Stumpy Point Bay Emergency Ferry Terminal
SR 1164 (Log Storage Road)
Dare County
Federal Aid Project STP-1164(3)
State Project Number 8.2051201
TIP Project F-4407

MITIGATION PLAN

1.0 INTRODUCTION

The North Carolina Department of Transportation (NCDOT) proposes to construct an emergency ferry terminal landing adjacent to Stumpy Point Bay. The site is an 8-acre parcel owned by NCDOT located on SR 1164 (Log Storage Road), between US 264 and Stumpy Point Bay in Dare County. The intent of this plan is to describe impact areas and provide compensatory mitigation in three areas:

- 404 / CAMA Wetlands
- Shellfish Bed Areas
- Essential Fish Habitat

2.0 PROJECT DESCRIPTION

The recommended alternative (Alternative 1) will consist of a new channel accessing a new turning basin. At the water-most end, this channel will begin at the existing Stumpy Point channel maintained by the USACE. The channel will be excavated by hydraulic dredge utilizing a box cut 1400 feet long, 100 feet wide and 8 feet deep. On the landward end, a turning basin will be excavated 350 feet long, 300 feet wide and 8 feet deep. Approximately 44,000 cubic yards of material will be excavated by the channel and turning basin construction. After dredging and within this turning basin, mooring fenders will be constructed to service, moor and maneuver the ferry vessels. In addition, facilities will be constructed to facilitate loading and offloading automobiles to and from the vessels.

The loading facilities will consist of a bulkhead 120 feet long established at the landward-most edge of the turning basin and a loading ramp. This bulkhead will be constructed of steel sheet pilings and will be positioned at the normal water line (NWL) along the shoreline. Riprap material will make up the return walls to protect the bulkhead flanks on either end. Fill will be placed behind the bulkhead to raise the elevation to the required specifications. An additional wall will be placed waterward of the bulkhead to prevent the bulkhead from being undermined by propwash from the vessels. A pivoting

ramp will be constructed roughly centered along the bulkhead length and a gantry will be constructed to facilitate raising and lowering of the ramp.

Upland development will include: a paved access drive (200 feet by 18 feet) to access the loading ramp; a gravel parking area (100 feet by 60 feet) for employee parking adjacent to the loading ramp; and the expansion of SR 1164 (Log Storage Road) by 20 feet (the shoulders will be gravel) to allow vehicle parking as part of the ferry operations.

Impacts to sub-tidal areas will consist of 105,000 square feet for the turning basin excavation and 140,000 square feet for the access channel excavation for a total of 245,000 square feet (5.624 acres). Upland development will disturb approximately 35,284 square feet (0.81 acres).

3.0 SITE CONDITIONS

3.1 Terrestrial Conditions

The site is bordered on the east by Stumpy Point Bay and on the west by a man-made canal. Log Storage Road divides the property into two nearly equal parcels. A man-made berm dominates the land features east of Log Storage Road on the southern side. Between the man-made berm and Log Storage Road are wetlands and wetlands exist between Log Storage Road and the low, natural berm bordering Stumpy Point Bay further to the north on this east side. A single isolated spoil pile (uplands) exists in this area that is approximately 1,600 square feet (0.04 acres) in size. To the west, between Log Storage Road and the man-made canal, is another large wetland area. Wetlands have been delineated by the NCDOT and verified by the US Army Corps of Engineers. A total of 3.83 acres of wetland areas have been identified on the site.

According to the Dare County Soil Survey, all the soils of the site are classified as Psamments, or soil areas where the natural soil has been either removed or buried. Based on a site examination, upland areas appear to utilize fill to raise the surface elevation 1' to 5' above a saturation elevation.

Predominant vegetation consists of common reed (*Phragmites australis*) commonly known as phragmites. Other species include minor amounts of salt meadow grass (*Spartina patens*), black needle rush (*Juncus roemeranus*), salt bush (*Baccharis halimifolia*), and wax myrtle (*Myrica cerifera*). Some of the site vegetation has been managed by mowing in an attempt to treat the phragmites.

Wet conditions at the site are primarily influenced by groundwater and rainfall. Groundwater is wicked up by the soils to produce saturated (even inundated) conditions in the fall, winter and spring. The evapotranspiration capacity of the phragmites exerts a strong drainage influence on the wetland areas in late spring and summer. Wind tides breach the low natural berm bordering Stumpy Point Bay periodically, adding water and increasing the salinity content of the wetlands east of Log Storage Road.

3.2 Aquatic Conditions

Stumpy Point Bay is classified as a productive "secondary nursery area" for a number of recreationally and commercially important finfish and shellfish species. Atlantic croaker (*Micropogonias undulates*), spot (*Leiostomus xanthurus*), and weakfish (*Cynoscion regalis*) were the most abundant species found near the site. Other species captured include Atlantic menhaden (*Brevoortia tyrannus*), spotted seatrout (*Cynoscion nebulosus*), sheepshead (*Archosargus probatocephalus*), black drum (*Pogonias cromis*), striped bass (*Morone saxatilis*), American eel (*Anguilla rostrata*), and summer and southern flounder (*Paralichthys dentatus* and *Paralichthys lethostigma*).

Important shellfish caught throughout the bay include pink shrimp (*Penaeus duorarum*), brown shrimp (*Penaeus aztecus*), white shrimp (*Penaeus setiferus*), blue crab (*Callinectes sapidus*), surf clam (*Spisula solidissima*), and naturally occurring eastern oysters (*Crassostrea virginica*). No benthic macroinvertebrate surveys were conducted in Stumpy Point Bay.

Submerged aquatic vegetation (SAV), namely widgeon grass (Ruppia maritime), is commonly found throughout Stumpy Point Bay. However, in the immediate vicinity of the project limits, little SAV was found.

The project study area has been designated as an Essential Fish Habitat (EFH). Pertinent information on EFH with respect to the 1996 Congressional amendments to the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) (PL 94-265) is included in Appendix D of the Federal CE for this project. The MSFCMA set forth new requirements to identify and protect marine and anadromous fish habitat.

4.0 IMPACTS

4.1 Wetlands

The proposed improvements on the land will impact approximately 480 square feet **(0.01 acres)** of a coastal wetlands fringe impacted by the excavation and backfilling of a proposed bulkhead, along with 2,224 square feet **(0.05 acres)** of 404-type brackish marsh wetland impacts associated with the construction of an access road to the proposed ferry basin. The 404-type marsh is primarily dominated by phragmites.

4.2 Submerged Aquatic Vegetation

A general survey including a brief submerged aquatic vegetation (SAV) reconnaissance was done in the project study area by DMF in March 2002. Only a few strands of Widgeon grass (*Ruppia maritime*) were gathered from the search. DMF personnel concluded that habitat is not conducive to SAV production due to dark, nutrient poor conditions in the project study area.

4.3 Shellfish

According to a recent sampling completed by DMF in the project study area, the shell substrate was found throughout the proposed dredging area. All samples contained rangia clam and oyster shell, with the exception of samples taken in very soft mud. The majority of the shell was dead, and oyster densities were estimated by the abundance of live resource only. Overall oyster densities were estimated at 6.06 bushels of oysters per acre within the project study area (see Appendix D of Federal CE for EFH Assessment). From this evaluation, the entire area of 5.624 acres is considered impacted.

4.4 Essential Fish Habitat

Within the proposed dredging area (5.624 acres), the total area of these habitats are considered EFH and will be disturbed by dredging procedures (see Appendix D of Federal CE for the EFH Assessment).

5.0 MITIGATION

5.1 Wetlands

Several on-site options were reviewed.

Enhancement: The phragmites dominates the jurisdictional wetlands on this property, as well as the adjacent property wetlands. Past attempts to treat phragmites by NCDOT has not been very successful, especially when the seed source is on the adjacent properties. Therefore, NCDOT is not proposing enhancement of the existing wetlands.

Restoration: a small area of uplands (approximately .33 acres in size) will remain after completion of the driveway and parking lot. This area can be graded down to the elevation of the adjacent wetlands and connected. Care will be given to protecting the adjacent wetlands. This area will be planted with suitable marsh plants, such as black needle rush (Juncus roemeranus). However, NCDOT will not guarantee the success of these plants due to the invasive phragmites. NCDOT anticipates that this area will be overtaken with phragmites within a few years.

Preservation: The remaining wetlands on the NCDOT property will be preserved.

NCDOT believes that the combination of restoration and preservation on the site will provide all of the necessary mitigation for the wetland impacts due to this project.

5.2 Shellfish

To compensate for impacts to shellfish habitat (at a 1:1 ratio), NCDOT is working with the NCDMF to place replacement oyster shell in the Bay to create new shell habitat. The original quantity of 68,000 bushels of replacement oyster shell (as noted in the CE document) was revised by NCDMF to 34,000 bushels after further evaluation of the existing resources. Because of the depletion of purchasable oyster shell in the area, the NCDMF also proposed that 1200 tons of Class B rip rap be used as a substitute for the oyster shell. This quantity and material substitution was verified in a meeting between NCDOT and the NCDMF on June 18, 2002.

5.3 Essential Fish Habitat

To compensate for impacts to EFH, NMFS has determined that the replacement of oyster shell in the Bay will provide acceptable mitigation for the EFH. No additional mitigation is required.

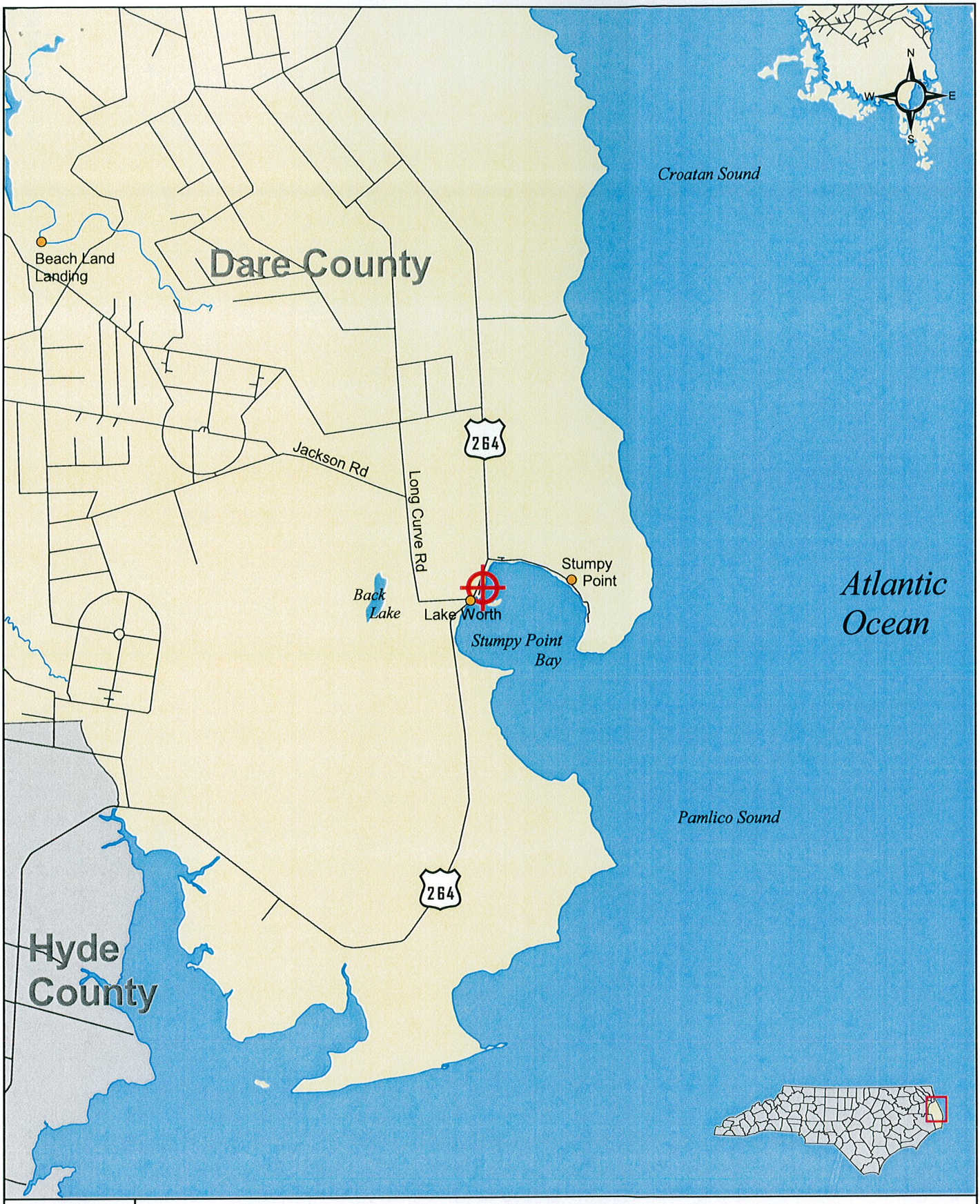
6.0 SUCCESS CRITERIA

No hydraulic or vegetation success criteria will be applicable to the project after the wetland mitigation work is completed. No monitoring is required in regards to the oyster shell placement.

7.0 DISPENSATION OF PROPERTY:

The property is currently owned by NCDOT. If the property is transferred, covenants and/or restrictions on the deed will be included that will ensure adequate management and protection of the site in perpetuity. The most likely candidate for dispensation would be the Alligator River National Wildlife Refuge, the adjacent landowner.

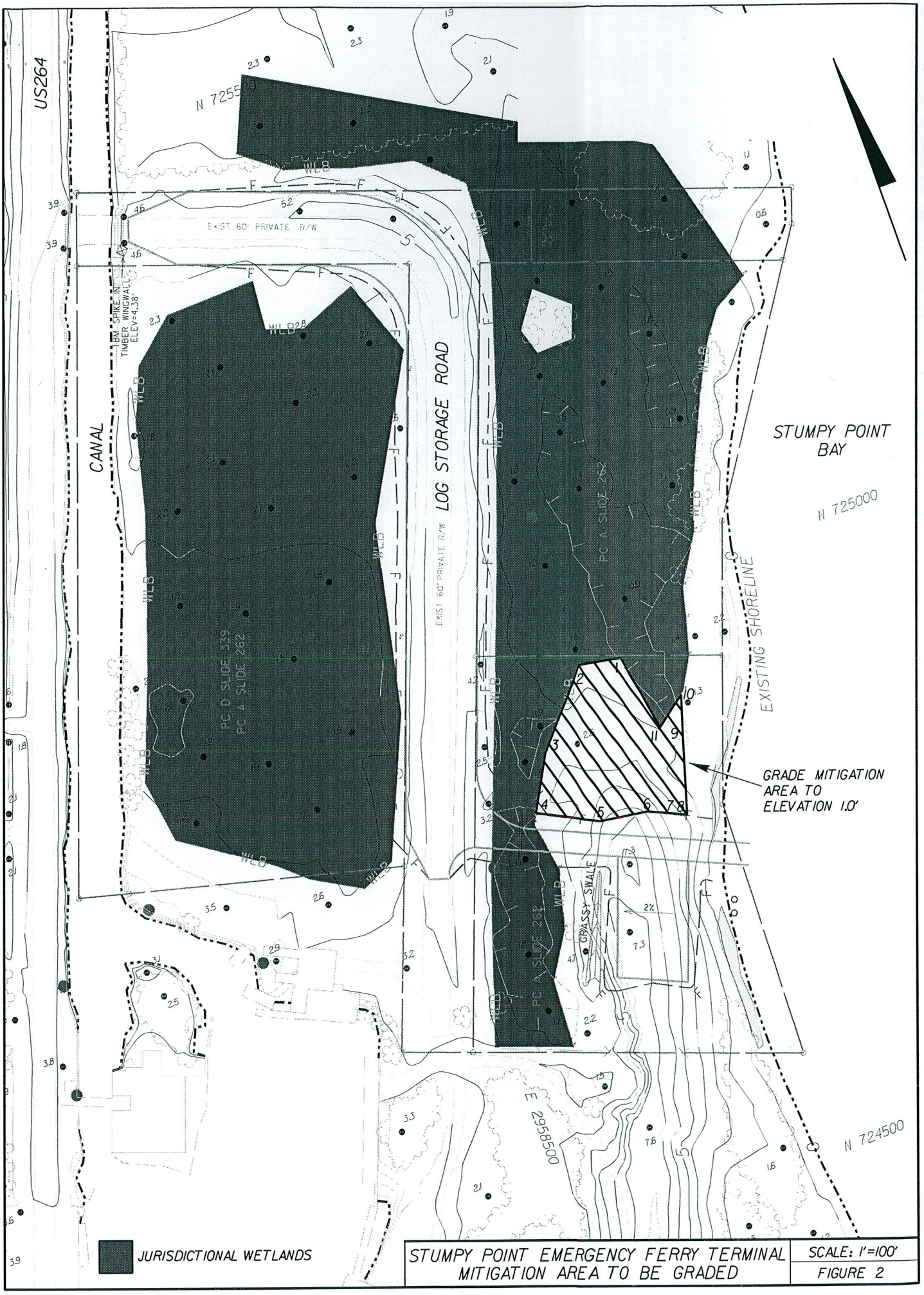
CRC/cc



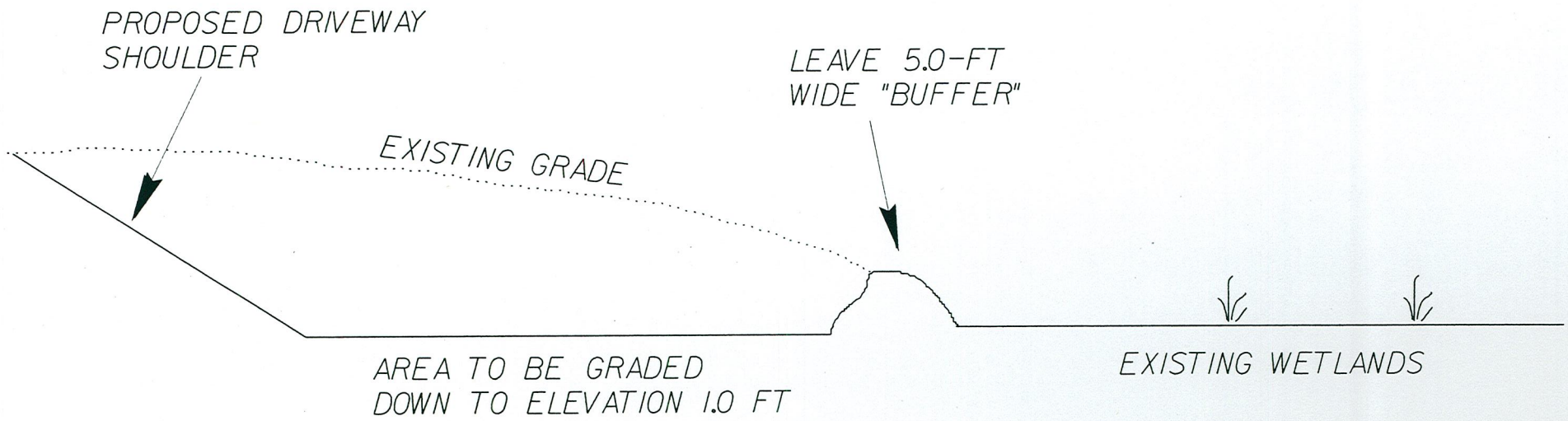
Stumpy Point Emergency Ferry Terminal
Location Map

0 2 4 6 8 10 Miles

Figure 1


US264
CANAL
LOG STORAGE ROAD
EXIST 60' PRIVATE R/W
EXIST 60' PRIVATE R/W
BM. SPIKE IN TIMBER WINGWALL ELEV=4.38'
PC D SLIDE 339
PC A SLIDE 242
PC A SLIDE 252
PC A SLIDE 251
STUMPY POINT BAY
EXISTING SHORELINE
GRADE MITIGATION AREA TO ELEVATION 1.0'
GRASSY SWALE
N 725500
N 725000
N 724500
E 2958500
JURISDICTIONAL WETLANDS
STUMPY POINT EMERGENCY FERRY TERMINAL
MITIGATION AREA TO BE GRADED
SCALE: 1"=100'
FIGURE 2

NOTES:
1. "Buffer" between existing wetlands and newly constructed wetlands is to protect existing wetlands. However, several small cuts will connect the proposed and existing areas, as directed by Engineer.



WETLAND GRADING TYPICAL SECTION

(N.T.S.)

FIGURE 3

REV. 4/12/02 CRC