



STATE OF NORTH CAROLINA
DEPARTMENT OF JUSTICE

JOSH STEIN
ATTORNEY GENERAL

9001 MAIL SERVICE CENTER
RALEIGH, NC 27699-9001

REPLY TO:
MARY LUCASSE
ENVIRONMENTAL DIVISION
mlucasse@ncdoj.gov

MEMORANDUM

TO: Coastal Resource Commissioners

CC: Ted Sampson, Consultant for The Riggings Homeowners, Inc. via email
Paul Derek Jarrett, Registered Agent, via US Mail
Braxton Davis, Director of DCM, via email

FROM: Mary Lucasse
Special Deputy Attorney General and CRC Counsel

DATE: January 25, 2017

RE: The Riggings HOA 2016 Annual Report (CRC-17-07)

In the Final Agency Decision issued December 11, 2015 conditionally granting The Riggings Homeowners Inc. (HOA) request for a variance relating to sandbags, the Commission required the HOA to provide an Annual Update on Alternative Solutions to address Erosion at the Riggings. That decision provides factual and procedural information regarding erosion and sandbags at The Riggings. The 2016 Annual Update was submitted on behalf of the HOA by Sampson Contracting, Inc. Division of Coastal Management was asked to provide written comments on the 2016 Annual Update. The purpose of requesting the HOA to provide an annual update was, in part, to allow the Commission to have ongoing discussions with the HOA to proactively consider methods of addressing erosion at the Site (other than sandbags).

Recommendation: Following discussion of the 2016 annual Update and DCM's comments, determine whether the Commission would like to request additional information or suggest the HOA take additional steps to proactively consider possible ways to address erosion at the Site.

Attachment A - Final Agency Decision dated December 11, 2015
Attachment B - The 2016 Annual Update submitted by the HOA
Attachment C - DCM's comments on the 2016 Annual Update
Attachment D - Powerpoint of Site Photos

STATE OF NORTH CAROLINA
COUNTY OF NEW HANOVER

IN THE MATTER OF:
PETITION FOR VARIANCE
BY RIGGINGS HOMEOWNERS, INC.

) BEFORE THE NORTH CAROLINA
) COASTAL RESOURCES COMMISSION
) **CRC-VR-15-08**
)
)
)

) **FINAL AGENCY DECISION**
)

On October 6, 2015, Petitioner, the Homeowners Association for The Riggings condominium development in Kure Beach, New Hanover County, submitted a request seeking a variance from Rule 15A NCAC 7H .1705(a)(7) to allow sandbags to remain on the beach for a period longer than is allowed by the rules of the North Carolina Coastal Resources Commission ("Commission"). The matter was heard on oral arguments and stipulated facts at the regularly scheduled meeting of the Commission on November 17, 2015 in Atlantic Beach, North Carolina pursuant to N.C. Gen. Stat. § 113A-120.1 and 15A NCAC 7J .0700, *et seq.* Assistant Attorney General Christine A. Goebel, Esq. appeared for the Department of Environmental Quality, Division of Coastal Management and William G. Wright, Esq. appeared on behalf of Petitioner.

Upon consideration of the record documents and the arguments of the parties, the Commission adopts the following:

FINDINGS OF FACTS

1. Petitioner Riggings Homeowners, Inc. ("Riggings HOA" or "Petitioner") is a non-profit corporation organized under the laws of the State of North Carolina. "The Riggings" is also the name of the 48-unit residential condominium project bordering the Atlantic Ocean in Kure Beach, New Hanover County, North Carolina, whose unit owners are members of Riggings HOA.

2. The Riggings was constructed in 1985 near the boundary between the town of Kure Beach and the Fort Fisher State Historic Site. Immediately south of The Riggings is Fort Fisher, a North Carolina State Park, which is also located on the shoreline of the Atlantic Ocean.

3. The Riggings has been threatened by erosion since 1985, and a sandbag revetment has been used to protect it since that time.

4. In the 1920's the Board of County Commissioners of New Hanover County allowed a contractor to remove some of the coquina rock outcropping northeast of Fort Fisher for use in the completion of a section of U.S. Highway 421, a public project.

5. The contractor removed approximately 6,000 cubic yards of rock from a strip approximately 50 to 100 feet wide.

6. An intertidal rock outcrop near Fort Fisher, known as the Fort Fisher Coquina Outcrop Natural Area, was entered on the official North Carolina Registry of Natural Heritage Areas on February 6, 1982.

7. Among other things, coquina rock outcroppings can provide a partial natural barrier against beach erosion.

8. Currently some of these coquina rock outcroppings are within sight of The Riggings, and the southern portion of a large outcropping is situated in front of the northern section of The Riggings.

9. A large part of the rock outcroppings within sight of The Riggings was uncovered during Hurricane Floyd, and its vegetation was uprooted by the storm surge.

10. Since 2000, beach nourishment projects conducted by the U.S. Army Corps of Engineers have covered some coquina rock outcroppings north of The Riggings.

11. The first CAMA permits for sandbags at The Riggings were issued by the Local Permit Officer for the Town of Kure Beach.

12. Since 1992, the CAMA permits for the sandbags have been issued by the Division of Coastal Management ("DCM").

13. In 1994 DCM issued CAMA General Permit No. 13355-D, which authorized repair of the sandbags and the addition of new ones.

14. Permit No. 13355-D was modified in February 1995 to allow the filling of holes in the sandbag revetment with sandbags.

15. The sandbags which were in place when Permit No. 13355-D expired on March 5, 1995, could legally remain in place until May 1, 2000.

16. In order to protect Fort Fisher from the effects of erosion from the Atlantic Ocean, the State of North Carolina erected a permanent revetment from July 1995 to January 1996.

17. At the time the revetment was erected, the general policy of the State of North Carolina did not permit the construction of hardened structures like the Fort Fisher revetment in recognition of the adverse erosion effects such structures can cause to adjacent properties. However, the revetment was constructed under an exception to this policy for the protection of federal and state historic sites, such as Fort Fisher.

18. Initially after the construction of the revetment at Fort Fisher, the rate of erosion of the shoreline in front of The Riggings increased, but since then the rate of erosion has decreased.

19. On May 26, 2000, the Commission granted a variance to the Riggings HOA extending the deadline for removing the sandbag to May 26, 2001. (Stipulated Exhibit 6, pp 164-68)

20. The Carolina / Kure Beach Renourishment Project of 2001 included a large part of Carolina Beach and 98 percent of Kure Beach but fell approximately 1,500 feet short of the Riggings Condominium.

21. The Riggings HOA made various attempts to get the United States Army Corps of Engineers to extend beach nourishment projects to include the shoreline immediately adjacent to The Riggings, but the attempts did not succeed.

22. The Corps of Engineers informed U.S. Representative Mike McIntyre by letter dated February 25, 2000, that the "primary reason that the (beach nourishment) project stops short of the Riggings is due to the intertidal coquina rock outcropping." The letter further states that the "rock outcropping has been declared a natural heritage area by the North Carolina Natural Heritage Program and burying them was not an acceptable alternative."

23. On February 4, 2002, the Commission granted a variance to the Riggings HOA, extending the deadline for removal of the sandbags until May 23, 2003. (Stipulated Exhibit 6, at 158-63)

24. On May 9, 2003, CRC signed an order granting a variance to allow the sandbags to remain in place until May 9, 2005. (Stipulated Exhibit 6, at 152-57)

25. After obtaining estimates for relocating the condominium, Riggings HOA sought financial assistance to relocate certain of the condominium buildings by contacting the North Carolina Division of Emergency Management ("NCDEM"), the Natural Heritage Trust Fund and DCM, and requested the Town of Kure Beach apply for beach access and/or FEMA grants.

26. In July 2004 the Town of Kure Beach was awarded a \$3.6 million FEMA grant to acquire a portion of the property on the ocean-side where some of the buildings comprising The

Riggings are located, once these buildings were relocated across the street. The grant included \$2.7 million dollars from FEMA, with the individual unit owners of The Riggings being required to contribute the remaining \$900,000.

27. In March 2005 Riggings HOA was working with architects and surveyors to finalize plans to rebuild across the street and to remove the current structures. It also had contractors ready to start construction once the planning was complete.

28. In its most recent variance order, dated April 25, 2005, CRC said the sandbags were to be removed "prior to the expiration of the FEMA grant." (Stipulated Exhibit 6, at 145-51)

29. In order to comply with the provisions of the grant, Riggings HOA was required to obtain the unanimous consent of the unit owners. On May 1, 2006, Riggings HOA notified the Town of Kure Beach that twenty-four of the homeowners of The Riggings had voted not to accept the FEMA pre-disaster grant. Although it is not certain why each individual owner voted as he or she did, among the reasons owners may have voted against the grant were:

- a. Each unit owner would have been required to contribute approximately \$125,000 toward the cost of relocation and reconstruction. Some homeowners lacked the financial capability to relocate.
- b. There was no guarantee in the grant contract that the provisions of the grant, particularly the provision regarding the use of the oceanfront property, would not change.
- c. Some owners had been informed by the holders of their mortgages that no relocation of the units could occur without their consent, and some of those lenders had expressed concerns about whether that consent would be given.

30. Subsequently, DCM was notified on June 20, 2006, by the State Hazard Mitigation Officer of NCDEM that the grant had been terminated, notwithstanding its June 30, 2007 expiration date, and had been closed out June 1, 2006.

31. The Carolina / Kure Beach Renourishment Project of 2007 included a large part of Carolina Beach and 98 percent of Kure Beach, but again fell approximately 1,500 feet short of The Riggings.

32. Sometimes sandbags at The Riggings are buried under sand and sometimes they are exposed. This depends on the beach profile, which can change quickly.

33. A former member of the U.S Army Corps of Engineers is on record as stating that the Riggings sandbags have not had any deleterious effect on surrounding property nor have they come into contact with the Atlantic Ocean except during major storm events.

34. Whether the public can walk along the beach without detouring landward around the sandbags depends on the beach profile at the time, but even at high tide the public can get around the sandbags by going between the sandbags and The Riggings buildings closest to the ocean.

35. The Riggings HOA proposes that the sandbags remain in place until such time as their proposed Habitat Enhancement Project, a copy of which is incorporated herein by reference, and/or a renourishment project, either privately or publicly funded, has been completed.

36. Petitioner filed its fifth request for a variance in 2006. In conjunction with resolving two other legal cases, Petitioner and DCM Staff agreed to a set of stipulated facts in 2007, and the variance request was heard at the Commission's January 17, 2008 meeting. The Commission

found against the request of all four variance factors, and denied the variance through a written order dated January 31, 2008 (Stipulated Exhibit 6, at 172-85)

37. On March 7, 2008, a Petition for Judicial Review was timely filed by Petitioners pursuant to N.C. Gen. Stat. § 150B-45. On February 20, 2009, the Honorable Superior Court Judge Jay Hockenbury found that the CRC's denial of the Riggings variance request was i) based on an error of law, ii) was made upon unlawful procedure, iii) was not supported by substantial evidence in the record, and iv) was arbitrary and capricious. The court reversed the Commission's Order and remanded the matter back to Commission pursuant to the instructions contained in his Order. The CRC did not appeal from that Order, and the matter was remanded back to the Commission. (Stipulated Exhibit 6, at 199 - 212)

38. On April 29, 2009, Petitioner's variance request was reheard by the Commission. The Commission agreed with Petition on the second and third variance factors, but disagreed with Petitioner on the first and fourth variance factors. Accordingly, the Commission denied the variance through a May 21, 2009 Final Order. (Stipulated Exhibit 6, at 236-47)

39. On June 17, 2009, Petitioner timely filed a Petition for Judicial Review pursuant to N.C. Gen. Stat. § 113A-123 and § 150B-45, which was heard by Judge Hockenbury on March 12-13, 2012. Following that hearing, Judge Hockenbury entered a June 1, 2012 Order holding in pertinent part the Commission erred in concluding: (1) the Petitioner did not demonstrate strict application of 15A NCAC 7H.1705 would result in unnecessary hardship to the Riggings Property; and (2) that Petitioner did not meet the fourth element of the variance request: that the variance is consistent with the spirit, purpose, and intent of the rules, standards or order; will secure public safety and welfare; will preserve substantial justice and that the Commission's

decision is not supported by substantial evidence and there is substantial evidence to grant the variance. On some other matters, Judge Hockenbury found in the Commission's favor. Judge Hockenbury reversed the Commission's Order and remanded the matter back to Commission for a new hearing, consistent with the mandates and instructions contained within his Order. (Stipulated Exhibit 6, at 260-81)

40. On June 27, 2012, the Commission gave written notice of appeal to the North Carolina Court of Appeals, appealing Judge Hockenbury's June 1, 2012 Order. On June 29, 2012, Petitioner gave written notice of cross-appeal. Following Oral Arguments on April 10, 2013, the majority of the three judge panel of the North Carolina Court of Appeals ruled on August 6, 2013, affirming Judge Hockenbury's ruling. Judge Bryant filed a Dissenting Opinion. (Stipulated Exhibit 1)

41. On September 10, 2013, the Commission filed its Notice of Appeal based on the dissenting opinion of the Court of Appeals panel, and also petitioned the Court for discretionary review as to all other issues resolved adversely to the Commission. On September 24, 2013, The Riggings conditionally petitioned the Court for discretionary review as to the issues resolved adversely to the Riggings. (Stipulated Exhibit 2)

42. On January 24, 2014, the Supreme Court allowed both of the petitions for discretionary review of the Court of Appeals decision and the appeal. (Stipulated Exhibit 3)

43. On December 19, 2104 following oral argument, an equally divided panel of the North Carolina Supreme Court, with Justice Robert Hunter abstaining due to his participation on the panel of the Court of Appeals, affirmed the decision of the Court of Appeals. (Stipulated Exhibit 4)

44. The Petitioner's variance has been remanded back to the Commission, as noted in the April 9, 2015 letter to DCM Staff Counsel and Petitioner's Counsel from Commission Counsel Lucasse. (Stipulated Exhibit 5)

STIPULATED EXHIBITS

Included with the Petition and the Staff Recommendation for the Commission's review were the following Stipulated Exhibits:

1. Decision of the NC Court of Appeals and Dissent, August 6, 2013;
2. CRC's Notice of Appeal and Petition & Riggings' Conditional Petition to the Supreme Court, September 10, 2013;
3. Supreme Court's Order granting both petitions, January 23, 2014;
4. Decision of the NC Supreme Court, December 19, 2014;
5. CRC Counsel's April 9, 2015 letter to DCM Counsel and Riggings' Counsel;
6. The Record on Appeal to the NC Court of Appeals (297 pages);
7. PowerPoint presentation.

CONCLUSIONS OF LAW

1. The Commission has jurisdiction over the parties and the subject matter.
2. All notices for the proceeding were adequate and proper.
3. Petitioner has met the requirements in N.C.G.S. § 113A-120.1(a) and 15 NCAC

07J .0703(f) which must be found before a variance can be granted as set forth below.

A. Strict application of the rules relating to temporary erosion control structures will cause Petitioner unnecessary hardships.

The Commission affirmatively finds that strict application of 15A NCAC 7H. 0308(a)(2) and 15A NCAC 7H.1705 would cause Petitioner unnecessary hardship. The rules relating to temporary erosion control structures are designed to allow the temporary use of sandbags to counteract erosion, "but only to the extent necessary to protect property for a short period of time until the threatened structures can be relocated or until the effects of a short-term erosion event is

reversed.” 15A NCAC 7M .0200. Without the variance, Petitioner would not be able to keep the sandbags to protect their condominiums. In its recent variance request, Petitioner requests additional time to develop its proposed Habitat Enhancement Project and/or a renourishment project. In addition, Petitioner states, if a variance is granted and the sandbags are allowed to remain at the Site, this “will permit the residents of the Riggings Condominium time to explore alternative options . . . such as private renourishment of the beach.” (Attachment C to Staff Recommendation at 3)

The Commission, in its May 21, 2009 Final Agency Order, disagreed with Petitioner on this factor, and held that “Petitioner ha[d] not demonstrated that strict application of Rules 15A NCAC 7H .0308(a)(2) and 15A NCAC 7H .1705(a)(7) will result in an unnecessary hardship, as required by N.C.G.S. § 113A-120.1(a)” (CRC’s May 21, 2009 order, p. 6). While acknowledging Petitioner’s hardships from erosion and its resulting use of sandbags since 1985, along with Petitioner’s lack of success in its efforts to relocate the structures or be included in the Corps’ renourishment project, the Commission concluded that another variance from sandbag time limits to allow their continued use on the site for a time-period without an end point would not result in “unnecessary” hardships.

The Superior Court’s June 1, 2012 Order on Judicial Review reversed the Commission, and held that the Commission’s conclusion that “erosion is stable” was not supported by the record, was contradicted by the Stipulated Facts, and held that “even though the rate of erosion has decreased, there still is erosion of the shoreline at The Riggings.” (June 1, 2012 Order, p. 9) The Superior Court also determined that the Commission’s “unnecessary hardship” analysis improperly focused on the Riggings owners and their actions, and not on their property.

The Court of Appeals noted that there was a mutual disagreement of the parties of the meaning of the Stipulated Facts concerning the statements “erosion is stable” and “the rate of erosion is stable” and concluded that erosion was still occurring at the property. (Court of Appeals Decision, p. 16) The Court went on to hold that the Commission improperly based its consideration of this factor on the property owners, and not the property, in its unnecessary hardships analysis. (Id., pp. 18-19)

The 3-3 split at the Supreme Court (with Justice Hunter not participating) upheld the Court of Appeals decision “without precedential value” for the Court of Appeals’ reasoning. Given these appellate decisions and analysis, DCM did not recommend the Commission find against Petitioner on this variance factor.

For the reasons set forth above, the Commission affirmatively finds that strict application of the rule providing for the temporary use of sandbags would cause Petitioner unnecessary hardship in light of Petitioner’s request for time for the residents of the Riggings Condominium time to explore alternative options . . . such as private renourishment of the beach.” For these reasons, the Commission affirmatively finds that Petitioner has met the first factor without which a variance cannot be granted.

b. Petitioner has demonstrated that the hardship results from conditions peculiar to Petitioner's property.

The Commission affirmatively finds that Petitioner has demonstrated that the hardship results from conditions peculiar to the property. Specifically, Petitioner's property is located between the Fort Fisher revetment and the intertidal coquina rock outcropping. Based on the physical features adjacent to the Site, in the Commission’s Final Agency Order dated May 21, 2009, the Commission held,

The CRC concludes as a matter of law that Petitioner has demonstrated any hardship which might result from strict application of the time limits for use of sandbags as a temporary erosion measure, if any, would be from conditions peculiar to Petitioner's property such as the location, size, or topography of the property.

(CRC's May 21, 2009 order, pp. 8-9). As the Commission has previously found in Petitioner's favor on this variance factor, DCM recommended that the Commission again find in Petitioner's favor on this variance factor for the same reasons outlined in the Commission's May 21, 2009 Final Agency Order, and as directed by the Superior Court's June 1, 2012 Order on Judicial Review which was upheld by the Court of Appeals and the Supreme Court.

For these reasons, the Commission affirmatively finds that Petitioner has demonstrated that this hardship results from conditions peculiar to the property and has met the second factor required for the grant of its request for a variance.

c. Petitioner has demonstrated that the hardship does not result from actions taken by Petitioner.

In the Commission's In the Commission's Final Agency Order dated May 21, 2009, the Commission held,

The CRC concludes as a matter of law that Petitioner has demonstrated any hardship which might result from strict application of the time limits for use of sandbags as a temporary erosion measure, if any, would not result from actions the Petitioner has taken. (SF 20-21, 25-31)

(CRC's May 21, 2009 order, p. 9) As the Commission has previously found in Petitioner's favor on this variance factor, DCM recommended that the Commission again find in Petitioner's favor on this variance factor for the same reasons outlined in the Commission's May 21, 2009 Final Agency Order, and as directed by the Superior Court's June 1, 2012 Order on Judicial Review which was upheld by the Court of Appeals and the Supreme Court.

For these reasons, the Commission affirmatively finds that Petitioner has demonstrated that the hardships do not result from actions taken by Petitioner. Therefore, Petitioner has met the third factor required for the grant of its request for a variance.

- d. Petitioner has demonstrated that the requested variance is consistent with the spirit, purpose and intent of the Commission's rules, will secure public safety and welfare, and will preserve substantial justice.**

In order to receive a variance, Petitioner must demonstrate (a) that the requested variance is consistent with the spirit, purpose and intent of the Commission's rules, (b) that it will secure public safety and welfare, and (c) that it will preserve substantial justice. The principal purpose of the Temporary Erosion Control Structure Rule is to give Petitioner some time, but not an unlimited amount of time, to protect its property from erosion. *See* 15A NCAC 7H .0308(a)(2) and 15A NCAC 7H .1705(a)(7).

The Commission, in its May 21, 2009 Final Agency Order, disagreed with Petitioner on this factor, and held that "The proposed variance is inconsistent with the spirit, purpose, and intent of the CRC's rules because sandbags are intended to be a temporary erosion control structure and this sandbag revetment has been in place for almost 24 years." (May 21, 2009 Final Agency Order, p. 10) The Commission also held that the variance did not preserve public safety and welfare as it was difficult for the public to use this portion of the Public Trust Area because of the sandbags on the beach. (*Id.* p. 10) Finally, the Commission held that a variance would not preserve substantial justice because both the legislature and the Commission's express directive was that sandbags could only be used as a temporary erosion control structure. (*Id.*, p. 10)

The Superior Court's June 1, 2012 Order on Judicial Review reversed the Commission, and held that in addition to the Commission's focus on 15A NCAC 7M.0202(a) which limits

erosion control measures so that they are consistent with and minimize impacts to the public use of the beach, the Commission should give more weight to the factors in N.C.G.S. 113A-102, specifically focusing on minimizing the loss of private resources to erosion and reducing potential debris from the “potential destruction of The Riggings that can harm other structures and/or inhibit public access to the beach. (June 1, 2012 Order, pp. 16-18) The 2-judge majority opinion of the Court of Appeals upheld the Superior Court, but Judge Bryant drafted a separate dissent, questioning the majority’s application of the standard of review and stating that the Commission’s decision on the fourth variance factor was supported by “substantial evidence” as required. (Court of Appeals Dissent, pp. 2-4) The dissent concluded that the majority improperly substituted its own judgement for that of the Commission. (*Id.*)

The 3-3 split at the Supreme Court (with Justice Hunter not participating) resulted in the Court of Appeals decision being upheld “without precedential value.” In light of this appellate history, DCM recommended that the Commission find in Petitioner’s favor on this variance factor as long as reasonable and appropriate conditions and safeguards are included in the final agency decision.

REASONABLE AND APPROPRIATE CONDITIONS AND SAFEGUARDS

N.C.G.S. 113A-120.1(b) provides, “The Commission may impose reasonable and appropriate conditions and safeguards upon any variance it grants.” The Superior Court noted this provision with approval in its June 1, 2012 Order. (*See* Order at p. 8) In the current request, “The Riggings HOA proposes that the sandbags remain in place until such time as their proposed Habitat Enhancement Project, and/or a renourishment project, either privately or publically funded, has been completed.” (Stipulated Fact 35)

In its recommendation, DCM suggested that the Commission include conditions to safeguard the beach in front of The Riggings. Specifically, Petitioner shall remove any existing visible sandbag debris based on 15A NCAC 7H .0308(a)(G) which requires that "Prior to completing any erosion response project, all exposed remnants of or debris from failed erosion control structures must be removed by the permittee." In addition, Petitioner shall ensure that any new sandbags placed shall be installed in conformance with the Commission's sandbag rules, with the exception of the time limits in .0308(a)(2)(F). Instead, DCM recommended that the Commission place as a condition on its grant of Petitioner's variance request a time limit of up to five (5) years from the date of the variance order for the replacement of any sandbag structures. Finally, DCM requested the Commission require that the HOA submit an annual written update of progress on alternative solutions to the Commission's Executive Secretary. Such a condition would allow the Commission and Staff to follow Petitioner's progress in seeking long-term solutions to address erosion at The Riggings, and could provide an opportunity for the Commission and Staff to suggest other avenues for addressing erosion as Petitioner moves toward achieving its proposed "Habitat Enhancement Project, and/or a renourishment project, either privately or publically funded."

During the hearing on the variance request, Petitioner's counsel agreed that the conditions proposed by DCM be included in any variance granted by the Commission.

For the reasons provided above, which include the conditions proposed by DCM, the Commission affirmatively finds that Petitioner's request to keep the sandbags for a limited period of time is consistent with the spirit, purpose, and intent of the Commission's Temporary Erosion Control Structure Rule, will be protective of public safety and welfare, and will preserve

substantial justice by balancing private property interests with the longstanding right of the public to use the ocean beaches as long as Petitioner meets the conditions included in the variance.

ORDER

THEREFORE, the requested variance from 15A NCAC 7H. 0308(a)(2) and 15A NCAC 7H .1705(a)(7) is GRANTED subject to the following conditions:

1. Petitioner shall remove all exposed remnants of or debris from failed erosion control structures as required by 15A NCAC 7H .0308(a)(G) prior to completing any erosion response project;
2. Petitioner shall ensure that any new sandbags placed shall be installed in conformance with the Commission's sandbag rules, with the exception of the time limits in .0308(a)(2)(F);
3. The temporary sandbags authorized by this variance may only be left in place for a period of five (5) years from the date of this final agency decision (up to December 11, 2020);
4. The Board of the HOA shall submit a detailed annual written update to the Commission including information regarding the steps it has taken and the progress made on finding and implementing alternative solutions to address erosion at The Riggings. This annual update shall be provided on December 11 to the Executive Secretary of the Coastal Resources Commission at the following address:

Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

The granting of this variance does not relieve Petitioner of the responsibility to obtain other required permits from the proper permitting authority. This variance is based upon the Findings of Facts set forth above, the stipulated facts and exhibits which make up the record, and the arguments presented. The Commission reserves the right to reconsider the grant of this variance if there is a material change to any of the facts upon which it was granted. .

This the 11th day of December 2015.

Frank D. Gorham III

Frank D. Gorham, III, Chairman
Coastal Resources Commission

CERTIFICATE OF SERVICE

This is to certify that I have this day served the foregoing FINAL AGENCY DECISION
upon the parties by the methods indicated below:

Riggings Homeowners, Inc.
Dawn Gual, Registered Agent
P.O. Box 1124
Carolina Beach, NC 28428

Certified Mail/ Return Receipt Requested

William G. Wright
Shipman & Wright, L.L.P.
575 Military Cutoff Road, Suite 106
Wilmington, NC 28405

U.S. Mail and Electronically at
wwright@shipmanlaw.com

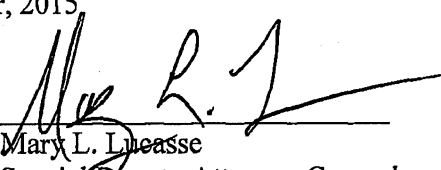
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This the 11th day of December, 2015

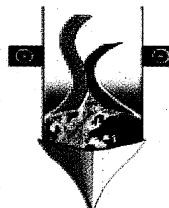


Mary L. Lucasse
Special Deputy Attorney General and Commission Counsel
N.C. Department of Justice
P.O. Box 629
Raleigh, N. C. 27602



SAMPSON CONTRACTING, INC.
Marine Construction And Environmental Consulting Services

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December 11, 2016

Braxton Davis
Executive Secretary
Coastal Resources Commission
NC Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

Re: Annual Update on Alternative Solutions to
Address Erosion at the Riggings

Dear Mr. Davis:

Our firm has been engaged by Riggings Homeowners, Inc., of Kure Beach, NC, to assist them in complying with the provisions of Paragraph 4 of the Variance Order in the matter of Petition for Variance by Riggings Homeowners, Inc. (CRC-VR-15-08), which was issued on December 11, 2015.

Paragraph 4 directs:

The Board of the HOA shall submit a detailed annual written update to the Commission including information regarding the steps it has taken and the progress made on finding and implementing alternative solutions to address erosion at The Riggings. This annual update shall be provided on December 11 to the Executive Secretary of the Coastal Resources Commission at the following address:

Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

Please find enclosed the first of the required annual updates.

Sincerely,

Ted Sampson
Environmental Consultant

Encl: (1) Annual Update on Alternative Solutions to Address Erosion at the Riggings - 2016



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ANNUAL UPDATE ON ALTERNATIVE SOLUTIONS TO ADDRESS EROSION AT THE RIGGINGS 2016

FINDING ALTERNATIVE SOLUTIONS

Since the issuance of the Coastal Resources Commission's (CRC) Variance Order on December 11, 2015, the major focus of Riggings Homeowners, Inc. has been on the removal of the remnants of, or debris from its failed erosion control structure, in compliance with Paragraph 1 of that Order, and on the construction of a replacement sandbag erosion protection alignment as authorized by that Order. The removal of remnants and debris from the previous sandbag alignment was initiated in April 2016, and completed prior to the initiation of construction on the new sandbag revetment. Construction of the new sandbag revetment commenced in May of 2016, and was completed at the end of June 2016.

During the above activities, a number of steps were initiated to allow the identification of potential alternative solutions. These included:

- Evaluate observations of beach morphology for mechanisms underlying the accelerated erosion of The Riggings' shoreline;
- Evaluate history, significance, and uniqueness of Coquina rock outcroppings on the shoreline in the vicinity of The Riggings; and
- Evaluate effects of beach nourishment to the north of The Riggings on the exposed Coquina outcroppings.

Mechanisms Underlying Accelerated Erosion:

The construction activities from April through June provided the opportunity for daily observation of the response of the beach to wind, wave and storm effects. During this period of time, construction activities were suspended during two nor'easter storm events and the passage of one tropical depression and one tropical storm. The beach elevation and slope changed noticeably on an almost daily basis, and most dramatically in response to the storm events.

In light to moderate northeast winds, little change was noticed to beach elevation or slope, with the exception of when the Kure Beach Coastal Storm Damage Reduction (CSDR) project began to approach completion at the southern terminus in May. At that time there appears to have been enough sand placed into the north-south littoral transport current to bypass the Coquina rock outcropping located immediately to the north of The Riggings property, and this, during the higher portions of the tidal cycle, allowed sand to pass landward of the northern outcropping, allowing the beach in front of The Riggings to begin to build in elevation and at a less steep slope.

When the wind blew strongly out of the northeast, and especially at times of higher lunar tides, or in association with a storm surge, sand which had previously built-up along The Riggings shoreline was quickly stripped away, and lower portions of the rock revetment at Ft. Fisher became visible. During

these occurrences, not only did the level of the beach at The Riggings drop overall, but the slope of the beach became significantly steeper.

At nearly all times of observation, the slope of the beach, from the middle of The Riggings shoreline to the southern extreme of The Riggings property, was steeper than the shoreline to the north, and the southern shoreline was much slower to fill back in than what was noticed to the north. This characteristic of the shoreline is likely related to the absence of Coquina directly offshore of The Riggings, as well as the different bathymetry in this area. With winds out of the northeast, the waves were observed to refract and strike perpendicular to the shoreline in the northern area, but continued running out of the northeast until the beach face was encountered along the southern portion of the shoreline.

Under the condition of winds and waves from the northeast, the refraction of the waves encountering the northern portion of the shoreline serves both to dissipate some of the wave energy, and to reduce the movement of beach sand to the south. On the southern portions of The Riggings shoreline, these conditions allow greater wave energy to strike the beach and move the beach sediments farther south along the beach, and beyond The Riggings property.

Winds out of the east and southeast were not as frequent and more moderate in strength, and the beach elevation and slope did not show significant changes when experiencing such winds. The beach elevation increased somewhat, especially in the southern portion when winds blew moderately from the southeast for several days.

The above observations were corroborated by anecdotal evidence obtained by discussions with a number of Kure Beach residents and former residents who had witnessed changes in the beach over many years. Some of this anecdotal evidence suggested that these changes, while visibly pronounced now in front of The Riggings, were not so pronounced before the construction of the rock revetment at Ft. Fisher. Some of this anecdotal information suggested that these pronounced changes to the beach in front of The Riggings can be explained by the re-nourishment of beach material to the north, while there has been no nourishment for The Riggings portion of the beach.

The absence of nourishment sand being placed along The Riggings shoreline is contributive to the severity of the erosion along this stretch of beach. The Riggings shoreline must face the erosive effect of waves with a significant deficit of sand when compared to the shoreline of Kure Beach that is north of The Riggings.

While the placement of sand along The Riggings shoreline would have some positive effect, it is difficult to estimate the significance of the effect, and the duration over which such positive effect would last. It is possible that any such positive effect could be very short-lived, given the presence of the Coquina outcroppings both to the north and south of the property, and the absence of Coquina outcroppings directly in front of The Riggings, along with the significant increase in depth that exists at the seaward limit of the buried Coquina substrate that runs along The Riggings property.

History, Significance, and Uniqueness of Coquina Rock Outcroppings:

The location of the Coquina rock outcroppings are depicted in Figure 1 of the June 1993 US Army Corps of Engineers Final Environmental Impact Statement for Beach Erosion Control and Hurricane Wave Protection – Carolina Beach and Vicinity Area South Project New Hanover County, North

Carolina. This Figure shows Coquina rock outcroppings to the north and south of The Riggings shoreline.

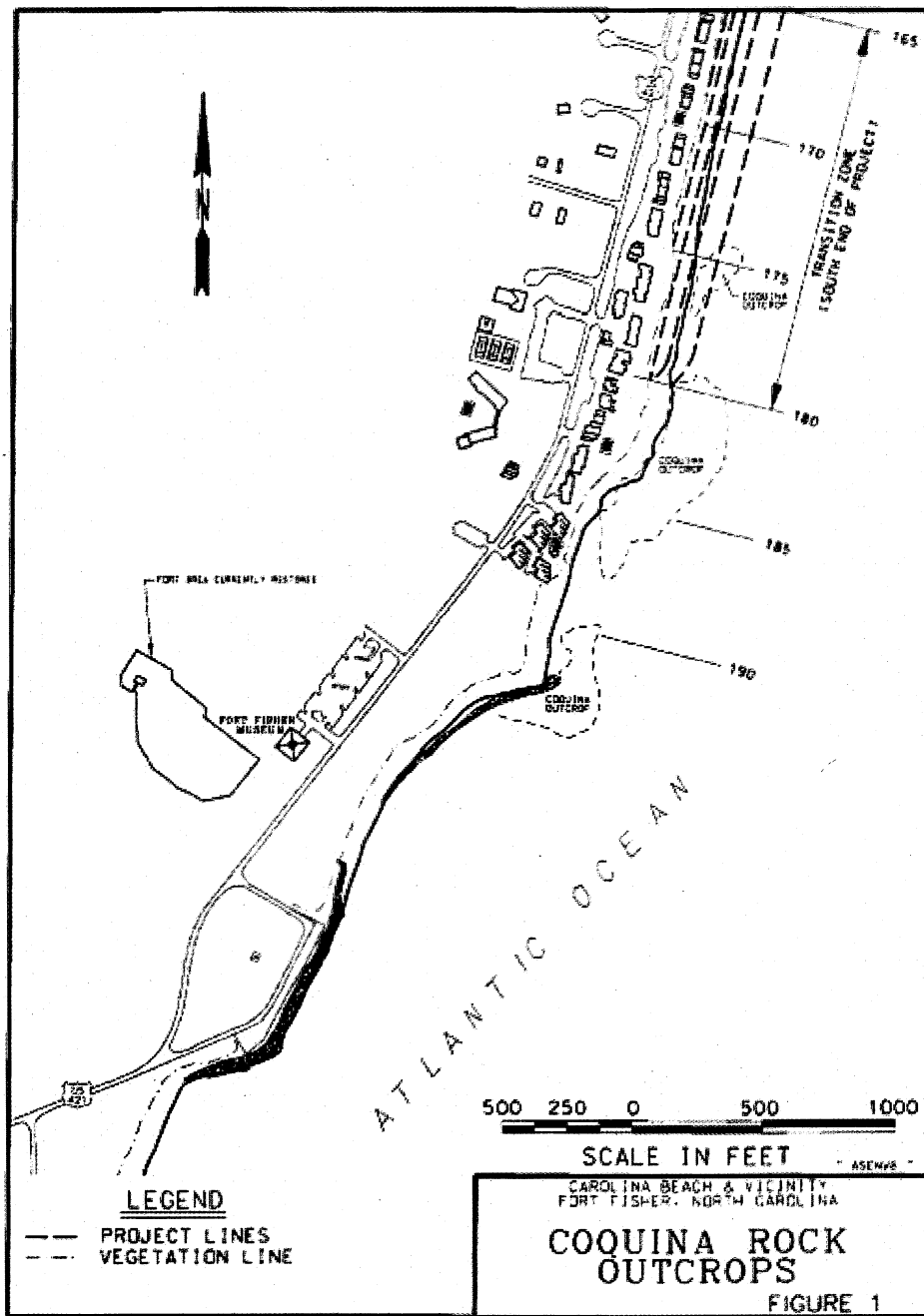


Figure 1 From USACE 1993 Final EIS

In 1931, the Chief of Engineers, United States Army, prepared a Report to address concerns over erosion of historically important land on Ft. Fisher. This was titled: REPORT DATED DECEMBER 29, 1931, FROM THE CHIEF OF ENGINEERS, UNITED STATES ARMY, ON THE STUDIES AND INVESTIGATIONS OF THE BEACH EROSION AT FORT FISHER, N. C. This Report was made by the Beach Erosion Board in cooperation with the North Carolina Department of Conservation and Development.

Paragraph 24 of this Report states:

Reference is made to the strata of coquina shown in Plate VII. It is reported that four or five years ago the county commissioners removed some of this coquina for road metal. Local information is that it was taken from surface strata just south of the projecting point of coquina northeast of the fort and that a strip perhaps 50 to 100 feet wide was removed for a considerable length of beach over an area that now appears to be at or below mean low water. The estimated amount of material removed is 6,000 cubic yards. This action apparently synchronizes with a reversal in the erosion cycle of Table I above; a net accretion of 60 feet over three years before that date was followed by a net erosion of 280 feet in the five subsequent years.

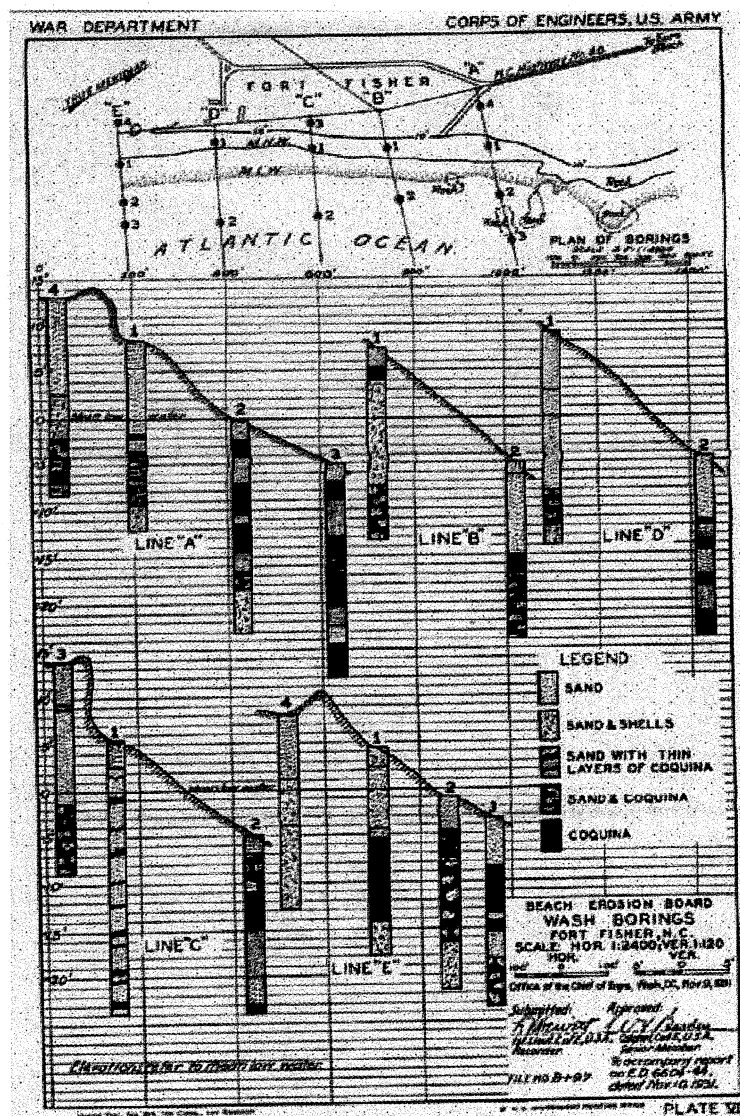


Plate VII of 1931 US Army Report

Examining Plate VII, it appears that the “projecting point of Coquina northeast of the fort” would correspond with the projecting point of Coquina that now exists just to the north of The Riggings shoreline. The estimated amount of material removed of 6,000 cubic yards over a strip that averages 75-ft wide would correspond to the removal of a 7.5-ft depth of Coquina over a length of shoreline of 285-ft. The shoreline fronting The Riggings is approximately 285-ft.

Plate VI of the 1931 US Army Report shows the underwater contours of the shoreline that existed in 1931. In the area between the two Coquina outcroppings, the slope of the shoreline transitions from +5-ft MLW to +1-ft MLW over a distance of approximately 25-ft. Along the shoreline both to the north and south of the outcroppings, this transition between +5-ft MLW and 15-ft MLW occurs over a distance of approximately 70 to 75-ft.

At this point, no documentation has been discovered that definitively locates the area where the Coquina was removed for the construction of US Highway 421. But, the steepness of the beach between the +5-ft MLW and +1-ft MLW contours located between the two outcroppings, which still exist today, along with the approximate correlation of amount of Coquina material removed to the length of The Riggings shoreline, suggests that this was the area where Coquina was removed from the beach substrate.

The statement in Paragraph 24 of the 1931 Report, addressing the removal of the Coquina, links the removal of the Coquina with a reversal of a 3-year cycle of beach accretion to a 5-year period of beach erosion that led to a net erosion of 280-ft. Plate VI shows the mean high water (MHW) line between the two Coquina outcroppings to lie approximately 480-ft to the east of US Highway 421.

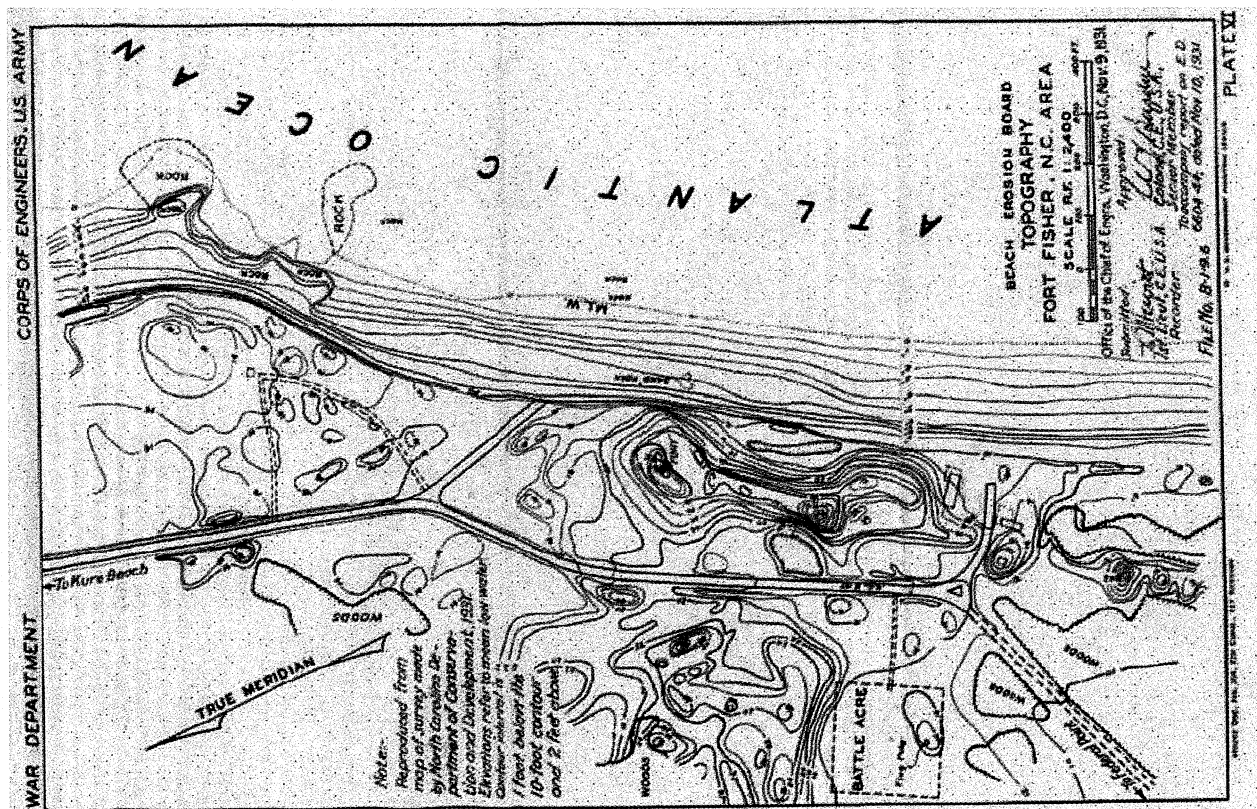


Plate VI of 1931 US Army Report

From Google Earth images, this distance from the center of US Highway 421 to the MHW is shown as approximately 320-ft in February 1993. After the 3,050-ft Beach Erosion Control Project (existing rock revetment for the protection of Fort Fisher) was completed in Spring of 1996, the distance from US Highway 421 had diminished to approximately 280-ft by December of 2002, approximately the same distance that exists today.

This suggests that both the mining of Coquina rock for the construction of US Highway 421 (NC 40 at the time of construction), and the current rock revetment constructed for the protection of Fort Fisher, may have had a cumulative negative impact on the width of the dry sand beach along The Riggings shoreline, contributing to the loss of approximately 200-ft of protective beach.

Spencer Rogers of North Carolina Sea Grant was contacted to discuss the effects of the Coquina rock outcroppings upon the shoreline fronting The Riggings. Rogers suggests that both Coquina rock outcroppings to the north and south of The Riggings are functioning as natural groins. He suggests that, during north-south littoral transport of beach sand, the northern Coquina outcropping traps sand and prevents its deposition along the shoreline in front of The Riggings, until such time as it reaches its maximum trapping capacity, after which the groin trapping effect of the outcropping is exceeded, and sand begins to bypass the outcropping and travel on to the south. Similarly, Rogers suggests that, during south-north littoral transport of beach sand, the southern Coquina outcropping, in conjunction with the rock armored shoreline, traps sand preventing its deposition along the shoreline of The Riggings until its trapping capacity is exceeded.

Rogers presents a reasonable characterization of the effects of the Coquina outcroppings lying to the north and south of The Riggings. With these outcroppings functioning as groins, it must be anticipated that sand that bypasses the outcroppings, as would be the case with groins, would be restricted from direct deposition on the nearshore beach on the down-drift side of each of the outcroppings, and this is observable. What appears to be absent from this groin model of the outcroppings is the expected build-up of a significant amount of sand on the southern side of the north outcropping when the littoral drift is south-north, and the expected build-up of a significant amount of sand on the northern side of the south outcropping when the littoral drift is north-south.

This absence of a significant build-up of sand may be attributable to the two “groins” being located so close together, and because the “groins” do not extend far enough offshore. This could result in the bypassing sand being carried beyond the second, down-drift “groin.” This absence could also be attributed to the bathymetry between the 2 “groins.” The significant nearshore drop in depth that exists between the two “groins” would require the wind-wave regime causing sand bypassing to exist for a long period of time before sand build-up would be observable. The periodic reversal of littoral drift may also be contributing to a limited observable build-up of sand on the interior up-drift side of the two “groins,” along with the frequency of significant wind-wave regimes from the northeast or southeast, which at high tide levels tends to strip accumulated sand from the beach face along The Riggings, carrying the sand past the “groins” on their landward ends.

The Coquina outcroppings to the north and south of The Riggings are sufficiently dissimilar so that their effects on sand transport would not be expected to be identical. The outcropping to the north of The Riggings is of sufficient elevation as to be visible above the water level during all but the higher levels of the tidal cycle, while the outcropping to the south is only visible during the lowest levels of the tidal cycle. This suggests that the north outcropping of Coquina functions in a manner that interferes with the deposition of sand on The Riggings shoreline to a greater extent than does the Coquina outcropping to

the south. In that the nourished beach to the north of The Riggings provides a ready sand source for the littoral transport of beach sand when compared to sand from the south of The Riggings, this suggests that the northern Coquina rock outcropping is having a significant negative effect on the level of beach sand in front of The Riggings.

The Coquina rock outcroppings near The Riggings have been identified as unique hard-bottom habitats along the North Carolina coast. In the May 2003 Natural Area Inventory of New Hanover County, North Carolina, the Fort Fisher Coquina Outcrop is listed as a Stand-alone Site of State significance. These Coquina outcroppings appear to be only one of three that exist along the Atlantic shoreline. Concerns over the negative impacts of the deposition of beach nourishment sand in the vicinity of this habitat resulted in comments from resource agencies on the Environmental Impact Statement for the Beach Erosion Control and Hurricane Wave Protection, Carolina Beach and Vicinity Area South Project, calling for protection of the outcroppings up to, and including total impact avoidance.

While Coquina rock outcroppings in the intertidal area may be rare at the present time, the presence of Coquina rock as a substrate to beach sand is quite extensive. In seeking a water source for the sandbag project at the Riggings, it was found that a hard Coquina substrate underlies most of The Riggings property. This substrate does not appear to be continuous, but was found to exist throughout most of the area landward of the swimming pool at a depth of approximately 10 – 14-ft below the surface. Investigation of existing geological studies revealed that this type of substrate lies below the sand all along Kure Beach and Carolina Beach shorelines, extending at least up to Snow Cut.

These geological studies indicated that the Coquina substrate may lie much closer to the surface in places. This means that in the absence of any storm protection efforts along the Carolina Beach and Kure Beach shoreline, natural erosion would likely, over time, expose additional areas of Coquina rock outcroppings. This is corroborated by the US Fish and Wildlife Service's August 12, 1992 Draft Fish and Wildlife Coordination Act Report for the Area South of Carolina Beach, New Hanover County, North Carolina (beach nourishment project), in which the Service addresses anticipated impacts without the Project, stating:

As sea level rises... Additional coquina rock, farther landward than the present exposed outcroppings, may become exposed in the future, thus maintaining the extent of the intertidal communities. In general, the Service believes that, without the project, invertebrate organisms inhabiting the coquina rocks should continue to do well, and species diversity should remain high.

Effects of Nourishment on Exposed Coquina Outcroppings:

In response to the Coquina rock outcropping concerns and recommendations raised by the US Fish and Wildlife Service's above document, the USACE, Wilmington District conducted a study to assess the potential impacts of beach nourishment activities on the Coquina rock outcrops. The recommendation of the US Fish and Wildlife Service was that, "Beach nourishment should not extend as far south as the exposed coquina rock outcrops so as to avoid burial of and adverse turbidity impacts to the coquina rock community."

The USACE found:

- Material transport along this stretch of the shoreline is primarily driven by extended northerly wind;

- The Coquina rock outcrops appear to be acting as a natural low-level groin, retaining material to the north during the winter months (prevailing northerly winds), and littoral material fills in naturally up to the elevation of the outcrops;
- Littoral material in excess of the natural groin capacity of the rock outcropping migrates to the beach south of Fort Fisher;
- The northern portions of the rock outcropping are typically buried during the winter months; and
- The outcrops are exposed during the summer months except during major storms.

The USACE proposed to address the concerns for the Area South (Kure Beach) portion of the Project by transitioning the Project fill to a southern terminus, north of the Coquina outcrops. By taking this action, the USACE states:

After project construction and subsequent periodic renourishment, there will be more material on the beach profile, which will be subject to littoral drift. Portions of the landward sides of the northern most outcrops are expected to be covered by the material similar to what is already occurring. The areal extent of this coverage cannot be quantified at this time. Physical monitoring will be conducted during construction to document whether any changes in sand movement observed are the result of natural influences or beach restoration.

In that the USACE's study suggests that sand that accumulates on the north of the Coquina outcroppings bypasses the Coquina, reaching deposition farther south on the Ft. Fisher shoreline once the trapping capacity of this natural groin is exceeded, this suggests that nourishment sand, were it to be deposited along The Riggings shoreline, would similarly be transported south to the Ft. Fisher shoreline. If this were to be borne out, then periodic nourishment of The Riggings shoreline could form part of an alternate permanent solution to address the beach erosion without the use of sandbags.

During, and/or subsequent to the previous nourishment projects in Area South, the USACE pledged to conduct additional studies to assess the impact of the Project on Coquina outcroppings. These will be obtained and reviewed to further assess the potential of seeking nourishment of The Riggings' shoreline.

Initial Evaluation of Alternative Solutions:

Beach nourishment is normally seen by resource agencies as a preferred approach to providing response to an eroding shoreline when existing development becomes threatened. This preference is largely related to the reduced negative environmental impacts associated with such projects when compared to other possible responses. In the case of The Riggings shoreline, beach nourishment may not be a readily available alternative given the already documented objections of resource agencies to the potential harm that could occur to a unique hard bottom habitat from migrating sand.

Some of the information discovered relating to the ongoing Area South beach nourishment project suggests that nourishment of The Riggings shoreline could possibly be done without significant harm to the Coquina outcroppings and the associated habitat. However, given the expressed concern by virtually all resource agencies, obtaining the necessary permits for this alternative would likely be difficult and problematic.

If beach nourishment of The Riggings shoreline could be achieved, there is an additional concern for whether it could function as successful alternative to the sandbag revetment. The Area South

nourishment project is maintained at fairly frequent intervals of approximately three years. It is possible that a 3-year interval would be insufficient to maintain storm protection along The Riggings shoreline. In that the bathymetry offshore of The Riggings is atypical when compared to the Kure Beach shoreline to the north, sand in front of The Riggings would likely be subjected to greater wave energy. Incoming waves would not encounter a shallow bottom, with concomitant breaking of the waves, until the waves were virtually at the base of a relatively narrow nourished beach.

Complicating the ability to keep nourished sand on the beach face of The Riggings shoreline is the presence of a rock revetment located nearby to the south protecting the Fort Fisher shoreline. While this structure was curved inland at its northern terminus, and does terminate short of The Riggings southern property line, dramatic loss of shoreline at The Riggings did occur after its construction. The erosion mechanisms at work after the construction of this rock revetment are still in play today. They have not allowed a natural, permanent accretion of sand on The Riggings shoreline, and it may be unlikely that these mechanisms would allow artificially placed sand to remain in place.

Still, in that the majority of Kure Beach shoreline receives beach nourishment, and much of the needed work has been done to validate the need for nourishment along this shoreline, and to justify the expenditure of funding for the nourishment, further exploration is warranted into the possibility of including The Riggings shoreline within the existing Area South, Coastal Storm Damage Reduction (CSDR) Project. To this end, a meeting was held with appropriate representation of the Town of Kure Beach, New Hanover County, The USACE and the NC Division of Coastal Management on December 6, 2016.

While a number of other alternatives exist, they virtually all, with the exception of sandbag revetments, are barred by statute and rule as they involve hardened shoreline structures. There is some latitude within the Shoreline Erosion Policies of the CRC Rules. 15A NCAC 07M.0202(g) states:

The State of North Carolina will consider innovative institutional programs and scientific research that will provide for effective management of coastal shorelines. The development of innovative measures that will lessen or slow the effects of erosion while minimizing the adverse impacts on the public beach and on nearby properties is encouraged.

Future efforts to identify an alternative solution to sandbags will explore the possibility of innovative projects that could fall within the ambit of this Policy and receive the support of the NC Division of Coastal Management and the Coastal Resources Commission.

12/6/16 Meeting on Potential Inclusion of Riggings Shoreline in the Kure Beach CSDR Project:

Initial review of a limited amount of USACE documentation suggested that The Riggings shoreline had been originally included within the Area South (Kure Beach) portion of the Project. In the USACE's January 13, 2014 Draft Review Plan for Plans & Specifications and Design Documentation for Periodic Maintenance Nourishment: Carolina Beach, North Carolina Coastal Storm Damage Reduction Project, Beach Renourishment Carolina Beach 2014 & Carolina Beach (Area South) 2016, P2#: 113752, Paragraph 2.1 provides the following Project Description:

The Carolina Beach project was originally authorized by Congress in 1962 (House Document Number 418, 87th Congress, 2nd Session). This original authorization divided the 25,800-foot long project into two separable elements. The Carolina Beach element

called for protecting the 12,800 feet of shoreline within the town limits of Carolina Beach. **The Carolina Beach (Area South) element would protect the adjacent 13,000 feet of shoreline south of Carolina Beach, which would extend to the southern town limits of Kure Beach.** The Carolina Beach (Area South) element was later increased to a total length of 18,000 feet in a Post Authorization Change Report.
(Bold emphasis added.)

In the USACE's February 23, 2015 Congressional Fact Sheet, PROJECT INFORMATION – Carolina Beach and Vicinity, Carolina Beach and Area South Portions (Coastal Storm Damage Reduction), Area South Portion is described as follows:

The portion of the project includes a dune with a base generally bordering at or near the building line with a crown width of 25 feet at an elevation of 13.5 feet national geodetic vertical datum (NGVD), together with integral construction of a shoreline berm with a crown width of 50 feet at elevation 9.5 feet NGVD **extending about 18,000 feet from the southern limits of Carolina Beach to the northern limits of Fort Fisher**, and Federal participation in the cost of coastal storm damage reduction nourishment for a period not to exceed 50 years from the year of initial placement (FY 1998 to 2047).
(Bold and underline emphasis added.)

In the USACE's June 1993 FINAL ENVIRONMENTAL IMPACT STATEMENT, Beach Erosion Control and Hurricane Wave Protection, Carolina Beach and Vicinity, Area South Project, New Hanover County, North Carolina, the ABSTRACT describes the Project as follows:

Project construction will cover approximately 3 ½ miles of shoreline between the Town of Carolina Beach to the north **and Fort Fisher Historic Site to the south.**
(Bold emphasis added.)

In Paragraph 1.00 INTRODUCTION, the Project is described as follows:

The Carolina Beach and Vicinity – Area South project is an erosion control/hurricane wave protection project. It is a separable element of the Carolina Beach and Vicinity project. **The Area South portion of the Carolina Beach and Vicinity project refers to a stretch of beach approximately 3 ½ miles long in New Hanover County, North Carolina (Figure 1).**
(Bold emphasis added.)

Figure 1, provided below, is at a scale that does not allow accurate discernment of the southern terminus of the Project area. But it does label Fort Fisher State Historic Site as laying immediately to the south of the Project Limits' southern terminus.

Figure 2 of this document, provided below, shows Stations 0+00 to 180+00 as the northern and southern limits of the Area South Project. This Figure shows the Project stopping short of The Riggings, and not extending to the southern limits of the Town of Kure Beach at Fort Fisher. It shows a Transition Zone between Stations 165+00 and 180+00, which appears to conform to the area at, or just north of the Coquina outcropping.

Based on the above information, it appears that the Project was originally intended to extend all the way to the southern limit of the Town of Kure Beach at Fort Fisher, and was subsequently revised to terminate, or transition at, or to the north of the Coquina outcropping, apparently in deference to environmental concerns over the habitat associated with the rock outcropping.

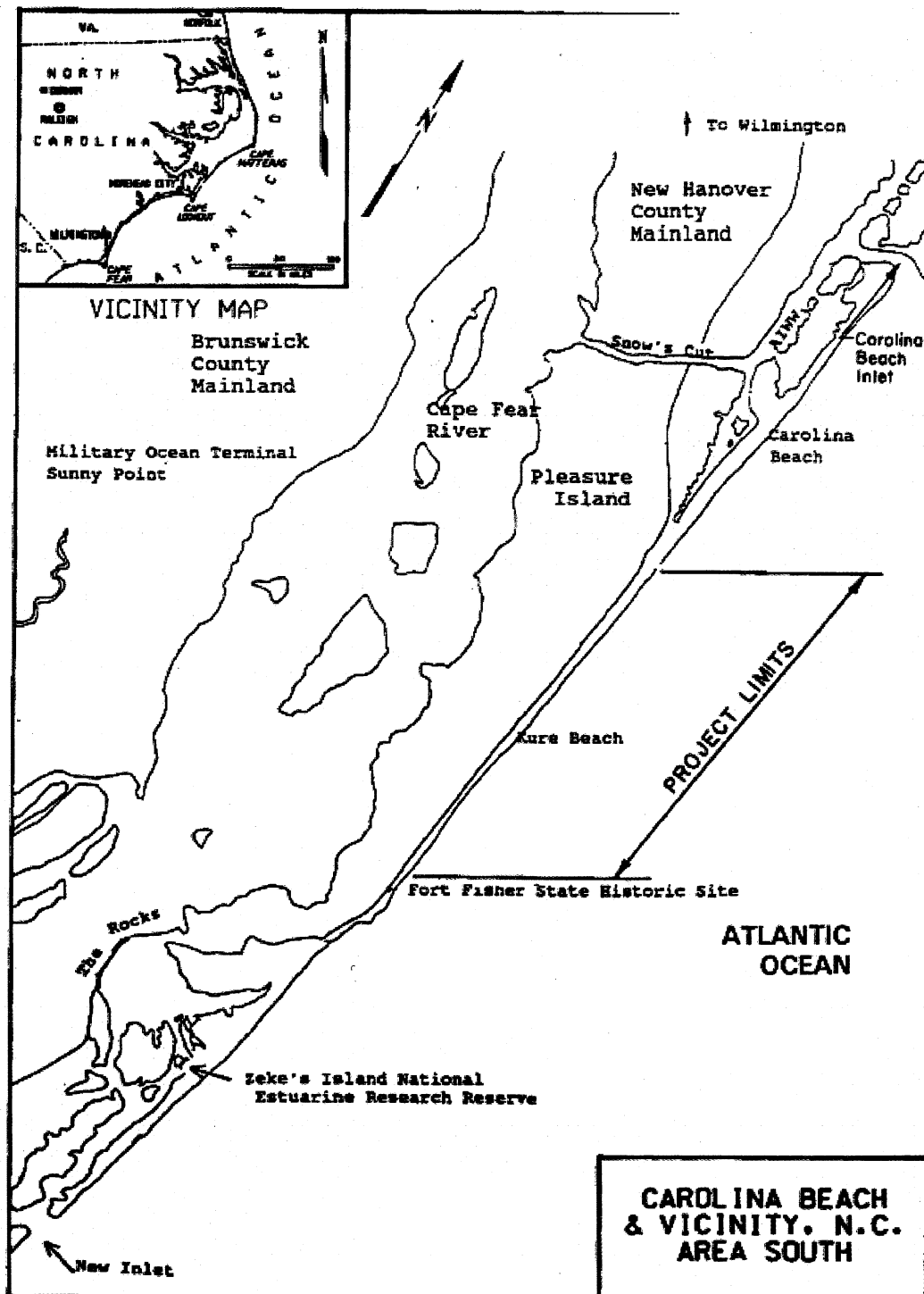
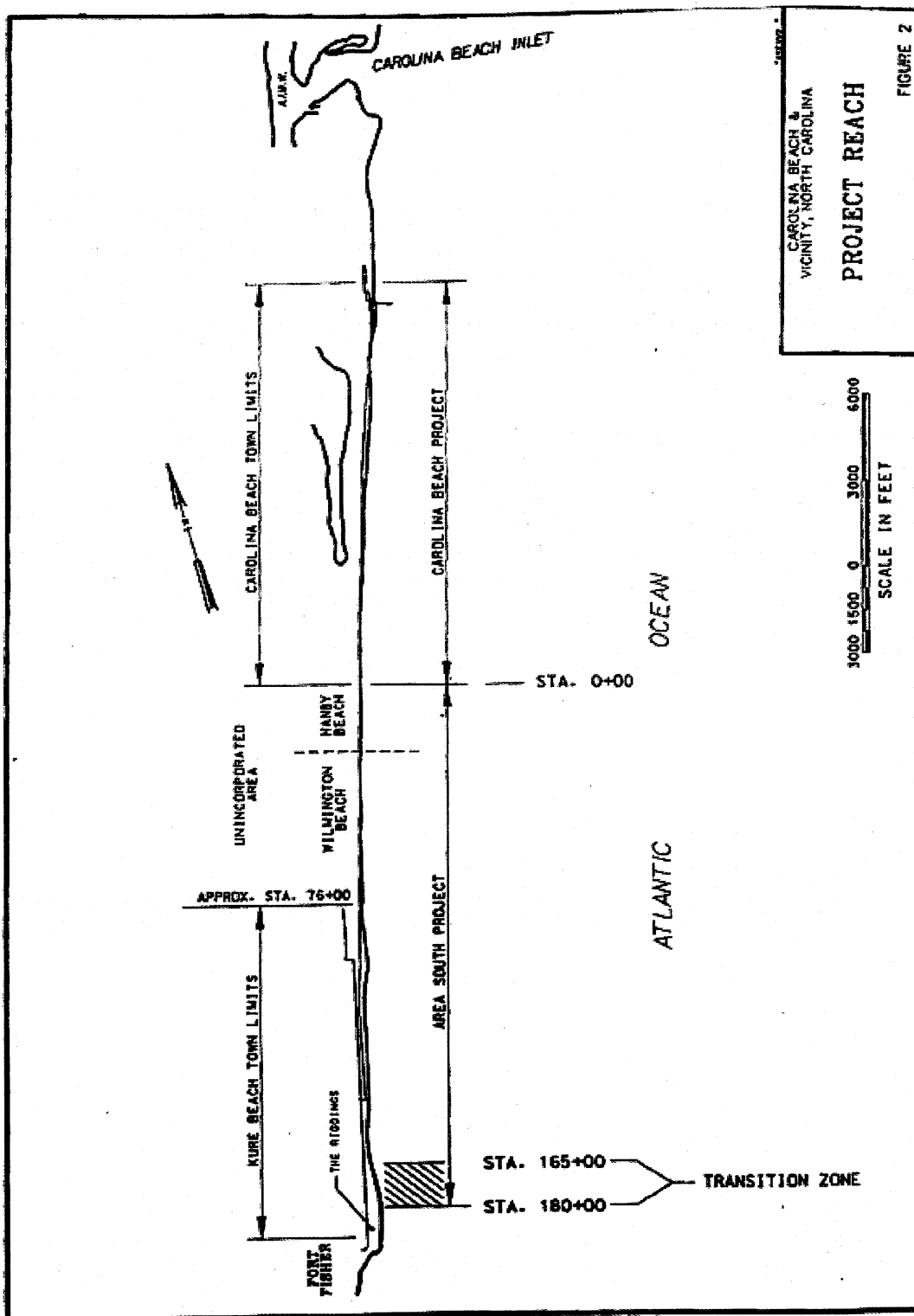


FIGURE 1

USACE June 1993 Final Environmental Impact Statement, Figure 1



USACE June 1993 Final Environmental Impact Statement, Figure 2

In an attempt to clarify the rationale for the current exclusion of The Riggings shoreline from the Area South CSDR Project, and to get a sense of what would be needed to include The Riggings shoreline within the Area South Project, a meeting was organized with representatives of the Town of Kure Beach, New Hanover County, the USACE and the NC Division of Coastal Management.

Representatives attending this meeting are identified below:

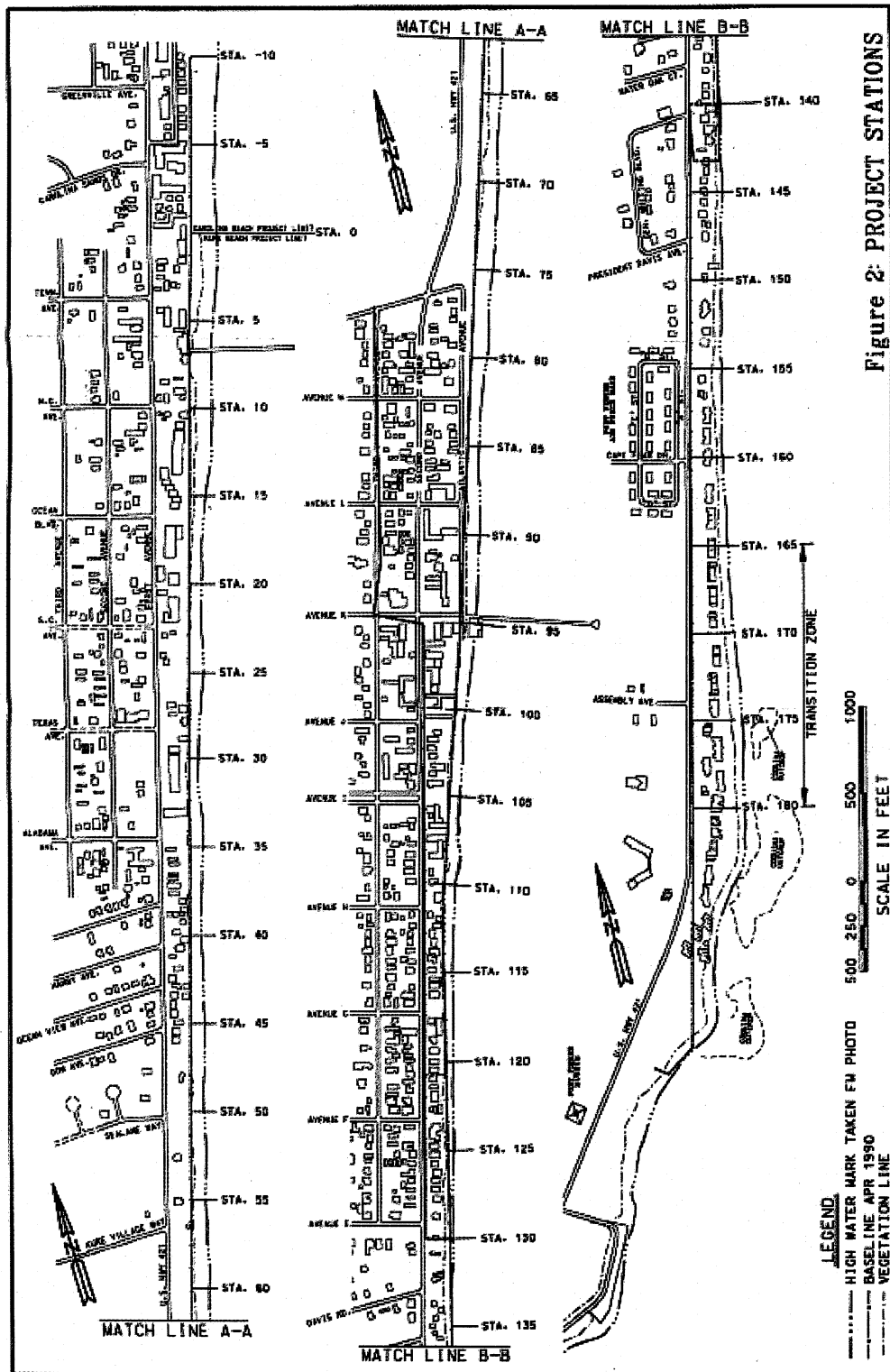
- | | | |
|------------------|-----------------------------------|---|
| • Nancy Avery | Town of Kure Beach | Town Clerk |
| • Joseph Whitley | Town of Kure Beach | Commissioner |
| • Jim Dugan | Town of Kure Beach | Commissioner |
| • John Batson | Town of Kure Beach | Building Inspector |
| • Layton Bedsole | New Hanover County | Shore Protection Coordinator |
| • Jim Medlock | USACE | Chief, Programs Management
Branch, Wilmington District |
| • Debbie Wilson | NC Division of Coastal Management | Wilmington District Manager |
| • Ted Sampson | SCI, Environmental Consulting | Env. Consultant to Riggings HOA |

At the beginning of the meeting, it was made clear that the purpose of the meeting was not to initiate a process to have The Riggings shoreline included within the Area South CSDR Project, but rather to explore whether this might be possible and to identify requirements and issues that would need to be addressed should such an initiative be chosen to be pursued by The Riggings HOA. It was also emphasized that this was not a scoping meeting as no reasonable shoreline protection alternative to sandbags had yet been identified by The Riggings HOA. The requirement of Paragraph 4 of the CRC Variance Order was read to the attendees to clarify that this meeting represented an initial effort by The Riggings HOA to find and implement alternative solutions to address erosion at The Riggings.

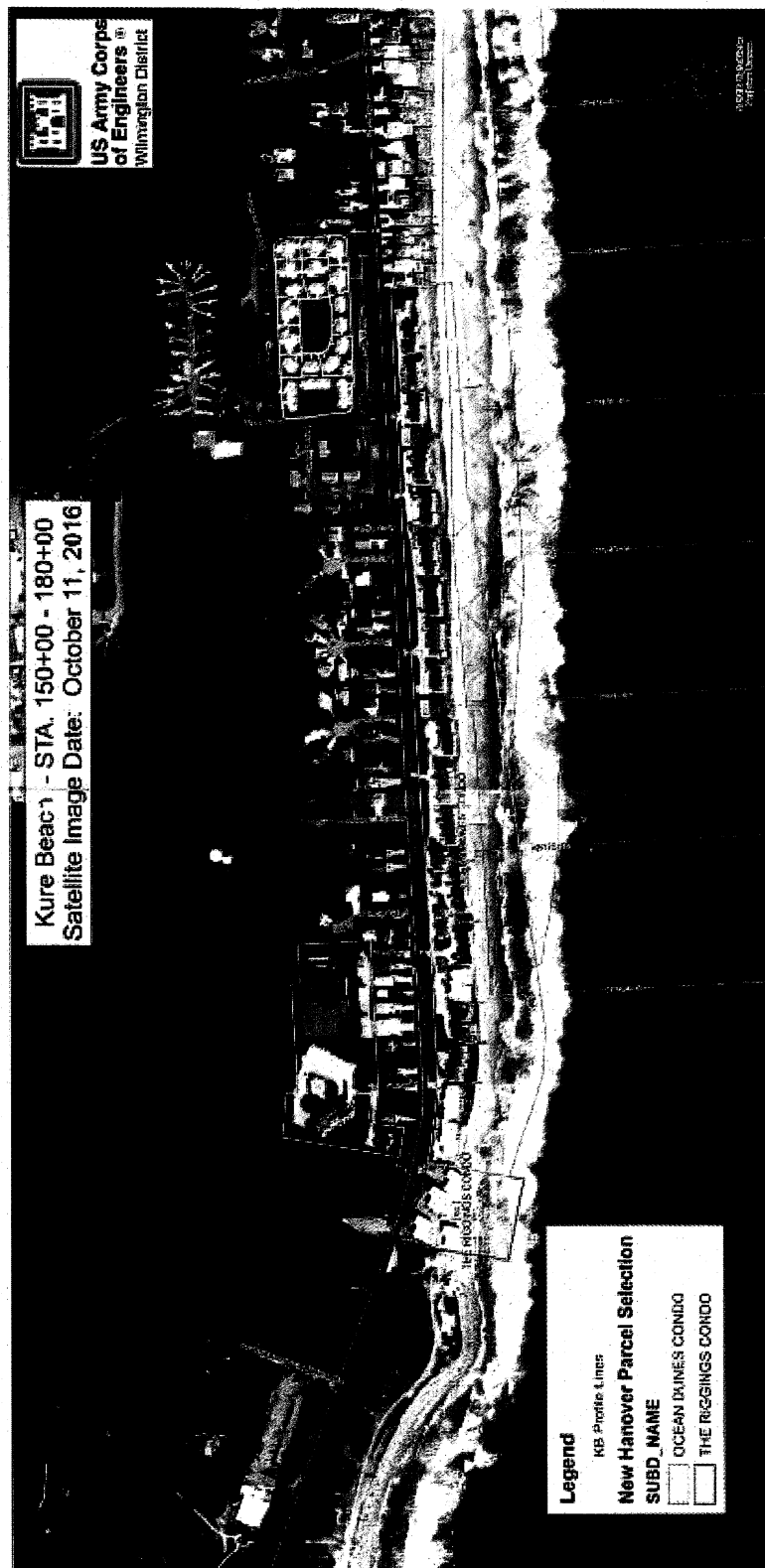
In the discussions, the premise that The Riggings shoreline was originally included in the Area South Project area, and subsequently excluded due to environmental concerns for the Coquina outcroppings, was quickly questioned by Jim Medlock. He indicated that it was his understanding that The Riggings shoreline had never been included within the Area South Project area, and he supplied the two documents, provided below, that depict the Project Station transects, showing Station 180+00 as the southernmost transect, which, on one of the documents, shows this to be the southern end of the Project Transition Zone.

John Batson displayed a large drawing/photo of the Project that showed transects from the Town records to also end short of the The Riggings shoreline. Copies of this document were not available.

Jim Medlock also had available early bound documents from the USACE that addressed the Area South Project, and the shoreline in the vicinity of The Riggings. He has indicated that he will make copies of these documents available in a digital format, but as of this date they have not been received. Future review of these documents may shed additional light on how The Riggings shoreline came to be



Transect Document 1 Provided by Jim Medlock, USACE



Transect Document 2 Provided by Jim Medlock, USACE

excluded from the Area South CSDR Project. It is difficult to imagine that any portion of shoreline within Kure Beach was in greater need of Coastal Storm Damage Reduction efforts than The Riggings shoreline. It seems logical that The Riggings shoreline would have, or at least should have been included in the original Area South CSDR Project efforts. This can be addressed in the 2017 Annual Update.

Additional discussion took place, based on the premise that The Riggings shoreline had never been included as part of the Area South CSDR Project, to identify the way forward if inclusion within the Project was to be pursued by The Riggings HOA. Jim Medlock indicated that he did not believe that a problem would arise related to the cost/benefit ratio, since already assembled information suggested that inclusion of this additional shoreline would not negatively affect a positive determination. He also indicated that he believed that a new Congressional authorization would have to be obtained, and this would require the assembling of documentation as would be needed for a new Project.

Jim Medlock indicated that a new Project to address The Riggings Shoreline could either be initiated by the Town of Kure Beach, or by the The Riggings HOA. The main issue to be resolved would be how the non-federal funding of the Project would be addressed. If a new Project were to be pursued by The Riggings alone, the provision of the non-federal portion of the study and construction funding could fall solely on The Riggings HOA.

Nancy Avery clarified that it is a common misconception that funding for the beach nourishment comes from the Town's tax base – it does not. At present, funds derived from the occupancy taxes are utilized for construction costs of CSDR projects through New Hanover County. It remains to be seen whether any occupancy tax funds could be applied to a new Project pursued solely by The Riggings HOA.

Layton Bedsloe raised the question of what The Riggings HOA wanted to achieve, and were they looking to have a dry-sand beach. In response it was explained that some owners, perhaps many owners, would like to have a dry-sand beach, but that was not the purpose of considering beach nourishment of The Riggings shoreline. This effort is being driven by a requirement of the Variance Order that authorized shoreline protection through the use of sandbags and the accompanying direction that an alternative solution needs to be pursued to provide shoreline protection without sandbags.

Layton Bedsloe voiced the opinion that the presence of Coquina outcroppings, functioning as natural groins, along with the existence of the rock revetment protecting the Fort Fisher shoreline could limit the success of achieving shoreline protection through nourishment of beach sand. There is little doubt that these features significantly complicate achieving protection of The Riggings shoreline without sandbags, and only with beach nourishment on 3-year intervals.

If a new CSDR Project for the Riggings shoreline were to be pursued by the HOA under the auspices of the Town of Kure Beach, it seems that the funding mechanisms that provided for the non-federal cost sharing of studies and construction for the current Area South Project would be applicable. The hypothetical question was posed of whether this would raise any particular issues or concerns on the part of the Town or the County.

Nancy Avery indicated that she would be concerned with how such an initiative might impact the anticipated continued federal funding of the current Area South Project. Jim Medlock responded that his opinion was that any such action would have no negative effect upon the commitment to fund the current Project.

The specific requirements for what would be needed in support of a request for a new CSDR Project for The Riggings shoreline were not pursued in that further clarification is needed into the circumstances that caused The Riggings shoreline to be excluded from the existing Area South Project. However, this would likely involve obtaining a Congressional Study Authorization, a Corps Feasibility Study, an Environmental Impact Statement, a Corps Preconstruction Engineering and Design, and Congressional Construction Authorization.

Conclusions:

Nourishment of The Riggings shoreline to provide a form of shoreline protection, alternative to the use of sandbags, is probably the easiest path forward to obtain a permitted project that is not proscribed by the CAMA statute. However, given the location of The Riggings between Coquina rock outcroppings and the hardened shoreline of Fort Fisher, achieving storm protection from the typical designs for beach nourishment may not provide an acceptable alternative. At the least, an improved design, or more frequent re-nourishment intervals would likely be needed. Even a basic, typical design of a nourishment Project for The Riggings shoreline would face close scrutiny, and perhaps insurmountable opposition on potential impacts to the Coquina outcroppings.

A nourishment Project to achieve storm protection along The Riggings shoreline designed in conjunction with additional efforts to reduce the wave energy, and/or the negative end effects of the natural outcropping “groins” and the Fort Fisher rock revetment could possibly lead to a suitable alternative to sandbag protection. This is not an easy path to follow as it would necessarily involve detailed modeling of this portion of the shoreline, and likely face significant permitting opposition. Follow-on efforts can seek to explore the possibilities of such an approach.

IMPLEMENTING ALTERNATIVE SOLUTIONS

Until such time as one or more alternative solutions have been identified that can be seen to have a real potential to provide storm protection, and keep The Riggings structures clear of an imminent threat as is now provided by the sandbag revetment, there is nothing to report. Subsequent Annual Reports can address this requirement in more detail.



Environmental Consultant
Sampson Contracting, Inc.

December 11, 2016



ROY COOPER
Governor

WILLIAM G. ROSS, JR.
Acting Secretary

To: Coastal Resources Commission

CC: Ted Sampson, Consultant for the Riggings Homeowners, Inc.
Riggings Homeowners, Inc. c/o Registered Agent Paul Derek Jarrett

From: Christine A. Goebel, Assistant General Counsel

Date: January 25, 2017

Re: DCM Staff Response to Riggings HOA's December 11, 2016 Annual Update

On December 11, 2016, the Division of Coastal Management ("DCM") received the Annual Update on Alternatives Solutions to address Erosion at the Riggings report ("Update") from The Riggings Homeowners, Inc. ("HOA") through its consultant Ted Sampson of Sampson Contracting, Inc. ("Consultant"). This Update was required as a condition of the December 2015 Order of the Commission granting a variance authorizing the use of sandbags by the HOA for an additional five years. On January 19, 2017, DCM received a letter from CRC Counsel requesting that ahead of the Commission's February 7-8, 2017 meeting, DCM provide a review of the Update through written comments to the Commission. DCM's review and written comments follow, along with a PowerPoint showing site photos including the removal of the old sandbags and installations of new sandbags which took place this past spring.

**DCM STAFF RESPONSE TO THE RIGGINGS' 2016 ANNUAL UPDATE
ON ALTERNATIVE SOLUTIONS
TO ADDRESS EROSION AT THE RIGGINGS**

DCM's Staff Response will provide comment to each of the sections of the Update, followed by suggestions for next steps which could be pursued by the HOA and concluding with a PowerPoint of site photos, include some taken in the last year which show the sandbag removal and replacement at the HOA property.

1. Staff Comments on the Report's examination of Mechanisms Underlying Accelerated Erosion.

This section is comprised of short-term observations during a 3-month period of time and anecdotal reports of the site conditions by unnamed individuals. While it may constitute background information, it is not clear if these observations are sufficient to support the two concluding paragraphs related to the impacts of possible nourishment at the site, especially because it is not clear if they were made by individuals with the qualifications necessary to make such observations.

2. History, Significance, and Uniqueness of Coquina Rock Outcroppings.

The first portion of this section describes documentation of the coquina rock outcroppings in the vicinity of the site. It also discusses how, in a 1931 report of the Corps of Engineers ("Corps"), some amount of coquina rock was removed for use as road material from a site northeast of Fort Fisher, which may or may not have been in front of the Riggings. The estimated amount of material removed was approximately 6,000 cubic yards. The 1931 Corps report notes that the removal of the coquina came after a 3-year period of accretion at the site of the removal followed by a period of 280-foot erosion, and the Update concludes that the likely source of the coquina used was in front of the Riggings. While this is interesting history, any removal of coquina rock around 1926 took place at least 59 years before the construction of the Riggings in 1985, and so its relevance to erosion which took place since 1985 is of limited value in finding alternatives to the use of the sandbags at the site.

The next part of this section summarizes a site evaluation by Spencer Rogers of North Carolina Sea Grant, and his belief that the coquina rock outcroppings on either side of the site act as two groins with the northern outcropping holding back the north to south littoral transport and the southern outcropping holding back the south to north littoral transport, leaving this area of the beach with less sand. DCM does not dispute this assessment of coastal processes at the site, but is also unable to confirm these described trends in littoral sand transport without additional study.

The final part of this section describes earlier sources that take note of these outcroppings. The coquina outcroppings were mentioned in the May 2003 Natural Area Inventory of New Hanover County, North Carolina as a site of significance. This source also notes that additional outcroppings may exist in the Kure Beach area and continue to be buried, though the extent of the coquina rock is unknown.

3. Effects of Nourishment on Exposed Coquina Outcroppings.

This section examines the potential effects of beach nourishment on the coquina rock. It begins by referencing a 1992 report by the US Fish and Wildlife Service's Draft Fish and Wildlife Coordination Act Report for the Area South of Carolina Beach, New Hanover County, North Carolina (federal beach nourishment project), and noting a recommendation that "Beach nourishment should not extend as far south as the exposed coquina rock outcrops so as to avoid burial of and adverse turbidity impacts to the coquina rock community." While this Update notes that the Service suggested it would conduct physical monitoring, the Update states that such monitoring "will be obtained and reviewed to further assess the potential of seeking nourishment of The Riggings' shoreline." However, it is unclear from the Update if the Service undertook this physical monitoring at any time since 1992.

4. Initial Evaluation of Alternative Solutions.

This section begins by noting "the already documented objections of resource agencies due to the potential harm that could occur to a unique hard bottom habitat from migrating sand," but does not list them specifically or attach copies of past objections. The Update then lists some of the unique site characteristics that might dictate the design for a possible nourishment project at the site, including the coquina rock outcroppings and their possible groin-like effects on the site, the high-energy wave action at the site, the bathymetry of the adjacent ocean, and the Fort Fisher revetment. While the Update notes that "innovative measures" might be approved by the Commission as noted in 15A NCAC 7M .0202(g), Staff notes that this provision might be limited by the Commission's rule at 15A NCAC 7M .0202(f) which still prohibits efforts to permanently stabilize the location. Further, the hardened structure ban at N.C.G.S. § 113A-115.1 was enacted after the Commission's "innovative measures" provision, and so may significantly limit measures which may be innovative but also may be banned by statute.

The Update describes a meeting on December 6, 2016, which included representatives from the Town of Kure Beach, DCM District Manager Debbie Wilson, the New Hanover County Shore Protection Coordinator Layton Bedsole, Jim Medlock, Chief of Programs Management Branch for the Corps, and Mr. Sampson. The Update contains Mr. Sampson's characterizations of what different parties stated during the meeting, but does not include a review by or a response from the other parties, which might be helpful to ensure the representations accurately reflect their discussion.

The Update also examines past reports by the Corps to ascertain whether or not the area of the Riggings was included in the initial design of the 1962 50-year federal project, or not. While the Update is unclear on this point, it appears that Mr. Medlock of the Corps indicated to the parties at the meeting that he had documentation, which he sent to the parties December 16, 2016, that confirmed that the site was never within the bounds of the federal project.

Some discussion at the meeting centered around concerns about future funding if the Riggings site was added to the federal project. The parties also discussed who would cover the non-federal share for adding the Riggings to the project and if that would come from the County's nourishment fund (which receives funding from occupancy taxes) or from the Riggings privately. Parties also

raised concerns about whether the unique features of the site would limit the success of nourishment at the site.

5. Conclusion

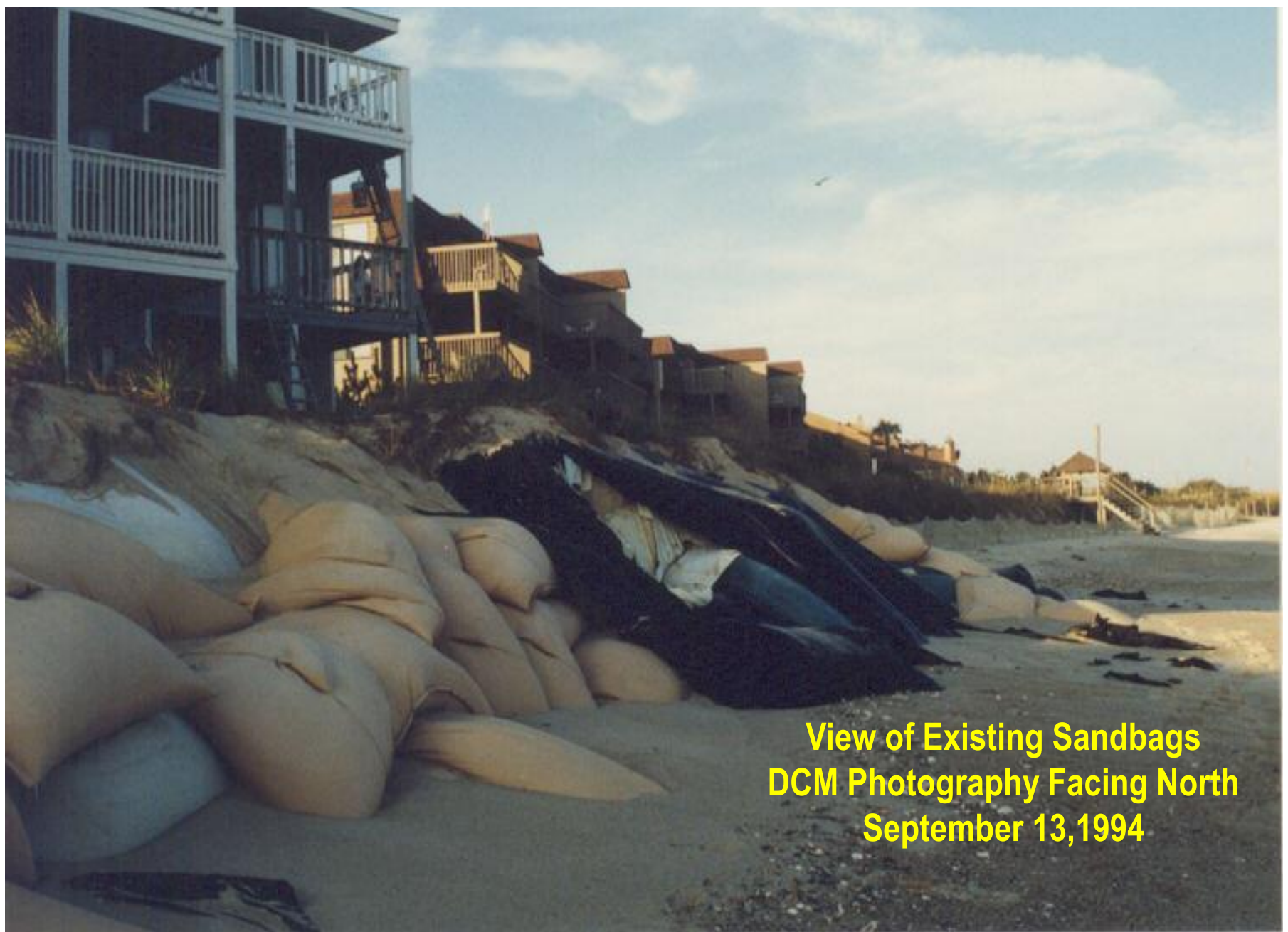
The Update concludes that nourishment, as an alternative to sandbags, “is probably the easiest path forward to obtain a permitted project that is not proscribed by the CAMA statute” but warns that its location between the coquina rock outcroppings and the Fort Fisher revetment may result in “typical designs of a nourishment project” which may not provide “an acceptable alternative.” The Update also concludes that the nourishment option would require detailed modeling and would “likely face significant permitting opposition.” The Update seems to be discounting the idea of adding the site to the Federal Project as the Federal Project’s design might not be sufficient to protect the Riggings. Staff is unclear what the Update means by “additional efforts to reduce wave energy.” Staff also notes that there was no discussion or evaluation of the relocation of structures.

6. DCM Staff Recommendations

Based on a review of the Report, DCM staff suggest the following as topics for discussion by the Commission or further examination by the Riggings.

- Further study of the site by coastal geologists or engineers, including their suggestions for possible approaches to take at the site.
- Make a formal/official request by the Riggings to the Corps requesting that this area be added.
- Approach relevant resource agencies to solicit their current concerns about possible nourishment along the Riggings beach that may cover the outcroppings and provide their responses to the Commission in the 2017 Annual Update.
- Further investigate the significance of the 1982 designation as the Fort Fisher Coquina Outcrop Natural Area in the North Carolina Registry of Natural Heritage Areas, and the inclusion in the May 2003 Natural Area Inventory of New Hanover County, North Carolina, and inquire whether these designations on their own prohibit inclusion within a nourishment project.
- Examine of the potential for structure relocation or provide information collected on structure relocation.





Department of Environmental Quality



View of Existing Sandbags
Facing South
DCM Photography
October 1997



View of Existing Sandbags Facing North
DCM Photography
November 1999

View of Existing Sandbags Facing South
DCM Photography
April 21, 2003



Department of Environmental Quality

View of Existing Sandbags Facing South
DCM Photography
October 8, 2006



Department of Environmental Quality

View of Existing Sandbags Facing South
DCM Photography
December 11, 2007





View of Existing Sandbags Facing North
DCM Photography
August 2011





View of Existing Sandbags Facing South
DCM Photography
October 13, 2015

View of Existing Sandbags Facing North
DCM Photography
April 15, 2016



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View of Existing Sandbags Facing North
DCM Photography
April 18, 2016



View of Removed Sandbags Facing South
DCM Photography
April 28, 2016



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View of Existing New Sandbags Facing North
DCM Photography
July 1, 2016



Department of Environmental Quality

View of Existing New Sandbags Facing South
DCM Photography
July 1, 2016



Department of Environmental Quality

**View of Existing New Sandbags Facing South
DCM Photography
August 15, 2016**



Department of Environmental Quality

View of Existing New Sandbags Facing North
DCM Photography
August 15, 2016



Department of Environmental Quality

**View of Existing New Sandbags Facing South
Town of Kure Beach LPO Photography
January 19, 2017**



Department of Environmental Quality

**View of Existing New Sandbags Facing North
Town of Kure Beach LPO Photography
January 19, 2017**



Department of Environmental Quality