

South Carolina Department of Health and Environmental Control  
Division of Ocean and Coastal Resource Management  
1362 McMillan Avenue, Suite 400  
Charleston, South Carolina 29405

**July 6, 2015**  
**Permit Application Public Notice**

***Kiawah Island Utility Inc, OCRM-15-210-E***

The Department has received an application for a permit for the alteration of a critical area. The application was submitted pursuant to the Coastal Zone Management Act (Act 123) of 1977 South Carolina General Assembly. The application in brief, is described as follows:

**LOCATION:** On and adjacent to Kiawah River and the marshes at Bryans Dairy Road, Johns Island, Charleston County, South Carolina. TMS: N/A.

**WORK:** The work as proposed consists of installing a new water line. Specifically, the applicant seeks to install a second ("redundant") water main from SJWC. The applicant will be directional boring to cross under the Kiawah River before it reaches Kiawah Island where open trench and backfill methodology will be reinstated until it reaches the existing pump station. The new 16" waterline will impact 0.05 acres of critical area and another 1.05 acres of critical area is proposed to serve as a temporary staging area for the directional boring. The area will be restored to pre-construction conditions after construction. The work as described is for construction of a backup waterline.

This public notice is being distributed to all known interested persons and agencies to assist in developing facts on which a decision by the Department can be based. Comments concerning the proposed work must be submitted in writing, setting forth sufficient detail to furnish a clear understanding of the reasons for support or opposition.

Comments regarding this application must be received by the Department on or before **August 5, 2015**. For more information, please contact: **Bill Eiser** at 843-953-0237 or via email at [eiserwc@dhec.sc.gov](mailto:eiserwc@dhec.sc.gov).

**NOTE:** Plans depicting the proposed work are available and will be provided upon receipt of a written request or may be viewed on the Department website at <http://www.scdhec.gov/Apps/Environment/PublicNotices>.

**Attachments****Description of Dimensions, General Specifications, and Purpose of the Project:**

Kiawah Island Utility (KIU) is the water and sewer provider for Kiawah Island, Charleston County, South Carolina. The KIU water system was developed in the early 1980's, and uses a single 16" DIP water main crossing under the Kiawah River. KIU purchases water wholesale from St. Johns Water Company (SJWC). During the last few years Kiawah Island's single supply line has developed numerous leaks. These leaks are becoming more frequent, which is alarming since a major line break would eliminate the source of potable water for the island and severely limit fire protection. For these reasons a second, or redundant, water main from SJWC is being proposed for installation. The second line will not increase capacity, but will serve as a backup in case of a line failure of the existing 16" main under the Kiawah River.

The new 16" redundant water supply main will connect to an existing 24" St. John's Water Company water main adjacent to Briar's Creek Golf. The new water main will initially travel east for approximately 0.5 miles, then turn south towards the Kiawah River. The 16" redundant water supply main will be installed through open trench and backfill methodology and the installation will not directly impact any wetlands or other waters of the US, except 0.05 acres of freshwater wetland for permanent road access. The applicant will use directional boring technology to cross under Kiawah River (Frac-out plan attached) before it reaches Kiawah Island, where open trench and backfill methodology will be reinstated until it reaches the existing down island pump station. Once installed, the new 16" redundant water supply main ownership will be transferred to and maintained by Kiawah island Utilities, Inc.

As a result of the project approximately 0.05 acres of critical area/TNW, and approximately 0.02 acres of freshwater wetlands, will be temporarily impacted while installing the 16" water main using open trench and backfill methodology. Approximately 0.05 acres of permanent freshwater wetland fill impact is being proposed. This permanent fill impact will serve as gravel access road for inspection and maintenance of the proposed 16" water main.

Approximately 1.05 acres (5,920 cubic yards) of critical area/TNW are being proposed to be temporarily filled to serve as a temporary staging area for the Horizontal Directional Drill (HDD) construction equipment. A geotextile layer will be placed on the existing ground, and then fill material will be brought in from a nearby upland source in order to create an elevated pad for the HDD construction equipment. Upon completion of the construction activities, the fill material will be removed, and the areas will be restored to pre-construction conditions.

**Locations of the Project Site**

From Charleston proceed toward Folly Beach on SC Highway 171. After the Wappoo Bridge turn right onto Maybank Highway toward John's Island. Once on John's Island, turn right onto Maybank Road/River Road intersection, turn left onto River Road. Proceed approximately 4 miles and turn

RECEIVED  
JUN 15 2015DHEC-OCRM  
CHARLESTON OFFICE

left onto Bryans Dairy Road. Travel approximately 0.75 miles and turn right onto an unnamed Berkeley Electric Cooperative (BEC) right-of-way and proceed approximately 0.5 miles to a BEC substation. The project area is immediately west to the BEC substation.

Kiawah Island Utility, Inc

OCRM-15-210-E

**RECEIVED**

JUN 15 2015

DHEC-OCRM  
CHARLESTON OFFICE

**Frac-Out Response Plan**  
**Kiawah Island Utility, Inc.**  
**Kiawah Island Redundant Water Supply Main**

**1. Introduction:** Prior to initiating construction activities Kiawah Island Utility, Inc. (KIU), permittee, and the project engineer, will ensure that the contractor and all personnel involved are made aware of and understands the permit and its requirements, including any special conditions of the permit, monitoring of the project required by the permit, implementation of the Frac-Out Response Plan and the implementation of Best Management Practices (BMP) during all phases of construction that are designed to prevent release of sediment or deleterious substances into adjacent wetlands or waterways. Additionally, wetland boundaries will be marked in the field and silt fencing will be established along these boundaries by the contractor prior to any other land disturbing activities on site.

**2. Monitoring:** Monitoring the project site during all phases of construction will be conducted by the contractor and the project engineer. The contractor will visually inspect the project site twice daily (AM & PM) for compliance with BMP's and to ensure that work is proceeding as permitted and conditions are such that problems are not anticipated and a Frac-Out has not occurred. The engineer will also monitor the project site on a daily basis during the drilling operation. Inspection logs will be maintained on-site and will contain the date and time of all inspections and will note any problems or potential problems or other items of interest. All actions occurring on-site that cause problems with the work or a temporary stop in work will be noted in the log. Daily photographs will also document the progress of work, the integrity of any sediment control measures and compliance with permit conditions.

**3. Stop Work:** Upon discovery of a Frac-Out by the contractor or notification by the project engineer that a Frac-Out or other release of material or deleterious matter has occurred with potential for impacts to adjacent wetlands or waterways, the contractor will immediately stop all work. An exception to an immediate cessation of construction activities may be warranted if such stop could result in unsafe conditions for workers on-site or if stopping work would risk loss of the bore hole or could potentially result in more harm to the environment than continuing work. In any event, containment and notification of such release will immediately occur.

**4. Containment:** The contractor, under the supervision of the project engineer, will immediately implement measures to contain any release of sediment or other deleterious substance into adjacent wetlands or waterways. Containment measures may include silt fencing and sediment tube installation.

**5. Contact:** Once a Frac-Out is discovered by the contractor, the project engineer or the owners representative shall notify the United States Army Corps of Engineers (USACE)

**RECEIVED**

JUN 15 2015

DHEC-OCRM  
CHARLESTON OFFICE

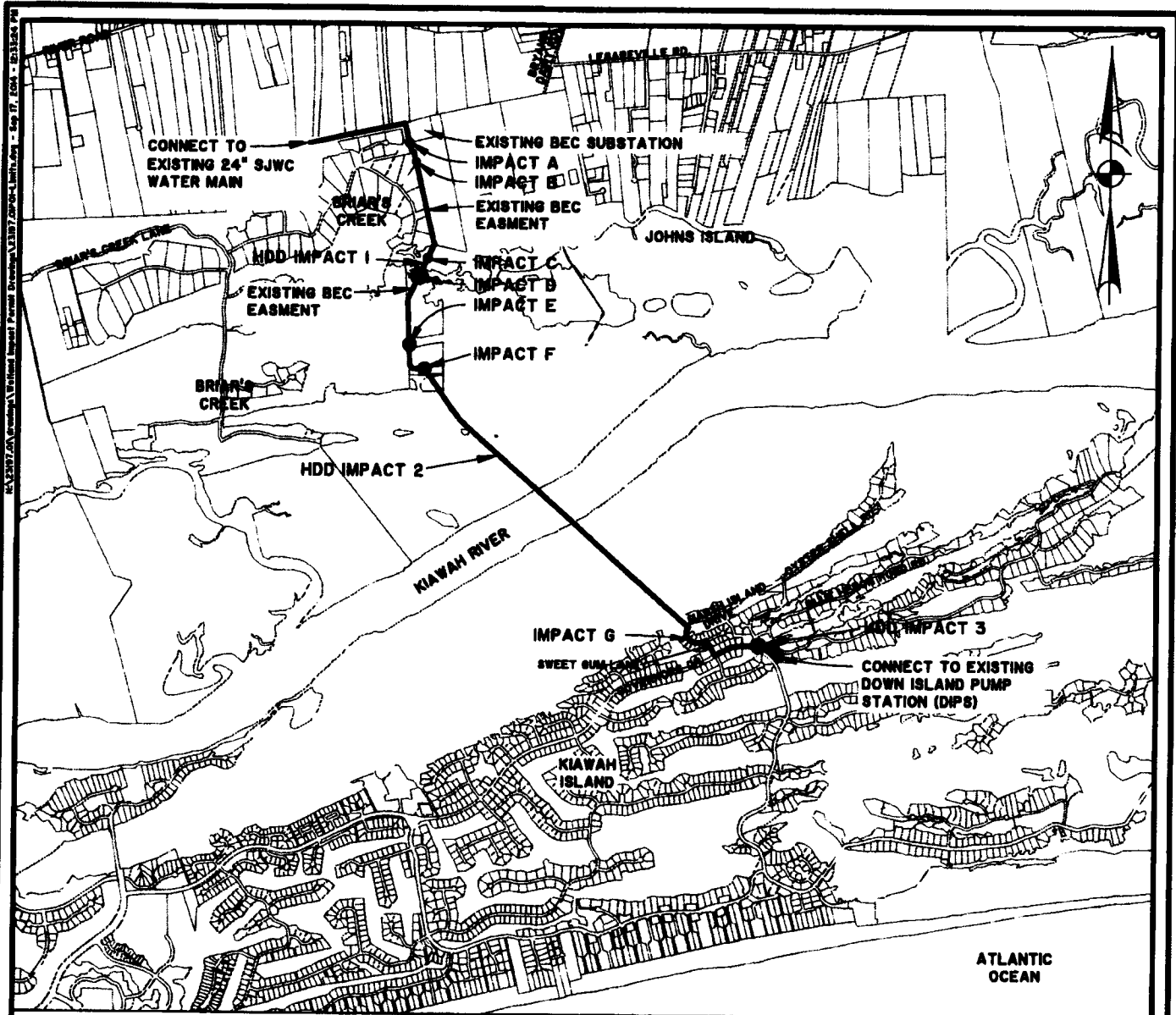
843-329-8044, South Carolina Department of Health and Environmental Control (SCDHEC) 843-722-4958, and permittee by the most timely means possible.

**6. Clean up:** The contractor, project engineer and permittee will coordinate with the USACE & SCDHEC to determine the most effective method of cleaning up the affected area(s) and appropriate methods for disposing of sediment or deleterious substance.

**7. Restoration:** The contractor, project engineer and permittee will consult and coordinate with USACE and SCDHEC to determine the most effective and efficient means of restoring the site, including stabilizing and re-vegetating as appropriate.

Kiawah Island Utility, Inc

OCRM-15-210-E



**SCHEDULE OF DRAWINGS**

SHT NO.	DESCRIPTION	SHT NO.	DESCRIPTION
1	PROJECT LIMITS	10	WETLAND IMPACT G
2	QUAD MAP LOCATION	11	HDD IMPACT 1
3	LEGEND AND ABBREVIATIONS	12	HDD IMPACT 2
4	WETLAND IMPACT A	13	HDD IMPACT 3
5	WETLAND IMPACT B	14	IMPACT SUMMARY
6	WETLAND IMPACT C	15	TYPICAL SECTION - WATER MAIN INSTALLATION
7	WETLAND IMPACT D		
8	WETLAND IMPACT E		
9	WETLAND IMPACT F		

Kiawah Island Utility, Inc

OCRM-15-210-E

**PROJECT LIMITS**

SCHEDULE OF DRAWINGS  
 REDUNDANT WATER SUPPLY MAIN

CLIENT:  
 KIAWAH ISLAND UTILITIES, INC.

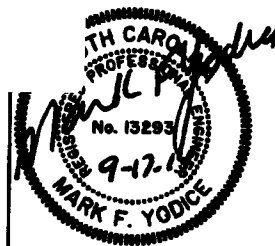
LOCATION: CHARLESTON COUNTY, SOUTH CAROLINA

DATE: 8/18/2014

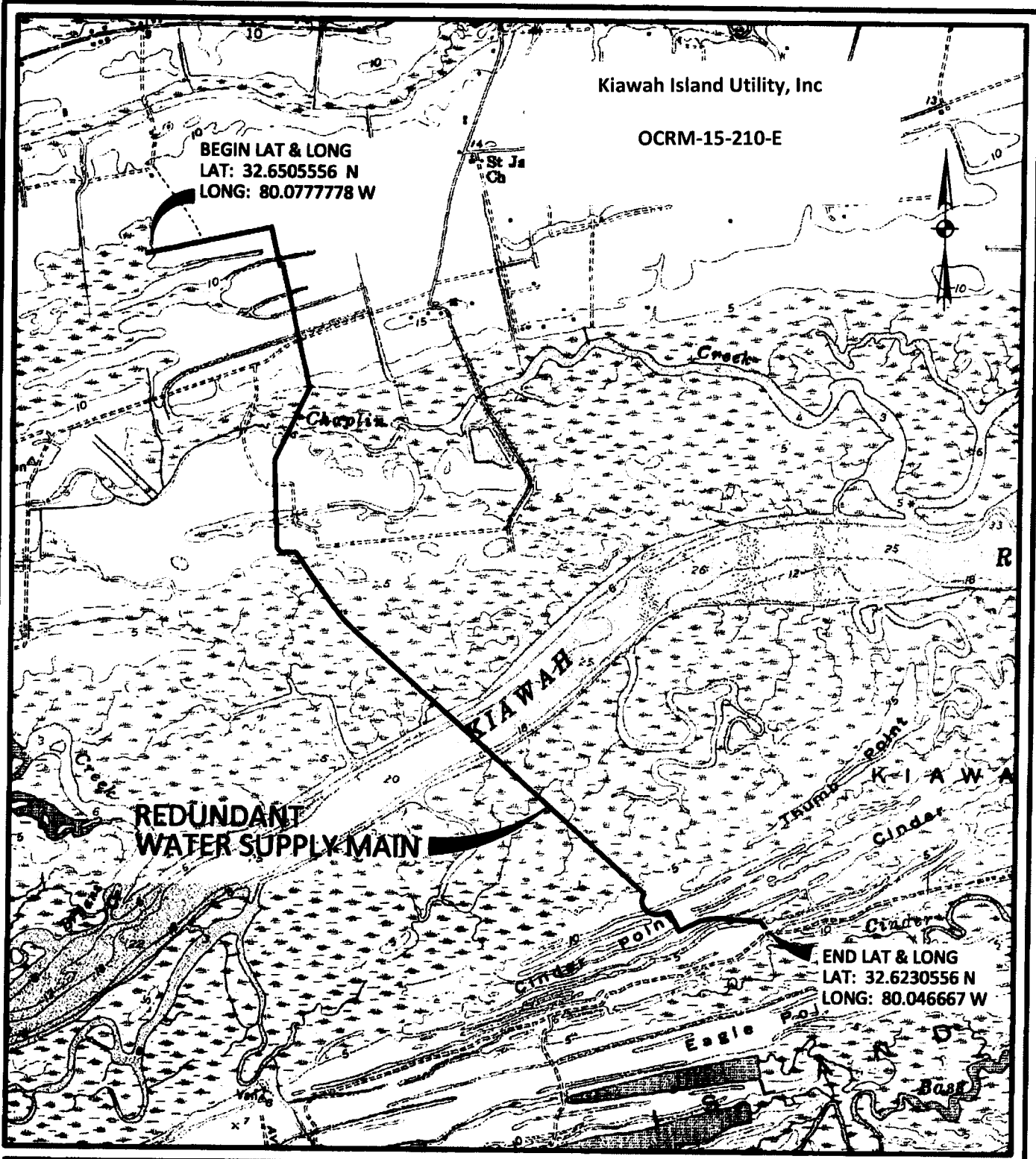
JOB NUMBER: J - 23197.00001

SHEET: 1 of 15

SCALE: 1" = 300'



N:\23197.001\drawings\Work\Asst Permitt Drawings\23197.0001-QUAD.dwg - Sep 17, 2014 - 11:34:50 PM



# REDUNDANT WATER SUPPLY MAIN

SHEET:  
QUAD MAP LOCATION

CLIENT:  
KIAWAH ISLAND UTILITIES, INC.

LOCATION: KIAWAH ISLAND, CHARLESTON COUNTY, SC  
DATE: 8/18/2014  
JOB NUMBER: J- 23197.0001

SHEET: 2 of 15  
SCALE: 1" = 200'



M:\23197\04\Drawings\Watermain Impact Permit\Drawings\23197.0003 Legend.dwg - Sep 17, 2014 - 12:40:28 PM

### WATER SYMBOLS

DESCRIPTION	EXISTING	PROPOSED
WATER MAIN		
VALVE AND BOX		
AIR RELEASE VALVE IN MH		
VALVE IN MANHOLE		
BUTTERFLY VALVE		
FIRE HYDRANT W/VALVE & BOX		
SERVICE		
NHD WATER MAIN (HORIZONTAL DIRECTIONAL DRILL)		

### SEWER SYMBOLS

DESCRIPTION	EXISTING	PROPOSED
SANITARY MANHOLE		
PUMP STATION		
AIR RELEASE VALVE IN MH		
SANITARY SEWER PIPE		

### EROSION CONTROL SYMBOLS

DESCRIPTION	EXISTING	PROPOSED
SLT FENCE		
TREE TO BE REMOVED		
TREE TO BE PROTECTED		
FENCE		

### DRAINAGE SYMBOLS

DESCRIPTION	EXISTING	PROPOSED
CURB INLET TYPE "A"		
GRATE INLET		
OUTFALL CONTROL STRUCTURE		
STORM MANHOLE OR JUNCTION BOX		
TYPE 9 INLET		
RP RAP		
CONCRETE CURB & GUTTER		
STORM PIPE		
GRASSED SWALE		
DITCH		

### TOPOGRAPHY SYMBOLS

DESCRIPTION	EXISTING	PROPOSED
RIGHT-OF-WAY LINE		
PROPERTY LINE		
E ROAD		
EASEMENT		
TREE LINE		
LAKE NORMAL WATER SURFACE BOUNDARY CONTOUR		
PARCEL BOUNDARY LINE		
LIMITS OF DISTURBANCE		
COE FRESHWATER WETLAND		
FRESHWATER WETLAND BUFFER		
OCRM CRITICAL LINE		
PHASE LINE		
FRESHWATER WETLAND SYMBOL		
CRITICAL AREA SYMBOL (SALTWATER WETLAND)		
GRAND TREE		
SIGNIFICANT TREE		
SPOT ELEVATION		
TREE PROTECTION		

### ABBREVIATIONS

ADG	ADVANCED DRAINAGE SYSTEMS (CORRUGATED PLASTIC PIPE)	PVC	POLYVINYL CHLORIDE
ARV	AIR RELEASE VALVE	RCP	REINFORCED CONCRETE PIPE
BFV	BUTTERFLY VALVE	RJ	RESTRAINED JOINT
BTM	BOTTOM	SS	SANITARY SEWER
CI	CAST IRON	TC	TOP OF CURB
CIPA	CORRUGATED METAL PIPE ARCH	TG	TOP OF GUTTER
CMP	CORRUGATED METAL PIPE	TP	TOP OF PAVEMENT
DI	DUCTILE IRON	TPPE	TOP OF PIPE
DP	DUCTILE IRON PIPE	TS	TOP OF SLAB
EL	ELEVATION	TW	TOP OF WALK
FG	FINISHED GRADE	TYP	TYPICAL
FL	FLANDED	W	WATER
FM	FORCE MAIN (SANITARY SEWER)	W/	WITH
FR	FRAME	WV	WATER VALVE
GI	GRATE INLET	"	DIAMETER
HDD	HORIZONTAL DIRECTIONAL DRILL		
IE	INVERT ELEVATION	IBBY	IBBY
KIU	KIAWAH ISLAND UTILITIES, INC.	CBY	CEDAR
LF	LINEAR FEET	CYP	CYPRESS
MAX	MAXIMUM	LO	LIVE OAK
MIN	MINIMUM	OAK	MISC. OAK
MJ	MECHANICAL JOINT	MAG	MAGNOLIA
OC	ON CENTER	MRT	MYRTLE
PC	POINT OF CURVE	PN	PALM
PEJ	PREGROUED EXPANSION JOINT	PNE	PINE
PT	POINT OF TANGENT		

**REDUNDANT**

SHEET:  
LEGEND & ABB

CLIENT:

KIAWAH ISLAND UTILITIES, INC.

LOCATION: CHARLESTON COUNTY, SOUTH CAROLINA

DATE: 8/18/2014

JOB NUMBER: J - 23197.0001

Kiawah Island Utility, Inc

OCRM-15-210-E

SHEET: 3 OF 15

SCALE: NA







PERMANENT WETLAND IMPACT (GRAVEL ACCESS ROAD)

TEMPORARY WETLAND IMPACT

LEGEND



THREE 95L-00-00-048  
BERKELEY COUNTY ELECTRIC  
COOPERATIVE, INC.  
PLAT BOOK 87, PAGE 157

PERMANENT WETLAND IMPACT A  
(0.06 AC.) WITH FILL

NEW 20' KIU GENERAL  
UTILITY EASEMENT

7' CHAIN LINK FENCE

TEMPORARY  
SILT FENCE (TYP)

SF

PROPOSED  
16" WATER MAIN  
INSTALLED BY  
OPEN CUT

FRESHWATER WETLAND LINE

FRESHWATER  
WETLAND LINE

FRESHWATER  
WETLAND

FRESHWATER  
WETLAND

Kiawah Island Utility, Inc

OCRM-15-210-E

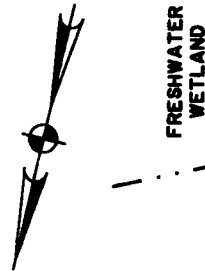
### WETLAND IMPACT A

PROPOSED ACTIVITY:  
REDUNDANT WATER SUPPLY MAIN  
CLIENT:  
KIAWAH ISLAND UTILITIES, LLC  
LOCATION: CHARLESTON COUNTY, SOUTH CAROLINA  
DATE: 8/18/2014  
JOB NUMBER: J - 23197.0001

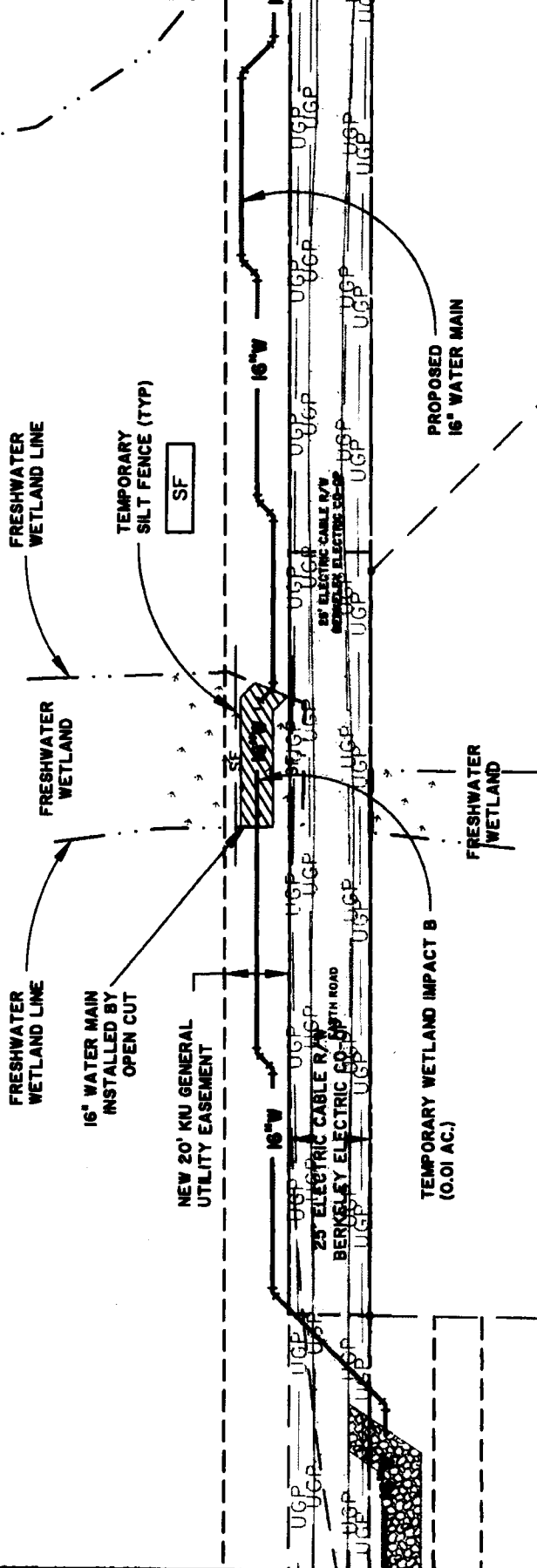
SHEET: 4 OF 15  
SCALE: 1" = 50'



PERMANENT WETLAND IMPACT  
 TEMPORARY WETLAND IMPACT



FRESHWATER WETLAND



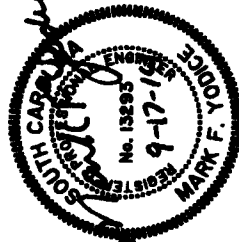
Kiawah Island Utility, Inc

OCRM-15-210-E

**WETLAND IMPACT B**

PROPOSED ACTIVITY:  
 REDUNDANT WATER SUPPLY MAIN  
 CLIENT:  
 KIAWAH ISLAND UTILITIES, LLC  
 LOCATION: CHARLESTON COUNTY, SOUTH CAROLINA  
 DATE: 8/18/2014  
 JOB NUMBER: J - 23197.0001

SHEET: 5 OF 15  
 SCALE: 1" = 50'



Kiawah Island Utility, Inc

OCRM-15-210-E

LEGEND



PERMANENT WETLAND IMPACT



TEMPORARY WETLAND IMPACT



SALTWATER WETLAND

PROPOSED DRILL SITE  
(HIGHLAND AREA)

TMS# 261-00-00-013  
BRYAN DAIRY  
DEED BOOK W048, PAGE 113

BEGIN HORIZONTALLY  
DRILLED SECTION

FRESHWATER  
WETLAND

CRITICAL LINE/TNW

SALTWATER  
WETLAND

PROPOSED  
16" WATER MAIN INSTALLED BY HDD  
(HORIZONTAL DIRECTIONAL DRILL)

CRITICAL LINE/TNW

NEW 20' KU GENERAL  
UTILITY EASEMENT

TEMPORARY  
SILT FENCE (TYP)

SF

FRESHWATER  
WETLAND

TEMPORARY MARSH MAT  
PLACEMENT FOR  
ACCESS

SALTWATER  
WETLAND

25' ELECTRIC CABLE R/V  
BERKELEY ELECTRIC CO-DR

TEMPORARY WETLAND IMPACT C  
FRESHWATER (0.01 AC.)  
SALTWATER (0.01 AC.)

TMS# 261-00-00-013  
BRYAN DAIRY  
DEED BOOK W048, PAGE 113

TMS# 260-00-00-113  
BRIARS CREEK GOLF, LLC  
PLAT BOOK EL, PAGE 396

WETLAND IMPACT C

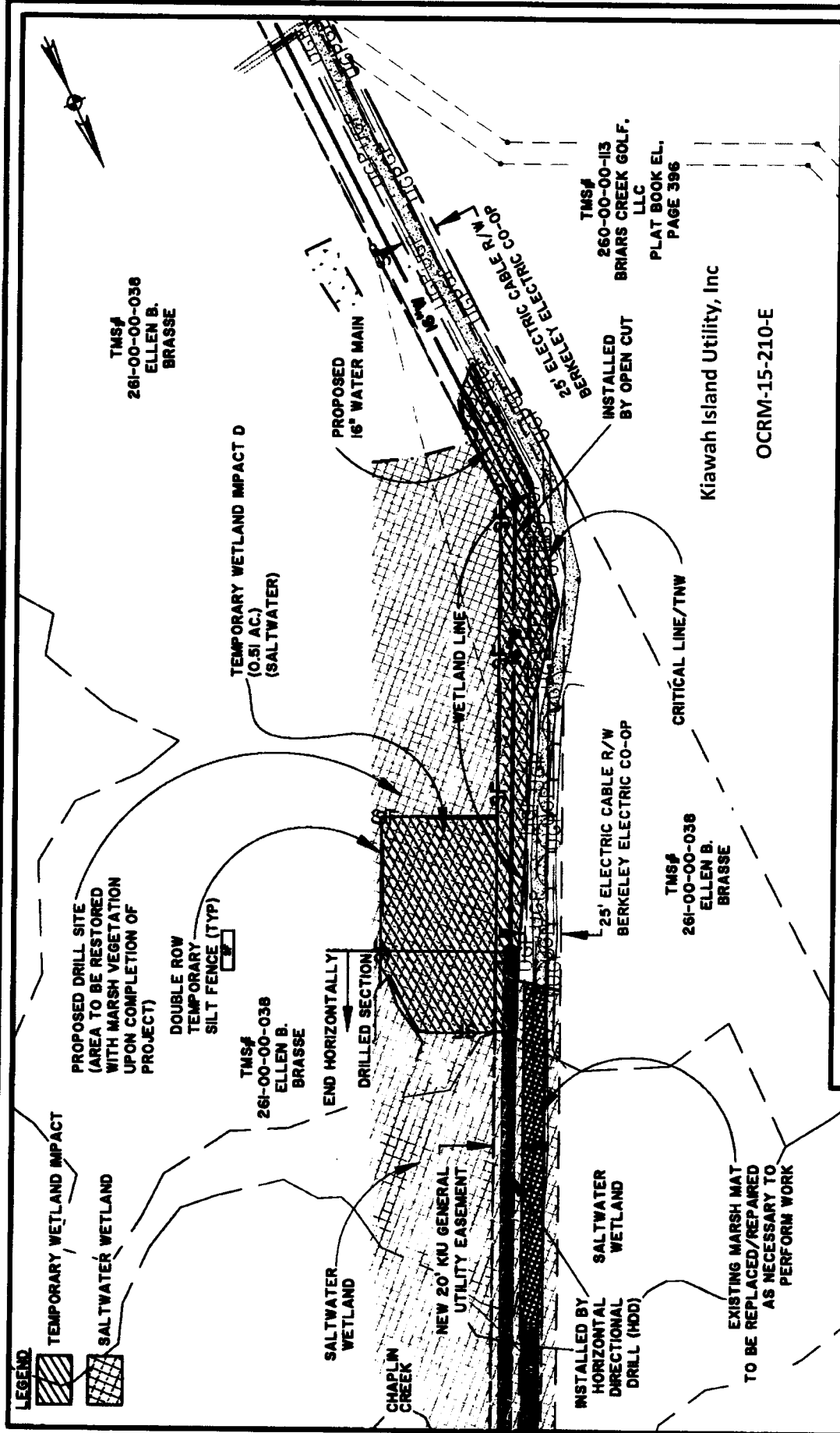
PROPOSED ACTIVITY:  
REDUNDANT WATER SUPPLY MAIN

CLIENT:  
KIAWAH ISLAND UTILITIES, LLC

LOCATION: CHARLESTON COUNTY, SOUTH CAROLINA  
DATE: 8/18/2014  
JOB NUMBER: J - 23197.0001

SHEET: 6 OF 15  
SCALE: 1" = 50'





TMS#  
261-00-00-036  
ELLEN B.  
BRASSE

TEMPORARY WETLAND IMPACT D  
(0.51 AC.)  
(SALTWATER)

PROPOSED  
16" WATER MAIN

WETLAND LINE

25' ELECTRIC CABLE R/W  
BERKELEY ELECTRIC CO-OP

TMS#  
260-00-00-113  
BRIARS CREEK GOLF,  
LLC  
PLAT BOOK EL,  
PAGE 396

INSTALLED  
BY OPEN CUT

Kiawah Island Utility, Inc

OCRM-15-210-E

TMS#  
261-00-00-036  
ELLEN B.  
BRASSE

TMS#  
261-00-00-036  
ELLEN B.  
BRASSE

END HORIZONTALLY

NEW 20' KIU GENERAL  
UTILITY EASEMENT

INSTALLED BY  
HORIZONTAL  
DIRECTIONAL  
DRILL (HDD)

EXISTING MARSH MAT  
TO BE REPLACED/REPAIRED  
AS NECESSARY TO  
PERFORM WORK

### WETLAND IMPACT D

PROPOSED ACTIVITY:  
REDUNDANT WATER SUPPLY MAIN

CLIENT:  
KIAWAH ISLAND UTILITIES, LLC

LOCATION: CHARLESTON COUNTY, SOUTH CAROLINA  
DATE: 8/18/2014  
JOB NUMBER: J - 23197.0001

SHEET: 7 OF 15  
SCALE: 1" = 100'



**LEGEND**

TEMPORARY WETLAND IMPACT



SALTWATER WETLAND



TMS#  
261-00-00-038  
ELLEN B. BRASSE

TMS#  
261-00-00-013  
BRYAN DAIRY  
DEED BOOK W048,  
PAGE 113

TMS#  
261-00-00-038  
ELLEN B. BRASSE

CRITICAL LINE/TNW

PROPOSED  
16" WATER MAIN

INSTALLED BY OPEN CUT

NEW 20' KIU GENERAL  
UTILITY EASEMENT

25' ELECTRIC CABLE R/W  
BERKELEY ELECTRIC CO-OP

TEMPORARY WETLAND IMPACT E  
(0.04 AC.)

EXISTING BEC EASEMENT (ACCESS)

SALTWATER  
WETLAND

TEMPORARY  
SET PILE (TPI)

TMS#  
260-00-00-113  
BRIARS CREEK  
GOLF, LLC  
PLAT BOOK EL,  
PAGE 396

Kiawah Island Utility, Inc

OCRM-15-210-E

**WETLAND IMPACT E**

PROPOSED ACTIVITY:  
REDUNDANT WATER SUPPLY MAIN

CLIENT:  
KIAWAH ISLAND UTILITIES, LLC

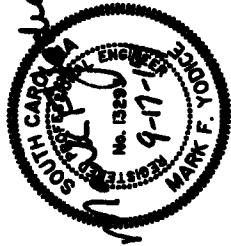
LOCATION: CHARLESTON COUNTY, SOUTH CAROLINA

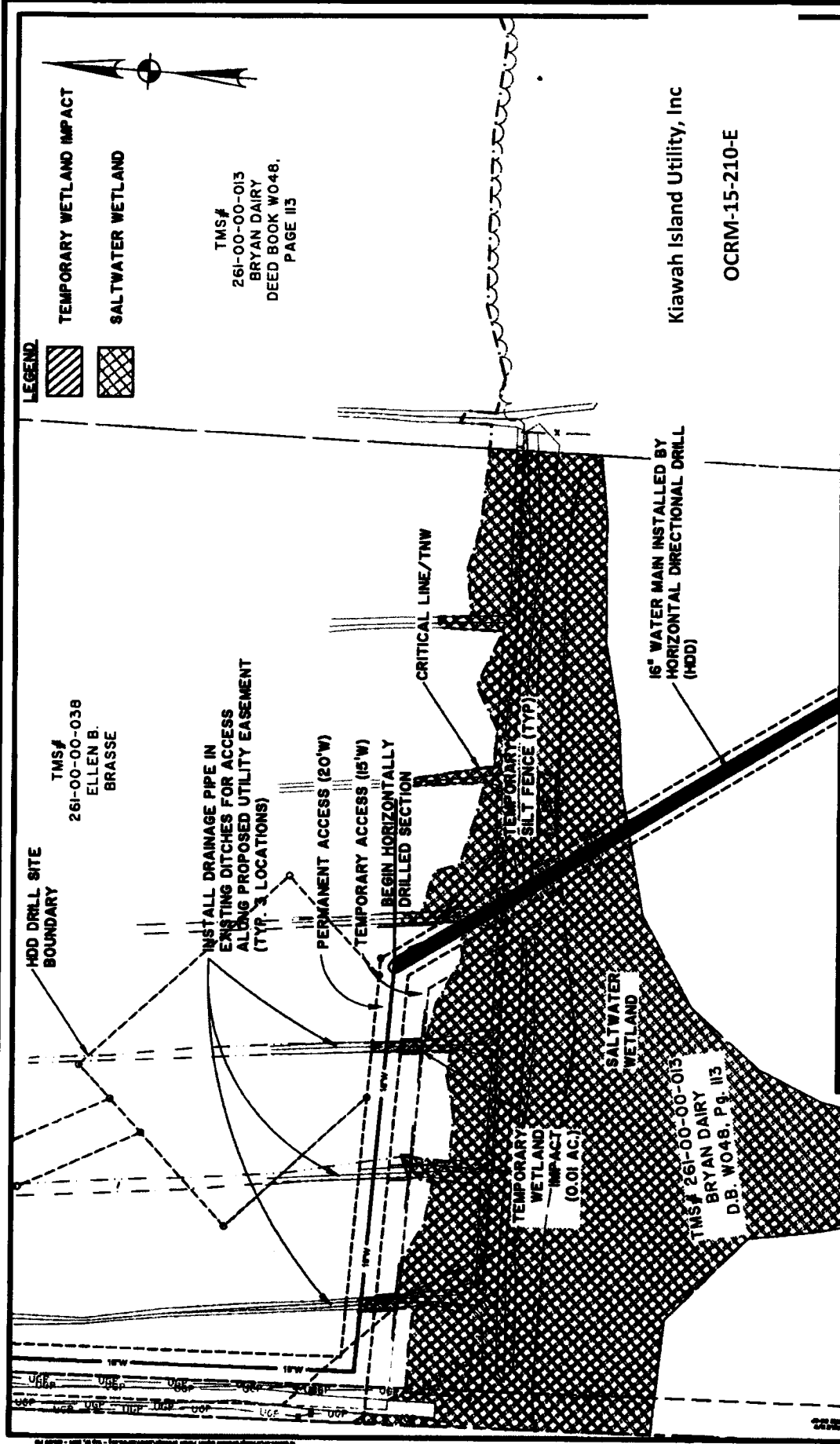
DATE: 8/18/2014

JOB NUMBER: J - 23197.0001

SHEET: 8 OF 15

SCALE: 1" = 50'





**WETLAND IMPACT F**

PROPOSED ACTIVITY:  
REDUNDANT WATER SUPPLY MAIN

CLIENT:  
KIWAH ISLAND UTILITIES, LLC

LOCATION: CHARLESTON COUNTY, SOUTH CAROLINA  
DATE: 8/18/2014  
JOB NUMBER: J - 23197.0001

PROF. ENGINEER  
SOUTH CAROLINA  
No. 19260  
9-17-14  
MARK F. YODY

CERTIFICATE OF  
SOUTH CAROLINA  
THOMAS  
& HUTTON  
ENGINEERING  
CO.  
No. 000885

**WETLAND IMPACT F**

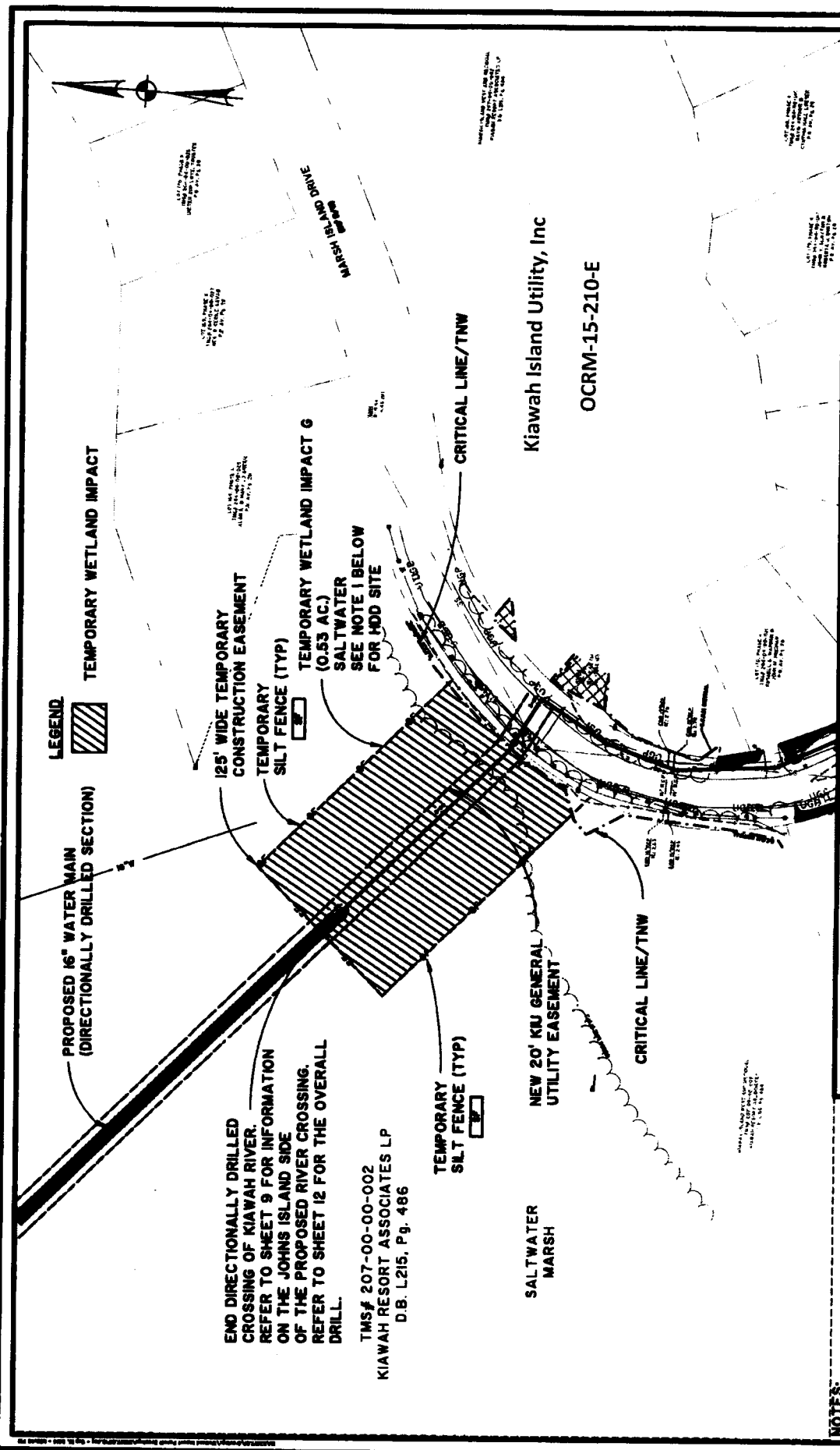
PROPOSED ACTIVITY:  
REDUNDANT WATER SUPPLY MAIN

CLIENT:  
KIWAH ISLAND UTILITIES, LLC

LOCATION: CHARLESTON COUNTY, SOUTH CAROLINA  
DATE: 8/18/2014  
JOB NUMBER: J - 23197.0001

PROF. ENGINEER  
SOUTH CAROLINA  
No. 19260  
9-17-14  
MARK F. YODY

CERTIFICATE OF  
SOUTH CAROLINA  
THOMAS  
& HUTTON  
ENGINEERING  
CO.  
No. 000885



**LEGEND**



PROPOSED 16" WATER MAIN  
(DIRECTIONALLY DRILLED SECTION)

TEMPORARY WETLAND IMPACT

125' WIDE TEMPORARY  
CONSTRUCTION EASEMENT

TEMPORARY  
SILT FENCE (TYP)

TEMPORARY WETLAND IMPACT G  
(0.53 AC.)  
SALT WATER  
SEE NOTE I BELOW  
FOR HDD SITE

TEMPORARY  
SILT FENCE (TYP)

SALT WATER  
MARSH

NEW 20' KU GENERAL  
UTILITY EASEMENT

CRITICAL LINE/TNW

CRITICAL LINE/TNW

END DIRECTIONALLY DRILLED  
CROSSING OF KIAWAH RIVER.  
REFER TO SHEET 9 FOR INFORMATION  
ON THE JOHNS ISLAND SIDE  
OF THE PROPOSED RIVER CROSSING.  
REFER TO SHEET 12 FOR THE OVERALL  
DRILL.

TMS# 207-00-00-002  
KIAWAH RESORT ASSOCIATES LP  
D.B. L215, Pg. 486

Kiawah Island Utility, Inc  
OCRM-15-210-E

**NOTES:**

1. A GEOTEXTILE LAYER WILL BE PLACED ON THE EXISTING GROUND, THEN COVERED WITH FILL MATERIAL IN ORDER TO CREATE AN ELEVATED PAD FOR THE HORIZONTAL DIRECTIONAL DRILL (HDD) CONSTRUCTION EQUIPMENT. UPON COMPLETION OF THE CONSTRUCTION ACTIVITIES, THE FILL MATERIAL AND THE GEOTEXTILE LAYER WILL BE REMOVED, AND THE AREA RESTORED TO PRE-CONSTRUCTION CONDITIONS.

**WETLAND IMPACT G**

PROPOSED ACTIVITY:

REDUNDANT WATER SUPPLY MAIN

CLIENT:

KIAWAH ISLAND UTILITIES, LLC

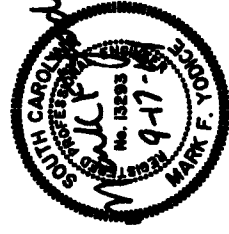
LOCATION: CHARLESTON COUNTY, SOUTH CAROLINA

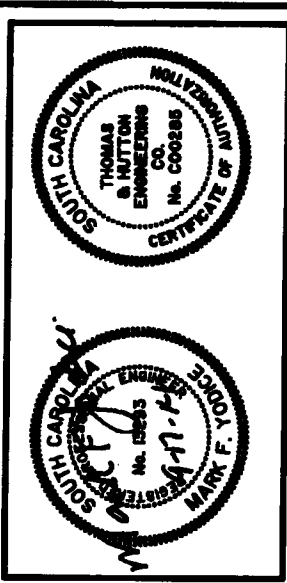
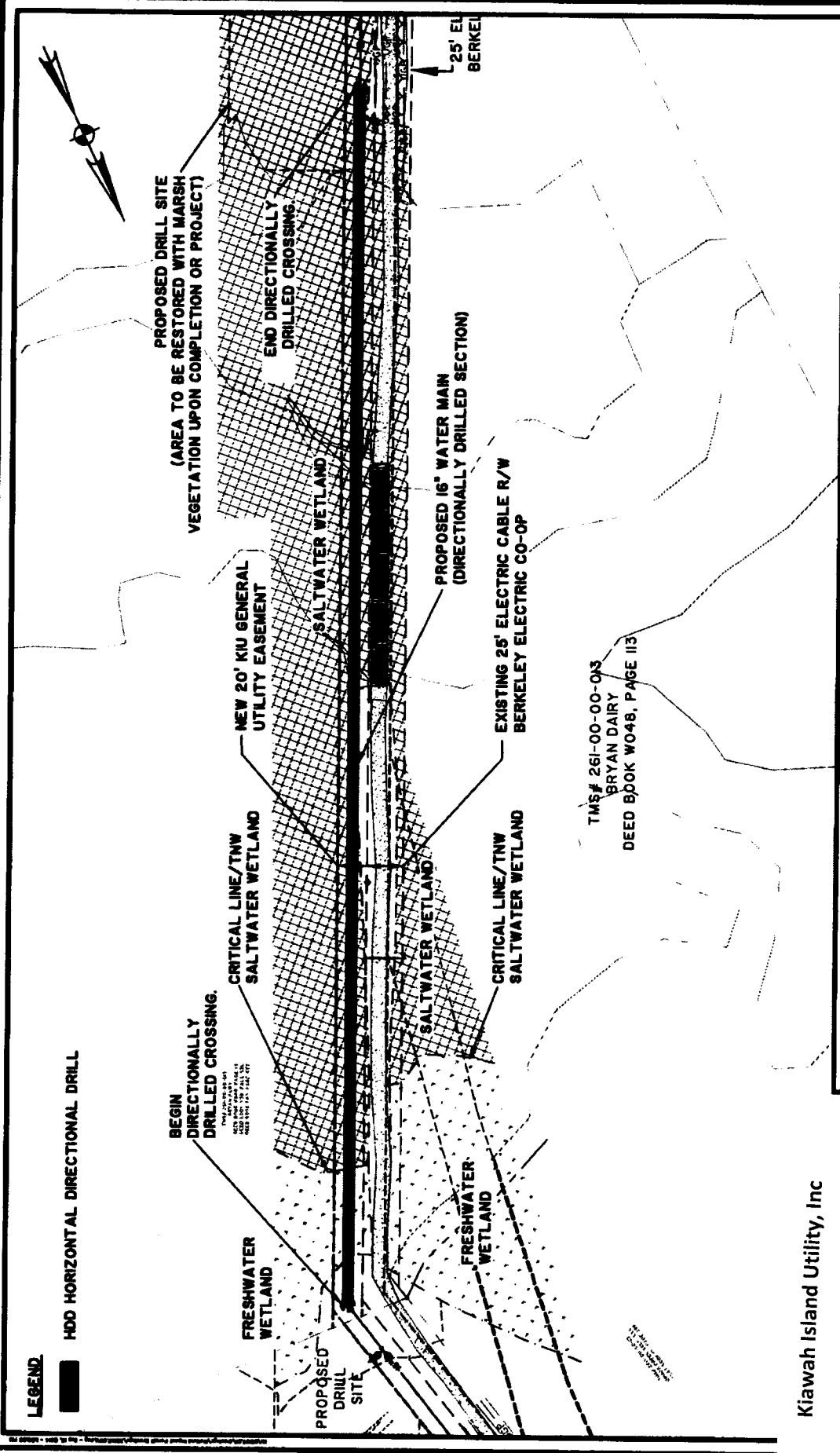
DATE: 8/18/2014

SHEET: 10 OF 15

JOB NUMBER: J - 23197.0001

SCALE: 1" = 100'





**HDD IMPACT 1**  
 PROPOSED ACTIVITY:  
**REDUNDANT WATER SUPPLY MAIN**  
 CLIENT:  
**KIAWAH ISLAND UTILITIES, LLC**  
 LOCATION: CHARLESTON COUNTY, SOUTH CAROLINA  
 DATE: 8/18/2014  
 JOB NUMBER: J - 23197.0001

SHEET: 11 OF 15  
 SCALE: 1" = 100'

Kiawah Island Utility, Inc

OCRM-15-210-E

ALL RIGHTS RESERVED BY THE ENGINEER. NO PART OF THIS DRAWING IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER.