STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL ENGINEERING DIVISION

TERREBONNE BAY SHORE PROTECTION
DEMONSTRATION PROJECT

TE-45
TERREBONNE PARISH, LOUISIANA

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AS-BUILT

TYPE OF CONSTRUCTION
CLASSIFICATION III (HEAVY CONSTRUCTION)
SHORE PROTECTION

FEDERAL PROJECT SPONSOR
STATE PROJECT SPONSOR
LOUISIANA DEPARTMENT OF NATURAL RESOURCES
COASTAL ENGINEERING DIVISION
BATON ROUGE, LOUISIANA

TERREBONNE BAY SHORE PROTECTION
DEMONSTRATION PROJECT
STATE PROJECT NUMBER: TE-45
FEDERAL PROJECT NUMBER:

DRAWN BY: KHETI CANTU
DESIGNED BY: DAIN LEELI

APPROVED BY: MAEY CHATELIER, P.E.

CED DIRECTOR
CED ENGINEER MANAGER
CED PROJECT ENGINEER

TITLE SHEET
SHEET 1 OF 15
GENERAL NOTES


2. BENCHMARK TE 45-58431 HAS BEEN ESTABLISHED AT THE SITE BY THE OWNER. SEE SHEET 3 FOR BENCHMARK LOCATION. THE CONTRACTOR SHALL BE RESPONSIBLE TO ESTABLISH AND MAINTAIN TEMPORARY BENCHMARKS DURING CONSTRUCTION AS NECESSARY.

3. ELEVATIONS SHOWN ON PLANS ARE BASED ON SURVEYS PERFORMED BETWEEN JUNE 23, 2002 AND JULY 6, 2002 BY MORRIS P. HERBERT, INC.

4. CONTRACTOR SHALL VISIT THE SITE OF WORK TO BECOME FAMILIAR WITH THE LOCAL CONDITIONS AND WHAT EFFECTS THE CONDITIONS MAY HAVE ON ACCESS AND CONSTRUCTION.

5. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, EXISTING ELEVATIONS AND CONDITIONS SHOWN ON THE DRAWINGS PRIOR TO ORDERING MATERIAL, COMMENCEMENT OF CONSTRUCTION, AND PREPARATION OF SHOP DRAWINGS. ENGINEER SHALL BE NOTIFIED OF ALL DISCREPANCIES.


7. THE LOCATIONS OF THE STRUCTURES SHOWN ON THE DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE ALL SURVEY PERSONNEL AND EQUIPMENT NECESSARY TO LOCATE THE STRUCTURES AT THE BEGINNING OF CONSTRUCTION.

8. LOCATION OF UTILITIES INDICATED ON THE DRAWINGS ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE BASED IN PART ON INFORMATION PROVIDED BY THE RESPECTIVE UTILITY COMPANIES. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL EXISTING UTILITY LOCATIONS PRIOR TO CONSTRUCTION.

9. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITY CAUSED BY THE CONTRACTORS NEGLIGENCE. THE DAMAGE SHALL BE REPAIRED AT CONTRACTORS EXPENSE.

10. FORTY-EIGHT (48) HOURS PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL CALL LOUISIANA ONE CALL AT 1-800-272-8020 TO LOCATE ANY UTILITY OR PIPELINES IN THE AREA WHICH MAY BE UNOWNED TO THE OWNER. ADDITIONALLY, THE CONTRACTOR SHALL PERFORM A MACHINERY LOCATOR SURVEY WITHIN THE CONSTRUCTION AREA AND WHERE THE STRUCTURES ARE TO BE LOCATED. FURTHERMORE, CONTRACTOR SHALL NOTIFY CHEVRON/TEXACO A MINIMUM OF 14 DAYS PRIOR TO ACCESSING THE SITE AT 989-758-0230 OR 955-247-3383, ATTENTION SHANNON MONTGOMERY, TO HAVE THE PIPELINE IN THE PROJECT AREA PROPERLY MARKED PRIOR TO MOBILIZATION.

11. ALL PIPELINES WITHIN THE PROJECT AREA SHALL BE CLEARLY MARKED WITH BUOYS BY THE CONTRACTOR. THE CONTRACTOR SHALL MAINTAIN BUOYS DURING CONSTRUCTION OR HAVE ADEQUATE NAVIGATIONAL EQUIPMENT ON THE DRIVEWAY TO AVOID DRIVING IN RESTRICTED AREAS. THE CONTRACTOR SHALL NOT ANCHOR OR EXCAVATE WITHIN 100 FEET OF ANY PIPELINE.

12. ALL STRUCTURAL STEEL SHALL BE ASTM A36, UNLESS OTHERWISE NOTED.

13. ALL WELDING SHALL BE ELECTRIC WELDING, WORKMANSHIP AND TECHNIQUE WHERE APPLICABLE, SHALL CONFORM TO THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE.

14. WELDING SYMBOLS SHOWN ARE THOSE ADOPTED BY THE AMERICAN WELDING SOCIETY AND INDICATE ONLY SIZE AND TYPE OF WELDS REQUIRED. DETAILED INFORMATION SHALL BE SHOWN ON THE SHOP DRAWINGS AND SUBMITTED BY THE CONTRACTOR FOR APPROVAL.

15. STRUCTURAL STEEL FABRICATION AND ERECTION SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION LATEST EDITION UNLESS NOTED OTHERWISE.

16. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI UNLESS OTHERWISE SPECIFIED.

17. TIE-IN UNITS CONNECT THE ONSHORE UNITS WITH THE FORESHORE UNITS. TIE-IN UNITS MAY CONSIST OF THE FORESHORE TRIANGULAR UNIT OR ONSHORE ARMOR UNIT WITH A GEOGRID AND CRUSHED STONE FOUNDATION BASE. ALL TIE-IN STRUCTURES SHALL BE OF THE SAME TYPE FOR THE ENTIRE PROJECT. THE TOP OF ALL TIE-IN UNITS MUST BE AT ELEVATION +12' NAVD 88.

18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MOBILIZING, COMPLETING THE REQUIRED CONSTRUCTION ACTIVITIES, AND DE-MOBILIZING WITHOUT CROSSING OR OTHERWISE IMPACTING UNATTACHED OYSTER LEASES SHOWN ON SHEET 3.

SUMMARY OF ESTIMATED QUANTITIES

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>ESTIMATED QUANTITY</th>
<th>AS-BUILT QUANTITY</th>
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<tr>
<td>1</td>
<td>MOBILIZATION AND DE-MOBILIZATION</td>
<td>LUMP SUM</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>SURVEYING</td>
<td>LUMP SUM</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>ONSHORE ARMOR UNIT</td>
<td>LINEAR FOOT</td>
<td>900</td>
<td>900</td>
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<tr>
<td>4</td>
<td>ONSHORE GABION MAT UNIT</td>
<td>LINEAR FOOT</td>
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<tr>
<td>5</td>
<td>FORESHORE TRIANGULAR UNIT</td>
<td>LINEAR FOOT</td>
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</tr>
<tr>
<td>6</td>
<td>TIE-IN UNIT</td>
<td>EACH</td>
<td>180</td>
<td>180</td>
</tr>
<tr>
<td>7</td>
<td>FOUNDATION BASE GEOGRID</td>
<td>SQ. YARD</td>
<td>2200</td>
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<tr>
<td>8</td>
<td>FOUNDATION BASE CRUSHED STONE</td>
<td>TON</td>
<td>950</td>
<td>950</td>
</tr>
<tr>
<td>9</td>
<td>TI-10 UNIT*</td>
<td>LINEAR FOOT</td>
<td>790</td>
<td>790</td>
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<tr>
<td>10</td>
<td>PERMANENT WARNING SIGN</td>
<td>EACH</td>
<td>8</td>
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NOTES:
1. APPROXIMATELY 180 GABION MAT UNITS, 1470 ARMOR UNITS WITH 63 ANCHORS, AND 180 TRIANGULAR UNITS WITH 63 ANCHORS WILL BE PLACED.
2. THE TIE-IN UNITS WILL REQUIRE APPROXIMATELY 85 ANCHORS. THE AMOUNT OF GEOGRID AND CRUSHED STONE REQUED FOR THE TIE-IN UNITS WILL VARY DEPENDING ON WHAT TYPE OF TIE-IN UNIT IS CHosen.
3. TIE-IN UNITS SHALL CONSIST OF THE CHOSEN TYPE OF STRUCTURE, FOUNDATION BASE GEOGRID, FOUNDATION BASE CRUSHED STONE, AND ANCHOR SYSTEM. BASIS PLACED ON TIE-IN UNITS SHALL INCLUDE THE ASSOCIATED COST FOR ALL OF THE ABOVE MATERIALS.

AS-BUILT NOTES:
1. ONSHORE ARMOR UNIT WAS SELECTED AND USED BY THE CONTRACTOR AS THE TIE-IN UNIT.

LSU BAY PROJECT:
GENERAL NOTES

AS-BUILT

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
COASTAL ENGINEERING DIVISION
BATON ROUGE, LOUISIANA 1992

REV. DSCR. DRAWN BY: SIGNED BY: APPROVED BY: SHEET 1 OF 15

REV. DSCR. DRAWN BY: SIGNED BY: DATE:
TYPICAL ONSHORE GABION MAT UNIT
NOT TO SCALE

TYPICAL ONSHORE ARMOR UNIT
NOT TO SCALE

TYPICAL FORESHORE TRIANGULAR UNIT
NOT TO SCALE

NOTES:
1. THE CONTRACTOR WILL SELECT ONLY ONE TYPE OF STRUCTURE FOR THE TIE-IN UNIT. FOR THE ENTIRE PROJECT. TIE-IN UNITS MUST ACHIEVE A MINIMUM TOP OF STRUCTURE ELEVATION OF +1.5' TIE-IN UNITS MAY CONSIST OF THE FORESHORE TRIANGULAR UNIT OR THE ONSHORE ARMOR UNIT WITH A GEONRD AND CRUSHED STONE FOUNDATION BASE. GABION MAT UNITS WILL NOT BE ALLOWED AS TIE-IN UNITS.

AS-BUILT NOTES:
1. THE ONSHORE ARMOR UNIT WAS SELECTED AND USED BY CONTRACTOR AS THE TIE-IN UNIT.

AS-BUILT
NOTES:
1. CONCRETE SHALL HAVE A MINIMUM COMPRESSION STRENGTH OF 4000 PSI.
2. ADHESIVE SHALL BE USED TO JOIN ALL HALVES TO FORM A SINGLE UNIT.
3. IF CONTRACTOR SELECTS ARMOR UNIT AS HIS STANDARD, THE TOP OF THE ARMOR UNIT MUST BE AT A MINIMUM ELEVATION OF +3.25' NAVD.
4. SEE SHEET 5 FOR ANCHORING AND TIE-DOWN DETAILS.

AS-BUILT
NOTES:

1. REFERENCES HEREIN TO THE "STANDARD SPECIFICATIONS" REFER TO THE "LA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES" LATEST EDITION, INCLUDING AMENDMENTS, BY THE DEPT. OF TRANSPORTATION AND DEVELOPMENT. MEASUREMENT AND PAYMENT WILL BE MADE AS DESCRIBED THEREIN, EXCEPT WHERE STATED OTHERWISE.

2. TWO WARNING SIGNS SHALL BE INSTALLED WITHIN EACH PAIR (5 TOTAL) AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE PROJECT ENGINEER. APPROXIMATE LOCATIONS OF THE WARNING SIGNS ARE SHOWN ON SHEETS 6 AND 7. ACTUAL LOCATIONS WILL BE DETERMINED BY SITE FIELD.


4. NEOPRINE WASHERS SHALL BE PLACED BETWEEN THE SIGN AND THE PILING AT ALL POINTS OF CONTACT.

5. HARDWARE FOR TIMBER CONNECTIONS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SECTION B11.15 OF THE LOUISIANA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, AS PUBLISHED BY THE LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT, LATEST EDITION.

6. TIMBER PILES SHALL CONFORM TO SECTIONS 824 AND 1014 OF THE LOUISIANA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, AS PUBLISHED BY THE LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT, LATEST EDITION. PILES SHALL BE TREATED WITH A CREOSOTE SOLUTION CONFORMING TO AWPA P2 TO A MINIMUM VISCOSITY OF 15° P.S.I.

7. TIMBER PILES SHALL BE 45 FEET IN LENGTH WITH A 1.25 INCH DIAMETER BOLT AND 1.5 INCH DIAWATER AT THE TOP.

8. EXPOSED BOLT THREADS SHALL BE EITHER TACK WELDED TO NUTS, STRIPED, OR DAMAGED BY OTHER APPROVED METHOD TO PREVENT EASY REMOVAL.
AS-BUILT

NOTES:
1. THE MEAN HIGH WATER (MHW) AND MEAN LOW WATER (MLW)
   ELEVATIONS ARE BASED ON THE BAYOU PETIT DAILL GU GAGE
   #730503, READINGS FROM 1980-2002 HAVING A VERTICAL DATUM OF
   NAVD 29, WHICH WAS CONVERTED TO NAVD 88 ELEVATIONS.
2. ALL ELEVATIONS ARE GIVEN IN THE NORTH AMERICAN VERTICAL
   DATUM OF 1988 (NAVD 88).
3. CROSS-SECTIONS ARE BASED ON CONTRACTOR'S PRE-CONSTRUCTION
   SURVEY PERFORMED IN SEPTEMBER OF 2007.
4. AS-BUILT POSITIONS AND ELEVATIONS OF STRUCTURES WAS TAKEN
   FROM CONTRACTOR'S AS-BUILT SURVEY PERFORMED IN JANUARY
   OF 2008.

LEGEND
- PRE-CONSTRUCTION X-SECTIONS (SEPT 2007)
- ORIGINAL DESIGN X-SECTIONS (JUNE/JULY 2002)

HORIZONTAL GRAPHIC SCALE

VERTICAL GRAPHIC SCALE

REACH A AND B PROFILES
NOTES:
1. THE MEAN HIGH WATER (MHW) AND MEAN LOW WATER (MLW) ELEVATIONS ARE BASED ON THE BAYOU PETIT CHIQUIC GAGE #8305 READING FROM 1992-2002 HAVING A VERTICAL DATUM OF NAVD 88 WHICH WAS CONVERTED TO NAVD 88 ELEVATIONS.
2. ALL ELEVATIONS ARE GIVEN IN THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. CROSS-SECTIONS ARE BASED ON CONTRACTOR'S PRE-CONSTRUCTION SURVEY PERFORMED IN SEPTEMBER OF 2007.

LEGEND
- PRE-CONSTRUCTION X-SECTIONS (SEPT 2007)
- DESIGN X-SECTIONS (APR/JULY 2007)

HOURLY GRAPHIC SCALE

VERTICAL GRAPHIC SCALE
NOTES:
1. THE MEAN HIGH WATER (MHW) AND MEAN LOW WATER (MLW) ELEVATIONS ARE BASED ON THE BAYOU PETIT CAILLOU GAGE 8703305 READINGS FROM 1980-2002 HAVING A VERTICAL DATUM OF NAVD 29 WHICH WAS CONVERTED TO NAVD 88 ELEVATIONS.
2. ALL ELEVATIONS ARE GIVEN IN THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. CROSS-SECTIONS ARE BASED ON CONTRACTOR'S PRE-CONSTRUCTION SURVEY PERFORMED IN SEPTEMBER OF 2007.

LEGEND
PRE CONSTRUCTION X-SECTIONS (SEP 2007)
ORIONAL DESIGN X-SECTIONS (JUNE/JULY 2002)
NOTES:
1. THE MEAN HIGH WATER (MHW) AND MEAN LOW WATER (MLW) ELEVATIONS ARE BASED ON THE BAYOU PETIT CALLOU GAUGE 879365 READING FROM 1992-2002 HAVING A VERTICAL DATUM OF NAVD 29 WHICH WAS CONVERTED TO NAVD 88 ELEVATIONS.
2. ALL ELEVATIONS ARE GIVEN IN THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. CROSS-SECTIONS ARE BASED ON CONTRACTOR'S PRE-CONSTRUCTION SURVEY PERFORMED IN SEPTEMBER OF 2007.

LEGEND
- PRE-CONSTRUCTION X-SECTIONS (SEPT 2007)
- ORIGINAL DESIGN X-SECTIONS (JUNE/July 2002)

HOURLGATGRAPHICSCALE

VERTICAL GRAPHIC SCALE

10'  100'  200'

0  5  10
NOTES:
1. THE MEAN HIGH WATER (MHW) AND MEAN LOW WATER (MLW) ELEVATIONS ARE BASED ON THE BAYOU PETIT CAILLOU GAGE, #78305 READINGS FROM 1992-2002 HAVING A VERTICAL DATUM OF NAVD 29 WHICH WAS CONVERTED TO NAVD 88 ELEVATIONS.
2. ALL ELEVATIONS ARE GIVEN IN THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. CROSS-SECTIONS ARE BASED ON CONTRACTOR'S PRE-CONSTRUCTION SURVEY PERFORMED IN SEPTEMBER OF 2007.

LEGEND
- - - PRE-CONSTRUCTION X-SECTIONS (SEPT 2007)
- - - ORIGINAL DESIGN X-SECTIONS (JUNE/JULY 2002)

AS-BUILT
NOTES:
1. THE MEAN HIGH WATER (MHW) AND MEAN LOW WATER (MLW) ELEVATIONS ARE BASED ON THE BAYOU PETIT CALLOU RAGE #7309 READING FROM 1992-2002 HAVING A VERTICAL DATUM OF NAVD 48 WHICH WAS CONVERTED TO NAVD 88 ELEVATIONS.
2. ALL ELEVATIONS ARE GIVEN IN THE NORTH AMERICAN VERTICAL DATUM OF NAVD 88.
3. CROSS-SECTIONS ARE BASED ON CONTRACTOR'S PRE-CONSTRUCTION SURVEY PERFORMED IN SEPTEMBER OF 2007.

LEGEND
- PRE-CONSTRUCTION X-SECTIONS (SEPT 2007)
- ORIGIANAL DESIGN X-SECTIONS (JUNE/JULY 2002)