

**JOINT**  
**PUBLIC NOTICE**

**CHARLESTON DISTRICT, CORPS OF ENGINEERS**  
**69A Hagood Avenue**  
**Charleston, South Carolina 29403-5107**  
**and the**

**S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL**  
**OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT**  
**1362 McMillan Avenue, Suite 400**  
**Charleston, South Carolina 29405**

REGULATORY DIVISION  
Refer to: P/N # 2011-1359-1T

12 January 2012

Pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403), Sections 401 and 404 of the Clean Water Act (33 U.S.C. 1344), and the South Carolina Coastal Zone Management Act (48-39-10 et seq.) an application has been submitted to the Department of the Army and the S.C. Department of Health and Environmental Control by

**SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES (SCDNR)**  
**C/O DEAN HARRIGAL, SCDNR**  
**585 DONNELLEY DRIVE**  
**GREEN POND, SOUTH CAROLINA 29446**

for a permit to excavate and fill wetlands within the managed tidal wetlands located on the

**ASHEPOO AND SOUTH EDISTO RIVERS**

at the Bear Island Wildlife Management Area (WMA)/Lowcountry NAWCA II located in eastern Colleton County off of Bennett's Point Road at 42 Titi Road in Green Pond, Colleton County, South Carolina (Latitude 32.592 / Longitude -80.46412).

**NOTICE**

is hereby given that written statements regarding the proposed work will be received by the **Corps** until

**15 Days from the Date of this Notice,**

and **SCDHEC** will receive written statements regarding the proposed work until

**30 Days from the Date of this Notice**

from those interested in the activity and whose interests may be affected by the proposed work.

The proposed work consists of the installation of four (4) new rice field trunks, seven (7) new spillway boxes, the removal of one (1) culvert, the removal of one (1) rice field trunk, and the construction two new embankments with two (2) new spillway boxes to divide an existing 422 acre managed wetland cell into two comparable sized units at the Bear Island East Unit. A total of 2.2 acres of tidal wetlands will be impacted by fill and a total of 2.872 acres of tidal wetlands will be

impacted by excavation. Specifically, the work consists of the following:

- Installation of a new rice trunk RT #1 will occur within an existing embankment between Sara and Ashepoo impoundments. Installation of RT #1 will establish connectivity between these two impoundments and will require the excavation of 0.014 acres of tidal wetlands located within the impoundments
- Installation of a new rice trunk RT #2 will occur within an existing embankment that crosses Mathew's Canal and impedes flow of Mathew's Canal to Freshwater, Mosquito, Larvae, Lower Tank, Upper Pine and Pinkney Break impoundments. The installation of the rice trunk will require the excavation of 0.010 acres of tidal wetlands within the canal.
- Installation of a new rice trunk RT #3 will occur within an existing embankment along Mathew's Canal. Installation of RT #3 will establish independent connectivity of Larvae impoundment to Mathew's Canal and will require the excavation of 0.004 acres of tidal wetlands within the impoundment and canal.
- Installation of a new rice trunk RT #4 will occur within an existing embankment along Mathew's Canal. Installation of RT #4 will establish independent connectivity of Lower Tank impoundment to Mathew's Canal and will require the excavation of 0.004 acres of tidal wetlands within the impoundment and canal.
- An existing culvert located near RT #2 between Goose and Larvae impoundments will be removed once independent water supply is established to Larvae from Mathew's Canal. The embankment will be repaired after removal of the culvert and all fill material will be placed within the current footprint. No impacts are associated with this activity.
- The installation of new spillway box SWB #3 will occur within an existing embankment located between Minkey and Lower Hog impoundments. Installation of SWB #3 will establish a connection between Minkey and Lower Hog impoundments and will require the excavation of 0.004 acres of tidal wetlands located within the impoundments.
- The installation of new spillway box SWB #4 will occur within an existing embankment located between Minkey and Upper Hog impoundments. Installation of SWB #4 will establish a connection between Minkey and Upper Hog impoundments and will require the excavation of 0.005 acres of tidal wetlands located within the impoundments.
- The installation of new spillway box SWB #5 will occur within an existing embankment located between Edisto and Goose impoundments. Installation of SWB #5 will enhance water delivery between the impoundments and will require the excavation of 0.004 acres of tidal wetlands located within the impoundments.
- The installation of new spillway box SWB #6 will occur within an existing embankment located between Mary's House and Pinkney Break impoundments. Installation of SWB #6 will enhance water delivery between the impoundments and will require the excavation of 0.022 acres of tidal wetlands located within the impoundments.
- The installation of a new double spillway box DBL SWB #1 will occur within an existing embankment between Ashepoo and Mary's House impoundments. The embankment is currently equipped with an aged rice trunk that will be removed and the embankment will be repaired with fill material being placed within the current footprint. The new DBL SWB #1 will be installed in close proximity to the existing rice trunk location. Installation of DBL

SWB #1 will allow for water to be consistent and more easily delivered and will require the excavation of 0.005 acres of tidal wetlands located within the impoundments.

- The construction of a two (2) new embankments will occur within the Ashepoo impoundment and will divide the 422 acre impoundment into two comparable units. For construction of Cross Embankment #1, the work involves the placement of fill material into 1.9 acres (6,390 cubic yards of material) of tidal wetlands for construction of the field-dike and the excavation of 2.4 acres ( 6,390 cubic yards of material) for construction of the canal. Two (2) new spillway boxes SWB #1 and SWB #2 will also be installed in Cross Embankment #1. For construction of Cross Embankment #2, the work involves the placement of fill material into 0.3 acres (1,005 cubic yards of material) of tidal wetlands for construction of the field-dike and the excavation of 0.4 acres (1,005 cubic yards of material) for construction of the canal. A total of 2.2 acres of tidal wetlands will be impacted by fill and 2.8 acres of tidal wetlands will be impacted by excavation. Material obtained from excavation of the canals will be used as fill for construction of the field-dikes.

The purpose of the project is to enhance water delivery to individual units of the wetland complex thereby improving habitat management capabilities and water quality for wetland wildlife including resident and migratory birds.

The East Wetland Management Unit of Bear Island WMA currently cannot be managed effectively in accordance with published scientific wetland management strategies due to limitations of independent water delivery to and within several impoundments (units) and differences in wetland elevations within an impoundment. Water supply for the complex is sourced from either the Ashepoo or South Edisto Rivers and is dependent upon the impoundment location in relation to Ti-Ti Road. Currently, water brought into the system from the South Edisto River is primarily delivered through Mathew's Canal. Mathew's Canal bisects several of the larger impoundments on the north end of the property and allows independent water delivery to most of these impoundments, but it currently does not deliver water independently to all impoundments within the system due to limitations in the number of water control structures. This has a direct effect on the water quality within the impoundments and discharged from the impoundments, as well as wetland habitat management objectives. The proposed installation of three (3) new rice trunks (RT #2, RT #3, and RT #4) and one (1) new spillway box (SWB #5) and removal of an existing culvert will achieve independent water control and interflows between impoundments in this complex will be enhanced.

Similar issues in water delivery occur in the impoundment on the west side of Ti-Ti Road. Currently all impoundments, with exception of Upper Hog, receive independent water supplied through rice trunks on the Ashepoo River. However, there is limited connectivity between impoundments which limits water circulation across the complex.

The Ashepoo impoundment is the largest impoundment within the East Unit and has a significant elevation difference between the northwest and the southeast end which limits effective management. This difference restricts dynamic wetland management due to variances in water levels across the impoundment when water is delivered into and across the system. The northwest portion of the Ashepoo Impoundment consists of several channels and ponds that can be managed for widgeon grass (*Ruppia maratina*) with the remainder of this upper area dominated by smooth cord grass (*Spartina alterniflora*) and black needlerush (*Juncus roemerianus*). The southeast portion of the impoundment consists of an elevated bed where moist soil plants, spike-rushes and other wetland emergents are seasonally established. The

changes in the plant community contribute to heterogeneity across the system that provides improved foraging and nesting habitat for a wider range of species including some endangered and several species of concern. However, water on these moist-soil flats cannot be maintained at adequate levels without impacting hydrology on the northwest portion of the unit. As in the other systems, this has a direct effect on the water quality in and discharged from the impoundments and on the habitat management. Currently in the Ashepoo impoundment, all water is discharged across the entire system and the overland holding capacity is dependent on the water levels of the entire system. Additionally, connectivity to adjacent impoundments is limited and the water circulation is inadequate. By compartmentalizing the larger wetland management unit and increasing the number of water control structures, the applicant can improve the quality of discharged waters by avoiding algal blooms and circulating water more effectively to reduce increased water temperatures thereby promoting higher levels of dissolved oxygen. This will provide additional opportunities to increase the diversity and density of favorable wetland plants within the system that are often difficult to establish in the summer months during periods of high water temperatures. Another consideration for compartmentalization of this unit relates to climate change adaptation. The importance of these highly productive systems is well documented and in the event of wetland loss to sea level rise, the applicant will be able to manage and maintain individual compartments thereby buffering larger wetland systems and their many and valuable ecosystem functions. A final consideration for the importance of this project involves the increasing public use during times of peak waterfowl, shorebird and wading bird utilization. Bear Island WMA annually supports a wide range and large concentrations of avifauna and other wetland dependent species, and the presence of these species creates considerable public demand for use. The 2011 Mid-winter survey, conducted by the USFWS in conjunction with SCDNR, estimated the waterfowl concentration in the state for surveyed areas to be 140,564 individuals. Of these, 10% were wintering at Bear Island WMA. The numbers are similar for the trend data over the last 10 years.

Wetland management within the completed units will follow the management plan for Bear Island described in the 2012 revised management plan. Additions to the current management plan of the northwestern unit of Ashepoo impoundment which will be manipulated annually to encourage the development of emergent and submergent vegetation and the maintenance of high water quality. This suite of conditions should provide excellent habitat for wintering and breeding waterfowl and a variety of other avian species. The southeastern unit will be managed similar to the upper unit for emergent wetland vegetation with the primary focus on moist-soil management and improved foraging and nesting habitat for shorebirds and waders.

Impacts to 0.55 acres of wetlands as a result of fill and 0.72 acres of wetlands as a result of excavation were avoided by the applicant choosing to only divide the Ashepoo impoundment into two smaller impoundments as opposed to three impoundments as originally planned. Minimization of wetland impacts has occurred by utilizing remnant embankments and uplands for the location and construction of the two new cross embankments within the Ashepoo impoundment.

The applicant is not proposing compensatory mitigation as the proposed project is designed to enhance wetland habitat through better water management capabilities. The connectivity between wetlands provided by the new water control structures will improve water quality through overall circulation and sheet flow.

**NOTE: Plans depicting the work described in this notice are available and will be provided, upon receipt of a written request, to anyone that is interested in obtaining a copy of the plans for the specific project. The request must identify the project of interest by public notice number and a self-addressed stamped envelope must also be provided for mailing the drawings to you. Your request for drawings should be addressed to the**

**U.S. Army Corps of Engineers  
ATTN: REGULATORY DIVISION  
69A Hagood Avenue  
Charleston, South Carolina 29403-5107**

The District Engineer has concluded that the discharges associated with this project, both direct and indirect, should be reviewed by the South Carolina Department of Health and Environmental Control in accordance with provisions of Section 401 of the Clean Water Act. As such, this notice constitutes a request, on behalf of the applicant, for certification that this project will comply with applicable effluent limitations and water quality standards. The work shown on

this application must also be certified as consistent with applicable provisions the Coastal Zone Management Program (15 CFR 930). The District Engineer will not process this application to a conclusion until such certifications are received. The applicant is hereby advised that supplemental information may be required by the State to facilitate the review.

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. Implementation of the proposed project would impact 5.072 acres of estuarine substrates and emergent wetlands utilized by various life stages of species comprising the red drum, shrimp, and snapper-grouper management complexes. Our initial determination is that the proposed action would not have a substantial individual or cumulative adverse impact on EFH or fisheries managed by the South Atlantic Fishery Management Council and the National Marine Fisheries Service (NMFS). Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the NMFS.

The District Engineer has consulted the most recently available information and has determined that the project will have no effect on any Federally endangered, threatened, or proposed species and will not result in the destruction or adverse modification of designated or proposed critical habitat. This public notice serves as a request to the U.S. Fish and Wildlife Service and the National Marine Fisheries Service for any additional information they may have on whether any listed or proposed endangered or threatened species or designated or proposed critical habitat may be present in the area which would be affected by the activity, pursuant to Section 7(c) of the Endangered Species Act of 1973 (as amended).

Pursuant to Section 106 of the National Historic Preservation Act (NHPA), this public notice also constitutes a request to Indian Tribes to notify the District Engineer of any historic properties of religious and cultural significance to them that may be affected by the proposed undertaking.

In accordance with the NHPA, the District Engineer has also consulted the latest published version of the National Register of Historic Places for the presence or absence of registered properties, or properties listed as being eligible for inclusion therein, and this worksite is not included as a registered property or property listed as being eligible for inclusion in the Register. To insure that other cultural resources that the District Engineer is not aware of are not overlooked, this public notice also serves as a request to the State Historic Preservation Office to provide any information it may have with regard to historic and cultural resources.

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

The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the activity on the public interest and will include application of the guidelines promulgated by the Administrator, Environmental Protection Agency (EPA), under authority of Section 404(b) of the Clean Water Act and, as appropriate, the criteria established under authority of Section 102 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the project must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the project will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production and, in general, the needs and welfare of the people. A permit will be granted unless the District Engineer determines that it would be contrary to the public interest. In cases of conflicting property rights, the Corps of Engineers cannot undertake to adjudicate rival claims.

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

If there are any questions concerning this public notice, please contact **Tracy Dotolo Sanders** at 843-329-8044 or toll free at 1-866-329-8187.



**DUCKS  
UNLIMITED**

**DUCKS UNLIMITED, INC.**

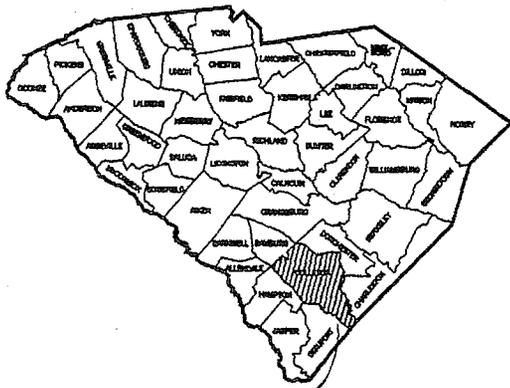
# BEAR ISLAND WILDLIFE MANAGEMENT AREA

COLLETON COUNTY  
IN COOPERATION WITH

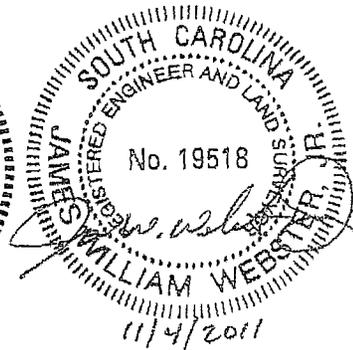
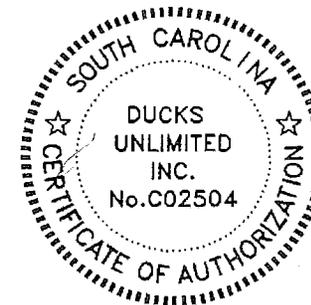
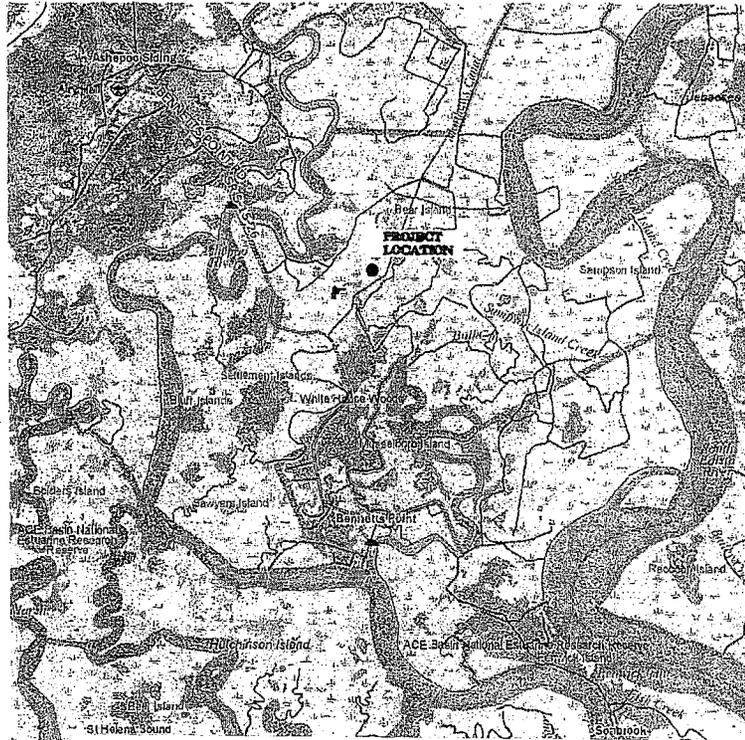
**SC DEPARTMENT OF NATURAL RESOURCES**

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- 10 DOUBLE SPILLWAY BOX #1 SECTION
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PROJECT LOCATION



**NOTICE:**  
S.C.D.H.E.C.-O.C.R.M. CRITICAL LINE INDICATED HEREON WERE  
CERTIFIED BY FRED WALLETT ON 10-4-2011

**CAUTION**  
The engineer preparing these plans will not be responsible for,  
or liable for, unauthorized changes to or uses of these plans. All  
changes to the plans must be in writing and must be approved by the  
preparer of these plans.

**SCDNR-Bear Island WMA-East Unit Project  
Drawings- P/N 2011-1359-1T**

January 12, 2012

Sheet 1 of 25

THIS DRAWING FOR PERMIT PURPOSES ONLY.  
NOT TO BE USED FOR BIDDING OR CONSTRUCTION

APPLICATION NUMBER:	DUCKS UNLIMITED INC.	PROJECT NO.:	DU-SC-20-02
SUPPORTED ACTIVITY:	CONSTRUCT CROSS DIKE & INSTALL WATER CONTROL STRUCTURES	PROJECT TITLE:	BEAR ISLAND COVER SHEET
DATE:	NOVEMBER 4, 2011	PROJECT LOCATION:	BEAR ISLAND WMA
OWNER:	COLLETON	PROJECT COORDINATOR:	BILLY WEBSTER
		DATE:	11/4/2011



SOUTHERN REGIONAL OFFICE 195 Business Park Drive, Suite E Ridgewood, MS 39167 Certificate of Authorization No. C02204	S.C.D.N.R. 6/20/2011	SHEET 1 OF 19
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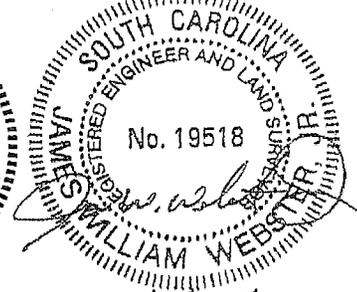
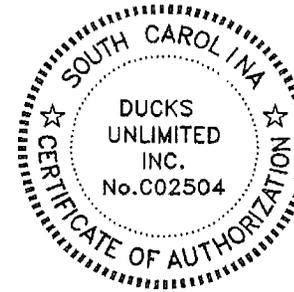
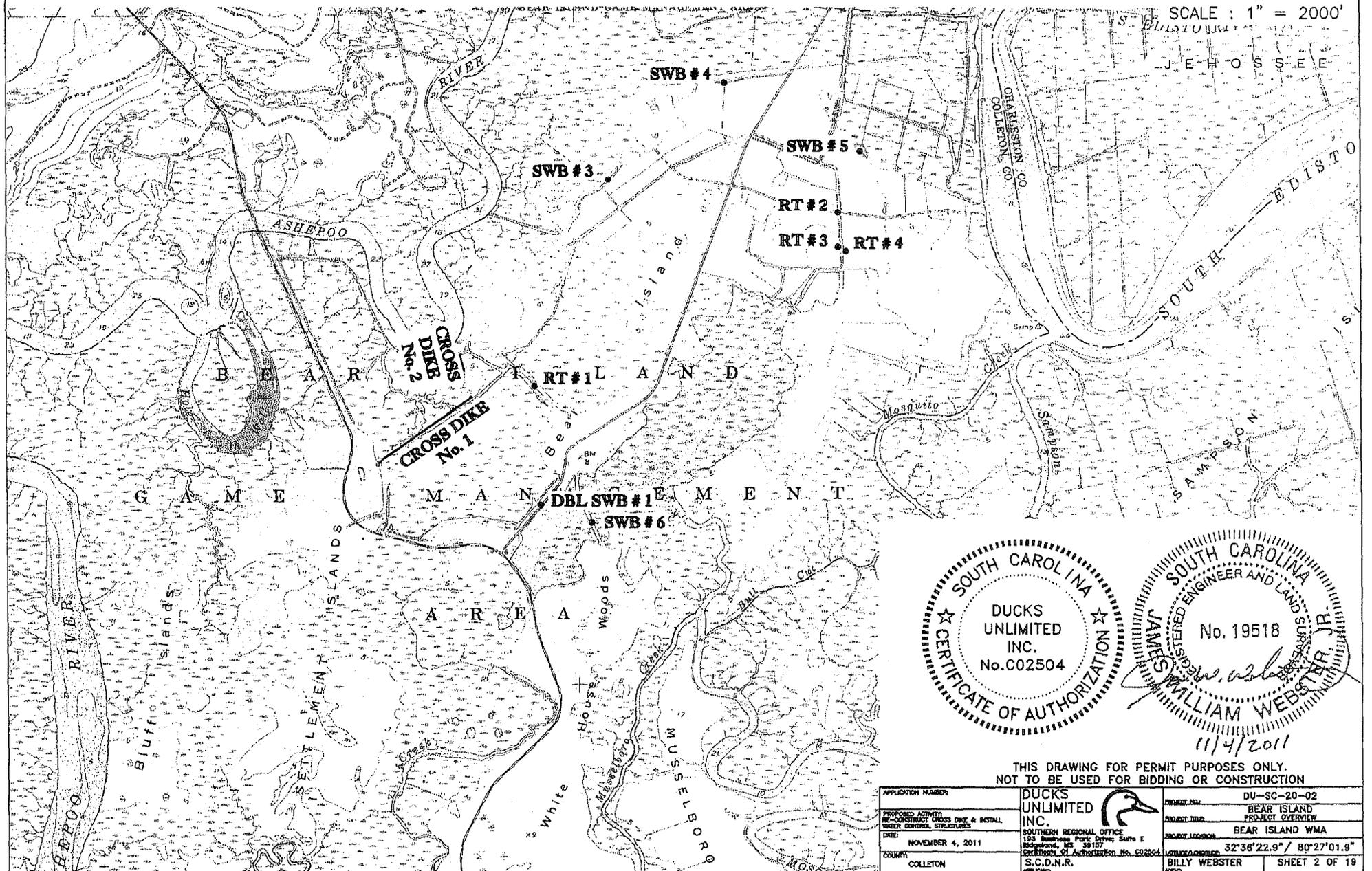
SCDNR-Bear Island WMA-East Unit Project  
 Drawings- P/N 2011-1359-1T

January 12, 2012

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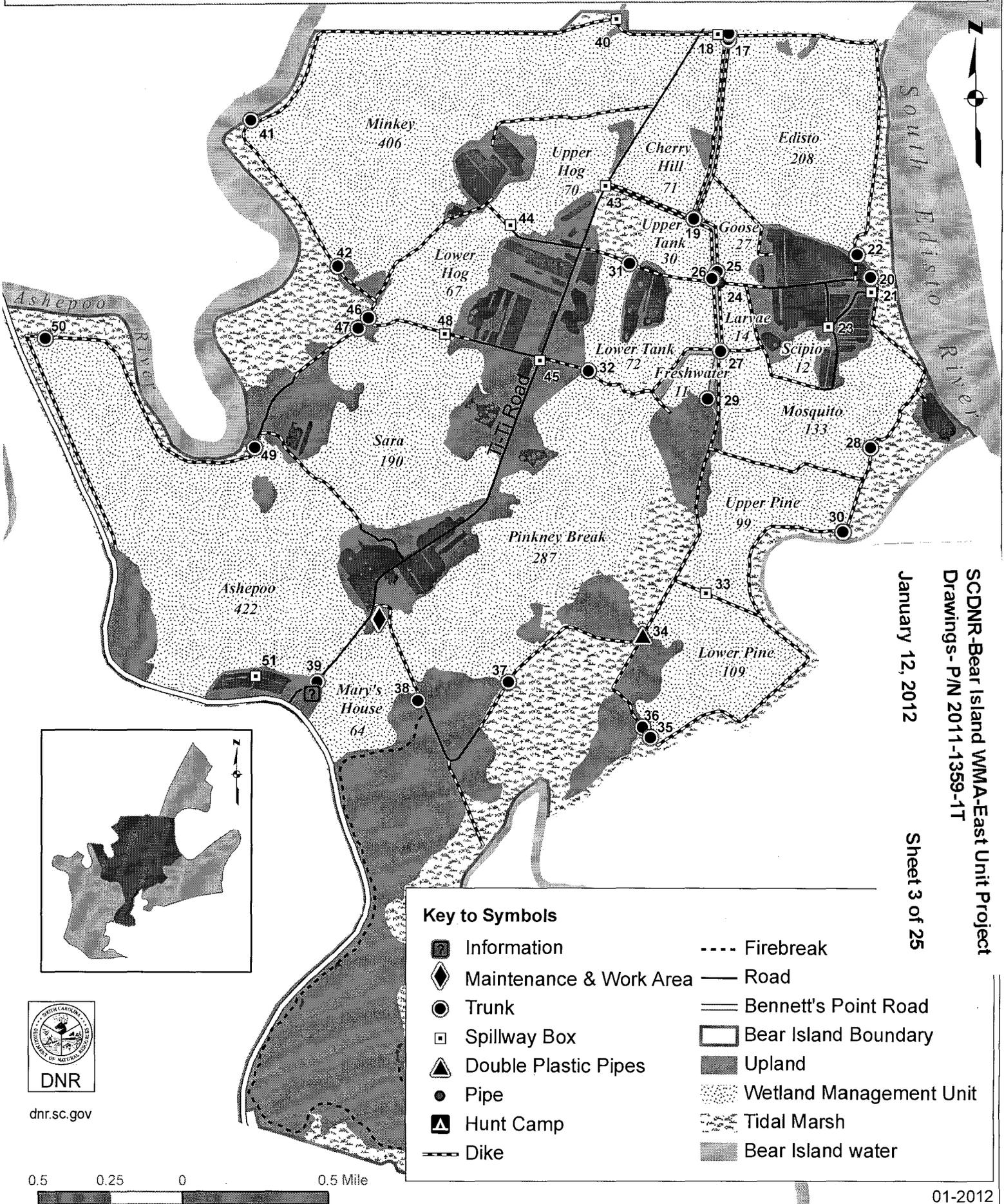
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THIS DRAWING FOR PERMIT PURPOSES ONLY.  
 NOT TO BE USED FOR BIDDING OR CONSTRUCTION

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PROPOSED ACTIVITY:	RE-CONSTRUCT CROSS DIKE & INSTALL WATER CONTROL STRUCTURES	PROJECT TITLE:	BEAR ISLAND PROJECT OVERVIEW
DATE:	NOVEMBER 4, 2011	PROJECT LOCATION:	32°36'22.9" / 80°27'01.9"
COUNTY:	COLLETON	COMMISSIONER:	BILLY WEBSTER
		APP. NO.:	SHEET 2 OF 19

Fig. 2. East Unit of Bear Island Wildlife Management Area with Existing Water Control Structures



SCDNR-Bear Island WMA-East Unit Project  
 Drawings- P/N 2011-1359-1T  
 January 12, 2012  
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**Key to Symbols**

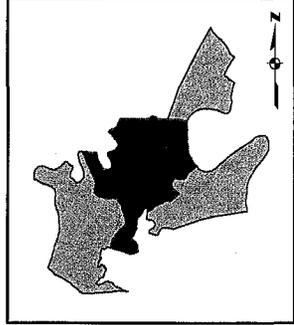
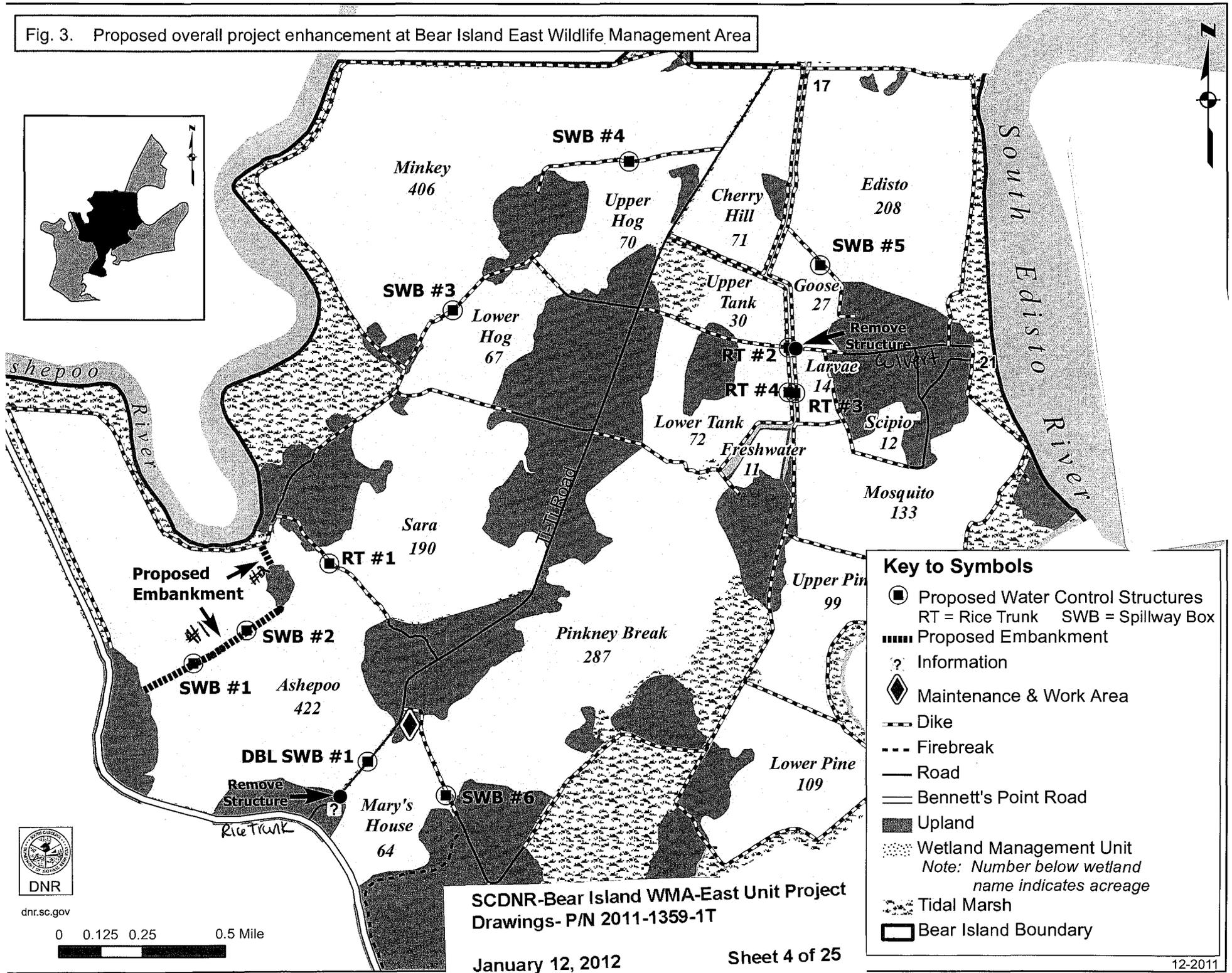
- |  |                         |  |                         |
|--|-------------------------|--|-------------------------|
|  | Information             |  | Firebreak               |
|  | Maintenance & Work Area |  | Road                    |
|  | Trunk                   |  | Bennett's Point Road    |
|  | Spillway Box            |  | Bear Island Boundary    |
|  | Double Plastic Pipes    |  | Upland                  |
|  | Pipe                    |  | Wetland Management Unit |
|  | Hunt Camp               |  | Tidal Marsh             |
|  | Dike                    |  | Bear Island water       |



dnr.sc.gov

0.5 0.25 0 0.5 Mile

Fig. 3. Proposed overall project enhancement at Bear Island East Wildlife Management Area

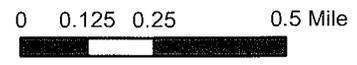


**Key to Symbols**

- Proposed Water Control Structures  
RT = Rice Trunk SWB = Spillway Box
- ▬▬▬▬ Proposed Embankment
- ⊕ Information
- ◆ Maintenance & Work Area
- ▬▬▬ Dike
- - - Firebreak
- Road
- ▬▬▬ Bennett's Point Road
- Upland
- ▨ Wetland Management Unit  
Note: Number below wetland name indicates acreage
- ▨ Tidal Marsh
- ▭ Bear Island Boundary



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SCDNR-Bear Island WMA-East Unit Project Drawings- P/N 2011-1359-1T

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12-2011

Fig. 4. Proposed Mathew's Canal Enhancement at Bear Island East Wildlife Management Area

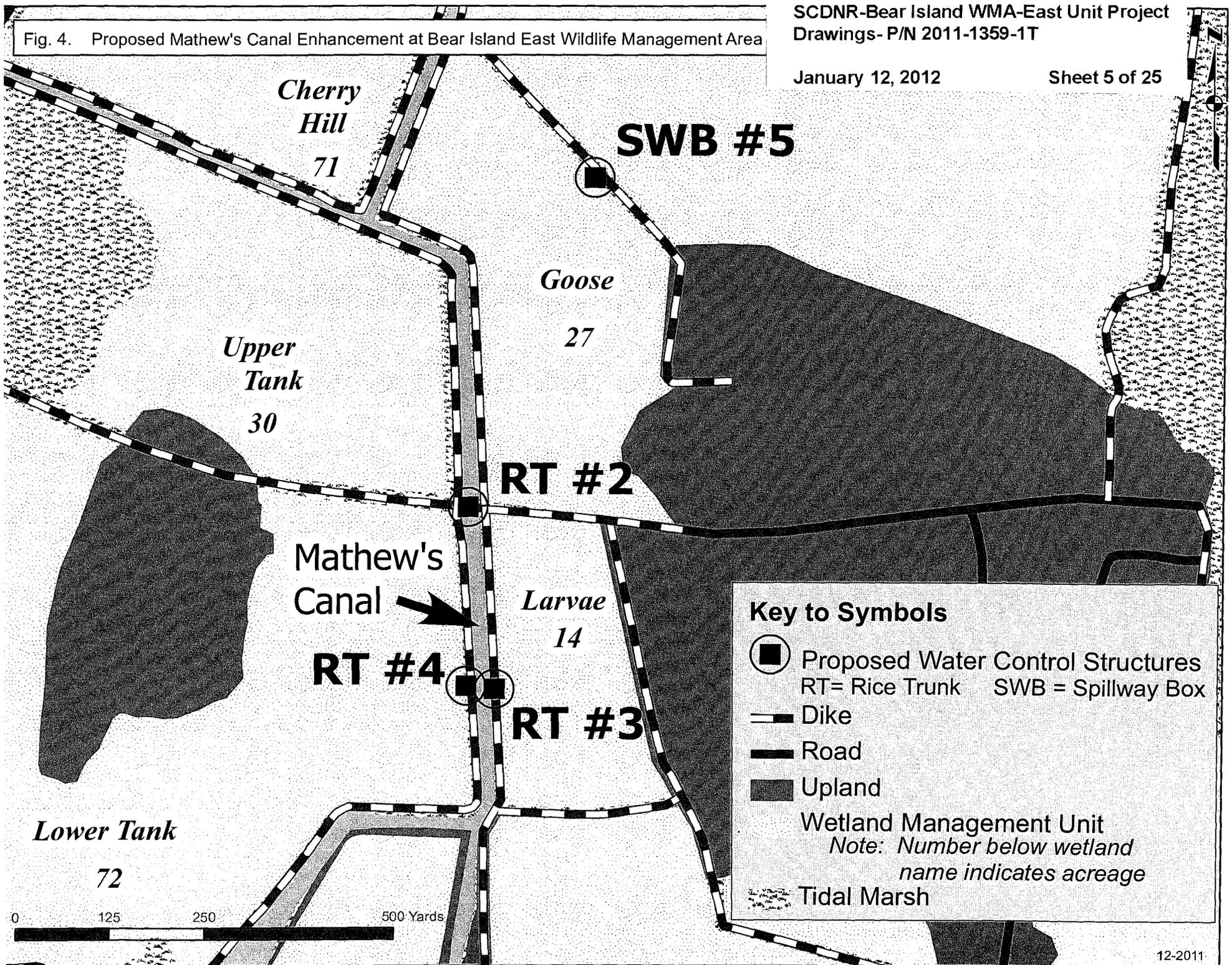
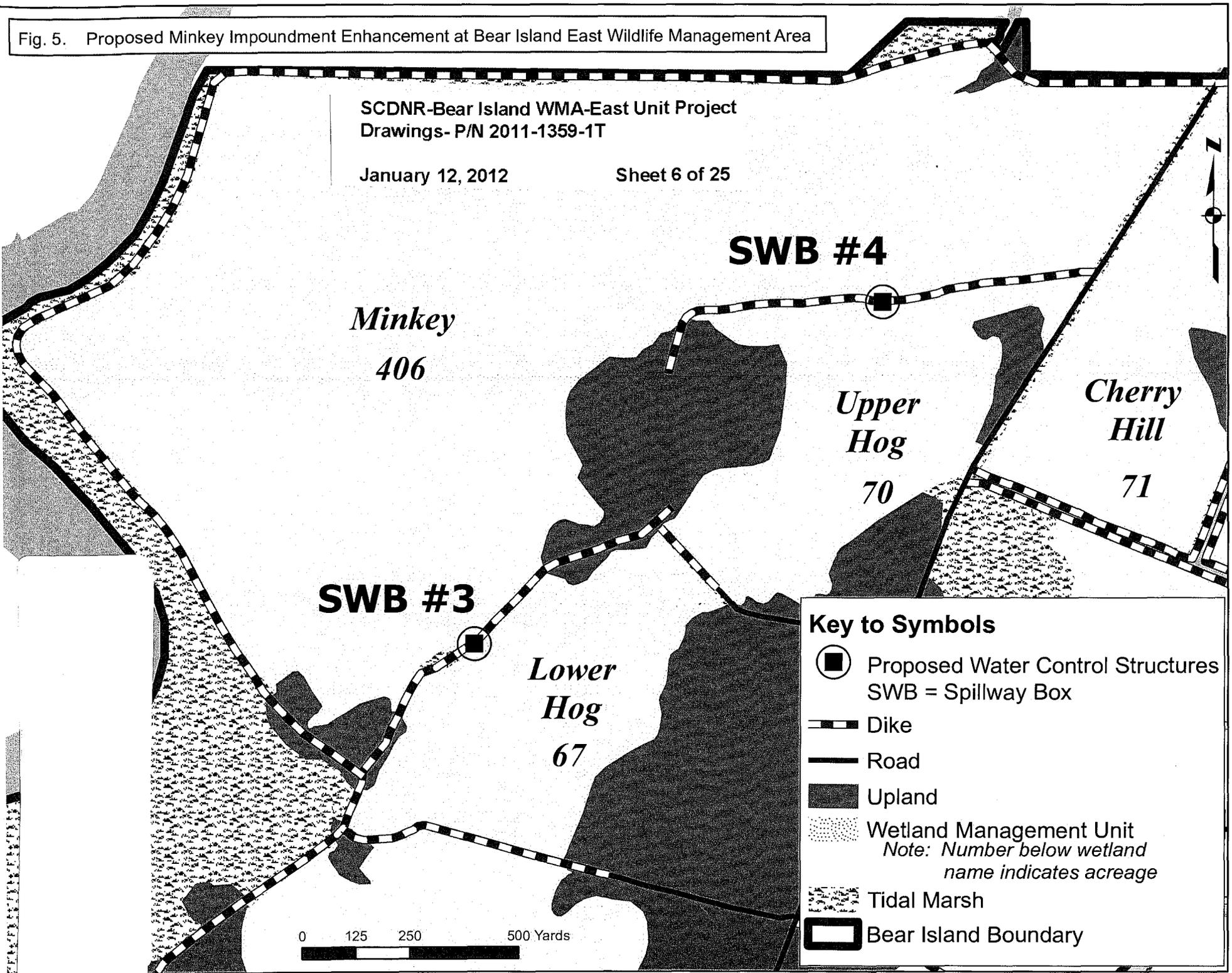


Fig. 5. Proposed Minkey Impoundment Enhancement at Bear Island East Wildlife Management Area

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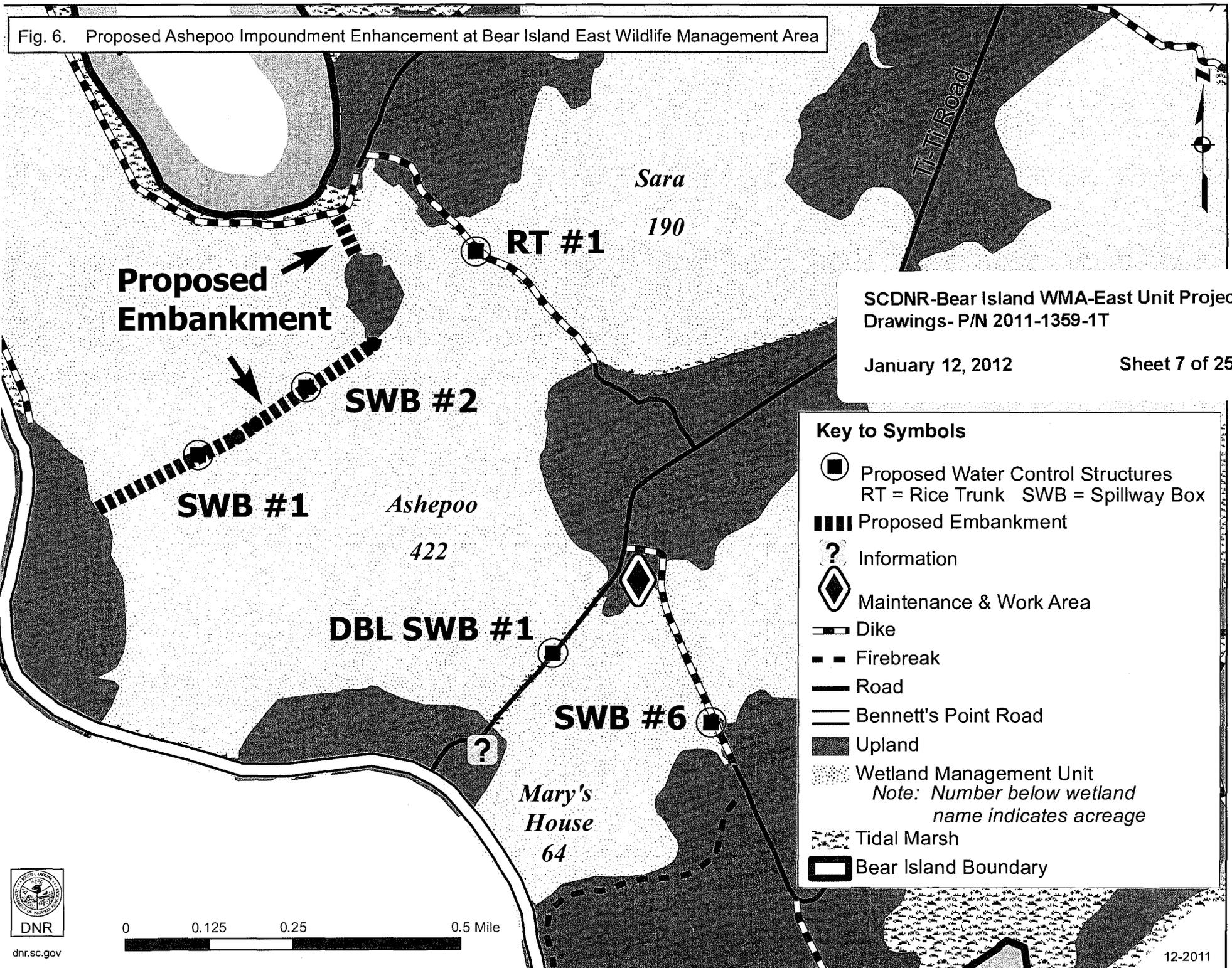


**Key to Symbols**

-  Proposed Water Control Structures  
SWB = Spillway Box
-  Dike
-  Road
-  Upland
-  Wetland Management Unit  
*Note: Number below wetland name indicates acreage*
-  Tidal Marsh
-  Bear Island Boundary

0 125 250 500 Yards

Fig. 6. Proposed Ashepoo Impoundment Enhancement at Bear Island East Wildlife Management Area



SCDNR-Bear Island WMA-East Unit Project  
Drawings- P/N 2011-1359-1T

January 12, 2012

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**Key to Symbols**

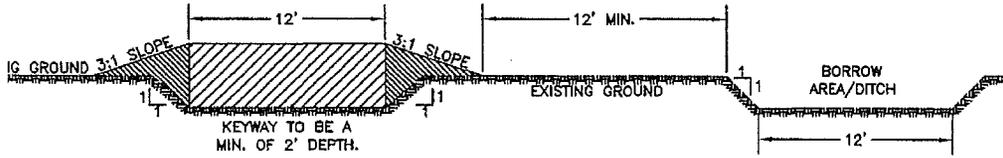
-  Proposed Water Control Structures  
RT = Rice Trunk SWB = Spillway Box
-  Proposed Embankment
-  Information
-  Maintenance & Work Area
-  Dike
-  Firebreak
-  Road
-  Bennett's Point Road
-  Upland
-  Wetland Management Unit  
*Note: Number below wetland name indicates acreage*
-  Tidal Marsh
-  Bear Island Boundary



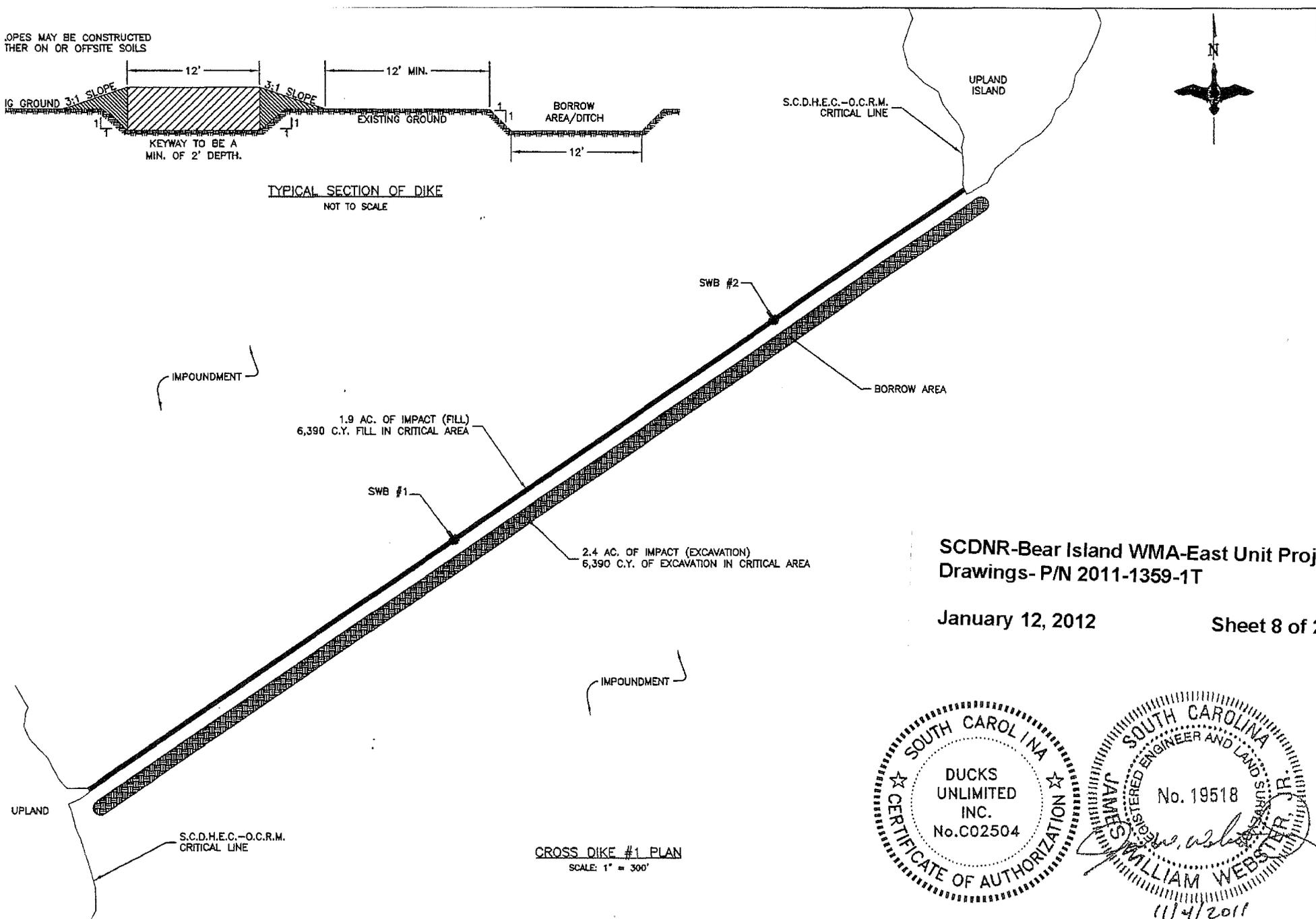
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0 0.125 0.25 0.5 Mile

POLES MAY BE CONSTRUCTED  
EITHER ON OR OFFSITE SOILS



TYPICAL SECTION OF DIKE  
NOT TO SCALE

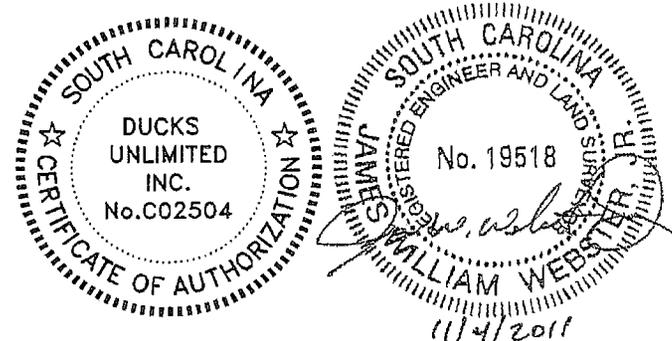


CROSS DIKE #1 PLAN  
SCALE: 1" = 300'

SCDNR-Bear Island WMA-East Unit Project  
Drawings- P/N 2011-1359-1T

January 12, 2012

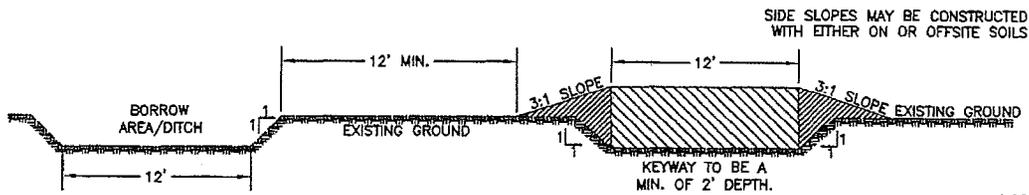
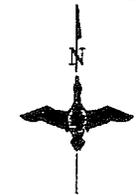
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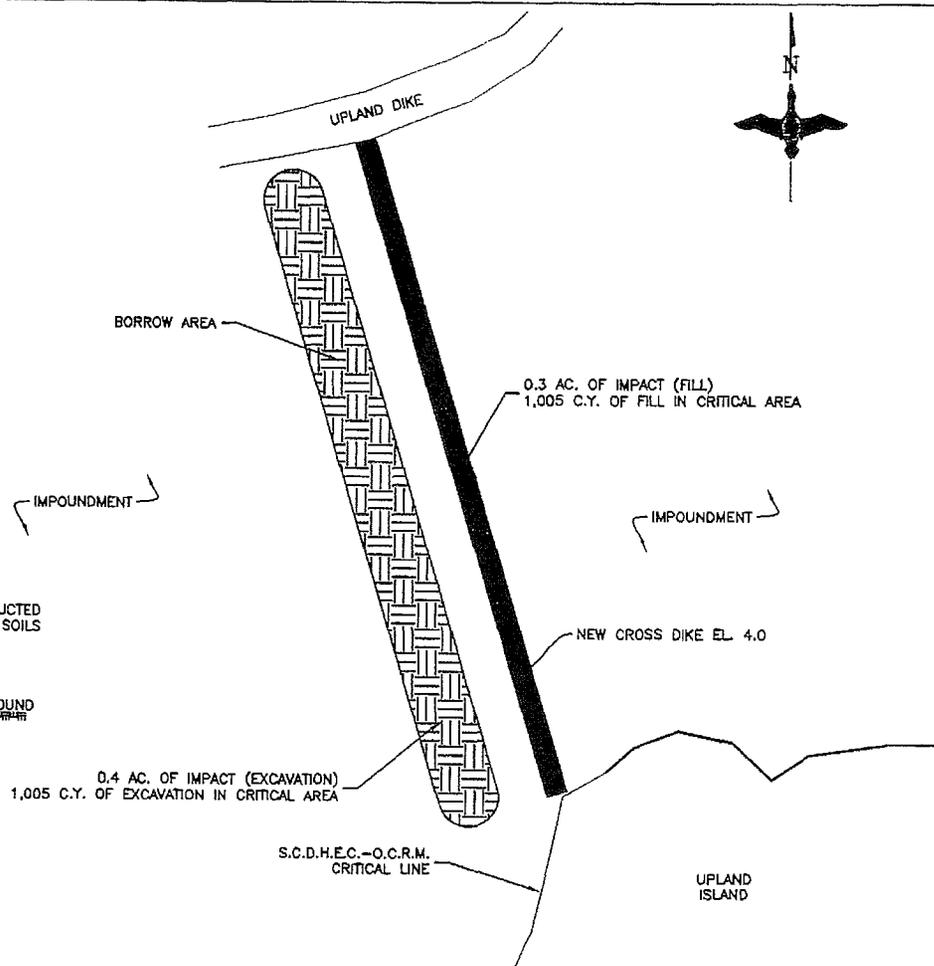
THIS DRAWING FOR PERMIT PURPOSES ONLY.  
NOT TO BE USED FOR BIDDING OR CONSTRUCTION

-O.C.R.M. CRITICAL LINE INDICATED HEREON WERE  
BY FRED MALLETT ON 10-4-2011

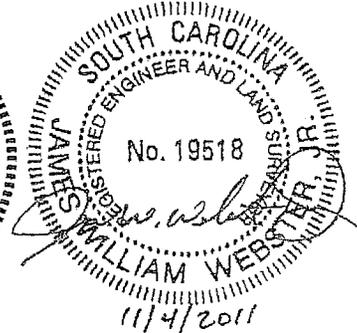
APPLICATION NUMBER:	DUCKS UNLIMITED INC.	PROJECT NO.:	DU-SC-20-02
PROPOSED ACTIVITY: RE-CONSTRUCT CROSS DIKE & INSTALL WATER CONTROL STRUCTURES	SOUTHERN REGIONAL OFFICE 185 Business Park Drive, Suite E Ridgeland, MS 39157 Certificate of Authorization No. C02504	PROJECT TITLE:	BEAR ISLAND CROSS DIKE #1 PLAN
DATE:	NOVEMBER 4, 2011	PROJECT LOCATION:	BEAR ISLAND WMA
COUNTY:	COLLETON	UNIQUE IDENTIFIER:	32°36'22.9" / 80°27'01.9"
	S.C.D.N.R. BILLY WEBSTER	APPROVED:	BILLY WEBSTER
			SHEET 3 OF 19



TYPICAL SECTION OF DIKE  
NOT TO SCALE



CROSS DIKE #2  
SCALE: 1" = 100'



NOTICE:  
S.C.D.H.E.C.-O.C.R.M. CRITICAL LINE INDICATED HEREON WERE  
CERTIFIED BY FRED MALLET ON 10-4-2011

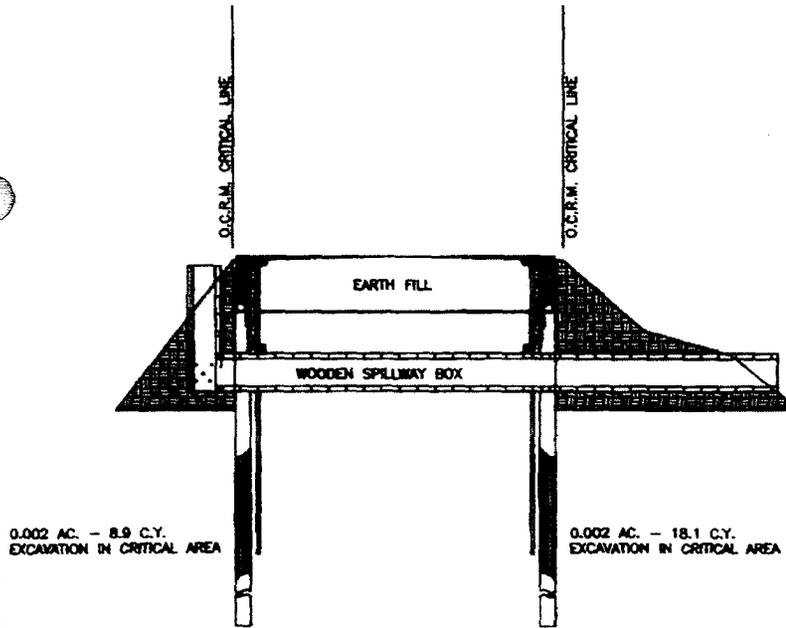
SCDNR-Bear Island WMA-East Unit Project  
Drawings- P/N 2011-1359-1T

January 12, 2012

Sheet 9 of 25

THIS DRAWING FOR PERMIT PURPOSES ONLY.  
NOT TO BE USED FOR BIDDING OR CONSTRUCTION

APPLICATION NUMBER:	DUKS UNLIMITED INC.	PROJECT NO.:	DU-SC-20-02
PROPOSED ACTIVITY:	RE-CONSTRUCT CROSS DIKE & INSTALL BRICK CONTROL STRUCTURES	PROJECT T.O.D.:	BEAR ISLAND CROSS DIKE #2 PLAN
DATE:	NOVEMBER 4, 2011	PROJECT LOCATION:	BEAR ISLAND WMA
COUNTY:	COLLETON	Location/Assurance:	32°36'22.9" / 80°27'01.9"
	S.C.D.N.R.	License/Assurance:	BILLY WEBSTER SHEET 4 OF 19

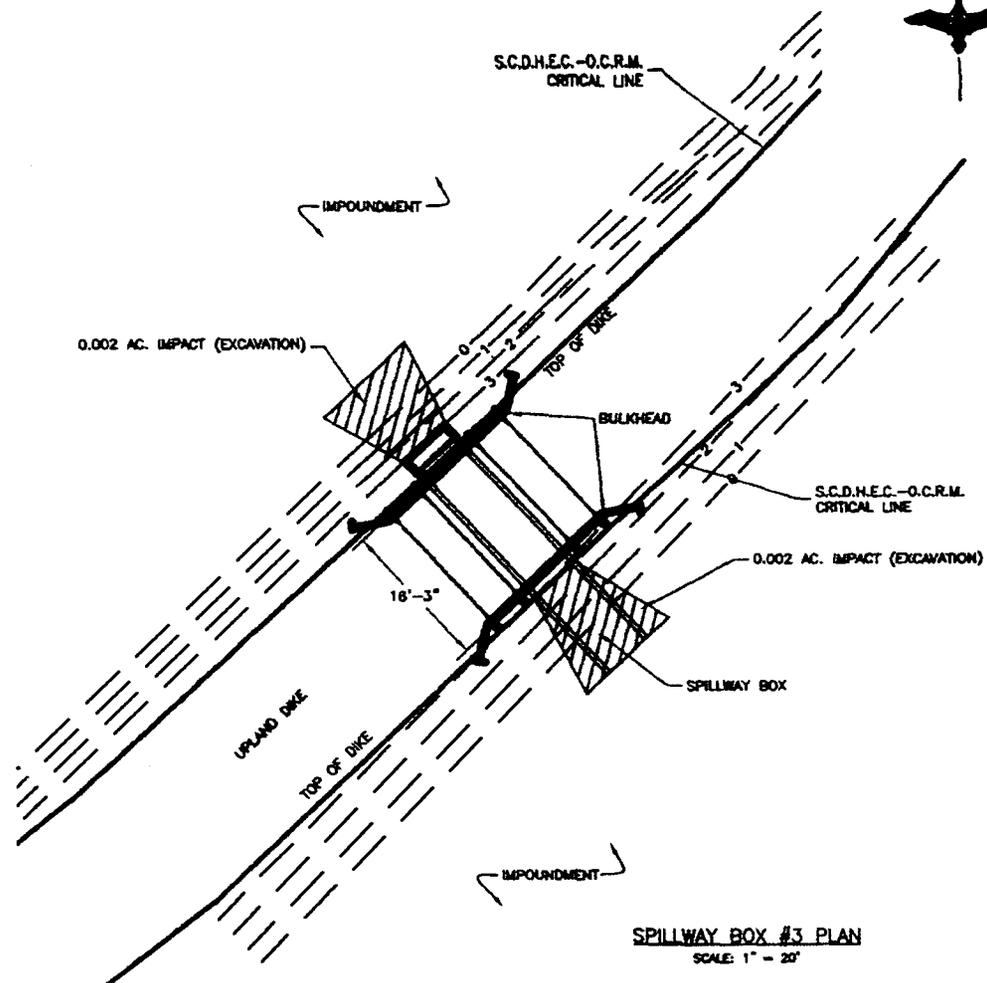


0.002 AC. - 8.9 C.Y.  
EXCAVATION IN CRITICAL AREA

0.002 AC. - 18.1 C.Y.  
EXCAVATION IN CRITICAL AREA

**SPILLWAY BOX #3 SECTION**

SCALE: 1" = 10'



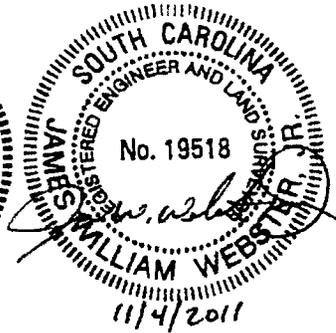
**SPILLWAY BOX #3 PLAN**

SCALE: 1" = 20'

**SCDNR-Bear Island WMA-East Unit Project  
Drawings- P/N 2011-1359-1T**

January 12, 2012

Sheet 10 of 25



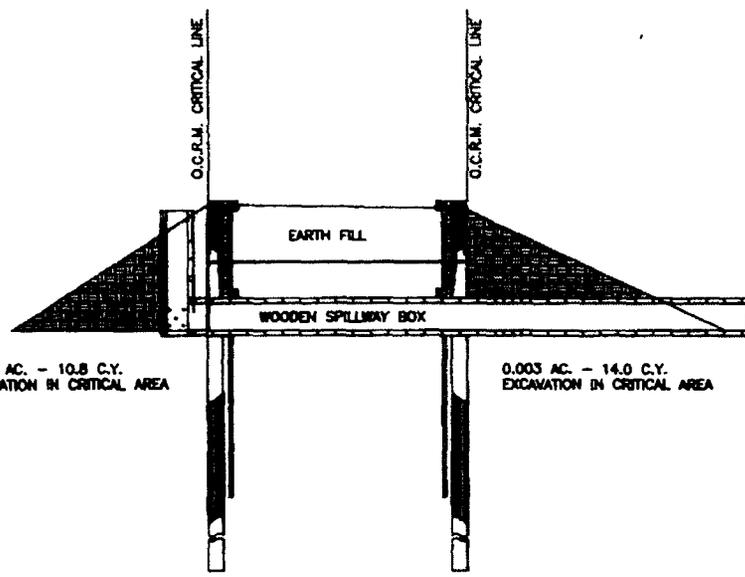
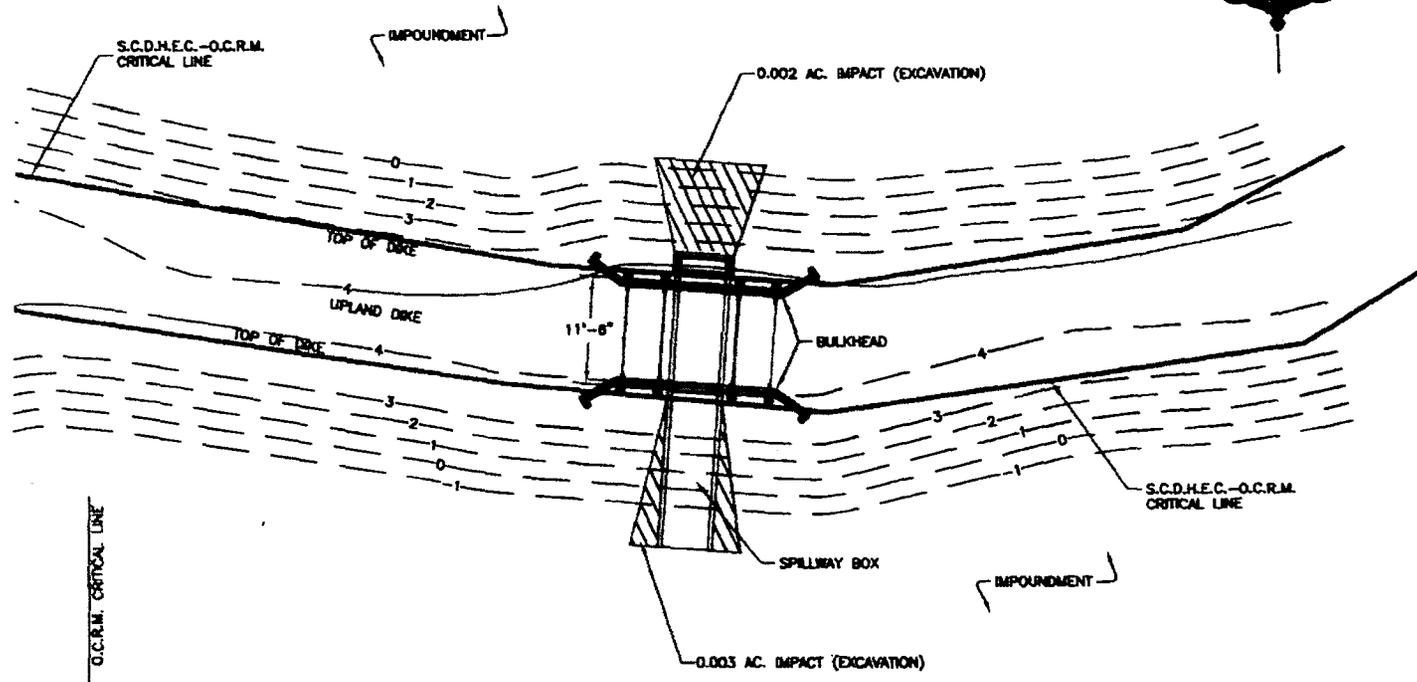
**NOTICE:**  
S.C.D.H.E.C.-O.C.R.M. CRITICAL LINE INDICATED HEREON WERE  
CERTIFIED BY FRED MALLETT ON 10-4-2011

**NOTICE:**  
ALL MATERIAL EXCAVATED FROM CRITICAL  
AREA WILL BE DEPOSITED ON UPLAND LEVÉE.

**IMPACT SUMMARY:**  
EXCAVATION IN CRITICAL AREA 0.004 AC. - 27.0 C.Y.

THIS DRAWING FOR PERMIT PURPOSES ONLY.  
NOT TO BE USED FOR BIDDING OR CONSTRUCTION

PROJECT NUMBER	DUCKS UNLIMITED INC.	PROJECT NUMBER	DU-3C-20-02
PROJECT LOCATION	BEAR ISLAND WMA	PROJECT LOCATION	BEAR ISLAND WMA
DATE	NOVEMBER 4, 2011	DATE	32°36'22.9" / 89°27'01.9"
DESIGNER	JAMES WILLIAM WEBSTER	DESIGNER	BILLY WEBSTER
CHECKER	S.C.D.H.E.C.	CHECKER	SHEET 5 OF 19

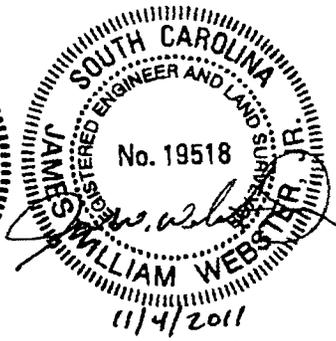
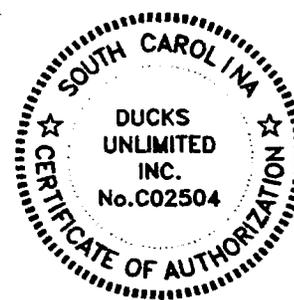


0.002 AC. - 10.8 C.Y.  
EXCAVATION IN CRITICAL AREA

0.003 AC. - 14.0 C.Y.  
EXCAVATION IN CRITICAL AREA

**SPELLWAY BOX #4 SECTION**  
SCALE: 1" = 10'

**SPELLWAY BOX #4 PLAN**  
SCALE: 1" = 20'



11/4/2011

**NOTICE:**  
S.C.D.H.E.C.-O.C.R.M. CRITICAL LINE INDICATED HEREON WERE  
CERTIFIED BY FRED MALLET ON 10-4-2011

**NOTICE:**  
ALL MATERIAL EXCAVATED FROM CRITICAL  
AREA WILL BE DEPOSITED ON UPLAND LEVEE.

**IMPACT SUMMARY**  
EXCAVATION IN CRITICAL AREA 0.005 AC. - 24.8 C.Y.

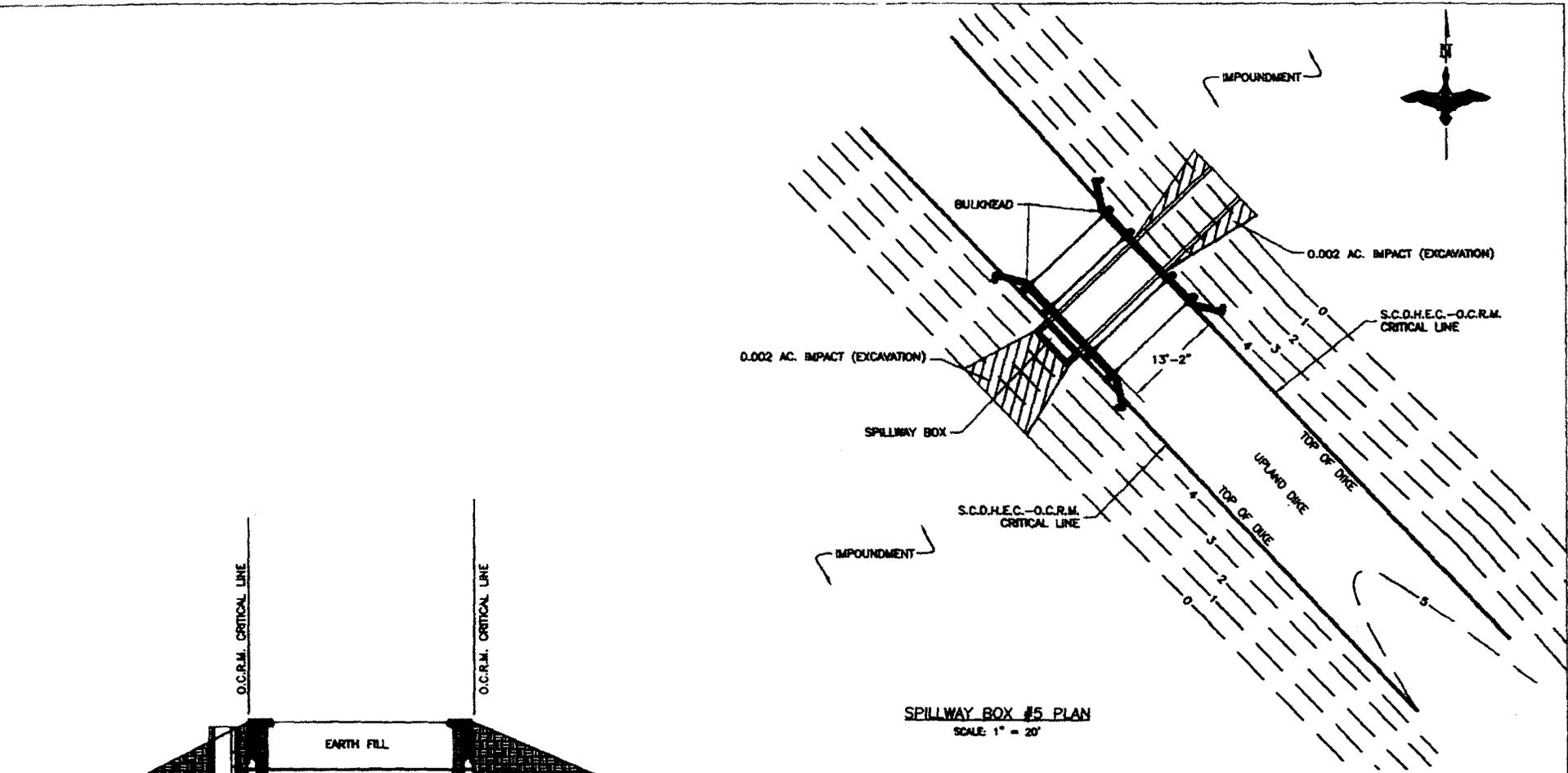
SCDNR-Bear Island WMA-East Unit Project  
Drawings- P/N 2011-1359-1T

January 12, 2012

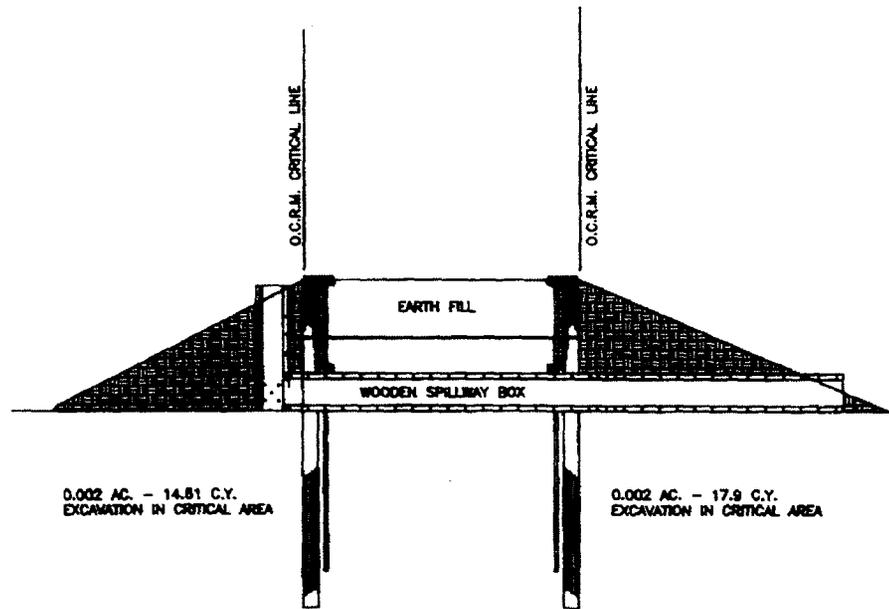
Sheet 11 of 25

THIS DRAWING FOR PERMIT PURPOSES ONLY.  
NOT TO BE USED FOR BIDDING OR CONSTRUCTION

DUCKS UNLIMITED INC. 	DU-SC-20-02 BEAR ISLAND BEAR ISLAND WMA 33°38'22.6" / 80°27'01.5"
DATE: NOVEMBER 4, 2011 DRAWN BY: COLLEEN	CHECKED BY: BILLY WEBSTER SCALE: 1" = 20' SHEET 6 OF 19



SPILLWAY BOX #5 PLAN  
SCALE: 1" = 20'



SPILLWAY BOX #5 SECTION  
SCALE: 1" = 10'

SOUTH CAROLINA  
DUCKS UNLIMITED INC.  
No. C02504

SOUTH CAROLINA  
REGISTERED ENGINEER AND LAND SURVEYOR  
No. 19518  
JAMES S. WEBSTER  
WILLIAM WEBSTER  
11/4/2011

NOTICE:  
S.C.D.H.E.C.-O.C.R.M. CRITICAL LINE INDICATED HEREON WERE  
CERTIFIED BY FRED MALLETT ON 10-4-2011

NOTICE:  
ALL MATERIAL EXCAVATED FROM CRITICAL  
AREA WILL BE DEPOSITED ON UPLAND LEVEE.

IMPACT SUMMARY  
EXCAVATION IN CRITICAL AREA 0.004 AC. - 35.5 C.Y.

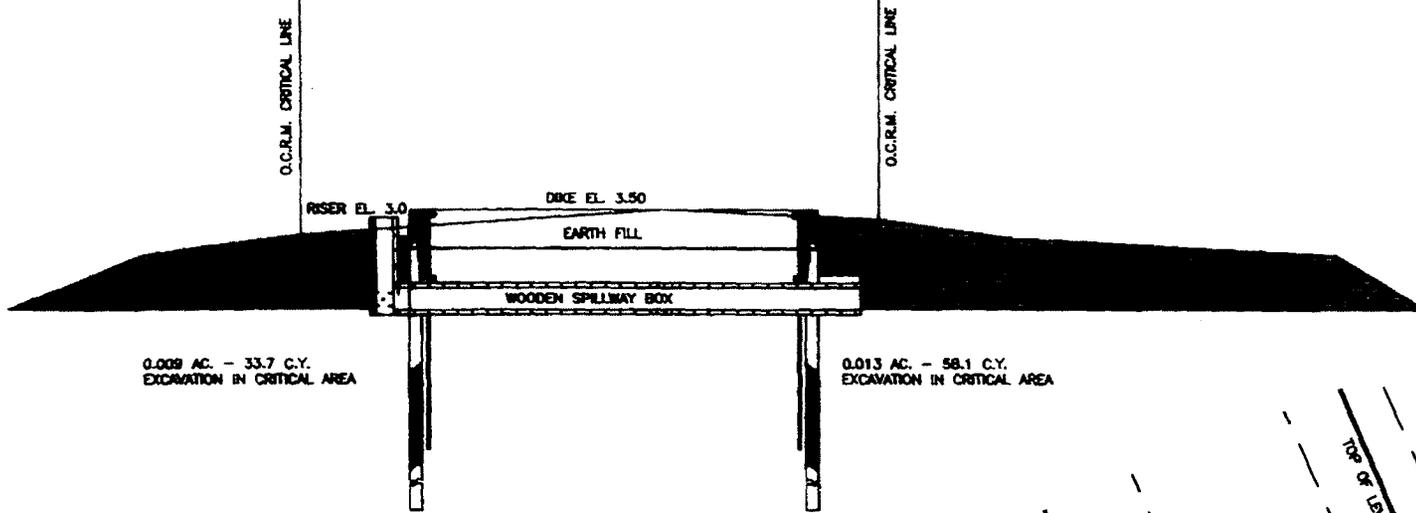
SCDNR-Bear Island WMA-East Unit Project  
Drawings- P/N 2011-1359-1T

January 12, 2012

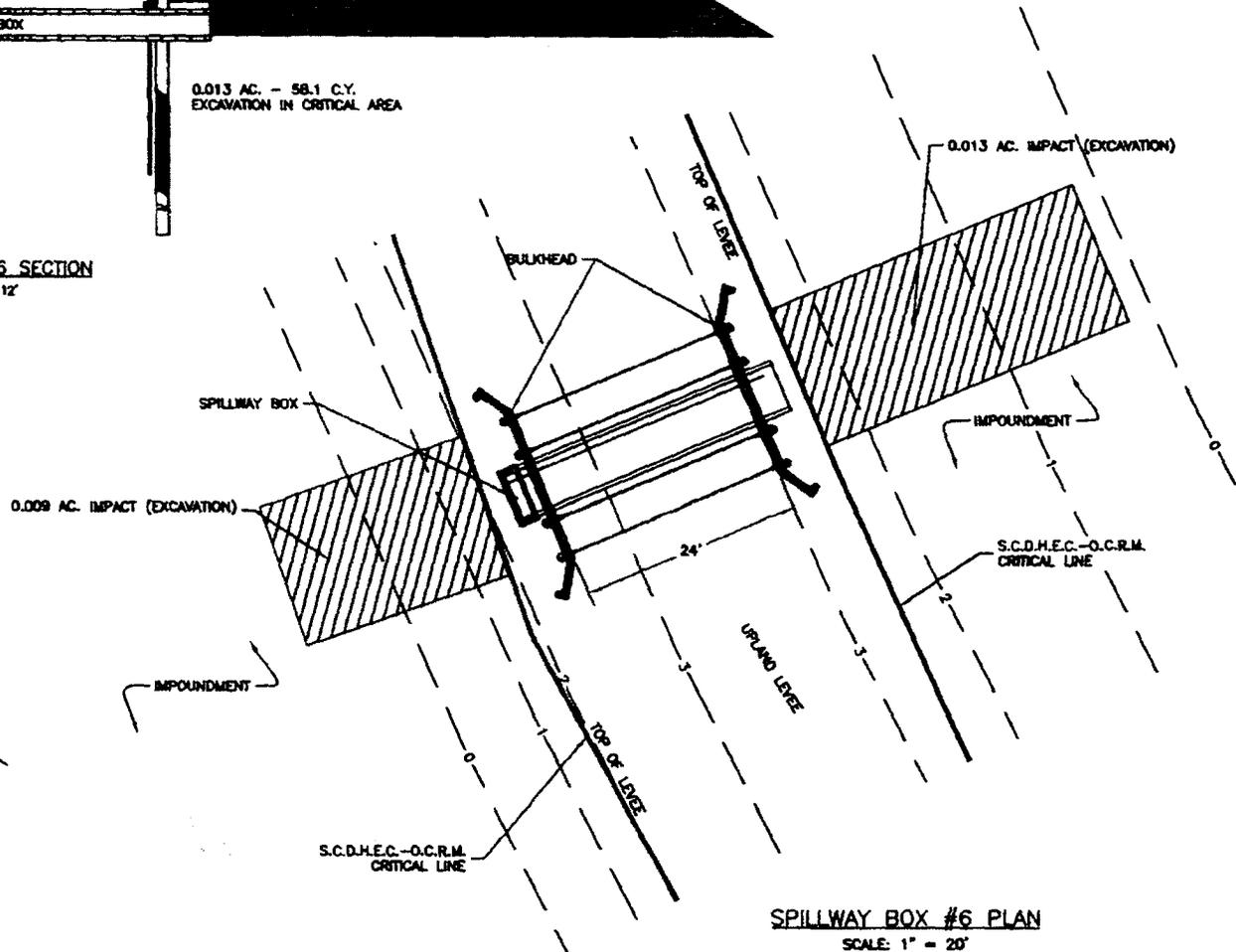
Sheet 12 of 25

THIS DRAWING FOR PERMIT PURPOSES ONLY.  
NOT TO BE USED FOR BIDDING OR CONSTRUCTION

APPLICATION NUMBER	DUCKS UNLIMITED INC.	PROJECT NO.	DU-SC-20-02
DATE	NOVEMBER 4, 2011	PROJECT NAME	BEAR ISLAND WMA
PROJECT	SPILLWAY BOX #5 PLAN & SECTION	PROJECT LOCATION	BEAR ISLAND WMA
OWNER	SCDNR	COORDINATE	33°36'22.8" / 80°27'01.8"
COLLECTION	S.C.D.N.R.	DESIGNER	BILLY WEBSTER
			SHEET 7 OF 19



SPILLWAY BOX #6 SECTION  
SCALE: 1" = 12'



SPILLWAY BOX #6 PLAN  
SCALE: 1" = 20'

SOUTH CAROLINA  
DUCKS UNLIMITED INC.  
No. C02504  
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA  
REGISTERED ENGINEER AND LAND SURVEYOR  
No. 19518  
JAMES WILLIAM WEBSTER, P.E.  
11/4/2011

NOTICE:  
S.C.D.H.E.C.-O.C.R.M. CRITICAL LINE INDICATED HEREON WERE  
CERTIFIED BY FRED MALLETT ON 10-4-2011

NOTICE:  
ALL MATERIAL EXCAVATED FROM CRITICAL  
AREA WILL BE DEPOSITED ON UPLAND LEVEE.

IMPACT SUMMARY  
EXCAVATION IN CRITICAL AREA 0.022 AC. - 92.0 C.Y.

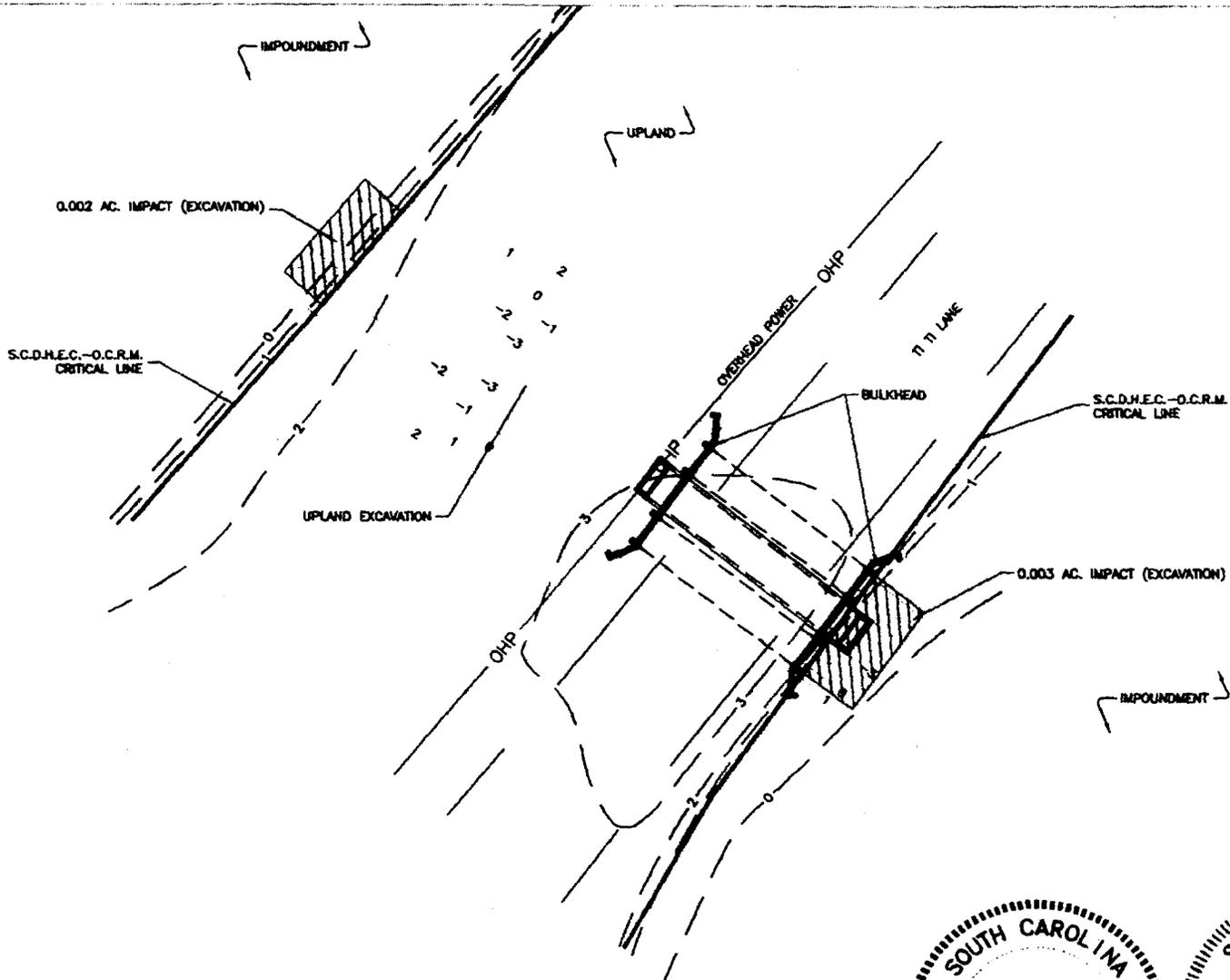
SCDNR-Bear Island WMA-East Unit Project  
Drawings- P/N 2011-1359-1T

January 12, 2012

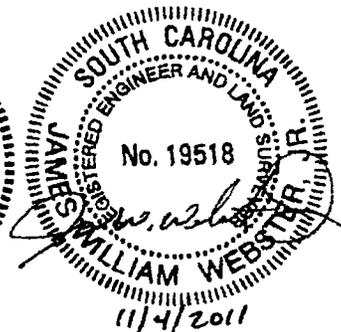
Sheet 13 of 25

THIS DRAWING FOR PERMIT PURPOSES ONLY.  
NOT TO BE USED FOR BIDDING OR CONSTRUCTION

PROJECT NUMBER	DUCKS UNLIMITED INC.	PROJECT NO.	DU-SC-20-02
DATE	NOVEMBER 4, 2011	PROJECT NAME	BEAR ISLAND WMA
OWNER	S.C.D.H.E.	PROJECT LOCATION	BEAR ISLAND WMA
DESIGNER	BILLY WEBSTER	PROJECT COORDINATOR	BILLY WEBSTER
CHECKER	BILLY WEBSTER	PROJECT DATE	32°56'22.9" / 80°27'01.9"
DATE	NOVEMBER 4, 2011	SHEET NO.	8 OF 19



DOUBLE SPILLWAY BOX #1 PLAN  
SCALE: 1" = 20'



NOTICE:  
S.C.D.H.E.C.-O.C.R.M. CRITICAL LINE INDICATED HEREON WERE  
CERTIFIED BY FRED MALLET ON 10-4-2011

NOTICE:  
ALL MATERIAL EXCAVATED FROM CRITICAL  
AREA WILL BE DEPOSITED ON UPLAND LEVEE.

IMPACT SUMMARY:  
EXCAVATION IN CRITICAL AREA 0.005 AC. - 37 C.Y.  
EXCAVATION IN UPLAND AREA 0.020 AC. - 133 C.Y.

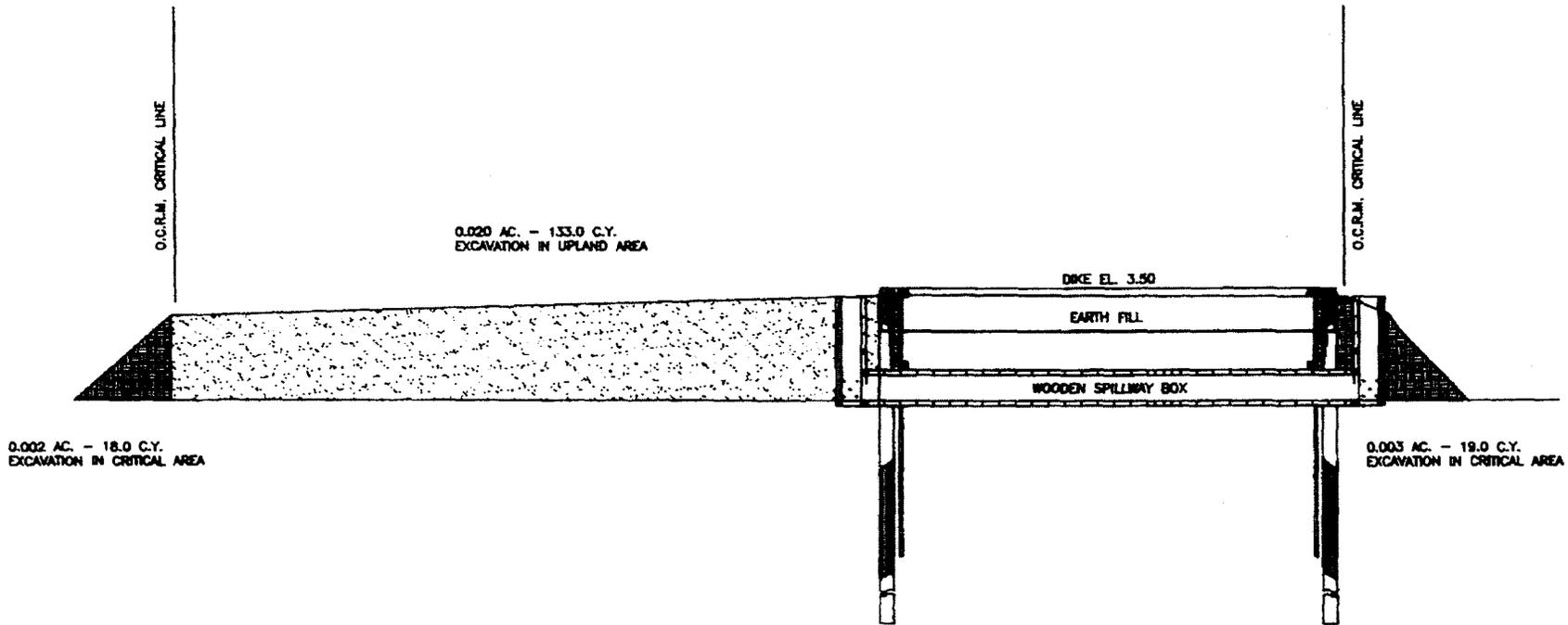
SCDNR-Bear Island WMA-East Unit Project  
Drawings- P/N 2011-1359-1T

January 12, 2012

Sheet 14 of 25

THIS DRAWING FOR PERMIT PURPOSES ONLY.  
NOT TO BE USED FOR BIDDING OR CONSTRUCTION

APPLICANT NUMBER:	DUCKS UNLIMITED INC.	PROJECT NO.:	DU-SC-20-02
PROJECT NAME:	BEAR ISLAND WMA	PROJECT TITLE:	BEAR ISLAND WMA
DATE:	NOVEMBER 4, 2011	PROJECT LOCATION:	BEAR ISLAND WMA
OWNER:	S.C.D.N.R.	PROJECT COORDINATOR:	BILLY WEBSTER
COLLECTOR:		SHEET:	9 OF 19



0.020 AC. - 133.0 C.Y.  
EXCAVATION IN UPLAND AREA

DIKE EL. 3.50

EARTH FILL

WOODEN SPILLWAY BOX

0.002 AC. - 18.0 C.Y.  
EXCAVATION IN CRITICAL AREA

0.003 AC. - 19.0 C.Y.  
EXCAVATION IN CRITICAL AREA

O.C.R.M. CRITICAL LINE

O.C.R.M. CRITICAL LINE

DOUBLE SPILLWAY BOX #1 SECTION  
SCALE: 1" = 10'



NOTICE:  
S.C.D.H.E.C.-O.C.R.M. CRITICAL LINE INDICATED HEREON WERE  
CERTIFIED BY FRED WALLETT ON 10-4-2011

NOTICE:  
ALL MATERIAL EXCAVATED FROM CRITICAL  
AREA WILL BE DEPOSITED ON UPLAND LEVEE.

IMPACT SUMMARY  
EXCAVATION IN CRITICAL AREA 0.005 AC. - 37 C.Y.  
EXCAVATION IN UPLAND AREA 0.020 AC. - 133 C.Y.

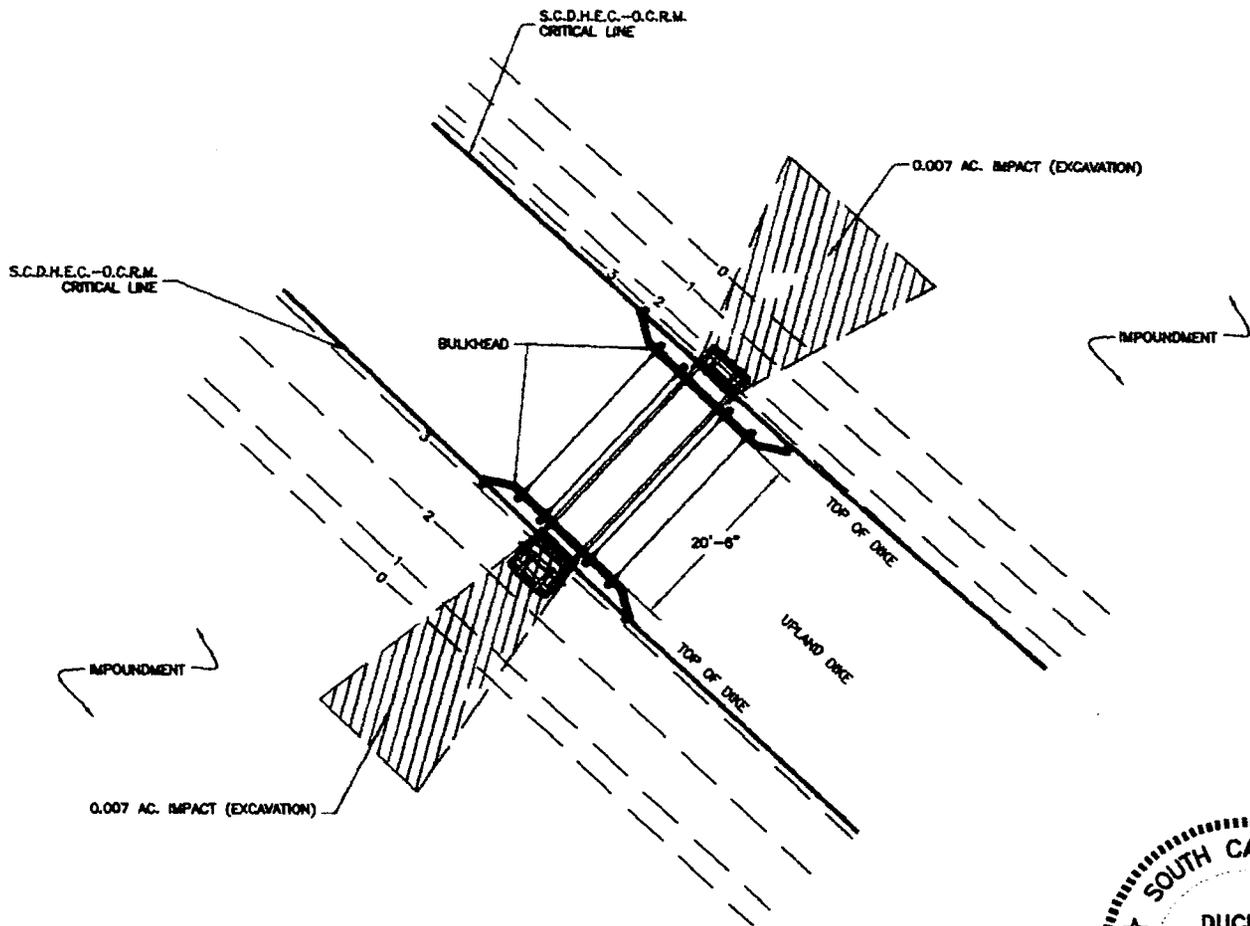
SCDNR-Bear Island WMA-East Unit Project  
Drawings- P/N 2011-1359-1T

January 12, 2012

Sheet 15 of 25

THIS DRAWING FOR PERMIT PURPOSES ONLY.  
NOT TO BE USED FOR BIDDING OR CONSTRUCTION

APPROVED BY:	DUCKS UNLIMITED INC.	PROJECT NO.:	DU-SC-20-02
DATE:	NOVEMBER 4, 2011	PROJECT NAME:	BEAR ISLAND WMA
PROJECT:	COLLEEN	PROJECT LOCATION:	BEAR ISLAND WMA
	S.C.D.H.E.C.	PROJECT COORDINATOR:	BILLY WEBSTER
		PROJECT NUMBER:	32°36'22.9" / 80°27'01.9"
		SHEET:	SHEET 10 OF 19



RICE TRUNK #1 PLAN  
SCALE: 1" = 20'

SCDNR-Bear Island WMA-East Unit Project  
Drawings- P/N 2011-1359-1T

January 12, 2012

Sheet 16 of 25

NOTICE:  
S.C.D.H.E.C.-O.C.R.M. CRITICAL LINE INDICATED HEREON WERE  
CERTIFIED BY FRED WALLETT ON 10-4-2011

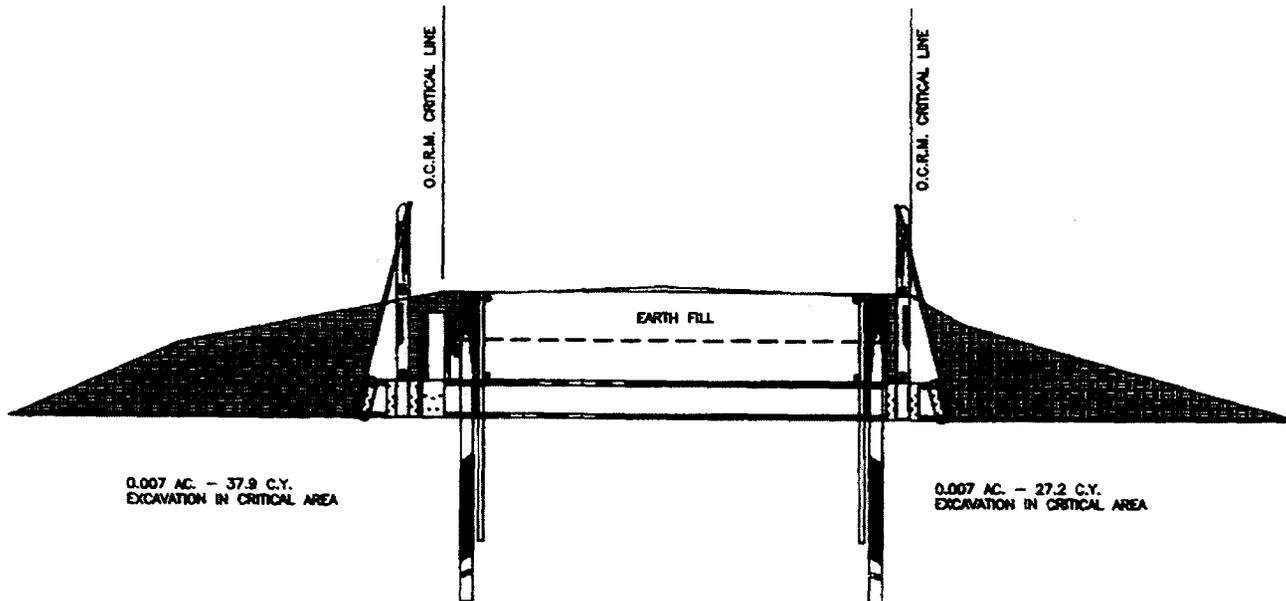
NOTICE:  
ALL MATERIAL EXCAVATED FROM CRITICAL  
AREA WILL BE DEPOSITED ON UPLAND LEVEL.

IMPACT SUMMARY  
EXCAVATION IN CRITICAL AREA 0.014 AC. - 65.1 C.Y.

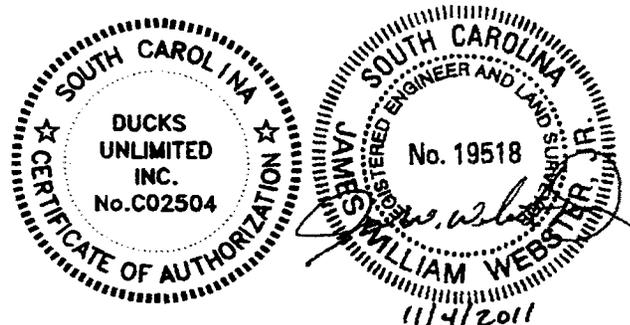


THIS DRAWING FOR PERMIT PURPOSES ONLY.  
NOT TO BE USED FOR BIDDING OR CONSTRUCTION

APPLICATOR NUMBER	DUCKS UNLIMITED INC.	DU-SC-20-02
APPLICATOR ADDRESS	10000 WINDY HOLLOW RD DUCKS, NC 27822	BEAR ISLAND WMA
DATE	NOVEMBER 4, 2011	BEAR ISLAND WMA
OWNER	S.C.D.H.E.	32°58'22.9" / 80°27'01.5"
COLLECTOR	BILLY WEBSTER	SHEET 11 OF 19



RICE TRUNK #1 SECTION  
SCALE: 1" = 10'



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NOTICE:  
S.C.D.N.R.-O.C.R.M. CRITICAL LINE INDICATED HEREON WERE  
CERTIFIED BY FRED WALLETT ON 10-4-2011

NOTICE:  
ALL MATERIAL EXCAVATED FROM CRITICAL  
AREA WILL BE DEPOSITED ON UPLAND LEVEE.

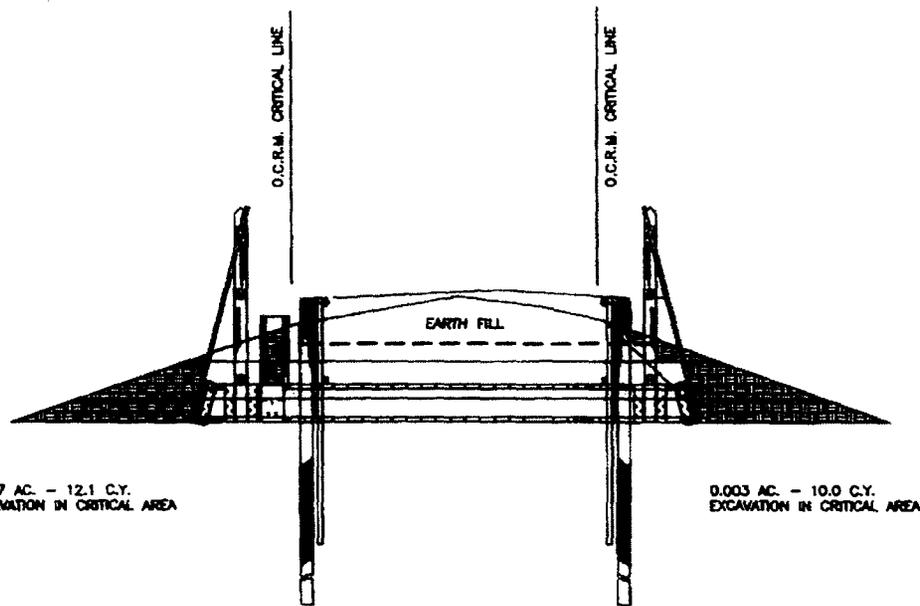
IMPACT SUMMARY  
EXCAVATION IN CRITICAL AREA 0.014 AC. - 85.1 C.Y.

SCDNR-Bear Island WMA-East Unit Project  
Drawings- P/N 2011-1359-1T

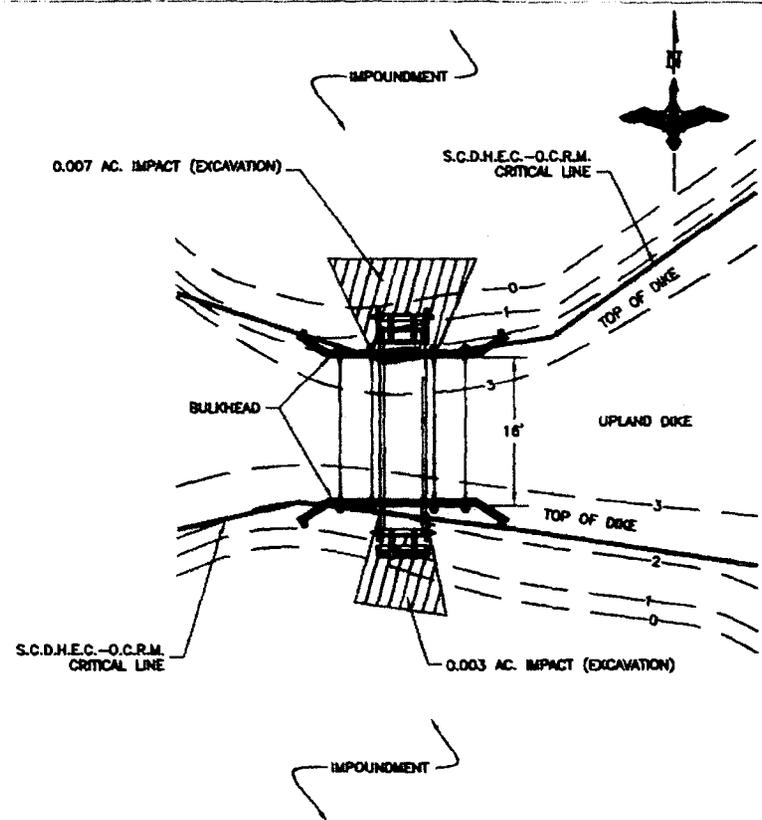
January 12, 2012

Sheet 17 of 25

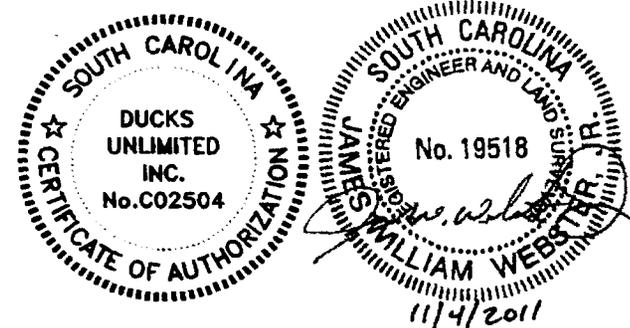
PROJECT NUMBER	DUCKS UNLIMITED INC.	DU-SC-20-02
DATE OF PERMIT	NOVEMBER 4, 2011	BEAR ISLAND WMA
ISSUED BY	S.C.D.N.R.	32°36'22.9" / 80°27'01.9"
COLLECTOR	BILLY WEBSTER	SHEET 12 OF 19



RICE TRUNK #2 SECTION  
SCALE: 1" = 10'



RICE TRUNK #2 PLAN  
SCALE: 1" = 20'



THIS DRAWING FOR PERMIT PURPOSES ONLY.  
NOT TO BE USED FOR BIDDING OR CONSTRUCTION

APPLICANT NUMBER	DUCKS UNLIMITED INC.	DU-SC-20-02
PROJECT NAME	BEAR ISLAND WMA	BEAR ISLAND WMA
PROJECT LOCATION	BEAR ISLAND WMA	BEAR ISLAND WMA
DATE	NOVEMBER 4, 2011	33°36'22.9" / 80°27'01.8"
DRAWN BY	S.C.D.N.R.	BILLY WEBSTER
CHECKED BY		SHEET 13 OF 19

NOTICE:  
S.C.D.H.E.C.-O.C.R.M. CRITICAL LINE INDICATED HEREON WERE  
CERTIFIED BY FRED MALLET ON 10-4-2011

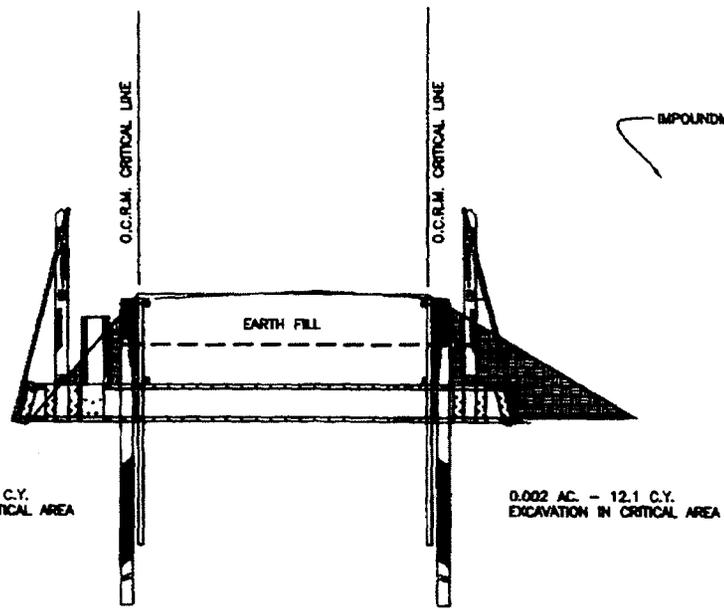
NOTICE:  
ALL MATERIAL EXCAVATED FROM CRITICAL  
AREA WILL BE DEPOSITED ON UPLAND LEVÉE.

IMPACT SUMMARY  
EXCAVATION IN CRITICAL AREA 0.010 AC. - 22.1 C.Y.

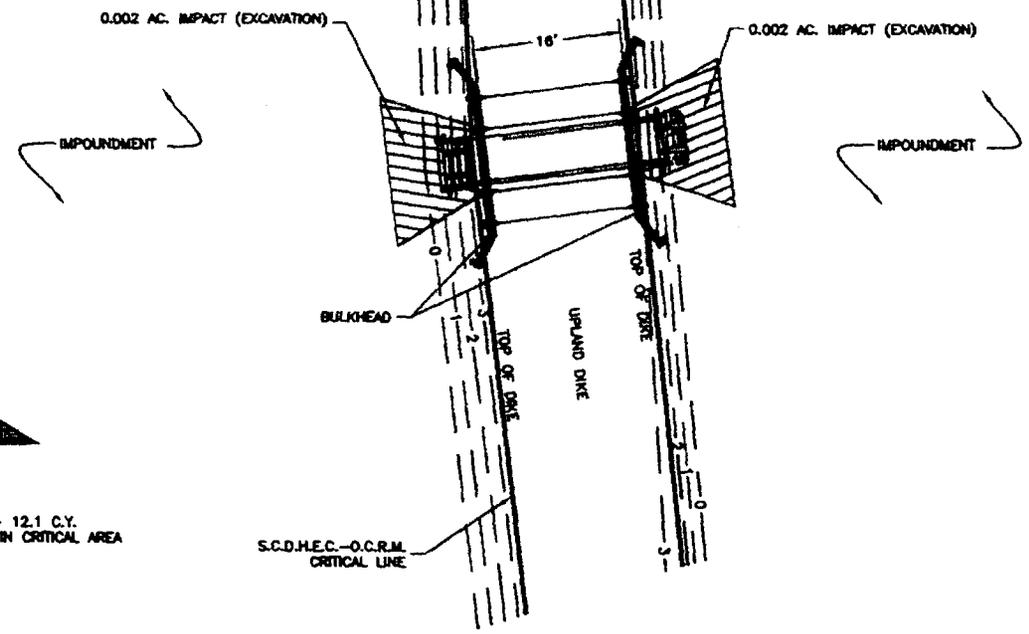
SCDNR-Bear Island WMA-East Unit Project  
Drawings- P/N 2011-1359-1T

January 12, 2012

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RICE TRUNK #3 SECTION  
SCALE: 1" = 10'



RICE TRUNK #3 PLAN  
SCALE: 1" = 20'

0.002

NOTICE:  
S.C.D.H.E.C.-O.C.R.M. CRITICAL LINE INDICATED HEREON WERE  
CERTIFIED BY FRED MALLET ON 10-4-2011

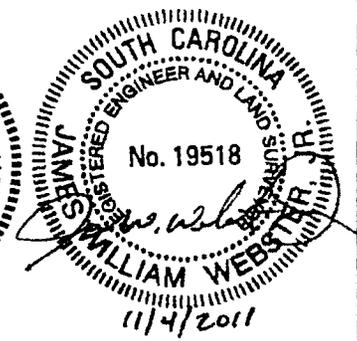
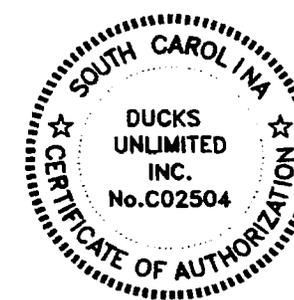
NOTICE:  
ALL MATERIAL EXCAVATED FROM CRITICAL  
AREA WILL BE DEPOSITED ON UPLAND LEVEE.

IMPACT SUMMARY  
EXCAVATION IN CRITICAL AREA 0.004 AC. - 22.1 C.Y.

SCDNR-Bear Island WMA-East Unit Project  
Drawings- P/N 2011-1359-1T

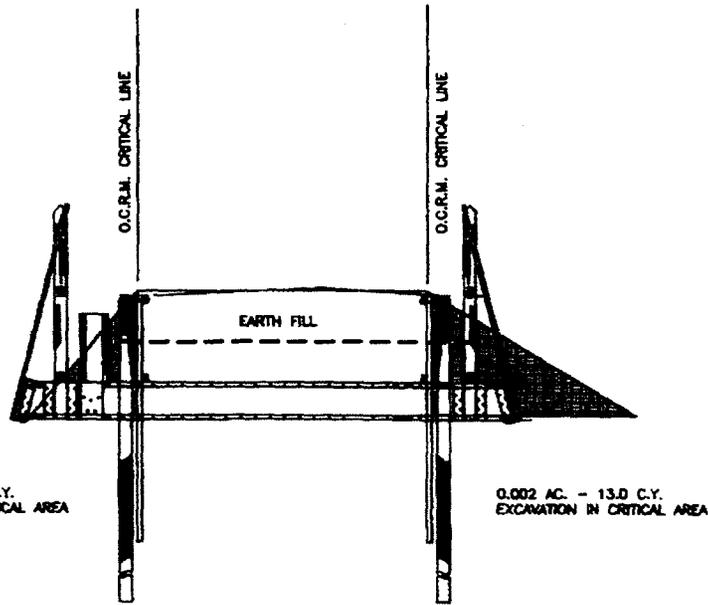
January 12, 2012

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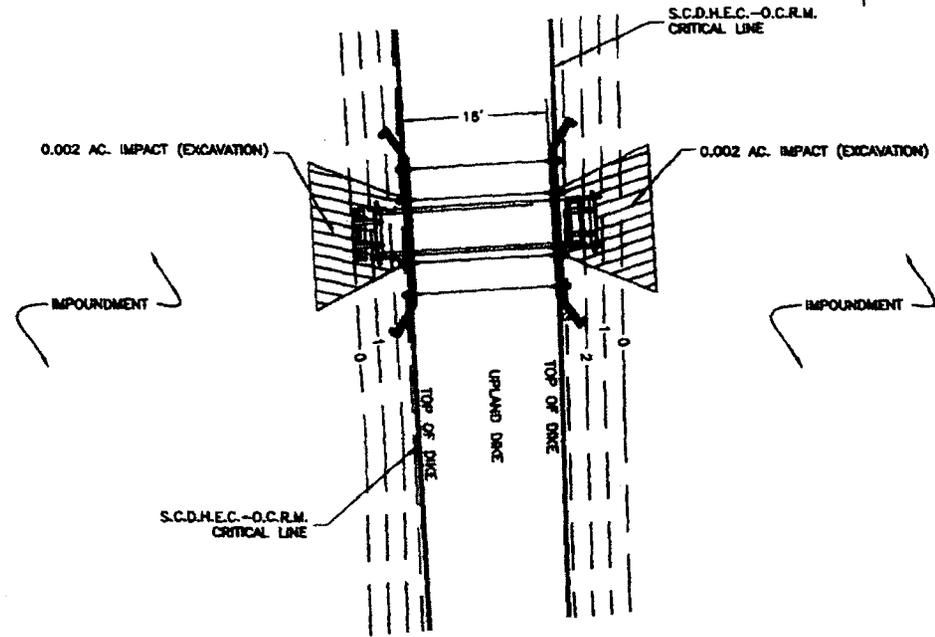


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NOT TO BE USED FOR BIDDING OR CONSTRUCTION

APPLICANT NUMBER	DUCKS UNLIMITED INC.	DU-SC-20-02
PROJECT NAME	BEAR ISLAND WMA	BEAR ISLAND WMA
DATE	NOVEMBER 4, 2011	32-38-22-8 / 8027-01.5"
OWNER	S.C.D.H.E.	BILLY WEBSTER
DESIGNER		SHEET 14 OF 19



RICE TRUNK #4 SECTION  
SCALE: 1" = 10'



RICE TRUNK #4 PLAN  
SCALE: 1" = 20'

NOTICE:  
S.C.D.H.E.C.-O.C.R.M. CRITICAL LINE INDICATED HEREON WERE  
CERTIFIED BY FRED WALLETT ON 10-4-2011

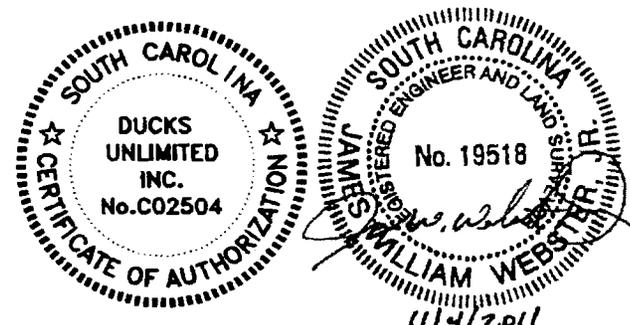
NOTICE:  
ALL MATERIAL EXCAVATED FROM CRITICAL  
AREA WILL BE DEPOSITED ON UPLAND LEVEE.

IMPACT SUMMARY:  
EXCAVATION IN CRITICAL AREA 0.004 AC. - 20.3 C.Y.

SCDNR-Bear Island WMA-East Unit Project  
Drawings- P/N 2011-1359-1T

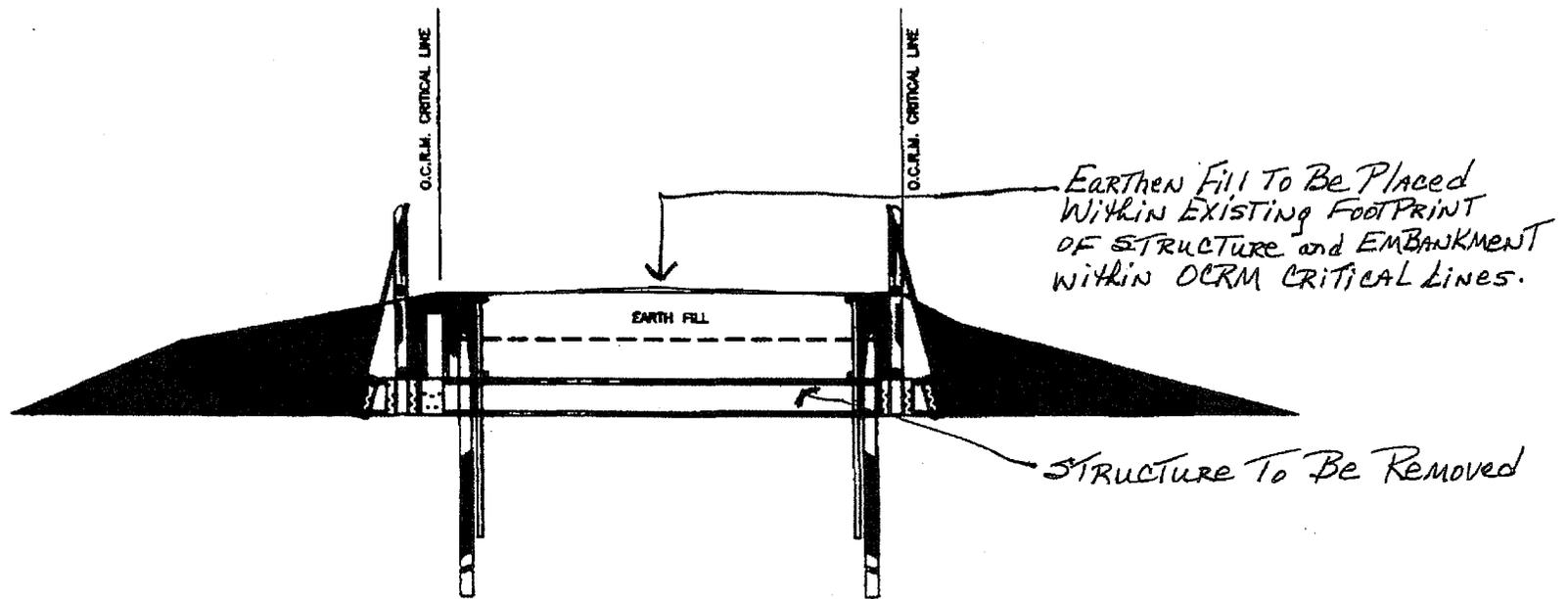
January 12, 2012

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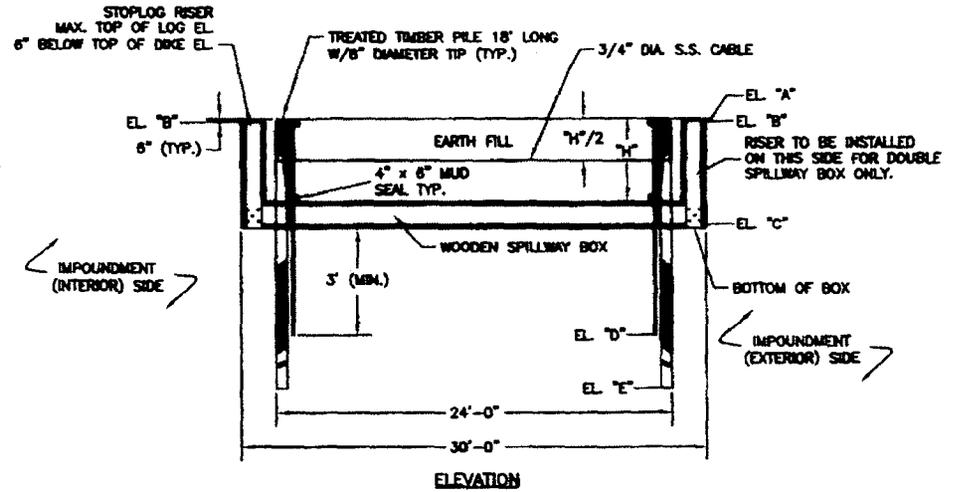
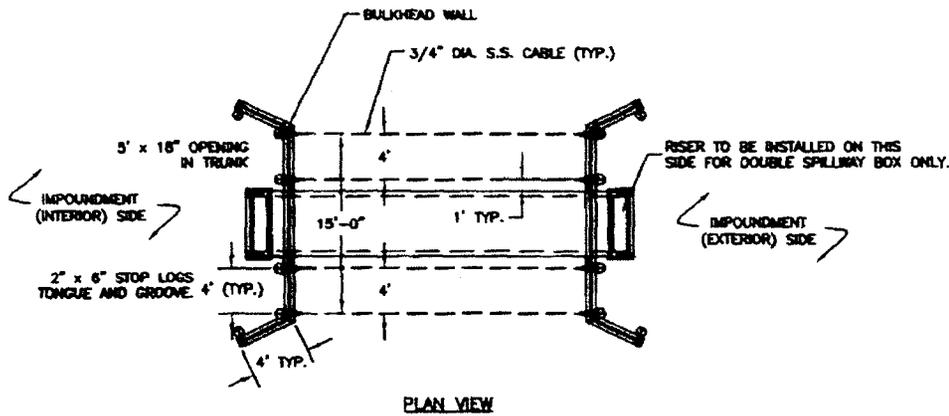


THIS DRAWING FOR PERMIT PURPOSES ONLY.  
NOT TO BE USED FOR BIDDING OR CONSTRUCTION

APPLICANT NUMBER	DUCKS UNLIMITED INC.	DU-EC-20-02
PROJECT NAME	BEAR ISLAND WMA EAST UNIT PROJECT	BEAR ISLAND WMA
DATE	NOVEMBER 4, 2011	32°36'22.9" / 80°27'01.9"
COLLECTOR	S.C.D.N.R.	BILLY WEBSTER SHEET 15 OF 19



Typical Cross-Section of Structure To Be  
 Removed and Replaced By Earth Fill.  
 (Rice Trunk and Culvert)

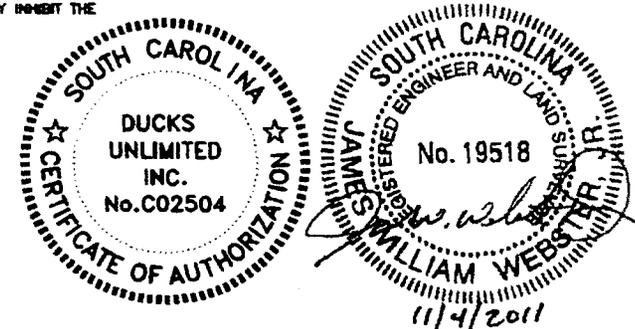


**SPILLWAY BOX DETAILS**  
NOT TO SCALE

WOODEN SPILLWAY BOX TABLE							
STRUCTURE	TRUNK SIZE INSIDE DIMENSION	LOCATION	EL. "A"	EL. "B"	EL. "C"	EL. "D"	EL. "E"
PROPOSED SPILLWAY BOX #1	5' x 18"	N/A	4.0	3.5	-3.0	-6.0	-14.0
PROPOSED SPILLWAY BOX #2	5' x 18"	N/A	4.0	3.5	-3.0	-6.0	-14.0
PROPOSED SPILLWAY BOX #3	5' x 18"	N/A	4.0	3.5	-3.5	-6.5	-14.0
PROPOSED SPILLWAY BOX #4	5' x 18"	N/A	4.0	3.5	-2.5	-5.5	-14.0
PROPOSED SPILLWAY BOX #5	5' x 18"	N/A	4.0	3.5	-2.5	-5.5	-14.0
PROPOSED SPILLWAY BOX #6	5' x 18"	N/A	4.0	3.5	-2.5	-5.5	-14.0
PROPOSED DOUBLE SPILLWAY BOX #1	5' x 18"	N/A	3.5	3.0	-3.0	-6.0	-14.0

**NOTES:**

1. THE CONTRACTOR IS RESPONSIBLE FOR DEMATERING AND CONSTRUCTING COFFER DAMS AS NECESSARY TO ALLOW FOR THE INSTALLATION OF THE STRUCTURE. AFTER COMPLETION OF THE STRUCTURE INSTALLATION, THE CONTRACTOR SHALL REMOVE ANY COFFER DAMS AND RESHAPE THE GROUND AND CANAL TO THE PRECONSTRUCTION ELEVATIONS AND SHAPE.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL MATERIAL WHICH MAY BE PRESENT THAT MAY INHIBIT THE DRIVING OF THE TIMBER PILES AND VERTICAL 3 x 12 MEMBERS.
3. THE CONTRACTOR SHALL FIELD VERIFY ALL MEASUREMENTS BEFORE ORDERING MATERIALS.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF THE EXISTING ALUMINUM RISER.



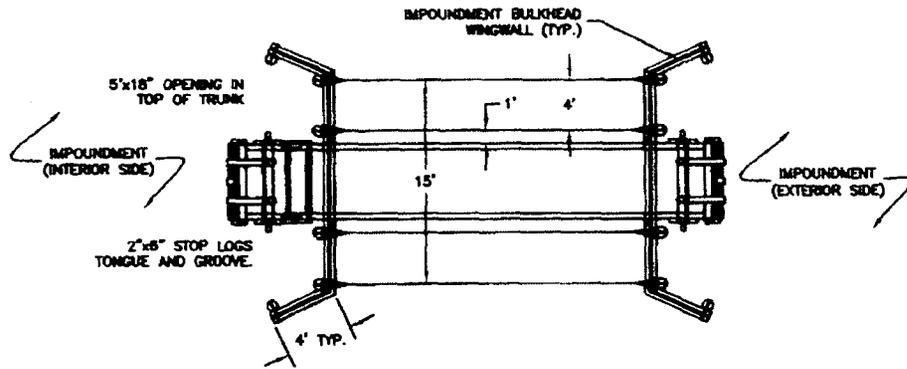
SCDNR-Bear Island WMA-East Unit Project  
Drawings- P/N 2011-1359-1T

January 12, 2012

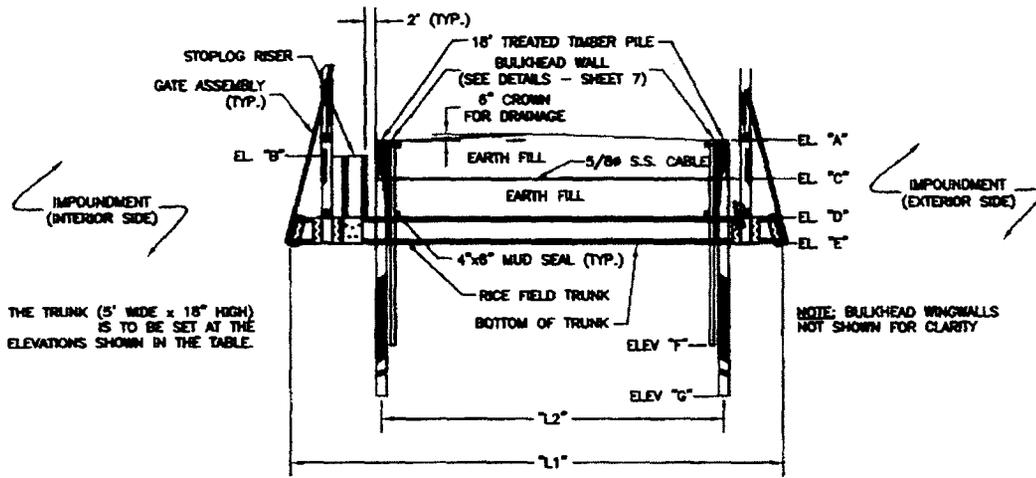
Sheet 22 of 25

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NOT TO BE USED FOR BIDDING OR CONSTRUCTION

APPROVED FOR:	<b>DUCKS UNLIMITED INC.</b>	DUJ-20-20-02
PROJECT:	BEAR ISLAND WMA EAST UNIT	BEAR ISLAND WMA
DATE:	NOVEMBER 4, 2011	33°36'22.9" / 80°27'01.9"
COLLECTION:	S.C.D.N.R.	BILLY WEBSTER SHEET 18 OF 19



PLAN VIEW



ELEVATION

WOODEN RICE TRUNK DETAILS  
NOT TO SCALE

THE TRUNK (5' WIDE x 18" HIGH) IS TO BE SET AT THE ELEVATIONS SHOWN IN THE TABLE.

NOTE: BULKHEAD WINGWALLS NOT SHOWN FOR CLARITY

SCDNR-Bear Island WMA-East Unit Project  
Drawings- P/N 2011-1359-1T

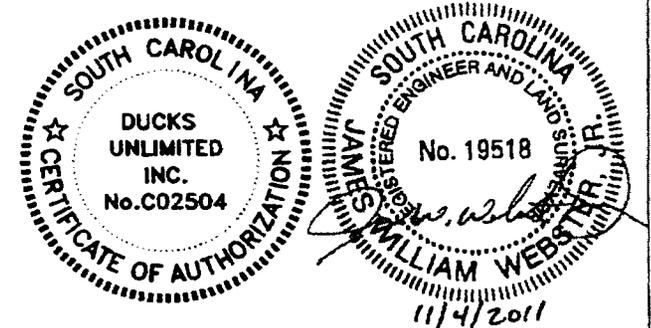
January 12, 2012

Sheet 23 of 25

WOODEN RICE TRUNK TABLE											
STRUCTURE	TRUNK SIZE INSIDE DIMENSION	LOCATION	EL. "A"	EL. "B"	EL. "C"	EL. "D"	EL. "E"	EL. "F"	EL. "G"	11'	12'
PROPOSED RICE TRUNK #1	5' x 18"	N/A	4.0	3.5	1.25	-1.0	-3.0	-7.5	-11.5	32'	20'
PROPOSED RICE TRUNK #2	5' x 18"	N/A	4.0	3.5	1.25	-1.0	-3.0	-7.5	-11.5	32'	20'
PROPOSED RICE TRUNK #3	5' x 18"	N/A	4.0	3.5	1.25	-1.0	-3.0	-7.5	-11.5	32'	20'
PROPOSED RICE TRUNK #4	5' x 18"	N/A	4.0	3.5	1.25	-1.0	-3.0	-7.5	-11.5	32'	20'

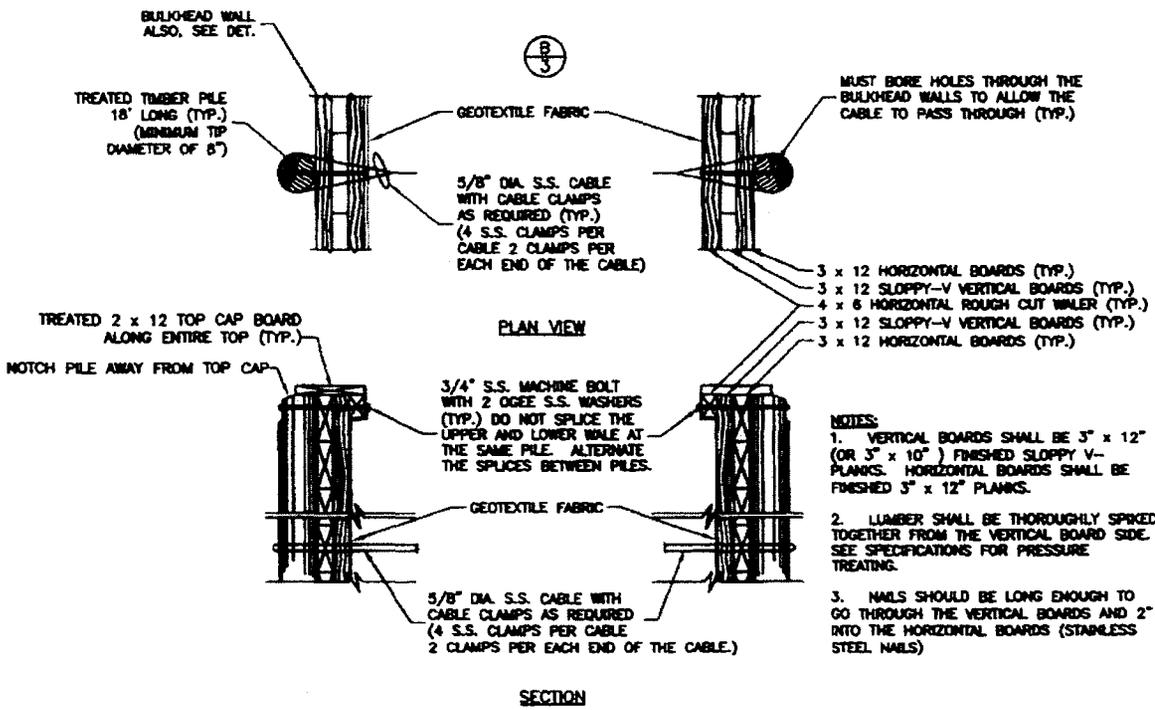
NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR DEWATERING AND CONSTRUCTING COFFER DAMS AS NECESSARY TO ALLOW FOR THE INSTALLATION OF THE STRUCTURE. AFTER COMPLETION OF THE STRUCTURE INSTALLATION, THE CONTRACTOR SHALL REMOVE ANY COFFER DAMS AND RESHAPE THE GROUND AND CANAL TO THEIR PRECONSTRUCTION ELEVATIONS AND SHAPE.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL MATERIAL WHICH MAY BE PRESENT THAT MAY INHIBIT THE DRIVING OF THE TIMBER PILES AND VERTICAL 2x12 MEMBERS.
3. THE CONTRACTOR SHALL FIELD VERIFY ALL MEASUREMENTS BEFORE ORDERING MATERIALS.



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APPROVED FOR:	DUCKS UNLIMITED INC.	DU-SC-20-02
DATE:	NOVEMBER 4, 2011	BEAR ISLAND BEAR TRAP SERVICE
PROJECT:	BEAR ISLAND WMA	BEAR ISLAND WMA
COLLECTOR:	BILLY WEBSTER	32'36"22.9" / 80'27'01.5"
		SHEET 17 OF 19



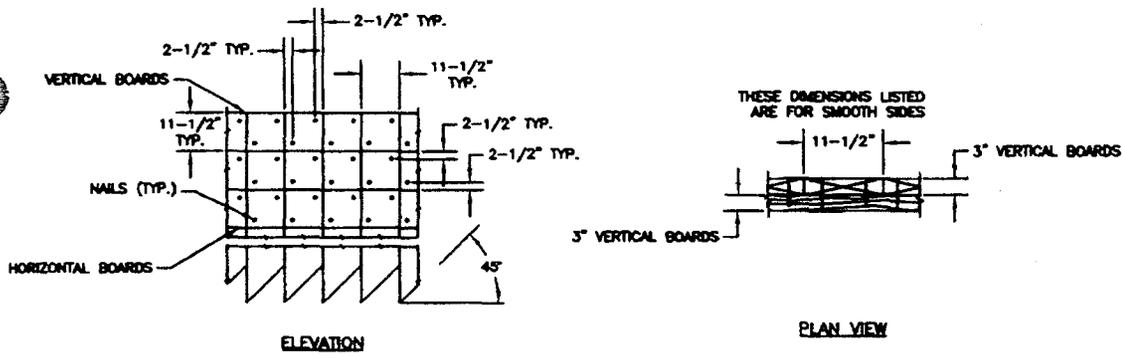
- NOTES:**
1. VERTICAL BOARDS SHALL BE 3" x 12" (OR 3" x 10") FINISHED SLOPPY V-PLANKS. HORIZONTAL BOARDS SHALL BE FINISHED 3" x 12" PLANKS.
  2. LUMBER SHALL BE THOROUGHLY SPIKED TOGETHER FROM THE VERTICAL BOARD SIDE. SEE SPECIFICATIONS FOR PRESSURE TREATING.
  3. NAILS SHOULD BE LONG ENOUGH TO GO THROUGH THE VERTICAL BOARDS AND 2" INTO THE HORIZONTAL BOARDS (STAINLESS STEEL NAILS)

**BULKHEAD WALL PILE BRACING DETAILS**  
NOT TO SCALE

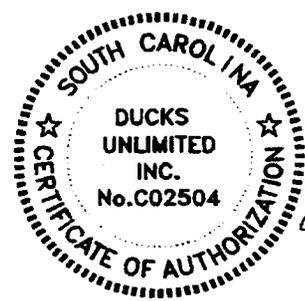
SCDNR-Bear Island WMA-East Unit Project  
Drawings- P/N 2011-1359-1T

January 12, 2012

Sheet 24 of 25



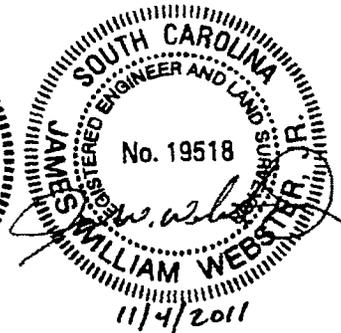
**BULKHEAD WALL PILE BRACING DETAILS**  
NOT TO SCALE



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APPROVED FOR:	<b>DUCKS UNLIMITED INC.</b>	DU-20-20-02
DATE:	NOVEMBER 4, 2011	BEAR ISLAND WMA
PROJECT:	SCDNR	BEAR ISLAND WMA
LOCATION:	COLLETON	32°56'22.9" / 80°27'01.9"
SCALE:	AS SHOWN	BILLY WEBSTER
PROJECT NO.:	2011-1359-1T	SHEET 16 OF 19

SUMMARY OF IMPACTS AREA	UPLAND EXCAVATION	CRITICAL AREA EXCAVATION	CRITICAL AREA FILL
CROSS DIKE # 1	NA	2.4 AC. - 6,390 CY	1.9 AC. - 6,390 CY
CROSS DIKE # 2	NA	0.4 AC. - 1,005 CY	0.3 AC. - 1,005 CY
SWB # 1	NA	NA	NA
SWB # 2	NA	NA	NA
SWB # 3	NA	0.004 AC. - 27.0 CY	NA
SWB # 4	NA	0.005 AC. - 24.8 CY	NA
SWB # 5	NA	0.004 AC. - 35.5 CY	NA
SWB # 6	NA	0.022 AC. - 92.0 CY	NA
DBL. SWB # 1	0.020 AC. - 133 CY	0.005 AC. - 37.0 CY	NA
RT # 1	NA	0.014 AC. - 65.1 CY	NA
RT # 2	NA	0.010 AC. - 22.1 CY	NA
RT # 3	NA	0.004 AC. - 22.1 CY	NA
RT # 4	NA	0.004 AC. - 20.3 CY	NA
<b>Total Impacts</b>	<b>0.020 AC. - 133 CY</b>	<b>2.869 AC. - 7,740.9 CY</b>	<b>2.2 AC. - 7,395 CY</b>



SCDNR-Bear Island WMA-East Unit Project  
Drawings- P/N 2011-1359-1T

January 12, 2012

Sheet 25 of 25

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APPROVED DESIGN	DUCKS UNLIMITED INC.	DU-SC-20-02
PROJECT NAME	BEAR ISLAND WMA	BEAR ISLAND WMA
DATE	NOVEMBER 4, 2011	NOVEMBER 4, 2011
COLLECTION	S.C.D.N.R.	S.C.D.N.R.
		32°36'22.9" / 80°27'01.9"
		BILLY WEBSTER
		SHEET 19 OF 10