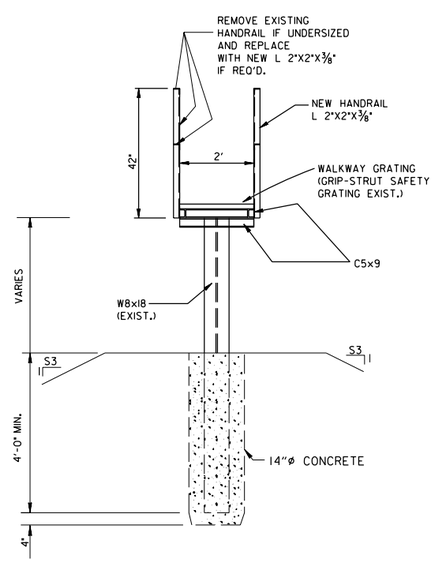
I S2 S2 SECTION
N.T.S.



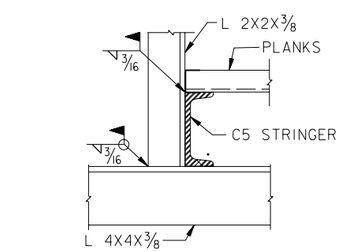
A S2 S2 SECTION
N.T.S.



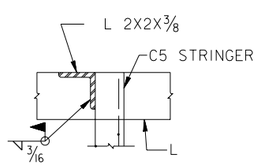
C S2 S2 SECTION
N.T.S.



WALKWAY SUPPORT SECTION
N.T.S.



E S2 S2 PLATFORM HANDRAIL @ WALKWAY CONNECTION
N.T.S.



D S2 S2 SECTION
N.T.S.

REF: 7.1.7 MODIFICATIONS TO DROP-OUTLETS

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by:
Designed by: X
Checked by: X
Submitted by: LORIK, THOMAS, P.E. Chief, Geotech/Structure Section
Approved by: RITA C. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Scale: AS SHOWN
Rev. --
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch

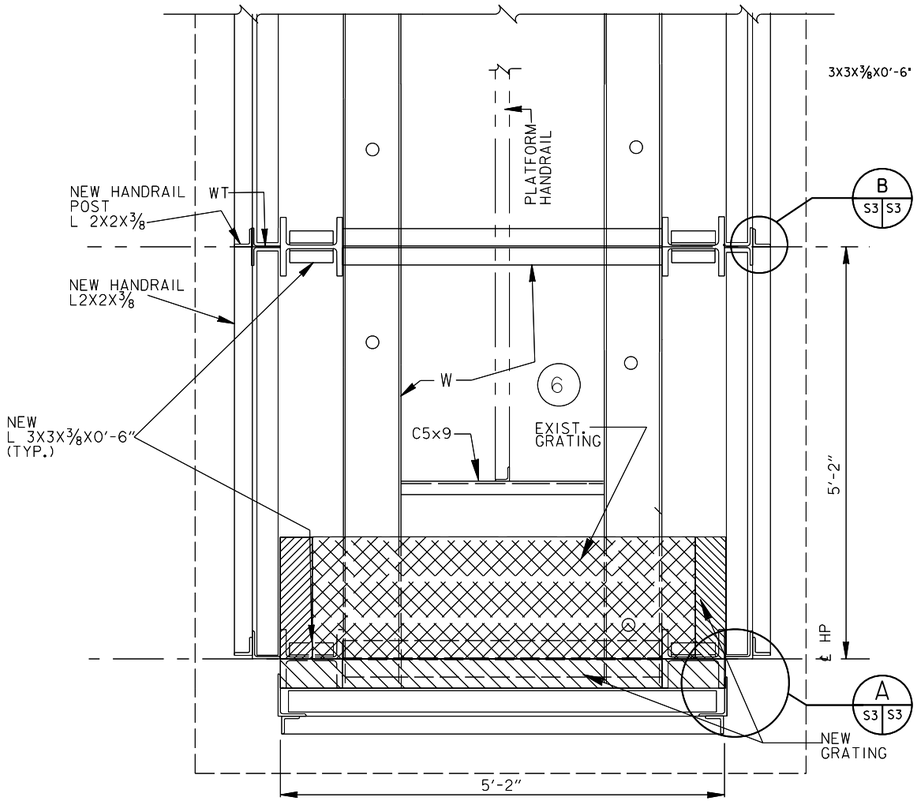
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL. C.E.,
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

DROP OUTLET STRUCTURE
DETAILS

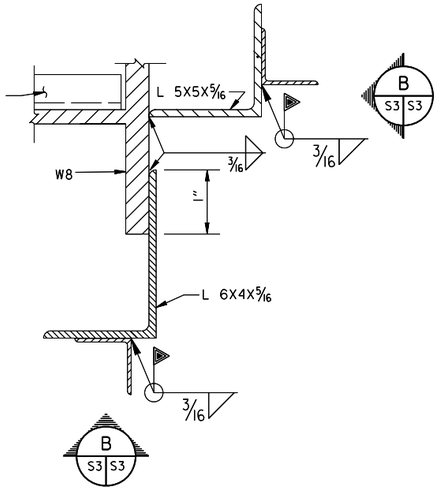
Drawing No.:
S-2



PARTIAL PLAN

N.T.S.

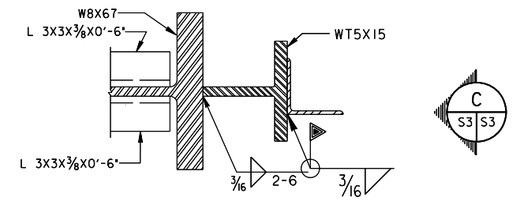
(WALKWAY NOT SHOWN)



A DETAIL

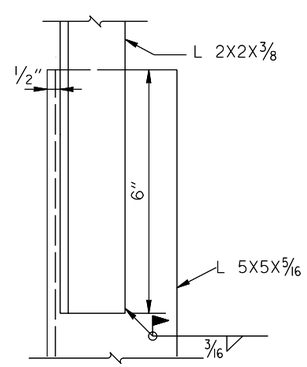
S3 S3 / S1

N.T.S.



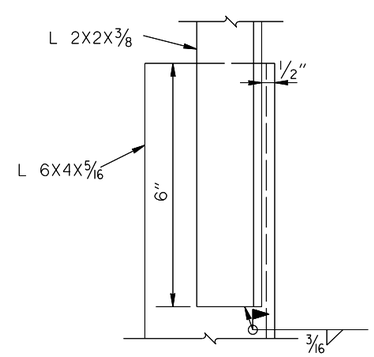
B DETAIL

S3 S3 N.T.S.



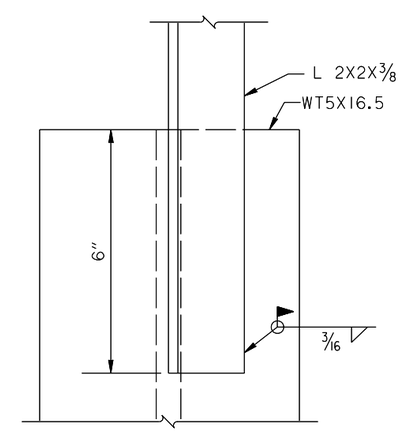
VIEW A

N.T.S. S3 S3



VIEW B

N.T.S. S3 S3



VIEW C

N.T.S. S3 S3

REF: 7.1.7 MODIFICATIONS TO DROP-OUTLETS

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

Drawn by:
Designed by: X
Checked by: X
Submitted by: LORIK, THOMAS, P.E. Chief, Geotech/Structure Section
Approved by: RAFE C. PEREZ, P.E. Chief, Engineering and Construction Division
Date: MAY 2008
Rev. --
Scale: AS SHOWN
Approval Recommended: HARRISON T. SUTCLIFF, PE Chief, Engineering Branch

U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL, C.E.,
DISTRICT COMMANDER

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

DROP OUTLET STRUCTURES
DETAILS

Drawing No.:
S-3

TABLE I EXISTING/NEW STRUCTURES

REF. DWG. NOS.	C-09			C-07 C-08	C-07	C-06	C-04		C-04		C-04		C-03			C-02		C-01			C-01	
DESCRIPTION	EXIST. 5N	EXIST. 5S	EXIST. 5C	EXIST. 8	EXIST. 9, 9A	EXIST. 11	EXIST. 12	EXIST. 13	EXIST. 14	EXIST. 14A	EXIST. 16, 16A		EXIST. 18A	EXIST. 21	EXIST. 22	EXIST. 23A	EXIST. 24	EXIST. 25A	NEW 16A	NEW 24	NEW 24A	NEW 27D
NO. OF BAYS				5				5														
WALKWAY ℄ BAY				4				3														
WALKWAY BETWEEN BAYS																						
HEIGHT OF STRUCTURE				19′				11′														
PIPE(S) IN BAY NO(S)				2&3				2&4														
PIPE(S): NO./DIA.				2-48				2-36														
ELEVATIONS:																						
A				18.0				15.0														
B				23.0				18.0														
C																						
D								R														
E																						
F																						
G				4.0				7.0														
H																						
K																						
LENGTHS:																						
L 1				28.5′				28.5′														
L 2																						
L 3				40′				20′														
L 4																						
L 5																						
L 6																						
C 1																						
C 2																						
T																						
SLOPES:																						
S 1																						
S 2																						
S 3																						
COLUMNS				W8X58				W8X58														
STRUTS				W8X18				W8X18														
SUPPORTS				W8X58				W8X18														
WT SIZE				4X9				4X12														
TIMBER SIZE				3"				3"														

REF: 7.1.7 MODIFICATIONS TO DROP-OUTLETS

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.
DISTRICT COMMANDER

Drawn by:
Designed by: X
Checked by: X
Submitted by:
LORIK, THOMAS, P.E.
Chief, Geotech/Structure Section

Approved by:
JOSE E. C. PEREZ, P.E.
Chief, Engineering and Construction Division

Date: MAY 2008
Scale: AS SHOWN
Rev. --
Approval Recommended:
HARRISON T. SUTCLIFF, PE
Chief, Engineering Branch

SABINE NECHES WATERWAY, TEXAS
CHANNEL IMPROVEMENT STUDY
48' PROJECT

DROP OUTLET STRUCTURE
TABLE I

Drawing No.:
S-4