



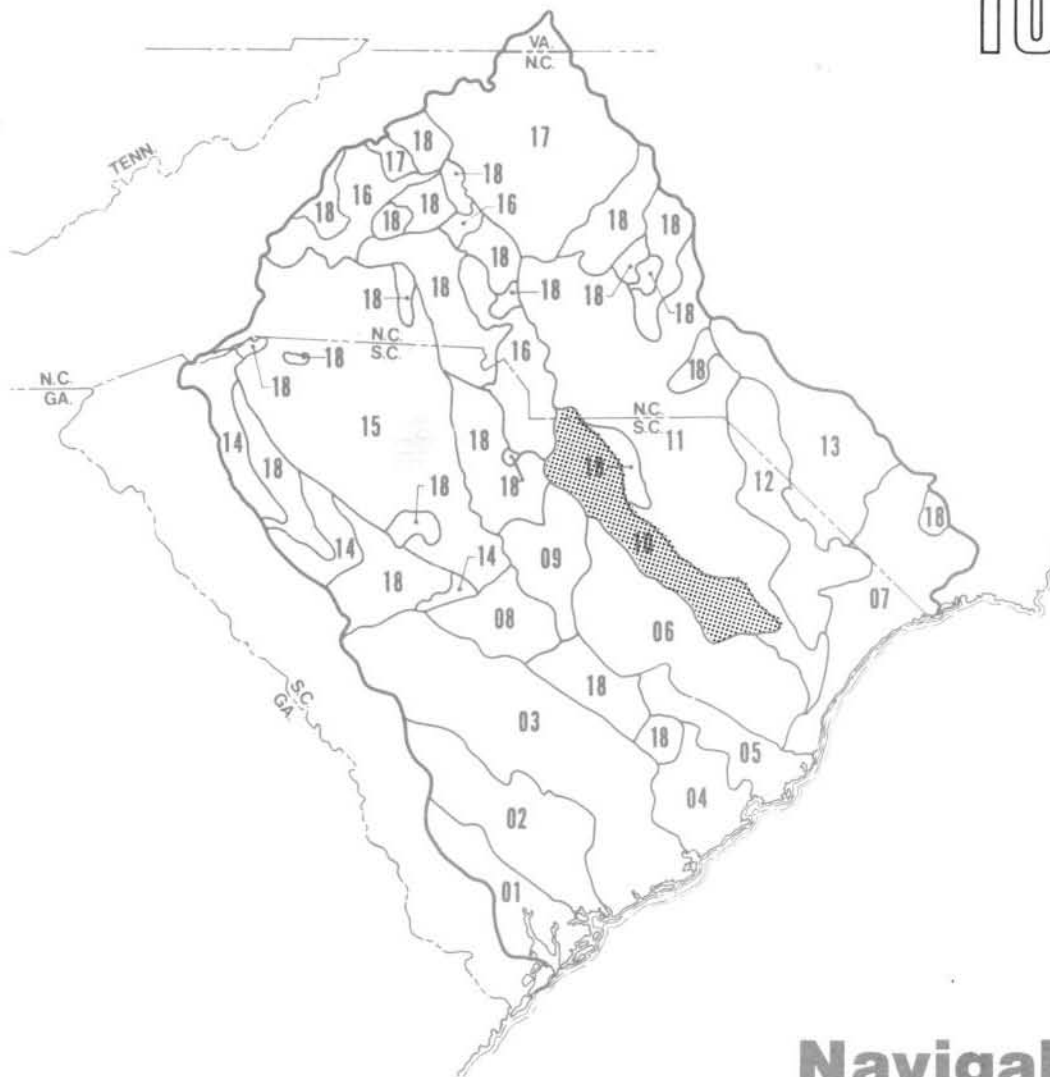
U.S. ARMY CORPS OF ENGINEERS  
CHARLESTON DISTRICT  
Charleston, South Carolina



# LYNCHES RIVER BASIN

Report No.

10



**Navigability  
Study  
1977**



STANLEY CONSULTANTS

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## SECTION 1 - INTRODUCTION

### Purpose

The purpose of this study is to collect, develop, and evaluate information on waterbodies within the boundaries of the Charleston District, Corps of Engineers, for establishing the classification of "navigable waters of the U. S." and "waters of the U. S." (During the course of this study the term "navigable waters" was changed to "waters of the U. S." Herein references to "navigable waters" are synonymous with "waters of the U. S.") Study objectives include definition of the present head of navigation, the historic head of navigation, the potential head of navigation, and the headwaters of all waterbodies within the district.

The information generated as a part of the study will be utilized by the Charleston District in administration of its programs dealing with water resource project construction permits in "navigable waters of the U. S." (River and Harbor Act of 1899), and the deposition of dredge or fill material in "navigable waters" or their contiguous wetlands (Section 404 of PL 92-500).

### Scope

The scope of this project is generally summarized by the following:

1. Outline drainage areas, locate headwater points where mean flow is five cubic feet per second (cfs), summarize lake data (10 to 1,000 acres), establish stream mileage for "navigable waters of the U. S.", and prepare a stream catalog summary for the district.
2. Conduct field surveys of waterbodies to establish mean water levels and obstruction clearances for evaluating the potential head of navigation.
3. Analyze available hydrological data to estimate mean, maximum, and minimum discharge rates at obstructions and other selected locations.
4. Conduct a literature review to identify past, present, and future uses of waterbodies for interstate commerce.

5. Conduct a legal search to identify Federal and state court cases which impact on navigation classifications.
6. Prepare plan and profile drawings, maps of the district showing significant physical features, and a map delineating the recommended navigation classifications.
7. Prepare reports on all major river basins and large lakes (greater than 1,000 acres) including information on physical characteristics, navigation projects, interstate commerce, court decisions, navigation obstructions, and recommended classification of waterbodies for navigation.
8. Prepare a summary report outlining navigation-related information for the entire district as well as the methodology, procedures, and other factors pertinent to the development of each of the river basin reports.

Conduct of this study relies heavily upon available information. Compilation and evaluation of existing data from many sources and development of field survey information are the main contributions to the new water resource data base represented by this study.

#### Related Reports

Information pertaining to this navigability study for the Charleston District has been compiled into a series of reports, one of which is represented by this document. A complete listing of the reports is presented below to facilitate cross referencing.

<u>Number</u>	<u>Title</u>
--	Summary Report
01	Coosawhatchie River Area
02	Combahee River Area
03	Edisto River Area
04	Cooper River Area
05	Santee River Basin
06	Black River Area
07	Waccamaw River Basin
08	Congaree River Basin
09	Wateree River Basin
10	Lynches River Basin



<u>Number</u>	<u>Title</u>
11	Great Pee Dee River Basin
12	Little Pee Dee River Basin
13	Lumber River Basin
14	Saluda River Basin
15	Broad River Basin
16	Catawba River Basin
17	Yadkin River Basin
18	Lakes - Greater Than 1,000 Acres
--	Coastal Supplement

The eighteen reports covering various drainage areas in the district present information for the specific basins. The Summary Report provides an overview of the entire study of district waterbodies and presents information applicable to all waters in the district. Reference should be made to both the individual drainage area reports as well as the Summary Report to obtain a thorough understanding of the study approach and results.

#### Acknowledgements and Data Sources

The contribution of many project team members within the Corps of Engineers, Charleston District, and Stanley Consultants is gratefully acknowledged by Stanley Consultants. In addition to the legal search and other evaluations and input from Charleston District staff, several others made significant contributions to this study effort. Dr. John W. Gordon, Assistant Professor in the Department of History, The Citadel, prepared the narrative and literature review information for past and present interstate commerce.

Several state water resource, transportation, utility, and planning agencies also cooperated and provided useful data for compiling these reports. Federal water resource and regulatory agencies and private utilities provided information along with public and private operators of large reservoirs.

Specific numbered data sources are referenced in the reports in parentheses. These data sources are listed in the Bibliography of each report of the navigation study.

## SECTION 2 - PHYSICAL CHARACTERISTICS

The Lynches River, a tributary to the Great Pee Dee River, has a drainage area of approximately 1,400 square miles and lies in east-central South Carolina. The stream flows for approximately 195 miles in a southeast direction, from its headwaters in Union County, North Carolina and Lancaster and Chesterfield Counties in South Carolina, through portions of Kershaw, Lee, Darlington, Sumter, and finally Florence County where it meets the Great Pee Dee River at river mile (R.M.) 61.9. Plate 10-1 shows the entire drainage basin of the Lynches River and its tributaries.

The Lynches River is a gently flowing river, from its headwaters in the rolling hills of the uplands through sometimes swamp-like conditions in the coastal plain, to its mouth. Elevations range in the basin from 510 feet above mean sea level at the headwaters to 15 feet above mean sea level at the confluence with the Great Pee Dee River (R.M. 61.9) near Johnsonville in Florence County, South Carolina. The Lynches River is not subject to tidal influence. Plates 10-2 through 10-4 are detailed maps indicating the significant features found in the basin.

The principal tributary to the Lynches River is the Little Lynches River. Selected physical characteristics of the Lynches River and its tributaries are presented in Table 1. Included are approximate values for drainage areas, mean discharges, and elevation changes for the streams. Detailed slope information may be found in Table 4. Methodology for determining the numerical values of physical characteristics appearing in Table 1 is defined in the Summary Report.

The location of a key stream gaging station on the Lynches River is presented in Table 2. Also shown are the mean, minimum, and maximum flows at the gaging station.

TABLE 1

## PHYSICAL CHARACTERISTICS (1) (2) (3) (4)\*

<u>Stream &amp; Code</u> <sup>1)</sup>	<u>Length-Mouth to Headwaters</u> <sup>2)</sup> (mi)	<u>Elevation Change</u> <sup>2)</sup> (ft)	<u>Drainage Area</u> (sq.mi)	<u>Mean Discharge at Mouth</u> (cfs)	<u>Confluence with River Mile</u>	<u>Present Navi- gable Waters of the U. S. (R.M.)</u>
Lynches River	195.6	495	1,400	1,400	Great Pee Dee River - R.M. 61.9	42.5 <sup>3)</sup>
Little Lynches River	70.9	410	190	190	Lynches River R.M. 114.0	--

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1) See Summary Report for explanation of code.

2) From mouth to a remote point in the respective basin having a mean annual flow of five cfs.

3) R.M. 42.5 corresponds with river mileage developed as a part of this study. The actual length of "navigable waters of the U. S." is longer, since this classification is "via Clark Creek" which is about six miles in length. See Section 6 for further explanation.

\* See Bibliography for these references.

TABLE 2

KEY STREAM GAGING STATION (1)(2)

USGS Gaging Station Number	02132000
Location Description	Located near Effingham, S.C., Florence County on U. S. 52 Highway Bridge, just upstream of Southern Coast Line Railroad Bridge
Drainage Area	1,030 square miles
Mean Flow	1,020 cfs
Minimum Flow <sup>1)</sup>	255 cfs
Maximum Flow <sup>2)</sup>	2,150 cfs

- 
- 1) Exceeded or equaled 90 percent of the time.
  - 2) Exceeded or equaled 10 percent of the time.

### SECTION 3 - NAVIGATION IMPROVEMENT PROJECTS

#### Federal Navigation Projects

A number of studies relating to conditions on the Lynches River have been authorized by Congress and compiled by the Corps of Engineers. As a result of these early studies, the river was determined to be navigable for small vessels for 80 miles from its confluence with the Great Pee Dee River. It was reported that the primary limit to navigation for larger vessels was the obstruction of logs and drift wood at its mouth. This resulted in the study of Clark Creek as an alternate navigable outlet for the Lynches River.

Congress authorized a project to improve Clark Creek as a result of these earlier studies. Under the River and Harbor Act, 11 August 1888, a Federal navigation project was established to provide a cleared channel 40 feet wide and 3 feet deep from the Great Pee Dee River via Clark Creek to the Lynches River, a distance of approximately six miles. Since there were no additional appropriations made to continue maintenance, the stream again filled with debris. The channel was cleared once more when, in 1907, Congress approved a Federal navigation project to clear the stream of snags, logs, and debris.

In 1910, the Corps reported that the mouth of the Lynches River was completely filled with drift coming in from the Great Pee Dee River. This forced all river traffic to use Clark Creek. Clark Creek was cleared the same year. The U. S. War Department later recommended that this improvement be abandoned due to lack of commerce.

In 1926, the Corps of Engineers recommended that the Lynches River - Clark Creek project be abandoned. In 1950, the Corps listed the Lynches River - Clark Creek system as an inactive navigation project, with no commerce reported.

Summarized information on the Lynches River is given in Table 3.

TABLE 3  
 AUTHORIZED FEDERAL NAVIGATION PROJECTS (4) (5)

Waterbody	Clark Creek
Work Authorized	40 ft. wide, 3 ft. deep channel
Date Completed	1892
Project Location	Lynches River (R.M. 0.8) via Clark Creek (approximately six mile length) to the Great Pee Dee River (R.M. 52.2)
Authorization	River and Harbor Act, 11 August 1888

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Waterbody	Lynches River - Clark Creek System
Work Authorized	Removal of logs and snags
Date Completed	1910
Project Location	Lower end of Clark Creek and Lynches River (known as Lawrence-Cut)
Authorization	River and Harbor Act, 2 March 1907. Abandonment recommended in 1926, H. Doc. 467, 69th Cong., 1st Sess.

Other Navigation Projects

Inquiries made at various state and Federal agencies indicate no projects are now planned or under construction which would improve or substantially benefit navigation on the Lynches River.

#### SECTION 4 - INTERSTATE COMMERCE

##### Fast

The first settlers in South Carolina were restricted to waterbodies for movement of heavy and bulky goods and products. As such, both the Lynches River and Clark Creek appear to have been important water highways for movement of people and products during the early and mid-1700's. Settlements along the Great Pee Dee River and its tributaries shipped their surplus provisions to the Georgetown area by the water routes to feed the slave populations of the rice plantations. Crops were transported downstream and then to other areas while supplies were shipped upstream. Ocean commerce which passed into and out of Charleston, South Carolina, connected the Georgetown region with the other colonies and England itself. (6)(7)

The Lynches River - Clark Creek system prospered during the 1820's and 1830's, the age of steam and the age of cotton. However, it was noted that the Lynches River was obstructed by logs and driftwood near its mouth but "could be easily made navigable." (8)(9)(10) Though smaller craft could navigate the Lynches River 80 miles from the Great Pee Dee River, Federal money was needed to deal effectively with the debris problem at the Lynches' River mouth. Improvements were made in the 1890's over the six mile length of Clark Creek, from where it joins the Great Pee Dee to its junction with the Lynches River. These improvements gave the Lynches River an outlet. (10)(12)

By 1892, the outbound commerce on the Lynches - Clark Creek system comprised 1,000 tons of rosin valued at \$10,000, and 5,326 tons of timber valued at \$16,000. The total tonnage, amounting to over \$28,000, was carried by pole boats and rafts. A Corps' officer noted that, "Timber rafts are now run ... on the part of the river above Effingham." The area through which the river and the creek flowed was "almost entirely without railroad facilities. There are twenty-two landings on the right bank and twenty-two landings on the left bank..." (11)(13)

The Georgetown Board of Trade observed four years later that Clark Creek had a navigable length of 6 miles for steamers, and that the Lynches

River was navigable for pole (but not steam) boats for 89 miles (R.M. 121.2). The commerce-tonnage figures for the Lynches - Clark system, as of June 1, 1895, comprised 6,586 tons. (14)

Thereafter, the Lynches River riverine commerce appears to have declined. By 1910, the Corps reported that there was "no commerce on this stream," and "no navigation, except rafts" sometimes amounting to more than three thousand tons of logs. (12)(15)(16)(17)

Whatever had been the contribution of the Lynches River and Clark Creek to interstate commerce during the 19th Century, by 1926, it was recommended to Congress that the authorized Federal project be terminated. There "were no terminal facilities on the river ... no commerce ... and there had been none since 1908, when it amounted to 2,000 tons of rafted timber valued at \$25,000." In 1926, there was "no commerce", nor was there any in 1950. Instead the Lynches River - Clark Creek project was essentially unused -- its important period of moving products by water had been in the latter half of the 19th Century.

#### Present

The Lynches River - Clark Creek system, from the Seaboard Coast Line Railroad bridge (R.M. 121.2) to its junction with Clark Creek (R.M. 0.8) and then to its confluence with the Great Pee Dee River (R.M. 61.9) has been a significant artery for interstate waterborne commerce. In 1950, however, the system was labeled an "inactive" navigation project with "no commerce reported." There was no commerce evident, nor any listing of the Lynches River - Clark Creek system, seven years later in Waterborne Commerce of the United States, 1961. No commerce was listed in the Annual Report of the Chief of Engineers U. S. Army, 1974. (19)(20)(21)

#### Future Potential

Comprehensive analysis of the regional economics (income, education, employment, community facilities, transportation systems, and similar factors), which would indicate growth patterns and the services needed to sustain various types of industrial and commercial activities,



is beyond the scope of this study. Thus, it is difficult to determine future interstate commerce potential for the Lynches River and its tributaries. However, some analysis and judgments have been made concerning future commerce to assist in establishing navigation classifications.

As discussed later in Section 6, the Lynches River is navigable, with reasonable improvements, up to the confluence of the Little Lynches River (R.M. 114.3). It is anticipated that this stretch of river has the potential to be utilized for shipment of goods into other states since it is connected (via Clark Creek or the mouth) with the Great Pee Dee River and the Atlantic Ocean. The upstream reaches of the basin are not currently used for interstate commerce and the future potential is not anticipated to be significant. This is due in part to limited industrial and commercial activity and heavy dependence on other forms of transportation including the interstate highway system, railroad, and air transport.

## SECTION 5 - LEGAL AUTHORITY

### General

This section presents information pertaining to the legal aspects of the navigability investigation. Such Federal and state court decisions as apply to the specific basin reported on herein are outlined. The Summary Report presents more complete documentation and references to the court cases dealing with navigation classifications and legal jurisdiction.

### Navigability Interpretations

The term "navigable waters of the U. S." is used to define the scope and extent of the regulatory powers of the Federal government. Precise definitions of "navigable waters" or "navigability" are ultimately dependent on judicial interpretation, and are not made conclusively by administrative agencies.

Definitions of "navigability" are used for a wide variety of purposes and vary substantially between Federal and state courts. Primary emphasis must therefore be given to the tests of navigability which are used by the Federal courts to delineate Federal powers. Statements made by state courts, if in reference to state tests of navigability, are not authoritative for Federal purposes.

Federal courts may recognize variations in definition of navigability or its application where different Federal powers are under consideration. For instance, some tests of navigability may include:

1. Questions of title to beds underlying navigable waters.
2. Admiralty jurisdiction.
3. Federal regulatory powers.

This study is concerned with Federal regulatory powers. Unfortunately, courts often fail to distinguish between the tests, and instead rely on precedents which may be inapplicable. Thus, a finding that waters are "navigable" in a question dealing with land title may have a somewhat different meaning than "navigable waters of the U. S." which pertains to Federal regulatory functions.

In this study, the term "navigable waters of the U. S." is used to define the extent and scope of certain regulatory powers of the Federal government (River and Harbor Act); this is distinguished from the term "navigable waters" which refers to other Federal regulatory powers (Section 404 of PL 92-500).

Administratively, "navigable waters of the U. S." are determined by the Chief of Engineers and they may include waters that have been used in the past, are now used, or are susceptible to use as a means to transport interstate commerce landward to their ordinary high water mark and up to the head of navigation. "Navigable waters of the U. S." are also waters subject to the ebb and flow of the tide shoreward to their mean high water mark. These waters are deemed subject to a Federal "navigation servitude". The term "navigable waters of the U. S." defines the more restricted jurisdiction which pertains to the River and Harbor Acts -- particularly the one of 1899 which specifically defined certain regulatory functions for the Corps of Engineers.

In contrast, the term "navigable waters" defines the new broader jurisdiction with respect to Section 404 of the Federal Water Pollution Control Act Amendments of 1972. Accordingly, "navigable waters" not only include those waters subject to the navigation servitude, but adjacent or contiguous wetlands, tributaries, and other waters, as more fully defined in revised Corps of Engineers Regulations.

Although this navigability study covers both "navigable waters of the U. S." and "navigable waters", the analyses of judicial interpretations have only focused upon determining "navigable waters of the U. S." to the head of navigation. Due to common usages in court cases, the terms "navigability" and "navigable waters" may herein appear interchangeably with the term "navigable waters of the U. S." However, the summary of court cases is directed at the Federal regulatory jurisdiction of the River and Harbor Acts, and not necessarily regulatory jurisdiction under the Federal Water Pollution Control Act.

#### General Federal Court Cases

Powers of the Federal government over navigable waters stem from the Commerce Clause of the U. S. Constitution (Art. I, §8). Pursuant

to its powers under the Commerce Clause, Congress enacted the River and Harbor Act of 1899 which particularly specifies regulatory powers of the Federal government in "navigable waters of the U. S."

The well-established Federal test of navigability is whether a body of water is used or is capable of being used in conjunction with other bodies of water to form a continuous highway upon which commerce with other states or countries might be conducted.

Several Federal court decisions make it clear that a waterway which was navigable in its natural or improved state retains its character as "navigable in law" even though it is not presently used for commerce. The test of navigability is not whether the particular body of water is in fact being used for any form of commerce but, whether it has the capacity for use of some type of commerce. Several cases substantiate this (see the Summary Report for details on the court decisions).

The ebb and flow of the tide is another test which remains a constant rule of navigability in tidal areas, even though it has sometimes been disfavored as a test of Federal jurisdiction. Several cases note that ebb and flow should not be the sole criterion of navigability, but that extension of Federal jurisdiction into the major non-tidal inland waters is possible by an examination of the waters "navigable character". The ebb and flow test, however, remains valid as a rule of navigability in tidal areas; it is merely no longer a restriction for non-tidal areas. For bays and estuaries, this extends to the entire surface and bed of all waterbodies subject to tidal action, even though portions of the waterbody may be extremely shallow or obstructed by shoals, vegetation, or other barriers as long as such obstructions are seaward of the mean high tidal water line. Marshlands and similar areas are thus considered "navigable in law" insofar as they are subject to inundation by the mean high waters. The relevant test is therefore the presence of the mean high tidal waters. Navigable waters are considered navigable laterally over the entire surface regardless of depth.

Another factor relevant to navigability determinations is land title. Whatever title a party may claim under state law, the private ownership of the underlying lands has no bearing on the existence or

extent of the dominant Federal jurisdiction over "navigable waters of the U. S." Ownership of a river or lake bed will vary according to state law; however, the Supreme Court has consistently held that title to the bottomlands is subordinate to the public right of navigation.

#### Specific Federal Court Cases

Navigability, in the sense of actual usability for navigation or as a legal concept embracing both public and private interests, is not defined or determined by a precise formula which fits every type of stream or body of water under all circumstances and at all times. A general definition or test which has been formulated for Federal purposes is that rivers or other bodies of water are navigable when they are used, or are susceptible of being used, in their ordinary condition as highways for commerce over which trade and travel are or may be conducted in the customary modes of trade and travel on water.

The question of navigability of water when asserted under the Constitution of the U. S., as is the case with "navigable waters of the U. S.", is necessarily a question of Federal law to be determined according to the general rule recognized and applied in the Federal courts.

Review of Federal case history reveals no decisions which apply specifically to navigation in the Lynches River basin.

#### South Carolina State Court Cases

The South Carolina legislative enactment defining navigability and requiring freedom from obstruction may be found in Section 70-1 of the South Carolina Code of Laws. This Section essentially provides that all streams which can float rafts of lumber or timber are considered navigable by state law.

Many of the South Carolina State cases reported are primarily concerned with state ownership questions. While the majority of states actually own streams and exercise control over their navigable waters, the ultimate authority has been granted to the Federal government by the Commerce Clause of the Constitution. The general rule, then, is that the states both own and control the navigable streams within their

borders, subject to exercise of the superior right of control by the U. S. Although case histories show that state and Federal concepts of navigability do not always agree, when Federal interests are at stake, the Federal test will govern.

There are exceptions, however, to the "overwhelming majority rule of state ownership of lands beneath navigable waters", and South Carolina is in the minority. In the minority states, it was considered that property rights were vested at the time of independence from England and that the state took title only to tidal-navigable streams while riparian owners took title to all stream beds, both navigable and non-navigable, if non-tidal. Even in the minority states, however, private ownership of the bed does not affect the rights of the public to the use of navigable waters.

A legal search indicates that there are no South Carolina state court cases which specifically deal with navigation considerations in the Lynches River basin.

#### North Carolina State Court Cases

The issue of navigability has arisen in a number of actions in the state courts of North Carolina. However, most of these cases concern coastal areas not within the boundary of the Charleston District.

North Carolina does not follow the English common-law rule that streams are navigable only as far as tidewater extends. Thus, unlike South Carolina as discussed previously, North Carolina conforms to the majority rule within the U. S. (i.e., state ownership of land beneath navigable waters).

A review indicates that there are no North Carolina state court decisions which relate to navigation in the Lynches River basin.

#### Recent Federal Litigation

A review of Federal litigation concerning the Charleston District did not reveal any court actions in the Lynches River basin concerning navigation.

### Federal Agency Jurisdiction

The delineation of "navigable waters of the U. S.", as discussed earlier, in essence, defines the Federal navigation servitude and is applicable to Federal jurisdiction generally (not merely applicable to the Corps of Engineers). No matter which Federal agency or activity may be involved, the assertion of "navigability" ("navigable waters of the U. S.") arises under the U. S. Constitution, or under application of Federal statute.

By virtue of the Commerce Clause of the Federal Constitution, and the clause empowering Congress to make all laws necessary to carry into execution the Federal judicial power in admiralty and maritime matters, "navigable waters of the U. S." are under the control of Congress, which has the power to legislate with respect thereto. It is for Congress to determine when and to what extent its power shall be brought into activity. It may be exercised through general or special laws, by Congressional enactments, or by delegation of authority.

Thus, Congress has power which is paramount to that of the states to make improvements in the navigable streams of the U. S. and for this purpose to determine and declare what waters are navigable. The Federal government also has the power to regulate the use of, and navigation on, navigable waters.

The above presents the basis upon which Federal jurisdiction in "navigable waters of the U. S." is established. The basic definition or jurisdictional concept of "navigable waters of the U. S." remains consistent, irrespective of which department or office of the Federal government may be delegated particular responsibility. For instance, the safety, inspection, and marine working functions of the U. S. Coast Guard embrace vessel traffic within "navigable waters of the U. S." as previously defined.

With specific reference to agency regulation of construction or work within "navigable waters of the U. S.", other than by the Corps of Engineers, the Department of Transportation Act of 15 October 1966 (PL 89-670) transferred to and vested in the Secretary of Transportation, certain functions, powers, and duties previously vested in the Secretary

of the Army and the Chief of Engineers. By delegation of authority from the Secretary of Transportation, the Commandant, U. S. Coast Guard, has been authorized to exercise certain of these functions, powers, and duties relating to the location and clearances of bridges and causeways in the "navigable waters of the U. S."

An additional agency of particular interest concerning work or construction within "navigable waters of the U. S." is the Federal Power Commission. The Federal Power Act, Title 16, United States Code, Sections 791 et. seq., contemplates the construction and operation of water power projects on navigable waters in pursuance of licenses granted by the Federal Power Commission. The statute was enacted to develop, conserve, and utilize the navigation and water power resources of the nation. The act provides for the improvement of navigation, development of water power, and use of public lands to make progress with the development of the water power resources of the nation.



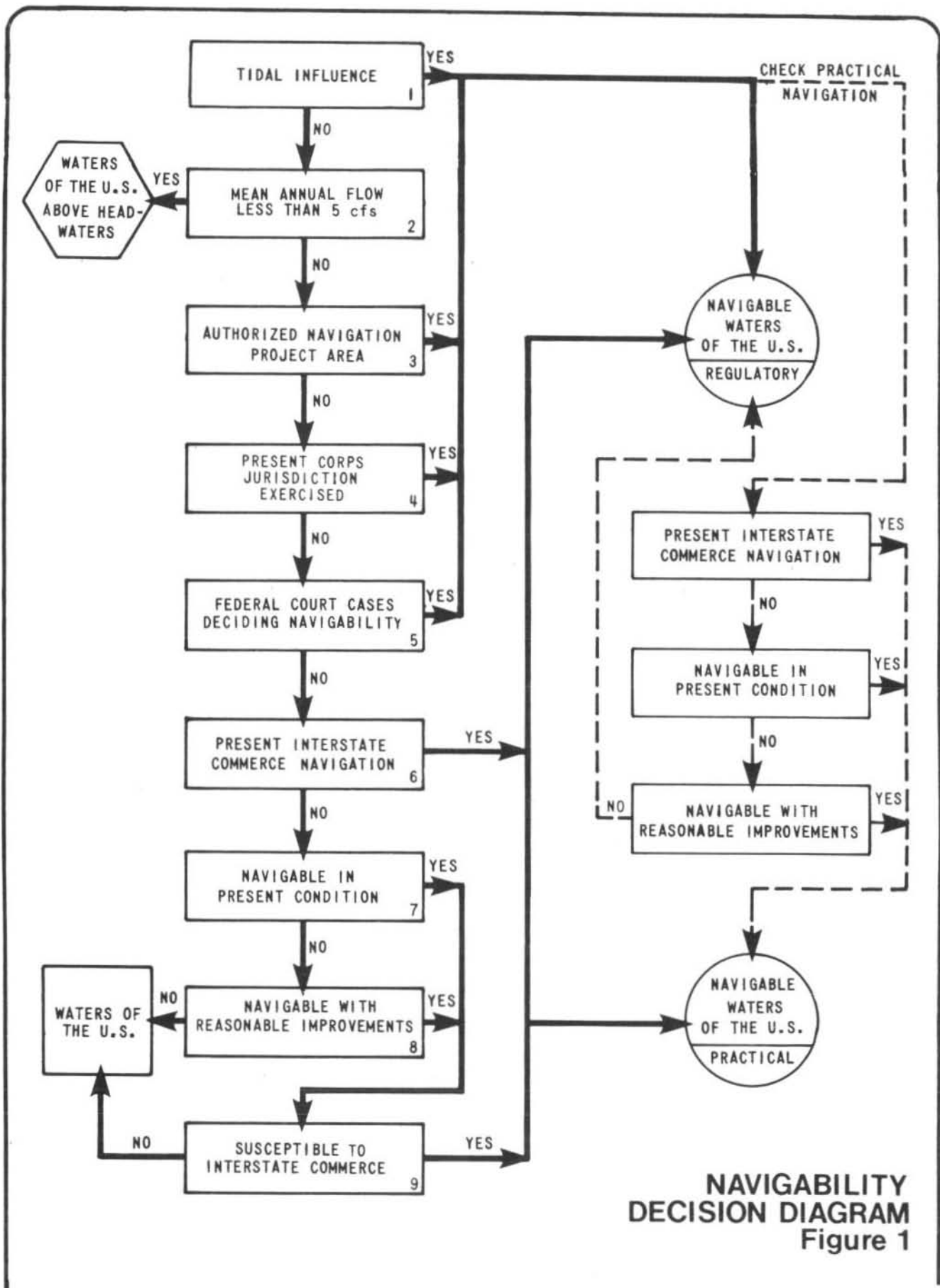
## SECTION 6 - NAVIGATION OBSTRUCTIONS AND CLASSIFICATIONS

### Navigation Classification Procedures

As noted in Section 5, definition of navigability is not subject to a single precise formula which applies to every circumstance. Many factors including stream physical characteristics (depth, width, flow, slope, etc.), presence of obstructions, court decisions, authorized navigation projects, potential for reasonable improvements, and susceptibility of a stream to interstate commerce activities, play a role in the decision-making process for classifying waterbodies in the Charleston District. In an effort to make the analytical process concerning stream classifications as systematic as possible, a "Navigability Decision Diagram" has been developed and is presented in Figure 1. This diagram has been utilized as a guide in assessing the various navigation classifications for streams in the Charleston District. The Summary Report includes a detailed presentation on the methodology and approaches used in the analysis; however, the following presents a brief synopsis of the techniques as indicated in Figure 1.

Tidal Influenced Areas - Tidal areas (see Item 1 in Figure 1) which are affected by mean high water are classified "navigable waters of the U. S." according to various legislative and judicial actions. The "navigable waters of the U. S." are subject to regulatory jurisdiction by the Corps of Engineers and other agencies. Even though all tidal areas are so classified and subject to regulatory procedures, many are not practically navigable based upon past and/or present requirements for vessels. Figure 1 shows that some additional "check" analyses are necessary to distinguish those tidal waters which are actually capable of practical navigation. Investigation of the tidal areas is beyond the scope of this study; however, drawings showing the "plan" of major rivers to their mouth, often tidal influenced, are presented in the interest of continuity.

Waters of the U. S. Above Headwaters - Section 404 of PL 92-500 considers the headwaters of waterbodies to be the point at which the mean annual flow is five cfs. Waterbodies or portions of waterbodies



**NAVIGABILITY  
DECISION DIAGRAM**  
Figure 1



located upstream of the headwaters are nationally permitted by law and will not require an individual application for dredge or fill discharge permits provided the proposed work will meet certain conditions.

However, these waters are classified "waters of the U. S." and are within Corps of Engineers jurisdiction as applicable to Section 404. Item 2 in Figure 1 shows the testing procedure for the five cfs point.

Authorized Navigation Project Area - Any streams which currently have authorized Federal projects to aid navigation are classified as "navigable waters of the U. S." (Item 3 in Figure 1). Many of the projects thus authorized were based upon conditions which are not currently applicable (for example, use of pole boats or steamboats for justifying the navigation benefits). Consequently, many of the streams having older authorized projects will not allow passage of present-day commercial navigation vessels without some additional improvement. Thus, some portions of the authorized project areas are not considered practical for navigation. Figure 1 shows the additional "check" procedure which has been followed to assess the practical limit of "navigable waters of the U. S."

Present Corps Jurisdiction Exercised - The Corps of Engineers is exercising jurisdiction on several non-tidal waterbodies which are not covered by authorized projects (Item 4 in Figure 1). (4) Determinations previously made on these waterbodies under the River and Harbor Act indicated use for interstate commerce and hence the current classification as "navigable waters of the U. S." Some of these streams are not currently navigable by present-day commercial vessels and thus have practical limits. Figure 1 shows the "check" used to assess the practical limits of "navigable waters of the U. S."

Federal Court Decisions - As noted in Section 5, Federal case law is the predominant indicator which is to be used for establishing Federal jurisdiction over waterbodies in the Charleston District (Item 5 in Figure 1). Several decisions have been rendered which classify certain streams in the district as "navigable waters of the U. S." However, some of these court decisions have been arrived at under different circumstances or without the benefit of the data developed as a part of this investigation. Therefore, even though some of the

streams are classified by judicial review as "navigable waters of the U. S.", they are not practical for navigation with present-day vessels. Figure 1 shows the steps necessary to "check" those portions of the "navigable waters of the U. S." which are capable of practical navigation.

Present Interstate Commerce Navigation - Any rivers currently involved in interstate commerce activities are classified as "navigable waters of the U. S." from both the regulatory and practical standpoint (see Item 6 in Figure 1).

Waters of the U. S. Below Headwaters - For those streams, or portions of streams, not subject to authorized projects, court cases, or present interstate commerce navigation, several additional tests for determining navigability are required (Items 7 and 8 in Figure 1). If the waterbody is not judged to be navigable in its present state or with reasonable improvements, then it is beyond the limit of "navigable waters of the U. S." and is termed "waters of the U. S." over the remaining length. These "waters of the U. S." (as well as the "navigable waters of the U. S.") up to the headwaters (five cfs points) of the streams are subject to jurisdiction under Section 404 of PL 92-500. A general or individual permit is required for discharge of dredged or fill material below the headwaters (five cfs point) of "waters of the U. S." Discharges above the headwaters are discussed in the previous subsection, "Waters of the U. S. Above Headwaters."

Interstate Commerce - Some non-tidal waters in the district are not now subject to authorized projects, court decisions, or interstate commerce navigation, but can be navigated under present or reasonably improved conditions. These streams may be considered for classification as "navigable waters of the U. S." if they are susceptible to interstate commerce activities (past, present, or future). A combined judgment considering both "reasonable improvement" factors (Item 8 in Figure 1) and "interstate commerce" factors (Item 9 in Figure 1) has often been utilized in arriving at the conclusions and recommendations concerning navigability of waterbodies in the Charleston District. The Summary Report provides further details on these factors.

### Navigation Classification Categories

This study classifies streams into several different categories, each of which is discussed subsequently:

1. Present "navigable waters of the U. S." (by regulatory procedures).
2. Historically navigable waters (based on literature review).
3. Recommended "navigable waters of the U. S." (based upon data developed as a part of this investigation).
4. Recommended waters for practical navigation (within "navigable waters of the U. S.>").
5. Headwaters for all waterbodies (five cfs points).

The first four navigation classifications are displayed on the plates presented later in this report. The headwater limits are summarized in Appendix A.

### Present Navigable Waters of the U. S.

The Lynches River is currently classified as "navigable waters of the U. S.", via Clark Creek, from R.M. 0.8 near its mouth on the Great Pee Dee River to R.M. 42.5 at the Seaboard Coast Line Railroad Bridge near Effingham, South Carolina (see Plate 10-1 for location). Clark Creek, which joins the Great Pee Dee River at R.M. 52.2 with the Lynches River at R.M. 0.8, is classified as "navigable waters of the U. S." for 6.0 miles. In addition, Muddy Creek is currently classified as "navigable waters of the U. S." from its confluence with Clark Creek to R.M. 3.0. (4)

### Historically Navigable Waters

Historic limit of navigation on the Lynches River extends beyond the present limit of "navigable waters of the U. S." to R.M. 121.2 at the Seaboard Coast Line Railroad Bridge in Kershaw and Chesterfield Counties (see Plate 10-4 for location). The Lynches River was navigated (via Clark Creek - Plate 10-12) by large vessels to Effingham, South Carolina (R.M. 42.5 as shown on Plate 10-7) while smaller craft navigated beyond to the Seaboard Coast Line Railroad Bridge (R.M. 121.2), as noted in Section 4 (see Plate 10-3 for location).

Recommended and Practical Navigable Waters of the U. S.

The recommended and practical limit of "navigable waters of the U. S." is at the confluence of the Little Lynches River and Lynches River (R.M. 114.3) (see Plate 10-11 for location). As noted in the two previous subsections, this classification is "via Clark Creek". Clark Creek is approximately six miles long and connects the Great Pee Dee River at R.M. 52.2 with the Lynches River at R.M. 0.8 (see Report 11). Field investigation of Muddy Creek revealed insufficient water depth and/or channel width to meet navigability criteria. The mouth of the Lynches was found to be obstructed with logs, trees, debris, and a shallow depth. Thus, channel improvements would have to be made either on Clark Creek or the mouth of the Lynches River in order to open the river for commercial navigation. This would be a reasonable improvement since commerce on the Lynches River would then have access to the Atlantic Ocean via Clark Creek (or the river mouth), the Great Pee Dee River, and Winyah Bay. Field investigation of 19 obstructions crossing the Lynches River between its junction with Clark Creek at R.M. 0.8 and the recommended and practical limit of "navigable waters of the U. S." reveals sufficient water depth of at least 7 feet across a 50 feet wide unobstructed channel width in all but eight cases. At S. C. Secondary 55 bridge (R.M. 50.6), U. S. 301 bridge (R.M. 57.3) and U. S. 403 bridge (R.M. 64.4), a channel depth of 5.0 feet, 3.5 feet and 4.0 feet, respectively, is estimated at mean water level. These bridges are located in a 14 mile section of the river having a swamp-like, multi-channel condition which explains the shallow depth (located on Plate 10-8). U. S. 76 (6.0 feet estimated mean water channel depth) at R.M. 74.5 and the Seaboard Coast Line Railroad bridge (6.0 feet estimated mean water channel depth) at R.M. 74.5 are near the upper portion of the swampy and multi-channel area of Lynches River. These bridges are close to each other and again reveal shallow depth in swamp-like areas (see Plate 10-9 for location).

Interstate 20 (R.M. 92.9) has an estimated mean water channel depth of 6.5 feet (7.5 feet at the maximum point as shown on Plate 10-10). The Seaboard Coast Line Railroad bridge (R.M. 98.3) is upstream of Interstate 20 and has an estimated mean water channel depth of 4.0 feet but is 7.0 feet deep at the maximum point (see Plate 10-10). The

remaining shallow depth obstruction is S. C. Secondary 17 (R.M. 108.3) which has an estimated mean water channel depth of 6.0 feet. Four of the eight obstructions, as previously shown, have a channel depth of 6.0 feet or greater as shown on Plates 10-5 through 10-11. These shallow depths are considered minor obstructions to navigation and are attributed to the swamp-like conditions. The confluence of the Little Lynches River and the Lynches River (R.M. 114.3) is considered the major barrier to navigation due to shallow depth and a rapid increase in channel slope. Therefore, the recommended and practical limit of "navigable waters of the U. S." is at R.M. 114.3 (see Plate 10-11 for location).

"Navigable waters of the U. S.", once classified in the past, cannot be declassified. Thus, the recommended limits of "navigable waters of the U. S." (for regulatory purposes) on Clark and Muddy Creeks are at R.M. 6.0 and R.M. 3.0, respectively. (4) The recommended practical limit of navigation on Clark Creek is at R.M. 1.0. No practical navigation is recommended on Muddy Creek. In addition, field investigation of other small tributary streams revealed sufficient depth and width to justify recommendation of one additional tributary for navigability classification. This investigation resulted in Tie Lake being recommended for classification as practical and recommended "navigable waters of the U. S." from its confluence with the Lynches River (R.M. 7.4) to R.M. 0.6.

There are no other significant tributaries in the Lynches River basin capable of supporting navigation.

These conclusions on the navigation limit meet the criteria established for the Federal test of navigability that the body of water is used, or is capable of being used, in conjunction with other bodies of water to form a continuous highway upon which commerce with other states or countries might be conducted.

Plan and profiles of the "navigable waters of the U. S." are shown on Plates 10-5 through 10-12. The plan and profile plates show mean water surface as determined from USGS maps, stream bed depth, 50 feet wide navigable channel depth, pier spacing for bridges crossing the river, and vertical clearances at structures. Approximate vertical clearances for overhead utilities are shown later in this Section in Table 4. It is emphasized that all references to elevation are approximate

since vertical control was established from USGS contour maps and not field instrument surveys. Water depth and structure vertical clearance measurements are also approximate due to the accuracy inherent in the field techniques. Small tributaries recommended for classification as "navigable waters of the U. S." for less than one mile in length from their confluences are shown on the plan only. (See Summary Report for a detailed description of the field procedures and the methodology used to calculate water depth at mean flow.)

#### Obstructions to Navigation

All obstructions within the recommended "navigable waters of the U. S." on the Lynches River are listed in Table 4. Vertical clearance to mean water level and mean water slope are presented at all obstructions and mean discharge is shown at all bridges. It is emphasized that mean discharge, slope, and vertical clearances are only approximations based on best available data. Specific procedures for these are discussed in the Summary Report.

Figures 2 through 41 present photographs of each obstruction investigated in the field. Each photograph is identified to correspond with the obstructions listed in Table 4. No major obstructions were found on Muddy Creek or Clark Creek.

#### Waters of the U. S.

"Waters of the U. S." are considered to be all streams beyond the recommended limits of "navigable waters of the U. S." "Waters of the U. S." with more than five cfs mean annual flow require a permit for discharge of dredged or fill material. "Waters of the U. S." with less than five cfs mean annual flow are nationally permitted by law and will not require an individual application for dredge or fill discharge permits provided the proposed work will meet certain conditions.

Appendix A lists all the five cfs flow points located within the Lynches River basin. Each point is located by stream code, stream name, latitude and longitude, and a mileage reference.

Appendix B lists the lakes located in the Lynches River basin which have surface areas between 10 and 1,000 acres. The lake summary identifies the stream basin code, lake name or owner, county location, and, where data is available, the surface area and gross storage.



TABLE 4

OBSTRUCTION LISTING FROM MOUTH TO  
RECOMMENDED LIMIT OF NAVIGABLE WATERS OF THE U. S.

<u>Lynches River Mile</u>	<u>Description</u>	<u>Mean Discharge (cfs)</u>	<u>Mean Water Slope (ft/mi)</u>	<u>Approximate Vertical Clearance To Obstruction (ft)</u>
6.5	Seaboard Coast Line Rail- road Bridge	1,280	1.73	15.5
6.5	Utility Line (power)	--	1.73	28.0
6.5	S. C. 41 & 51 Highway Bridge	1,280	1.73	14.0
7.0	Utility Line (underground pipe)	--	1.73	-3.0 <sup>1)</sup>
8.0	Utility Line (power)	--	1.73	68.0
15.4	Utility Line (power)	--	1.32	31.5
15.4	S. C. Secondary 49 Highway Bridge	1,100	1.32	6.0
27.6	U. S. 378 Highway Bridge	1,050	1.02	10.5
27.6	Utility Line (power)	--	1.02	29.0
30.6	Utility Line (power)	--	1.02	31.0
33.8	Utility Line (power)	--	1.00	35.0
33.8	S. C. Secondary 46 Highway Bridge	--	1.00	11.0
42.5	Seaboard Coast Line Rail- road Bridge	1,020	1.00	16.0
42.5	Utility Line (telephone)	--	1.00	21.0
42.5	U. S. 52 Highway Bridge	1,020	1.00	18.0
50.6	S. C. Secondary 55 Highway Bridge	780	2.17	7.5
53.9	Utility Line (power)	--	2.17	32.0

TABLE 4 (continued)

OBSTRUCTION LISTING FROM MOUTH TO  
RECOMMENDED LIMIT OF NAVIGABLE WATERS OF THE U. S. (3)

<u>Lynches River Mile</u>	<u>Description</u>	<u>Mean Discharge (cfs)</u>	<u>Mean Water Slope (ft/mi)</u>	<u>Approximate Vertical Clearance To Obstruction (ft)</u>
57.3	U. S. 301 Highway Bridge	760	1.84	16.0
59.3	Utility Line (power)	--	1.84	40.0
64.4	U. S. 403 Highway Bridge	750	1.51	10.5
64.4	Utility Line (power)	--	1.51	23.0
67.5	Interstate 95 Highway Bridges	750	1.73	14.5
72.9	Utility Line (power)	--	1.57	40.0
74.5	U. S. 76 Highway Bridge	740	1.57	13.5
74.5	Seaboard Coast Line Rail- road Bridge	740	1.57	10.0
84.6	U. S. 401 Highway Bridge	710	1.73	13.0
84.6	Utility Line (power)	--	1.73	33.0
89.6	Utility Line (power)	--	1.73	43.0
92.9	Interstate 20 Highway Bridges	690	1.81	17.5
98.3	Seaboard Coast Line Railroad Bridge	670	1.76	12.0
99.4	Utility Line (power)	--	2.50	31.0
99.5	U. S. 15 & S. C. 34 Highway	670	2.50	16.0
108.3	S. C. Secondary 17 Highway Bridge	600	1.59	16.5
114.3	Utility Line (power)	--	1.75	41.0
114.3	S. C. 23 Secondary Highway Bridge	570	1.75	13.0

1) Estimated minimum depth below streambed at time of construction.



FIGURE 2 - SEABOARD COASTLINE RAILROAD BRIDGE (R.M. 6.5)



FIGURE 3 - UTILITY LINE (R.M. 6.5)  
(AND SCLRR BRIDGE AND S. C. 41 AND 51 HIGHWAY BRIDGE)



FIGURE 4 - S. C. 41 AND S. C. 51 HIGHWAY BRIDGE (R.M. 6.5)



FIGURE 5 - UTILITY LINE (R.M. 8.0)



FIGURE 6 - UTILITY LINE (R.M. 15.4)  
(AND S. C. SECONDARY 49 HIGHWAY BRIDGE)



FIGURE 7 - S. C. SECONDARY 49 HIGHWAY BRIDGE (R.M. 15.4)



FIGURE 8 - U. S. 378 HIGHWAY BRIDGE (R.M. 27.6)



FIGURE 9 - UTILITY LINE (R.M. 27.6) (AND U. S. 378 HIGHWAY BRIDGE)



FIGURE 10 - UTILITY LINE (R.M. 30.6)

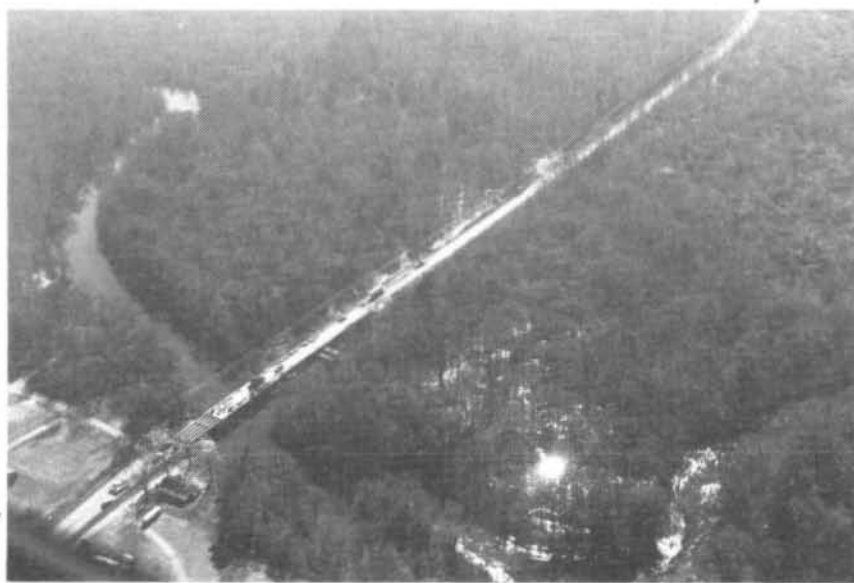


FIGURE 11 - UTILITY LINE AND S. C. SECONDARY 46 HIGHWAY BRIDGE (R.M. 33.8)  
(UNDER CONSTRUCTION AT TIME OF FIELD INVESTIGATION)

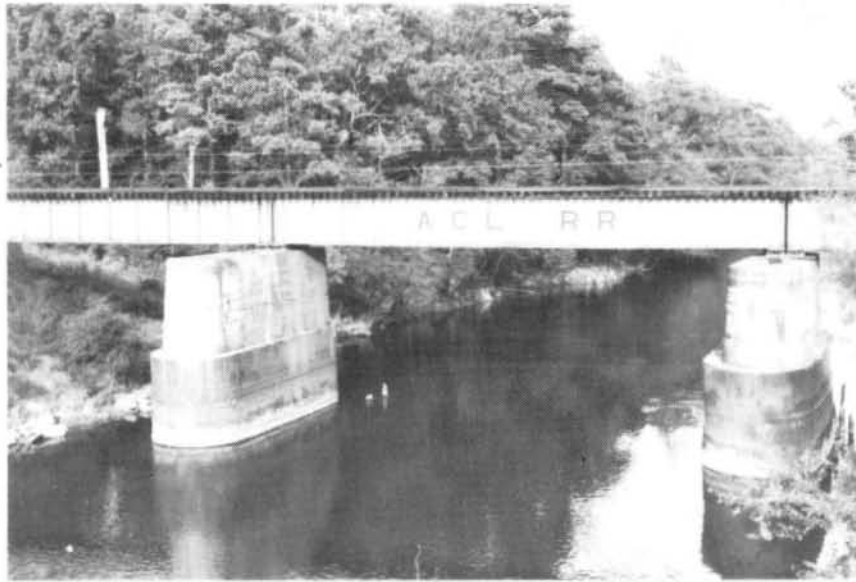


FIGURE 12 - SEABOARD COASTLINE RAILROAD BRIDGE (R.M. 42.5)  
(AND UTILITY LINE)



FIGURE 13 - UTILITY LINE (R.M. 42.5)  
(AND SCLRR BRIDGE AND U. S. 52 HIGHWAY BRIDGES)





FIGURE 14 - U. S. 52 HIGHWAY BRIDGE (SOUTH BOUND) (R.M. 42.5)

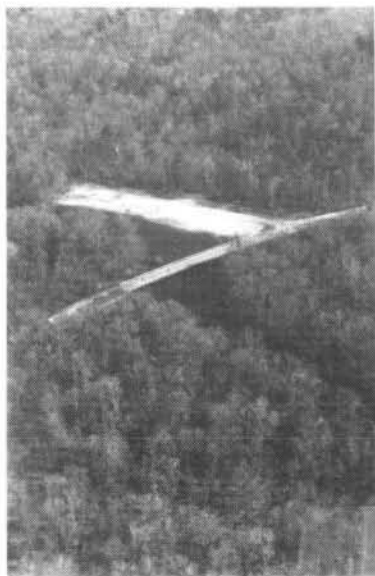


FIGURE 15 - S. C. SECONDARY 55 HIGHWAY BRIDGE (R.M. 50.6)



FIGURE 16 - UTILITY LINE (R.M. 53.9)

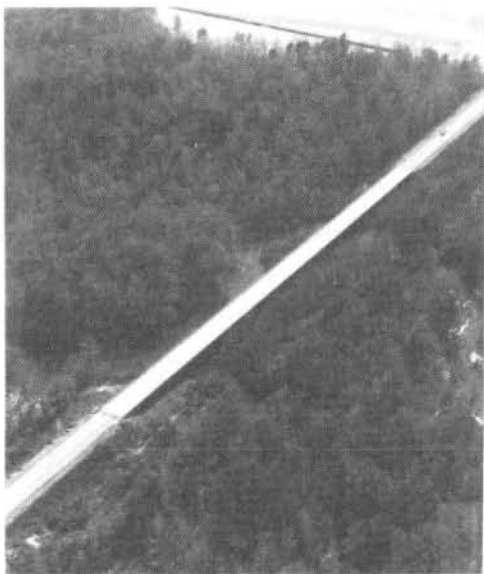


FIGURE 17 - U. S. 301 HIGHWAY BRIDGE (R.M. 57.3)



FIGURE 18 - UTILITY LINE (R.M. 59.3)



FIGURE 19 - U. S. 403 HIGHWAY BRIDGE (R.M. 64.4)



FIGURE 20 - UTILITY LINE (R.M. 64.4) (AND U. S. 403 HIGHWAY BRIDGE)

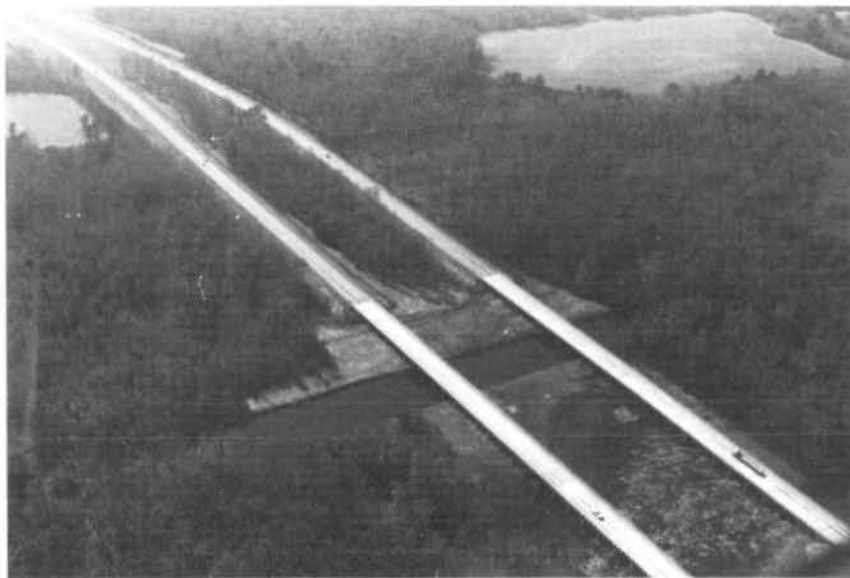


FIGURE 21 - INTERSTATE 95 HIGHWAY BRIDGES (R.M. 67.5)



FIGURE 22 - INTERSTATE 95 HIGHWAY BRIDGE (NORTH BOUND) (R.M. 67.5)



FIGURE 23 - INTERSTATE 95 HIGHWAY BRIDGE (SOUTH BOUND) (R.M. 67.5)



FIGURE 24 - UTILITY LINE (R.M. 72.9)



FIGURE 25 - U. S. 76 HIGHWAY BRIDGE AND SCLRR BRIDGE (R.M. 74.5)



FIGURE 26 - U. S. 76 HIGHWAY BRIDGE (R.M. 74.5)



FIGURE 27 - SEABOARD COAST LINE RAILROAD BRIDGE (R.M. 74.5)



FIGURE 28 - U. S. 401 HIGHWAY BRIDGE (R.M. 84.6)



FIGURE 29 - UTILITY LINE (R.M. 84.6) (AND U. S. 401 HIGHWAY BRIDGE)





FIGURE 30 - UTILITY LINE (R.M. 89.6)



FIGURE 31 - INTERSTATE 20 HIGHWAY BRIDGES (R.M. 92.9)



FIGURE 32 - INTERSTATE 20 HIGHWAY BRIDGE (EAST BOUND) (R.M. 92.9)



FIGURE 33 - INTERSTATE 20 HIGHWAY BRIDGE (WEST BOUND) (R.M. 92.9)



FIGURE 34 - SEABOARD COAST LINE RAILROAD BRIDGE (R.M. 98.3)



FIGURE 35 - SEABOARD COAST LINE RAILROAD BRIDGE (R.M. 98.3)



FIGURE 36 - UTILITY LINE (R.M. 99.4)  
(AND U. S. 15 AND S. C. 34 HIGHWAY BRIDGE)



FIGURE 37 - U. S. 15 AND S. C. 34 HIGHWAY BRIDGE (R.M. 99.4)



FIGURE 38 - S. C. SECONDARY 17 HIGHWAY BRIDGE (R.M. 108.3)



FIGURE 39 - S. C. SECONDARY 17 HIGHWAY BRIDGE (R.M. 108.3)



FIGURE 40 - UTILITY LINE (R.M. 114.3)  
(AND S. C. SECONDARY 15  
AND S. C. SECONDARY 23 HIGHWAY BRIDGE)



FIGURE 41 - S. C. SECONDARY 15 AND S. C. SECONDARY 23 HIGHWAY BRIDGE  
(R.M. 114.3)

## SECTION 7 - CONCLUSIONS AND RECOMMENDATIONS

Five classifications of navigation on streams in the Lynches River basin have been determined and are presented below. The first two are classifications developed from historical evidence and current Federal stream classifications. Classification 3 is based on field measurements, observations, and data analysis for the river. Classification 4 is based on review of all previously determined limits with a recommendation of the most upstream locations with supporting evidence of navigability. The fifth classification accounts for all streams not otherwise classified and was determined based on the drainage area and hydrological aspects of the stream.

1. The Lynches River is presently classified "navigable waters of the U. S.", via Clark Creek, from R.M. 0.8 near its mouth on the Great Pee Dee River (R.M. 61.9) to the Seaboard Coast Line Railroad bridge (R.M. 42.5), south of Effingham, South Carolina (see Plate 10-7 for location). Clark Creek is classified "navigable waters of the U. S." between the Great Pee Dee and Lynches Rivers (6 miles). In addition, Muddy Creek is presently classified "navigable waters of the U. S." from its confluence with Clark Creek to R.M. 3.0. (4)
2. The historical limit of navigation on the Lynches River is the Seaboard Coast Line Railroad bridge (R.M. 121.2) in Kershaw and Chesterfield Counties of South Carolina. Clark Creek was historically navigable over its entire length.
3. The recommended practical limit of navigation on the Lynches River, with minor improvements, is the confluence of Little Lynches River with Lynches River (R.M. 114.3). The recommended practical limit of navigation on Clark Creek is at R.M. 1.0. The recommended practical limit on Tie Lake is at R.M. 0.6.
4. It is recommended that the Lynches River be classified "navigable waters of the U. S.", via Clark Creek (or the river mouth), to the confluence of Little Lynches River (R.M. 114.3). Clark

Creek is recommended as "navigable waters of the U. S." for 6.0 miles. Muddy Creek is recommended for classification as "navigable waters of the U. S." from its confluence with the Lynches River to R.M. 3.0. In addition, Tie Lake is recommended as "navigable waters of the U. S." for 0.6 miles. These limits are based on the analytical procedures and tests of navigability used in this study effort.

5. All streams not recommended for classification as "navigable waters of the U. S." are recommended for classification as "waters of the U. S." throughout their entire length.



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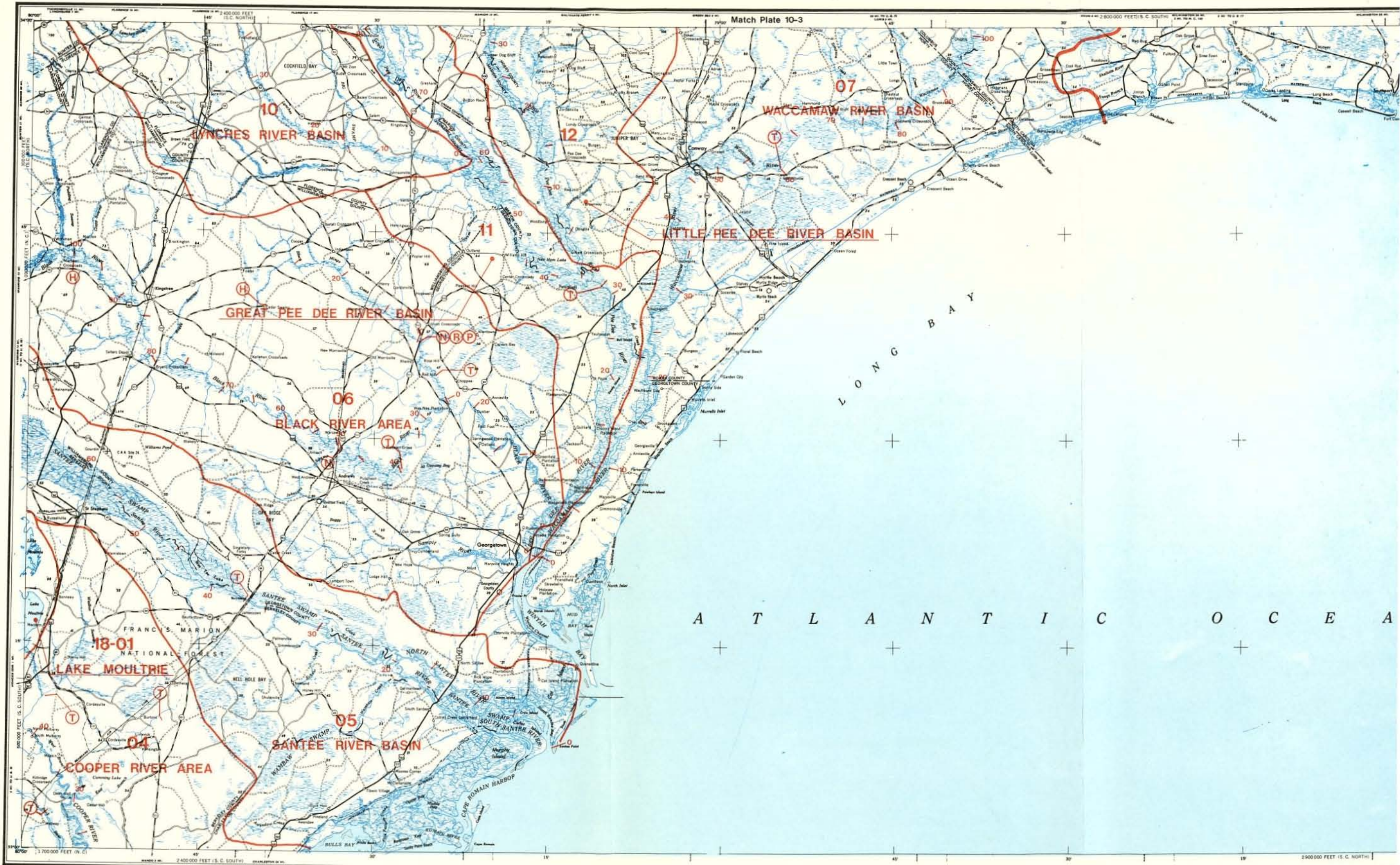
Annual Report of the Chief of Engineers, U. S. Army, 1881, (Washington USGPO, 1881), Part I, pp. 1038-1040.

Annual Report of the Chief of Engineers, U. S. Army, 1907, U. S. War Department, Part I, pp. 128, 129.

Annual Report of the Chief of Engineers 1910, U. S. War Department, Vol. I, p. 363.

Smith, Alfred G., Economic Readjustment of an Old Cotton State: South Carolina 1820-1860, USC Press, Columbia, South Carolina, 1958, p. 137.

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POPULATED PLACES

Over 500,000	NEW ORLEANS
100,000 to 500,000	CHARLOTTE
25,000 to 100,000	CHARLESTON
5,000 to 25,000	Georgetown
Under 5,000	Other

ROADS

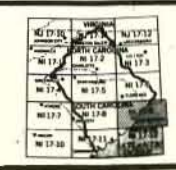
Primary, all weather, hard surface	—
Secondary, all weather, hard surface	—
Unimproved, all weather, improved surface	—
Unimproved, fair or dry weather, unimproved surface	—
Trail	—

Other symbols: Power line, Lighthouse, School, Church, Other, E. I., Light structure on pier, Water or beach, Intersection of any channel, Standard gauge, Stationary gauge, Locking area, Lock, Dam, Breaker, Breakwater, Pier, Breaker, Breakwater, Channel, Shoals, Sandbars, Rocks, Obstructions, etc.

USGS BASE MAP  
 GEORGETOWN, S.C.; N.C.  
 NI 17-9

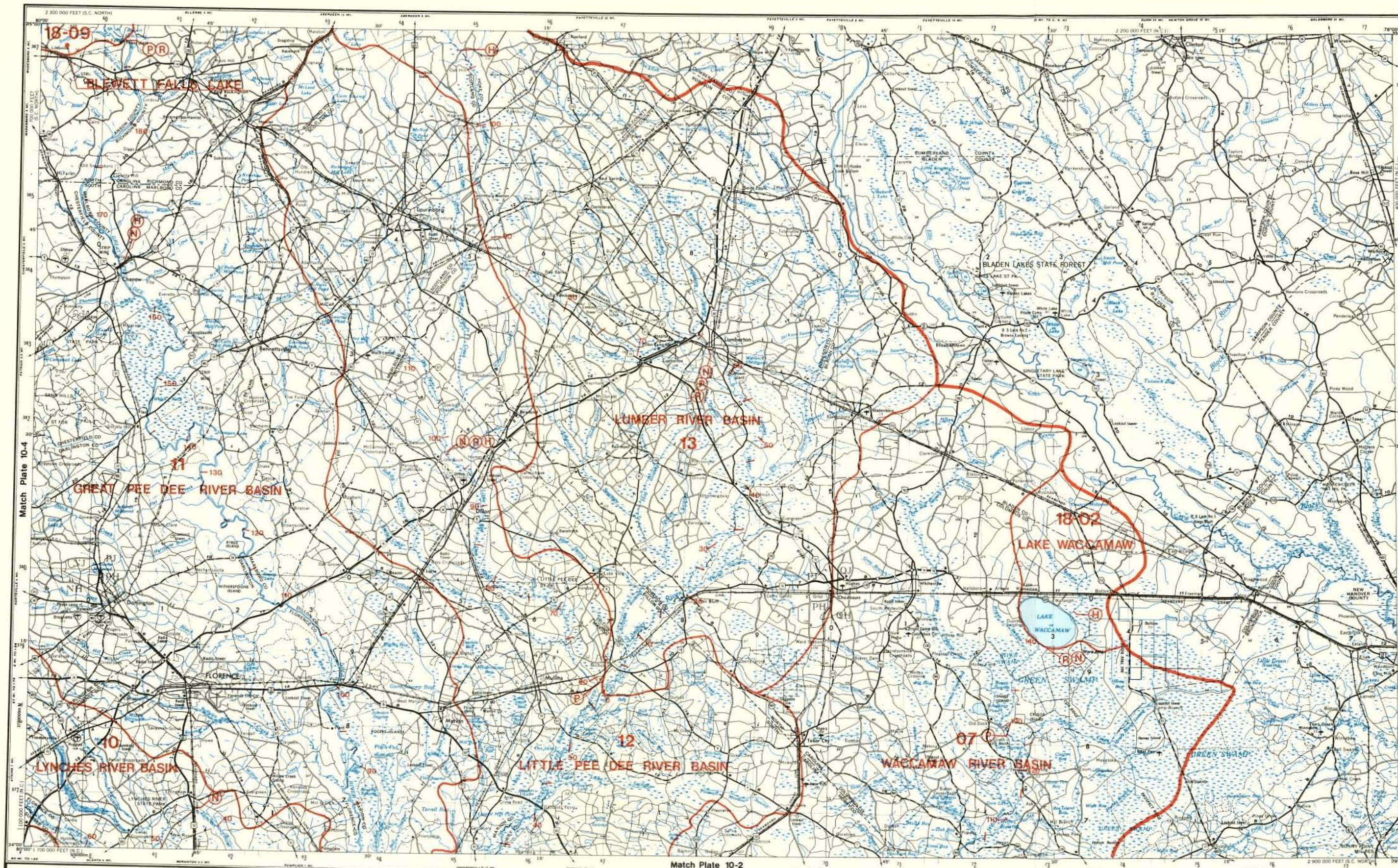
0 5 10  
 scale in miles

- LEGEND:
- (N) PRESENT LIMIT OF NAVIGABLE WATERS OF THE U.S.
  - (H) HISTORIC LIMIT OF NAVIGATION
  - (P) PRACTICAL LIMIT OF NAVIGATION (RECOMMENDED)
  - (R) LIMIT OF NAVIGABLE WATERS OF THE U.S. (RECOMMENDED)
  - (T) APPROXIMATE LIMIT OF TIDAL INFLUENCE
  - (RM) RIVER MILE



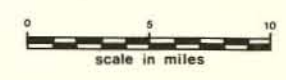
U.S. ARMY CORPS OF ENGINEERS  
 CHARLESTON DISTRICT  
 Charleston, South Carolina  
 STANLEY CONSULTANTS

SIGNIFICANT  
 LYNCHES RIVER  
 Report No. 04,05,  
 NAVIGABILITY

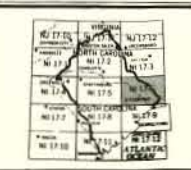


POPULATED PLACES	
NEW ORLEANS	100,000+
CHARLOTTE	25,000+
CHARLOTTE	10,000+
CHARLOTTE	5,000+
CHARLOTTE	2,500+
CHARLOTTE	1,000+
CHARLOTTE	500+
CHARLOTTE	250+
CHARLOTTE	100+
CHARLOTTE	50+
CHARLOTTE	25+
CHARLOTTE	10+
CHARLOTTE	5+
CHARLOTTE	2+
CHARLOTTE	1+
CHARLOTTE	0+

USGS BASE MAP  
FLORENCE, S.C.; N.C.  
1953, Revised 1974  
NI 17-6



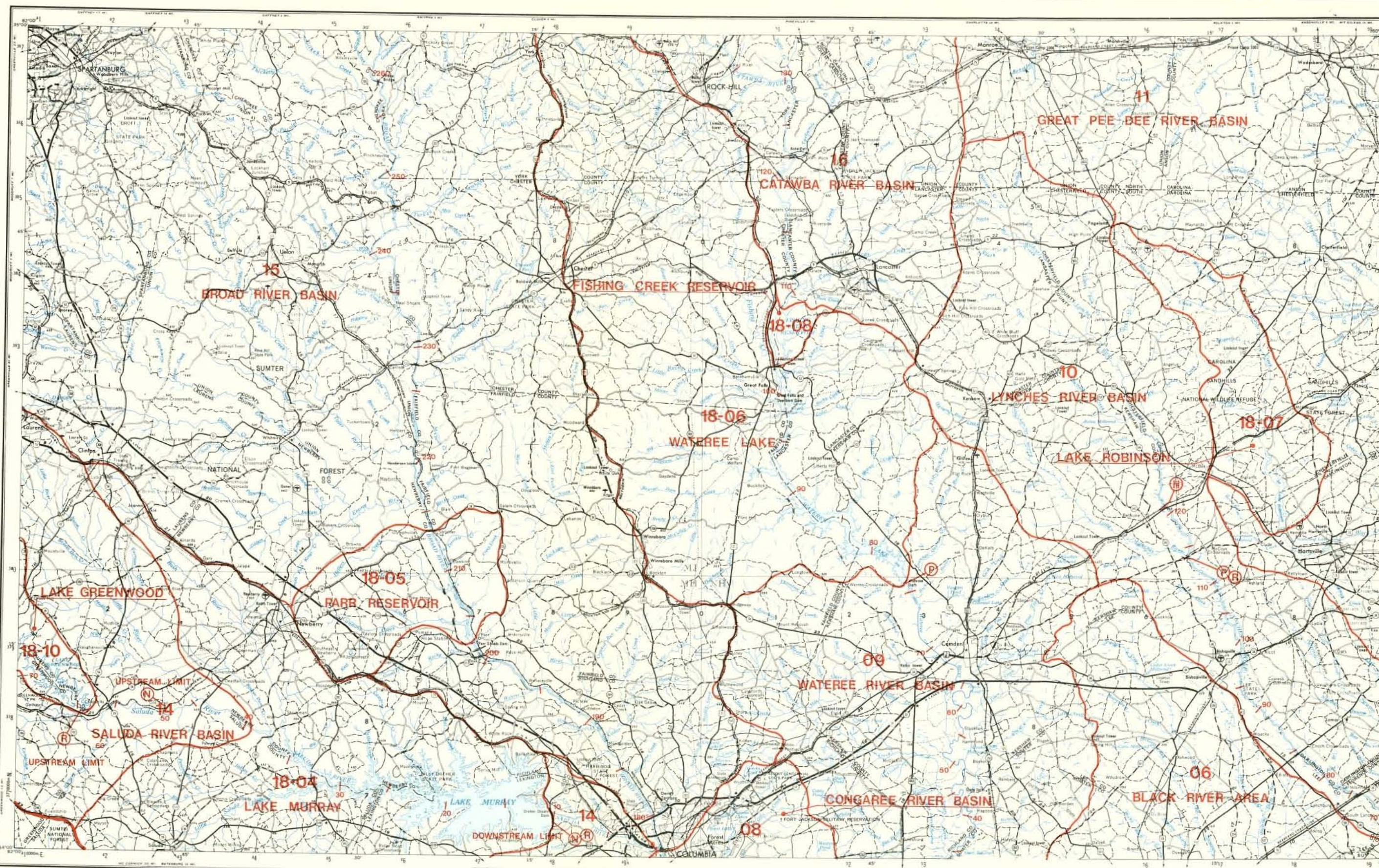
- LEGEND:**
- (N) PRESENT LIMIT OF NAVIGABLE WATERS OF THE U.S.
  - (H) HISTORIC LIMIT OF NAVIGATION
  - (P) PRACTICAL LIMIT OF NAVIGATION (RECOMMENDED)
  - (R) LIMIT OF NAVIGABLE WATERS OF THE U.S. (RECOMMENDED)
  - 20 RIVER MILE



U.S. ARMY CORPS OF ENGINEERS  
CHARLESTON DISTRICT  
Charleston, South Carolina  
STANLEY CONSULTANTS

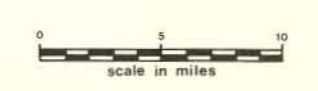
**SIGNIFICANT FEATURES**  
**LYNCHEs RIVER BASIN**  
Report No. 06, 07, 10, 11, 12, 13, 18  
**NAVIGABILITY STUDY**  
Plate 10-3

1977



NEW ORLEANS		CHARLOTTE		SPARTANBURG	
1:50,000	1:50,000	1:50,000	1:50,000	1:50,000	1:50,000
1:50,000	1:50,000	1:50,000	1:50,000	1:50,000	1:50,000
1:50,000	1:50,000	1:50,000	1:50,000	1:50,000	1:50,000

USGS BASE MAP  
 SPARTANBURG, S.C.; N.C.  
 1953, Revised 1969  
 NI 17-5



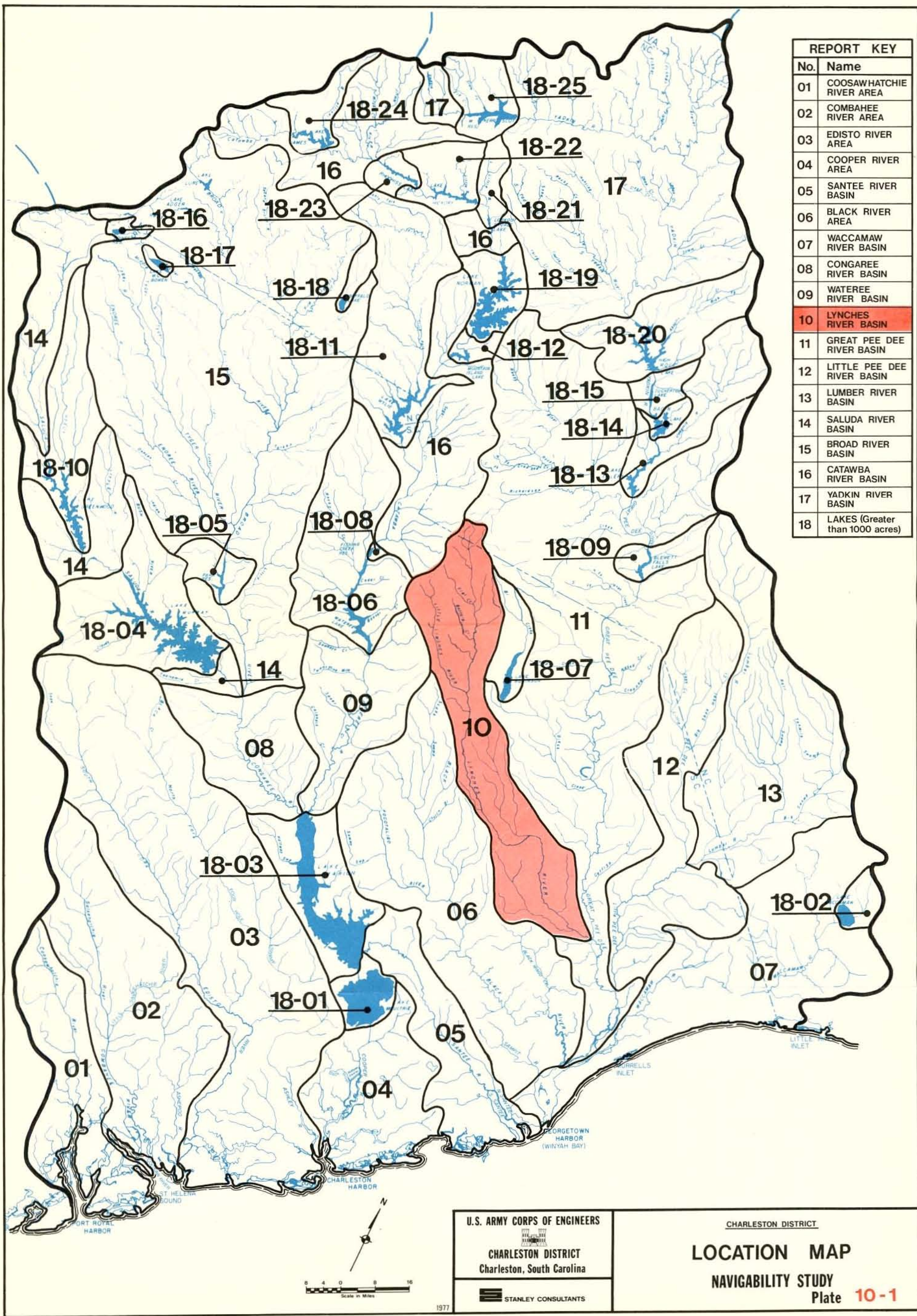
- LEGEND**
- (N) PRESENT LIMIT OF NAVIGABLE WATERS OF THE U.S.
  - (H) HISTORIC LIMIT OF NAVIGATION
  - (P) PRACTICAL LIMIT OF NAVIGATION (RECOMMENDED)
  - (R) LIMIT OF NAVIGABLE WATERS OF THE U.S. (RECOMMENDED)
  - 20 RIVER MILE



U.S. ARMY CORPS OF ENGINEERS  
 CHARLESTON DISTRICT  
 Charleston, South Carolina  
 STANLEY CONSULTANTS

**SIGNIFICANT FEATURES**  
 LYNCHES RIVER BASIN  
 Report No. 06,08,09,10,11,14,15,16,18  
**NAVIGABILITY STUDY**  
 Plate 10-4

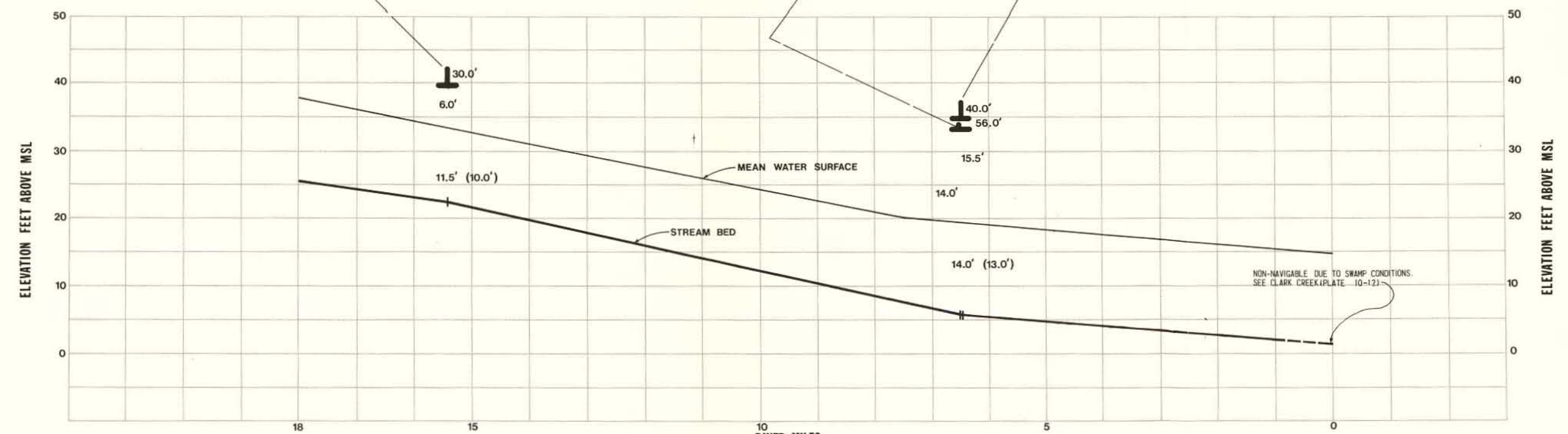
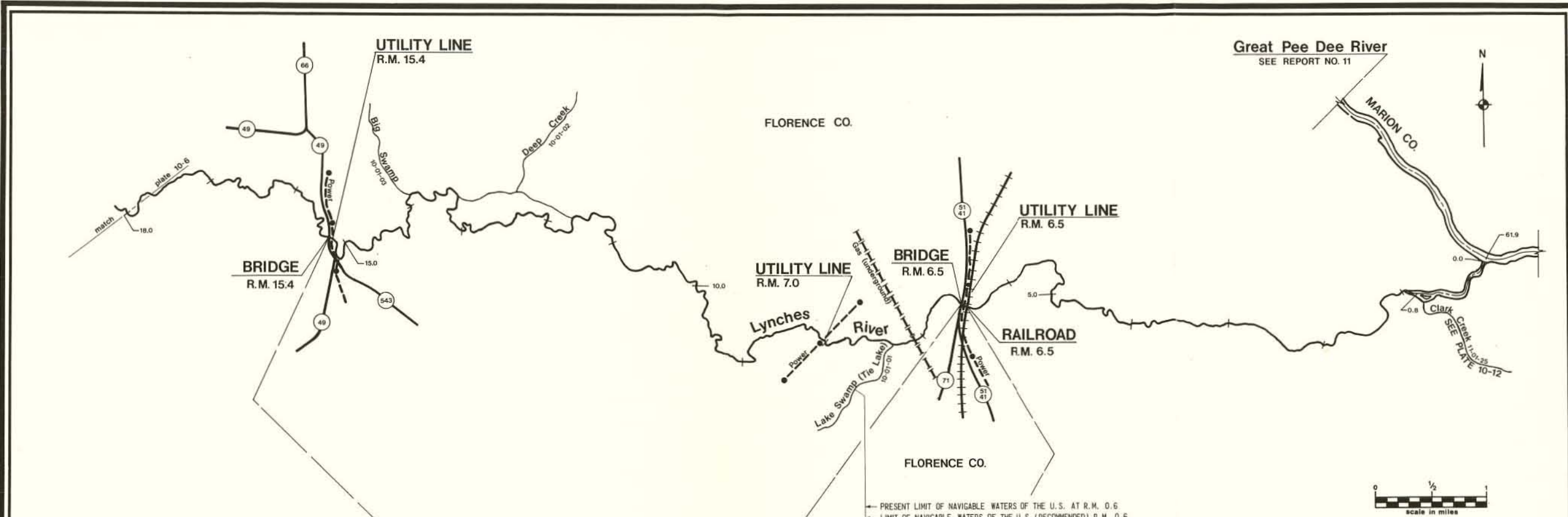
1977



REPORT KEY	
No.	Name
01	COOSAWHATCHIE RIVER AREA
02	COMBAHEE RIVER AREA
03	EDISTO RIVER AREA
04	COOPER RIVER AREA
05	SANTEE RIVER BASIN
06	BLACK RIVER AREA
07	WACCAMAW RIVER BASIN
08	CONGAREE RIVER BASIN
09	WATEREE RIVER BASIN
10	LYNCHEs RIVER BASIN
11	GREAT PEE DEE RIVER BASIN
12	LITTLE PEE DEE RIVER BASIN
13	LUMBER RIVER BASIN
14	SALUDA RIVER BASIN
15	BROAD RIVER BASIN
16	CATAWBA RIVER BASIN
17	YADKIN RIVER BASIN
18	LAKES (Greater than 1000 acres)

U.S. ARMY CORPS OF ENGINEERS  
 CHARLESTON DISTRICT  
 Charleston, South Carolina  
 STANLEY CONSULTANTS

CHARLESTON DISTRICT  
**LOCATION MAP**  
 NAVIGABILITY STUDY  
 Plate 10-1



**LEGEND:**

OVERHEAD STRUCTURE — 75' — HORIZONTAL CLEARANCE IN MAIN CHANNEL

MEAN WATER SURFACE — 12' — VERTICAL CLEARANCE TO STRUCTURE

STREAM BED — 8' (6') — MAXIMUM DEPTH AT MEAN FLOW

— 8' (6') — MAXIMUM DEPTH OF 50 FOOT WIDE CHANNEL AT MEAN FLOW

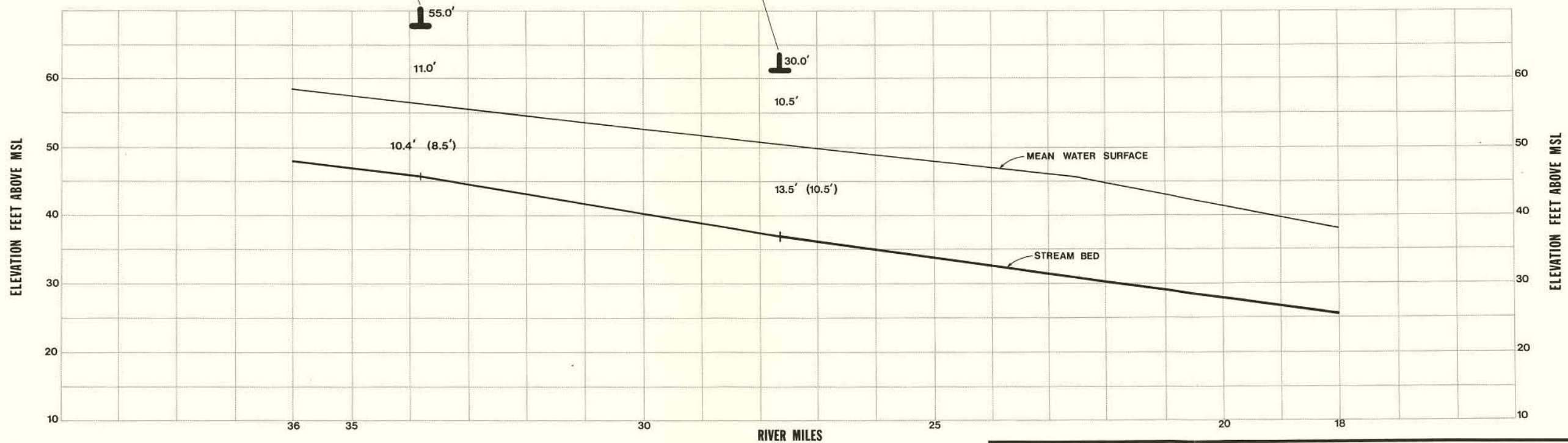
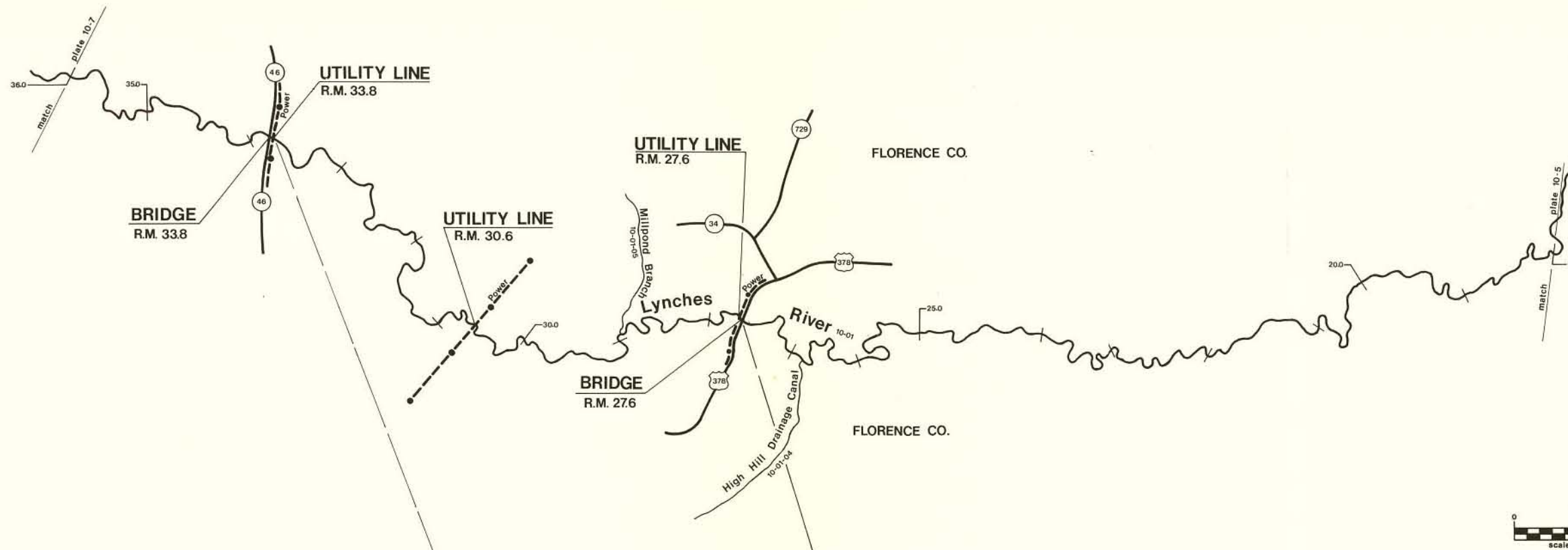
STRUCTURE RIVER MILE LOCATION

**NOTES:**

1. ELEVATION AND SLOPE OF MEAN WATER SURFACE ARE BASED ON USGS TOPOGRAPHIC MAPS AND ARE THEREFORE ONLY APPROXIMATIONS. VERTICAL DIMENSIONS FROM STREAM BED TO OVERHEAD STRUCTURES ARE FIELD MEASUREMENTS. RELATIVE LOCATION OF MEAN WATER SURFACE IS APPROXIMATED FROM CONTOUR MAPS, MEASURED CROSS SECTIONS AND VELOCITIES, STREAM FLOW RECORDS, THE MANNING EQUATION, AND FIELD OBSERVATIONS. SEE SUMMARY REPORT FOR COMPLETE EXPLANATION.

U.S. ARMY CORPS OF ENGINEERS  
 CHARLESTON DISTRICT  
 Charleston, South Carolina  
 STANLEY CONSULTANTS

PLAN AND PROFILE  
**LYNCHES RIVER**  
 Lynch River Basin  
 FLORENCE - MARION CO., S.C.  
**NAVIGABILITY STUDY**  
 Miles 0.0-18.0 Plate 10-5



**LEGEND:**

OVERHEAD STRUCTURE — 75' — HORIZONTAL CLEARANCE IN MAIN CHANNEL

MEAN WATER SURFACE — 12' — VERTICAL CLEARANCE TO STRUCTURE

STREAM BED — 8' (6') — MAXIMUM DEPTH AT MEAN FLOW

— 8' (6') — MAXIMUM DEPTH OF 50 FOOT WIDE CHANNEL AT MEAN FLOW

STRUCTURE RIVER MILE LOCATION

**NOTES:**

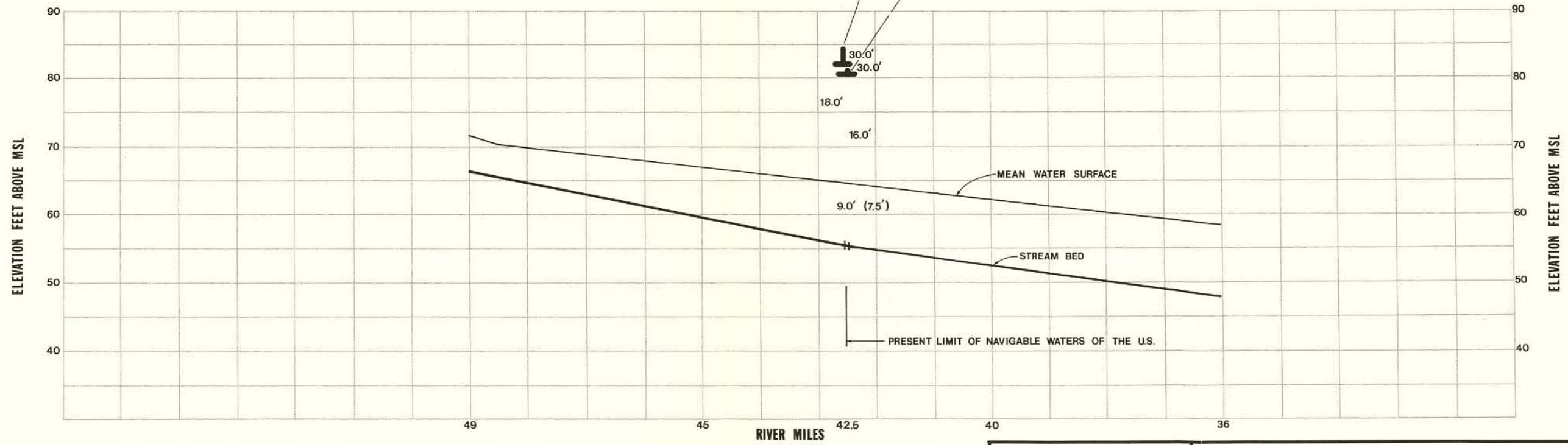
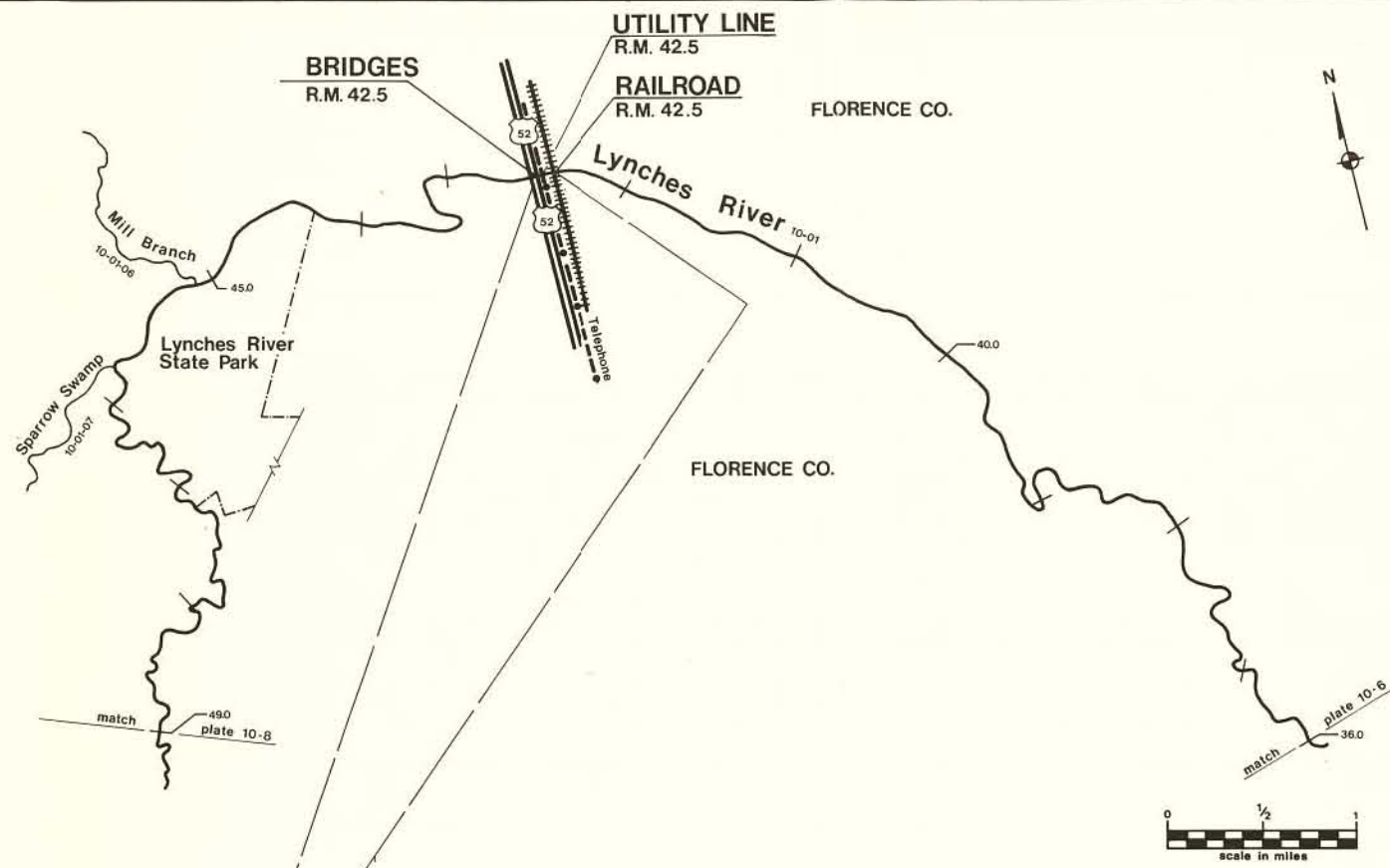
1. ELEVATION AND SLOPE OF MEAN WATER SURFACE ARE BASED ON USGS TOPOGRAPHIC MAPS AND ARE THEREFORE ONLY APPROXIMATIONS. VERTICAL DIMENSIONS FROM STREAM BED TO OVERHEAD STRUCTURES ARE FIELD MEASUREMENTS. RELATIVE LOCATION OF MEAN WATER SURFACE IS APPROXIMATED FROM CONTOUR MAPS, MEASURED CROSS SECTIONS AND VELOCITIES. STREAM FLOW RECORDS, THE MANNING EQUATION, AND FIELD OBSERVATIONS. SEE SUMMARY REPORT FOR COMPLETE EXPLANATION.

**U.S. ARMY CORPS OF ENGINEERS**  
 CHARLESTON DISTRICT  
 Charleston, South Carolina

STANLEY CONSULTANTS

**PLAN AND PROFILE**  
**LYNCHIES RIVER**  
 Lynchies River Basin  
 FLORENCE CO., S.C.  
**NAVIGABILITY STUDY**  
 Miles 18.0 - 36.0 Plate 10-6





**LEGEND:**

OVERHEAD STRUCTURE — 75' — HORIZONTAL CLEARANCE IN MAIN CHANNEL

MEAN WATER SURFACE — 12' — VERTICAL CLEARANCE TO STRUCTURE

STREAM BED — 8' (6') — MAXIMUM DEPTH OF 50 FOOT WIDE CHANNEL AT MEAN FLOW

STRUCTURE RIVER MILE LOCATION

**NOTES:**

1. ELEVATION AND SLOPE OF MEAN WATER SURFACE ARE BASED ON USGS TOPOGRAPHIC MAPS AND ARE THEREFORE ONLY APPROXIMATIONS. VERTICAL DIMENSIONS FROM STREAM BED TO OVERHEAD STRUCTURES ARE FIELD MEASUREMENTS. RELATIVE LOCATION OF MEAN WATER SURFACE IS APPROXIMATED FROM CONTOUR MAPS, MEASURED CROSS SECTIONS AND VELOCITIES, STREAM FLOW RECORDS, THE MANNING EQUATION, AND FIELD OBSERVATIONS. SEE SUMMARY REPORT FOR COMPLETE EXPLANATION.

**U.S. ARMY CORPS OF ENGINEERS**

**CHARLESTON DISTRICT**  
Charleston, South Carolina

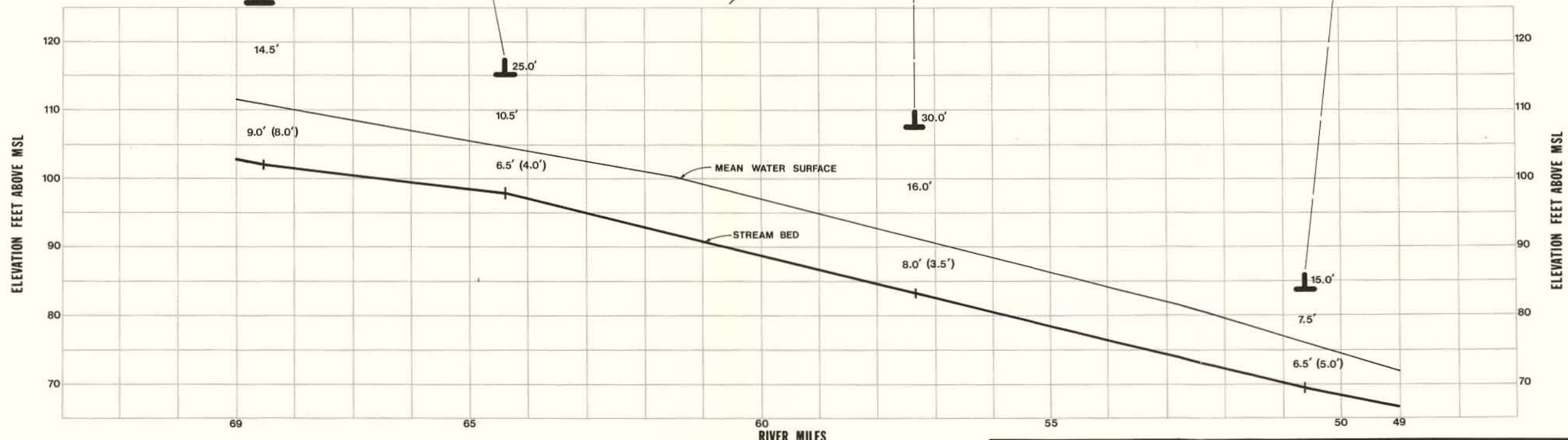
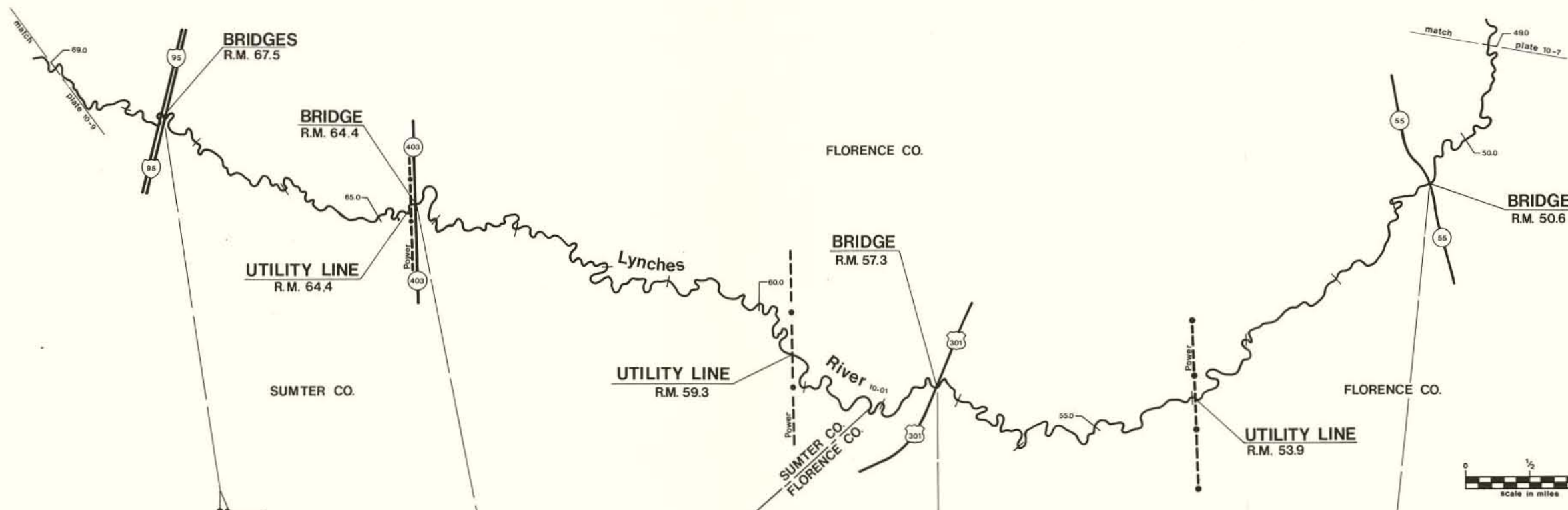
STANLEY CONSULTANTS

**PLAN AND PROFILE**

**LYNCHIES RIVER**  
Lynchies River Basin  
FLORENCE CO., S.C.

**NAVIGABILITY STUDY**

Miles 36.0-49.0 Plate 10-7



**LEGEND:**

OVERHEAD STRUCTURE — 75' — HORIZONTAL CLEARANCE IN MAIN CHANNEL

MEAN WATER SURFACE — 12' — VERTICAL CLEARANCE TO STRUCTURE

STREAM BED — 6' (6') — MAXIMUM DEPTH AT MEAN FLOW

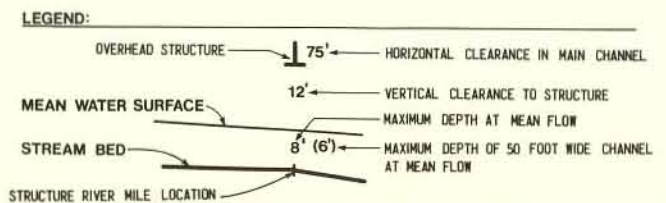
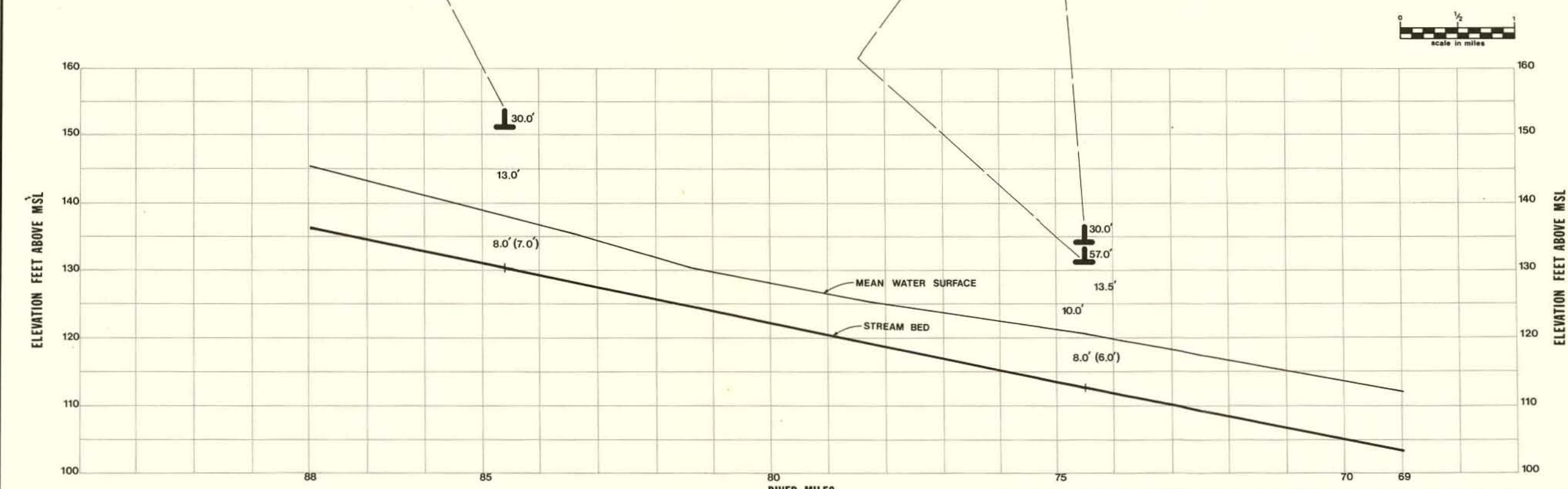
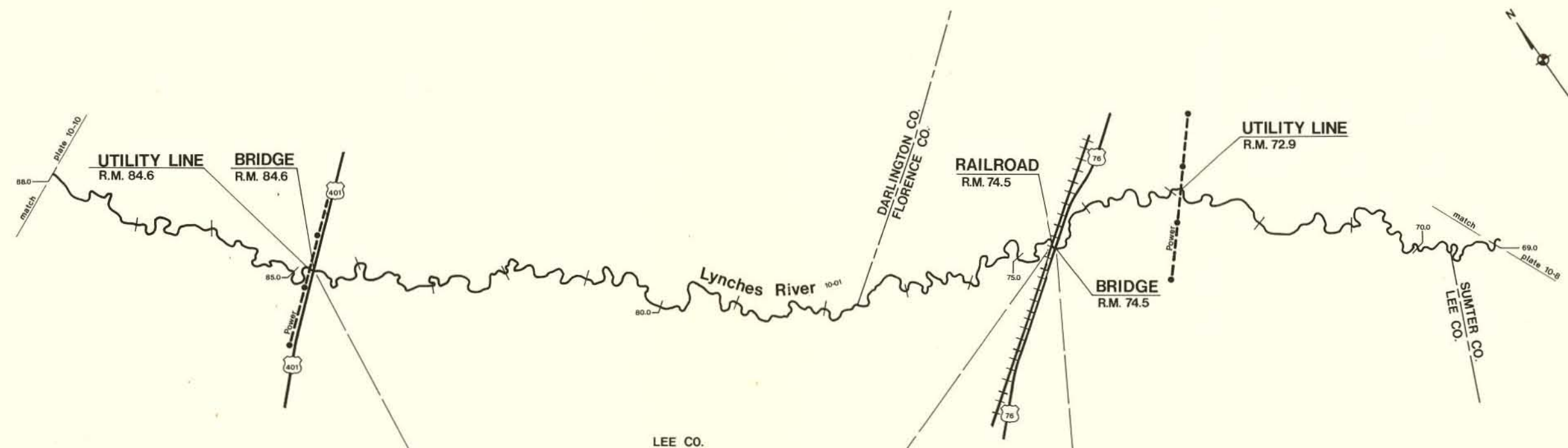
STRUCTURE RIVER MILE LOCATION

**NOTES:**

1. ELEVATION AND SLOPE OF MEAN WATER SURFACE ARE BASED ON USGS TOPOGRAPHIC MAPS AND ARE THEREFORE ONLY APPROXIMATIONS. VERTICAL DIMENSIONS FROM STREAM BED TO OVERHEAD STRUCTURES ARE FIELD MEASUREMENTS. RELATIVE LOCATION OF MEAN WATER SURFACE IS APPROXIMATED FROM CONTOUR MAPS, MEASURED CROSS SECTIONS AND VELOCITIES. STREAM FLOW RECORDS, THE MANNING EQUATION, AND FIELD OBSERVATIONS. SEE SUMMARY REPORT FOR COMPLETE EXPLANATION.

U.S. ARMY CORPS OF ENGINEERS  
 CHARLESTON DISTRICT  
 Charleston, South Carolina  
 STANLEY CONSULTANTS

PLAN AND PROFILE  
**LYNCHES RIVER**  
 Lynch River Basin  
 FLORENCE-SUMTER CO., S.C.  
**NAVIGABILITY STUDY**  
 Miles 49.0 - 69.0 Plate 10-8

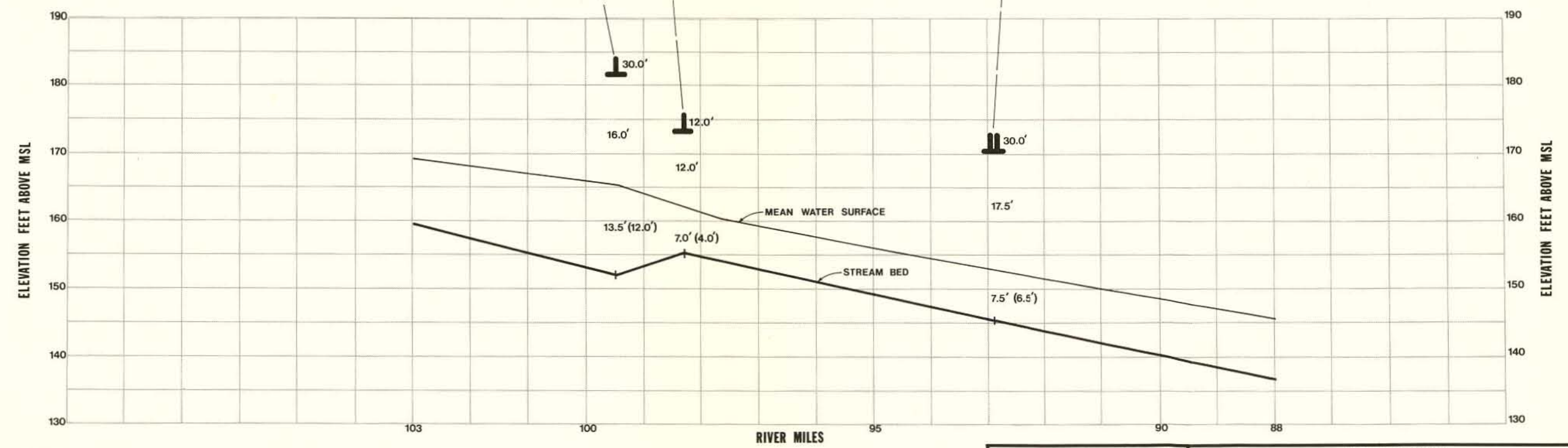
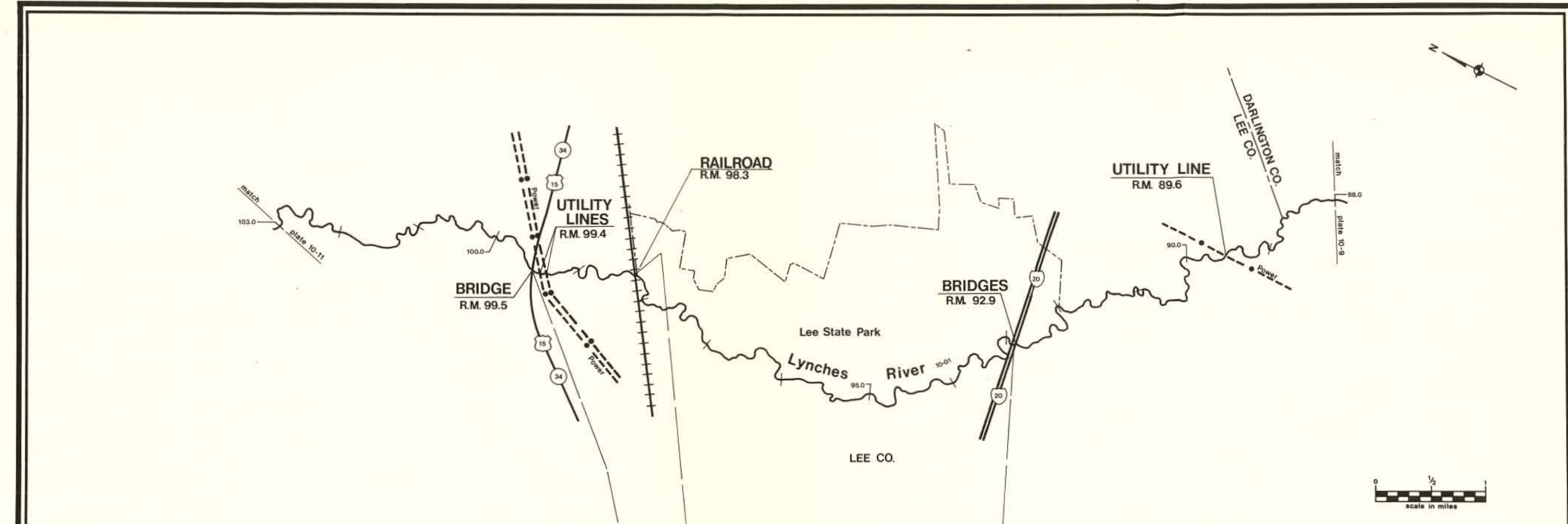


**NOTES:**

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<b>U.S. ARMY CORPS OF ENGINEERS</b>  <b>CHARLESTON DISTRICT</b> Charleston, South Carolina	<b>PLAN AND PROFILE</b> <b>LYNCHES RIVER</b> Lynch River Basin DARLINGTON-FLORENCE-LEE-SUMTER CO., S.C.	
	<b>NAVIGABILITY STUDY</b> Miles 69.0-88.0	Plate 10-9
<b>STANLEY CONSULTANTS</b>		

1977



**LEGEND:**

OVERHEAD STRUCTURE — 75' — HORIZONTAL CLEARANCE IN MAIN CHANNEL

MEAN WATER SURFACE — 12' — VERTICAL CLEARANCE TO STRUCTURE

STREAM BED — 8' (6') — MAXIMUM DEPTH AT MEAN FLOW

8' (6') — MAXIMUM DEPTH OF 50 FOOT WIDE CHANNEL AT MEAN FLOW

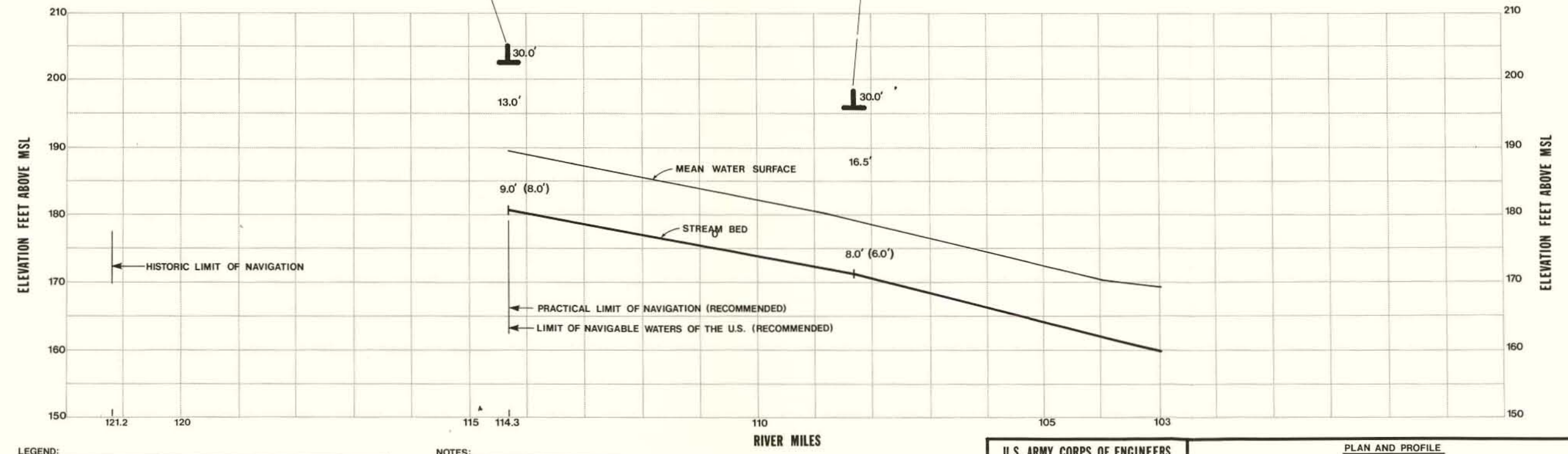
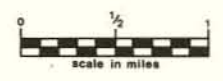
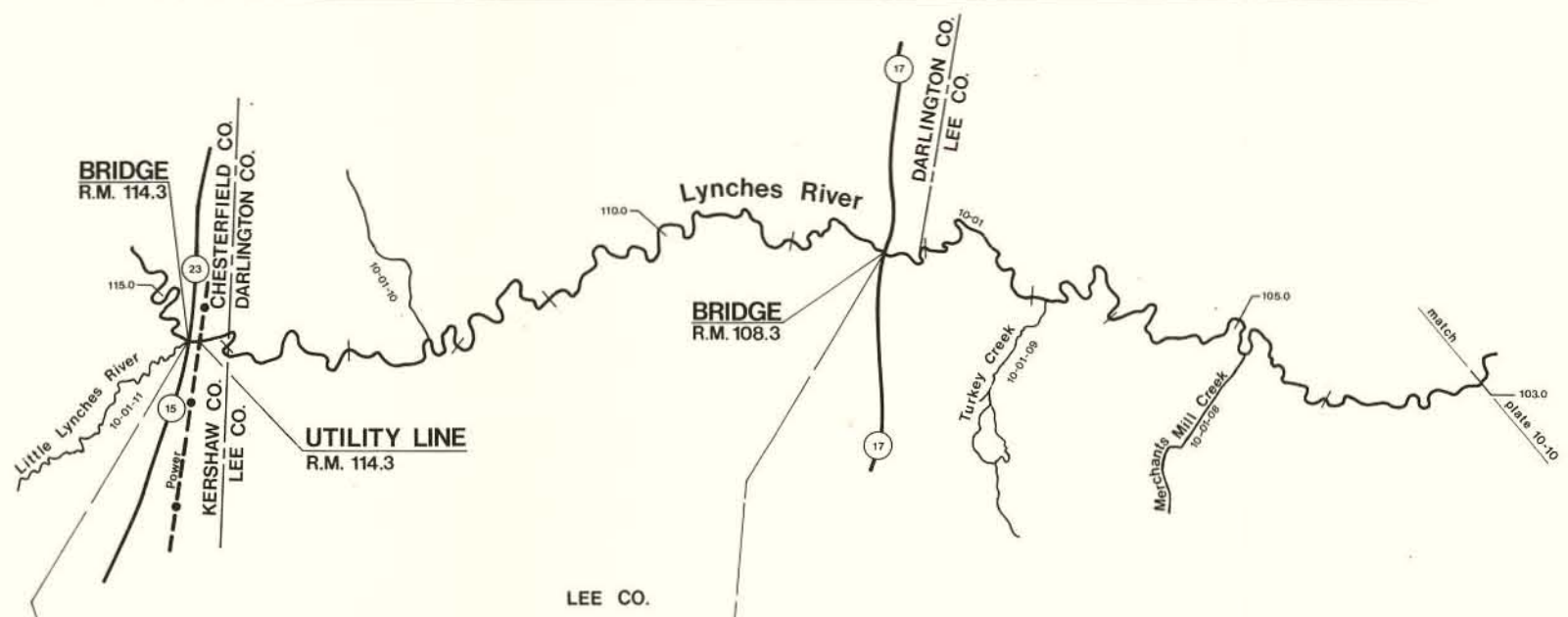
STRUCTURE RIVER MILE LOCATION

**NOTES:**

1. ELEVATION AND SLOPE OF MEAN WATER SURFACE ARE BASED ON USGS TOPOGRAPHIC MAPS AND ARE THEREFORE ONLY APPROXIMATIONS. VERTICAL DIMENSIONS FROM STREAM BED TO OVERHEAD STRUCTURES ARE FIELD MEASUREMENTS. RELATIVE LOCATION OF MEAN WATER SURFACE IS APPROXIMATED FROM CONTOUR MAPS, MEASURED CROSS SECTIONS AND VELOCITIES. STREAM FLOW RECORDS, THE MANNING EQUATION, AND FIELD OBSERVATIONS. SEE SUMMARY REPORT FOR COMPLETE EXPLANATION.

U.S. ARMY CORPS OF ENGINEERS  
 CHARLESTON DISTRICT  
 Charleston, South Carolina  
 STANLEY CONSULTANTS

PLAN AND PROFILE  
 LYNCHIES RIVER  
 Lynchies River Basin  
 DARLINGTON-LEE CO., S.C.  
 NAVIGABILITY STUDY  
 Miles 88.0-103.0 Plate 10-10



**LEGEND:**

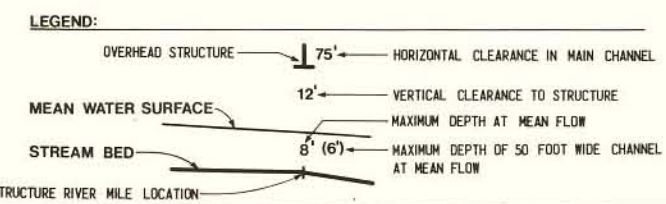
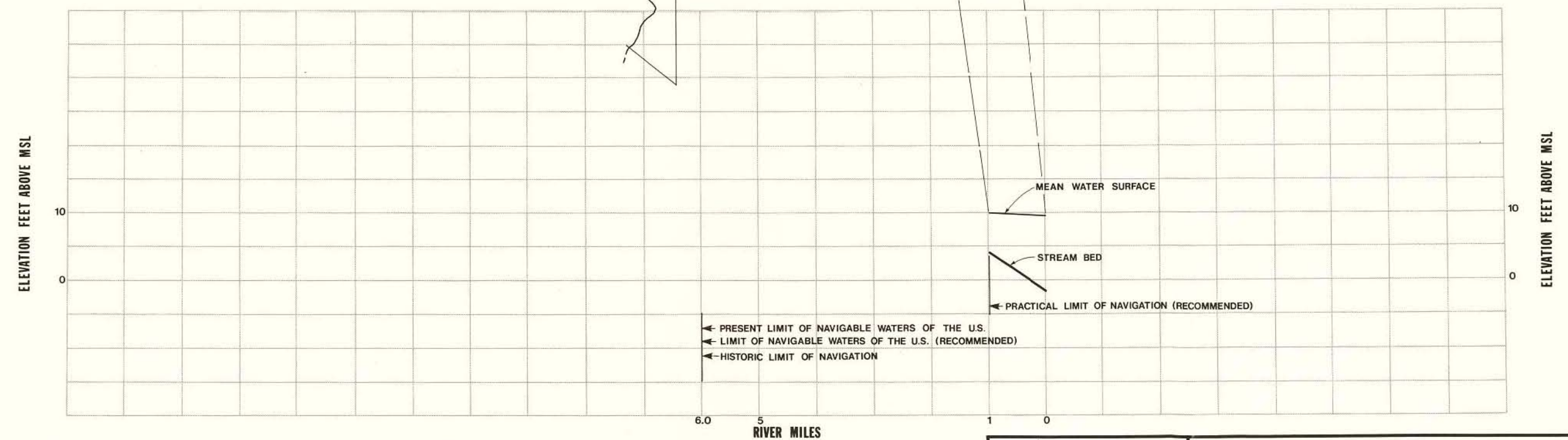
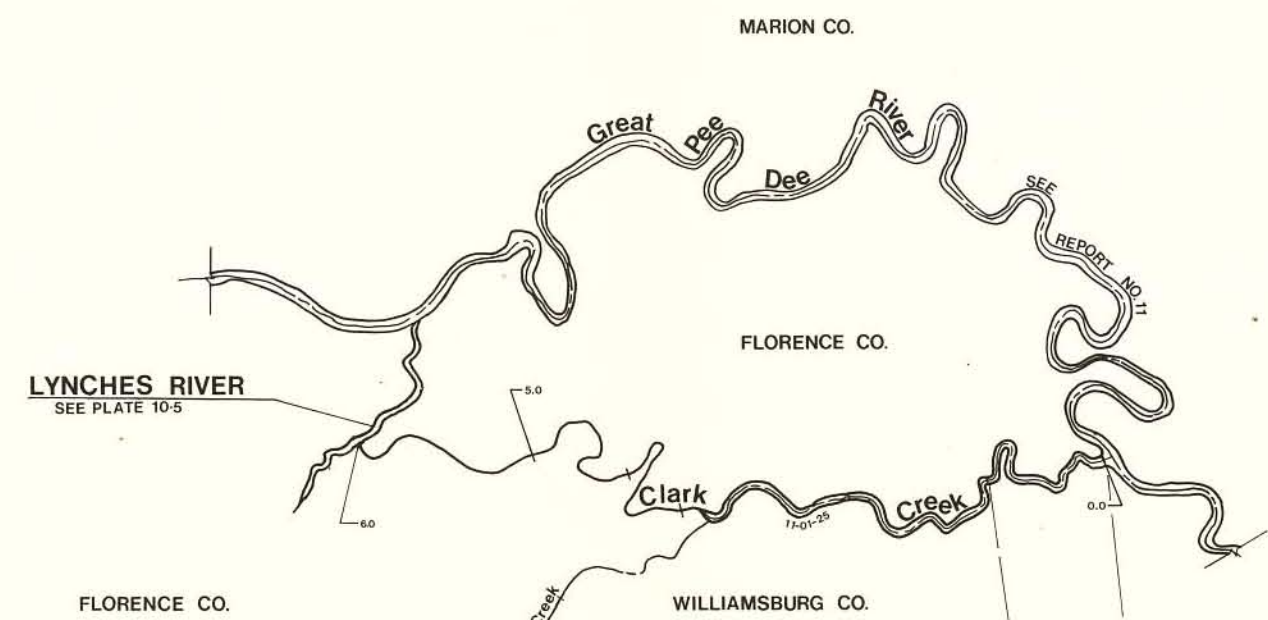
OVERHEAD STRUCTURE	↓ 75'	HORIZONTAL CLEARANCE IN MAIN CHANNEL
MEAN WATER SURFACE	↓ 12'	VERTICAL CLEARANCE TO STRUCTURE
STREAM BED	↓ 8' (6')	MAXIMUM DEPTH AT MEAN FLOW
		MAXIMUM DEPTH OF 50 FOOT WIDE CHANNEL AT MEAN FLOW
STRUCTURE RIVER MILE LOCATION		

**NOTES:**

- ELEVATION AND SLOPE OF MEAN WATER SURFACE ARE BASED ON USGS TOPOGRAPHIC MAPS AND ARE THEREFORE ONLY APPROXIMATIONS. VERTICAL DIMENSIONS FROM STREAM BED TO OVERHEAD STRUCTURES ARE FIELD MEASUREMENTS. RELATIVE LOCATION OF MEAN WATER SURFACE IS APPROXIMATED FROM CONTOUR MAPS, MEASURED CROSS SECTIONS AND VELOCITIES. STREAM FLOW RECORDS, THE MANNING EQUATION, AND FIELD OBSERVATIONS. SEE SUMMARY REPORT FOR COMPLETE EXPLANATION.

**U.S. ARMY CORPS OF ENGINEERS**  
**CHARLESTON DISTRICT**  
 Charleston, South Carolina  
**STANLEY CONSULTANTS**

**PLAN AND PROFILE**  
**LYNCHES RIVER**  
 Lynch River Basin  
 CHESTERFIELD-DARLINGTON-LEE-KERSHAW CO., S.C.  
**NAVIGABILITY STUDY**  
 Miles 103.0-114.3 Plate 10-11



**NOTES:**  
1. ELEVATION AND SLOPE OF MEAN WATER SURFACE ARE BASED ON USGS TOPOGRAPHIC MAPS AND ARE THEREFORE ONLY APPROXIMATIONS. VERTICAL DIMENSIONS FROM STREAM BED TO OVERHEAD STRUCTURES ARE FIELD MEASUREMENTS. RELATIVE LOCATION OF MEAN WATER SURFACE IS APPROXIMATED FROM CONTOUR MAPS, MEASURED CROSS SECTIONS AND VELOCITIES. STREAM FLOW RECORDS, THE MANNING EQUATION, AND FIELD OBSERVATIONS. SEE SUMMARY REPORT FOR COMPLETE EXPLANATION.

**U.S. ARMY CORPS OF ENGINEERS**  
CHARLESTON DISTRICT  
Charleston, South Carolina  
STANLEY CONSULTANTS

**PLAN AND PROFILE**  
**CLARK CREEK**  
Lynches River Basin  
FLORENCE-MARION-WILLIAMSBURG CO., S.C.  
**NAVIGABILITY STUDY**  
Miles 0.0-6.0  
Plate 10-12

APPENDIX A  
STREAM CATALOG

This appendix presents a coded listing of all streams located in the Lynches River basin having a mean annual flow greater than or equal to five cfs. The Lynches River and its tributaries are not tidally influenced; therefore, only those streams having a mean annual flow of five cfs or greater are coded.

The points where flow is approximately equal to five cfs (headwaters) are defined by approximate longitude and latitude, and river miles from the nearest named tributary, major highway, railroad, or other similar reference point. Some streams listed in the tabulation may not have headwater locations identified. This occurs when the name of a stream changes at a confluence where the flow immediately downstream is greater than five cfs. Thus, the headwater locations for streams with more than one name are associated with the appropriate upstream name found on USGS quadrangle maps. Some streams in this appendix listing are also coded in other reports for this study. Cross-references to specific reports are noted.

The coding system shown in the tabulation uses a procedure developed by the Charleston District, Corps of Engineers. Streams are summarized from the mouth of the major river upstream to the report boundary.

USGS data was used to identify the location where the mean annual stream flow is five cfs. Flow records from gaging stations throughout the Charleston District were evaluated and an isoflow map developed to indicate variations in runoff (cfs per square mile). These runoff values were then applied to the appropriate stream drainage areas (as determined from USGS quadrangle maps) so that a flow of five cfs was approximated.

APPENDIX A  
STREAM CATALOG

REPORT NUMBER	STREAM CODE					STREAM NAME	HEADWATER LOCATION ( Mean Flow = 5 cfs )					
	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER		FIFTH ORDER	LATITUDE ( ° ' " )	LONGITUDE ( ° ' " )	STREAM MILES		FROM
										UP	DOWN	
10	01					Lynches River #	34 49 30	80 34 00	2.8		Polecat Creek (N.C.)	
		01				Tie Lake						
			01			Lake Swamp						
				01		Singleton Swamp						
					01	Long Branch	33 48 50	79 42 00	0.9		Singleton Swamp	
					02	Smith Swamp	33 49 35	79 46 30	0.3		Atlantic Coast Line Railroad Bridge	
					02	Spring Run Branch	33 54 10	79 45 35			Confluence-Two Mile Branch	
					01	Cypress Branch	33 54 15	79 46 30	1.0		Spring Run Branch	
					03	Camp Branch	33 54 15	79 48 20	3.2		Lake Swamp	
		02				Deep Creek	33 51 50	79 30 45	0.9		Lynches River	
		03				Big Swamp	34 01 15	79 36 15		0.5	Gum Branch	
			01			Little Swamp	33 54 05	79 31 00	0.8		Big Swamp	
			02			Cypress Branch	33 56 45	79 34 00			Confluence-Bay Br	
		04				High Hill Drainage Canal	33 55 35	79 42 30	3.3		Lynches River	

# Dual code in Report 11.



APPENDIX A  
STREAM CATALOG

REPORT NUMBER	STREAM CODE						STREAM NAME	HEADWATER LOCATION ( Mean Flow = 5 cfs )				
	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE ( ° ' " )	LONGITUDE ( ° ' " )	STREAM MILES		FROM
										UP	DOWN	
10	01	05					Millpond Branch	33 55 55	79 40 00	0.3		Lynches River
		06					Mill Branch	34 03 10	79 47 35	0.6		Lynches River
		07					Sparrow Swamp	34 18 25	80 09 50	0.8		Burnt Branch
			01				Long Branch	34 03 25	79 49 30			Confluence-Meadow Prong
			02				Lake Swamp	34 16 15	80 03 10	9.3		Jacks Branch
			03				Deep Hole Swamp	34 06 15	80 01 05	0.1		Camel Branch
				01			Bay Branch	34 07 25	79 59 00	2.5		Poplar Branch
				04			Newman Swamp	34 11 20	80 07 10	6.5		Sparrow Swamp
				05			Boggy Gully Swamp	34 17 40	80 05 50	7.0		Sparrow Swamp
				08			Merchants Mill Creek	34 17 25	80 17 45	1.2		S. C. 341 Highway Bridge
				09			Turkey Creek	34 19 45	80 19 25	2.6		S. C. 341 Highway Bridge
		10			Unnamed Tributary	34 22 35	80 15 30	2.2		Lynches River		
		11			Little Lynches River							

10-A3

APPENDIX A  
STREAM CATALOG

STREAM CODE							STREAM NAME	HEADWATER LOCATION ( Mean Flow = 5 cfs )					
REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE ( ° ' " )	LONGITUDE ( ° ' " )	STREAM MILES		FROM	
										UP	DOWN		
10	01	11	01				Beaverdam Creek	34 24 30	80 29 00	3.2		Lynches River	
			02				Hanging Rock Creek	34 33 05	80 39 25	4.7		Lick Creek	
				01			Lick Creek	34 32 40	80 35 55	1.7		Hanging Rock Creek	
			03				Horton Creek						
				01			Little Lynches Creek	34 36 10	80 38 35				Confluence-Beckham Branch
			04				Baskins Creek	34 38 00	80 37 20				Confluence-Bend Cr
			12				Cedar Creek	34 28 20	80 17 15	2.8			Lynches River
			13				Red Oak Camp Creek	34 29 00	80 22 30	3.2			Lynches River
			14				Swift Creek						
				01			North Prong	34 31 50	80 17 35	1.2			South Prong
				02			South Prong	34 31 00	80 17 30	0.8			North Prong
			15				Jumping Gully	34 30 20	80 23 30	2.7			Lynches River
			16				Big Sandy Creek	34 35 35	80 16 40		0.4		Oxpen Branch
			17				Buffalo Creek	34 35 55	80 29 45	5.2			S. C. 157 Highway Bridge

10-A4

APPENDIX A  
STREAM CATALOG

		STREAM CODE					STREAM NAME	HEADWATER LOCATION ( Mean Flow = 5 cfs )				
REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE ( ° ' '' )	LONGITUDE ( ° ' '' )	STREAM MILES		FROM
										UP	DOWN	
10	01	17	01				Little Buffalo Creek	34 32 40	80 26 30	1.2		South Buffalo Creek
			18				Rocky Creek	34 38 35	80 19 10	0.8		Long Branch
				01			Little Rocky Creek	34 37 40	80 18 25		0.7	Fox Branch
			19				Fork Creek	34 42 30	80 23 15	2.7		Canal Branch
				01			Little Fork Creek	34 42 25	80 26 00		0.7	Reedy Fork
				02			Dry Branch	34 40 10	80 21 50			Confluence-Gum Br
			20				Flat Creek	34 41 15	80 35 15	0.7		Baker Creek
				01			Dry Creek	34 37 40	80 27 10	0.8		Flat Creek
				02			Lick Creek	34 39 10	80 32 10	0.5		Flat Creek
				03			Big Double Branch	34 41 05	80 33 05			Confluence-Little Double Branch
			21				Turkey Creek	34 43 20	80 29 50	0.5		Lynches River
			22				Wildcat Creek					
				01			North Branch Wildcat Cr	34 45 50	80 33 45	2.4		S. C. 9 Highway Bridge
				02			South Branch	34 44 30	80 33 45	1.3		Sutton Branch

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APPENDIX A  
STREAM CATALOG

STREAM CODE							STREAM NAME	HEADWATER LOCATION ( Mean Flow = 5 cfs )				
REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE ( ° ' " )	LONGITUDE ( ° ' " )	STREAM MILES		FROM
										UP	DOWN	
10	01	23					Hills Creek	34 47 00	80 26 05	1.0		Mangum Branch
		24					Dead Pine Creek	34 47 40	80 30 25	2.5		Lynches River
		25					Buffalo Creek	34 49 25	80 32 30	3.5		Lynches River
		26					Polecat Creek	34 49 30	80 36 30	1.9		Otter Creek
			01					Otter Creek	34 48 00	80 35 15		

10-A6

APPENDIX B  
SUMMARY OF 10 TO 1,000 ACRE LAKES

This appendix is a compilation of lakes from 10 to 1,000 acres which are contained in the Lynches River basin.

This inventory was compiled from the following sources:

1. Inventory of Lakes in South Carolina Ten Acres or More in Surface Area.
2. USGS Quadrangle Maps.

The USGS quadrangle maps were used to locate and to detect lakes that were not listed in the other sources. Actual surface area and gross storage information is supplied where available. The lakes were coded by major stream basin in accordance with other procedures developed for identifying streams. The map data from Source 1 above generally does not permit detailed location of the small lakes. Thus, lakes are coded by basin only as far as the secondary order.

APPENDIX B  
SUMMARY OF 10 TO 1,000 ACRE LAKES

REPORT NUMBER	STREAM CODE					LAKE NAME OR OWNER	SURFACE AREA (acres)	GROSS STORAGE (acre-ft)	LOCATION BY COUNTY  (SOUTH CAROLINA)
	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER				
10	01					Coastal Sand Company	16	160	Florence
10	01					Coastal Sand Company	12	120	Florence
10	01					W. D. & C. W. Boling	54	600	Florence
10	01					Marsh Plywood Company	12	100	Florence
10	01	01				Leo Hanna	12	38	Florence
10	01	01	03			Paul Webster	25	75	Florence
10	01	05				E. E. Matthews	16	45	Florence
10	01	07				Unnamed Lake	--	--	Florence
10	01	07	01			J. L. Blackwell	10	32	Florence
10	01	07	02			J. B. Carroway	15	75	Florence
10	01					B. A. Graham	14	80	Sumter
10	01					B. A. Graham	14	80	Sumter
10	01	06				Unnamed Lake	--	--	Lee
10	01	07				Walter Bell	18	54	Lee
10	01	07	03			Frank Copeland (Bay Lake)	35	140	Darlington
10	01	07	03			Ray Amerson	15	48	Darlington
10	01	07	05			Andrews Millpond	20	64	Darlington

APPENDIX B  
SUMMARY OF 10 TO 1,000 ACRE LAKES

REPORT NUMBER	STREAM CODE					LAKE NAME OR OWNER	SURFACE AREA (acres)	GROSS STORAGE (acre-ft)	LOCATION BY COUNTY (SOUTH CAROLINA)
	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FIFTH ORDER				
10	01	07	05			Harrell Millpond	20	64	Darlington
10	01	07				Marco Millpond	150	480	Darlington
10	01	07				John Smith	56	220	Darlington
10	01					John Skinner	10	50	Lee
10	01					City of Bishopville	14	70	Lee
10	01					Watsons Millpond	10	30	Lee
10	01	08				Merchants Millpond	20	60	Lee
10	01	09				Unnamed Lake	--	--	Lee
10	01	09				Turkey Creek Pond	25	75	Lee
10	01	09				Dewy Watkins	10	50	Lee
10	01	09				Clyburn Pond	35	105	Lee
10	01	09				Unnamed Lake	--	--	Lee
10	01	11				McGougan Millpond	16	42	Kershaw
10	01	11				Barfield Pond	10	40	Kershaw
10	01	11	02			C. R. Lindenzwieg	12	60	Kershaw
10	01	11	02			Kershaw Town Pond	30	56	Kershaw
10	01	11				Baxley Pond	10	50	Kershaw

10-B3

APPENDIX B  
SUMMARY OF 10 TO 1,000 ACRE LAKES

REPORT NUMBER	STREAM CODE					LAKE NAME OR OWNER	SURFACE AREA (acres)	GROSS STORAGE (acre-ft)	LOCATION BY COUNTY (SOUTH CAROLINA)
	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FIFTH ORDER				
10	01	11	03			Sunrise Lake	24	192	Lancaster
10	01	12				Sandhill State Forest (Sexton Pd)	34	136	Chesterfield
10	01	12				L. E. Meares (Park Pond)	30	132	Chesterfield
10	01					Judson Kirkley	30	180	Chesterfield
10	01	16				J. N. Benton	10	48	Chesterfield
10	01	16				J. S. Wildlife Refudge Pool "J"	12	53	Chesterfield
10	01	18				J. I. Knight	12	58	Chesterfield
10	01	18	01			Robert Hartman (Sycamore Pond)	12	58	Chesterfield
10	01	18				Ben Outen	10	48	Chesterfield
10	01	19	01			Howard Miller	10	48	Chesterfield
10	01	19	01			Plyler Pond	12	58	Chesterfield
10	01	23				Hill Creek Watershed Structure No. 1	50	200	Chesterfield
10	01	23				Town of Pageland	10	48	Chesterfield
10	01	23				Archie Jenkins	10	48	Chesterfield



APPENDIX B  
SUMMARY OF 10 TO 1,000 ACRE LAKES

REPORT NUMBER	STREAM CODE					LAKE NAME OR OWNER	SURFACE AREA (acres)	GROSS STORAGE (acre-ft)	LOCATION BY COUNTY (SOUTH CAROLINA)
	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FIFTH ORDER				
10	01	03				Bens Lake	--	--	Florence
10	01	19				Unnamed Lake	--	--	Chesterfield
10	01	14				Lake James	--	--	Chesterfield
10	01	15				Unnamed Lake	--	--	Kershaw
10	01	17				Raley Millpond	120	480	Kershaw
10	01	13				Hough Millpond	16	80	Kershaw
10	01					Blackwell Millpond	--	--	Chesterfield
10	01	17	01			W. B. Holley	10	40	Kershaw

10-85