J O I N T
P U B L I C N O T I C E

CHARLESTON DISTRICT, CORPS OF ENGINEERS
1949 Industrial Park, Room 140
Conway, South Carolina 29526
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 9 January 2014
Refer to: P/N # 2014-00013-3H

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.seg.) an application has been submitted to the Department of the Army and the S.C. Department of Health and Environmental Control by

HORRY COUNTY GOVERNMENT
***c/o* COASTAL SCIENCE & ENGINEERING, INC.**
P.O. BOX 8056
COLUMBIA, SOUTH CAROLINA 29202-8056

for a permit to perform work to include the placement of a concrete open culvert to re-align and stabilize

SINGLETON SWASH

at a location southeast of N. Ocean Boulevard, situated between Dunes Golf and Beach Club and Sands Beach Club, in Myrtle Beach, Horry County, South Carolina (Latitude 33.756297°N, Longitude -78.794612°W)

In order to give all interested parties an opportunity to express their views

N O T I C E

is hereby given that written statements regarding the proposed work will be received by both of the above mentioned offices 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 channel re-alignment and a plan for stabilization of Singleton Swash. In detail, the work will include installation of a concrete open culvert to channelize tidal flow between the tidal marsh area and the Atlantic Ocean. The applicant stated that the proposed project is expected to eliminate the need for frequent channel manipulation and potentially improve tidal exchange in Singleton Swash. The type and quantity of impacts to waters of the United States associated with the proposed project include backfill and bedding 0.35 acres and excavating 9,000 cubic yards of material from 0.62 acres of intertidal areas.

Specific Project Details Provided by the Applicant:

The County (per agreement with the US Army Corps of Engineers in 2007) has established a preferred swash alignment across the beach which is a minimum of 450 ft south of the Sands Beach Club south tower (Sheet 02, attached drawing). The Dunes Club revetment, marking a historical meander along the south side of the swash, is positioned about 600 ft south of the Sands Beach Club tower. The proposed project will follow the existing easement and install the culvert within this ~150-ft corridor across the beach. The maximum proposed culvert length is 250 feet measured from the existing Dunes Club revetment, which approximately equals the dry sand beach width in the area (Sheet 03, attached drawing). The final position of the culvert and its length will be determined based on site conditions at the time of construction so as to best direct the flow in and out of the swash and minimize encroachment on the wet sand beach. The anticipated beach condition after the proposed project is illustrated on Sheet 3A of the attached plans. Dry beach is expected to build up naturally, and dunes at the backshore area are expected to form gradually with the aid of sand fencing.

Elevations of the proposed culvert are designed to match the dry-beach elevation (~+5 ft NAVD) and to slope at the seaward end to limit the "reveal" of the structure with an invert elevation close to mean low water (-3 ft NAVD) (Sheet 04, attached drawing). Seaward of the structure, swash discharge will be unconfined across the wet-sand beach.

The sides of the proposed culvert will function as jetties to retain the dry beach and the bottom of the culvert will control the maximum channel depth. The concept illustrated in Sheets 04-05 shows a 20-ft culvert bottom-width and 25-ft top-width. It controls the channel across the dry beach and provides a fixed discharge point ~210 ft seaward of the existing dune line along Dunes Club. The length of the culvert corresponds to the existing dry-beach width, and the width of the culvert was determined so as to optimize flow velocities and maintain a discharge.

As Sheet 04 illustrates, the ends of the structure will require scour protection at the landward end and a scour apron at the seaward end. Training walls of some dimension are also necessary at the landward end to direct the flow into the channel. Once confined within the box culvert, flows are expected to be more uniform and accelerate so as to scour sediment that enters from littoral transport or aeolian transport across the dry beach.

By confining the channel across the dry beach, sand fillets (dry-beach area) are expected to be maintained naturally on either side of the structure similar to the shoreline response of a dual jetty system. Natural dune growth will be promoted or accomplished artificially so as to build up the backshore and reduce the chance of flanking of the culvert by swash flows on the north side. The up coast segment of beach between the swash and Sands Beach Club is an inner bend ("point bar" spit) which is less likely to erode than the Dunes Club ("cut bank") side of the channel, and a healthy dry beach with excess sand in this area can be stabilized by vegetation at the landward side adjacent to the swash. Typical profiles after the project are shown in Sheet 06 of the attached plans.

Construction Plan:

Prior to installation of the culvert, the existing swash channel will be realigned by sand scraping and excavation (similar to prior project performed under Department of the Army and OCRM permit P/N 2005-2W-180P) at a position ~100 ft north (up coast) of the proposed culvert within the limited easement corridor (Sheet 07 – Construction Plan). Temporary ~3-ft diameter pipes ~40-ft long will be installed in the realigned channel and covered with sand to provide

temporary access for land based equipment and maintain the tidal flow between the swash and the ocean during the installation of the culvert.

A new channel basin with maximum dimensions ~350 ft long, ~50 ft wide and ~11 ft deep (from approximately +5 ft to -6 ft NAVD) will be excavated in-the-dry across the beach at the final location of the culvert determined by site conditions at the time of construction. Sand dikes will be maintained along the basin especially at either end of the basin to keep out tidal waters until the time of opening. The excavation will be dewatered during construction to allow work to progress in-the-dry. Excavations will be stockpiled adjacent to the basin and used to backfill the structure and dress up the beach at the end of construction.

Work will proceed from the landward end to the seaward end. Training walls of sheet pile at the landward end will be driven by standard methods and cut to length according to the final design. Scour protection (armor stone) at the landward end will be installed after the sheet piles are in place.

Two-ft compacted bedding stone will be placed at the bottom of the basin to prepare an underlayer for the culvert. Typical culvert units come as pre-cast in 6-ft to 9-ft segments with tongue-and-groove edges that are sealed with grout upon placement. The number of segments used will be adjusted according to the beach condition at construction. Each culvert section will be brought to the site and placed on the prepared underlayer of bedding stone via crane. Toe protection (armor stone) at the seaward end of the culvert will be incorporated after the culvert units are in place.

The new culvert channel will be established during a single tide by excavating the remaining sill at the seaward end of the basin during a falling tide. The subsequent rising tide will overtop the sill and flood the basin. Near the time of high tide, a pilot channel will be excavated through the sill at the landward end of the culvert. Tidal flows will complete the excavation of the channel during succeeding tides. Upon completion of the structure and successful opening of the new channel, the temporary flushing channel will be closed via sand scraping, pipes and all equipment will be removed from the beach in the vicinity of the culverts and the beach will be graded to natural contours so as to eliminate unnatural mounds and depressions. The applicant anticipates redistributing sand from the basin excavations and adjacent beach to produce continuous dry beach fillets to either side of the culvert.

All work will be performed via land-based equipment during 2-3 winter months or an alternate period specified by federal and state resource agencies.

Avoidance and Minimization:

The applicant stated that prior to installation of the culvert, the existing swash channel will be re-aligned, and temporary pipes will be installed in the re-aligned channel to maintain the tidal flow between the swash and the ocean during the installation of the culvert to minimize impacts to the aquatic resources. In addition, a channel basin will be excavated across the beach, and sand dikes will be maintained at either end of the basin to keep out tidal waters until time of opening of the proposed permanent culvert. The excavation will be dewatered during construction to allow work to progress in-the-dry, and to avoid any discharge or impacts to the ocean.

Proposed Mitigation:

The applicant offered no compensatory mitigation for the proposed impacts.

Project Purpose:

The project purpose as stated by the applicant is for stabilization of Singleton Swash.

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 (0.97) acres of intertidal marine habitat. 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 is not likely to adversely affect 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.

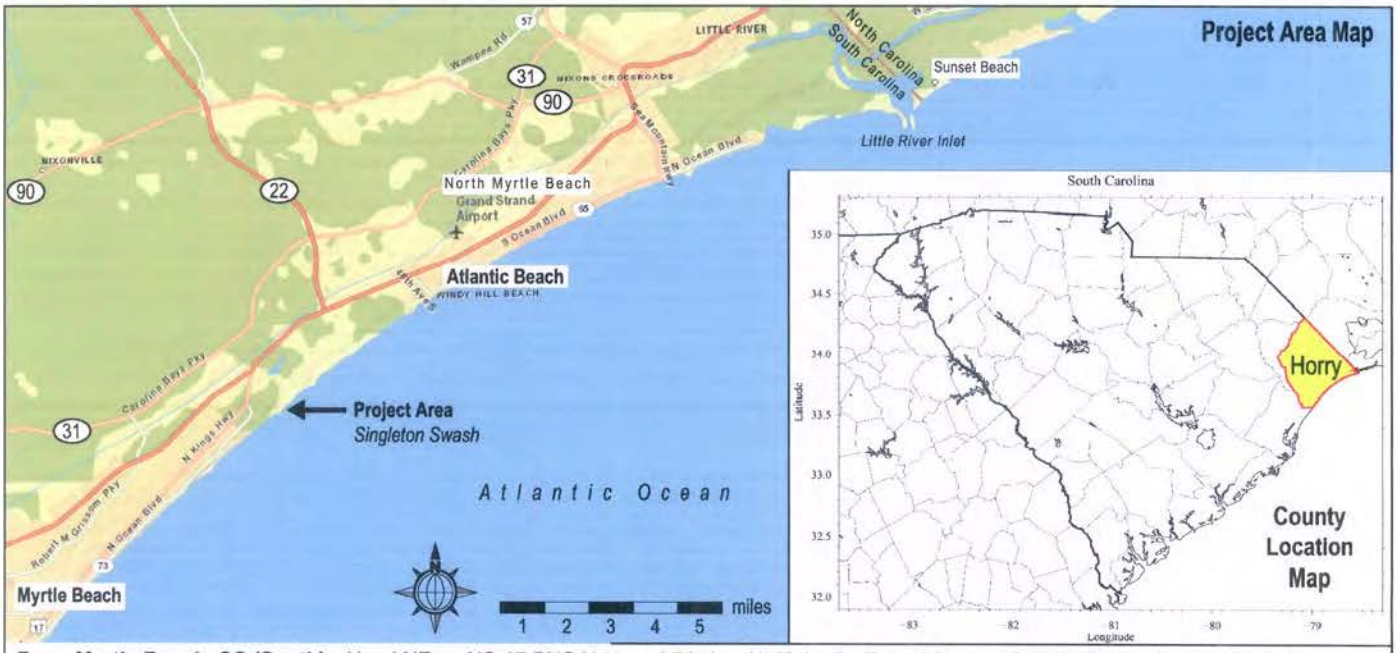
REGULATORY DIVISION 9 January 2014
Refer to: P/N # 2014-00013-3H

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 Rob Huff at 843-365-4239.



From Myrtle Beach, SC (South) - Head NE on US-17 BUS N toward 7th Ave N. (6.1 mi). Turn right onto Grande Dunes Blvd.(0.2 mi). Turn left onto N Ocean Blvd (0.2 mi). Take first right onto Ocean Blvd (0.6 mi). Project area is Northeast from the Dunes Golf Club along the beach.

From SC 22 E (North) - Exit onto US-17 S/N Kings Hwy toward Myrtle Beach (1.4 mi). Turn left onto Lake Arrowhead Rd. (1.2 mi). Lake Arrowhead Rd. turns slightly right and becomes Shore Dr. (0.6 mi). Project area is Southeast from the Sands Beach Club along the beach.

Singleton Swash Stabilization Project
SAC # 2014-00013-3H
Horry County, South Carolina
Sheet 1 OF 9 Dated: 01/7/2014

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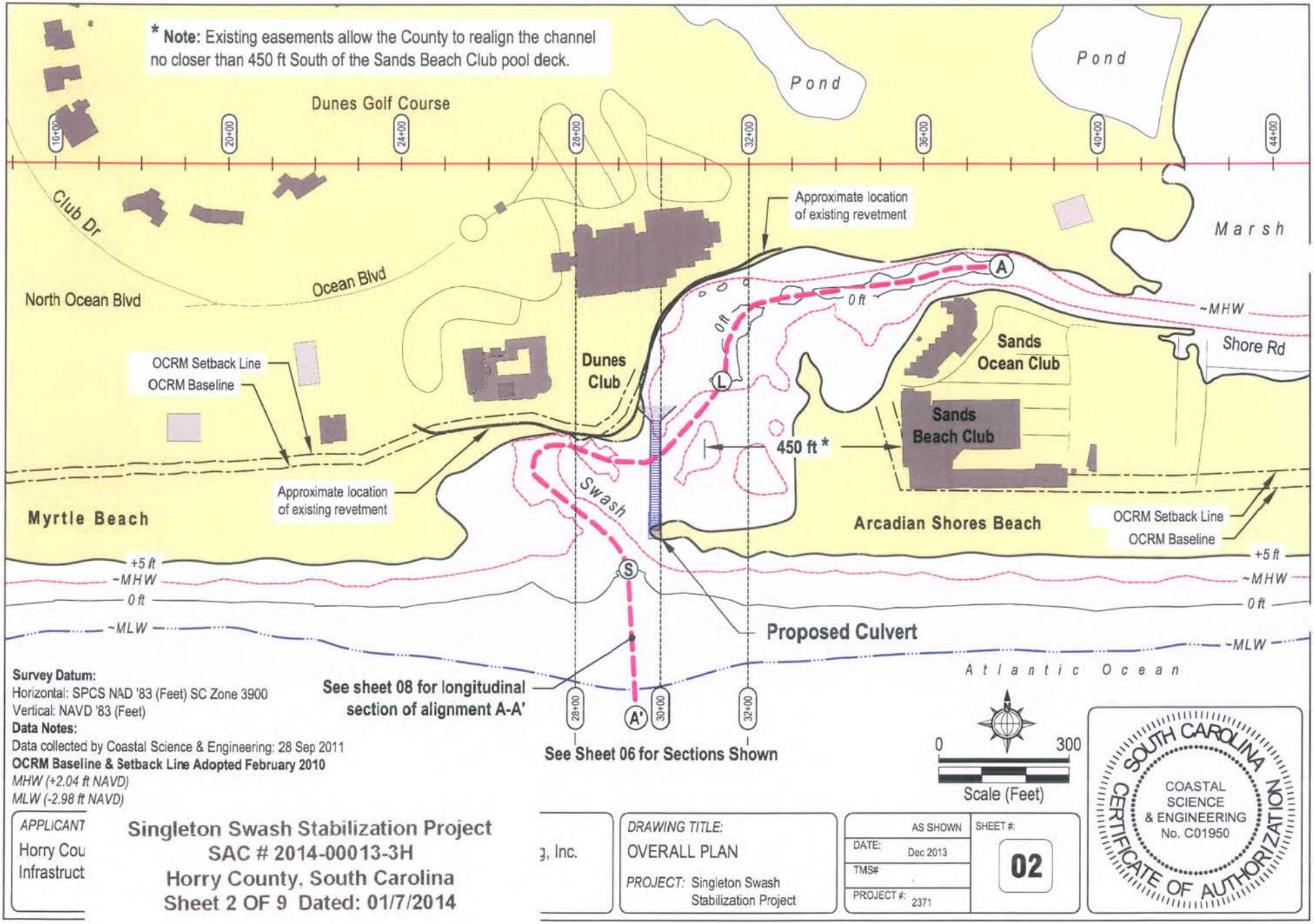
AGENT:
Coastal Science & Engineering, Inc.
P.O. Box 8056
Columbia, SC 29202

SCALE:	AS SHOWN
DATE:	Dec 2013
TMS#	
PROJECT #:	2371

SHEET #: 01

SOUTH CAROLINA COASTAL SCIENCE & ENGINEERING No. C01950 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER 12/5/13 No. 24737 HAIQING LIU KACZKOWSKI



Survey Datum:
Horizontal: SPCS NAD '83 (Feet) SC Zone 3900
Vertical: NAVD '83 (Feet)
Data Notes:
Data collected by Coastal Science & Engineering: 28 Sep 2011
OCRM Baseline & Setback Line Adopted February 2010
MHW (+2.04 ft NAVD)
MLW (-2.98 ft NAVD)

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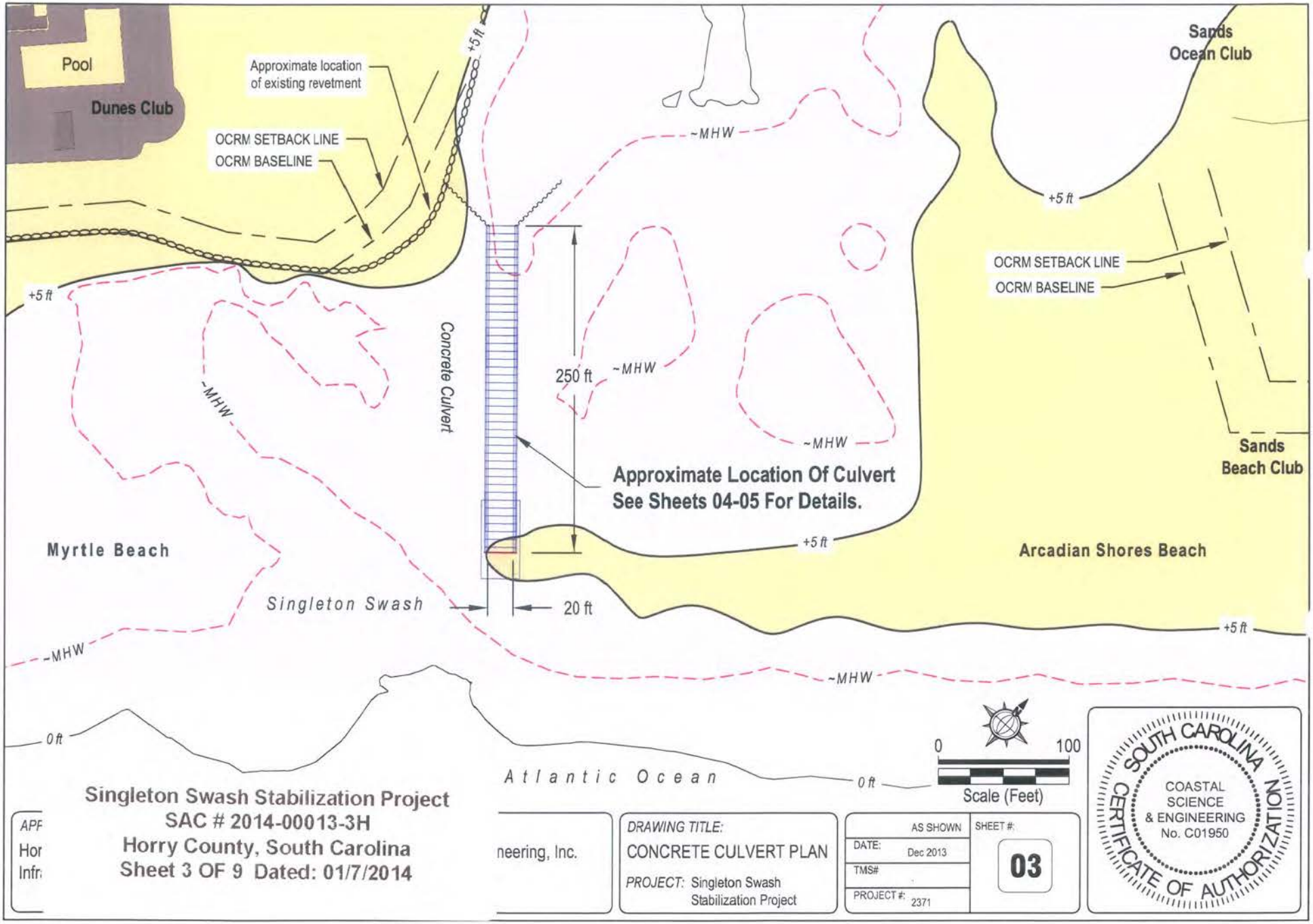
Singleton Swash Stabilization Project
SAC # 2014-00013-3H
Horry County, South Carolina
Sheet 2 OF 9 Dated: 01/7/2014

g, Inc.

DRAWING TITLE: OVERALL PLAN
PROJECT: Singleton Swash Stabilization Project

AS SHOWN	SHEET #: 02
DATE: Dec 2013	
TMS#	
PROJECT #: 2371	

SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION



Singleton Swash Stabilization Project
SAC # 2014-00013-3H
Horry County, South Carolina
Sheet 3 OF 9 Dated: 01/7/2014

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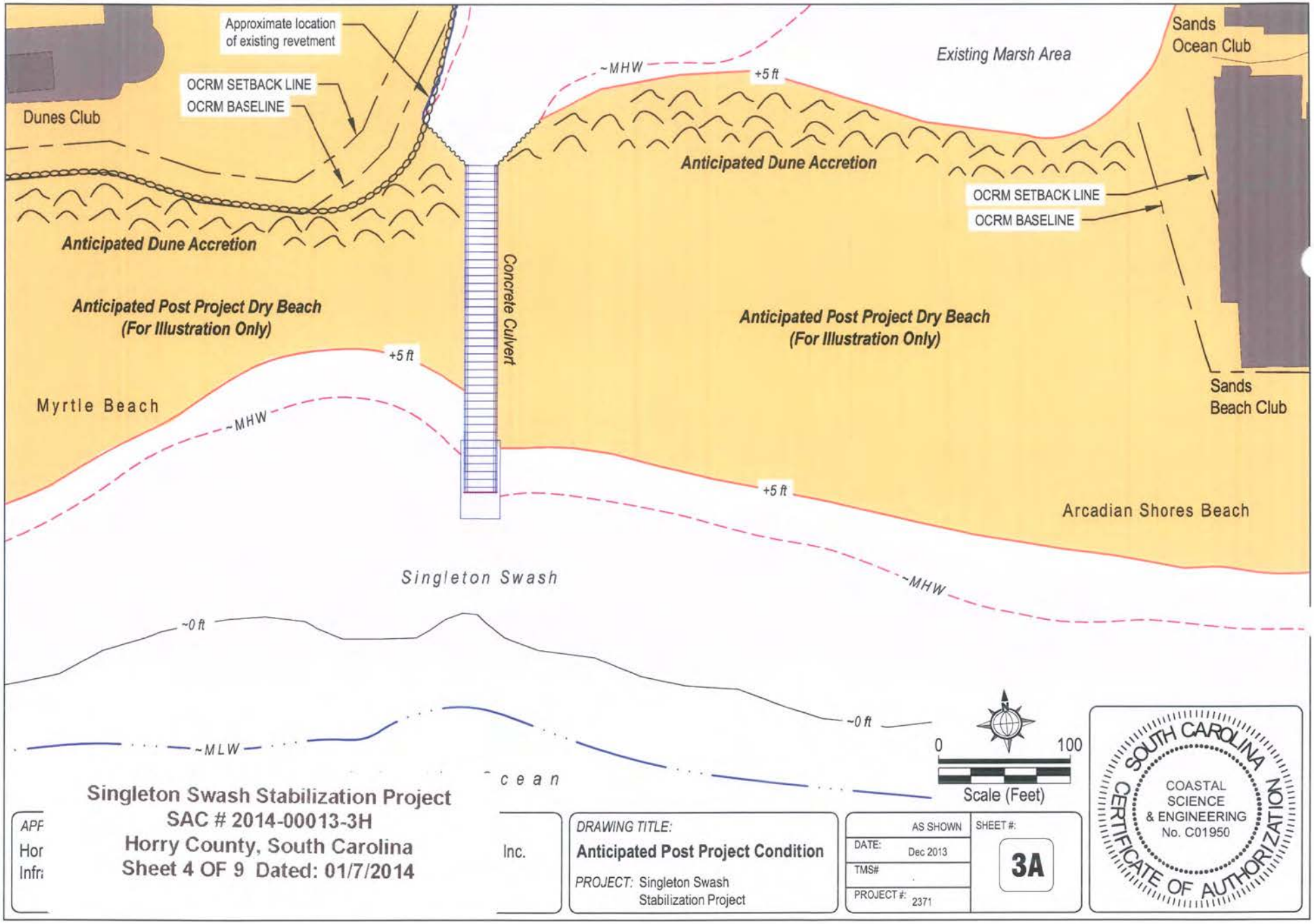
DRAWING TITLE: CONCRETE CULVERT PLAN

PROJECT: Singleton Swash Stabilization Project

AS SHOWN	SHEET #: 03
DATE: Dec 2013	
TMS#	
PROJECT #: 2371	

SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION



Singleton Swash Stabilization Project
SAC # 2014-00013-3H
Horry County, South Carolina
Sheet 4 OF 9 Dated: 01/7/2014

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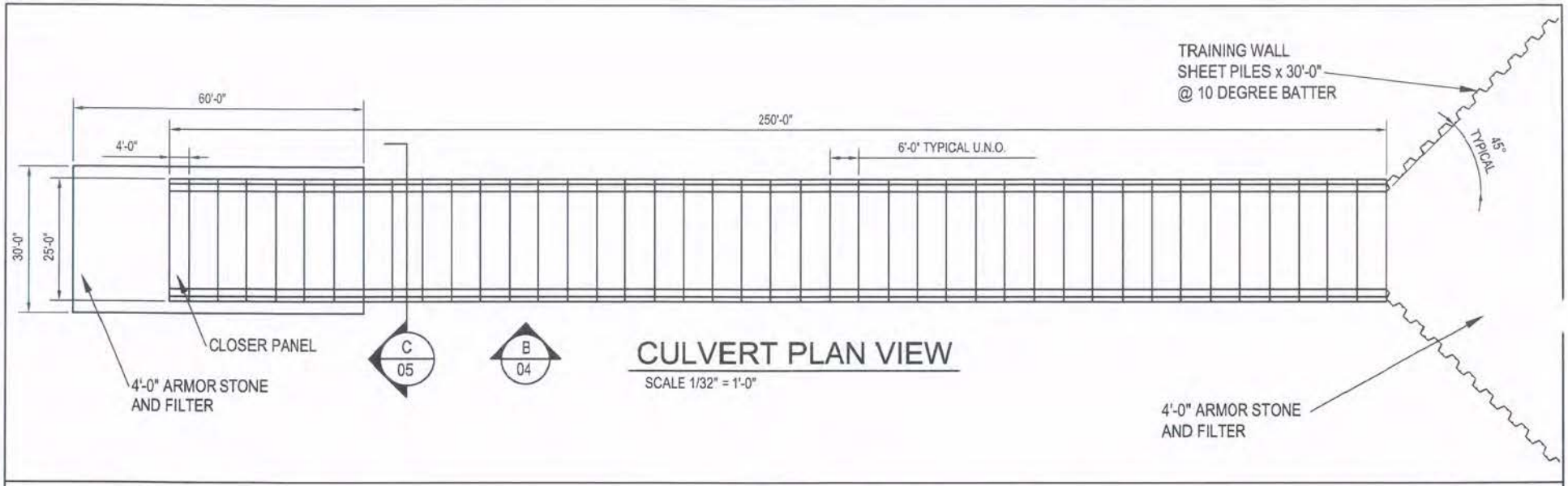
DRAWING TITLE:
Anticipated Post Project Condition

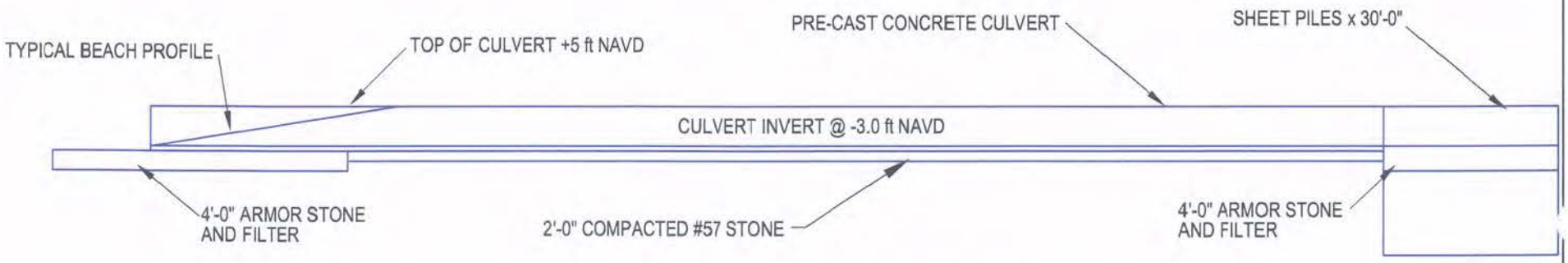
PROJECT: Singleton Swash Stabilization Project

AS SHOWN	SHEET #: 3A
DATE: Dec 2013	
TMS#	
PROJECT #: 2371	



CULVERT PLAN VIEW

SCALE 1/32" = 1'-0"



CULVERT ELEVATION

SCALE 1/32" = 1'-0"

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Singleton Swash Stabilization Project
SAC # 2014-00013-3H
Horry County, South Carolina
Sheet 5 OF 9 Dated: 01/7/2014

APPLICA
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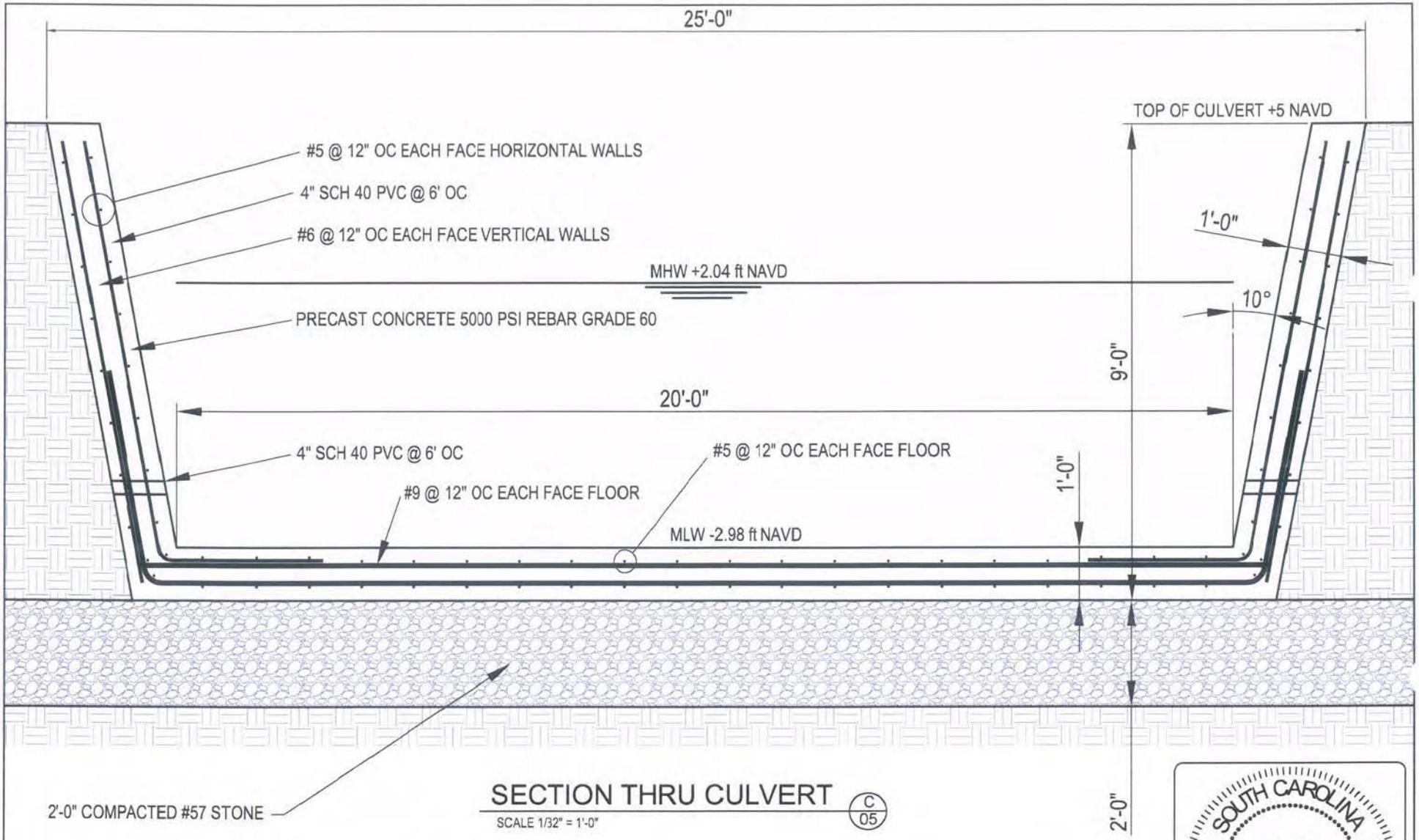
DRAWING TITLE:
CULVERT PLAN & ELEVATION
PROJECT: Singleton Swash Stabilization Project

AS SHOWN	SHEET #: 04
DATE: Dec 2013	
TMS#	
PROJECT #: 2371	

SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION



SECTION THRU CULVERT (C/05)

SCALE 1/32" = 1'-0"

Singleton Swash Stabilization Project
SAC # 2014-00013-3H
Horry County, South Carolina
Sheet 6 OF 9 Dated: 01/7/2014

APPLICA
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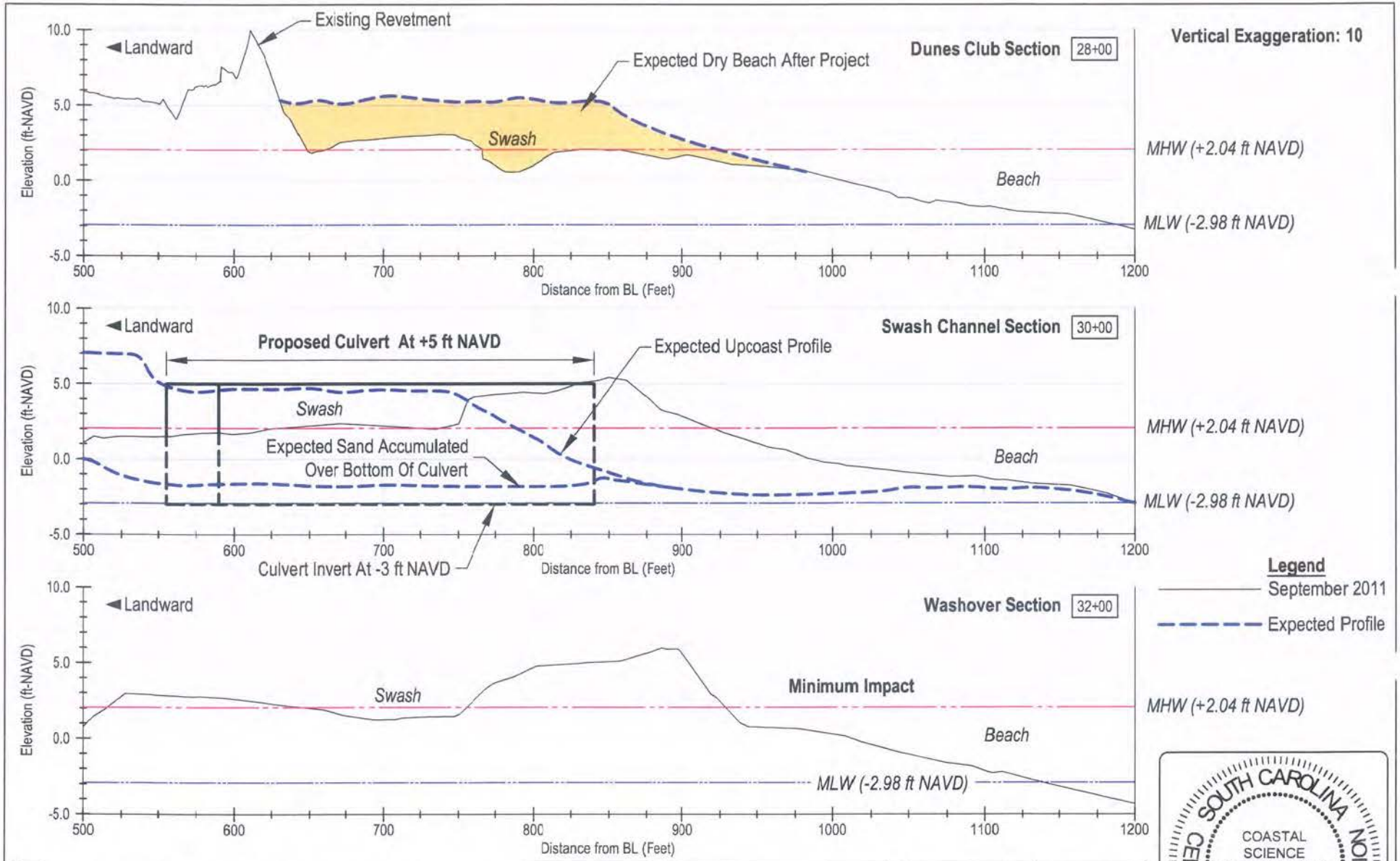
DRAWING TITLE: **CULVERT SECTION**

PROJECT: Singleton Swash Stabilization Project

AS SHOWN	SHEET #: 05
DATE: Dec 2013	
TMS#	
PROJECT #: 2371	

SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION



Singleton Swash Stabilization Project
SAC # 2014-00013-3H
Horry County, South Carolina
Sheet 7 OF 9 Dated: 01/7/2014

neering, Inc.

DRAWING TITLE: SECTIONS

PROJECT: Singleton Swash Stabilization Project

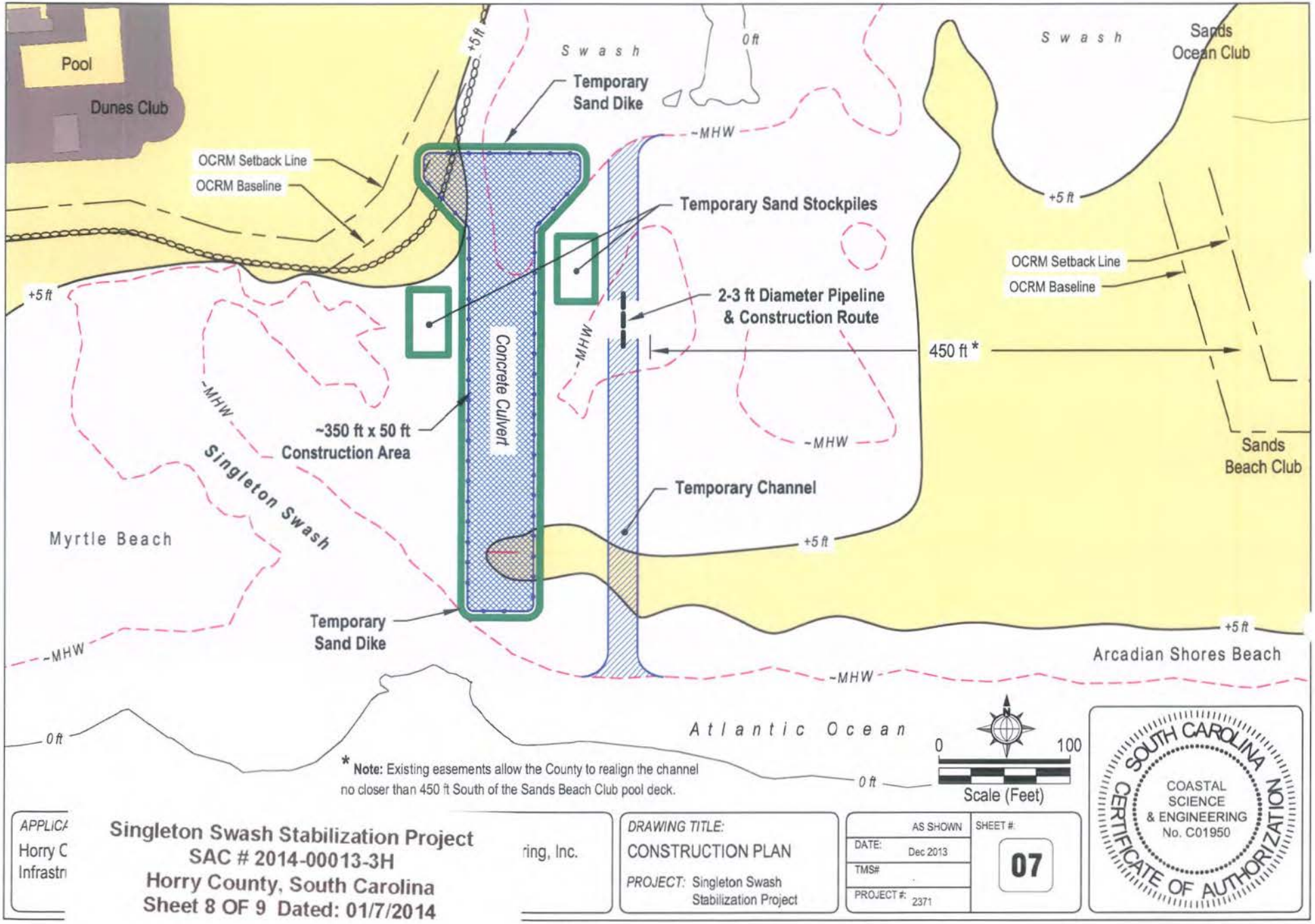
AS SHOWN | SHEET #: 06

DATE: Dec 2013

TMS#

PROJECT #: 2371

SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION



* **Note:** Existing easements allow the County to realign the channel no closer than 450 ft South of the Sands Beach Club pool deck.

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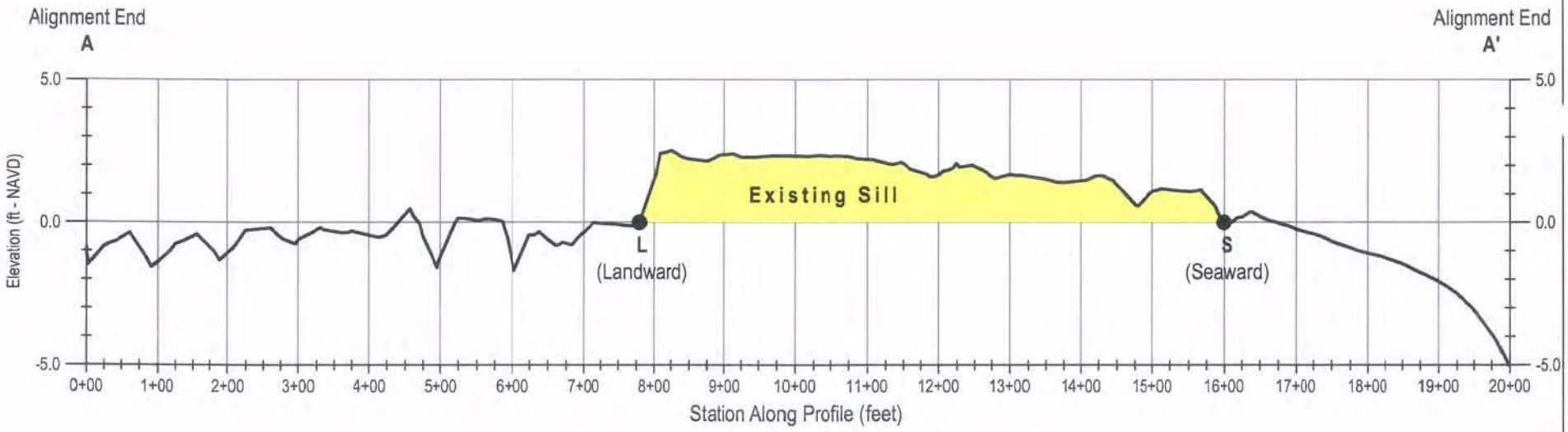
Singleton Swash Stabilization Project
SAC # 2014-00013-3H
Horry County, South Carolina
Sheet 8 OF 9 Dated: 01/7/2014

DRAWING TITLE: CONSTRUCTION PLAN

PROJECT: Singleton Swash Stabilization Project

AS SHOWN	SHEET #: 07
DATE: Dec 2013	
TMS#	
PROJECT #: 2371	

SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION



Singleton Swash channel profile for conditions of 28 September 2011 through 3 October 2011 showing the existing sill (controlling depth of +2 ft NAVD). The area of the sill (points L to S) is adjacent to the back beach (dry-sand beach) and generally aligns with the strand dune line. The natural sill prevents full discharge of tides in the marsh.

See sheet 02 for profile location and reference points on the profile.

Singleton Swash Stabilization Project
SAC # 2014-00013-3H
Horry County, South Carolina
Sheet 9 OF 9 Dated: 01/7/2014

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ering, Inc.

Columbia, SC 29202

DRAWING TITLE:
Existing Conditions Section

PROJECT: Singleton Swash Stabilization Project

AS SHOWN
DATE: Dec 2013
TMS#
PROJECT #: 2371

SHEET #: 08

SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION