



DEPARTMENT OF NATURAL RESOURCES  
COASTAL RESOURCES DIVISION  
ONE CONSERVATION WAY • BRUNSWICK, GA 31520 • 912.264.7218  
COASTALGADNR.ORG

MARK WILLIAMS  
COMMISSIONER

DOUG HAYMANS  
DIRECTOR

DEC 04 2017

David Vance  
Geosyntec  
1255 Roberts Boulevard, Suite 200  
Kennesaw, Georgia 30144

**Re: Letter of Permission (LOP) and Revocable License (RL) for Culvert Maintenance within Coastal Marshlands Protection Act (CMPA) Jurisdiction, SLNG, Elba Island Road, Chatham County, Georgia (SAS 19710580)**

Dear Mr. Vance:

This Letter of Permission (LOP) is in response to your request on behalf of Southern, LNG Company, LLC., dated October 16, 2017, to repair Culvert Structure 1 which consists of three (3) existing culverts (Culverts 3, 4 and 5) under Elba Island Road. Culvert Structure 1 was damaged while a utility company working in the vicinity employed heavy equipment at the site and compromised the integrity of Culvert 3, 4 and 5. The work will begin no sooner than 15 days from the date of this letter and be completed no later than six months from the date of this letter.

The proposed maintenance will be scheduled around the low tide and includes replacement of three damaged culverts. Slip lining the existing 42-inch culvert will be followed by the application of a high strength epoxy used to seal the annular space between the pipes. The compromised sections of each culvert will be removed from the State's CMPA Jurisdiction. Following the replacement of each repaired culvert, the downstream embankment adjacent to the roadway will be stabilized with structural fill and appropriately sized rip-rap will be placed to pre-existing contours below and above Ordinary High Water for scour and erosion protection.

The Department authorizes the culvert replacement as depicted in the attached construction drawings provided all Best Management Practices (BMPs) are used to prevent any erosion and sedimentation at the site and to protect Coastal Marshlands. This LOP is not meant to exempt the above referenced activity from future environmental laws. **No unauthorized equipment, materials or debris may be placed, disposed of, or stored in jurisdictional areas.** Any incidental impacts associated with this project must be rectified by fully restoring areas to their pre-operational topographic and vegetative states.

This authorization does not relieve you from obtaining any other required federal, state, or local permits. Tidal water bottoms and marshlands of coastal Georgia are public trust lands controlled by the State, except for such lands where a validated Crown Grant or State Grant exists. The construction of the project proposed for this license must be completed 6 months from the date of issuance of the license. Future maintenance activities that occur within tidal waters and have the potential to cause adverse impact, either temporary or permanent, or that will be in the public's interest shall be reported to the Georgia Department of Natural Resources' Coastal Resources Division.

DEC 04 2017

Please feel free to contact Deb Barreiro at 912.266.3695 if you have any questions regarding this or any other authorizations

Sincerely,



Jill Andrews  
Chief, Coastal Management Section

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Enclosures: Elba Island Road Culvert Structures Project Drawings & Description

cc: Skye Stockel, USACE

File: LOP20170429

STATE OF GEORGIA

REVOCABLE LICENSE REQUEST FOR THE USE OF TIDAL WATERBOTTOMS

APPLICANTS NAME(S): Southern LNG

MAILING ADDRESS: P.O. Box 1367 Savannah, GA 31402  
(Street) (City) (State) (Zip)

PROJECT ADDRESS/LOCATION: 1 Elba Island Rd, Savannah, GA 31404

COUNTY: Chatham WATERWAY: Wilmington River DATE: 11/29/17

LOT, BLOCK & SUBDIVISION NAME FROM DEED: 5th G.M.A., Plot Book V, pg. 81 & 86 Chatham County  
Land now known as Elba Island Road. Records.

Georgia Department of Natural Resources  
Coastal Resources Division One  
Conservation Way Brunswick,  
Georgia 31520-8687

I am requesting that I be granted a revocable license from the State of Georgia to encroach on the beds of tidewaters, which are state owned property. Attached hereto and made a part of this request is a copy of the plans and description of the project that will be the subject of such a license. I certify that all information submitted is true and correct to the best of my knowledge and understand that willful misrepresentation or falsification is punishable by law.

I understand that if permission from the State is granted, it will be a revocable license and will not constitute a license coupled with an interest. I acknowledge that this revocable license does not resolve any actual or potential disputes regarding the ownership of, or rights in, or over the property upon which the subject project is proposed, and shall not be construed as recognizing or denying any such rights or interests. I acknowledge that such a license would relate only to the property interests of the State and would not obviate the necessity of obtaining any other State license, permit or authorization required by State law. I recognize that I waive my right of expectation of privacy and I do not have the permission of the State of Georgia to proceed with such project until the Commissioner of DNR or his/her designee has signed a copy of this request.

Sincerely, Jeffrey C. Green  
By: Jeffrey C. Green (Sr Pipeline Engineer)  
(Applicant), title if applicable

By: \_\_\_\_\_  
(Applicant), title if applicable

\*\*\*\*\*

The State of Georgia hereby grants you a revocable license not coupled with an interest as provided in your request. This area may now or in the future be utilized by boats employing power drawn nets under the provisions for commercial or sport bait shrimping. In its occupancy and use of the premises, licensee shall not discriminate against any person on the basis of race, gender, color, national origin, religion, age, or disability. This covenant by licensee may be enforced by termination of this license, by injunction, and by any other remedy available at law to the Department. The project proposed for this license must be constructed and completed within the specified timeframe associated with the authorization and/or transmittal letter associated with this revocable license and must be maintained in serviceable condition. Otherwise, action will be initiated to revoke this license and all structures must be removed immediately at the licensee's expense.

STATE OF GEORGIA  
Office of the Governor

By: [Signature]  
For: Mark Williams, Commissioner-DNR

Date: DEC 04 2017

# ELBA ISLAND ROAD CULVERT STRUCTURES EROSION MITIGATION

ELBA ISLAND, SAVANNAH, GEORGIA

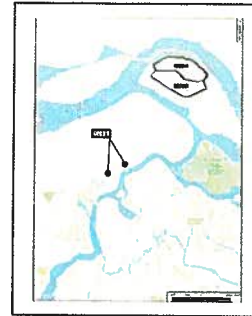
SOUTHERN LNG  
CONSTRUCTION DRAWINGS  
MAY 2016



LOCATION WITHIN STATE



LOCATION WITHIN CHATHAM COUNTY



LOCATION ON ELBA ISLAND

### DETAIL IDENTIFICATION LEGEND



### LIST OF DRAWINGS

DRAWING NO.	DRAWING TITLE
1	COVER SHEET
2	PLAN LAYOUT
3	CULVERT STRUCTURE 1 - EXISTING CONDITIONS
4	CULVERT STRUCTURE 1 - PHOTOGRAPHS
5	CULVERT STRUCTURE 2 - EXISTING CONDITIONS
6	CULVERT STRUCTURE 2 - PHOTOGRAPHS
7	CULVERT STRUCTURE 1 UPSTREAM SECTION REPAIR DETAILS
8	CULVERT STRUCTURE 1 DOWNSTREAM SECTION REPAIR DETAILS
9	CULVERT STRUCTURE 2 UPSTREAM SECTION REPAIR DETAILS
10	CULVERT STRUCTURE 2 DOWNSTREAM SECTION REPAIR DETAILS

Drawings 1-4 and 7-8 Relevant to NWP 3(a) PCN

PREPARED FOR:  
**SOUTHERN LNG**  
a Kinder Morgan Company  
ELBA ISLAND FACILITY, P.O. BOX 1367  
SAVANNAH, GEORGIA 31402

**Geosyntec**  
consultants

PREPARED BY:  
**GEOSYNTEC CONSULTANTS**  
1200 RIVERPLACE BLVD., SUITE 710  
JACKSONVILLE, FLORIDA 32207  
(904) 858-1818

<b>Geosyntec</b> CONSULTANTS		<b>SOUTHERN LNG</b> ELBA ISLAND FACILITY	
PROJECT NO. 22450		DRAWING NO. 1 OF 10	
DATE: MAY 2016		SCALE: AS SHOWN	
DRAWN BY: [Name]		CHECKED BY: [Name]	
DESIGNED BY: [Name]		APPROVED BY: [Name]	
PROJECT NO. 22450		DRAWING NO. 1 OF 10	

CONSTRUCTION DRAWING



Culvert Structure 1  
Subject of NWP  
3(e) PCN



NOTES  
1. AERIAL PHOTOGRAPHY DATE IS INDICATED IN IT AND OBTAINED FROM U.S. GEOLOGICAL SURVEY WITH SP-1000 (2013) DATA

<b>Geosyntec</b> CONSULTANTS		<b>SOUTHERN LMS</b> A LMS COMPANY SOUTHERN LMS PART OF LMS INC. INDUSTRIAL SYSTEMS GROUP	
PROJECT: RIVER ROAD-TWENTY-NINTH STREET BRIDGE EROSION MITIGATION			
NO. 42460			
STATE OF FLORIDA			
REGISTERED PROFESSIONAL ENGINEER			
DATE	BY	CHKD	APP'D
05/11/2014	W. J. BROWN	J. M. BROWN	J. M. BROWN
PROJECT NO.	DATE	SCALE	SHEET NO.
42460	05/11/2014	AS SHOWN	10

CONSTRUCTION DRAWING





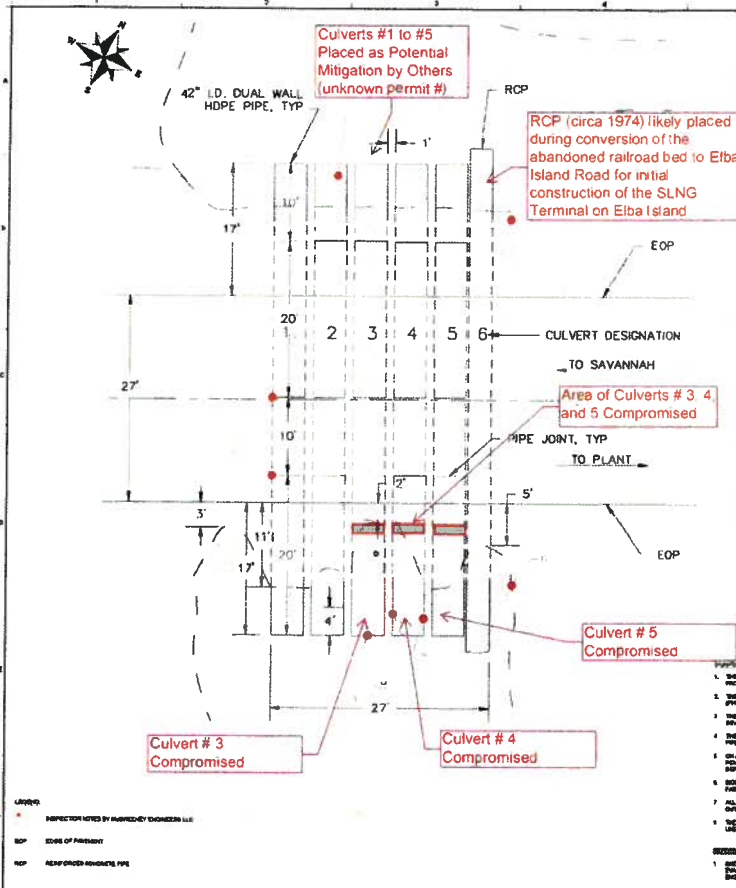
**LEGEND**

—	EXISTING ROAD
—	LIMIT OF ROAD
± 0.0'	SPOT ELEVATION
± 0.0'	TOP OF CULVERT
—	EXPAND LIMIT

- NOTES**
- 1 THE EXISTING TOPOGRAPHY SHOWN IS BASED ON A LIMITED PHOTOGRAPHIC SURVEY CONDUCTED BY GEOSYNTEC CONSULTANTS ON 8 JANUARY 2016.
  - 2 VERTICAL DIMENSIONS REPRESENT ELEVATION UNLESS OTHERWISE NOTED AND IS BASED ON THE NORTH AMERICAN DATUM, DATUM OF 1983 EXCEPT WHERE SHOWN OTHERWISE.
  - 3 NORTH AND SOUTH COORDINATES TO FEDERAL STATE PLANE COORDINATE SYSTEM DATUM 1983.
  - 4 AERIAL PHOTOGRAPHY DATED IN APPROXIMATE 2012 WAS OBTAINED FROM U.S. GEOLOGICAL SURVEY EARTHQUAKE DATA CENTER.

<b>Geosyntec</b> CONSULTANTS		<b>SOUTHERN LAND</b> ENGINEERS	
ELBA ISLAND ROAD CULVERT STRUCTURES EROSION MITIGATION			
NO. 42-000			
SOUTHERN LAND ENGINEERS ELBA ISLAND, GEORGIA			
DATE	SCALE	DATE	SCALE
DESIGNED BY	DRN	DESIGNED BY	FLC
CHECKED BY	FLC	CHECKED BY	FLC
APPROVED BY	FLC	APPROVED BY	FLC
DATE	3	DATE	10

CONSTRUCTION DRAWING



PHOTOGRAPH 1.1  
TYPICAL VIEW INSIDE HDPE PIPE



PHOTOGRAPH 1.2  
FRACTURE AT THE UPSTREAM END OF PIPE 2



PHOTOGRAPH 1.3  
RIPRAP AND FILTER FABRIC AT UPSTREAM END



PHOTOGRAPH 1.4  
4 FT LONG FRACTURE IN THE DOWNSTREAM END OF PIPE 4



PHOTOGRAPH 1.5  
TYPICAL GASKET AT PIPE JOINT



PHOTOGRAPH 1.6  
TYPICAL CONNECTION WITHOUT GASKET AT PIPE JOINT



PHOTOGRAPH 1.7  
EROSION AND FILTER FABRIC ADJACENT TO OUTFALL



PHOTOGRAPH 1.8  
SETTLEMENT OF THE RESPACED CONCRETE PIPE



PHOTOGRAPH 1.9  
TYPICAL UNDERSIZING OF THE PIPE AND FILTER FABRIC



PHOTOGRAPH 1.10  
TYPICAL UNDERSIZING OF PIPE

- UPSTREAM INFLECTION POINTS**
- THE END OF THE CONCRETE RELIEF VALVE STRUCTURE TO BE INSTALLED UPSTREAM FROM THE END OF THE PIPE TO THE PHOTOGRAPH LOCATIONS (PHOTOGRAPHS 1.1 & 1.2)
  - THE UPSTREAM END OF PIPE 2 WAS FRACTURED APPROXIMATELY 4 FT ALONG THE TOP OF THE PIPE (PHOTOGRAPH 1.2)
  - THE RIPRAP ALONG THE UPSTREAM DOWNSTREAM WAS PROPERLY PLACED. STONE WAS EMPLOYED IN BRIDGE, PILES AND SPACED TO MAINTAIN FILTER FABRIC (PHOTOGRAPH 1.3)
  - THE DOWNSTREAM END OF PIPE 4 WAS FRACTURED APPROXIMATELY 4 FT ALONG THE TOP OF THE PIPE JUST ABOVE THE SPREAD (PHOTOGRAPH 1.4)
  - ON ALL OF THE PIPES, THE PIPE JOINT FROM THE DOWNSTREAM ENDING A FEET AWAY FROM THE DOWNSTREAM END OF THE CONCRETE RELIEF VALVE WAS COMPROMISED (PHOTOGRAPH 1.5 AND 1.6)
  - NO SIGNIFICANT EROSION WAS OBSERVED ON THE DOWNSTREAM DOWNSTREAM. THE SLOPE AND FILTER FABRIC WERE PROTECTED (PHOTOGRAPH 1.7)
  - ALL OF THE PIPES COVERED UNDER FLOW OF SETTLEMENT ON THE DOWNSTREAM END NEAR THE OUTFALL. THE RESPACED CONCRETE PIPE SETTLED TO THE MOST SETTLEMENT (PHOTOGRAPH 1.8)
  - THERE WAS NO SOLID PROTECTION LOCATED AT THE OUTFALL. THE PIPES AND FILTER FABRIC ARE UNDERSIZED (PHOTOGRAPHS 1.9 AND 1.10)
- REVISIONS**
- ADDED PHOTOGRAPHS AND DESCRIPTION NOTES UNDER FROM REPORT FILES TO THE STRUCTURE EROSION MITIGATION STRUCTURE 1 - ELBA ISLAND ROAD BRIDGE STRUCTURE EROSION MITIGATION STRUCTURE 1.1

Culvert # 3 Compromised

Culvert # 4 Compromised

Culvert # 5 Compromised

**Geosyntec**  
CORPORATION

**SOFTENERS**  
LLC

**ELBA ISLAND ROAD BRIDGE STRUCTURE EROSION MITIGATION**

No. 42460

SOUTHERN LAND  
ELBA ISLAND, GEORGIA

DATE: 4/10

CONSTRUCTION DRAWING





**LEGEND**

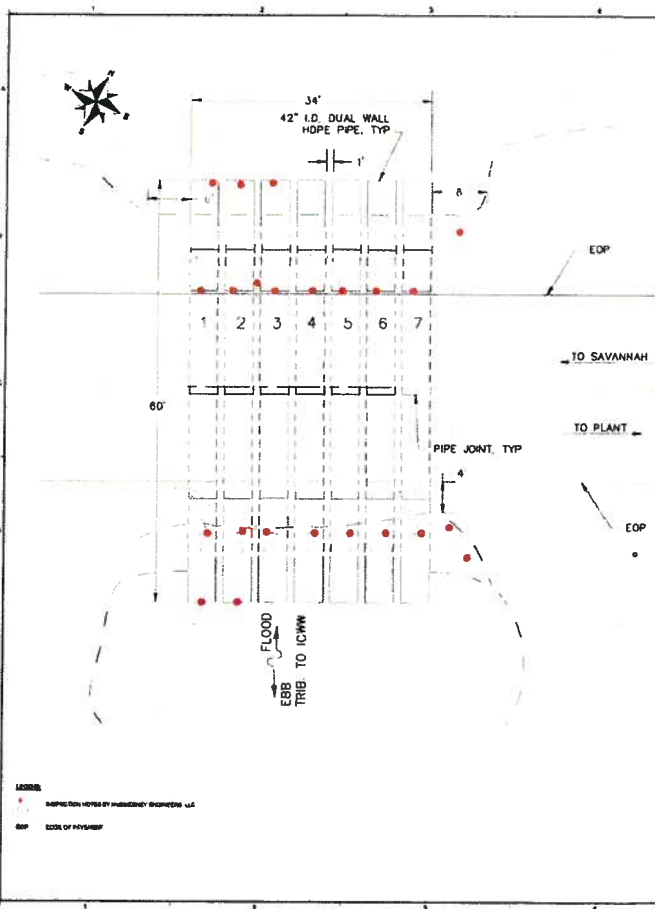
- EXISTING GROUND
- CENTERLINE
- RIGHT-OF-WAY
- SHOULDER LINE

- NOTE:**
- 1. ALL ELEVATIONS REFERENCED HEREON ARE BASED ON A LISTED TOPOGRAPHIC SURVEY CONTROLLED BY GEOSYNTEC CONDUCTED IN JANUARY 2016.
  - 2. VERTICAL CURVE REPRESENTS SEPARATE METERS FROM AND IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1985 UNLESS OTHERWISE NOTED AS FEET.
  - 3. NORTHING AND EASTING COORDINATES TO NEADAN STATE PLANE COORDINATE SYSTEM (SPL 2011 PROJ).
  - 4. AERIAL PHOTOGRAPHY DATED IN NOVEMBER 2015 WAS OBTAINED FROM U.S. GEOLOGICAL SURVEY AIRPHOTOGRAPHIC DATABASE.

<b>Geosyntec</b> CONSULTANTS 1301 KENNEDY BLVD., SUITE 100 ATLANTA, GA 30339		<b>SOUTHERN</b> L&S 1000 W. BROADWAY LAWRENCEVILLE, GA 30046	
PROJECT: HIGHWAY STRUCTURE 2 - EXISTING CONDITIONS DRAWING NO: 42-30 DATE: 05/14/16			
APPROVED BY: [Signature] TITLE: PROJECT MANAGER		DATE: MAY 14, 2016	
APPROVED BY: [Signature] TITLE: PROJECT MANAGER		DATE: MAY 14, 2016	
APPROVED BY: [Signature] TITLE: PROJECT MANAGER		DATE: MAY 14, 2016	

CONSTRUCTION DRAWING





PHOTOGRAPH 2.1  
PIPE FRACTURES AT DOWNSTREAM OF PIPES 1 AND 2



PHOTOGRAPH 2.2  
UPSTREAM EMBANKMENT



PHOTOGRAPH 2.3  
SINKHOLE AT THE UPSTREAM END ABOVE PIPES 3 AND 5



PHOTOGRAPH 2.4  
CUT IN THE CROWN OF THE PIPE DUE TO FIBER OPTIC INSTALLATION - TYPICAL OF PIPES 1 THROUGH 7



PHOTOGRAPH 2.5  
DOWNSTREAM EMBANKMENT EROSION



PHOTOGRAPH 2.6  
OPEN JOINT IN PIPE 1



PHOTOGRAPH 2.7  
OPEN JOINT IN PIPE 2

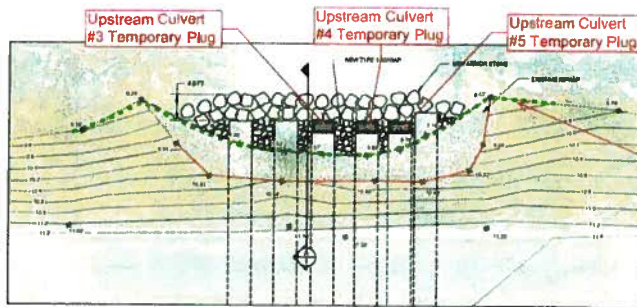


PHOTOGRAPH 2.8  
OPEN JOINT IN THE CROWN OF PIPE 6

- ROBERTSON, PROSPECTOR ENGINEERS**
- THE SCOPE OF THE WORK WAS LIMITED TO VISUAL INSPECTION OF THE EXISTING PIPELINE TO IDENTIFY EROSION FROM THE UPSTREAM TO THE DOWNSTREAM EMBANKMENT.
  - INSPECTION BEING APPROXIMATELY 4 FT LOW WATER LOCATED IN THE UPSTREAM AND DOWNSTREAM ENDS OF PIPES 1 AND 2 AND THE UPSTREAM END OF PIPES 3 THROUGH 7.
  - THE EROSION ALONG THE UPSTREAM AND DOWNSTREAM EMBANKMENTS WAS SEVERELY FACED. EROSION WAS OBSERVED IN SEVERAL AREAS AND EXPOSED THE UNDERLINED FILTER FABRIC PHOTOGRAPHS 2.1.
  - A SINKHOLE APPROXIMATELY 1 FT LONG BY 1 FT WIDE WAS LOCATED ABOVE PIPES 3 AND 5. THE SINKHOLE EXPOSED SOFT TO FIRM SILT AND CLAY PHOTOGRAPHS 2.3.
  - ON ALL OF THE PIPES, THE FIRST JOINT FROM THE DOWNSTREAM END WAS A VISUAL CHECK. THE DOWNSTREAM JOINTS WERE VISUALLY CHECKED AND THE EROSION WAS OBSERVED UP TO 1.5 FT OF EROSION.
  - A VISUALLY CHECKED PIPES OPTIC LINE CUT THROUGH THE CROWN OF PIPE 6, APPROXIMATELY 14 FT FROM THE DOWNSTREAM END.
  - EROSION EROSION WAS OBSERVED ON THE DOWNSTREAM EMBANKMENT. THE EROSION AND FILTER FABRIC WAS EXPOSED TO THE PHOTOGRAPHS 2.5.
  - A PIPE JOINT WAS LOCATED APPROXIMATELY 10 FT FROM THE UPSTREAM END OF EACH PIPE. ALL OF THE JOINTS OF THE LOCALIZATION POINTS OF EROSION. THE EXISTING EROSION LOCATIONS ARE AT PIPES 1, 2 AND 6. EROSION OTHER THAN THE EROSION LOCATIONS IN EACH A PIPE JOINT COULD BEAR WITHIN THE JOINTS ABOVE PIPES 3 AND 5. AT PIPES 3 THROUGH 7 THE EROSION WAS NOT OBSERVED. EROSION OF THE EROSION PHOTOGRAPHS 2.1 THROUGH 1.8.
- REFERENCE**
- EROSION PHOTOGRAPHS AND INSPECTION NOTES FROM ROBERTSON, PROSPECTOR ENGINEERS, LLC AND PROSPECTOR ENGINEERS, LLC. EROSION AND EROSION PHOTOGRAPHS WERE VISUALLY INSPECTED BY PROSPECTOR ENGINEERS, LLC.

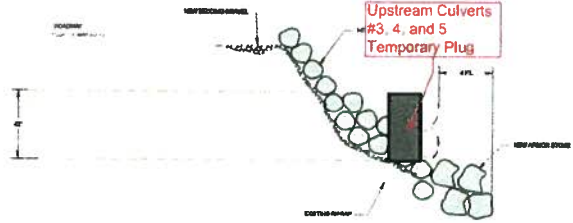
CONSTRUCTION DRAWING

CONSULTING 1000 Peachtree Street, N.E. Atlanta, GA 30309		A Division of SOUTHERN LAGOON 1000 Peachtree Street, N.E. Atlanta, GA 30309	
<b>BLUES ISLAND ROAD OVERLAP STRUCTURES EROSION MITIGATION</b>			
PROJECT NO. 42460		SHEET NO. 6 OF 10	
DRAWN BY: JAC CHECKED BY: JAC APPROVED BY: JAC			



Approximate OHWM  
(Green Dashed Line)

Duration of temporary plugs  
to be in place no more than 2  
days per culvert. Total  
construction duration  
anticipated to require 1 week.



**SECTION**  
**7** **CULVERT STRUCTURE 1 UPSTREAM**  
**SECTION**

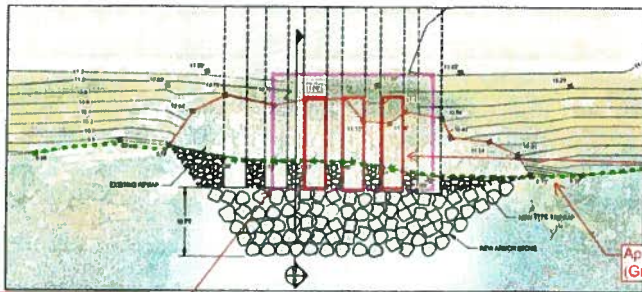
DELIVER 1 UPSTREAM SECTION COPY OF ROAD

1. PLACE ALONG STREET SIDEWALK OF THE PILE AS INDICATED BY THE CONTRACT DOCUMENTS, UP TO THE END OF THE ELEVATION.
2. PLACE ALONG SIDEWALK, ON EACH SIDE AS INDICATED BY THE CONTRACT.
3. PLACE TYPE 1 SPMAY BETWEEN THE PILES IN ACCORDANCE WITH THE CONSTRUCTION DETAILS, UP TO THE TOP OF THE SILLAGE.
4. PLACE ANCHORED BRUSH PILES WHICH TYPE 1 SPMAY AS INDICATED BY THE CONTRACT.

- NOTES:
1. THE EXISTING TOPOGRAPHY SHOWN IS BASED ON A LATEST TOPOGRAPHIC SURVEY CONDUCTED BY GEOSYNTEC CONSULTING, INC. IN JANUARY 2014.
  2. THE PILES ARE TO BE PLACED ALONG THE SIDEWALKS AND ARE TO BE PLACED ON THE EXISTING SIDEWALKS, UNLESS OTHERWISE NOTED BY THE CONTRACT DOCUMENTS.
  3. MATERIALS AND METHODS TO BE USED TO BE DETERMINED BY THE CONTRACTOR AND SHALL BE APPROVED BY THE ENGINEER.
  4. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE GEOTECHNICAL ENGINEERING DESIGN MANUAL.

Geosyntec®		SOUTHERN L&S	
CONSULTING ENGINEERS, INC.		SOUTH BRANCH BRIDGE	
10000 W. 10TH AVENUE		SOUTH BRANCH BRIDGE	
DENVER, CO 80202		SOUTH BRANCH BRIDGE	
PROJECT: ELBA ISLAND ROAD CULVERT STRUCTURES EROSION MITIGATION		SOUTH BRANCH BRIDGE	
SHEET: 7 OF 10		SOUTH BRANCH BRIDGE	
DATE: 10/20/14		SOUTH BRANCH BRIDGE	
DRAWN BY: [Name]		SOUTH BRANCH BRIDGE	
CHECKED BY: [Name]		SOUTH BRANCH BRIDGE	
APPROVED BY: [Name]		SOUTH BRANCH BRIDGE	
DATE: 10/20/14		SOUTH BRANCH BRIDGE	
SCALE: AS SHOWN		SOUTH BRANCH BRIDGE	
PROJECT NO: 14-0000		SOUTH BRANCH BRIDGE	
SHEET NO: 7		SOUTH BRANCH BRIDGE	
TOTAL SHEETS: 10		SOUTH BRANCH BRIDGE	

CONSTRUCTION DRAWING



Section of Culverts #3, 4, and 5 to be Removed

Approximate OHHM (Green Dashed Line)

Shaded Area to be Backfilled to Pre-Existing Contours with Riprap for Erosion Protection for Elba Island Road. No New Fill Proposed

Approximate OHHM

Section of Culvert #3, 4, and 5 to be Removed

Shaded Area to be Backfilled to Pre-Existing Contours with fill and Riprap for Erosion Protection for Elba Island Road. No New Fill Proposed

Duration of temporary plugs to be in place no more than 2 days per culvert. Total construction duration anticipated to require 1 week.



**SECTION**  
**CULVERT STRUCTURE 1 DOWNSTREAM**

1. PLACE RIPRAP ABOVE TO FRONT OF THE BRG. AS SHOWN IN THE CONSTRUCTION GENERAL, UP TO THE PRE-SHIFT 1 SECTION.
2. PLACE EXISTING SAND ON EXISTING AREAS AS DIRECTED BY THE GENERAL.
3. PLACE TYPE 1 RIPRAP BETWEEN THE BRG. AS SHOWN IN THE CONSTRUCTION GENERAL, UP TO THE TOP OF THE BRIDGE.
4. PLACE ADDITIONAL ARMOY STONE WHICH TYPE 1 RIPRAP AS DIRECTED BY THE GENERAL.

- NOTES
1. THE EXISTING CONDUIT STRUCTURE SHALL BE A MINIMUM 18" DIAMETER AND SHALL BE CONSIDERED AS EXISTING UNLESS OTHERWISE NOTED.
  2. VERTICAL CURVE REPRESENTS THE LOWEST POINT AND ALL POINTS ON THE CURVE SHALL BE TO THE TOP OF THE BRIDGE. THE EXISTING POINTS SHALL BE TO THE TOP OF THE BRIDGE.
  3. ALL WORK SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT AND SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT.
  4. AFTER THE CONSTRUCTION IS COMPLETE THE BRIDGE SHALL BE REINSTALLED AND THE BRIDGE SHALL BE OPEN TO TRAFFIC.

**Geosyntec**

**SOUTHERN LAND**

**CULVERT STRUCTURE 1 DOWNSTREAM SECTION REPAIR DETAILS**

**ELBA ISLAND ROAD CULVERT STRUCTURES EROSION MITIGATION**

STATE OF ALABAMA

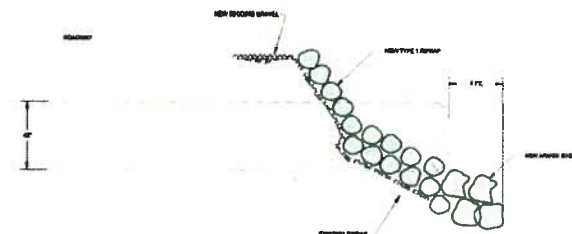
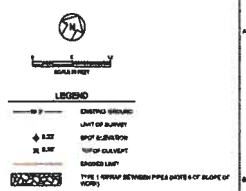
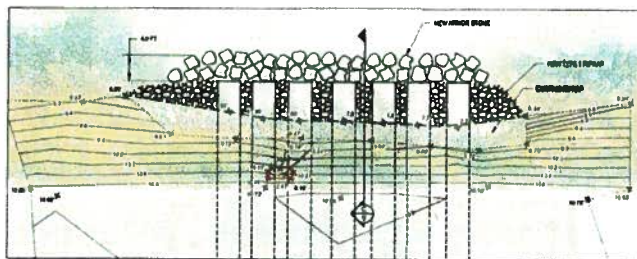
REGISTERED PROFESSIONAL ENGINEER

NO. 10000

EXPIRES 12/31/2024

PROJECT NO.	10000	DATE	10/10/2024
CLIENT	STATE OF ALABAMA	PLANNING	PLANNING
DESIGNED BY	STATE OF ALABAMA	DATE	10/10/2024
CHECKED BY	STATE OF ALABAMA	DATE	10/10/2024
APPROVED BY	STATE OF ALABAMA	DATE	10/10/2024

CONSTRUCTION DRAWING



**SECTION**  
**CULVERT STRUCTURE 2 UPSTREAM**

- CULVERT 2 UPSTREAM SECTION SCALE OF WORK:**
1. INITIAL POSITIONING AND ELEVATION SHALL BE AS SHOWN AS NOTED IN NOTES AND PERFORMED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND ELEVATION OF ALL POINTS AND FOR PROVIDING THE NECESSARY STAKES AND MARKERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES AND STRUCTURES.
  2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES AND STRUCTURES.
  3. PLACE ADDITIONAL STAKES AS SHOWN ON THE CONSTRUCTION DRAWING UP TO THE PIPE INVERT ELEVATION.
  4. PLACE REBAR DRIVEL ON SHOULDER AREAS AS SHOWN ON THE DRAWING.
  5. PLACE TYPE 1 REBAR AT THE END OF THE SHOULDER AS SHOWN ON THE CONSTRUCTION DRAWING UP TO THE TOP OF THE PROPOSED SHOULDER.
  6. PLACE ADDITIONAL REBAR STAKES AS SHOWN ON THE CONSTRUCTION DRAWING UP TO THE TOP OF THE PROPOSED SHOULDER.

- NOTES**
1. THE EXISTING TOPOGRAPHY SHOWN ON THIS PLAN IS A LIMITED TOPOGRAPHIC SURVEY CONDUCTED BY GEOSYNTEC CONSULTANTS IN 2014.
  2. VERTICAL CURVE DATA FOR THE EXISTING ROADWAY SHALL BE BASED ON THE NORTH AMERICAN VERTICAL CURVE OF THE ROADWAY WITH A GRADE OF 4.5%.
  3. HORIZONTAL AND GRADE DATA CORRESPOND TO GEODATA EXISTING PLANS COORDINATE SYSTEM DATA SHEET.
  4. ALL DATA POINTS SHOWN IN THIS DRAWING WERE OBTAINED FROM U.S. GEOLOGICAL SURVEY GROUND ELEVATION DATA SHEET.

**Geosyntec**  
CONSULTANTS

**SOUTHERN LAND**  
CONSULTANTS

**ELBA ISLAND ROAD CULVERT STRUCTURE EROSION MITIGATION**

PROJECT NO. 42480

SOUTHERN LAND CONSULTANTS  
1000 W. BROAD ST., SUITE 100  
ATLANTA, GA 30334  
PHONE: 404.525.1234  
FAX: 404.525.1235  
WWW.SOUTHERNLANDCONSULTANTS.COM

DATE: 09/10

CONSTRUCTION DRAWING



