

# JOINT PUBLIC NOTICE

United States Army  
Corps of Engineers  
New Orleans District  
Attn: Regulatory Branch  
Post Office Box 60267  
New Orleans, Louisiana 70160-0267

OCT 28 2013

State of Louisiana  
Department of Environmental Quality  
Attn: Water Quality Certification Sec.  
Post Office Box 4313  
Baton Rouge, Louisiana 70821-4313

Project Manager: Sara Fortuna  
(504) 862-1025/ fax: (504) 862-2574  
Sara.b.fortuna@usace.army.mil  
Permit Application Number:  
MVN-2013-02532 WKK

Project Manager:  
Jamie Phillippe  
(225) 219-3225 / fax: (225) 219-3156  
WQC Application Number:  
WQC-131023-01

Interested parties are hereby notified that a permit application has been received by the New Orleans District of the U.S. Army Corps of Engineers pursuant to: [ ] Section 10 of the Rivers and Harbors Act of March 3, 1899 (30 Stat. 1151; 33 USC 403); and/or [ X ] Section 404 of the Clean Water Act (86 Stat. 816; 33 USC 1344).

The application has also been mailed to the Louisiana Department of Environmental Quality, for a Water Quality Certification (WQC) in accordance with statutory authority contained in Louisiana Revised Statute 30:2074 A(3), and provisions of Section 401 of the Clean Water Act (P.L. 95-17).

## **ROAD REPAIR, BRIDGE REPLACEMENT, AND DRAINAGE MAINTENANCE IN CALCASIEU PARISH**

**NAME OF APPLICANT:** Calcasieu Parish Police Jury, c/o Arabie Environmental Solutions, Post Office Box 928, Lake Charles, Louisiana 70602.

**LOCATION OF WORK:** In Calcasieu Parish, W. Houston River Road, located in the community of Sulphur, Louisiana, as shown on the attached vicinity map. (Hydrologic Unit Code 08080205, Calcasieu Basin)

**CHARACTER OF WORK:** Within an 150-foot wide by 1,400-foot long section area, conduct operations to repair W. Houston River Road, replace bridge crossing over Houston River Tributary, and dredge approximately 6,000 cubic yards of earthen material from other waters located between road and wetland, and install approximately 510 cubic yards of Geotextile fabric and 4,000 cubic yards of rip rap revetment for drainage and erosion protection. The dredged material will be hauled offsite to a nonwetland location. There are 1.48 acres of jurisdictional wetlands that will be impacted via project implementation. The applicant agreed to purchase appropriate mitigation credits from an approved Department of the Army mitigation bank to compensate for all project related wetland impacts.

The comment period for the Department of the Army Permit and the Louisiana Department of Environmental Quality WQC will close **20 days** from the date of this joint public notice. Written comments, including suggestions for modifications or objections to the proposed work, stating reasons thereof, are being solicited from anyone having interest in this permit and/or this WQC request and must be submitted so as to be received before or by the last day of the comment period. Letters concerning the Corps of Engineers permit application must reference the applicant's name and the Permit Application Number, and be forwarded to the Corps of Engineers at the address above, **ATTENTION: REGULATORY BRANCH**. Individuals or parties may request an extension of time in which to comment on the proposed work by writing, faxing, or e-mailing the Corps of Engineers Project Manager listed above. Any request must be specific and substantively supportive of the requested extension, and received by this office prior to the end of the initial comment period. The Section Chief will review the request and the requestor will be promptly notified of the decision to grant or deny the request. If granted, the time extension will be continuous to the initial comment period and, inclusive of the initial comment period, will not exceed a total of 30 calendar days. Letters concerning the Water Quality Certification must reference the applicant's name and the WQC Application number and be mailed to the Louisiana Department of Environmental Quality at the address above.

The application for this proposed project is on file with the Louisiana Department of Environmental Quality and may be examined during weekdays between 8:00 a.m. and 4:30 p.m. Copies may be obtained upon payment of costs of reproduction.

### **Corps of Engineers Permit Criteria**

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.

The U.S. Army Corps of Engineers is soliciting comments from the public, federal, state, and local agencies and officials, Indian Tribes, and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the U.S. Army Corps of Engineers to determine whether to make, modify, condition, or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

The New Orleans District is unaware of properties listed on the National Register of Historic Places near the proposed work. The possibility exists that the proposed work may **damage or destroy presently unknown archeological, scientific, prehistorical, historical sites, or data.** Issuance of this public notice solicits input from the State Archeologist and State Historic Preservation Officer regarding potential impacts to cultural resources.

Our initial finding is that the proposed work would neither affect any species listed as endangered by the U.S. Departments of Interior or Commerce, nor affect any habitat designated as critical to the survival and recovery of any endangered species.

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The applicant's proposal may result in the destruction or alteration of 0.3 acres of EFH utilized by various life stages of red drum and penaeid shrimp. Our initial determination is that the proposed action would not have a substantial adverse impact on EFH or federally managed fisheries in the Gulf of Mexico. Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the National Marine Fisheries Service.

If the proposed work involves deposits of dredged or fill material into navigable waters, the evaluation of the probable impacts will include the application of guidelines established by the Administrator of the Environmental Protection Agency. Also, a certification that the proposed activity will not violate applicable water quality standards will be required from the Department of Environmental Quality, before a permit is issued.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing.

You are requested to communicate the information contained in this notice to any other parties whom you deem likely to have interest in the matter.

Darrell S. Barbara  
Chief, Western Evaluation Section  
Regulatory Branch

Enclosure



**APPROXIMATE SITE LOCATION**

ARABIE ENVIRONMENTAL SOLUTIONS

**FIGURE 1 OF 7  
SITE LOCATION MAP**

PERMIT APPLICATION  
CALCASIEU PARISH POLICE JURY  
HOUSTON RIVER ROAD BRIDGE REPLACEMENT  
CALCASIEU PARISH, LOUISIANA

Drawn By: CRH

Checked By: CBJ

Date: 9-25-2013

Drawing No: 11211

Data use subject to license.

© DeLorme. XMap® 5.2 GIS Editor.

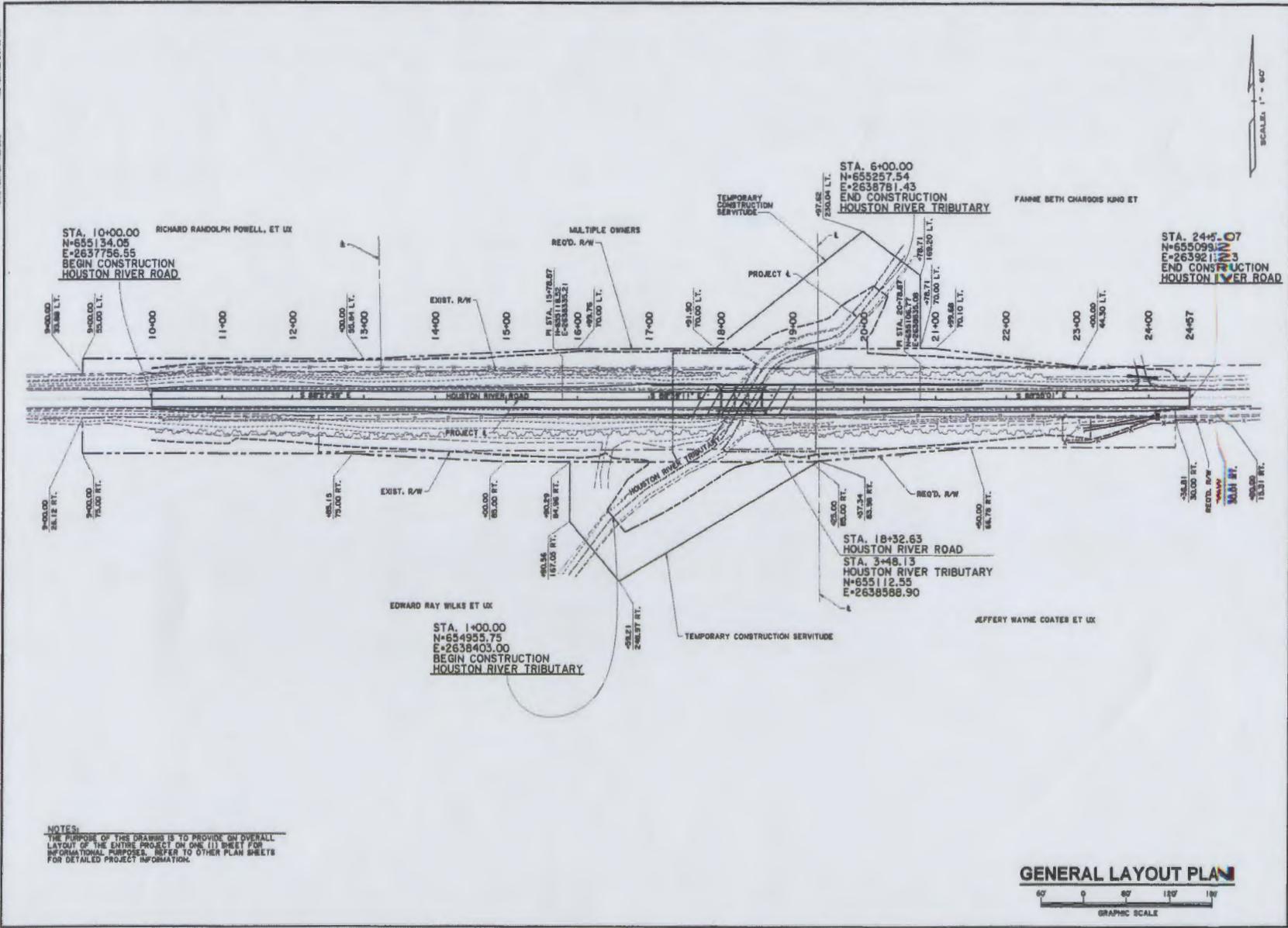
www.delorme.com



Data Zoom 13-0

DATE PLOTTED: 04/08/15

FILE: R12715-01.dwg



**NOTES:**  
 THE PURPOSE OF THIS DRAWING IS TO PROVIDE AN OVERALL LAYOUT OF THE ENTIRE PROJECT ON ONE (1) SHEET FOR INFORMATIONAL PURPOSES. REFER TO OTHER PLAN SHEETS FOR DETAILED PROJECT INFORMATION.

**GENERAL LAYOUT PLAN**  
 GRAPHIC SCALE  
 0 60 120 180

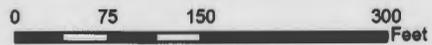
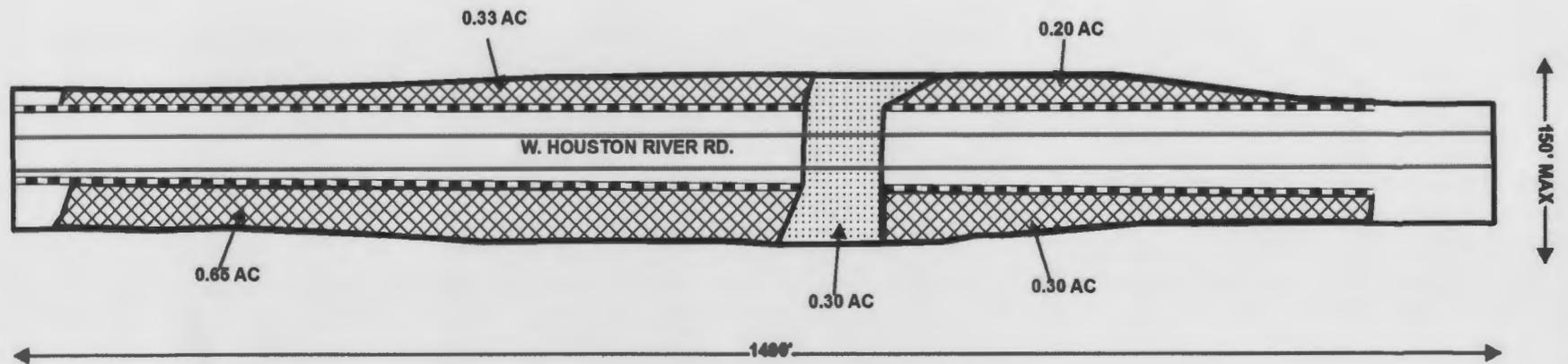
SCALE: 1" = 60'

EDWARD RAY WILKS ET UX 105 PITHON STREET LAKE CHARLES, LA 70602	
JEFFERY WAYNE COATES ET UX	
<b>HOUSTON RIVER ROAD          BRIDGE REPLACEMENT</b> (BRIDGE #2638403.00)	
LANCON ENGINEERS INC. CIVIL AND CONSULTING ENGINEERS 1000 PINEAPPLE DRIVE SUITE 100 MONROE, LA 70601	EDWARD G. BRADY REGISTERED PROFESSIONAL ENGINEER NO. 12715
APRIL 2015 PROJECT NO. 12-005	SHEET NO. 02

DRAWINGS PROVIDED BY LANCON ENGINEERS

**ARABIE ENVIRONMENTAL SOLUTIONS**  
**FIGURE 2 OF 7**  
**GENERAL PLAN VIEW**  
 PERMIT APPLICATION  
 CALCASIEU PARISH POLICE JURY  
 HOUSTON RIVER ROAD BRIDGE REPLACEMENT  
 CALCASIEU PARISH, LOUISIANA

Drawn By: \_\_\_\_\_ Checked By: \_\_\_\_\_  
 Date: \_\_\_\_\_ Drawing No: \_\_\_\_\_



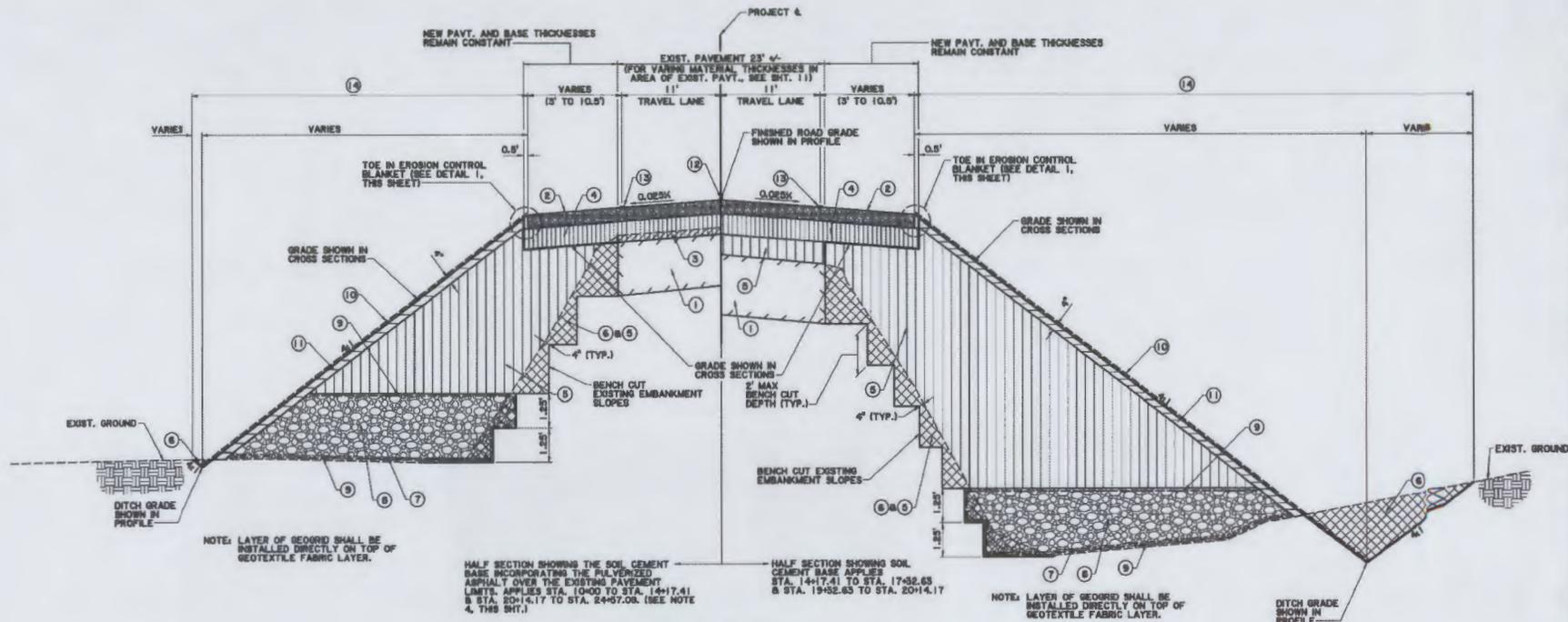
ARABIAN ENVIRONMENTAL SOLUTIONS

**FIGURE 3 OF 7**  
**SITE DIAGRAM**  
 PERMIT APPLICATION  
 CALCASIEU PARISH POLICE JURY  
 HOUSTON RIVER ROAD BRIDGE REPLACEMENT  
 CALCASIEU PARISH, LOUISIANA

Drawn By: CRH	Checked By: CBJ
Date: 9-25-2013	Drawing No: 11211

	NON-WETLANDS (2.28 ACRES)
	100% WETLANDS (1.48 ACRES)
	OTHER WATERS (0.30 ACRES)

DATE PLOTTED: 04/14/15 THE PLOTTED: 04/14/15 DATE PLOTTED: 04/14/15



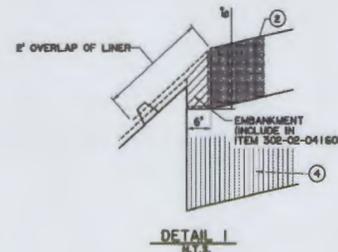
TYPICAL SECTION  
SCALE: HOR. 1"=8', VER. 1"=2'

**LEGEND:**

- 1 EXISTING ROAD AND BASE TO REMAIN
- 2 ASPHALTIC CONCRETE (TYPE 90 WCP) 6" THICK OUTSIDE EXIST. PAVT. LIMITS (VARIES THICKNESS OVER EXIST. PAVT.) (2" MAX. LIFT) (ITEM 302-01-10)
- 3 PULVERIZE EXIST. ASPHALT PAVT. (THICKNESS VARIES) (SEE SHEET 11 FOR VARYING THICKNESS) INCLUDE PULVERIZATION IN PRICE BID FOR CLASS II BASE COURSE (ITEM 302-02-01160) (SEE NOTE 2, THIS SHEET)
- 4 CLASS II BASE COURSE (2" THICK) (SOIL CEMENT) (ITEM 302-02-04160) (SEE NOTE 3, THIS SHEET)
- 5 EMBANKMENT (SELECT SOILS) (ITEM 203-03-00100)
- 6 GENERAL EXCAVATION (ITEM 203-01-00100)
- 7 GEORID MAT (TENSAR TRAX OR EQUAL) (ITEM HS-300-00060)
- 8 NON-PLASTIC EMBANKMENT (#57 STONE) (ITEM 203-04-00300) (SEE NOTE 1, THIS SHEET)
- 9 GEOTEXTILE FABRIC
- 10 EROSION CONTROL SYSTEM (FLEXIBLE CHANNEL LINER) (TYPE C) (SEE NOTE 5, THIS SHEET)
- 11 TOPSOIL (INCLUDE IN COST OF EMBANKMENT) (ITEM 203-03-00100)
- 12 PAVEMENT STRIPING AND RAISED PAVEMENT MARKERS
- 13 PAVEMENT STRIPING
- 14 HYDROSEEDING (SEE NOTE 5, THIS SHEET)

**NOTES:**

- 1. NON-PLASTIC EMBANKMENT SHALL BE #57 STONE INSTALLED IN MAXIMUM LIFTS OF 10".
- 2. PULVERIZED ROAD AND BASE MATERIAL SHALL BE HAULED BY CONTRACTOR TO CALCASEU PARISH WARD 4 MAINTENANCE YARD.
- 3. FOR AREAS INACCESSIBLE TO MIXING AND COMPACTING, FULL DEPTH ASPHALT (TYPE 90 WCP) (2" THICK) MAY BE SUBSTITUTED FOR THE SOIL CEMENT. THESE AREAS WILL BE PAID FOR BY THE SO. YD. AT PRICE BID FOR ITEM 302-02-04160.
- 4. STA. 10+00.00 TO STA. 13+00.00 AND STA. 23+79.18 TO STA. 24+57.09 SHALL HAVE ASPHALT OVER THE AREA OF EXISTING PAVEMENT WITH THE VARYING THICKNESSES SHOWN ON SHEET 11 IN LIEU OF CEMENT STABILIZED BASE SHOWN ON THIS SHEET. MATERIAL THICKNESSES OUTSIDE THE LIMITS OF THE EXISTING ROAD STILL APPLY WITHIN THESE STATIONS.
- 5. HYDROSEEDING SHALL BE DONE IMMEDIATELY PRIOR TO PLACING THE EROSION CONTROL SYSTEM ALONG THE EMBANKMENT FORESLOPES.
- 6. THE AREA ENCOMPASSING THE FOOTPRINT OF THE NEW EMBANKMENT SHALL BE CLEARED BUT NOT GRUBBED. ROOTS AND VEGETATION SHALL REMAIN IN-PLACE.



DETAIL 1  
N.T.S.

TYPICAL SECTION

DRAWINGS PROVIDED BY LANCON ENGINEERS

ARABIE ENVIRONMENTAL SOLUTIONS  
**FIGURE 4 OF 7**  
**TYPICAL ROAD SECTION**  
 PERMIT APPLICATION  
 CALCASEU PARISH POLICE JURY  
 HOUSTON RIVER ROAD BRIDGE REPLACEMENT  
 CALCASEU PARISH, LOUISIANA

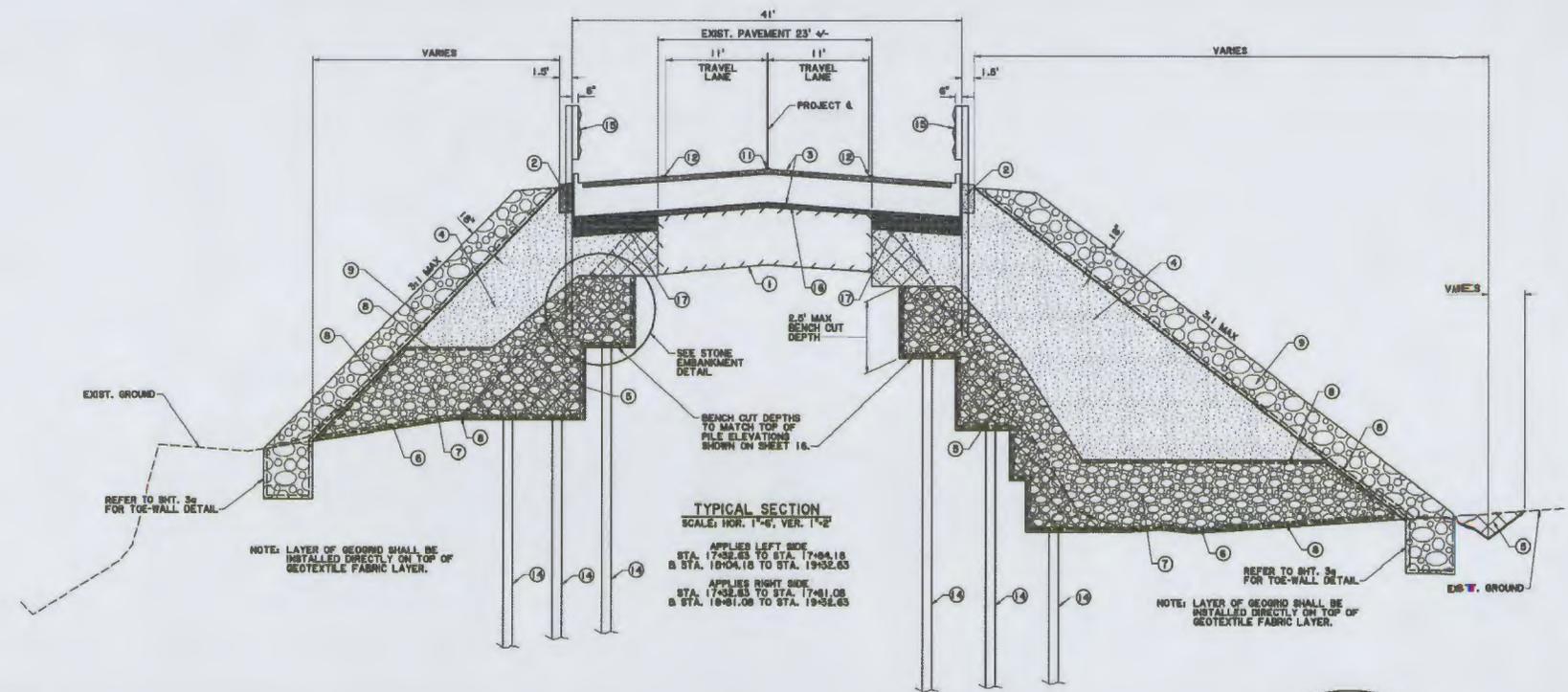
Drawn By:	Checked By:
Date:	Drawing No:

STATE OF LOUISIANA  
 POLICE JURY  
 CALCASEU PARISH POLICE JURY  
 1015 PITCHON STREET  
 LAKE CHARLES, LA 70002

LANCON ENGINEERS INC.  
 CIVIL AND ENVIRONMENTAL ENGINEERS  
 10000 WOODBRIDGE DRIVE  
 HOUSTON, TX 77036  
 DEBORAH L. LANCON  
 REGISTERED PROFESSIONAL ENGINEER  
 STATE OF TEXAS  
 NO. 10000

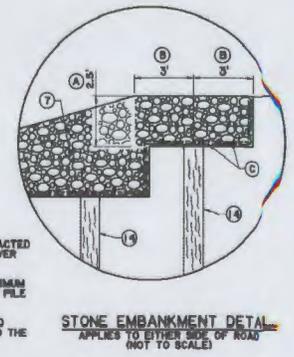
DATE: APRIL, 2015  
 PROJECT NO.: 12-005  
 REV. NO. / SHEET NO.: 0 / 3

DATE PLOTTED: 4/23/2013  
TIME PLOTTED: 4:00:17 PM



- LEGEND:**
- 1 EXISTING ROAD AND BASE TO REMAIN
  - 2 ASPHALTIC CONCRETE (TYPE 90 WSP) (12" THICK) INCLUDE IN ITEM 602-01-P
  - 3 CONCRETE APPROACH SLAB WITH 2" ASPHALTIC CONCRETE OVERLAY (INCLUDE ASPHALT IN ITEM 602-01-P)
  - 4 EMBANKMENT (LIME TREATED CLAY SOIL) (90% COMPACTION) (ITEM 203-03-0010) (SEE NOTES 3 & 4, THIS SHT.)
  - 5 GENERAL EXCAVATION (ITEM 205-01-0010)
  - 6 GEOTEXTILE MAT (TENSAR TRAX OR EQUAL) (ITEM NB-300-0008)
  - 7 NON-PLASTIC EMBANKMENT (#57 STONE) (ITEM 203-04-0030) (SEE NOTE 1, THIS SHT.)
  - 8 GEOTEXTILE FABRIC
  - 9 STONE REVETMENT (30 LBS. RIP-RAP) (18" THICK)
  - 10 RESERVED
  - 11 PAVEMENT STRIPING AND RAISED PAVEMENT MARKERS
  - 12 PAVEMENT STRIPING
  - 13 RESERVED
  - 14 12-INCH DIAMETER BUTT TAPERED TIMBER PILE (40-FT LONG) (ITEM 604-02-0010) (SEE INT. NO. 16 FOR PILE LAYOUT PLAN)
  - 15 GUARDRAIL, POST, AND BLOCKOUT
  - 16 ASPHALTIC CONCRETE LEVLER (THICKNESS VARIES) (SEE SHEET 11 FOR VARIES THICKNESS) (INCLUDE IN ITEM 602-01-P)
  - 17 ASPHALTIC CONCRETE BASE (6" THICK) (INCLUDE IN ITEM 602-01-P)

- NOTES:**
1. NON-PLASTIC EMBANKMENT SHALL BE #57 STONE INSTALLED IN MAXIMUM LIFTS OF 18".
  2. THE AREA ENCOMPASSING THE FOOTPRINT OF THE NEW EMBANKMENT SHALL BE CLEARED BUT NOT GRUBBED. ROOTS AND VEGETATION SHALL REMAIN IN-PLACE.
  3. EMBANKMENT SHALL BE LOW-PLASTICITY COHESIVE SOILS APPROVED FROM A BORROW SOURCE. THESE SOILS SHALL BE LIME STABILIZED OFFSITE TO THEIR OPTIMUM LIME CONTENT. THE OPTIMUM LIME IS THE AMOUNT NECESSARY TO ACHIEVE A PI OF 12.4 (WHICH REPRESENTS LIME FIXATION). WHILE TRYING TO ACHIEVE A PLASTICITY (PI) OF LESS THAN 20, LIME STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE LIME ASSOCIATION RECOMMENDATIONS. FOR SIZING PURPOSES, CONTRACTOR SHALL BASE 100 BDO ON A LIME CONTENT BETWEEN 4% AND 6%, BY DRY WEIGHT.
  4. EMBANKMENT SHALL BE UNIFORMLY COMPACTED TO AT LEAST 98% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698 (or DOTD TR 415 or TR 418).

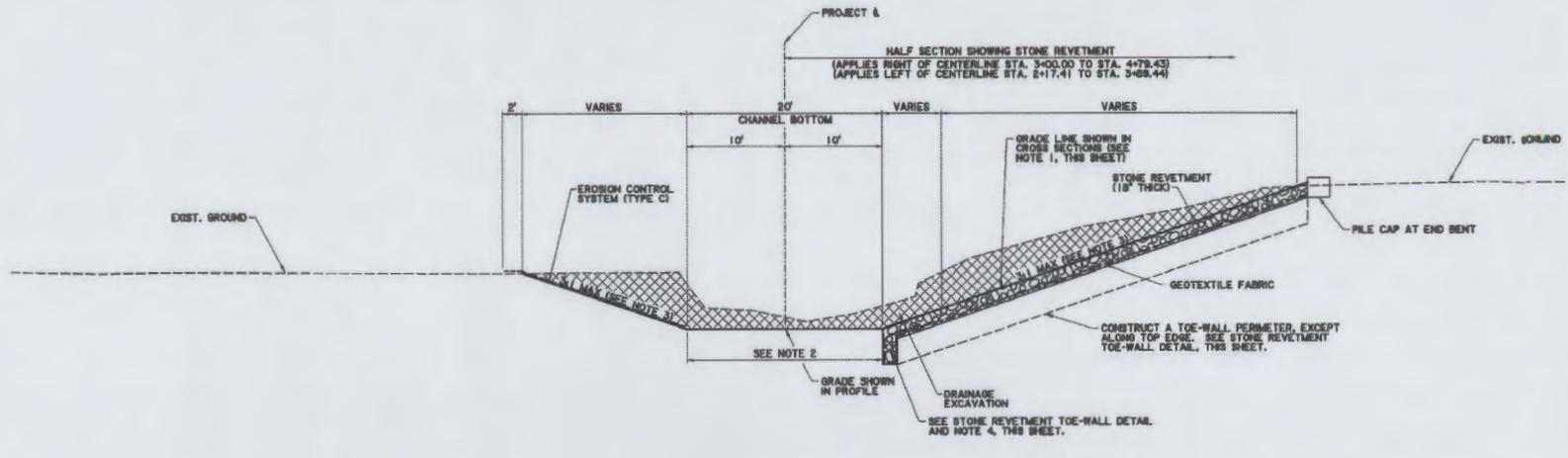


**TYPICAL SECTION - BRIDGE APPROACH SLABS**

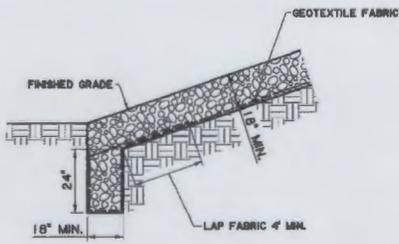
	<p><b>HOUSTON RIVER ROAD BRIDGE REPLACEMENT</b> (PERMITS PROJECT NO. 12-005)</p>
<p><b>LANCON ENGINEERS INC.</b> CIVIL AND CONSULTING ENGINEERS 10000 W. BRIDGEWAY HOUSTON, TEXAS 77036 TEL: 281-485-8800 WWW.LANCON.COM</p>	<p>REVIEWED BY: G. BRANCO REVIEWED BY: M. MCNEEL CHECKED BY: L. LIPSCITZ DATE: APRIL 2013</p>
<p>DATE: APRIL 2013 PROJECT NO.: 12-005 REV. NO. SHEET NO.: 0 3b</p>	

DRAWINGS PROVIDED BY LANCON ENGINEERS

	<p><b>FIGURE 5 OF 7 TYPICAL BRIDGE APPROACH SECTION</b></p> <p>PERMIT APPLICATION CALCASIEU PARISH POLICE JURY HOUSTON RIVER ROAD BRIDGE REPLACEMENT CALCASIEU PARISH, LOUISIANA</p>
<p>Drawn By:</p>	<p>Checked By:</p>
<p>Date:</p>	<p>Drawing No:</p>



TYPICAL SECTION  
HOUSTON RIVER TRIBUTARY  
(APPLIES STA. 1+00 TO STA. 6+00)



DETAIL NO. 1  
STONE REVETMENT TOE-WALL  
NOT TO SCALE

- NOTES:**
1. CONTRACTOR SHALL OVER EXCAVATE CHANNEL SIDE SLOPES TO FACILITATE INSTALLATION OF REVETMENT AS SHOWN. THE SURFACE OF REVETMENT SHALL BE SET TO CLOSELY MATCH THE GRADES SHOWN IN THE CROSS SECTIONS.
  2. CHANNEL BOTTOM WIDTH SHALL VARY FROM EXIST. WIDTH AT STA. 1+00 TO 20' AT STA. 1+50 AND FROM 20' AT STA. 5+50 TO EXIST. WIDTH AT STA. 6+00.
  3. CHANNEL SIDE SLOPES SHALL VARY FROM EXIST. SLOPE AT STA. 1+00 TO 3:1 AT STA. 1+50 AND FROM 3:1 AT STA. 5+50 TO EXIST. SLOPE AT 6+00.
  4. CONTRACTOR SHALL DAM AND DEWATER LOCATIONS WHERE TOE-WALL IS TO BE CONSTRUCTED. TOE-WALL SHALL BE CONSTRUCTED IN THE DRY.



DATE	APRIL 2013
PROJECT NO.	12-005
REV. NO.	0
SHEET NO.	3a

LANCON ENGINEERS INC.  
CIVIL AND CONSULTING ENGINEERS  
10000 W. BRAND  
SUITE 200  
HOUSTON, TEXAS 77044  
PHONE: 281-419-1100  
FAX: 281-419-1101  
WWW.LANCON.COM

STAFF: G. BRAND  
ENGINEER  
STAFF: M. RICHARD  
ENGINEER

HOUSTON RIVER ROAD  
BRIDGE REPLACEMENT  
(BRIDGE RECALL NO. BR-019)

CALCASIEU PARISH POLICE JURY  
1015 FITZGERALD STREET  
LAUREL, LA 70002

STATE OF LOUISIANA  
Marty Lee Lopez, Jr.  
REG. NO. 24150  
Professional Engineer  
Civil Engineering  
4-28-13

DRAWINGS PROVIDED BY LANCON ENGINEERS

ARABIE ENVIRONMENTAL SOLUTIONS

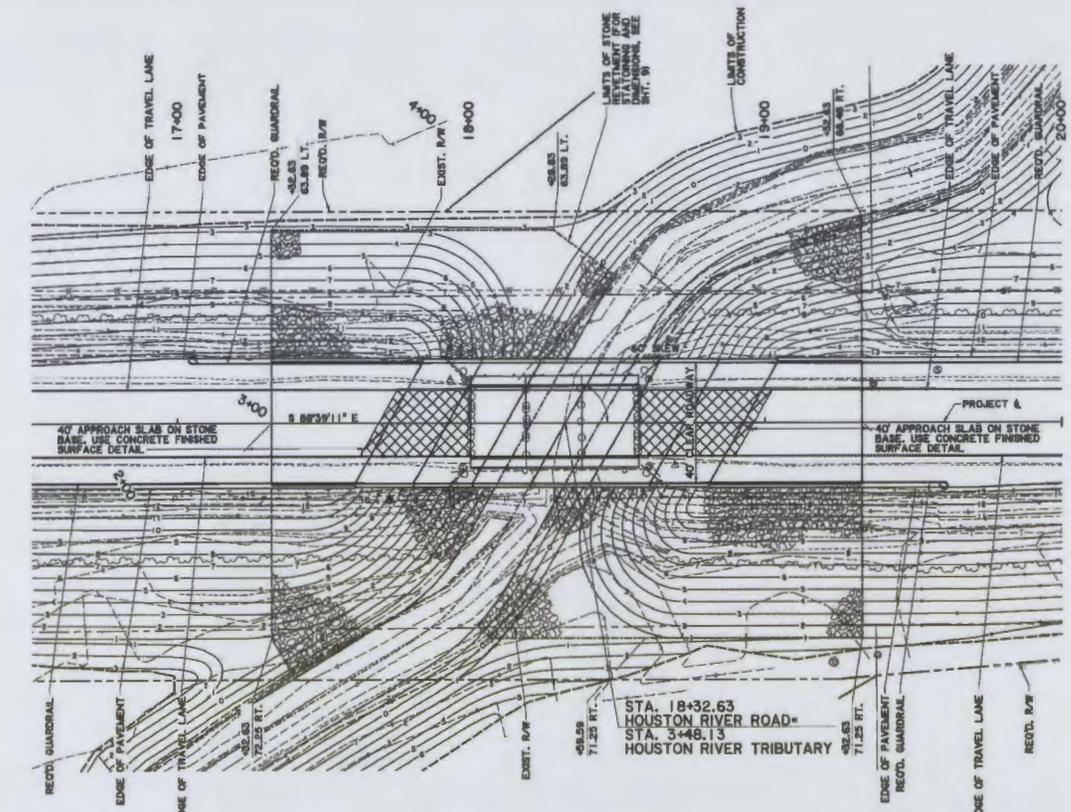
FIGURE 6 OF 7  
TYPICAL DITCH SECTION

PERMIT APPLICATION  
CALCASIEU PARISH POLICE JURY  
HOUSTON RIVER ROAD BRIDGE REPLACEMENT  
CALCASIEU PARISH, LOUISIANA

Drawn By:	Checked By:
Date:	Drawing No:

DATE PLOTTED: 04/23/2013 10:08 AM

PROJECT: C:\Users\lancon\Documents\Projects\2013\12-005\12-005.dwg



- NOTES:**
- EXISTING CONTOURS ARE SHOWN WITH A DASHED LINE. FINAL CONTOURS ARE SHOWN WITH A SOLID LINE.
  - THE BRIDGE SHALL BE CONSTRUCTED USING THE CAST-IN-PLACE DETAILS ONLY.
  - EXIST. PERMANENT PILES SHALL BE CUT OFF AND REMOVED FROM A POINT 5' BELOW NEW CHANNEL EXCAVATION LINE.
  - FOR ADDITIONAL GUARD RAIL INFORMATION SEE SHEET NOS. 208-217.
  - FOR BRIDGE DETAILS SEE STANDARD PLAN SHEET NOS. 100-107.
  - DATE OF CONSTRUCTION REQUIRED AT EACH END OF BRIDGE. SEE STANDARD PLAN WP-01, SHEET NO. 507 FOR DETAILS.
  - MAXIMUM PILE SERVICE LOAD IS 75 TONS (UNFACTORED). END-OF-DRIVING PILE CAPACITY SHALL BE AT LEAST 180 TONS (2.5 BY 1.75 TONS).
  - BATTER PILES A & E FOR BENTS 2-6.
  - DRABS SHALL BE CONSTRUCTED IN DECK AS PER STANDARD PLAN SHEET NO. 108. DRABS ARE NOT REQUIRED IN BARBER RAILING.
  - FILL SHALL BE IN-PLACE AND APPROVED AND EXCAVATION SHALL BE COMPLETED AND APPROVED PRIOR TO DRIVING BRIDGE PILES.
  - DATA GIVEN IN THE HYDRAULIC TABLE BELOW ASSUMES RIVERINE CONDITIONS AND DOES NOT FACTOR BACKWATER FROM HOUSTON RIVER.
  - APPROACH SLABS SHALL BE CONSTRUCTED USING THE HALF SECTION DETAILS FOR ASPHALTIC CONCRETE PAVEMENT (SEE SWT. 103).

SCALE: 1" = 20'

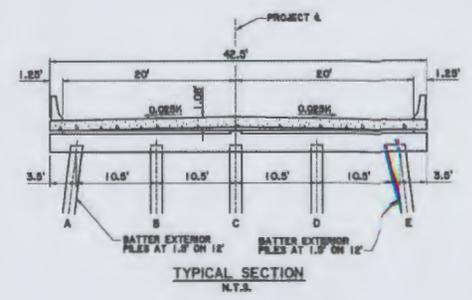
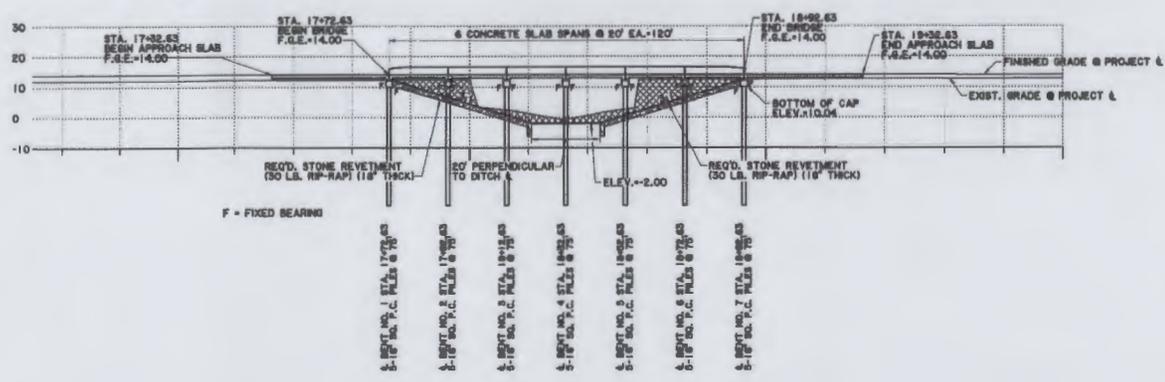
**TABLE OF PILE CUTOFF ELEV.**  
- CAST IN PLACE BRIDGE -

BENT NO.	A	B	C	D	E
1-7	10.79	10.79	10.79	10.79	10.79

**HYDRAULIC DATA TABLE**

STRUCTURE	FLOOD FREQUENCY (YEARS)		
	25	25	100
DISCHARGE (C.F.S.)	966	966	1093
SIZE AND TYPE	55 FT. BRIDGE	120 FT. BRIDGE	120 FT. BRIDGE
DESIGN WATER SURFACE ELEV.	13.08	9.46	10.10
AVERAGE VELOCITY (F.P.S.)	8.89	1.14	1.33
AREA OF OPENING (SQ. FT.)	3141	1093	1093
BACKWATER (FT.)	4.65	0.39	0.50

\*VALUE FACTORS SKEW OF BRIDGE IN RELATION TO CHANNEL.



**GENERAL BRIDGE PLAN**  
GRAPHIC SCALE: 1" = 20'

DRAWINGS PROVIDED BY LANCON ENGINEERS  
 MEAN HIGH WATER LEVEL 10' MSL  
 MEAN WATER LEVEL 8' MSL  
 MEAN LOW WATER LEVEL 6' MSL

**ARABIE ENVIRONMENTAL SOLUTIONS**  
 FIGURE 7 OF 7  
**GENERAL BRIDGE PLAN AND CROSS SECTION**  
 PERMIT APPLICATION  
 CALCASIEU PARISH POLICE JURY  
 HOUSTON RIVER ROAD BRIDGE REPLACEMENT  
 CL CASIEU PARISH, LOUISIANA

Drawn By:	Checked By:
Date:	Drawing No:

STATE OF LOUISIANA  
 CALCASIEU PARISH POLICE JURY  
 1015 PITCHON STREET  
 LAKE CHARLES, LA 70002

**LANCON ENGINEERS INC.**  
 10000 WOODLAWN DRIVE  
 HOUSTON, TX 77055  
 (281) 415-1100  
 WWW.LANCON.COM

DATE: APRIL 2013  
 PROJECT NO: 12-005  
 REV. NO: SHEET NO: 0 14