



COASTAL RESOURCES DIVISION  
ONE CONSERVATION WAY · BRUNSWICK, GA 31520 · 912-264-7218

WALTER RABON  
COMMISSIONER  
NOV 18 2024

DOUG HAYMANS  
DIRECTOR

Aaron Valenti (by email)  
Terracon  
10841 S. Ridgeview Road  
Olathe, KS 66061

**RE: Letter of Permission (LOP), Maintenance Activities in Coastal Marshlands Protection Act (CMPA) Jurisdiction, Wilmington River Tributaries, Chatham County, Georgia (NWP#3)**

Dear Mr. Valenti:

This LOP is in response to your request on behalf of the Causton Bluff Owners Association, Inc to maintain an existing earthen dike and water control structure authorized December 11<sup>th</sup>, 2015 by the Coastal Marshlands Protection Committee Permit #713. The work will begin no sooner than 15 days from the date of this letter and be completed within six months.

CMPA Permit #713 authorized construction of an earthen dike adjacent to a man-made tidal stormwater lagoon utilizing existing non-jurisdictional elevation areas that remained from a remnant dike within the project boundary. Materials used to construct the 7ft. elevation earthen dike consisted of approximately 2,500 cubic yards of naturally sourced sandy clay/sandy clay loam mixtures. Excavated material was reused within the footprint of the authorized project area (or removed off-site to an appropriate upland disposal area). A water level control structure (24 inch pipe) was installed centrally on the dike to connect the tidal stormwater lagoon to tidal marsh. To the south of the pipe, a 4 ft. x 4 ft. pre-cast concrete box was installed inside the tidal lagoon area with stop logs. A flap gate was installed on the northern (marsh side) of the pipe. Above the control structure, a 10 ft. wide hardened overflow structure was installed at an elevation of 6 ft. to allow for water to top the dike during storm events and / or extreme high tides. The top of the earthen dike is 8 ft. wide to allow for construction and maintenance. Monitoring of the dike and its control structure were conditioned under CMPA #713.

As recently as May 2022, monitoring showed erosion along the south side of the earthen dike. Since then, multiple locations along the permitted dike have begun to erode. Additionally, several concrete stabilization bags near the outfall structure weir box have failed and are no longer functioning for their intended purpose. Additionally, tidal flow across the overflow structure has caused scouring below the other existing sandbags. The purpose of the project is to maintain the existing concrete bags and the dike footprint at an elevation of 8ft. within its permitted footprint.

Maintenance to the permitted dike and the overflow structure will be accomplished by operating a mini excavator from the dike. To protect the integrity of the dike, CRD is requiring installation of matting along the travel corridor on the dike prior to commencing with maintenance. The excavator will travel to the western limits of the project area, matting the dike as it moves west. Once the equipment has made it to the overflow structure, the contractor will operate the excavator on the matted dike and remove damaged concrete bags from around the weir box. Water levels in the tidal lagoon will be manipulated by removing weir slats to temporarily lower water levels south of the structure. Once water levels in the lagoon are low enough to access the

eroded area, new concrete bags will be installed within the project's permitted footprint. After installation of the concrete bags, the tidal lagoon will be returned to its original pool elevation. Working back to the east along the dike, additional suitable clean fill material will be used to restabilize the elevation of the dike in areas that have experienced settlement and erosion. The side slopes of the dike will be repaired and reconstructed by removing enough of the rip rap to expose the void, backfill the void, reconstruct the side slope, and place rip rap on the side slope at the outfall structure. Where erosion is occurring on both the lagoon and marsh sides at the eastern end of the dike (150+ feet), the earthen dike will be reconstructed and revegetated. The agent will provide a list of native coastal vegetation to the State prior to commencing with the restoration project.

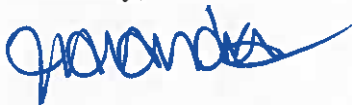
This LOP does not authorize the placement of riprap or fill outside of the project footprint authorized by CMPC Permit #713. If the permittee wishes to expand the footprint of the permitted project, a new CMPA permit application will be required to be submitted for approval by the Coastal Marshlands Protection Act Committee.

The Department authorizes the maintenance of the existing stormwater infrastructure as described in the attached project description and site plans. 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 Revocable 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.

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

Enclosures: Causton Bluff Owners Association Maintenance Request, Plans, and Site Photos;  
CMPA Permit #713

cc: Brian Moore, USACE

LOP20240060



MARK WILLIAMS  
COMMISSIONER

A.G. SPUD WOODWARD  
DIRECTOR

**DEC 16 2015**

Mike DeMell  
Environmental Services Inc.  
P.O. Box 2383  
Savannah, GA 31402

**RE: Coastal Marshlands Protection Act Permit # 713, Causton Bluff Owners Association, Inc., Causton Bluff Subdivision, Wilmington River, Savannah, Chatham County, Georgia. (ACOE # SAS-2015-00279)**

Dear Mr. DeMell:

The Coastal Marshlands Protection Committee considered and approved permit #713 referenced above under the Coastal Marshlands Protection Act O.C.G.A. 12-5-280 *et seq.* The permit and permit conditions are attached to this letter. All decision documents, as well as all other plans, documents and materials submitted during the application process become terms of this permit and are now enforceable conditions.

Staff of the Coastal Management Program has reviewed the above referenced application pursuant to Section 404 of the Clean Water Act and/or Section 10 of the River and Harbors Act of 1899 for consistency with the Georgia Coastal Management Program (GCMP). The Program concurs with the applicant's consistency certification to the extent that the project adheres to all conditions and restrictions of Coastal Marshlands Protection Act Permit #713. Issuance of a federal permit that does not contain the same conditions and/or restriction, as any issued state permit, does not alleviate the permittee from adhering to all components of state permits.

This letter and attachments are to be held by you for your files and for inspection by any authorized persons. The expiration date for the permit is five (5) years from the date of issuance. However, no construction may commence within the area of jurisdiction of the Act until the expiration of thirty (30) days following the date of issuance, provided there is no legal appeal of this permit, you have all other necessary federal, state and local authorizations and you have met all of the standard and special conditions as required by this permit.

**Permitted Project Description:** Construct an earthen dike with water control structures adjacent to a tidal stormwater lagoon within the Causton Bluff Subdivision which is adjacent to the Wilmington River in Savannah, Chatham County, Georgia. **Standard and Special conditions apply to this permit.**

**Marsh Component:** The authorized activities include the construction of an earthen dike adjacent to a man-made tidal stormwater lagoon that is approximately 4.6 acres in size utilizing existing higher elevation areas that remain from a previous dike within the project boundary. Material used to construct the 7 ft. elevation earthen dike will consist of approximately 2,500 cubic yards of naturally

sourced sandy clay/sandy clay loam mixtures. Excavated material will be reused within the footprint of the authorized project area or removed off-site to an appropriate upland disposal area. A water level control structure will be installed centrally on the dike and will include a 24 in. pipe that will connect the tidal stormwater lagoon to the tidal marsh. To the south of the pipe, a 4 ft. x 4 ft. pre-cast concrete box will be installed inside the lagoon area with stop logs. On the northern, marsh side, of the pipe a flap gate will be installed. Above the control structure a 10 ft. wide hardened overflow structure will be installed at an elevation of 6 ft. to allow for water to top the dike during storm events and/or extreme high tides. The top of the dike will be 8 ft. wide to allow for construction and future maintenance.

The authorized impact of the project includes 14,375 sq. ft. (0.33 acres) of permanent impacts and 11,760 sq. ft. (0.27 acres) of temporary impacts associated with construction. Authorized total temporary and permanent impacts to jurisdictional coastal marshlands for the dike construction are approximately 26,135 sq. ft. (0.60 acres).

**Upland Component:** The upland component of this project is approximately 6,839 square feet (0.15 acres) of the old dike.

**Permit Placard:** Enclosed is the permit placard to be posted at the work site (within 24 hours) for the duration of the construction activity.

**Post Construction Requirements: Compliance Certification and File Maintenance**

Also enclosed is a *Certification of Compliance* that must be submitted to us within 30 days following completion of the permitted activity. Please include this compliance form with the post-construction survey, if required under the conditions. Department staff will assess compliance and provide you with a written verification of project completion and compliance.

**Conveyance of Ownership Interest:**

If you as the permit holder sell, lease, rent, or otherwise convey the land or any portion of the land for which the permit was issued, you must notify the Department within 30 days of this transfer or conveyance. The permit shall continue in force in favor of the new owner, lessee, tenant, or other assignee so long as there is no change in the use of the land as set forth in the original application. The Department will transfer the permit to the new owner with all of the original terms and conditions.

We ask that you carefully read through this document and attachments and comply with the terms and conditions of this permit. Feel free to contact me if you need clarification of any of these conditions or for assistance with this project.

Sincerely,



A.G. "Spud" Woodward  
Director

**Enclosures: CMPC Permit #713 and Permit Conditions, Compliance Certificate, Permit Placard, Drawings**

**cc: Ms. Sara Wise, Savannah District Corps of Engineers**

**File # (CMP20150018)**



MARK WILLIAMS  
COMMISSIONER

A.G. 'SPUD' WOODWARD  
DIRECTOR

## Coastal Marshlands Protection Committee Permit #713 Final Conditions December 11, 2015

Causton Bluff Owners Association, Inc.  
P.O. Box 13310  
Savannah, GA 31416

**Permitted Project Description:** Construct an earthen dike with water control structures adjacent to a tidal stormwater lagoon within the Causton Bluff Subdivision which is adjacent to the Wilmington River in Savannah, Chatham County, Georgia. **Standard and Special conditions apply to this permit.**

**Marsh Component:** The authorized activities include the construction of an earthen dike adjacent to a man-made tidal stormwater lagoon that is approximately 4.6 acres in size utilizing existing higher elevation areas that remain from a previous dike within the project boundary. Material used to construct the 7 ft. elevation earthen dike will consist of approximately 2,500 cubic yards of naturally sourced sandy clay/sandy clay loam mixtures. Excavated material will be reused within the footprint of the authorized project area or removed off-site to an appropriate upland disposal area. A water level control structure will be installed centrally on the dike and will include a 24 in. pipe that will connect the tidal stormwater lagoon to the tidal marsh. To the south of the pipe, a 4 ft. x 4 ft. pre-cast concrete box will be installed inside the lagoon area with stop logs. On the northern, marsh side, of the pipe a flap gate will be installed. Above the control structure a 10 ft. wide hardened overflow structure will be installed at an elevation of 6 ft. to allow for water to top the dike during storm events and/or extreme high tides. The top of the dike will be 8 ft. wide to allow for construction and future maintenance.

The authorized impact of the project includes 14,375 sq. ft. (0.33 acres) of permanent impacts and 11,760 sq. ft. (0.27 acres) of temporary impacts associated with construction. Authorized total temporary and permanent impacts to jurisdictional coastal marshlands for the dike construction are approximately 26,135 sq. ft. (0.60 acres).

**Upland Component:** The upland component of this project is approximately 6,839 square feet (0.15 acres) of the old dike.

### **COASTAL MARSHLANDS PROTECTION ACT STANDARD CONDITIONS**

1. The project must comply, as applicable, for areas permitted herein, with all other federal, state, and local statutes, ordinances, and regulations and the applicant must obtain all licenses and permits prior to commencement of construction.
2. This permit does not resolve actual or potential disputes regarding ownership of, 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.
3. All plans, documents and materials contained in this permit application, required by Coastal Marshlands Protection Act of 1970, as amended O.C.G.A. § 12-5-280 *et seq.* are a part of this permit and conformance to such plans, documents, and materials are a condition of this permit. No change or deviation from these plans, documents, and materials shall be permitted without prior notification and approval by the Department or CMPC.
4. No further encroachment or construction shall take place within state jurisdiction, except as permitted by the CMPC. Any modification of the plans or structure in the jurisdictional area must be reviewed and approved by the Department or the CMPC, as necessary, prior to construction.
5. No construction or alteration of a project may commence until the expiration of 30 days following the date on which the application is approved; provided however that if a timely appeal is filed, no construction or alteration may commence until all administrative and judicial proceedings are terminated.
6. The permit must be posted onsite within twenty-four (24) hours of beginning construction.
7. A copy of these and all permit conditions must be supplied to the person in charge of construction. All contractors and subcontractors are responsible for strict adherence to all permit conditions.
8. All Best Management Practices (BMPs) should be used to prevent any erosion and sedimentation at the site. No equipment, materials, or debris may be placed in, disposed of, or stored in jurisdictional areas. Any visible alterations in the marsh topography will be restored immediately using low-impact hand tools. Any damage to the marsh vegetation that has not recovered naturally during the next growing season will be repaired by a method acceptable to the Department.
9. If the permitted improvements are damaged, fall into disrepair, become dilapidated, or are not meeting their expected usefulness and are not maintained at a serviceable level, it is the responsibility of the owner to remove the improvements. A new permit will be required to retain and repair the structure, improvement, or asset if it loses its structural integrity and is no longer serviceable.
10. The CMPC is not bound in the future to protect any improvement or asset authorized by the permit.

### **SPECIAL CONDITIONS**

1. This permit does not authorize construction of any bank stabilization projects within the project area or the tidal stormwater lagoon.
2. A re-vegetation plan must be submitted to the Department for approval prior to installation

- 3. Permittee must provide the Department with a maintenance plan, for approval prior to commencing construction. Such maintenance plan may include coordination with the Department prior to any work taking place within the project area.**
- 4. After initial construction, use of a motorized vehicle on the dike is prohibited except as authorized by the Department for maintenance events.**
- 5. Tidal connection via the water control structure must be maintained to the tidal stormwater lagoon.**
- 6. Permittee may be required to provide a post-construction elevation survey to the Georgia Department of Natural Resources, Coastal Resources Division. Such survey shall comply with the Georgia Plat Act O.C.G.A. 15-6-67 *et seq.***





MARK WILLIAMS  
COMMISSIONER

A.G. 'SPUD' WOODWARD  
DIRECTOR

**CERTIFICATION OF COMPLIANCE  
FOR THE CONSTRUCTION AND MAINTENANCE  
OF PROJECTS PERMITTED UNDER  
THE COASTAL MARSHLAND PROTECTION ACT**

**PERMITTEE:**

Name: Causton Bluff Owners Association, Inc.  
Address: P.O. Box 13310  
City or Town: Savannah, GA 31416  
Island or Waterway: Wilmington River  
County: Chatham  
Permit Number: CMPA # 713

Within 30 days of completion of the activity authorized by this permit, sign this certification and return it along with a copy of the post-construction survey to the Habitat Management Program of the Ecological Services Section at the address listed below.

Please note that your permitted activity is subject to compliance inspections by DNR representatives before and after completion of the project. If you fail to comply with the permit terms and conditions it may be subject to suspension, modification, or revocation.

**Permittee Statement**

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of the said permit.

Signature of Permittee: \_\_\_\_\_

Date: \_\_\_\_\_

# Georgia Coastal Marshlands Protection Committee

## PERMIT

Issued Pursuant to O.C.G.A. 12-5-280

To: Causton Bluff Owners Association, Inc.

For: Construction of an earthen dike with water control structures adjacent to a tidal stormwater lagoon within the Causton Bluff Subdivision which is adjacent to the Wilmington River in Savannah, Chatham County, Georgia. **Standard and Special conditions apply to this permit.**

Date: December 11, 2015

Expiration Date: December 11, 2020

Permit Number: 713

Authorized By: 



For further information, please contact the DNR Coastal Resources Division at (912) 264-7218



STATE OF GEORGIA  
5-YEAR REVOCABLE LICENSE REQUEST

APPLICANTS NAME(S): Causton Bluff Owners Association, Inc. c/o Hollie White

MAILING ADDRESS: P.O. Box 13310 Savannah GA 31416  
(Street) (City) (State) (Zip)

PROJECT ADDRESS/LOCATION: Causton Bluff Subdivision

COUNTY: Chatham WATERWAY: Wilmington River DATE: June 2015

LOT, BLOCK & SUBDIVISION NAME FROM DEED: Causton Bluff Owners Association, Inc.

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

I am making application for a permit with the U.S. Department of the Army, Corps of Engineers, Savannah District. I understand that the issuance of such a permit will not relieve me of the obligation to obtain authorization from the State of Georgia since the proposed project would constitute an encroachment on the beds of tidewaters which are State-owned property. Accordingly, I hereby request that I be granted a revocable license from the State of Georgia. 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 further acknowledge that I will have no liveboards, nor allow them to occur, at this structure. 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 has signed a copy of this request.

Sincerely,

By: Hollie A White  
(Applicant), title if applicable

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

Attachment

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 completed within 5 years of the date of issuance of the license and must be maintained in serviceable condition. Otherwise, action will be initiated to revoke this license and all structure must be removed immediately at the licensee's expense.

STATE OF GEORGIA  
Office of the Governor

By: Mark Williams  
For: Mark Williams, Commissioner-DNR

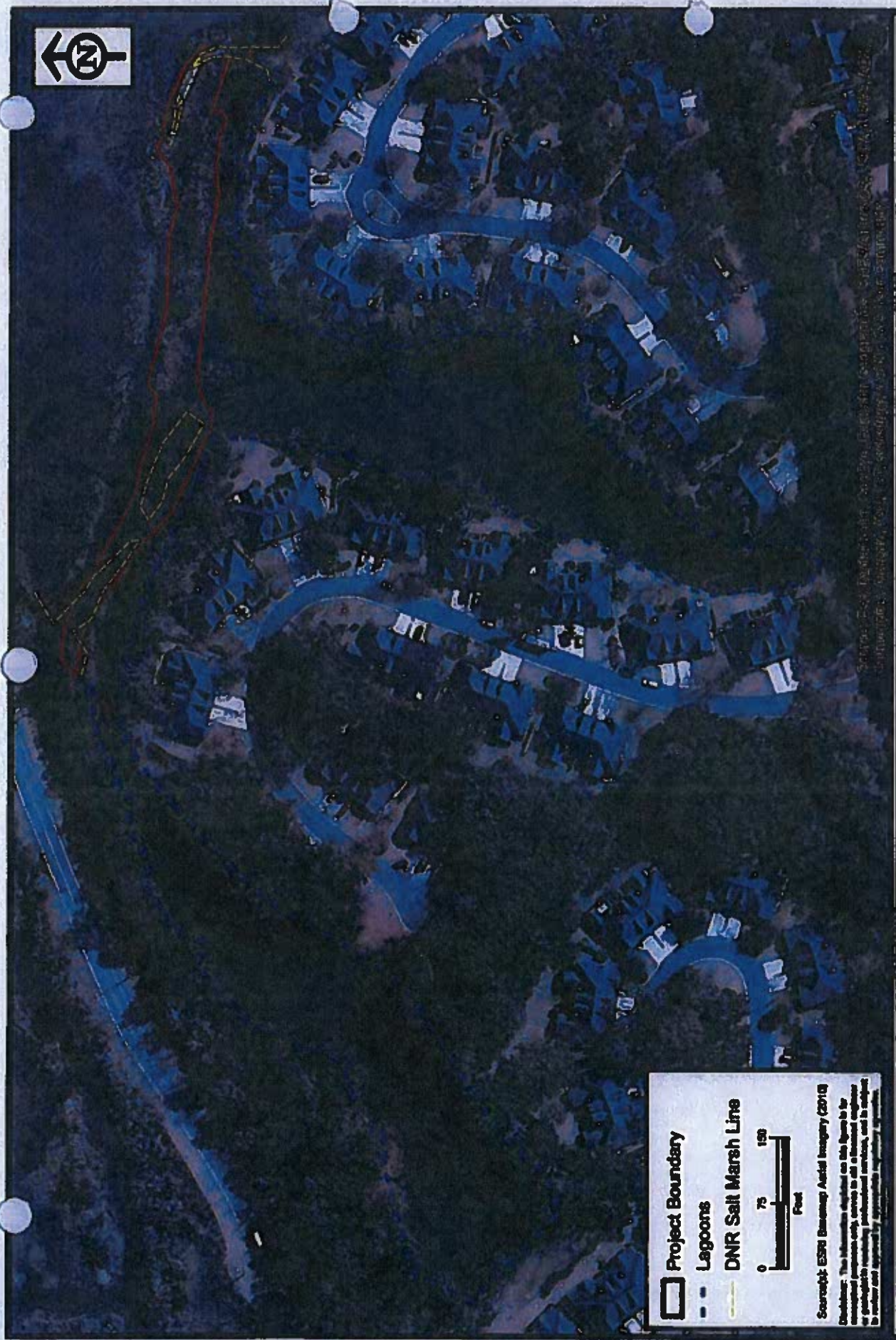
DATE: 12/11/15

Revised 3/2012

GA DNR

JUN 18 2015

Marsh & Shore Mgt. Program



**Project Boundary**  
 - - - Lagoons  
 — DNR Salt Marsh Line

Scale: ES10 Basecamp Aerial Imagery (2010)

Disclaimer: The information depicted on this figure is for informational purposes only, and is not intended to be used for any other purpose. Environmental Services, Inc. is not responsible for any errors or omissions in this figure, and is not liable for any damages, including consequential damages, arising from the use of this figure.

**ENVIRONMENTAL SERVICES, INC.**  
 1211 N. Peachtree Street, Suite 100  
 Atlanta, Georgia 30309  
 (404) 228-0711  
 (404) 228-0700 Fax  
[www.environmentalservices.com](http://www.environmentalservices.com)

**JUN 18 2015**

**Causton Bluff Owners Association, Inc.**

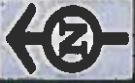
**JUN 18 2015**

Marsh & Shore Mgt. Program

Chatham County, Georgia

Marsh & Shore Mgt. Program

Project: ES130-44.00  
 Date: June 2015  
 Drawn/Checked: KHS/MJD  
 Figure: 3



SALT MARSH

LAGOON

LAGOON

**Project Boundary**

**Lagoons**

**DNR Salt Marsh Line**

**Upland Component w/in Project Boundary**

0 40 80  
Feet

Source: ESRI (Browning Aerial Imagery (2014))

Disclaimer: The information depicted on this figure is for conceptual purposes only, unless to the contrary is indicated by a legend or otherwise. The information is not intended to be used for any purpose not intended by the provider.

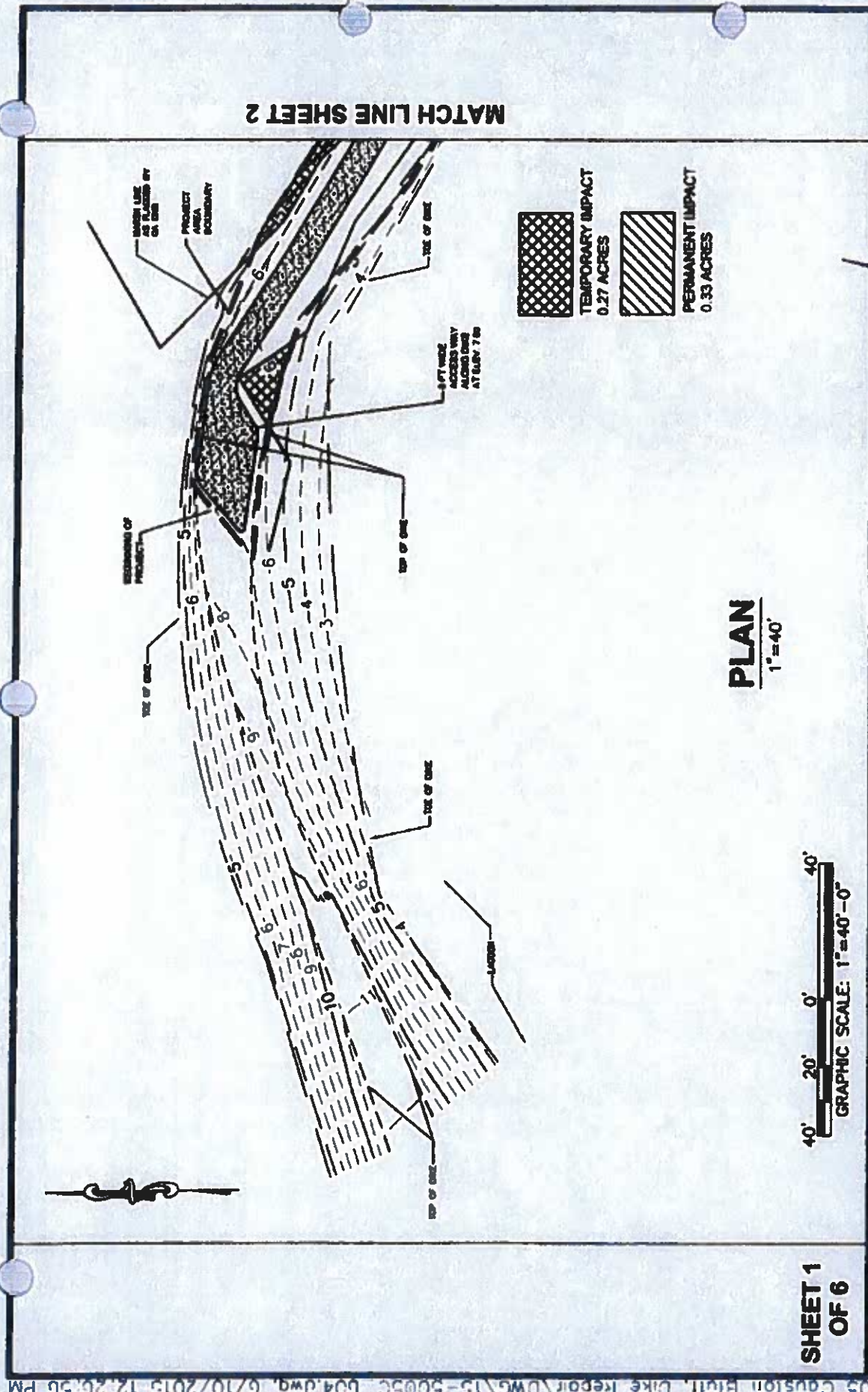
Project:	ES13044.00
Date:	Revised 7/28/15
Drawn/Checked:	KHSAM/JD
Figure:	4

**Aerial Project Boundary**      **GA DNR**

**Causton Bluff Owners Association, Inc.**      **AUG 18 2015**

Chatham County, Georgia

**ENVIRONMENTAL SERVICES, INC.**  
 121 Peachtree Street  
 Atlanta, Georgia 30309  
 404.253.4711  
 404.253.3888 Fax



**PLAN**  
1"=40'

40' 20' 0' 40'  
GRAPHIC SCALE: 1"=40'-0"

**SHEET 1**  
**OF 6**

**EMC ENGINEERING SERVICES, INC.**  
P.O. BOX 8101, 31412  
10 CHATHAM CENTER SOUTH  
SUITE 100  
SAVANNAH, GEORGIA 31405  
PHONE: (912) 233-6533  
FAX: (912) 233-4580

ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,  
COLUMBUS, SAVANNAH & VALDOSTA

**GA DNR**  
**JUN 18 2015**  
Marsh & Shore Mgt. Program

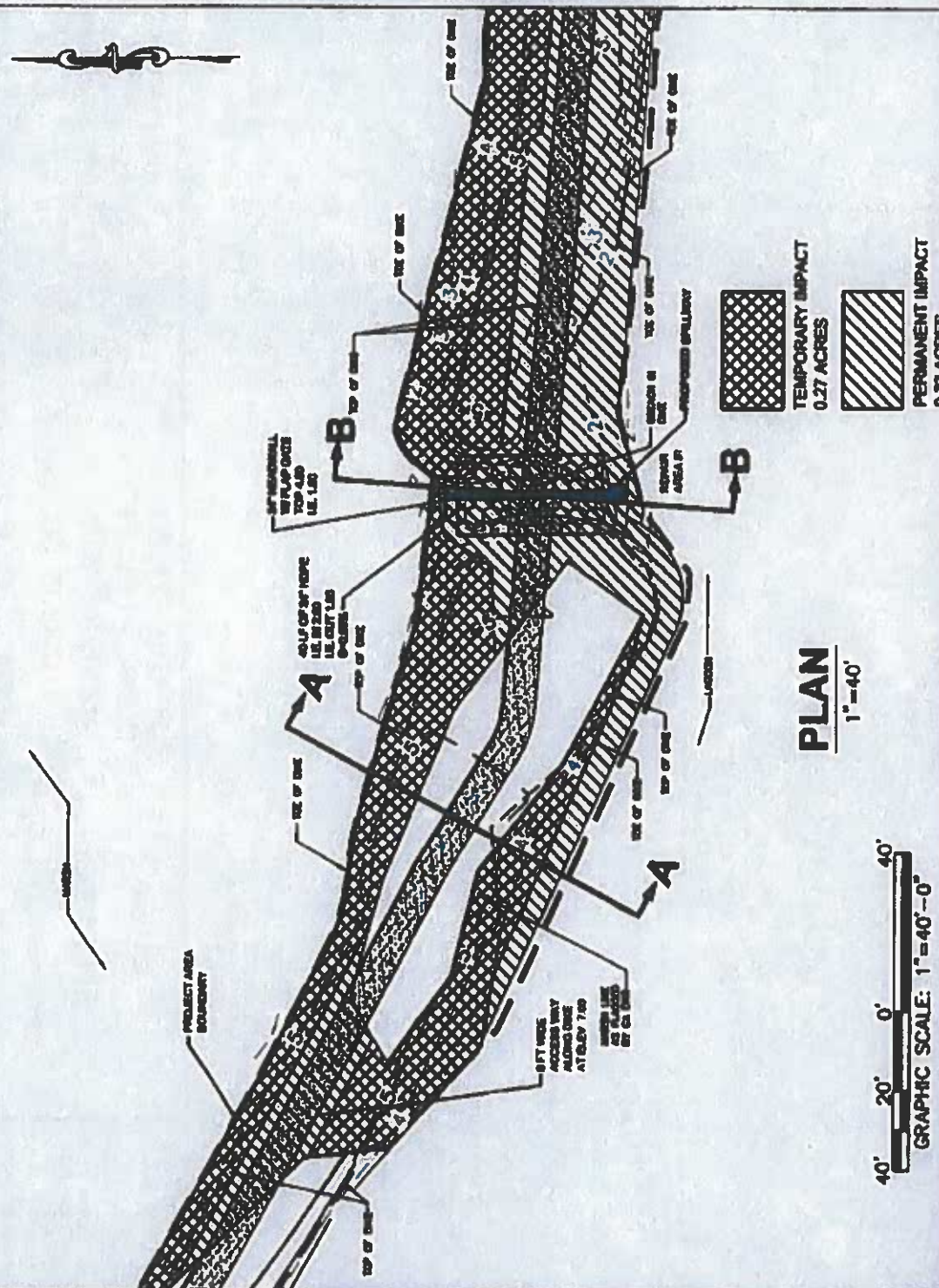
**PERMIT EXHIBIT**  
**CAUSTON BLUFF**  
**DIKE REPAIR**  
CHATHAM COUNTY, GEORGIA  
Prepared for:  
**CAUSTON BLUFF OWNERS ASSOCIATION, INC.**



PROJECT NO.: 15-5005  
DRAWN BY: B.W.L.  
DESIGNED BY: B.W.L.  
SURVEYED BY: EMC  
SURVEY DATE: 4-20-15  
CHECKED BY: B.W.L.  
SCALE: 1"=40'  
DATE: JUNE 2015

MATCH LINE SHEET 3

MATCH LINE SHEET 1



PLAN  
1"=40'

40' 20' 0' 40'  
GRAPHIC SCALE: 1"=40'-0"

SHEET 2  
OF 6

**EMC ENGINEERING SERVICES, INC.**  
 P.O. BOX 8101, 31412  
 10 CHATHAM CENTER SOUTH  
 SUITE 100  
 SAVANNAH, GEORGIA 31405  
 PHONE: (912) 232-6333  
 FAX: (912) 232-6380

ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,  
 COLUMBUS, SAVANNAH & VALDOSTA

GA DNR  
**JUN 18 2015**  
 Marsh & Shore Mgt. Program  
 Prepared for:  
**CHATHAM COUNTY, GEORGIA**  
**CAUSTON BLUFF OWNERS ASSOCIATION, INC.**

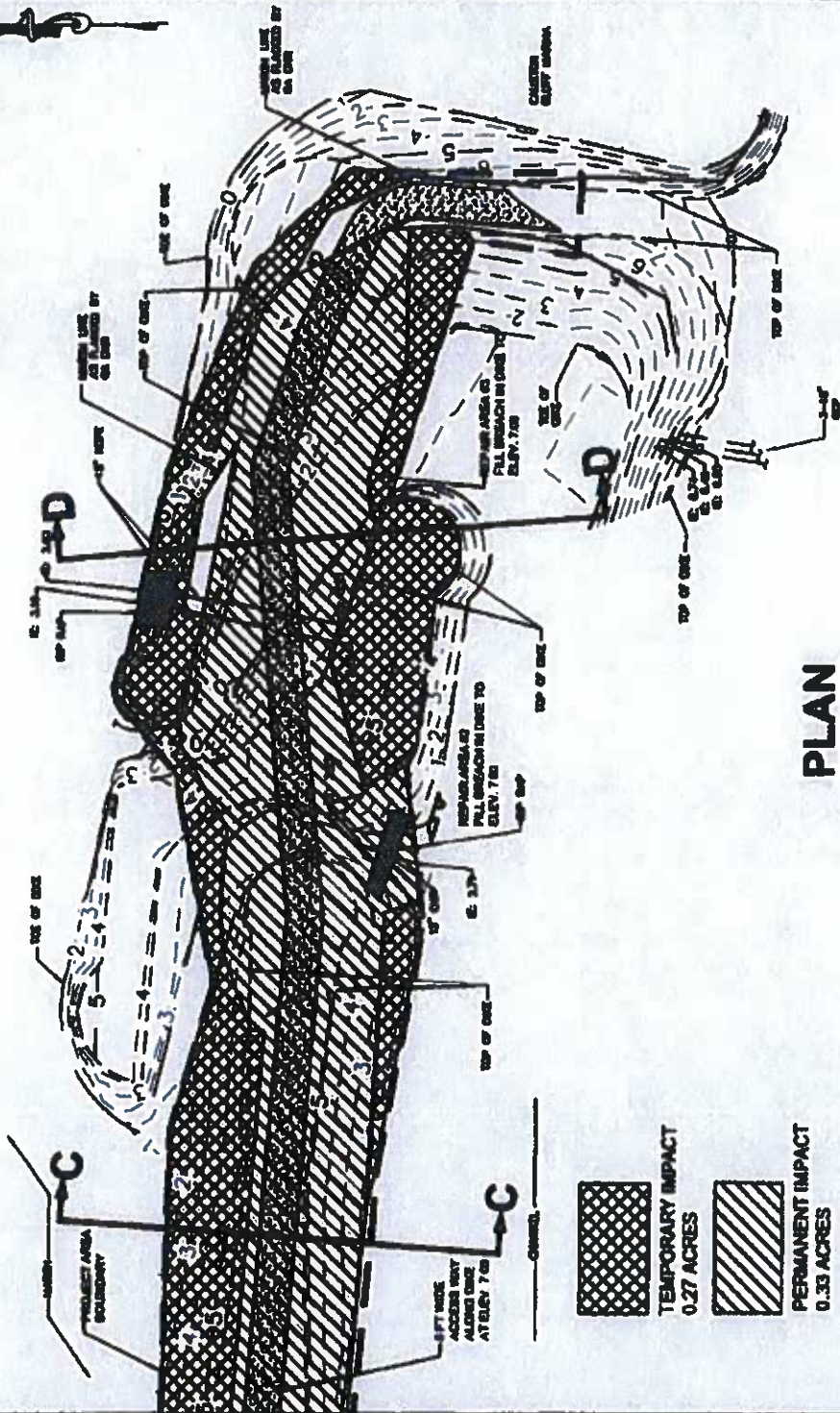
PERMIT EXHIBIT  
**CAUSTON BLUFF  
 DIKE REPAIR**



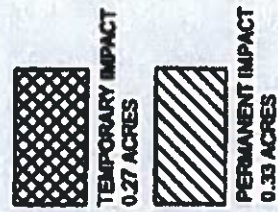
PROJECT NO.:	15-5005
DRAWN BY:	BWL
DESIGNED BY:	BWL
SURVEYED BY:	EMC
SURVEY DATE:	4-20-15
CHECKED BY:	BWL
SCALE:	1"=40'
DATE:	JUNE, 2015

MATCH LINE SHEET 2

SHEET 3  
OF 6



PLAN  
1"=40'



**EMC**  
**EMC ENGINEERING SERVICES, INC.**  
 P.O. BOX 8101, 31412  
 10 CHATHAM CENTER SOUTH  
 SUITE 100  
 SAVANNAH, GEORGIA 31405  
 PHONE: (912) 233-6533  
 FAX: (912) 233-4380

ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,  
 COLUMBUS, SAVANNAH & VALDOSTA

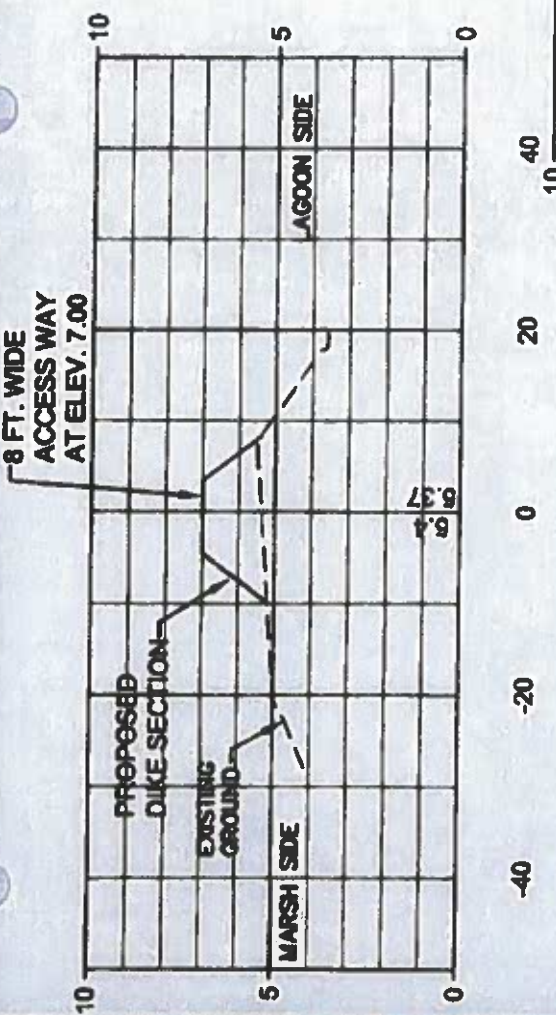
GA DNR  
**JUN 18 2015**  
 Marsh & Shore Mgt. Program

**PERMIT EXHIBIT  
 CAUSTON BLUFF  
 DIKE REPAIR**  
 CHATHAM COUNTY, GEORGIA  
 Prepared for:  
**CAUSTON BLUFF OWNERS ASSOCIATION, INC.**

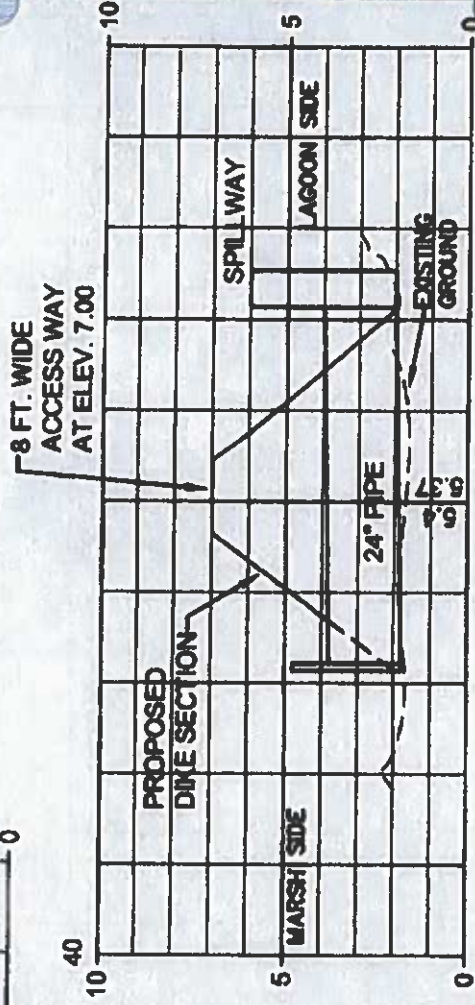


PROJECT NO.: 15-5005  
 DRAWN BY: BWL  
 DESIGNED BY: BWL  
 SURVEYED BY: EMC  
 SURVEY DATE: 4-20-15  
 CHECKED BY: BWL  
 SCALE: 1"=40'  
 DATE: JUNE 2015





**SECTION A-A**  
 HORIZONTAL: 1"=20'  
 VERTICAL: 1"=5'



**SECTION B-B**  
 HORIZONTAL: 1"=20'  
 VERTICAL: 1"=5'

CROSS SECTIONS ARE VIEWED LOOKING EAST



SHEET 4 OF 6

**EMC ENGINEERING SERVICES, INC.**  
 P.O. BOX 8101, 31412  
 10 CHATHAM CENTER SQUARE  
 SUITE 100  
 SAVANNAH, GEORGIA 31405  
 TEL: (912) 233-6533  
 FAX: (912) 233-6580

ALBANY, ATLANTA, AUGUSTA, BRUNSWICK, COLUMBUS, SAVANNAH & VALDOSTA

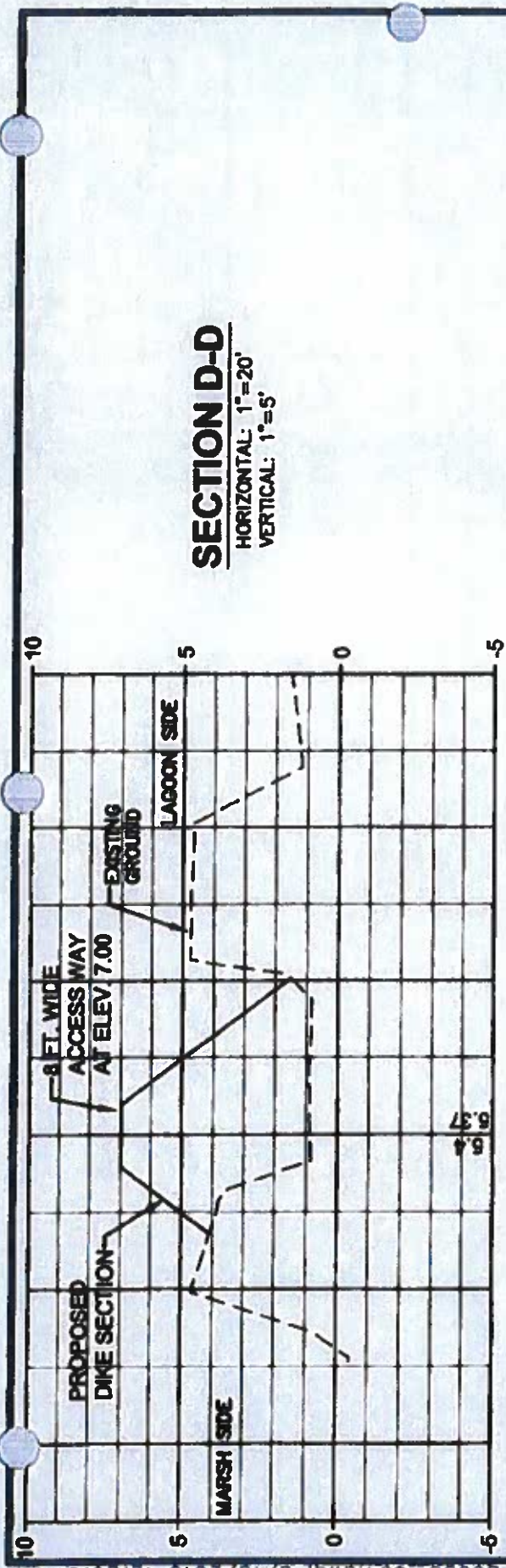


**GA DNR**  
**PERMIT EXHIBIT**  
**CAUSTON BLUFF**  
**DIKE REPAIR**

**JUN 18 2015**  
 Marsh & Shore Mgt. Program

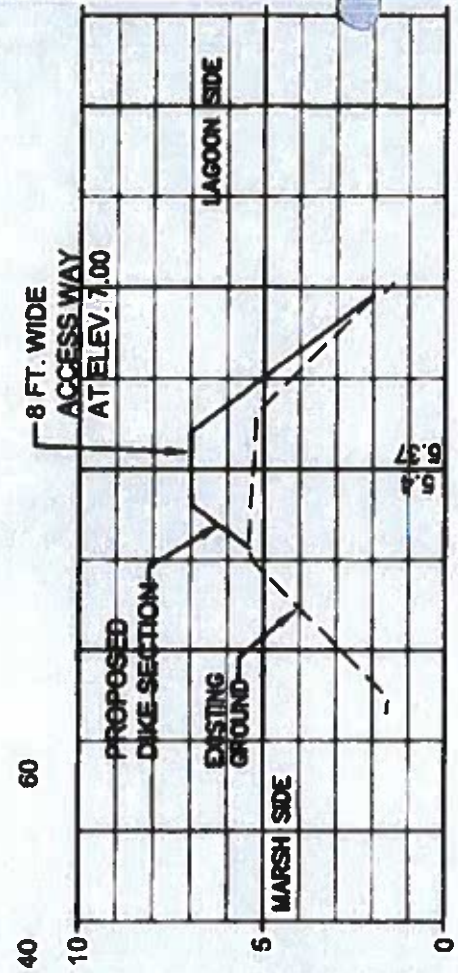
CHATHAM COUNTY, GEORGIA  
 Prepared for:  
 CAUSTON BLUFF OWNERS ASSOCIATION, INC.

PROJECT NO.:	15-5005
DRAWN BY:	BWL
DESIGNED BY:	BWL
SURVEYED BY:	EMC
SURVEY DATE:	4-20-15
CHECKED BY:	BWL
SCALE:	1"=50'
DATE:	JUNE 2015



**SECTION D-D**

HORIZONTAL: 1"=20'  
VERTICAL: 1"=5'



**SECTION C-C**

HORIZONTAL: 1"=20'  
VERTICAL: 1"=5'

CROSS SECTIONS ARE  
VIEWED LOOKING EAST

SHEET 5  
OF 6

GA DNR  
JUN 18 2015  
Marsh & Shore Mgt. Program

**EMC ENGINEERING SERVICES, INC.**  
P.O. BOX 8101, 31412  
10 CHATHAM CENTER SOUTH  
SUITE 100  
SAVANNAH, GEORGIA 31405  
PHONE: (912) 232-6533  
FAX: (912) 233-4880

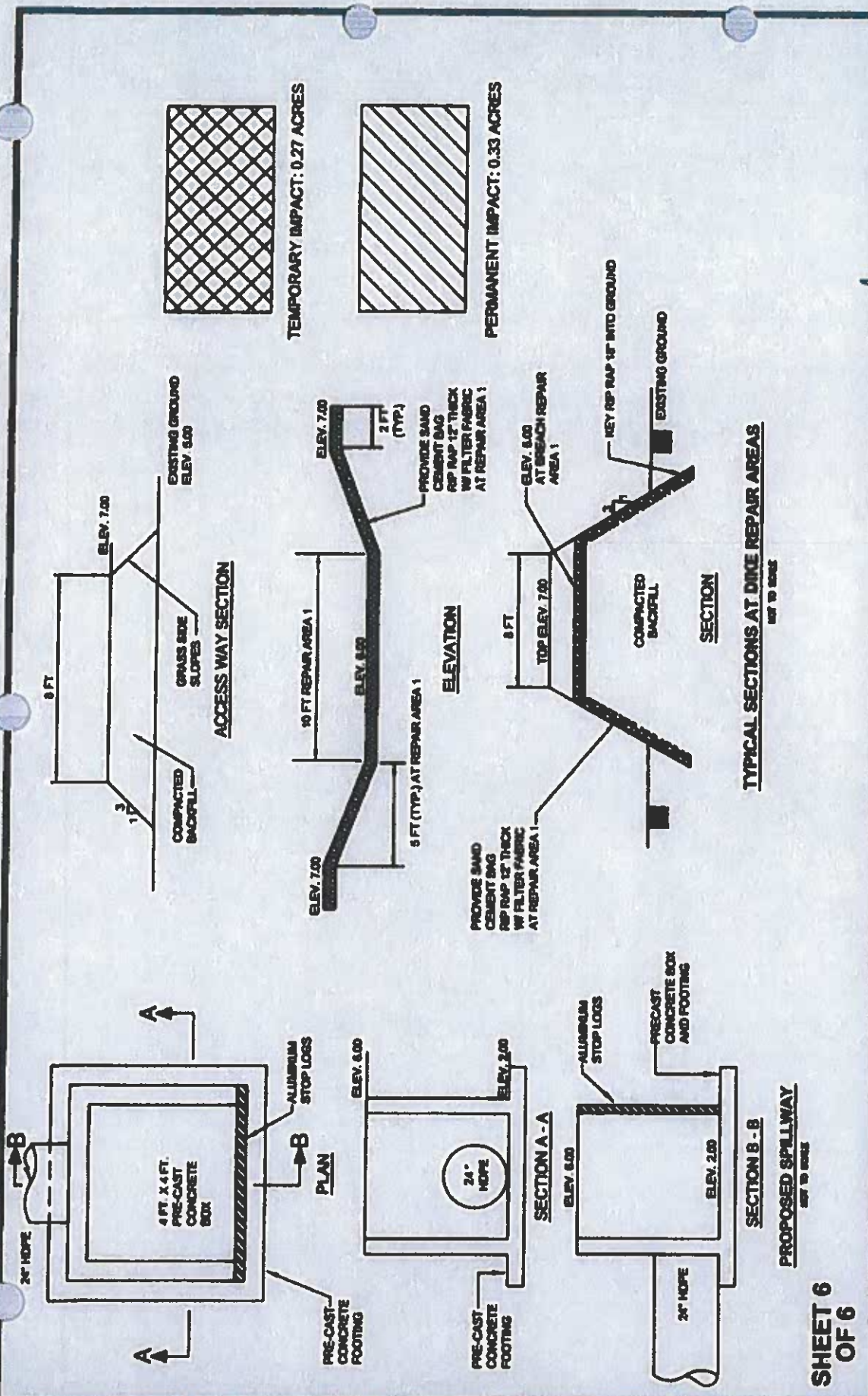
ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,  
COLUMBUS, SAVANNAH & VALDOSTA



**PERMIT EXHIBIT  
CAUSTON BLUFF  
DIKE REPAIR**

Prepared for:  
**CHATHAM COUNTY, GEORGIA  
CAUSTON BLUFF OWNERS ASSOCIATION, INC.**

PROJECT NO.: 15-5005  
DRAWN BY: BVL  
DESIGNED BY: BVL  
SURVEYED BY: EMC  
SURVEY DATE: 4-20-15  
CHECKED BY: BVL  
SCALE: 1"=40'  
DATE: JUNE 2015



PROJECT NO.:	15-5005
DRAWN BY:	BWL
DESIGNED BY:	BWL
SURVEYED BY:	EMC
SURVEY DATE:	4-20-15
CHECKED BY:	BWL
SCALE:	1"=40'
DATE:	JUNE 2015



**PERMIT EXHIBIT**  
**CAUSTON BLUFF**  
**DIKE REPAIR**

Prepared for:  
**CHATHAM COUNTY, GEORGIA**  
**CAUSTON BLUFF OWNERS ASSOCIATION, INC.**

**GA DNR**  
**JUN 18 2015**  
 Marsh & Shore Mgt. Program

**EMC ENGINEERING SERVICES, INC.**  
 P.O. BOX 8101, 31412  
 10 CHATHAM CENTER SOUTH  
 SUITE 100  
 SAVANNAH, GEORGIA 31405  
 PHONE: (912) 233-8333  
 FAX: (912) 233-4360

ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,  
 COLUMBUS, SAVANNAH & VALDOSTA

**SHEET 6**  
**OF 6**

Full  
 Street  
 To Be  
 Provided

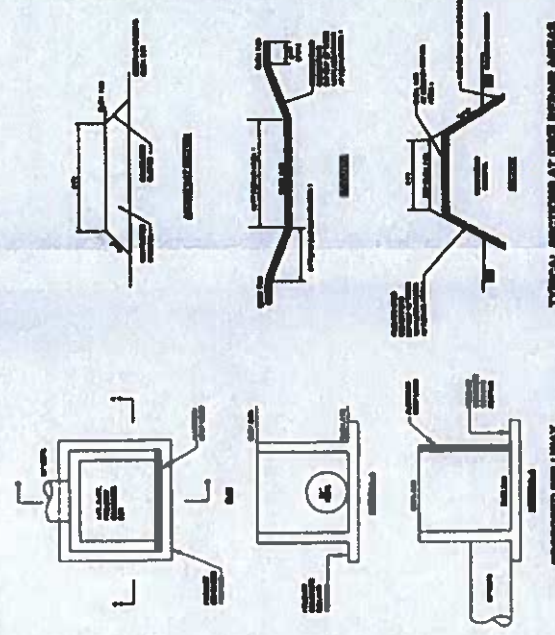
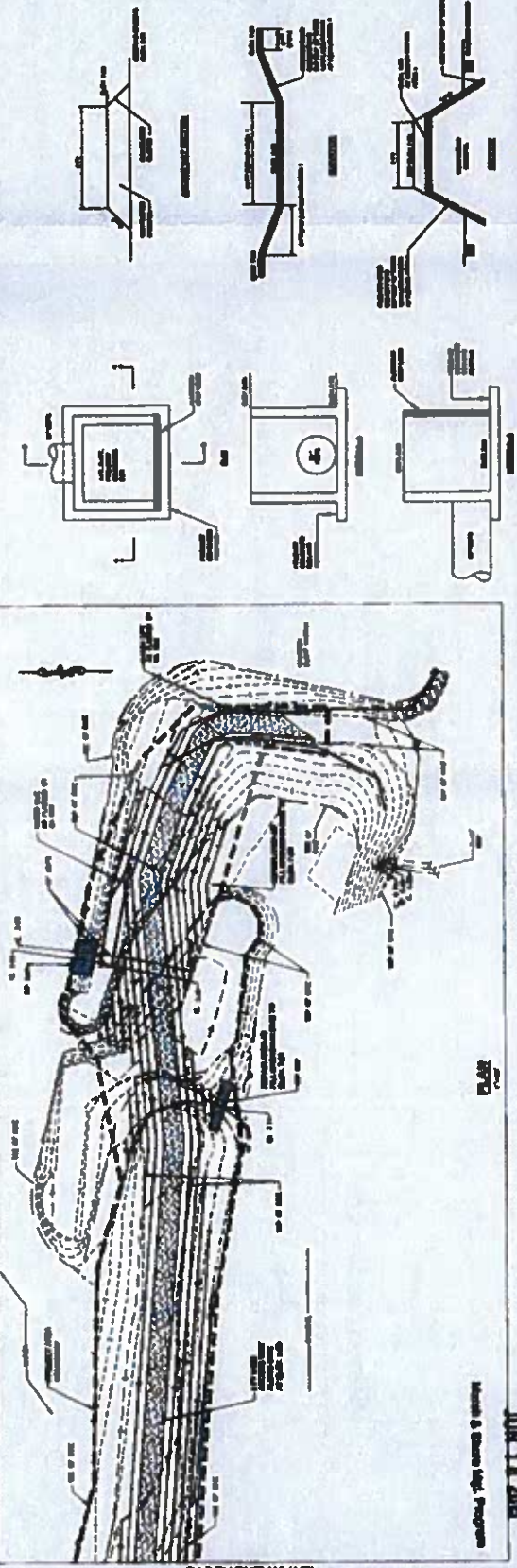
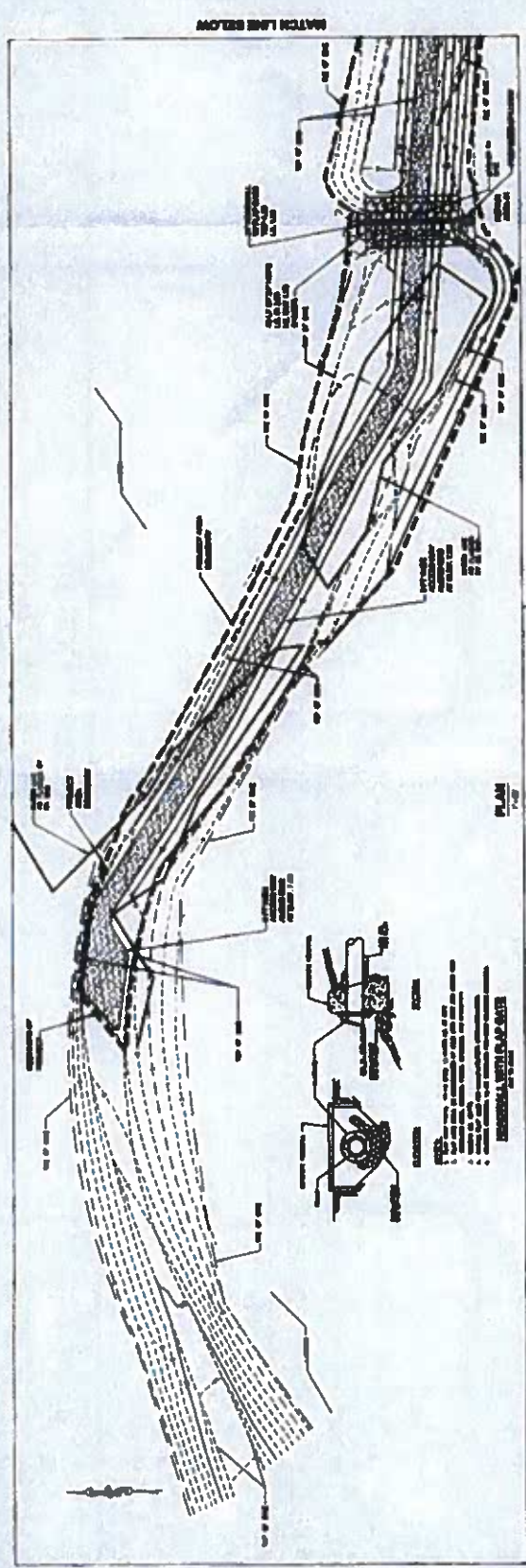


**EMC ENGINEERING SERVICES, INC.**  
 100 S. GILCHRIST STREET, SUITE 100  
 CHATHAM COUNTY, GEORGIA 30505  
 PHONE: (770) 289-1111  
 FAX: (770) 289-1112  
 WWW: WWW.EMCSERV.COM

**ALTERNATE CONCEPT 1**  
**CAUSTON BLUFF**  
 DDB NUMBER  
 CHATHAM COUNTY, GEORGIA  
 Prepared for  
**CAUSTON BLUFF OWNERS ASSOCIATION, INC.**

NO.	REVISION DESCRIPTION	DATE

1  
 2  
 SHEET



**QA DIV**  
**JUN 11, 2010**  
 Model & Stamp Mgt. Program



10841 S. Ridgeview Road  
Olathe, KS 66061

P (800) 593-7777

F (913) 599-0547

[Terracon.com](http://Terracon.com)

August 5, 2024

Georgia Department of Natural Resources  
Coastal Resource Division  
1 Conservation Way  
Brunswick, Georgia 31520

**Attn:** Mr. Josh Noble, Marsh and Shore Management Program Manager  
**E:** Josh.Noble@dnr.ga.gov

Mrs. Deb Barreiro, Coastal Permit Coordinator  
**E:** deb.barreiro@dnr.ga.gov

**Re: Letter of Permission Request**  
Causton Bluff Dike Erosion Maintenance  
Savannah, Chatham County, Georgia  
Terracon Project No. ES227264

Dear Mr. Noble:

On behalf of the Causton Bluff Owners Association (CBOA), Terracon Consultants, Inc. (Terracon) submits the following Letter of Permission (LOP) request for maintenance and repairs to an existing dike and overflow structure within the Causton Bluff Community, in Savannah, Chatham County, Georgia (Exhibit 1, Appendix A). The reconstruction of this earthen dike was previously completed under Coastal Marshlands Protection Act (CMPA) permit #713 (See Appendix B). Terracon's recent communication with Mrs. Deb Barreiro regarding this project resulted in a recommendation to submit an LOP request for maintenance work within the original permanent impact footprint from CMPA permit #713. The following letter will outline the current status of the dike, and the requested maintenance and repair activities necessary to secure future structural integrity of the dike.

## **1.0 BACKGROUND**

The earthen dike within the Causton Bluff Community serves as a stormwater control feature in conjunction with the community's lagoon and overflow structure. The dike experienced severe damage due to hurricane force winds and storm surge in 2013. As a result, a breach formed in the dike, allowing the lagoon to fill and drain with the tide cycle. CMPA permit #713 authorized the Causton Bluff POA to reconstruct the dike and overflow structure. The permit was issued on December 16, 2015, and the reconstruction was completed in 2016. Please refer to the attached As-Built, completed by EMC Engineering Services, Inc. (EMC), titled "Causton Bluff, Dike Repair," dated October 14, 2016 (Appendix C).

## **2.0 QUARTERLY DIKE MONITORING**

Following the completion of the dike reconstruction, Terracon was contracted by the CBOA to complete quarterly dike inspections beginning in 2018. The goal of these inspections was to monitor the status of the dike and identify any erosion along the top and slopes of the dike that may result in structural damage, needing attention from landscaping or engineering personnel. During these inspections, Terracon staff photographed the dike and the overflow structure and collected field notes on the presence of erosion, damage to the outflow structure, or changes in vegetative cover.

Beginning in May of 2022, erosion along the south side of the earthen dike was first observed by Terracon staff. Terracon speculates that this erosion is being caused by spring and king tides flowing over the earthen dike, and into the stormwater lagoon. Since May of 2022, Terracon has monitored this location and multiple other locations that have begun to display signs of erosion. Please see the attached photosheets, which depict the areas of erosion being monitored by Terracon field staff (Appendix D). Additionally, Terracon staff have identified a failure of several concrete bags near the weir box of the outfall structure. These bags may have been dislodged during a storm event where the overflow structure experienced a high velocity flow. The flow of water across the overflow structure has caused scouring in the cavity left below the remaining sandbags, creating a void of open space. Additional unsupported concrete bags may begin to fail during the next overflow event if not repaired.

In order to gauge the severity of this erosion on the structural integrity of the dike, EMC's engineering team was contracted to complete a review of the dike, survey the elevation of the dike to identify areas of potential settlement, and provide the CBOA with recommendations on corrective action. EMC also reviewed the damaged overflow structure while on site and included the necessary repairs to this structure in their recommendations letter described below. EMC's updated elevation data revealed that settlement of approximately 6-inches has occurred in the location where extreme high tides have topped the dike repeatedly. Please see the attached letter from EMC outlining the comparison of the 2016 As-Built elevations to the 2023 survey data captured by EMC (Appendix F).

As a temporary aid to ongoing erosion, a sub-contracted contractor has constructed a temporary erosion tube along the top of the dike. This tube, constructed of sandbags and plastic sheeting, has been placed in the location where large tides have been topping the dike. Terracon continues to monitor this temporary erosion tube during the quarterly dike inspections.

## **3.0 REQUESTED MAINTENANCE ACTIVITIES AND WORK PLAN**

Also attached to this letter is an EMC's recommendation letter, dated April 28, 2023, outlining their recommendations for correcting the ongoing erosion along the dike, as well as damage to the concrete bags within the overflow structure (Appendix E). Within the letter, EMC has

made recommendations for corrective action on the top of the dike, the side slopes of the dike, and the most seaward portion of the dike to the north. In past discussions with CRD staff, Terracon understands that an LOP may be issued only for maintenance and repairs within the original CMPA permit permanent impact footprint. Terracon staff has consulted with EMC's lead engineer for this project and have concluded that work within the permanent impact footprint should begin as soon as possible. This work would include the repair of the overflow structure and the any work along the top and slopes of the dike. The additional recommendations made by EMC outside of the permanent impact footprint may be addressed at a later date. Please see Appendix G for an illustration of proposed work areas for this LOP, overlaid on the final permit exhibits from CMPA Permit #713.

### **3.1 Proposed Work Plan**

Within the proposed work area exhibit in Appendix G, there are two types of polygons overlaid on the final permit drawings from CMPA Permit #713. The red polygons represent the primary repair areas that have been discussed above and require immediate attention. These two areas include the damaged overflow structure and the eroded section of the dike that has settled. The blue polygons represent areas where preemptive maintenance of the dike is being requested to mitigate future erosion issues along portions of the dike.

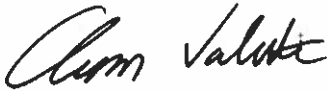
In order to complete the proposed work along the dike and the overflow structure, the selected contractor will begin by traversing the dike with a mini-excavator. This piece of equipment should be compact and lightweight enough to travel down the dike to the west, without causing additional damage to the structure.

Once the equipment has made it to the overflow structure, the contractor will begin removing the damaged concrete bags from around the weir box. At this point, the water within the stormwater lagoon will be lowered slightly by manipulating the weir box slats and the overflow structure's flap gate. Once the water is low enough to access the cavity left by the failed concrete bags, the contractor will repair the base material and place new bags similarly to the original construction. Once the concrete bags have been placed and sprayed to begin hardening, the weir slats will be returned to their original pool elevation.

Working back to the east along the dike, the contractor will begin bringing in additional suitable fill material to raise the elevation of the dike along the preemptive repair areas. Increasing the elevation in these areas should help limit future erosion due to king and spring tides. Once the equipment progresses to the east, the areas that have experienced settlement will be restabilized and elevated with fill material (Primary Repair Area). The side slopes of the dike where material has been eroded will also be repaired and reconstructed. Fully vegetated, stabilized slopes should not be altered or reconstructed. Following the placement of fill, the top of the dike and the slopes will be planted with vegetation to stabilize the soil.

Following your review of this information, please contact our office with any questions or requests for additional information regarding this project.

Sincerely,  
**Terracon Consultants, Inc.**



Aaron Valenti  
Staff Scientist



Mike DeMell  
Department Manager II - Principal

**Attachments:**

- Appendix A – Terracon Exhibits**
- Appendix B – CMPA Permit #713**
- Appendix C – EMC Engineering As-Built, dated October 14,2016**
- Appendix D – Photosheets**
- Appendix E – EMC Engineering Recommendations Letter, dated April 28, 2023**
- Appendix F - EMC Elevation Data Letter, dated February 29,2024**
- Appendix G – Proposed Work Areas Exhibit**



## Appendix A – Terracon Exhibits



Project Boundary



DATA SOURCES:  
ESRI Streets Basemap

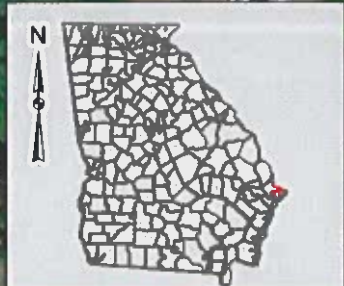
Project No.:	ES227264
Date:	Jul 2024
Drawn By:	AJV
Reviewed By:	KHD


2201 Rowland Avenue Savannah, GA 31404  
PH. (912) 629-4000 terracon.com

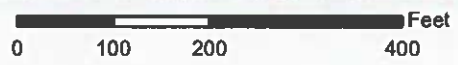
<b>Vicinity Exhibit</b>
Causton Bluff Dike Maintenance Chatham County, Georgia

<b>Exhibit</b>
<b>1</b>

N:\ES\Leacac\MapData\Projects\Graphics\2024\ES227264 - Causton Bluff Dike Permit\main\main\EC001 - vicinity.mxd




 Project Boundary



DATA SOURCES:  
ESRI World Imagery Basemap

Project No.:	ES227264
Date:	Jul 2024
Drawn By:	AJV
Reviewed By:	KHD



**Terracon**  
Explore with us

2201 Rowland Avenue Savannah, GA 31404  
PH. (912) 629-4000 terracon.com

<b>Aerial Imagery</b>
Causton Bluff Dike Maintenance
Chatham County, Georgia

<b>Exhibit</b>
<b>2</b>

## **Appendix B – CMPA Permit #713**



MARK WILLIAMS  
COMMISSIONER

A.G. SPUD WOODWARD  
DIRECTOR

**DEC 16 2015**

Mike DeMell  
Environmental Services Inc.  
P.O. Box 2383  
Savannah, GA 31402

**RE: Coastal Marshlands Protection Act Permit # 713, Causton Bluff Owners Association, Inc., Causton Bluff Subdivision, Wilmington River, Savannah, Chatham County, Georgia. (ACOE # SAS-2015-00279)**

Dear Mr. DeMell:

The Coastal Marshlands Protection Committee considered and approved permit #713 referenced above under the Coastal Marshlands Protection Act O.C.G.A. 12-5-280 *et seq.* The permit and permit conditions are attached to this letter. All decision documents, as well as all other plans, documents and materials submitted during the application process become terms of this permit and are now enforceable conditions.

Staff of the Coastal Management Program has reviewed the above referenced application pursuant to Section 404 of the Clean Water Act and/or Section 10 of the River and Harbors Act or 1899 for consistency with the Georgia Coastal Management Program (GCMP). The Program concurs with the applicant's consistency certification to the extent that the project adheres to all conditions and restrictions of Coastal Marshlands Protection Act Permit #713. Issuance of a federal permit that does not contain the same conditions and/or restriction, as any issued state permit, does not alleviate the permittee from adhering to all components of state permits.

This letter and attachments are to be held by you for your files and for inspection by any authorized persons. The expiration date for the permit is five (5) years from the date of issuance. However, no construction may commence within the area of jurisdiction of the Act until the expiration of thirty (30) days following the date of issuance, provided there is no legal appeal of this permit, you have all other necessary federal, state and local authorizations and you have met all of the standard and special conditions as required by this permit.

**Permitted Project Description:** Construct an earthen dike with water control structures adjacent to a tidal stormwater lagoon within the Causton Bluff Subdivision which is adjacent to the Wilmington River in Savannah, Chatham County, Georgia. **Standard and Special conditions apply to this permit.**

**Marsh Component:** The authorized activities include the construction of an earthen dike adjacent to a man-made tidal stormwater lagoon that is approximately 4.6 acres in size utilizing existing higher elevation areas that remain from a previous dike within the project boundary. Material used to construct the 7 ft. elevation earthen dike will consist of approximately 2,500 cubic yards of naturally

sourced sandy clay/sandy clay loam mixtures. Excavated material will be reused within the footprint of the authorized project area or removed off-site to an appropriate upland disposal area. A water level control structure will be installed centrally on the dike and will include a 24 in. pipe that will connect the tidal stormwater lagoon to the tidal marsh. To the south of the pipe, a 4 ft. x 4 ft. pre-cast concrete box will be installed inside the lagoon area with stop logs. On the northern, marsh side, of the pipe a flap gate will be installed. Above the control structure a 10 ft. wide hardened overflow structure will be installed at an elevation of 6 ft. to allow for water to top the dike during storm events and/or extreme high tides. The top of the dike will be 8 ft. wide to allow for construction and future maintenance.

The authorized impact of the project includes 14,375 sq. ft. (0.33 acres) of permanent impacts and 11,760 sq. ft. (0.27 acres) of temporary impacts associated with construction. Authorized total temporary and permanent impacts to jurisdictional coastal marshlands for the dike construction are approximately 26,135 sq. ft. (0.60 acres).

**Upland Component:** The upland component of this project is approximately 6,839 square feet (0.15 acres) of the old dike.

**Permit Placard:** Enclosed is the permit placard to be posted at the work site (within 24 hours) for the duration of the construction activity.

**Post Construction Requirements: Compliance Certification and File Maintenance**

Also enclosed is a *Certification of Compliance* that must be submitted to us within 30 days following completion of the permitted activity. Please include this compliance form with the post-construction survey, if required under the conditions. Department staff will assess compliance and provide you with a written verification of project completion and compliance.

**Conveyance of Ownership Interest:**

If you as the permit holder sell, lease, rent, or otherwise convey the land or any portion of the land for which the permit was issued, you must notify the Department within 30 days of this transfer or conveyance. The permit shall continue in force in favor of the new owner, lessee, tenant, or other assignee so long as there is no change in the use of the land as set forth in the original application. The Department will transfer the permit to the new owner with all of the original terms and conditions.

We ask that you carefully read through this document and attachments and comply with the terms and conditions of this permit. Feel free to contact me if you need clarification of any of these conditions or for assistance with this project.

Sincerely,



A.G. "Spud" Woodward  
Director

**Enclosures: CMPC Permit #713 and Permit Conditions, Compliance Certificate, Permit Placard, Drawings**

**cc: Ms. Sara Wise, Savannah District Corps of Engineers**

**File # (CMP20150018)**



MARK WILLIAMS  
COMMISSIONER

A.G. 'SPUD' WOODWARD  
DIRECTOR

## Coastal Marshlands Protection Committee Permit #713 Final Conditions December 11, 2015

Causton Bluff Owners Association, Inc.  
P.O. Box 13310  
Savannah, GA 31416

**Permitted Project Description:** Construct an earthen dike with water control structures adjacent to a tidal stormwater lagoon within the Causton Bluff Subdivision which is adjacent to the Wilmington River in Savannah, Chatham County, Georgia. **Standard and Special conditions apply to this permit.**

**Marsh Component:** The authorized activities include the construction of an earthen dike adjacent to a man-made tidal stormwater lagoon that is approximately 4.6 acres in size utilizing existing higher elevation areas that remain from a previous dike within the project boundary. Material used to construct the 7 ft. elevation earthen dike will consist of approximately 2,500 cubic yards of naturally sourced sandy clay/sandy clay loam mixtures. Excavated material will be reused within the footprint of the authorized project area or removed off-site to an appropriate upland disposal area. A water level control structure will be installed centrally on the dike and will include a 24 in. pipe that will connect the tidal stormwater lagoon to the tidal marsh. To the south of the pipe, a 4 ft. x 4 ft. pre-cast concrete box will be installed inside the lagoon area with stop logs. On the northern, marsh side, of the pipe a flap gate will be installed. Above the control structure a 10 ft. wide hardened overflow structure will be installed at an elevation of 6 ft. to allow for water to top the dike during storm events and/or extreme high tides. The top of the dike will be 8 ft. wide to allow for construction and future maintenance.

The authorized impact of the project includes 14,375 sq. ft. (0.33 acres) of permanent impacts and 11,760 sq. ft. (0.27 acres) of temporary impacts associated with construction. Authorized total temporary and permanent impacts to jurisdictional coastal marshlands for the dike construction are approximately 26,135 sq. ft. (0.60 acres).

**Upland Component:** The upland component of this project is approximately 6,839 square feet (0.15 acres) of the old dike.



### **COASTAL MARSHLANDS PROTECTION ACT STANDARD CONDITIONS**

1. The project must comply, as applicable, for areas permitted herein, with all other federal, state, and local statutes, ordinances, and regulations and the applicant must obtain all licenses and permits prior to commencement of construction.
2. This permit does not resolve actual or potential disputes regarding ownership of, 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.
3. All plans, documents and materials contained in this permit application, required by Coastal Marshlands Protection Act of 1970, as amended O.C.G.A. § 12-5-280 *et seq.* are a part of this permit and conformance to such plans, documents, and materials are a condition of this permit. No change or deviation from these plans, documents, and materials shall be permitted without prior notification and approval by the Department or CMPC.
4. No further encroachment or construction shall take place within state jurisdiction, except as permitted by the CMPC. Any modification of the plans or structure in the jurisdictional area must be reviewed and approved by the Department or the CMPC, as necessary, prior to construction.
5. No construction or alteration of a project may commence until the expiration of 30 days following the date on which the application is approved; provided however that if a timely appeal is filed, no construction or alteration may commence until all administrative and judicial proceedings are terminated.
6. The permit must be posted onsite within twenty-four (24) hours of beginning construction.
7. A copy of these and all permit conditions must be supplied to the person in charge of construction. All contractors and subcontractors are responsible for strict adherence to all permit conditions.
8. All Best Management Practices (BMPs) should be used to prevent any erosion and sedimentation at the site. No equipment, materials, or debris may be placed in, disposed of, or stored in jurisdictional areas. Any visible alterations in the marsh topography will be restored immediately using low-impact hand tools. Any damage to the marsh vegetation that has not recovered naturally during the next growing season will be repaired by a method acceptable to the Department.
9. If the permitted improvements are damaged, fall into disrepair, become dilapidated, or are not meeting their expected usefulness and are not maintained at a serviceable level, it is the responsibility of the owner to remove the improvements. A new permit will be required to retain and repair the structure, improvement, or asset if it loses its structural integrity and is no longer serviceable.
10. The CMPC is not bound in the future to protect any improvement or asset authorized by the permit.

### **SPECIAL CONDITIONS**

1. This permit does not authorize construction of any bank stabilization projects within the project area or the tidal stormwater lagoon.
2. A re-vegetation plan must be submitted to the Department for approval prior to installation

3. Permittee must provide the Department with a maintenance plan, for approval prior to commencing construction. Such maintenance plan may include coordination with the Department prior to any work taking place within the project area.
4. After initial construction, use of a motorized vehicle on the dike is prohibited except as authorized by the Department for maintenance events.
5. Tidal connection via the water control structure must be maintained to the tidal stormwater lagoon.
6. Permittee may be required to provide a post-construction elevation survey to the Georgia Department of Natural Resources, Coastal Resources Division. Such survey shall comply with the Georgia Plat Act O.C.G.A. 15-6-67 *et seq.*



MARK WILLIAMS  
COMMISSIONER

A.G. 'SPUD' WOODWARD  
DIRECTOR

**CERTIFICATION OF COMPLIANCE  
FOR THE CONSTRUCTION AND MAINTENANCE  
OF PROJECTS PERMITTED UNDER  
THE COASTAL MARSHLAND PROTECTION ACT**

**PERMITTEE:**

Name: Causton Bluff Owners Association, Inc.  
Address: P.O. Box 13310  
City or Town: Savannah, GA 31416  
Island or Waterway: Wilmington River  
County: Chatham  
Permit Number: CMPA # 713

Within 30 days of completion of the activity authorized by this permit, sign this certification and return it along with a copy of the post-construction survey to the Habitat Management Program of the Ecological Services Section at the address listed below.

Please note that your permitted activity is subject to compliance inspections by DNR representatives before and after completion of the project. If you fail to comply with the permit terms and conditions it may be subject to suspension, modification, or revocation.

**Permittee Statement**

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of the said permit.

Signature of Permittee: \_\_\_\_\_

Date: \_\_\_\_\_

# Georgia Coastal Marshlands Protection Committee

## PERMIT

Issued Pursuant to O.C.G.A. 12-5-280

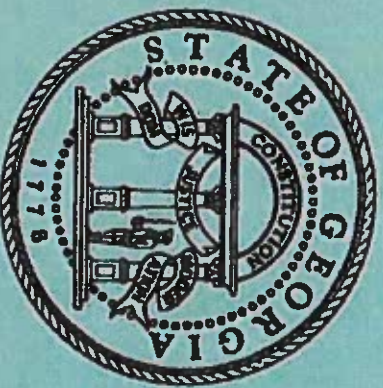
To: Causton Bluff Owners Association, Inc.  
For: Construction of an earthen dike with water control structures adjacent to a tidal stormwater lagoon within the Causton Bluff Subdivision which is adjacent to the Wilmington River in Savannah, Chatham County, Georgia. **Standard and Special conditions apply to this permit.**

Date: December 11, 2015

Expiration Date: December 11, 2020

Permit Number: 713

Authorized By: 



For further information, please contact the DNR Coastal Resources Division at (912) 264-7218



STATE OF GEORGIA  
5-YEAR REVOCABLE LICENSE REQUEST

APPLICANTS NAME(S): Causton Bluff Owners Association, Inc. c/o Hollie White

MAILING ADDRESS: P.O. Box 13310 Savannah GA 31416  
(Street) (City) (State) (Zip)

PROJECT ADDRESS/LOCATION: Causton Bluff Subdivision

COUNTY: Chatham WATERWAY: Wilmington River DATE: June 2015

LOT, BLOCK & SUBDIVISION NAME FROM DEED: Causton Bluff Owners Association, Inc.

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

I am making application for a permit with the U.S. Department of the Army, Corps of Engineers, Savannah District. I understand that the issuance of such a permit will not relieve me of the obligation to obtain authorization from the State of Georgia since the proposed project would constitute an encroachment on the beds of tidewaters which are State-owned property. Accordingly, I hereby request that I be granted a revocable license from the State of Georgia. 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 further acknowledge that I will have no veto boards, nor allow them to occur, at this structure. 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 has signed a copy of this request.

Sincerely,

By: Hollie A. White  
(Applicant), title if applicable

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

Attachment

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 completed within 5 years of the date of issuance of the license and must be maintained in serviceable condition. Otherwise, action will be initiated to revoke this license and all structure must be removed immediately at the licensee's expense.

STATE OF GEORGIA  
Office of the Governor

By: Mark Williams  
For: Mark Williams, Commissioner-DNR

DATE: 12/11/15

Revised 3/2012

GA DNR

JUN 18 2015

Marsh & Shore Mgt. Program



**Project Boundary**  
--- Lagoons  
--- DNR Salt Marsh Line

0 75 150  
Feet

Source: ESRI Business Aerial Imagery (2010)

Disclaimer: The information displayed on this graphic is copyright Environmental Services, Inc. and is provided for informational purposes only. It is not intended to be used for any other purpose, and is subject to change without notice. Environmental Services, Inc. is not responsible for any errors or omissions in this graphic.

**ENVIRONMENTAL SERVICES, INC.**  
241 Hickman Island Road  
Waynesboro, Georgia 30387  
(770) 228-5833 Fax  
www.environmentalservicesinc.com

**JUN 18 2015** **Causton Bluff Owners Association, Inc.** **JUN 18 2015**  
Marsh & Shore Mgt. Program Marsh & Shore Mgt. Program  
Chatham County, Georgia





Project:	EST3044.00
Date:	June 2015
Drawn/Checked:	KHS/MJD
Figure:	3



SALT MARSH

LAGOON


LAGOON

-  Project Boundary
-  Lagoons
-  DNR Salt Marsh Line
-  Upland Component w/in Project Boundary



Source: ES&S Biomass Aerial Imagery (2010)

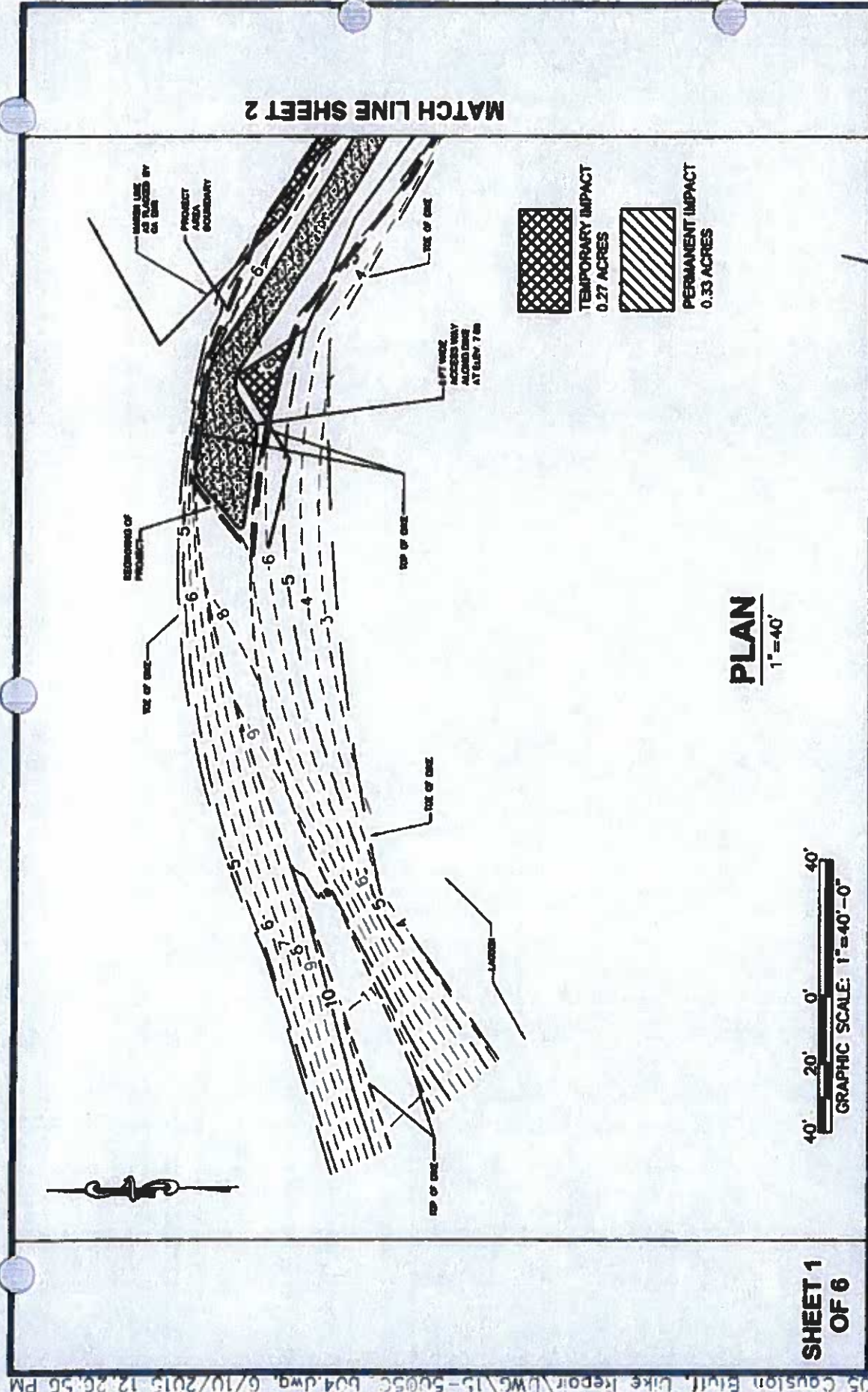
Disclaimer: The information depicted on this map is for informational purposes only, and is not intended to be used for any legal or regulatory purposes. Environmental Services, Inc. is not responsible for any errors or omissions on this map.



**ENVIRONMENTAL SERVICES, INC.**  
101 Middlebrook Industrial Blvd  
Lawrenceville, Georgia 30047  
877-228-4711  
877-228-2288 Fax  
www.environmentalservices.com

Aerial Project Boundary  
**Causton Bluff Owners Association, Inc.**  
 Chatham County, Georgia  
 GA DNR  
 AUG 18 2015

Project:	ES13044.00
Date:	Revised 7/28/15
Dwn/Chxt:	K/RS/MJD
Figure:	4



MATCH LINE SHEET 2

**PLAN**  
1"=40'



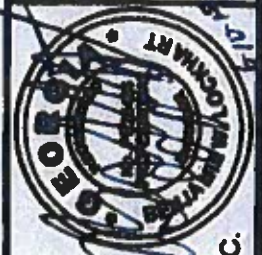
**SHEET 1**  
**OF 6**

**EMC ENGINEERING SERVICES, INC.**  
P.O. BOX 8101, 31412  
10 CHATHAM CENTER SOUTH  
SUITE 100  
SAVANNAH, GEORGIA 31405  
PHONE: (912) 233-6233  
FAX: (912) 233-6580

ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,  
COLUMBUS, SAVANNAH & VALDOSTA

**GA DNR**  
**JUN 18 2015**  
Marsh & Shore Mgt. Program

**PERMIT EXHIBIT**  
**CAUSTON BLUFF**  
**DIKE REPAIR**  
**CHATHAM COUNTY, GEORGIA**  
Prepared for:  
**CAUSTON BLUFF OWNERS ASSOCIATION, INC.**

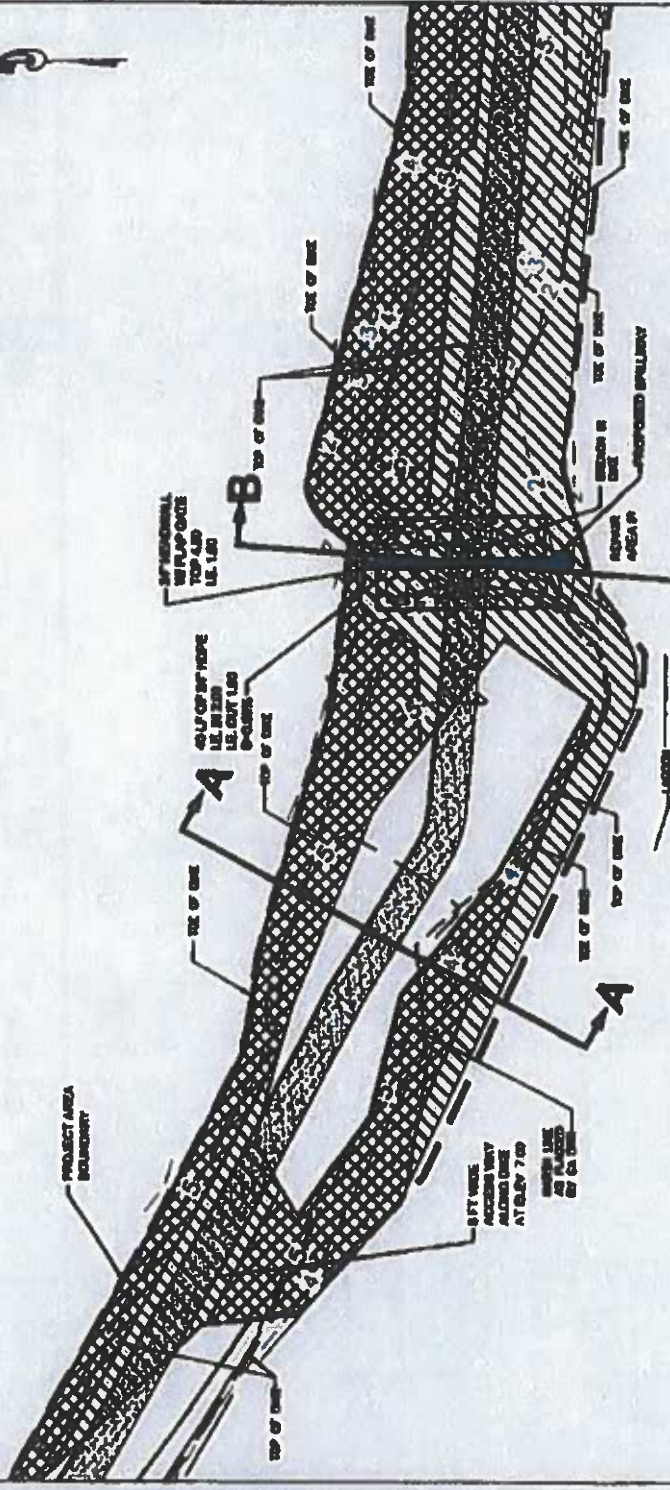


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DRAWN BY: BWM  
DESIGNED BY: BWM  
SURVEYED BY: EMC  
SURVEY DATE: 4-20-15  
CHECKED BY: BWM  
SCALE: 1"=40'  
DATE: JUNE 2015

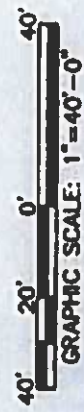


MATCH LINE SHEET 1

SHEET 2  
OF 6



PLAN  
1"=40'



MATCH LINE SHEET 3

**EMC ENGINEERING SERVICES, INC.**  
 P.O. BOX 8101, 31412  
 10 CHATHAM CENTER SOUTH  
 SUITE 100  
 SAVANNAH, GEORGIA 31406  
 TEL: (912) 232-6533  
 FAX: (912) 233-6280

ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,  
 COLUMBUS, SAVANNAH & VALDOSTA

GA DNR

JUN 18 2015

Marsh & Shore Mgt. Program

PERMIT EXHIBIT  
CAUSTON BLUFF  
DIKE REPAIR

CHATHAM COUNTY, GEORGIA

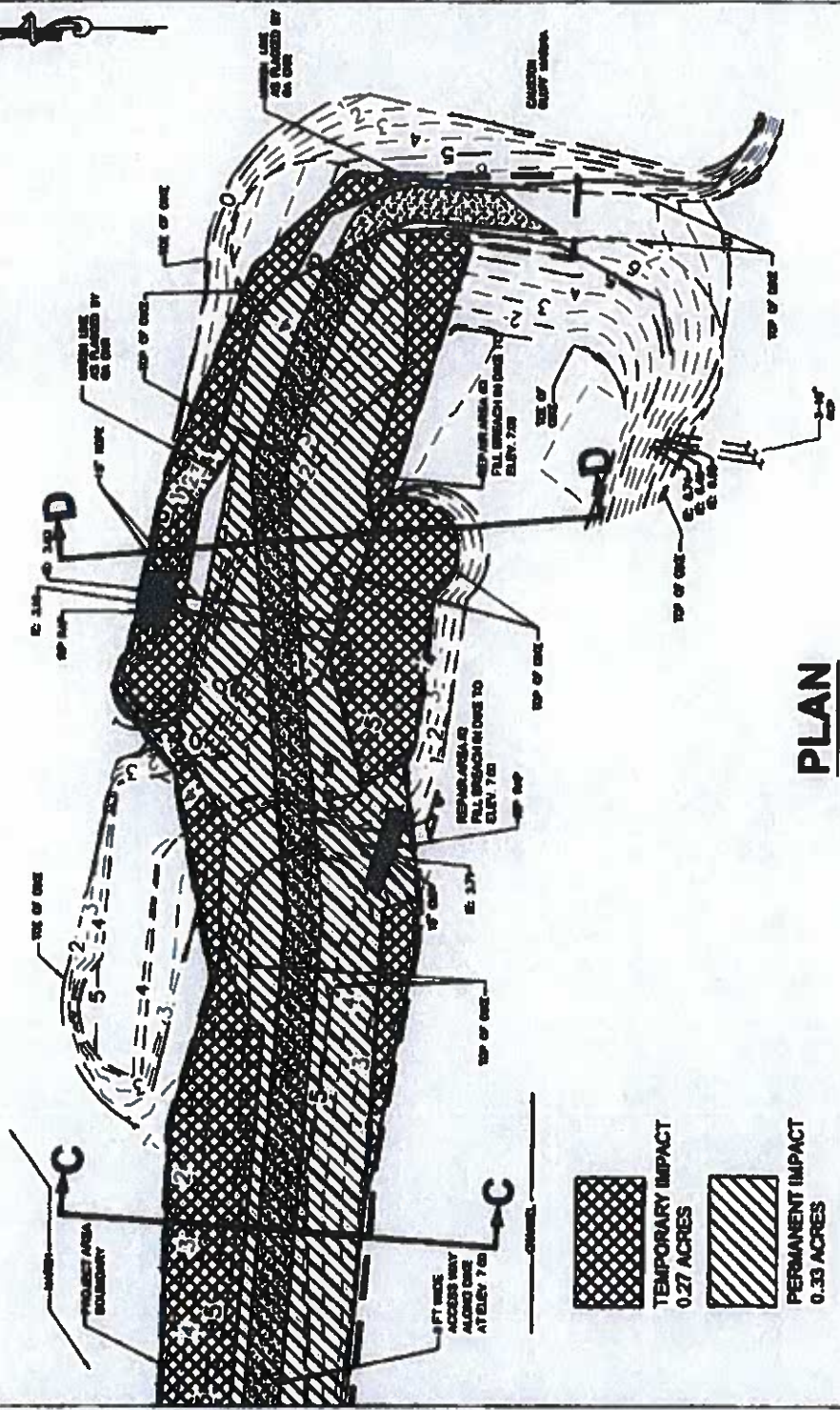
Prepared for:  
CAUSTON BLUFF OWNERS ASSOCIATION, INC.



PROJECT NO.:	15-5005
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DESIGNED BY:	BWL
SURVEYED BY:	EMC
SURVEY DATE:	4-20-15
CHECKED BY:	BWL
SCALE:	1"=40'
DATE:	JUNE 2015

MATCH LINE SHEET 2

SHEET 3  
OF 6



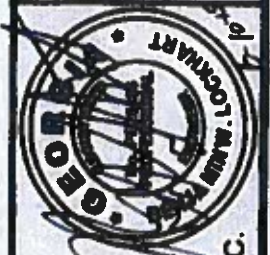
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1"=40'



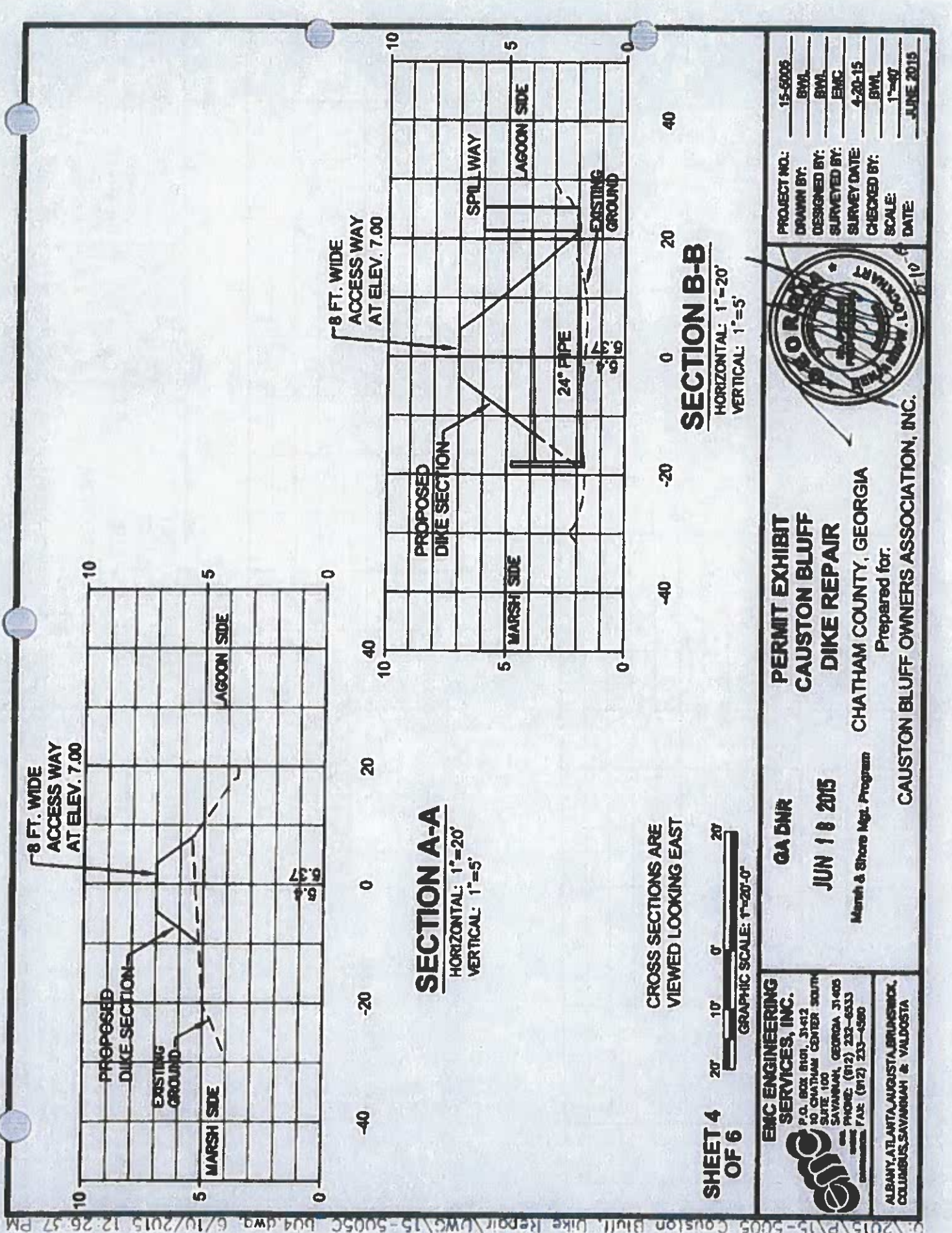
**EMC ENGINEERING SERVICES, INC.**  
P.O. BOX 8101, 31442  
10 CHATHAM CENTER SOUTH  
SUITE 100  
SAVANNAH, GEORGIA 31405  
PHONE: (912) 233-6833  
FAX: (912) 233-4500  
ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,  
COLUMBUS, SAVANNAH & VALDOSTA

GA DNR  
JUN 18 2015  
Mazah & Shore Mgt. Program

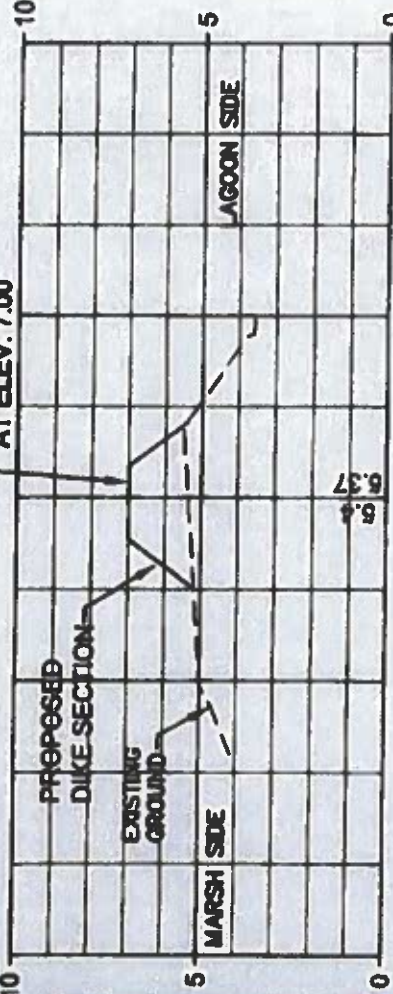
**PERMIT EXHIBIT  
CAUSTON BLUFF  
DIKE REPAIR**  
CHATHAM COUNTY, GEORGIA  
Prepared for:  
**CAUSTON BLUFF OWNERS ASSOCIATION, INC.**



PROJECT NO.: 15-5005  
DRAWN BY: B.W.  
DESIGNED BY: B.W.  
SURVEYED BY: EMC  
SURVEY DATE: 4-20-15  
CHECKED BY: B.W.  
SCALE: 1"=40'  
DATE: JUNE 2015

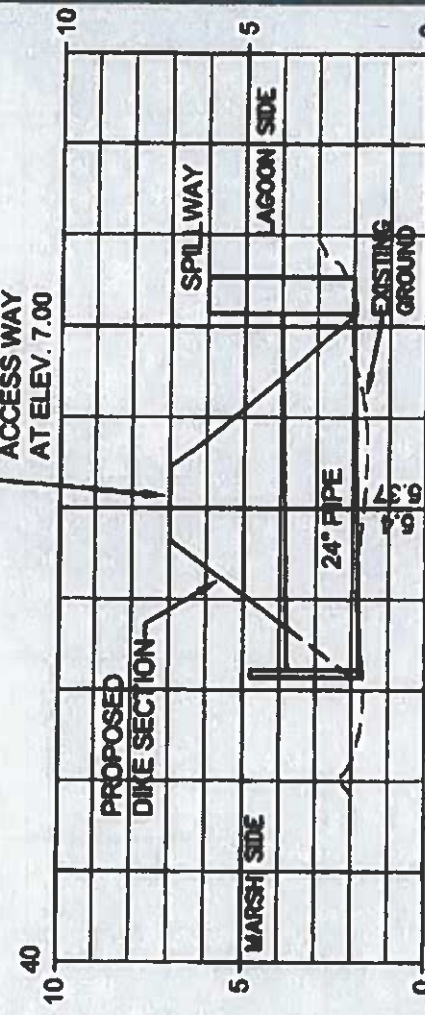


8 FT. WIDE  
ACCESS WAY  
AT ELEV. 7.00



**SECTION A-A**  
HORIZONTAL: 1"=20'  
VERTICAL: 1"=5'

8 FT. WIDE  
ACCESS WAY  
AT ELEV. 7.00



**SECTION B-B**  
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VERTICAL: 1"=5'

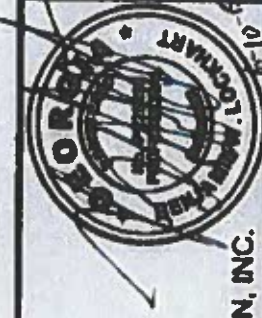
CROSS SECTIONS ARE  
VIEWED LOOKING EAST

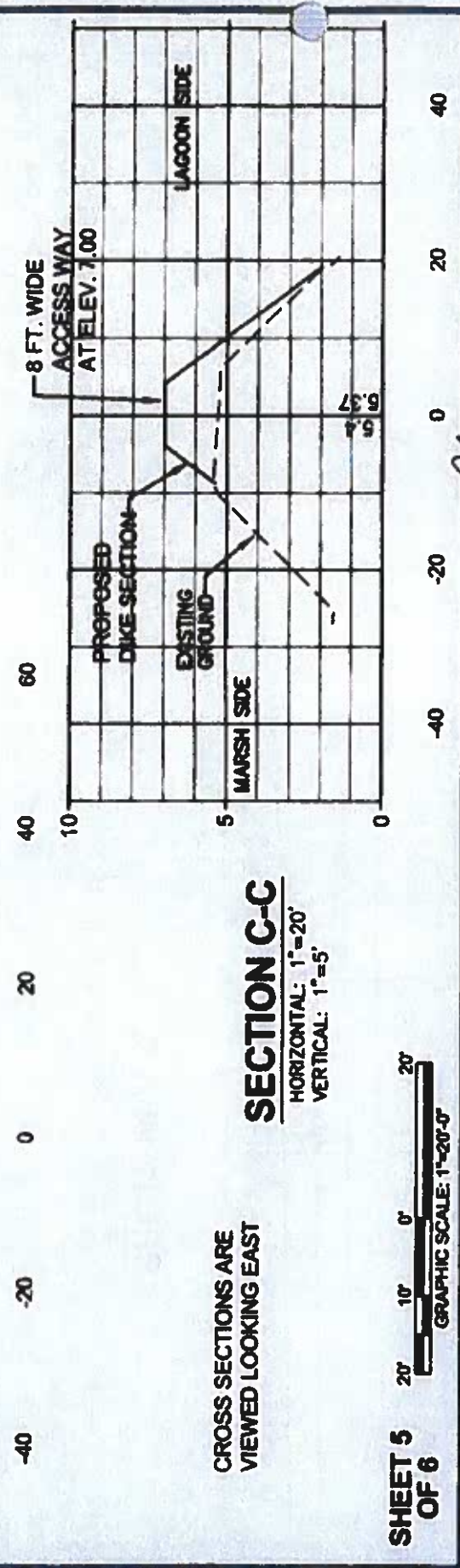
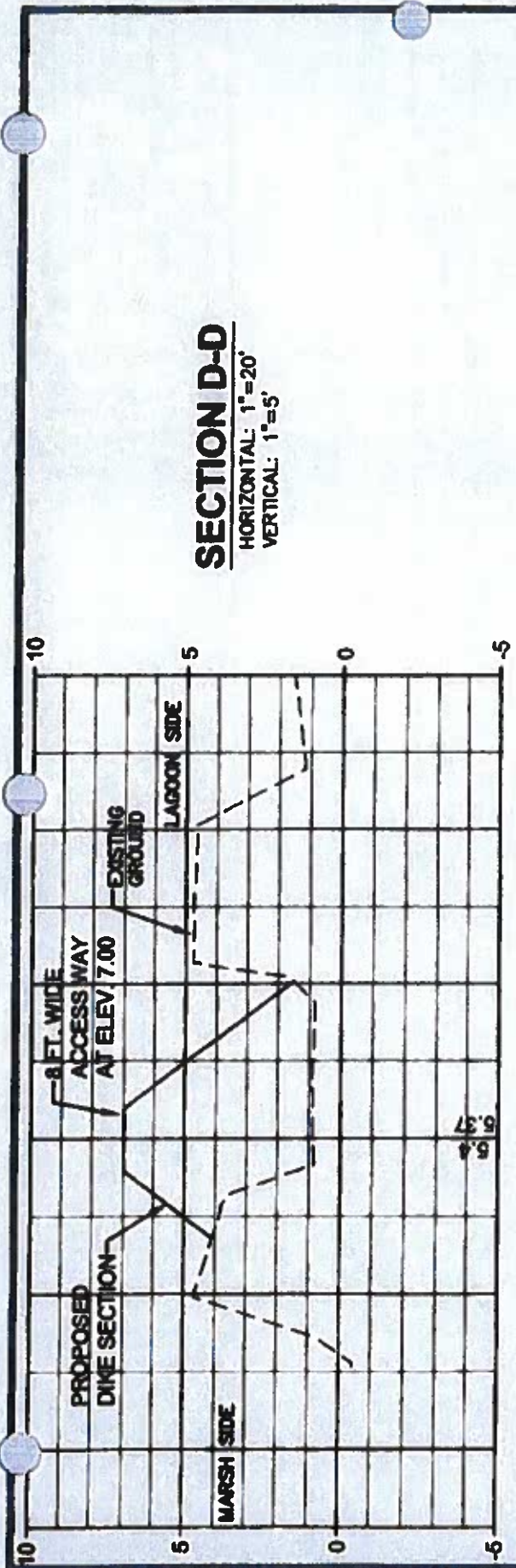


**EMC ENGINEERING SERVICES, INC.**  
P.O. BOX 8101, 31-412  
10 CHATHAM CENTER SOUTH  
SUITE 100  
SAVANNAH, GEORGIA 31400  
PHONE: (912) 233-6533  
FAX: (912) 233-4560  
ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,  
COLUMBUS, SAVANNAH & VALDOSTA

**GA DNR**  
**JUN 18 2015**  
Marsh & Shore Mgt. Program  
**PERMIT EXHIBIT**  
**CAUSTON BLUFF**  
**DIKE REPAIR**  
CHATHAM COUNTY, GEORGIA  
Prepared for:  
**CAUSTON BLUFF OWNERS ASSOCIATION, INC.**

PROJECT NO.:	15-5005
DRAWN BY:	BWL
DESIGNED BY:	BWL
SURVEYED BY:	EMC
SURVEY DATE:	4-20-15
CHECKED BY:	BWL
SCALE:	1"=40'
DATE:	JUNE 2015





CROSS SECTIONS ARE  
 VIEWED LOOKING EAST

SHEET 5  
 OF 6

20' 10' 0' 20'  
 GRAPHIC SCALE: 1"=20'-0"

**EMC ENGINEERING SERVICES, INC.**  
 P.O. BOX 8104, 31412  
 10 CHATHAM CENTER SOUTH  
 SUITE 100  
 SAVANNAH, GEORGIA 31405  
 PHONE: (912) 232-6533  
 FAX: (912) 233-6580

ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,  
 COLUMBUS, SAVANNAH & VALDOSTA

**GA DNR**  
**JUN 18 2015**  
 Marsh & Shore Mgt. Program

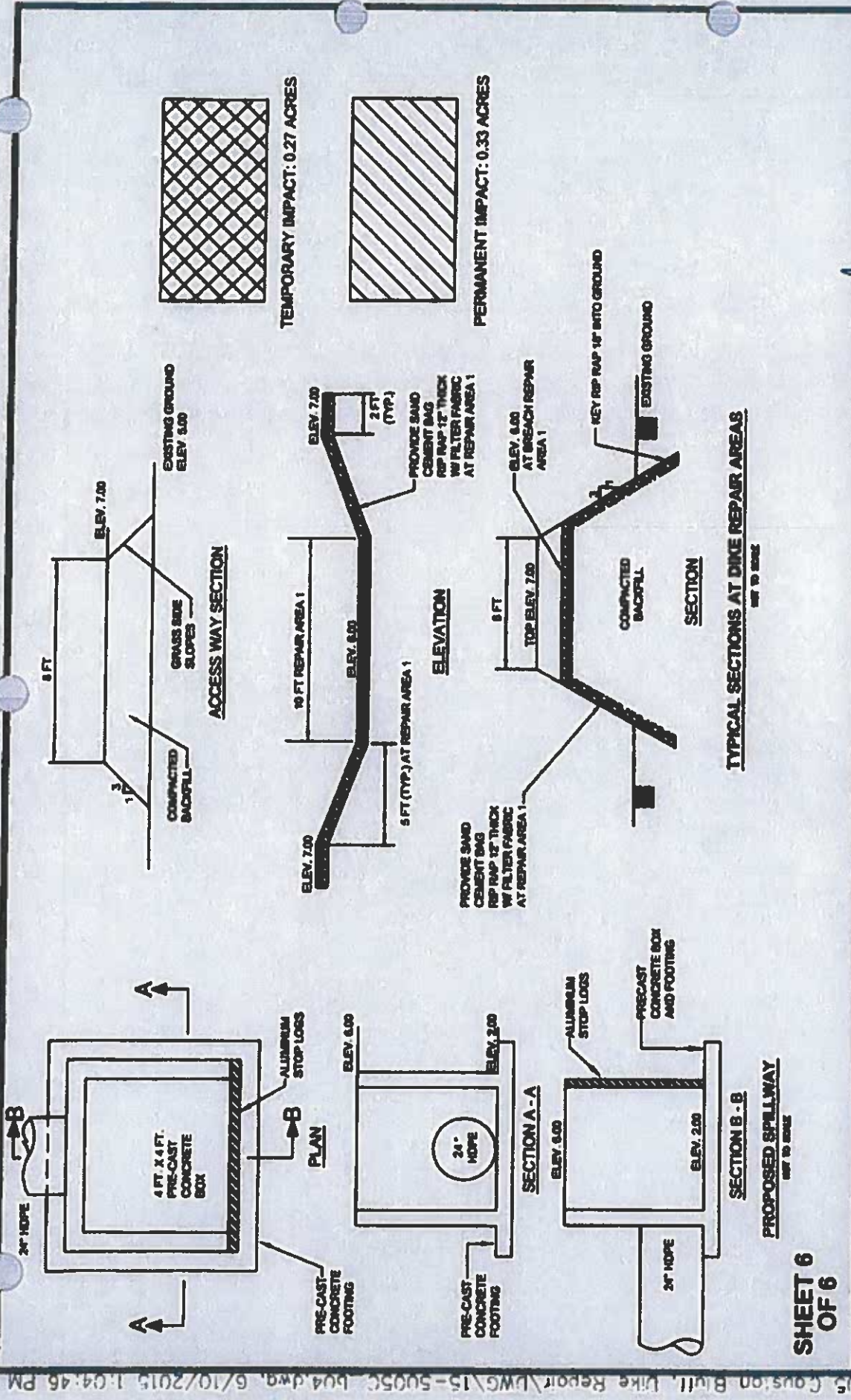
**PERMIT EXHIBIT  
 CAUSTON BLUFF  
 DIKE REPAIR**

CHATHAM COUNTY, GEORGIA

Prepared for:  
**CAUSTON BLUFF OWNERS ASSOCIATION, INC.**



PROJECT NO.: 15-5005  
 DRAWN BY: B.W.L.  
 DESIGNED BY: B.W.L.  
 SURVEYED BY: EMC  
 SURVEY DATE: 4-20-15  
 CHECKED BY: B.W.L.  
 SCALE: 1"=5'  
 DATE: JUNE 2015



**SHEET 6  
OF 6**

**PROPOSED SPILLWAY**  
SEE TO SCALE

**TYPICAL SECTIONS AT DIKE REPAIR AREAS**  
SEE TO SCALE

**EMC ENGINEERING SERVICES, INC.**  
P.O. BOX 8101, 31412  
10 CHATHAM CENTER SOUTH  
SUITE 100  
SAVANNAH, GEORGIA 31405  
PHONE: (912) 233-6333  
FAX: (912) 233-4890

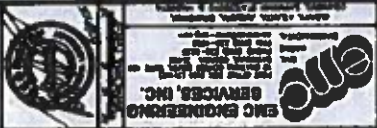
**GA DNR**  
**JUN 18 2015**  
Marsh & Shore Mgt. Program

**PERMIT EXHIBIT  
CAUSTON BLUFF  
DIKE REPAIR**

Prepared for:  
**CHATHAM COUNTY, GEORGIA**  
**CAUSTON BLUFF OWNERS ASSOCIATION, INC.**



PROJECT NO.:	15-5005
DRAWN BY:	BWL
DESIGNED BY:	BWL
SURVEYED BY:	EMC
SURVEY DATE:	4-20-15
CHECKED BY:	BWL
SCALE:	1"=40'
DATE:	JUNE 2015

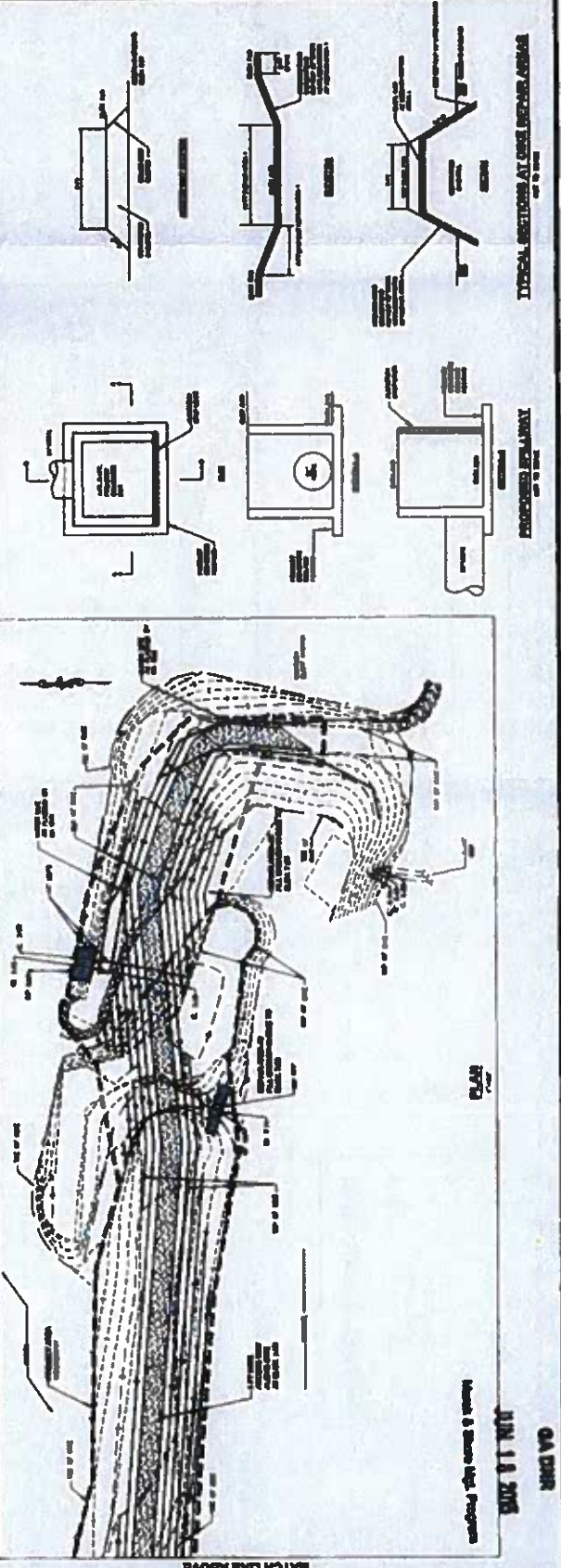
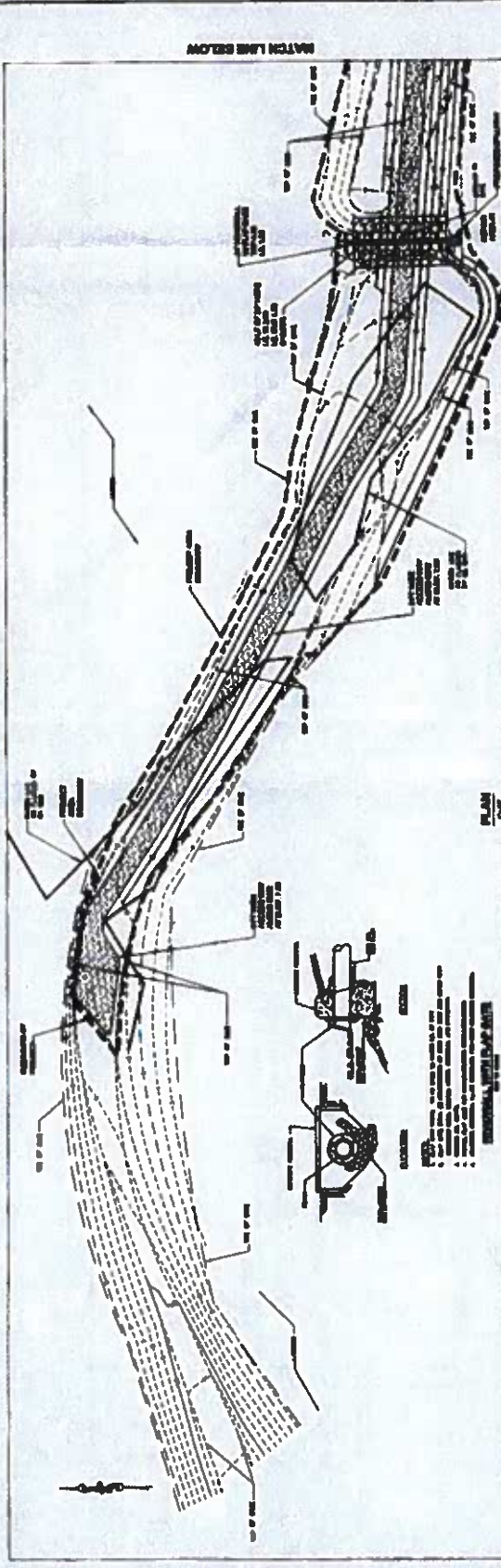


**CAUSTON BLUFF**  
**DEER HAVEN**  
 CHATTAHOOCHEE COUNTY, GEORGIA  
 Proposed Site  
**CAUSTON BLUFF GOLF AND COUNTRY ASSOCIATION, INC.**

DATE	BY

NO.	REVISION DESCRIPTION	DATE

*Handwritten notes:*  
 1/2" = 1'-0"  
 Four  
 view  
 to be  
 provided



**QA DWN**  
**JUN. 11 2018**  
 Issues & Items Log, Program

**Appendix C – EMC Engineering As-Built,  
dated October 14,2016**

# RECORD DRAWINGS

FOR

## CAUSTON BLUFF DIKE REPAIR

CHATHAM COUNTY, GEORGIA

OCTOBER 2016

EMC PROJECT NO. 15-5005

OWNER  
CAUSTON BLUFF OWNER'S ASSOCIATION, INC.  
6 ST. AUGUSTINE ROAD  
SAVANNAH, GA 31404  
(912) 658-8127

 **EMC ENGINEERING SERVICES, INC.**  
ENVIRONMENTAL - MARINE - CIVIL - SURVEY



VICINITY MAP  
SCALE 1" = 1 MILE

### INDEX OF DRAWINGS

SHT NO.	DESCRIPTION
1	COVER
2	SITE PLAN
3	GENERAL NOTES AND DETAILS

THE RECORD DRAWINGS ARE CORRECT  
BASED ON LIMITED CONSTRUCTION  
SURVEY AND FIELD DATA  
BY  
EMC ENGINEERING SERVICES, INC.  
DATE: 10/10/16

**GEORGIA811**  
Call Before You Dig



EMC ENGINEERING SERVICES, INC.  
POST OFFICE BOX 8111 (912) 658-8111  
14 CHATHAM COUNTY ROAD 1100  
SAVANNAH, GEORGIA 31404  
PHONE: (912) 252-8833  
FAX: (912) 252-8833  
PROJECT LOCATION: SAVANNAH, CHATHAM COUNTY, GEORGIA  
PROJECT NUMBER: 15-5005



NO.	REVISION DESCRIPTION	DATE

**RECORD  
DRAWING**

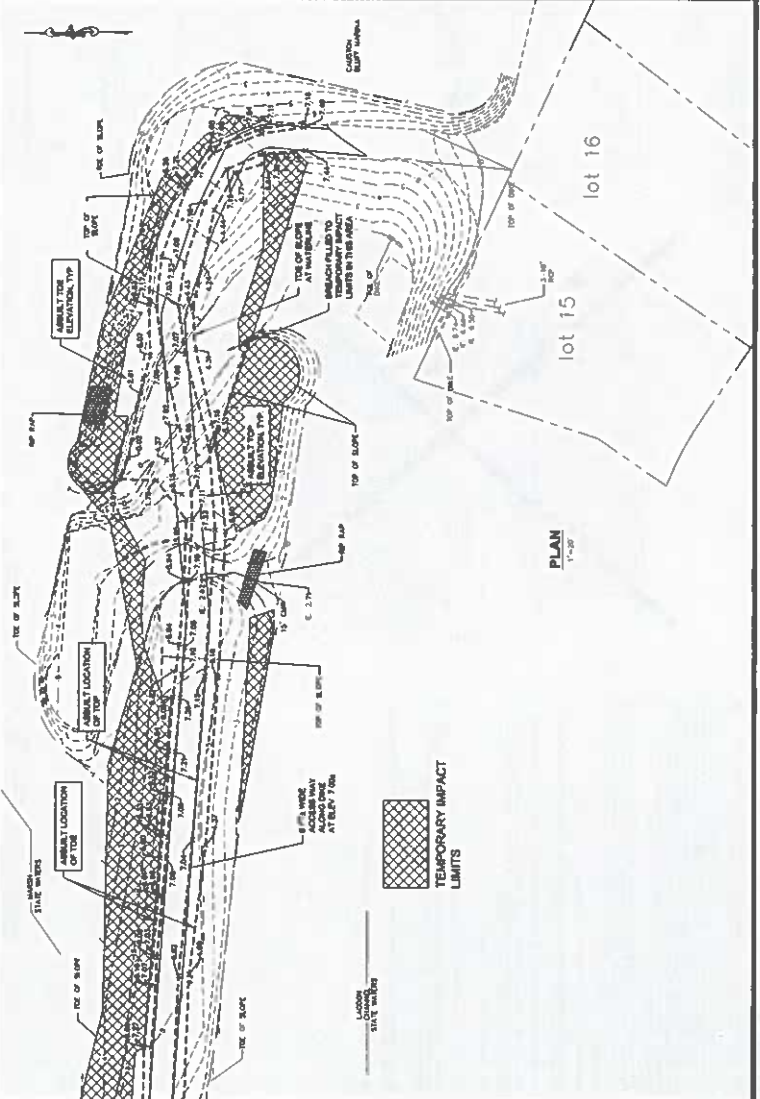
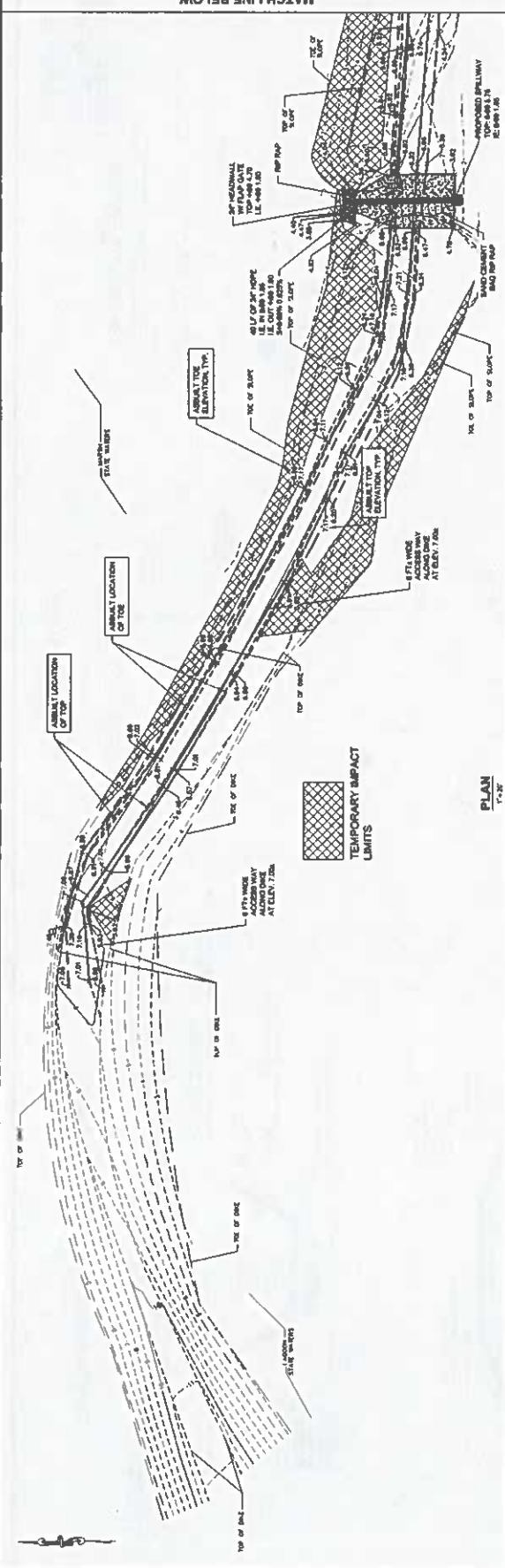


**EMC SERVICES, INC.**  
**EMC ENGINEERING**  
 2075 SAVANNAH DRIVE, SUITE 100  
 CHATHAM COUNTY, GEORGIA 31408  
 PHONE: (478) 233-4130  
 FAX: (478) 233-4130  
 DIVISIONAL  
 ALBANY, ALA.; AUGUSTA, GEORGIA;  
 COLUMBUS, GEORGIA; STATESBORO & VALDOSTA

**SITE PLAN**  
**CAUSTON BLUFF**  
**DIKE REPAIR**  
**CHATHAM COUNTY, GEORGIA**  
 Prepared for:  
**CAUSTON BLUFF OWNERS ASSOCIATION, INC.**

PROJECT NO.: 15-000  
 DRAWN BY: [Signature]  
 CHECKED BY: [Signature]  
 SURVEY DATE: [Date]  
 DATE: OCTOBER 2015

**SHEET 2** of 3



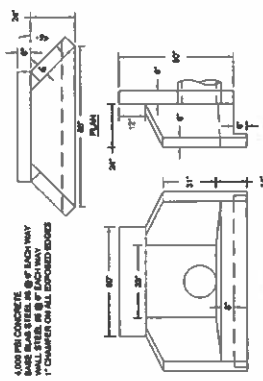
THE RECORD OWNERS ARE CONTACTED  
 BASED ON THE CONSTRUCTION  
 SURVEY BY EMC ENGINEERING SERVICES, INC.  
 DATE: OCTOBER 2015

**GENERAL NOTES:**

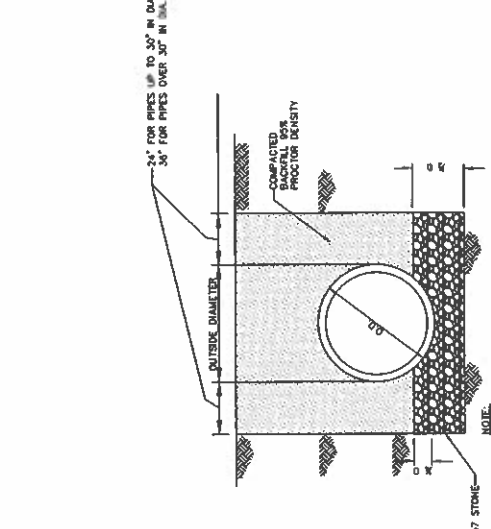
1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL REQUIRED PERMITS AND ACCURATELY LOCATE ALL UTILITIES BEFORE BEGINNING WORK.
2. ALL CONSTRUCTION SHALL BE DONE ACCORDING TO THE SPECIFICATIONS AND ALL DIMENSIONS SHALL BE AS SHOWN UNLESS OTHERWISE NOTED.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND ACCURATELY LOCATING ALL UTILITIES BEFORE BEGINNING WORK.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND ACCURATELY LOCATING ALL UTILITIES BEFORE BEGINNING WORK.
5. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND ACCURATELY LOCATING ALL UTILITIES BEFORE BEGINNING WORK.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND ACCURATELY LOCATING ALL UTILITIES BEFORE BEGINNING WORK.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND ACCURATELY LOCATING ALL UTILITIES BEFORE BEGINNING WORK.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND ACCURATELY LOCATING ALL UTILITIES BEFORE BEGINNING WORK.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND ACCURATELY LOCATING ALL UTILITIES BEFORE BEGINNING WORK.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND ACCURATELY LOCATING ALL UTILITIES BEFORE BEGINNING WORK.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND ACCURATELY LOCATING ALL UTILITIES BEFORE BEGINNING WORK.

**QUANTITIES CONC. IN WALL**

ITEM	QTY	UNIT	TOTAL
1. CLASS "A" CONCRETE	107.5	CY	107.5
2. CLASS "B" CONCRETE	107.5	CY	107.5
3. CLASS "C" CONCRETE	107.5	CY	107.5
4. CLASS "D" CONCRETE	107.5	CY	107.5
5. CLASS "E" CONCRETE	107.5	CY	107.5
6. CLASS "F" CONCRETE	107.5	CY	107.5
7. CLASS "G" CONCRETE	107.5	CY	107.5
8. CLASS "H" CONCRETE	107.5	CY	107.5
9. CLASS "I" CONCRETE	107.5	CY	107.5
10. CLASS "J" CONCRETE	107.5	CY	107.5
11. CLASS "K" CONCRETE	107.5	CY	107.5
12. CLASS "L" CONCRETE	107.5	CY	107.5
13. CLASS "M" CONCRETE	107.5	CY	107.5
14. CLASS "N" CONCRETE	107.5	CY	107.5
15. CLASS "O" CONCRETE	107.5	CY	107.5
16. CLASS "P" CONCRETE	107.5	CY	107.5
17. CLASS "Q" CONCRETE	107.5	CY	107.5
18. CLASS "R" CONCRETE	107.5	CY	107.5
19. CLASS "S" CONCRETE	107.5	CY	107.5
20. CLASS "T" CONCRETE	107.5	CY	107.5
21. CLASS "U" CONCRETE	107.5	CY	107.5
22. CLASS "V" CONCRETE	107.5	CY	107.5
23. CLASS "W" CONCRETE	107.5	CY	107.5
24. CLASS "X" CONCRETE	107.5	CY	107.5
25. CLASS "Y" CONCRETE	107.5	CY	107.5
26. CLASS "Z" CONCRETE	107.5	CY	107.5

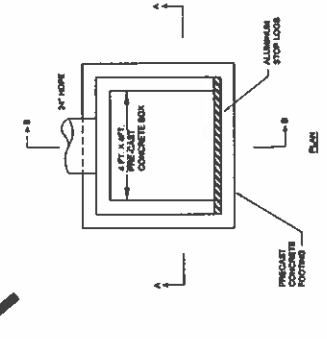


**48\"/>**

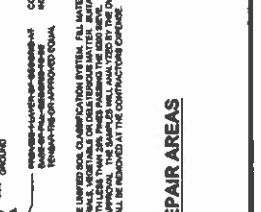
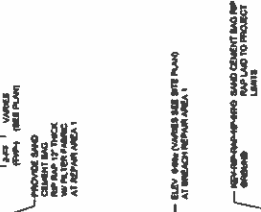
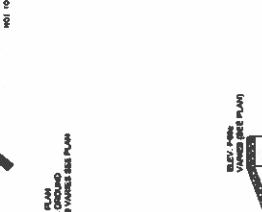
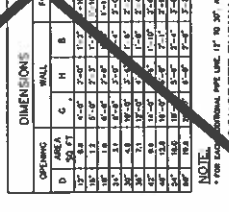
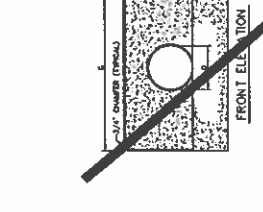


**BEDDING DETAIL FOR SINGLE PIPE STORM DRAINAGE**  
NOT TO SCALE

**CONCRETE ENDWALLS STRAIGHT TYPE**  
NOT TO SCALE



**PROPOSED SPILLWAY**  
NOT TO SCALE



**TYPICAL SECTIONS AT DIKE REPAIR AREAS**  
NOT TO SCALE

**EMC SERVICES, INC.**  
ENGINEERING  
1201 S. KENNEDY BLVD. SUITE 100  
MARIETTA, GEORGIA 30067  
PHONE: (770) 575-4444  
FAX: (770) 575-4444  
WWW.EMCSERVICES.COM

**CAUSTON BLUFF**  
DIKE REPAIR  
CHATHAM COUNTY, GEORGIA  
Prepared for:  
**CAUSTON BLUFF OWNERS ASSOCIATION, INC.**

PROJECT NO.:  
DRAWN BY:  
CHECKED BY:  
DATE:  
REVISIONS:

# Appendix D – Photosheets

Blank area for photos and notes, with faint grid lines visible.



Blank area for photos and notes, with faint grid lines visible.



**Photo 1:** Area of documented increased erosion along dike, see temporary control structure installation



**Photo 2:** Area of ongoing erosion on southern side of dike, along the lagoon edge



**Photo 3:** Temporary sandbag barrier installed along dike at location of increased erosion



**Photo 4:** Area of additional erosion documented during dike inspections



**Photo 5:** Area of new vegetation die-off, possibly caused by saltwater contact during high tides.

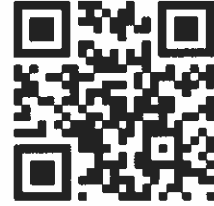


**Photo 6:** Failed cement bag rip rap located on west side of weir at control structure

**Appendix E – EMC Engineering  
Recommendations Letter, dated April  
28, 2023**



27 Chatham Center South Dr.  
Suite A  
Savannah, GA 31405  
Phone: (912) 232-6533  
Fax: (912) 233-4580  
www.emc-eng.com



April 28, 2023

Ms. Susan Brinkley  
Causton Bluff Owners Association, Inc.  
1901 Bull Street  
Savannah, GA 31401

**RE: Causton Bluff Lagoon Dike  
EMC Project No. 23-0022**

Dear Ms. Brinkley:

EMC Engineering Services, Inc. has performed a survey and reviewed the lagoon dike at selected locations. The selected locations are the upstream side of the outfall structure and the dike at the eastern end.

At the outfall structure a void has formed under the sand cement bag rip rap on the west side of the structure. The void has caused the side slope to fail. This area needs to be repaired by removing enough of the rip rap to expose the void, backfill the void, reconstruct the side slope, and place rip rap on the side slope at the outfall structure.

At the eastern end of the dike there is erosion present on the lagoon and marsh sides of the dike (150± feet). The erosion is greater on the marsh side than on the lagoon side. On the lagoon side the eroded areas can be filled in and revegetated. On the marsh side the side slope needs to be reconstructed and revegetated. The area between the small spur dike and the main dike should be filled in and revegetated to prevent potential erosion of the main dike. The reconstruction of the side slopes will need to include stabilization of the slope at the toe to help minimize slope failure in the future. Rip rap should be placed along the slope of the repaired area on the marsh side for additional stabilization. The top of the dike should be raised where the erosion is taking place to prevent the dike from overtopping during extreme high tides.

Pictures of the project area are attached. Construction plans will need to be prepared and permitting performed for the project.

Please contact me with any questions

Sincerely,  
EMC ENGINEERING SERVICES, INC.

A handwritten signature in blue ink, appearing to read 'Ben Lockhart'.

Ben Lockhart, P.E. CFM

Associate

cc: Terracon

Attachments

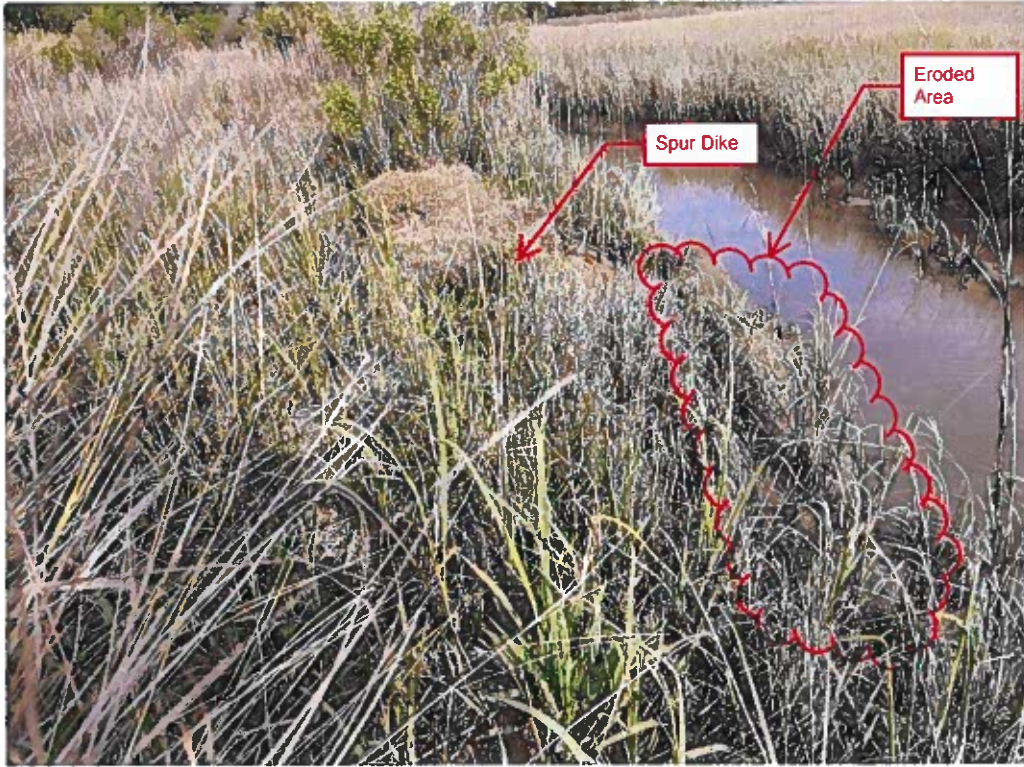




**Slope Failure at The Lagoon Outlet Structure**



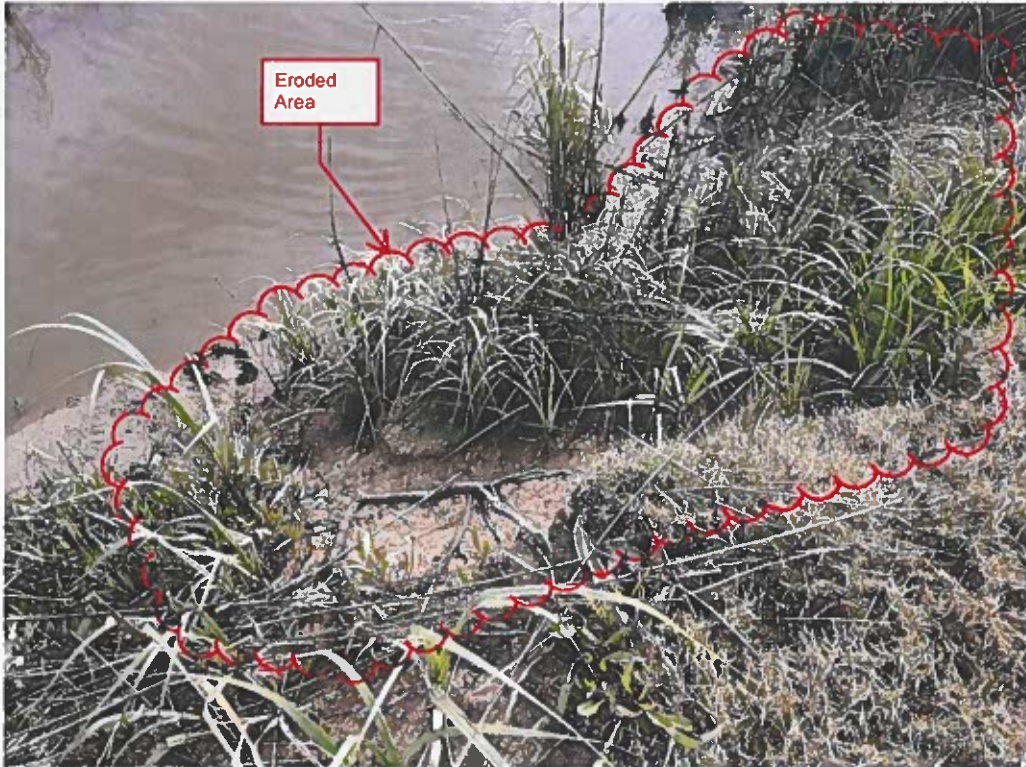
**Slope Failure at The Lagoon Outlet Structure**



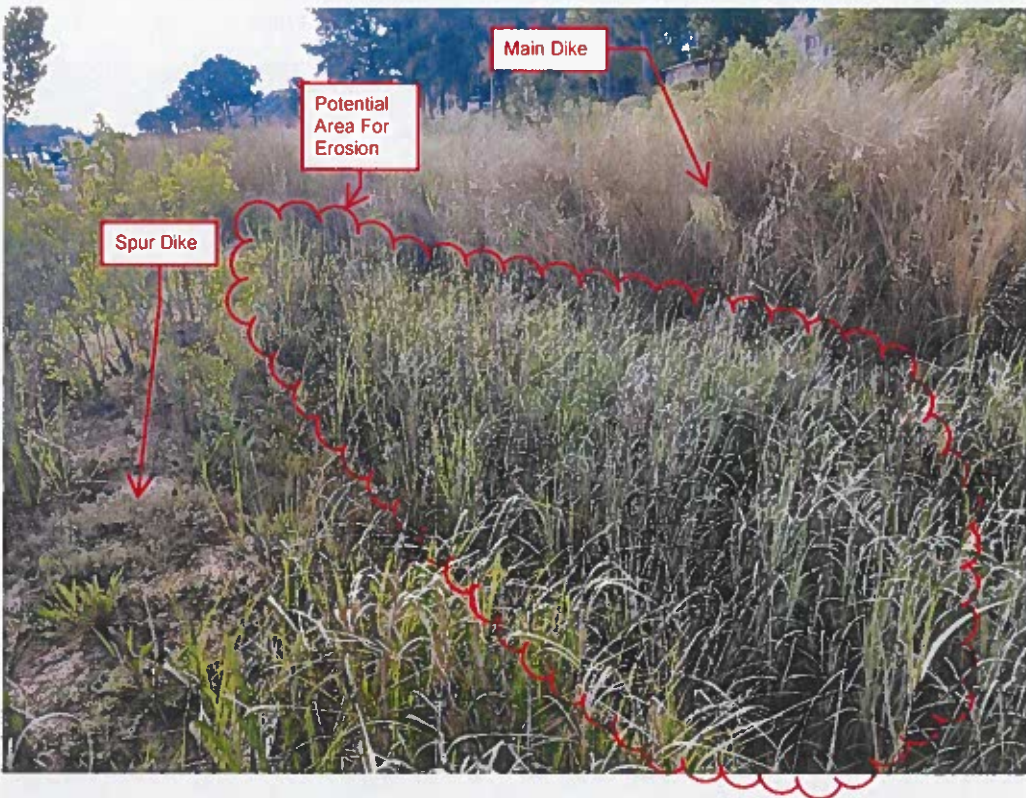
Spur Dike Adjacent to The Marsh



Erosion Along the Dike on The Marsh Side



Erosion Along the Dike on The Marsh Side



Area Where Tide Comes Around Back Side of Spur Dike and Back of Main Dike Which Is a Potential Area for Erosion



Erosion On the Lagoon Side of The Dike



Erosion Tube That Has Been Placed on Dike Where Water Has Overtopped Dike



Faint header text, possibly including a date or reference number.



**Appendix F - EMC Elevation Data Letter,  
dated February 29,2024**

Faint text in the upper right quadrant, possibly a recipient address or contact information.

Main body of faint text, likely the content of the letter or report.

Faint text in the bottom right corner, possibly a signature or footer.



27 Chatham Center South Dr.  
Suite A  
Savannah, GA 31405  
Phone: (912) 232-6533  
Fax: (912) 233-4580  
www.emc-eng.com



February 29, 2024

Mr. Mike DeMell  
Terracon  
2201 Rowland Avenue  
Savannah, GA 31404

**RE: Causton Bluff Dike  
EMC Project No. 23-0022**

Dear Mr. DeMell:

EMC Engineering Services has reviewed the survey data that has been collected in 2023 for the referenced project. A review has been performed due to a difference in the 2023 elevations along the top of the dike and at the outlet structure being lower in the range of  $0.5' \pm$  to  $0.8' \pm$  between the record drawings prepared in 2016. EMC Engineering does not believe that the dike and outlet structure have experienced this amount of settlement because:

- There is no visible evidence (cracks etc.) the lagoon outfall structure that indicate that it would have settled this much.
- There is no visible evidence (low spots, soil subsidence) that would indicate that the dike has experienced settlement in the range of 0.5' to 0.8' along its entire length except on the eastern end where water is known to have overtopped the dike and some bank erosion is present.

The elevation difference appears to be in the same survey control points used in the 2016 and 2023 surveys. A review of the 2016- and 2023-point files shows the 2023 control point elevations to be around 0.63 ft. lower than the 2016 elevations. The as-built elevations taken in 2023 will be adjusted by 0.63 ft in order to reference them back to the original record drawings for comparison. A revised drawing is attached. The revised drawing does show that some settlement has occurred on the eastern end of the dike. There is a spot approximately 330 feet east of the outfall structure that is  $0.5' \pm$  lower than the 2016 record drawings. This spot is located in the area where erosion has taken place.

Please contact me with any questions or comments.

Sincerely,

EMC ENGINEERING SERVICES, INC.

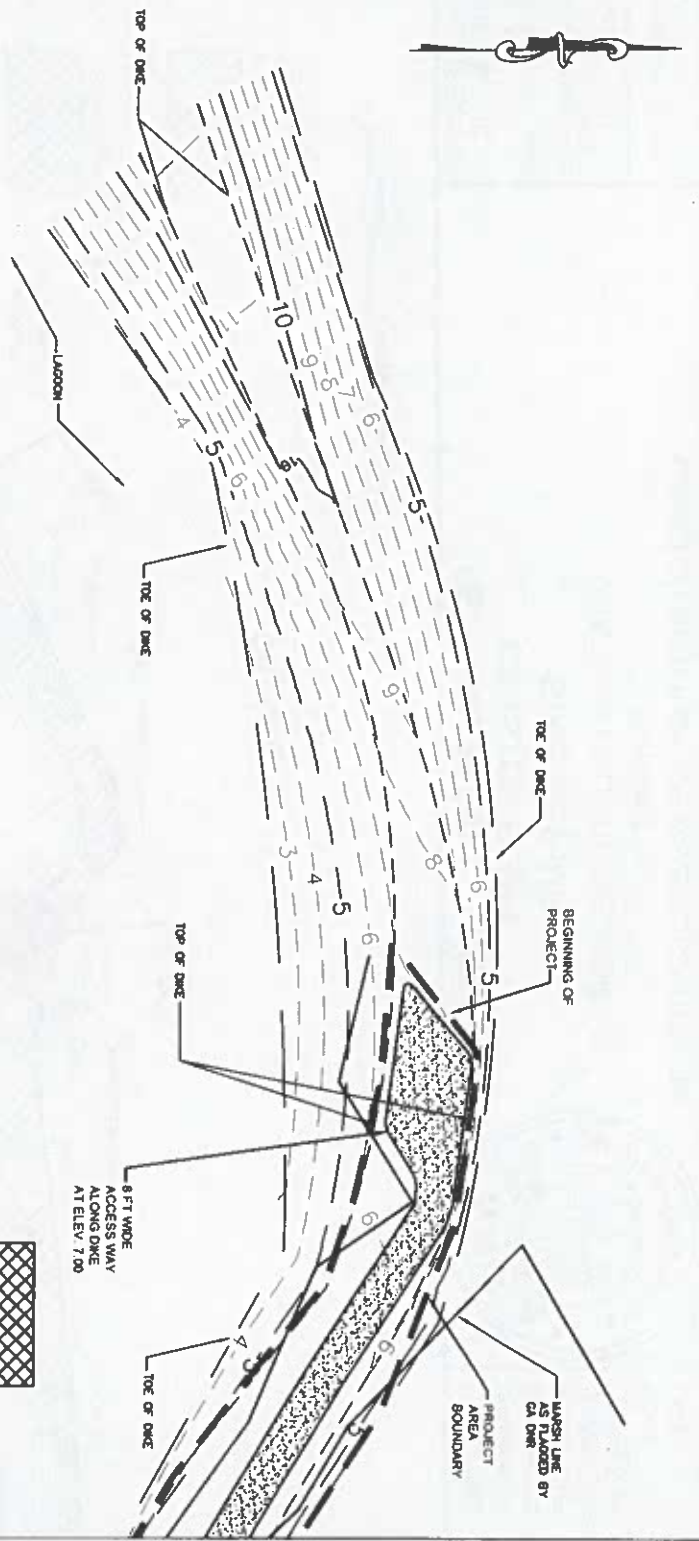
A handwritten signature in blue ink, appearing to read 'Ben Lockhart', is placed above the typed name.

Ben Lockhart, P.E., CFM  
Associate



# **Appendix G – Proposed Work Areas Exhibit**





**SHEET 1  
OF 6**



**PLAN**  
1"=40'

 PERMANENT FILL TO SPECIAL AQUATIC SITES  
0.142 ACRES

 TEMPORARY IMPACTS TO SPECIAL AQUATIC SITES  
0.051 ACRES

**MATCH LINE SHEET 2**

**EMC ENGINEERING SERVICES, INC.**  
P.O. BOX 8101, 31412  
10 CHATHAM CENTER SOUTH  
SUITE 100  
SAVANNAH, GEORGIA 31405  
PHONE: (912) 232-6533  
FAX: (912) 233-4580

ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,  
COLUMBUS, SAVANNAH & VALDOSTA

**FEDERAL PERMIT EXHIBIT  
CAUSTON BLUFF  
DIKE REPAIR**  
CHATHAM COUNTY, GEORGIA

Prepared for:

CAUSTON BLUFF OWNERS ASSOCIATION, INC.



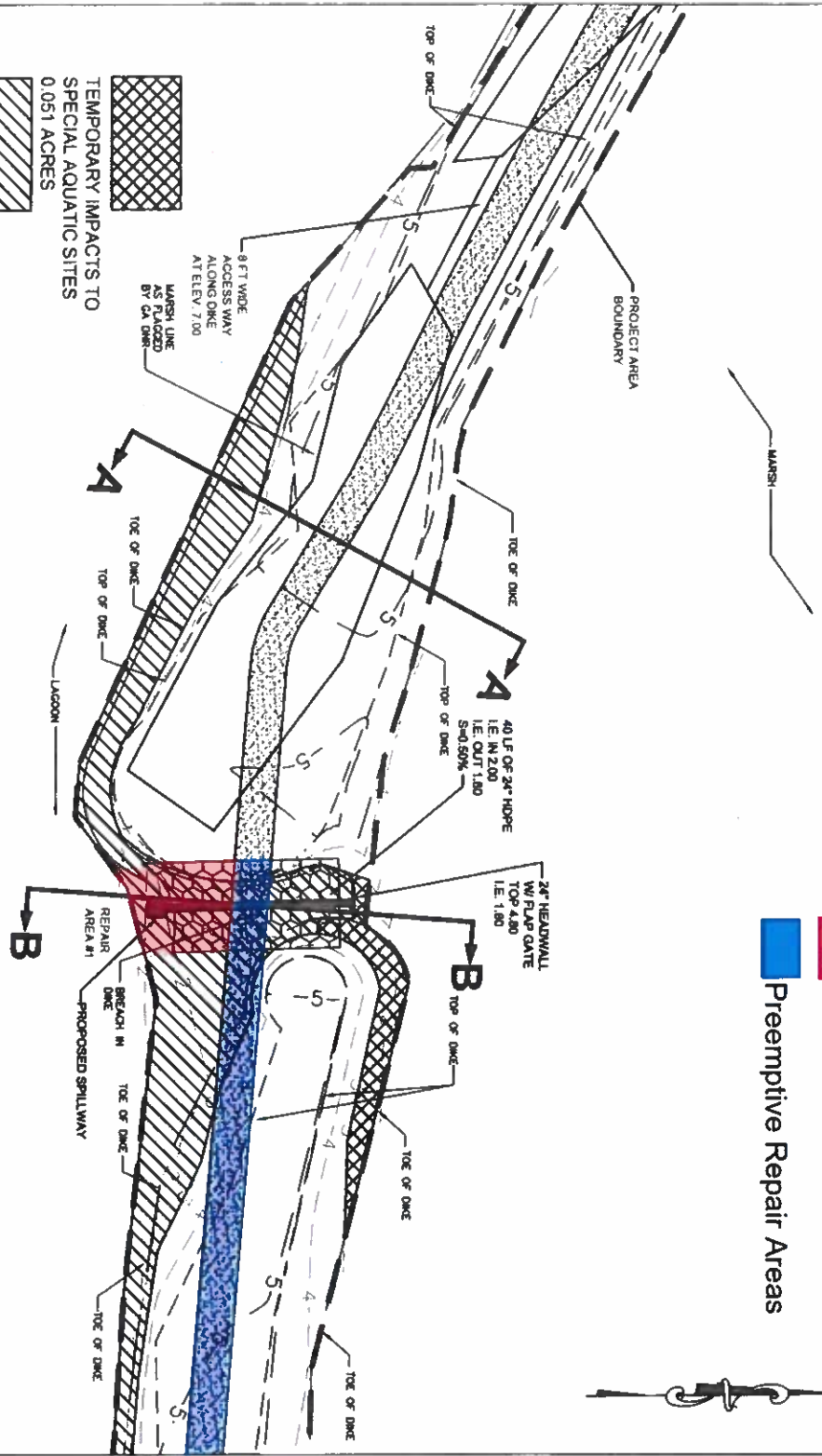
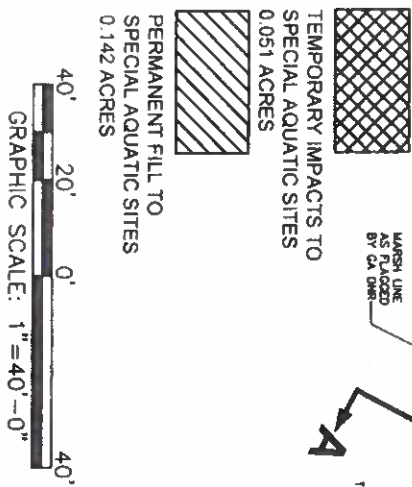
PROJECT NO.: 15-5005  
DRAWN BY: BWL  
DESIGNED BY: BWL  
SURVEYED BY: EMC  
SURVEY DATE: 4-20-15  
CHECKED BY: BWL  
SCALE: 1"=40'  
DATE: NOVEMBER 2015

MATCH LINE SHEET 1

SHEET 2  
OF 6

**EMC ENGINEERING SERVICES, INC.**  
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 10 CHATHAM CENTER SOUTH  
 SUITE 100  
 SAVANNAH, GEORGIA 31405  
 PHONE: (912) 232-6533  
 FAX: (912) 233-4580

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■ Primary Repair Areas  
■ Preemptive Repair Areas

**PLAN**  
1" = 40'

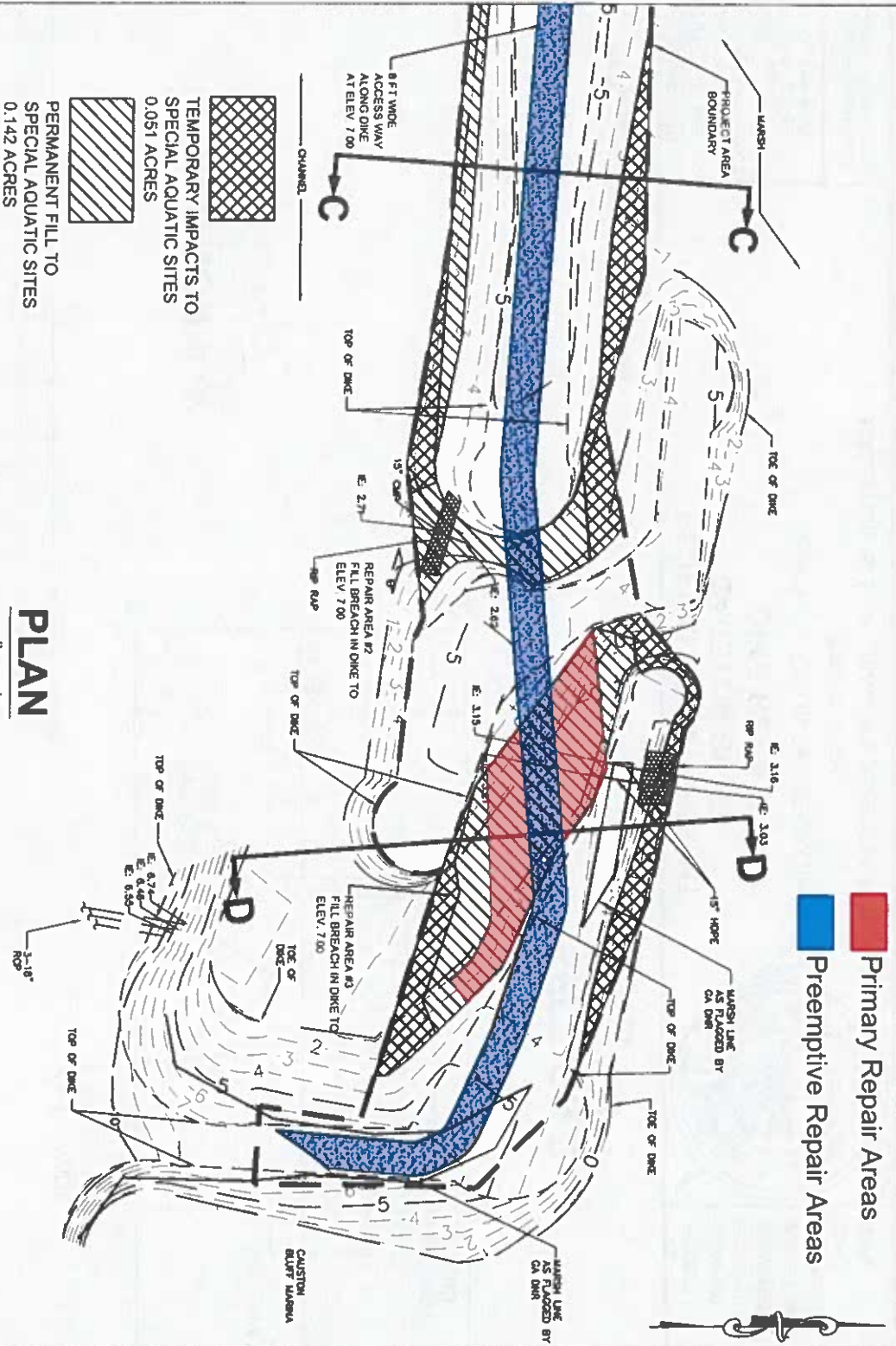
MATCH LINE SHEET 3

**FEDERAL PERMIT EXHIBIT**  
**CAUSTON BLUFF**  
**DIKE REPAIR**  
 CHATHAM COUNTY, GEORGIA  
 Prepared for:  
 CAUSTON BLUFF OWNERS ASSOCIATION, INC.



PROJECT NO.:	15-5005
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DESIGNED BY:	BWL
SURVEYED BY:	EMC
SURVEY DATE:	4-20-15
CHECKED BY:	BWL
SCALE:	1"=40'
DATE:	NOVEMBER 2015

MATCH LINE SHEET 2



SHEET 3  
OF 6



- TEMPORARY IMPACTS TO SPECIAL AQUATIC SITES  
0.051 ACRES
- PERMANENT FILL TO SPECIAL AQUATIC SITES  
0.142 ACRES

**PLAN**  
1" = 40'

**EMC ENGINEERING SERVICES, INC.**  
P.O. BOX 8101, 31412  
10 CHATHAM CENTER SOUTH  
SUITE 100  
SAVANNAH, GEORGIA 31405  
PHONE: (912) 232-6533  
FAX: (912) 233-4580

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**FEDERAL PERMIT EXHIBIT  
CAUSTON BLUFF  
DIKE REPAIR**

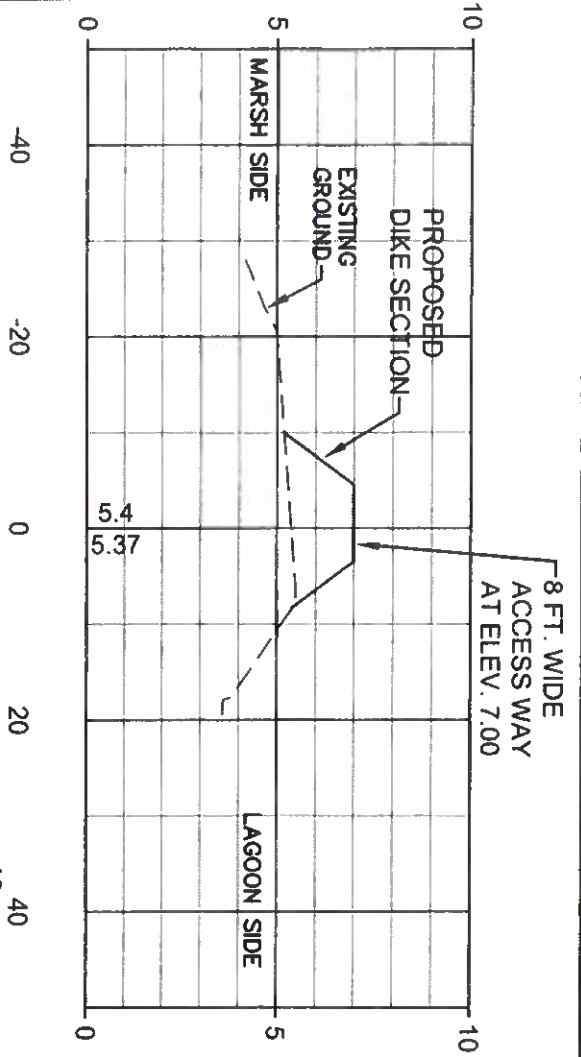
CHATHAM COUNTY, GEORGIA

Prepared for:

CAUSTON BLUFF OWNERS ASSOCIATION, INC.



PROJECT NO.:	15-5005
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DESIGNED BY:	BWL
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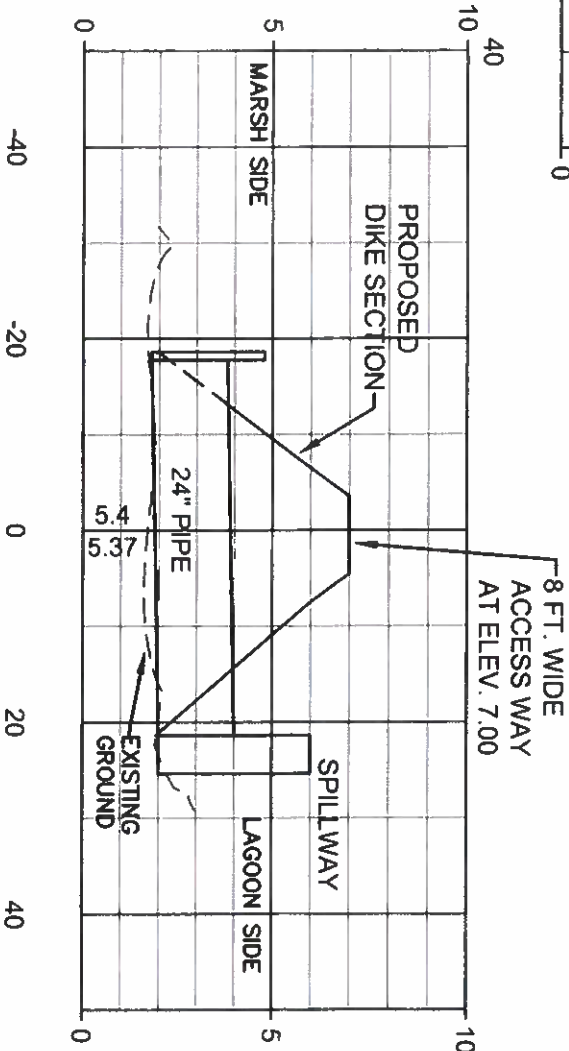


**SECTION A-A**

HORIZONTAL: 1"=20'  
VERTICAL: 1"=5'

CROSS SECTIONS ARE VIEWED LOOKING EAST

**SHEET 4 OF 6**



**SECTION B-B**

HORIZONTAL: 1"=20'  
VERTICAL: 1"=5'

**EMC SERVICES, INC.**  
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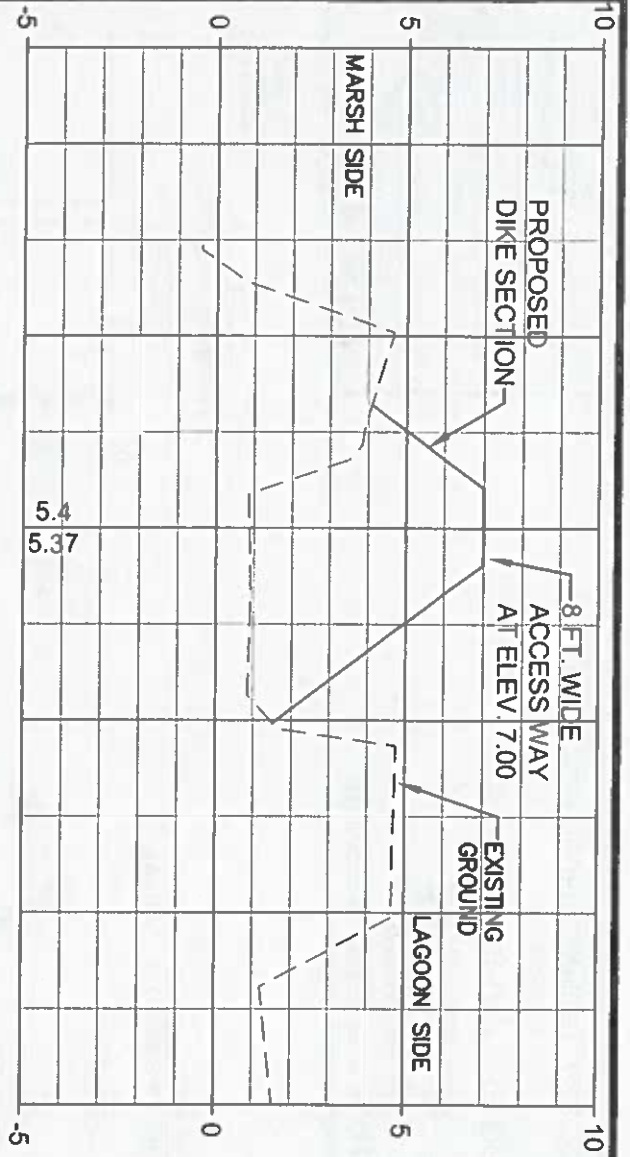
**FEDERAL PERMIT EXHIBIT  
CAUSTON BLUFF  
DIKE REPAIR**

CHATHAM COUNTY, GEORGIA

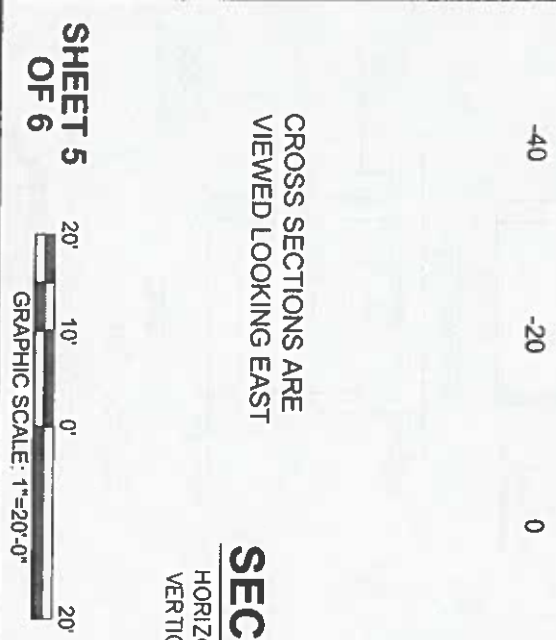
Prepared for:  
CAUSTON BLUFF OWNERS ASSOCIATION, INC.



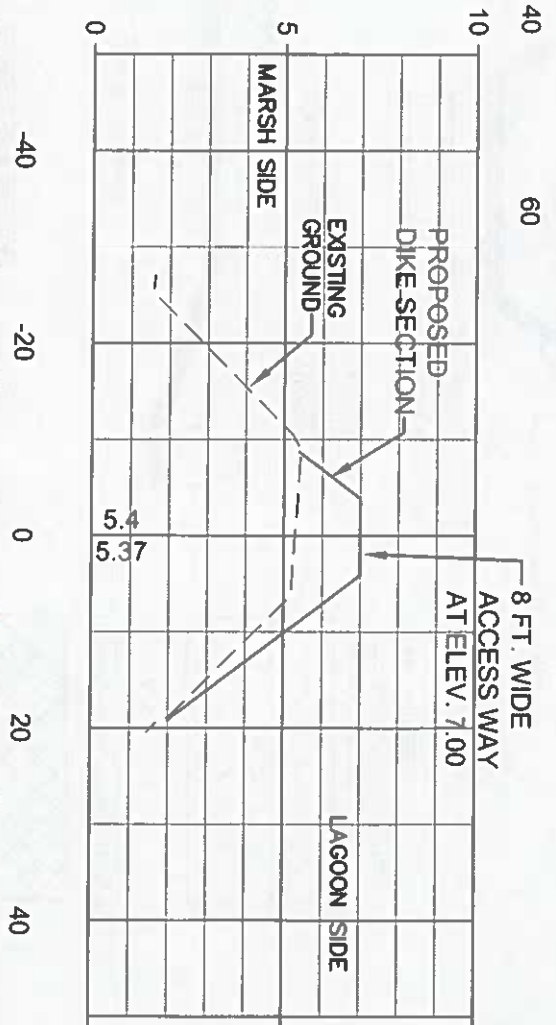
PROJECT NO.:	15-5005
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SURVEY DATE:	4-20-15
CHECKED BY:	BWL
SCALE:	1"=40'
DATE:	NOVEMBER 2015



**SECTION D-D**  
 HORIZONTAL: 1"=20'  
 VERTICAL: 1"=5'



**SECTION C-C**  
 HORIZONTAL: 1"=20'  
 VERTICAL: 1"=5'



CROSS SECTIONS ARE VIEWED LOOKING EAST

**SHEET 5 OF 6**



**EMC ENGINEERING SERVICES, INC.**  
 P.O. BOX 8101, 31412  
 10 CHATHAM CENTER SOUTH  
 SUITE 100  
 SAVANNAH, GEORGIA 31405  
 PHONE: (912) 233-6533  
 COMMERCIAL FAX: (912) 233-4580

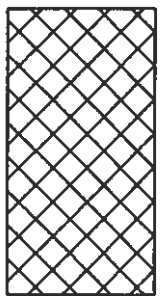
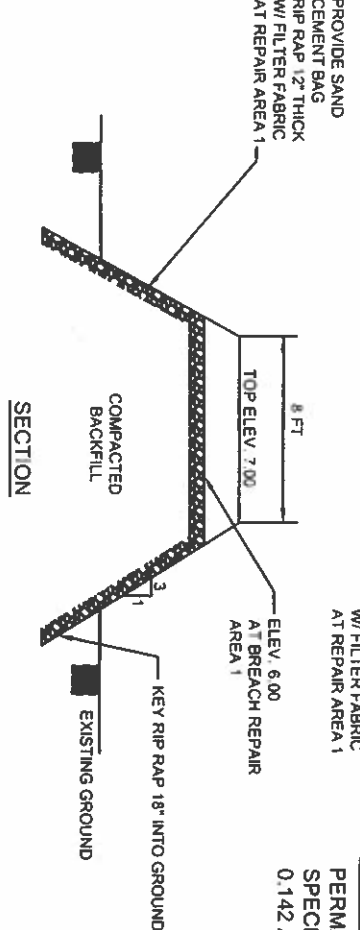
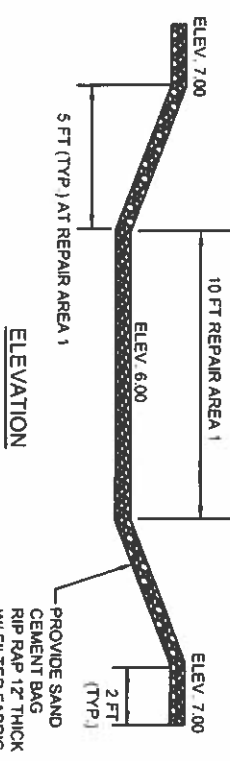
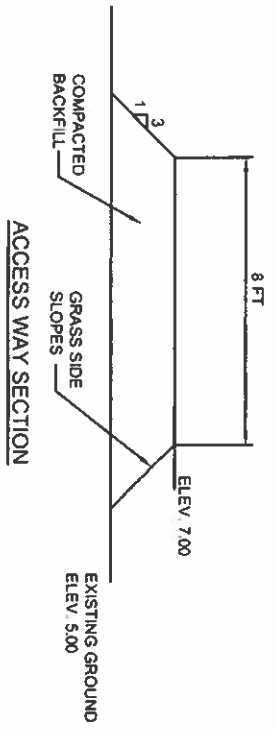
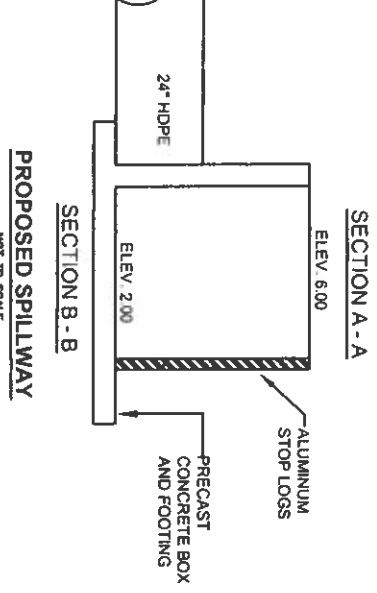
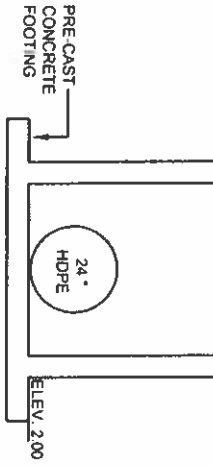
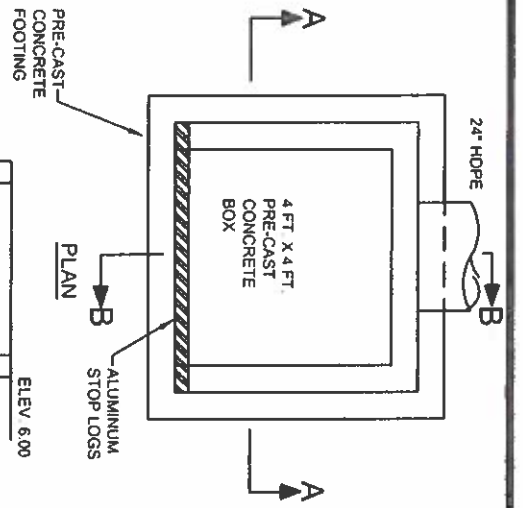
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 COLUMBUS, SAVANNAH & VALDOSTA

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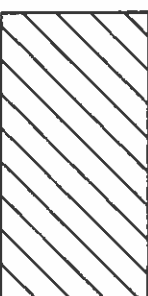
Prepared for:  
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TEMPORARY IMPACTS TO SPECIAL AQUATIC SITES  
0.051 ACRES



PERMANENT FILL TO SPECIAL AQUATIC SITES  
0.142 ACRES

**SHEET 6  
OF 6**

**PROPOSED SPILLWAY**  
NOT TO SCALE

**TYPICAL SECTIONS AT DIKE REPAIR AREAS**  
NOT TO SCALE

**EMC ENGINEERING SERVICES, INC.**  
P.O. BOX 8101, 31412  
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