

To: DCM Regulatory Staff / Local Permitting Officers

From: Braxton Davis, DCM Director



Date: July 20, 2020

Subject: Rules and Procedures related to post-project dune restoration

As beach nourishment projects continue to increase in scope and frequency, a few questions have emerged with respect to the appropriate siting of accessways and sand fencing on newly nourished areas. In the past, beach profile designs focused on rebuilding the flat sand beach berm that tied into the existing dune. However, many of these projects are now incorporating higher elevation emergency berms waterward of the remaining frontal dune to provide additional levels of protection during future storm events. These features are variably referred to as an “emergency berm,” “shelf,” or “incipient dune,” among other terminologies. Here I will refer to these features as a “starter dune” (see Figure 1).

In many cases, Towns and property owners want to plant these starter dunes with vegetation to facilitate stabilization. Property owners and local governments have also requested to extend structural accessways over these areas to reduce impacts of foot traffic on the starter dune and its newly planted vegetation. In addition to accessways, property owners and communities have sought to install sand fencing at the toe or on the slope of the new starter dune (rather than adjacent to the original frontal dune) to further expand and stabilize the starter dune.

While the Division fully recognizes the importance of a robust dune system, DCM has concerns regarding public access to the public trust/dry sand beach and has also received input from the NC Wildlife Resources Commission and US Fish & Wildlife Service expressing concerns about the placement of sand fencing and beach accessways on newly constructed starter dunes. These concerns are due to the gradual design slopes that may allow for sea turtle nesting, and concerns that natural erosion and storm events may significantly erode areas that are not yet stabilized. If new structural accessways were permitted over a starter dune, derelict structures could soon end up on an eroding beach or scattered as storm debris. Also, if sand fencing were permitted to be placed waterward of the toe or on the slope of this new feature, there is an increased potential for sea turtle/hatchling entrapment and exclusion of the public from even broader public trust/dry sand beach areas.

In determining the appropriate siting of structural accessways and sand fencing, N.C. Coastal Resources Commission Rules reference the first line of stable, natural vegetation and/or the toe of the frontal dune. The frontal dune is defined as “the first mound of sand located landward of the ocean beach that has stable and natural vegetation present.” [15A NCAC 07H .0305(a)(4)] Therefore, recently nourished areas, even if planted with vegetation, typically will not qualify as a frontal dune until they have stable, natural vegetation. With time, these areas may become stable and naturalized. As with determining the first line of stable, natural vegetation (FLSNV) for construction setbacks, indications of “stable and natural” vegetation include the establishment of new rhizomes in addition to the planted sprigs, the reduction of an obvious planted “grid” pattern, and/or the presence of additional species of vegetation. Prior to this, if the toe of the

original frontal dune is buried during nourishment construction, the visible FLSNV or any erosion scarp (or substantial drop in elevation) along the original frontal dune should be used in lieu of the buried toe of the original frontal dune to determine the allowable location of sand fencing and beach accessways.

To address these issues, the following is specific guidance for siting these types of structures:

Beach accessways should not be authorized to extend onto or over emergency berms or “starter dunes” until they are stabilized with natural vegetation and are determined to have become the frontal dune, in accordance with the Commission’s general use standards for structural accessways in 15A 07H .0308(c), which states:

(1) Structural accessways shall be permitted across primary or frontal dunes so long as they are designed and constructed in a manner that entails negligible alteration of the primary or frontal dune; and...

(5) Structural accessways may be constructed no more than six feet seaward of the waterward toe of the frontal or primary dune, provided they do not interfere with public trust rights and emergency access along the beach.

Limited stairs may be added to damaged structural accessways that are broken off above ground level in order to allow safe access to the beach, but shall be constructed parallel to the ocean.

Commission rules for **sand fencing** exemptions [15A NCAC 07K .0212] require that:

(6) Sand fencing shall be placed as far landward as possible to avoid interference with sea turtle nesting, existing public access, recreational use of the beach, and emergency vehicle access; and

(6)(c) Sand fencing installed waterward of the crest of the frontal or primary dune shall be installed at an angle no less than 45 degrees to the shoreline. Individual sections of sand fence shall not exceed more than 10 feet in length (except for public accessways) and shall be spaced no less than seven feet apart, and shall not extend more than 10 feet waterward of the following locations, whichever is most waterward, as defined in 15A NCAC 7H .0305: the first line of stable natural vegetation, the toe of the frontal or primary dune, or erosion escarpment of frontal or primary dune;

While this rule allows placement at the waterward-most location of these three reference features, in all cases consideration should be given to the first part of the rule (“as far landward as possible”). Sand fencing may also be installed along the length of public accessways, but should also be terminated as landward as possible and no more than 10 feet waterward of the FLSNV, toe of the frontal or primary dune, or erosion escarpment of the frontal or primary dune. In no case should sand fencing extend onto the wet sand beach area, as stated in subpart (a) of the rule.

Sand fencing proposed waterward of these locations, with different alignments, or with different materials can be considered through a minor permit application, but in accordance with the

general use standards for sand fencing in 15A 07H .0311(c): “sand fencing shall not be installed in a manner than impedes, traps or otherwise endangered sea turtles, sea turtle nests, or sea turtle hatchlings.” For this reason, CAMA minor permit applications for sand fencing are subject to review by the Wildlife Resources Commission and the U.S. Fish & Wildlife Service in order to determine whether or not the proposed design or installation will have an adverse impact on sea turtles or other threatened and endangered species. Sand fencing that is non-compliant should be immediately removed by the property owner, or is subject to enforcement action. All sand fencing that is non-functioning, damaged or unsecured should also be immediately removed by the property owner, in accordance with 15A NCAC 07H .0311(d).

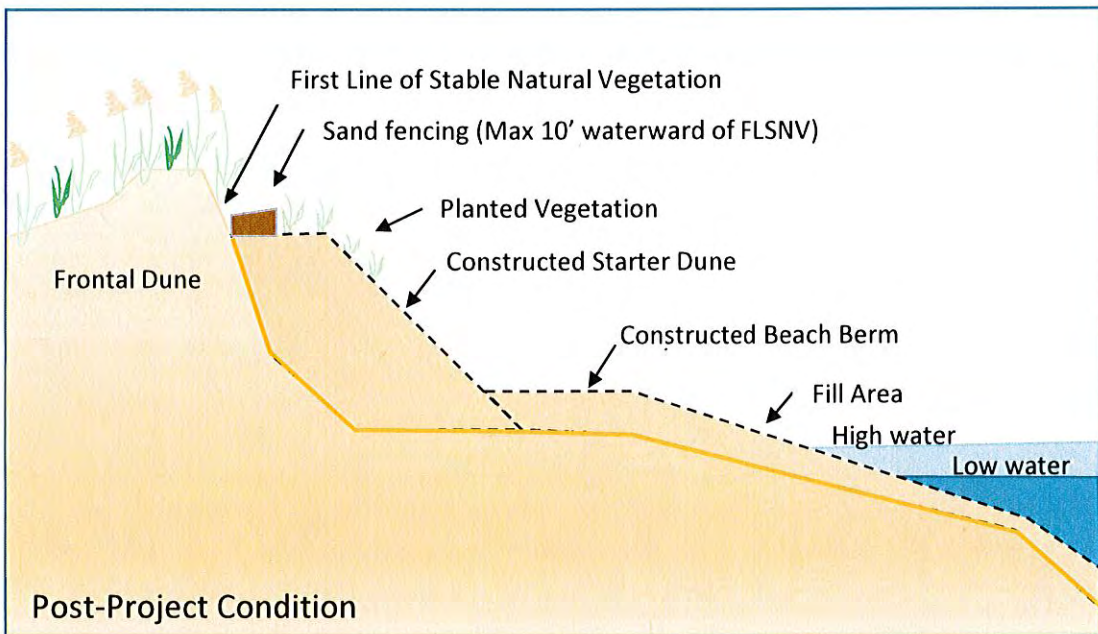
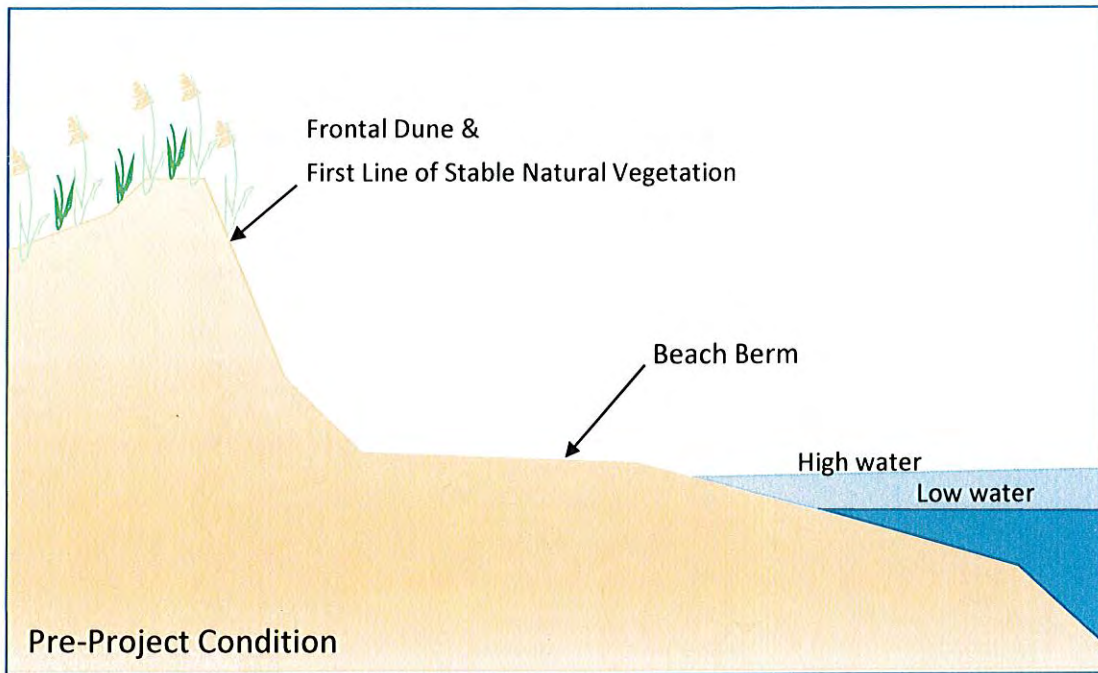
The Division recognizes and appreciates efforts to plant and stabilize newly constructed starter dunes to provide better storm protection for communities, and fully supports efforts to ensure access to our State’s beaches. The Commission’s rules are intended to find the right balance between the desire for structures that would enhance access and protect sensitive dunes and dune vegetation, with the potential increased exposure and damage to these structures from coastal storms and erosion, potential impacts to sea turtles, and potential impacts to public trust rights on the dry sand beach. With these goals in mind, the Division will not consider small post-and-rope pathways over newly constructed starter dunes, subject to the following design guidelines, as “development” requiring a CAMA permit. Post-and-rope pathways can provide a temporary solution until structural accessways can be authorized in accordance with the rules, once the dune vegetation has successfully established and stabilized. These conditions have also been coordinated with NCWRC and USFWS. In order to qualify, the following conditions for post-and-rope pathways must be followed:

- Posts must not be greater than 4x4 inches, should extend no deeper than 5 feet below grade, should not use concrete footers, and should maintain spacing of at least 7 feet between posts;
- Posts should be installed by hand without the use of heavy equipment;
- Only rope railings – no wooden or other railing systems will be allowed;
- Rope railings should be at least 3 feet above ground in order to avoid sea turtle interactions; and
- Paths shall be shore-perpendicular only for access to the beach; should not extend more than 6 feet waterward of planted vegetation or the toe of the constructed slope, *whichever is more landward*; post-and-rope shall not obstruct recreation, access, or emergency vehicles; and shall in no case extend below the high water line.

As is common in our line of work, please keep in mind there may be certain circumstances which may not be clear-cut and should be addressed on a case-by-case basis. If there any questions or concerns about this policy in general, please let me know. If you have any questions regarding application of this policy to specific projects and circumstances, please contact your field representative or district manager for assistance.

As always, thanks for everything you do for the State of North Carolina.

Figure 1. Pre- and post-nourishment beach profiles.



Applicable rule references:

15A NCAC 07H .0305 GENERAL IDENTIFICATION AND DESCRIPTION OF LANDFORMS

(a) This Paragraph describes natural and man-made features that are found within the ocean hazard area of environmental concern.

- (1) Ocean Beaches. Ocean beaches are lands consisting of unconsolidated soil materials that extend from the mean low water line landward to a point where either:
 - (A) the growth of vegetation occurs; or
 - (B) a distinct change in slope or elevation alters the configuration of the landform, whichever is farther landward.
- (2) Nearshore. The nearshore is the portion of the beach seaward of mean low water that is characterized by dynamic changes both in space and time as a result of storms.
- (3) Primary Dunes. Primary dunes are the first mounds of sand located landward of the ocean beaches having an elevation equal to the mean flood level (in a storm having a one percent chance of being equaled or exceeded in any given year) for the area plus six feet. Primary dunes extend landward to the lowest elevation in the depression behind that same mound of sand commonly referred to as the "dune trough".
- (4) Frontal Dunes. The frontal dune is the first mound of sand located landward of ocean beaches that has stable and natural vegetation present.
- (5) Vegetation Line. The vegetation line refers to the first line of stable and natural vegetation, which shall be used as the reference point for measuring oceanfront setbacks. This line represents the boundary between the normal dry-sand beach, which is subject to constant flux due to waves, tides, storms and wind, and the more stable upland areas. The vegetation line is generally located at or immediately oceanward of the seaward toe of the frontal dune or erosion escarpment. The Division of Coastal Management or Local Permit Officer shall determine the location of the stable and natural vegetation line based on visual observations of plant composition and density. If the vegetation has been planted, it may be considered stable when the majority of the plant stems are from continuous rhizomes rather than planted individual rooted sets. Planted vegetation may be considered natural when the majority of the plants are mature and additional species native to the region have been recruited, providing stem and rhizome densities that are similar to adjacent areas that are naturally occurring. In areas where there is no stable and natural vegetation present, this line may be established by interpolation between the nearest adjacent stable natural vegetation by on-ground observations or by aerial photographic interpretation.

15A NCAC 07H .0311 INSTALLATION AND MAINTENANCE OF SAND FENCING

(a) Sand fencing may only be installed for the purpose of building sand dunes by trapping wind blown sand; the protection of the dune(s) and vegetation (planted or existing).

(b) Sand fencing shall not impede existing public access to the beach, recreational use of the beach, or emergency vehicle access. Sand fencing shall not be installed in a manner that impedes or restricts established common law and statutory rights of public access and use of public trust lands and waters.

(c) Sand fencing shall not be installed in a manner that impedes, traps or otherwise endangers sea turtles, sea turtle nests or sea turtle hatchlings. CAMA permit applications for sand fencing shall be subject to review by the Wildlife Resources Commission and the U.S. Fish and Wildlife Service in order to determine whether or not the proposed design or installation will have an adverse impact on sea turtles or other threatened or endangered species.

(d) Non-functioning, damaged, or unsecured sand fencing shall be immediately removed by the property owner.

(e) Sand fencing shall not be placed on the wet sand beach area.

History Note: Authority G.S. 113A-107; 113A-113(b)(6);

Eff. August 1, 2002.

15A NCAC 07K .0212 INSTALLATION AND MAINTENANCE OF SAND FENCING

Sand fences that are installed and maintained subject to the following criteria are exempt from the permit requirements of the Coastal Area Management Act:

- (1) Sand fencing may only be installed for the purpose of: building sand dunes by trapping wind blown sand; the protection of the dune(s) and vegetation (planted or existing).
- (2) Sand fencing shall not impede existing public access to the beach, recreational use of the beach or emergency vehicle access. Sand fencing shall not be installed in a manner that impedes or restricts established common law and statutory rights of public access and use of public trust lands and waters.
- (3) Sand fencing shall not be installed in a manner that impedes, traps or otherwise endangers sea turtles, sea turtle nests or sea turtle hatchlings.
- (4) Non-functioning, damaged, or unsecured, sand fencing shall be immediately removed by the property owner.
- (5) Sand fencing shall be constructed from evenly spaced thin wooden vertical slats connected with twisted wire, no more than 5 feet in height. Wooden posts or stakes no larger than 2" X 4" or 3" diameter shall support sand fencing.
- (6) Location. Sand fencing shall be placed as far landward as possible to avoid interference with sea turtle nesting, existing public access, recreational use of the beach, and emergency vehicle access.
 - (a) Sand fencing shall not be placed on the wet sand beach area.
 - (b) Sand fencing installed parallel to the shoreline shall be located no farther waterward than the crest of the frontal or primary dune; or
 - (c) Sand fencing installed waterward of the crest of the frontal or primary dune shall be installed at an angle no less than 45 degrees to the shoreline. Individual sections of sand fence shall not exceed more than 10 feet in length (except for public accessways) and shall be spaced no less than seven feet apart, and shall not extend more than 10 feet waterward of the following locations, whichever is most waterward, as defined in 15A NCAC 7H .0305: the first line of stable natural vegetation, the toe of the frontal or primary dune, or erosion escarpment of frontal or primary dune; and
 - (d) Sand fencing along public accessways may equal the length of the accessway, and may include a 45 degree funnel on the waterward end. The waterward location of the funnel shall not exceed 10 feet waterward of the locations identified in Item (6)(c) of this Rule.

History Note: Authority G.S. 113A-103(5)c.;
Eff. August 1, 2002.