Environmental Resource Permit

Information Manual

2020

Regulation Division
South Florida Water Management District

ABOUT THIS MANUAL

This Manual is a compilation of information which will be useful to anyone who has an interest in the Environmental Resource Permitting (ERP) Program of the South Florida Water Management District. Originally Volume IV of a six- volume series of formal information manuals to provide information about the District's various permitting programs, The Environmental Resource Permit Information Manual (Manual) has evolved with the ERP program, and now exists as an online resource.

Comprehensive revisions to this Manual were completed after 1995, when the District began issuing ERPs, which replaced "dredge and fill" and "surface water management" permits. In 2013, the Statewide ERP Rule (Chapter 62-330, F.A.C.) was adopted, unifying the ERP rules for the state. This Manual has been updated to reflect the changes to the ERP program as a result of the Statewide ERP Rule.

The Manual begins with the pertinent chapters of the Florida Administrative Code (F.A.C.) -where all District ERP permitting regulations are codified-, and selected statutes. The Chapters are followed by the Environmental Resource Permit Applicant's Handbooks: Volume I (referred to as Volume I), for use throughout the state, and Volume II- For use within the geographic area of the South Florida Water Management District (known as Volume II). Volume I is incorporated by reference in Chapter 62-330. F.A.C. Volume II is incorporated by reference in Chapter 40E-4 and Chapter 62-330., F.A.C. The Applicant's Handbook contains the technical criteria by which an application for an ERP will be reviewed, with the primary goal of meeting state water resource objectives as set forth in Chapter 373, Florida Statutes (F.S.).

The third part of this Manual is devoted to References and Design Aids; a compilation of referenced maps, technical design aids and examples which may assist professionals in the ERP process and documents. Stormwater management design aids for typical storm water management systems in south Florida are provided. Environmental design aids are provided to assist professionals in designing a project to meet the environmental criteria. Design examples are intended to provide guidance on how the previously-presented rules, criteria, and aids may be employed in the design of a particular type of project.

The fourth and last part of the Manual contains some helpful information relating to post-permit activities: the maintenance of stormwater water management systems and preservation/mitigation areas, and environmental monitoring report guidelines.

The design aids and design examples in this manual are intended to provide general information only; specific projects may require additional or different design considerations in order to address site specific factors. These sections of the Manual do not constitute additional rule criteria.

FIRST EDITION PRINTED: June 1987

First Revision: November 1987. Major revisions: deleted from 40E-4 requirement of assurance of consistency with other public agencies' requirements; added to 40E-40 requirements for incidental site work; provided corrected freeboard equation in Major Impoundment design example; provided more legible copies of three pages in Major Impoundment design example.

Second Revision: March 1994. Major revisions: added Chapter 40E-1 which includes commonly used forms; updated version of 40E-4; updated 40E-40 to include No Notice General Permit for Construction, Alteration or Operation of Surface Water Management Systems; updated version of 40E-41 to include ability to issue General Permits in special basins; added Appendix 8 - Mitigation Banking; updated Index to reflect the above changes. Addition/revision of the following design aid pages as result of new information or clarification of existing information:

Page C-II-2: Clarification of SCS peak factors applicable to the South Florida Water Management District

Pages C-II-5 and C-II-5(a): Clarification of use of sheetflow runoff curves for irregular and high retardance basins

Page C-III-2: Addition of soil storage values for flatwoods and depressional soils based on recently received SCS information

Page D-F-7: Addition of Floodplain Encroachment Example Problem

SECOND EDITION

ORIGINAL PRINTING: 2000. Major revisions: updated the entire document to include revisions brought about by the merger of the surface water management and the dredge and fill permitting programs to create the Environmental Resource Permit (ERP) program.

DECEMBER 2001 Major items: • Service Center Map with Orlando S.C. revised; • Title 28 with title headers and pagination footers; • Chapter 40E-0 with 06/00 amendments; • Chapter 40E-1 with 06/00 amendments; Chapter 40E-4 with 09/01 amendments; • Chapter 40E-40 with 05/00 amendments; • Chapter 40E-41 with 10/01 amendments; • Chapter 40E-400 with 09/01 amendments; • Chapter 62-302 with 04/01 amendments; • *Basis of Review–January 2001*; • Delegation Agreement among DEP, the District, and Broward County, effective 05/22/2001; • Operating Agreement between the District and DEP, effective 10/27/1998; • ”Water Storage” pages E-1 and E-2, to correct an entry in the “Soil Storage” table on page E-2.

DECEMBER 2002 Major items: • Introduction with water preserve area basins added at two places in text; • Service Center Map with several revisions; • Chapter 40E-0 with 06/02 amendments; • Chapter 40E-1 with 08/02 amendments; • Chapter 40E-4 with 06/02 amendments; • Chapter 40E-40 with 06/02 amendments; • Chapter 40E-400 with 06/02 amendments; • Chapter 62-302 with 05/02 amendments; • *Basis of Review – June 2002*; • New forms 1105 and 1106

added; • New Broward County conservation easement form added; • New Affidavit for Operating Entity Documents added; • Permit Applicant Operating Entity Checklist with 05/01 revisions; • Subsections 62-4.242(1) and (2) with 05/02 amendments; • Section 62-302.300 with 05/02 amendments.
- Ralph L. Fanson, P.E.
January 2003

DECEMBER 2003 Major items: • Preface with origins of regulatory volumes added; • Service Center Map with Lower West Coast Service Center revised; • Chapter 40E-1 with 09/03 amendments; • Chapter 40E-4 with 09/03 amendments; • Chapter 40E-40 with 04/03 amendments; • Chapter 40E-41 with improved-quality figures 1-6; • Chapter 40E-400 with 04/03 amendments; • Chapter 62-302 with 12/03 amendments; • *Basis of Review – September 2003*; • Figure F-4 text clarified; • Section 62-4.242 with 05/02 amendments; • Design examples in word-searchable format and with Routing Model Cascade 2001 printouts; • Pages XD-5 and XD-7 modified for clarification of weir crest elevation guidance.
- Ralph L. Fanson, P.E.
January 2004

DECEMBER 2004 Major items: • Service Center Map with revisions • Chapter 40E-1 with 09/04 amendments • Chapter 40E-4 with 12/04 amendments • Chapter 62-302 with 07/04 amendments • Chapter 62-345, new on 02/02/04 • *Basis of Review* – December 7, 2004 • All "Permit Application Submittal Aids" starting with page PAS-I through and including page 18 in word-searchable format • All "regulatory Topics" starting with page T1-1 through and including page T8-1 in word-searchable format • All "Design Aids" text starting with page A-1 through and including page P-2 in word-searchable format • Pages XD-1, XD-3, XF-3, XF-5, and XG-5 revised to bring phrase "0.5 inch of dry detention or retention" into agreement with wording of sections 5.2.2(a) and (b) of the *BOR* • All "Post-Permit Considerations" starting with page PA-1 through and including page 13 of *Environmental Monitoring Report Guidelines* in word-searchable format.
- Ralph L. Fanson, P.E.
January 2005

2/12/06 "Recording of Notice of ERP": 40E-1.659 and 40E-4.101, F.A.C. – requires recording of a Notice of Environmental Resource or Surface Water Management Permit for Standard General Permits and incorporates the Notice of Permit form in the District's rules.

2/12/06 "Construction Completion Conversion": 40E-4.091 F.A.C., and the Basis of Review for Environmental Resource Permits within the SFWMD (BOR) – facilitates conversion of construction permits to the operation phase; minor corrections made to Appendix 6; and references to previously adopted mitigation bank and financial assurance forms added.

10/1/06 "ePermitting": 40E-1.021, 40E-1.5095, 40E-1.511, 40E-1.603, 40E-1.6058, 40E-1.6065, 40E-1.6105, 40E-1.6107, 40E-1.615, 40E-4.021, 40E-4.091, 40E-4.101, 40E-4.321, 40E-4.381, 40E-61.020, 40E-61.031, 40E-61.042, 40E-61.321, 40E-61.381, 40E-400.211, and 40E-400.475, F.A.C. - incorporates provisions to allow for noticing, delivery and receipt of documents through electronic media.

11/20/06 "UMAM": 40E-4.091, F.A.C., and Section 4.3.2 BOR – clarifies that the Uniform Mitigation Assessment Method (UMAM) adopted in Chapter 62-345, F.A.C., is applicable to applications received on or after February 2, 2004, pursuant to Section 373.414(18), F.S.

1/23/07 "Conservation Easement and Restrictive Covenant Forms": 40E-1.659, 40E-4.091, F.A.C., and Section 4.3.8 BOR – incorporates conservation easement and restrictive covenant forms, and incorporates conservation language for plats.

7/1/07 "Operating Agreement with DEP": 40E-4.091(1)(c) and 40E-4.302(2), F.A.C. – incorporates the following revisions to the Operating Agreement with DEP: 1) clarifying which mining projects are retained by DEP; 2) providing that the District will review boat docks associated with residential developments also reviewed by the District, even if the upland development qualified for a no-notice general permit; 3) providing that the District can review utility lines which are contained within projects under the District's review; 4) eliminating aquaculture from the agreement, which is now reviewed by the Florida Department of Agriculture and Consumer Services; 5) clarifying a process for review or transfer of incorrectly submitted applications; and 6) providing a revision of the threshold for District review of single family homes to four or more contiguous lots.

7/19/07 "Delegations: 40E-40.051 and 40E-40.061, F.A.C. – includes *Regulatory Manager* as one delegated and appointed by the Board to review and issue standard general and general permits for environmental resource permits, general surface water management permits and associated sovereign submerged land authorizations.

7/22/07 "ERP Glitch Rule": 40E-4.091, F.A.C. - updates references to the BOR and to Sections 4.2.8 and 4.3.8, and Appendix 2 BOR to correct minor errors.

8/7/07 "ERP Form Revisions": 40E-1.659, F.A.C. – updates Forms 0970 and 0971 with current service center addresses/contact information.

9/9/07 "Minor Roadway Exemptions": 40E-4.051, F.A.C. - establishes exemptions from ERP requirements for minor roadway safety projects with no wetlands for: 1) sidewalks; 2) intersection improvements and turn lanes less than 0.25 miles; and 3) road widening and shoulder paving that do not create additional lanes. The proposed exemptions are also for recreational paths (with no wetlands 8 feet or less for unidirectional and 12 feet or less for bidirectional, and no motorized vehicles except for maintenance or emergency.

9/9/07 "General Permits": 40E-400.443 and 40E-400.447, F.A.C. – clarifies the language for activities which qualify for general permits and include the Florida Turnpike Enterprise and various transportation authorities defined in Chapters 343, 348 and 349, F.S., as entities to be granted these types of permits. In addition, replacement of a bridge or modification of a bridge that includes changes in the configuration of the bridge or fill areas due to changes in materials, construction techniques, or meeting current construction codes or safety standards are now authorized under a General Permit.

11/18/07 "Proprietary Authorization Fees": 40E-1.607(4), F.A.C. – deletes specific (outdated) application fee for proprietary authorizations and references the Board of Trustees rule.

3/22/09 "Electronic Mailing Notice": 40E-0.105 and 40E-0.109, F.A.C. – includes electronic mailing as an option to providing notice of intended agency actions and final agency actions.

3/22/09 "Electronic Filing of Works of the District Permit Applications": 40E-4.021, F.A.C. – includes electronic filing of Works of the District permit applications.

10/18/09 "Collier County Delegation": 40E-400.315, F.A.C. – deletes Collier County's partial delegation authority to issue No Notice General Permits for projects with less than 40 acres total land area which are not located within wetlands, natural water bodies or Outstanding Florida Waters.

11/1/09 "ERP Permit Fees": 40E-1.607, F.A.C - ERP fees were increased based on an upward adjustment in the Consumer Price Index compiled by the U.S. Dept of Labor. Additional fee increases to recover a larger portion of the cost to process, monitor and inspect for compliance, were also adopted.
The following new fees were also adopted:

1) $100 to verify qualification for an exemption from regulation
2) $100 for No Notice General Permits
3) $500 for informal wetland boundary determinations
4) $500 for permit extensions

11/11/09 "Bald Eagle": 40E-4.021 and 40E-4.091, F.A.C., and BOR - deletes the Bald Eagle from the Listed Wildlife Species Table 4.2.7-1 and adds references to the Bald Eagle to address secondary impacts to the functions of wetlands or uplands for the nesting of Bald Eagles. The proposed rule amendments also update obsolete references to endangered, listed and threatened species.

7/1/10 "Melaleuca Eradication Elimination": 40E-4.091, F.A.C., and Section 4.3.9 BOR - deletes Section 4.3.9 "Mitigation Reduction Through a Melaleuca Eradication Program.

7/4/10 "Conservation Easement – Local Governments": 40E-1.659, 40E-4.091, F.A.C., and Section 4.3.8 BOR – incorporates Forms 1190-1192, 1194-1197, and 1318 by reference.

August – September 2010 – Corrections/Technical Changes: Minor corrections to the rules referenced below, which did not require rulemaking. Furthermore, since the effective date reflects a rule adopted through rulemaking, the effective date of the rule will remain as noted below**:**

40E-0 (Eff Date: March 22, 2009)	40E-40 (Eff Date: July 19, 2007)	BOR – ERP (Eff Date: July 4, 2010
40E-1 (Eff Date: July 4, 2010)	40E-41 (Eff Date: October 21, 2001)	
40E-4 (Eff Date: July 4, 2010)	40E-400 (Eff Date: October 18, 2009)	

12/1/11 "ERP Glitch Rule": 40E-1.5095, 40E-1.603, 40E-1.615, 40E-4.011, 40E-4,021, 40E-4.041, 40E-4.0415, 40E-4.042, 40E-4.051, 40E-4.101, 40E-4.201, 40E-4.301, 40E-4.302, 40E-4.303, 40E-4.305, 40E-4.321, 40E-4.331, 40E-4.361, 40E-4.381, 40E-40.010, 40E-40.011- 40E-40.031, 40E-40.041, 40E-40.051, 40E-40.141, 40E-40.302, 40E-40.321, 40E-40.331, 40E-40.341, 40E-40.381, 40E-40.391, 40E-41.121, 40E-41.43, 40E-41.60, 40E-41.263, 40E-41.265, 40E-41.363, 40E-400.211, 40E-400.417, 40E-400.443, 40E-400.447, 40E-400.470, 40E-400.475, 40E-400.487, and 40E-400.500, F.A.C. – Amendments resulting from review of District's ERP rules in accordance with Section 120.74, Fla. Stat., which requires agencies to review its rules every two years to identify and correct deficiencies, clarify and simplify its rules, delete unnecessary or obsolete rules, delete rules that are redundant of statutes, seek to improve efficiency, reduce paperwork, or decrease costs to government and the private sector, and determine whether the rules should be continued without change or should be amended or repealed to reduce the impact on small business while meeting the stated objectives of the rule. These amendments update the District's rules to be consistent with statutory amendments, incorporate forms in the rules which require their use, hyperlink to forms and materials incorporated by reference, amend forms to update titles and organizational structure, District's address and *ePermitting* address, and include incorporation language.

12/15/11 "ERP Glitch Rule": 40E-1.6058, 40E-1.607, 40E-1.659, 40E-4.091, and 40E-40.042, F.A.C. (rules that required publication of a Notice of Change) – Amendments resulting from review of District's ERP rules in accordance with Section 120.74, Fla. Stat., which requires agencies to review its rules every two years to identify and correct deficiencies, clarify and simplify its rules, delete unnecessary or obsolete rules, delete rules that are redundant of statutes, seek to improve efficiency, reduce paperwork, or decrease costs to government and the private sector, and determine whether the rules should be continued without change or should be amended or repealed to reduce the impact on small business while meeting the stated objectives of the rule. These amendments update the District's rules to be consistent with statutory amendments, incorporate forms in the rules which require their use, hyperlink to forms and materials incorporated by reference, and amend forms to update titles and organizational structure, include the District's address and ePermitting address, and include incorporation language.

5/20/12 "Reduction of Regulatory Burdens": 40E-1.659, 40E-4.091, 40E-4.101 and 40E-400.211, F.A.C. – reduces the number of copies applicants are required to submit and increases the duration of conceptual permits from 2 years to 5, thereby reducing regulatory burdens. The amendments also delete definitions and exemptions that are duplicative of Florida Statutes.

5/27/12 (Legislative Repeals): 40E-0.103, 40E-0.105, 40E-1.100, 40E-1.1065, 40E-1.125, 40E-1.200, 40E-1.208, 40E-1.300, 40E-1.400, 40E-1.500, 40E-1.511, 40E-1.521, 40E-1.564, 40E-1.570, 40E-1.601, 40E-1.608, 40E-1.611, 40E-1.6115, 40E-2.441, 40E-3.010, 40E-3.0511, 40E-4.311, 40E-7.201, 40E-7.205, 40E-7.300, 40E-7.401, 40E-20.141, 40E-20.341, 40E-20.391, 40E-21.031, 40E-21.132, 40E-21.611, 40E-22.082, 40E-22.112, 40E-22.132, 40E-22.242, 40E-22.252, 40E-22.272, 40E-23.011, 40E-23.021, 40E-23.023, 40E-23.031, 40E-23.043, 40E-23.053, 40E-63.201, 40E-63.211, 40E-63.212, 40E-63.223, 40E-63.225, F.A.C. - In accordance with Executive Order 11-211, Section 6, which requires agencies to review its rules and regulations annually and submit recommendations to the Office of Fiscal Accountability, The District identified numerous rules that should be eliminated as duplicative

or unnecessary. In lieu of the typical rulemaking process, those rules were repealed by the Legislature.

10/1/13 "Statewide ERP (SWERP)": 40E-0.113, 40E-1.602, 40E-1.603, 40E-1.6065, 40E-1.607, 40E-1.6107, 40E-1.615, 40E-1.659, 40E-4.010, 40E-4.011, 40E-4.021, 40E-4.041, 40E-4.0415, 40E-4.042, 40E-4.051, 40E-4.0515, 40E-4.054, 40E-4.091, 40E-4.101, 40E-4.201, 40E-4.205, 40E-4.301, 40E-4.302, 40E-4.303, 40E-4.305, 40E-4.321, 40E-4.331, 40E-4.341, 40E-4.351, 40E-4.361, 40E-4.381, 40E-4.451, 40E-40.010, 40E-40.011, 40E-40.021, 40E-40.031, 40E-40.041, 40E-40.042, 40E-40.051, 40E-40.061, 40E-40.091, 40E-40.101, 40E-40.141, 40E-40.302, 40E-40.321, 40E-40.331, 40E-40.341, 40E-40.351, 40E-40.381, 40E-40.391, 40E-40.407, 40E-41.011, 40E-41.043, 40E-41.053, 40E-41.063, 40E-41.143, 40E-41.160, 40E-41.243, 40E-41.260, 40E-41.263, 40E-41.333, 40E-41.343, 40E-41.363, 40E-400.010, 40E-400.021, 40E-400.201, 40E-400.211, 40E-400.215, 40E-400.315, 40E-400.316, 40E-400.417, 40E-400.427, 40E-400.431, 40E-400.437, 40E-400.439, 40E-400.443, 40E-400.447, 40E-400.453, 40E-400.455, 40E-400.457, 40E-400.463, 40E-400.467, 40E-400.470, 40E-400.475, 40E-400.483, 40E-400.485, 40E-400.487, 40E-400.495, 40E-400.500, F.A.C. - Section 373.4131, F.S. (2012), required DEP, in coordination with the five WMDs, to develop Statewide Environmental Resource Permitting rules. This was done by adopting Chapter 62-330, F.A.C., and amending the District's rules to assure consistency and eliminate redundancy with Chapter 62-330, F.A.C. The District's water quality and quantity rules remain with minor modifications, and are restated in a new ERP Applicant's Handbook Volume II. A summary of the updates is as follows:

1. Amendments to Chapters: 40E-1, 40E-4, and 40E-41.
2. Added Chapter 62-330, F.A.C.
3. Rules Repealed: 40E-0.113
4. Chapters Repealed: 40E-40 and 40E-400
5. SFWMD forms no longer in use: 0444, 0881A, 0881B, 0920, 0960, 0961, 0971, 0972, 0974, 0980, 1019, 1020, 1021, 1022, 1023, 1024, 1105, 1106, 1189, 1190, 1191, 1192, 1194, 1195, 1196, 1197, and 1318.
6. New DEP Statewide forms will be in use – DEP Statewide forms are in 62-330, F.A.C.
7. Vol. I – is a DEP Statewide Applicant's Handbook
8. Vol. II – is specific to SFWMD: Environmental Resource Applicant's Handbook Vol. II. (fka ERP BOR)

1/19/14 "Electronic Posting": Rules 40E-1.021 and 40E-1.6058 - defines the term "electronic posting" and provides for electronic posting of the receipt of certain applications, as opposed to newspaper publication. Notice of Receipt of applications for individual water use permits, environmental resource permits for construction or alteration of dams, impoundments, reservoirs, and appurtenant works, and permits under Section 403.812, Fla. Stat., will continue to be published in the newspaper in accordance with Section 373.116, Fla. Stat.

8/10/14 "Impaired Waters Procedure": 40E-4.091, F.A.C., and Volume II – added section 4.1.4 for Projects Discharging to Impaired Waters or to Outstanding Florida Waters and new Appendix E " Procedure for Environmental Resource Permit Water Quality Evaluations for Applications Involving Discharges to Outstanding Florida Waters and Water Bodies that Do Not Meet State Water Quality Standards," to update, rename, and incorporate the "Impaired Waters Memorandum" prepared as a guidance memorandum in 2004 and revised in 2009 and 2013, to

assist applicants and District staff when an application includes a discharge to an impaired water body or OFW. This rule does not create new standards or change the existing ERP application process.

11/5/15 "40E-41 Rule Repeals": 40E-41.033, 40E-41.091, 40E-41.133, 40E-41.233, and 40E-41.333, F.A.C. – repealed as a result of comprehensive rule review required by Executive Order 11-211 as duplicative, unnecessarily burdensome, or no longer necessary. Rule 40E-41.091 is unnecessary because it merely refers to the publications, rules and interagency agreements incorporated by reference in Rule 40E-4.091, F.A.C. Rules 40E-41.033, 40E-41.133, 40E-41.233, and 40E-41.333, F.A.C., are unnecessary because the implementation date is set forth in the history note of each rule.

11/11/15 "C-51 Basin Rule Updates": 40E-41.221 and 40E-41.263, F.A.C. – revises basin boundaries, 10-year, three-day design discharge rates, and 100-year, three-day design stages, consolidates Figure 41-9 with Figure 41-8, corrects typographical error in Rule 40E-41.263(1)(b), F.A.C., from 27 "cfs" to 27 "CSM" to be consistent with Appendix A of the "Environmental Resource Permit Applicant's Handbook Volume II: For Use within the Geographic Limits of the South Florida Water Management District," and eliminate the requirement of non-commercial/industrial projects located within the Western C-51 Basin to provide one-half inch of dry retention/detention pretreatment.

5/22/16 "Incorporation of Amended State Water Quality Standards": 40E-4.091, F.A.C. – incorporates the latest water quality standards referenced in Rule 40E-4.091, F.A.C., and the Environmental Resource Permit Applicant's Handbook, Volume II For Use Within the Geographic Limits of the South Florida Water Management District: 62-4, F.A.C. (effective 2/17/16), 62-302, F.A.C. (effective 2/17/16), 62-550, F.A.C. (effective 7/7/2015).

8/7/16 "ERP amendments": 40E-1.021, 40E-1.607, 40E-1.6107, 40E-1.615, 40E-1.659, 40E-1.702, 40E-41.023, 40E-41.063, 40E-41.121, 40E-41.123, 40E-41.160, 40E-41.321, 40E-41.323, 40E-41.363 - addresses comments received from the Joint Administrative Procedures Committee regarding incorporation of enforcement guidelines that apply to the environmental resource permitting, consumptive use, and surface water management enforcement programs; updates and corrects rules; removes obsolete language, renames figures, and incorporates and hyperlinks Figures 41-1 through 41-5 and Figures 41-9 through 41-14 into the appropriate rules. (effective 8/7/16).

6/1/18: "SWERP 2": Chapter 62-330, F.A.C.- minor revisions and clarifications to statewide ERP rules and Applicant's Handbook Volume I, including substantive amendments that will provide additional exemptions, reduce submittal requirements, remove the U.S. Army Corps of Engineers from the joint application process, and revise the application and notice forms.

12/22/20: "SWERP State 404 Program": Chapter 62,330, F.A.C. - Amendments include incorporating updated version of water management district handbooks, revising incorporated forms to include a State 404 Program Permit section, incorporating a new form, and clarifying that applicants may waive Environmental Resource Permit timelines so that Agency actions can be issued concurrently. Amendments to Applicant's Handbook Volume I include updating form titles, clarifying the process for the landward delineation of wetlands, adding unincorporated

appendices for use when delineating the landward extent of wetlands, and providing for the use of state or local authorizations for construction activities in right of ways as evidence of real property interest.

ENVIRONMENTAL RESOURCE PERMIT
APPLICANT'S HANDBOOK
VOLUME I
(GENERAL AND ENVIRONMENTAL)

This Volume, including Appendices G, H, and I only is incorporated by reference in subsection 62-330.010(4), F.A.C.

Effective ____December 22, 2020_____

FOR:

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT

SUWANNEE RIVER WATER MANAGEMENT DISTRICT

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

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PART I -- BACKGROUND AND PROCEDURES

1.0 Introduction

The Florida Department of Environmental Protection ("Department" or "DEP") and Florida's five water management districts ("Districts" or "WMDs") developed this Applicant's Handbook to help persons understand the rules, procedures, standards, and criteria that apply to the environmental resource permit (ERP) program under Part IV of Chapter 373 of the Florida Statutes (F.S.).

The Department and each of the Districts implement the ERP program. Several local governments also implement the ERP program under the delegated authority in Section 373.441, F.S. The Applicant's Handbook refers to these entities collectively as "Agencies" and also refers to one or more water management districts as "District" or "Districts" (capitalized), respectively. The term "district" (lower case) generally refers to the main or field offices of either the Department or District. These and other terms are defined in Section 2.0 of this volume of the Applicant's Handbook (hereinafter referred to as "Volume I," or "this volume").

Part IV of Chapter 373, F.S., regulates the construction, alteration, operation, maintenance, abandonment and removal (hereinafter referred to as "activities") of stormwater management systems, dams, impoundments, reservoirs, works and appurtenant works (hereinafter referred to as "projects"). Such projects include dredging and filling in wetlands and other surface waters, as those terms are defined in Sections 373.403(13) and (14), F.S.

The primary ERP program rules are adopted by DEP as Chapter 62-330, of the Florida Administrative Code (F.A.C.), and are also rules of the Districts and delegated local governments in accordance with the authority under Section 373.4131, F.S. The Applicant's Handbook is incorporated by reference in subsection 62-330.010(4), F.A.C., and therefore operates as a rule of the Agencies.

The Districts are:

- Northwest Florida Water Management District (NWFWMD)
- Suwannee River Water Management District (SRWMD)
- St. Johns River Water Management District (SJRWMD)
- Southwest Florida Water Management District (SWFWMD) and
- South Florida Water Management District (SFWMD)

Responsibilities of these Agencies are divided in accordance with Operating and Delegation Agreements incorporated by reference in Chapter 62-113, F.A.C., accessible at: https://floridadep.gov/ogc/ogc/content/operating-agreements. These Agreements operate so that only one agency is responsible for permitting, compliance, and enforcement of an activity, and identify which Agency is responsible for the various types of activities. See Section 1.2, below for additional information on the division of responsibilities between the Agencies.

Chapter 62-330, F.A.C., will control in cases where the information in the Applicant's Handbook conflicts with that rule chapter.

1.1 Overview of Applicant's Handbook

This is Volume I of a two-volume ERP Applicant's Handbook. This volume and Chapter 62-330 F.A.C., are adopted by DEP and apply statewide to all activities regulated under Part IV of Chapter 373, F.S. This includes those activities for which the Districts and the delegated local governments are responsible for the review and agency action.

This Volume I provides general background information on the ERP program, including points of contact, a summary of the statutes and rules used to authorize and implement the ERP program, and the forms used to notice or apply to the Agencies for an ERP authorization. This Volume also provides discussion on:

- Activities regulated under Chapter 62-330, F.A.C., and Part IV of Chapter 373, F.S.;
- Types of permits, permit thresholds, and exemptions;
- Procedures used to review exemptions and permits, and that are applicable to inspections, compliance, and enforcement;
- Conditions for issuance of an ERP, including the environmental criteria used for activities located in wetlands and other surface waters;
- Erosion and sediment control practices to prevent water quality violations;
- Operation and maintenance requirements.

Applicant's Handbook Volume II is adopted separately by DEP (for use within the NWFWMD) and by the SRWMD, SJRWMD, SWFWMD, and SFWMD (for use within the geographical area of each applicable District). These separate Volumes address regional differences in hydrology, soils, geology, and rainfall specific to each District. Each Volume II provides design and performance standards specific to the geographical area of each District. Volume II applies whether an ERP application is processed and acted on by DEP, a District, or a delegated local government. More specifically, it provides:

- Design and performance standards and criteria for water quality and quantity, including those for specific types of stormwater management systems, dams, impoundments, reservoirs, works, and appurtenant works;
- Standards and criteria pertaining to special basins that may exist within the geographic area of each District;
- Standards and criteria pertaining to flood protection; and
- Design and performance standards for dams.
- The design and performance standards and criteria above are also applicable to inspections, compliance, and enforcement.

Volume II primarily applies to activities that require the services of a registered professional to design a stormwater management system. A stormwater management system is defined in Sections 373.403(10) and 403.031(16), F.S., as "a system that is designed and constructed or implemented to control discharges which are necessitated by rainfall events, incorporating methods to collect, convey, store, absorb, inhibit, treat, use, or reuse water to prevent or reduce flooding, overdrainage, environmental degradation, and water pollution or otherwise affect the quantity and quality of discharges from the system." This includes most activities that create new impervious surface or that alter surface water flows.

Volume II generally is not applicable to the construction, alteration, modification, maintenance, or removal of projects that cause no more than an incidental amount of stormwater runoff, such as:

- An **individual**, single-family residence, duplex, triplex, or quadruplex **that is not part of a larger plan of development**.
- A "stand-alone" seawall, riprap revetment, other shoreline stabilization structure, and docks and piers.
- "Stand-alone, in-water" projects such as channel dredging, channel markers, mooring piles and buoys, and water testing equipment. Dredged material disposal sites are subject to specific design and performance standards (see **Volume II**).
- Activities that do not add more than a de minimis amount of impervious surface, such as the installation of overland and buried electric and communication transmission and distribution lines.
- Activities that qualify for an exemption in Rule 62-330.051, F.A.C. (see additional discussion in **sections 3.2 through 3.2.7 of this Volume**).
- Activities that qualify for a general permit (as provided in Rules 62-330.410 through 62-330.635, F.A.C., and discussed in **sections 3.1.3 and 4.2.2 of this Volume).**

Activities that qualify for the "10/2" general permit in Section 403.814(12), F.S., are not regulated under Chapter 62-330, F.A.C. (see Section 3.1.3 of this Volume for additional information on this general permit).

Many Districts have "special basins." Activities within those basins must comply with the applicable special basin criteria. Those basins are listed below; detail on the allowable activities in those basins is described in more detail in the Volume II for each District:

- Within the Northwest Florida Water Management District – Special Basin Criteria for Sensitive Karst Areas, **sections 13.0 through 13.4**, including Appendix A, in Volume II
- Within the Suwannee River Water Management District – Section 5.9 of Volume II and Chapter 40B-4, F.A.C. (Works of the District)
- Within the St. Johns River Water Management District – Chapter 40C-41, F.A.C. (Surface Water Management Basin Criteria) and Sections 24.0 through 24.8.3 of Volume II
- Within the South Florida Water Management District –
  - Chapter 40E-41, F.A.C., Surface Water Management Basin and Related Criteria
  - Chapter 40E-62, F.A.C., Works and Lands of the District Management Plans
  - Chapter 40E-63, Everglades Program
  - Rules 62-312.400 through 62-312.460, F.A.C. – activities within the Outstanding Florida Waters of Monroe County

Neither volume of this Handbook applies to "grandfathered activities" as described in **section 3.1.2**, below, except where those projects are modified, altered, abandoned, or removed in such a way as to require a permit under Chapter 62-330, F.A.C.

Throughout the Handbook Volumes, whenever there is a reference to the primary number of a section (such as "section 1.3"), the reference shall apply to all subsections of that section (such as 1.3.1 through 1.3.6), unless specified otherwise. In addition, for brevity, all future references to "this Volume," "Volume I," and "Volume II," represent references to the respective Volume or Volumes of the Applicant's Handbook.

1.2 Contacts and Division of Responsibilities

Applications, notices, and inquiries should be sent to the Agency that is responsible for the type of activity, as described in the Operating or Delegation Agreement in effect at the location of the

project. The Operating and Delegation Agreements between the Agencies are incorporated by reference in subsection 62-330.010(3), F.A.C., and are accessible at https://floridadep.gov/ogc/ogc/content/operating-agreements. They identify which Agency is responsible for the review and agency action on particular types of activities. The Operating Agreements between DEP and the SRWMD, SJRWMD, SWFWMD, and SFWMD are fundamentally similar; the Agreement between DEP and the NWFWMD differs due to funding limitations within that District. Each Delegation Agreement is specific to the respective local government that has been delegated to implement the ERP program on behalf of DEP or District.

The geographic boundaries, and office responsibilities, and contact information for the Agencies are shown in **Appendix A**. Section 373.069(2), F.S., contains legal descriptions of the boundaries of each District.

ERP staff of the Agencies may be contacted for additional information regarding such things as:

- How and to whom to submit applications and notices;
- Permit requirements and processing procedures;
- Assistance with interpreting the ERP rules, and completing an application or notice;
- Pre-application meetings;
- The status of applications and notices received; and
- Complaints related to potential violations under Part IV of Chapter 373, F.S.

Copies of application and notice forms, other documents incorporated by reference in Chapter 62-330, F.A.C., and copies of the rules that apply to the ERP program may be obtained at https://floridadep.gov/water/water/content/water-resource-management-rules#ERP .

1.3 Other Authorizations and Relationship to Other Governmental Entities

Issuance of a permit or verification of qualification for an exemption or general permit under Chapter 62-330, F.A.C., does not:

(a) Convey or create to the person any property right, or any interest in the real property;

(b) Authorize any entrance or activities on property that is not owned or controlled by the person; or

(c) Relieve persons from obtaining all other required licenses, permits, and authorizations under applicable state, federal, or local statute, rule, or ordinance. Persons are advised to obtain all required authorizations prior to constructing, altering, operating, maintaining, removing, or abandoning projects regulated under the ERP program.

Additional information on the distribution of permit applications to, and coordination with, other governmental agencies is discussed in sections **5.3.5 and 5.5.2 through 5.5.2.2** of this Volume.

1.3.1 U.S. Army Corps of Engineers (USACE)

Applicants may wish to consult with the applicable processing office of the USACE (see the Jacksonville District Regulatory Division Sourcebook online), and the local government if they have a wetlands regulatory program regarding any additional permitting and mitigation design considerations that may need to be addressed before, or concurrently with, submitting an application to the Agencies. Such coordination may avoid the need to redesign and modify the project to meet the requirements of those other regulatory agencies.

1.3.1.1 Federal Coordination, Water Quality Certification, and Coastal Zone Consistency Concurrence

The USACE, DEP, and the Districts have an Operating Agreement to coordinate the exchange of information between these agencies regarding permitting, compliance, and enforcement of activities regulated under Part IV of Chapter 373, F.S., that also require a Department of the Army (DA) permit under Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act of 1899, or Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972. Among other things this Agreement:

(a) Provides the process by which the Agencies and the USACE will facilitate sharing of information.

(b) Discusses how issuance of an ERP (including a general permit) shall also constitute a water quality certification or waiver thereto under the Clean Water Act for the required DA permit. The DA permits described above cannot be issued without a state water quality certification or waiver thereto.

The State of Florida has waived water quality certification for activities that are exempt from ERP permitting requirements. See the Operating Agreement for additional information. Additional information on the federal permitting program is available online in the Jacksonville District Regulatory Division Sourcebook.

The State of Florida has provided regional conditions applicable to water quality certifications for the Nationwide Permits issued by the USACE for use in Florida as well as for numerous regional and programmatic general permits issued by the Jacksonville District of the USACE. The Nationwide Permits can be found online in the Jacksonville District Regulatory Division Sourcebook. Applicants are advised that activities that qualify for USACE Nationwide, Regional, or General Permits are still subject to applicable ERP and any other state, local, or regional permitting requirements.

(c) Discusses how issuance of an ERP (including a general permit) in coastal counties also constitutes a finding of consistency or waiver thereto of the State's statutory authorities under Florida's federally approved coastal zone management program. Any required DA permit cannot be issued without applicable coastal zone consistency concurrence or waiver. Pursuant to Section 380.23(7), F.S., applications for federally permitted or licensed activities that qualify for an exemption under the ERP program are not eligible to be reviewed for federal consistency with Part IV of Chapter 373, F.S. The Corps or any designated Federal, State or local agency administering general permits on behalf of the Corps under 33 C.F.R. § 325.2(b)(2) may presume the Florida's coastal zone consistency concurrence for exempt activities, provided the activity receives any applicable authorization to use and occupy state-owned submerged lands under Chapter 253, F.S., and, for activities located within an Aquatic Preserve, Chapter 258, F.S., and the rules of the Florida Administrative Code adopted thereunder. The Corps or any designated Federal, State or local agency administering general permits on behalf of the Corps can act on the DA permit before the applicable authorization under Chapter 253, F.S., and, as applicable, Chapter 258, F.S., is obtained or granted, because it is understood such authorization must be obtained prior to persons using or occupying state-owned submerged lands.

1.3.1.2 State Programmatic General Permit (SPGP) and Programmatic General Permits (PGPs)

The USACE has issued a permit (a SPGP) that delegates to certain Agencies the authority to verify whether certain activities qualify for a federal dredge and fill permit under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. The SPGP streamlines permitting by not requiring persons who are conducting the activities to be subject to separate permitting review of qualifying activities by the USACE.

The procedures and scope of the SPGP, including any coordination agreements between the USACE and the Agencies to implement the SPGP, can be viewed at https://floridadep.gov/water/submerged-lands-environmental-resources-coordination/content/federal-permits-and-coordination and online in the Jacksonville District Regulatory Division Sourcebook.

The Agency will determine upon receipt of an ERP application or notice if the activity qualifies for the SPGP. These activities are subject to several conditions and limitations, so not all projects within the SPGP activity categories will qualify for the SPGP.

If the requested activity does not qualify for the SPGP, the Agency will notify the applicant so the applicant may submit a separate application to the USACE so they may begin processing any required USACE permit.

The USACE also has issued other PGPs, some of which authorize the Agencies to further eliminate the need for separate federal permitting, for example SAJ 111 within the St. Johns River Water Management District.

More information on the SPGP and other PGPs is available at https://floridadep.gov/water/submerged-lands-environmental-resources-coordination/content/federal-permits-and-coordination and online in the Jacksonville District Regulatory Division Sourcebook.

1.3.2 Relationship to National Pollutant Discharge Elimination System (NPDES) Permit Program

In October of 2000, the U.S. Environmental Protection Agency authorized DEP to implement several components of the National Pollutant Discharge Elimination System (NPDES) permitting program, several of which are related to activities regulated under the ERP program. Although delegated to DEP, NPDES permitting *is a separate federal permit program;* ***it is not linked to the state ERP***. It also is not delegated to the WMDs at this time. Therefore, applicants are advised to obtain *both* any required NPDES and ERP prior to construction.

Sections 1.3.2 through 1.3.2.2 of this volume are purely informational and are intended to make ERP applicants aware of possible interactions between ERP and NPDES regulatory requirements. In all cases, the procedures, standards and criteria of the applicable NPDES program, as adopted under state and federal law, shall control.

1.3.2.1 NPDES Stormwater Construction

The following construction activities are subject to NPDES stormwater permitting, under Section 403.0885, F.S. (see https://floridadep.gov/Water/Stormwater):

An NPDES stormwater construction generic permit is required for any construction activities

that:

(a) **Disturb** (includes soil disturbance, clearing, grading, and excavating) one or more acres of land, or disturb less than one acre of land that is part of a **common plan of development or sale**; and

(b) Discharge stormwater to surface waters of the state or to surface waters of the State through a municipal separate storm sewer system (**MS4**).

Responsible Authorities must apply, separately from the ERP, either for an individual NPDES stormwater construction permit or for coverage under the "Generic Permit for Stormwater Discharge from Large and Small Construction Activities" under paragraph 62-621.300(4)(a), F.A.C., and found at https://www.flrules.org/Gateway/reference.asp?No=Ref-04265, also referred to as the Construction Generic Permit (CGP). The Responsible Authority of a construction activity is ultimately responsible for obtaining and complying with either permit, in addition to all applicable ERP requirements. The CGP allows you to discharge surface stormwater and, optionally, produced groundwater associated with **large** or **small** construction activity to waters of the State, either directly or through an MS4. More information on the CGP is available at https://floridadep.gov/Water/Stormwater.

1.3.2.2 NPDES Dewatering

A generic permit has been issued under subsection 62-621.300(2), F.A.C., for any person constructing or operating a system discharging produced ground water (i.e., a dewatering system) from any non-contaminated site activity that discharges by a point source to surface waters of the State; this generic permit is associated with activities that are designed and operated in accordance with the general conditions in Rule 62-621.250, F.A.C. Additional information on this permit is available at: https://floridadep.gov/water/industrial-wastewater. NPDES permit coverage for dewatering operations can also be obtained via the CGP for construction activities, as described in **1.3.2.1, above.**

1.3.3 Linkage with State-owned Submerged Lands Authorizations

Activities located on sovereignty submerged lands (as defined in subsection 18-21.003, F.A.C.,) also require a proprietary authorization from the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees) to use such lands under Chapter 253, F.S., and Chapter 18-21, F.A.C., and, if located in an aquatic preserve, Chapter 258, F.S., and Chapter 18-18 or 18-20, F.A.C. For the purposes of Chapter 62-330, F.A.C., and the Applicant's Handbook, those lands are referred to as "state-owned submerged lands," in Section 2.0(a)94, below. With the exceptions in Section 253.03(7)(b), F.S., and paragraph 18-21.005(1)(a), F.A.C., proprietary authorization is required for most activities on state-owned submerged lands, whether it requires a regulatory permit under Part IV of Chapter 373, F.S., is exempt from permitting, or falls below permitting requirements.

DEP and the Districts act as staff to the Board of Trustees, and, in accordance with the Operating Agreement between the Agencies, will process all applications involving work on state-owned submerged lands (see Appendix A of this Handbook). These Agencies have delegated authority from the Board to approve or deny most projects, but for some types of projects, the final decision to approve or deny the state-owned submerged lands authorization rests with the Governor and Cabinet, who serve as the Board of Trustees (see Rule 18-21.0051, F.A.C.).

The application form adopted as Form 62-330.060(1), includes an application for a permit under Part IV of Chapter 373, F.S., as well as a request for authorization to use state-owned submerged lands, when such lands are involved; applicants are not required to submit a separate application for such authorization. Upon receipt of the application, or of a notice to use a general permit or a determination of an exemption, staff will examine the application or notice to determine whether the activity appears to be located, in whole or in part, on state-owned submerged lands. Where necessary, staff will request a title determination from DEP's Division of State Lands. Staff will then determine if authorization is required to perform the activities on those lands, or if it is automatically authorized [as a Consent by Rule—see subsection 18-21.005(1)(b), F.A.C.]. Activities located in one of the state's Aquatic Preserves must receive a separate written authorization in accordance with Chapter 258, F.S., and Rule 18-18 (within the Biscayne Bay Aquatic Preserve) or 18-20, F.A.C., (in all other Aquatic Preserves) prior to initiating any work. Other activities on state-owned submerged lands are subject to needing a letter of consent, an easement or lease, in accordance with Rule 18-21.005, F.A.C., and Chapter 253, F.S.

The approval or denial of an individually processed ERP application is linked with the approval or denial of any required state-owned submerged lands application under Section 373.427, F.S. This linkage is described in Rules 62-330.075 and 18-21.00401, F.A.C. Activities that require an individually-processed ERP cannot become complete until all required state-owned submerged lands information has been submitted as part of the permit application. In addition, the ERP cannot be issued unless a determination has been made that the related state-owned submerged lands application also can be issued. If an activity meets all the requirements for issuance of an ERP, but does not meet all the requirements for issuance of the state-owned submerged lands authorization, the ERP must be denied. Conversely, if the activity meets all the state-owned submerged lands requirements, but does not meet the conditions for issuance of the ERP, the state-owned submerged lands application and the ERP will be denied.

Activities that qualify for a general permit or an exemption are not linked. In such cases, even though an activity may be authorized by the general permit or exemption, construction, alteration, modification, maintenance, operation, abandonment, or removal of the project may not commence until the required state-owned submerged lands authorization also has been granted.

1.3.4 Consumptive Uses of Water

Section 373.406(1), F.S., states that "Nothing herein, or in any rule, regulation, or order adopted pursuant hereto, shall be construed to affect the right of any natural person to capture, discharge, and use water for purposes permitted by law."

A water use or consumptive use permit, and possibly a water well construction permit, may be required from the applicable District prior to constructing, altering, or operating projects regulated under Chapter 62-330, F.A.C., that also involve or require the withdrawal, reservations, and other uses of water in accordance with the applicable District rules. Some activities requiring a water use or consumptive use permit cannot be issued until the applicable permit under Part IV of Chapter 373, F.S., is complete and receives staff recommendation for approval.

Additional discussion on water use and consumptive uses of water is available at https://floridadep.gov/water-policy, and at the website of each of the Districts.

1.3.5 Mine Reclamation

Chapter 378, F.S., requires the reclamation of lands disturbed by mining operations, including lands disturbed by the operation of a borrow pit where the extracted materials will be used offsite for commercial, industrial or construction use. Under the Operating Agreements between DEP and the Districts, a District will process the ERP application for certain mines. However, the Districts do not have delegated authority to process the reclamation authorization. Applicants for mining activities are advised to contact DEP's Mining and Mitigation Program concerning the reclamation requirements. Mine operators are required to provide to DEP either a Conceptual Reclamation Plan or a Notice of Intent to Mine or Mining Other Resources unless exempt by Section 378.804, F.S.

1.4 Statutes and Rules

1.4.1 Statutes

The ERP program is authorized under Part IV of Chapter 373 F.S. More specifically, Section 373.4131, F.S., authorizes implementation of the statewide ERP rules. Chapter 120, F.S. (Administrative Procedures Act) also governs licensing, rulemaking, and administrative procedures under the ERP program. Chapter 403, F.S. (Environmental Control) governs aspects of the ERP program related to water quality, program implementation, exemptions, and general permits. Copies of these statutes are available at: http://www.leg.state.fl.us/Statutes/index.cfm?Tab=statutes&submenu=1 and from any Agency office.

1.4.2 Rules

Chapter 62-330, F.A.C., establishes the types of activities that require a permit, activities that do not require a permit, the procedures for processing a permit, the conditions for issuance of a permit, general permit conditions, and the forms associated with applications, notices, and permits. It also provides for general permits, which are pre-issued for specified activities that have been determined by rule to have minimal individual and cumulative impact.

The following additional rules of the Florida Administrative Code are related to implementing Chapter 62-330, F.A.C. Copies of the current rules are available at: https://www.flrules.org/. Some of these rules have been repealed, but are still applicable to activities that are "grandfathered" (see section 3.1.2 of this Volume); text of the repealed rules is still available, from the websites of the applicable Agency, and from the office of that Agency. This list is not comprehensive; other state, federal and local rules and regulations also may be required for an activity.

- Chapters 28-103 through 28-108, F.A.C. (Uniform Rules of Procedure) — provide uniform rules of procedure for all state agencies regarding activities such as processing of variances, administrative hearings, mediation, and licensing. Many of these uniform procedures have been superseded by exceptions to the uniform rules of procedure in Chapter 62-110, F.A.C. (specific to DEP), and in the rules of the applicable Districts.
- Chapter 62-4 (Permits) —Rule 62-4.242, F.A.C., provides antidegradation requirements for activities located in Outstanding Florida Waters. Rule 62-4.244, F.A.C., provides criteria for mixing zones. Subsection 62-4.050(4)(h), F.A.C., provides the schedule of processing fees required for applications, notices, and petitions for ERP activities that are the responsibility of DEP and the NWFWMD.
- Chapter 62-25, F.A.C. (Regulation of Stormwater Discharge) — applies to stormwater treatment systems that qualify for grandfathering under Sections 373.414(11), (12), (13), (14), (15), (16), or 373.4145(6), F.S. Systems constructed under Chapter 62-25, F.A.C., are authorized to be operated in perpetuity, and maintenance may be conducted under such systems without a permit under

Chapter 62-330, F.A.C., in perpetuity, provided the terms and conditions of the permit, exemption, or other authorization under Chapter 62-25, F.A.C., continue to be met, and provided the work is conducted in a manner that does not cause violations of water quality standards. However, if the system is altered, modified, expanded, abandoned, or removed, it is subject to being regulated by Chapter 62-330, F.A.C.

- Chapter 62-40, F.A.C. (Water Resource Implementation Rule) — provides water resource implementation goals, objectives, and guidance relating to water resources. This includes guiding principles for stormwater and surface water management programs (including the basis for minimum design criteria for the stormwater management systems), flood protection, natural systems protection and management, minimum flows and levels, and protection measures for surface water resources (including the goals for implementation of erosion and sediment control measures).
- Chapter 62-302, F.A.C. (Surface Water Quality Standards) — provides the State's numeric and narrative water quality standards criteria for surface waters, lists the classes of waters in Florida, and lists waters that are designated as Outstanding Florida Waters. Also includes the state's anti-degradation requirements.
- Chapters 62-303 (Identification of Impaired Surface Waters), 62-304, (Total Maximum Daily Loads), and 62-306, F.A.C. (Water Quality Credit Trading) — provide for identification of waters that do not meet state water quality standards and that are subject to pollution limits and recovery plans. Discharges of pollutants that cause or contribute to such impairment are subject to meeting net improvement requirements, as discussed in section 10.2.4.5 of this Volume and Volume II.
    - Sections 62-312.400 through 62-312.460, F.A.C. – establish special procedures and criteria for dredging and filling within the Outstanding Florida Waters in Monroe County that are used in combination with Chapter 62-330, F.A.C. The remainder of this chapter has been repealed, but can continue to be used as it existed prior to the repeal for dredging and filling in surface waters of the state (as defined in Rule 62-312.030, F.A.C.) for applicable activities "grandfathered" under Section 373.414(11), (12), (13), (14), (15), (16), 373.4131(4), or 373.4145(6), F.S. Grandfathered rule sections are retained on DEP website at https://floridadep.gov/water/water/content/water-resource-management-rules#erp.
- Chapter 62-340 (Delineation of the Landward Extent of Wetlands and Surface Waters) — provides the procedures and methodology used by all state and local government agencies in Florida to delineate the landward extent of wetlands and other surface waters.
- Chapter 62-341 (Noticed General Environmental Resource Permits) — All of this chapter was transferred to Chapter 62-330, F.A.C., on June 4, 2012. This chapter now applies only for those activities that can be constructed within the five years of the date notice was received by DEP of the intent to use the applicable noticed general permit, or within five years of the date DEP verified that the requested activities qualified for the noticed general permit, whichever is later. Such activities remain controlled under the rules that existed prior to Chapter 62-330, F.A.C. [10-1-13]. This grandfathered rule is retained on DEP website at https://floridadep.gov/water/water/content/water-resource-management-rules#erp.
- Chapter 62-342 (Mitigation Banks) – applies to projects proposed to be constructed and operated as a mitigation bank, and to persons seeking to purchase mitigation credits from such banks. The criteria of this chapter apply in addition to the permitting requirements of Chapter 62-330, F.A.C.
- Chapter 62-343 (Environmental Resource Permit Procedures) — contains the procedures used by DEP to review and take agency action on applications for ERPs under Part IV of Chapter 373, F.S., that are "grandfathered" under Chapter 62-330, F.A.C. More specifically, it is used in conjunction with the version of Chapter 62-330, F.A.C., in effect prior to October 1, 2013, which identifies the rules of the water management districts that are used when review and agency action

on the ERP is the responsibility of DEP), and Chapter 62-341, F.A.C. (Noticed General Environmental Resource Permits). Together, those rule chapters apply to activities that were permitted, exempt from permitting, or that were subject to an application that was complete prior to the effective date of the rules adopted under Section 373.4131, F.S. This grandfathered rule is retained on DEP website at https://floridadep.gov/water/water/content/water-resource-management-rules#erp.

- Chapter 62-344 (Delegation of the Environmental Resource Permit Program to Local Governments) — provides procedures for delegating all or a portion of the ERP program to qualified local governments.
- Chapter 62-345 (Uniform Mitigation Assessment Method) — in accordance with Section 373.414(18), F.S., this is the sole methodology to be used to determine the amount of mitigation required to offset otherwise unpermittable adverse impacts to wetlands and other surface waters, and the amount of mitigation that is provided by proposed mitigation. This rule does not assess whether the adverse impacts meet other criteria for issuance of a permit, or whether the mitigation is appropriate to offset adverse impacts.
- Chapter 62-346 (Environmental Resource Permitting in Northwest Florida) – applicable to activities within the geographical area of the NWFWMD that were permitted, constructed, exempt from permitting, legally in existence, or subject to an application under that chapter that was complete, including activities that qualified for a noticed general permit under Chapter 62-341, F.A.C., prior to the effective date of the rules adopted under Section 373.4131, F.A.C. This grandfathered rule is retained on DEP website at https://floridadep.gov/water/water/content/water-resource-management-rules#erp.
- Chapter 62-520 (Ground Water Classes, Standards, and Exemptions)
- Chapter 62-532 (Water Well Permitting and Construction Requirements)
- Chapter 62-550 (Drinking Water Standards, Monitoring, and Reporting)
- Chapter 62-555 (Permitting, Construction, Operation, and Maintenance of Public Water Systems)
- Chapter 62-621 Generic Permits) – sets forth procedures to obtain a type of general National Pollutant Discharge Elimination System (NPDES) permit issued under Section 403.0885, F.S., and 40 CFR 122.28, and a type of "Non-NPDES Generic Permit" issued under Section 403.087, F.S. These are alternatives to individual permits for certain wastewater facilities and other activities that: involve the same or substantially similar types of operations; discharge the same types of wastes or engage in the same types of residuals or industrial sludge use or disposal practices; require the same effluent limitations, operating conditions, or standards for residuals or industrial sludge use or disposal; require the same or similar monitoring.
- Chapters 40B-1, 40C-1, 40D-1, and 40E-1, F.A.C. – provide the fee schedules and certain administrative details associated with permitting of applications that are the responsibility of the SRWMD, SJRWMD, SWFWMD, and SFWMD, respectively.
- Chapters 40A-2, 40B-2, 40C-2, 40D-2, and 40E-2, F.A.C. — provide the regulatory requirements covering withdrawals, reservations, and other uses of water.
- Within the SRWMD, Chapter 40B-4, F.A.C., provides the permitting requirements for activities located within Works of the SRWMD. Chapters 40B-4, 40C-4, 40D-4, and 40E-4, F.A.C., also provide the standards and criteria, and general conditions for, issuance of an ERP within the SRWMD, SJRWMD, SWFWMD, and SFWMD, respectively, for an application that was complete or permitted prior to the effective date of the rules adopted under Section 373.4131, F.S., or that were legally in existence on that date. Portions of those rules remain in effect under the ERP program, the text of which is available at https://www.flrules.org/, but most of these rules have been repealed, and are applicable only for grandfathered activities. The text of these rules applicable to grandfathered activities remains available at the website of the respective Agency.
- Chapter 40A-6 (Works of the District) — provides the permitting requirements for activities that withdraw water from, discharge to, are located on, or otherwise use a Works of the NWFWMD,

primarily involving certain lands within Megginnis Creek-Megginnis Arm in Leon County. Chapters 40E-6, 40E-61, 40E-62, and 40E-63, F.A.C., provide the permitting requirements for activities are located on, or otherwise use a Works of the SFWMD, including activities within the Everglades and Lake Okeechobee.

- Chapters 40B-8, 40C-8, 40D-8, and 40E-8 — provide minimum water level and flow requirements for specified surface waters within each applicable District.
- Chapters 40C-40, 40D-40, and 40E-40, F.A.C. – provide the requirements for, conditions for issuance, and general conditions applicable to, standard general, general, and standard permits within the SJRWMD, SWFWMD, and SFWMD, respectively, that were in an application that was complete or permitted prior to the effective date of the rules adopted under Section 373.4131, F.S. The text of these rules applicable to grandfathered activities remains available at the website of the respective Agency.
- Chapters 40A-44 and 40C-44, F.A.C. — rules of the NWFWMD and SJRWMD that provide the permitting requirements for agriculture and, in the NWFWMD, silviculture activities that do not qualify for the exemptions in Section 373.406, F.S.
- Chapters 40B-400, 40C-400, 40D-400, and 40E-400, F.A.C. — rules of the Districts that adopted noticed general permits for activities under the ERP rules in effect prior to the effective date of the rules adopted under Section 373.4131, F.S., as well as the no-noticed general permit applicable within the South Florida Water Management District in Rule 40E-400.315, F.A.C. The text of these rules applicable to grandfathered activities remains available at the website of the respective Agency.

1.5 Administrative Criteria

1.5.1 Ownership and Control

(a) In accordance with Rule 62-330.060, F.A.C., and paragraph 62-330.301(1)(j), F.A.C., an applicant must provide reasonable assurance that permitted activities will be conducted by an entity with financial, legal, and administrative capability of ensuring that the activity will be undertaken in accordance with the terms and conditions of a permit, if issued, and to ensure staff of the Agencies have legal authority to access the land for inspections and monitoring, as discussed in **section 1.7, below**. Compliance with this requirement must be demonstrated through subsections 62-330.060(3) and (4), F.A.C., the certification required in the Application Form 62-330.060(1), and **section 12.0 of this Handbook**.

(b) In addition to the above, persons proposing to conduct activities on state-owned submerged lands that are riparian to uplands must submit satisfactory evidence of sufficient upland interest in accordance with section 4.2.3(h) of this volume.

1.5.2 Phased Projects

Projects developed in phases will normally require the submission of a master plan showing the applicant's contiguous land holdings. The primary concerns of the Agency are to ensure continuity between phases, and satisfactory completion and operation of individual phases if the overall project is not completed as planned. Applicants desiring approval in concept of the master plan should consider submitting an application for a conceptual approval permit encompassing the total master plan. A conceptual approval permit also may be sought for phased construction as part of urban redevelopment or infill. An application to construct the first phase of the overall plan may be included as a part of the initial application for the conceptual approval permit. Procedures for requesting a conceptual approval permit are in Rules 62-330.055 and 62-330.056, F.A.C., and **sections 3.4 through 3.4.6** of this Volume.

Applications to construct or alter phases of a project for which no conceptual permit has been obtained may be considered only when each phase can be constructed, operated, and maintained totally independent of the future phases, and, an overall plan for the full build out is submitted with the application, including an overall schedule for implementing the plan and identification of any future lands that may need to implement the future phases.

1.5.3 Land Use Considerations

The proposed land use to be served by an activity regulated under Chapter 62-330, F.A.C., does not have to be consistent with the local government's comprehensive plan or existing zoning for the site. However, it is strongly recommended that an applicant obtain the necessary land use approvals from the affected local government prior to or concurrent with the ERP application, since these approvals often contain conditions which impact the overall project design and, hence, the nature of the proposed activity. By obtaining these local government approvals first or concurrently, the applicant can reduce or eliminate the need for subsequent permit modifications which may be necessary as a result of conditions imposed by the local government.

When permits or authorizations issued or granted by other agencies materially affect the design or footprint of works authorized under Chapter 62-330, F.A.C., the permittee shall contact the Agency to determine if a modification of the permit is necessary under Rule 62-330.315, F.A.C., and sections 6.2 through 6.3.2.3 of this Handbook.

1.5.4 Water and Wastewater Service

As applicable, the applicant for an individual permit will be requested to provide information on how utilities, such as wells, sewage treatment or disposal (including septic tanks), lift station wet wells, and sewage force mains within the project area may affect any stormwater treatment and conveyance system, and whether activities to install or alter utility services may involve any work in wetlands or other surface waters, or any work that may affect surface water flows on or off-site, such as through the creation of temporary dikes and trenches during the installation of utility pipes and lines. This includes the status of any existing or proposed water use or consumptive use permit, if applicable. If wastewater disposal is accomplished on-site, additional information normally will be requested regarding separation of wastewater and stormwater systems.

1.5.5 Stormwater Management Areas

Areas reserved for stormwater management shall be shown on construction plans and legally reserved for that purpose by dedication on the plat or protected through deed restrictions, easements, or other binding covenants so that subsequent owners or others may not remove such areas from their permitted use. Stormwater management areas, including maintenance easements, shall be connected to a public road or other location from which operation and maintenance access is legally and physically available. Impervious areas designed for purposes such as roads, parking lots, sidewalks, or public access shall not be used as stormwater management areas if the level or duration of standing or flowing water on these areas is a risk to vehicular traffic or pedestrian use.

1.5.6 Legal Authorization for Offsite Areas

Applicants proposing to use offsite areas not under their control to satisfy the requirements for issuance in Rule 62-330.301, F.A.C., must obtain legal authorization to do so prior to permit issuance to use the area. For example, an applicant who proposes to locate the outfall pipe from a stormwater basin to the receiving water on an adjacent property owner's land must obtain a drainage easement or other appropriate legal authorization from the adjacent owner. A copy of the legal authorization shall be submitted with the permit application when required to do so under section 4.2.3(d) of this Volume. Authorization to use offsite mitigation areas is discussed in section 10.3.1.2.1 of this Volume.

1.6 Enforcement Authority

Parts I and IV of Chapter 373, F.S., provide for the enforcement of Agency rules by administrative and civil complaint. The Agency also has the authority to obtain the assistance of county and city officials in the enforcement of the rules (see Sections 373.603 and 373.609, F.S.). Any person who violates any provisions of Chapter 373 or 403, F.S., the rules adopted thereunder, or orders of the Agency, is subject to civil fines or criminal penalties as provided in Section 373.430, F.S.

1.7 Permission to Inspect, Monitor and Sample

Each application must include permission signed by the landowner, easement or lessee holder, or their legal designee that Agency staff may access the property where the proposed activity is located for purposes of inspecting, sampling, and monitoring the land subject to the application to determine whether the activity can meet (and if a permit is issued, is meeting) permitting criteria and permit conditions. If this is not possible, the applicant must supply the Agency with written authorization through other means (such as obtaining permission from leases and easement holders) for staff to enter onto, inspect, and conduct sampling of the site. This is necessary to prevent claims of trespass, and to ensure the applicant, and potential permittee, has approval from the entity that has sufficient real property interest over the land subject to the application to construct, alter, operate, and maintain, or remove, the project.

In the case of an easement, the easement must specifically provide for the right of governmental entities to be on the lands subject to the easement for such purposes as compliance, or such right must flow through necessity from the explicit grant of the easement.

Each permit is subject to the condition that Agency authorized staff, upon proper identification, will have permission to enter, inspect and observe, and collect samples of the activity to ensure compliance with the approved plans and specifications included in the permit. See Part 4 of Form 62-330.060(1) for additional information.

2.0 Definitions and Terms

(a) The definitions and terms below are used for purposes of Chapter 62-330, F.A.C., and this Volume I. **Section 2.1** of each District-specific Volume II contains additional definitions that apply to the design and performance standards and criteria for stormwater management systems, dams, impoundments, reservoirs, works, appurtenant works, and special basins as regulated in that District. Where a definition is in accordance with Florida Statutes, the statutory attribution is given as "[XX]."

1. "Abandon" or "Abandonment," means cessation of use and maintenance activities or responsibility for a system or part of a system in accordance with Section 373.426, F.S.

2. "Activity" or "Activities," means construction, alteration, operation, maintenance, abandonment, or removal of any stormwater management system, dam, impoundment, reservoir, works [including dredging or filling, as those terms are defined in Sections 373.403(13) and (14), F.S.], and appurtenant works.

3. "Alter" means to extend a dam or works beyond maintenance in its original condition, including changes which may increase or diminish the flow or storage of surface water which may affect the safety of such dam or works [Section 373.403(7), F.S.]. Routine custodial maintenance and repairs shall not constitute alterations.

4. "Agency" means the Department of Environmental Protection, the water management districts, and local governments delegated authority to implement the environmental resource permit program under Part IV of Chapter 373, F.S., in accordance with Section 373.441, F.S.

5. "Appurtenant works" means any artificial improvements to a dam which might affect the safety of such dam or, when employed, might affect the holding capacity of such dam or of the reservoir or impoundment created by such dam. [Section 373.403(2), F.S.]

6. "Aquifer" shall mean a geologic formation, group of formations, or part of a formation capable of yielding a significant amount of ground water to wells, springs or surface water.

7. "Aquatic plant" means a plant, including the roots, which typically floats on water or requires water for its entire structural support, or which will desiccate outside of water.

8. "Aquatic preserves" means those areas designated in Part II, Chapter 258, F.S.

9. "Artificial structure" means any object constructed or installed by man which has a water management effect, including, but without limitation thereof, dikes, levees, embankments, ditches, canals, conduits, channels, culverts, and pipes.

10. "Artificial waters," "artificial waterway," "artificially created waterway," or "artificial watercourse" means bodies of water that were totally excavated from uplands, do not overlap historic wetlands or other surface waters, and were not created as a part of a mitigation plan.

11. "As-Built drawings" means plans certified by a registered professional that accurately represent the constructed condition of a project, including identifying any substantial deviations from the permitted design. See subparagraph 62-330.310(4)(a)1, F.A.C.

12. "Borrow pit" means a location where the soil or other natural deposits on or in the earth are removed from their location so as to make them suitable for use to build up land. No processing is involved, except for the use of a scalping screen to remove large rocks, wood, and other debris. The materials are used more for their bulk than their intrinsic qualities.

13. "Canal" means a man-made trench, the bottom of which is normally covered by water, with the upper edges of its two sides normally above water. [Section 403.803(2), F.S.]

14. "Canopy" means the plant stratum composed of all woody plants and palms with a trunk four inches or greater in diameter at breast height, except vines.

15. "Channel" means a trench, the bottom of which is normally covered entirely by water, with the upper edges of one or both of its sides normally below water. [Section 403.803(3), F.S.]

16. "Common plan of development or sale" or "larger plan of other commercial or residential development" means any activity that facilitates the advancement of land use (such as multiple residences, a residential subdivision, or phased site development) on the subject property, or that comprises a total land area divided into multiple lots, parcels, tracts, tiers, blocks, sites, or units, if such areas are under common ownership or control. This includes any activity on contiguous real property that comprises a total land area divided into parcels, tracts, tiers, blocks, sites, or units, and is served by a common road or road network or common stormwater management systems within that land area. Areas of land that are divided by public or private roads are considered contiguous if such areas are under common ownership or control.

17. "Completion of construction" means the time when all components of the project are installed and fully functional or when the infrastructure is used for its intended purpose, whichever occurs first. For a phased system, "completion of construction" means the time when all components for a phase of the project are installed and fully functional, or when the infrastructure for a phase is used for its intended purpose, whichever occurs first.

18. "Construction" means the creation, alteration, or abandonment of any project, including placement of fill, land clearing, earthwork, or the placement or removal of structures. Cutting of trees or removal of vegetation is not considered land clearing, except where it involves stump removal, root raking, or grubbing.

19. "Construction phase" means that period necessary to construct, alter, abandon, or remove a system in accordance with the terms and conditions of an individual permit.

20. "Conversion," for purposes of wetland mitigation, means a man-made change to a wetland [as defined in Section 373.019(27), F.S.], or surface water by draining, filling, or other means which results in the permanent change of the wetland or surface water to an upland.

21. "Coral" means living stony coral and soft coral.

22. "Creation" means the establishment of new wetlands or surface waters by conversion of other land forms.

23. "Dam" means any artificial or natural barrier, with appurtenant works, raised to obstruct or impound, or which does obstruct or impound, any of the surface waters of the state [Section 373.403(1), F.S.]

24. "Department" means the Florida Department of Environmental Protection.

25. "Diameter at Breast Height (DBH)" means the diameter of a plant's trunk or main stem at a height of 4.5 feet above the ground.

26. "Direct discharge" means a discharge without prior opportunity for mixing and dilution sufficient to prevent a lowering of the existing ambient water quality.

27. "Direct Hydrologic Connection" means a surface water connection which occurs on an average of 30 or more consecutive days per year. In the absence of reliable hydrologic records, a continuum of naturally occurring wetlands may be used to establish a direct hydrologic connection.

28. "Discharge" means to allow or cause water to flow.

29. "District" means a water management district created pursuant to Section 373.069, F.S.

30. "Dock" means a fixed or floating structure extending from land out over water, including access walkways, terminal platforms, catwalks, mooring pilings, lifts, davits, and other associated water-dependent structures, used for mooring and accessing vessels.

31. "Drainage basin" means a subdivision of a watershed [Section 373.403(9), F.S.].

32. "Drainage ditch" or "irrigation ditch" means a man-made trench that is dug for the purpose of draining water from the land or for transporting water for use on the land and that is not built for navigational purposes. [Section 403.803(7), F.S.]

33. "Dredging" means excavation, by any means, in surface waters or wetlands, as delineated in Section 373.421(1), F.S. Dredging also means the excavation, or creation, of a water body which is, or is to be, connected to surface waters or

wetlands, as delineated in Section 373.421(1), F.S., directly or via an excavated water body or series of water bodies [Section 373.403(13), F.S.]

34. "Ecological value" means the value of functions performed by uplands, wetlands and other surface waters to the abundance, diversity, and habitats of fish, wildlife, and listed species. These functions include, but are not limited to, providing cover and refuge; breeding, nesting, denning, and nursery areas; corridors for wildlife movement; food chain support; and natural water storage, natural flow attenuation, and water quality improvement, which enhances fish, wildlife and listed species utilization. [Section 373.403(18), F.S.]

35. "e-Permitting website" means the Agency's Internet address established to provide for submittal and viewing of applications and notices, responses to requests from the Agencies, reports, certifications, and other submittals.

36. "Embedded" means the placement of transmission or distribution lines, pipes or cables into the bottom of surface waters by minimal displacement of bottom material and without the creation of a trench, or trough, through the use of techniques such as plowing-in, weighing-in, or non-trenching jets.

37. "Endangered or threatened species" means those animal species that are identified as endangered or threatened by the US Fish and Wildlife Service, the National Marine Fisheries Service, or the Florida Fish and Wildlife Conservation Commission, as well as those plant species identified as endangered or threatened when such plants are located in a wetland or other surface water.

38. "Enhancement" means improving the ecological value of wetlands, other surface waters, or uplands in comparison to their current condition.

39. "Entrenchment" means the placement of transmission or distribution lines, pipes or cables into the bottoms of waters of the state by the creation of a defined trench, or trough, through the use of such devices as clamshells, dredges, trenching jets, or other devices that produce similar results.

40. "Estuary" means a semi-enclosed, naturally existing coastal body of water which has a free connection with the open sea and within which seawater is measurably diluted with fresh water derived from riverine systems. [Section 373.403(15), F.S.]

41. "Existing nesting or denning" refers to an upland site that is currently being used for nesting or denning, or is expected, based on reasonable scientific judgment, to be used for such purposes based on past nesting or denning at the site.

42. "Exotic species" means a plant species introduced to Florida, purposefully or accidentally, from a natural range outside of Florida, including naturalized exotic species (an exotic plant that sustains itself outside cultivation) and invasive exotic species (an exotic plant that not only has naturalized, but is expanding on its own in Florida native plant communities). Additional information on Florida's exotic plant species is available at: http://www.fleppc.org/.

43. "Farm pond" means a pond located on agricultural lands as defined in Section 193.461, F.S, used for agricultural activities as described in Section 403.927, F.S., and constructed, altered, maintained, and operated using the agricultural best management practices as provided in Section 403.927, F.S.

44. "Filling" means the deposition, by any means, of materials in wetlands or other surface waters, as delineated in Section 373.421(1), F.S. [Section 373.403(14), F.S.]

45. "Floodplain" means land area subject to inundation by flood waters from a river, watercourse, or lake. Floodplains are delineated according to their estimated frequency of flooding.

46. "Forested wetlands," for purposes of how this term is used in the exemptions and general permits in Chapter 62-330, F.A.C., means those wetlands where the canopy coverage by trees with a diameter at breast height of greater than 4 inches is greater than 10 percent, as well as those areas required to be planted with tree species to establish or reestablish forested wetlands pursuant to a permit issued, or enforcement action taken, under rules adopted under Part IV of Chapter 373, F.S., or Sections 403.91 through 403.929, F.S. (1984 Supp.), as amended, and those areas where the canopy has been temporarily removed but are expected to revegetate to a forested wetland if use of the area would remain unchanged.

47. "Governing Board" means the governing board of a water management district created under Section 373.069, F.S.

48. "Groundwater" means water beneath the surface of the ground, whether or not flowing through known and definite channels [Section 373.019(9), F.S.]

49. "Herbaceous wetlands," for purposes of how this term is used in the general permits in Chapter 62-330, F.A.C., means those wetlands dominated by non-woody vegetation that have less than a 10 percent canopy coverage of tree species with a diameter at breast height of greater than 4 inches, and/or subcanopy or woody shrub species with a diameter at breast height of one inch to four inches.

50. "Hydroperiod" means the duration and range of elevation of inundation in a wetland.

51. "Impaired water" means a water body or water body segment that does not meet its applicable water quality standards as set forth in Chapters 62-302 and 62-4, F.A.C., as determined by the methodology in Part IV of Chapter 62-303, F.A.C., due in whole or in part to discharges of pollutants from point or nonpoint sources.

52. "Impervious" for purposes of applying permitting thresholds and exemption criteria, means surfaces that do not allow, or minimally allow, the penetration of water, including semi-impervious areas, but excluding wetlands or other surface waters. For other purposes, "impervious" means all artificial surfaces that that are not pervious. Included as examples are building roofs and normal concrete and asphalt pavements.

53. "Impoundment" means any lake, reservoir, pond, or other containment of surface water occupying a bed or depression in the earth's surface and having a discernible shoreline. [Sections 373.403(3) and 373.019(10), F.S.]

54. "Insect control impoundment dikes" means artificial structures, including earthen berms, constructed and used to impound waters for the purpose of insect control. [Section 403.803(10), F.S.]

55. "Isolated wetland" means any area that is determined to be a wetland in accordance with Chapter 62-340, F.A.C., but that does not have any connection to other wetlands or other surface waters via wetlands or other surface waters as determined using Rule 62-340.600, F.A.C.

56. "Lagoon" means a naturally existing coastal zone depression which is below mean high water and which has permanent or ephemeral communications with the sea, but which is protected from the sea by some type of naturally existing barrier. [Section 373.403(16), F.S.]

57. "Listed Species" means those species that are endangered or threatened species (as defined in definition 2.0(a)37, above), or species of special concern (as defined in definition 2.0(a)95, below).

58. "Mail" shall mean when a document is properly addressed, stamped, and deposited in the United States mail, and the postmark date shall be the date of mailing. "Mail" also shall mean when the Agency electronically sends a document to the e-mail address provided to the Agency.

59. "Maintenance" or "Repair" means remedial work of a nature as may affect the safety of any dam, impoundment, reservoir, or appurtenant work or works, but excludes routine custodial maintenance. [Section 373.403(8), F.S.]

60. "Material," when used in the context of "filling," means matter of any kind, such as, sand, clay, silt, rock, dredged material, construction debris, solid waste, pilings or other structures, ash, and residue from industrial and domestic processes. The term does not include the temporary use and placement of lobster pots, crab traps, or similar devices or the placement of oyster cultch pursuant to Section 597.010, F.S.

61. "Mine" means an area of land that is related to the removal from its location of solid substances of commercial value found in natural deposits on or in the earth, so as to make the substances suitable for commercial, industrial, or construction use, but does not include excavation solely in aid of on-site farming or on-site construction, nor the process of prospecting. As used in Chapter 62-330, F.A.C., this does not include mining operations conducted in conjunction with land development that will result in residential, industrial, commercial, or land fill uses at the end of construction. Borrow pits that use extracted material in on-site locations are not mines. For the purposes of this definition, "on-site" means, "within the contiguous limits of an area of land under one ownership or control, and upon which agricultural or construction projects are taking place. Areas of land that are divided by public or private roads are considered contiguous if such areas are under one ownership or control."

62. “Mitigation” means an action or series of actions to offset the adverse impacts that would otherwise cause an activity regulated under Part IV of Chapter 373, F.S., to fail to meet the criteria set forth in Sections 10.1.1 through 10.2.8.2 of this Volume. Mitigation usually consists of restoration, enhancement, creation, preservation, or a combination thereof.

63. “Mitigation bank,” “Mitigation bank permit,” “Mitigation banker” or “banker,” “Mitigation credit,” and “Mitigation service area” shall have the same meanings as provided in Chapter 62-342, F.A.C.

64. “Natural systems” for the purpose of this rule means an ecological system supporting aquatic and wetland-dependent natural resources, including fish and aquatic and wetland-dependent wildlife habitat.

65. “Nuisance species” means any species of flora or fauna whose noxious characteristics or presence in sufficient number, biomass, or areal extent that prevents, or interferes with, uses or management of resources, and which are native or naturalized in the area where it occurs.

66. “Obstruction” means any fill, structure, work, appurtenant work, or system placed in waters, a floodway, or a work of the district which may impede the flow of water or otherwise result in increased water surface elevations.

67. “Offsite regional mitigation” means mitigation on land off of the site of an activity permitted under Part IV of Chapter 373, F.S., where an applicant proposes to mitigate the adverse impacts of only the applicant's specific activity as a requirement of the permit, which provides regional ecological value, and which is not a mitigation bank permitted under Section 373.4136, F.S. [Section 373.403(22), F.S.]

68. “Operate” or “operation” means to cause or to allow a project, or a completed independent phase thereof, to function.

69. “Ordinary high water line” or “OHWL,” for the regulatory purposes of Chapter 62-330, F.A.C., means that point on the slope or bank where the surface water from the water body ceases to exert a dominant influence on the character of the surrounding vegetation and soils. The OHWL frequently encompasses areas dominated by non-listed vegetation and non-hydric soils.

70. “Other surface waters” means surface waters as described and delineated pursuant to Rule 62-340.600, F.A.C., as ratified by Section 373.4211, F.S., other than wetlands.

71. “Other watercourse” means any canal, ditch, or other artificial watercourse in which water usually flows in a defined bed or channel. It is not essential that the flowing be uniform or uninterrupted. [Section 373.019(14), F.S.]

72. “Permit area” means the area where works occur as part of an activity requiring a permit under Part IV of Chapter 373, F.S., and any mitigation, buffer, and preservation areas, and all portions of the stormwater management system serving the project area.

73. "Pier" means a fixed or floating structure extending from land out over water, that is used primarily for fishing or swimming and not designed or used for mooring or accessing vessels.

74. "Pollution" is the presence in the outdoor atmosphere or waters of the state of any substances, contaminants, noise, or manmade or human-induced impairment of air or waters or alteration of the chemical, physical, biological, or radiological integrity of air or water in quantities or at levels which are or may be potentially harmful or injurious to human health or welfare, animal or plant life, or property or which unreasonably interfere with the enjoyment of life or property, including outdoor recreation unless authorized by applicable law. [Section 403.031(7), F.S.]

75. "Preservation" means the protection of wetlands, other surface waters or uplands from adverse impacts by placing a conservation easement as defined in and meeting the requirements of Section 704.06, F.S., over the property, or by donation of fee simple interest in the property to an entity having purposes as described in Section 704.06(3), F.S.

76. "Project" — see "system."

77. "Project area" means the area where works occur as part of an activity requiring a permit under part IV of Chapter 373, F.S., or Section 403.814, F.S.

78. "Prospecting" means activities considered normal and reasonably necessary to retrieve samples of subsurface geologic sediments for the specific purpose of locating, mapping, and determining the quality and quantity of sedimentary strata or natural deposits.

79. "Reclaimed water," except as specifically provided in Chapter 62-610, F.A.C., means water that has received at least secondary treatment and basic disinfection, and is reused after flowing out of a domestic wastewater treatment facility.

80. "Recreational path" means an improved lane, path, road, trail, or walkway, whether paved, cleared, or hardened with shell, clay, rock, or other materials, to provide a corridor for travel between destinations primarily by walking, biking, or use of non-internal combustion vehicles.

81. "Regional stormwater management system" means a system designed, constructed, operated, and maintained to collect convey, store, absorb, inhibit, treat, use or reuse stormwater to prevent or reduce flooding, overdrainage, environmental degradation and water pollution or otherwise affect the quantity and quality of discharges from multiple parcels and projects within the drainage area served by the regional system, where the term "drainage area" refers to the land or development that is served by or contributes stormwater to the regional system.

82. "Regional watershed" means a watershed as delineated in Rule 62-342.200, F.A.C.

83. "Residential Canal System" means those canals whose uplands are occupied predominantly by residential single-family or multi-family dwelling units.

84. "Registered Professional" means a professional registered or licensed by and in the State of Florida and practicing under Chapter 471, 472, 481, or 492, F.S.

85. "Remove" or "removal" means cessation of use and maintenance of a project, or part of a project, accompanied by elimination of all or part of the project.

86. "Reservoir" means any artificial or natural holding area that contains or will contain the water impounded by a dam. [Section 373.403(4), F.S.]

87. "Restoration" means converting back to a historic condition those wetlands, surface waters, or uplands that currently exist as a land form that differs from the historic condition. For phosphate mining and reclamation, "restoration" shall mean the recontouring and revegetation of the lands in a manner, consistent with the criteria and standards of Part II of Chapter 378, F.S., which will maintain or improve the water quality and functions of the biological systems present at the site prior to mining.

88. "Retention" means a system designed to prevent the discharge of a given volume of stormwater runoff into surface waters in the state by complete on-site storage. Examples are systems such as excavated or natural depression storage areas, pervious pavement with subgrade, or above ground storage areas.

89. "Reuse" means the deliberate application of reclaimed water, in compliance with Department and District rules, for a beneficial purpose.

90. "Riprap" means a sloping retaining structure or stabilization made to reduce the force of waves and to protect the shore from erosion, and consists of unconsolidated boulders, rocks, or clean concrete rubble with no exposed reinforcing rods or similar protrusions, and having a size large enough to be stable under normal hydrologic, tidal, and wave conditions unless a different specific size is specified by rule or permit.

91. "Routine custodial maintenance" means those activities described in **section 3.1.1** of this Volume.

92. "Seasonal High Water Level (SHWL)" means the elevation to which the ground and surface water can be expected to rise due to a normal wet season.

93. "Seawall" means a man-made wall or encroachment, except riprap, which is made to break the force of waves and to protect the shore from erosion. [Section 373.403(17), F.S.]

94. "Semi-impervious" means land surfaces that partially restrict the penetration of water; such as porous concrete and asphalt pavements, gravel, limerock, and certain compacted soils.

95. "Species of special concern" means those species identified as such by the Florida Fish and Wildlife Conservation Commission.

96. "State-owned submerged lands" means those lands defined as "sovereignty submerged lands" in Rule 18-21.003, F.A.C., which are: "those lands including but not limited to, tidal lands, islands, sand bars, shallow banks, and lands waterward of the ordinary or mean high water line, beneath navigable fresh water or beneath tidally-influenced waters, to which the State of Florida acquired title on March 3, 1845, by virtue of statehood, and which have not been heretofore conveyed or alienated. For the purposes of [Chapter 18-21] sovereignty submerged lands shall include all submerged lands title to which is held by the Board."

97. "State water quality standards" means water quality standards adopted pursuant to Chapter 403, F.S. [Section 373.403(11), F.S.], including standards composed of designated most beneficial uses (classification of waters), the numerical and narrative criteria applied to the specific water use or classification, the Florida anti-degradation policy (Rules 62-4.242 and 62-302.300, F.A.C.), and the moderating provisions contained in Chapters 62-4, 62-302, 62-520, and 62-550, F.A.C.

98. "Stormwater" means the flow of water that results from, and that occurs immediately following, a rainfall event.

99. "Stormwater management system" means a surface water management system that is designed and constructed or implemented to control discharges which are necessitated by rainfall events, incorporating methods to collect, convey, store, absorb, inhibit, treat, use, or reuse water to prevent or reduce flooding, over drainage, environmental degradation, and water pollution or otherwise affect the quantity and quality of discharges from the system. [Sections 373.403(10) and 403.031(16), F.S.]

100. "Stormwater harvesting" means capturing stormwater for irrigation or other beneficial use.

101. "Stormwater Retrofit" means a project that adds treatment, attenuation, or flood control to an existing stormwater management system or systems but does not serve new development or redevelopment.

102. "Stormwater utility" means the entity through which funding for a stormwater management program is obtained by assessing the cost of the program to the beneficiaries based on their relative contribution to its need. It is operated as a typical utility that bills services regularly, similar to water and wastewater services.

103. "Stream" means any river, creek, slough, or natural watercourse in which water usually flows in a defined bed or channel. It is not essential that the flowing be uniform or uninterrupted. The fact that some part of the bed or channel shall have been dredged or improved does not prevent the watercourse from being a stream. [Section 373.019(20), F.S.]

104. "Structure" means anything constructed, installed, or portable, the use of which requires a location on a parcel of land. It includes a movable structure while it is located on the land which can be used for housing, business, commercial, agricultural, or office purposes either temporarily or permanently.

105. "Submerged grassbeds" means any native, herbaceous, submerged vascular plant community that is growing on the bottoms of surface waters waterward of the mean high water line or ordinary high water line.

106. "Surface water" means water upon the surface of the earth, whether contained in bounds created naturally or artificially or diffused. Water from natural springs shall be classified as surface water when it exits from the spring onto the earth's surface. [Section 373.019(21), F.S.]

107. "Swale" means a man-made trench that:

(a) Has a top width-to-depth ratio of the cross-section equal to or greater than 6:1, or side slopes equal to or greater than three feet horizontal to one foot vertical;

(b) Contains contiguous areas of standing or flowing water only following a rainfall event;

(c) Is planted with or has stabilized vegetation suitable for soil stabilization, stormwater treatment, and nutrient uptake; and

(d) Is designed to take into account the soil erodibility, soil percolation, slope, slope length, and drainage area so as to prevent erosion and reduce pollutant concentration of any discharge. [Section 403.803(14), F.S.]

Note: when a swale is used for stormwater treatment, it must meet the standards and criteria in Volume II.

108. "System" or "surface water management system" means a stormwater management system, dam, impoundment, reservoir, appurtenant work, or works, or any combination thereof, including areas of dredging or filling, as those terms are defined in Sections 373.403(13) and (14), F.S. For purposes of Chapter 62-330, F.A.C., and this Handbook, the term "project" generally will be used in lieu of the term "system."

109. "Total land area" means land holdings under common ownership that are contiguous, or land holdings that are served by common surface water management facilities.

110. "Total maximum daily load," or TMDL, means the sum of the individual wasteload allocations for point sources and the load allocations for nonpoint sources and natural background as defined and applied in Chapter 62-303, F.A.C.

111. "Traversing work" means any artificial structure or construction that is placed in or across a stream or other watercourse, or an impoundment.

112. "Uplands" means areas that are not wetlands or other surface waters, as delineated pursuant to Rules 62-340.100 through 62-340.550, F.A.C., as ratified by Section 373.4211, F.S.

113. "Vertical seawall" is a seawall the waterward face of which is at a slope steeper than 75 degrees to the horizontal. A seawall with sloping riprap covering the waterward face to the mean high water line shall not be considered a vertical seawall.

114. "Vessel," is synonymous with "boat" as referenced in s. 1(b), Art. VII of the State Constitution, and includes every description of watercraft, barge, and airboat, other than a seaplane on the water, used or capable of being used as a means of transportation on water. [Section 327.02(43), F.S.]

115. "Water" or "waters in the state" means any and all water on or beneath the surface of the ground or in the atmosphere, including natural or artificial watercourses, lakes, ponds, or diffused surface water and water percolating, standing, or flowing beneath the surface of the ground, as well as all coastal waters within the jurisdiction of the state. [Section 373.019(22), F.S.]

116. "Waters of the state" shall be as defined in Section 403.031(13), F.S.

117. "Watershed" means the land area that contributes to the flow of water into a receiving body of water. [Sections 373.403(12) and 403.031(18), F.S.]

118. "Water Management District" or "District" means a Water Management District created pursuant to Section 373.069, F.S.

119. "Water quality standards" or "State water quality standards" means those standards set forth in Chapters 62-4, 62-302, 62-520, and 62-550, F.A.C., including the antidegradation provisions of paragraphs 62-4.242(1)(a) and (b), F.A.C., subsections 62-4.242(2) and (3), F.A.C., and Rule 62-302.300, F.A.C.

120. "Wet detention" means the collection and temporary storage of stormwater in a permanently wet impoundment in such a manner as to provide for treatment through physical, chemical, and biological processes with subsequent gradual release of the stormwater.

121. "Wetlands," means those areas that are inundated or saturated by surface water or ground water at a frequency and a duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils. Soils present in wetlands generally are classified as hydric or alluvial, or possess characteristics that are associated with reducing soil conditions. The prevalent vegetation in wetlands generally consists of facultative or obligate hydrophytic macrophytes that are typically adapted to areas having soil conditions described above. These species, due to morphological, physiological, or reproductive adaptations, have the ability to grow, reproduce or persist in aquatic environments or anaerobic soil conditions. Florida wetlands generally include swamps, marshes, bayheads, bogs, cypress domes and strands, sloughs, wet prairies, riverine swamps and marshes, hydric seepage slopes, tidal marshes, mangrove swamps and other similar areas. Florida wetlands generally do not include longleaf or slash pine flatwoods with an understory dominated by saw palmetto. [Section 373.019(27), F.S.] The landward extent of wetlands is delineated pursuant to Rules 62-340.100 through 62-340.550, F.A.C., as ratified by Section 373.4211, F.S.

122. "Wetland Normal Pool Elevation" means the elevation of sustained water levels in a wetland during the wet season under normal conditions, as reflected by biological indicators. Normal pool elevation is lower than the SHWL.

123. "Work of the District" means those projects and works, including, but not limited to, structures, impoundments, wells, streams, and other watercourses, together with the appurtenant facilities and accompanying lands, which have been officially adopted by the Governing Board of the District as "Works of the District." [Section 373.019(28), F.S.]

124. "Works" means all artificial structures, including, but not limited to, ditches, canals, conduits, channels, culverts, pipes, and other construction that connects to, draws water from, drains water into, or is placed in or across the waters in the state [Section 373.403(5), F.S.] and includes all types of dredging and filling to create, remove, or locate structures in, on, or over wetlands or other surface waters.

125. "Zone of discharge" means a volume underlying or surrounding the site and extending to the base of a specifically designated aquifer or aquifers, within which an opportunity for the treatment, mixture or dispersion of wastes into receiving ground water is afforded. Generally, stormwater treatment systems have a zone of discharge 100 feet from the system boundary or to the project's property boundary, whichever is less.

(b) Definitions and terms that are not defined above shall be given their ordinary and customary meaning or usage of the trade or will be defined using published, generally accepted dictionaries, together with any rules and statutes of the Agencies that have additional authority over the regulated activities.

3.0 Regulated Activities

3.1 Permits Not Required

A permit is not required under Chapter 62-330, F.A.C., for activities listed in subsection 62-330.020(1), F.A.C. Components of those provisions are discussed below.

3.1.1 Routine Custodial Maintenance

The operation and routine custodial maintenance of projects legally in existence does not require a permit under paragraph 62-330.020(1)(a), F.A.C., provided they:

(a) Comply with the terms and conditions of any permit, exemption, or other authorization previously granted for the work being operated or maintained;

(b) Do not alter, modify, expand, abandon, or remove the existing work in a manner as to require a general permit under Rule 62-330.052, F.A.C., or an individual permit under Rule 62-330.054, F.A.C.

(c) Do not cause or contribute to violations of water quality standards in receiving waters.

(d) Are routine and custodial, having no more than a minimal adverse impact on the environment. To be considered routine custodial maintenance, the activity must occur on a frequent enough basis to ensure that the project continues to function as originally designed. The Agencies recognize that a partial loss of function will occur over a period of time prior to routine custodial maintenance. However, should the project be allowed to deteriorate over a period of time to the extent that it no longer functions as originally designed or proposed, then restoring the project to its original design is not exempt from the requirements to obtain a permit. Projects are considered to no longer function as designed when they no longer fulfill their originally intended purpose or the repairs needed to restore the project to original design are so extensive that they would cause more than a minimal adverse environmental impact. Some examples of originally intended purposes of projects are:

1. Stormwater systems;

2. Irrigation ditches – conveying water from a water source to a water use area;

3. Drainage ditches – draining lands to enable specific agricultural, residential, commercial or recreational land use;

4. Drainage ditches – draining lands to enable harvesting, site preparation, and regeneration of silvicultural lands during timber rotations;

5. Canals – conveying water for flood control or draining lands to enable specific land uses or navigational uses;

6. Channels – specific navigational uses; and

7. Dikes – preventing flooding to enable specific agricultural, urban or recreational land uses.

The only instance when repair of a non-functioning project would be routine custodial maintenance is when the project has lost functionality due to a sudden event such as a large storm. In such case, the repair must be conducted as soon as practical after the damage occurs, but in no case later than June 1 of the next calendar year after the damage occurred. This serves to ensure a continuity of function during the wet season, which generally occurs between June and October throughout the state. If this deadline would result in a substantial hardship or would violate principles of fairness, the maintenance entity may seek a variance or waiver from this requirement pursuant to Section 120.542, F.S.

The evaluation of environmental impacts will compare the environmental conditions prior to conducting the proposed maintenance activity with the expected environmental conditions that would result from the proposed maintenance. Environmental impacts that are considered to be more than minimal include: changing water levels in wetlands or other surface waters in a manner that adversely impacts fish and wildlife or their habitat as provided in paragraph 62-330.301(1)(d); changing water levels off-site in a manner that causes flooding or other adverse impacts as described in paragraph 62-330.301(1)(a), (b), or (c), F.A.C.; or causing a violation of state water quality standards in receiving waters, as described in paragraph 62-330.301(1)(e), F.A.C.

3.1.2 "Grandfathered Activities"

A permit is not required under Chapter 62-330, F.A.C., to conduct certain activities that are "grandfathered" in accordance with the statutory provisions listed in paragraph 62-330.020(1)(c), F.A.C. Such projects are authorized to remain in existence, to remain operating, or may be constructed under the stormwater, dredge and fill, and management and storage of surface waters (MSSW) statutes and rules that existed prior to certain dates as specified below, as long as the terms and conditions of any issued permit, exemption, or other authorization for such project continue to be met, unless the applicant elects review under Chapter 62-330, F.A.C.:

(a) The effective date of the ERP program (October 3, 1995) throughout Florida, except within the geographical area of the NWFWMD, for activities under Sections 373.414(11), (12)(a), (13), (14), (15), or (16), F.S. The text of these provisions must be followed very carefully. A copy of those provisions is included in the "References and Design Aids" for Volume I, available at https://floridadep.gov/water/water/content/water-resource-management-rules#erp. The following is just a brief overview, and should not be considered a complete guide to their implementation:

1. Activities approved under a valid stormwater permit under Chapters 17-25 or 62-25, F.A.C., a dredge and fill permit under Chapters 17-312 or 62-312, F.A.C., or an MSSW permit under the rules of the applicable District in effect prior to October 3, 1995. Most of these permits have now expired, but the operation and maintenance phase of those activities permitted under the stormwater and MSSW rules remains in effect in perpetuity.

2. Activities within a valid jurisdictional declaratory statement submitted prior to October 3, 1995.

3. Activities for which an application was pending on June 15, 1994, and complete prior to October 3, 1995, under Chapters 17-25 or 62-25, F.A.C., Chapters 17-312 or 62-312, F.A.C., or a management and storage of surface waters (MSSW) permit under the rules of the applicable District. Most of these applications have already been permitted, denied, or withdrawn.

4. Projects legally in existence, including those in operation and those that for which construction had commenced in accordance with an exemption under Part IV of Chapter 373, F.S., or Part V of Chapter 403, F.S., prior to October 3, 1995. Most of the exemptions continue to exist in Sections 373.406 and 403.813, F.S.; to the extent an activity meets the terms and conditions of an exemption, a permit under Chapter 62-330, F.A.C., is not required.

5. Activities associated with mining operations that are included in a conceptual reclamation plan or modification submitted prior to July 1, 1996, under Sections 378.201 through 378.212, and 378.701 through 378.703, F.S.

(b) The effective date of Phase I of the ERP program within the NWFWMD (October 1, 2007), was limited to certain stormwater management systems that were either legally in existence, permitted under Chapter 62-25, F.A.C., or did not require a permit under that chapter. The effective date of Phase II of the ERP program within the NWFWMD (November 1, 2010), was expanded to all systems, including dredging and filling in, on, or over wetlands and other surface waters, including isolated wetlands. In accordance with Section 373.4145(6), F.S., the following shall continue to be governed by Section 373.4145, F.S., as it was in effect in 1994. The text of these provisions must be followed very carefully — see: http://www.leg.state.fl.us/statutes/index.cfm?App_mode=Display_Statute&Search_String=&URL=0300-0399/0373/Sections/0373.414.html; the following is just a brief overview, and should not be considered a complete guide to their implementation.

1. The operation and routine custodial maintenance of projects legally in existence as long as the terms and conditions of the permit, exemption, or other authorization for such projects continue to be met. Additional discussion on routine custodial maintenance is contained in **section 3.1.1, above.**

2. Activities approved in a permit issued pursuant to Section 373.4145, F.S. (1994).

3. Activities proposed in applications under Chapter 62-25, F.A.C., received and completed before November 1, 2010.

4. Any modification of the plans, terms, and conditions of a permit issued pursuant to Section 373.4145, F.S. (1994) that lessens the environmental impact, except that any such modification shall not extend the time limit for construction beyond two additional years.

These provisions shall not apply to any project that is altered or modified in a manner that: increases the water resource impact; increases the duration for construction beyond two additional years; or involves expansion, abandonment, or removal of a project after October 1, 2013.

(c) The following shall continue to be governed by the rules adopted by the Agencies under Part IV of Chapter 373, F.S., in effect before the effective date of Chapter 62-330, F.A.C.,

implementing Section 373.4131, F.S., unless the applicant elects review in accordance with Chapter 62-330, F.A.C., as it exists after that date:

1. Operation and maintenance of any project that was legally in existence before October 1, 2013, as long as the terms and conditions of the permit, exemption, or other authorization for such activity continue to be met.

2. Activities determined in writing by the Agency to be exempt from permitting under Part IV of Chapter 373, F.S., including self-certifications submitted to an Agency before October 1, 2013, as long as the terms and conditions of the exemption continue to be met.

3. Activities approved in a permit Part IV of Chapter 373, F.S., before October 1, 2013 and the review of activities proposed in a permit application that was complete before October 1, 2013. This includes any modification of such a permit, including new activities within the originally permitted project area that lessens or does not increase impacts. However, a permit modification under Chapter 62-330, F.A.C., October 1, 2013, is required if:

    a. The project will cause additional or substantially different water resource impacts, or

    b. The project does not qualify as a minor or "letter" modification under Rule 62-330.315, F.A.C.

(d) Appendix D of the NWFWMD Volume II contains guidance on the extent to which alteration of a system previously permitted under Rule 17-4.248, F.A.C. (in effect between March 1, 1979, and February 1, 1982), or Chapter 62-25, F.A.C. (Chapter 17-25, F.A.C., between February 1, 1982, and July 1994), is subject to the permitting requirements of Chapter 62-330, F.A.C.

3.1.3 "10/2 General Permit"

Paragraph 62-330.020(1)(d), F.A.C., is a reference to activities in uplands having less than 10 acres of total project area and less than two acres of impervious surface that can qualify for the general permit in Section 403.814(12), F.S. (referred to as the "10/2" general permit). This is not a general permit under Chapter 62-330, F.A.C., and does not require submittal of the notice specified in subsection 62-330.402(1), F.A.C., but does require submittal of an electronic self-certification attesting to compliance with the general permit. DEP has a portal at http://www.fldepportal.com/go/ that enables persons to submit a variety of self-service authorizations for exempt and general permit activities online, including certifying qualification for the 10/2 general permit. DEP's portal can be used regardless of whether regulation of the activity in the absence of the general permit would be the responsibility of the DEP, a WMD, or a delegated local government under the Operating Agreements between the Agencies. **Volume II** contains design and performance standards that are relevant to the design of activities that qualify for this general permit.

3.1.4. Permit Thresholds

Unless it is not regulated or is exempt under subsection 62-330.020(1), F.A.C. (as discussed above in sections **3.1 through 3.1.3**, above), a permit is required for any activity that, by itself or in combination with any other activity conducted after October 1, 2013, cumulatively exceeds any of the thresholds in paragraphs 62-330.020(2)(a) through (j), F.A.C. Some provisions of those thresholds are explained below:

(a) Examples of impervious or semi-impervious surface area subject to vehicular traffic, as provided in paragraph 62-330.020(2)(b), F.A.C., are roads, parking lots, driveways, and loading zones. The terms "impervious" and "semi-impervious" are defined in paragraphs 2.0(a)51 and 92, respectively, of this Volume. The total impervious and semi-impervious surface areas in paragraph 62-330.020(2)(c), F.A.C., include those areas described in paragraph 62-330.020(2)(b), F.A.C.

(b) The term "project area," as used in paragraph 62-330.020(2)(d), F.A.C., is defined in paragraph 2.0(a)75 of this Volume, and generally is the area, including mitigation, where works (essentially movement of earth, or construction or alteration of structures) occur as part of an activity requiring a permit.

(c) As referenced in paragraph 62-330.020(2)(i), F.A.C., District-specific thresholds are in **section 1.2** of each Volume II.

(d) The term "common plan of development or sale" is defined in section **2.0(a)16**. of this Volume.

(e) Section 373.4132, F.S. provides additional information on dry storage facilities that are not subject to permitting under paragraph 62-330.020(2)(h), F.A.C.

(f) Activities that do not exceed the thresholds in paragraphs 62-330.020(2)(a) through (j) must not:

1. Cause adverse water quantity impacts to receiving waters and adjacent lands. Volume II applicable to the geographical location of the activity provides design and performance standards for meeting this criterion;

2. Cause adverse flooding to on-site or off-site property. Volume II applicable to the geographical location of the activity provides design and performance standards for meeting this criterion;

3. Cause adverse impacts to existing surface water storage and conveyance capabilities. Volume II applicable to the geographical location of the activity provides design and performance standards for meeting this criterion;

4. Cause or contribute to a violation of the water quality standards. Those standards are contained in Chapter 62-302, F.A.C., and Rule 62-4.242, F.A.C., for all surface waters, including the anti-degradation requirements for Outstanding Florida Waters, and Chapters 62-520 and 62-550, F.A.C., for ground waters; or

5. Cause adverse secondary or cumulative impacts to the water resources by itself, or in combination with existing activities. See Sections **10.2.7 and 10.2.8** for

discussion of how the Agency evaluates the potential for secondary and cumulative impacts.

The above do not need to be evaluated by the Agencies prior to conducting activities that do not exceed the thresholds in subsection 62-330.020(2), F.A.C. However, persons are subject to potential enforcement if the construction or operation of such projects results in any of the adverse effects in (f)1 through 5, above, or the project is discovered to exceed the thresholds in subsection 62-330.020(2), F.A.C.

(g) A "Works of the District" permit pursuant to Chapter 40A-6, F.A.C. (within the NWFWMD), Chapter 40B-4, F.A.C. (within the SRWMD), and Chapter 40E-6, 40E-61, 40E-62, or 40E-63, F.A.C. (within the SFWMD), is required within those WMDs if the activity involves connection with, placement of structures in or across, or otherwise makes use of Works of the District.

3.2 Exemptions

A permit is not required for activities that are exempt under Section 373.406, 373.4145(3), or 403.813, F.S., Rule 62-330.051 or 62-330.0511, F.A.C., or Section 1.3 (District-specific exemptions) of the applicable Volume II (see Rule 62-330.020(1)(b), F.A.C.). Explanations of some of those exemptions are provided below.

Except where required by the terms of the exemption, an application or notice to the Agency is not required for activities that meet all the terms and conditions of an exemption. However, such exemptions do not provide the authorization that may be required from other local, state, regional, or federal agencies. For example, exempt activities that occur on state-owned submerged land may require a separate letter of consent, easement, or lease under Chapters 253 and 258, F.S., and Chapters 18-20 and 18-21, F.A.C., as applicable. Activities that are exempt from ERP permitting under Rules 62-330.051 or 62-330.0511, F.A.C., may require separate permitting from the USACE (see **sections 1.3.1 through 1.3.1.2, above**).

If a person desires verification that an activity qualifies for an exemption, and information on potential state-owned submerged lands authorization, the request must be submitted following Rule 62-330.050, F.A.C., and **sections 4.2.1 and 4.4 of this Volume**.

3.2.1 Agriculture and Forestry

(a) Section 373.406(2), F.S., states that "…[N]othing herein, or in any rule, regulation, or order adopted pursuant hereto, shall be construed to affect the right of any person engaged in the occupation of agriculture, silviculture, floriculture, or horticulture to alter the topography of any tract of land, including, but not limited to, activities that may impede or divert the flow of surface waters or adversely impact wetlands, for purposes consistent with the normal and customary practice of such occupation in the area. However, such alteration or activity may not be for the sole or predominant purpose of impeding or diverting the flow of surface waters or adversely impacting wetlands."

Within the Panhandle, the NWFWMD reviews agricultural and forestry activities that are not exempt using Chapter 40A-44, F.A.C.; they will not require a separate ERP under Chapter 62-330, F.A.C., for those activities. The other Districts regulate agriculture and

silviculture activities that do not qualify for the exemption using Chapter 62-330, F.A.C., and the Applicant's Handbook. The SJRWMD also uses Chapter 40C-44, F.A.C., for such regulation.

(b) Section 373.406(3), F.S., provides that "Nothing herein, or in any rule, regulation or order adopted pursuant hereto, shall be construed to be applicable to construction, operation, or maintenance of any agricultural closed system." A "closed system" is defined in Section 373.403(6), F.S., and a surface water management permit is not required for such systems. This subsection shall not be construed to eliminate the need to meet generally accepted engineering practices for the design, construction, operation, and maintenance of dams, dikes, or levees.

(c) The SWFWMD has a voluntary Agricultural Ground and Surface Water Management (AGSWM) program to assist the agriculture industry in implementing best management practices designed to minimize adverse impacts to water resources. See **section 1.3 of the SWFWMD Volume II** for additional information.

(d) DEP will regulate activities on agricultural or forestry lands that are non-agricultural in nature and that are otherwise the responsibility of DEP in accordance with the Operating Agreements between the Agencies, such as an individual single-family residence, duplex, triplex, or quadruplex that is incidental to an agriculture or forestry activity, or a concentrated animal feeding operation (CAFO) operating under an Industrial Waste Permit issued by DEP.

(e) Construction or alteration of systems such as roads for future development will not be considered agriculture or silviculture activities, and will be regulated under Chapter 62-330, F.A.C.

3.2.2 Individual Single-Family Residence, Duplex, Triplex, or Quadruplex

(a) Subsection 62-330.051(13), F.A.C., exempts from the noticing and permitting requirements of Chapter 62-330, F.A.C., the construction or private use of an individual, single-family dwelling unit, duplex, triplex, or quadruplex that:

1. Is not part of a larger common plan of development or sale;

2. Does not involve work in wetlands or other surface waters; and

3. Does not require a modification of a permit issued under part IV of Chapter 373, F.S.

This exemption does not apply within the Wekiva River Protection Area within Lake, Seminole, and Orange Counties (see **section 1.2 of the SJRWMD Volume II**).

(b) Section 403.813(1)(q), F.S., exempts the construction, operation, or maintenance of stormwater management facilities that are designed to serve single-family residential projects, including duplexes, triplexes, and quadruplexes, if they are less than 10 acres total land and have less than 2 acres of impervious surface and if the facilities:

1. Comply with all regulations or ordinances applicable to stormwater management and adopted by a city or county;

2. Are not part of a larger common plan of development or sale; and

3. Discharge into a stormwater discharge facility exempted or permitted by DEP under this chapter which has sufficient capacity and treatment capability as specified in this chapter and is owned, maintained, or operated by a city, county, special district with drainage responsibility, or water management district; however, this exemption does not authorize discharge to a facility without the facility owner's prior written consent.

Activities qualifying for the provisions in **paragraph (a) or (b), above,** are not required to comply with the provisions in the **Volume II**.

3.2.3 Maintenance Dredging and Maintenance of Insect Control Systems

Exemptions for certain maintenance activities are provided in Section 403.813(1)(f) and (g), F.S., and are described in detail below. The exemption in Section 403.813(1)(f), F.S., authorizes maintenance dredging of existing manmade canals and channels, including navigation basins and ship's berths; intake and discharge structures; and previously dredged portions of natural water bodies within recorded drainage rights-of-way or drainage easements. The exemption in Section 403.813(1)(g), F.S., addresses the maintenance of existing insect control structures, dikes, and irrigation and drainage ditches. A number of limitations and conditions apply to these exemptions, as summarized below.

(a) Original design specifications/configurations.

1. Section 403.813(1)(f), F.S., requires that no more dredging be performed than is necessary to restore the canals, channels, intake and discharge structures and previously dredged portions of natural water bodies, to original design specifications or configurations. Section 403.813(1)(g), F.S., requires that no more

dredging be performed than is necessary to restore the dike or irrigation or drainage ditch to its original design specifications.

2. The entity claiming the maintenance exemption bears the burden of establishing that its activity qualifies for the exemption, including that the maintenance will not extend a system beyond its original design specifications or configuration. However, there is no requirement for the maintenance entity to provide advance notice to the Agency that they are planning on performing maintenance that qualifies for the exemptions in Sections 403.813(1)(f) or (g), F.S., except for the 30-day notice required for the maintenance dredging of previously dredged portions of natural water bodies within recorded drainage rights-of-way or drainage easements.

   Maintenance entities are encouraged to notify the Agency of proposed maintenance and to discuss its planned scope and extent with the Agency. Maintenance entities may also request confirmation from the Agency that they qualify for an exemption. In the event that the planned activity does not qualify for an exemption, such consultation should help to avoid enforcement action by the Agency.

3. Direct evidence of original design can include: plans; historical aerial photographs; surveyed cross sections; soil boring reports, if such borings can distinguish between the original soils and the sediment deposited in a system; and other historical documents. Where such documentation does not clearly establish the original design, eyewitness accounts can be submitted to provide further evidence of the original design specifications or configuration. In addition, indirect evidence can be used. Indirect evidence is evidence from which the original design specifications or configuration can be scientifically deduced. Examples of such indirect evidence include historic information of land uses enabled by the system, and the sizes and capacities of associated systems, such as culverts or weirs. If the maintenance entity cannot reasonably establish the original design of a system, the maintenance exemptions in Sections 403.813(1)(f) and (g), F.S., are not applicable.

(b) The following limitations, conditions, and definitions also apply to the exemption in Section 403.813(1)(f), F.S., for maintenance dredging of existing: canals and channels, including navigation basins and ship's berths; intake and discharge structures; and previously dredged portions of natural water bodies within recorded drainage rights-of-way or drainage easements:

1. Spoil material must be deposited in a self-contained, upland spoil disposal site that will prevent the escape of spoil material into the waters of the state. For the purposes of the exemptions in Sections 403.813(1)(f) and (g), F.S., a self-contained, upland disposal site is a disposal site located entirely in uplands which is designed to prevent the spoil material from reentering waters of the state as defined in Section 403.031(13), F.S. Some examples of self-contained upland spoil disposal sites are:

   a. An upland area separated from waters of the state by a berm, such that the spoil material cannot reenter waters of the state;

b. In a system that has an outer berm or dike, placing the spoil on the inner banks of the dike where it could potentially reenter those interior canals which are not waters of the state, and where the spoil material is prevented from being discharged to waters of the state through the operation of a pump or other type of water control structure; and

c. In a system involving a road with roadside ditches that are waters of the state, placing spoil in a "V" shaped notch in the center of the road such that it could not be discharged to waters of the state.

Additionally, use of dredged materials to conduct exempt or permitted maintenance of a dike or road shall not be considered spoil disposal, so long as the dredged materials are only used to restore the dike or road to original design specifications and the dredged material is not deposited into wetlands or other surface waters outside of the original dike or road cross section.

2. Best management practices for erosion and sediment control must be used at the dredge site to prevent bank erosion and scouring and to prevent turbidity, dredged material, and toxic or deleterious substances from discharging into adjacent waters during maintenance dredging. This does not prevent the discharge of water during dredging or from the disposal site, as long as water quality standards are not violated in the receiving waters.

3. The maintenance dredging shall not cause significant impacts to previously undisturbed natural areas.

4. Maintenance work must be conducted in accordance with Section 379.2431(2)(d), F.S., which provides that, except as authorized by a permit issued under Section 379.2431(2)(c), F.S., or by the terms of a valid federal permit, the maintenance entity shall not at any time, by any means or in any manner intentionally or negligently:

a. Annoy, molest, harass, or disturb or attempt to molest, harass, or disturb any manatee;

b. Injure or harm or attempt to injure or harm any manatee;

c. Capture or collect or attempt to capture or collect any manatee;

d. Pursue, hunt, wound, or kill or attempt to pursue, hunt, wound, or kill any manatee; or

e. Possess, literally or constructively, any manatee or any part of any manatee.

5. For canals and previously dredged portions of natural water bodies, the exemption only applies to such systems constructed prior to April 3, 1970, or constructed on or after April 3, 1970, pursuant to all necessary state permits.

6. The exemption does not apply to the removal of any natural or manmade barrier separating a canal or canal system from adjacent waters.

7. Maintenance dredging shall be limited to a depth of no more than five feet below mean low water for existing manmade canals or intake or discharge structures that have not been previously permitted for construction or maintenance dredging in accordance with necessary state permits or permits issued by the U.S. Army Corps of Engineers (USACE) between April 4, 1970, and October 26, 1975, or when such permits were required, by DEP, the WMD, or the USACE after October 26, 1975.

   For canals dredged prior to 1975, where evidence indicates that the canals were dredged to depths deeper than five feet, and no subsequent enforcement action was taken, the maintenance entity is encouraged to notify the Agency at least 30 days prior to dredging, and provide documentation of original design specifications or configurations where such exist so that the Agency can have an opportunity to verify that the exempt conditions apply.

8. For maintenance dredging of a previously dredged portion of a natural water body, the maintenance entity must notify DEP at least 30 days prior to dredging, and provide documentation of original design specifications or configurations where such exist.

9. The term "natural water bodies" as used in paragraph 403.813(1)(f), F.S., means those surface water bodies extending waterward from the boundary established pursuant to the methodology in Chapter 62-340, F.A.C., except for those waters that were created solely due to human activity, such as borrow pits, ditches, canals, and artificial impoundments located in areas that were uplands prior to construction. As stated above, the maintenance entity is required to notify the Agency at least 30 days prior to dredging and provide documentation of original design specifications or configurations where such exist for maintenance dredging of previously dredged portions of natural water bodies within recorded drainage rights-of-way or drainage easements. The terms "previously dredged" and "within recorded drainage rights-of-way" are interpreted to apply to dredging originally performed within a right-of-way recorded prior to when these provisions became effective (October 1, 1997, per Chapter 97-22, Laws of Florida).

(c) The following limitations or conditions also apply to the exemption in Section 403.813(1)(g), F.S., for the maintenance of existing insect control structures, dikes, and irrigation and drainage ditches:

1. Spoil material must be deposited on a self-contained, upland spoil site that will prevent the escape of spoil material into waters of the state (see **paragraph 3.2.3(b)1, above,** for further explanation of self-contained, upland spoil site);

2. For insect control structures, if the Department of Health determines that the cost of new spoil disposal is so excessive that it will inhibit proposed insect control, then existing spoil sites or dikes may be used upon notification to DEP. In such cases, turbidity control devices shall be used when the receiving water body is a potable water supply, is designated as shellfish harvesting waters, or functions as a habitat for commercially or recreationally important shellfish or finfish.

3.2.4 Seawall, Riprap, and other Shoreline Structure Restoration

Restoration and repair of a seawall, riprap revetment or other shoreline protection structure may be performed without a permit, under any of the following circumstances:

(a) The work qualifies as routine, custodial maintenance, as discussed in section 3.1.1, above.

(b) The work is authorized under a *de minimis* exemption, as explained in section 3.2.7, below.

(c) The work is authorized to be performed without a permit under an Emergency Order issued by the Governor and/or the Secretary of DEP or the Executive Director of a District following a large event, such as a hurricane.

(d) The work qualifies for an exemption under paragraph 62-330.051(12)(b), F.A.C., and Section 403.813(1)(e), F.S., which authorize restoration as long as no permit is required under Chapter 161, F.S., and the face of the restored structure is within 18 inches from the face of the old structure. Restoration under this exemption is limited to instances where the primary purpose of the project is restoration or replacement of an old or failing structure, and is not to expand or reclaim uplands. Generally, this exemption applies to situations in which:

1. The structure has been damaged or destroyed by a discrete event (such as a storm, accident, fire, or other unforeseen circumstance), typically of a localized nature within a period of no longer than one year of the event (which is normally a reasonable time to perform such restoration).

2. The restoration or repair is necessary due to degradation of materials over time, erosion (such as from currents or boat wakes), structural failures resulting from poor workmanship or design, or to upgrade materials or raise the height of the structure (such as to prevent overtopping by tides, waves, wakes, or flows). Restoration of structures that have deteriorated over long periods of time may require extensive work, such as backfilling, which may result in adverse individual or cumulative impact to the water resources. For this reason, the following factors will be considered in determining whether the repair or restoration work is exempt, or needs a permit:

    a. Whether the mean (or ordinary) high water line has shifted landward or waterward of the structure along more than 50 percent of its length (which may or may not run the entire length of the shoreline of the property);

    b. The structural failure has persisted long enough for wetland or other aquatic communities to become established behind more than 10 percent of the length of the structure (excluding such communities that exist solely due to periodic overtopping by tides, waves or floods);

    c. The damage or deterioration consists of more than minor cracks or gaps, (such as large sections of the structure that are failing, leaning, or completely missing), and the structure is no longer effectively retaining or stabilizing land; or

d. An excessive period of time has elapsed between when the degradation or failure became apparent and the time the repairs are proposed. Consideration will be given when extended time is needed due solely to circumstances beyond the control of the property owner, such as unavailability of contractors.

Furthermore, for the restoration work to qualify for this exemption, the structure must also be (or have been) legally in existence by virtue of:

1. Having been built under an applicable exemption or permit under Part IV of Chapter 373, F.S., or Part V of Chapter 403, F.S.; and was granted any applicable state-owned submerged lands authorization under Chapters 253 and 258, F.S.; or

2. Qualifying as being "grandfathered" (see section 3.1.2, above), such as having been built prior to permitting requirements under the above statutes.

3.2.5 Swales

Section 403.813(1)(j), F.S., exempts the construction and maintenance of swales. A swale is defined in Section 403.803(14), F.S., as a manmade trench that:

(a) Has a top width to depth ratio of the cross-section equal to or greater than 6:1, or side slopes equal to or greater than 3 feet horizontal to 1-foot vertical;

(b) Contains contiguous areas of standing or flowing water only following a rainfall event;

(c) Is planted with vegetation suitable for soil stabilization, stormwater treatment, and nutrient uptake; and

(d) Is designed to take into account the soil erodibility, soil percolation, slope, slope length, and drainage area so as to prevent erosion and reduce pollutant concentration of any discharge.

Applicants are advised that the construction of a swale system does not qualify for the exemption under Section 403.813(1)(j), F.S. A "swale system" is a stormwater management system that does not consist entirely of swales. An example is a subdivision served by swales as the primary stormwater management system, but that includes culverted driveway crossings and other pipe conveyance features. Such stormwater management systems must be designed and evaluated to address such things as potential impoundments and flood conveyance restrictions imposed by the culvert crossings and other pipe conveyance features. The entire stormwater management system as a whole must be designed, implemented, operated, and maintained to meet the conditions for issuance of Rule 62-330.301, F.A.C., the applicable Volume II, and the operation and maintenance requirements in **section 6.1.4** and **Part V of this Volume**.

3.2.6 Docks and Piers

Subparagraph 62-330.051(5)(b)4, F.A.C., pertains to the exemption in Section 403.813(1)(b), F.S. Section 403.813(1)(b)5, F.S., provides that the installation must be, ". . .the sole dock constructed pursuant to this exemption as measured along the shoreline for a distance of 65 feet, unless the parcel of land or individual lot as platted is less than 65 feet in length along the shoreline, in which case there may be one exempt dock allowed per parcel or lot." This measurement begins where that portion of the structure (typically the access walkway or end of a marginal dock) connects to the

shoreline (the landward extent of wetlands and other surface waters). From that point, there must be a minimum of 65 feet along the shoreline of the parcel or lot before reaching the point where the next access walkway or marginal dock connects to the shoreline of the same parcel or lot. The only exception is if the parcel of land or individual platted lot has less than 65 feet of shoreline. All waterward components of the dock (such as "T" ends, terminal platforms, walkways, finger piers, and boat shelters) must be separated from the waterward components of any other docks on the parcel or lot such that the docks cannot be reasonably be considered one structure. That test is met if there is enough separation between the docks that a person cannot access the next dock through more than extraordinary means (such as having to take a "running leap" or having to place temporary or permanent planks between the docks).

Applicants are advised that in addition to compliance with the regulatory exemption criteria, docks and piers located on state-owned submerged lands (SSL) are subject to the need to obtain a separate authorization, which will include consideration of such things as proximity and setbacks to riparian rights lines, the size of terminal platforms in aquatic preserves, whether the dock or pier includes any non-water dependent uses or activities, the total amount of preemption of state-owned submerged lands, the number of boat slips, the sufficient upland interest of the riparian upland owners, and any income-producing, revenue-generating uses of the dock or pier and associated uplands. See Chapters 18-18, 18-20, and 18-21, F.A.C., for additional information.

3.2.7 Other Exemptions

(a) Section 403.813(1), F.S., provides that no permit shall be required for certain activities under Chapters 373 and 403, F.S. These exemptions are listed in Rule 62-330.051, F.A.C.

(b) DEP has established additional exemptions by rule for minor activities that have been determined to have no more than minimal individual and cumulative impacts. They are contained in Rule 62-330.051, F.A.C.

(c) Section 373.406(6), F.S., provides that "Any district or the department may exempt from regulation under this part those activities that the district or department determines will have only minimal or insignificant individual or cumulative adverse impacts on the water resources of the district." The Agencies are authorized to determine, on a case-by-case basis, whether a specific activity comes within this exemption. Requests to qualify for this exemption shall be submitted in writing to the applicable Agency, and such activities shall not commence without a written determination from the Agency confirming qualification for the exemption. These are known as "*de minimis*" exemptions.

Applicants and permittees are advised that dewatering during construction may require a separate consumptive use permit from the applicable District, and potentially an NPDES permit.

3.3 Permits Required

Rule 62-330.020, F.A.C., describes activities that require a permit. The types of permits available are general permits, individual permits (which include mitigation bank permits), and conceptual approval permits. These are described below.

3.3.1 General Permits

General permits authorize activities specified in Rules 62-330.410 through 62-330.635, F.A.C.

To qualify, a person must submit notice to the Agency of intent to use a general permit following Rule 62-330.402, F.A.C., and **section 4.2.2 of this Volume**. Activities that comply with all the general conditions of Rule 62-330.405, F.A.C., and the specific limitations and conditions for the particular general permit may be initiated 30 days after the Agency receives the notice, unless:

(a) The Agency responds within 30 days after receiving the notice that the activity does not qualify for the general permit, or that additional information is needed to determine if the activity qualifies for the general permit; or

(b) The conditions of the general permit require written verification from the Agency prior to initiating the activities.

Notices to use a general permit are not circulated to other parties for comment.

As discussed in **section 3.1.3**, above, the "10/2" general permit in Section 403.814(12), F.S., is not a general permit under Chapter 62-330, F.A.C.

3.3.2 Individual Permits

Except where a conceptual approval permit is sought, an individual permit under Rules 62-330.020 and 62-330.054, F.A.C., is required prior to the construction, alteration, operation, maintenance (excluding routine custodial maintenance), abandonment, or removal of projects that:

(a) Are not exempt in accordance with Rule 62-330.051 or 62-330.0511, F.A.C.;

(b) Exceed the permitting thresholds in subsection 62-330.020(2), F.A.C.;

(c) Do not qualify for a general permit under Rules 62-330.410 through 62-330.635, F.A.C.; and

(d) Do not qualify for the general permit in Section 403.814(12), F.S.

A mitigation bank permit is processed and evaluated as a type of individual permit, but also is processed and evaluated under the Mitigation Bank Permit rule, Chapter 62-342, F.A.C.

A conceptual approval permit is not a type of individual permit, but is processed in the same manner as an individual permit. It is evaluated under Rule 62-330.055 or 62-330.056, F.A.C., as applicable, the conditions for issuance in Rules 62-330.301 and 62-330.302, F.A.C., and the Applicant's Handbook Additional information on conceptual approval permits is contained in **section 3.4**, below.

Applications for individual permits undergo detailed site review and consideration of comments received during processing. Except as provided in Rule 62-330.054(4), F.A.C., an application for an individual permit shall be prepared and submitted following Rule 62-330.060, F.A.C., and **sections 4.2.3 and 4.4 below**, and processed following Rule 62-330.090, F.A.C., and **section 5.5, below.**

3.3.2.1 Dry Storage Facilities

An individual permit is required for the construction, alteration, operation, maintenance, abandonment, or removal of any dry storage facility for 10 or more vessels that is functionally associated with a boat launching area, including when the dry storage facility does not involve any work within the landward extent of wetlands and other surface waters (see Section 373.4132, F.S.). Such activities do not qualify for the "10/2" general permit in Section 403.814(12), F.S.

3.3.2.2 Alteration, Maintenance, and Operation

A permit is required prior to the alteration, maintenance (other than routine custodial maintenance), or operation of an existing project, including those previously constructed in conformance with an exemption or prior to the existence of state or federal permitting programs, if the alteration or maintenance does not qualify for an exemption under Rule 62-330.051 or 62-330.0511, F.A.C., a general permit under Section 403.814(12), F.S., or the grandfathering provisions summarized in **section 3.1.2**, above.

"Alter" means "to extend a dam or works beyond maintenance in its original condition, including changes that may increase or diminish the flow or storage of surface water which may affect the safety of such dam or works" (see Section 373.403(7), F.S., and **paragraph 2.0(a)3**., above). Alterations that are subject to requiring a permit under Chapter 62-330, F.A.C., include:

(a) Addition to an existing system;

(b) Change of any part of an existing activity to capacities or locations different from those originally constructed; or

(c) Addition of, or changes to an existing project that will result in changes in the rate, volume, or timing of discharges; the point or points of discharge; increased pollutant loading; or that intrude into or otherwise adversely affect wetlands or other surface waters by activities such as rim ditching, draining, filling, or excavation.

"Maintenance," as defined in Section 373.403(8), F.S., and **paragraph** 2.0(a)58, above, includes repairs that exceed routine custodial maintenance, and is subject to the permitting requirements of Chapter 62-330, F.A.C. Routine custodial maintenance is exempt from permitting as discussed in **section 3.1.1, above**.

Except as provided in Chapter 62-330, F.A.C., or in a permit issued thereunder, the construction phase of an individual permit must be converted to an operation phase that extends in perpetuity after construction has been completed in conformance with the terms and conditions of the permit. The terms "operate" and "operation" are defined in **paragraph** 2.0(a)67, above. An application to construct or alter a project also constitutes a request for authorization to operate and maintain the project. General permits under Rules 62-330.410 through 62-330.635, F.A.C, automatically convert to the operation and maintenance phase upon completion of construction performed in compliance with the general permit. Additional information on operation and maintenance of projects is in Rule 62-330.310, F.A.C., and **Part V of this Volume.**

3.4 Conceptual Approval Permits

A conceptual approval permit is available, but not required, for activities occurring in phases or over a large land area. Conceptual approval permits are available under Rule 62-330.056, F.A.C., for any type of long-term build out other than for redevelopment or infill, and for redevelopment

or infill under Rule 62-330.055, F.A.C. A conceptual approval permit does not authorize construction, alteration, maintenance, removal, or alteration (a separate individual permit is required for those activities). However, the first phase of construction can be authorized at the same time the conceptual approval permit is issued, as discussed below and in Rule 62-330.056, F.A.C. Construction of redevelopment or infill projects consistent with a conceptual approval permit issued under Rule 62-330.055, F.A.C., can be authorized through the general permit in Rule 62-330.450, F.A.C.

3.4.1 Issuance of a conceptual approval permit is a determination that conceptual plans are, within the extent of detail provided in the application, consistent with applicable rules at the time of issuance. A conceptual approval permit provides the permit holder with a rebuttable presumption that, during the duration of the conceptual approval permit, the design and environmental concepts upon which the conceptual approval permit is based (within the detail provided in the application) will meet applicable rule criteria for issuance of permits for subsequent phases of the project. This presumption is rebuttable at the time of receipt of a complete application to construct or operate future phases, dependent on the factors in subsection 62-330.056(7), F.A.C.

3.4.2 An application for a conceptual approval permit will be reviewed pursuant to the standards, criteria, and procedures for processing individual permits, together with the provisions of Rule 62-330.055 or 62-330.056, as applicable. The permit, if issued, will contain specific conditions necessary to ensure that future applications for permits to construct, alter, operate, maintain, remove, or abandon projects can be issued only if such applications remain consistent with the conceptual approval permit.

3.4.3 Conceptual Approval for Urban Infill and Redevelopment

(a) A county or municipality may request a conceptual approval permit under Rule 62-330.055, F.A.C., for redevelopment within an urban redevelopment and infill area or a community redevelopment area created under Chapter 163, F.S. Projects in compliance with the redevelopment conceptual approval permit can be constructed, operated, and maintained under the terms and conditions of the general permit in Rule 62-330.450, F.A.C.

(b) An application for redevelopment conceptual approval permit must contain a stormwater master plan developed in coordination with, and approved by, the Agency. The master plan must demonstrate that the urban redevelopment or infill project, as a whole, will provide a net improvement of the quality of stormwater discharge, as determined through a calculated reduction of annual loading of pollutants of concern as determined during the permit application review discharged after development, as compared to the predevelopment condition existing on the date of application for the conceptual permit. For areas that were demolished prior to the application, the predevelopment condition is considered to be the land use five years prior to submittal of the application for the conceptual approval permit.

(c) If issued, the urban redevelopment or infill conceptual approval permit will include a ledger that indicates the target annual loading of the pollutants of concern (mass per acre) for each drainage basin within the area covered.

(d) A person wishing to construct or alter a project within the urban infill or redevelopment area may use the general permit in Rule 62-330.450, F.A.C., when the design meets the terms and conditions of that general permit. The general permit is available to all qualifying activities within the urban infill or redevelopment conceptual approval permit area.

Construction under the general permit must occur within five years of the date qualification for its use is verified by the Agency for the specific activity subject to the general permit.

(e) Activities qualifying for the general permits will result in a debit to the master plan ledger of target pollutant loading within the drainage area affected. Once the entire pollutant load target is reached for the receiving waters, no more general permits under Rule 62-330.450, F.A.C., will be available for use under the terms of the issued urban infill or redevelopment conceptual approval permit. However, this does not preclude issuance of subsequent urban infill or redevelopment conceptual approval permits for which the general permit would be available.

3.4.4 The duration of a conceptual approval permit is discussed in **section 6.1.5**, below.

3.4.5 Modifications of conceptual approval permits and subsequently issued permits for construction, alteration, operation, maintenance, removal, or abandonment shall be in accordance with Rule 62-330.315, F.A.C.

3.4.6 Requests to extend the duration of a conceptual approval permit will be reviewed as provided in Rule 62-330.320, F.A.C.

4.0 Preparation and Submittal of Applications and Notices

4.1 Pre-application Conference

Applicants are encouraged to have a pre-application phone call, meeting (on-site or in the office), or other conference with the applicable Agency staff prior to submitting an application or notice. This should minimize processing steps and potential time delays by assisting the applicant to understand such things as:

(a) The need for a permit or potential qualification for an exemption or general permit;

(b) Which agency will be responsible for the review of the application or notice;

(c) How to prepare the application or notice, including availability of on-line tools that may assist in completing it;

(d) Information required by the Agency to evaluate an application or notice, including such things as wetland delineations, resources that may be affected, surface water data (such as for water quality, flooding, mean high water, and other surface water elevations), and other hydrologic, environmental, or water quality data;

(e) Application processing and evaluation procedures;

(f) The need for a pre-application on-site meeting;

(g) Adverse impacts that may prevent the proposed activity from meeting applicable permitting or review standards and criteria; and

(h) Measures that can be taken to reduce or eliminate adverse impacts, and the appropriateness of mitigation to offset remaining adverse impacts.

See **Appendix A of this Volume** for Agency contact information.

4.2 Forms and Submittal Instructions

Where available, applicants are encouraged to use the e-Permitting and electronic portals of the Agencies to submit most applications and notices as discussed below. **Appendix A** of this Volume contains the Internet addresses of the Agencies.

4.2.1 Requesting an Exemption Determination

Except as noted below, notice to the Agency is **not required** to conduct an activity that qualifies for an exemption. The following are exceptions where prior notice to the Agency is required before conducting an exempt activity:

(a) Work proposed under Section 373.406(6), F.S., often called the "*de minimis"* exemption; this exemption is used for activities that are expected to have no more than minimal individual and cumulative impact, but are not authorized under a specific exemption or

general permit adopted by rule. These activities must be reviewed on a case-by-case basis to determine qualification for the statutory exemption.

(b) Maintenance dredging within previously dredged portions of natural water bodies within drainage rights-of-way or drainage easements which have been recorded in the public records of the county, in accordance with Section 403.813(1)(f), F.S.

(c) The repair, stabilization, paving, or repaving of existing county- or municipally-maintained roads and the repair or replacement of bridges that are part of the roadway under Section 403.813(1)(t), F.S., as superseded by the exemption in paragraph 62-330.051(4)(e), F.A.C.

(d) Removal by an individual, residential property owner of organic detrital material from freshwater rivers or lakes that have a natural sand or rocky substrate and that are not located in an Aquatic Preserve, in accordance with Section 403.813(1)(u), F.S.

(e) The construction, operation, maintenance, alteration, abandonment, or removal of minor silvicultural surface water management systems under Rule 62-330.0511, F.A.C. The notice required by this exemption [Form 62-330.0511(1)] must be received by the Agency, but does not require verification of qualification by the Agency prior to commencement of the authorized activities.

A request for a written determination of qualification for an exemption shall follow Rule 62-330.050, F.A.C. Additional information on submitting a notice or letter requesting verification of an exemption is in **section 5.2**, below.

Many exempt activities involving certain categories of in-water work qualify for the USACE SPGP discussed in **section 1.3.1.2**, above. If the activity does not qualify for the SPGP, a separate USACE permit may be required. Applicants must apply separately to USACE using the appropriate federal application form. More information about USACE permitting can be found online in the Jacksonville District Regulatory Division Sourcebook.

4.2.2 Preparing a Notice of Intent to Use a General Permit

Available general permits, including the specific limitations and conditions that apply to each are in Rules 62-330.410 through 62-330.635, F.A.C. General conditions applying to all general permits are in Rule 62-330.405, F.A.C.

Rule 62-330.402, F.A.C., contains the procedures to submit a notice of intent to use a general permit, and how it will be reviewed by the Agencies. Persons wishing to use a GP must complete Form 62-330.402(1), "Notice of Intent to Use an Environmental Resource and/or State 404 Program General Permit." This form will provide the Agency with information needed to determine if the requested activity is on state-owned submerged lands and if the activity qualifies for the SPGP (see **section 1.3.1.2**, above). The notice must include:

(a) A location map(s) of sufficient detail to allow someone who is unfamiliar with the site to travel to and locate the specific site of the activity;

(b) Documentation of the person's real property interest, as described in section 4.2.3(d) below, over the land upon which the activities subject to the notice will be conducted;

(c) One set of construction plans, drawings, other supporting documents that depict and describe that the proposed activities qualify for the GP requested; and

(d) The fee required by Rule 62-330.071, F.A.C.

The notice may be submitted electronically or mailed to the Agency as provided in Rule 62-330.010, F.A.C. See **Appendix A** of this Volume for information on who to contact if you have any questions about whether the proposed activity may qualify for a GP, and **section 4.4**, below, for additional information on submitting notices.

Effective July 1, 2012, and amended April 6, 2016, the Florida Legislature established a general permit in Section 403.814(12), F.S., authorizing certain activities located entirely in uplands having a total project area of less than 10 acres and less than two acres of impervious surface. This is not a general permit under Chapter 62-330, F.A.C., and is not subject to the noticing and review provisions of that chapter. Additional information on that general permit is in **section 3.1.3**, above.

4.2.3 Preparing an Application for an Individual or Conceptual Approval Permit

Except as provided in Rule 62-330.054(4), F.A.C., applications for individual and conceptual approval permits must be made on Form 62-330.060(1), "Application for Individual and Conceptual Approval Environmental Resource Permit, State 404 Program Permit, and Authorization to Use State-Owned Submerged Lands," available at: https://floridadep.gov/water/submerged-lands-environmental-resources-coordination/content/forms-environmental-resource or from the Internet site or office of any of the Agencies (see **Appendix A of this Volume**). It is designed so an applicant will need to complete only those sections applicable to the type of activity proposed. The form requests site and design information needed:

- To distribute, process, and evaluate whether the application meets the standards and criteria for issuance;

- To determine if the requested activity is on state-owned submerged lands, and whether it qualifies for any applicable authorization to use and occupy those lands; and

- To determine whether the activity qualifies for the SPGP (see **section 1.3.1.2, above**).

The submitted application must contain one original mailed or an electronic submittal of the materials requested in the applicable sections of the form, and such other information as is necessary to provide reasonable assurance that the activities proposed in the application meet the conditions for issuance under Rule 62-330.301, F.A.C., the additional conditions for issuance under Rule 62-330.302, F.A.C., and the applicable provisions of the Applicant's Handbook. Those materials include:

(a) Location maps of detail to allow someone who is unfamiliar with the site to travel to and locate the specific site of the activity;

(b) Construction plans, drawings, calculations, and other supporting documents that depict and describe the proposed activities;

(c) The applicable processing fee in accordance with Rule 62-330.071, F.A.C.;

(d) Documentation of the applicant's real property interest over the land upon which the activities subject to the application will be conducted. Interests in real property typically are evidenced by:

1. The applicant being the record title holder.

2. The applicant being the holder of a recorded easement conveying the right to utilize the property for a purpose consistent with the authorization requested in the permit application.

3. An entity having the right to exercise the power of eminent domain and condemnation authority, in which case the permit shall contain a provision that work cannot begin until proof of ownership is provided to the Agency.

4. An entity having a contract to purchase the real property included in the application, in which case the permit shall contain a provision that work cannot begin until proof of ownership is provided to the Agency. The contract to purchase shall be provided to the Agency (financial terms can be redacted). If the contract to purchase does not authorize the Agency to access, inspect, and sample the property, then the applicant shall provide written authorization from the record title holder to enable staff of the Agency to legally access, inspect, and sample the property in accordance with section 4.2.3(f) below.

5. An entity that has either obtained or has an application to obtain a permit or other legal authorization from the Florida Department of Transportation, a Water Management District, or local government authorizing construction, operation, and maintenance of parts of the proposed system that will be located on right of way property.

6. A lessee of the property included in the application, provided at least one of the following exists:

   a. The record title owner is a co-applicant on the application.

   b. The applicant provides a copy of a written agreement with a governmental entity that states that the governmental entity agrees to accept the transfer of the permit if the lease is revoked, terminated or expires and that the governmental entity will accept the operation and maintenance phase of the permit. Documentation must be provided that the governmental entity has a recorded right of entry agreement or access easement to enter upon the property for these purposes.

   c. The applicant provides a recorded restrictive covenant or other recorded instrument demonstrating that the record title holder agrees to be responsible for the permanent operation and maintenance of the system upon revocation, termination or expiration of the lease.

   d. Where the lease is on lands owned by a water management district, the government of the State of Florida or the United States, the lessee shall:

1] Provide a bond made payable to the Agency in an amount sufficient to construct the stormwater management system, or provide other measures suitable for ensuring that the stormwater management system can be completed, removed, or abandoned in the event the lessee, at any time, fails to or cannot complete construction of the system;

2] Provide an agreement from a person in accordance with Part V of this Volume who agrees to be responsible for operation and maintenance of the system in the event the lessee, at any time, fails to or can no longer operate and maintain the system; or

3] Provide an easement or other legally-binding document from the landowner or other person with sufficient real property interest in the lands subject to the application giving the Agency and other persons who require it, a right of entry for purposes of inspecting for compliance, monitoring, operating and maintaining, and completing construction as needed to comply with the permit, if issued.

7. Alternatives such as a recorded option agreement, a judgment of the court, or a certificate of title issued by a clerk of the court, that show that the person or entity has sufficient interest in, or control over, the property to construct, alter, operate, and maintain the project in accordance with Chapter 62-330, F.A.C. Except when it cannot reasonably be provided (such as when there is a court determination, or an inability to locate the record title holder), the recorded documentation shall indicate that the record title holder agrees to accept responsibility for the permit, is agreeable to accept the transfer of the permit, and that the Agency has third party enforcement rights to enforce the terms and conditions of the permit on the property.

8. Additional persons may be included as co-applicants, provided that one of the persons listed in 1. through 6., above is included as an applicant.

(e) Applications must be signed by an entity having sufficient real property interest over the land upon which the activities subject to the application will be conducted as described in section 4.2.3(d), above. The applicant may designate an agent to provide materials in support of the application on its behalf. If the applicant is a non-individual entity required by statute or rule to register with the State of Florida Secretary of State, it must be registered, and the person signing the application must have the legal authority to bind the entity with the terms, conditions, and liabilities associated with such application and subsequent permit, if issued. Further, any such entity must maintain their registration with the State of Florida Secretary of State for the duration of the permitted activities.

(f) Written authorization from the owner, lessee, or easement holder for staff of the Agency to enter onto, inspect, and conduct sampling or monitoring of the site that is subject to the application. If this is not possible, the applicant shall secure other means for staff to access the site in a manner that prevents trespass, and to demonstrate how the applicant will obtain approval from the entity having sufficient real property interest over the land subject to the application to perform the activities proposed prior to undertaking the work.

(g) Where an operating entity described in **section 12.3.1** of this Volume will be different from the permittee, written confirmation is required from the operating entity that they agree to accept responsibility for operation and maintenance of the activity as set forth in the permit, as further set forth in **section 12.3** of this Volume. Written confirmation is not required if the operation and maintenance entity is approved upon issuance of the permit for the construction phase, or in a permit modification.

(h) Persons requesting to conduct activities on state-owned submerged land must submit satisfactory evidence of sufficient upland interest in accordance with paragraph 18-21.004(3)(b), F.A.C. (March 2, 2012), and are advised that necessary consent, lease, easement, or other form of authorization as required under the authority of Chapter 253 and, as applicable, Chapter 258, F.S., and the rules adopted thereunder, is required prior to initiating such work. In addition to demonstrating ownership or control in the land as described above, the applicant also must demonstrate that they have the riparian rights to the state-owned submerged lands necessary to conduct the proposed activity under paragraph 18-21.004(3)(b), F.A.C.

For construction of docks and piers when satisfactory evidence of sufficient upland interest is not fee simple title, the applicant's interest must cover the entire shoreline of the adjacent upland fee simple parcel or 65 feet, whichever is less, except as otherwise provided in paragraph 18-21.004(1)(d), F.A.C.

(i) A separate mangrove alteration or trimming permit under Sections 403.9321 through 403.9333, F.S., is not required when the mangrove trimming or alteration is authorized and conducted as part of and in conformance with a general or individual environmental resource permit, or when necessary to construct projects in conformance with an exemption or general permit under Chapter 62-330, F.A.C.

Submittal of the application is discussed in **section 4.4, below**.

4.2.3.1 Conceptual Approval Permits

An application for a conceptual approval permit shall be prepared and submitted in the same manner, and using the same form as an individual permit, as discussed in **section 4.2.3.**, above, except that the application shall be supplemented with the materials discussed in either Rule 62-330.055 or 62-330.056, F.A.C., as applicable.

4.2.3.2 Mitigation Bank Permits

An application for a mitigation bank permit shall be prepared and submitted in the same manner, and using the same form as an individual permit, as discussed in Section 4.2.3., above, except that the application shall be supplemented with the materials required in Chapter 62-342, F.A.C.

4.3 Processing Fees

Processing fees are required for the Agency to process each permit application, permit modification, petition, and submittal of requests to determine qualification for a general permit or exemption under Chapter 62-330, F.A.C. These fees must be submitted as prescribed by Rule 62-330.071, F.A.C. Additional information on the fees of the Agencies is in **Appendix D of this Volume**.

Processing fees are non-refundable except for the amount of any fees paid that exceed the amount specified for the application or notice under review, as specified above.

An application or notice submitted without the fee will not be considered complete; an Agency shall not be compelled to issue the requested permit, verify qualification for a general permit or exemption, or issue the requested petition until the complete processing fee is paid.

Additional information on processing fees associated with applications and notices is in sections 5.3.2, 5.3.3, 5.3.4, 5.5.3.1, 5.5.3.3, 5.5.3.4, 5.5.3.5 and 5.5.3.7, below.

4.4 Submittal of Applications, Notices, and Petitions

All applications, notices, and petitions shall be submitted by mail or via e-permitting (where available) to the correct office of the applicable Agency (see **Appendix A of this Volume),** in accordance with the Operating Agreement or Delegation Agreement between the Agencies [see subsection 62-330.010(5), F.A.C.], except that:

(a) Submittal of an application or notice for a activity, a portion of which extends beyond the boundary of more than one District, is subject to Section 373.046(6), F.S. It provides that the responsible Agency will be determined based on factors such as the amount and geography of the activity's land area, the location of the activity's discharge or discharges, the type of activity, prior agency history, and the terms and conditions of the Operating Agreement in effect between the Agencies. In the case of activities that are the responsibility of DEP, the Director of the district office or Administrator of the Program processing the application shall have the authority to take the final agency action on the entire application.

(b) Applications, notices, and requests for activities that are within the geographic limits of a local government delegated responsibility for the ERP program under Chapter 62-344, F.A.C., shall be submitted to that local government or to the Agency in accordance with the terms of the Delegation Agreement with that local government incorporated by reference in Chapter 62-113, F.A.C. The text of those agreements may be viewed at https://floridadep.gov/ogc/ogc/content/operating-agreements.

Paper and electronic copies of applications and notices must be filed during normal business hours with the Agency. Paper and electronic copies of applications or notices received after 5:00 PM (local time) of the office to which the submittal is made shall be deemed as filed as of 8:00 AM on

the next regular business day. Electronic applications or notices to the NWFWMD are received at the District headquarters, which is in the Eastern time zone.

5.0 Processing of, and Agency Action on, Applications and Notices

5.1 General Procedures

The Agencies are required to follow procedural statutes and rules to review and act on applications and notices, and to provide rights to the public to object to Agency decisions: Chapter 120, F.S. (Florida Administrative Procedures Act), Chapters 28-101 through 28-110, F.A.C. (Uniform Rules of Procedure), and each Agency's adopted Exceptions to the Uniform Rules of Procedure. Additional specific provisions for processing applications and notices under Chapter 62-330, F.A.C., are summarized below.

Except as provided in subsection 62-330.054(4), F.A.C., individual and conceptual approval permits are processed using Rule 62-330.090, F.A.C., and **sections 5.5 through 5.5.5.6, below,** Those sections also address how components of an application that qualify for an exemption or general permit will be processed when they are included in an application for an individual permit.

5.2 Review of an Exemption Determination Request

Rule 62-330.050, F.A.C., and **section 4.2.1** above, describe how the Agencies evaluate whether an activity qualifies for an exemption. Persons are reminded that, except as noted in **section 4.2.1**, above, activities that qualify for an exemption may be conducted without formal review or action by the Agency.

5.3 Review of Request to Use a General Permit

5.3.1 General permits are granted by rule to authorize construction, operation, maintenance, alteration, abandonment, or removal of certain minor projects that have been determined to produce no more than minimal individual and cumulative impacts, provided:

(a) The activity is designed and implemented to meet the specific limits and conditions in the applicable general permit in Rules 62-330.410 through 62-330.635, F.A.C.

(b) The activity complies with all the general conditions in Rule 62-330.405, F.A.C.; and

(c) The person wishing to use a general permit submits to the Agency a completed Form 62-330.402(1), "Notice of Intent to Use an Environmental Resource General Permit", and as discussed in **section 4.2.2, above.**

5.3.2 Upon receipt, Agency staff will review the notice form to determine if it provides the information needed to demonstrate qualification for the general permit, including the processing fee required in Rule 62-330.071, F.A.C. If it does not qualify or contain all the required information, the Agency will mail a notification to the person within 30 days of receiving the notice form that the notice contains errors or omissions, or does not qualify for the requested general permit. If the Agency does not mail such notification within 30 days of receipt of the original or an amended notice to use the general permit, the person is authorized to conduct the activity authorized by the general permit, except where the general permit specifically requires Agency acknowledgement of qualification prior to proceeding with construction (see the general permits in Rules 62-330.410, 62-330.412, 62-330.417, 62-330.450, 62-330.475, and 62-330.630, F.A.C.)

5.3.3 The person submitting the notice form will have 60 days from the date of the Agency notification of non-qualification to correct the errors or deficiencies. An additional notice fee will not be required if the correct fee was originally submitted and information demonstrating qualification for the general permit is submitted to the Agency within the 60-day time limit.

5.3.4 If the person decides not to pursue the general permit and instead submits an application for an individual permit for the activity within 60 days of the Agency's notification of non-qualification for the general permit, the Agency will apply the fee submitted for the general permit to the application fee for the individual permit.

5.3.5 Within three business days of receipt of a general permit notice for general permits under Rule 62-330.474, 62-330.475, or 62-330.600, F.A.C., the Agency will send a copy of the notice form to the FWC.

5.3.6 Activities conducted under a general permit are certified to comply with applicable state water quality standards in Section 401, Public Law 92-500 and 33 USC Section 1341, and constitute a finding of consistency concurrence with the state's coastal zone management program

5.4 Publishing Notices of Exemptions and General Permits

The Agency will not publish in the newspaper, or require the person requesting qualification for an exemption or general permit to publish notice of receipt of, or Agency action on, the request. The Agency shall provide notice of receipt of permit applications, including notices of intent to use general permits, to persons who have requested to receive such notice within a geographic area in accordance with Section 373.413(3), F.S. Such notice may be provided by e-mail or regular mail. An Agency may require the use of an existing online notification system to request and receive such notices, except where the requestor demonstrates a technical or financial hardship. Such notice will not be directly provided for notice of receipt or Agency action on exemption verifications unless they are part of an application for a permit. Any person who requests to inspect public records will be furnished information in accordance with Section 119.07, F.S.

Persons qualifying for an exemption or general permit are advised that interested parties who become aware of Agency action verifying or denying use of the exemption or general permit may have the rights, under Chapter 120, F.S., to petition for an administrative hearing until their point of entry closes. For this reason, it may be in the best interest of the person proposing the activity to publish, at its expense, a one-time "Notice of Qualification for an Exemption" or "Notice of Qualification to Use a General Permit" in a newspaper of general circulation (under Section 50.031, F.S.) in the county where the activity is located.

5.5 Processing Individual and Conceptual Approval Permit Applications

5.5.1 Initial Receipt

Processing of an individual permit application, including an application for a conceptual approval or mitigation bank permit, commences upon receipt of the application (see **section 4.2.3**, above), submitted as described in Rule 62-330.060, F.A.C., and **section 4.4, above.**

5.5.2 Distribution of Applications and Notices to the Public Prior to Agency Action

Receipt of the application form 62-330.060(1) by the Agency serves to initiate the application process for four separate authorizations:

(a) Application for an environmental resource permit. This will include distribution of all or parts of the application to interested parties and state agencies who have requested receipt of such application, or notice of its receipt;

(b) Application for a State 404 Program permit, if the activities will occur within state-assumed waters regulated under Chapter 62-331, F.A.C. This will include distribution of a public notice to interested parties, adjacent property owners, the general public, and applicable state and federal agencies as provided in Chapter 62-331, F.A.C.;

(c) Application for a State Programmatic General Permit (SPGP), if applicable; and

(d) Application to use state-owned submerged lands, when the activities appear to be located on, or have the potential to be located on, such lands.

5.5.2.1 Distribution to the USACE

As of October 1, 2017, copies of the application form are not forwarded to the USACE. A separate USACE permit may be required for the activity. If a USACE permit is required and the project does not qualify for the SPGP, applicants should send a separate application form to the USACE on the appropriate federal application form. Additional information about federal permitting can be found online in the Jacksonville District Regulatory Division Sourcebook.

5.5.2.2 Distribution to Other Agencies

The applicable sections of the application will be distributed to certain state agencies with statutory authority under Florida's approved Coastal Zone Management Program within five working days of receipt of the application, including the Florida Fish and Wildlife Conservation Commission (FWC) and the Department of State, Division of Historical Resources. Those agencies may comment on the application as it is being processed, and may request additional information be provided to them so that they may fully evaluate the application. The Agencies shall consider comments that are timely received in the course of processing the application. As provided by Section 373.428, F.S., these agencies also may object to issuance of the project under the Coastal Zone Management Act. The applicant is not responsible for distributing the application to the above commenting agencies, but may be requested to supply information to them; the applicant is requested to always copy the processing Agency with any materials supplied to those other agencies in response to information related to the application.

5.5.2.3 Publishing Notice of Receipt of an Application for an Individual Permit

(a) Upon receipt by the District of an application for an individual permit to construct or alter a dam, impoundment, reservoir, or appurtenant work, it shall, cause a notice of receipt of the

application to be published in a newspaper having general circulation (meeting the requirements of Section 50.031, F.S.) within the affected area in accordance with Sections 373.116, F.S., 373.118(3), 373.146, and 373.413(3), F.S. In addition, the District may also publish such notice on its website.

(b) When DEP processes the application, it may publish notice on its website if DEP determines that the activities are reasonably expected to result in a heightened public concern or likelihood of request for administrative proceedings. DEP will base that determination on the size, potential effect on the environment or the public, potential controversial nature, and the location of the activities.

(c) For applications processed by any Agency, the Agency will provide a notice of receipt of an application to any person who has filed a written request for notification of any pending applications affecting a designated area. Such notice will contain the name and address of the applicant; a brief description of the proposed activity, including any mitigation; the location of the proposed activity, including whether it is located within an Outstanding Florida Water or aquatic preserve; a map identifying the location of the proposed activity; a depiction of the proposed activity; a name or number identifying the application and the office where the application can be inspected; and any other information required by rule. Such persons have certain rights to comment on or object to applications as they are being processed. Again, applicants are not responsible for performing this distribution.

Persons who wish to have their names placed on that mailing list may do so by contacting the local office of the Agency. An Agency may require the use of an existing online notification system to request and receive such notices, except where the requestor demonstrates a technical or financial hardship. Pending applications and their current status also may be viewed at https://floridadep.gov/sec/sec/content/permits-applications-under-review (for DEP), or at the Internet site of the applicable District.

(d) When noticing is required under Section 253.115, F.S., for activities requiring a lease or easement in, on, or over state-owned submerged lands, the Agency, as staff to the Board of Trustees of the Internal Improvement Trust Fund, is required to provide notice of all property owners within a 500-foot radius of the proposed lease or easement boundary. In such a case, the applicant will be required to forward to the Agency a list of names and addresses from the latest county tax assessment roll in mailing label format. In lieu of the Agency providing notice of application for lease or easement, an applicant may elect to send the notice, provided the notice is sent by certified mail, with the return-receipt card addressed to DEP or District, as applicable.

5.5.3 Request for Additional Information

5.5.3.1 Within 30 days of receipt of the application (see **section 4.2.3., above**) for an individual or conceptual approval permit, and within 30 days of receipt of any additional information provided by the applicant in response to the Agency's timely request for information, the Agency will determine if it contains:

(a) The applicable information requested in Rule 62-330.060, F.A.C., and Sections A through H, as applicable, of the application;

(b) The fee required in Rule 62-330.071, F.A.C.;

(c) Information or exhibits needed to clearly and legibly depict and describe the proposed activity, and its location; and

(d) Any other additional information to provide the reasonable assurances needed by the Agency to determine if the proposed activity meets the conditions for issuance of a permit in accordance with Rules 62-330.301 and 62-330.302, F.A.C., and the Applicant's Handbook, as well as the information that may be required to concurrently process applications located on state-owned submerged lands in accordance with Rule 62-330.075, F.A.C. Applications for a conceptual approval permit also will be evaluated for the information required in either Rule 62-330.055 or 62-330.056, F.A.C., as applicable. Applications for a mitigation bank permit also will be evaluated for information required in Chapter 62-342, F.A.C.

The Agency may request only that information needed to clarify the additional information, or to answer new questions directly related to the additional information. The request will include citation to the rule that authorizes the Agency to request information on each item pursuant to Section 373.417, F.S.

The applicant may voluntarily submit a written waiver of the above 30-day time clock requirement to allow the Agency additional time to determine if additional information is required; the Agency is not obligated to accept the waiver or to delay sending the request for additional information.

5.5.3.2 An application will be considered incomplete if it does not include all the above items, or if it appears to contain conflicts or errors. If an agent completed the application on behalf of the applicant, the Agency will request any needed information from the agent, and will provide a copy of the request to the applicant. For purposes of the discussion that follows, the term "applicant" will also refer to the agent working on behalf of the applicant as identified in the application.

5.5.3.3 The Agency will inform the applicant within 30 days of receipt of the application, or within 30 days of receipt of additionally received information, whether the proposed activities are exempt from permitting or qualify for a general permit. Any processing fees received in excess of those required under Rule 62-330.071, F.A.C., will be refunded.

5.5.3.4 If a project contains a mixture of activities, one or more of which require an individual permit, and one or more of which are exempt from permitting or qualify for a general permit, all of the proposed activities will be considered together to be part of the application for an individual permit, and will be reviewed by the Agency as a whole, unless the applicant specifically requests in writing, prior to or in conjunction with the submittal of the application for an individual permit, that the Agency determine which components of the entire application qualify for an exemption or general permit. In such a case, the applicant must separately pay the processing fee required under Rule 62-330.071, F.A.C., for the Agency to determine qualification for an exemption, a general permit, or both. If the application contains more than one type of activity qualifying for an exemption, only one exemption verification processing fee will be charged in addition to the required permit application fee, as provided in subsection 62-330.050(6), F.A.C. If the application contains more than one type of activity qualifying for a general permit, a processing fee shall be charged for each general permit verification under subsection 62-330.402(2), F.A.C., in addition to the individual permit application fee.

5.5.3.5 The applicant shall have 90 days from the date the Agency makes a timely request for additional information to submit that information to the Agency. If an applicant requires more than 90 days to respond, it must notify the Agency in writing of the circumstances, at which time the application shall remain in active status for one additional period of up to 90 days. Additional extensions shall be granted for good cause shown by the applicant. A showing that the applicant is making a diligent effort to obtain the requested additional information, and that the additional time period is both reasonable and necessary to supply the information, shall constitute good cause. In such case, a specified amount of additional time shall be granted at the mutual consent of the Agency and the applicant. If the applicant chooses not to, or is unable to, respond to the request for additional information within the above time frames, the application shall be administratively denied without prejudice. Such denial is not a determination of the merit of an application and does not preclude the applicant from reapplying at a later time. However, the applicant will not receive a refund of processing fees submitted, and the Agency will not apply those processing fees to a subsequently submitted permit application or notice. An applicant who cannot provide requested information within the above time frames is encouraged to withdraw their application before the Agency takes action to deny it.

5.5.3.6 The applicant may submit a written request for an application be deemed complete at any time. Upon receipt of such request, the Agency will begin processing the application and will take Agency action to issue or deny the application within 60 days of that date, or within such additional time as may be provided if the applicant voluntarily waives that time clock.

5.5.3.7 An applicant may voluntarily request the application be withdrawn prior to Agency action if the applicant does not or cannot provide the requested information or required processing fees within the above time frames. The applicant will not receive a refund of processing fees, but the Agency will apply processing fees submitted for such withdrawn application to the processing fee required for a new application or notice received from the same applicant, for an activity on all or a part of the same parcel, within 365 days of the date the Agency received the request to withdraw the previous application.

5.5.4 Staff Evaluation and Agency Action

5.5.4.1 Agency staff will commence the technical review when the application for an individual permit is complete. Criteria used in the evaluation will include Rules 62-330.075 (if the activity is located on state-owned submerged lands), 62-330.301 and 62-330.302, F.A.C., **Parts II through V of this Volume,** and **Volume II**, as applicable**.**

The decision to issue or deny a permit will be based on a determination of whether the reasonable assurances required in the above rules and the Handbook have been provided, including the provisions for elimination or reduction of adverse impacts to wetlands and other surface waters, and a determination of whether mitigation is appropriate to offset those adverse impacts.

5.5.4.2 A permit shall be approved, denied, or subject to a notice of proposed agency action within 60 days after receipt of the original application, the last item of timely requested additional material, or the applicant's written request to begin processing the permit application. By the 60-day deadline, or prior to the expiration of a timely filed waiver, the Agency will either issue a permit (or a Notice of Intent to Issue) if the activity meets the criteria in **section 5.5.4.1, above,** or it will issue a Notice of Denial (or Notice of Intent to Deny) if the activity does not meet the permitting criteria.

5.5.4.3 If the Agency determines that the applicant has not provided reasonable assurance that the proposed activity qualifies for issuance of an individual permit, the notice of denial (or notice of intended denial) will explain the basis for the denial, and what changes, in general terms, if any, would address the reasons for denial.

5.5.5 Notice of Agency Action

5.5.5.1 A person may request notice of the intended agency action for a specific application.

5.5.5.2 Interested persons, including objectors, may submit information about a proposed activity for Agency review. For Agency staff to properly evaluate the information, those persons are advised to contact the Agency within 14 days of notification of the Agency's receipt of the application if they have questions, objections, comments, or information regarding the proposed activity. Persons may also request public records in accordance with Section 119.07, F.S.

5.5.5.3 For applications processed by DEP, it will provide notice of agency action to any person who has filed a written request to be notified of DEP's decision to issue or deny the permit, and to persons who have filed written objections or concerns about the activity. In addition, applicants will be required to publish, at their expense, a one-time notice of the agency decision in a newspaper of general circulation (meeting the requirements of Section 50.031, F.S.) in the county where the activity is located if DEP determines the proposed activities are reasonably expected to result in a heightened public concern or likelihood of request for administrative proceedings. DEP will base that determination on the size, potential effect on the environment or the public, controversial nature, or location of the activities. DEP will furnish the applicant with the notice that is to be published. Notwithstanding DEP's intended agency action, such application shall be denied if the applicant either fails to publish notice, or fails to provide proof of publication within 30 days of DEP's issuance of intended agency action, or within 21 days of the date of publication, whichever occurs sooner. In addition, DEP may also publish such notice on its website.

5.5.5.4 For applications processed by a District, the District shall provide notice of agency action or intended agency action to the applicant and to any persons who have requested to receive such notice. The District shall inform the applicant of the right to publish the Agency decision. The District may also publish such notice on its website.

5.5.5.5 The Notice of Agency Action, or the permit if there is no prior Notice of Agency Action, will include a notice of rights under Chapter 120, F.S., explaining the time limit for a person to file a petition for a formal administrative hearing.

5.5.5.6 Persons who have not been provided with notice of the Agency decision may have the right to petition for an administrative hearing on the activity under Chapter 120, F.S., until their point of entry closes. Therefore, even if not required to publish notice of the Agency's decision, it may be in the applicant's best interest to publish, at its own expense, a one-time notice of the Agency's decision (or intended decision) in a newspaper of general circulation in the county in which the activity is located.

5.6 Activities on State-owned Submerged Lands

Permit applications (as well as notices requesting qualification for an exemption or general permit) for activities on, or having the potential to be located on, state-owned submerged lands are subject to review by DEP's Division of State Lands for a title determination. Applicants are not responsible for obtaining that determination. If a determination is made that the activity is located on state-owned submerged lands, a separate submerged lands authorization will be required in addition to any required environmental resource permit. The Agency will determine the form of authorization required, and whether such authorization can be approved, as part of the review of the application in accordance with Chapter 253, F.S., and 258, F.S., Chapters 18-18 or 18-20, F.A.C., as applicable, and Chapter 18-21, F.A.C. Processing of individual permit applications for activities on state-owned submerged lands are concurrently processed with the applicable state-owned submerged lands authorization, as described in **section 1.3.3 above**, Rule 62-330.075, F.A.C., and Section 373.427, F.S. For exemptions and general permits, the Agency will attempt to provide the state-owned submerged lands authorization at the same time as the decision to issue, deny, or verify the permit or notice under Chapter 62-330, F.A.C. If the state-owned submerged lands authorizations require execution of a document, such as a lease or easement, construction, alteration, maintenance, or removal of the project should not commence until that document is executed.

6.0 Duration, Operation, Modification, and Transfer of Permit

6.1 Duration of Permits

6.1.1 General

General, individual, and conceptual approval permits are issued with a specified construction phase, as provided in Rule 62-330.320, F.A.C. Upon completion of the construction that is compliant with the terms and conditions of the permit, the permit is then converted to a perpetual operation and maintenance phase. Conversion is either automatic or requires formal action by the Agency; the procedures for the conversion are described below and in Rule 62-330.310, F.A.C. A conceptual approval permit does not authorize construction or operation, but does have an expiration date that is tied to the issuance of subsequent permits for construction or alteration of the activities that are consistent with the conceptual approval permit, as discussed in Rule 62-330.055 and 62-330.056, F.A.C.

6.1.2 Construction Phase Duration

6.1.2.1 General Permits — The construction phase of a general permit is five years and cannot be extended. If construction activities have not been completed within that five year period, a new notice of intent to use the applicable general permit must be submitted, as provided in Rule 62-330.402, F.A.C., and **sections 5.3 through 5.3.6**, above.

6.1.2.2 Individual Permits — The construction phase of an individual permit typically is five years, but for good cause, may be authorized for a longer duration at the time of issuance of the permit, as described below and in subsection 62-330.320(2), F.A.C. An extension may be requested as a modification to the permit as described in Rule 62-330.315, F.A.C., and **sections 6.1.3 and 6.2**, below.

The construction phase of a permit expires on the date indicated in the permit unless an application is received for an extension of the construction phase prior to expiration of the permit.

If a construction phase is requested for a duration of more than five years, as part of either the initial application or any subsequent modification, the applicant, in each instance, will be required to provide reasonable assurance that:

(a) The project cannot reasonably be expected to be completed within five years after commencement of construction; and

(b) The impacts of the activity, considering its nature, size, and any required mitigation, can be accurately assessed and offset where appropriate, and the terms of the permit can be met for the duration of the permit requested.

A mine is an example of a type of project where a construction phase of more than five years is typically requested; in many cases, mine resources are extracted over a period that may exceed 50 years.

6.1.2.3 A construction phase may include some incidental operation of constructed activities prior to formal conversion to an operation phase. For example, during construction of a stormwater

management system, rainfall events may occur that will discharge stormwater runoff into the system under construction. At such times, the system may be temporarily operated prior to formal conversion to the operation phase, provided such temporary operation does not violate the conditions for issuance of a permit in Rule 62-330.301 and 63-330.302, F.A.C. However, such constructed projects cannot be used for their intended use (such as occupation of a residence, commencement of business transactions for a business, public use of a road, or occupation of parking spaces by the general public within a parking lot) until the project, or the portions of the project that can be operated independently of other portions of the project have been completed and the Permittee has submitted Form 62-330.310(1) "As-Built Certification and Request for Conversion to Operation Phase," in accordance with subparagraph 62-330.350(1)(f)2., F.A.C., certifying as to such completion.

6.1.3 Request to Extend the Duration of the Construction Phase after Issuance

After issuance of an individual or conceptual approval permit, *but before the expiration date*, a permittee may request the duration of the permit be extended by sending a permit modification request (electronically or by mail) to the Agency that issued the permit in accordance with Rule 62-330.315, F.A.C., and section **6.2**, below.

If a timely and complete request is received to extend the construction phase of an individual permit, or the duration of a conceptual approval permit, the existing permit shall remain in full force and effect until the Agency takes action on the request for extension. If the request is denied, the permit shall not expire until the last day for requesting review of the Agency order.

6.1.4 Operation and Maintenance Phase

The procedures and requirements for converting a permit from the construction phase to the operation and maintenance phase are provided in Rule 62-330.310, F.A.C., the general and special limiting condition in paragraph 62-330.350(1)(g), F.A.C., and **sections 12.1 through 12.2 of this Volume.**

The operation and maintenance phase of all ERPs lasts in perpetuity.

6.1.5 Conceptual Approval Permits

The duration of conceptual approval permits is:

The maximum duration of a conceptual approval permit, other than for urban infill and redevelopment, is 20 years, or as otherwise provided in subsection 62-330.056(9), F.A.C., provided authorized construction commences within five years of issuance (see subsection 62-330.056(10), F.A.C.).

The phrases "authorized construction or alteration has begun" in subsection 62-330.056(9), F.A.C., and "construction commenced" in subsection 62-330.056(10), F.A.C., mean that substantive work has been initiated in accordance with a general or individual permit authorizing construction of the project in conformance with the terms and conditions of the conceptual approval permit. Minor clearing, dredging, or filling with an apparent purpose of keeping the permit active will not be considered to meet this requirement.

For urban infill and redevelopment — 20 years, as specified in subsection 62-330.055(7), F.A.C.

6.2 Modification of Permits

The permittee may request a modification to an existing, currently valid individual or conceptual approval permit in accordance with Rule 62-330.315, F.A.C., and as summarized below. Changes to activities authorized by a general permit require submittal of a new notice (if the changes result in the project still qualifying for a general permit), or submittal of a new application for an individual permit if the changes cause the activity to exceed the limitations and conditions of the general permit.

6.2.1 Applications for modifications are processed as either minor or major in accordance with Rule 62-330.315, F.A.C., and the following.

(a) Applications for minor modifications, as described in Rule 62-330.315, F.A.C., other than to modify the permit to reflect a change in ownership or control of the land subject to the permit as provided in subsection 62-330.340(1), F.A.C., and section 6.3.2.1(a)**, below**, may be requested electronically or by letter sent to the Agency that processed the permit. The request must include:

1. Reference to the permittee name and permit number;

2. Contact information for the requestor;

3. A clear statement explaining the nature of the proposed modification

4. Fully dimensioned or scaled drawings reflecting the proposed modification, if applicable.

(b) A request to transfer a permit or to add co-permittees to a permit is considered a minor modification, and shall be made in accordance with Rule 62-330.340, F.A.C., and through use of the "Request to Transfer Environmental Resource Permit and/or State 404 Program" Form 62-330.340(1).

(c) A request that does not qualify as a minor modification is processed as a major modification in accordance with subsection 62-330.315(3), F.A.C.

(d) Factors that will be considered in determining whether a modification will cause more than minor changes under subsection 62-330.315(2), F.A.C., are whether the proposed activity will:

1. Increase the project area by more than 10 percent or 1 acre, whichever is less, unless the activities were permitted with stormwater treatment and flood attenuation capability sufficient to meet the permitting requirements for the proposed modification, or unless the increase in project area is to a mitigation bank, in which case any increase in the project area is considered a major modification;

2. Increase proposed impervious and semi-impervious surfaces by more than 10 percent or 0.5 acres, whichever is less, unless the activities were permitted with stormwater treatment and flood attenuation capability sufficient to meet the permitting requirements for the proposed modification;

3. Reduce the stormwater treatment or flood attenuation capability of the system, unless the activities were permitted with stormwater treatment and flood

attenuation capability sufficient to meet the permitting requirements for the proposed modification;

4. Result in additional net loss of regulated floodplain storage;

5. Result in additional unmitigated impacts to wetlands or other surface waters, unless mitigation is not required pursuant to **section 10.2.2.1 or 10.2.2.2**, below;

6. Result in more than 10 percent or 0.5 acre, whichever is less, of total additional mitigated impacts to wetlands and other surface waters;

7. Result in any additional impacts within a designated riparian habitat protection zone;

8. Cause or contribute to water quality violations that were not anticipated in the issued permit;

9. Reduce the permitted financial responsibility mechanisms, except in accordance with specific permit conditions that provide for a reduction in such financial responsibility mechanisms;

10. Result in a net reduction in the area of conservation easement or mitigation within the area which was previously permitted;

11. Extend the duration of a permit beyond five years from the current permit expiration date except as otherwise provided in Rule 62-330.320(2), F.A.C.;

12. Require a new site inspection that will require more than minimal staff time to conduct;

13. Lead to substantially different impacts to the water resources or overall objectives of the District or Department, unless they lessen the impacts of the original permit; or

14. Otherwise substantially alter the design of the activities or the permit conditions.

(e) An application for a permit or a request to construct a phase of a project pursuant to Rule 62-330.056, F.A.C., is not a minor modification of the conceptual approval permit.

(f) Requests to use or release mitigation bank credits shall be reviewed as a minor modification of the relevant mitigation bank permit.

(g) All modification requests must include payment of the processing fee under Rule 62-330.071, F.A.C.

6.3 Transfers of Permits and Changes in Ownership

6.3.1 General permits

Projects constructed in accordance with the terms and conditions of a general permit are automatically authorized to be operated and maintained by the permittee and subsequent owners in accordance with subsection 62-330.340(1), F.A.C., and do not require a modification request to the Agency upon change in ownership.

6.3.2 Individual and Conceptual Approval Permits

6.3.2.1 A modification to an individual or conceptual approval permit is required to reflect any sale, conveyance, or other transfer of ownership or control of the real property, project, or activity covered by the permit, except for transfer to the operation and maintenance entity approved in the permit. Ownership must be demonstrated in accordance with **sections 4.2.3(d) and (e), above**. One of two procedures below is to be used, depending on whether the permit is in the construction phase or the operation and maintenance phase and the timing of the request:

(a) Upon transfer of ownership or control of the entire real property, project, or activity covered by a permit that is in the operation and maintenance phase, transfer of the permit to the new owner or person in control is automatic if the permittee provides the agency with written notice within 30 days of the change in ownership or control, except as otherwise provided in subsection 62-330.340(1), F.A.C.

(b) In all other situations a permit modification must be processed under subsections 62-330.340(2) through (4), F.A.C.

A request to transfer a portion of a permitted project shall also include a demonstration that either that portion of the project is capable of functioning independently in compliance with all conditions for permit issuance, or that the transferee has sufficient legal and ownership interest (such as drainage easements, cross drainage agreements or other agreements) to allow the transferee to operate and maintain all other portions of the project when necessary.

6.4 Removal and Abandonment

An owner of any stormwater management system, dam, impoundment, reservoir, appurtenant work, or works wishing to abandon or remove such project is subject to the provisions of Section 373.426, F.S.

7.0 Determinations of the Landward Extent of Wetlands and Other Surface Waters

7.1 Methodology

Determinations of the landward extent of wetlands and other surface waters shall be performed using Chapter 62-340, F.A.C., as ratified under Section 373.4211, F.S.

Three types of determinations are available:

(a) A formal determination, based on a certified survey, an approximate delineation, or a combination thereof, as discussed in **sections 7.2 through 7.2.9**, below;

(b) An informal determination, as discussed in **section 7.3**, below; and

(c) A delineation, identification, or verification as part of a request for verification of an exemption, notice of intent to use a general permit, or application for an individual or conceptual approval permit.

7.1.1 Data Form

Agency staff shall use Form 62-330.201(1), F.A.C., "Chapter 62-340, F.A.C. Data Form, (December 22, 2020), incorporated by reference in Rule 62-330.201(1), F.A.C., to document verification of determinations of the landward extent of wetlands and other surface water for notices and applications for ERP permits and formal or informal determinations of the landward extent of wetlands and other surface waters. The "Chapter 62-340, F.A.C. Data Form Guide" in Appendix J, the "62-340, F.A.C. Data Form Instructions", in Appendix K, and the "Florida Wetland Delineation Manual", which is available for download on the Department website, may be used to assist staff and other environmental professionals in completing the form and performing delineations.

Any time a regulatory agency concludes or determines that an area is a non-wetland surface water, wetland, or upland at least one data point should be documented, *i.e.*, once a conclusion informally or formally has been made by the regulatory agency at least one complete data form supporting that conclusion is required.

The number of data forms required will depend on the size and variability of the site inspection area. There is no size threshold or maximum number of data forms required for an inspection site. Reasonable scientific judgement should be used to determine the number of required data forms on a case by case basis.

(a) For the delineation of the landward extent of wetlands and other surface waters, at least one delineation data point along the boundary shall be verified and documented by the regulatory agency during the visual site inspection pursuant to Chapter 62-340.100(1), F.A.C. Documentation of a delineation data point shall include two data forms; one representative of the waterward area adjacent to the data point, the other representative of the landward or upland area adjacent to the data point. The two complete data forms at a delineation data point will document failure or satisfaction of all methodology criteria pursuant to Chapter 62-340, F.A.C., and changes in evidence used to determine the boundary delineation at that point.

A delineation data point will be documented for each homogeneous boundary within the site inspection area. If all delineation boundaries on site are homogenous in character, one data point is sufficient for documentation. One delineation data point representative of homogeneous boundaries found in other locations throughout the site is sufficient for documentation.

For purposes of the delineation data point, "homogeneous boundary" means all or part of a site delineation that is sufficiently similar in current condition to be delineated determine the landward extent of wetlands and other surface waters with a particular "test(s)" or interpretation of evidence as contemplated in Chapter 62-340, F.A.C. Characteristics that distinguish homogeneous boundaries may include, but are not limited to:

1. plant community type,
2. surface water type,
3. hydrologic indicators,
4. soils,
5. alterations to plants, hydrology, or soils,
6. hydrologic isolation or connection to waters of the State, or
7. other current condition expression which separate it from other boundaries on site.

(b) For identification or conclusions regarding the absence or presence of a non-wetland surface water, wetland, or upland classification by the regulatory agency within the site inspection area, at least one data form within homogeneous areas of classification shall be verified and documented by the regulatory agency during the visual site inspection pursuant to Chapter 62-340.100(1), F.A.C. Documentation of an identification data point shall include one data form representative of the area of classification. The data form at an identification data point will document failure or satisfaction of all methodology criteria pursuant to Chapter 62-340, F.A.C. and evidence used to determine the upland, wetland, or non-wetland surface water classification.

An identification data point will be documented for each homogeneous area within the site inspection area. If all areas on site are homogenous in character, one data point is sufficient for documentation. One data point representative of homogeneous areas found in other locations throughout the site is sufficient for documentation.

For purposes of the identification data point, "homogeneous area" means all or part of a site inspection area that is sufficiently similar in current condition to classify with a particular "test(s)" or interpretation of evidence as contemplated in Chapter 62-340, F.A.C. Characteristics that distinguish a homogeneous area may include, but are not limited to:

1. upland classification,
2. wetland classification,
3. non-wetland surface water classification,
4. hydrologic isolation or connection to waters of the State,
5. plant community type,
6. surface water type,
7. hydrologic indicators,
8. soils,
9. alterations to plants, hydrology, or soils, or
10. other current condition expression which separate it from other areas on site.

7.2 Formal Determinations

Petitions for formal determinations shall be prepared following the requirements below**,** and submitted to the applicable Agency in accordance with the Operating Agreements incorporated by reference in subsection 62-330.010(5), F.A.C.

7.2.1 Preparation and Submittal of the Petition

The petition shall contain:

(a) One copy of completed Form 62-330.201(2), "Petition for a Formal Determination of the Landward Extent of Wetlands and Other Surface Waters," including copies of all items required by that form; and

(b) The processing fee required in Rule 62-330.071, F.A.C.

(c) The petition shall be submitted to the Agency office that will have permitting responsibility for the types of activities proposed for the lands subject to the Determination, in accordance with the Operating Agreements incorporated by reference in Chapter 62-113, F.A.C.

7.2.2 Processing the Petition

(a) Within 30 days of receipt of a petition for a formal determination of the landward extent of wetlands and other surface waters, and within 30 days of receipt of any additional information submitted by the petitioner in accordance with this subsection, the Agency shall notify the petitioner of any additional information which may be necessary to complete the review of the petition. The applicant may voluntarily submit a written waiver of the above 30-day time clock requirement to allow the Agency additional time to determine if additional information is required. The Agency is not obligated to accept the waiver or to delay sending the request for additional information.

The petitioner shall have 90 days from the date the Agency mails a timely request for additional information to submit that information to the Agency. If a petitioner requires more than 90 days in which to respond to a request for additional information, the petitioner may notify the Agency in writing of the circumstances, at which time the petition shall be held in active status for one additional period of up to 90 days, if approved by the Agency. Additional extensions shall be granted by the reviewing Agency for good cause shown by the petitioner. A showing that the petitioner is making a diligent effort to obtain the requested additional information shall constitute good cause. Failure of a petitioner to provide the timely requested information by the applicable deadline shall result in administrative denial of the petition without prejudice to re-apply.

1. For petitions processed by DEP, it will complete the determination and issue a notice of intended agency action within 60 days after the petition is deemed complete. The petitioner shall publish, at its own expense, the notice of proposed agency action in a newspaper of general circulation in the affected area. The petitioner shall provide a copy of the proof of publication of the notice of intended agency action to DEP using the format prescribed in subsection 62-110.106(5), F.A.C. The Agency shall send the property owner a copy of the Agency determination if the owner is not the petitioner.

2. For petitions processed by a District, the District shall complete the determination and shall issue a notice of intended agency action within 60 days after the petition is deemed complete. The petitioner may publish, at its own expense, the notice of proposed agency action in a newspaper of general circulation in the affected area. If published, the petitioner shall provide a copy of the proof of publication of the notice of intended agency action to the District. The District shall send the property owner a copy of the Agency determination if the owner is not the petitioner.

(b) The petition shall be denied if the Agency determines that the materials submitted to the reviewing agency do not contain all the applicable information required in this subsection, including if the petitioner does not correctly delineate the landward extent of wetlands and other surface waters in accordance with Chapter 62-340, F.A.C. The Agency shall complete the determination and shall issue a notice of intended agency action within 60 days after the petition is deemed complete unless the petitioner provides the reviewing agency with a written waiver of this time limit. A person requesting a formal determination may withdraw the petition without prejudice at any point before final agency action.

(c) Sections 120.569 or 120.57, F.S., apply to formal determination decisions made by the Agency.

(d) Prior to the Agency's inspection of real property, the petitioner or its agent shall initially delineate the boundaries of wetlands and other surface waters on the site by flagging the field locations of wetland and other surface water boundaries (for a certified survey or a global positioning system [GPS] approximate delineation), or by depicting the extent of wetlands and other surface waters on the most recent aerials (for an approximate delineation). Limits of the area to be delineated, whether contained within a single property or consisting of multiple properties, shall be clearly marked and easily discernable in the field. This inspection boundary shall be depicted on all aerials and maps clearly identifying the limits of the inspection for the formal determination. An Agency representative will then verify the location of the wetland and other surface water boundaries within the inspection boundary and indicate any necessary adjustments of the petitioner's initial determination to reflect an accurate delineation. When the real property is less than 10 acres, the petitioner may elect to not pre-flag for verification, in which case the reviewing Agency will flag the wetland and other surface water boundaries during its inspection of the site. Verification and documentation of the wetland and other surface water boundaries by the Agency representative shall be conducted in accordance with Chapter 62-340, F.A.C., and section 7.1.1(a), above.

(e) A petitioner may request a formal determination in the form of a certified survey, an approximate delineation, or combinations thereof, as described below.

1. When a certified surveyed delineation of the extent of wetlands and other surface waters is used, the survey shall be prepared and certified by a Professional Surveyor and Mapper registered in the State of Florida. The surveyor or the surveyor's representative shall accompany the Agency representative on the delineation verification described in section **7.2.2(f)**, below, and shall have the surveyor survey the verified boundaries of wetlands and other surface waters. The certified survey shall include a legal description of, and acreage contained within, and depict the boundaries of the property for which the determination is sought. The boundaries of wetlands and other surface waters must be witnessed to the property boundaries, and shall be capable of being mathematically reproduced

from the survey. The petitioner must submit to the Agency one electronic copy or three paper copies of the certified survey, along with one copy of the survey depicted on aerial photographs to complete the petition.

2. When an approximate delineation is used, it shall consist of a depiction of the approximate boundary of wetlands and other surface waters produced by using a GPS, or the boundary of wetlands and other surface waters drawn on rectified aerial photographs, or a combination thereof. The approximate delineation shall be subject to the following:

   a. A range of variability shall be determined for all depictions of approximate wetland and other surface water boundaries by comparing a number of field located flagged points of the delineated wetland and other surface water points field delineated by GPS, to field located and surveyed boundary points. The Agency shall determine the number and location of comparison points using the total linear feet of approximately delineated wetland and other surface water boundaries such that the total number of comparison points reflects at least one specific surveyed comparison point for every 1,000 feet of approximately depicted wetland and other surface water boundary. No fewer than three comparison points shall be performed for each approximate delineation. The applicant may request that artificial waterbodies that were constructed entirely in uplands be excluded from the linear feet calculation when determining the number of required comparison points. This exclusion is limited to artificial waterbodies for which the Agency has confirmed a delineation in accordance with 62-340.600(2)(d), F.A.C., and that meet the definition in paragraph 2.0(a)10 of this Volume, except when the exclusion would result in an approximate delineation with less than three comparison points. For GPS approximate delineations, the petitioner shall provide a survey prepared and certified by a Professional Surveyor and Mapper registered in the State of Florida, to show the relationship of surveyed comparison points to the GPS depicted wetland and other surface water boundaries. The range of variability shall be the greatest deviation measured at the surveyed comparison points. An approximate GPS depiction of wetland and other surface water boundaries cannot be used if the range of variability is equal to or greater than 25 feet.

   b. A range of variability shall be determined for all approximate wetland and other surface water boundaries hand drawn on aerial photographs by comparing a number of specific wetland and other surface water boundary points indicated on the rectified aerial photograph, to field located and surveyed boundary points. The Agency shall determine the number and location of comparison points using the total linear feet of approximately delineated wetland and other surface water boundary such that the total number of comparison points reflects at least one specific surveyed comparison point for every 1,000 feet of approximately delineated wetland and other surface water boundary. No fewer than three comparison points shall be performed for each approximate delineation. The applicant may request that artificial waterbodies that were constructed entirely in uplands be excluded from the linear feet calculation when determining the number of required comparison points. This exclusion is limited to artificial

waterbodies for which the Agency has confirmed a delineation in accordance with 62-340.600(2)(d), F.A.C., and that meet the definition in paragraph 2.0(a)10 of this Volume, except when the exclusion would result in an approximate delineation with less than three comparison points. For approximate wetland and other surface water boundaries hand drawn on an aerial photograph, the petitioner shall provide a specific purpose survey prepared and certified by a Professional Surveyor and Mapper registered in the State of Florida, to show the relationship of surveyed comparison wetland and other surface water boundary points to the aerial photo-interpreted wetland and other surface water boundary points. The range of variability shall be the greatest deviation measured at the surveyed comparison points. An approximate hand-drawn aerial photograph delineation method cannot be used if the range of variability is equal to or greater than 25 feet.

c. A rectified aerial photograph shall serve as the basis for an approximate delineation hand-drawn on aerial photographs only when the boundaries of wetlands and other surface waters are accurately depicted on the aerial photograph by the clear expression of vegetative or physical signatures of the vegetative communities as verified by ground-truthing. If a submitted rectified aerial photograph does not provide a clear expression of vegetative or physical signatures of the vegetative communities or other surface water features on the property, or cannot be accurately depicted, then the landward extent of wetlands and other surface waters shall be delineated by flagging the boundary, and the formal determination shall be produced using the procedure for a certified survey described above in section 7.2.2(e)1; or by depiction of the approximate wetland and other surface water boundaries field delineated by GPS as described above in section 7.2.2(e)2.a., or a combination thereof.

d. After any verification and adjustment as required in section **7.2.2(f)**, below, the petitioner shall submit one copy of the following to complete the petition: the hand-drawn wetland and other surface water boundaries on a rectified aerial photograph; or a depiction of the approximate wetlands and other surface waters field-delineated by GPS on a rectified aerial photograph, along with one electronic copy or three paper copies of a survey prepared and certified by a Professional Surveyor and Mapper registered in the State of Florida, to show the relationship of field located surveyed comparison points to the approximate field GPS boundary points or the wetlands and other surface waters boundary drawn on a rectified aerial photograph.

e. As a condition of an approximate formal determination, when a subsequent permit application includes regulated activities within 200 feet of the landward extent of the approximate delineation, the applicant shall field-establish and flag or stake the exact wetlands and other surface waters boundaries pursuant to Chapter 62-340, F.A.C., at that location for verification by the reviewing Agency. The purpose of the flagging or staking is to identify the line to minimize the potential for unintentional disturbance of the wetlands or other surface waters. If the regulated activities are in such proximity to the field-established line that it is

necessary for the Agency to require the field-established line to be documented as part of the permit application or formal determination, or if required as part of accepting a site-protection instrument proposed by the applicant, the line as field-verified by the reviewing Agency shall be located by a surveyor or mapper registered in the State of Florida. The field-established line does not need to be documented when any of the following exist:

(1) The project will involve dredging or filling of an entire wetland or other surface water encompassed by the approximate delineation, and the impact meets the requirements of section 10.2.1 of Volume I. If only a portion of the wetlands or other surface waters at that location is proposed for dredging or filling, the need to stake or flag the field-established line or the proposed limits of dredging or filling will be determined by the Agency during processing of the permit application based on factors such as those in (2) through (3) below.

(2) The precise location of the wetland or other surface water boundary is not needed to demonstrate compliance with section 10.2.7 of Volume I.

(3) Flagging or staking of the field-established line will not materially affect whether the project impacts can be determined by relying on the approximate delineation.

(f) Prior to the Agency's inspection of the site the petitioner or their agent shall submit to the reviewing agency a depiction of the delineation of wetlands and other surface waters that have been flagged (for a certified survey or a global positioning system [GPS] approximate delineation) or photointerpreted (for an aerial approximate delineation) on the most recent aerial photographs that depict the property. Verification and documentation of the wetland and other surface water boundaries by the Agency representative shall be conducted in accordance with Chapter 62-340, F.A.C., and section 7.1.1(a), above.

(g) Pursuant to Section 373.421, F.S., an issued formal determination of the landward extent of wetlands and other surface waters is binding only for the limits of wetlands and other surface waters as defined and delineated under Chapter 62-340, F.A.C.

7.2.3 Duration.

A formal determination shall be binding for five years provided physical conditions on the property do not change, other than changes that have been authorized by a permit issued under Part IV, Chapter 373, F.S., so as to alter the boundaries of delineated wetlands or other surface waters during that period.

7.2.4 Renewal of Determination. A petition for a new formal determination for a property for which a formal determination issued pursuant to this rule already exists shall qualify for a renewal for an additional five years, pursuant to Section 373.421, F.S., at a reduced processing fee under Rule 62-330.071, F.A.C., provided:

(a) Physical conditions on the property have not altered the boundaries of wetlands or other surface waters during the period of the existing determination, other than changes that have been authorized by a permit issued under Part IV of Chapter 373, F.S. Site conditions shall be documented in accordance with section 7.1.1(a), above;

(b) The petition is submitted within 60 days prior to the expiration of the existing determination; and

(c) The methodology in Chapter 62-340, F.A.C., has not been amended since the previous formal determination.

7.2.5 Re-issuance of Determination. A petition for a new formal determination for a property for which a formal determination was previously issued pursuant to this rule but has since expired shall qualify for a re-issuance for an additional five years at a reduced processing fee under Rule 62-330.071, F.A.C., provided:

(a) Physical conditions on the property have not altered the boundaries of wetlands or other surface waters during the period of the former determination, other than changes that have been authorized by a permit issued under Part IV of Chapter 373, F.S. (Site conditions shall be documented in accordance with section 7.1.1(a), above);

(b) The petition is submitted within two years of the expiration of the former determination; and

(c) The methodology in Chapter 62-340, F.A.C., has not been amended since the previous formal determination.

7.2.6 Revocation of Determination. The Agency shall revoke a formal determination upon finding that the petitioner has submitted inaccurate information to the Agency such that a substantially different delineation of the boundaries of wetlands or other surface waters would have resulted if the correct information had been submitted (see Section 373.421(4), F.S.).

7.2.7 A formal determination issued to a real property owner or other person who has a legal or equitable interest in real property may be transferred to a successor in interest to the party who originally petitioned for the determination. The transfer shall be subject to the existing terms and conditions of the original determination.

7.2.8 A copy of the issued formal determination, along with the certified survey depicting the approved wetlands and other surface waters boundaries, shall be sent to the appropriate USACE office and to DEP or the District, as appropriate.

7.2.9 Where a petition for a formal determination is requested for lands subject to a violation of Part IV of Chapter 373, F.S., the extent of wetlands and other surface waters will be evaluated as if the violation or non-compliance issue had not occurred.

7.3 Informal Determinations.

(a) The Agency may issue informal, non-binding pre-application determinations of wetlands and other surface waters. Such determinations will be performed only as Agency staff time and resources allow. Applicants are strongly advised to contact Agency staff prior to requesting an informal determination, as staff resources to perform these determinations are very limited.

Informal determinations are provided as a public service, and are available only to the property owner, an entity that has the power of eminent domain, or any other person who has a legal or equitable interest in the parcel of property.

(b) A request for an informal determination by the Agency requires payment of the fee in Rule 62-330.071, F.A.C., but:

1. Will be limited to one of the following:

(a) Presence or absence identification of wetlands, non-wetland surface waters, or uplands. Verification and documentation shall be conducted in accordance with Chapter 62-340, F.A.C., and section 7.1.1(b), above.

(b) Verification of the landward extent of wetlands and other surface waters established using Chapter 62-340, F.A.C., and marked in the field prior to the Agency inspection. Verification and documentation shall be conducted in accordance with Chapter 62-340, F.A.C., and section 7.1.1(a), above.

2. Is not an application for a permit.

3. Is not subject to the processing review timeframes in Chapter 120 or 373, F.S.

(c) An informal determination by the Agency, if issued:

1. Does not constitute final agency action;

2. Is subject to change, and does not bind the Agency, nor does it convey any legal rights, expressed or implied. Persons obtaining an informal pre-application determination are not entitled to rely upon it for purposes of compliance with law or Agency rules.

(d) An inability of the Agency to perform an informal determination also does not constitute a default of agency action.

PART II -- CRITERIA FOR EVALUATION

8.0 Criteria for Evaluation

8.1 Purpose

The criteria explained in this part are those that have been adopted by the Agency in evaluating applications for individual and conceptual approval permits, with the exception of those individual permits described in Rule 62-330.054(4), F.A.C. The staff recommendation to approve any individual or conceptual approval permit will be based upon a determination of whether reasonable assurance has been provided that the activity meets the criteria for evaluation, and whether the applicable permit fee has been submitted. In addition, the staff recommendation to resolve any violation under Chapter 62-330, F.A.C., also will be based upon a determination of whether reasonable assurance has been provided that the activity meets the criteria for evaluation in this part.

General permits are pre-issued, and already contain the limitations and criteria that must be met to qualify to use the specific general permit. Upon receipt of a notice to use a general permit, the Agency's review is limited to determining whether the notice complies with the terms and conditions of the pre-issued permit, in accordance with Chapter 62-330, F.A.C., and whether the applicable permit fee has been submitted.

8.2 Criteria for Evaluation

8.2.1 To obtain an individual or conceptual approval permit, an applicant must give reasonable assurance that the following major standards contained in Sections 373.042, .413, .414, .416, .426, .429, .4595, F.S., are met:

(a) The construction or alteration of any stormwater management system, dam, impoundment, reservoir, appurtenant work or works will not be harmful to the water resources of the District or Department;

(b) The operation or maintenance of any stormwater management system, dam, impoundment, reservoir, appurtenant work or works will not be inconsistent with the overall objectives of the District or Department and will not be harmful to the water resources of the District or Department;

(c) The abandonment or removal of any stormwater management system, dam, impoundment, reservoir, appurtenant work, or works will not be inconsistent with the overall objectives of the District or Department; and

(d) Compliance with applicable additional basin criteria will not be inconsistent with the overall objectives of the District or Department.

8.2.2 All Individual and Conceptual Approval Permits

Generally, to obtain an individual or conceptual approval permit, an applicant must provide reasonable assurance that the construction, alteration, operation, maintenance, removal, or abandonment of a project will meet the Conditions for Issuance in Rule 62-330.301, F.A.C., the applicable Additional Conditions for Issuance in Rule 62-330.302, F.A.C., and the requirements of this Volume, and the applicable parts of Volume II.

However, when an activity requires an individual permit solely pursuant to section 1.2.3 of Volume II for the SJRWMD, the permit application for such activity shall be reviewed and acted upon in accordance with that section.

8.2.3 Activities Discharging into Waters That Do Not Meet Standards

In instances where an applicant is unable to meet water quality standards because existing ambient water quality does not meet standards, and the activity will cause or contribute to this existing condition, mitigation for water quality impacts can consist of water quality enhancement that achieves a net improvement. In these cases, the applicant must propose and agree to implement mitigation measures that will cause net improvement of the water quality in the receiving waters for those contributed parameters that do not meet water quality standards.

8.2.4 Flood Damage

Activities shall not cause adverse flooding. Information on design and performance standards to avoid and minimize flood damage is contained in Volume II specific to the geographic area covered by each District.

8.2.5 Storage and Conveyance

Floodways and floodplains, and levels of flood flows or velocities of adjacent streams, impoundments or other water courses must not be altered so as to adversely impact the off-site storage and conveyance capabilities of the water resource. Projects that alter existing conveyance systems (such as by rerouting an existing ditch) must not adversely affect existing conveyance capabilities. Also, the applicant shall provide reasonable assurance that proposed velocities are non-erosive or that erosion control measures (such as riprap and concrete lined channels) are sufficient to safely convey the flow. Information on design and performance standards to achieve storage and conveyance requirements are in Volume II specific to the geographic area covered by each District.

8.2.6 Low Flow and Base Flow Maintenance

Flows of adjacent streams, impoundments, or other watercourses must not be decreased so as to cause adverse impacts. Information on design and performance standards to achieve low flow and base flow maintenance requirements are contained in Volume II specific to the geographical area covered by each District.

8.2.7 Mine Stormwater Management Systems Permitted by DEP

Appendix I in this Volume contains additional criteria when a mine pit is to be used as part of a stormwater management system during mining and reclamation. That Appendix is applicable only for mines for which DEP has permitting, compliance, and enforcement responsibilities under the Agency Operating Agreements, but is not applicable to borrow pits. Specific evaluation criteria, including pre-treatment of stormwater runoff prior to stormwater entering the mine excavation area (mine pit) is needed to provide reasonable assurance that water quantity and quality requirements under Chapter 62-330, F.A.C., are met. The applicant for such a system is strongly encouraged to contact the Department's Mining and Mitigation staff to arrange a pre-application review meeting to discuss project design and monitoring requirements.

8.3 State Water Quality Standards

8.3.1 Surface Water Quality Standards

State surface water quality standards are set forth in Chapters 62-4 and 62-302, F.A.C., including the antidegradation provisions of paragraphs 62-4.242(1)(a) and (b), 62-4.242(2) and (3), F.A.C., and Rule 62-302.300, F.A.C., and the special standards for Outstanding Florida Waters and Outstanding National Resource Waters set forth in subsections 62-4.242(2) and (3), F.A.C.

8.3.2 Ground Water Quality Standards

State water quality standards for ground water are set forth in Chapter 62-520, F.A.C. In addition to the minimum criteria, Class G-I and G-II ground water must meet primary and secondary drinking water quality standards for public water systems, which are established pursuant to the Florida Safe Drinking Water Act, Sections 403.850 through 403.864, F.S., and are listed in Rules 62-550.310 and 62-550.320, F.A.C.

Only the minimum criteria apply within a zone of discharge, as determined in Rule 62-520.400**,** F.A.C.

8.3.3 How Standards are Applied

The quality of waters discharged to receiving waters is presumed to meet the surface water quality standards in Chapter 62-302, F.A.C., and Rule 62-4.242 and 62-4.244, F.A.C., and the ground water standards in Chapter 62-520, F.A.C., if a project is permitted, constructed, operated, and maintained in accordance with Chapter 62-330, F.A.C., this Volume, and the applicable parts of Volume II.

9.0 RESERVED

PART III – ENVIRONMENTAL

10.0 Environmental Considerations

10.1 Wetlands and other surface waters

Wetlands are important components of the water resources in the state because they often serve as spawning, nursery and feeding habitats for many species of fish and wildlife, and because they often provide important flood storage, nutrient cycling, detrital production, and recreational and water quality functions. Other surface waters, such as lakes, ponds, reservoirs, other impoundments, streams, rivers, and estuaries, also provide such functions and in addition may provide flood conveyance, navigation, recreation, and water supply functions to the public. Not all wetlands or other surface waters provide all of these functions, nor do they provide them to the same extent. A wide array of biological, physical and chemical factors affect the functioning of any wetland or other surface water community. Maintenance of water quality standards in applicable wetlands and other surface waters is critical to their ability to provide many of these functions. It is the intent of the Agency that the criteria in **sections 10.2 through 10.3.8, below,** be implemented in a manner that achieves a programmatic goal, and a project permitting goal, of no net loss in wetland or other surface water functions. This goal shall not include projects that are exempt by statute or rule, or that are authorized by a general permit. Unless exempted by statute or rule, permits are required for the construction, alteration, operation, maintenance, abandonment, and removal of projects so that the Agency can conserve the beneficial functions of these communities. The term "project" includes areas of dredging or filling, as those terms are defined in Sections 373.403(13) and 373.403(14), F.S.

10.1.1 Environmental Conditions for Issuance

The Agency addresses the conservation of these beneficial functions in the permitting process by requiring applicants to provide reasonable assurances that the following conditions for issuance of permits, set forth in Rules 62-330.301 (Conditions for Issuance) and 62-330.302 (Additional Conditions for Issuance), F.A.C., are met. Applicants must provide reasonable assurance that:

(a) A regulated activity will not adversely impact the value of functions provided to fish and wildlife and listed species by wetlands and other surface waters [paragraph 62-330.301(1)(d), F.A.C.];

(b) A regulated activity located in, on, or over wetlands or other surface waters will not be contrary to the public interest, or if such an activity significantly degrades or is within an Outstanding Florida Water, that the regulated activity will be clearly in the public interest [subsection 62-330.302(1), F.A.C.];

(c) A regulated activity will not adversely affect the quality of receiving waters such that the water quality standards set forth in Chapters 62-4, 62-302, 62-520, and 62-550, F.A.C., including any antidegradation provisions of paragraphs 62-4.242(1)(a) and (b), subsections 62-4.242(2) and (3), and Rule 62-302.300, F.A.C., and any special standards for Outstanding Florida Waters and Outstanding National Resource Waters set forth in subsections 62-4.242(2) and (3), F.A.C., will be violated [paragraph 62-330.301(1)(e), F.A.C.];

(d) A regulated activity located in, adjacent to or in close proximity to Class II waters or located in waters classified by the Department of Agriculture and Consumer Services as approved, restricted, conditionally approved, or conditionally restricted for shellfish harvesting will

comply with the additional criteria in **section 10.2.5, of this Volume** [paragraph 62-330.302(1)(c), F.A.C.];

(e) The construction of vertical seawalls in estuaries and lagoons will comply with the additional criteria in **section 10.2.6, of this Volume** [paragraph 62-330.302(1)(d), F.A.C.];

(f) A regulated activity will not cause adverse secondary impacts to the water resources [paragraph 62-330.301(1)(f), F.A.C.]; and

(g) A regulated activity will not cause unacceptable cumulative impacts upon wetlands and other surface waters [paragraph 62-330.302(1)(b), F.A.C.].

10.2 Environmental Criteria

Compliance with the conditions for issuance in **section 10.1.1, above,** will be determined through compliance with the criteria explained in **sections 10.2 through 10.3.8, below**.

10.2.1 Elimination or Reduction of Impacts

Protection of wetlands and other surface waters is preferred to destruction and mitigation due to the temporal loss of ecological value and uncertainty regarding the ability to recreate certain functions associated with these features. The following factors are considered in determining whether an application will be approved by the Agency: the degree of impact to wetland and other surface water functions caused by a proposed activity; whether the impact to these functions can be mitigated; and the practicability of design modifications for the site that could eliminate or reduce impacts to these functions, including alignment alternatives for a proposed linear system. Design modifications to reduce or eliminate adverse impacts must be explored, as described in **section 10.2.1.1, below**. Adverse impacts remaining after practicable design modifications have been made may be offset by mitigation as described in **sections 10.3 through 10.3.8, below**. An applicant may propose mitigation, or the Agency may suggest mitigation, to offset the adverse impacts caused by regulated activities as identified in **sections 10.2 through 10.2.8.2, below**. To receive Agency approval, an activity cannot cause a net adverse impact on wetland functions and other surface water functions that is not offset by mitigation.

10.2.1.1 Except as provided in **section 10.2.1.2, below**, if the proposed activity will result in adverse impacts to wetland functions and other surface water functions such that it does not meet the requirements of **sections 10.2.2 through 10.2.3.7, below**, then the Agency in determining whether to grant or deny a permit shall consider whether the applicant has implemented practicable design modifications to reduce or eliminate such adverse impacts.

The term "modification" shall not be construed as including the alternative of not implementing the activity in some form, nor shall it be construed as requiring a project that is significantly different in type or function. A proposed modification that is not technically capable of being completed, is not economically viable, or that adversely affects public safety through the endangerment of lives or property is not considered "practicable." A proposed modification need not remove all economic value of the property in order to be considered not "practicable." Conversely, a modification need not provide the highest and best use of the property to be "practicable." In determining whether a proposed modification is practicable, consideration shall also be given to the cost of the modification compared to the environmental benefit it achieves.

10.2.1.2 The Agency will not require the applicant to implement practicable design modifications to reduce or eliminate impacts when:

a. The ecological value of the functions provided by the area of wetland or other surface water to be adversely affected is low, based on a site specific analysis using the factors in **section 10.2.2.3, below**, and the proposed mitigation will provide greater long term ecological value than the area of wetland or other surface water to be adversely affected, or

b. The applicant proposes mitigation that implements all or part of a plan that provides regional ecological value and that provides greater long term ecological value than the area of wetland or other surface water to be adversely affected.

10.2.1.3 Should such mutual consideration of modification and mitigation not result in a permittable activity, the Agency must deny the application. Nothing herein shall imply that the Agency may not deny an application for a permit as submitted or modified, if it fails to meet the conditions for issuance, or that mitigation must be accepted by the Agency.

10.2.2 Fish, Wildlife, Listed Species and their Habitats

Pursuant to **section 10.1.1(a), above**, an applicant must provide reasonable assurances that a regulated activity will not impact the values of wetland and other surface water functions so as to cause adverse impacts to:

(a) The abundance and diversity of fish, wildlife, listed species, and the bald eagle (*Halieaeetus leucocephalus*), which is protected under the Bald and Golden Eagle Protection Act, 16 U.S.C. 668-668d (April 30, 2004); a copy of the Act is in Appendix F; and

(b) The habitat of fish, wildlife, and listed species.

In evaluating whether an applicant has provided reasonable assurances under these provisions, *de minimis* effects shall not be considered adverse for the purposes of this section.

As part of the assessment of the impacts of regulated activities upon fish and wildlife, the Agency will provide a copy of all notices of applications for individual (including conceptual approval) permits that propose regulated activities in, on, or over wetlands or other surface waters to the Florida Fish and Wildlife Conservation Commission (FWC) for review and comment, in accordance with Section 20.331(10), F.S. In addition, Agency staff may solicit comments from the FWC regarding other applications to assist in the assessment of potential impacts to fish and wildlife and their habitats, particularly with regard to listed species.

The need for a wildlife survey will depend upon the likelihood that the site is used by listed species and the bald eagle, considering site characteristics and the range and habitat needs of such species, and whether the proposed activity will impact that use such that the criteria in **sections 10.2.2 through 10.2.2.3 and section 10.2.7, below,** will not be met. Survey methodologies employed to inventory the site must provide reasonable assurances regarding the presence or absence of the subject listed species. Species-specific wildlife surveys are dependent on seasonality and day/night patterns of animals. Applicants are encouraged to discuss the proposed survey methodologies with the Agencies prior to conducting the survey.

In assessing the likelihood of use of a site by listed species, the sufficiency of proposed survey methodology, and any information provided as reasonable assurance under this section, the Agency will consider comments and recommendations received from the FWC, the U.S. Fish and Wildlife Service, comments from the applicant, and other water-resource related public comments. Scientific literature, and technical assistance documents such as the "*Florida Wildlife Conservation Guide*" at: myfwc.com/conservation/value/fwcg/ (2011), management plans, recovery plans, and habitat and conservation guidelines also will be considered.

10.2.2.1 Compliance with **sections 10.2.2 through 10.2.3.7 and 10.2.5 through 10.3.8, below,** will not be required for regulated activities in isolated wetlands less than one half acre in size, unless:

(a) The wetland is used by endangered or threatened species;

(b) The wetland is located in an area of critical state concern designated pursuant to Chapter 380, F.S.;

(c) The wetland is connected by standing or flowing surface water at seasonal high water level to one or more wetlands, and the combined wetland acreage so connected is greater than one half acre; or

(d) The Agency establishes that the wetland to be impacted is, or several such isolated wetlands to be impacted are cumulatively, of more than minimal value to fish and wildlife.

10.2.2.2 Alterations in wholly-owned ponds that were entirely constructed in uplands and that are less than one acre in area and alterations in drainage ditches that were constructed in uplands will not be required to comply with the provisions of **sections 10.2.2 through 10.2.2.3, 10.2.3 through 10.2.3.7, and 10.2.5 through 10.3.8 below**, unless those ponds or ditches provide significant habitat for endangered or threatened species. This means that, except in cases where those ponds or ditches provide significant habitat for endangered or threatened species, the only environmental criteria that will apply to those ponds or ditches are those included in **sections 10.2.2.4 and 10.2.4 through 10.2.4.5, below.** This provision shall only apply to those ponds and ditches that did not require a permit under Part IV, Chapter 373, F.S., or that were constructed for purposes other than mitigation pursuant to a permit under Part IV, Chapter 373, F.S. This provision does not apply to ditches constructed to divert natural stream flow.

10.2.2.3 The assessment of impacts expected as a result of proposed activities on the values of functions will be based on a review of scientific literature, ecologic and hydrologic information, and field inspection. When assessing the value of functions that any wetland or other surface water provides to fish, wildlife, and listed species, the factors that the Agency will consider are:

(a) Condition – this factor addresses whether the wetland or other surface water is in a high quality state or has been the subject of past alterations in hydrology, water quality, or vegetative composition. However, areas impacted by activities in violation of an Agency rule, order, or permit adopted or issued pursuant to Chapter 373, F.S., or Part VIII of Chapter 403, F.S. (1984 Supp.) as amended, will be evaluated as if the activity had not occurred;

(b) Hydrologic connection – this factor addresses the nature and degree of off-site connection, which may provide benefits to off-site water resources through detrital export, base flow maintenance, water quality enhancement or the provision of nursery habitat;

(c) Uniqueness – this factor addresses the relative rarity of the wetland or other surface water and its floral and faunal components in relation to the surrounding regional landscape;

(d) Location – this factor addresses the location of the wetland or other surface water in relation to its surroundings. In making this assessment, the Agency will consult reference materials such as the Florida Natural Areas Inventory, Comprehensive Plans, and maps created by governmental agencies identifying land with high ecological values; and

(e) Fish and wildlife utilization – this factor addresses use of the wetland or other surface water for resting, feeding, breeding, nesting or denning by fish and wildlife, particularly those that are listed species.

10.2.2.4 Water Quantity Impacts to Wetlands and Other Surface Waters

Pursuant to **section 10.1.1(a), above**, an applicant must provide reasonable assurance that the regulated activity will not change the hydroperiod of a wetland or other surface water, so as to adversely affect wetland functions or other surface water functions as follows:

(a) Whenever portions of a system, such as constructed basins, structures, stormwater ponds, canals, and ditches, could have the effect of reducing the depth, duration or frequency of inundation or saturation in a wetland or other surface water, the applicant must perform an analysis of the drawdown in water levels or diversion of water flows resulting from such activities and provide reasonable assurance that these drawdowns or diversions will not adversely impact the functions that wetlands and other surface waters provide to fish and wildlife and listed species;

(b) Increasing the depth, duration, or frequency of inundation through changing the rate or method of discharge of water to wetlands or other surface waters or by impounding water in wetlands or other surface waters must also be addressed to prevent adverse effects to functions that wetlands and other surface waters provide to fish and wildlife and listed species. Different types of wetlands respond differently to increased depth, duration, or frequency of inundation. Therefore, the applicant must provide reasonable assurance that activities that have the potential to increase discharge or water levels will not adversely affect the functioning of the specific wetland or other surface water subject to the increased discharge or water level; and

(c) Whenever portions of an activity could have the effect of altering water levels in wetlands or other surface waters, applicants shall be required to either: monitor the wetland or other surface waters to demonstrate that such alteration has not resulted in adverse impacts; or modify the activity to prevent adverse impacts. Monitoring parameters, methods, schedules, and reporting requirements shall be specified in permit conditions.

10.2.3 Public Interest Test

In determining whether a regulated activity located in, on, or over wetlands or other surface waters is not contrary to the public interest, or if such an activity significantly degrades or is within an Outstanding Florida Water, that the regulated activity is clearly in the public interest, the Agency shall consider and balance, and an applicant must address, the following criteria:

(a) Whether the regulated activity will adversely affect the public health, safety, or welfare or the property of others (subparagraph 62-330.302(1)(a)1, F.A.C.);

(b) Whether the regulated activity will adversely affect the conservation of fish and wildlife, including endangered or threatened species, or their habitats (subparagraph 62-330.302(1)(a)2, F.A.C.);

(c) Whether the regulated activity will adversely affect navigation or the flow of water or cause harmful erosion or shoaling (subparagraph 62-330.302(1)(a)3, F.A.C.);

(d) Whether the regulated activity will adversely affect the fishing or recreational values or marine productivity in the vicinity of the activity (subparagraph 62-330.302(1)(a)4, F.A.C.);

(e) Whether the regulated activity will be of a temporary or permanent nature (subparagraph 62-330.302(1)(a)5, F.A.C.);

(f) Whether the regulated activity will adversely affect or will enhance significant historical and archaeological resources under the provisions of Section 267.061, F.S. (subparagraph 62-330.302(1)(a)6, F.A.C.); and

(g) The current condition and relative value of functions being performed by areas affected by the proposed regulated activity (subparagraph 62-330.302(1)(a)7, F.A.C.).

10.2.3.1 Public Health, Safety, or Welfare or the Property of Others

In reviewing and balancing the criterion regarding public health, safety, welfare and the property of others in **section 10.2.3(a), above**, the Agency will evaluate whether the regulated activity located in, on, or over wetlands or other surface waters will cause:

(a) An environmental hazard to public health or safety or improvement to public health or safety with respect to environmental issues. Each applicant must identify potential environmental public health or safety issues resulting from their project. Examples of these issues include: mosquito control; proper disposal of solid, hazardous, domestic or industrial waste; aids to navigation; hurricane preparedness or cleanup; environmental remediation, enhancement or restoration; and similar environmentally related issues. For example, the installation of navigational aids may improve public safety and may reduce impacts to public resources;

(b) Impacts to areas classified by the Department of Agriculture and Consumer Services as approved, conditionally approved, restricted or conditionally restricted for shellfish harvesting. Activities that would cause closure or a more restrictive classification or management plan for a shellfish harvesting area would result in a negative factor in the public interest balance with respect to this criterion;

(c) Flooding or alleviate existing flooding on the property of others. There is at least a neutral factor in the public interest balance with respect to the potential for causing or alleviating flooding problems if the applicant meets the water quantity criteria in **Part III of Volume II**; and

(d) Environmental impacts to the property of others. For example, construction of a ditch that lowers the water table such that off-site wetlands or other surface waters would be partly or

fully drained would be an environmental impact to the property of others. The Agency will not consider impacts to property values.

10.2.3.2 Fish and Wildlife and their Habitats

The Agency's public interest review of that portion of a proposed activity in, on, or over wetlands and other surface waters for impacts to "the conservation of fish and wildlife, including endangered or threatened species, or their habitats" is encompassed within the required review of the entire activity under **section 10.2.2, above**. An applicant must always provide the reasonable assurances required under **section 10.2.2, above**.

10.2.3.3 Navigation, Water Flow, Erosion and Shoaling

In reviewing and balancing the criterion on navigation, erosion and shoaling in **section 10.2.3(c), above**, the Agency will evaluate whether the regulated activity located in, on or over wetlands or other surface waters will:

(a) Significantly impede navigability or enhance navigability. The Agency will consider the current navigational uses of the surface waters and will not speculate on uses that may occur in the future. Applicants proposing to construct bridges or other traversing works must address adequate horizontal and vertical clearance for the type of watercraft currently navigating the surface waters. Applicants proposing to construct docks, piers and other works that extend into surface waters must address the continued navigability of these waters. An encroachment into a marked or customarily used navigation channel is an example of a significant impediment to navigability. Applicants proposing temporary activities in navigable surface waters, such as the mooring of construction barges, must address measures for clearly marking the work as a hazard to navigation, including nighttime lighting. The addition of navigational aids may be beneficial to navigation. If an applicant has a U.S. Coast Guard permit issued pursuant to 14 U.S.C. Section 81 or 33 C.F.R. Part 62 for a regulated activity in, on or over wetlands or other surface waters, submittal of this permit with the application may assist the applicant in addressing this criterion.

(b) Cause or alleviate harmful erosion or shoaling. Applicants proposing activities such as channel relocation, artificial reefs, construction of jetties, breakwaters, groins, bulkheads and beach nourishment must address existing and expected erosion or shoaling in the proposed design. Compliance with erosion control best management practices referenced in **Part IV of this Volume**, will be an important consideration in addressing this criterion. Each permit will have a general condition that requires applicants to utilize appropriate erosion control practices and to correct any adverse erosion or shoaling resulting from the regulated activities.

(c) Significantly impact or enhance water flow. Applicants must address significant obstructions to sheet flow by assessing the need for structures that minimize the obstruction such as culverts or spreader swales in fill areas. Compliance with the water quantity criteria found in **section 10.2.2.4, above,** shall be an important consideration in addressing this criterion.

10.2.3.4 Fisheries, Recreation, Marine Productivity

In reviewing and balancing the criterion regarding fishing or recreational values and marine productivity in **section 10.2.3(d), above**, the Agency will evaluate whether the regulated activity in, on, or over wetlands or other surface waters will cause:

(a) Adverse effects to sport or commercial fisheries or marine productivity. Examples of activities that may adversely affect fisheries or marine productivity are the elimination or degradation of fish nursery habitat, change in ambient water temperature, change in normal salinity regime, reduction in detrital export, change in nutrient levels, or other adverse effects on populations of native aquatic organisms.

(b) Adverse effects or improvements to existing recreational uses of a wetland or other surface water. Wetlands and other surface waters may provide recreational uses such as boating, fishing, swimming, waterskiing, hunting, and birdwatching. An example of potential adverse effects to recreational uses is the construction of a traversing work, such as a road crossing a waterway, which could impact the current use of the waterway for boating.

10.2.3.5 Temporary or Permanent Nature

When evaluating the other criteria in **section 10.2.3, above**, the Agency will consider the frequency and duration of the impacts caused by the proposed activity. Temporary impacts will be considered less harmful than permanent impacts of the same nature and extent.

10.2.3.6 Historical and Archaeological Resources

In reviewing and balancing the criterion regarding historical and archaeological resources in **section 10.2.3(f), above**, the Agency will evaluate whether the regulated activity located in, on, or over wetlands or other surface waters will impact significant historical or archaeological resources. The applicant must map the location of and characterize the significance of any known historical or archaeological resources that may be affected by the regulated activity located in, on or over wetlands or other surface waters. The Agency will provide copies of all individual (including conceptual approval) permit applications to the Division of Historical Resources of the Department of State and solicit its comments regarding whether the regulated activity may adversely affect significant historical and archaeological resources. The applicant will be required to perform an archaeological survey and to develop and implement a plan as necessary to demarcate and protect the significant historical or archaeological resources, if such resources are reasonably expected to be impacted by the regulated activity.

10.2.3.7 Current Condition and Relative Value of Functions

When evaluating other criteria in **section 10.2.3, above**, the Agency will consider the current condition and relative value of the functions performed by wetlands and other surface waters affected by the proposed regulated activity. Wetlands and other surface waters that have had their hydrology, water quality, or vegetative composition permanently impacted due to past legal alterations or occurrences, such as infestation with exotic species, usually provide lower habitat value to fish and wildlife. However, if the wetland or other surface water is currently degraded, but is still providing some beneficial functions, consideration will be given to whether the regulated activity will further reduce or eliminate those functions. The Agency will also evaluate the predicted ability of the wetlands or other surface waters to maintain their current functions as part

of the proposed activity once it is developed. Where previous impacts to a wetland or other surface water are temporary in nature, consideration will be given to the inherent functions of these areas relative to seasonal hydrologic changes, and expected vegetative regeneration and projected habitat functions if the use of the subject property were to remain unchanged. When evaluating impacts to mitigation sites that have not reached success pursuant to **section 10.3.6, below**, the Agency shall consider the functions that the mitigation site was intended to offset, and any additional delay or reduction in offsetting those functions that may be caused by impacting the mitigation site. Previous construction or alteration undertaken in violation of Chapter 373, F.S., or Agency rule, order or permit will not be considered as having diminished the condition and relative value of a wetland or other surface water.

10.2.4 Water Quality

Pursuant to **section 10.1.1(c), above**, an applicant must provide reasonable assurance that the regulated activity will not cause or contribute to violations of water quality standards in areas where water quality standards apply.

Reasonable assurances regarding water quality must be provided both for the short term and the long term, addressing the proposed construction, alteration, operation, maintenance, removal and abandonment of the project. The following requirements are in addition to the water quality requirements found in **sections 8.2.3 and 8.3 through 8.3.3, above**.

10.2.4.1 Short Term Water Quality Considerations

The applicant must address the short term water quality impacts of a proposed activity, including:

(a) Providing and maintaining turbidity barriers or similar devices for the duration of dewatering and other construction activities in or adjacent to wetlands or other surface waters;

(b) Stabilizing newly created slopes or surfaces in or adjacent to wetlands and other surface waters to prevent erosion and turbidity;

(c) Providing proper construction access for barges, boats and equipment to ensure that propeller dredging and rutting from vehicular traffic does not occur;

(d) Maintaining construction equipment to ensure that oils, greases, gasoline, or other pollutants are not released into wetlands or other surface waters;

(e) Controlling the discharge from spoil disposal sites; and

(f) Preventing any other discharge or release of pollutants during construction or alteration that will cause or contribute to water quality standards being violated.

10.2.4.2 Long Term Water Quality Considerations

The applicant must address the long term water quality impacts of a proposed activity, including:

(a) The potential of a constructed or altered water body to cause or contribute to violations of water quality standards due to its depth or configuration. For example, the depth of water bodies must be designed to ensure proper mixing so that the water quality standard for

dissolved oxygen will not be violated in the lower levels of the water body, but the depth should not be so shallow that the bottom sediments are frequently resuspended by boat activity. Water bodies must be configured to prevent the creation of debris traps or stagnant areas that could result in violations of water quality standards.

(b) Long term erosion, siltation or propeller dredging that will cause turbidity violations.

(c) Prevention of any discharge or release of pollutants from the activity that will cause water quality standards to be violated.

10.2.4.3 Additional Water Quality Considerations for Docking Facilities

Docking facilities, due to their nature, provide potential sources of pollutants to wetlands and other surface waters. If the proposed work has the potential to adversely affect water quality, an applicant proposing the construction, expansion or alteration of a docking facility must address the following factors to provide the required reasonable assurance that water quality standards will not be violated:

(a) Hydrographic information or studies shall be required for docking facilities of greater than ten boat slips, unless hydrographic information or studies previously conducted in the vicinity of the facility provide reasonable assurance that the conditions of the water body and the nature of the proposed activity do not warrant the need for new information or studies. Hydrographic information or studies also may be required for docking facilities of fewer than ten slips, dependent upon the site specific features described in **section 10.2.4.3(b), below**. In all cases, the design of the hydrographic study, and its complexity, will be dependent upon the specific project design and the specific features of the project site.

(b) The purpose of the hydrographic information or studies is to document the flushing time (the time required to reduce the concentration of a conservative pollutant to ten percent of its original concentration) of the water at the docking facility. This information is used to determine the likelihood that the facility will accumulate pollutants to the extent that water quality violations will occur. Generally, a flushing time of less than or equal to four days is the maximum that is desirable for docking facilities. However, the evaluation of the maximum desirable flushing time also takes into consideration the size (number of slips) and configuration of the proposed docking facility; the amplitude and periodicity of the tide; the geometry of the subject water body; the circulation and flushing of the water body; the quality of the waters at the project site; the type and nature of the docking facility; the services provided at the docking facility; and the number and type of other sources of water pollution in the area.

(c) The level and type of hydrographic information or studies that will be required for the proposed docking facility will be determined based upon an analysis of site specific characteristics. As compared to sites that flush in less than four days, sites where the flushing time is greater than four days generally will require additional, more complex levels of hydrographic studies or information to determine whether water quality standards can be expected to be violated by the facility. The degree and complexity of the hydrographic study will be dependent upon the types of considerations listed in **section 10.2.4.3(b), above**, including the potential for the facility, based on its design and location, to add pollutants to the receiving waters. Types of information that can be required include site-specific measurements of: waterway geometry, tidal amplitude, the periodicity of forces that drive

water movement at the site, and water tracer studies that document specific circulation patterns.

(d) The applicant shall document, through hydrographic information or studies, that pollutants leaving the site of the docking facility will be adequately dispersed in the receiving water body so as to not cause or contribute to violations of water quality standards based on circulation patterns and flushing characteristics of the receiving water body.

(e) In all cases, the hydrographic studies shall be designed to document the hydrographic characteristics of the project site and surrounding waters. All hydrographic studies must be based on the factors described in **sections (a) through (d), above**. An applicant should consult with the Agency prior to conducting such a study.

(f) In accordance with Chapters 62-761 and 62-762, F.A.C., applicants are advised that fueling facilities must have secondary containment equipment and shall be located and operated so that the potential for spills or discharges to surface waters and wetlands is minimized.

(g) The disposal of domestic wastes from boat heads, particularly from liveaboard vessels, must be addressed to prevent improper disposal into wetlands or other surface waters. A liveaboard vessel shall be defined as a vessel docked at the facility that is inhabited by a person or persons for any five consecutive days or a total of ten days within a 30-day period.

(h) The disposal of solid waste, such as garbage and fish cleaning debris, must be addressed to prevent disposal into wetlands or other surface waters.

(i) Pollutant leaching characteristics of materials such as treated pilings and anti-fouling paints used on the hulls of vessels must be addressed to ensure that any pollutants that leach from the structures and vessels will not cause violations of water quality standards given the flushing at the site and the type, number and concentration of the likely sources of pollutants.

10.2.4.4 Mixing Zones

A temporary mixing zone for water quality during construction or alteration may be requested by the applicant. The Agency shall review such requests pursuant to Rule 62-4.242 and subsection 62-4.244(5), F.A.C.

10.2.4.5 Where Ambient Water Quality Does Not Meet Standards

If the site of the proposed activity currently does not meet water quality standards, the applicant must demonstrate compliance with the water quality standards by meeting the provisions in **sections 10.2.4.1, 10.2.4.2, and 10.2.4.3, above,** as applicable, and for the parameters that do not meet water quality standards, the applicant must demonstrate that the proposed activity will not contribute to the existing violation. If the proposed activity will contribute to the existing violation, mitigation may be proposed as described in **section 10.3.1.4, below**.

10.2.5 Class II Waters; Waters Approved for Shellfish Harvesting

The special value and importance of shellfish harvesting waters to Florida's economy as existing or potential sites of commercial and recreational shellfish harvesting and as a nursery area for fish and

shellfish is recognized by the Agencies. In accordance with **section 10.1.1(d), above**, the Agency shall deny a permit for a regulated activity located:

(a) In Class II or Class III waters, as designated in Chapter 62-302, F.A.C., that are classified by the Department of Agriculture and Consumer Services (DACS) as "approved," "restricted," "conditionally approved," or "conditionally restricted" for shellfish harvesting. However, the Agency may issue permits or certifications in such waters for: environmental restoration or enhancement; maintenance dredging of navigational channels; the construction of shoreline protection structures; the installation of transmission and distribution lines for carrying potable water, electricity or communication cables in rights-of-way previously used for such lines; or clam and oyster culture. This provision also shall not apply to docking facilities that meet all of the following criteria:

1. No more than two vessels shall be moored, and no more than two slips constructed in total at a private residential single-family dock, or no more than ten vessels moored and no more than ten slips constructed in total at a private residential multi-family, commercial, or governmental dock at any time;

2. No overboard discharges of trash, human or animal waste, or fuel shall occur at the dock. For all commercial, governmental, or private residential multi-family docks that will moor vessels that contain, or have the capability of containing, a permanent marine sanitation device, the applicant must provide reasonable assurance that there will not be a discharge of domestic wastes from such vessels at the dock;

3. Any enclosed, non-water dependent structures shall be located on the uplands;

4. Prior to the mooring of any vessel at the dock, there shall be existing structures with toilet facilities located on the uplands;

5. Any proposed boat shelter shall not be enclosed with screens, walls, doors, or windows;

6. A minimum of one foot clearance must be maintained between the deepest draft of any vessel (including the vessel propulsion unit) moored in the water at the dock and the top of any submerged resources (which includes rooted aquatic macrophyte communities, attached macro-marine algae communities, sponge beds, coral communities, and oyster communities) in the mooring location, as measured at mean low water. The height of rooted aquatic macrophyte communities, attached macro-marine algae communities shall be measured as they exist during the growing season (April through September);

7. Any structures located over grassbeds shall be designed so as to allow for the maximum practicable amount of light penetration; and

8. There shall be no overnight occupancy at any time on the dock or on any vessels moored to the dock.

Solely for purposes of this subsection, the term "vessel" shall include all sailboats and motorized boats of any type other than personal watercraft as defined in Section 327.02, F.S.,

whether moored in the water or stored on the dock, in a boat lift, or on a floating vessel platform.

(b) In any Class II waters that are not classified by DACS as "approved," "restricted," "conditionally approved," or "conditionally restricted" for shellfish harvesting, unless the applicant submits a plan or proposes a procedure to protect those waters and waters in the vicinity. The plan or procedure shall detail the measures to be taken to prevent significant damage to the immediate project area and the adjacent area, and shall provide reasonable assurance that the water quality standards for Class II waters will not be violated.

(c) In any class of waters where the location of the activity is adjacent or in close proximity to Class II waters, unless the applicant submits a plan or proposes a procedure that demonstrates that the regulated activity will not have a negative effect on the Class II waters and will not result in violations of water quality standards in the Class II waters.

10.2.6 Vertical Seawalls

(a) The construction of vertical seawalls in estuaries or lagoons is prohibited unless one of the following conditions exists:

1. The proposed construction is located within a port, as defined in Section 315.02 or 403.021, F.S.;

2. The proposed construction is necessary for the creation of a marina, the vertical seawalls are necessary to provide access to watercraft, or the proposed construction is necessary for public facilities;

3. The proposed construction is to be located within an existing manmade canal and the shoreline of such canal is currently occupied in whole or in part by vertical seawalls; or

4. The proposed construction is to be conducted by a public utility when such utility is acting in the performance of its obligation to provide service to the public.

5. The proposed construction is located within the coastal areas of Collier, Lee, Miami-Dade, and Monroe Counties, or Charlotte Harbor/Peace River in Charlotte County designated by the National Marine Fisheries Service as Critical Habitat for the smalltooth sawfish (*Pristis pectinata*) -- see http://www.nmfs.noaa.gov/pr/species/fish/smalltooth-sawfish.html.

(b) When considering an application for a permit to repair or replace an existing vertical seawall, the Agency shall require such seawall to be faced with riprap material, or to be replaced entirely with riprap material unless a condition specified in **paragraphs 1 through 5, above,** exists. However, nothing in this subsection shall be construed to hinder any activity previously exempt or permitted under Part IV of Chapter 373, F.S., or permitted under Chapter 161, F.S.

10.2.7 Secondary Impacts

Pursuant to **section 10.1.1(f), above**, an applicant must provide reasonable assurances that a regulated activity will not cause adverse secondary impacts to the water resource, as described in **sections (a)**

through (d), below. Aquatic or wetland dependent fish and wildlife are an integral part of the water resources that the Agency is authorized to protect under Part IV, Chapter 373, F.S.

Aquatic or wetland dependent species that are listed species are particularly in need of protection, as are: the bald eagle (*Halieaeetus leucocephalus*), which is protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d) and Rule 68A-16.002, F.A.C.

A proposed activity shall be reviewed under this criterion by evaluating the impacts to: wetland and surface water functions identified in **section 10.2.2, above**, water quality, upland habitat for bald eagles and aquatic or wetland dependent listed species, and historical and archaeological resources. *De minimis* or remotely related secondary impacts will not be considered. Applicants may propose measures such as preservation to prevent secondary impacts. Such preservation shall comply with the land preservation provisions of **section 10.3.8, below**. If such secondary impacts cannot be prevented, the applicant may propose mitigation measures as provided for in **sections 10.3 through 10.3.8, below**.

This secondary impact criterion consists of the following four parts:

(a) An applicant shall provide reasonable assurance that the secondary impacts from construction, alteration, and intended or reasonably expected uses of a proposed activity will not cause or contribute to violations of water quality standards or adverse impacts to the functions of wetlands or other surface waters as described in **section 10.2.2, above**.

Impacts such as lights from development adjacent to marine turtle nesting beaches, boat traffic generated by a proposed dock, boat ramp or dry dock facility, which cause an increased threat of collision with manatees; impacts to wildlife from vehicles using proposed roads in wetlands or other surface waters; impacts to water quality associated with the use of onsite sewage treatment and disposal systems (e.g., septic tanks and drainfields) or propeller dredging by boats and wakes from boats; and impacts associated with docking facilities as described in **sections 10.2.4.3(f) through (i), above**, will be considered relative to the specific activities proposed and the potential for such impacts. Impacts of groundwater withdrawals upon wetlands and other surface waters that result from the use of wells permitted pursuant to the District consumptive use rules shall not be considered under the rules adopted pursuant to Part IV of Chapter 373, F.S.

Secondary impacts to the habitat functions of wetlands associated with adjacent upland activities will not be considered adverse if buffers, with a minimum width of 15 ft. and an average width of 25 ft., are provided abutting those wetlands that will remain under the permitted design, unless additional measures are needed for protection of wetlands used by bald eagles for nesting, or listed species for nesting, denning, or critically important feeding habitat. The mere fact that a species is listed does not imply that all of its feeding habitat is critically important. Buffers shall be maintained in an undisturbed vegetated condition, except when the permit requires removal of exotic and nuisance vegetation or the planting of appropriate native species to prevent adverse secondary impacts to the habitat functions of the wetlands. Drainage features such as spreader swales and discharge structures are acceptable within the buffer, provided the construction or use of these features does not adversely impact wetlands. Where an applicant elects not to use buffers of the above-described dimensions, buffers of different dimensions, or other measures, may be proposed to provide the required reasonable assurance. Wetlands or other surface waters shall not be filled to achieve this buffer requirement. For example, an undisturbed upland buffer would not be required to be established waterward of areas of wetlands or other surface waters that are

authorized to be filled for other purposes, such as to construct a bulkhead, although this does not relieve the applicant from providing other reasonable assurance demonstrating that the construction, alteration, and intended or reasonably expected uses of a proposed activity will not result in adverse secondary impacts to wetlands and other surface waters. Buffers proposed to protect against secondary impacts shall be allowed to overlap with vegetated natural buffers, except where the Agency determines that such overlap would adversely affect the purposes each buffer is designed to address**.**

(b) An applicant shall provide reasonable assurance that the construction, alteration, and intended or reasonably expected uses of a proposed activity will not adversely impact the ecological value of uplands for bald eagles, and aquatic or wetland dependent listed animal species for enabling existing nesting or denning by these species, but not including:

1. Areas needed for foraging; or

2. Wildlife corridors, except for those limited areas of uplands necessary for ingress and egress to the nest or den site from the wetland or other surface water.

A list of aquatic or wetland dependent listed species and species having special protection that use upland habitats for nesting and denning may be found at https://floridadep.gov/water/submerged-lands-environmental-resources-coordination/documents/listed-wildlife-species-are.

In evaluating whether a proposed activity will adversely impact the ecological value of uplands to the bald eagle and aquatic or wetland dependent listed species, the Agencies shall consider comments received from the Florida Fish and Wildlife Conservation Commission (FWC), the U.S. Fish and Wildlife Service, the applicant, and the public (for comments related to this section). Permitting guidelines within management plans, recovery plans, habitat and conservation guidelines, scientific literature, and technical assistance documents such as the "*Florida Wildlife Conservation Guide*" (myfwc.com/conservation/value/fwcg/) also will be considered.

Compliance with the U.S. Fish and Wildlife Service (USFWS) *Habitat Management Guidelines for the Wood Stork in the Southeast Region* (January 1990), available at: http://www.fws.gov/northflorida/WoodStorks/Documents/19900100_gd_Wood-stork-habitat-guidelines-1990.pdf, and reproduced in Appendix G, will provide reasonable assurance that the proposed activity will not adversely impact upland habitat functions described in **paragraph (b)** for the wood stork.

Secondary impacts to the functions of wetlands or uplands for nesting of bald eagles (*Haliaeetus leucocephalus)* will not be considered adverse if the applicant holds a valid authorization from the USFWS pursuant to paragraph 68A-16.002(1), F.A.C., for the same activities proposed by the applicant under Part IV of Chapter 373, F.S., or if the applicant demonstrates compliance with the USFWS *National Bald Eagle Management Guidelines* (May 2007) available at: https://www.fws.gov/northeast/ecologicalservices/pdf/NationalBaldEagleManagementGuidelines.pdf , and reproduced in Appendix H).

For those aquatic or wetland dependent listed animal species for which habitat management guidelines have not been developed, or in cases where an applicant does not propose to use

USFWS or FWC habitat management guidelines, the applicant may propose measures to mitigate adverse impacts to upland habitat functions described in **paragraph (b)** provided to aquatic or wetland dependent listed animal species and species having special protection listed online at https://floridadep.gov/water/submerged-lands-environmental-resources-coordination/documents/listed-wildlife-species-are. Such proposals will be evaluated by the Agency to determine if the measures provide reasonable assurance.

(c) In addition to evaluating the impacts in the area of any dredging and filling in, on, or over wetlands or other surface waters, and as part of the balancing review under **section 10.2.3, above**, the Agency will consider any other associated activities that are very closely linked and causally related to any proposed dredging or filling that have the potential to cause impacts to significant historical and archaeological resources.

(d) An applicant shall provide reasonable assurance that the following future activities will not result in water quality violations or adverse impacts to the functions of wetlands or other surface waters as described in **section 10.2.2, above:**

1. Additional phases or expansion of the proposed activity for which plans have been submitted to the Agency or other governmental agencies; and

2. On-site and off-site activities regulated under Part IV, Chapter 373, F.S., or activities described in Section 403.813(1), F.S., that are very closely linked and causally related to the proposed activity.

As part of this review, the Agency will also consider the impacts of the intended or reasonably expected uses of the future activities on water quality and wetland and other surface water functions.

In conducting the analysis under **section (d)2, above**, the Agency will consider those future projects or activities that would not occur but for the proposed activity, including where the proposed activity would be considered a waste of resources should the future project or activities not be permitted.

Where practicable, proposed activities shall be designed in a fashion that does not necessitate future impacts to wetland and other surface water functions. Activity expansions and future activity phases will be considered in the secondary impact analysis. If the Agency determines that future phases of an activity involve impacts that do not appear to meet permitting criteria, the current application shall be denied unless the applicant can provide reasonable assurance that those future phases can comply with permitting criteria. One way for applicants to establish that future phases or system expansions do not have adverse secondary impacts is for the applicant to obtain a conceptual approval permit for the entire project.

10.2.8 Cumulative Impacts

Pursuant to **section 10.1.1(g), above**, an applicant must provide reasonable assurance that a regulated activity will not cause unacceptable cumulative impacts upon wetlands and other surface waters within the same drainage basin as the regulated activity for which a permit is sought. The impact on wetlands and other surface waters shall be reviewed by evaluating the impacts to water quality as set forth in **section 10.1.1(c), above,** and by evaluating the impacts to functions identified in **section 10.2.2, above**.

(a) If an applicant proposes to mitigate these adverse impacts within the same drainage basin as the impacts, and if the mitigation fully offsets these impacts, then the Agency will consider the regulated activity to have no unacceptable cumulative impacts upon wetlands and other surface waters, and consequently, the condition for issuance in **section 10.1.1(g)** will be satisfied. The drainage basins within each District are reproduced below in **Figures 10.2.8-1 through 10.2.8-5**.

(b) If an applicant proposes to mitigate adverse impacts through mitigation physically located outside of the drainage basin where the impacts are proposed, an applicant may demonstrate that such mitigation fully offsets the adverse impacts within the impacted drainage basin (as measured from the impacted drainage basin), based on factors such as connectivity of waters, hydrology, habitat range of affected species, and water quality. If the mitigation fully offsets the impacts (as measured from the impacted drainage basin), then the Agency will consider the regulated activity to have no unacceptable cumulative impacts upon wetlands and other surface waters, and consequently, the condition for issuance in section 10.1.1(g), above, will be satisfied. In other words, if the functions provided by the proposed out-of-basin-mitigation will "spill over" into the impacted basin, and are sufficient to offset the impacts within the impacted basin, then the condition for issuance in section 10.1.1(g) will be satisfied.

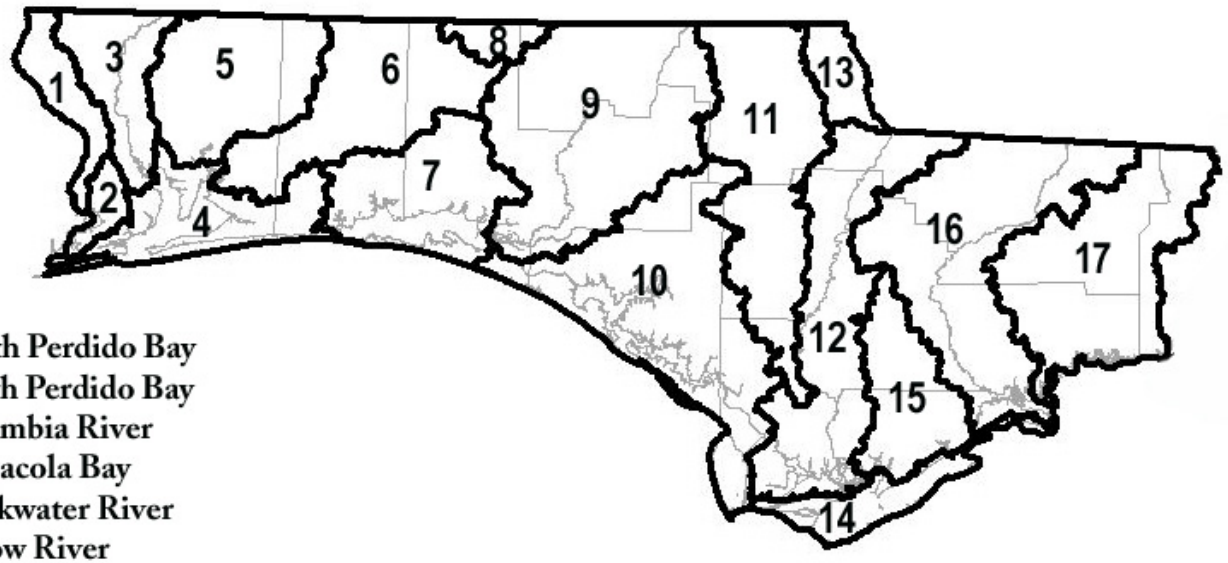
(c) When adverse impacts to water quality or adverse impacts to the functions of wetlands and other surface waters, as referenced in paragraphs (a) and (b) above, are not fully offset within the same drainage basin as the impacts, then an applicant must provide reasonable assurance that the proposed activity, when considered with the following activities, will not result in unacceptable cumulative impacts to water quality or the functions of wetlands and other surface waters, within the same drainage basin:

1. Projects that are existing or activities regulated under Part IV, Chapter 373, F.S., that are under construction or projects for which permits or determinations pursuant to Section 373.421, F.S., or Section 403.914, F.S. (1991), have been sought.

2. Activities that are under review, approved, or vested pursuant to Section 380.06, F.S., or other activities regulated under Part IV of Chapter 373, F.S., which may reasonably be expected to be located within wetlands or other surface waters, in the same drainage basin, based upon the comprehensive plans, adopted pursuant to Chapter 163, F.S., of the local governments having jurisdiction over the activities, or applicable land use restrictions and regulations.

Only those activities listed in **sections (c)1. and 2., above,** that have similar types of impacts (adverse effects) to those that will be caused by the proposed activity and for which those impacts are not fully offset within the drainage basin, as described in section (a) or (b), above, will be considered. Activities are considered to have similar impacts if they affect similar types of water resources and functions, regardless of whether the activities themselves are similar to one another.

The cumulative impact evaluation is conducted using an assumption that reasonably expected future applications with like impacts will be sought, thus necessitating equitable distribution of acceptable impacts among future applications.



1 North Perdido Bay
2 South Perdido Bay
3 Escambia River
4 Pensacola Bay
5 Blackwater River
6 Yellow River
7 Choctawhatchee Bay
8 Pea River
9 Choctawhatchee River
10 St. Andrews Bay
11 Chipola River
12 Apalachicola River
13 Chattahoochee River
14 Apalachicola Bay
15 New River
16 Ochlockonee River
17 St Marks River

Figure 10.2.8-1 Drainage Basins within the geographical territory of the Northwest Florida Water Management District (Source: USGS Hydrologic Unit Code (HUC) Basins, 1:24K, HPGN)

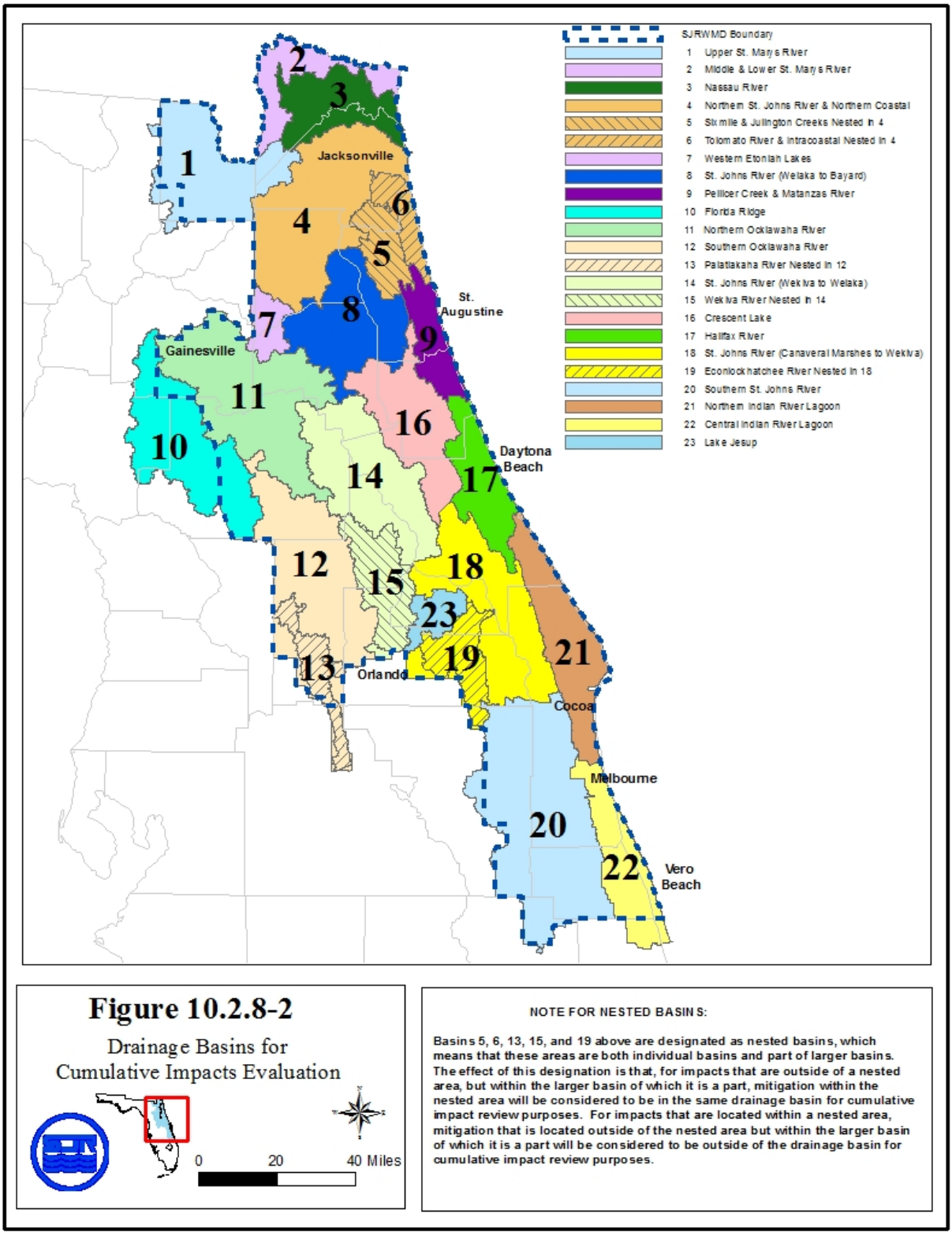


Figure 10.2.8-2

Drainage Basins for Cumulative Impacts Evaluation

NOTE FOR NESTED BASINS:

Basins 5, 6, 13, 15, and 19 above are designated as nested basins, which means that these areas are both individual basins and part of larger basins. The effect of this designation is that, for impacts that are outside of a nested area, but within the larger basin of which it is a part, mitigation within the nested area will be considered to be in the same drainage basin for cumulative impact review purposes. For impacts that are located within a nested area, mitigation that is located outside of the nested area but within the larger basin of which it is a part will be considered to be outside of the drainage basin for cumulative impact review purposes.

Figure 10.2.8-3 Drainage Basins for Cumulative Impact Determinations within the Suwannee River Water Management District

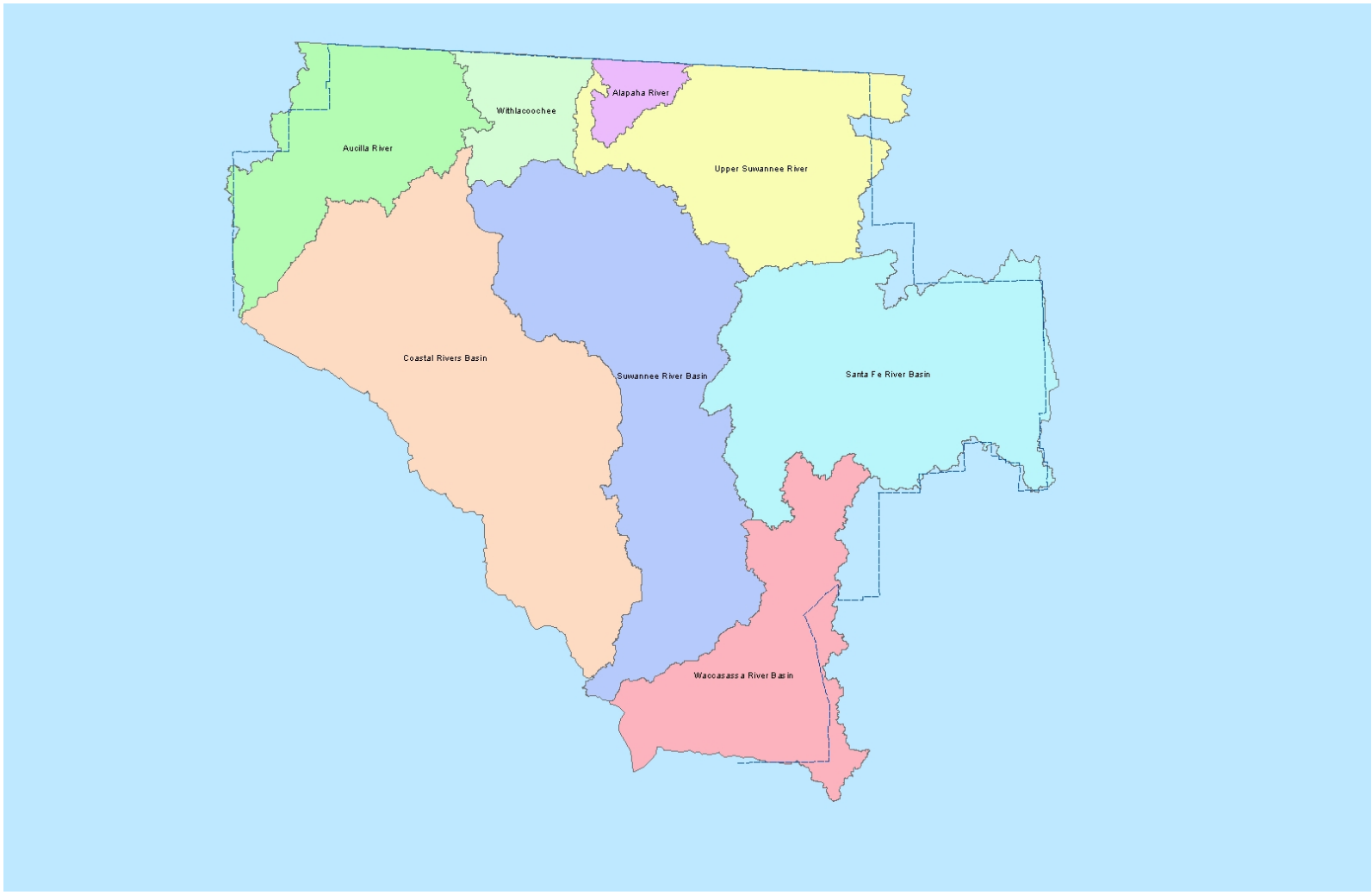


Figure 10.2.8-4

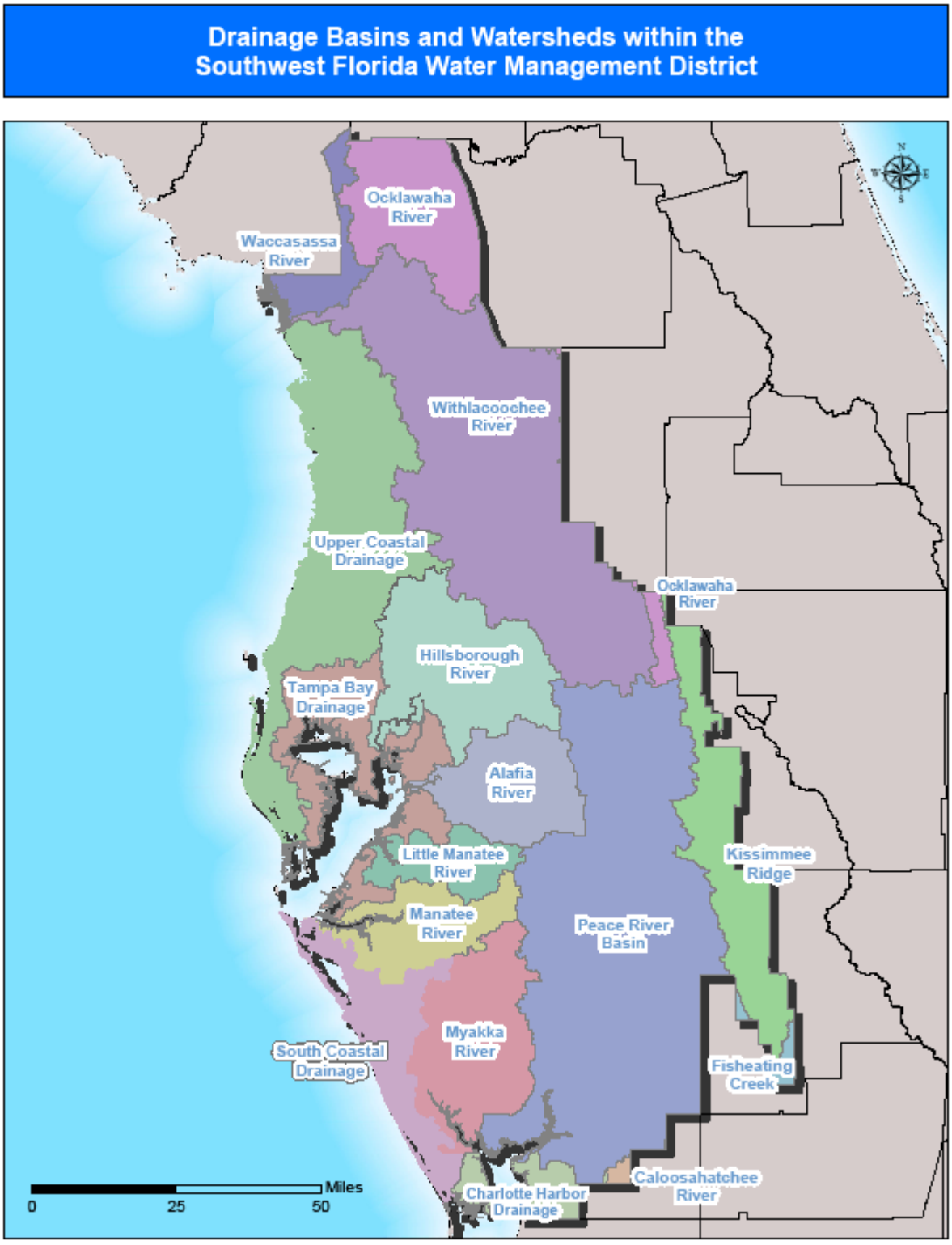
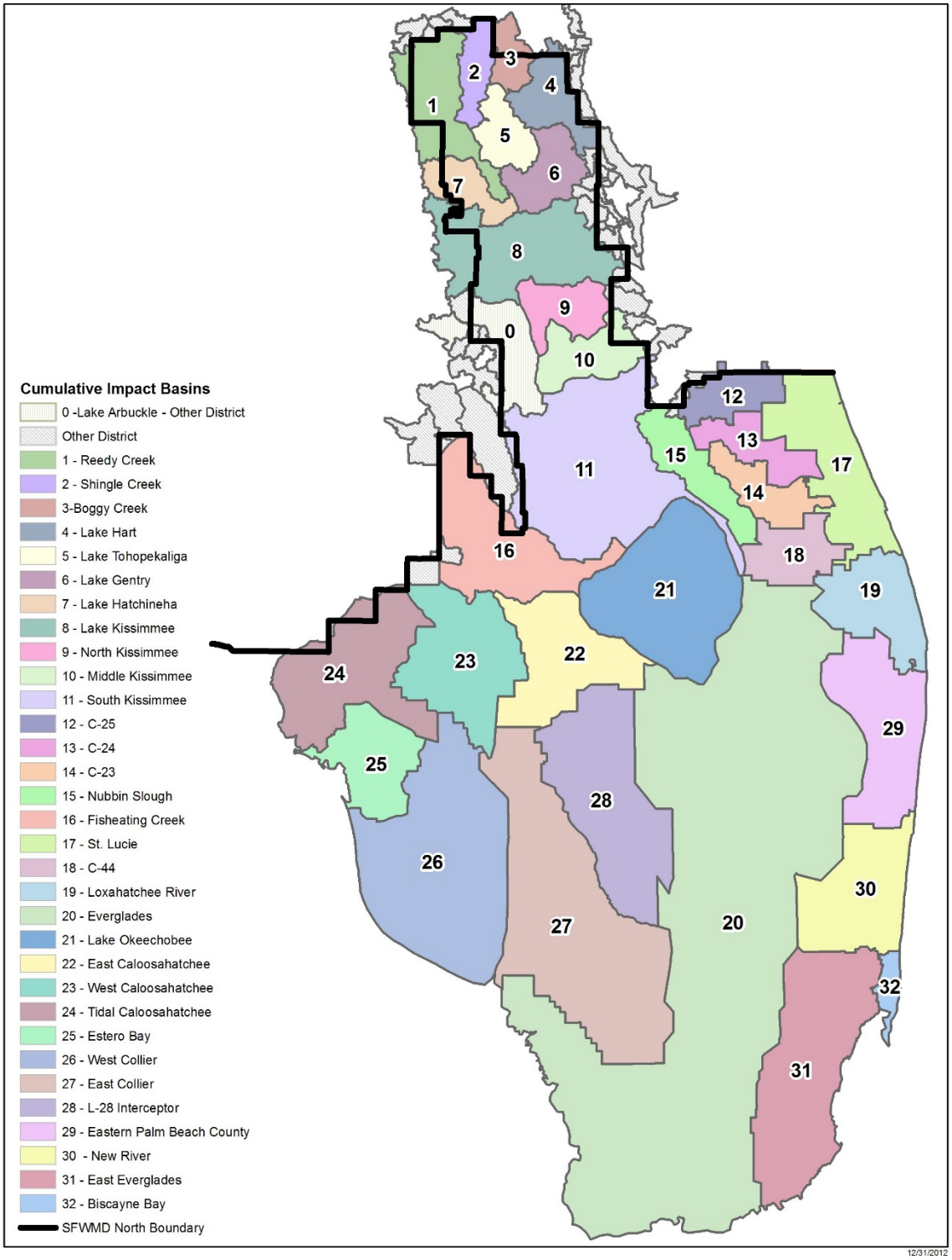


Figure 10.2.8-5 — Drainage Basins within the South Florida Water Management District



10.2.8.1 Cumulative impacts are considered unacceptable when the proposed activity, considered in conjunction with the past, present, and future activities as described in **section 10.2.8, above,** would then result in a violation of state water quality standards as set forth in **section 10.1.1(c)above**, or significant adverse impacts to functions of wetlands or other surface waters identified in **section 10.2.2**, **above**, within the same drainage basin when considering the basin as a whole. This analysis asks the question whether the proposed system, considered in conjunction with past, present, and future activities, would be the proverbial "straw that breaks the camel's back" regarding the above referenced water quality or wetland and other surface water functions in the basin.

10.2.8.2 Applicants may propose measures such as preservation to prevent cumulative impacts. Such preservation shall comply with the land preservation provisions in **section 10.3.8, below**. If unacceptable cumulative impacts are expected to occur, based on an evaluation conducted in accordance with **section 10.2.8, above**, the applicant may propose mitigation measures as provided for in **sections 10.3 through 10.3.8, below**.

10.3 Mitigation

Mitigation will be approved only after the applicant has complied with the requirements of **sections 10.2.1 through 10.2.1.3, above,** regarding practicable modifications to reduce or eliminate adverse impacts. However, any mitigation proposal submitted for review shall be reviewed concurrently with the analysis of any modification pursuant to **section 10.2, above**. This section establishes criteria to be followed in evaluating mitigation proposals in light of the programmatic and project permitting goal of no net loss of wetland and other surface waters functions.

Mitigation as described in **sections 10.3 through 10.3.8, below,** is required only to offset the adverse impacts to the functions identified in **sections 10.2 through 10.2.8.2, above,** caused by regulated activities. In certain cases, mitigation cannot offset impacts sufficiently to yield a permittable project. Such cases include activities that significantly degrade Outstanding Florida Waters, adversely impact habitat for listed species, or adversely impact those wetlands or other surface waters that are not likely to be successfully recreated.

Applicants are encouraged to consult with Agency staff in pre-application conferences or during the application process to identify appropriate mitigation options.

10.3.1 Types of Mitigation

Mitigation usually consists of restoration, enhancement, creation, or preservation of wetlands, other surface waters, or uplands. Uplands that function as a hydrologic contributing area to wetlands, and are necessary to maintain the ecological value of those wetlands, may be appropriate for mitigation of impacts to wetlands, as well as impacts to uplands that are used by bald eagles, and listed aquatic and wetland dependent species for nesting or denning. The evaluation of the appropriateness of incorporating uplands as part of a mitigation plan shall include consideration of the proximity of uplands to wetlands and the degree to which uplands support the functions of the associated wetlands. In some cases, a combination of mitigation types is the best approach to offset adverse impacts resulting from the regulated activity.

Restoration is usually preferred over creation as it often has a greater chance of success due to soil characteristics, hydrologic regime, landscape position, or other factors that favor re-establishment of wetland or other surface water communities. Preservation of important ecosystems can provide an improved level of protection over current regulatory programs when

it ensures that the values of the preserved area are protected and maintained in the long term. Areas proposed to be preserved to prevent secondary or cumulative impacts (**sections 10.2.7 and 10.2.8, above**) may also be considered part of a mitigation plan if those areas also serve to offset adverse impacts.

10.3.1.1 In general, mitigation is best accomplished through creation, restoration, enhancement, or preservation of ecological communities similar to those being impacted. However, when the area proposed to be impacted is degraded, compared to its historic ecological community and hydrologic condition, mitigation is best accomplished through creation, restoration, enhancement or preservation of the ecological community that was historically present. When impacts are proposed to wholly artificial systems, such as borrow pits, ditches, and canals, mitigation is best accomplished through creation, restoration, enhancement or preservation of the native ecological community to which it is most analogous in function. For wetlands or other surface waters that have been altered from their native community type, the historic community type at that location shall be used as a reference, unless the alteration has been of such a degree and extent that a different native community type is now present and self sustaining. Mitigation involving other ecological communities is acceptable if impacts are offset and the applicant demonstrates that greater improvement in ecological value will result.

10.3.1.2 Mitigation can be conducted on-site, off-site, or through the purchase of credits from a mitigation bank, or through a combination of approaches, as long as it offsets anticipated adverse impacts to wetlands and other surface waters and meets all other criteria for permit issuance. Off-site mitigation is preferred when:

(a) On-site mitigation opportunities are not expected to have comparable long-term viability due to such factors as unsuitable hydrologic conditions or ecologically incompatible existing adjacent land uses or future land uses identified in a local comprehensive plan adopted according to Chapter 163, F.S.; or

(b) Off-site mitigation will provide greater improvement in ecological value than on-site mitigation.

One example of a project expected to benefit from off-site mitigation is a linear project that cannot effectively implement on-site mitigation due to right-of-way constraints.

10.3.1.2.1 An applicant proposing offsite mitigation must provide reasonable assurance that the permitted mitigation will be conducted by an entity with the financial, legal, and administrative capability to implement the mitigation plan in accordance with the terms and conditions of the permit, if issued, pursuant to Rule 62-330.301(1)(j), F.A.C. Compliance with this requirement can be demonstrated when an entity has sufficient ownership interest or control in the land in accordance with **section 4.2.3(d)** of this Volume.

If the applicant demonstrates compliance with this requirement by providing the Agency with a purchase and sale agreement, the permit, if issued, shall be conditioned to prohibit all construction until ownership is transferred to the permittee. This provision does not apply if the applicant proposes to offset adverse impacts to wetlands or other surface waters through the purchase of credits from a mitigation bank, or participation in regional off-site mitigation pursuant to Section 373.4135, F.S., and does not apply to the Florida Department of Transportation when mitigation is accomplished pursuant to Section 373.4137, F.S.

10.3.1.3 Mitigation through participation in a mitigation bank shall be in accordance with Section 373.4136, F.S., and Chapter 62-342, F.A.C. (Mitigation Banks), except that, for purposes of the maps applicable to regional watersheds, the SJRWMD, SWFWMD, and SFWMDs shall use the maps incorporated by reference in the applicable Volume II.

10.3.1.4 In instances where an applicant is unable to meet water quality standards because existing ambient water quality does not meet standards and the activity will contribute to this existing condition, mitigation for water quality impacts can consist of water quality enhancement. In these cases, the applicant must implement mitigation measures that will cause net improvement of the water quality in the receiving waters for those parameters that do not meet standards. (See Section 373.414(1)(b), F.S.)

10.3.1.5 To offset adverse secondary impacts from regulated activities to habitat functions that uplands provide to bald eagles and listed species evaluated as provided in **section 10.2.7(b), above**, mitigation can include the implementation of management plans, participation in a wildlife mitigation park established by the FWC, or other measures. Measures to offset adverse secondary impacts on wetlands and other surface waters resulting from use of a system can include the incorporation of culverts or bridged crossings designed to facilitate wildlife movement, fencing to limit access, reduced speed zones, or other measures designed to offset the secondary impact.

10.3.1.6 Mitigation for certain mining activities shall be in accordance with Section 373.414(6), F.S. Applicants also are advised that they may elect to use the provisions of Chapter 62-348, F.A.C. (Wetland Permitting and Mitigation for the Mining of Peat for the Horticultural Industry), to provide for alternative wetland mitigation associated with the mining of high-quality peat in accordance with Section 373.414(6)(e), F.S.

10.3.1.7 Except as provided in Section 373.414(6), F.S., mitigation or reclamation required or approved by other agencies for a specific project will be acceptable to the Agency to the extent that such mitigation or reclamation fulfills the requirements of **sections 10.3 through 10.3.8,** and offsets adverse impacts of the same project in accordance with the criteria in **sections 10.2 through 10.2.8.2, above**.

10.3.1.8 Innovative mitigation proposals that deviate from the standard practices described in **sections 10.3 through 10.3.6,** shall be considered on a case-by-case basis to determine whether they offset the adverse impacts. Any donation of money as mitigation shall be in accordance with Sections 373.4135(1)(b), F.S., and 373.414(1)(b), F.S.

10.3.2 Guidelines for the Amount of Mitigation

Chapter 62-345, F.A.C., Uniform Mitigation Assessment Method (UMAM), establishes a standardized procedure for assessing functions provided by wetlands and other surface waters, the amount those functions are reduced by proposed impact, and the amount of mitigation needed to offset that impact. The Agency will be responsible for verifying the information provided and applying this assessment method to determine the amount of mitigation necessary to offset the proposed impacts.

Chapter 62-345, F.A.C., also establishes the criteria to award and deduct mitigation bank or regional offsite mitigation area credits. The Agency will be responsible for verifying that information and applying this assessment method to determine the potential amount of mitigation to be provided by the bank or regional offsite mitigation area.

Paragraphs 62-345.100(3), (5), (6), (7), (8), and (9), F.A.C., provide exceptions from the application of UMAM to determine the amount of mitigation necessary to offset adverse impacts.

10.3.3 Mitigation Proposals

10.3.3.1 Applicants shall provide reasonable assurance that proposed mitigation will:

(a) Offset adverse impacts due to regulated activities; and

(b) Achieve mitigation success by providing viable and sustainable ecological and hydrological functions.

The use of credits from a mitigation bank permitted under Part IV of Chapter 373, F.S., or a Regional Offsite Mitigation Area under Section 373.4135, F.S., is not subject to **sections 10.3.3.2 through 10.3.8, below**.

10.3.3.2 Applicants shall submit detailed plans describing proposed construction, establishment, and management of mitigation areas. These plans shall include the following information, as appropriate for the type of mitigation proposed:

(a) A soils map of the mitigation area and other soils information pertinent to the specific mitigation actions proposed;

(b) A topographic map of the mitigation area and adjacent hydrologic contributing and receiving areas;

(c) A hydrologic features map of the mitigation area and adjacent hydrologic contributing and receiving areas;

(d) A description of current hydrologic conditions affecting the mitigation area;

(e) A map of vegetation communities in and around the mitigation area;

(f) Construction drawings detailing proposed topographic alterations and all structural components associated with proposed activities;

(g) Proposed construction activities, including a detailed schedule for implementation;

(h) A vegetation-planting scheme if planting is proposed, and schedule for implementation;

(i) Sources of plants and soils used in wetland creation or restoration;

(j) Measures to be implemented during and after construction to avoid adverse impacts related to proposed activities;

(k) A management plan comprising all aspects of operation and maintenance, including water management practices, vegetation establishment, exotic and nuisance species control, fire management, and control of access;

(l) A proposed monitoring plan to demonstrate mitigation success;

(m) A description of the activities proposed to control exotic and nuisance species should these become established in the mitigation area. The mitigation proposal must include reasonable measures to assure that these species do not invade the mitigation area in such numbers as to affect the likelihood of success of the project;

(n) A description of anticipated site conditions in and around the mitigation area after the mitigation plan is successfully implemented;

(o) A comparison of current fish and wildlife habitat to expected habitat after the mitigation plan is successfully implemented;

(p) For mitigation plans with projected implementation costs in excess of $25,000, an itemized estimate of the cost of implementing mitigation as set forth in **section 10.3.7.7, below**;

(q) Evidence that the applicant has legal access to the mitigation area and authority to perform the mitigation, and documentation granting the Agency a reasonable right of legal access to the mitigation area and the authority to conduct the mitigation should the applicant fail to do so; and

(r) Any additional necessary supporting information required by Chapter 62-345, F.A.C.

10.3.4 Monitoring Requirements for Mitigation Areas

If applicable, applicants shall monitor the progress of mitigation areas until success can be demonstrated as provided in **section 10.3.6, below**. Monitoring parameters, methods, schedules, and reporting requirements will be specified in permit conditions.

10.3.5 Protection of Mitigation Areas

Applicants shall propose and be responsible for implementing methods that assure that mitigation areas will not be adversely impacted by incidental encroachment or secondary activities that might compromise mitigation success or long-term viability.

10.3.6 Mitigation Success

Mitigation success will be measured in terms of whether the objectives of the mitigation are expected to be realized. The success criteria to be included in permit conditions will specify the minimum requirements necessary to attain a determination of success. The mitigation shall be deemed successful by the Agency when all applicable water quality standards are met, the mitigation area has achieved viable and sustainable ecological and hydrological functions and the specific success criteria contained in the permit are met. If success is not achieved within the time frame specified within the permit, remedial measures shall be required. Monitoring requirements shall remain in effect until success is achieved as specified in the permit. Maintenance requirements shall remain in effect as specified in the permit.

10.3.7 Financial Responsibility for Mitigation.

As part of compliance with paragraph 62-330.301(1)(j), F.A.C., where an applicant proposes mitigation, the applicant shall provide proof of financial responsibility to:

(a) Conduct the mitigation activities;

(b) Conduct any necessary management of the mitigation site;

(c) Conduct monitoring of the mitigation;

(d) Prepare and submit monitoring reports to the Agency; and

(e) Conduct any necessary corrective action indicated by the monitoring.

10.3.7.1 Applicants not subject to financial responsibility requirements.

The following applicants shall not be subject to the financial responsibility requirements in **sections 10.3.7 through 10.3.7.9**:

(a) Applicants whose mitigation is deemed successful pursuant to **section 10.3.6, above,** prior to undertaking the construction activities authorized under the permit issued pursuant to Part IV, Chapter 373, F.S.

(b) Applicants whose mitigation is estimated to cost less than $25,000.

(c) Federal, state, county and municipal governments; state political subdivisions; investor-owned utilities regulated by the Florida Public Service Commission; and rural electric cooperative.

(d) Mitigation banks that comply with the financial responsibility provisions of Rule 62-342.700, F.A.C.

10.3.7.2 Amount of financial responsibility.

The amount of financial responsibility provided by the applicant shall be in an amount equal to 110 percent of the cost estimate determined pursuant to **section 10.3.7.7, below**, for each phase of the mitigation plan submitted under the requirements of **sections 10.3 through 10.3.8**, and under the requirements of Section 373.414(19)(a), F.S., when mitigation is required for the extraction of limestone and phosphate.

10.3.7.3 Documentation.

The permit applicant shall provide draft documentation of the required financial responsibility mechanism described below with the permit application, and shall submit to the Agency the executed or finalized documentation within the time frames specified in the permit.

10.3.7.4 General Terms for Financial Responsibility Mechanisms.

In addition to the specific provisions regarding financial responsibility mechanisms set forth in **section 10.3.7.6, below**, the following, as they relate to the specific mechanism proposed, shall be complied with:

(a) The form and content of all financial responsibility mechanisms shall be approved by the Agency. Forms that have been developed for this purpose are incorporated by reference in subsection 62-330.301(5), F.A.C. The applicant must provide the applicable form or one that is in substantial conformance with that form; any changes must be noted on the face of the form and identified to the Agency for review and approval.

(b) The financial mechanisms shall name the Agency as sole beneficiary or shall be payable solely to the Agency. If the financial mechanism is of a type that is retained by the beneficiary according to industry standards, the original financial responsibility mechanism shall be retained by the Agency.

(c) The financial responsibility mechanisms shall be established with a regulated state or national bank, savings and loan association, or other financial institution, licensed or regulated by a federal or state agency and authorized to issue such instruments in the State of Florida. In the case of letters of credit, the letter of credit must be issued by an entity that has authority to issue letters of credit and whose letter of credit operations are regulated and examined by a federal or state agency. In the case of a surety bond, the surety bond must be issued by a surety company registered with the state of Florida.

(d) The financial responsibility mechanisms shall be effective on or prior to the date that the activity authorized by the permit commences and shall continue to be effective through the date of notification of final release by the Agency in accordance with **section 10.3.7.7.2 below**.

(e) The financial responsibility mechanisms shall provide that they cannot be revoked, terminated, or cancelled without first providing an alternative financial responsibility mechanism that meets the requirements of **sections 10.3.7 through 10.3.7.9**. Financial mechanisms shall provide that they cannot be revoked, terminated, or cancelled without a 120-day notice to the Agency. Within 90 days of receipt by the permittee of actual or constructive notice of revocation, termination, or cancellation of a financial responsibility mechanism or other actual or constructive notice of cancellation, the permittee shall provide such an alternate financial responsibility mechanism.

(f) When mitigation is required for the extraction of limestone and phosphate, the financial responsibility mechanism must meet the criteria of Section 373.414(19)(a), F.S.

10.3.7.5 If the permittee fails to comply with the terms and conditions of the permit, including any mitigation requirement, such failure shall be deemed a violation of Chapter 62-330, F.A.C., and the permit issued thereunder. In addition to any other remedies for such violation available to it, the Agency may make demand upon the financial mechanism. Notice of intent to make demand shall be as provided in the mechanism or, if none, upon reasonable notice.

10.3.7.6 Financial Responsibility Mechanisms.

Financial responsibility for the mitigation, monitoring, and corrective action for each phase of the project may be established by any of the following methods, at the discretion of the applicant:

(a) Performance bond; when issued in favor of DEP, the applicant shall also establish a standby trust fund agreement;

(b) Irrevocable letter of credit; when issued in favor of DEP, the applicant shall also establish a standby trust fund agreement;

(c) Trust fund agreement;

(d) Deposit of cash or cash equivalent into an escrow account at a regulated financial institution or at the Florida Department of Financial Services; and

(e) Guarantee bond.

10.3.7.7 Cost estimates.

For the purposes of determining the amount of financial responsibility that is required by this subsection, the applicant shall submit a detailed written estimate, in current dollars, of the total cost of conducting the mitigation, including any maintenance and monitoring activities, and the applicant shall comply with the following:

(a) The cost estimate for conducting the mitigation and monitoring shall include all associated costs for each phase thereof, including earthmoving, planting, structure installation, maintaining and operating any structures, controlling nuisance or exotic species, fire management, consultant fees, monitoring activities, and reports.

(b) The applicant shall submit the estimates, together with verifiable documentation, to the Agency along with the draft of the financial responsibility mechanism.

(c) The costs shall be estimated based on a third party performing the work and supplying materials at the fair market value of the services and materials. The source of any cost estimates shall be indicated.

10.3.7.7.1 Partial Releases.

The permittee may request the Agency to release portions of the financial responsibility mechanism as parts of the mitigation plan, such as earth moving, construction, or other activities for which cost estimates were submitted in accordance with **section 10.3.7.7**, are successfully completed. The request shall be in writing and include documentation that the activities have been completed and have been paid for or will be paid for upon release of the applicable portion of the financial responsibility mechanism and a revised cost estimate for the completion of the mitigation activities. The Agency shall authorize the release, or shall request the applicable financial institution release, of the portion requested upon verification that the activities have been completed in accordance with the mitigation plans.

10.3.7.7.2 Final Release.

Within thirty (30) days of the Agency determining that the mitigation is successful in accordance with **section 10.3.6, above**, the Agency shall so notify the permittee and shall authorize the return and release of all funds held or give written authorization to the appropriate third party for the cancellation or termination of the financial responsibility mechanism.

10.3.7.8 Financial Responsibility Conditions.

For applicants subject to the financial responsibility of **sections 10.3.7 through 10.3.7.9,** the Agency will include the following conditions in the permit:

(a) A permittee must notify the Agency by certified mail of the commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming the permittee as debtor within 10 business days after the commencement of the proceeding.

(b) A permittee who fulfills the requirements of **sections 10.3.7 through 10.3.7.9,** by obtaining a letter of credit or performance bond will be deemed to be without the required financial assurance in the event of bankruptcy, insolvency, or suspension or revocation of the license or charter of the issuing institution. The permittee must reestablish in accordance with **sections 10.3.7 through 10.3.7.9,** a financial responsibility mechanism within 60 days after such event.

(c) When transferring a permit, the new owner or person with legal control shall submit documentation to satisfy the financial responsibility requirements of **sections 10.3.7 through 10.3.7.9**. The prior owner or person with legal control of the project shall continue the financial responsibility mechanism until the Agency has approved the permit transfer and substitute financial responsibility mechanism.

10.3.7.9 Financial Responsibility Mechanisms for Multiple Projects.

An applicant may use a mechanism specified in **section 10.3.7.6, above** to meet the financial responsibility requirement for multiple projects. The financial responsibility mechanism must include a list of projects, the amount of funds assured for each project, and limit the amount of funds available for each project. The mechanism must be no less than the sum of the funds that would be necessary in accordance with **section 10.3.7.2, above**, as if separate mechanisms had been established for each project. As additional permits are issued that require mitigation, the amount of the financial responsibility mechanism may be increased in accordance with **section 10.3.7.2, above,** and the project added to the list.

10.3.8 Real property conveyances.

(a) All conservation easements, deed restrictions, and restrictive covenants accepted for mitigation purposes shall be granted in perpetuity without encumbrances, unless such encumbrances do not adversely affect the ecological viability of the mitigation. All liens and mortgages shall be released or subordinated to the conservation easement. All conservation easements shall be consistent with Section 704.06, F.S., and shall contain restrictions that ensure the ecological viability of the site.

(b) All real property conveyances shall be in fee simple and by statutory warranty deed, special warranty deed, or other deed, without encumbrances that adversely affect the

integrity of the preservation. The Agency shall also accept a quit claim deed if necessary to aid in clearing minor title defects or otherwise resolving boundary questions.

(c) The use of the applicable Form 62-330.301(8) through 62-330.301(17) shall constitute consistency with Section 704.06, F.S. **Where the applicant demonstrates that project specific conditions necessitate deviation from language of the accepted forms, alternative language shall be accepted** provided that it meets the provisions of Section 704.06, F.S. and **section 10. 3. 8** of this Volume. Each of these forms are in **Appendix C** of this Volume, and a copy of the form may be obtained from the Agency, as described in subsection 62-330.010(5), F.A.C.

PART IV -- EROSION AND SEDIMENT CONTROL

11.0 Erosion and Sediment Control

11.1 Overview

Uncontrolled erosion and sediment from land development activities can result in costly damage to aquatic areas and to both private and public lands. Excessive sediment blocks stormwater conveyance systems, plugs culverts, fills navigable channels, impairs fish spawning, clogs the gills of fish and invertebrates, and suppresses aquatic life.

A plan for minimizing erosion and controlling sediment through the implementation of best management practices (BMPs) must be included with the application for a permit. In addition to the "erosion and sediment control plan" required by **section 11.2**, all projects that disturb one or more acre of land that discharge to waters or a permitted Municipal Separate Stormwater Sewer System (MS4) also will need to develop and implement a Stormwater Pollution Prevention Plan (SWPPP) to obtain coverage under Florida's NPDES Stormwater Construction Generic Permit. Therefore, applicants are advised to comply with the erosion and sediment control requirements in **section 11.3.1**, **below**.

An effective sediment and erosion control plan is essential for controlling stormwater pollution during construction. An erosion and sediment control plan is a site-specific plan that specifies the location, installation, and maintenance of best management practices to prevent and control erosion and sediment loss at a construction site. The plan is submitted as part of the permit application and must be clearly shown on the construction plans for the development. Erosion and sediment control plans range from very simple for small, single-phase developments to complex for large, multiple phased projects. If, because of unforeseen circumstances such as extreme rainfall events or construction delays, the proposed erosion and sedimentation controls no longer provide reasonable assurance that water quality standards will not be violated, additional erosion and sediment control measures shall be required that must be designed and implemented to prevent violations of water quality standards.

11.1.1 Erosion and Sediment Control Requirements

Erosion and sediment control BMPs shall be used as necessary during construction to **retain sediment on-site and assure that any discharges from the site do not cause or contribute to a violation of state water quality standards**. These management practices must be designed according to specific site conditions and shall be shown or clearly referenced on the construction plans for the development. At a minimum, the erosion and sediment control requirements described in this section shall be followed during construction of the project. Additional measures are required if necessary to protect wetlands or prevent off-site flooding. All appropriate contractors must be furnished with the information pertaining to the implementation, operation, and maintenance of the erosion and sediment control plan. In addition, sediment accumulation in the stormwater system from construction activities must be removed prior to final certification of the system to ensure that the designed and permitted storage volume is available.

11.1.2 Erosion and Sediment Control Principles

Factors that influence erosion potential include soil characteristics, vegetative cover, topography, climatic conditions, timing of construction, and the areal extent of land clearing activities. The following principles must be considered in planning and undertaking construction and alteration of systems:

(a) Plan the development to fit topography, soils, drainage patterns, and vegetation;

(b) Minimize both the extent of area exposed at one time and the duration of exposure;

(c) Schedule activities during the dry season or during dry periods whenever possible to reduce the erosion potential;

(d) Apply erosion control practices to minimize erosion from disturbed areas;

(e) Apply perimeter controls to protect disturbed areas from off-site runoff and to trap eroded material on-site to prevent sedimentation in downstream areas;

(f) Keep runoff velocities low and retain runoff on-site;

(g) Stabilize disturbed areas immediately after final grade has been attained or during interim periods of inactivity resulting from construction delays; and

(h) Implement a thorough maintenance and follow-up program.

These principles are usually integrated into a system of vegetative and structural measures, along with other management techniques, that are included in an erosion and sediment control plan to minimize erosion and control movement of sediment. In most cases, a combination of limited clearing and grading, limited time of exposure, and a judicious selection of erosion control practices and sediment trapping systems will prove to be the most practical method of controlling erosion and the associated production and transport of sediment. Permit applicants, system designers, and contractors can refer to the *State of Florida Erosion and Sediment Control Designer and Reviewer Manual (June 2007)* and the *Florida Stormwater, Erosion, and Sedimentation Control Inspector's Manual (FDEP July 2008)*, for further information on erosion and sediment control. These manuals provide guidance for the planning, design, construction, and maintenance of erosion and sediment control practices. Both of these manuals are incorporated by reference in subparagraph 62-330.050(9)(b)5., F.A.C.

11.2 Development of an Erosion and Sediment Control Plan

An erosion and sediment control plan must be submitted as part of the application as a way of providing reasonable assurance that water quality standards will not be violated during the construction phase of a project. The plan must identify the location, relative timing, and specifications for all erosion and sediment control and stabilization measures that will be implemented as part of the project's construction. The plan must provide for compliance with the terms and schedule of implementing the proposed project, beginning with the initiation of construction activities. The plan may be submitted as a separate document, or may be contained as part of the plans and specifications of the construction documents.

11.3 Development of a Stormwater Pollution Prevention Plan (SWPPP) for NPDES Requirements

Although the requirement to develop and submit an SWPPP under a National Pollution Discharge Elimination System (NPDES) permit is not a requirement for a permit under Chapter 62-330, F.A.C., applicants are advised that preparation and adherence to a SWPPP is required where the permitted activity also requires an NPDES construction permit pursuant to subsection 62-621.300(4), F.A.C. Namely, **those construction activities resulting in greater than one acre of soil disturbance discharging to waters of the state or a permitted MS4 must also apply for**

and receive coverage from DEP under Florida's NPDES Generic Permit for Stormwater Discharge from Large and Small Construction Activities (CGP) before disturbing the soil. This section of the Handbook is provided to help the design community develop a comprehensive erosion and sediment control plan that satisfies all state requirements and avoid having to revise the plan for the CGP and its associated SWPPP. For purposes **sections 11.3.1 through 11.4, below,** references to the term "applicant" shall mean an applicant for the NPDES permit.

11.3.1 Additional Requirements of the Construction Generic Permit

(a) The following non-stormwater discharges are prohibited:

1. Wastewater from washout of concrete;

2. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;

3. Fuels, oils, or other pollutants associated with vehicle and equipment operation and maintenance; and

4. Soaps or solvents used in vehicle or equipment washing or cleaning.

(b) Pollution Prevention Controls. The applicant must provide for the design, installation, implementation, and maintenance of effective pollution prevention measures to accomplish all of the following:

1. Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Treat wash waters using a treatment system so that they do not cause or contribute to violations of water quality standards;

2. Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to precipitation and to stormwater;

3. Minimize the discharge of pollutants from spills and leaks; and implement chemical spill and leak prevention and response procedures;

4. Control wastes, such as discarded building materials, chemicals, litter, and sanitary waste, in accordance with all applicable state, local, and federal regulations;

5. Follow all applicable State and local waste disposal, sanitary sewer, and septic system regulations;

6. Use proper application rates and methods for fertilizers, herbicides, and pesticides. Set forth how these procedures will be implemented and enforced. Apply nutrients only at rates necessary to establish and maintain vegetation and consistent with all labeling requirements; and

7. Limit the application, generation, and migration of toxic substances; and properly store and dispose of toxic materials.

(c) Erosion and Sediment Controls. The applicant must provide for the design, installation, implementation, and maintenance of appropriate erosion and sediment controls to accomplish all of the following:

1. Control stormwater volume and velocity within the site to minimize soil erosion;

2. Control stormwater peak discharge rates and volume to minimize erosion at discharge outfalls and to minimize downstream channel and streambank erosion;

3. Minimize the amount of soil exposed during the construction activity;

4. Minimize the disturbance of steep slopes;

5. Minimize sediment discharges from the site. The design, installation, and maintenance of erosion and sediment controls shall address factors such as the amount, frequency, intensity, and duration of precipitation; the nature of the resulting stormwater; and soil characteristics, including the range of soil particle sizes expected to be present on the site;

6. Minimize off-site vehicle tracking of sediments onto paved surfaces and the generation of dust. If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize off-site impacts;

7. Where feasible, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration and to provide and maintain natural buffers adjacent to surface waters of the state; and

8. Minimize soil compaction and preserve topsoil.

(d) Sediment Basins

1. For drainage basins with 10 or more disturbed acres at one time, a temporary (or permanent) sediment or wet detention basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. The 3,600 cubic feet of storage area per acre drained does not apply to flows from offsite areas and flows from onsite areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin. For drainage basins with 10 or more disturbed acres at one time and where a temporary sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent controls is not attainable, a combination of smaller sediment basins, sediment traps, wet detention systems, and/or other BMPs shall be used. At a minimum, silt fences or equivalent sediment controls are required for all side slope and downslope boundaries of the construction area.

2. For drainage basins of less than 10 acres, sediment basins and/or sediment traps are recommended but not required. At a minimum, silt fences or equivalent sediment controls are required for all sideslope and downslope boundaries of the construction area.

3. Areas that will be used for permanent stormwater infiltration treatment (e.g., stormwater retention basins) shall not be used for temporary sediment basins unless appropriate measures are taken to assure removal of accumulated fine sediments, to avoid excessive compaction of soils by construction machinery or equipment, and to ensure that the design and permitted infiltration rate is achieved.

(e) Maintenance Requirements

The plan shall include a description of procedures that will be followed to ensure the timely maintenance of vegetation, erosion and sediment controls, stormwater management practices, and other protective measures and BMPs so they will remain in good and effective operating condition.

(f) Inspections

An inspector qualified in accordance with Part II.12. of DEP Document No. 62-621.300(4)(a), effective February 17, 2009, incorporated by reference in paragraph 62-621.300(4)(a), F.A.C., (provided by the owner or operator) shall perform all required site inspections. Site inspections must include all points of discharge into surface waters or an MS4; disturbed areas of the construction site that have not been finally stabilized; areas used for storage of materials that are exposed to precipitation; structural controls; and locations where vehicles enter or exit the site. Site inspections shall be conducted at least once every seven calendar days and within 24 hours of the end of a storm that is 0.50 inches or greater. Inspections shall include:

1. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the stormwater system. The stormwater management system and erosion and sediment control measures identified in the plan shall be observed to ensure that they are operating correctly. Discharge locations or points shall be inspected to ascertain whether erosion and sediment control and stormwater treatment measures are effective in preventing or minimizing the discharge of pollutants, including retaining sediment onsite pursuant to Rule 62-40.432, F.A.C. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.

2. Based on the results of the inspection, all maintenance operations needed to assure proper operation of all controls, BMPs, practices, or measures identified in the stormwater pollution prevention plan shall be done in a timely manner, but in no case later than 7 calendar days following the inspection. If needed, pollution prevention controls, BMPs, and measures identified in the plan shall be revised as necessary to assure proper operation of all controls, BMPs, practices, or measures identified in the stormwater pollution prevention plan. Such revisions shall provide for timely implementation of any changes to the plan within 7 calendar days following the inspection.

3. A report summarizing the scope of the inspection; name(s) and qualifications of personnel making the inspection; the date(s) of the inspection; rainfall data; major observations relating to the implementation of the stormwater pollution prevention plan; and actions taken in accordance with the requirements of this permit, shall be made and retained as part of the stormwater pollution prevention plan. Such

reports shall identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report shall contain a certification that the facility is in compliance with the stormwater pollution prevention plan and the Generic Permit for Stormwater Discharge from Large and Small Construction Activities.

11.4 Sediment Sump Design Example

Example calculations for designing a sediment sump are provided in Section 3 of the "References and Design Aids" for Volume I, available at https://floridadep.gov/water/water/content/water-resource-management-rules#erp.

PART V – OPERATION AND MAINTENANCE-SPECIFIC REQUIREMENTS

12.0 Operation and Maintenance Requirements

12.1 Responsibilities

(a) In accordance with Rule 62-330.310, F.A.C., and except as provided in **section 12.1.1, below,** upon completion of a project constructed in conformance with an individual permit issued under Part IV of Chapter 373, F.S., the permit must be converted from the construction phase to an operation and maintenance phase.

(b) Responsibility for operation and maintenance of a regulated activity shall be an obligation in perpetuity as provided in Rule 62-330.310, F.A.C. Such entity or entities must have the financial, legal, and administrative capability to perform operation and maintenance in accordance with Agency rules and permit conditions.

(c) Conversion of a permit from the construction to the operation and maintenance phase shall follow the procedures in Rule 62-330.310, F.A.C., and **section 12.2, below.**

12.1.1 Exceptions

The operation phase of mining projects subject to the land reclamation requirements of Chapter 378, F.S., and that are used solely for and by the mine during its life shall be allowed to terminate, without the need to apply for abandonment of the permit, after the mine, or its subunits, has met the requirements described in the applicable paragraph 62-330.310(7)(a) or (b), F.A.C.

12.2 Procedures for Requesting Conversion from the Construction Phase to the Operation and Maintenance Phase

(a) Automatic Conversion —

1. In accordance with subsection 62-330.310(5), F.A.C., projects authorized in a General Permit shall automatically convert to an operation and maintenance phase upon completion of the permitted activities in conformance with all the terms and conditions of the permit.

2. For projects that serve an individual, private single family dwelling unit, duplex, triplex, or quadruplex that are not part of a larger plan of common development proposed by an applicant, upon receipt of a completed Form 62-330.310(3), "Construction Completion and Inspection Certification for Activities Associated with a Private Single-Family Dwelling Unit," the construction phase of the permit shall automatically convert to the operation and maintenance phase. However, if at any time the Agency determines that such an activity was not built in conformance with the terms and conditions of the permit, the permittee shall be subject to enforcement by the Agency and for all measures required to bring the activity into compliance with the permit.

(b) For projects other than those specified in **sections 12.1.1** and **12.2(a), above** — Submittal of Form 62-330.310(1) "As-Built Certification and Request for Conversion to Operation Phase," in accordance with subparagraph 62-330.350(1)(f)2., F.A.C., shall serve to notify the Agency that the project, or independent portion of the project, is completed (other than

long-term monitoring and any mitigation that will require additional time after construction or alteration to achieve the success criteria specified in the permit) and ready for inspection by the Agency.

1. Projects not requiring certification by a registered professional shall be certified by the permittee or their authorized agent. Projects designed by a registered professional shall be certified by a registered professional, unless exempted by law.

2. The person completing Form 62-330.310(1) shall inform the Agency if there are substantial deviations from the plans approved as part of the permit and include as-built drawings with the form.

   The plans must be clearly labeled as "as-built" or "record" drawings and shall consist of the permitted drawings that clearly highlight (such as through "red lines" or "clouds") any substantial deviations made during construction. The permittee shall be responsible for correcting the deviations [as verified by a new certification using Form 62-330.310(1)]. Non-substantial deviations do not require a permit modification. Substantial deviations shall be processed as a minor or major modification under Rule 62-330.315, F.A.C. Such modification must be issued by the Agency prior to the Agency approving the request to convert the permit from the construction to the operation and maintenance phase.

3. The person certifying compliance with the permit shall submit documentation that demonstrates satisfaction of all permit conditions, other than long term monitoring and inspection requirements, along with Form 62-330.310(1).

(c) When projects authorized by a permit under this chapter are constructed in phases, each phase or independent portion of the permitted project must be completed and the Permittee must have submitted Form 62-330.310(1) "As-Built Certification and Request for Conversion to Operation Phase," in accordance with subparagraph 62-330.350(1)(f)2., F.A.C., certifying as to such completion prior to the use of that phase or independent portion of the project. The request for conversion to the operating phase for any phase or independent portion of the permitted project shall occur before construction of any future work that may rely on that infrastructure for conveyance and water quality treatment and attenuation. Phased construction can include a partial certification.

(d) Within 60 days of receiving Form 62-330.310(1), the Agency shall approve the request or will notify the permittee of any deficiencies that must be corrected prior to conversion to the operation and maintenance phase. If the Agency fails to take action on the request to convert the permit or notify the permittee of deficiencies, the conversion to operation and maintenance shall be deemed approved.

(e) If the Agency notifies the permittee of deficiencies that must be corrected, and if the permittee fails to correct those deficiencies in a timely manner, the project will be considered to be not operating in accordance with a permit issued under Chapter 62-330, F.A.C., and the permittee will be subject to enforcement action by the Agency. In such case, the permittee will be responsible for any necessary permit modifications, alterations, or maintenance to bring the project into such compliance, and for submitting any new certifications and requests to convert the permit to the operation and maintenance phase as provided in this section.

(f) The requirements for submittal of an "as-built certification" contained in a permit issued under Part IV of Chapter 373, F.S., prior to October 1, 2013, the effective date of Chapter 62-330, F.A.C., shall continue to be followed in accordance with the existing permit unless the permittee obtains a modification using the procedures in Rule 62-330.315, F.A.C., to comply with the "as-built certification" requirements of Rules 62-330.310 and 62-330.350, F.A.C., and this section of Volume I.

12.2.1 Transfer to the perpetual operation and maintenance entity

(a) If the permittee is also the operation and maintenance entity, once the activity has been converted to the operation phase as described in **section 12.2, above,** no other action is required under this section.

(b) In accordance with subparagraph 62-330.350(1)(g)2., F.A.C., if the permittee is not also the operation and maintenance entity, a completed Form 62-330.310(2), "Request for Transfer of Environmental Resource Permit to the Perpetual Operation Entity" must be submitted to transfer the permit to the operation and maintenance entity. If the transfer is to the entity identified in the permit, the submittal of the form does not require a processing fee, and the review shall not require processing as a permit modification under Rule 62-330.315, F.A.C. The form must be signed by a person authorized to represent the operation and maintenance entity, and shall be submitted along with the following, as applicable:

1. A copy of the recorded transfer of title to the operation and maintenance entity for the common areas on which the stormwater management system, or other permitted works are located (unless dedicated by plat),

2. A copy of all recorded plats,

3. Copies of recorded declaration of covenants and restrictions, amendments, and associated exhibits, and

4. A copy of the filed articles of incorporation and documentation of the operation and maintenance entity's active corporate status with the Department of State, Division of Corporations, if the entity is a corporation.

(c) Documents that require recordation in the public records must be recorded in the county where the project is located prior to any lot or unit sales within the project served by the system or work, or upon completion of construction of the system or work, whichever occurs first.

(d) Within 60 days of receiving a complete request to transfer the permit to the operation and maintenance entity, the Agency shall approve the request, or will notify the permittee that the documentation is insufficient to demonstrate compliance with **Section 12.3, below,** and permit conditions. The permittee shall remain liable until the permit is transferred to the operation and maintenance entity by the Agency. If the Agency fails to take action or notify the permittee of the insufficiencies within 60 days of the request, the transfer shall be deemed approved if the permit has already been certified and converted to the operation phase.

(e) If a permit modification is required to allow for a new entity or multiple entities to operate and maintain the project, the 60-day time period for Agency action shall not commence until the permit modification is issued.

12.3 Operation and Maintenance Entities

12.3.1 An acceptable operation and maintenance entity must have the legal ability to access, monitor, operate, and maintain the permitted project. Typically, this is accomplished through ownership or control of all property on which the permitted project is located by one of the entities listed below. However, alternative methods of achieving the legal requirements necessary for operation and maintenance will be considered by the Agency. Drainage easements, cross drainage agreements, or similar documents may be required for connected systems or systems with common infrastructure to be operated by different entities.

The following entities are acceptable for ensuring that an activity will be operated and maintained in compliance with the requirements of Section 373.416(2), F.A.C., and Chapter 62-330, F.A.C.

(a) Local government units, including counties and municipalities, Municipal Service Taxing Units, or special taxing units;

(b) Water control districts created pursuant to Chapter 298, F.S., drainage districts created by special act, special districts defined in Chapter 189, F.S., Community Development Districts created pursuant to Chapter 190, F.S., Special Assessment Districts created pursuant to Chapter 170, F.S., or water management districts created pursuant to Chapter 373, F.S.;

(c) State or federal agencies;

(d) Duly constituted communication, water, sewer, stormwater, electrical, or other public utilities;

(e) Construction permittees, subject to the restrictions below; or

(f) Non-profit corporations, including homeowners' associations, property owners' associations, condominium owners' or master associations, subject to the restrictions below.

12.3.2 If the proposed operation and maintenance entity falls within paragraph (a), (b), (c), or (d) above, a preliminary letter of intent or statement from such entity must be submitted to the Agency with the permit application, or in a permit modification request, indicating the entity's intention to accept responsibility for operation and maintenance of the permitted system. The letter of intent or statement must clearly indicate what portions of the system will be operated and maintained by the entity, and whether any portions of the system are to be operated and maintained by another entity. If portions of the system are to be operated and maintained by another entity, similar letters of intent or statements must be received from those entities. Upon approval by the Agency, all such identified entities will be responsible for operation and maintenance of the system.

12.3.3 A construction permittee is an acceptable operation and maintenance entity, provided the property on which all of the permitted project is located will continue to be owned or controlled by the construction permittee. When a permittee intends to convey the property to a third party, the permittee will be an approved operation and maintenance entity from the time construction begins until the system is transferred to the established legal entity approved by the Agency. If a permittee intends to convey or

transfer any portion of the property on which the permitted project is located, the permittee may continue to be the long-term operation and maintenance entity only if appropriate drainage easements, cross drainage agreements or similar documents that provide the entity with the legal capability and authority to operate and maintain the permitted project is approved as part of the permit application, are recorded in the official records of the applicable county, and are in effect prior to any conveyance or transfer of the property or conversion of the permit to the operation and maintenance phase, whichever occurs first. Where the property is leased or rented to a third party, the property owner shall continue to be the responsible operation and maintenance entity.

12.3.4 Homeowners' associations, property owners' associations, and condominium owners' or master associations (collectively, "Associations") are acceptable operation and maintenance entities only if they have the financial, legal, and administrative capability to provide for the long term operation and maintenance of the project. Accordingly, the applicant must:

(a) Submit draft Articles of Incorporation, Declaration, Restrictive Covenants, Deed Restrictions or other organizational and operation documents, or draft amendments thereto, that affirmatively assign responsibility to the Association for the operation or maintenance of the project. Model language for Declaration and Restrictive Covenants is included in section 7 of the "References and Design Aids" for Volume I. The Association documents must comply with Chapters 617, 718, 719, and 720, F.S., as applicable.

(b) Submit documentation that the Association will have sufficient powers (reflected in governing documents where applicable), to:

1. Own and convey property;

2. Operate and perform maintenance of the permitted project on common property as exempted or permitted by the Agency;

3. Establish rules and regulations governing membership or take any other actions necessary for the purposes for which the corporation or association was organized;

4. Assess members for the cost of operating and maintaining the common property, including the stormwater management system, and enforce the collection of such assessments;

5. Sue and be sued;

6. Contract for services to provide for operation and maintenance (if the association contemplates employing a maintenance company);

7. Require all owners of real property or units to be members of the corporation or association; and

8. Demonstrate that the land on which the system is located is owned or otherwise controlled by the corporation or association to the extent necessary to operate and maintain the system or convey operation and maintenance to another entity.

(c) Submit documentation that the following covenants and restrictions, will be or have been set forth in the Declaration of Restrictive Covenants, Deed Restrictions, Declaration of

Condominium, or other recorded document setting forth the Association's rules and regulations:

1. That it is the responsibility of the Association to operate and maintain the system;

2. The system is owned by the Association or described therein as common property;

3. That there is a method of assessing and collecting the assessment for operation and maintenance of the system;

4. That any proposed amendment to the Association's documents affecting the system (including environmental conservation areas and the water management portions of the common areas) must be submitted to the Agency for a determination of whether the amendment necessitates a modification of the environmental resource permit. If a modification is necessary, the Agency will so advise the permittee. The amendment affecting the system may not be finalized until any necessary permit modification is approved by the Agency or the Association is advised that a modification is not necessary;

5. That the governing provisions of the Association must be in effect for at least 20 years with automatic renewal periods thereafter;

6. That the Association shall exist in perpetuity. However, should the Association dissolve, the operational documents shall provide that the system shall be transferred to and maintained by one of the entities identified in **sections 12.3.1(a) through (f), above**, who has the powers listed in **section 12.3.4(b)1. through 8., above**, the covenants and restrictions required in **section 12.3.4(c)1. through 9., herein**, and the ability to accept responsibility for the operation and maintenance of the system described in **section 12.3.4(d)1. or 2, below**;

7. If wetland mitigation monitoring is required by the permit and the operational entity will be responsible to carry out this obligation, the rules and regulations of the Association shall state that it will be the Association's responsibility to complete the task successfully, including meeting all conditions associated with mitigation maintenance and monitoring;

8. The Agency has the right to take enforcement action, including a civil action for an injunction and penalties, against the Association to compel it to correct any outstanding problems with the system facilities or in mitigation or conservation areas under the responsibility or control of the Association; and

9. A "Recorded Notice of Environmental Resource Permit," Form No. 62-330.090(1), shall be recorded in the public records of the County(s) where the project is located. The Registered Agent for the Association shall maintain copies of all permitting actions for the benefit of the Association.

(d) Submit documentation that the Association will have the ability to accept responsibility for the operation and maintenance of the system:

1. For future phases of the project, if the operation and maintenance entity is proposed for a project that will be constructed in phases, and subsequent phases will utilize the same system as the initial phase or phases; or

2. Have, either separately or collectively, the responsibility and authority to operate and perform maintenance of the system for the entire project area, if the development scheme contemplates independent operation and maintenance entities for different phases, and the system is integrated throughout the project. That authority must include cross easements for surface water management and the ability to enter and maintain the various portions of the system, should any sub-entity fail to maintain a portion of the system within the project area.

12.4 Minimum Operation and Maintenance Standards

(a) In accordance with Section 373.416(2), F.S., unless revoked or abandoned, all stormwater management systems, dams, impoundments, reservoirs, appurtenant works, or works permitted under Part IV of Chapter 373, F.S., must be operated and maintained in perpetuity. The operation and maintenance shall be in accordance with the designs, plans, calculations, and other specifications that are submitted with an application, approved by the Agency, and incorporated as a condition into any permit issued.

(b) Upon completion of the permitted stormwater management systems, dams, reservoirs, impoundments, appurtenant work, or works, the Agency shall have periodic inspections made to ensure the project was constructed and is being operated in compliance with the terms and conditions of the permit, and in a manner that protects the public health and safety and the natural resources of the state. No person shall refuse immediate entry or access to any authorized representative of the District or DEP who requests entry for purposes of such inspection and presents appropriate credentials.

(c) Inspections may be performed by Agency staff during and after construction. When needed to ensure a project is being operated and maintained in perpetuity, the permit may require the operation and maintenance entity to conduct the periodic inspections. The required inspection schedule for a specific project will be specified in the permit.

(d) Some projects **that do not consist of or include a stormwater management system, dam, impoundment, reservoir, or appurtenant work,** whether designed by a registered professional or not, also may be required in the permit to be regularly inspected and monitored to ensure continued compliance with permit conditions and the functioning of the project. This may include individual permits issued for activities at a private residential single-family residence. For example, a residential fill pad may have been permitted with specific requirements for slope drainage or runoff. A dock located in waters with sensitive resources may have been permitted with conditions prohibiting mooring in certain locations, limiting the number or size of boats to be moored at the dock, or with requirements for handrailing or other associated structures. The permit will specify the periodic inspections that will be required, and how the results of the inspections are to be either retained by the permittee or reported to the Agency.

The following are examples of activities as discussed above that are subject to an initial inspection prior to conversion to the operation phase, and then subject to routine

inspections during the operation and maintenance phase. The inspection frequency during the operation and maintenance phase will be determined in the permit:

- Single-family dock (to verify that: handrails are constructed and are maintained to prevent mooring of vessels in shallow waters);
- Multi-slip docking facility (to verify maintenance of manatee protection signs, sewage pumpout facilities, or over-water fueling operation);
- Single-family lot fill (to verify lawn grading and sloping is maintained to reduce discharges of nutrients from lawn runoff entering sensitive waters);
- Seawalls or rip rap (to verify integrity of system or shoreline plantings);
- Lands within a conservation easements (for encroachments, alterations, or exotic/nuisance vegetation removal) in accordance with a permit under this chapter;
- Mitigation sites (to determine compliance with success criteria, including the status of exotic species removals); and
- Other dredging or filling (for example, dredged material sites and dams to ensure functioning and stability of dikes and control structures).

(e) The efficiency of stormwater management systems, dams, impoundments, and most other projects normally decreases over time without periodic maintenance. For example, a significant reduction in the flow capacity of a stormwater management system often can be attributed to partial blockages of its conveyance system. Once flow capacity is compromised, flooding may result. Therefore, operation and maintenance entities must perform periodic inspections to identify if there are any deficiencies in structural integrity, degradation due to insufficient maintenance, or improper operation of projects that may endanger public health, safety, or welfare, or the water resources. If deficiencies are found, the operation and maintenance entity will be responsible for correcting the deficiencies so that the project is returned to the operational functions required in the permit and contemplated by the design of the project as permitted. The corrections must be done a timely manner to prevent compromises to flood protection and water quality.

(f) Inspection and reporting frequencies will be included as permit conditions based on site-specific operational and maintenance requirements, considering things as:

1. The type, nature, and design of the design and performance standards proposed, including any alternative designs such as pervious pavement, green roofs, cisterns, managed aquatic plant systems, stormwater harvesting, wetland treatment trains, low impact designs, alum or polymer injection systems;

2. The proximity of receiving waters classified as Outstanding Florida Waters in Rule 62-302.700, F.A.C., or impaired for constituents likely to be contained in discharges from the project;

3. The nature of the site, such as whether it is part of a port or landfill, whether it will impound more than 40 acre-feet of water, or will include above ground impoundments;

4. The topography, rainfall patterns, and adjacent development surrounding the activity site, including any special basin designations within the District in which the activity is located, as identified in paragraph 62-330.301(1)(k), F.A.C.;

5. The nature of the underlying soils, geology, and groundwater, and hydrology;

6. The potential for construction and operation of the project to cause harm to public health, safety, or welfare, or harm to water resources, water quality standards, or water quality; and

7. Prior compliance history with the proposed design and performance type, including whether the activity characteristics are likely to pose more than a minimal risk for harm.

(g) Special attention shall be made during inspections to ensure that:

1. All erosion is controlled and soil is stabilized to prevent sediment discharge to waters in the state;

2. The system is kept free of debris, trash, garbage, oils and greases, and other refuse;

3. Stormwater management systems that include oil and grease separators, skimmers, or collection devices are working properly and do not allow the discharge of oils or greases. Oils and greases or other materials removed from such a device during routine maintenance shall be disposed of at a sanitary landfill or by other lawful means; and

4. All structures within stormwater management systems have not become clogged or choked with vegetative or aquatic growth to such an extent as to render them inoperable.

(h) Unless otherwise specified in the permit, the operation and maintenance entity must maintain a record of each inspection, including the date of inspection, the name and contact information of the inspector, whether the system was functioning as designed and permitted, and make such record available upon request of the Agency, in accordance with **section 12.5, below**.

(i) The inspection and reporting requirements contained in a permit issued under Part IV of Chapter 373, F.S., prior to October 1, 2013, the effective date of Chapter 62-330, F.A.C., which implements Section 373.4141, F.S., shall continue to be followed in accordance with the existing permit unless the permittee obtains a modification using the procedures in Rule 62-330.315, F.A.C., to comply with the inspection and reporting requirements of Rule 62-330.311, F.A.C., and this section of the Handbook.

12.5 Reporting

(a) All forms required for reporting can be submitted to the respective Agency Internet site. If the permittee does not use the electronic forms provided on that site, they shall be responsible for retaining records of the inspections and for delivering such records within 30 days of request to the requesting Agency, unless a more rapid delivery is requested for such reasons as the potential for the activity harm to water quality, water resources, public health, or public safety.

(b) Within 30 days of any failure of a stormwater management system or deviation from the permit, a report shall be submitted electronically or in writing to the Agency using Form 62-330.311(1), "Operation and Maintenance Inspection Certification," describing the remedial actions taken to resolve the failure or deviation.

(c) The operation and maintenance entity of a regional stormwater management facility must notify the Agency on an annual basis, using Form 62-330.311(2), "Regional Stormwater Management System Annual Report," of all new systems and their associated stormwater volumes that have been allowed to discharge stormwater into the regional facility, and confirming that the maximum allowable treatment volume of stormwater authorized to be accepted by the regional stormwater management facility has not been exceeded.

(d) A listing of all the forms that are incorporated by reference in Chapter 62-330, F.A.C., is contained in Appendix C of this Volume; copies of which may be obtained from the Agency, as described in Appendix A of this Volume and subsection 62-330.010(5), F.A.C.

12.6 Recording of Operation and Maintenance Documents and Notice of Permit

(a) Operation and maintenance documents required by **section 12.3.4 above**, must be submitted to the Agency for approval prior to recording. Such documents must be recorded in public records of the county where the project is located prior to any lot or unit sales within the project served by the system, or upon completion of construction of the system, whichever occurs first. For those systems that are to be operated and maintained by county or municipal entities, final operation and maintenance documents must be received by the Agency when maintenance and operation of the system is accepted by the local government entity. Failure to submit the appropriate final documents will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system.

(b) Permittees are advised that the Agency shall cause a "Recorded Notice of Environmental Resource Permit," Form No. 62-330.090(1), to be recorded in the public records of the county where the property is located in accordance with subsection 62-330.090(7), F.A.C., upon issuance of a permit, except for certain types of activities identified in that subsection.

12.7 Subsequent Transfers

Transfers of the permitted activity or the real property on which the permitted activity is located once a permit is in the operation and maintenance phase are governed by the procedures described in Rule 62-330.340, F.A.C., and **section 6.3 of this Volume**.

APPENDIX A

CONTACT INFORMATION AND MAPS FOR AGENCIES IMPLEMENTING THE ERP PROGRAM

The Agencies have divided responsibilities for permitting, compliance, and enforcement in accordance with Operating and Delegation Agreements incorporated by reference in Chapter 62-113, F.A.C., and as referenced in subsection 62-330.010(3), F.A.C.

Applications and notices are to be submitted to the correct agency. However, some applications involve activities, a portion of which extends beyond the boundary of more than one water management district. In such a case, Section 373.046(6), F.S., provides that the responsible Agency will be determined based on factors such as the amount and geography of the activity's land area, the location of the activity's discharge or discharges, the type of activity, prior agency history, and the terms and conditions of the Operating Agreement in effect between the Agencies.

Electronic applications shall be filed through the applicable Agency e-permitting portal or website listed in subsection 62-330.010(7), F.A.C., or at http://flwaterpermits.com/, or at the following Internet site of the applicable District:

SWFWMD: http://www.swfwmd.state.fl.us/permits/

SJRWMD: http://www.sjrwmd.com/permitting/ or https://permitting.sjrwmd.com/epermitting/jsp/start.jsp

SRWMD: https://permitting.sjrwmd.com/srepermitting/jsp/start.jsp

NWFWMD: https://permitting.sjrwmd.com/nwepermitting/jsp/start.jsp

SFWMD: http://my.sfwmd.gov/ePermitting/MainPage.do

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISTRICT AND BRANCH OFFICES

https://floridadep.gov/districts

Northwest District:
Escambia, Holmes, Okaloosa, Santa Rosa, & Walton Counties
160 W. Governmental Street, Suite 308
Pensacola, FL 32502-5740
https://floridadep.gov/northwest/

Northwest District Branch Office: Bay, Calhoun, Gulf, Jackson, & Washington Counties
2353 Jenks Avenue
Panama City, FL 32405

Northwest District Branch Office: Franklin, Gadsden, Jefferson, Leon, Liberty, & Wakulla Counties
2600 Blair Stone Road MS 55
Tallahassee, FL 32399-3000

Northeast District:
Alachua, Baker, Bradford, Clay, Columbia, Dixie, Duval, Flagler, Gilchrist, Hamilton, Lafayette, Levy, Madison, Nassau, Putnam, St. Johns, Suwannee, Taylor & Union Counties
8800 Baymeadows Way West, Suite 100
Jacksonville, FL 32256-7590
https://floridadep.gov/northeast/

Central District:
Brevard, Lake, Marion, Orange, Osceola, Seminole, Sumter & Volusia Counties
3319 Maguire Boulevard, Suite 232
Orlando, FL 32803-3767
https://floridadep.gov/central/

Southwest District:
Citrus, Hardee, Hernando, Hillsborough, Manatee, Pasco, Pinellas & Polk Counties
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
https://floridadep.gov/southwest/

Southeast District:
Indian River, Okeechobee, St. Lucie, Martin, Palm Beach, Broward & Dade Counties
400 North Congress Avenue, Third Floor
West Palm Beach, FL 33401-2913
https://floridadep.gov/southeast/

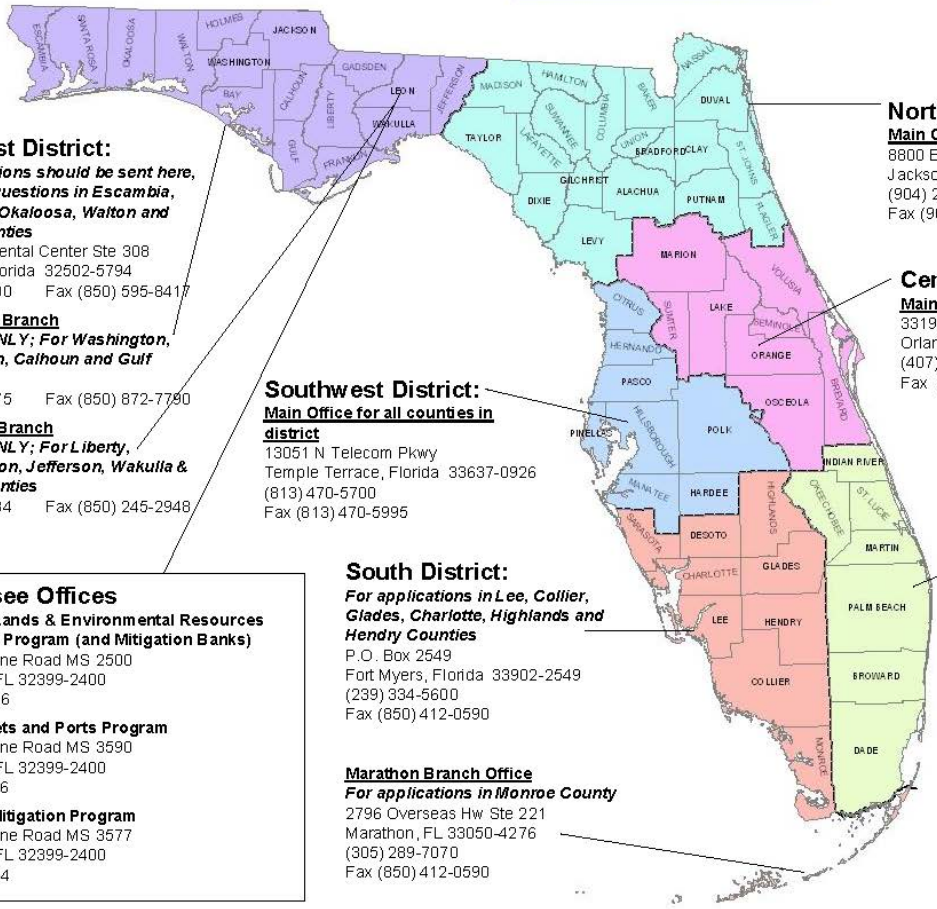
South District:
Charlotte, Collier, DeSoto, Highlands, Hendry, Glades, Lee & Sarasota Counties
2295 Victoria Avenue, Suite 364
Fort Myers, FL 33901-2549
https://floridadep.gov/south/

South District Marathon Branch Office: Monroe County
2796 Overseas Highway, Suite 221
Marathon, FL 33050-4276

Florida Department of Environmental Protection District Offices

SLER Programs Contacts

Directions: https://floridadep.gov/districts



Northwest District:
ALL applications should be sent here, and call for questions in Escambia, Santa Rosa, Okaloosa, Walton and Holmes Counties
160 Governmental Center Ste 308
Pensacola, Florida 32502-5794
(850) 595-8300 Fax (850) 595-8417

Panama City Branch
Questions ONLY; For Washington, Bay, Jackson, Calhoun and Gulf Counties
(850) 872-4375 Fax (850) 872-7790

Tallahassee Branch
Questions ONLY; For Liberty, Gadsden, Leon, Jefferson, Wakulla & Franklin Counties
(850) 245-2984 Fax (850) 245-2948

Northeast District:
Main Office for all counties in district
8800 Baymeadows Way West, Suite 100
Jacksonville, FL 32256-7590
(904) 256-1700
Fax (904) 256-1590

Central District:
Main Office for all counties in district
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
(407) 897-4100
Fax (850) 245-0467

Southwest District:
Main Office for all counties in district
13051 N Telecom Pkwy
Temple Terrace, Florida 33637-0926
(813) 470-5700
Fax (813) 470-5995

Southeast District:
Main Office for all counties in district
3301 Gun Club Road, MSC 7210-1
West Palm Beach, FL 33406-3007
(561) 681-6600
Fax (561) 681-6755

Tallahassee Offices

Submerged Lands & Environmental Resources Coordination Program (and Mitigation Banks)
2600 Blair Stone Road MS 2500
Tallahassee, FL 32399-2400
(850) 245-8486

Beaches, Inlets and Ports Program
2600 Blair Stone Road MS 3590
Tallahassee, FL 32399-2400
(850) 245-8336

Mining and Mitigation Program
2600 Blair Stone Road MS 3577
Tallahassee, FL 32399-2400
(850) 245-7554

South District:
For applications in Lee, Collier, Glades, Charlotte, Highlands and Hendry Counties
P.O. Box 2549
Fort Myers, Florida 33902-2549
(239) 334-5600
Fax (850) 412-0590

Marathon Branch Office
For applications in Monroe County
2796 Overseas Hw Ste 221
Marathon, FL 33050-4276
(305) 289-7070
Fax (850) 412-0590

rev 1/2018

Figure 1A

WATER MANAGEMENT DISTRICTS

Water management districts: contact information is available at the Department's site https://floridadep.gov/water-policy/water-policy/content/water-management-districts at the permitting portal http://flwaterpermits.com/ and at individual water management district web sites.

Northwest Florida Water Management District:

Contact the nearest Field Office

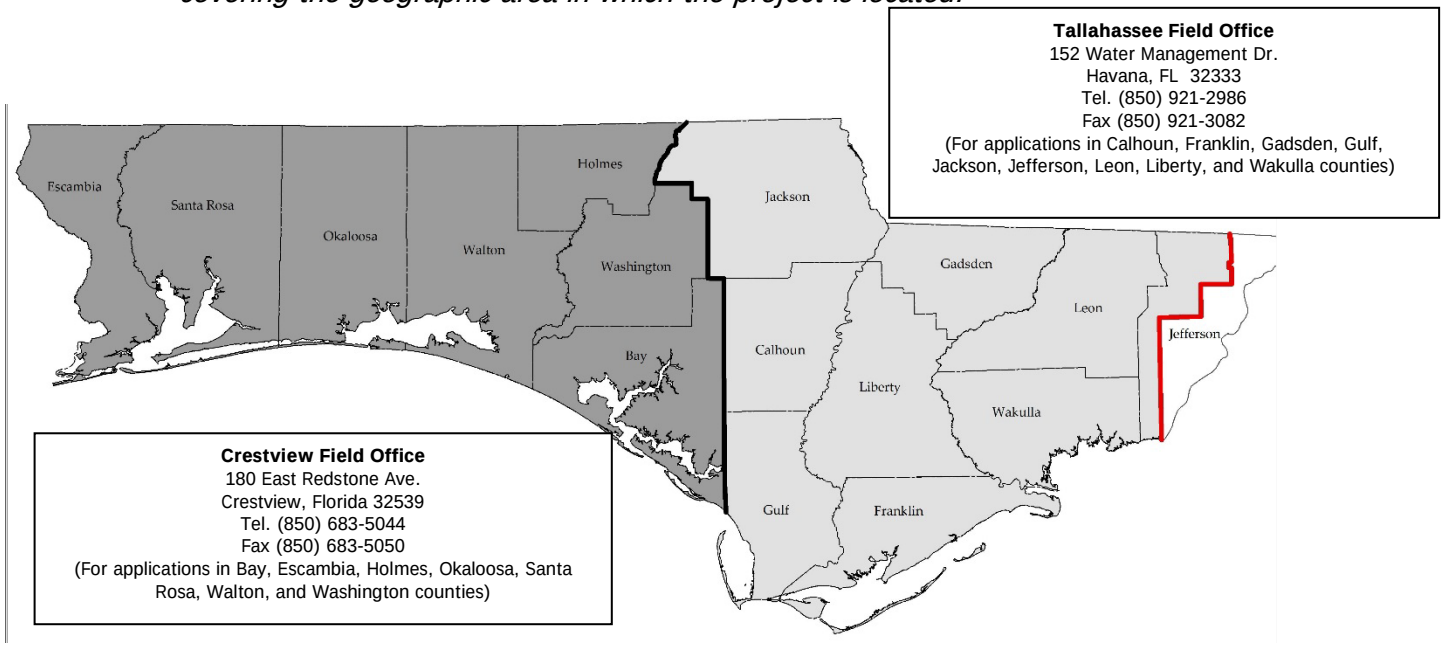
http://www.nwfwater.com/contact-us/locations/
http://www.nwfwater.com/permits/environmental-resource-permits/

Tallahassee Field Office (ERP)
152 Water Management Dr.
Havana, FL 32333

Crestview Field Office
180 East Redstone Ave.
Crestview, FL 32539

Figure 1B:
Northwest Florida Water Management District Geographic Limits and Office Responsibilities

Note: Electronic applications can be submitted to the NWFWMD via the web. Paper applications can be submitted to the office covering the geographic area in which the project is located.



SUWANNEE RIVER WATER MANAGEMENT DISTRICT

Contact the Water Supply and Resource Management Department
http://www.flwaterpermits.com/home/srwmd_inside.jsp
http://www.SRWMD.state.fl.us

Water Supply and Resource Management Department
9225 CR 49
Live Oak, FL 32060

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

Contact the District Headquarters

http://www.flwaterpermits.com/home/stjohns_inside.jsp
http://www.SJRWMD.com
ePermitting: http://floridaswater.com/permitting/

District Headquarters, Division of Permit Data Services
4049 Reid Street
Palatka, Florida 32177-2529

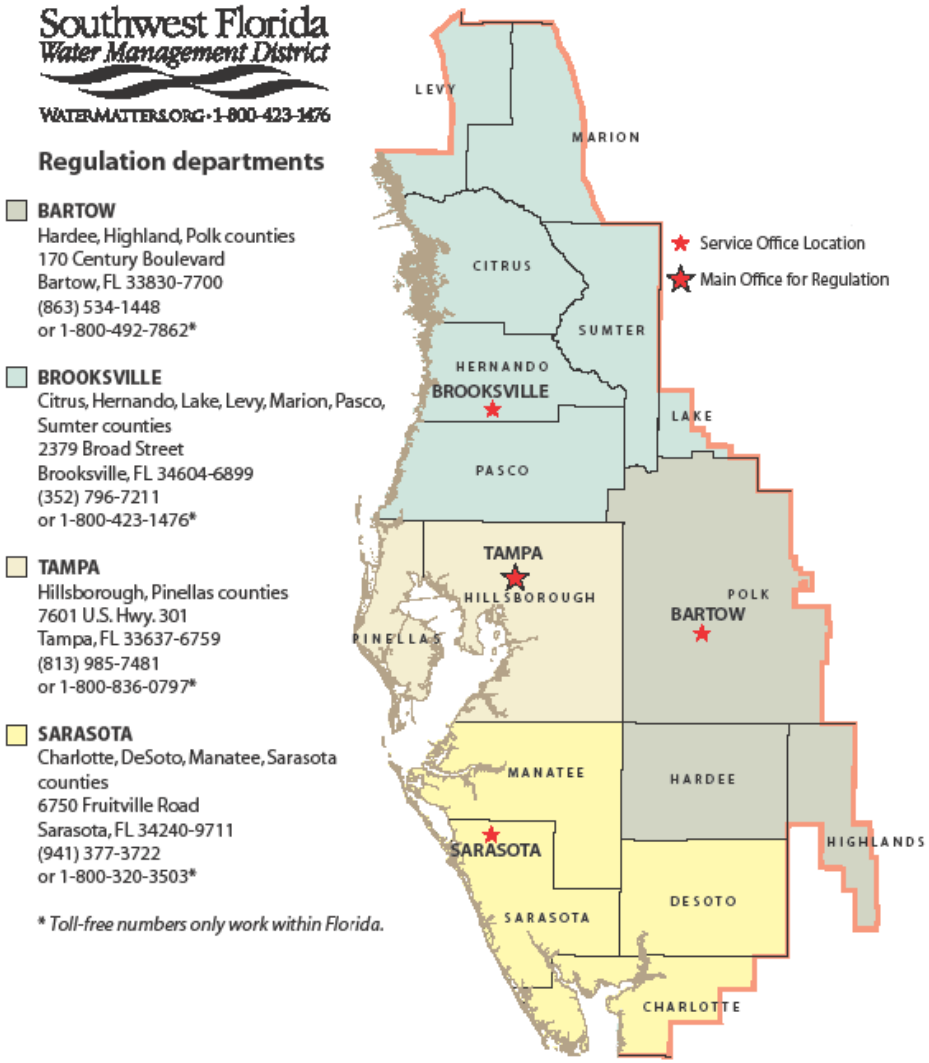
P.O. Box 1429
Palatka, FL 32178-1429

Southwest Florida Water Management District

Contact the nearest Tampa Service Center or the nearest Regulation Department office as depicted below:

http://www.flwaterpermits.com/home/swfwmd_inside.jsp
http://www.WaterMatters.org
ePermitting: http://www.swfwmd.state.fl.us/permits/

Tampa Service Office
7601 US Hwy. 301
Tampa, FL 33637-6759



South Florida Water Management District

Contact the nearest Service Center or the Regulation Reception Desk

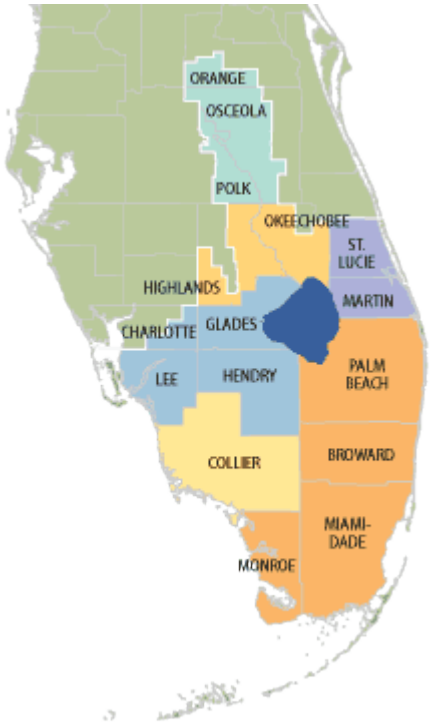
http://www.flwaterpermits.com/home/sfwmd_inside.jsp
http://www.sfwmd.gov/ePermitting
http://my.sfwmd.gov/portal/page/portal/levelthree/permits, or at any of the District's Service Centers online at http://my.sfwmd.gov/portal/page/portal/xrepository/sfwmd_repository_pdf/motormap.pdf

- **Broward, Miami-Dade, Monroe and Palm Beach counties**
  SFWMD Headquarters
  Building B-1
  3301 Gun Club Road
  West Palm Beach, FL 33406
  Phone: (561) 682-6736

- **Charlotte, Hendry and Lee counties**
  Fort Myers Service Center
  2301 McGregor Blvd.
  Fort Myers, FL 33901
  Phone: (239) 338-2929
  Fax: (239) 338-2936

- **Collier County**
  Big Cypress Basin Service Center
  2660 Horseshoe Drive North
  Naples, FL 34104
  Phone: (239) 263-7615
  Fax: (239) 263-8166

  Or, Fort Myers Service Center
  2301 McGregor Blvd.
  Fort Myers, FL 33901
  Phone: (239) 338-2929
  Fax: (239) 338-2936



- **Glades, Highlands, Martin, Okeechobee and St. Lucie counties**
  Okeechobee Service Center
  3800 NW 16th Blvd., Suite A
  Okeechobee, FL 34972
  Phone: (863) 462-5260
  Fax: (863) 462-5269

- **Orange, Osceola and Polk counties**
  Orlando Service Center
  1707 Orlando Central Parkway
  Orlando, FL 32809
  Phone: (407) 858-6100
  Fax: (407) 858-6121

Local Governments with Delegated Authority

1. Broward County:
   Agreement dated 7/19/2001: https://floridadep.gov/water/submerged-lands-environmental-resources-coordination/content/erp-local-program-delegation
   http://www.broward.org/permittingandlicensing/Pages/Default.aspx

   Broward County Environmental Protection and Growth Management Department,
   Environmental Licensing and Building Permitting Division
   1 North University Drive, Suite 201
   Plantation, FL 33324, (954)519-1483

2. Environmental Protection Commission of Hillsborough County:
   Agreement dated 2/9/2012:
   https://floridadep.gov/water/submerged-lands-environmental-resources-coordination/content/erp-local-program-delegation
   http://fl-hillsboroughcountyepc.civicplus.com/

   Executive Director
   Environmental Protection Commission
   3629 Queen Palm Dr.
   Tampa, FL 33619

APPENDIX B

OPERATING AND DELEGATION AGREEMENTS BETWEEN THE DEPARTMENT, WATER MANAGEMENT DISTRICTS, and DELEGATED LOCAL GOVERNMENTS

The following Operating Agreements have been executed between the Department and the Districts to implement the divisions of responsibilities for implementing the environmental resource permitting program under Part IV of Chapter 373, F.S. These Agreements are cited in subsection 62-330.010(3), F.A.C., and are incorporated by reference in Chapter 62-113, F.A.C.:

#10-1 Operating Agreement Concerning Regulation Under Part IV, Chapter 373, F.S., Between Northwest Florida Water Management District and Department of Environmental Protection, effective October 1, 2013, incorporated by reference in paragraph 62-113.100(3)(aa), F.A.C. (October 1, 2013).

#07-2: Operating Agreement Concerning Regulation Under Part IV, Chapter 373, F.S., between Suwannee River Water Management District and Department of Environmental Protection, dated July 1, 2007, incorporated by reference in paragraph 62-113.100(3)(m), F.A.C., and subsection 40B-400.091(2), F.A.C. (June 7, 2010).

#07-4: Operating Agreement Concerning Regulation Under Part IV, Chapter 373, F.S., between St. Johns River Water Management District and Department of Environmental Protection, dated July 1, 2007, incorporated by reference in paragraph 62-113.100(3)(x), F.A.C., and subsection 40C-4.091(1)(b), F.A.C. (May 27, 2012).

#07-3: Operating Agreement Concerning Regulation Under Part IV, Chapter 373, F.S., Between the Southwest Florida Water Management and Department of Environmental Protection, dated July 1, 2007, incorporated by reference in paragraph 62-113.100(3)(s), F.A.C., and subsection 40D-4.091(2), F.A.C. (August 1, 2012).

#07-1: Operating Agreement Concerning Regulation Under Part IV, Chapter 373, F.S., between South Florida Water Management District and Department of Environmental Protection, dated July 1, 2007, incorporated by reference in paragraph 62-113.100(3)(f), F.A.C., and subsection 40E-4.091(1)(c), F.A.C., May 27, 2012

The following Delegation Agreements have been executed between the Department and Local Governments to delegate responsibilities of the Agencies for implementing the environmental resource permitting program under Part IV of Chapter 373, F.S. These Agreements are in subsection 62-330.010(5), F.A.C., and are incorporated by reference in Chapter 62-113, F.A.C:

#01-1: Delegation Agreement Between the Florida Department of Environmental Protection, the South Florida Water Management District, and Broward County Regarding Implementation of Environmental Resource Permitting, Compliance, and Enforcement, under Part IV, Chapter 373, F.S., dated May 22, 2001, incorporated by reference in paragraph 62-113.100(2)(o), F.A.C.

#11-1: Delegation Agreement Between the Florida Department of Environmental Protection and the Environmental Protection Commission, Hillsborough County, Regarding Implementation of Environmental Resource Permitting, Compliance, and Enforcement, under Part IV, Chapter 373, F.S., effective date December 13, 2011, incorporated by reference in paragraph 62-113.100(2)(p), F.A.C., dated May 22, 2001.

Additional Operating Agreements, Memoranda of Understandings, and Delegation Agreements may be accessed at:
https://floridadep.gov/ogc/ogc/content/operating-agreements

APPENDIX C
FORMS

The following forms incorporated for use in Chapter 62-330, F.A.C., (as identified by the Form number) are listed below.

Form No.	Title
Form 62-330.050(1)	"Request for Verification of an Exemption" [http://www.flrules.org/Gateway/reference.asp?No=Ref-02468]
Form 62-330.0511(1)	"Notice of Intent to Construct a Minor Silvicultural System" [https://www.flrules.org/Gateway/reference.asp?No=Ref-02510]
Form 62-330.060(1)	Section A "Application for Individual and Conceptual Approval Environmental Resource Permit, State 404 Program Permit, and Authorization to Use State-Owned Submerged Lands" [https://www.flrules.org/Gateway/reference.asp?No=Ref-12036]
	Section B: For Single-Family Projects [https://www.flrules.org/Gateway/reference.asp?No=Ref-12036]
	Section C: Supplemental Information for Works or Other Activities In, On, Over Wetlands and/or Other Surface Waters [https://www.flrules.org/Gateway/reference.asp?No=Ref-12036]
	Section D: Supplemental Information For Works or Other Activities Within Surface Waters [https://www.flrules.org/Gateway/reference.asp?No=Ref-12036]
	Section E: Supplemental Information Required for Works or Other Activities Involving a Stormwater Management System (Other Than a Single-Family Project [https://www.flrules.org/Gateway/reference.asp?No=Ref-12036]
	Section F: Application For Authorization to Use State-Owned Submerged Lands [https://www.flrules.org/Gateway/reference.asp?No=Ref-12036]
	Section G: Supplemental Information Required for Mitigation Banks [https://www.flrules.org/Gateway/reference.asp?No=Ref-12036]
	Section H: Supplemental Information for Stormwater Management Systems for Mines [https://www.flrules.org/Gateway/reference.asp?No=Ref-12036]
	Section I: Supplemental Information for State 404 Program Permits [https://www.flrules.org/Gateway/reference.asp?No=Ref-12036]
	Attachments 1-3: Application Form Instructions, Agency Contacts, and Application Fees [http://www.dep.state.fl.us/water/wetlands/erp/forms.htm]
Form 62-330.090(1)	"Recorded Notice of Environmental Resource Permit" [http://www.flrules.org/Gateway/reference.asp?No=Ref-09362]
Form 62-330.201(1)	"Chapter 62-340, F.A.C., Data Form" [https://www.flrules.org/Gateway/reference.asp?No=Ref-12037]
Form 62-330.201(2)	"Petition for a Formal Determination of the Landward Extent of Wetlands and Other Surface Waters" [https://www.flrules.org/Gateway/reference.asp?No=Ref-12038]
Form 62-330.301(1)	"Performance Bond To Demonstrate Financial Assurance for Mitigation" [http://www.flrules.org/Gateway/reference.asp?No=Ref-02472]
Form 62-330.301(2)	"Irrevocable Letter of Credit to Demonstrate Financial Assurance for Mitigation" [http://www.flrules.org/Gateway/reference.asp?No=Ref-02473]

Form 62-330.301(3)	"Standby Trust Fund Agreement to Demonstrate Financial Assurance for Mitigation" [http://www.flrules.org/Gateway/reference.asp?No=Ref-02474]
Form 62-330.301(4)	"Trust Fund Agreement to Demonstrate Financial Assurance for Mitigation" [http://www.flrules.org/Gateway/reference.asp?No=Ref-02477]
Form 62-330.301(5)	"Escrow Agreement" [http://www.flrules.org/Gateway/reference.asp?No=Ref-02476]
Form 62-330.301(6)	"Guarantee Bond To Demonstrate Financial Assurance for Mitigation" [http://www.flrules.org/Gateway/reference.asp?No=Ref-02488]
Form 62-330.301(8)	"Deed of Conservation Easement, Standard" [http://www.flrules.org/Gateway/reference.asp?No=Ref-02489]
Form 62-330.301(9)	"Deed of Conservation Easement, Standard, With Third Party Beneficiary Rights" [http://www.flrules.org/Gateway/reference.asp?No=Ref-02490]
Form 62-330.301(10)	"Deed of Conservation Easement – Passive Recreational Uses" [http://www.flrules.org/Gateway/reference.asp?No=Ref-02491]
Form 62-330.301(11)	"Deed of Conservation Easement – Riparian Uses" [https://www.flrules.org/Gateway/reference.asp?No=Ref-02492]
Form 62-330.301(12)	"Deed of Conservation Easement for Local Governments" [http://www.flrules.org/Gateway/reference.asp?No=Ref-02493]
Form 62-330.301(13)	"Deed of Conservation Easement with Third Party Beneficiary Rights to the U.S. Army Corps of Engineers" [https://www.flrules.org/Gateway/reference.asp?No=Ref-02494]
Form 62-330.301(14)	"Declaration of Restrictive Covenants" [http://www.flrules.org/Gateway/reference.asp?No=Ref-02495]
Form 62-330.301(15)	"Declaration of Restrictive Covenants –Insert" [https://www.flrules.org/Gateway/reference.asp?No=Ref-02496]
Form 62-330.301(16)	"Temporary Easement for Construction Access" [https://www.flrules.org/Gateway/reference.asp?No=Ref-02497]
Form 62-330.301(17)	"Permanent Access Easement" [https://www.flrules.org/Gateway/reference.asp?No=Ref-02498]
Form 62-330.301(18)	"Joint Deed of Conservation Easement – Standard (within Broward County)," [http://www.flrules.org/Gateway/reference.asp?No=Ref-09377]
Form 62-330.301(19)	"Joint Deed of Conservation Easement — Third Party Beneficiary Rights (within Broward County)," [http://www.flrules.org/Gateway/reference.asp?No=Ref-09378]
Form 62-330.301(20)	"Joint Deed of Conservation Easement — Passive Recreational Uses (within Broward County)," [http://www.flrules.org/Gateway/reference.asp?No=Ref-09379]
Form 62-330.301(21)	"Joint Deed of Conservation Easement — Riparian Uses (within Broward County)," [http://www.flrules.org/Gateway/reference.asp?No=Ref-09380]
Form 62-330.301(22)	"Joint Deed of Conservation Easement — Local Governments (within Broward County)," [http://www.flrules.org/Gateway/reference.asp?No=Ref-09381]
Form 62-330.301(23)	"Joint Deed of Conservation Easement — Third Party Beneficiary Rights to the U.S. Army Corps of Engineers (within Broward County)," [http://www.flrules.org/Gateway/reference.asp?No=Ref-09382]
Form 62-330.301(24)	"Deed of Conservation Easement for Mitigation Banks – Third Party Beneficiary Rights to the U.S. Army Corps of Engineers," [http://www.flrules.org/Gateway/reference.asp?No=Ref-09383]

Form 62-330.310(1)	"As-Built Certification and Request for Conversion to Operation Phase" [https://www.flrules.org/Gateway/reference.asp?No=Ref-02499]
Form 62-330.310(2)	"Request For Transfer of Environmental Resource Permit to the Perpetual Operation and Maintenance Entity" [https://www.flrules.org/Gateway/reference.asp?No=Ref-02500]
Form 62-330.310(3)	"Construction Completion and Inspection Certification for Activities Associated With a Private Single-Family Dwelling Unit" [https://www.flrules.org/Gateway/reference.asp?No=Ref-02501]
Form 62-330.311(1)	"Operation and Maintenance Inspection Certification" [https://www.flrules.org/Gateway/reference.asp?No=Ref-02502]
Form 62-330.311(2)	"Regional Stormwater Management System Annual Report" [https://www.flrules.org/Gateway/reference.asp?No=Ref-02503]
Form 62-330.340(1)	"Request to Transfer Environmental Resource Permit and/or State 404 Program Permit" [https://www.flrules.org/Gateway/reference.asp?No=Ref-12039]
Form 62-330.350(1)	"Construction Commencement Notice" [https://www.flrules.org/Gateway/reference.asp?No=Ref-02505]
Form 62-330.360(1)	"Emergency Field Authorization" [https://www.flrules.org/Gateway/reference.asp?No=Ref-02506]
Form 62-330.402(1)	"Notice of Intent to Use an Environmental Resource and/or State 404 Program General Permit" [https://www.flrules.org/Gateway/reference.asp?No=Ref-12040]
Form 62-330.417(1)	"Agreement to Maintain Public Access" [http://www.flrules.org/Gateway/reference.asp?No=Ref-02508]
Form 62-330.417(2)	"Agreement to Maintain Public Access and Operate Stormwater System" [https://www.flrules.org/Gateway/reference.asp?No=Ref-02509]

All forms are listed by rule number, which is also the form number, and with the subject title and effective date. Copies of forms may be obtained from the above Internet links, or from any local district or branch office of the Agencies (see subsection 62-330.010(5), F.A.C., and Appendix A).

APPENDIX D

PROCESSING FEES

PROCESSING FEES REQUIRED FOR APPLICATIONS, NOTICES, AND PETITIONS SUBMITTED TO THE AGENCIES ARE ACCESSIBLE AT:

- Submittals to the Department or the Northwest Florida Water Management District — Rule 62-4.050(4)(h) , F.A.C. [https://www.flrules.org/gateway/ChapterHome.asp?Chapter=62-4]

- Submittals to the Suwannee River Water Management District — Rule 40B-1.706, F.A.C. [https://www.flrules.org/Gateway/reference.asp?No=Ref-02534]

- Submittals to the St. Johns River Water Management District — Rule 40C-1.603, F.A.C. [https://www.flrules.org/Gateway/reference.asp?No=Ref-02535]

- Submittals to the Southwest Florida Water Management District — Rule 40D-1.607, F.A.C. [https://www.flrules.org/Gateway/reference.asp?No=Ref-02536]

- Submittals to the South Florida Water Management District — Rule 40E-1.607, F.A.C. [https://www.flrules.org/Gateway/reference.asp?No=Ref-02537]

These rules are incorporated by reference in Rule 62-330.071, F.A.C.

For applications, notices, or petitions that are the responsibility of a local government delegated to implement Chapter 62-330, F.A.C., in accordance with Section 373.441, F.S., the processing fee shall be submitted to the local government in accordance with the fee schedule of the local government as authorized in the Delegation Agreement between the Department and the local government incorporated by reference in Chapter 62-113, F.A.C.

- Broward County - http://www.broward.org//Environment/Engineering/Pages/Default.aspx

- Hillsborough County - http://www.epchc.org/

APPENDIX E

OPERATING AGREEMENT BETWEEN

JACKSONVILLE DISTRICT USACE, DEP, AND ALL WMDS

[Appendices E, F, G, H, I, J and K are located in a separate document because of size; title pages are included here because they are all part of Applicant's Handbook, Volume I]

APPENDIX F

Bald and Golden Eagle Protection Act

APPENDIX G

USFWS Habitat Management Guidelines for the Wood Stork in the Southeast Region

APPENDIX H

National Bald Eagle Management Guidelines

APPENDIX I

Mine Stormwater Management Systems

APPENDIX J

Chapter 62-340, F.A.C. Data Form Guide

APPENDIX K

Chapter 62-340, F.A.C. Data Form Instructions

ENVIRONMENTAL RESOURCE PERMIT APPLICANT'S HANDBOOK VOLUME II

FOR USE WITHIN THE GEOGRAPHIC LIMITS OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT

EFFECTIVE MAY 22, 2016

Volume II (including Appendices A, B, C, D and E)
is incorporated by reference in
Rule 40E-4.091(1)(a) and Rule 62-330.010, F.A.C.

sfwmd.gov

ENVIRONMENTAL RESOURCE PERMIT APPLICANT'S HANDBOOK VOLUME II FOR USE WITHIN THE GEOGRAPHIC LIMITS OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT MAY 22, 2016

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PART 1 – INTRODUCTION, ORGANIZATION, APPLICABILITY

1.0 INTRODUCTION

This **Applicant's Handbook Volume II** accompanies Chapter 62-330, Fla. Admin. Code (F.A.C.), and the "**Environmental Resource Permit Applicant's Handbook Volume I (General and Environmental)**" **(Applicant's Handbook Volume I)**.– **Applicant's Handbook Volume I** is applicable to all environmental resource permit applications, and provides background information on the environmental resource permit (ERP) program, including:

- Points of contact;
- A summary of the statutes and rules that are used to authorize and implement the ERP program;
- A summary of the types of permits, permit thresholds, and exemptions;
- Procedures used to review exemptions and permits;
- Conditions for issuance of an ERP, including the environmental criteria used for activities located in wetlands and other surface waters;
- Erosion and sediment control practices to prevent water quality violations; and
- Operation and maintenance requirements.

This Volume is designed to be applicable only to those ERP applications that involve the design of a stormwater management system that requires a permit as provided in Chapter 62-330, F.A.C., or Section 403.814(12) F.S. This volume also contains South Florida Water Management District (District) specific appendices for regionally-specific criteria such as basin maps for cumulative impact assessments (see Applicant's Handbook Volume I, Section 10.2.8), mitigation bank service area determination (refer to Chapter 62-342, F.A.C), and above ground impoundments.

Projects that qualify for a general permit in Section 403.814(12), F.S., are not regulated under Chapter 62-330, F.A.C. However, **Applicant's Handbook Volume II** contains design and performance standards that are relevant to the design of projects that qualify for that general permit.

This Volume provides specific, detailed water quality and quantity design and performance criteria for stormwater management systems regulated by the District through the ERP program authorized under Part IV of Chapter 373, F.S. This Volume explains, and provides more detail on, the rule criteria for stormwater quality and quantity contained in Chapter 62-330, F.A.C. In cases where conflicting or ambiguous interpretations of the information in this Volume results in uncertainty, the final determination of appropriate procedures to be followed will be made using Chapters 120 and 373, F.S., applicable F.A.C. rule chapters, and best professional judgment of Agency staff.

Both Applicant's Handbook Volumes I and II are adopted by reference in Chapter 62-330, F.A.C. Applicant's Handbook Volume II is also incorporated in Rule 40E-4.091, F.A.C. Both Applicant's Handbook Volumes I and II are rules of the Department and the District. The term "Agency," where used in this Volume, shall apply to the Department, the District, or a delegated local government, as applicable, in accordance with the division of responsibilities specified in the Operating Agreements incorporated by reference in subsection 62-330.010(5) and Rule 40E-4.091, F.A.C., except where a specific Agency is otherwise identified. Volume II applies whether an ERP application is processed and acted on by the Department, a District, or a delegated local government. The Handbooks are written to provide more detail and clarity to the public in understanding the statutory and rule provisions that implement the ERP program.

1.1 Criteria Objectives

The criteria contained herein were established with the primary goal of meeting water resource objectives as set forth in Part IV of Chapter 373, F.S. Performance criteria are used where possible. Other methods of meeting overall objectives of the District and which meet the conditions for issuance set forth in Rules 62-330.301 and 62-330.302, F.A.C., will be considered. Compliance with the criteria herein constitutes a presumption that the project proposal is in conformance with the conditions for issuance set forth in Rules 62-330.301 and 62-330.302, F.A.C. Pursuant to Section 373.4131, F.S., if a stormwater management system is designed in accordance with the criteria in this Handbook or if a system is constructed, operated, and maintained for stormwater treatment in accordance with a valid Environmental Resource Permit or exemption under Part IV of Chapter 373, the discharges from the system are presumed not to violate applicable state water quality standards.

An applicant may propose alternative designs to those provided in this Volume for consideration by the Agency. However, reasonable assurance in the form of plans, test results, or other information must be provided by the applicant to demonstrate that the alternative design meets the conditions for issuance (Rules 62-330.301 and 62-330.302, F.A.C.).

1.2 District-Specific Thresholds

Within Miami-Dade County, an ERP is not required for the construction, alteration or operation of a stormwater water management system in uplands provided that system meets all of the conditions below:

1. The project area is less than 40 acres with positive stormwater outfall or the project area is less than 320 acres with less than 160 acres of impervious area, and no positive stormwater outfall;
2. The design plans and calculations are signed and sealed by a registered professional;
3. The system meets the criteria specified in Rules 62-330.301 and 62-330.302, F.A.C.; and
4. The system is not located in natural water bodies, wetlands, waters of the state, or

an Outstanding Florida Water as listed in Rule 62-302.700, F.A.C.

1.3 District-Specific Exemptions

There are no exemptions specific to the South Florida Water Management District geographical area. All applicable exemptions can be found in Rules 62-330.051-.0511, F.A.C.

PART II – GENERAL CRITERIA

2.0 General Criteria for all Stormwater Management Systems

This Volume applies to the design of stormwater management systems that require a permit under Chapter 62-330, F.A.C., or a general permit as provided under Section 403.814(12), F.S. Additional special basin criteria within SFWMD can be found in Chapter 40E-41, F.A.C (for Western C-9 Basin, Kissimmee River Basin, C-51 Basin, and the Water Preserve Area Basins of Palm Beach and Broward Counties), Chapter 40E-61 F.A.C (for the Lake Okeechobee Basin), and Chapter 40E-63, F.A.C (for the Everglades Agricultural Area).

2.1 Definitions

The definitions set forth in Applicant's Handbook Volume I, Section 2.0(a) are applicable to Volume II.

2.1.1 "Agency" - The Department of Environmental Protection or South Florida Water Management District or a delegated local government, as applicable, in accordance with division of responsibilities specified in the Operating Agreements incorporated by reference in subsection 62-330.010(5), and Rule 40E-4.091, F.A.C.

2.1.2 "Control device" - Element of a discharge structure which allows the gradual release of water under controlled conditions. It is sometimes referred to as the bleed-down mechanism, or "bleeder".

2.1.3 "Control elevation" - The lowest elevation at which water can be released through the control device.

2.1.4 "Department" - The Department of Environmental Protection.

2.1.5 "Detention" - The delay of stormwater runoff prior to discharge into receiving waters.

2.1.6 "Detention volume" - The volume of open surface storage behind the discharge structure between the overflow elevation and control elevation.

2.1.7 "District" - The South Florida Water Management District.

2.1.8 "Elevation" - Height in feet above mean sea level according to National Geodetic Vertical Datum (NGVD) or North American Vertical Datum 88 (NAVD).

2.1.9 "Exfiltration trench" - A subsurface retention system consisting of a conduit such as perforated pipe surrounded by natural or artificial aggregate which temporarily stores and infiltrates stormwater runoff.

2.1.10 "Historic discharge" - The peak rate at which runoff leaves a parcel of land by gravity in an undisturbed/natural state, or the legally allowable discharge in effect at the time of permit application.

2.1.11 "Impervious" - Land surfaces which do not allow, or minimally allow, the penetration of water. Examples include building roofs, normal concrete and asphalt pavements, and some fine grained soils such as clays.

2.1.12 "Mean annual higher high tide" - The arithmetic mean of the higher high water elevations observed at a location or tidal station over the National Tidal Datum Epoch. Only the higher high water of each pair of high waters of the tidal day is included in the mean.

2.1.13 "Overflow elevation" - Design elevation of a discharge structure at which, or below which, water is contained behind the structure, except for that which leaks out, or bleeds out, through a control device down to the control elevation.

2.1.14 "Regulated activity" - The construction, alteration, operation, maintenance, abandonment or removal of a surface water management system, including dredging and filling, regulated pursuant to Part IV, Chapter 373, F.S.

2.1.15 "Retention" - The prevention of stormwater runoff from direct discharge into receiving waters. Examples include systems which discharge through percolation, exfiltration, filtered bleed-down and evapotranspiration processes.

2.1.16 "Retention/detention area (dry)" - Water storage area with bottom elevation at least one foot above the control elevation of the area. Sumps, mosquito control swales and other minor features may be at a lower elevation.

2.1.17 "Retention/detention area (wet)" - A water storage area with bottom elevation lower than one foot above the control elevation of the area.

2.1.18 "Staff Report" - A written report prepared by Agency staff setting forth staff's conclusions and recommendations based on review of an application. The description of the project in the Staff Report shall take precedence over application data contained in Agency permit files, since numerous project changes are often made by applicants during application processing, the results of which may only be reflected in the Staff Report. Staff Reports serve as notice of proposed agency action.

2.1.19 "State water quality standards" – Water quality standards adopted pursuant to Chapter 403, F.S. [Section 373.403(11), F.S.], including standards composed of designated most beneficial uses (classification of waters), the numerical and narrative criteria applied to the specific water use or classification, the Florida anti-degradation policy (Rules 62-4.242, 62-302.300, F.A.C.), and the moderating provisions contained in Chapters 62-4 (2/17/2016) [http://www.flrules.org/Gateway/reference.asp?No=Ref-06802], 62-302 (2/17/2016) [http://www.flrules.org/Gateway/reference.asp?No=Ref-06803], 62-520 (7/12/2009) [http://www.flrules.org/Gateway/reference.asp?No=Ref-02977], and 62-550, F.A.C. (7/7/2015) [http://www.flrules.org/Gateway/reference.asp?No=Ref-06804], incorporated by reference herein and in Rule 40E-4.091, F.A.C. Copies of Chapters 62-4, 62-302, 62-520 and 62-550, F.A.C., are available at no cost by contacting the South Florida Water Management District Clerk's Office, 3301 Gun Club Road, West Palm Beach, FL 33406 (800) 432-2045, ext. 2087, or (561) 682-2087.

2.1.20 "Surface Water Management System" or "System" - A stormwater management system, dam, impoundment, reservoir, appurtenant work or works, or any combination thereof. The terms "surface water management system" or "system" include areas of dredging or filling as defined by Section 373.403(13) and (14), F.S., respectively.

2.1.21 "Tailwater" - The receiving water elevation (or pressure) at the final discharge point of the stormwater management system.

2.1.22 "Water management areas" - Areas to be utilized for the conveyance, treatment or storage of stormwater.

2.1.23 "Wet detention systems" - Permanently wet ponds which are designed to slowly release collected stormwater runoff through an outlet structure.

2.2 Professional Certification

All construction plans and supporting calculations submitted to the Agency for surface water management systems that require the services of a registered professional must be signed, sealed, and dated by a registered professional.

2.3 Water and Wastewater Service and Concurrent Processing

(a) Potable water, irrigation and wastewater facilities must be identified. An applicant for an environmental resource permit must provide documentation on how these services are to be provided. If wastewater disposal is accomplished on-site, additional information shall be requested regarding separation of waste and stormwater management systems.

(b) For environmental resource permits, if on-site consumptive water use withdrawals are also proposed for which a District water use permit is required, the environmental resource and water use permits must be

processed simultaneously. These requirements are dependent upon site specific water resource limitations. It is recommended that the applicant contact Agency staff prior to filing an application to determine whether the proposed project necessitates simultaneous environmental resource and water use permitting.

2.4 Retrofits of Existing Stormwater Management Systems

(a) A stormwater retrofit project is typically proposed by a county, municipality, state agency, or water management district to provide new or additional treatment or attenuation capacity, or improved flood control to an existing stormwater management system or systems. Stormwater retrofit projects shall not be proposed or implemented for the purpose of providing the water quality treatment or flood control needed to serve new development or redevelopment.

Example components of stormwater retrofit projects are:

1. Construction or alteration that will add additional treatment or attenuation capacity and capability to an existing stormwater management system;
2. Modification, reconstruction, or relocation of an existing stormwater management system or stormwater discharge facility;
3. Stabilization of eroding banks through measures such as adding attenuation capacity to reduce flow velocities, planting of sod or other vegetation, and installation of rip rap boulders;
4. Excavation or dredging of sediments or other pollutants that have accumulated as a result of stormwater runoff and stormwater discharges.

(b) Stormwater Quality Retrofits

1. The applicant for a stormwater quality retrofit project must provide reasonable assurance that the retrofit project itself will, at a minimum provide additional water quality treatment such that there is a net reduction of the stormwater pollutant loading into receiving waters. Examples are:

    a. Addition of treatment capacity to an existing stormwater management system such that it reduces loadings of stormwater pollutants of concern to receiving waters;
    b. Adding treatment or attenuation capability to an existing developed area when either the existing stormwater management system or the developed area has substandard stormwater treatment and attenuation capabilities, compared

to what would be required for a new system requiring a permit under Part IV of Chapter 373, F.S.; or

c. Removing pollutants generated by, or resulting from, previous stormwater discharges.

2. If the applicant has conducted, and the Agency has approved, an analysis that provides reasonable assurance that the proposed stormwater quality retrofit will provide the intended pollutant load reduction from the existing system or systems, the project will be presumed to comply with the requirements in Part IV of this Volume.

3. The pollutants of concern will be determined on a case-by-case basis during the permit application review based upon factors such as the type and intensity of land use, existing water quality data within the area subject to the retrofit, and the degree of impairment or water quality violations in the receiving waters.

(c) Stormwater Quantity (Flood Control) Retrofits

The applicant for a stormwater quantity retrofit project must provide reasonable assurance that the retrofit project will reduce existing flooding problems in such a way that it does not cause any of the following:

1. A net reduction in water quality treatment provided by the existing stormwater management system or systems;
2. Increased discharges of untreated stormwater entering adjacent or receiving waters;

If the applicant has conducted, and the Agency has approved, an analysis that provides reasonable assurance that the stormwater quantity retrofit project will comply with the above, the project will be presumed to comply with the requirements in Part III of this Volume.

(d) The applicant for any stormwater retrofit project must design, construct, operate, and maintain the project so that it:

1. Will not cause or contribute to a water quality violation;
2. Does not reduce stormwater treatment capacity or increase discharges of untreated stormwater. Where existing ambient water quality does not meet water quality standards the applicant must demonstrate that the proposed activities will not cause or contribute to a water quality violation. If the proposed activities will contribute to the existing violation, measures shall be proposed that will provide a net improvement of the water quality in the receiving waters for those parameters that do not meet standards.

3. Does not cause any adverse water quality impacts in receiving waters; or
4. Will not cause or contribute to increased flooding of adjacent lands or cause new adverse water quantity impacts to receiving waters.

2.5 Flexibility for State Transportation Projects and Facilities

With regard to state linear transportation projects and facilities the Agencies shall be governed by subsection 373.413(6), F.S. (2012).

PART III – STORMWATER QUANTITY/FLOOD CONTROL

3.1 General

This document refers to flood and drought frequency impacts interchangeably with rainfall frequency. Additional calculations may be required to identify other combinations of site conditions and rainfall frequencies which might result in impacts of the specified frequency. Examples include designs affected by spring tides, fluctuating tides and fluctuating receiving water stages.

3.2 Discharge Rate

Off-site discharge rate is limited to rates not causing adverse impacts to existing off-site properties, and:

(a) Historic discharge rates; or
(b) Rates determined in previous Agency permit actions; or
(c) Rates specified in District criteria (see Appendix A to this Volume).

3.3 Design Storm

Unless otherwise specified by previous Agency permits or criteria, a storm event of 3 day duration and 25 year return frequency shall be used in computing off-site discharge rates. Applicants are advised that local drainage districts or local governments may require more stringent design storm criteria. An applicant who demonstrates its project is subject to unusual site specific conditions may, as a part of the permit application process, request an alternate discharge rate.

3.3.1 Methodologies

An acceptable peak discharge analysis typically consists of generating pre-development and post-development runoff hydrographs, routing the post-development hydrograph through a detention basin, and sizing an overflow structure to control post-development discharges at or below pre-development rates. Acceptable design techniques also include the use of grassed waterways, and any other storage capability that the particular system may have.

Peak discharge computations shall consider the duration, frequency, and intensity of rainfall, the antecedent moisture conditions, upper soil zone and surface storage, time of concentration, tailwater conditions, changes in land use or land cover, and any other changes in topographic and hydrologic characteristics. Large systems shall be divided into sub-basins according to artificial or natural drainage divides to allow for more accurate hydrologic simulations.

Peak discharge calculations must make proper use of the SCS Peak Rate Factor or K' Factor. The Peak Rate Factor reflects the effect of watershed storage on the hydrograph shape and directly and significantly impacts the peak discharge value. As such, K' must be based on the true watershed storage of runoff, and not on the slope of the landscape which is more accurately accounted for in the time of concentration. However, the average slope of natural watersheds is highly interrelated with the surface storage potential. Land development will generally result in a reduction of natural storage. As a result, the K' value should either increase or remain constant, but never decrease. In most cases, post-development conditions will include detention storage areas; this storage should be accounted for by routing the hydrograph based on a defined stage-storage-discharge relationship and should therefore not be considered in determining K'. However, in some cases where surface storage is maintained, K' may be reduced to same value used in the pre-development condition.

3.3.2 Aggregate Discharge

Where multiple off-site discharges are designed to occur, if the combined discharges meet all other requirements of Chapter 62-330, F.A.C., and discharge to the same receiving waterbody, the Agency will allow the total post-development peak discharge not to exceed the pre-development peak discharge for the combined discharges rather than for each individual discharge.

3.3.3 Upper Soil Zone Storage and Surface Storage

In most instances, the upper soil zone storage and surface storage capacities will have an effect on the pre-development and post-development peak discharges and shall be considered in these computations. Any generally accepted and well-documented method may be used to develop the upper soil zone storage and surface storage values.

(a) The soil zone storage at the beginning of a storm shall be estimated by using reasonable and appropriate parameters consistent with generally accepted engineering and scientific principles to reflect drainage practices, average wet season water table elevation, the antecedent moisture condition (generally AMC II) and any underlying soil characteristics that would limit or prevent percolation of storm water into the entire soil column. The soil storage used in the computation shall not exceed the difference between the maximum soil water capacity and the field capacity (for example, gravitational water) for the

soil columns above any impervious layer or seasonal groundwater table. Refer to Section 5.7.4.2 for additional soil storage criteria.

(b) Surface storage, including that available in wetlands and low-lying areas, shall be considered as depression storage. Depression storage shall be analyzed for its effect on peak discharge and the time of concentration. Depression storage can also be considered in post-development storage routing which requires development of stage-storage relationships. If depression storage is considered, then both pre-development and post-development storage routing must be considered.

3.4 Flood Protection of Building Floors

Building floors shall be at or above the 100 year flood elevations, as determined from the most appropriate information, including Federal Flood Insurance Rate Maps. Both tidal flooding and the 100 year, 3 day storm event shall be considered in determining elevations.

Lower floor elevations will be considered for agricultural buildings which are non-residential and are not routinely accessed by the public. For example, agricultural structures such as barns or equipment sheds normally qualify for a lower finished floor elevation. Applicants are cautioned that potential water quality impacts caused by flooding of contents housed in a structure will be considered in allowing a reduced finished floor elevation.

3.5 Flood Protection of Roads and Parking Lots

Many local governments have criteria for the protection of roads and parking lots from flooding.

(a) In cases where criteria are not specified by the local government with jurisdiction, the following design criteria for drainage and flood protection shall be used:

frequency - 5 years
duration - 1 day (road centerlines)
1 hour (parking lots served by exfiltration systems)

(b) If the local government with jurisdiction has set flood protection criteria for roads and parking lots within commercial projects, the Agency will not require the applicant to meet Agency road and parking lot flood protection criteria. This shall only be allowed for commercial projects which are to remain single owner projects. Such criteria may provide lesser degrees of flood protection than required under Agency criteria. Projects which are not permitted pursuant to Agency criteria will be special conditioned, as notice to the permittee and local government, that a substandard design has been permitted. The applicant shall, however, meet Agency criteria for water quality, off-site discharge and building floor elevations.

(c) In each basin, the minimum roadway crown elevation shall be at least 2 feet higher than the control elevation, in order to protect the road subgrade.

3.6 Flood Plain Encroachment

No net encroachment into the floodplain, between the average wet season water table and that encompassed by the 100 year event, which will adversely affect the existing rights of others, will be allowed.

3.7 Historic Basin Storage

Provision must be made to replace or otherwise mitigate the loss of historic basin storage provided by the project site.

3.8 Offsite Lands

Onsite works such as swales and dikes shall be used to allow the passage of drainage from offsite areas to downstream areas. Diking of project development areas or other equivalent methods shall be used to contain water at or above stages identified in the project discharge computations.

3.9 Minimum Drainage

(a) Residential projects shall have systems with the calculated ability to discharge by surface flow or subsurface percolation at least 3/8 inch per day during or subsequent to the storm of the allowable discharge frequency and duration, so that lowering of the water surface elevations within the water management system to the maximum depth compatible with the environmental protection or other constraints as described in 3.10, will occur in 12 days or less.

(b) 1. Commercial and industrial projects to be subdivided for sale, where the initial permittee will not build the entire system, are required to have installed by the initial permittee, as a minimum,

a. The required water quality system for one inch of runoff detention or one half inch of runoff retention in the master system for the total developed site. The individual sites must provide the remainder (2.5" x % impervious - one inch) which may be in exfiltration trench. The master system must be in a legally defined common area. The master system cannot utilize exfiltration trench.

b. A stormwater collection and conveyance system to interconnect the retention/detention system with the outfall, with access points to the system available to each individual lot or tract. The system shall be sized to limit discharge under design conditions to the allowable discharge.

2. Projects permitted in such manner will require deed restrictions which identify to lot or tract purchasers:
   a. The amount of additional on-site storm water management system necessary to provide flood protection for specific design events,
   b. Any additional retention/detention required for water quality purposes, and
   c. The assumed percent impervious, or impervious area used in design calculations.

3.10 Overdrainage and Water Conservation

Systems shall be designed to:

(a) maintain existing water table elevations in existing wellfield cones of depression;
(b) preserve site environmental values (see Section 10.0 of Applicant's Handbook Volume I);
(c) not waste freshwater;
(d) not lower water tables which would adversely affect the existing rights of others; and
(e) preserve site ground water recharge characteristics.

3.11 Detention and Control Elevations

Detention and control elevations shall be set to accomplish 3.10 and are subject to the following criteria:

(a) Wetland protection elevations;
(b) Consistency with surrounding land and project control elevations and water tables;
(c) Possible restrictions by other agencies to include tree protection and landscape ordinances;
(d) Consistency with water use permits; and
(e) A maximum depth of six feet below natural ground.

3.12 Lake-Wetland Separation

Lakes which potentially may adversely affect wetland areas shall be separated from the wetland preservation, creation, or restoration areas by a minimum distance as determined by the following criteria:

(a) A separation distance (shortest distance between the wetland jurisdictional line and the edge of water in the proposed waterbody at the proposed control elevation) producing a gradient less than or equal to 0.005 using the difference in the elevation of the jurisdictional boundary of the wetland and

the basin control elevation to calculate the driving head. Staff will consider elevations differing from the jurisdictional boundary of the wetland to calculate the driving head. The applicant will be required to submit monitoring data or other relevant hydrologic data from the site to substantiate the reason for using a different starting elevation. Existing conditions alone will not be considered sufficient reason to use a different elevation if there is evidence that activities on or adjacent to the project site may be responsible for lowering water tables which may be currently having an adverse impact on the subject wetlands. In these cases, preservation of the wetlands cannot be assured by simply maintaining the existing conditions.

(b) If the gradient resulting from any separation distance and the driving head as defined above is between 0.005 and 0.015, then calculations will be required which demonstrate that the drawdown in the adjacent wetland(s) will be of a magnitude which will not result in adverse impacts on the wetland. A drawdown of more than 12 vertical inches in a 90-day period with no recharge shall be presumed to be an adverse impact.

(c) If the gradient is equal to or greater than 0.015, then construction of an impermeable barrier or other equivalent action must be taken to mitigate for the impact of the proposed excavation between the wetland and the excavation.

(d) The Agency will review modeling results which demonstrate that a gradient equal to or greater than 0.015 will not have an adverse impact on the adjacent wetland. Model input data shall be derived from a detailed soil profile constructed from a minimum of three separate sampling locations with permeability testing results on selected samples. Two-dimensional modeling may be necessary to represent the site geometry.

3.13 Water Supply Sources

An evaluation of the impact of the proposed surface water management system on sources of water supply must be submitted with the surface water management application. Cumulative impacts which may result from the construction and operation of the proposed surface water management system must be evaluated in conjunction with the cumulative withdrawals of existing legal uses of water.

PART IV – STORMWATER QUALITY

4.1 State Standards

Projects shall be designed and operated so that off-site discharges will meet State water quality standards.

4.1.1 How Standards are Applied

The quality of stormwater discharged to receiving waters is presumed to meet the surface water standards in Chapters 62-4 and 62-302, F.A.C., and the groundwater standards in Chapters 62-520 and 62-550 F.A.C., if the system is permitted, constructed, operated and maintained in accordance with Chapter 62-330, F.A.C., and Part III, Part IV, and Part V of this Volume. However, this presumption is rebuttable. The volume of runoff to be treated from a site shall be determined by the type of treatment system. If off-site runoff is not prevented from combining with on-site runoff prior to treatment, then treatment must be provided for the combined off-site and project runoff.

4.1.2 Erosion and Sediment Control Criteria for Stormwater Management Systems

Land clearing activities, including the construction of stormwater management systems, shall be designed, constructed, and maintained at all times so that erosion and sedimentation from the system, including the areas served by the system, do not cause violations of applicable state water quality standards in receiving waters. Further, because sedimentation of offsite lands can lead to public safety concerns, erosion and sediment controls shall be designed and implemented to retain sediment on-site as required by subsection 62-40.432(2), F.A.C. In particular, the erosion and sediment control requirements described in Part IV of Applicant's Handbook Volume I shall be followed during construction of the system.

4.1.3 Direct Discharges to Outstanding Florida Waters

Systems which have a direct discharge to an OFW, must provide an additional fifty percent of the required treatment.

4.1.4 Projects Discharging to Impaired Waters or to Outstanding Florida Waters

Systems discharging to a waterbody that has been identified as impaired by the Department of Environmental Protection pursuant to 403.067, F.S., or to an Outstanding Florida Water, shall be designed in accordance with the procedures in Appendix E.

4.2 Retention / Detention Criteria

4.2.1 Volumetric Requirements

(a) Retention, detention, or both retention and detention in the overall system, including swales, lakes, canals, greenways, etc., shall be provided for one of the three following criteria or equivalent combinations thereof:

1. Wet detention volume shall be provided for the first inch of runoff from the developed project, or the total runoff of 2.5 inches times the percentage of imperviousness, whichever is greater.
2. Dry detention volume shall be provided equal to 75 percent of the above amounts computed for wet detention.
3. Retention volume shall be provided equal to 50 percent of the above amounts computed for wet detention. Retention volume included in

flood protection calculations requires a guarantee of long term operation and maintenance of system bleed-down ability. Examples of such guarantee include evidence of excellent soil percolation rates, such as coastal ridge sands, or an operations entity which specifically reserves funds for operation, maintenance and replacement (example: Orange County MSTU). (NOTE: Orange County subdivision regulation criteria for retention - published by Orange County in Orange County Subdivision Regulations - may be utilized for Orange County MSTU projects in lieu of Agency retention criteria where retention volumes exceed one half inch.

(b) Systems with inlets in grassed areas will be credited with up to 0.2 inches of the required wet detention amount for the contributing areas. Full credit will be based on a ratio of 10:1 impervious area (paved or building area) to pervious area (i.e. the grassed area) with proportionately less credit granted for greater ratios.

4.2.2 Land Use and Coverage Criteria

(a) Commercial or industrial zoned projects shall provide at least one-half inch of dry detention or retention pretreatment as part of the required retention / detention, unless reasonable assurances can be offered that hazardous materials will not enter the project's surface water management system. Such assurances include, for example, deed restrictions on property planned for re-sale, type of occupancy, recorded lease agreements, local government restrictive codes, ordinances, licenses, and separate containment systems designed to prevent discharge.

(b) Projects having greater than 40% impervious area and which discharge directly to the following receiving waters shall provide at least one half inch of dry detention or retention pretreatment as part of the required retention/detention. Receiving waters being addressed are:

1. Lake Okeechobee and the Kissimmee River.
2. Waterbodies designated as Class I or Class II waters by the Florida Department of Environmental Protection;
3. Canals back-pumped to Lake Okeechobee or to the Conservation areas, or proposed for back-pumping;
4. Other areas, such as the Savannas in St. Lucie and Martin Counties; the Six Mile Cypress Strand; the Big Cypress area of Collier County; and lands acquired by the District pursuant to Section 373.59, F.S. Water Management Lands Trust Fund (Save Our Rivers); and mitigation bank lands;
5. Outstanding Florida Waters as defined in Chapter 62-302, F.A.C.; and Aquatic Preserves as created and provided for in Chapter 258, F.S.; and
6. Waterbodies within a District permitted public water supply wellfield cone-of-depression which are not separated from the aquifer by strata at least ten feet thick and having an average saturated

hydraulic conductivity of less than 0.1 foot per day; where the cone-of-depression is defined by one of the following:

a. in those areas of the District where no local wellfield protection ordinance has been adopted by the local governing body, the one foot drawdown line as expressed in the water table aquifer under conditions of no rainfall and 100 days of pumpage at the permitted average daily pumpage rate (where significant canal recharge is indicated, canal recharge representative of a 1 in 100 year drought will be considered);

b. Chapter 27, Article XIII, Wellfield Protection Ordinance, Broward County Code of Ordinances, last amended September 28, 1999, http://www.flrules.org/Gateway/reference.asp?No=Ref-00052. This information is incorporated by reference herein and in Rule 40E-4.091, F.A.C. Copies are available at no cost by contacting the South Florida Water Management District Clerk's Office, 3301 Gun Club Road, West Palm Beach, FL 33406 (800) 432-2045, ext. 2087, or (561) 682-2087.

c. Dade County Wellfield Protection Ordinance contour showing maximum limits (Section 24-43 Protection of Public Potable Water Supply Wells; Chapter 24 Environmental Protection; Code of Metropolitan Dade County, Florida; Codified through Ordinance No. 11-01, enacted January 20, 2011 (Supp. No. 68)) http://www.flrules.org/Gateway/reference.asp?No=Ref-00053. This information is incorporated by reference herein and in Rule 40E-4.091, F.A.C. Copies are available at no cost by contacting the South Florida Water Management District Clerk's Office, 3301 Gun Club Road, West Palm Beach, FL 33406 (800) 432-2045, ext. 2087, or (561) 682-2087.

(c) Water surface and roofed areas can be deducted from site areas only for water quality pervious/impervious calculations. The water surface area meeting dimensional criteria may also be subtracted from the total site area when making final water quality treatment volume calculations.

(d) In cases of widening existing urban public highway projects, the District shall reduce the water quality requirements, if the applicant provides documentation which demonstrates that all reasonable design alternatives have been considered, and which provides evidence that the alternatives are all cost-prohibitive.

(e) Pursuant to subsection 62-555.312(3), F.A.C., stormwater retention and detention systems are classified as moderate sanitary hazards with respect to public and private drinking water wells. Stormwater treatment facilities shall not be constructed within 100 feet of a public drinking water well, and shall not be constructed within 75 feet of a private drinking water well.

4.3 Incorporation of Natural Areas and Existing Waterbodies

Natural areas and existing waterbodies may be used for retention/detention purposes when not in conflict with environmental (see subsection 10.2.2.4 of Applicant's Handbook Volume I), water quality, (see Sections 10.2.4 through 10.2.4.5 of Applicant's Handbook Volume I) or public use considerations. Candidate areas for such purposes include:

(a) Previously degraded areas;
(b) Man-made areas such as borrow pits;
(c) Extensive areas which have the ability to absorb impacts easily; and
(d) Areas incorporated into a system with mitigation features.

4.4 Underground Exfiltration Systems

(a) Systems shall be designed for the retention volumes specified in Section 4.2.1 for retention systems, exfiltrated over one hour for retention purposes, prior to overflow, and based on test data for the site. (Note: such systems will not be acceptable on projects to be operated by entities other than single owners or entities with full-time maintenance staff.)
(b) A safety factor of two or more shall be applied to the design to allow for geological uncertainties.
(c) A dry system is one with the pipe invert at or above the average wet season water table.

4.5 Sewage Treatment Percolation Ponds

Above-ground percolation pond dikes shall not be within 200 feet of water management lakes or 100 feet of dry retention/detention areas, or the applicant must provide reasonable assurance that effluent will not migrate into the water management lakes or detention areas. Reasonable assurance may be provided by:

(a) Documentation of volume and rate of application of effluent to the percolation ponds, and
(b) Submittal of net flow analyses.

4.6 Criteria for Creation of Waterbodies

The creation of waterbodies shall meet both of the following criteria:

(a) Entrapped salt water, resulting from inland migration of salt water or penetration of the freshwater/salt water interface, will not adversely impact existing legal water users.
(b) Excavation of the water body shall not penetrate a water-bearing formation exhibiting poorer water quality for example, in terms of chloride concentrations.

4.7 Impervious Areas

Runoff shall be discharged from impervious surfaces through retention areas, detention devices, filtering and cleansing devices, or subjected to some other type of Best Management Practice (BMP) prior to discharge from the project site. For projects which include substantial paved areas, such as shopping centers, large highway intersections with frequent stopped traffic, and high density developments, provisions shall be made for the removal of oil, grease and sediment from storm water discharges.

4.8 Stagnant Water Conditions

Configurations which create stagnant water conditions such as hydraulically dead end canals are to be avoided, regardless of the type of development.

4.9 Water Quality Monitoring

All new drainage projects will be evaluated based on the ability of the system to prevent degradation of receiving waters and the ability to conform to State water quality standards.

4.9.1

(a) There are areas within the District where water quality considerations are extremely important, because of the sensitivity of the area. These areas include:

1. Lake Okeechobee and the Kissimmee River.
2. Waterbodies designated as Class I or Class II waters by the Florida Department of Environmental Protection.
3. Canals back-pumped to Lake Okeechobee or to the Conservation areas, or proposed for back-pumping.
4. Sensitive areas, such as the Savannas in St. Lucie and Martin Counties, the Six Mile Cypress Strand and Estero Bay Aquatic Preserve in Lee County and the Big Cypress area of Collier County.
5. Outstanding Florida Waters as defined in Chapter 62-302, F.A.C.

(b) New developments which plan to utilize sensitive areas for disposal of stormwater will be given more detailed evaluation by the Agency Staff. In addition, new projects entailing a more intensified land use, such as industrial parks, and planning to discharge to a sensitive receiving water, directly or indirectly, shall be required to institute a water quality monitoring program if the applicant is unable to provide adequate assurances (by such means as routing drainage of areas where polluting materials would be located away from the stormwater management system; developing restrictive covenants, or similar documents, which would have the effect of prohibiting polluting materials on the project site; or proposing other

methods of assurance) that degradation of the receiving body water quality will not occur. The following listing of land use intensity is in ascending order.

1. Wetlands (including transition zones adjacent thereto)
2. Forested lands
3. Rangeland
4. Agricultural
5. Urban and built-up land

4.9.2 Monitoring is required for sites with high pollutant generating potential, such as industrial sites, and Class I and II solid waste disposal sites.

4.9.3 There are two reasons for requiring water quality monitoring by permittees, as follows:

(a) Such data can be used to determine if the pollution abatement practices incorporated into the design for the drainage system are functioning properly.
(b) In some cases there may be a real and immediate concern regarding degradation of quality in the receiving waters, regardless of the apparent pollutant removal efficiency of the drainage system.

4.9.4 The reason for the monitoring requirement will be stated in the Staff Report for each permit. Also included in the permit will be the monitoring and reporting schedules and the parameters of interest. Each monitoring program will be designed specifically for the land use or individual project in question and will include applicable surface and ground water sampling. Staff shall specify applicable project specific parameters such as those listed in Chapter 62-302, F.A.C. The applicant shall use a Florida Department of Health certified laboratory for all water quality analysis. It is recommended that the applicant submit final results from the laboratory. Examples of records to be supplied are as follows: sample date, sample location with D for discharge or N for no discharge, water discharge rates (cfs) and concentration values of indicated elements or compounds, date and time of analysis.

4.9.5 As a general rule, monitoring required of permittees will be confined to points within their boundaries. If additional sampling is needed in order to assess off-site impacts of the projects, the responsible party will be named in the permit. The determination of the responsible party will be based upon the accessibility of the monitoring site to the permittee.

4.9.6 Applicants are advised that Staff Reports written and Permits issued for projects not requiring monitoring at this time will normally include a statement to the effect that water quality monitoring may be required in the future. This should not be construed as an indication that the Agency is contemplating the implementation of a program of intensive water quality monitoring by all permittees. If water quality problems develop in specific

areas, however, permittees will be put on notice in this manner that they may have to determine the quality of the water which they are discharging.

4.10 Solid Waste Facilities

(a) Stormwater management systems for Class I and II solid waste facilities, as defined by Chapter 62-701, F.A.C., shall be so designed, constructed, and operated as to maintain the integrity of the landfill at all times (during construction, operation, closure and post closure). Applicant must provide assurances that:
   1. All flows will be conveyed at non-erosive velocities;
   2. The project is designed to minimize erosion.

(b) Design features in support of this requirement include features such as:
   1. Slopes adequate to promote runoff but not affect slope stability;
   2. Intermediate benches or swales which reduce runoff velocities and limit erosion;
   3. Vegetation of closed portion of landfill.

(c) Class I and II landfill projects shall provide adequate assurance that leachate will not enter the stormwater management system. This assurance may be provided through affirmative demonstration that the requirement of Chapter 62-701, F.A.C. for design and emplacement of liners, leachate collection systems, and treatment and disposal of leachate will be met.

(d) Borrow pits shall not be included in the stormwater management system unless the applicant can affirmatively demonstrate that leachate will not enter the borrow pit, and that the water quality standards in Chapters 62-4 and 62-302, F.A.C.), will be met.

(e) Dewatering operations at active, unlined landfills will not be permitted.

(f) For Class I and II landfills the Agency shall require additional Best Management Practices, such as:
   1. Detention in excess of the quantities stated in Section 4.2;
   2. Dry detention areas;
   3. Dry conveyance swales with adequate dimensions to permit maintenance;
   4. Filter mechanisms for additional water quality enhancement prior to discharge;
   5. Skimmers in front of discharge structures to restrict discharge of floatable materials;
   6. Screw gates on water control structures capable of restricting discharge of poor quality surface water; or
   7. Vegetation of appropriate portions of the water management system, such as conveyance swales.

(g) To provide information for assessing the need for Best Management Practices at a specific site, Agency staff will require a hydrogeologic investigation that shall, at a minimum, provide information on:

1. The hydrogeologic properties of the formations underlying the landfill, including aquifer and characteristics, groundwater elevations and direction and rate of groundwater flow;
2. Location of existing wells within one-half mile of the site perimeter;
3. Locations and specifications of existing or proposed monitor wells;
4. The location and chemical composition of any known leachate plumes.

(h) Applicants should consult with Agency staff prior to or at pre-application meetings to determine the specific requirements which will apply for a particular project.

PART V – WATER MANAGEMENT SYSTEM DESIGN AND CONSTRUCTION CRITERIA

5.1 Discharge Structures

(a) All design discharges shall be made through structural discharge facilities. Earth berms shall be used only to disperse or collect sheet flows from or to ditches, swales or other flow conveyance mechanisms served by discharge structures.

(b) Discharge structures shall be fixed so that discharge cannot be made below the control elevation, except that emergency devices may be installed with secure locking devices. Use of emergency devices must be coordinated with Agency personnel prior to opening or as soon as possible thereafter. The Agency's Executive Director or secretary is authorized to specify the use of emergency devices pursuant to Rule 40E-1.611, F.A.C.

(c) Discharge structures must be non-operable unless approved otherwise.

(d) It is recommended that discharge structures include gratings for safety and maintenance purposes. The use of trash collection screens is desirable.

(e) Discharge structures shall include a baffle system to encourage discharge from the center of the water column rather than the top or bottom. Discharge structures from areas with greater than 50 percent impervious area or from systems with inlets in paved areas shall include a baffle, skimmer, or other mechanism suitable for preventing oil and grease from discharging to or from retention/detention areas. Designs must assure sufficient clearance between the skimmer and concrete structure or pond bottom to ensure that the hydraulic capacity of the structure is not affected.

(f) Direct discharges, such as through culverts, stormdrain, and weir structures, will be allowed to receiving waters which by virtue of their large capacity, or configuration are easily able to absorb concentrated discharges. Such receiving waters include existing storm sewer systems and man-made ditches, canals and lakes.

(g) Indirect discharges, such as overflow and spreader swales, are required where the receiving water or its adjacent supporting ecosystem might be degraded by a direct discharge. The discharge structure would therefore

discharge, for example, into the overflow or spreader swale, which in turn would release the water to the actual receiving water. Such receiving waters include, for example, natural streams, lakes, wetlands and land naturally receiving overland sheetflow. Spreader swales shall be of a length sufficient to reduce discharge velocities to the receiving waters to historic rates or rates less than two feet per second.

(h) Pumped systems will only be allowed for single owner or governmental agency operation entities, unless perpetual operation ability can be assured.

5.2 Control Devices/Bleed-down Mechanisms for Detention Systems

(a) Agency criteria require that gravity control devices shall be sized based upon a maximum design discharge of one half inch of the detention volume in 24 hours. The devices shall incorporate dimensions no smaller than 6 square inches of cross sectional area, two inches minimum dimension, and 20 degrees for "V" notches. Systems which are limited by a discharge structure with an orifice no larger than the minimum dimensions described herein shall be presumed to meet the discharge quantity criteria except for projects which are required to have zero discharge. Applicants are advised that local drainage districts or local governments may have more stringent gravity control device criteria.

(b) Gravity control devices shall be of a "V" or circular shaped configuration whenever possible, to increase detention time during minor events.

(c) Pumped control devices, if pump discharge is permitted, shall be sized based on a design discharge of 20 percent of the detention volume in one day.

5.3 Retention systems

5.3.1 Description

Stormwater retention works best using a variety of retention systems throughout the project site. Examples of retention systems include:

- Man-made or natural depressional areas where the basin bottom is graded flat and turf is established to promote infiltration and stabilize the basin slopes;
- Shallow landscaped areas designed to store stormwater; and
- Vegetated swales with swale blocks or raised inlets.

Soil permeability and water table conditions must be such that the retention system can percolate the desired runoff volume within a specified time following a storm event. After drawdown has been completed, the basin shall not hold any water, thus the system is

normally "dry." Unlike detention basins, the treatment volume for retention systems is not discharged to surface waters.

Besides pollution control, retention systems can be utilized to promote the recharge of ground water to prevent saltwater intrusion in coastal areas or to maintain groundwater levels in aquifer recharge areas.

5.3.2 Retention Basin Construction

Since stormwater management systems are often exposed to poor quality surface runoff during construction and fine particles of clay, silt, and organics at the bottom of a retention basin create a poor infiltrating surface, retention basin construction methods and the overall sequence of site construction must retain the effectiveness of retention basins and assure that the basin is not rendered inoperable prior to completion of site development.

5.3.3 Dry Retention/Detention Areas (Not Applicable to Natural or Mitigation Wetland Areas)

(a) Dry retention/detention areas shall have mechanisms for returning the groundwater level in the area to the control elevation. The bleed-down rate for these systems is the same as in section 5.2.(a), herein.
(b) Mosquito control ditches or other appropriate features for such purpose, shall be incorporated into the design of dry retention/detention areas.
(c) The design of dry retention/detention areas shall incorporate considerations for regular maintenance and vegetation harvesting procedures.

5.4 Wet Detention Design and Performance Criteria

5.4.1 Pond Configuration

The flow path of water from the inlets to the outlet of the pond must be maximized to promote good mixing with no dead spots, minimize short circuiting, and maximize pollutant removal efficiency and mixing.

If short flow paths are unavoidable, the effective flow path can be increased by adding diversion barriers such as islands, peninsulas, or baffles to the pond. Inlet structures shall be designed to dissipate the energy of water entering the pond.

5.4.2 Wet Retention/Detention Area Dimensional Criteria (As Measured at or from the Control Elevation)

(a) Area - 0.5 acre minimum

(b) Width - 100 feet minimum for linear areas in excess of 200 feet length. Irregular shaped areas may have narrower reaches but shall average at least 100 feet.

(c) Depth - Shallow, littoral areas are desirable for water quality enhancement purposes. Such areas are defined for purposes of this criteria as the portion of wet retention/detention bodies shallower than 6 feet as measured from below the control elevation. The minimum shallow, littoral area shall be the lesser of 20 percent of the wet retention/detention area or 2.5 percent of the total of the retention/detention area (including side slopes) plus the basin contributing area.

(d) Side slopes for wet retention/detention and attenuation areas - for purposes of public safety, water quality enhancement and maintenance, all wet retention /detention areas shall be designed with side slopes no steeper than 4:l (horizontal:vertical) from top of bank out to a minimum depth of two feet below the control elevation, or an equivalent substitute. Constructed side slopes steeper than 3.5:1 (horizontal:vertical) shall be considered a substantial deviation during the consideration of operation permit issuance. Side slopes shall be topsoiled, and stabilized through seeding or planting from 2 feet below to 1 foot above the control elevation to promote vegetative growth. Side slope vegetation growth survival shall be a consideration of operation permit issuance. Side slope dimensional criteria for above ground impoundments are set forth in Appendix B.

(e) Alternative Side Slope Criteria for Golf Course Wet Retention/Detention Areas Adjacent to Tee Areas, Bunkers, and Greens - The design and final constructed side slopes adjacent to tee areas, bunkers, and greens contiguous to golf course wet retention/detention areas shall be no steeper than 2:1 (horizontal:vertical) for the area above the permitted control elevation. For purposes of this rule, the tee area is limited to an area specifically constructed and designated as the location from which a golfer makes his/her first shot toward a designated hole. The green is the area of shortest grass around the hole. Bunkers (sand traps) consist of a prepared area of ground, often a hollow, from which turf or soil has been removed and replaced with sand-like material.

For those portions of the wet retention/detention areas adjacent to tee areas, bunkers, and greens with final constructed side slopes steeper than 3.5:1 (horizontal:vertical), the final constructed side slopes below the control elevation shall not be steeper than 8:1 (horizontal:vertical) to a depth of two feet below the control elevation or equivalent substitute. Side slopes shall be topsoiled and stabilized through seeding or planting from 2 feet below to 1 foot above the control elevation. Side slope vegetation growth survival shall be a consideration of operation permit issuance.

(f) Bulkheads - Bulkheads shall be allowed for no more than 40 percent of the shoreline length, but compensating littoral zone must be provided based on

appropriate maximum allowable side slope including local government requirements.

5.5 Maintenance Access and Easements

Minimum perimeter maintenance and operation easements of 20 feet width at slopes no steeper than 4:l (horizontal:vertical) shall be provided beyond the control elevation water line. These easements shall be legally reserved to the operation entity and for that purpose by dedication on the plat, deed restrictions, easements, or other equivalent documents, so that subsequent owners or others may not remove such areas from their intended use. Water management areas, including 20 foot wide maintenance easements at a minimum, shall be connected to a public road or other location from which operation and maintenance access is legally and physically available.

5.6 Exfiltration Systems

5.6.1 Description

In an exfiltration system, stormwater shall pass through a perforated pipe and infiltrate through the trench walls and bottom into the shallow groundwater aquifer thereby increasing the storage available in the trench and promoting infiltration by making delivery of the runoff more effective and evenly distributed over the length of the system.

When an exfiltration trench is utilized, soil permeability and water table conditions must be such that the trench system can percolate the required stormwater runoff treatment volume within a specified time following a storm event. The trench system shall be returned to a normally "dry" condition when drawdown of the treatment volume is completed. Like retention basins, the treatment volume in exfiltration trench systems shall not be discharged to surface waters.

Besides pollution control, exfiltration trench systems can be utilized to promote the recharge of ground water and to prevent saltwater intrusion in coastal areas, or to maintain groundwater levels in aquifer recharge areas.

5.6.2 Construction

During construction, measures must be taken to limit the parent soil and debris entering the trench. The use of an aggregate with minimal fines is recommended.

Exfiltration systems must conform with the following requirements:

(a) Pipe diameter - 12" minimum;
(b) Trench width - 3' minimum;
(c) Rock in trench must be enclosed in filter material, at least on the top and sides; and
(d) Maintenance sumps in inlets.

5.7 REQUIRED DESIGN INFORMATION AND ASSUMPTIONS

5.7.1 Antecedent Conditions

Antecedent conditions shall be average wet season elevations for water table or other water surfaces.

5.7.2 Rainfall

Distributions and intensities should be consistent with one or more of these Reference Sources:

(a) Appendix C of this Handbook, Isohyetal Maps from SFWMD Technical Memorandum, *Frequency Analysis of One and Three Day Rainfall Maxima for central and southern Florida*, Paul Trimble, October 1990, and the following distribution table:

Time (hours)	Cumulative Percentage of Peak One Day Rainfall
0	0
24	14.6
48	35.9
58	57.2
59	62.8
59.5	67.8
59.75	82.8
60	101.5
60.5	108.8
61	112.6
62	117.7
72	135.9

100% One Day Rainfall

(b) Actual gage data analyzed by accepted statistical methods;

(c) U.S. Department of Agriculture, Soil Conservation Service, "Rainfall Frequency Atlas of Alabama, Florida, Georgia and South Carolina for Durations from 30 Minutes to 24 Hours and Return Periods from 1 to 100 years" (1978), http://www.flrules.org/Gateway/reference.asp?No=Ref-02975 , incorporated by reference herein and in Rule 40E-4.091, F.A.C.

(d) Florida Department of Transportation "Drainage Manual, Appendix B: IDF Curves, Precipitation Data, Rainfall Distributions" (August 2001) http://www.flrules.org/Gateway/reference.asp?No=Ref-02981, incorporated by reference herein and in Rule 40E-4.091, F.A.C.

Copies of the materials incorporated by reference in (c) and (d) above are available at no cost by contacting the South Florida Water Management District Clerk's Office, 3301 Gun Club Road, West Palm Beach, FL 33406, (800) 432-2045, ext. 2087, or (561) 682-2087.

5.7.3 Evapotranspiration

Amounts can be estimated as follows:

(a) Groundwater depth 0 to 1' - 0.3" ET/day
(b) Groundwater depth 1' to 2.5' - 0.2" ET/day
(c) Groundwater depth 2.5' to 4' - 0.1" ET/day
(d) Groundwater depth below 4' - 0" ET/day

5.7.4 Storage

5.7.4.1 Open Surface

If open surface storage is to be considered in the review, the Applicant shall submit stage-storage computations. If open surface storage plus discharge is to be considered, the stage- discharge computations shall also be submitted. Actual rather than allowable discharges shall be used in routing. For the more extreme events, such as 100 year frequency, discharge should be ignored because the high tail water stage in the receiving water effectively prevents any but a negligible discharge. In such cases a mass accounting of on-site water will suffice, if the applicant can demonstrate that no adverse impacts will occur to adjacent areas.

5.7.4.2 Ground

The Soil Conservation Service has made the following estimate of soil storage capability for the normal sandy soils found within the District in their average natural state:

Depth to Water Table	Cumulative Water Storage
1'	0.6"
2'	2.5"
3'	6.6"
4'	10.9"

(a) For the same sandy soils which have been compacted intentionally or incidental to earthwork operations, the cumulative storage shall be reduced 25 percent. An applicant may submit site-specific soil storage capability data.
(b) Groundwater storage beneath impervious surfaces generally appears impractical to any great degree because of the trapped air which water cannot displace. It further appears impractical below four feet depths, except in high sandy coastal ridge areas, because of the relationship between infiltration rates and runoff rates in most parts of south Florida.

5.7.5 Infiltration and Percolation

5.7.5.2 Subsurface

Subsurface exfiltration will be reviewed only on the basis of representative or actual test data submitted by the Applicant. Test parameters such as elevation, location, and soils, shall be consistent with those of the designed system. The Dade County Department of Environmental Resource Management and Florida Department of Transportation are suggested as reference sources to Applicants for test procedures and design and maintenance performance of subsurface exfiltration systems.

5.7.6 Runoff

The usual methods of computation are as follows:

(a) Rainfall minus losses and storage.
(b) U.S. Department of Agriculture, Natural Resources Conservation Service, "National Engineering Handbook, Section 4, Part 630, Chapter 10 – 2004 http://www.flrules.org/Gateway/reference.asp?No=Ref-02983. Peak factors used for natural systems shall not exceed "257" unless project specific site conditions warrant use of a larger peak factor.
(c) Rational method, for water quality retention/detention purposes.

Copies of the material referenced in (b) above is available at no cost by contacting the South Florida Water Management District Clerk's Office, 3301 Gun Club Road, West Palm Beach, FL 33406, (800) 432-2045, ext. 2087, or (561) 682-2087.

5.7.7 Receiving Water Stage

(a) Tailwater for Water Quantity Design
Stormwater management systems must consider tailwater conditions. Receiving water stage can affect the amount of flow that will discharge from the project to the receiving water. This stage may be such that tailwater exists in portions of the project system, reducing the effective flow or storage area.

The stage in the receiving water shall be considered to be the maximum stage which would exist in the receiving water from a storm equal to the project design storm. Lower stages may be used if the applicant can show that the flow from his project will reach the receiving water prior to the time of maximum stage in the receiving water.

(b) Regulated Systems

Applicants are advised that design and maintained stage elevations are available either from the respective local jurisdiction or the Agency. Stages for the Agency's system for frequencies other than the design will be estimated by the Agency upon request from the Applicant.

(c) Non-regulated Systems

It is recommended that the Applicant compute receiving water stages for such systems from the best available data and submit the results to the Agency for review and concurrence before utilizing such results in further computations.

(d) Any System

Variable tailwater stages shall be considered if they have a significant influence on the design.

5.7.8 Runoff Coefficient and Curve Number for Stormwater Management Ponds

Stormwater management ponds, including dry retention ponds, detention ponds with filtration, dry detention ponds with underdrains, and wet detention ponds, shall be considered as impervious area for calculating composite runoff coefficients (C), and composite curve numbers.

5.8 Inspection and Maintenance

Inspection and maintenance standards are described in **section 12.4 of Volume I** and Rule 62-330.311, F.A.C. See **Appendix B** for inspection and reporting requirements for above-ground impoundments.

APPENDICES

Appendix A	SFWMD - Allowable Discharge Formulas
Appendix B	Above Ground Impoundments
Appendix C	Isohyetal Maps from SFWMD Technical Memorandum, *Frequency Analysis of One and Three Day Rainfall Maxima for central and southern Florida,* Paul Trimble, October 1990.
Appendix D	SFWMD Basins for Cumulative Impact Assessments & Mitigation Bank Service Areas
Appendix E	Procedure for Environmental Resource Permit Water Quality Evaluations for Applications Involving Discharges to Outstanding Florida Waters and Water Bodies that Do Not Meet State Water Quality Standards

Appendix A: SFWMD - ALLOWABLE DISCHARGE FORMULAS

Canal	Allowable Runoff	Design Frequency
C-1	$Q = \frac{(112 + 31) A}{\sqrt{A}}$	10 year
C-2	Essentially unlimited inflow by gravity connections southeast of Sunset Drive: 54 CSM northwest of Sunset Drive	200 year +
C-4	Essentially unlimited inflow by gravity connections east of S.W. 87th Avenue	200 year +
C-6	Essentially unlimited inflow by gravity connections east of FEC Railroad	200 year +
C-7	Essentially unlimited inflow by gravity connection	100 year +
C-8	Essentially unlimited inflow by gravity connection	200 year +
C-9	Essentially unlimited inflow by gravity connection east of Red Road; 20 CSM pumped, unlimited gravity with development limitations west of Red Road or Flamingo Blvd.	100 year +
C-10	----------	200 year +
C-11	20 CSM west of 13A;40 CSM east of 13A	----------
C-12	90.6 CSM	25 year
C-13	75.9 CSM	25 year
C-14	69.2 CSM	25 year
C-15	70.0 CSM	25 year
C-16	62.6 CSM	25 year
C-17	62.7 CSM	25 year
C-18	41.6 CSM	25 year
C-19	57.8 CSM	----------
C-23	31.5 CSM	10 year
C-24	30.25 CSM	10 year
C-25	$Q = \frac{(47 + 28) A}{\sqrt{A}}$ (Under Review)	10 year
C-38	31.1 CSM (subject to restrictions of Basin Rule)	10 year
C-40, 41, 41A	35.4 CSM	10 year
Hillsboro Canal (east of S-39)	35 CSM	25 year
North New River (east of S-34)	70.8 CSM	25 year
Everglades Ag. Area (all canals)	20 CSM	5 year
L-28	11.8 CSM	----------
C-51	35 CSM east of Turnpike; 27 CSM west of Turnpike (subject to restrictions of Basin Rule)	10 year
C-100, 100A, 100B, 100C, 100D:	$Q = \frac{(104 + 43) A}{\sqrt{A}}$	10 year
C-102	$Q = \frac{(119 + 25) A}{\sqrt{A}}$	10 year
C-103N, C103-S	$Q = \frac{(107 + 39) A}{}$	10 year

C-110	$Q = (\frac{137}{\sqrt{A}} + 9) A$	10 year
C-111	$Q = (\frac{117}{\sqrt{A}} + 29) A$	10 year
C-113	$Q = (\frac{104}{\sqrt{A}} + 3) A$	10 year

Definitions:

Q = Allowable runoff in cfs (cubic feet per second) CSM = cfs per square mile
A = Drainage area in square miles

APPENDIX B: ABOVE GROUND IMPOUNDMENTS

1.0 INTRODUCTION

1.1 Purpose

This Appendix to the Applicant's Handbook Volume II for use within the geographic limits of the South Florida Water Management District has been prepared to elaborate on the criteria and standards applicable to above ground impoundments in accordance with the definition and requirements for "dams" in Part IV of Chapter 373, F.S. The content herein is not intended to be all inclusive of all possible situations, but is intended to provide guidelines and basic performance criteria wherever possible on design criteria for the situations commonly encountered for most typical south Florida situations. Because dam performance is a function of construction, operation and maintenance as well as design, information on those subjects is included. The basic responsibility for dam performance remains vested in the owner or permittee through appropriate representation by his registered professional in accordance with State laws.

1.2 Classification

Upon request or application receipt District staff will classify impoundments or dams as "Major" or "Minor" for application review purposes in accordance with the following provisions:

1.2.1 Major - Impoundments located where failure would cause significant damage to the property of other than the permittee, could involve loss of human life, would create a public health hazard, or would cause irreversible environmental or water quality damage; maximum water depths above surrounding ground levels would generally exceed four feet.

1.2.2 Minor - Impoundments generally located in rural areas where failure would generally limit significant damage to the property of the permittee, would not involve loss of human life, would not create a public health hazard, and would not cause irreversible environmental or water quality damage; maximum water depths above surrounding ground levels would generally be limited to four feet, except where dam break analysis influence lines (six inch depth and two feet per second velocity) are limited to the land of the permittee and others, including the public, are not involved. It may be necessary that the permittee's land be legally restricted by such means as a unity of title to insure perpetual single ownership.

1.3 Certification responsibility

1.3.1 Major impoundments are considered to be individually engineered structures involving the disciplines of geotechnical, soils, foundation, and/or structural engineering and are therefore required to be certified in accordance with State law by registered professionals.

1.3.2 Minor impoundments are considered to be general site improvements and may therefore be certified in accordance with State law as part of the overall surface water management system by registered professionals.

1.4 Information submittals

1.4.1 Major impoundments require the submittal of all design, construction, operation and maintenance information necessary for complete review of the impoundment. Information to be submitted in addition to design calculations includes:

a. Proposed construction schedule
b. Safe filling and draining schedules
c. Design of seepage and water level monitoring programs
d. Operation and maintenance manual
e. Influence lines for dam break analysis (6 inch depth and 2 feet per second velocity)
f. Emergency response and evacuation plan (if appropriate)

Review by the District will be done for purposes of confirming that reasonable assurances are offered that the intent of District policies and general engineering principles will be met. The review is not intended to supplant the registered professional's initiative, judgment, expertise, experience and/or responsibility. When necessary the District may retain outside expertise to participate in the review.

1.4.2 Minor impoundments require only the submittal of the usual surface water management permit information. It is understood that the registered professional may perform calculations, tests, etc. for his/her own purposes or to meet State law and which may not be submitted.

2.0 DESIGN GUIDELINES

2.1 Major impoundments

2.1.1 Structural stability - All elements and appurtenant works for impoundments shall be designed for all possible conditions up to and including maximum water depths and in accordance with generally accepted engineering principles for such works, which include consideration of site preparation, construction materials, geological conditions, storm conditions, settlement, erosion, operation and maintenance and vandalism. More specific guidelines are as follows:

2.1.1.1 Dikes - shall be designed based on field test data of subsurface conditions and actual procedures and materials to be used in construction. Seepage and piping shall be considered and cutoff walls and toe drains included where necessary. Dimensions shall be such as to allow maintenance by normal equipment. Recommended side slopes for vegetated earth should be no steeper than 2 1/2:1 (horizontal to vertical) for external slopes and 3:1 (horizontal to vertical) for internal slopes. Top widths should be of sufficient width to allow safe vehicular access and no less than twelve feet. Dike toes should be continually accessible by vehicle by relatively level to berms of at least ten feet width. Dikes and toe berms should be widened at strategic points for vehicular turnaround or where necessary to load stockpiled material to be used for dike repair.

2.1.1.2 Structures - Discharge and other structures should be located to be accessible from the top of the dike during storm conditions for emergency operation and maintenance if necessary. They should be of permanent low maintenance materials, preferably reinforced concrete. The location and design should be such that dike integrity is maintained. Trash racks, seepage rings and vandalism protection should be included. A preferable design would consist of an inlet box which does not interfere with normal dike sideslopes and a conduit under the dike to an outfall endwall. Erosion protection, energy dissipators, etc. would be necessary at strategic points including the outfall.

2.1.2 Hydraulics - Unless more stringent criteria should apply because of other jurisdictional standards or unusual risks, the minimum District standards are as follows:

2.1.2.1 Maximum water depth as determined by routing a three day precipitation (distributed according to the Applicant's Handbook Volume II, Section 5.7.2) through the inflow and outflow structures with rainfall on the reservoir. Three day precipitation amounts may vary between thirty six and fifty six inches depending on site specific conditions and risk management considerations. District staff will advise on request.

2.1.2.2 Design water depth - As determined by routing the project allowable discharge design event through the inflow and outflow structures with rainfall on the reservoir. The three day 25 year event should typically be used as a minimum.

2.1.2.3 Minimum freeboard above maximum water depth - Three feet minimum or that required to prevent overtopping or failure due to hurricane force winds as derived from the South Florida Building Code.

2.1.2.4 Discharge structure – Applicant's Handbook Volume II allowable discharge for reservoir at maximum water depth with 100 year tailwater flood elevation, or Applicant's Handbook allowable discharge for reservoir at design water depth and non-limiting tailwater, unless more accurate site specific tailwater elevations are applicable and substantiated by the applicant.

2.1.2.5 Return overflow - Impoundments must contain an outflow discharge structure which returns water to the area from which inflow occurs. Therefore a separate structure

will be necessary for pump filled impoundments to allow return flow under the conditions of maximum or design water depths in the reservoir with pumps continuing to operate. For gravity filled impoundments this structure will actually be the inflow structure since reservoir and project stages will be the same.

2.1.2.6 Emergency discharge gates - Discharge structures should include emergency gates which can only be opened with District permission. Return overflow structures must include emergency gates to be operated at the discretion of the permittee or at the direction of the District.

2.1.2.7 Pumps-The pumps used to fill impoundment serving multiple owners, when allowed, should be multiple pumps of the same sizes to allow interchange of parts. Electric pumps should have standby fuel operated power systems.

2.1.2.8 Seepage collection systems - A safety factor of three shall be utilized for hydraulic conveyance design purposes.

2.1.3 Floodplain encroachment and setbacks - Impoundments shall not be located within floodplains or shall otherwise provide compensation and setbacks as provided in Section 3.6 in the Applicant's Handbook Volume II. Impoundments located in flat areas of diffused flow shall have the toe of dikes set back at least fifty feet from property lines to allow historic sheet flow to move around the impoundments. Greater dimensions or swale construction may be required if steep slopes, very large contributing areas, etc. would cause that dimension to be inadequate. Smaller dimensions may be allowed if the applicant can demonstrate smaller dimensions will suffice.

2.1.4 Environmental and water quality - The provisions of the Applicant's Handbook Volume I and Volume II apply. Since many impoundments are utilized for wetland management and/or mitigation, it may be necessary to set control elevations and emergency gate bottoms above natural ground levels in order to prevent wetland overdrainage.

2.1.5 Emergency repair material - Appropriate amounts of type, quantity and location of emergency repair materials shall be included in design plans.

2.2 Minor impoundments

2.2.1 Structural stability - The same general comments apply as for Major impoundments with specific guidelines as follows:

2.2.1.1 Dikes - Designs shall be in accordance with commonly accepted engineering principles and State laws. Dikes external to the permittee's property shall meet the dimensional and access criteria for Major impoundments to the degree necessary to meet the intent of Section 1.2.1. Internal dikes may be of lesser standards, but sideslopes should be no steeper than 2:1 (horizontal to vertical) and top widths no less than five feet.

2.2.1.2 Structures - Discharge and other structures should be as for Major impoundments.

2.2.2 Hydraulics - The same general comments apply as for Major impoundments with specific standards as follows:

2.2.2.1 Maximum water depth - The maximum water depth equals the design water depth as described for Major impoundments.

2.2.2.2 Minimum freeboard above maximum water depth - Equal to the maximum water depth dimensions but not less than two feet, no more than three feet.

2.2.2.3 Discharge structure – Applicant's Handbook Volume II allowable discharge for reservoirs at design water depth and non-limiting tailwater, unless more accurate site specific tailwater elevations are applicable and substantiated by the applicant.

2.2.2.4 Return overflow - Same as for Major impoundments.

2.2.2.5 Emergency discharge gates - Same as for Major impoundments except installation is optional.

2.2.2.6 Pumps - Same as for Major impoundments.

2.2.2.7 Seepage collection systems - Optional.

2.2.3 Floodplain encroachment and setbacks - Same as for Major impoundments.

2.2.4 Environmental and water quality - Same as for Major impoundments.

2.2.5 Emergency repair material - Optional.

3.0 CONSTRUCTION

Construction certification is a requirement of all permits for both Major and Minor impoundments, and it is therefore the responsibility of the registered professional to satisfy himself/herself and the State laws as to construction compliance with design. Changes to permitted design would require the need for As-Built plans to satisfy certification. Major changes, including changes to permit authorization or special or limiting conditions would require a permit modification prior to implementation. The District expects continual construction observation to be the minimum requirement necessary to

evidence ability to perform certification on Major impoundments. Certification must indicate that construction has been satisfactorily completed so that routine operation and maintenance may commence.

4.0 OPERATION AND MAINTENANCE

4.1 Reporting

Inspection of impoundment conditions, repairs, etc. will be a continuing process required by permit special condition. Inspection reports are to be retained by the permittee and copies made available to the District upon request. It is the basic responsibility of the permittee to initiate interim reporting and/or more detailed reporting to the District as conditions change, emergencies or problems arise, etc. It is expected that Major impoundments will be reported in accordance with the operation and maintenance manual and emergency response and evacuation plan adopted at the time of permit issuance, with updates as necessary.

4.2 Primary subjects of interest

4.2.1 Major impoundments

4.2.1.l Dikes and seepage collection system

a. Vegetation conditions
b. Erosion
c. Evidence of boils, piping, unusual seepage
d. Slope stability, surface cracking
e. Settlement
f. Travelway conditions
9. High and low water marks
h. Presence of aquatic vegetation in supposed dry areas
i. Monitoring system condition and monitoring data
j. Adequacy and condition of emergency repair material
k. Short and long term repair and modification recommendations

4.2.1.2 Structures and pumps

a. Materials conditions
b. Operational conditions
c. Evidence of vandalism
d. Settlement and erosion
e. Freedom from trash problems
f. Short and long term repair and modification recommendations

4.2.1.3 Impoundment area

a. Vegetation changes
b. Evidence of encroachment and misuse of land

4.2.1.4 Emergency response plan

a. Land use changes in area of influence
b. Topographic changes causing change in area of influence
c. Changes in participants, addresses, phone numbers, etc. involved in emergency response plan
d. Evidence of contact update with involved emergency management officials

4.2.2 Minor impoundments

4.2.2.1 Dikes

a. Vegetation conditions
b. Erosion, settlement, cracking, stability
c. Short term repair and modification recommendations

4.2.2.2 Structures and pumps

a. Structural conditions
b. Operational conditions
c. Short term repair and modification recommendations

4.2.2.3 Impoundment area

a. Vegetation changes
b. Evidence of encroachment and misuse of land

4.3 Typical special condition

4.3.1 Upon completion of construction, and on an annual basis (in March of each year), the permittee shall have an inspection performed to assess the structural adequacy of all above-ground dikes, control structures, levees and berms behind which water is to be contained and where failure could impact off-site areas. A registered professional shall perform each inspection and prepare each report. These reports shall be signed and sealed by the registered professional performing the inspection, kept on file by the permittee and made available to the South Florida Water Management District (SFWMD) personnel upon request. If deficiencies are found that will affect the performance of the impoundment, a report which is signed and sealed by the registered professonal performing the inspection shall be submitted to the District which includes, but is not limited to, the proposed technique and schedule for repair of any deficiencies noted.

5.0 REFERENCES

Agencies with impoundment experience and publications:

a. U.S. Army Corps of Engineers
b. U.S. Department of Interior, Bureau of Reclamation
c. U S Department of Agriculture, Soil Conservation Service

Appendix C: Isohyetal Maps
from SFWMD Technical Memorandum, *Frequency Analysis of One and Three Day Rainfall Maxima for central and southern Florida*, Paul Trimble, October 1990.

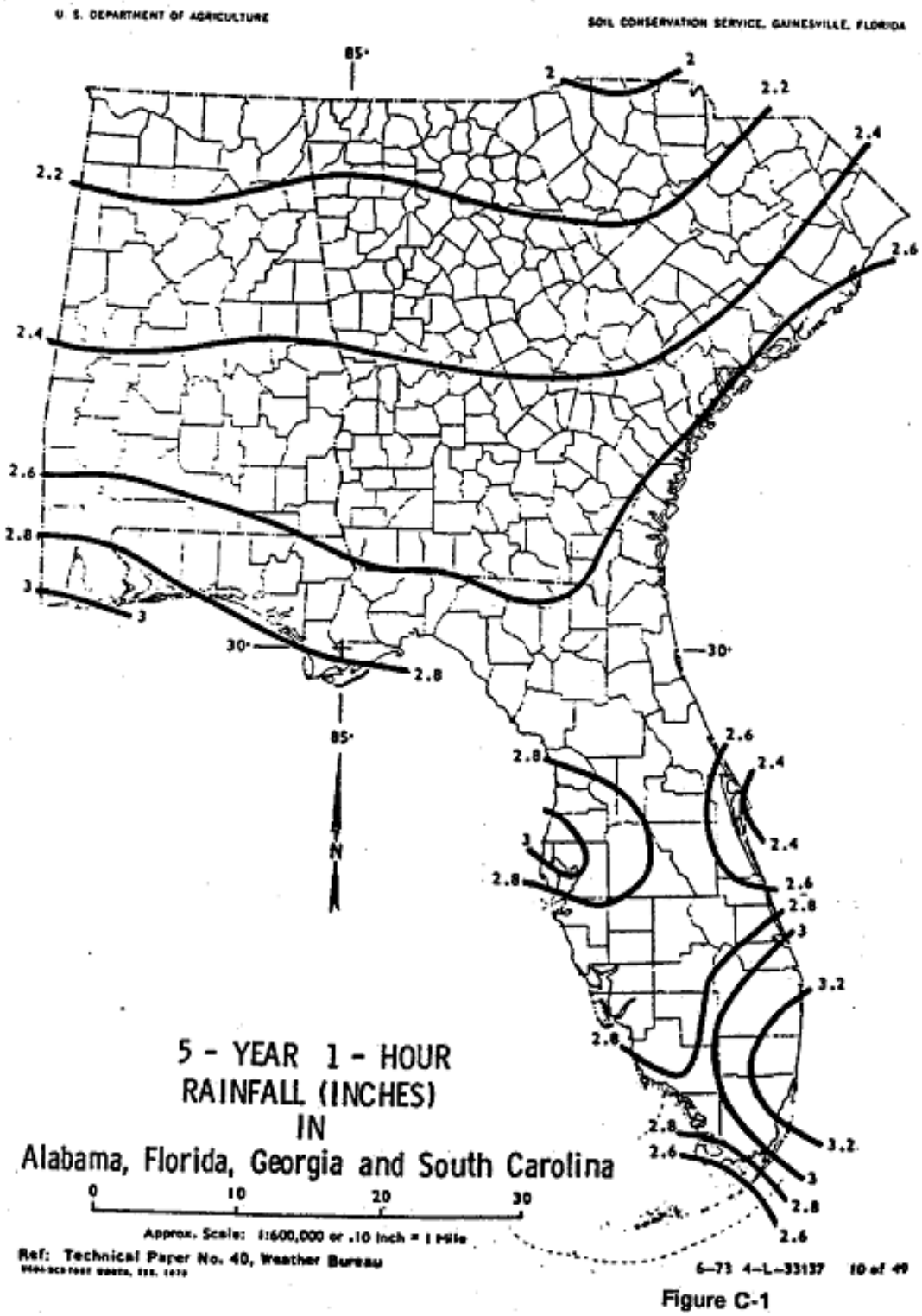


Figure C-1

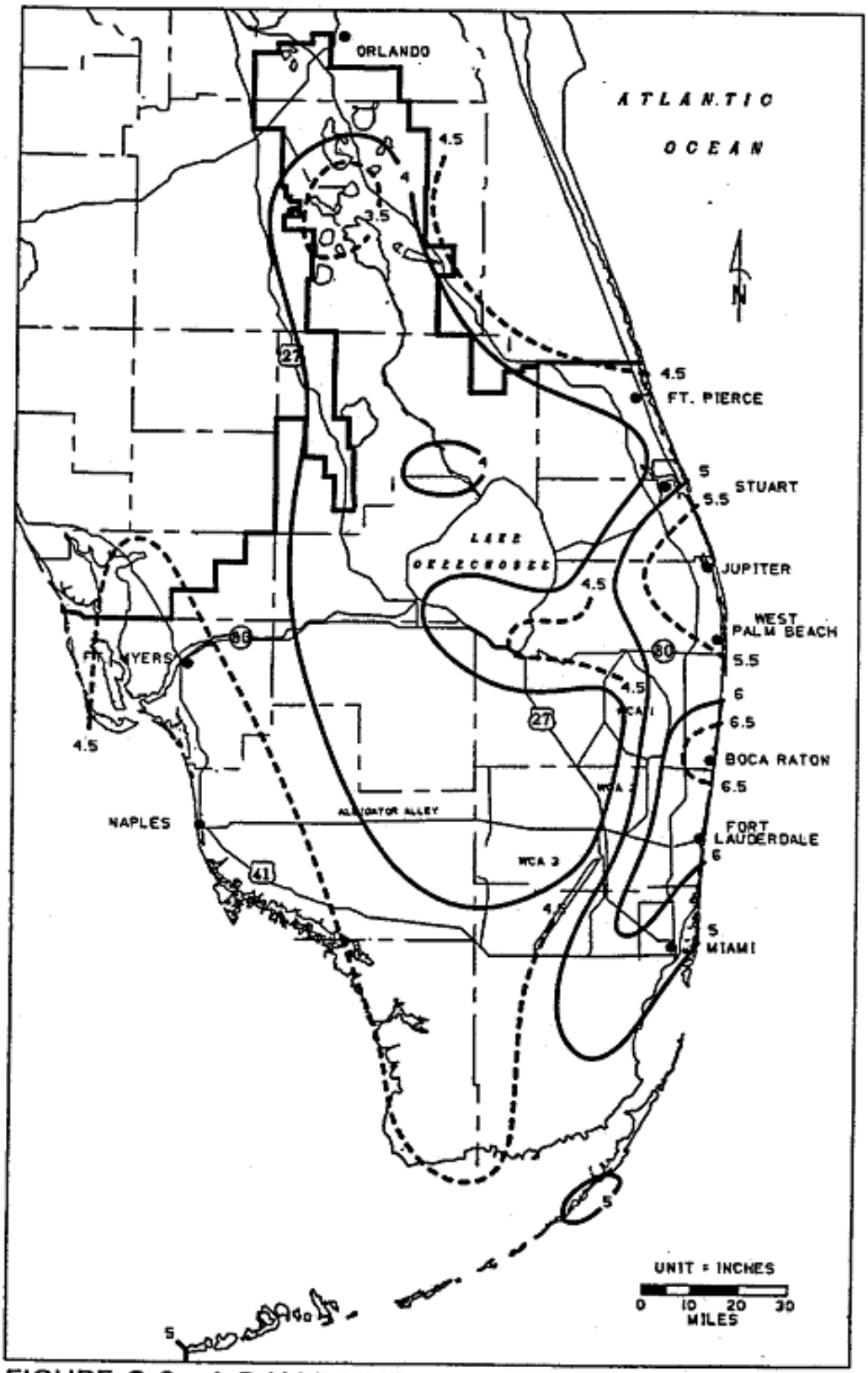


FIGURE C-2. 1-DAY RAINFALL: 3-YEAR RETURN PERIOD

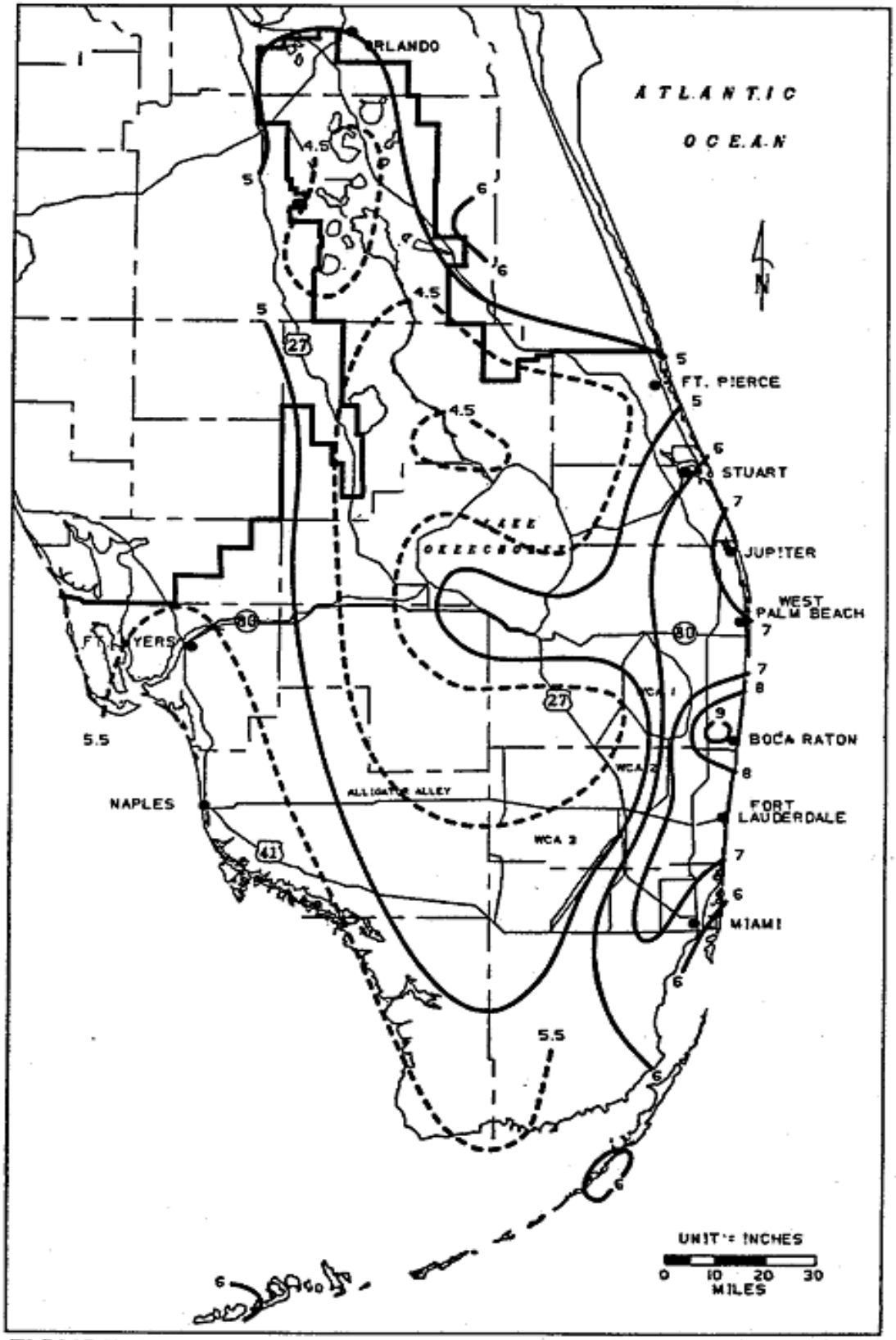


FIGURE C-3. 1-DAY RAINFALL: 5-YEAR RETURN PERIOD

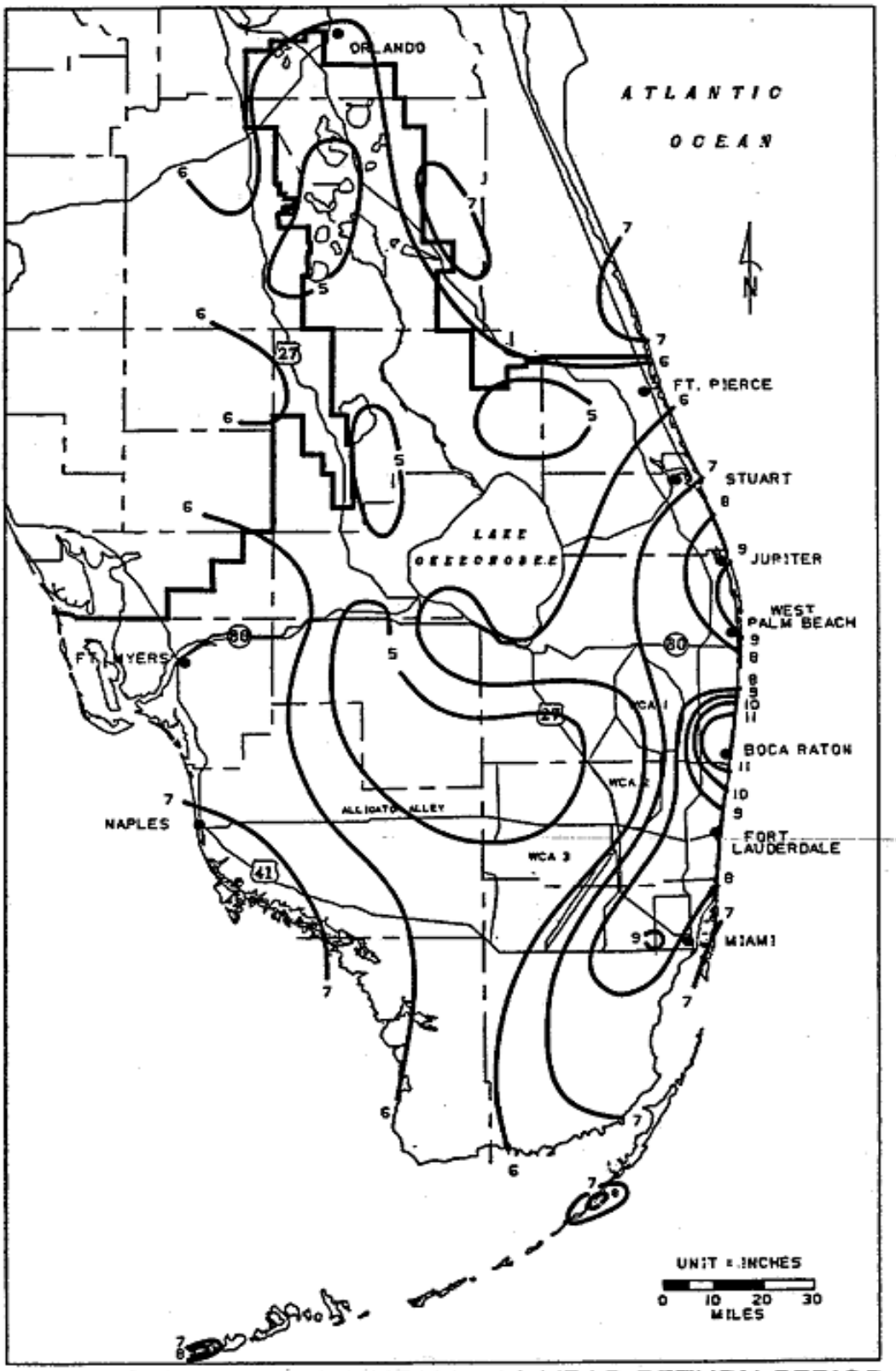


FIGURE C-4. 1-DAY RAINFALL: 10-YEAR RETURN PERIOD

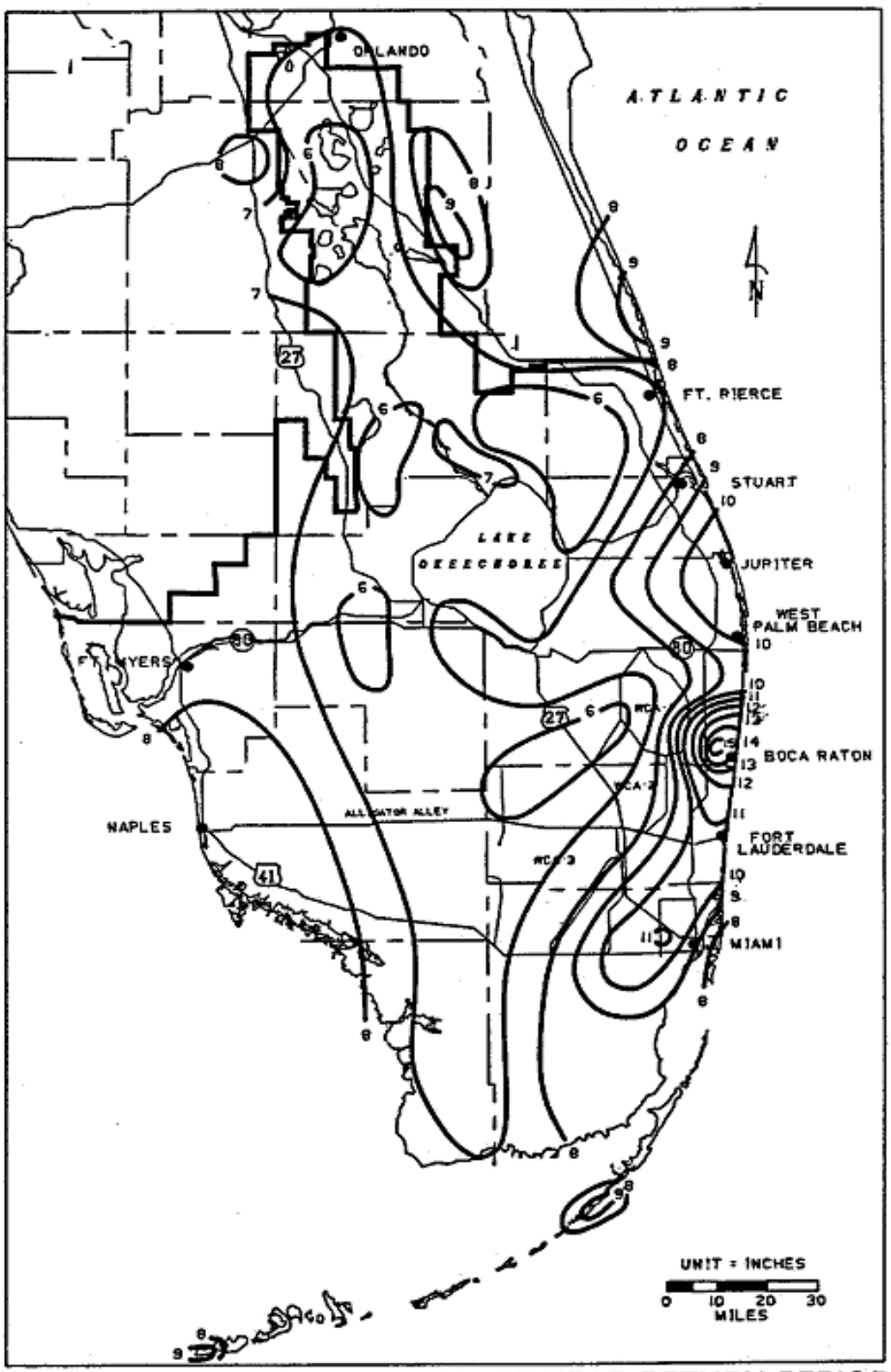


FIGURE C-5. 1-DAY RAINFALL: 25-YEAR RETURN PERIOD

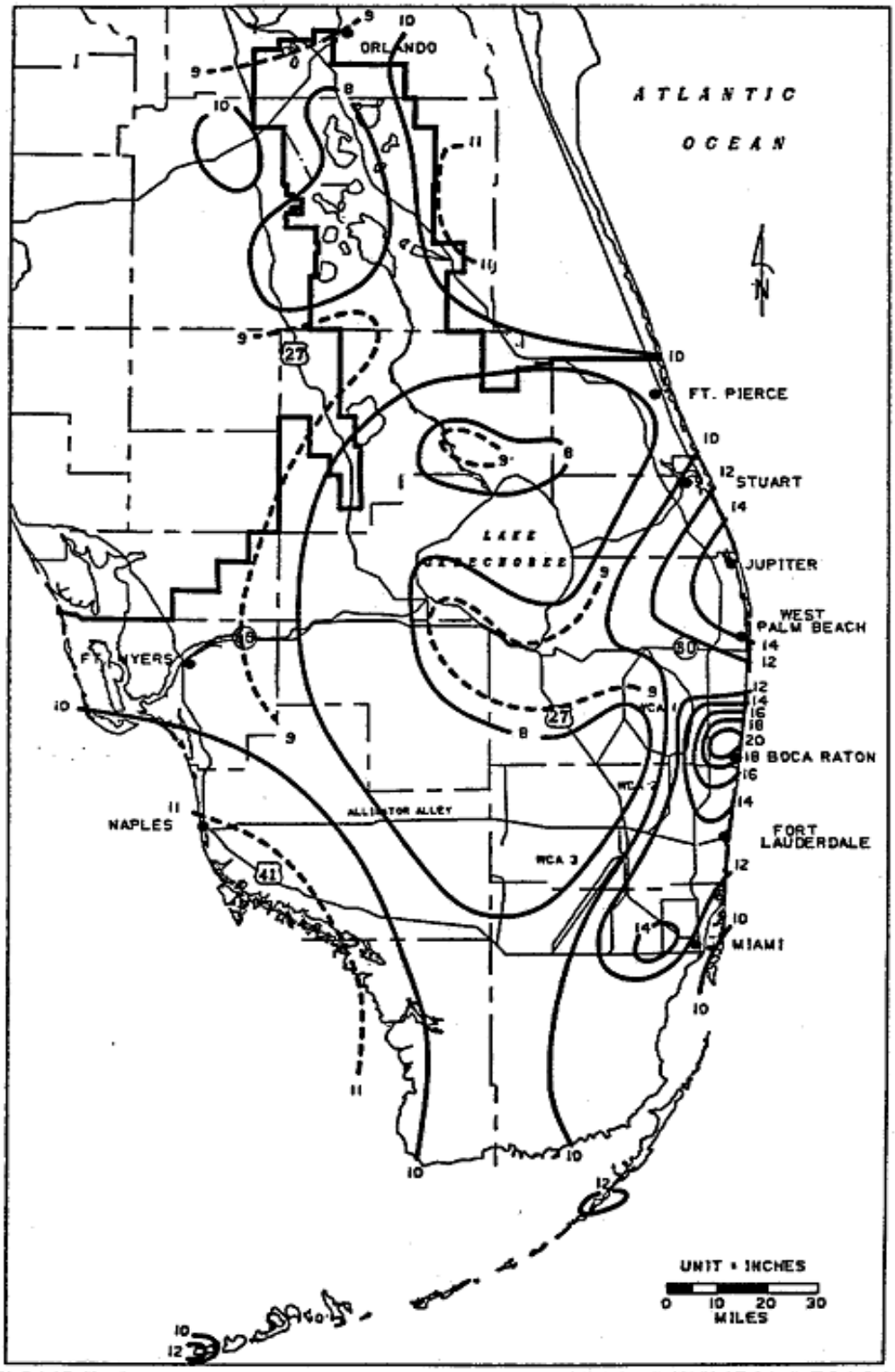


FIGURE C-6. 1-DAY RAINFALL: 100-YEAR RETURN PERIOD

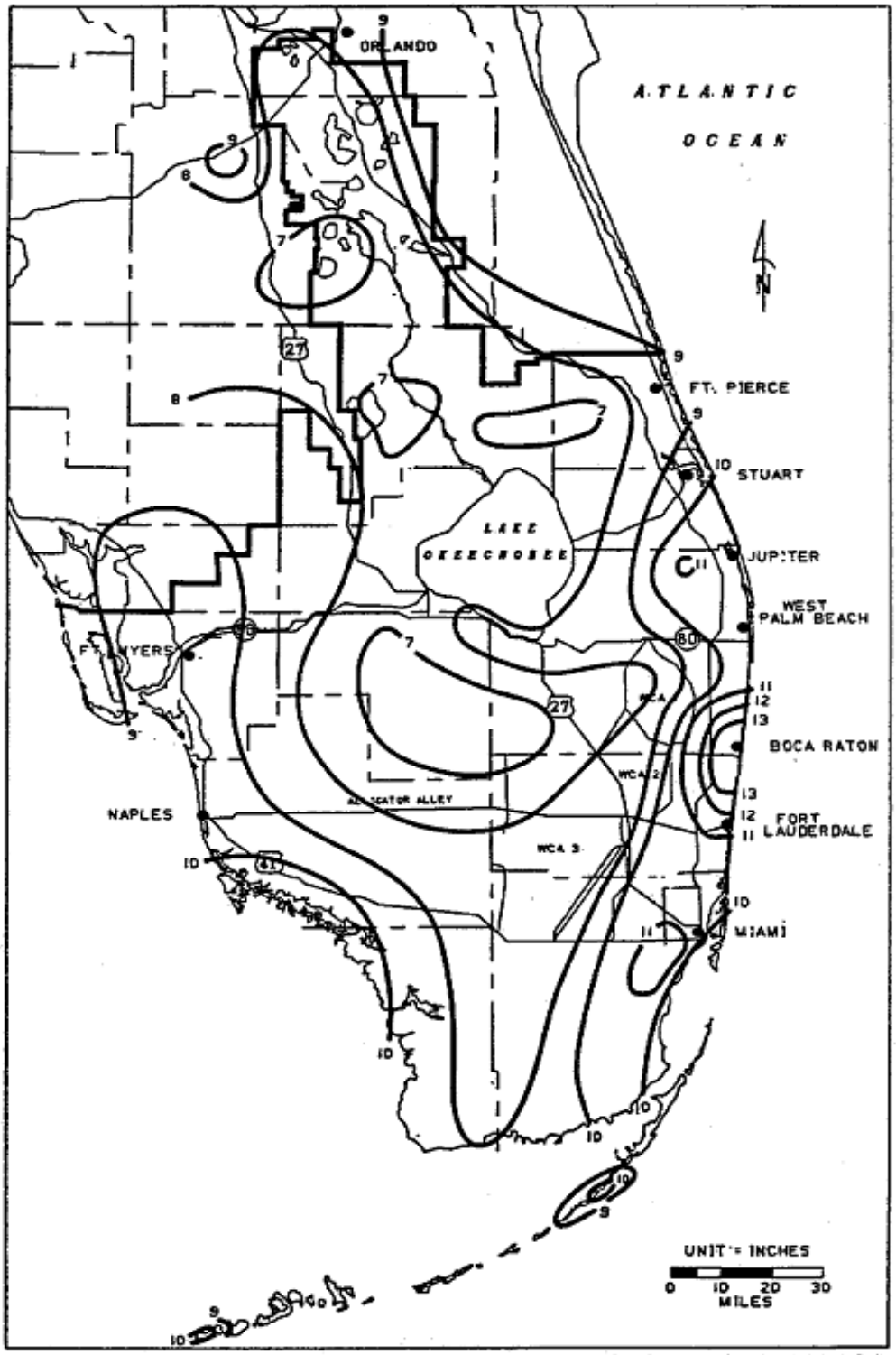


FIGURE C-7. 3-DAY RAINFALL: 10-YEAR RETURN PERIOD

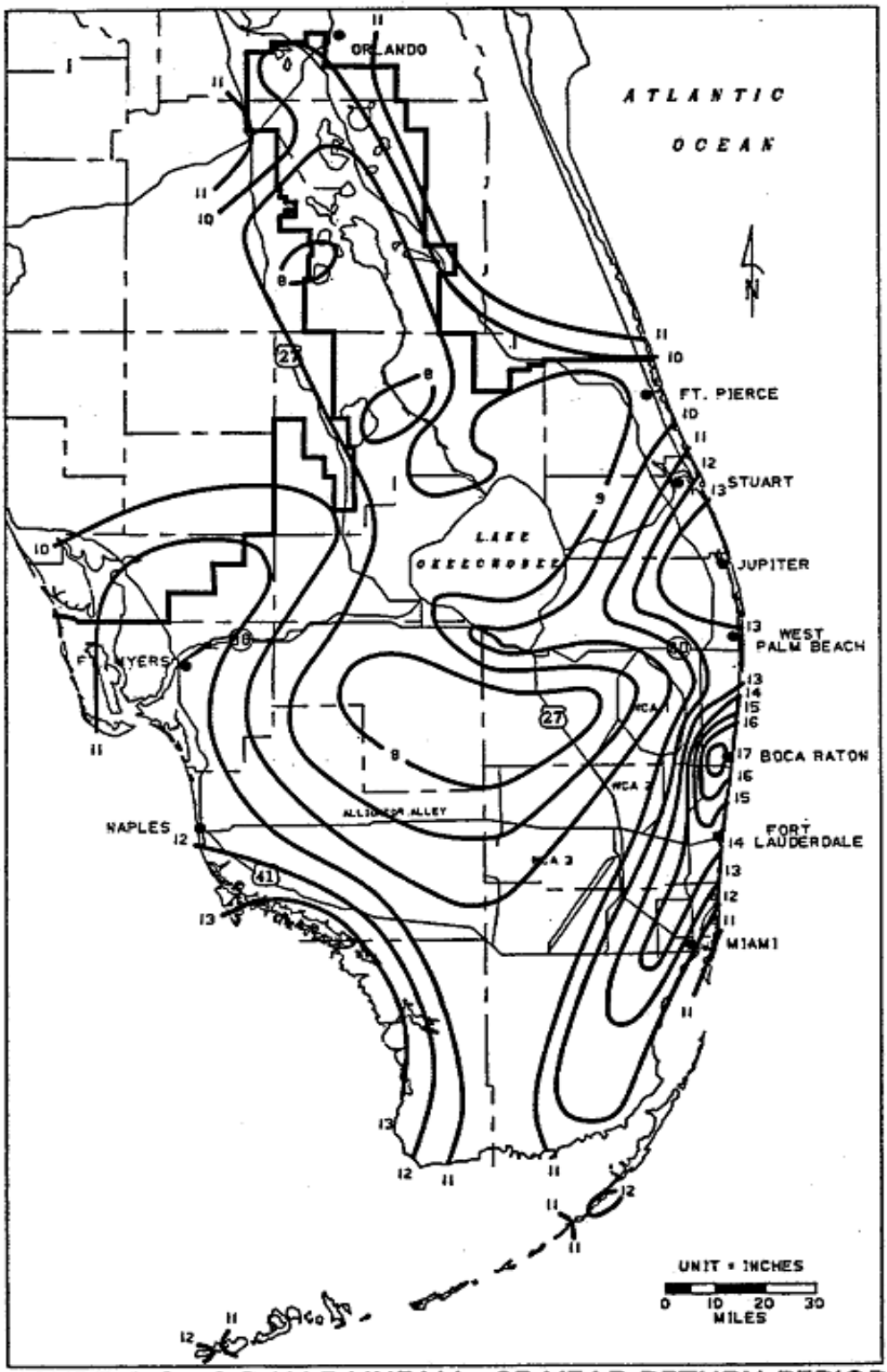


FIGURE C-8. 3-DAY RAINFALL: 25-YEAR RETURN PERIOD

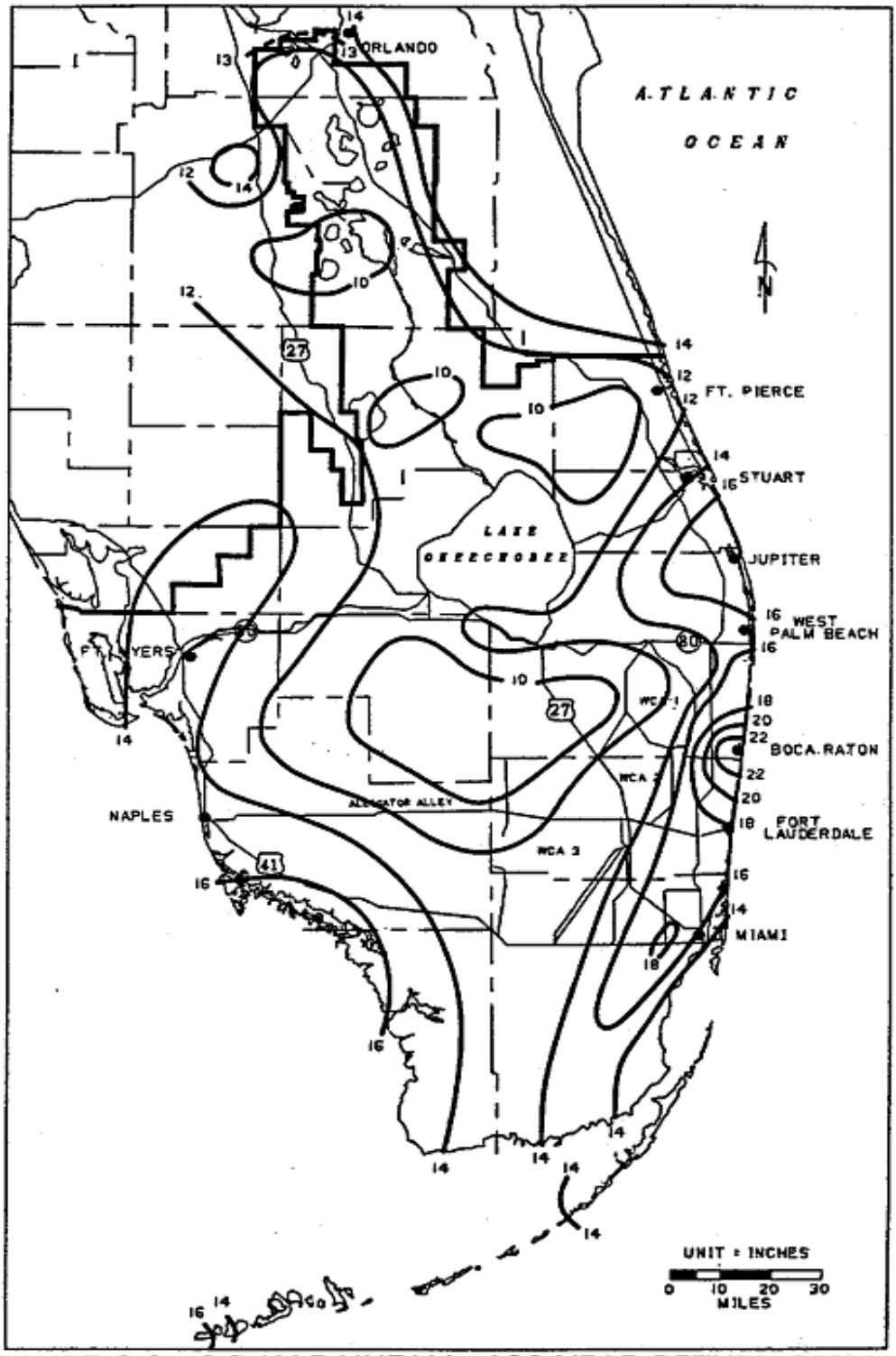
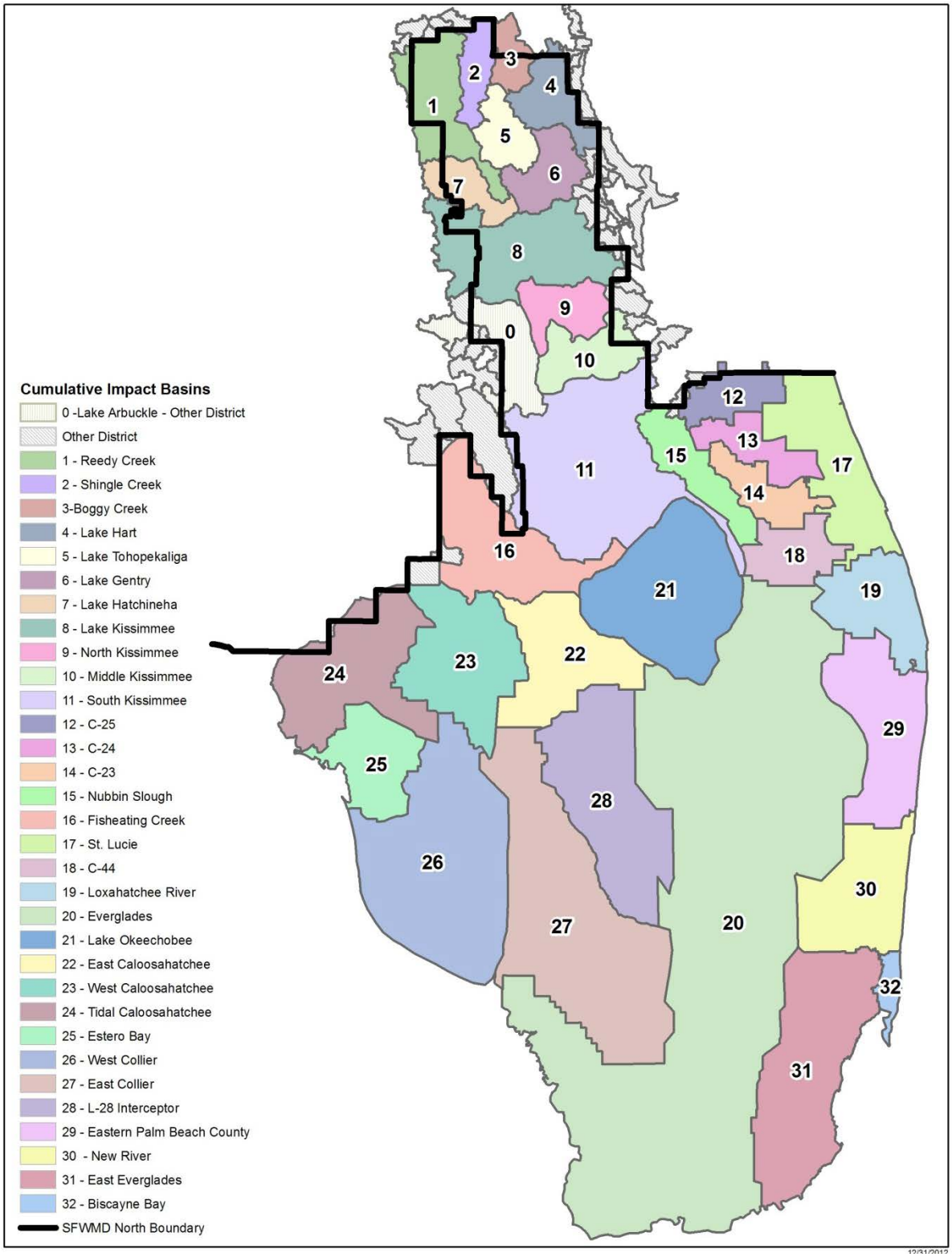


FIGURE C-9. 3-DAY RAINFALL: 100-YEAR RETURN PERIOD

APPENDIX D: SFWMD Basins
for Cumulative Impact Assessments & Mitigation Bank Service Areas



APPENDIX E
Procedure for Environmental Resource Permit Water Quality Evaluations for Applications Involving Discharges to Outstanding Florida Waters and Water Bodies that Do Not Meet State Water Quality Standards

This procedure shall be utilized in coordination with the "Environmental Resource Permit Applicant's Handbook Volume I: General and Procedural" (Volume I), incorporated by reference in Rule 62-330.010, F.A.C., and "Environmental Resource Permit Applicant's Handbook Volume II: For Use within the South Florida Water Management District" (District) (Volume II), incorporated by reference in Rule 40E-4.091, F.A.C. This procedure pertains to the application of existing District rules in the evaluation of permit applications for projects which discharge to Outstanding Florida Waters (OFWs) and water bodies that do not meet State water quality standards identified on the State's "Verified List" of impaired waters or water bodies that have a State adopted Total Maximum Daily Load (TMDL) (impaired water bodies).

"Impaired Water Bodies"
Chapter 62-303, Florida Administrative Code (F.A.C.), describes impaired water bodies. Water bodies that have been assessed and determined to be impaired by the Department of Environmental Protection (DEP) due to pollutant discharges are included on the "Verified List" adopted by DEP Secretarial Order. Water bodies on the "Verified List" can be determined from DEP's web site at: https://floridadep.gov/dear/watershed-assessment-section/content/assessment-lists.

Relationship Between "Impaired Waters" and District Water Quality Rules
Chapter 62-303, F.A.C., does not limit the applicability of existing environmental resource permit (ERP) rules and other criteria under other provisions of Florida law. Consequently, the District implements its existing rules to ensure non-degradation of OFWs and prevent further degradation of impaired water bodies.

This procedure highlights the requirements in the existing District ERP rules to meet water quality criteria. This procedure also provides additional measures which shall be considered, on a project by project basis, as necessary to provide reasonable assurance that new activities regulated pursuant to Part IV of Chapter 373, Florida Statutes (F.S.) will not degrade an OFW or will not contribute additional causative pollutants to an impaired water body.

Existing ERP Water Quality Requirements and Evaluation
The design requirements in Section 4, Stormwater Quality, of Volume II are applied in conjunction with the water quality requirements in Section 8, Criteria for Evaluation and Section 10, Environmental Criteria, Volume I.

State surface water quality standards are outlined in Chapter 62-302, F.A.C., and require that reasonable assurances be provided to ensure that proposed discharges do not cause or contribute to violations of State water quality standards. As a part of the review of ERP applications, the District evaluates whether discharges from a project will be directed to

an OFW or a water body that has been identified as impaired pursuant Chapter 62-303, F.A.C. If a proposed project discharges to an OFW or an impaired water body, the District will require that additional protective measures be incorporated into the project's design and operation to provide reasonable assurance that the proposed discharge will not cause or contribute to violations of State water quality standards. The additional protective measures shall include a site-specific pollutant loading analysis and an additional 50% water quality treatment volume above the amounts required pursuant to Section 4.2.1, Volume II. Best management practices (BMPs), source controls or protective measures shall be considered as discussed below.

Section 4.1, Volume II requires that "projects shall be designed and operated so that off-site discharges will meet State water quality standards." Section 4.1.3, Volume II, states that "systems which have a direct discharge to an OFW, must provide an additional fifty percent of the required treatment." Section 4.9.1, Volume II specifies a more detailed evaluation by the District staff for new developments which outfall to sensitive receiving waters. Such sensitive receiving waters include all OFWs as well as other water bodies specifically named in this rule.

Section 10.2.4, Volume I states:

> An applicant must provide reasonable assurance that the regulated activity will not violate water quality standards.
> Reasonable assurance regarding water quality must be provided both for the short term and the long term . . . . The following requirements are in addition to the water quality requirements found in Sections 8.2.3 and 8.3 through 8.3.3.

In cases where a project will discharge to a water body that does not meet standards, Section 10.2.4.5, Volume I requires that:

> The applicant must demonstrate that the proposed activity will not contribute to the existing violation.

Section 10.2.4.5, Volume I also states, "If the proposed activity will contribute to the existing violation, mitigation may be proposed as described in subsection 10.3.1.4 (Volume I)."

In addition, where the applicant is unable to meet water quality standards because existing ambient water quality does not meet standards, Section 373.414(1)(b)3, F.S., states that the Governing Board shall:

> consider mitigation measures proposed by or acceptable to the applicant that cause net improvement of the water quality in the receiving body of water for those parameters which do not meet standards.

Required Analysis
The applicant must submit the following for each project:

Construction Phase Pollution Prevention Plan

A Stormwater Pollution Prevention Plan for construction activities resulting in greater than 1 acre of land clearing, soil disturbance, excavation, or deposition of dredge material. The plan shall be prepared in accordance with recognized design practices and shall identify the potential sources of pollution that shall reasonably be expected to affect the quality of stormwater discharge associated with the construction activity.

Operation Phase Pollution Prevention Plan

A Post-construction Pollution Prevention Plan to be submitted as part of the permit application, which provides details of controls and practices to be implemented after construction is completed to reduce or eliminate the generation and accumulation of potential stormwater runoff contaminants at or near their source. A Post-construction Pollution Prevention Plan shall include plans for surface water management system operation and maintenance, nutrient and pesticide management, solid waste management, and/or animal/livestock waste storage and disposal, if applicable. Records of maintenance, operation and inspection shall be kept by the permittee and shall be available for inspection and copying by the District staff upon request.

Site-Specific Water Quality Evaluation

In order to demonstrate that the proposed activities will not contribute to an existing impairment of a water body, will not degrade an OFW, or will provide a "net improvement," an applicant shall provide reasonable assurance based on site-specific information to demonstrate that discharges of the parameter or parameters which have caused the impairment do not have the potential to cause or contribute to water quality violations in the basin. This demonstration shall be accomplished through the use of a site-specific water quality evaluation.

Additional Source Controls, BMPs and Other Protective Measures
In addition to the extra 50% water quality treatment volume for discharges to OFWs or impaired water bodies, a site-specific water quality analysis is required. Before submitting an application, the applicant shall perform an initial site-specific water quality analysis. The initial analysis must demonstrate that the proposed project's stormwater management system will not degrade an OFW or will provide a net improvement in an impaired water body for any parameters which are impaired. If the site-specific water quality analysis does not demonstrate that an OFW will not be degraded or a net improvement will occur in an impaired water body, then additional protective measures are required. These protective measures shall consist of source controls, BMPs or other protective measures. The applicant must then submit a site-specific water quality analysis to the District that demonstrates that an OFW will not be degraded or that a net improvement will occur in an impaired water body of any parameter which is impaired.

Listed below are typical source and structural controls commonly incorporated into proposed project stormwater designs and site specific water quality analysis as a part of the evaluation of whether an applicant has provided reasonable assurance to demonstrate that a proposed activity will not degrade an OFW, or in the case of an impaired water body, will not contribute to a violation of the impaired parameter. Such evaluation must take into consideration the particular water quality parameter which is not being met in the water body and whether the proposed project will contribute to the continued violation. The listed additional protective measures are not considered exhaustive. The District will consider other protective measures proposed by the applicant which include the necessary detailed documentation to demonstrate reasonable assurance that water quality standards will not be violated during construction and during long term operation. A combination of protective measures must be based on the proposed project, receiving water body, and specific pollutant(s) causing or contributing to the impairment of the receiving water body. Examples of protective measures are:

Increased Hydraulic Residence Time

Increased average wet season hydraulic residence time of wet detention ponds to at least 21 days using a maximum depth of 12 feet from the control elevation to calculate the residence time.

Pollutant Source Controls

Source controls typically include reduced turf coverage; native landscape plantings; stormwater harvesting and recycling; rooftop runoff management and recycling; pervious pavement; and vegetated non-turf buffers around detention/retention ponds.

Conveyance and Pretreatment BMPs

Stormwater conveyance and pretreatment BMPs typically include filter strips; vegetated stormwater inlets; vegetated swales; sediment trap structures such as baffle boxes; and dry retention or detention pretreatment.

Water Quality Treatment Enhancement

Stormwater treatment system enhancements typically include the use of on-site created wetlands in a treatment train as a polishing cell after primary treatment; detention ponds with littoral berms, settling basins or phyto-zones within the detention areas; planted wetland filter marshes just upstream of project outfall structures; detention ponds with increased effective treatment time by use of internal levees and/or berms and/or location of inflow and outflow structures to increase the flow path distance.

Treatment Efficiency of BMPs in Series

If a stormwater treatment system is designed in series as part of a BMP treatment train to increase the pollutant removal efficiency of the overall system, the treatment efficiencies of BMPs in series must account for the reduced loading transferred to subsequent downstream treatment devices as well as irreducible concentrations of certain pollutants. After treatment occurs in the first system, a load reduction occurs, which is a function of the type of treatment

provided. After migrating through the initial treatment system, the remaining load consists of pollutant mass which was not removed in the initial system. This mass is then acted upon by the second treatment system with an efficiency associated with the particular type of BMP used until the irreducible concentration level is met.

Attention must be paid to the treatment efficiency used for each downstream BMP to account for the diminishing "treatability" of stormwater as concentrations are reduced.

Water Quality Mitigation

In cases where ambient water quality does not meet State water quality standards and it is determined that the proposed activity will contribute to the violation (e.g., the water body is impaired for nutrients and the proposed project will discharge an increased nutrient load), Section 373.414(1)(b)3, F.S., and the Section 10.3.1.4. Volume I include provisions for water quality mitigation that will cause a net improvement. Water quality mitigation can be accomplished in a variety of ways. The typical concept is to provide net improvement through implementation of a water quality treatment system or retrofit of an area that currently discharges untreated stormwater runoff to the same receiving body as the proposed project. The type of land use, runoff rates, removal efficiencies and the pollutants expected from the mitigation area all must be compared to the proposed activity to assure the proposed mitigation is sufficient to cause a net improvement in the receiving water. Any areas used for off-site treatment must include a perpetual easement for this purpose, over the off-site treatment area, which cannot be amended, altered, released or revoked without the prior written consent of the District.

Water Quality Monitoring

Section 4.9.1(b), Volume II of the Environmental Resource Permit Applicant's Handbook Volume II: For Use within the Geographic Limits of the South Florida Water Management District, incorporated by reference in Rule 40E-4.091, F.A.C., contains the rule on water quality monitoring.

Rules of the
South Florida Water Management District

EXCEPTIONS TO THE UNIFORM RULES OF PROCEDURE CHAPTER 40E-0, F.A.C.

Effective: October 1, 2013

Section 373.4131, F.S. (2012), required DEP, in coordination with the five WMDs, to develop Statewide Environmental Resource Permitting rules (SWERP)

CHAPTER 40E-0
EXCEPTIONS TO THE UNIFORM RULES OF PROCEDURE

40E-0.101 Scope
40E-0.102 Time for Consideration of Emergency Petition for Variance or Waiver
40E-0.103 Procedures for Processing Permit Applications (Repealed)
40E-0.105 Consideration of Intended Agency Decision on Permit Applications (Repealed)
40E-0.107 Emergency Action
40E-0.108 Emergency Authorization
40E-0.109 Point of Entry Into Proceedings and Mediation
40E-0.111 Exemptions and Variances for Well Construction Permits
40E-0.113 Variances from Specified Review Criteria for Environmental Resource Permits (Repealed)
40E-0.115 Variances from Water Use Restrictions

40E-0.101 Scope.
This chapter contains rules for which the South Florida Water Management District has been granted specific exceptions to Title 28, F.A.C., Uniform Rules of Procedure, by the Administration Commission pursuant to Section 120.54(5), F.S. Each rule listed in this chapter is also listed within its corresponding, substantive rule chapter within Title 40E, F.A.C.

Rulemaking Authority 120.54(5) FS. Law Implemented 120.54(5) FS. History–New 7-2-98.

40E-0.102 Time for Consideration of Emergency Petition for Variance or Waiver.
Notwithstanding Rule 28-104.005, F.A.C., when a petition for an emergency variance or waiver requires action by the District, the District shall grant or deny a petition for emergency variance or waiver within 30 days of its receipt or at the next regularly scheduled meeting for which notice may be properly given.

Rulemaking Authority 120.54(5) FS. Law Implemented 120.54(5), 373.079, 373.083 FS. History–New 7-2-98, Amended 10-23-12.

40E-0.103 Procedures for Processing Permit Applications.

Rulemaking Authority 120.54(5), 120.60 FS. Law Implemented 120.54(5), 120.60 FS. History–New 7-2-98, Amended 6-12-00, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-0.105 Consideration of Intended Agency Decision on Permit Applications.

Rulemaking Authority 120.54(5), 120.60, 668.003, 668.004, 668.50 FS. Law Implemented 120.54(5), 120.60, 668.003, 668.004, 668.50 FS. History–New 7-2-98, Amended 3-22-09, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-0.107 Emergency Action.

(1) An emergency exists when immediate action is necessary to protect public health, safety or welfare; the health of animals, fish or aquatic life; the works of the District; a public water supply, or recreational, commercial, industrial, agricultural or other reasonable uses of land and water resources.

(2) The Executive Director may employ the resources of the District to take whatever remedial action necessary to alleviate the emergency condition without the issuance of an emergency order, or in the event an emergency order has been issued, after the expiration of the requisite time for compliance with that order.

(3) The procedures under this rule are provided in addition to the procedures set forth in Rule 28-106.501, F.A.C.

Rulemaking Authority 120.54(5), 120.60, 373.439 FS. Law Implemented 120.54(5), 120.60, 373.439 FS. History–New 7-2-98.

40E-0.108 Emergency Authorization.

(1) Permission to initiate activities regulated under Chapter 373, F.S., prior to the issuance of a permit or authorization of use may be applied for, in writing, when emergency conditions justify. However, no such permission shall be granted unless the proposed use is already under consideration for a permit under District rules. Mere carelessness or lack of planning on the part of the applicant shall not be sufficient grounds to warrant the granting of an emergency authorization.

(2) The Executive Director may grant an emergency authorization pursuant to Section 373.119(2), F.S. The emergency authorization shall be presented to the Governing Board for concurrence at its next regularly scheduled meeting. Failure to receive the Governing Board's concurrence shall automatically invalidate the emergency authorization.

Rulemaking Authority 120.54(5), 120.60, 373.439 FS. Law Implemented 120.54(5), 120.60, 373.439 FS. History–New 7-2-98, 6-12-00.

40E-0.109 Point of Entry Into Proceedings and Mediation.

Point of entry into proceedings determining substantial interests are governed by Rule 28-106.111, F.A.C., and this section.

(1)(a) "Receipt of written notice of agency decision" as set forth in Rule 28-106.111, F.A.C., means receipt of either written notice through regular United States mail, or electronic mail, or posting that the District has or intends to take final agency action, or publication of notice that the District has or intends to take final agency action.

(b) If notice is published pursuant to this chapter, publication shall constitute constructive notice to all persons. Until notice is published, the point of entry to request a formal or informal administrative proceeding shall remain open unless actual notice is received.

(2) If the District takes action which substantially differs from the notice of intended agency decision, the applicant or persons who may be substantially affected shall have an additional point of entry pursuant to Rule 28-106.111, F.A.C., unless otherwise provided by law. The District action is considered to substantially differ from the notice of intended agency decision when the potential impact on water resources has changed.

(3) Notwithstanding Rule 28-106.111, F.A.C., intended agency decisions or agency decisions regarding consolidated applications for Environmental Resource Permits and Use of Sovereign Submerged Lands pursuant to Section 373.427, F.S., shall provide a 14 day point of entry to file

petitions for administrative hearing under Rule 28-106.111, F.A.C.

Rulemaking Authority 120.54(5), 373.044, 373.113 FS. Law Implemented 120.54(5), 120.569, 120.57, 120.60, 373.079, 373.083, 373.146, 373.413, 373.427, 668.003, 668.004, 668.50 FS. History–New 7-2-98, Amended 6-12-00, 3-22-09, 10-23-12.

40E-0.111 Exemptions and Variances for Well Construction Permits.

(1) The board finds that compliance with all the requirements of Part I of Chapter 40E-3, F.A.C., may result in an undue hardship for the construction, repair or abandonment of certain wells.

(2) Any affected person may request an exemption from any or all of these rules for an individual well by making written request which must include those specific requirements for which an exemption is requested, any alternate or substitute methods or conditions considered appropriate, and reasons why the exemption is considered necessary.

(3) The District shall grant the exemption by way of a variance if the proposal is in accordance with accepted public health and sanitary engineering principles and practices and will not adversely affect the water resource. The variance shall be the minimum necessary to ameliorate the hardship.

(4) If the request is for a variance from the requirement of obtaining a water use permit, the applicant must demonstrate that an application has been filed and a compelling necessity exists to commence the construction, repair or modification of a well while an application for a water use permit is pending. Issuance of the variance will not be evidence of any entitlement to the water use permit.

(5) Upon issuance of a variance the District shall impose such special conditions as may be necessary to protect the intent and purpose of Part III, Chapter 373, F.S., and this chapter.

(6) The variance under this rule is provided in addition to the variance and waiver procedures set forth in Rule 28-104, F.A.C., which implements Section 120.542, F.S.

Rulemaking Authority 120.54(5), 373.044, 373.113, 373.171 FS. Law Implemented 120.54(5), 373.303, 373.308, 373.313, 373.316, 373.326 FS. History–New 9-2-98, Amended 6-12-00.

40E-0.113 Variances from Specified Review Criteria for Environmental Resource Permits.

Rulemaking Authority 373.044, 373.113, 373.171, 373.414(17) FS. Law Implemented 403.201 FS. History–New 9-2-98, Amended 6-12-00, 6-26-02, 10-23-12, Repealed 10-1-13.

40E-0.115 Variances from Water Use Restrictions.

(1) All users requesting relief from the provisions of Chapter 40E-21, F.A.C., shall file an application for variance but must conform to water use restrictions until the Executive Director grants a temporary variance or the Board grants the variance.

(2) Criteria for Issuance – No application for variance shall be granted unless the applicant provides reasonable assurances that the variance will not otherwise be harmful to the water resources of the District and affirmatively demonstrates that one or more of the following circumstances exists:

(a) The variance is essential to protect health or safety, or

(b) Compliance with the particular rule or order from which a variance is sought will require measures which, because of their extent or cost, cannot be accomplished within the anticipated duration of the shortage, or

(c) Alternative restrictions which achieve the same level of demand reduction as the

restrictions from which a variance is sought are available and are binding and enforceable, or

(d) The applicant is a public or private utility that demonstrates that special circumstances exist which necessitate the issuance of a variance, or

(e) The applicant's source of water includes an approved aquifer storage and recovery installation or a water reclamation project.

(3) Limiting Conditions – Variances granted shall be subject to the following conditions:

(a) The variance granted shall be the minimum necessary to alleviate the circumstance for which the variance was requested under subsection (2).

(b) All variances shall expire upon a declaration by the Board that a water shortage no longer exists or when a more restrictive water shortage declaration is made, unless the Board specifies that the variance shall be in effect for a longer period of time, provided however that variance conditions which require the applicant to modify water use facilities shall remain in full force and effect until such modifications have been completed. However, when a new application for variance is filed within seven working days of the effective date of a more restrictive water shortage declaration, the existing variance shall remain in effect until final agency action on the application.

(c) Variances granted under paragraph (2)(b) may prescribe a timetable for compliance with the restrictions from which a variance was sought.

(4) Applications for Variance – The application shall contain the following:

(a) The applicant's name, address, telephone number and location of the property for which relief is requested.

(b) The specific rule, order, water shortage phase or restriction from which the applicant is requesting relief.

(c) A detailed statement of the facts which the applicant believes demonstrate that the request qualifies for a variance under subsection (2), including reports by qualified technical experts.

(d) A description of the relief desired.

(e) The period of time for which the variance is sought, including the reasons and facts in support thereof.

(f) The damage or harm resulting or which may result to the applicant from compliance with the rule or order.

(g) If the variance is sought under paragraph (2)(b), information identifying the restrictions which currently can be met, a description of the measures which would be necessary to meet all restrictions and the date when these measures could be completed.

(h) If the applicant is the owner or operator of a golf course whose need for a variance arises from the operational inability of its irrigation system or works to meet the front nine-back nine requirement in Chapter 40E-21, Part V, F.A.C., the applicant shall submit a map showing the proposed alternative division of the course in-half and an explanation of the applicant's proposed irrigation scheme.

(i) For applications for variance from restrictions on irrigation, a general description of the irrigation system, including pump or water system output and irrigated area, and

(j) Any other information, the applicant believes is material.

(5) Procedures.

(a) Within ten working days after receipt of a complete application for variance, which contains the information listed in subsection 40E-21.275(4), F.A.C., the staff shall recommend to the Executive Director whether the application complies with the provisions of subsections (2) through (4). The recommendation shall be in writing and shall constitute proposed agency action.

The District shall set forth in writing the grounds or basis for denial of the variance and inform the applicant of the right to a hearing on the denial of the application by filing a petition. A copy of the recommendation shall be forwarded to the applicant. Any petition for hearing on an application for variance shall be considered a petition for informal proceedings in accordance with subsection 40E-1.571(2), F.A.C.

(b) The Executive Director or his designee shall review the application and the staff recommendation. Applications which do not require immediate action or which do not comply with the provisions of subsections (2) through (4) may be deferred for Board action. Applications which require immediate action and which comply with the provisions of subsections (2) through (4) may be temporarily granted by the Executive Director or his designee. Temporary variances granted by the Executive Director or his designee shall be presented to the Board for concurrence, rejection or modification.

(c) The Board shall consider all deferred applications as well as those temporarily granted by the Executive Director or his designee, at its next regularly scheduled meeting. The Board may grant, or deny the deferred applications and may concur in, reject or modify those variances temporarily granted by the Executive Director or his designee. All Board action denying applications for variances shall be by written order and copies shall be furnished to the applicant and the appropriate law enforcement officials. An applicant whose variance has been granted shall be furnished an appropriate notice of water shortage variance and any attachments which shall be prominently displayed at the applicant's place of use.

(d) The Board may revoke or modify a variance when it determines that the continued utilization of the variance is inconsistent with the objectives of the District.

(6) The variance under this rule is provided in addition to the variance and waiver procedures set forth in Rule 28-104, F.A.C., which implements Section 120.542, F.S.

Rulemaking Authority 120.54(5), 373.044, 373.113 FS. Law Implemented 120.54(5), 373.175, 373.246 FS. History–New 9-2-98, Amended 6-12-00.

Rules of the
South Florida Water Management District

General & Procedural
(Formerly 16CA-1; 16K-1)
CHAPTER 40E-1, F.A.C.

Effective: August 7, 2016

CHAPTER 40E-1
GENERAL AND PROCEDURAL

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40E-1.021 Definitions.

When used in this chapter, Chapters 40E-0, 40E-2, 40E-3, 40E-4, 40E-5, 40E-41, 40E-61 and 40E-63, F.A.C.:

(1) “e-Permitting website” means the District’s website address for e-Permitting at http://www.sfwmd.gov/ePermitting.

(2) “Electronic filing” means filing or submission of an Environmental Resource, Surface Water Management Permit or Consumptive Use Permit Application; Response to Request for Additional Information; or Request for Permit Transfer at the District’s e-Permitting website. Electronic filing is governed by the provisions of Chapter 668, F.S. If the applicant or sender of electronic data inhibits the ability of the District to store or print the electronic data, it shall not be considered filed with or received by the District. Filings received by the District after 5:00 p.m. shall be deemed filed on the next regular business day.

(3) “Electronic mail” means an electronic or computer file that is transmitted between two or more telecommunications devices; computers; computer networks, regardless of whether the network is a local, regional, or global network; or electronic devices capable of receiving electronic messages, regardless of whether the message is converted to hard copy format after receipt, viewed upon transmission, or stored for later retrieval. Electronic mail received after 5:00 p.m. shall be deemed received on the next regular business day.

(4) “Electronic Posting” means placing notice through a link on the home page of the District’s website.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 668.50 FS. History–New 10-1-06, Amended 10-23-12, 1-19-14, 7-14-14, 8-7-16.

40E-1.100 Uniform Rules of Procedure and Statement of District Organization and Operation.

Rulemaking Authority 120.54(5) FS. Law Implemented 120.54(5) FS. History–New 7-2-98, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-1.106 Post-Employment Restrictions.

(1) For a period of two years following separation of employment, or expiration of term of office, no former specified employee or official shall personally represent another person or entity for compensation before the District in connection with any matter where the person participated personally and substantially, within their last two years of employment or service on the board, and where the person has actual knowledge of the matter.

(2) Such representation is prohibited unless the Executive Director consents to such representation.

(3) This section shall apply to all specified employees hired after November 1, 1997; all employees promoted to a position which is included in the definition of specified employee after November 1, 1997; and all officials appointed after November 1, 1997.

(4) This section does not apply to former specified employees or officials working for another government agency.

(5) For the purposes of this rule, the following definitions shall apply:

(a) “Matter” shall include any judicial or other proceeding, application, request for ruling or other determination, contract, claim, controversy or investigation.

(b) “Official” shall mean any member of the Basin Board(s) or Governing Board of the South Florida Water Management District.

(c) “Represent” or “Representation” shall mean actual physical attendance on behalf of an individual or entity, for compensation, at a proceeding before the South Florida Water Management District or personal communications made with any officials, employees, or advisory board members of the South Florida Water Management District in their official capacity, on behalf of an individual or entity, including the filing of documents or the writing of letters on behalf of said individual or entity.

(d) “Specified employee” shall mean any management position within the Executive Council of the District.

Rulemaking Authority 112.311, 112.313(13), 373.044 FS. Law Implemented 112.311, 112.313(13) FS. History–New 10-22-97.

40E-1.1065 Misuse of Public Position.

Rulemaking Authority 112.311, 112.313(6), 373.044 FS. Law Implemented 112.311, 112.313(6) FS. History–New 10-22-97, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-1.125 Public Information and Inspection of Records.

Rulemaking Authority 119.01, 119.085, 120.53, 282.303(1), 286.011, 373.044, 373.113 FS. Law Implemented 119.01, 119.07, 119.021, 119.085, 120.53, 286.011, 373.044, 373.113 FS. History–New 9-3-81, Formerly 16K-1.16(4), (7), Amended 5-11-93, 9-19-95, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-1.139 Complaints under the Americans with Disabilities Act.

(1) It is the policy of the District to provide an equal opportunity for access to District services, programs, activities, and facilities which are held open to the public by handicapped and disabled persons in keeping with Title III of the Americans With Disabilities Act of 1990, 42 USC 12101, et seq., and the regulations which implement the Act, 28 CFR 35.

(2) Interested persons may obtain information concerning handicapped and disabled accessibility to the District's services, activities, programs, and facilities which are held open to the public by contacting the facilities manager.

(3) Any affected person may file a complaint alleging discrimination on the basis of handicapped or disabled inaccessibility of District services programs, activities and facilities which are held open to the public.

(a) Complaints shall be filed with the facilities manager and shall specify to the best of the complainant's knowledge, the location and nature of the conduct or circumstances complained of;

(b) The complaint must be signed by the complainant or authorized representative and contain an address or telephone number where the complainant can be reached;

(c) The District shall promptly investigate the complaint and may require the complainant to furnish any additional information reasonably necessary to aid investigating the complaint;

(d) The District shall promptly provide to the Complainant a written decision which documents why the decision is consistent with the provisions of the Americans With Disabilities Act and the regulations which implement the Act.

(4) The complaint procedure established by this subsection is intended to provide a prompt informal method of dispute resolution. Failure to file a complaint pursuant to this subsection will not preclude an affected person from following other remedies which may be available under state and federal law. A District decision regarding a complaint shall not be considered an agency action pursuant to Chapter 120, F.S.

Rulemaking Authority 120.53(1), 373.044, 373.113 FS., 28 CFR 35.106, 35.107 Law Implemented 120.53, 286.26, 373.083 FS. CFR 35.106, 35.107 FS. History–New 5-11-93.

40E-1.200 Procedures for Agendas and Scheduling of Meetings and Workshops.

Rulemaking Authority 120.54(5) FS. Law Implemented 120.54(5) FS. History–New 7-2-98, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-1.208 Procedure for Abstaining from Voting Conflicts of Interest.

Rulemaking Authority 112.3143, 120.53(1), 373.044, 373.113 FS. Law Implemented 120.53, 373.079 FS. History–New 5-11-93, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-1.300 Rulemaking Procedures.

Rulemaking Authority 120.54(5) FS. Law Implemented 120.54(5) FS. History–New 7-2-98, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-1.400 Procedures Regarding Declaratory Statements.

Rulemaking Authority 120.54(5) FS. Law Implemented 120.54(5) FS. History–New 7-2-98, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-1.500 Procedures for Proceedings which Determine Substantial Interests and Associated Mediation.

Rulemaking Authority 120.54(5) FS. Law Implemented 120.54(5) FS. History–New 7-2-98, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-1.5095 Publication of Notice of Agency Decision or Intended Agency Decision.

Rulemaking Authority 120.54(5), 373.044, 373.113, 668.003, 668.004, 668.50 FS. Law Implemented 120.54(5), 120.569, 120.57, 373.146, 373.413, 668.003, 668.004, 668.50 FS. History–New 7-2-98, Amended 6-12-00, 10-1-06, Repealed 12-1-11.

40E-1.511 Point of Entry Into Proceedings.

Rulemaking Authority 120.54(5), 373.044, 373.113, 668.003, 668.004, 668.50 FS. Law Implemented 120.54(5), 120.569, 120.57, 120.60, 373.146, 373.413, 373.427, 668.003, 668.004, 668.50 FS. History–New 9-3-81, Amended 7-26-87, 5-11-93, 10-3-95, 7-2-98, 6-12-00, 10-1-06, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-1.520 Procedures Concerning Formal Proceedings.

Rulemaking Authority 120.54(5) FS. Law Implemented 120.54(5) FS. History–New 7-2-98, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-1.521 Initiation of Formal Proceedings.

Rulemaking Authority 120.53, 373.044, 373.113 FS. Law Implemented 120.53(1), 120.57, 373.113 FS. History–New 9-3-81, Formerly 16K-1.09(1), 16K-1.112(1)-(3), 16K-1.12, Amended 5-11-93, 7-2-98, 6-12-00, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-1.564 Exceptions to Recommended Order.

Rulemaking Authority 120.53, 373.044, 373.113 FS. Law Implemented 120.53(1), 120.57, 373.113 FS. History–New 9-3-81, Formerly 16K-1.11(10), Amended 5-11-93, 7-2-98, 6-12-00, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-1.570 Procedures Concerning Informal Proceedings.

Rulemaking Authority 120.54(5) FS. Law Implemented 120.54(5) FS. History–New 7-2-98, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-1.601 General.

Rulemaking Authority 120.53, 373.044, 373.113 FS. Law Implemented 120.53(1), 120.57, 120.60, 373.085, 373.116, 373.119, 373.175, 373.229, 373.239, 373.243, 373.246, 373.413, 373.416, 373.429, 373.433, 373.436, 373.439 FS. History–New 9-3-81, Amended 5-11-93, 7-2-98, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-1.602 Permits Required.

Unless expressly exempt by statute or District rule, permits must be obtained from the District prior to commencement of the following activities:

(1) A water use individual or general permit pursuant to Chapter 40E-2, F.A.C., must be obtained prior to use or withdrawal of water or dewatering activities;

(2) A water well construction permit pursuant to Chapter 40E-3, F.A.C., must be obtained prior to the construction, repair or abandonment of any well within the District;

(3) A water well contractor's license, pursuant to Chapter 40E-3, F.A.C., must be obtained by contractors engaged in the business of construction, repair, or abandonment of water wells.

(4) An environmental resource permit pursuant to Chapter 62-330 or 40E-4, F.A.C., or, an individual or general surface water management or wetland resource permit grandfathered pursuant to Sections 373.414(11)-(16), F.S., must be obtained prior to:

(a) Construction, alteration, operation, maintenance, repair or abandonment of any stormwater management system, dam, impoundment, reservoir, appurtenant work or works including dredging or filling as prescribed by District rule,

(b) Establishment and operation of a mitigation bank.

(5) A conceptual environmental resource permit may be obtained for proposed surface water management systems or mitigation banks. However, a conceptual permit does not authorize construction or operation. A conceptual mitigation bank permit can be utilized to estimate the legal and financial requirements for the mitigation bank, information required for evaluation of the mitigation bank permit application, and potential mitigation credits that would be awarded to the specific project proposal.

(6) A proprietary authorization pursuant to Chapters 253 and 258, F.S., is required and shall be reviewed by the District for all activities which require a permit under Chapter 62-330 or 40E-4, F.A.C., or a permit under Sections 373.414(11)-(16), F.S., and which are located on submerged lands owned by the Board of Trustees of the Internal Improvement Trust Fund pursuant to Section

373.427, F.S., Chapter 18-21, F.A.C. and Rules 18-18.014 and 62-343.075, F.A.C.

(7) An artificial recharge permit pursuant to Chapter 40E-5, F.A.C., must be obtained prior to construction of any project involving artificial recharge or the intentional introduction of water into any underground formation;

(8) A Works or Lands of the District permit pursuant to Chapter 40E-6, F.A.C., must be obtained prior to connecting with, placing structures in or across, discharging into or making use of works of the District and any additional lands or real property interests owned by the District.

(9) A Use of Works of the District within the Lake Okeechobee Basin General or Individual Permit must be obtained pursuant to Chapter 40E-61, F.A.C., by any owner of a parcel of land within the Lake Okeechobee Basin.

(10) An Occupancy or Use of the C-18 Right of Way general or individual permit pursuant to Chapter 40E-62, F.A.C., must be obtained prior to constructing, planting, maintaining, pruning, mooring boats, and placing other items on, across, under, or upon District lands and works along the C-18 canal right of way.

(11) A Use of Works of the District within the Everglades general, individual or master permit pursuant to Chapter 40E-63, F.A.C., must be obtained by any owner of a parcel of land in the Everglades Agricultural Area.

Rulemaking Authority 373.044, 373.113, 373.4131, 373.4135 FS. Law Implemented 120.60, 373.085, 373.106, 373.116, 373.118, 373.119, 373.171, 373.216, 373.309, 373.323, 373.413, 373.414, 373.416 FS. History–New 9-3-81, Formerly 16K-1.06, Amended 7-26-87, 5-11-93, 10-3-95, 4-1-96, 10-1-13, 7-14-14.

40E-1.603 Application Procedures for Processing Permit Applications or Notices of Intent.

(1) Application procedures for environmental resource permits are set forth in Chapter 62-330, F.A.C. The following procedures for processing permit applications or notices of intent apply in addition to the requirements of Section 120.60, F.S. and Chapter 28-106, F.A.C.

(a) Within 30 days of receipt of an application or notice of intent, the District shall review the application to determine whether all information needed to evaluate the application has been submitted. The District shall notify the applicant of the date on which the application is declared complete.

(b) If the District determines that the application is incomplete, the District shall request the information needed to complete the application within 30 days of its receipt. The applicant shall have 90 days from receipt of a timely request for additional information to submit that information to the District.

(c) The District may request information needed to clarify any additional information submitted by the applicant, or to answer new questions raised by or related to the additional information within 30 days of its receipt. The applicant shall have 30 days from receipt of such a request in which to provide the necessary information. If the application is still incomplete after such information is submitted, the District shall notify the applicant within 30 days. The applicant shall have an additional 30 days to complete the application.

(d) Failure of an applicant to provide the timely requested information within these timeframes shall be considered grounds for denial of the application. Denial of an application for lack of completeness is without prejudice to the applicant's right to file a new application on the same subject matter. The District shall grant an extension upon a showing of a good faith effort by the applicant to comply with the timelines set forth herein. Unless an extension of time has been granted by the District, any application which remains incomplete 240 days after the original submittal date of an individual permit application or 90 days after the original submittal date of a notice of intent for general permit, shall be denied without prejudice.

(e) If the applicant submits information, either in response to or independent of a request by the District, which incorporates or results in a substantial modification in the proposed activity for which the applicant seeks a permit, the application will be considered an amended application. For purposes of this subsection, the term "substantial modification" shall mean a modification reasonably expected to result in water resource or environmental impacts which differ from those expected from the original application and require detailed review. Review timelines of the permit application or notice of intent will be reinitiated under this section.

(2) Upon a determination by the District that the activity requested in the notice of intent for any general permit requires an individual permit, the notice of intent shall be processed as an application for an individual permit, unless the permit applicant withdraws the application. If the application is processed as an individual permit, the permit applicant will be required to submit payment equal to the difference between the applicable fee for the individual permit and the fee previously submitted.

(3)(a) Agency action on all other individual permits and standard permits shall occur within 90 days of receipt of a complete

application, including receipt of all requested information and correction of any error or omission of which the applicant was timely notified.

(b) An authorization to proceed for noticed general water use permits in Chapter 40E-2, F.A.C., shall occur within 30 days of receipt of a complete notice of intent, unless a notice that the project does not qualify for the noticed general water use permit is sent by regular United States mail or electronic mail by the District within 30 days. If notice that the proposed project does not qualify for a noticed general water use permit is sent to the applicant, the review process under subsection (1) shall be initiated or the applicant shall be required to apply for the appropriate permit.

Rulemaking Authority 373.044, 373.113, 373.171, 373.4131 FS. Law Implemented 120.60, 373.085, 373.107, 373.109, 373.116, 373.118, 373.229, 373.309, 373.323, 373.4131, 373.4141, 373.417, 373.421, 373.422 FS. History–New 9-3-81, Formerly 16K-1.08(1)-(8), Amended 7-1-86, 7-26-87, 11-21-89, 5-11-93, 10-3-95, 4-1-96, 7-2-98, 6-12-00, 10-1-06, 12-1-11, 10-23-12, 10-1-13, 7-14-14.

40E-1.604 Bond.

(1) The Board may require the applicant for a permit to furnish a bond made payable to the District and its successors, with a reputable bonding corporation authorized to do business in this State as surety, conditioned upon full compliance with terms of the permit, including the proper construction, operation, and maintenance of the facility. The amount of the bond shall be determined by the Board.

(2) The Board may require liability insurance in such amount as the Board may determine endorsed in favor of the District or a hold harmless agreement satisfactory to the Board, in lieu of a bond under subsection (1).

(3) The Board may require that the bond or liability insurance be maintained as a condition of the continued validity of the permit.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.085, 373.103, 373.219, 373.413, 373.416 FS. History–New 9-3-81, Formerly 16K-1.061.

40E-1.6058 Posting, Publication and Requests for Notification of Permit Applications or Notices of Intent.

(1) Notice of Receipt of Permit Application or Notice of Intent. Persons who wish to be notified in writing or by electronic mail of any permit application or notice of intent which affects a designated geographic area shall notify the District in writing or by electronic mail, and shall specify their area of interest by county. Requests must be renewed every 6 months. The District shall provide notice in writing or by electronic mail of receipt of application or notice of intent to all persons who have filed in the preceding 6 months a written or electronic request for notification of any application or notice of intent affecting the designated geographic area in which the proposed activity is to occur.

(2) Publication of Notice of Receipt of Permit Application or Notice of Intent.

(a) Within 45 days of receipt of a permit application, the District shall electronically post notice thereof through a link on the home page of the District's website. Within 45 days of receipt of an application for an individual water use permit; permit for construction or alteration of dams, impoundments, reservoirs, and appurtenant works under Chapter 373, Part IV, F.S.; and permit under Section 403.812, F.S., the District shall publish notice thereof in a newspaper having general circulation as defined in Chapter 50, F.S., in the county in which the activity will occur. Permit applications submitted under Chapter 40E-6, F.A.C., shall not be subject to the requirements of this paragraph.

(b) Within 14 days of filing notice of intent to use a general permit or application for a standard permit, persons qualifying for the use thereof are not required to, but may publish notice of such filing in a newspaper of general circulation, as defined in Chapter 50, F.S., in the area affected by the proposed project. Proof of publication shall be submitted to the District within 14 days of publication.

(c) Published Notice of Use for No Notice General Permits. Publication of notice of use of general permits for which no notice is required to be filed with the District may occur if desired by the permittee. The published notice must be published in a newspaper of general circulation, as defined in Chapter 50, F.S., in the area affected by the proposed project within 7 days of commencing work. If published, proof of publication must be submitted to the district within 14 days of publication.

(3) Interested persons shall have the opportunity to inspect a copy of the permit application at the appropriate District Service Center and submit written comments, which shall be considered by the District if received before the District issues proposed agency action concerning the application. Where appropriate, the District shall request that persons submitting comments furnish additional information reasonably necessary to ascertain the nature of the comments.

(4) Persons who wish to be advised of the proposed agency action regarding a particular permit application shall file a written or electronic request for further notice within 14 days of receipt of the notice of application.

(5) The governing board may charge a subscription fee for information requested in accordance with this section to any person who has filed a written or electronic request for notification of any pending applications, pursuant to Rule 40E-1.125, F.A.C.

Rulemaking Authority 373.044, 373.113, 373.116, 373.118 FS. Law Implemented 120.60(3), 373.116, 373.118, 668.50 FS. History–New 10-3-95, Amended 7-2-98, 6-12-00, 10-1-06, 12-15-11, 1-19-14.

40E-1.6065 Consideration of Intended Agency Decision on Permit Applications.

(1) After the application for a permit is declared by staff to be complete, the District shall prepare a Staff Review Summary, which shall contain its recommendations regarding the subject application and which shall constitute intended agency decision. A notice of intended agency decision together with the Staff Review Summary shall be furnished to the applicant and any persons requesting the same pursuant to Rule 40E-1.6058, F.A.C., as applicable. The notice shall state the District Staff's recommendation that the District approve, deny, or approve with conditions the permit application and the reasons therefore.

(2) The District shall consider the application for a standard right of way occupancy permit at its next regularly scheduled Governing Board meeting following the mailing or electronic mailing of notice of intended agency decision, unless an administrative hearing is requested and granted pursuant to Section 120.569, F.S. If staff's recommendation is for denial, the District shall consider the application at its next available regularly scheduled Governing Board meeting following the mailing or electronic mailing of notice of intended agency decision, unless an administrative hearing is requested and granted pursuant to Section 120.569, F.S.

(3) In no case shall agency action be taken later than 60 days after the application for a conceptual approval or individual environmental resource permit, or later than 90 days after an individual water use, water well, right of way occupancy, or works of the district permit is declared complete unless waived by the applicant or stayed by the filing of a petition for an administrative hearing. The permit applicant may voluntarily waive the timeline for governing action on the permit application in Section 120.60, F.S., in order to resolve any outstanding issues, including third party objections, regarding the project.

(4) Because the District may take a final agency action which materially differs from the noticed intended agency action, applicants and other interested persons should be prepared to defend their position regarding the permit application when it is considered by the District. If the District takes final agency action which materially differs from the intended agency decision, the District shall mail by regular United States mail or electronic mail a notice of the final agency action to all persons who were notified of the intended agency decision.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 120.60, 373.079, 373.083, 373.4141 FS. History–New 7-2-98, Amended 6-12-00, 10-1-06, 10-23-12, 10-1-13, 7-14-14.

40E-1.607 Permit Application Processing Fees.

A permit application processing fee is required and shall be paid to the District when certain applications are filed pursuant to District rules. An application shall not be considered complete until the appropriate application fee is submitted. These fees are assessed in order to defray the cost of evaluating, processing, monitoring, and inspecting for compliance required in connection with consideration of such applications. Fees are non-refundable in whole or part unless the activity for which an application is filed is determined by the District to be exempt or the fee submitted is determined by the District to be incorrect. Failure of any person to pay the applicable fees established herein will result in denial of an application. Activities that do not require a permit and are exempt pursuant to Rule 40E-2.051 or 40E-3.051, F.A.C., are not subject to the following permit application fees. The District's permit application processing fees are as follows:

(1) Water Use Permit Application processing fees are in the following table:

TABLE 40E-1.607(1)
PERMIT APPLICATION PROCESSING FEES FOR
WATER USE PERMIT APPLICATIONS
REVIEWED PURSUANT TO CHAPTER 40E-2, F.A.C.

Fee amounts shall apply to applications for new permits, permit modifications, and permit renewals, except as noted.

Category	Amount

Individual Permit, except Mining/Dewatering (applies to all durations). Maximum monthly allocation:	
Up to 3 million gallons per month (mgm).	$350
Greater than 3 mgm through 15 mgm.	$1,000
Individual Public Water Supply with a duration less than 20 years.	
Maximum monthly allocation:	
Greater than 15 mgm through 30 mgm	$2,700
Greater than 30 mgm through 300 mgm	$5,500
Greater than 300 mgm	$7,000
Individual Public Water Supply with a duration of at least 20 years.	
Maximum monthly allocation:	
Greater than 15 mgm through 30 mgm.	$4,200
Greater than 30 mgm through 300 mgm.	$8,500
Greater than 300 mgm.	$11,500
Individual Irrigation with a duration less than 20 years.	
Maximum monthly allocation:	
Greater than 15 mgm.	$1,000
Individual Irrigation with a duration of at least 20 years.	
Maximum Monthly allocation:	
Greater than 15 mgm through 30 mgm.	$1,600
Greater than 30 mgm through 300 mgm.	$3,400
Greater than 300 mgm.	$5,600
Individual Mining/Dewatering.	
Standard Individual Permit with a total project duration of up to one year.	$500
Standard Individual Permit with a total project duration of greater than one year.	$1,800
Master Individual Permit.	$4,000
Individual Commercial/Industrial with a duration less than 20 years.	
Maximum monthly allocation:	
Greater than 15 mgm through 30 mgm.	$1,400
Greater than 30 mgm through 300 mgm.	$2,750
Greater than 300 mgm.	$3,500
Individual Commercial/Industrial with a duration of at least 20 years.	
Maximum monthly allocation:	
Greater than 15 mgm through 30 mgm.	$2,000
Greater than 30 mgm through 300 mgm.	$3,650
Greater than 300 mgm.	$5,600
Individual Diversion and Impoundment with a duration less than 20 years. Maximum monthly allocation:	
Greater than 15 mgm through 30 mgm.	$1,400
Greater than 30 mgm through 300 mgm.	$2,750
Greater than 300 mgm.	$3,500
Individual Diversion and Impoundment with a duration of at least 20 years. Maximum monthly allocation:	
Greater than 15 mgm through 30 mgm.	$2,000
Greater than 30 mgm through 300 mgm.	$3,950
Greater than 300 mgm.	$6,200
Independent Secondary User of a Diversion and Impoundment (applies to all durations).	
Maximum monthly allocation:	
Greater than 15 mgm through 30 mgm.	$1,000
Greater than 30 mgm through 300 mgm.	$2,000

Greater than 300 mgm.	$3,200
Noticed General Water Use Permit.	
Applications filed electronically at www.sfwmd.gov/ePermitting.	$100
Application filed by other means.	$350
Aquifer Storage and Recovery: cost added to the applicable use type listed above.	$1,000
Permit Transfer to Another Entity Pursuant to Rules 40E-0.107 and 40E-2.351, F.A.C.	$300
Letter Modification.	no fee
General Permit by Rule.	no fee

(2) Water Well Construction Permit Application processing fees are in the following table:

TABLE 40E-1.607(2)
PERMIT APPLICATION PROCESSING FEES FOR
WATER WELL CONSTRUCTION PERMIT APPLICATIONS
REVIEWED PURSUANT TO CHAPTER 40E-3, F.A.C.

Category	Amount
Water Well Construction.	$100
Water Well Abandonment.	no fee

(3)(a) Environmental Resource Permit Application processing fees are in the following table:

TABLE 40E-1.607(3)(a)
PERMIT APPLICATION PROCESSING FEES FOR
ENVIRONMENTAL RESOURCE PERMIT APPLICATIONS
REVIEWED PURSUANT TO CHAPTER 62-330, F.A.C.

For the purposes of determining the applicable processing fee, “project area” means the total area wherein works occur as part of an activity requiring a permit under Chapter 373, Part IV, F.S., including all portions of the stormwater management system serving the project area.

1. Use of the reviewing agency’s electronic self-certification system.	$0
2. Verification of exemption under Section 373.406 or 403.813(1), F.S. or under Rules 62-330.050 through 62-33.051, F.A.C.	$100
3. Verification of qualification to use a General Permit.	$250
4. Individual or Conceptual Approval Permits, excluding Permits for a Mitigation Bank.	
a. New applications – the processing fee for a new permit application shall be as determined from the categories below:	
(I) Total project area of less than 10 acres and no activities in, on or over wetlands or other surface waters, except where exempt under paragraphs 62-330.051(9)(a) through (c), F.A.C.	$2,000
(II) Project exceeds any of the thresholds in sub-sub-subparagraphs (3)(a)4.a.(I), above involves a total project area of less than 10 acres, less than 1 acre of works (i.e. dredging, filling, construction, or alteration) in, on or over wetlands and other surface waters, AND less than 10 new boat slips.	$3,500
(III) Project exceeds any of the thresholds in sub-sub-subparagraph (3)(a)4.a.(II), above, but involves a total project area of less and 40 acres, less than 3 acres of works in, on or over wetlands and other surface waters, AND less than 30 new boat slips.	$5,500
(IV) Project exceeds any of the thresholds in sub-sub-subparagraph (3)(a)4.a.(III), above, but involves a total project area of less than 100 acres, less than 10 acres of works in, on or over wetlands and other surface waters, AND less than 50 new boats ships.	$7,500
(V) Project exceeds any of the thresholds in sub-sub-subparagraph (3)(a)4.a.(IV), above, but involves a total project area of less than 640 acres, AND less than 50 acres of works in, on or over wetlands and other surface waters.	$13,125
(VI) Project exceeds any of the thresholds sub-sub-subparagraph (3)(a)4.a.(V), above.	$25,000

(VII) Projects that are exclusively for agriculture or silviculture, and that involve a total project area of less than 10 acres AND less than 1 acre of works (i.e. dredging, filling, construction, or alternatiion) in, on or over wetlands and other surface waters.	$859
(VIII) Projects that are exclusively for agriculture of silviculture, and that exceed any of the thresholds in sub-sub-subparagraph (3)(a)4.a.(VII), above, but involves a total project area of less than 40 acres AND less than 3 acres of works in, on or over wetlands and other surface waters.	$2,444
(IX) Projects that are exclusively for agriculture or silviculture, and that exceed any of the thresholds in sub-sub- subparagraph (3)(a)4.a.(VIII), above, but involve a total project area of less than 100 acres AND less than 10 acres of works in, on or over wetlands and other surface waters.	$4,029
(X) Projects that are exclusively for agriculture or silviculture, and that exceed any of the thresholds in sub-sub-subparagraph (3)(a)4.a.(IX), above, but involve a total project area of less than 640 acres AND less than 50 acres of works in, on or over wetlands and other surface waters.	$5,284
(XI) Projects that are exclusively for agriculture or silviculture, and that exceed any of the thresholds in sub-sub-subparagraph (3)(a)4.a.(X), above.	$6,605
(XII) Individual or Conceptual Permits solely for environmental restoration or enhancement activities, provided such activities are not associated with a mitigation bank and are not being implemented as mitigation for other activities that require a permit under Chapter 373, Part IV, F.S. For the purposes of this provision, the term "environmental restoration or enhancement" means an action or actions designed and implemented solely to convert degraded or altered uplands, wetlands, or other surface waters to intact communities typical of those historically present, or to improve the quality and condition of currently degraded wetlands or other surface waters to the more healthy, functional, and sustaining condition for fish, wildlife, and listed species.	$250
(XIII) Individual or Conceptual Permit solely to retrofit an existing stormwater management system or systems to add treatment to and reduce stormwater pollutant loadings from the system or systems.	$250
(XIV) An Individual Permit for a phase of construction that is consistent with an existing Conceptual Approval Permit.	$1,500
b. Major Modifications that exceed any of the thresholds in subsection 62-330.315(3), F.A.C.	
(I) Major Modification to an Individual or Conceptual Approval Permit that increase the project area.	60% of fee for new permit for the same activity
(II) All other Major Modification.	60% of fee for new permit for the same activity
c. Minor Modifications that do not exceed any of the thresholds in subsection 62-330.315(2), F.A.C.	
(I) Time Extensions of Permits, where not exempt from fees under Florida Statutes.	$500
(II) Minor Modifications to correct minor errors that do not involve technical review, to transfer ownership of a permit, or to transfer a permit from the construction to the operation phase.	$0
(III) All other Minor Modifications.	$250
5. Individual or Conceptual Permits for a Mitigation Bank.	
a. New applications.	
(I) For a Mitigation Bank with a permit area less than 100 acres.	$7,500
(II) For a Mitigation Bank with a permit area greater than 100 acres but less than 640 acres.	$13,125
(III) For a Mitigation Bank with a permit area of 640 acres or more.	
b. Major Modifications involving changes to one or more of the following components: service area; credit assessment; success or release criteria; hydrologic structures or alterations; constructions or mitigation design that does not increase the project area; elimination of lands; or monitoring or management plans:	$25,000
(I) Affecting one of the above components.	20% of the fee under 5.a.
(II) Affective to of the above components.	40% of the fee under 5.a.
(III) Affective three of the above components.	60% of the fee under 5.a.

(IV) Major modifications affecting four or more of the above components of the increase the project area.	100% of the fee under 5.a.
c. Major Modification that do not involve changes to the components listed in sub-subparagraph (3)(a)5.b. above, but that exceed any of the thresholds in subsection 62-330.315(2), F.A.C.	100% of the fee under 5.a.
d. Minor Modifications that do not exceed any of the thresholds in subsection 62-330.315(2), F.A.C.	
(I) Time Extensions of Permits, where not exempt from fees under Florida Statutes.	$500
(II) To correct minor errors that do not involve technical review, to transfer ownership of a permit, or to transfer a permit from the construction to the operation phase.	$0
(III) All other Minor Modifications.	$250
e. Mitigation Bank Credit Release.	$0
f. Mitigation Bank Credit Withdrawal.	$0
6. Informal Wetland Determination.	
a. Where total area included is less than 1 acre.	$250
b. Where total area included is greater than 1 acre.	$500
7. Variance or Waiver:	
a. Under Section 120.532, F.S.	$0
b. Under Section 373.414(17), F.S.	$1,125
8. Fee reductions.	
a. Applications by an entity qualifying under Section 218.075, F.S., when the fee exceeds $100.00.	$100.00
b. Applications submitted by the U.S. Department of Defense.	$0
c. For resubmittal, within 365 days, of an application for the same project that was previously withdrawn, under subsection 62-330.071(3), F.A.C., any fee paid as part of the previous application will be applied toward the fee required for the application under this rule.	Previously paid fee shall be applied

9. When used in Table paragraph 40E-1.607(3)(a), F.A.C., "Agriculture" shall be defined as set forth in Section 570.02, F.S.

10. For permit applications which involve a combination of fee categories, the highest fee that applies shall be charged.

11. Any individual permit application submitted concurrently with a conceptual approval application – where the individual permit application represents a phase of the conceptual approval application – is exempt from the above environmental resource permit fees.

12. For projects grandfathered pursuant to Section 373.414, F.S., the letter modification, conceptual approval, individual or general surface water management permit application fee shall be the same as listed in Table paragraph 40E-1.607(3)(a), F.A.C.

13. The District shall use the Consumer Price Index (CPI) adopted by the United States Department of Labor since the most recently revised fee increase for revising fees under Chapter 373, Part IV, F.S., pursuant to Section 373.109, F.S. The inflation index used is the price paid by all urban consumers for a market basket of consumer goods and services; specifically, the CPI figures for the "CPI-U, U.S. City Average. All Items" established for the previous five years by the Bureau of Labor Statistics (BLS) (www.bls.gov/cpi), computed as provided in the BLS publication Bureau of Labor Staticstics Handbook of Methods, Chapter 17 (www.bls.gov/opub/hom/pdf/homch17.pdf).

(b) Permit application processing fees for projects grandfathered pursuant to Section 373.414, F.S., wetland resource (dredge and fill) are in the following table:

TABLE 40E-1.607(3)(b)
PERMIT APPLICATION PROCESSING FEES FOR
PROJECTS GRANDFATHERED PURSUANT TO SECTION 373.414, F.S.
WETLAND RESOURCE (DREDGE AND FILL) PERMIT APPLICATIONS
REVIEWED PURSUANT TO CHAPTERS 40E-4, 40E-40, AND 40E-400, F.A.C.

Category	Amount
Construction projects up to and including 5 years.	
Standard form projects including dredge and fill activities that affect 10 or more acres of jurisdictional area, pursuant to subsection 62-312.070(2), F.A.C. (1993).	$7,500
Short form construction projects including dredging and filling activities that affect less than 10 acres of jurisdictional	$750

area, pursuant to subsection area, pursuant to subsection area, pursuant to subsection.	
Variance associated with a wetland resource permit application.	
From the prohibition of subsection 62-312.080(7), F.A.C.	$132
From other permitting standards, permit conditions, or water quality standards.	$661
General Permits.	$132
Minor modifications of permits that do not require substantial technical evaluation by the District, in conformance with subsections 62-4.050(6) and (7), F.A.C. (1993), do not require a new site inspection by the District, and will not lead to substantially different environmental impacts or will lessen the impacts of the original permit:	$66
Transfer of permits or time extensions. Minor technical changes.	
Existing permit fee is less than $300, except for modification to permits issued pursuant to Section 403.816, F.S.	$66
Existing permit fee is equal to or more than 300.	$330

1. For the purposes of determining the fee for wetland resource management permits, the term of duration for the permit shall be reduced by the period of time (in yearly increments) during which no dredging or filling activity occurs or no reclamation, restoration, or mitigation occurs and only minor monitoring and maintenance activities are required.The fee for the full term shall be submitted with the application. After the District determines the period of time that the term of the permit can be reduced, the excess fee shall be returned.

2. For permit applications which involve a combination of the project fee categories listed above, the highest fee that applies to the appropriate standard form or short form project, pursuant to Rule 62-312.070, F.A.C., shall be charged.

3. A single additional fee of $500 shall be required for projects in which monitoring and evaluation to determine the success of the mitigation will be required beyond the period of time to which the permit fee will ordinarily apply. If it is determined at the time of the permit application that monitoring and evaluation to determine the success of the mitigation will be required beyond the time period to which the permit fee will ordinarily apply, then this single additional fee shall be due when it is determined that this monitoring and evaluation is required.

(4) Application for proprietary authorization under Chapters 253 and 258, F.S., except consent of use authorizations, processing fees are in the following table:

TABLE 40E-1.607(4)
PERMIT APPLICATION PROCESSING FEES FOR
PROPRIETARY AUTHORIZATIONS UNDER
CHAPTERS 253 AND 258, F.S.,
EXCEPT CONSENT OF USE AUTHORIZATIONS

See Chapter 18-21, F.A.C. for application fees for proprietary authorizations, specifically as follows:

Subparagraph 18-21.008(1)(a)8., F.A.C.	Applications for Lease (eff. 8-10-05)
Paragraph 18-21.0081(1)(k), F.A.C.	Grandfather Structure Applications (eff. 8-10-05)
Paragraph 18-21.009(1)(g), F.A.C.	Applications for Public Easement (eff. 8-10-05)
Paragraph 18-21.010(1)(i), F.A.C.	Applications for Private Easement (eff. 8-10-05)
Paragraph 18-21.013(1)(l), F.A.C.	Applications to Purchase Lands Riparian to Uplands (eff. 3-27-82)
Subsection 18-21.019(7), F.A.C.	Applications for Disclaimers, Quitclaim Deeds or Certificates to Clear Title to Filled Sovereignty Lands and for Disclaimers for Lands Lost Due to Avulsion or to Reclaim Lands Lost due to Artificial Erosion or Artificial Erosion and Avulsion (eff. 4-13-98)

(5) Petition for Formal Determination of Wetlands and Other Surface Waters processing fees are in the following table:

TABLE 40E-1.607(5)
DETERMINATION PETITION PROCESSING FEES FOR
FORMAL DETERMINATION OF WETLANDS AND
OTHER SURFACE WATERS

For the validation of informal, non-binding wetland determinations pursuant to Section 373.421(6), F.S., the fees shall be the same as formal determinations listed in Table subsection 40E-1.607(5), F.A.C.

Category	Amount

Property less than or equal to 10 acres.	$500
Property greater than 10 acres but less than or equal to 40 acres.	$1,000
Property greater than 40 acres but less than or equal to 100 acres.	$1,500
Additional fee per 100 acres (or portion thereof) beyond the first 100 acres.	$350
Reissuance of a Formal Determination.	$350

(6) Permit Processing Fee Waiver for Certain Local Governments.
Notwithstanding the provisions set forth above in this rule, the District shall waive permit processing fees for permit applications submitted by the governing body of a county with a population of less than 50,000, a municipality with a population of less than 25,000, a county or municipality not included within a metropolitan statistical area, or a third party under contract with such a county or municipality, provided:

(a) The project for which the fee waiver is sought serves a public purpose; and

(b) The governing body submits Form No. 889 certifying that the fee reduction is necessary due to an environmental need for a particular project or activity; or

(c) The governing body submits Certification of Waiver of Permit Application Processing Fee, Form No. 0889, certifying that the permit processing fee is a fiscal hardship due to one of the following factors:

1. Per capita taxable value is less than the statewide average for the current fiscal year;

2. Percentage of assessed property value that is exempt from ad valorem taxation is higher than the statewide average for the current fiscal year;

3. Any condition specified in Section 218.503, F.S., that determines a state of financial emergency;

4. Ad valorem operating millage rate for the current year is greater than 8 mills; or

5. A financial condition is documented in annual statements at the end of the current fiscal year which indicates an inability to pay the permit processing fee during that fiscal year.

Form 0889, December 2011, http://www.flrules.org/Gateway/reference.asp?No=Ref-00061, is incorporated by reference herein and available at no cost by contacting the South Florida Water Management District Clerk's Office, 3301 Gun Club Road, West Palm Beach, FL 33406, (800)432-2045, ext. 6436 or (561)682-6436.

(7) PERMIT APPLICATION PROCESSING FEES FOR MODIFICATION OR TRANSFER OF ENVIRONMENTAL RESOURCE, SURFACE WATER MANAGEMENT OR WORKS OF THE DISTRICT PERMITS FOR PROPERTIES ACQUIRED BY THE DISTRICT PURSUANT TO THE FLORIDA FOREVER WORK PLAN OR SAVE OUR RIVERS LAND ACQUISITION AND MANAGEMENT PLAN:

(a) Modification of existing permits to reflect property ownership changes where no new works or modifications to an existing stormwater management system is requested.	$0
(b) Permit transfer pursuant to Rules 40E-1.6107 and 62-330.340, F.A.C.	$0

Rulemaking Authority 373.044, 373.109, 373.113, 373.171, 373.421(2), 373.421(6)(b), 373.4131 FS. Law Implemented 218.075, 373.109, 373.4131, 373.421(2), 373.421(6)(b), 403.201 FS. History–New 1-8-89, Amended 1-2-91, 11-15-92, 6-1-93, 1-23-94, 10-3-95, 4-1-96, 11-8-99, 5-24-00, 6-26-02, 7-11-02, 8-10-03, 8-14-03, 11-18-07, 11-1-09, 12-15-11, 10-23-12, 10-1-13, 7-31-14, 9-7-15, 8-7-16.

40E-1.608 Denial of Permits.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 120.53(1), 120.57, 120.60 FS. History–New 9-3-81, Amended 10-3-95, 7-2-98, 6-12-00, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-1.609 Suspension, Revocation and Modification of Permits.

(1) Procedures concerning the District's suspension, revocation and modification of a permit are contained in the Uniform Rules of Procedure, Rule 28-106.2015, F.A.C.

(2) The District may temporarily suspend or revoke a permit, in whole or in part, when it determines that the permittee or an agent of the permittee has:

(a) Submitted false or inaccurate information on an application or operational report;

(b) Violated Chapter 373, F.S., or portions of Chapter 403, F.S., for which authority has been delegated to the District, and the

rules promulgated thereunder, or any other provision of Florida law related to the operations or regulations of the District;

(c) Failed to comply with an Administrative Order issued pursuant to Section 373.119, F.S.;

(d) Violated a condition of the permit;

(e) Failed to permit inspection of the subject property.

(3) The District may revoke a permit or modify its terms and conditions when it determines that such action is necessary to protect the public health, safety and welfare, prevent a public or private nuisance, or when the continued utilization of the permit becomes inconsistent with the objectives of the District. In such instances, due consideration shall be given to the extent to which the permittee has detrimentally relied upon the permit.

(4) The provisions of subsections (1) and (2) shall not preclude the District from exercising other enforcement remedies pursuant to Chapters 120, 373 and 403, F.S., when it determines such action is necessary and appropriate either in addition to or instead of suspension or revocation described above.

Rulemaking Authority 120.53, 373.044, 373.113, 373.119, 373.129, 373.136 FS. Law Implemented 120.53(1)(b), (c), 120.60(2), 373.119, 373.239, 373.243, 373.429 FS. History–New 9-3-81, Amended 5-11-93, 10-3-95, 7-2-98, 6-12-00.

40E-1.610 Permit Renewal.

(1) Holders of renewable permits shall make timely application as required by Rule 40E-1.603, F.A.C., for renewal so as to avoid expiration during the renewal process. When timely application is made, the existing permit shall not expire until final agency action, or if the permit is denied or the terms limited, until the last day for seeking review of the District order or a later date fixed by order of the reviewing court.

(2) Application for a permit renewal is timely only if actually filed at the District prior to expiration of the existing permit. Mailing the application does not constitute filing.

Rulemaking Authority 120.53(1), 373.044, 373.113 FS. Law Implemented 120.60, 373.219, 373.239, 373.323, 373.413 FS. History–New 5-11-93, Amended 6-12-00.

40E-1.6105 Notification of Transfer of Interest in Real Property.

Within 30 days of any transfer of interest or control of the real property at which any permitted facility, system, consumptive use, or activity is located, the permittee must notify the District, in writing or electronically at the District's e-Permitting website, of the transfer giving the name and address of the new owner or person in control and providing a copy of the instrument effectuating the transfer. Notification of a transfer shall not constitute a permit transfer pursuant to Rule 40E-1.6107, F.A.C.

Rulemaking Authority 373.044, 373.113, 668.003, 668.004, 668.50 FS. Law Implemented 373.083, 373.171, 373.309, 373.416, 373.426, 373.429, 373.436, 668.003, 668.004, 668.50 FS. History–New 5-11-93, Amended 10-1-06.

40E-1.6107 Transfer of Environmental Resource, Surface Water Management, or Water Use, or Wetland Resource Permit.

(1) The procedures for the transfer of environmental resource permits are set forth in Rule 62-330.340, F.A.C. To transfer a surface water management, water use, or wetland resource permit, the permittee, in addition to satisfying the applicable provisions in Rule 40E-2.351, F.A.C., must submit Form No. 0483, (October 1, 2013), http://www.flrules.org/Gateway/reference.asp?No=Ref-02753, Request for Surface Water Management, Water Use, or Wetland Resource Permit Transfer, incorporated by reference herein. Form No. 0483 is also available at no cost by contacting the South Florida Water Management District Clerk's Office, 3301 Gun Club Road, West Palm Beach, FL 33406, (800)432-2045, ext. 2729, or (561)682-2729.

(2) In addition, the permittee must provide information required in Rule 40E-1.6105, F.A.C., and file a statement from the proposed transferee in writing or at the District's e-Permitting website that it has reviewed the District permit and project design and will be bound by all terms and conditions of the permit, including all compliance requirements, for the duration of the permit.

(3) The District shall approve the transfer of a permit unless it determines that the proposed transferee cannot provide reasonable assurances that conditions of the permit will be met. The determination shall be limited solely to the ability of the new permittee to comply with the conditions of the existing permit, and it shall not concern the adequacy of those permit conditions.

(4) The District shall approve the transfer of the permit if the requirements in subsections (1) and (2) are met. If the District proposes to deny the transfer, it shall provide both the permittee and the proposed transferee a written objection to such transfer

together with the notice of right to request a Chapter 120, F.S., proceeding on such determination.

(5) Until transfer is approved by the District, the permittee shall be liable for compliance with the permit. The permittee transferring the permit shall remain liable for any corrective actions that are required as a result of any violations of the permit which occurred prior to the transfer of the permit.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.083, 373.171, 373.219, 373.309, 373.413, 373.4131, 373.414, 373.416, 373.426, 373.429, 373.436, 668.003, 668.004, 668.50 FS. History–New 5-11-93, Amended 10-3-95, 10-1-06, 10-23-12, 10-1-13, 7-14-14, 8-7-16.

40E-1.611 Emergency Action.

Rulemaking Authority 120.54(5), 373.439 FS. Law Implemented 120.54(5), 373.439 FS. History–New 9-3-81, Amended 7-2-98, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-1.6115 Emergency Authorization.

Rulemaking Authority 120.54(5), 373.439 FS. Law Implemented 120.54(5), 373.439 FS. History–New 7-2-98, Amended 6-12-00, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-1.615 Coordinated Agency Review Procedures for the Florida Keys Area of Critical State Concern.

(1) This rule applies to applications for environmental resource, surface water management, and water use permits for projects located in the Florida Keys Area of Critical State Concern when the applicant has elected coordinated agency review under Section 380.051, F.S.

(2) The following coordinated agency review procedures apply to projects which are eligible for exemptions from District environmental resource and water use permitting requirements:

(a) No permit and no coordinated agency review participation by the District is required for the water uses exempted by Rule 40E-2.051 (Exemptions), F.A.C., or identified in Rule 40E-2.061, F.A.C.

(b) No permit and no coordinated agency review participation by the District is required for surface water management activities which are exempted by Rule 62-330.051 (Exempt Activities), F.A.C.

(3) The following coordinated agency review procedures apply to projects which require permits pursuant to Chapters 40E-2 (Consumptive Use), 62-330 and 40E-4 (Environmental Resource), F.A.C.:

(a) The Coordinated Review Application shall consist of the application information required by Rules 40E-1.603 (Application Procedures for Processing Permit Applications or Notices of Intent), 40E-2.101 (Content of Application) or 62-330.060 (Content of Application), F.A.C.

(b) The District's Coordinated Review process begins when the District receives the Coordinated Review Application from the Permit Coordinator as required by Section 380.051, F.S.

(c) The District's Coordinated Review process follows the permit review procedures set forth in Rule 40E-1.603, F.A.C. (Application Procedures for Processing Permit Applications or Notices of Intent).

(d) If the applicant waives the time limits required by Chapter 120 and Section 380.051, F.S., the District shall delay initiation of substantive review until notice is received by electronic mail at the District's e-Permitting website or in writing from the Permit Coordinator indicating that substantive review should begin. If the applicant does not waive the time limits, the District shall begin substantive review when the Coordinated Review Application is complete.

(e) The Certification of the Coordinated Review Application required by Section 380.051(2)(a), F.S., shall occur within 60 days after the District begins substantive review, and shall consist of the notice of proposed agency action together with the staff report on the individual permit pursuant to Section 40E-1.603 (Application Procedures for Processing Permit Applications or Notices of Intent), F.A.C., which may recommend denial to the Governing Board, or approval, or approval with conditions to its designee.

(f) Certification concludes the coordinated agency review process. However, the applicant may complete the permit process as set forth in subsections 40E-1.603(6)-(11), F.A.C., which results in the Governing Board's denial, or approval, or approval with conditions to its designee.

Rulemaking Authority 373.044, 373.113, 373.171, 373.4131, 380.051 FS. Law Implemented 373.4131, 380.051, 668.003, 668.004, 668.50 FS. History–New 9-22-87, Amended 10-3-95, 10-1-06, 12-1-11, 10-23-12, 10-1-13, 7-14-14, 8-7-16.

40E-1.659 Forms and Instructions.

The following forms and instructions are incorporated by reference throughout the District's rules as specified below and are listed herein for convenience. Hyperlinks are provided in the rules in which the forms and instructions are referenced and copies can be obtained without cost by contacting the South Florida Water Management District Clerk's Office, 3301 Gun Club Road, West Palm Beach, FL 33406, (800)432-2045, ext. 2729, or (561)682-2729:

Form No.	Date	Title
0186	09-12	Application for a State of Florida Water Well Contractor's License, incorporated by reference in subsection 40E-3.038(1), F.A.C.
0483	10-13	Request for Surface Water Management, Water Use or Wetland Resource Permit Transfer, incorporated by reference in subsection 40E-1.6107(1), F.A.C.
0779	01-01	Application for a Works of the District Permit, incorporated by reference in subsection 40E-63.091(9), F.A.C.
0889	12-11	Certification of Waiver of Permit Application Processing Fee, incorporated by reference in Paragraph 40E-1.607(6)(b), F.A.C.
1045	11-10	Application for a C-139 Basin Works of the District Permit, incorporated by reference in subsection 40E- 63.430(2), F.A.C.
1376	7-14	Report of Planting and Harvest of Seasonal Crops Form, incorporated by reference in paragraph 40E-2.091(2)(a), F.A.C.
1377	7-14	Water Quality Report Form, incorporated by reference in paragraph 40E-2.091(2)(b), F.A.C.
1378	7-14	Water Use Pumpage Report Form, incorporated by reference in paragraph 40E-2.091(2)(c), F.A.C.
1379	7-14	Water Use Permit Application, incorporated by reference in subsection 40E-2.101(3), F.A.C.
1380	7-14	Water Use Permit Application Supplemental Form A – Agricultural Use, incorporated by reference in paragraph 40E-2.101(3)(a), F.A.C.
1381	7-14	Water Use Permit Application Supplemental Form B – Commercial/Industrial Use, incorporated by reference in paragraph 40E-2.101(3)(b), F.A.C.
1382	7-14	Water Use Permit Application Supplemental Form C – Landscape/Recreation Use, incorporated by reference in paragraph 40E-2.101(3)(c), F.A.C.
1383	7-14	Water Use Permit Application Supplemental Form D – Dewatering Use, incorporated by reference in paragraph 40E-2.101(3)(d), F.A.C.
1384	7-14	Water Use Permit Application Supplemental Form E – Public Supply Use, incorporated by reference in paragraph 40E-2.101(3)(e), F.A.C.
1386	7-14	Water Use Permit Application Supplemental Form F – Diversion and Impoundment Use, incorporated by reference in paragraph 40E-2.101(3)(f), F.A.C.
1387	7-14	Flow Meter Accuracy Calibration Report Form, incorporated by reference in paragraph 40E-2.091(2)(d), F.A.C.
1388	7-14	Alternative Method Calibration Report Form, incorporated by reference in paragraph 40E-2.091(2)(e), F.A.C.
1389	7-14	Crop (Freeze) Protection Form, incorporated by reference in pargraph 40E-2.091(2)(f), F.A.C.
1391	7-14	Notice of Intent to Use a Water Use Noticed General Permit, incorporated by reference in subsection 40E-2.101(4), F.A.C.
Subsection 62-532.900(1), F.A.C.	10-10	State of Florida Permit Application to Construct, Repair, Modify or Abandon a Well, incorporated by reference in subsection 40E-3.101(1), F.A.C.
Subsection 62-532.900(2), F.A.C.	10-10	State of Florida Well Completion Report, incorporated by reference in subsection 40E-3.411(1), F.A.C.
DEP Form 3	6-14	Application for Continuing Education Coursework Approval, Florida Water Well Contractor Continuing Education Program.
DEP Form 4	6-14	Application for Continuing Education Course Provider, Florida Water Well Contractor Continuing Education Program.

Rulemaking Authority 218.075, 373.044, 373.113, 373.171, 373.4136, 373.416, 695.03, 704.06 FS. Law Implemented 218.075, 373.113, 373.4135, 373.4136, 373.416, 704.06 FS. History–New 9-3-81, Amended 12-1-82, 3-9-83, Formerly 16K-1.90, Amended 7-26-87, 11-21-89, 1-4-93, Formerly 40E-1.901, Amended 5-11-93, 4-20-94, 10-3-95, 6-26-02, 8-14-02, 8-31-03, 9-16-03, 9-20-04, 2-12-06, 1-23-07, 8-7-07, 7-4-10, 12-15-11, 5-20-12, 10-23-12, 10-1-13, 7-14-14, 9-7-15, 8-7-16.

40E-1.702 Environmental Resource, Surface Water Management Permit and Consumptive Use Enforcement Guidelines. The following guidelines apply to the District's Environmental Resource, Consumptive Use and Surface Water Management Permit enforcement programs:

(1) Adverse impacts to water resources shall be recovered by requiring complete restoration.

(2) In those cases where restoration of the adverse impact is not environmentally feasible, the District shall require mitigation to offset such impacts.

(3) If the violation cannot be resolved in a negotiated, pro-active manner, it is the District's policy to seek full compliance with District permits and rules through appropriate legal action.

(4) The District shall provide for prompt resolution of enforcement matters in a manner that best protects the public interest and water resources.

(5) The District shall ensure that violators do not gain an economic advantage over competitors by circumventing District permitting requirements. Enforcement action shall be designed to remove any economic advantage resulting from the failure to comply with District permits and rules.

Rulemaking Authority 120.53(1), 373.044, 373.113 FS. Law Implemented 120.62, 120.69, 373.083(2), 373.119, 373.129, 373.136, 373.430, 373.433, 373.603 FS. History–New 10-3-95, Amended 7-2-98, 8-7-16.

40E-1.711 Orders of Corrective Action and Consent Orders.

(1) Orders of Corrective Action.

(a) An order of corrective action may accompany and be served with an administrative complaint upon an alleged violator pursuant to Rule 28-106.2015, F.A.C. An order of corrective action shall include a description of remedial action, with implementation timeframes, and shall, if applicable, set forth any damages, costs of investigation, or other demands that the District is authorized to recover pursuant to Chapter 373 or 403, F.S. Unless a responsive pleading and request for a Section 120.57, F.S., administrative hearing is filed within fourteen (14) days after service of the order of corrective action, the order for corrective action shall become final and effective, and shall constitute a final adjudication of the matters alleged, subject only to judicial review under Chapter 120 or 373, F.S.

(b) Orders of corrective action, which constitute final agency action, shall be enforceable pursuant to the enforcement provisions in Chapters 373 and 403, F.S.

(2) Consent Order.

(a) A consent order is final agency action wherein all parties and the District, by negotiation, have arrived at a resolution of alleged violations of law for the purpose of achieving full and expeditious compliance with Chapters 373 and 403, F.S., and District rules promulgated thereunder. A consent order, executed by all parties to an enforcement action, shall have the same force and effect as a final order entered by the District after a formal Section 120.57, F.S., administrative hearing, and shall be enforced in like manner.

(b) The resolution of an enforcement action which requires only the payment of civil penalties and costs but no corrective action shall be memorialized by use of a letter agreement. Any other remedial action required, such as mitigation, restoration, or procurement of permits shall be implemented by use of a consent order.

(c) Upon execution by the Chair of the Governing Board, or a duly authorized designee, and filing by the District Clerk, a consent order shall constitute agency action subject to the provisions of Rule 40E-0.109, F.A.C.

(3) A non-exempt system which is constructed, operated, altered, maintained, removed or abandoned without a permit shall be restored to its pre-violation condition, unless a permit application for such activity is approved by the District.

Rulemaking Authority 120.53, 373.044, 373.113 FS. Law Implemented 373.119, 373.129, 373.136, 373.430, 373.603 FS. History–New 5-11-93, Formerly 40E-1.614, Amended 10-3-95, 10-23-12.

40E-1.715 Civil Penalty Calculation.

(1) Consistency and equitable treatment are essential elements of the District's enforcement guidelines. Therefore, the District has developed two civil penalty matrices (CPM) for use in calculating appropriate civil penalties in enforcement actions. The Comsumptive Use CPM, October 2012, http://www.flrules.org/Gateway/reference.asp?No=Ref-01532, is incorporated by reference herein and utilized for violations of Chapters 40E-2, 40E-3, 40E-5, 40E-20 and 40E-21, F.A.C. The Environmental Resource CPM, October 2012, http://www.flrules.org/Gateway/reference.asp?No=Ref-01533, is incorporated by reference herein and utilized for violations of Chapters 40E-4, 40E-40, 40E-41, 40E-61, 40E-63 and 40E-400, F.A.C. Copies of the CPMs are also available at no cost by contacting the South Florida Water Management District Clerk's Office, 3301 Gun Club Road, West Palm Beach, FL 33405, (800) 432-2045, ext. 6436, or (561) 682-6436.

(2) The CPM is the initial basis for determining the appropriate amount for a particular penalty. The CPM reflects the District's statutory authority under Section 373.129, F.S., to seek civil penalties of up to $10,000 per day, per violation. The CPM is comprised of two principle components:

(a) The actual or potential harm to the public and the environment that may occur as a result of the violation; and,

(b) The extent of deviation from statutory or regulatory requirements.

(3) Because an economic advantage can be derived through avoidance of expenditures necessary to achieve compliance with District permitting rules and regulations, the District shall consider in its assessment of civil penalties any economic benefit which the violator may have gained through noncompliance.

(4) Multiple penalties shall be calculated for every violation which constitutes an independent and substantially distinguishable violation, or when the same person has violated the same requirement in substantially different locations.

(5) Multi-day penalties shall be calculated where daily advantage is being gained by the violator for an ongoing violation, computed by multiplying the original assessment amount by the number of days of noncompliance.

Rulemaking Authority 120.53(1), 373.044, 373.113, 373.333(1) FS. Law Implemented 120.69, 373.129, 373.209(3), 373.430, 373.603 FS. History–New 10-3-95, Amended 10-23-12.

40E-1.721 Complaints, District Investigations, Probable Cause Determinations and Notices of Violations.

(1) Any person may file a written complaint with the District alleging that a person is in violation of any of the provisions of Chapter 373, F.S., or provisions of Chapter 403, F.S., for which authority has been delegated to the District, or the rules promulgated thereunder or an order issued pursuant thereto. Any person may file a written complaint alleging that a lawfully issued District permit is causing a public or private nuisance. District investigations and probable cause determinations preliminary to District action are not subject to the provisions of Section 120.57, F.S., or the rules in this part promulgated thereunder.

(2) The complaint shall specify to the best of complainant's knowledge the identity of the alleged violator, the location and nature of the alleged violation, and any additional information deemed relevant or material by the complainant. The complaint must be signed by the complainant or the complainant's agent and contain an address or phone number where the complainant can be reached. The District shall request that the complainant to furnish any additional information reasonably necessary to aid in investigating the complaint.

(3) Upon receipt of a complaint filed pursuant to this section, the District shall conduct an investigation and make a determination of probable cause. Nothing in this rule shall preclude the District from conducting investigations and probable cause determinations as otherwise authorized or required by law.

(4) An investigation or determination of probable cause is a non-adversary executive function to discover or procure evidence as part of the fact finding function of the District. The District need not have an administrative complaint pending to conduct an investigation or make such a determination.

(5) Upon receipt of a field inspection or investigation report and upon a finding of probable cause, District staff are authorized to issue a Notice of Violation providing instructions for compliance with Chapter 373, F.S., and all applicable District rules. Nothing in this rule shall preclude the District from seeking injunctive relief or filing any other action that is authorized by Chapter 373, F.S.

Rulemaking Authority 120.53(1), 120.54(10), 373.044, 373.113 FS. Law Implemented 120.53(1), 120.57(4), 373.219(2), 373.229(2), 373.333(2), 373.429 FS. History–New 9-3-81, Formerly 16K-1.09, 16K-2.03(3), Amended 5-11-93, Formerly 40E-1.510, Amended 10-3-95.

40E-1.800 Lobbyist Registration.

(1) A person who is a "lobbyist" as defined in Section 112.3215, F.S., may not lobby the South Florida Water Management District (the "District") until he or she has registered as a lobbyist with the District. Registration shall be made by completing, under oath, the "Lobbyist Registration Form," which is incorporated by reference in subsection (7) below, and submitting that form to the District Clerk at the mail or email address provided in the form.

(2) A separate completed Lobbyist Registration Form must be submitted for each principal represented by the lobbyist before the District.

(3) For identifying and designating a principal's main business on the Authorization to Represent the Principal part of the Lobbyist Registration Form, the District adopts and incorporates by reference the 6-digit NAICS code published in the North American Industry Classification System – United States, 2012 which can be found at, http://www.flrules.org/Gateway/reference.asp?No=Ref-05266. Classification system information can be obtained by contacting the NAICS Association, 129 Lakeshore Drive, Rockaway, NJ 07866, or by visiting its website: www.naics.com.

(4) Changes to the information provided on a Lobbyist Registration Form must be reported to the District within 15 days by submitting a completed Lobbyist Registration Form and checking the box indicating the submitted form is for the purpose of changing previously filed information.

(5) A lobbyist may renew his or her registration to lobby by filing a completed Lobbyist Registration Form with the District and checking the box indicating the submitted form is for renewal purposes. Renewals must be filed before January 1 of each year.

(6) The principal of a lobbyist may cancel the lobbyist´s registration by submitting a completed "Lobbyist Registration Cancellation Form," which is incorporated by reference in subsection (7) below, informing the District that a particular lobbyist is no longer authorized to represent that principal. A lobbyist must cancel his or her registration with the District upon termination of his or her contract or other such employment relationship with the principal by promptly submitting a completed Lobbyist Registration Cancellation Form.

(7) The Lobbyist Registration Form, form number 1400, 5/2015 http://www.flrules.org/Gateway/reference.asp?No=Ref-05266, and the Lobbyist Registration Cancellation Form, form number 1402, 5/2015 http://www.flrules.org/Gateway/reference.asp?No=Ref-05266, are hereby incorporated by reference and may be obtained without cost from the District Clerk either at South Florida Water Management District, 3301 Gun Club Road, West Palm Beach, FL 33406, or at clerk@sfwmd.gov. These forms may also be downloaded from the District's website at: www.sfwmd.gov/opengov.

Rulemaking Authority 112.3261(8) FS. Law Implemented 112.3261 FS. History–New 5-14-15.

Rules of the
South Florida Water Management District

ENVIRONMENTAL RESOURCE PERMITS
CHAPTER 40E-4, F.A.C.

Effective: May 22, 2016

CHAPTER 40E-4
ENVIRONMENTAL RESOURCE PERMITS

40E-4.010 Review of Environmental Resource Permit Applications
40E-4.011 Policy and Purpose (Repealed)
40E-4.021 Definitions (Repealed)
40E-4.031 Implementation
40E-4.041 Permits Required (Repealed)
40E-4.0415 Permit Thresholds (Repealed)
40E-4.042 Formal Determination of Wetlands and Other Surface Waters (Repealed)
40E-4.051 Exemptions From Permitting (Repealed)
40E-4.0515 Exemptions From Specified Review Criteria (Repealed)
40E-4.052 Request for Exemption (Repealed)
40E-4.053 Conditions for Exemption (Repealed)
40E-4.054 Modification of Exempt Projects (Repealed)
40E-4.091 Publications, Rules and Interagency Agreements Incorporated by Reference
40E-4.101 Content of Permit Applications (Repealed)
40E-4.201 Forms and Instructions (Repealed)
40E-4.205 Permit Application Processing Fees (Repealed)
40E-4.301 Conditions for Issuance of Permits (Repealed)
40E-4.302 Additional Conditions for Issuance of Permits (Repealed)
40E-4.303 Environmental Resource Permit Authorization (Repealed)
40E-4.305 Conceptual Approvals (Repealed)
40E-4.311 Variances from Specified Review Criteria for Environmental Resource Permits (Repealed)
40E-4.321 Duration of Permits (Repealed)
40E-4.331 Modification of Permits (Repealed)
40E-4.341 District Revocation or Modification of Permits (Repealed)
40E-4.351 Transfer of Permits (Repealed)
40E-4.361 Conversion from Construction Phase to Operation Phase (Repealed)
40E-4.371 Abatement and Abandonment of a System (Repealed)
40E-4.381 General Conditions (Repealed)
40E-4.451 Emergency Authorization (Repealed)

40E-4.010 Review of Environmental Resource Permit Applications.

Environmental Resource permit applications are processed pursuant to the provisions of Section 120.60, F.S., Chapters 40E-1, 62-330 and 28-106, F.A.C.

Rulemaking Authority 120.54(5), 120.60, 373.4131 FS. Law Implemented 120.54(5), 120.60, 373.4131 FS. History–New 7-2-98, Amended 10-1-13.

40E-4.011 Policy and Purpose.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.086(1), 373.103(1), 373.103(4), 373.403-.443 FS. History–New 9-3-81, Formerly 16K-4.01, Amended 4-20-94, 10-3-95, 12-1-11, Repealed 10-1-13.

40E-4.021 Definitions.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.019, 373.403-.443, 403.031, 668.003, 668.004, 668.50, 704.06 FS. History–New 9-3-81, Amended 1-31-82, 12-1-82, Formerly 16K-1.05(1), Amended 7-1-86, 4-20-94, 10-3-95, 4-1-96, 10-1-06, 3-22-09, 11-11-09, 12-1-11, 5-20-12, Repealed 10-1-13.

40E-4.031 Implementation.

(1) The effective dates for the permit program developed pursuant to Chapter 373, Part IV, F.S., are:

(a) January 12, 1977, for the portion of the District formerly within the Ridge and Lower Gulf Coast Water Management District.

(b) March 2, 1974, for the remainder of the District.

(2) The rules implementing the Environmental Resource Permit program shall apply to all projects which do not have a complete permit application, as evidenced by a letter of completeness from the District on the effective date of the rule, unless the project is grandfathered pursuant to Section 373.414, F.S.

(3) Unless otherwise addressed by this rule, an application deemed complete prior to the effective date of a rule shall be governed by the rule in effect at the time the application became complete.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.403-.443 FS. History–New 9-3-81, Amended 4-20-94, 10-5-95.

40E-4.041 Permits Required.

Rulemaking Authority 373.044, 373.113, 373.406(5) FS. Law Implemented 373.103, 373.413, 373.416, 373.426 FS. History–New 9-3-81, Amended 12-1-82, Formerly 16K-4.03(1), 16K-4.07(1), 16K-4.09(1), Amended 1-23-94, 4-20-94, 10-3-95, 4-1-96, 1-7-97, 7-22-07, 12-1-11, Repealed 10-1-13.

40E-4.0415 Permit Thresholds.

Rulemaking Authority 373.044, 373.113, 373.406(5) FS. Law Implemented 373.118(1), 373.413(1) FS. History–New 10-3-95, Amended 5-28-00, 6-26-02, 4-14-03, 12-1-11, Repealed 10-1-13.

40E-4.042 Formal Determination of Wetlands and Other Surface Waters.

Rulemaking Authority 373.043, 373.113, 373.421(2) FS. Law Implemented 373.421(2) FS. History–New 10-3-95, Amended 7-22-07, 12-1-11, Repealed 10-1-13.

40E-4.051 Exemptions From Permitting.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.406, 373.413, 373.416, 403.813(1), (2) FS. History–New 9-3-81, Amended 1-31-82, 3-9-83, Formerly 16K-4.02, Amended 4-20-94, 10-3-95, 5-28-00, 9-2-01, 4-14-03, 9-9-07, 12-1-11, 5-20-12, Repealed 10-1-13.

40E-4.0515 Exemptions From Specified Review Criteria.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.406, 373.413, 373.416, 403.813(2) FS. History–New 10-3-95, Amended 5-28-00, Repealed 10-1-13.

40E-4.052 Request for Exemption.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.406, 373.413 FS. History–New 3-9-83, Repealed 4-20-94.

40E-4.053 Conditions for Exemption.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.406, 373.413 FS. History–New 3-9-83, Repealed 4-20-94.

40E-4.054 Modification of Exempt Projects.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.406, 373.413, 373.416 FS. History–New 3-9-83, Amended 4-20-94, 10-3-95, 5-28-00, Repealed 10-1-13.

40E-4.091 Publications, Rules and Interagency Agreements Incorporated by Reference.

(1) The following publications, rules and interagency agreements are incorporated by reference herein:

(a) “Environmental Resource Permit Applicant’s Handbook, Volume II For Use Within the Geographic Limits of the South

Florida Water Management District, May 19, 2016, [http://www.flrules.org/Gateway/reference.asp?No=Ref-06805], which incorporates the following forms or materials by reference:

1. U.S. Department of Agriculture, Soil Conservation Service, "Rainfall Frequency Atlas of Alabama, Florida, Georgia and South Carolina for Durations from 30 Minutes to 24 Hours and Return Periods from 1 to 100 years" (1978), http://www.flrules.org/Gateway/reference.asp?No=Ref-02975, referenced in Section 5.7.2(c);

2. Florida Department of Transportation "Drainage Manual, Appendix B: IDF-Curves, Precipitation Data, Rainfall Distributions" (August 2001), http://www.flrules.org/Gateway/reference.asp?No=Ref-02981, referenced in Section 5.7.2(d);

3. U.S. Department of Agriculture, Natural Resources Conservation Service, "National Engineering Handbook, Part 630, Chapter 10" (2004), http://www.flrules.org/Gateway/reference.asp?No=Ref-02983, referenced in Section 5.7.6(b);

4. Chapter 27, Article XIII, Wellfield Protection Ordinance, Broward County Code of Ordinances, last amended September 28, 1999, http://www.flrules.org/Gateway/reference.asp?No=Ref-00052, reference in Section 4.2.2(b)6.b;

5. Dade County Wellfield Protection Ordinance contour showing maximum limits (Section 24-43 Protection of Public Potable Water Supply Wells; Chapter 24 Environmental Protection; Code of Metropolitan Dade County, Florida; Codified through Ordinance No. 11-01, enacted January 20, 2011 (Supp. No. 68)), http://www.flrules.org/Gateway/reference.asp?No=Ref-00053, referenced in Section 4.2.2(b)6.c.

(b) Operating Agreement Concerning Regulation Under Chapter 373, Part IV, F.S., between South Florida Water Management District and Department of Environmental Protection, July 1, 2007, http://www.flrules.org/Gateway/reference.asp?No=Ref-00055.

(c) State water quality standards set forth in Chapter 62-4, F.A.C., (2/17/2016) [http://www.flrules.org/Gateway/reference.asp?No=Ref-06802], Chapter 62-302, F.A.C., (2/17/2016) [http://www.flrules.org/Gateway/reference.asp?No=Ref-06803], Chapter 62-520, F.A.C., (7/12/2009) [http://www.flrules.org/Gateway/reference.asp?No=Ref-02977], and Chapter 62-550, F.A.C., (7/7/2015) [http://www.flrules.org/Gateway/reference.asp?No=Ref-06804]. The state water quality standards are also defined and incorporated in Section 2.1.19 of the Applicant's Handbook, Volume II.

(d) Chapter 62-312, Part IV, F.A.C., "Additional Criteria for Dredging and Filling Within Outstanding Florida Waters in Monroe County," (2/16/2012), http://www.flrules.org/Gateway/reference.asp?No=Ref-02974.

(e) Delegation Agreement among the Florida Department of Environmental Protection, the South Florida Water Management District, and Broward County, (dated May 22, 2001), http://www.flrules.org/Gateway/reference.asp?No=Ref-00054.

(2) The documents listed in subsection (1) can also be obtained at no cost by contacting the South Florida Water Management District Clerk's Office, South Florida Water Management District, 3301 Gun Club Road, West Palm Beach, FL 33406, 1(800) 432-2045, ext. 6436, or (561) 682-6436.

Rulemaking Authority 373.044, 373.103, 373.113, 373.413, 373.418, 373.4131, 373.441 FS. Law Implemented 373.046, 373.413, 373.4131, 373.414, 373.4142, 373.416, 373.418, 373.426, 373.441 FS. History–New 9-3-81, Amended 1-31-82, 12-1-82, Formerly 16K-4.035(1), Amended 5-1-86, 7-1-86, 3-24-87, 4-14-87, 4-21-88, 11-21-89, 11-15-92, 1-23-94, 4-20-94, 10-3-95, 1-7-97, 12-3-98, 5-28-00, 8-16-00, 1-17-01, 7-19-01, 6-26-02, 6-26-02, 4-6-03, 4-14-03, 9-16-03, 12-7-04, 2-12-06, 10-1-06, 11-20-06, 1-23-07, 7-1-07, 7-22-07, 11-11-09, 7-1-10, 7-4-10, 12-15-11, 5-20-12, 10-1-13, 8-10-14, 5-22-16 (1)(c), 5-22-16 (1)(a).

40E-4.101 Content of Permit Applications.

Rulemaking Authority 373.016, 373.044, 373.113, 373.171, 668.003, 373.416, 668.004, 668.50 FS. Law Implemented 373.016, 373.117, 373.413, 373.416, 373.426, 668.003, 668.004, 668.50 FS. History–New 9-3-81, Amended 1-31-82, 12-1-82, Formerly 16K-4.03(2), 16K-4.07(2), 16K-4.09(2), Amended 7-1-86, 11-21-89, 4-20-94, 10-3-95, 5-28-00, 4-14-03, 8-14-03, 2-12-06, 10-1-06, 12-1-11, 5-20-12, Repealed 10-1-13.

40E-4.201 Forms and Instructions.

Rulemaking Authority 120.53(1), 373.044, 373.113, 373.118 FS. Law Implemented 120.53(1), 373.044, 373.113, 373.116, 373.118, 373.229, 373.413, 373.421 FS. History–New 10-3-95, Amended 12-1-11, Repealed 10-1-13.

40E-4.205 Permit Application Processing Fees.

Rulemaking Authority 373.044, 373.109, 373.113, 373.171, 373.421 FS. Law Implemented 373.109, 373.421 FS. History–New 10-3-95, Repealed 10-1-13.

40E-4.301 Conditions for Issuance of Permits.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.413, 373.416, 373.426 FS. History–New 9-3-81, Amended 1-31-82, 12-1-82, Formerly 16K-4.035(2), 16K-4.30, Amended 7-1-86, 3-24-87, 4-14-87, 7-9-87, 4-21-88, 4-20-94, 10-3-95, 4-1-96, 1-7-97, 7-22-07, 12-1-11, Repealed 10-1-13.

40E-4.302 Additional Conditions for Issuance of Permits.

Rulemaking Authority 373.044, 373.113, 373.171, 373.414(9) FS. Law Implemented 373.042, 373.409, 373.413, 373.414, 373.416, 373.426, 380.23 FS. History–New 10-3-95, Amended 1-7-97, 12-3-98, 5-28-00, 7-1-07, 7-22-07, 12-1-11, Repealed 10-1-13.

40E-4.303 Environmental Resource Permit Authorization.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.413, 373.416, 373.421 FS. History–New 10-3-95, Amended 12-1-11, Repealed 10-1-13.

40E-4.305 Conceptual Approvals.

Rulemaking Authority 373.044, 373.113, 373.171, 380.06(9) FS. Law Implemented 373.413, 373.416, 373.421(2), 380.06(9) FS. History–New 10-3-95, Amended 4-14-03, 12-1-11, Repealed 10-1-13.

40E-4.311 Variances from Specified Review Criteria for Environmental Resource Permits.

Rulemaking Authority 373.044, 373.113, 373.171, 373.414(17) FS. Law Implemented 403.201 FS. History–New 10-3-95, Amended 7-2-98, 6-12-00, Repealed by Section 3, Chapter 2012-31, Laws of Florida, 5-27-12.

40E-4.321 Duration of Permits.

Rulemaking Authority 373.044, 373.113, 668.003, 668.004, 668.50 FS. Law Implemented 373.413, 373.416, 373.419, 373.426, 668.003, 668.004, 668.50 FS. History–New 9-3-81, Amended 1-31-82, 12-1-82, Formerly 16K-4.07(4), Amended 7-1-86, 4-20-94, 10-3-95, 5-28-00, 10-1-06, 12-1-11, 5-20-12, Repealed 10-1-13.

40E-4.331 Modification of Permits.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.413, 373.416(1) FS. History–New 12-1-82, Formerly 16K-2.031(1), 16K-2.032(1)(a), Amended 7-1-86, 11-21-89, 4-20-94, 10-3-95, 12-1-11, Repealed 10-1-13.

40E-4.341 District Revocation or Modification of Permits.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.429 FS. History–New 12-1-82, Amended 7-1-86, 4-20-94, 10-3-95, 7-2-98, 5-28-00, Repealed 10-1-13.

40E-4.351 Transfer of Permits.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.413, 373.416(2) FS. History–New 9-3-81, Amended 12-1-82, Formerly 16K-4.07(4), Amended 4-20-94, 10-3-95, Repealed 10-1-13.

40E-4.361 Conversion from Construction Phase to Operation Phase.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.413, 373.416 FS. History–New 10-3-95, Amended 1-7-97, 4-14-03, 9-16-03, 7-22-07, 12-1-11, Repealed 10-1-13.

40E-4.371 Abatement and Abandonment of a System.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.426, 373.433 FS. History–New 10-3-95, Repealed 4-14-03.

40E-4.381 General Conditions.

Rulemaking Authority 373.044, 373.113, 373.171, 668.003, 668.004, 668.50 FS. Law Implemented 373.116, 373.229, 373.413, 373.416, 373.421, 373.422, 373.426, 668.003, 668.004, 668.50 FS. History–New 9-3-81, Amended 1-31-82, 12-1-82, Formerly 16K-4.07(3), 16K-4.38, Amended 7-1-86, 4-20-94, 10-3-95, 1-7-97, 4-14-03, 9-16-03, 10-1-06, 7-22-07, 12-1-11, Repealed 10-1-13.

40E-4.451 Emergency Authorization.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.119(2), 373.413 FS. History–New 9-3-81, Formerly 16K-4.13, Amended 10-3-95, 7-2-98, Repealed 10-1-13.

Rules of the
South Florida Water Management District

SURFACE WATER MANAGEMENT BASIN AND RELATED CRITERIA CHAPTER 40E-41, F.A.C.

Effective: August 7, 2016

CHAPTER 40E-41
SURFACE WATER MANAGEMENT BASIN AND RELATED CRITERIA

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40E-41.011 Policy and Purpose.

The rules in this part establish supplemental Environmental Resource Permit criteria for specified basins which insure that development within named basins incorporates the appropriate environmental, water quantity and water quality control measures necessary to protect the integrity of the public investments in the basin and minimize adverse impacts to the water resources of the District. Criteria delineated in this chapter are in addition to criteria specified in Chapter 40E-4 or 62-330, F.A.C. The criteria, exemptions and additional requirements specified in this part are not intended to supersede or rescind the terms and conditions of any valid Environmental Resource Conceptual Approval, Construction or Operation Permit or Surface Water Management Conceptual Approval, Construction or Operation Permit, or certification order issued pursuant to Sections 403.501-.518 and 403.52-.5365, F.S., prior to the effective date of this part. In addition, the rules

establish additional criteria for the named basins which insure that the use of the District's works or land is consistent with the policies of the District.

Rulemaking Authority 373.044, 373.113, 373.4131 FS. Law Implemented 373.413, 373.4131, 373.416 FS. History–New 9-3-81, Formerly 16K-34.01, Amended 4-11-85, 4-20-94, 10-21-01, 10-1-13.

40E-41.020 Scope of Part I.

The rules in this part shall apply to projects within the Western C-9 Basin.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.413, 373.416 FS. History–New 4-11-85.

40E-41.023 Western Canal 9 Basin Boundary.

The Western Canal 9 Basin is generally depicted in Figure 41-1 (August 2016) [http://www.flrules.org/Gateway/reference.asp?No=Ref-07149], incorporated by reference herein, and specifically shall include the area within the following boundaries: In Dade and Broward Counties, Florida, as follows:

BEGINNING at the Southeast corner of Section 12, Township 52 South, Range 40 East; Thence, bear Westerly along the Section Lines to the intersection thereof with State Road No. 25; Thence, Northwesterly and Northerly along State Road No. 25 to the intersection thereof with State Road No. 820; Thence, Easterly along State Road No. 820 to the intersection thereof with the East line of Section 14, Township 51 South, Range 40 East; Thence, Southerly along Section Lines to the Northwest corner of Section 1, Township 52 South, Range 40 East; Thence, Easterly along the Section Line to the Northeast corner of said Section 1; Thence, Southerly along the Section Lines to the Southeast corner of said Section 12 to the POINT OF BEGINNING. Figure 41-1 is available at no cost by contacting the South Florida Water Management District Clerk's Office, 3301 Gun Club Road, West Palm Beach, FL 33406, (800)432-2045, ext. 2729 or (561)682-2729.

Rulemaking Authority 373.044, 373.113, 373.4131 FS. Law Implemented 373.413, 373.4131, 373.416 FS. History–New 9-3-81, Formerly 16K-34.02, Amended 8-7-16.

40E-41.033 Implementation.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.413, 373.416 FS. History–New 10-2-77, Formerly 16K-34.03, Amended 4-20-94, Repealed 11-5-15.

40E-41.043 Application of Part I.

All projects located within the Western Canal 9 Basin requiring permits pursuant to Chapter 62-330, F.A.C., shall be constructed, altered, operated, maintained and abandoned in accordance with the criteria specified in Rules 62-330.301, 62-330.302 and 40E-41.063, F.A.C., unless specifically exempted in Rule 62-330.051, F.A.C. The most restrictive criteria will be applicable unless the applicant can demonstrate to the District's satisfaction through accepted methodology that the purpose and intent of this part will be fulfilled using alternate criteria.

Rulemaking Authority 373.044, 373.113, 373.4131 FS. Law Implemented 373.413, 373.4131, 373.416, 373.426 FS. History–New 9-3-81, Formerly 16K-34.04, Amended 4-20-94, 10-1-13.

40E-41.053 Exemptions.

Projects which have received final approval of construction plans, or equivalent approval, from local government prior to the effective date of this part are hereby exempt from the fill encroachment criteria specified in subsection 40E-41.063(4), F.A.C. All other criteria specified in Rules 62-330.301, 62-330.302 and

40E-41.063, F.A.C., must be strictly met.

Rulemaking Authority 373.044, 373.113, 373.4131 FS. Law Implemented 373.413, 373.4131, 373.416 FS. History–New 9-3-81, Formerly 16K-34.05, Amended 4-20-94, 10-1-13.

40E-41.063 Conditions for Issuance of Permits in the Western Canal 9 Basin.

(1) For design purposes the 100-year, 25-year and 10-year flood frequency elevations are established as 7.3 feet, 6.8 feet and 6.5 feet mean sea level, respectively.

(2) For systems designed to be pumped from fully diked areas, discharge shall be limited to three-fourths of an inch per twenty-four hours, or the criteria in Rules 62-330.301 and 62-330.302, F.A.C., whichever is more restrictive. In addition, no pumping shall be permitted when Canal 9 stages at pump tailwater exceed the 25-year peak elevation of 6.8 feet mean sea level.

(3) All direct connections to Canal 9 shall be designed to prevent lowering of the groundwater table below elevation 2.5 feet mean sea level. All indirect connections to Canal 9 shall be designed to prevent lowering of the groundwater table by installing the discharge facilities at a discharge elevation no lower than six inches below average existing ground elevation for the project. Nothing in this subsection shall be construed to preclude the construction and operation of discharge facilities designed to temporarily lower the groundwater table below these elevations immediately prior to the arrival of a major storm event.

(4) Fill encroachment criteria–

(a) The volume encroached by development between average existing ground surface and elevation 7.0 feet mean sea level shall not exceed 2.0 feet times the total area of the property.

(b) For diked areas with on-site retention of runoff, the area diked shall not exceed the encroachment volume specified in paragraph (a) divided by the difference between average existing ground elevation within the dike and elevation 5.75 feet mean sea level. This will require all such projects on land of average elevation less than 3.75 feet mean sea level to preserve some area outside of the dikes with no fill. The preserved area shall be located so as to preserve natural basin flow patterns for lands outside the dikes.

(c) Typical development schemes using these criteria are depicted in Figure 41-2 (August 2016) [http://www.flrules.org/Gateway/reference.asp?No=Ref-07150], incorporated by reference herein, and available at no cost by contacting the South Florida Water Management District Clerk's Office, 3301 Gun Club Road, West Palm Beach, FL 33406, (800)432-2045, ext. 2729 or (561)682-2729.

Rulemaking Authority 373.044, 373.113, 373.4131 FS. Law Implemented 373.413, 373.4131, 373.416 FS. History–New 9-3-81, Formerly 16K-34.06, Amended 4-20-94, 10-1-13, 8-7-16.

40E-41.091 Publications, Rules and Interagency Agreements Incorporated by Reference.

Rulemaking Authority 120.54(8), 373.044, 373.046, 373.113, 373.171, 373.414, 403.812 FS. Law Implemented 120.54(8), 373.046, 373.403, 373.413, 373.414, 373.416, 373.429 FS. History–New 11-15-92, Amended 1-23-94, 4-20-94, 10-3-95, Repealed 11-5-15.

40E-41.120 Scope of Part II.

The rules in this part shall apply to projects within the Kissimmee River Basin.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.413, 373.416 FS. History–New 5-1-85.

40E-41.121 Definitions.

When used in this Part:

(1) "Pre-project" means the hydrologic conditions which existed prior to the construction of the canal known as C-38.

(2) "Floodplain" means that area depicted on Figure 41-3, Plates 1 through 5, (August 2016) [http://www.flrules.org/Gateway/reference.asp?No=Ref-07151], incorporated by reference herein, and available at no cost by contacting the South Florida Water Management District Clerk's Office, 3301 Gun Club Road, West Palm Beach, FL 33406, (800)432-2045, ext. 2729 or (561)682-2729.

Rulemaking Authority 373.044, 373.113, 373.4131 FS. Law Implemented 373.413, 373.4131, 373.416 FS. History–New 5-1-85, Amended 12-1-11, 8-7-16.

40E-41.123 Kissimmee River Basin Boundary.

The Kissimmee River Basin boundary is generally described in Figure 41-4 (August 2016) [http://www.flrules.org/Gateway/reference.asp?No=Ref-07152], incorporated by reference herein, and shall specifically include the area within the following boundaries:

Begin at the intersection of the Southerly right of way line of U.S. 98 (S. R. 700) and the West line of Section 16, Township 35 South, Range 31 East; Thence, Northerly along said West line of Section 16 and Section 9, Township 35 South, Range 31 East, to the Southwest corner of Section 4, Township 35 South, Range 31 East; Thence, Easterly along the South line of said Section 4 to the Southeast corner of said Section 4; Thence, Northerly along the East line of said Section 4 to the Southeast corner of Section 33, Township 34 South, Range 31 East; Thence, Westerly along the South line of said Section 33 to the Southwest corner of said Section 33; Thence, Northerly along the section lines to the Southeast corner of Section 20, Township 34 South, Range 31 East; Thence, Westerly along the section lines to the Southwest corner of Section 19, Township 34 South, Range 31 East and the range line between Ranges 30 and 31 East; Thence, Northerly along said range line to the Southeast corner of Section 36, Township 32 South, Range 30 East on the Polk-Highlands County line; Thence, Westerly along said Polk-Highlands County line, also being the section line to the Southwest corner of said Section 36; Thence, Northerly along the section lines to the Southeast corner of Section 11, Township 32 South, Range 30 East; Thence, Westerly along the South line of said Section 11 to the Southwest corner of said Section 11; Thence, Northerly along the section lines to the Southeast corner of Section 34, Township 31 South, Range 30 East; Thence, Westerly along the South line of said Section 34 to the Southwest corner of said Section 34; Thence, Northerly along the section lines to the Southeast corner of Section 16, Township 31 South, Range 30 East; Thence, Westerly along the South line of said Section 16 to the Southwest corner of the East one-half (E 1/2) of said Section 16; Thence, Northerly along the one-half section lines to the Northwest corner of the West one-half (W 1/2) of Section 4, Township 31 South, Range 30 East, on the township line between Townships 30 and 31 South; Thence, Easterly along said township line to the Northeast corner of the West one-half (W 1/2) of Section 5, Township 31 South, Range 31 East; Thence, Southerly along the one-half section line of said Section 5 to the Southeast corner of said West one-half (W 1/2) of Section 5; Thence, Easterly along the section lines to the Southwest corner of Section 4, Township 31 South, Range 32 East; Thence, Northerly along the West line of said Section 4 to the Northwest corner of said Section 4 and the township line between Townships 30 and 31 South; Thence, Easterly along said township line to the Northeast corner of Section 6, Township 31 South, Range 33 East; Thence, Southerly along the East line of said Section 6 to the Northwest corner of Section 8, Township 31 South, Range 33 East; Thence, Easterly along the North line of said Section 8, to the Northeast corner of said Section 8; Thence, Southerly along the section lines to the Northwest corner of Section 28, Township 31 South, Range 33 East; Thence, Easterly along the North line of said Section 28, Township 31 South, Range 33 East; Thence, Easterly along the North line of said Section 28 to the Northeast corner of the West one-half (W 1/2) of said Section 28; Thence, Southerly along the one-half section line to the Northwest corner of the East one-half (E 1/2) of Section 33, Township 31 South, Range 33 East; Thence, Easterly along the North line of said Section 33 to the Northeast corner of said Section 33 and the Easterly boundary line of the South Florida Water Management District; Thence, Southerly along the section lines and the said Easterly boundary line of the South Florida

Water Management District to the Osceola-Okeechobee County Line and the Southeast corner of Section 33, Township 32 South, Range 33 East; Thence, Easterly continuing along said Easterly boundary line and said County Line to the Northwest corner of Section 3, Township 33 South, Range 34 East; Thence, Southerly along the West line of said Section 3, to the Southwest corner of said Section 3; Thence, Easterly along the South line of said Section 3 to the Southeast corner of said Section 3 and the East boundary of the South Florida Water Management District; Thence, Southerly, continuing along said Easterly boundary line and along the section lines to the Southeast corner of Section 34, Township 34 South, Range 34 East; Thence, Easterly, continuing along said Easterly boundary line and the township line between Townships 34 and 35 South, to the Northeast corner of Section 1, Township 34 South, Range 34 East; Thence, Southerly along the East line of said Section 1 to the Southeast corner of the North one-half (N 1/2) of said Section 1; Thence, Westerly along the one-half section line to the Southwest corner of the North one-half (N 1/2) of said Section 1; Thence, Southerly along the West line of said Section 1 to the Northeast corner of Section 11, Township 35 South, Range 34 East; Thence, Westerly along the North line of said Section 11, to the Northeast corner of Section 10, Township 35 South, Range 34 East; Thence, Southerly along the East line of said Section 10 to the Southeast corner of the North one-half (N 1/2) of said Section 10; Thence, Westerly along the one-half section line to the Southwest corner of said North one-half (N 1/2) of Section 10; Thence, Southerly along the West line of said Section 10 to the Northeast corner of Section 16, Township 35 South, Range 33 East; Thence, Westerly along the North line of said Section 16 to the Northwest corner of the East one-half (E 1/2) of said Section 16; Thence, Southerly along the one-half section lines to the Southwest corner of the East one-half (E 1/2) of Section 28, Township 35 South, Range 34 East; Thence, Easterly along the section lines to the Northeast corner of the West one-half (W 1/2) of Section 34, Township 35 South, Range 34 East; Thence, Southerly along the one-half section lines to the Southeast corner of the West one-half (W 1/2) of Section 3, Township 36 South, Range 34 East; Thence, Westerly along the section lines to the Northeast corner of the West one-half (W 1/2) of Section 9, Township 36 South, Range 34 East; Thence, Southerly along the one-half section lines to the Southwest corner of the East one-half (E 1/2) of Section 16, Township 36 South, Range 34 East; Thence, Easterly along the section line to the Northeast corner of Section 21, Township 36 South, Range 34 East; Thence, Southerly along the section lines to the Northwest corner of Section 34, Township 36 South, Range 34 East; Thence, Easterly along the North line of said Section 34, to the Northeast corner of said Section 34; Thence, Southerly along the East line of said Section 34 to the Northeast corner of Section 3, Township 37 South, Range 34 East; Thence, Westerly to the Northwest corner of the East one-half (E 1/2) of said Section 3; Thence, Southerly along the one-half section line to the intersection thereof with the Southerly right of way line of the Seaboard Coast Line Rail Road (The Family Line); Thence, Northwesterly along said Southerly right of way line to the intersection thereof with the West line of Section 33, Township 36 South, Range 34 East; Thence, Southerly along the section lines to the Northeast corner of Section 20, Township 37 South, Range 34 East; Thence, Westerly along the North line of said Section 20 to the Northwest corner of said Section 20; Thence, Southerly along the section lines to the intersection thereof with the Southerly right of way line of South Florida Water Management District's Levee 48 Tieback; Thence, Westerly along said Southerly right of way line and the Southerly right of way line of South Florida Water Management District's Canal 41A to the intersection thereof with the West line of Section 35, Township 37 South, Range 33 East; Thence, Northerly along the section lines to the intersection thereof with the Southerly right of way line of State Road 70; Thence, Westerly along said Southerly right of way line of State Road 70 to the intersection thereof with the West line of Section 29, Township 37 South, Range 33 East; Thence, Northerly along the section lines to the Southeast corner of Section 7, Township 37 South, Range 33 East; Thence, Westerly along the South line of said Section 7 to the Southwest corner of the East one-half (E 1/2) of said Section 7; Thence, Northerly along the one-half section line of said Section 7 to the Northwest corner of said East one-half (E 1/2) of Section 7; Thence, Westerly along the section lines to the Southwest corner of the East one-half (E 1/2)

of Section 1, Township 37 South, Range 32 East; Thence, Northerly along the one-half section line of said Section 1 to the Northwest corner of the East one-half (E 1/2) of said Section 1; Thence, Westerly along the North line of said Section 1 to the Northwest corner of said Section 1; Thence, Northerly along the section lines to the Southeast corner of Section 14, Township 36 South, Range 32 East; Thence, Westerly along the section lines to the Southwest corner of the East one-half (E 1/2) of Section 17, Township 36 South, Range 32 East; Thence, Northerly along the one-half section lines to the Southeast corner of the Northwest one-quarter (NW 1/4) of Section 8, Township 36 South, Range 32 East; Thence, Westerly along the South line of said Northwest one-quarter (NW 1/4) of Section 8 and the South line of the North one-half (N 1/2) of Section 7, Township 36 South, Range 32 East to the Southwest corner of said North one-half (N 1/2) of Section 7 and the range line between Ranges 31 and 32 East; Thence, Northerly along said range line to the Northeast corner of Section 1, Township 36 South, Range 31 East and the Township line between Township lines 35 and 36 South; Thence, Westerly along said township line to the Southwest corner of Section 36, Township 35 South, Range 31 East; Thence, Northerly along the West line of said Section 36 to the Southeast corner of Section 26, Township 35 South, Range 31 East; Thence, Westerly to the Southwest corner of said Section 26; Thence, Northerly along the section lines to the intersection thereof with the Southerly right of way line of U.S. 98 (S.R. 700); Thence, Westerly along said Southerly right of way line to the West line of Section 16, Township 35 South, Range 31 East and the POINT OF BEGINNING.

Figure 41-4 is available at no cost by contacting the South Florida Water Management District Clerk's Office, 3301 Gun Club Road, West Palm Beach, FL 33406, (800)432-2045, ext. 2729 or (561)682-2729.

Rulemaking Authority 373.044, 373.113, 373.4131 FS. Law Implemented 373.413, 373.4131, 373.416 FS. History–New 5-1-85, Amended 8-7-16.

40E-41.133 Implementation.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.413, 373.416 FS. History–New 5-1-85, Repealed 11-5-15.

40E-41.143 Application of Part II.

(1) All projects located within the Kissimmee River Basin requiring permits pursuant to Chapter 62-330, F.A.C., shall be constructed, altered, operated, maintained and abandoned in accordance with the criteria specified in Rules 62-330.301, 62-330.302 and 40E-41.163, F.A.C., unless specifically exempted by Section 373.406, F.S..

(2) The criteria set forth in Rule 40E-41.163, F.A.C., shall be considered more restrictive than that set forth in Rule 62-330.301 and 62-330.302, F.A.C. The most restrictive criteria will be applicable unless the applicant can demonstrate through accepted scientific and technical methodology that the purpose and intent of this part will be fulfilled by the use of alternate criteria.

(3) All projects located within the Kissimmee River Basin requiring permits pursuant to Rules 40E-6.041 and 40E-6.331, F.A.C., shall comply with the criteria set forth in Rules 40E-6.121, 40E-6.221 and 40E-41.165, F.A.C.

(4) The criteria set forth in Rule 40E-41.165, F.A.C., shall be considered more restrictive than that set forth in Rule 40E-6.121 and 40E-6.221, F.A.C. The most restrictive criteria will be applicable.

Rulemaking Authority 373.044, 373.113, 373.4131 FS. Law Implemented 373.085, 373.086, 373.413, 373.4131, 373.416 FS. History–New 5-1-85, Amended 4-20-94, 10-1-13.

40E-41.160 Content of Application.

All projects located within the Kissimmee River Basin requiring permits pursuant to Chapter 62-330, F.A.C., shall submit the information specified by Rule 62-330.060, F.A.C., as appropriate, and the following

information:

(1) For projects wholly or partially within the floodplain the status of the project as a development of regional impact must be indicated by a binding letter issued by the Department of Economic Opportunity.

(2) For projects requiring a permit under Chapter 40E-6, F.A.C., the applicant shall submit all information required under Rule 40E-6.101, F.A.C.

Rulemaking Authority 373.044, 373.113, 373.4131 FS. Law Implemented 373.413, 373.4131, 373.416 FS. History–New 5-1-85, Amended 4-20-94, 10-1-13, 8-7-16.

40E-41.163 Conditions for Issuance of Surface Water Management Permits in the Kissimmee River Basin.

(1) Allowable discharge for projects within the Kissimmee River Basin shall be based upon the post-development discharge rate not exceeding the pre-project development discharge rate during a design storm of a 10 year, 3 day duration.

(2) No net encroachment into the floodplain will be allowed. Any water storage volume removed from the floodplain must be accommodated by an equal volume of open storage compensation.

(3) Projects within the St. Johns River Water Management District which require a permit from the South Florida Water Management District to drain into the Kissimmee River Basin shall comply with the criteria set forth in this part.

(4) Other than an approved drainage connection to the Kissimmee River, the district works or land may not be utilized as part of the applicant's project.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.085, 373.413, 373.416 FS. History–New 5-1-85.

40E-41.165 Conditions for Issuance of Right of Way Permits in the Kissimmee River Basin.

(1) Use of the district's works or lands which may interfere with the proposed Kissimmee River restoration shall not be allowed.

(2) Any drainage connection to the Kissimmee River must be part of a surface water management system approved under Rule 40E-41.163, F.A.C.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.085, 373.086, 373.413 FS. History–New 5-1-85.

40E-41.220 Scope and Policy of Part III.

The rules in this part shall apply to new construction in the C-51 Basin.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.085, 373.413, 373.416 FS. History–New 5-13-87.

40E-41.221 Definitions.

When used in this Part:

(1) "Basin" means the C-51 Basin as legally described in Rule 40E-41.223, F.A.C., (Basin Boundary) and as depicted on Figure 41-5 (November 11, 2015) [http://www.flrules.org/Gateway/reference.asp?No=Ref-05950], incorporated by reference herein.

(2) "Western C-51 Basin" means that portion of the C-51 Basin west of State Road Seven as described in subsection 40E-41.223(1), F.A.C. (Western Basin Boundary) and depicted on Figure 41-6 (November 11, 2015) [http://www.flrules.org/Gateway/reference.asp?No=Ref-05951], incorporated by reference herein.

(3) "Eastern C-51 Basin" means that portion of the C-51 Basin east and west of State Road Seven as

described in subsection 40E-41.223(2), F.A.C. (Eastern Basin Boundary) and depicted on Figure 41-7 (November 11, 2015) [http://www.flrules.org/Gateway/reference.asp?No=Ref-05952], incorporated by reference herein. Figures 41-5, 41-6 and 41-7 can also be obtained at no cost by contacting the South Florida Water Management District Clerk's Office, South Florida Water Management District, 3301 Gun Club Road, West Palm Beach, FL 33406, 1(800)432-2045, ext. 6436, or (561)682-6436.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.085, 373.413, 373.416 FS. History–New 5-15-87, Amended 11-11-15.

40E-41.223 C-51 Basin Boundary.

The C-51 Basin is generally depicted in Figures 41-5, 41-6 and 41-7 and specifically includes land described below.

(1) Western C-51 Basin Boundary. Begin at the intersection of S. R. 80 (Southern Blvd.) and S. R. 7 (U.S. Highway No. 441) in Section 36, Township 43 South, Range 41 East; thence, westerly along S. R. 80 1000 feet; thence, southerly along a line 1000 feet west of and parallel with S. R. 7 to the north line of Section 1, Township 44 South, Range 41 East; thence, westerly along the north line of Section 1, Township 44 South, Range 41 East to the east line of Section 2, Township 44 South, Range 41 East; thence, southerly along the east line of Sections 2, 11 and 14, Township 44 South, Range 41 East to the southeast (S.E.) corner of said Section 14; thence, westerly along the south line of Sections 14, 15, 16, 17 and 18, Township 44 South, Range 41 East to the range line between Ranges 40 and 41 East; thence, southerly along said range line to the intersection thereof with South Florida Water Management District's Levee 40; thence, northwesterly and northerly along said Levee 40 and along Levee 8 to the south line of Section 21, Township 43 South, Range 40 East; thence, easterly along the south line of Sections 21 and 22, Township 43 South, Range 40 East to the southeast (S.E.) corner of said Section 22; thence, northerly along the east line of said Section 22 to the northeast (N.E.) corner of said Section 22; thence, westerly along the south line of Section 15, Township 43 South, Range 40 East to the southwest (S.W.) corner of said Section 15; thence, northerly along the west line of Sections 15 and 10, Township 43 South, Range 40 East to the intersection thereof with the "M" Canal of the City of West Palm Beach; thence, northerly, northeasterly and easterly along said "M" Canal to the range line between Ranges 41 and 42 East; thence, southerly along said range line to the southwest (S.W.) corner of Section 19, Township 43 South, Range 42 East; thence, southerly along S.R. 7 to the Point of Beginning.

(2) Eastern C-51 Basin Boundary.

(a) Begin at the intersection of the Florida East Coast Railway and SR 802 (Lake Worth Road) in Section 21, Township 44 South, Range 43 East; thence, Westerly along SR 802 to SR 7 (U.S. Highway No. 441); thence, North along the East line of Section 25, Township 44 South, Range 41 East to the Northeast (N.E.) corner of said Section 25; thence, Westerly along the North line of said Section 25 to the Southwest (S.W.) corner of Section 24, Township 44 South, Range 41 East; thence, North along the west line of Sections 24, 13, 12, and 1, Township 44 South, Range 41 East to the Northwest (N.W.) corner of said Section 1; thence, Easterly along the North line of said Section 1 to a line that is 1,000 feet west of and parallel with the East line of Section 36, Township 43 South, Range 41 East; thence, North along said line to the intersection thereof with Canal 51; thence, Easterly along Canal 51 to SR 7; thence, North along SR 7 to the Southwest (S.W.) corner of Section 19, Township 43 South, Range 42 East; thence, North along the West line of said Section 19 to the Northwest (N.W.) corner of said Section 19; thence, Easterly along the North line of said Section 19 and the North line of Section 20, Township 43 South, Range 42 East to the Southwest (S.W.) corner of Section 16, Township 43 South, Range 42 East; thence, Northerly along the West line of said Section 16 to the Northwest (N.W.) corner of said Section 16; thence, Easterly along the North line of said Section 16 to the Southwest (S.W.) corner of Section 10, Township 43 South, Range 42 East; thence, Northerly along the West line of said Section 10 to the Northwest (N.W.) corner of said Section 10; thence, Easterly along the North line of said

Section 10 to Florida's Turnpike; thence, Southerly along Florida's Turnpike to the North line of Section 23, Township 43 South, Range 42 East; thence, Easterly along the North line of said Section 23 to the Northeast (N.E.) corner of said Section 23; thence, Southerly along the East line of said Section 23 to SR 704 (Okeechobee Road); thence, Easterly along SR 704 to Palm Beach Lakes Boulevard; thence, Northeasterly along Palm Beach Lakes Boulevard to Interstate 95; thence, Southeasterly along I-95 to Congress Avenue; thence, Northeasterly along Congress Avenue to the North line of Section 20, Township 43 South, Range 43 East; thence, Easterly along the North line of said Section 20 to the Westerly bank of the canal connecting Clear Lake and Lake Mangonia; thence, Northerly, Easterly, Southerly, and Westerly along the shore of Lake Mangonia to the Easterly bank of said canal to the Northerly shore of Clear Lake; thence, Easterly and Southerly along the shore of Clear Lake to the Westerly extension of First Street; thence, Easterly along said extension and along First Street to the Florida East Coast Railway; thence, Southerly along the Florida East Coast Railway to the Point of Beginning.

(b) And Begin at the Northeast (N.E.) corner of Section 36, Township 44 South, Range 41 East on SR 7; thence Southerly along SR 7 to the Southeast (S.E.) corner of Section 24, Township 45 South, Range 41 East; thence, Westerly along the South line of said Section 24, and the east one-half of Section 23, Township 45 South, Range 41 East to the intersection thereof with South Florida Water Management District's Levee 40; thence, Northwesterly along said Levee 40 to the Southwest (S.W.) corner of Section 33, Township 44 South, Range 41 East; thence, Easterly along the South line of said Section 33 and the South line of Section 34; Township 44 South, Range 41 East to the Southwest (S.W.) corner of Section 35, Township 44 South, Range 41 East; thence, North along the West line of said Section 35 to the Northwest (N.W.) corner of said Section 35; thence, Easterly along the North line of said Section 35 and the North line of Section 36, Township 44 South, Range 41 East to the Northeast (N.E.) corner of said Section 36 and the POINT OF BEGINNING.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.085, 373.413, 373.416 FS. History–New 5-15-87.

40E-41.233 Implementation.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.085, 373.413, 373.416 FS. History–New 5-15-87, Repealed 11-5-15.

40E-41.243 Application of Part III.

(1) All projects located within the C-51 Basin which propose to discharge directly or indirectly into C-51 Canal or which are connected directly or indirectly in the C-51 Basin and which require permits pursuant to Rule 62-330.020, F.A.C., or this part shall be constructed, altered, operated, maintained and abandoned in accordance with the criteria specified in Rules 62-330.301, 62-330.302 and 40E-41.263, F.A.C., unless specifically exempted by Rule 40E-4.051, F.A.C.

(2) The criteria in Rule 40E-41.263, F.A.C., shall apply unless the applicant can demonstrate through accepted scientific and technical methodology that the purpose and intent of this rule chapter is fulfilled by the use of alternate criteria.

(3) All projects located within the C-51 Basin requiring permits pursuant to Rules 40E-6.041, F.A.C., (Works of the District, Consent Required), and Rule 40E-6.331, F.A.C., (Works of the District, Modification of Permits), shall comply with the criteria set forth in Rules 40E-6.301, F.A.C., (Works of the District, Conditions for Issuance of Permits), and Rule 40E-41.265, F.A.C., (Conditions for Issuance of Right-of-Way Permits in the C-51 Basin).

(4) The criteria in Rule 40E-41.265, F.A.C., (Conditions for Issuance of Right-of-Way Permits in the C-51 Basin), shall apply unless the applicant can demonstrate through accepted scientific and technical methodology that the purpose and intent of this rule chapter is fulfilled by the use of alternate criteria.

Rulemaking Authority 373.044, 373.113, 373.4131 FS. Law Implemented 373.085, 373.086, 373.413, 373.4131, 373.416 FS. History–New 5-15-87, Amended 4-20-94, 12-1-11, 10-1-13.

40E-41.260 Content of Application.

(1) All projects located within the C-51 Basin which require a permit from the District shall submit detailed plans showing the existing topography and proposed finished grading and detailed design calculations which demonstrate the proposed project's effect on net storage from the Basin for events up to and including the 100 year frequency event.

(2) In addition all projects in the C-51 Basin which require permits pursuant to Chapter 62-330, F.A.C., shall submit the information specified by Rule 62-330.060, F.A.C., and all projects located in the C-51 Basin which require a permit pursuant to Rule 40E-6.041, F.A.C., shall submit the information required under Rule 40E-6.101, F.A.C.

Rulemaking Authority 373.044, 373.113, 373.4131 FS. Law Implemented 373.085, 373.413, 373.4131, 373.416 FS. History–New 5-15-87, Amended 4-20-94, 12-1-11, 10-1-13.

40E-41.263 Conditions for Issuance of Permits in the C-51 Basin.

The following criteria shall apply:

(1)(a) The allowable discharge shall be based upon the post development discharge rate not exceeding the pre-development discharge rate during a design storm of a 10-year 3-day duration as depicted on Figure 41-8 (November 11, 2015) [http://www.flrules.org/Gateway/reference.asp?No=Ref-05953], incorporated by reference herein. Pre-development discharge rate shall be calculated by the formula:

Q = C sub e X A/640

Where

Q = allowable flow in cubic feet per second (cfs);

A = Project size in acres;

C sub e = discharge coefficient under existing/present conditions

(b) This criteria is not intended to limit inflows to the C-51 Canal to the rates specified in paragraph (a) above during non-flood conditions. Discharge capacity up to 27 CSM during non-flood conditions shall be considered on a case-by-case basis pursuant to the criteria in the "Environmental Resource Permit Applicant's Handbook Volume II for Use Within the Geographic Limits of the South Florida Water Management District," incorporated by reference in paragraph 40E-4.091(1)(a), F.A.C., and subparagraph 62-330.010(4)(b)5., F.A.C.

(2) Finished building floor elevations shall be above the most restrictive of the following:

(a) The 1 in 100 year storm elevations as determined by peak flood stage of the C-51 Basin as depicted on the attached Figure 41-8;

(b) The Federal Flood Insurance Rate Map; or

(c) The on-site stage created by a 100-year 3-day storm event assuming no off-site discharge.

(3) No net encroachment into the floodplain shall be allowed. Any water storage volume removed from the floodplain must be accommodated by an equal volume of open storage compensation. Water storage volume shall be computed by utilizing Figure 41-8. For the purposes of this part, the minimum volume of water which must be accommodated on site shall be that quantity equal to the volume stored below the level shown on Figure 41-8 and above the existing grades. Compensation for any reduction in soil storage also shall be accommodated on site.

(4) All criteria in the "Environmental Resource Permit Applicant's Handbook Volume II for Use Within the Geographic Limits of the South Florida Water Management District," which is incorporated by reference in paragraph 40E-4.091(1)(a) and subparagraph 62-330.010(4)(b)5., F.A.C.

(5) Figure 41-8 can also be obtained at no cost by contacting the South Florida Water Management District Clerk's Office, South Florida Water Management District, 3301 Gun Club Road, West Palm Beach, FL 33406, 1(800)432-2045, ext. 6436, or (561)682-6436.

Rulemaking Authority 373.044, 373.113, 373.4131 FS. Law Implemented 373.085, 373.086, 373.413, 373.416 FS. History–New 5-15-87, Amended 12-1-11, 10-1-13, 11-11-15.

40E-41.265 Conditions for Issuance of Right-of-Way Permits in the C-51 Basin.

Any drainage connection to C-51 Canal within the C-51 Basin must be part of a surface water management system approved under Rule 40E-41.263, F.A.C.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.085, 373.086 FS. History–New 5-15-87, Amended 12-1-11.

40E-41.320 Scope, Policy, and Implementation of Part IV.

The purpose of these rules is to protect areas that are necessary for water supply, water storage, water quality improvement, and ecological restoration. Further, it is an objective of the District to reduce the loss of groundwater through seepage or discharge to coastal receiving waters. The protection of lands within and adjacent to the Water Preserve Areas is crucial to the success of Everglades restoration, flood protection and water supply enhancement efforts. Because of their hydrological and biological relationship to the Everglades, the region's water supply and other unique natural areas and resources, the lands within and adjacent to the Water Preserve Area require supplemental Environmental Resource Permit criteria. The purpose of such criteria is to protect the current and future functions of aquifer recharge, water storage, flood attenuation, water quality enhancement and wildlife habitat provided by lands within and adjacent to the Water Preserve Area. The purpose of this rule is also to limit seepage from the water conservation areas across the protective levees and ultimately to tide.

Rulemaking Authority 373.044, 373.113, 373.114 FS. Law Implemented 373.413, 373.416, 373.4592 FS. History–New 10-21-01.

40E-41.321 Definitions.

(1) "Water Preserve Area" or "WPA" means: those component areas identified in Figures 41-9 through 41-14 (August 2016) [http://www.flrules.org/Gateway/reference.asp?No=Ref-07160], incorporated by reference herein, and available at no cost by contacting the South Florida Water Management District Clerk's Office, 3301 Gun Club Road, West Palm Beach, FL 33406, (800)432-2045, ext. 2729 or (561)682-2729.

(2) "Water Preserve Area Basin" or "WPAB" means: the WPA and all or a portion of those drainage basins located adjacent to, or planned to discharge into, the WPA as identified in Figures 41-9 through 41-14.

(3) "Protective Levees" means: for the purposes of this rule, those portions of levees L-33, L-35, L-35A, L-36, L-37, L-38 and L-40 adjacent to Water Conservation Areas 1, 2A, 2B, 3A and 3B as identified in Figure 41-11.

(4) "Overburden" means: for the purposes of this rule, the layer of existing natural soil material as shown in Figures 41-9, 41-10, 41-12, 41-13, and 41-14.

Rulemaking Authority 373.044, 373.113, 373.4131 FS. Law Implemented 373.085, 373.413, 373.4131, 373.416 FS. History–New 10-21-01, Amended 8-7-16.

40E-41.323 Water Preserve Area & Water Preserve Area Basin Boundaries.

(1) The WPA boundaries are shown in Figures 41-9 through 41-14, incorporated by reference in Rule 40E-41.321, F.A.C.

(2) The WPAB includes all or a portion of the following drainage basins as shown in Figures 41-9 through 41-14, incorporated by reference in Rule 40E-41.321, F.A.C.

(a) Palm Beach County:	Acme Basin B C-51 East (west of SR 7) C-16 (west of the Florida Turnpike) C-15 (west of the Florida Turnpike) Hillsboro Canal (west of the Florida Turnpike)
(b) Broward County:	C-11 West C-9 West Hillsboro Canal (west of the Florida Turnpike)

Rulemaking Authority 373.044, 373.113, 373.4131 FS. Law Implemented 373.413, 373.4131, 373.416 FS. History–New 10-21-01, Amended 8-7-16.

40E-41.333 Implementation.

Rulemaking Authority 373.044, 373.113, 373.4131 FS. Law Implemented 373.413, 373.4131, 373.416 FS. History–New 10-21-01, Amended 10-1-13, Repealed 11-5-15.

40E-41.343 Application of Part IV.

All projects located within the WPA, WPAB, or adjacent to the Protective Levees which require permits pursuant to Rule 62-330, F.A.C., shall be constructed, altered, operated, maintained and abandoned in accordance with the criteria specified in Rules 62-330.301 and 62-330.302, F.A.C., as applicable, (Environmental Resource Permits Conditions for Issuance) and Rule 40E-41.363, F.A.C., (Conditions for Issuance of Environmental Resource Permits and Surface Water Management Permits in the Water Preserve Area, Water Preserve Area Basin, or Adjacent to the Protective Levees).

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.413, 373.416 FS. History–New 10-21-01.

40E-41.360 Permit Thresholds.

All systems proposed within the boundaries of the WPA shall require an individual permit.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.413, 373.416 FS. History–New 10-21-01.

40E-41.363 Conditions for Issuance of Permits in the Water Preserve Area, Water Preserve Area Basin, or Adjacent to the Protective Levees.

(1) In order to obtain a permit under this part, an applicant must provide reasonable assurance that the proposed activities will meet the requirements of this section; not be harmful to the water resources; and be consistent with the purposes and objectives set forth in Rule 40E-41.320, F.A.C.

(2) Projects located within one mile of existing or proposed WPA components, or the Protective Levees, shall leave sufficient overburden in place to prevent seepage increases eastward into surface water bodies, such as surface water management lakes, canals, ditches or ponds, in accordance with the following design criteria:

(a) Proposed excavations located within one-quarter mile of the existing or proposed WPA components or

the Protective Levees shall maintain an overburden thickness of at least three-quarters of the existing overburden.

(b) Proposed excavations located from one-quarter mile to one-half mile from existing or proposed WPA components or the Protective Levees shall maintain an overburden thickness of at least half of the existing overburden.

(c) Proposed excavations located from one-half mile to one mile from existing or proposed WPA components or the Protective Levees shall maintain an overburden thickness of at least one-quarter of the existing overburden.

(d) Figures 41-9, 41-10, 41-12, 41-13, and 41-14, incorporated by reference in Rule 40E-41.321, F.A.C., show the thickness of existing overburden within the WPA, WPAB and adjacent to the Protective Levees.

(3) Notwithstanding paragraphs (2)(a)-(d) above, applicants can:

(a) Provide site-specific technical information documenting the presence of sufficient overburden above the production zone of the surficial aquifer system to demonstrate that a proposed excavation will not cause adverse seepage or hydrologic impacts to the WPA or Water Conservation Areas; or

(b) Propose an alternative engineering design, such as installation of a synthetic liner, muck back-filled trench or other seepage barrier, with site-specific technical information to demonstrate that a proposed excavation will not cause adverse seepage or hydrologic impacts to the WPA or Water Conservation Areas.

(4) Proposed projects within the WPA, WPAB or adjacent to the Protective Levees shall not lower existing water table elevations.

(5) In addition to the water quality treatment volumes required in section 4.2.1. of the Applicant's Handbok Volume II, projects within the WPA or WPAB shall provide an additional fifty (50) percent retention/detention water quality treatment.

(6) No dredging or filling of wetlands shall be permitted in the WPA, except where necessary to provide access to upland sites; allow an economically viable use of private property; facilitate relocation or installation of essential public services such as electricity, transportation, telecommunications and water supply in locations compatible with the WPA objectives when it has been demonstrated that such services cannot be located outside the WPA; or to facilitate the objectives of the WPA or Comprehensive Everglades Restoration Plan.

(7) Mitigation for proposed impacts incurred in the WPA or WPAB must be provided within the WPAB, or at a mitigation bank or Regional Offsite Mitigation Area with an approved mitigation service area that includes the impact site, provided all other applicable criteria are met.

Rulemaking Authority 373.044, 373.113, 373.4131 FS. Law Implemented 373.413, 373.4131, 373.416 FS. History–New 10-21-01, Amended 12-1-11, 10-1-13, 8-7-16.

Section 403.814(12) F.S.

10/2 Self-Certification

Effective: July 2013

DEP Business Portal

Ch. 2012-205 LAWS OF FLORIDA Ch. 2012-205
Section 19. Subsection (12) is added to section 403.814, Florida Statutes, to read:

403.814 General permits; delegation.—
(12) A general permit is granted for the construction, alteration, and maintenance of a stormwater management system serving a total project area of up to 10 acres. When the stormwater management system is designed, operated, and maintained in accordance with applicable rules adopted pursuant to part IV of chapter 373, there is a rebuttable presumption that the discharge for such system will comply with state water quality standards. The construction of such a system may proceed without any further agency action by the department or water management district if, within 30 days after construction begins, an electronic self-certification is submitted to the department or water management district that certifies the proposed system was designed by a Florida registered professional to meet the following requirements:

(a) The total project area involves less than 10 acres and less than 2 acres of impervious surface;
(b) No activities will impact wetlands or other surface waters;
(c) No activities are conducted in, on, or over wetlands or other surface waters;
(d) Drainage facilities will not include pipes having diameters greater than 24 inches, or the hydraulic equivalent, and will not use pumps in any manner;
(e) The project is not part of a larger common plan, development, or sale; and
(f) The project does not:

1. Cause adverse water quantity or flooding impacts to receiving water and adjacent lands;
2. Cause adverse impacts to existing surface water storage and conveyance capabilities;
3. Cause a violation of state water quality standards; or
4. Cause an adverse impact to the maintenance of surface or ground water levels or surface water flows established pursuant to s. 373.042 or a work of the district established pursuant to s. 373.086.

Section 25. This act shall take effect July 1, 2012.
Approved by the Governor May 4, 2012.
Filed in Office Secretary of State May 4, 2012

Florida Statutes Related to the ERP Program	
F.S., Subsections	**Title**
403.9321, F.S.	Environmental Control: Mangrove Trimming and Preservation Act 403.9321 Short title.—Sections 403.9321-403.9333 may be cited as the "Mangrove Trimming and Preservation Act." History.—s. 1, ch. 95-299.
403.9322, F.S	Legislative Findings
403.9323, F.S	Legislative intent
403.9324, F.S	Mangrove protection rule; delegation of mangrove protection to local governments
403.9325, F.S	Definitions
403.9326, F.S	Exemptions
403.9327, F.S	General permits
403.93271, F.S	Applicability to multifamily residential units
403.9328, F.S	Alteration and trimming of mangroves; permit requirement
403.9329, F.S	Professional mangrove trimmers
403.9331, F.S.	Applicability; rules and policies
403.9332, F.S.	Mitigation and enforcement
403.9333, F.S.	Variance relief
403.9334, F.S.	Effect of Ch. 96-206

DEP Sections - For Activities within Outstanding Florida Waters of Monroe County Subsections:	
62-312.400	Intent
62-312.410	General Criteria
62-312.420	Permitting Requirements for Piers
62-312.430	Permitting Requirements for Marinas
62-312.440	Permitting Requirements for Shoreline Stabilization
62-312.450	Mitigation
62-312.460	Special Consideration

Florida Department of Environmental Protection Rules:	
62-302	Surface Water Quality Standards

Florida Department of Environmental Protection Rules:	
62-340	Delineation Of The Landward Extent Of Wetlands And Surface Waters

Florida Department of Environmental Protection Rules:	
62-345	Uniform Mitigation Assessment Method

Part II - Forms Incorporated By Reference In Chapter 62-330

- **To access forms on the SFWMD web library click here: SWERP Forms**

Rule	Form Number/Document Incorporated
62-330.050	
.050(2)	Form 62-330.050(1) "Request for Verification of an Exemption"
62-330.0511	
. 0511(2)	Form 62-330.0511(1) "Notice of Intent to Construct a Minor Silvicultural System"
62-330.060	
.060(1)	Form 62-330.060(1) "Joint Application for Individual And Conceptual Environmental Resource Permit/Authorization to Use State-Owned Submerged Lands/Federal Dredge and Fill Permit", Section A
	Section B: For Single-Family Projects
	Section C: Supplemental Information for Works or Other Activities In, On, Over Wetlands and/or Other Surface Waters
	Section D: Supplemental Information For Works or Activities Within Surface Waters (Other Than a Single Family Project)
	Section E: Supplemental Information Required for Works or Other Activities Involving a Water Management System (Other Than a Single Family Project)
	Section F: Application For Authorization to Use State-Owned Submerged Lands
	Section G: Supplemental Information Required for Mitigation Banks
	Section H: Supplemental Information for Applications for Environmental Resource Permits Involving Stormwater Management Systems for Mines
	Attachments 1-3: Joint Application Form Instructions, Agency Contacts, and Application Fees
62-330.090	
.090(7)	Form 62-330.090(1) "Recorded Notice of Environmental Resource Permit"
62-330.201	
.201(2)	Form 62-330.201(1), "Petition for a Formal Determination of the Landward Extent of Wetlands and Other Surface Waters"
62-330.301	
.301(5)(a)	Form 62-330.301(1), "Performance Bond To Demonstrate Financial Assurance for Mitigation"
.301(5)(b)	Form 62-330.301(2), "Irrevocable Letter of Credit To Demonstrate Financial Assurance for Mitigation"
.301(5)(c)	Form 62-330.301(3), "Standby Trust Fund Agreement to Demonstrate Financial Assurance for Mitigation"

Rule	Form Number/Document Incorporated
.301(5)(d)	Form 62-330.301(4), "Trust Fund Agreement to Demonstrate Financial Assurance for Mitigation"
.301(5)(e)	Form 62-330.301(5), "Escrow Agreement"
.301(5)(f)	Form 62-330.301(6), "Guarantee Bond To Demonstrate Financial Assurance for Mitigation"
.301(6)(a)	Form 62-330.301(8), "Deed of Conservation Easement — Standard"
.301(6)(b)	Form 62-330.301(9), "Deed of Conservation Easement – Standard, With Third Party Beneficiary"
.301(6)(c)	Form 62-330.301(10), "Deed of Conservation Easement — Passive Recreational Uses"
.301(6)(d)	Form 62-330.301(11), "Deed of Conservation Easement — Riparian Uses"
.301(6)(e)	Form 62-330.301(12), "Deed of Conservation Easement for Local Governments"
.301(6)(f)	Form 62-330.301(13), "Deed of Conservation Easement with Third Party Beneficiary Rights to the U.S. Army Corps of Engineers"
.301(6)(g)	Form 62-330.301(14), "Declaration of Restrictive Covenants "
.301(6)(h)	Form 62-330.301(15), "Declaration of Restrictive Covenants -- Insert"
.301(6)(i)	Form 62-330.301(16), "Temporary Easement for Construction Access"
.301(6)(j)	Form 62-330.301(17), "Permanent Access Easement"
62-330.310	
.310(4)(a)1.a.	Form 62-330.310(1), "As-Built Certification and Request for Conversion to Operation Phase"
.310(4)(a) 1.b.	Form 62-330.310(2), "Request for Transfer of Environmental Resource Permit to the Perpetual Operation Entity"
.310(4)(b)	Form 62-330.310(3), "Construction Completion and Inspection Certification for Activities Associated With a Private Single-Family Dwelling Unit"
62-330.311	
.311(2)	Form 62-330.311(1), "Operation and Maintenance Inspection Certification"
.311(3)	Form 62-330.311(2), "Regional Stormwater Management System Annual Report"
62-330.340	
.340(3)	Form 62-330.340(1), "Request to Transfer Permit"
62-330.350	
.350(1)(d)	Form 62-330.350(1), "Construction Commencement Notice"
62-330.360	
.360(3)	Form 330.360(1), "Emergency Field Authorization"
62-330.402	

Rule	Form Number/Document Incorporated
.402(1)	Form 62-330.402(1), "Notice of Intent to Use an Environmental Resource General Permit"
62-330.417	
.417(5)	Form 62-330.417(1), Agreement to Maintain Public Access
.417(5)	Form 62-330.417(2), Agreement to Maintain Public Access and Operate Stormwater Systems

PART III

DESIGN AIDS AND DESIGN EXAMPLES

DESIGN AIDS AND DESIGN EXAMPLES

This part of the Manual is a compilation of suggested methods and information that can be used to design project. The Design Aids include: drainage basin maps and information on many topics including rainfall, water table, runoff, water storage, exfiltration trenches, discharging to impaired waters or Outstanding Florida Waters, and special considerations for transportation facilities. Also included is information about wetland boundary determinations, elimination or reduction of wetland impacts, separation of lakes from wetlands, protecting wetland hydroperiods, planting wetland areas, and water quality considerations for wetlands.

The information is intended to help the reader understand the environmental resource permitting program and associated principles of project design and permitting. The Design Aids and Examples do not constitute additional rule criteria nor will it be used in lieu of adopted rule criteria or in a manner which is inconsistent with such duly adopted rules.

The **Design Examples** provided how the rules, technical criteria and design aids might be used in designing various types of projects, including agricultural, residential and commercial stormwater management systems.

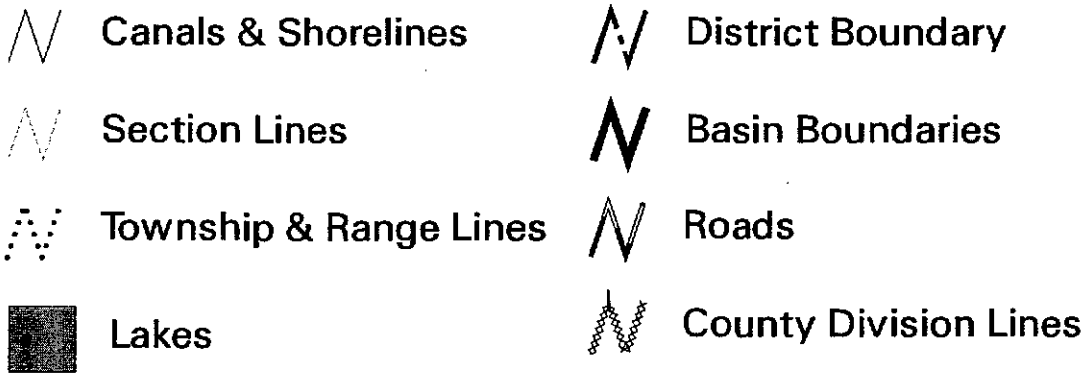
Drainage Basin Maps

Organized by county to show the major drainage basin boundaries within the District.

Figures

B-1 Eastern Broward Co.
B-2 Western Broward Co.
B-3 Charlotte Co.
B-4 Eastern Collier Co.
B-5 Western Collier Co.
B-6 Glades Co.
B-7 Hendry Co.
B-8 Highlands Co.
B-9 Lee Co.
B-10 Martin Co.
B-11 Northern Miami-Dade Co.
B-12 Southern Miami-Dade Co.
B-13 Monroe Co.
B-14 Okeechobee Co.
B-15 Orange Co.
B-16 Northern Osceola Co.
B-17 Southern Osceola Co.
B-18 Eastern Palm Beach Co.
B-19 Western Palm Beach Co.
B-20 Polk Co.
B-21 St. Lucie Co.

Legend

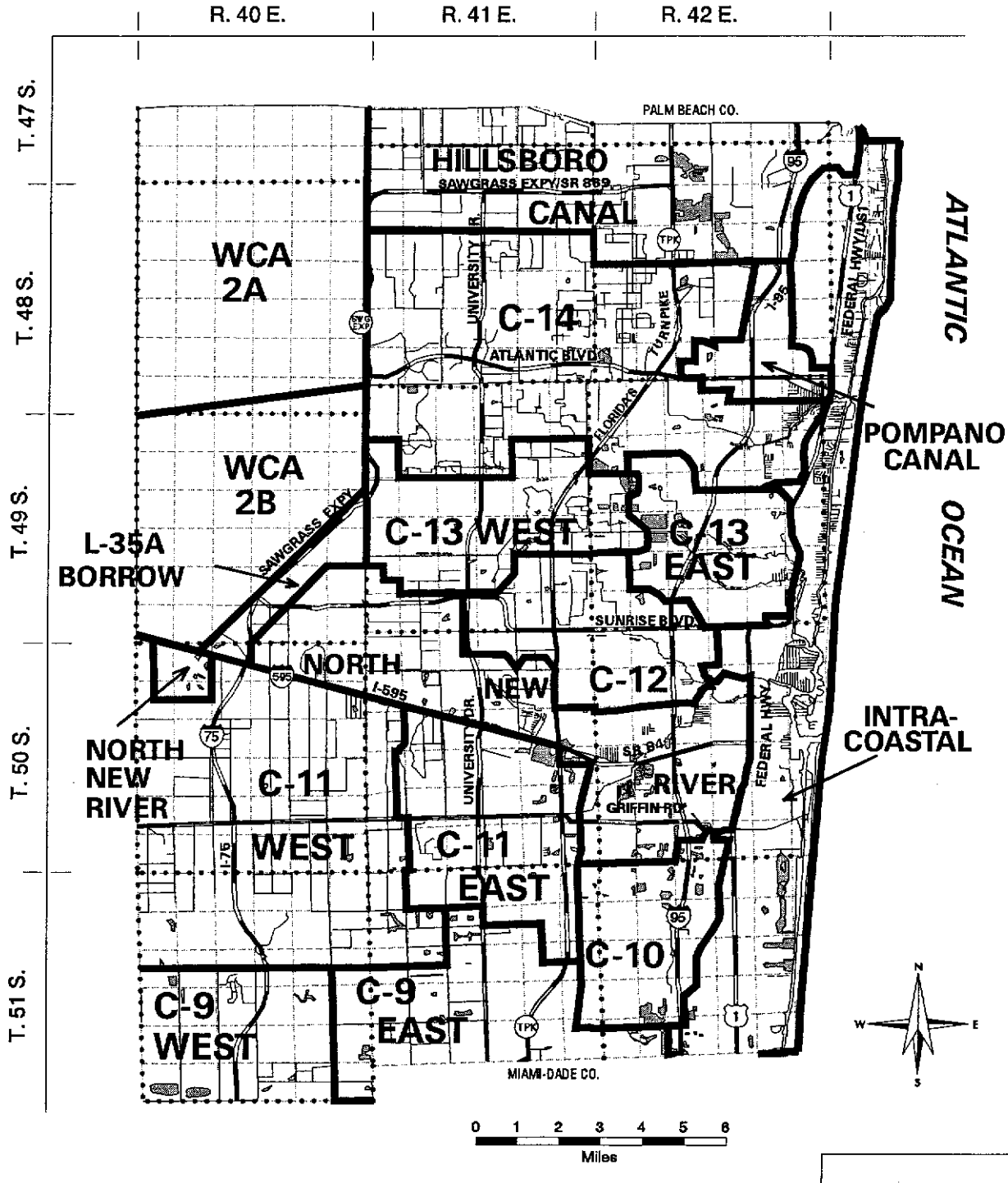


All maps projected in State Plane Coordinates.

Drainage basin maps were created and edited by the Regulation Department of the South Florida Water Management District.

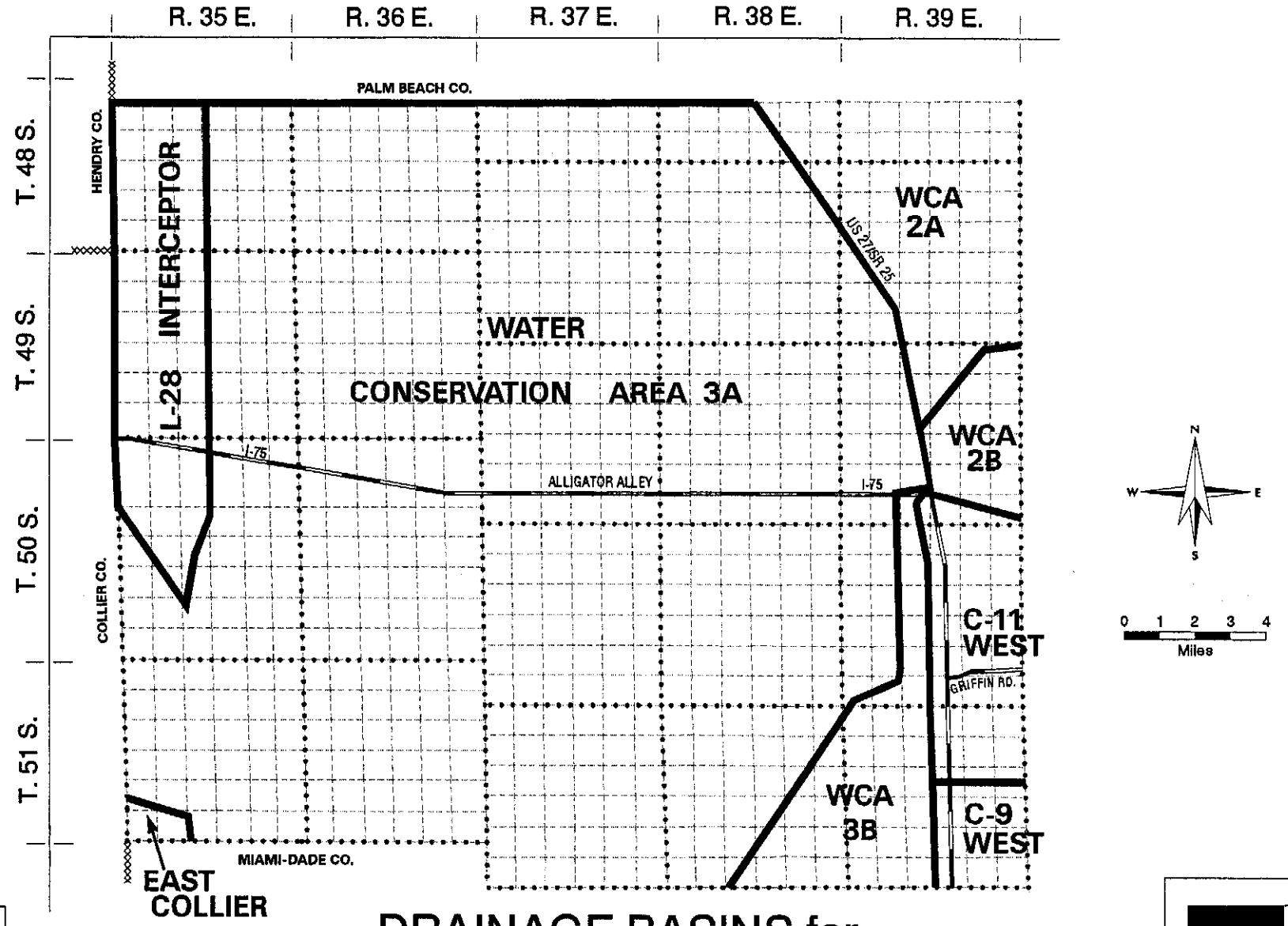
Basin boundaries were reviewed and updated in 1989 by the Water Resources Division.

Revised September 1999



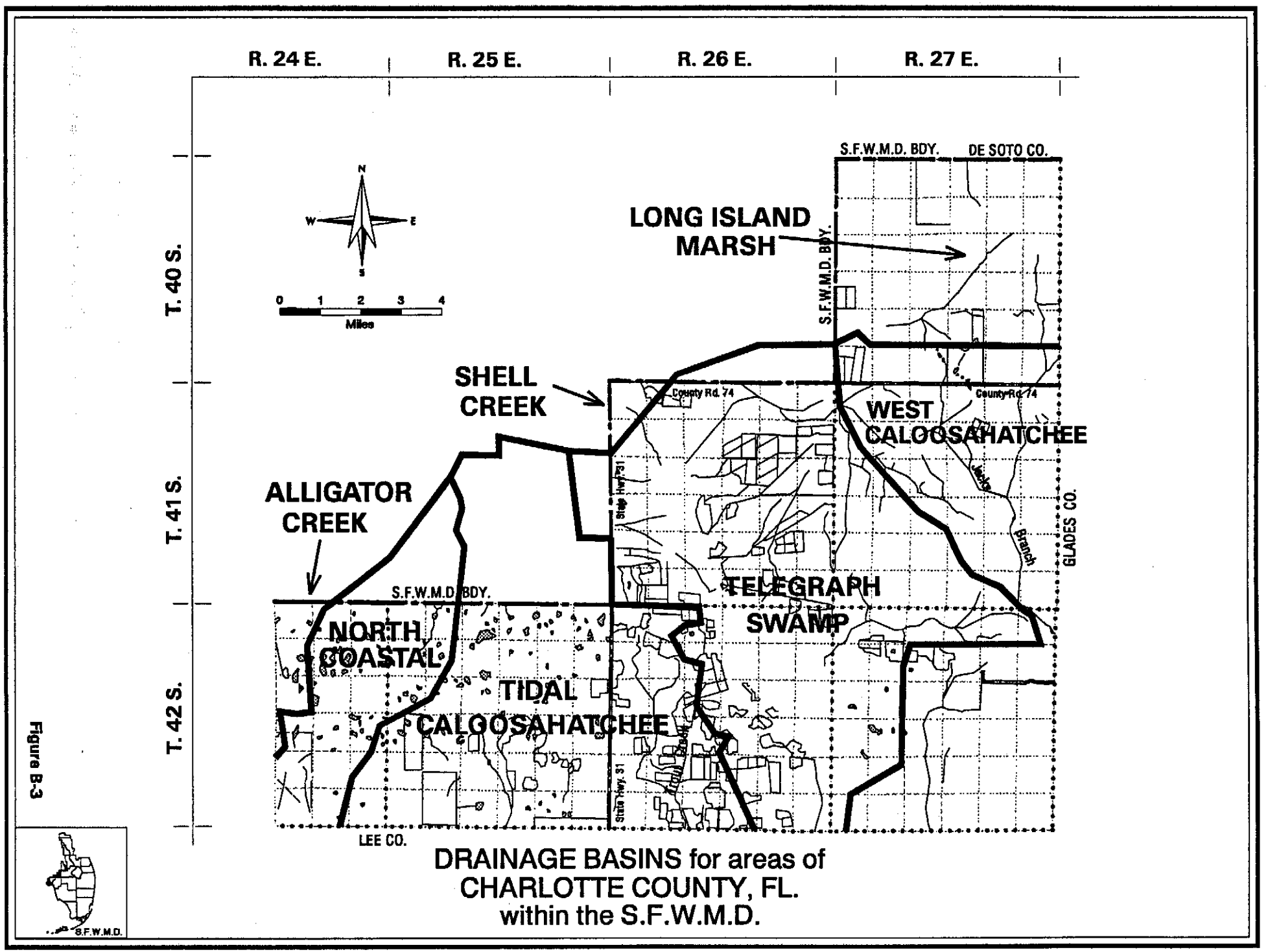
DRAINAGE BASINS for EASTERN BROWARD COUNTY, FL.

Figure B-1



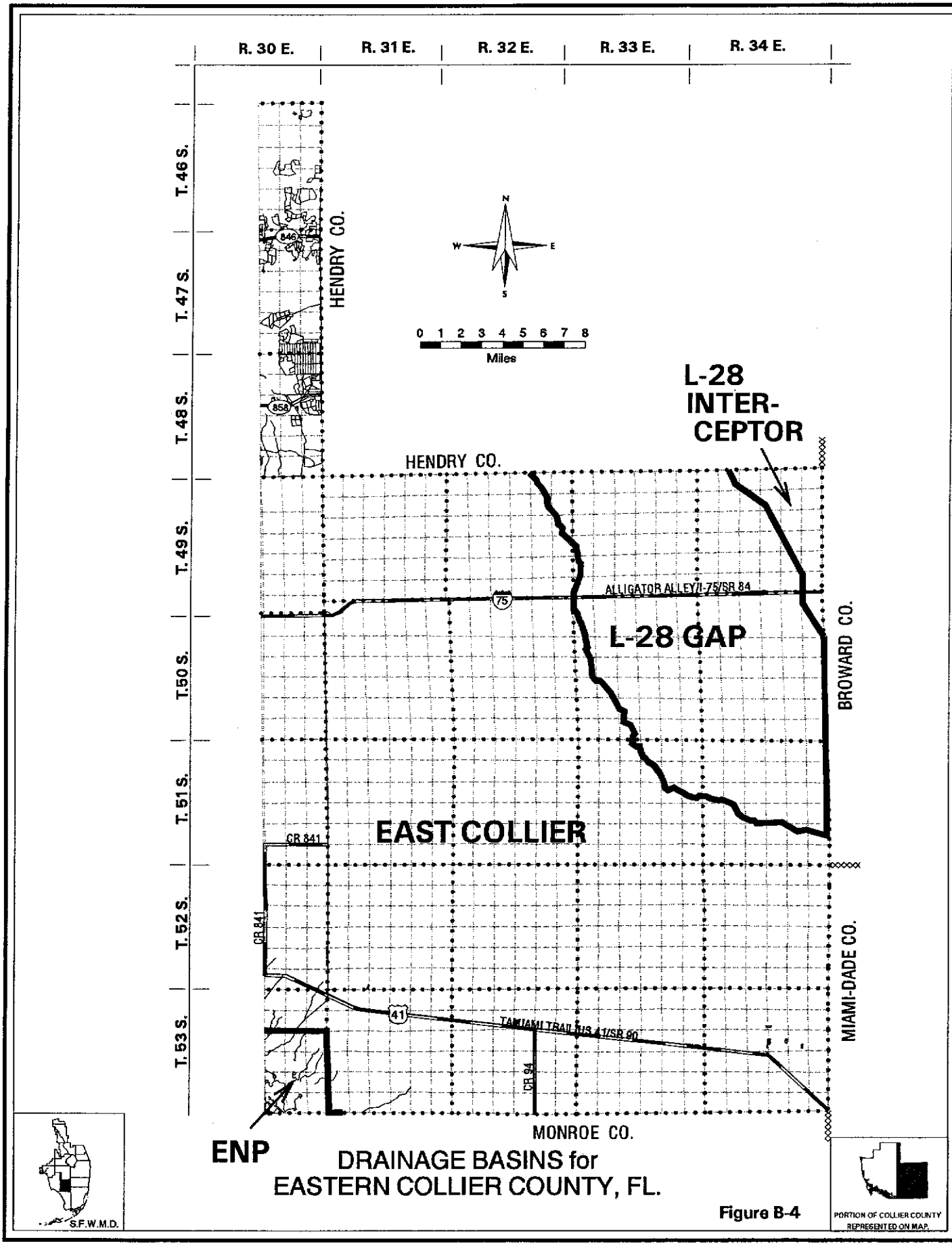
DRAINAGE BASINS for WESTERN BROWARD COUNTY, FL.

Figure B-2



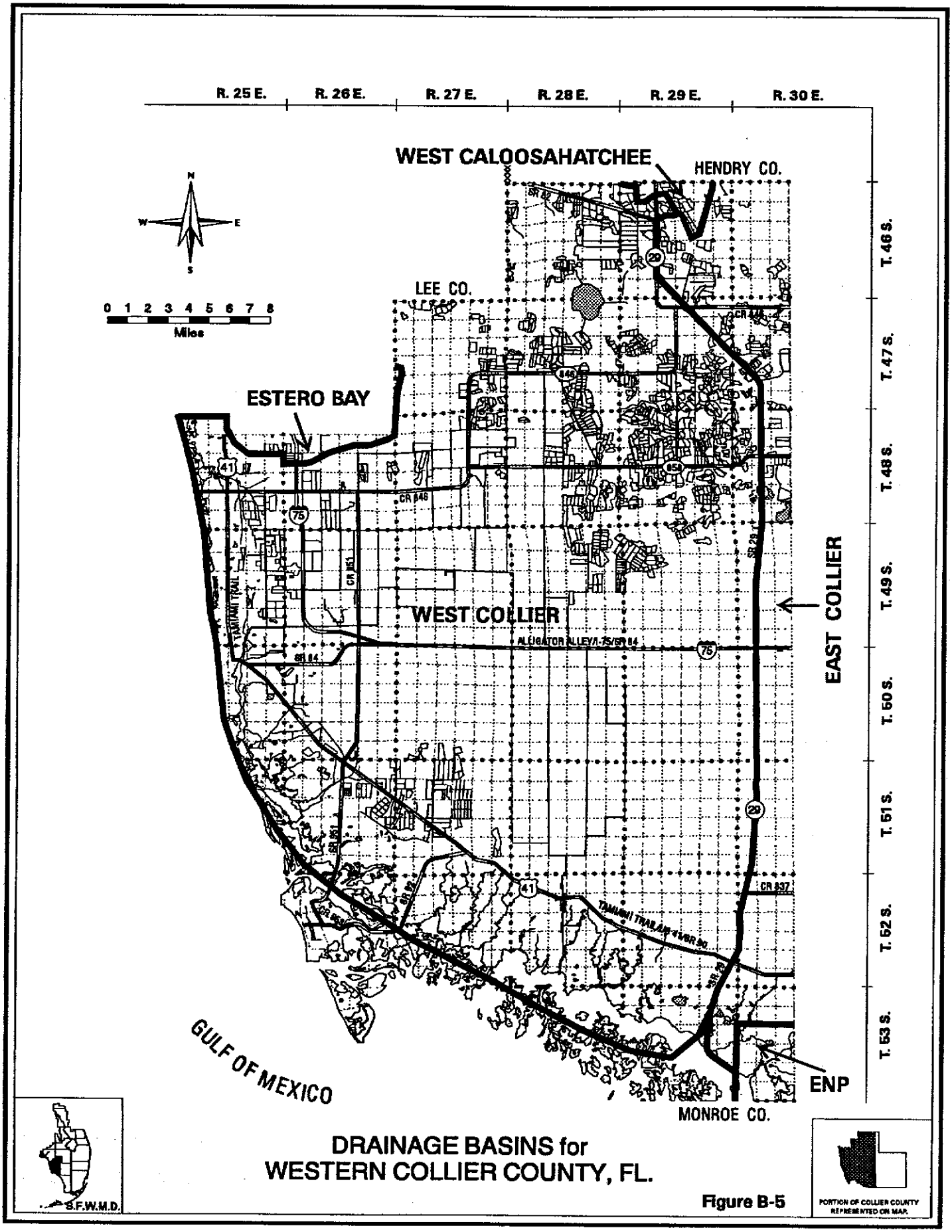
DRAINAGE BASINS for areas of
CHARLOTTE COUNTY, FL.
within the S.F.W.M.D.

Figure B-3



DRAINAGE BASINS for
EASTERN COLLIER COUNTY, FL.

Figure B-4



DRAINAGE BASINS for WESTERN COLLIER COUNTY, FL.

Figure B-5

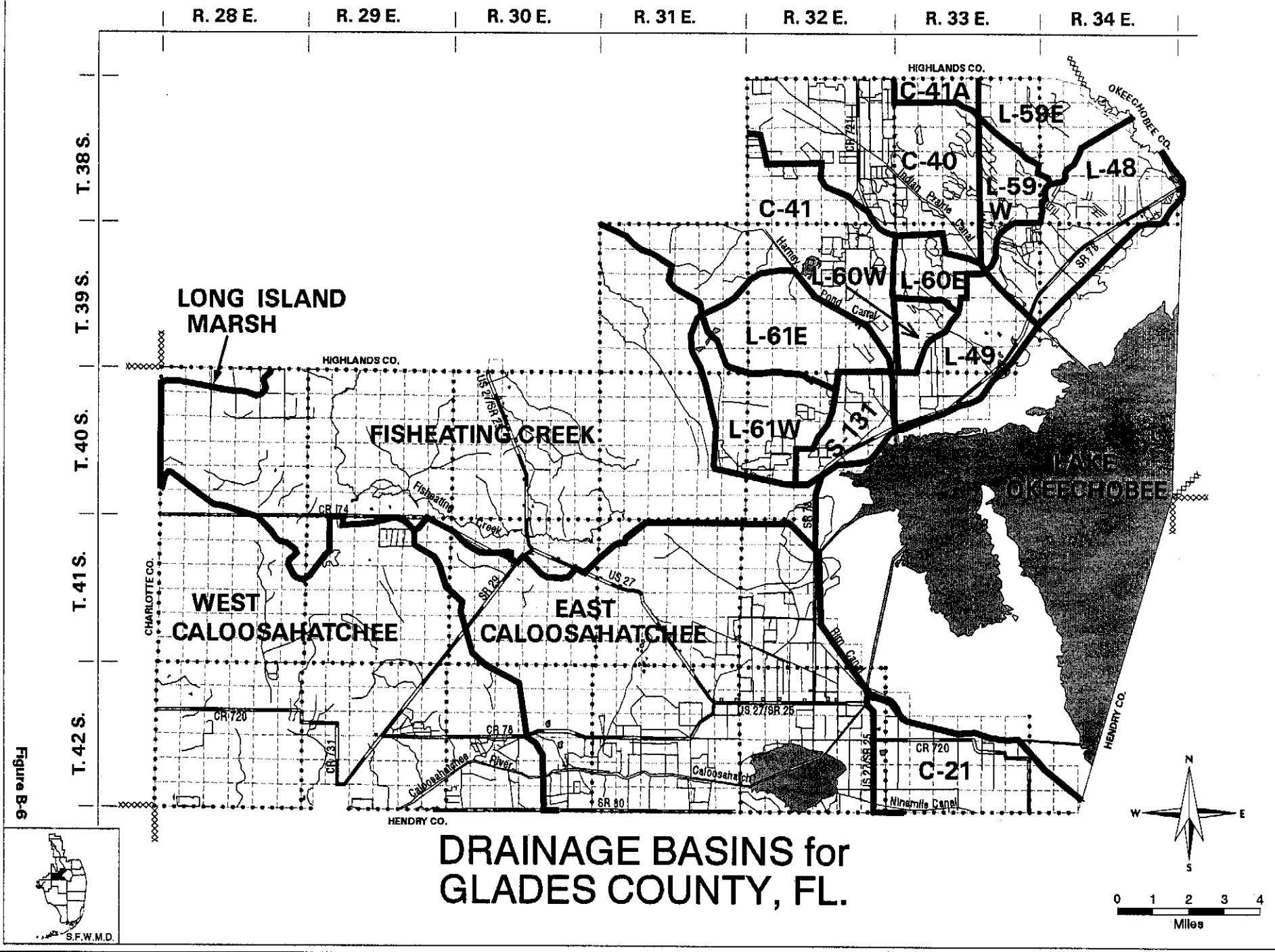


Figure B-6

DRAINAGE BASINS for GLADES COUNTY, FL.

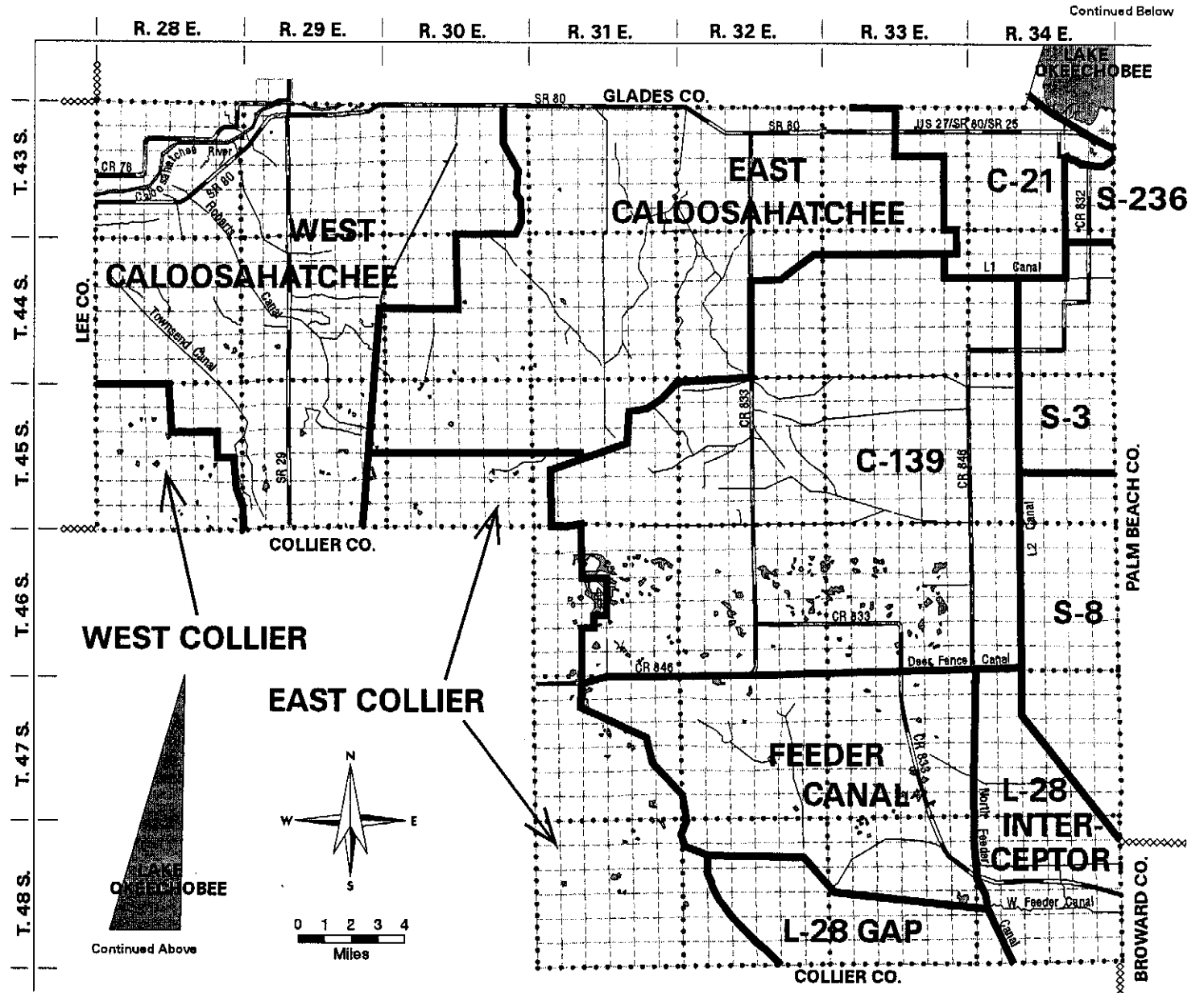
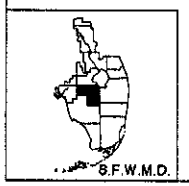
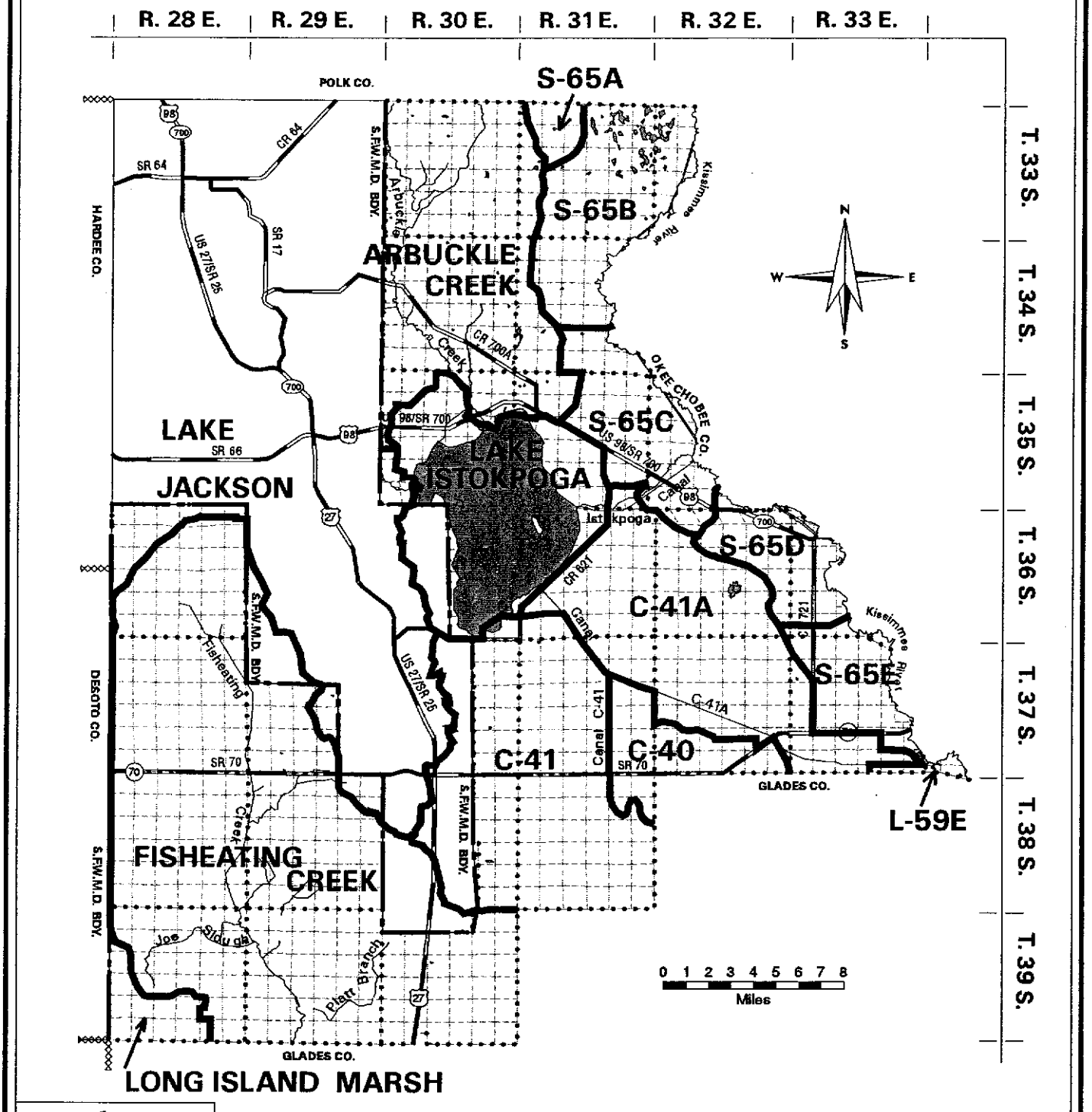


Figure B-7



DRAINAGE BASINS for HENDRY COUNTY, FL.



DRAINAGE BASINS for areas of HIGHLANDS COUNTY, FL. within the S.F.W.M.D.

Figure B-8

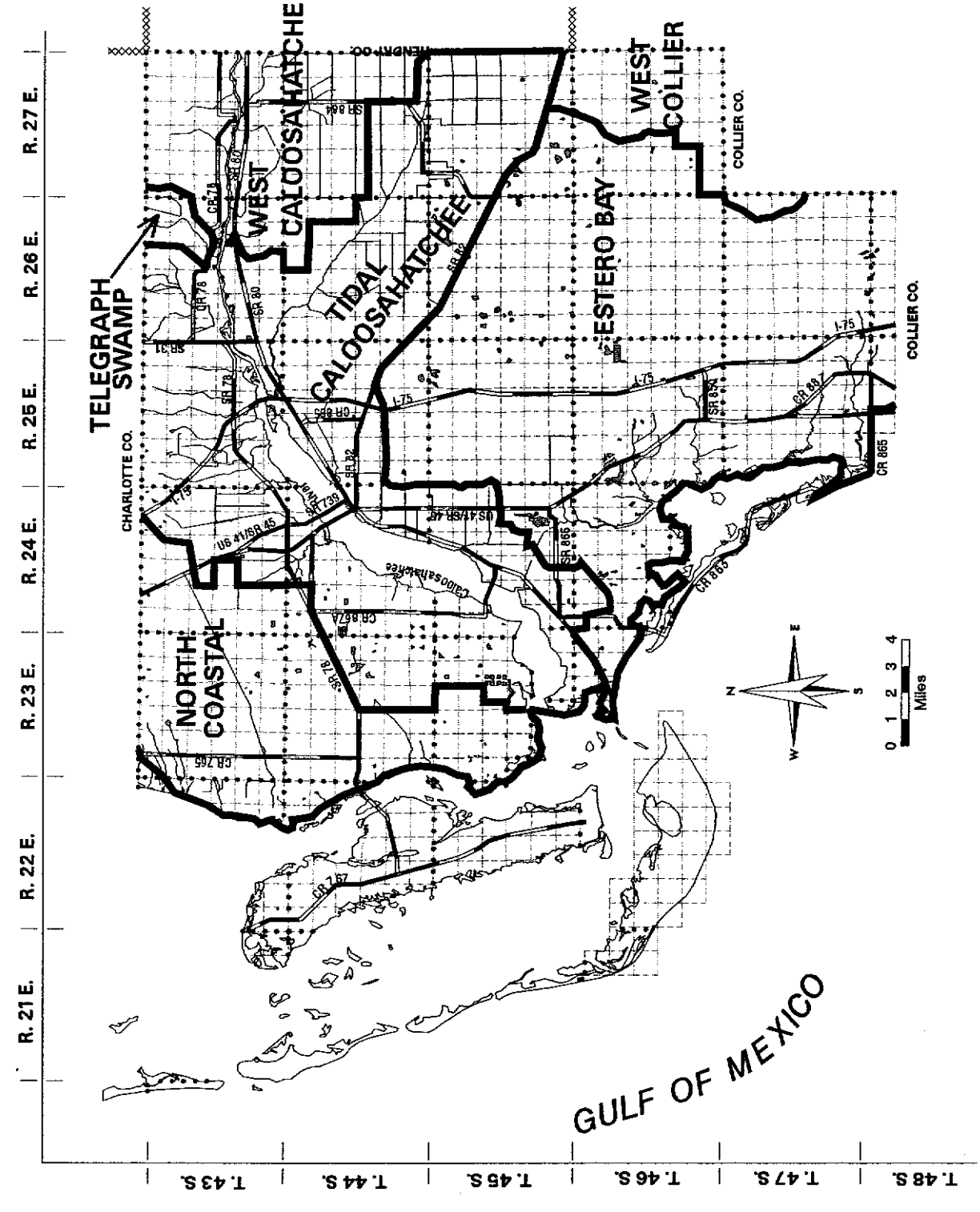
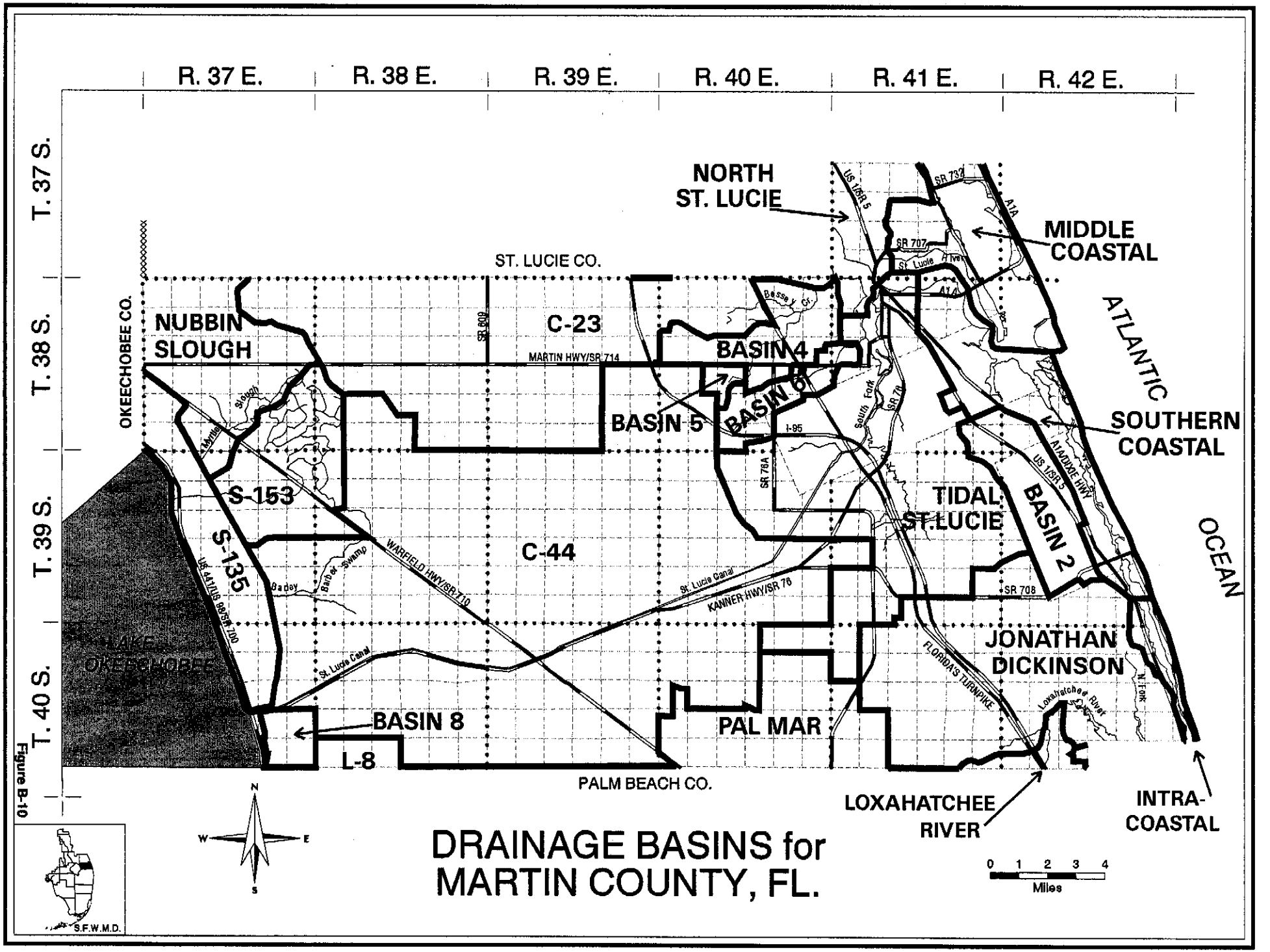

DRAINAGE BASINS for
LEE COUNTY, FL.
TELEGRAPH SWAMP
WEST CALOOSAHATCHEE
TIDAL CALOOSAHATCHEE
ESTERO BAY
WEST COLLIER
NORTH COASTAL
CHARLOTTE CO.
COLLIER CO.
HENDRY CO.
GULF OF MEXICO
R. 21 E.
R. 22 E.
R. 23 E.
R. 24 E.
R. 25 E.
R. 26 E.
R. 27 E.
T. 43 S.
T. 44 S.
T. 45 S.
T. 46 S.
T. 47 S.
T. 48 S.
Miles
0 1 2 3 4
S.F.W.M.D.

Figure B-9



DRAINAGE BASINS for MARTIN COUNTY, FL.

Figure B-10

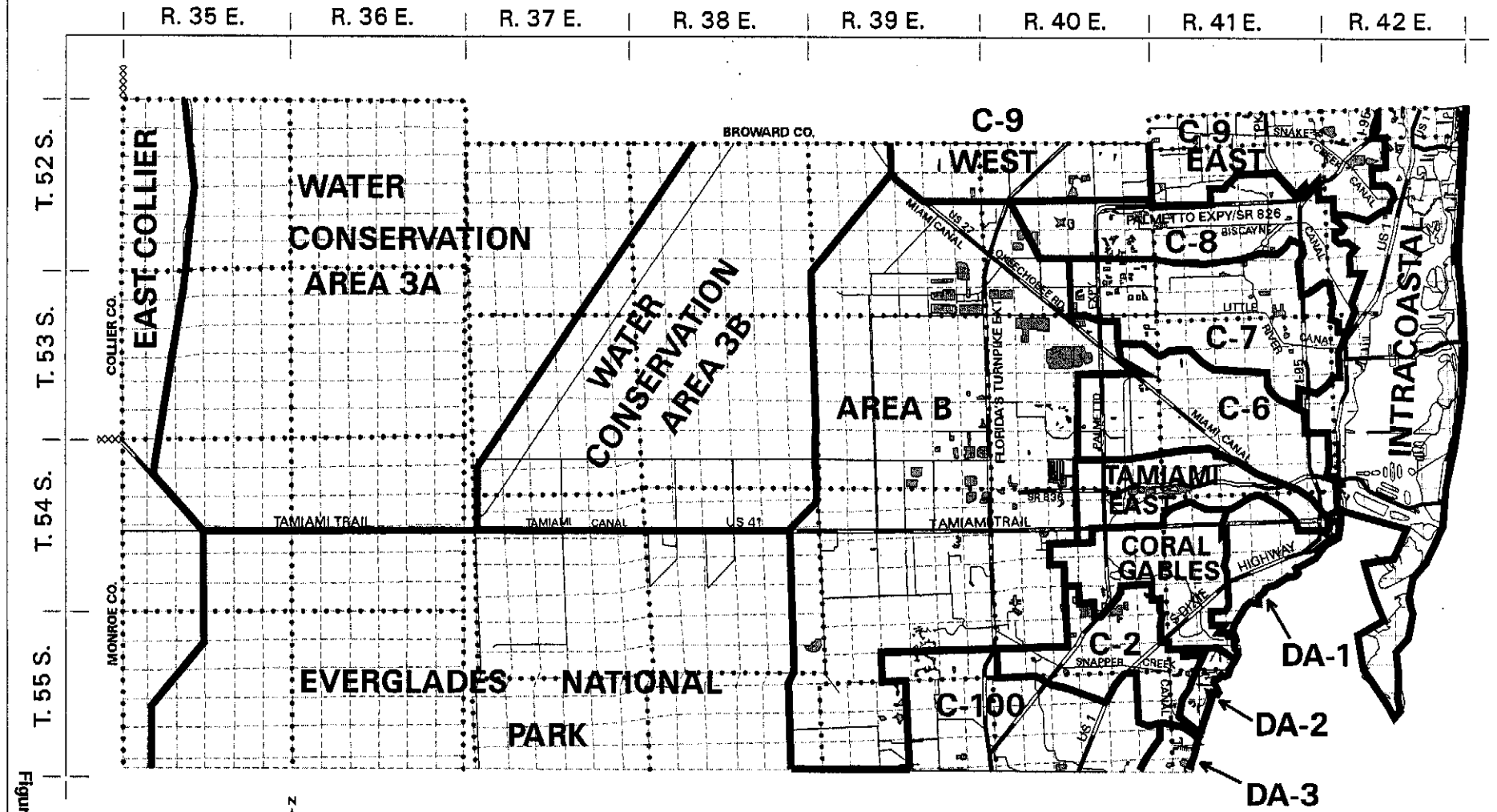


Figure B-11

DRAINAGE BASINS for NORTHERN MIAMI-DADE COUNTY, FL.

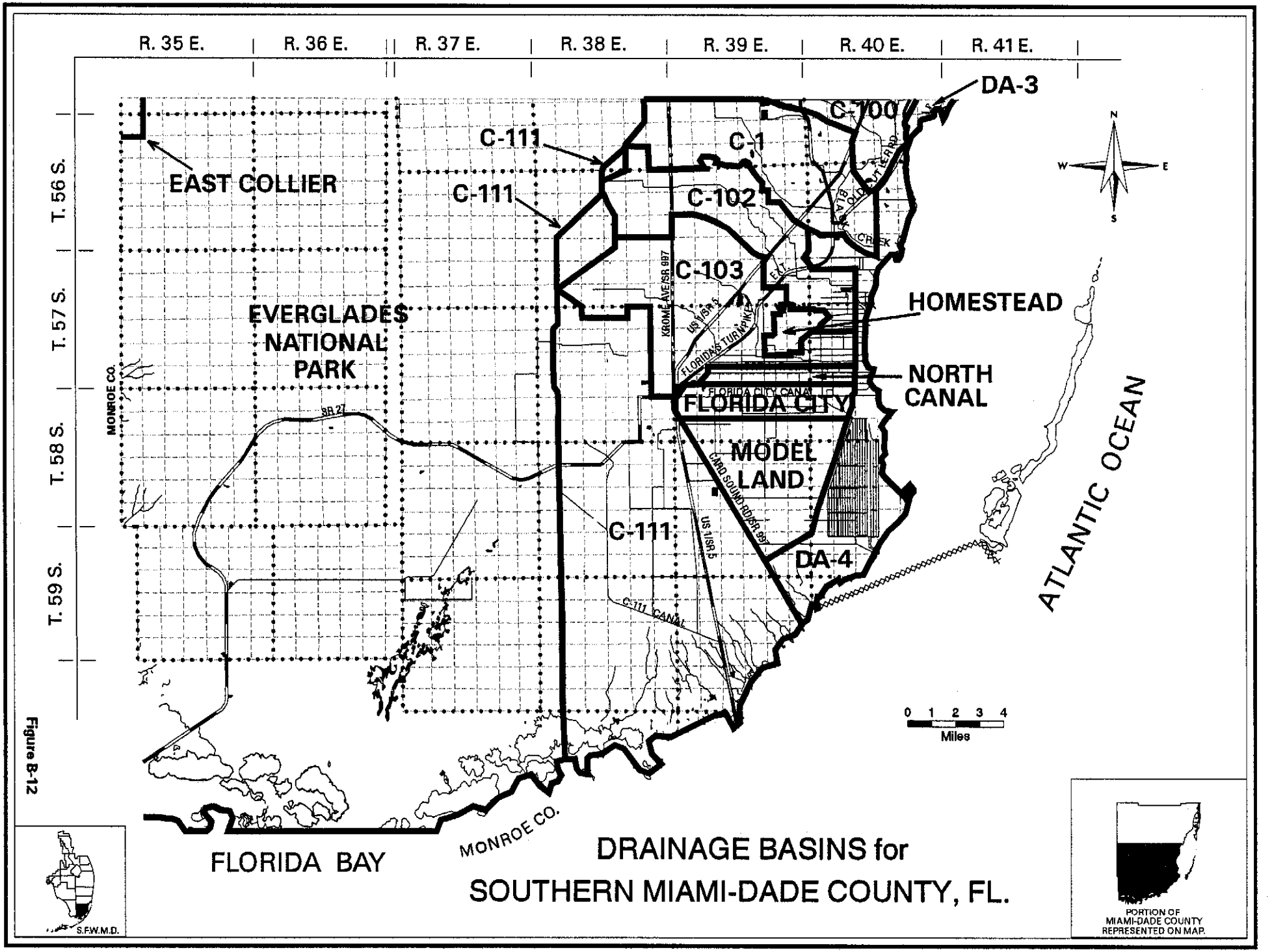
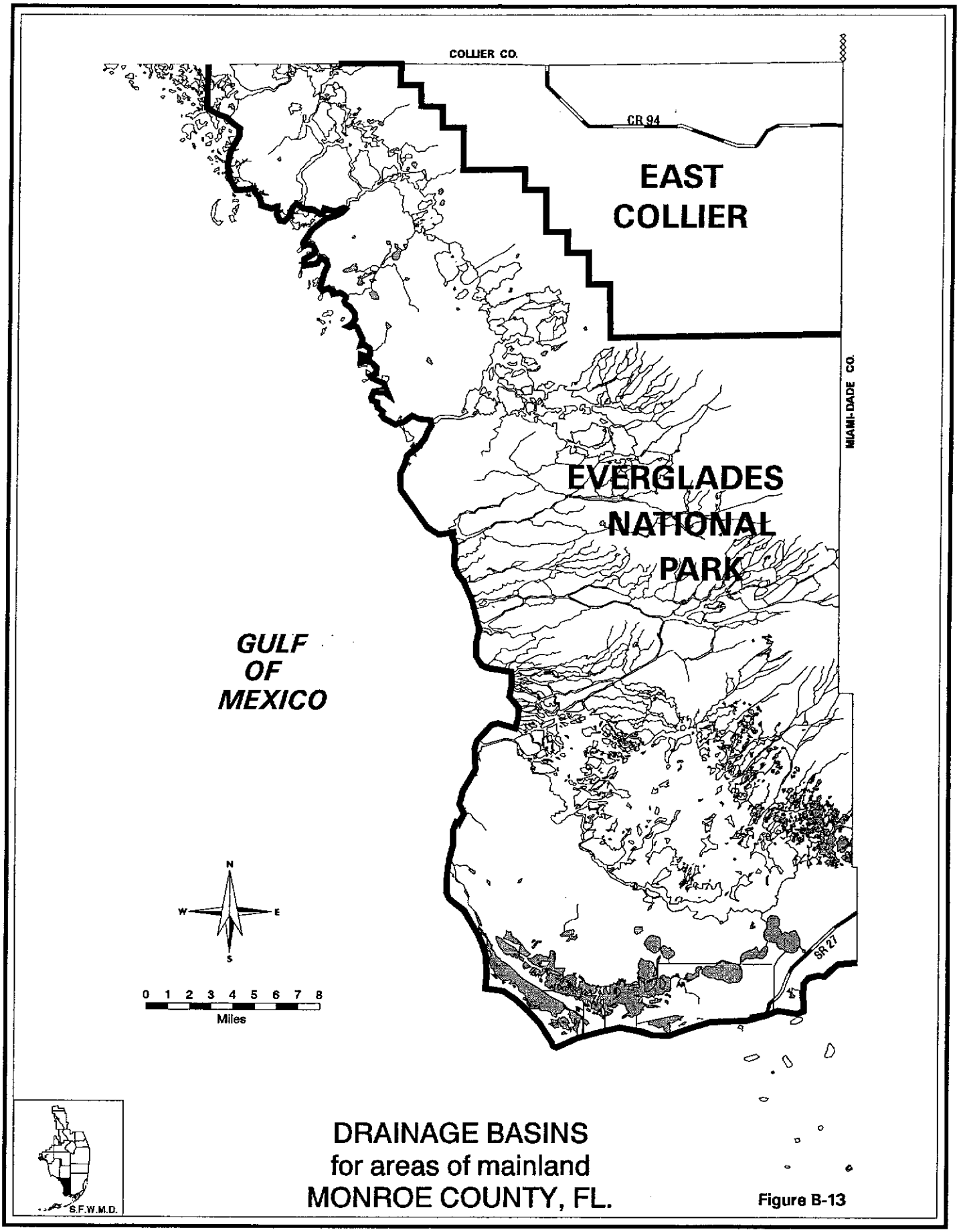
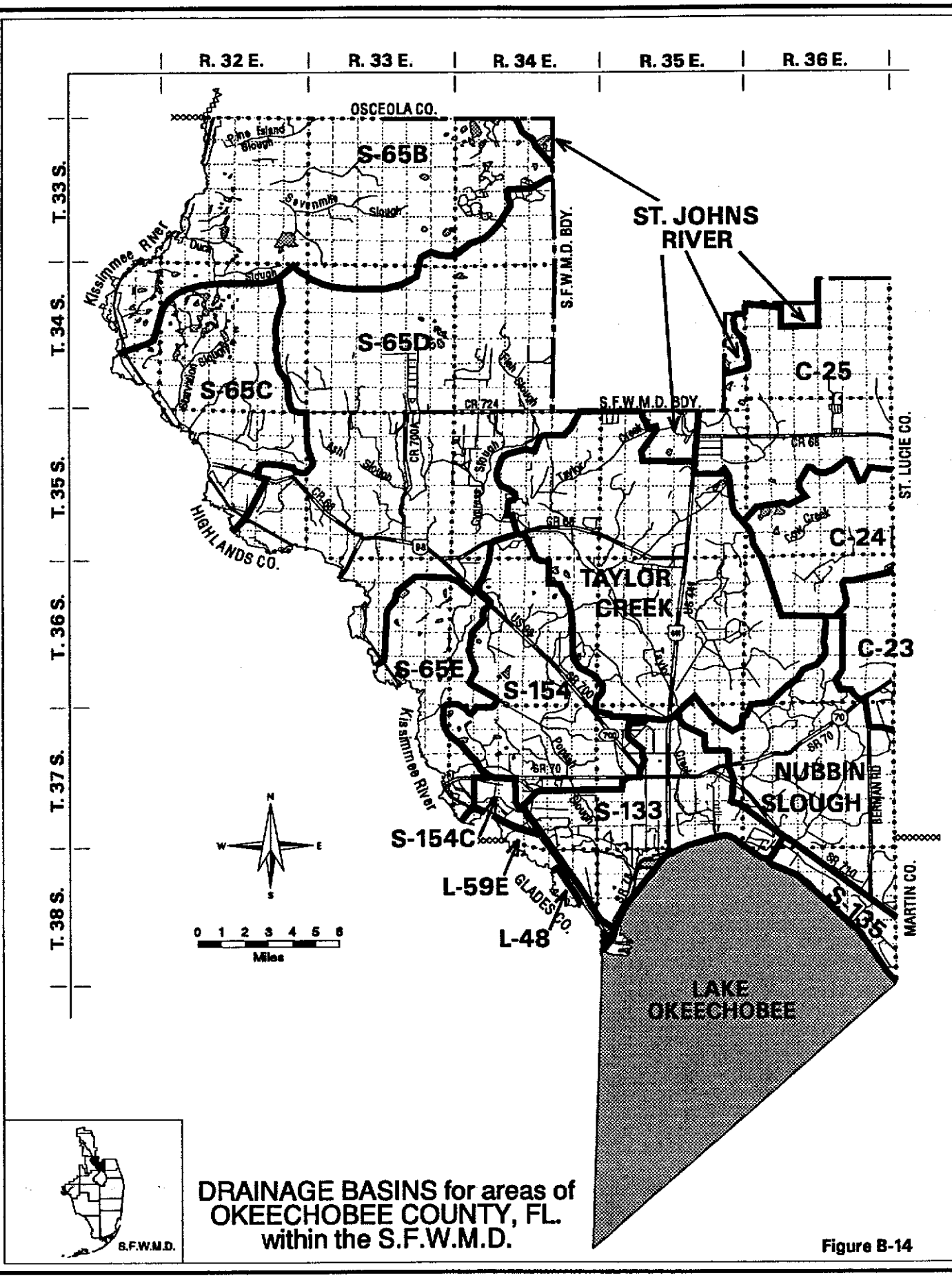

R. 35 E.
R. 36 E.
R. 37 E.
R. 38 E.
R. 39 E.
R. 40 E.
R. 41 E.
T. 56 S.
T. 57 S.
T. 58 S.
T. 59 S.
DA-3
C-100
C-1
C-111
C-102
C-103
EAST COLLIER
EVERGLADES NATIONAL PARK
HOMESTEAD
NORTH CANAL
FLORIDA CITY
MODEL LAND
DA-4
ATLANTIC OCEAN
MONROE CO.
SR 27
US 1/SR 5
KROME AVE/SR 997
FLORIDA'S TURNPIKE
FLORIDA CITY CANAL
CARD SOUND RD/SR 997
C-111 CANAL
0 1 2 3 4
Miles
FLORIDA BAY
MONROE CO.
DRAINAGE BASINS for
SOUTHERN MIAMI-DADE COUNTY, FL.
S.F.W.M.D.
PORTION OF MIAMI-DADE COUNTY REPRESENTED ON MAP.

Figure B-12



DRAINAGE BASINS
for areas of mainland
MONROE COUNTY, FL.

Figure B-13



DRAINAGE BASINS for areas of OKEECHOBEE COUNTY, FL. within the S.F.W.M.D.

Figure B-14

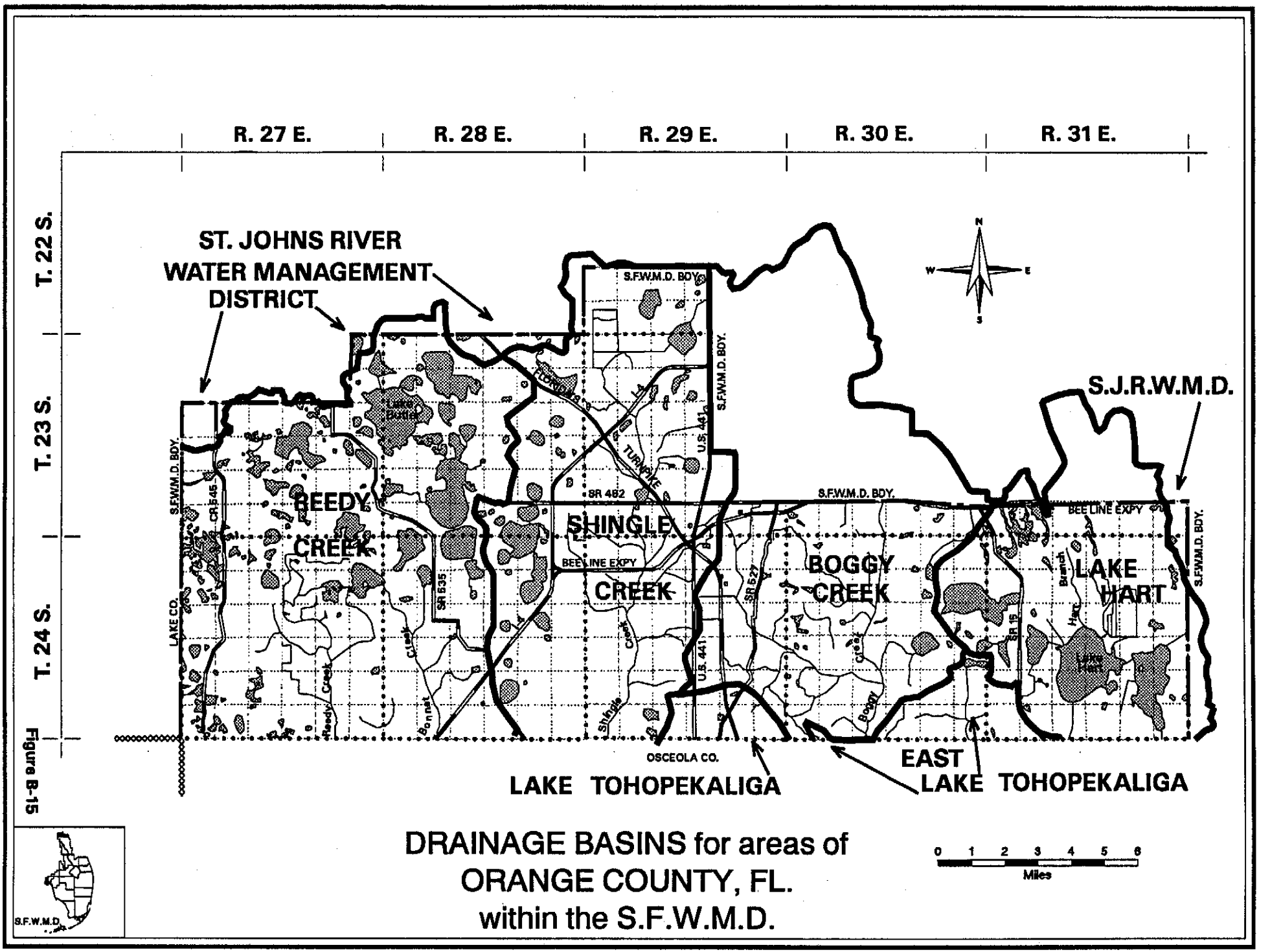


Figure B-15

DRAINAGE BASINS for areas of ORANGE COUNTY, FL. within the S.F.W.M.D.

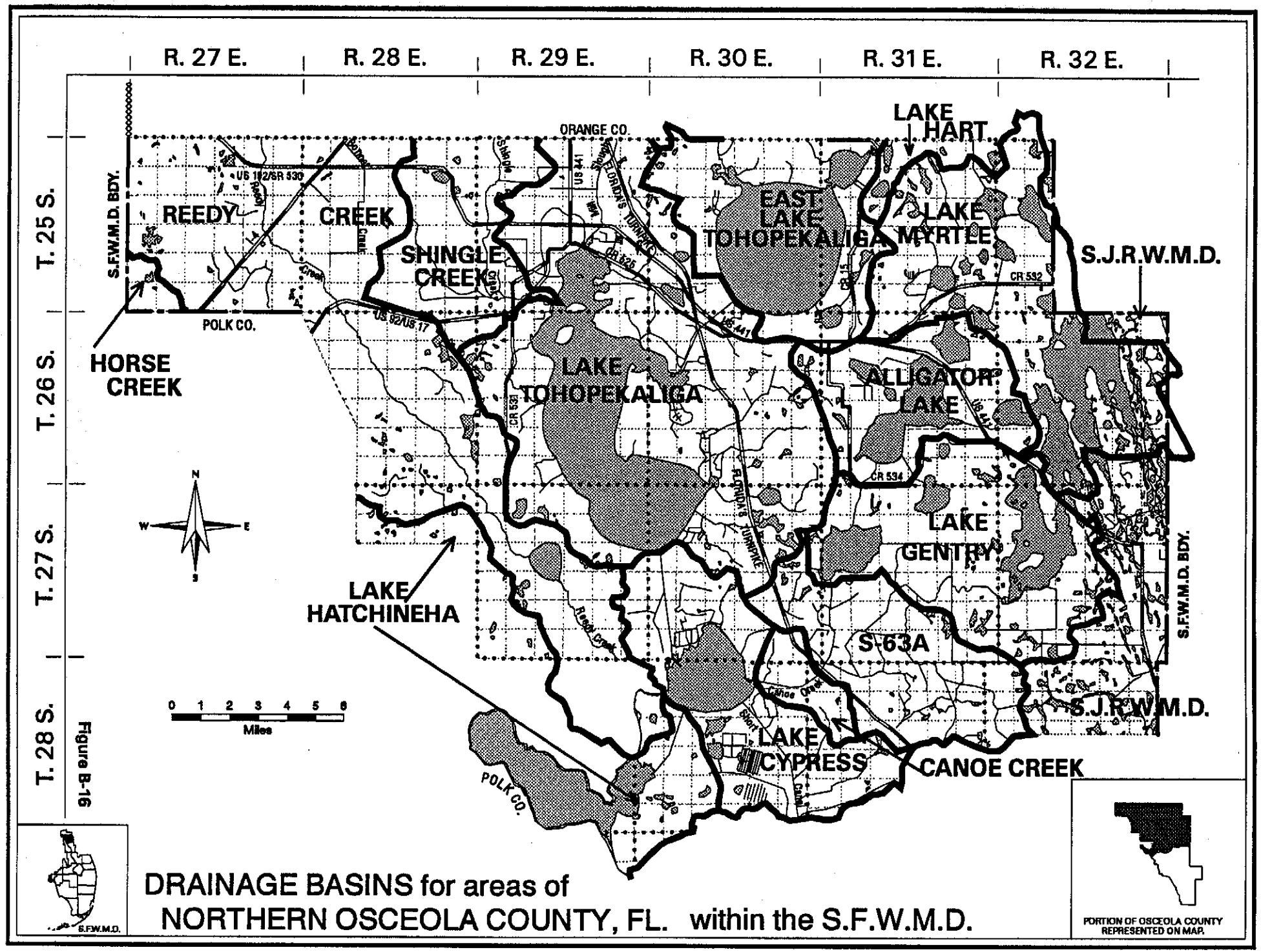
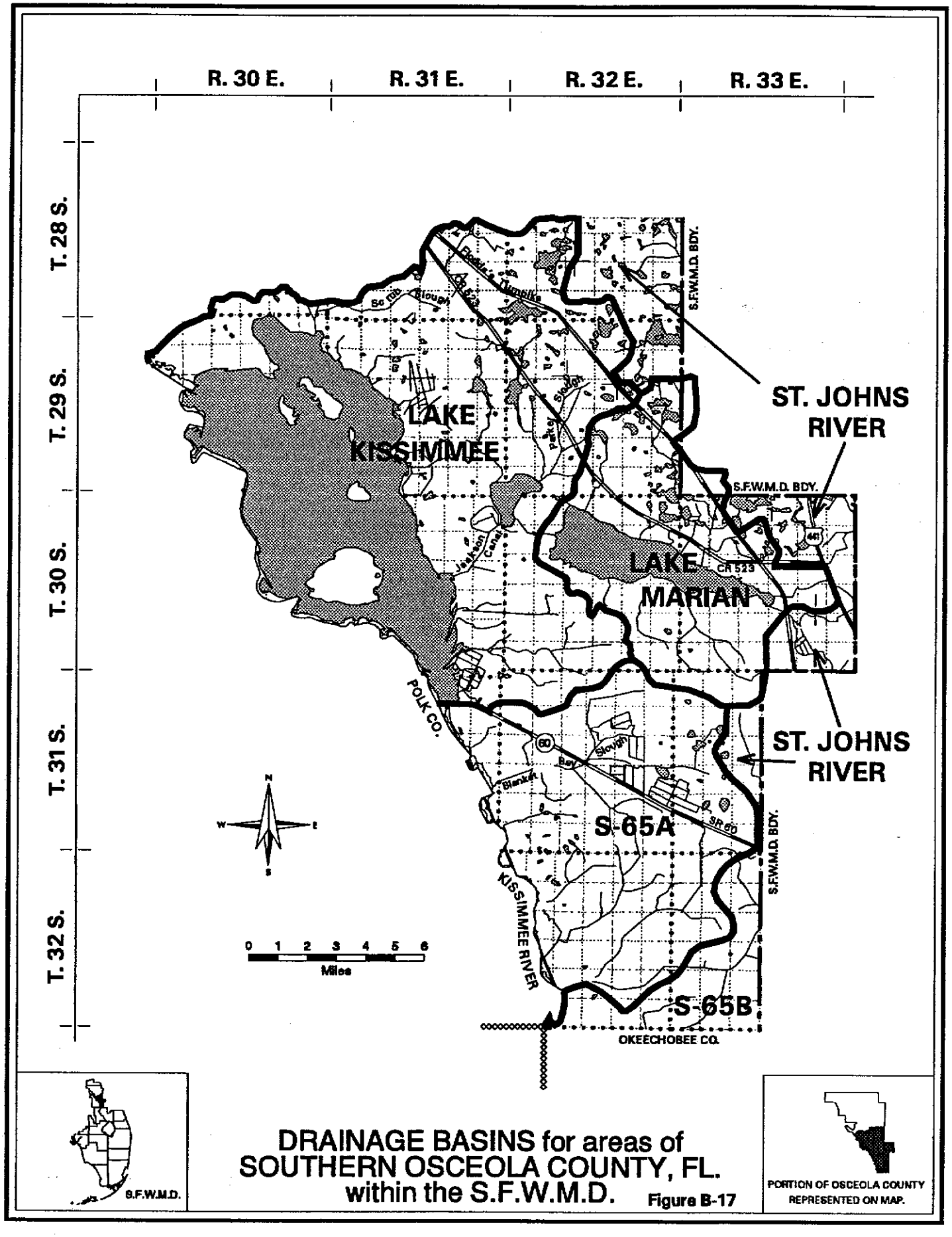


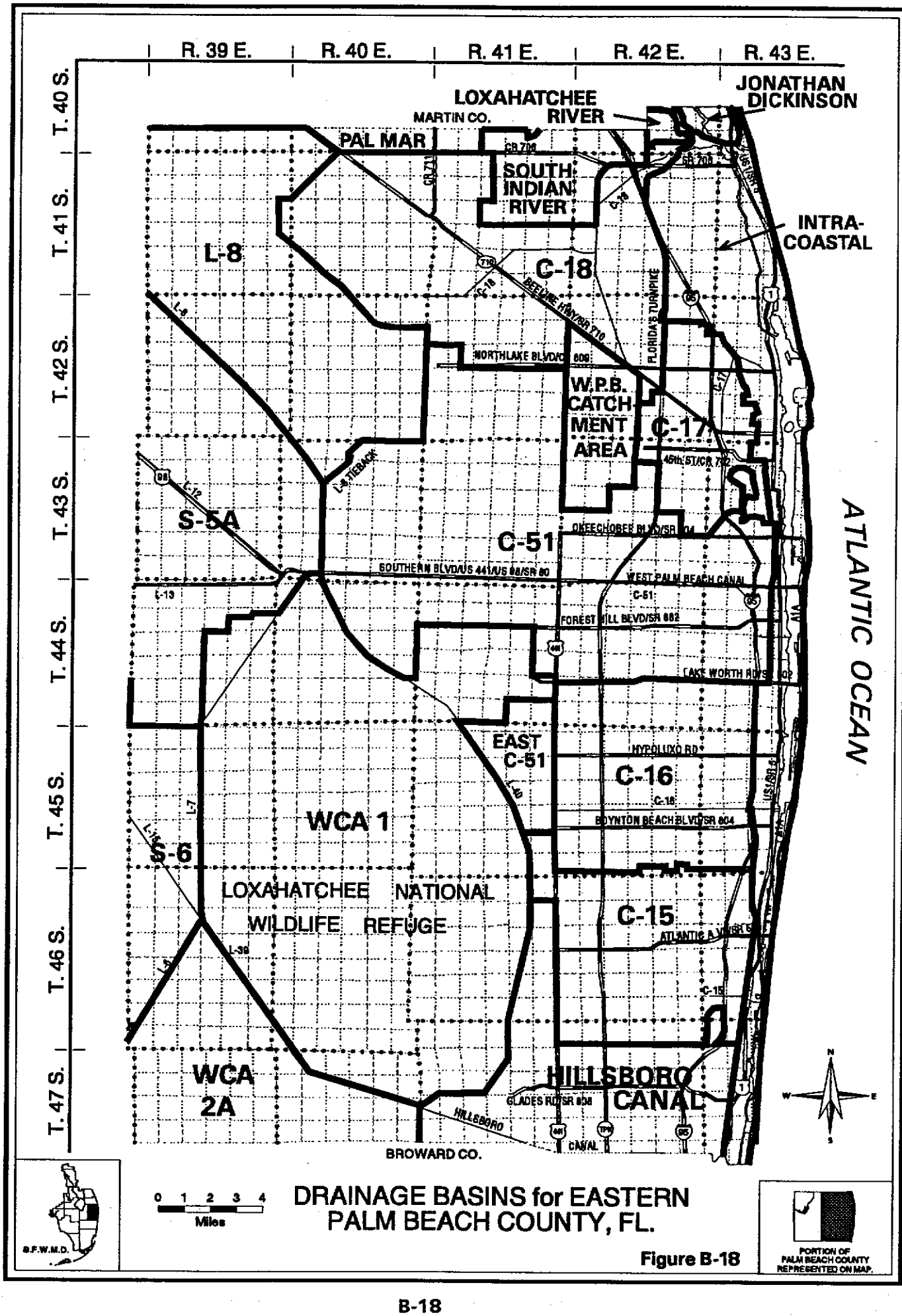
Figure B-16

DRAINAGE BASINS for areas of NORTHERN OSCEOLA COUNTY, FL. within the S.F.W.M.D.



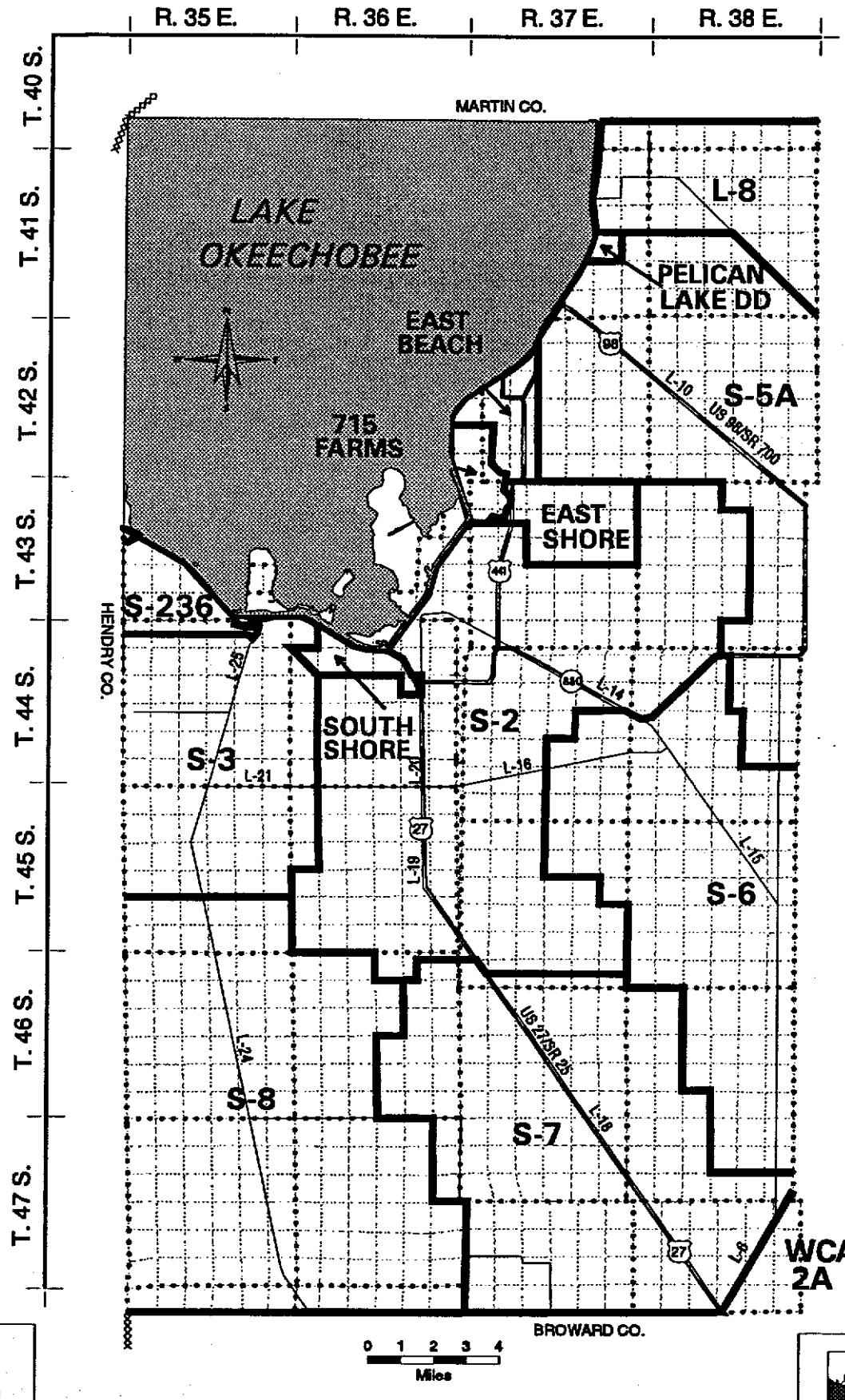
DRAINAGE BASINS for areas of SOUTHERN OSCEOLA COUNTY, FL. within the S.F.W.M.D.

Figure B-17

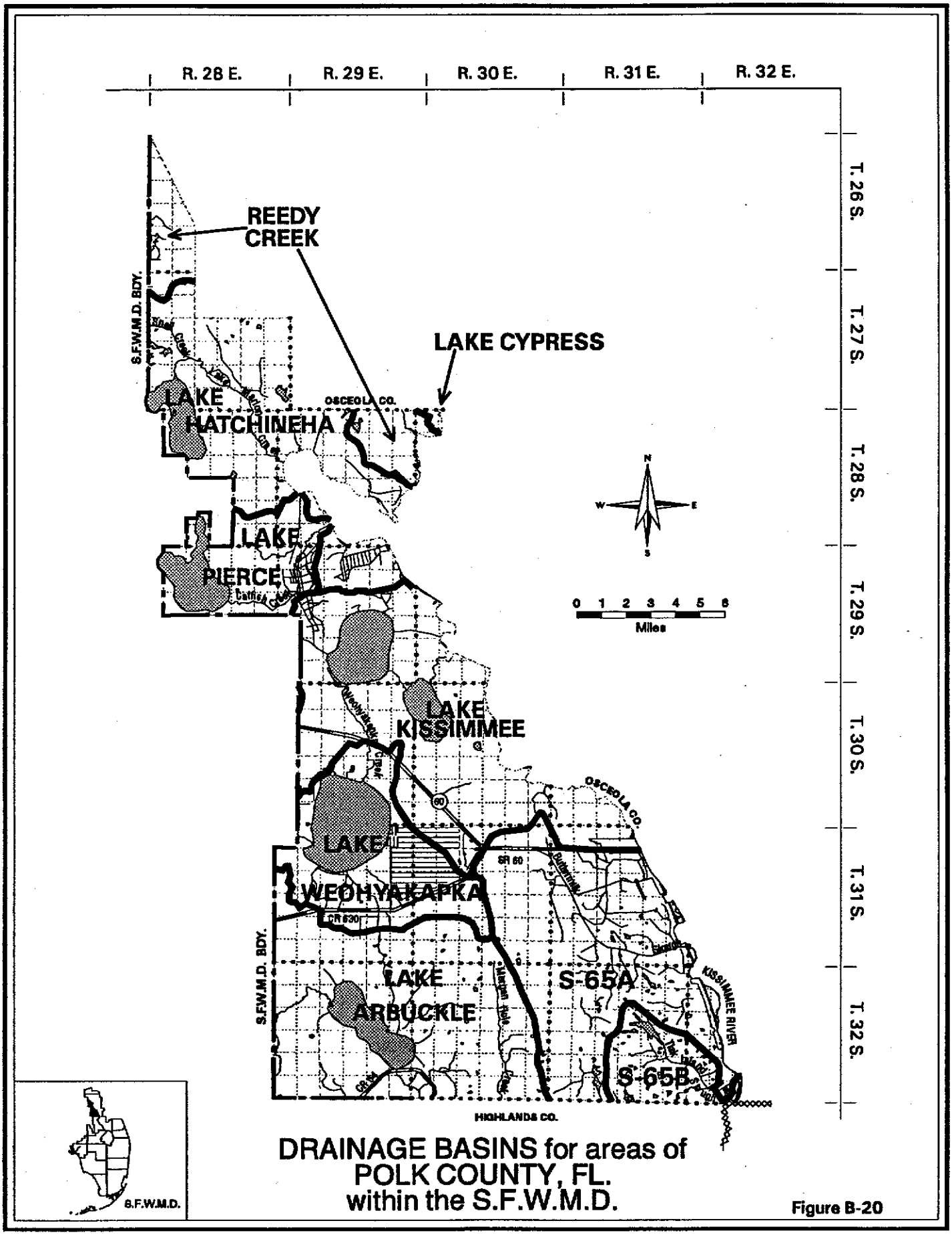


DRAINAGE BASINS for EASTERN PALM BEACH COUNTY, FL.

Figure B-18

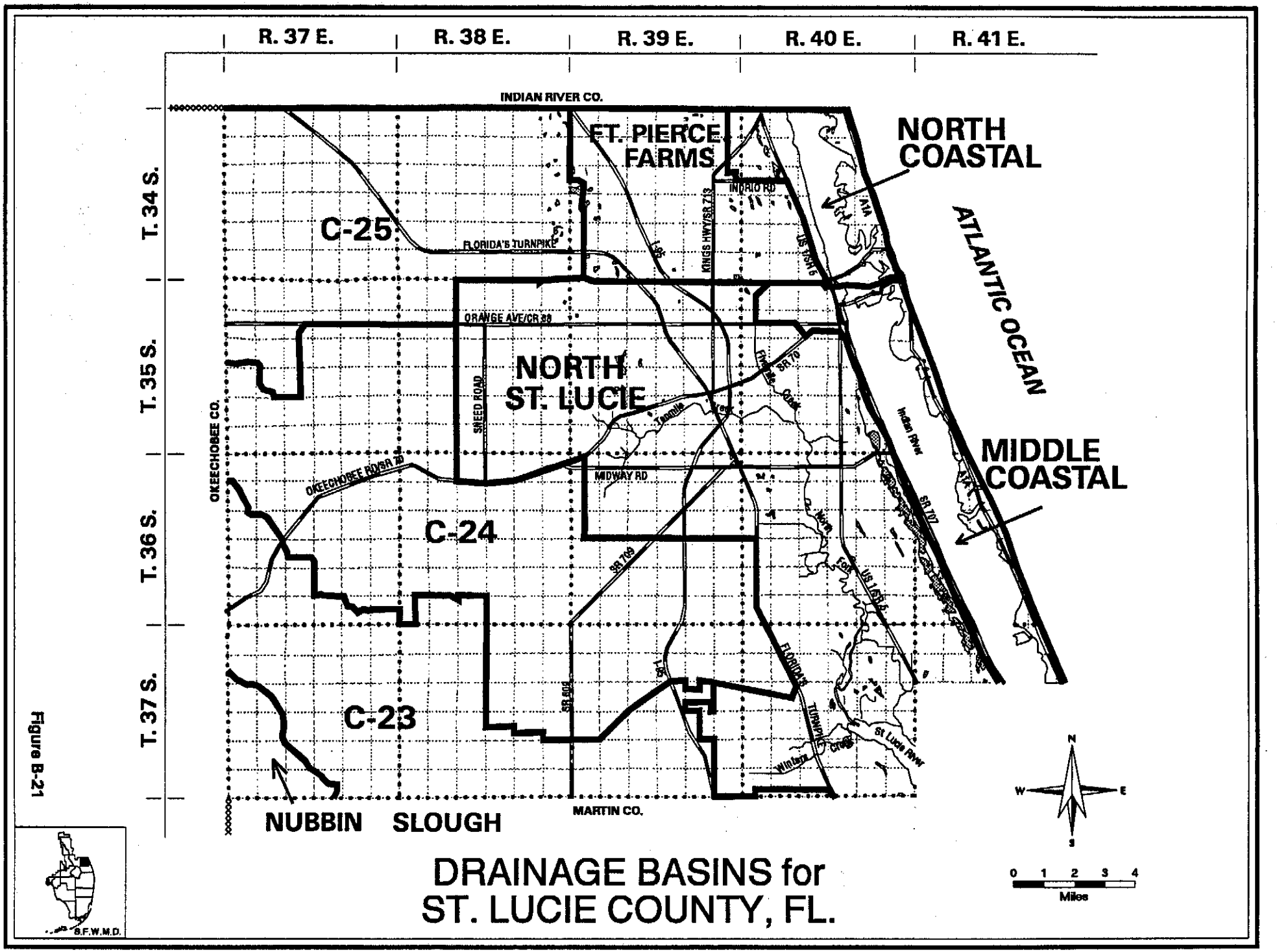


DRAINAGE BASINS for WESTERN PALM BEACH COUNTY, FL. Figure B-19



DRAINAGE BASINS for areas of POLK COUNTY, FL. within the S.F.W.M.D.

Figure B-20



DRAINAGE BASINS for ST. LUCIE COUNTY, FL.

Figure B-21

C. Rainfall

A. Selection of Design Event

The depth of rainfall in inches for a specific return frequency and storm duration is the most basic parameter needed in the design and analysis of a stormwater management system. The design event (return frequency storm) is determined either from local criteria or from the *Applicant's Handbook Volume II*.

B. Determination of Rainfall Amount

Once the design frequency and duration are known, use Figures C-1 through C-9 for estimating the appropriate rainfall depth.

Example 1:

Assume the following:

Frequency - 25-year
Duration - 24-hour
Location - West Palm Beach

From Figure C-5 the 25-year, 24-hour depth is approximately 10.1 inches at West Palm Beach.

10.1 inches Answer

Example 2:

Assume the following:

Frequency - 100-year
Duration - 72-hour
Location - Stuart

From Figure C-9, the 100-year, 72-hour depth is approximately 13.8 inches at Stuart.

13.8 inches Answer

Determination of Seasonal High Water Table (SHWT)

This section contains a discussion of certain indicators and methodologies that applicants can use to determine the elevation of the seasonal high water table (SHWT). The SHWT is the highest average depth of soil saturation during the wet season in a normal year. For the purposes of this section, the discussion of SHWT refers to water below ground. [Note: For a discussion of indicators of the seasonal high water level when it is above ground, see the section in this Manual titled "Protection of Wetland Hydroperiods."] The SHWT is one of the components that should be considered in the design of a surface water management system.

What follows is a summary of the methodology developed by the Natural Resource Conservation Service, NRCS, (formerly Soil Conservation Service (SCS)). This methodology is based on the chemical changes in the soil resulting from the presence of water. The water must be present in the soil for a time period sufficient to generate anaerobic conditions which result in changes in the color and morphology of the soil.

Discussion

An accurate evaluation of the SHWT elevation on a project site is an important aspect in the design of surface water management systems which meet the criteria in sections 4.4, 3.10, 3.11, and 3.12 of the *Applicant's Handbook, Volume II*.

The SHWT elevation should be used to design wet and dry detention and retention areas, predict soil storage, set project control elevations, and protect wetland hydroperiods. The proper use of the SHWT elevation in a project design also ensures the preservation of ground water supplies, protects estuaries from excess freshwater inflows, and aids in establishing wetland boundaries. [Note: there are additional factors to consider in establishing project control elevations such as wetland water level indicators, existing drainage facilities and existing projects. Applicants are advised to consult District staff regarding site-specific features which may affect establishing control elevations.]

Methods to determine the SHWT are either through direct physical measurements or indirectly by estimation of soil saturation through inspection and evaluation of the soil profile. Soils which experience continuous or periodic saturation may be identified by the presence of visible features within the soil.

Soil Surveys and Seasonal High Water Table

Preliminary information regarding the SHWT on a project site can be found in county soil surveys and soil interpretation documents. Such literature should be reviewed and applied as an initial tool in the project planning stage. Data from the soil survey reports must be verified in the field. Due to the scale of soil maps and soil survey correlation procedures, inclusions of other soil types in a soil map unit are common. Site-specific data sufficient to characterize the various soil and vegetative community types present throughout the project site should be evaluated.

Determination of Seasonal High Water Table (SHWT)

Soil surveys have been conducted as part of the National Cooperative Soil Survey Program since the end of the nineteenth century. Most of the county soil surveys compiled by the NRCS have been completed in Florida through years of field work.

Information on the SHWT of a soil can be found in tabular and text form in the published soil surveys. In recent surveys, wet and dry season water table information is provided in the soil map unit description and soil series description. The water table is described according to depth, duration, and dry season response. Entries in the soil survey are given to the nearest half-foot for soils in their natural state.

The SHWT depth and duration are listed by soil map units in tabular form under the title of "Soil and Water Features" in newer soil surveys, or "Water Features" in older ones. The information provided in soil surveys pertains to undrained soils. Water tables that have been modified by artificial drainage or impounding require additional consideration in determining SHWT elevations.

Field Identification of Seasonal High Water Table.
The SHWT indicators listed in Table D-1 are field indicators that are used for determining the location (elevation) of the SHWT in a soil profile. SHWTs are determined by examining a freshly dug soil pit or soil boring for listed indicators. The presence of any one of the indicators at the shallowest depth in the soil indicates the depth to the SHWT. These are very specific indicators for Florida described according to the NRCS. Accurate identification of these indicators requires training in the field of hydric soil indicators.

The identification of the SHWT is based on the premise that when soils are wet for a long enough duration, they exhibit certain visible properties that are easily observed in the field. Continuous or periodic inundation or saturation of the soil results in visible soil characteristics (color and morphology changes) that are indicative of wetness. Through years of observation and field verification by soil scientists, soil features have been reliably used to determine water table fluctuation patterns and to evaluate wet season water table conditions. This method holds true for evaluations conducted in either the wet or dry season, regardless of climatic anomalies.

Direct Measurement of the Seasonal High Water Table
The most direct way to estimate SHWT is through the measurement of water levels in shallow wells. Unfortunately, this approach is often too expensive, complicated and time-consuming to be practical because of variations in the water table over time and spatial variability across the landscape. Because surficial water tables fluctuate in response to such factors as cumulative rainfall, antecedent moisture conditions, evapotranspiration rates, permeability of soil horizons, and aquifer leakage rates, gross differences have been reported in long-term versus short-term studies. About 10 to 12 years of data are needed to reflect representative conditions.

Determination of Seasonal High Water Table (SHWT)

As the length of the study decreases, the uncertainty and variability of the data increase. Care must be taken to ensure that data are of an adequate duration, frequency, and accuracy to represent long-term hydrologic conditions. This includes taking into account variability in quantity and seasonality of rainfall and wet-year/dry-year cyclic variations.

Placement and construction of wells are also important considerations to reflect water table fluctuation accurately. Spatial variability in soils across the landscape and hydrologic effects of drainage structures must be reflected. Use of an unlined auger hole to determine saturation may be inaccurate or misleading, especially in clayey soils when only large cracks, fissures and voids (macropores) are filled with water after a recent rain, while the soil matrix itself remains unsaturated.

Temporal variations can also cause misleading data. In highly permeable sandy flatwood soils common to south Florida, water tables can drop six inches within 20 to 76 hours, depending on soil type.

The minimum number of years needed to describe water table depths adequately depends on 1) the amount of variability from long term average that is considered acceptable, 2) soil drainage class (a greater uncertainty occurs in poorly drained and very poorly drained soils than in better drained soils), and 3) season of the year.

Procedures in Determining Seasonal High Water Table

1. The first step is to consult the county soil survey. Identify the project boundaries on the soil survey maps and record each soil map unit found within the boundaries. Soil map unit descriptions, soil series descriptions, and soil-water interpretive tables will list the SHWT and drainage class for each soil on the project site. Record the SHWT for each soil type occurring within the project boundaries.

   While the soil survey should be consulted first, it should be used only as a guide to determine soil characteristics and cannot be used as a substitute for on-site investigation.

2. Field verification is important in properly identifying the SHWT. Due to the scale of mapping and spatial variability of the soil, other soils are commonly found within a soil map unit. These soils can have the same or different water table relationship. Soil borings (test pits) should be performed on the project site to determine the SHWT through observation and identification of indicators within the soil profile (see definitions and Table D-1). Borings should be conducted at the locations of proposed water management facilities. Each boring should include a description of the observed SHWT indicators. The use of a trained soil scientist or individual knowledgeable in the identification of SHWT indicators is recommended.

3. SHWT elevations should be surveyed in tenths of a foot to N.G.V.D. or N.A.V.D. and the recorded data submitted with the permit application including each soil type, depth from ground surface, observed indicators, and N.G.V.D. or N.A.V.D. elevation.

A location map showing the position of each soil boring on the project site should be included.

4. Both soil survey estimations of SHWT and on-site evaluation results should be submitted in the application. If field-verified SHWT elevations vary significantly (more than six inches) from soil survey information, additional evaluation should be conducted to determine the cause of the discrepancy. An explanation of any significant difference between field-verified SHWT elevations and the soil survey data should accompany each application submittal.

General Descriptions of Hydric Soil Indicators

Details for identification of the indicators listed below can be found in the publications: *"Soil and Water Relationships of Florida's Ecological Communities"* Florida Soil Conservation Service, 1992; and "*Field Indicators of Hydric Soils in the United States, Version 7,"* U.S. Department of Agriculture/Natural Resource Conservation Service, 2010. The District recommends coordination with District environmental analysts or a professional soil scientist in interpreting the above indicators with the soils in situ to determine the SHWT.

Dark surface: A layer >4 inches thick occurring within the upper 6 inches of the soil profile. The color of the soil is very dark gray or black with at least 70% of the soil particles coated by organic material.

Depleted matrix: Soil in which iron (Fe) has been removed or transformed by reduction and translocation to create contrasting color patterns of mottles of differing chroma and/or value as compared to the matrix.

Gleyed: A soil condition which is manifested by the presence of bluish or greenish colors through the soil profile or in mottles (spots or streaks) among other colors. These colors are not synonymous with gray colors. Gleyed colors are indicative of long term soil saturation.

Hydrogen sulfide: A soil feature common to tidal marshes, mangrove swamps and other very wet areas. A rotten-egg smell indicates that sulfate-sulfur has been reduced and the soil is anaerobic.

Marl: Soil formed or deposited in aquatic environments through precipitation by algae. Marl occurs in coastal areas predominantly in the Florida Keys but can extend northward to Indian River County on the east coast and to Collier County on the west coast. Marl reacts with dilute hydrochloric acid (HCl) to release carbon dioxide (CO2).

Muck: A well decomposed soil material where virtually all of the organic material is decomposed, limiting recognition of plant parts. Muck soils commonly contain a

leaf/root mat which lies over the muck soil itself. The leaf/root mat includes leaves, needles or other plant remains. If this layer is present it must be removed from the soil surface before a determination of the presence of muck can be made. Generally, muck is very dark brown to black, has a greasy feel, and stains the hands when rubbed between the fingers. Sand may be present, but grains should not be evident on initial visual inspection or texturing.

Mucky mineral texture: Mineral soil material containing 5% to 12% organic matter. When rubbed between the fingers, the soil has a greasy feel; but unlike muck, sand grains can be seen or felt.

Organic bodies: Soil accretions, generally, but not always, 1 to 3 cm in size, that are muck or mucky mineral texture found within the soil matrix, and are usually associated with live plant roots.

Redoximorphic features: Visible soil morphological features associated with wetness and which form by the processes of oxidation, reduction, and translocation of iron (Fe) and manganese (Mn). These features appear as irregular shaped spots or blotches of contrasting color in the soil.

Sandy redox: Terminology applied to the zones of accumulation of Fe and Mn soft masses and pore linings in the soil matrix.

Saturation: A soil condition characterized by zero or positive pressure in the soil. Saturation can be estimated by observing free water in an unlined borehole (auger hole) allowing time for stabilization.

Stratified layers: Layers occurring in the soil along river flood plains and along other water bodies where flooding is common. These alluvial soils form alternating patterns of dark soils and light colored sands which result from periodic repeating flood events.

Stripped matrix: Color patterns within the soil that occur from the mobilization and translocation of Fe and Mn oxides and organic matter. Water fluctuation results in splotchy uncoated (stripped) areas within the soil profile. Two or more colors are generally recognizable where the stripped (gray) areas are rounded and about 1 to 3 cm in diameter.

Determination of Seasonal High Water Table (SHWT)

Table D-1: Seasonal High Water Table Indicators

Indicators	Sandy Soils	Loamy or Clayey Soils	Description
muck	X	X	If present at ground surface, indicates SHWT is at or above the surface
mucky mineral texture	X	X	If present at ground surface, indicates SHWT is at or above the surface
hydrogen sulfide	X	X	Rotten egg smell.
gleyed (sandy matrix)	X		Bluish or greenish color (must begin within 6" of soil surface in sandy soils).
gleyed (loamy matrix)		X	Bluish or greenish color (must begin within 12" of soil surface in loamy & clayey soils).
dark surface	X		Black surface layer ≥ 4" thick and if present, SHWT is within 6” of the surface.
organic bodies	X	X	Organic accretions 1 – 3 cm in size.
sandy redox	X		Fe & Mn accumulations.
stripped matrix	X		Fe & Mn oxides stripped from soil.
stratified layers	X	X	Alluvial soils in upper 6 " with alternating layers of sand & mucky texture.
marl		X	Silty gray material.
depleted matrix		X	Contrasting splotchy or stripped areas within the soil. SHWT is at upper limit of the indicator.

X= applicable soil texture for given indicator

Note: The SHWT is found at the shallowest depth to the observed indicator.

E. Runoff

A. Volume

A method for estimation of runoff from rainfall information has been developed by the United States Department of Agriculture's Natural Resource Conservation Service (formerly the Soil Conservation Service [SCS].

The runoff equation used by the NRCS was developed by Victor Mockus and others and presented in the U.S. Soil Conservation Service's National Engineering Handbook, Section 4, "Hydrology." The relationship between accumulated rainfall and accumulated runoff was derived from experimental data for numerous soils, vegetative cover and land treatment measures.

The equation is:

$$Q = \frac{(P - Ia)^2}{(P - Ia) + S}$$

where

Q = direct runoff (inches)

P = rainfall (inches) as determined from Figures $C-1$ through $C-9$, as appropriate

Ia = initial abstraction inc. surface storage, interception, and infiltration prior to runoff (inches)

S = soil storage (inches) as determined based on soil type and depth to water table (DWT)

This equation is particularly easy to use with cumulative rainfall distributions. For purposes of developing project-specific runoff generation relationships, District staff apply this formula using a weighted soil moisture storage value for the maximum retention parameter, S. For example, if a project had the ability to store 6.0 inches of rainfall in the soil profile and it was 50% impervious, then for purposes of calculating the cumulative runoff volumes, use an S value of:

$$S = (6.0 \text{ inches})(1 - 0.50) = 3.0 \text{ inches}$$

The relationship between Ia and S was developed from experimental watershed data. The empirical relationship used in the SCS runoff equation is:

$$Ia = 0.2S$$

Substituting 0.2S for Ia in the runoff equation, above, yields:

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

To convert S values into curve numbers (CN), the following equation developed by the NRCS is applied:

$$\mathrm{CN} = \frac{1000}{\mathrm{S} + 10}$$

Example:

Assume the following:

$\mathrm{P}_{24} = 10.0$ inches rainfall

$\mathrm{S}_{\mathrm{o}} = 10.0$ inches storage in soil profile

$\mathrm{I} = 50\%$ impervious

$\mathrm{S} = 10.0\ (1 - .50) = 5.0$ inches

$$\mathrm{CN} = \frac{1000}{\mathrm{S} + 10} = \frac{1000}{5.0 + 10} = 67$$

Therefore,

$$\mathrm{Q} = \frac{(\mathrm{P} - 0.2\mathrm{S})^2}{\mathrm{P} + 0.8\mathrm{S}} = \frac{[10.0 - 0.2(5.0)]^2}{10.0 + 0.8(5.0)} = \frac{5.8 \text{ inches}}{24 \text{ hrs}}$$

CN values can also be determined directly from the NRCS's Technical Release 55 (TR-55), Urban Hydrology for Small Watersheds for specific land uses and Hydrologic Soil Groups (HSGs). CN values for areas comprised of different land uses and/or soil types should be weighted based on the area of the respective land uses to develop a composite CN value.

Example:

Assume the following:

$\mathrm{A}_1 = 1.0$ acres of open space in good condition

$\mathrm{HSG}_1 = \mathrm{C}$

$\mathrm{CN}_1 = 74$

$\mathrm{A}_2 = 5.0$ acres of impervious area

$\mathrm{HSG}_2 = \mathrm{C}$

$\mathrm{CN}_2 = 98$

Therefore,

$$CN_{comp} = \frac{\sum_{i=1}^{n}(A_i)(CN_i)}{\sum_{i=1}^{n} A_i} = \frac{(A_1)(CN_1) + (A_2)(CN_2)}{A_1 + A_2} = \frac{(1.0)(74) + (5.0)(98)}{1.0 + 5.0}$$
$$= 94$$

The NRCS computational procedure computes peak discharge (q) from daily runoff (Q) by means of an equation which uses a peak factor (K) which has a standard value of 484 in most parts of the United States. The peak factor relates the rising limb to the recession limb of the SCS triangular hydrograph. In the South Florida Water Management District, for slopes less than approximately five feet per mile, a value for K of 100 is recommended (ref. Capece et al 1988) and for slopes greater than five feet per mile a factor of 256 is recommended.

F. Water Storage

A. Ground Storage

1. One of the requirements for dry retention/detention flood protection areas is that each shall have a "mechanism" for returning the water level to control elevation. In such situations, the term "mechanism" is normally interpreted to mean something designed, fabricated, and installed in or on the site. As a result, almost every such project will have something - a V-notch weir, exfiltration trench, key/mosquito ditch, sump, etc. - to provide the required drawdown.

   Such devices may not always be necessary. If it can be shown that the soil itself allows the water table to subside in an acceptable length of time, then no "artificial" mechanism need be installed. The burden of proof is on the applicant, and District staff will not approve, or recommend for approval, a dry system which does not provide such mechanisms, be they natural or fabricated.

2. The moisture storage capability (S) of the soil profile has been estimated by the United States Department of Agriculture – Natural Resource Conservation Service (USDA – NRCS; fka Soil Conservation Service [SCS]) for the soils found within the SFWMD boundaries. The total amount of water which can be stored in the soil profile expressed as a function of the depth to the water table* for these soils is:

SOIL STORAGE

Depth to W.T.*	Coastal(1)				Flatwoods (2)				Depressional (3)			
	Uncomp. S (In.)	Uncomp. CN	Comp. S	Comp. CN	Uncomp. S (In.)	Uncomp. CN	Comp. S (In.)	Comp. CN	Uncomp. S (In.)	Uncomp. CN	Comp. S (In.)	Comp. CN
1	0.60	94	0.45	96	0.60	94	0.45	96	0.60	94	0.45	96
2	2.50	80	1.88	84	2.50	80	1.88	84	2.10	83	1.58	86
3	6.60	60	4.95	67	5.40	65	4.05	71	4.40	69	3.30	75
4	10.90	48	8.18	55	9.00	53	6.75	60	6.80	60	5.10	66

*Typically, the Seasonal High Water Table. Consult with District staff regarding site-specific situations and questions.

(1) Sandy soils 0 - 40" thick with water tables dropping below 40" - St. Lucie series is representative

(2) Water tables 15" - 40" - Immokalee series is representative

(3) Water tables above ground - 15" - Riviera and Pompano series are representative

The compacted values represent the cumulative water storage values reduced by 25 percent to account for the reduction in void spaces due to the compaction which occurs incidental to earthwork operations. An example of the use of this information is:

Assume the following:

Average Finished Grade = 17.0 feet NGVD

Average Ground Water* Level = 14.0 feet NGVD

Percent of Project in Lakes = 15%

Percent of Project Impervious = 35%

Coastal Soil Type (compacted)

F. Water Storage

The next step is to compute the project-specific S-value to use for determining the runoff volume which will be discharged from the site. The depth to the water table will be three feet (17.0 - 14.0 = 3.0), consequently the total amount of water which can be stored under pervious surfaces will be 4.95 inches. If 15% of the project will be in lakes and 35% will be covered by impervious surfaces, then the remainder, or 50% will be pervious areas and the appropriate weighted S-value will be:

$$S = 4.95" \text{ x } (1 - (0.15 + 0.35)) = 2.48"$$

S-values for depths between those indicated on the table can be determined by linear interpolation:

Assume the following:

Average Finished Grade = 17.3-ft NGVD

Average Ground Water* Level = 14.0 -ft NGVD

Coastal Soil Type (compacted)

DWT = (17.3 – 14.0) = 3.3-ft NGVD

D_1 = 3’ S_1 = 4.95”

D_2 = 4’ S_2 = 8.18”

D_x = 3.3’ Solve for S_x

$$S_x = \left[\frac{(D_x - D_1)(S_2 - S_1)}{(D_2 - D_1)}\right] + S_1 = \left[\frac{(3.3' - 3')(8.18" - 4.95)}{(4' - 3')}\right] + 4.95" = 5.92"$$

B. Surface Storage

1. Storage in Lakes and Canals

For small projects the amount of water which can be stored within a developed project's lakes and canals can be assumed to extend vertically without variation of surface area. For a project with five acres of lakes and canals and an average top of bank elevation three feet above the maintained water level within the project, the estimated "bank-full" storage capability is (5.0-ac x 3.0-ft) = 15 ac-ft of water storage without overflowing the canal or lake banks. The actual storage volume will be somewhat different due to side slopes and the changing surface area versus elevation; however, it is not felt to be significant enough to substantially affect the calculated values for small projects. It should be noted that in certain projects that have a large number of lakes that compose the total lake acreage, thus creating a high ratio of shoreline to lake acreage, the side slopes may have to be considered when the volume of lake storage is computed.

2. Storage on the Land

The amount of water which can be stored above the land surface in the developed areas can be estimated as shown on Figure F-1. The project used for Figure F-1 has 360 acres of

graded property below the house pad elevation of 17.5-ft NGVD and above the top of bank of lake elevation of 14.5-ft NGVD. The calculation is based upon the assumption that the total area with standing water varies linearly with the stage on-site. Based upon 360 acres of landscaped property with a three-foot difference in grade, the rate of submergence versus rising stage is 360-ac/3.0-ft or 120 acres of land submerged per foot of rise.

As an example, at elevation 16.0-ft NGVD, a total of 180 acres has some standing water on it and the depth of standing water varies from 1.5-feet for property at 14.5-ft NGVD to zero for property at 16.0-ft NGVD. Hence, the total volume of water stored on the land is equal to the total acreage with water on it times the average depth of standing water:

180 ac x (1.5-ft + 0.0-ft)/2 = 135 ac-ft stored

3. Stage-Storage Graph

The above calculations can then be represented visually by the construction of a stage-storage curve as shown on Figure F-2.

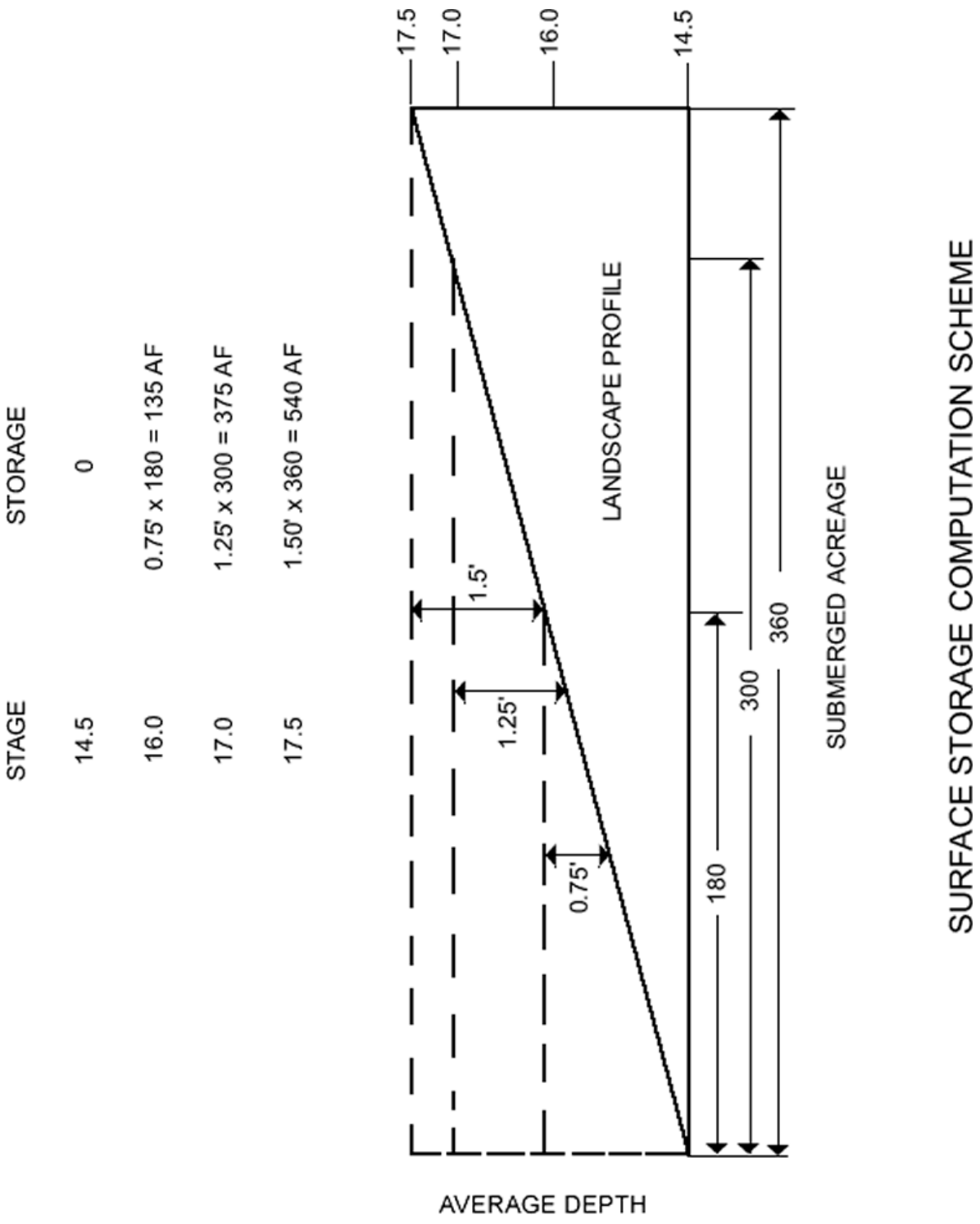

SURFACE STORAGE COMPUTATION SCHEME
STAGE
STORAGE
14.5
0
16.0
0.75' x 180 = 135 AF
17.0
1.25' x 300 = 375 AF
17.5
1.50' x 360 = 540 AF
17.5
17.0
16.0
14.5
LANDSCAPE PROFILE
1.5'
1.25'
0.75'
180
300
360
SUBMERGED ACREAGE
AVERAGE DEPTH

Figure F-1

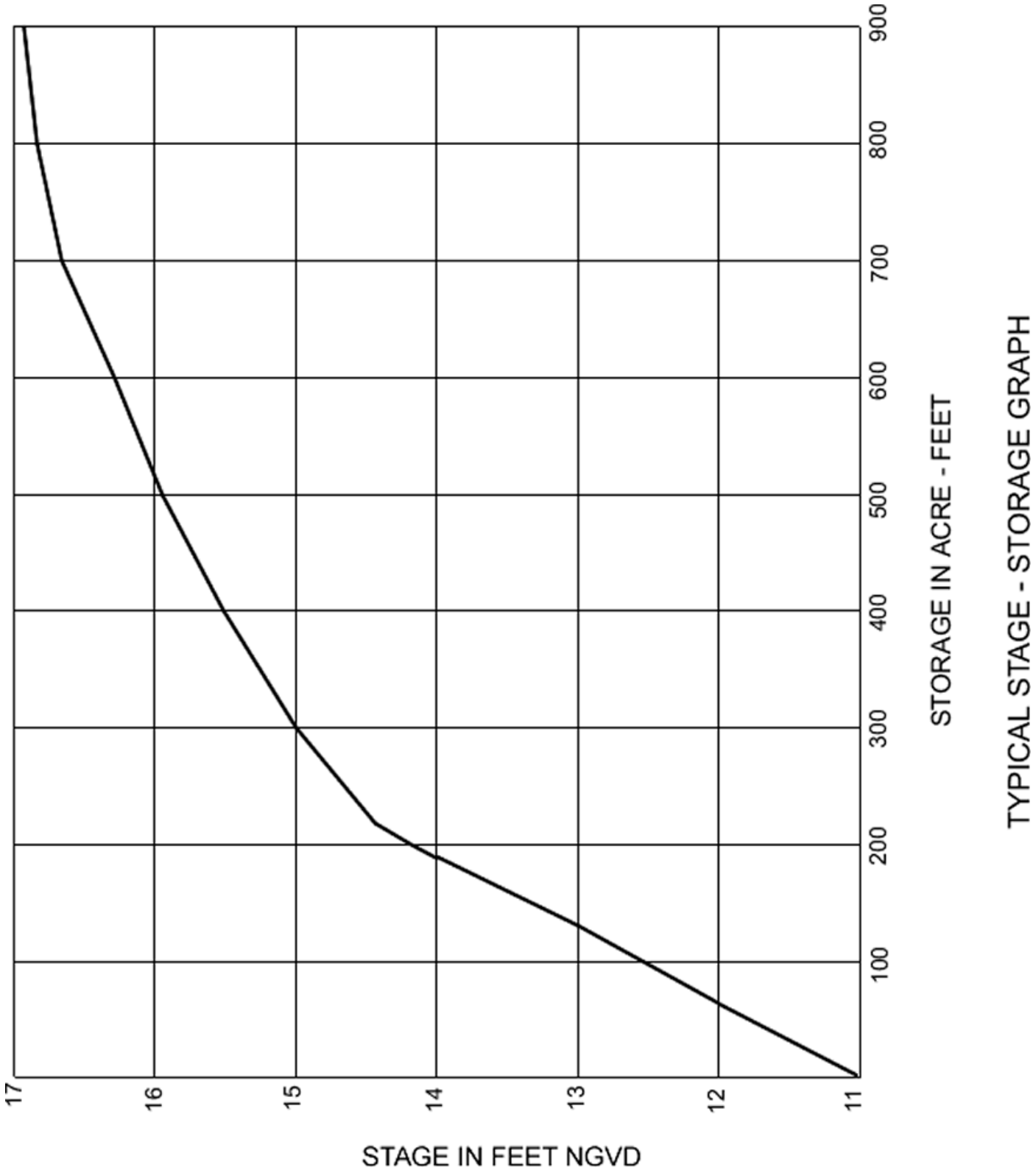

TYPICAL STAGE - STORAGE GRAPH
STORAGE IN ACRE - FEET
100
200
300
400
500
600
700
800
900
STAGE IN FEET NGVD
17
16
15
14
13
12
11

Figure F-2

Exfiltration Trenches

A. From Paragraph 4.4 of the *Applicant's Handbook Volume II*:

"4.4 Underground Exfiltration Systems -

(a) Systems shall be designed for the retention volumes specified in Section 4.2.1 for retention systems, exfiltrated over one hour for retention purposes, prior to overflow, and based on test data for the site. (Note: such systems should not be proposed for projects to be operated by entities other than single owners or entities with full time maintenance staff.)

(b) A safety factor of two or more shall be applied to the design to allow for geological uncertainties.

(c) A dry system is one with the pipe invert at or above the average wet season water table."

Paragraph 4.2.2(a) is the requirement that projects with commercial or industrial zoning must provide dry pretreatment. Obviously, a project which falls into this category and is being designed to meet the criteria by using trench must have the pipe invert at or above the average wet season water table. It is also a requirement that no gravity discharge from the trench system be allowed below the elevation of the top of the perforated pipe.

B. <u>Design of Trenches</u>

The currently accepted equation for the design of exfiltration trenches within the SFWMD follows, while an acceptable typical section is provided in Figure G-4 along with the description of the appropriate parameters.

$$L = \frac{FS\left[(\%WQ)\left(V_{wq}\right) + V_{add}\right]}{K(H_2W + 2H_2D_u - D_u^2 + 2H_2D_s) + (1.39 \times 10^{-4})WD_u}$$

where:

L = trench length (ft)

FS = factor of safety; no less than 2.0

%WQ = percent reduction in required water quality (WQ) treatment volume based on method of WQ treatment: 50% for wet/dry retention.

V_{wq} = volume of WQ treatment provided by trench in one hour (ac-in/hr);

greater of one-inch over total project area or 2.5 inches multiplied by the percentage impervious over the total project area less water management areas

V_{att} = volume of storage provided in addition to V_{wq} in one hour (ac-in/hr);

K = hydraulic conductivity (cfs/ft^2-ft head)

H_2 = head on saturated surface (ft) = EL_{inv} – CE

where:

EL_{inv} = invert elevation of lowest weir/bleeder allowing discharge from trench (ft NGVD or ft NAVD)

CE = control elevation (ft NGVD or ft NAVD)

W = trench width (ft)

D_u = unsaturated trench depth (ft) = EL_{top} – CE

where:

EL_{top} = top elevation of trench (ft NGVD or ft NAVD)

D_s = saturated trench depth (ft) = CE - EL_{bot}

where:

EL_{bot} = bottom elevation of trench (ft NGVD or ft NAVD)

Following is a derivation of the formula for clarity:

1. Volume of Runoff:

$$Q = \left(V \frac{\cancel{ac \cdot ft}}{\cancel{hr}}\right)\left(43560 \frac{ft^2}{\cancel{ac}}\right)\left(\frac{ft}{12\ \cancel{in}}\right) = 3630V \qquad (EQ.1)$$

where:

Q = volume of runoff in one hour (ft^3/hr)

V = total volume exfiltrated in one hour = FS[(%WQ)(V_{wq}) + V_{add}]

2. Volume of Storage In Trench (based on 50% voids):

$$V_{stor} = 0.50WD_uL \qquad (EQ.2)$$

where:

V_{stor} = volume physically stored in trench in one hour (ft^3/hr)

3. Volume Exfiltrated:

$$V_{bot} = \left(K\frac{ft^3}{\cancel{s}\cdot\cancel{ft^2}\cdot\cancel{ft\ head}}\right)(H_2\cancel{ft})(W\cancel{ft})(L\cancel{ft})\left(3600\frac{\cancel{s}}{hr}\right)$$

$$V_{bot} = 3600KH_2WL \qquad (EQ.3)$$

where:

V_{bot} = volume exfiltrated through trench bottom in one hour (ft^3/hr)

and:

$$V_{side} = 3600KL(S_1H_1 + S_2H_2) \qquad (EQ.4)$$

where:

V_{side} = volume exfiltrated through trench side in one hour (ft^3/hr)

$S_1 = (D_uft)(Lft)$

$S_2 = (D_sft)(Lft)$

$H_1 = (H_2ft\ head) - (0.50D_uft)$

then:

$$V_{side} = KD_uL[(H_2 - 0.50D_u) + KD_sLH_2]$$

$$V_{side} = \left(3600\frac{\cancel{s}}{hr}\right)\left(K\frac{ft^3}{\cancel{s}\cdot\cancel{ft^2}\cdot\cancel{ft\ head}}\right)(L\cancel{ft})[(H_2\cancel{ft})(D_u\cancel{ft}) - (0.50D_u^2\cancel{ft^2}) + (H_2\cancel{ft})(D_s\cancel{ft})]$$

$$V_{side} = 3600KL(H_s D_u - 0.50D_u^2 + H_s D_s) \qquad (EQ.5)$$

Setting the volume of runoff equal to the volume exfiltrated (EQ.1 = EQ.2 + EQ.3 + EQ.5 + EQ. 5):

$$Q = V_{stor} + V_{bot} + 2V_{side}$$

$$3630V = 0.50WD_u L + 3600KH_2 WL + 2[3600KL(H_2 D_u - 0.50D_u^2 + H_2 D_s)]$$

Solving for L:

$$L = \frac{1.00834V}{K(H_2 W + 2H_2 D_u - D_u^2 + 2H_2 D_s) + (1.39 \times 10^{-4})WD_u} \qquad (EQ.6)$$

However, considering the effect on the answer and normal variations in estimation, the equation can be simplified:

$$L = \frac{FS\left[(\%WQ)\left(V_{wq}\right) + V_{add}\right]}{K(H_2 W + 2H_2 D_u - D_u^2 + 2H_2 D_s) + (1.39 \times 10^{-4})WD_u} \qquad (EQ.7)$$

For those situations when either:

(1) the saturated depth of trench is greater than the non-saturated depth of trench; or

(2) the trench width is greater than two times the total trench depth,

the proportional assumptions for flow through the trench bottom are probably not valid. A conservative design formula for use in these cases would be:

$$L = \frac{FS\left[(\%WQ)\left(V_{wq}\right) + V_{add}\right]}{K(2H_2 D_u - D_u^2 + 2H_2 D_s) + (1.39 \times 10^{-4})WD_u} \qquad (EQ.8)$$

As with any design method, a good amount of engineering judgment must be applied for use on site-specific cases.

***NOTE:** The formulas derived to calculate exfiltration trench length are based on a one-hour time of exfiltration. This is representative of the majority of rainfall events being of small magnitude and short duration. Larger-magnitude and longer-duration storm events can affect the design by significantly changing the water table conditions assumed in the equation. In those situations, the design professional must consider the effects that groundwater mounding will have on the elevation of the water table and adjust the variables in the equations accordingly.

Example:

- V_{wq} = 15.00 Ac-In. **[Given]**
- V_{add} = 0.00 Ac-In. **[WQ treatment only**]
- K = 1.75 x 10-4 cfs/ft2 - ft head **[Design condition**]
- EL_{top} = 10.0-ft NGVD **[Design condition]**
- EL_{inv} = 7.5-ft NGVD **[Design condition; no bleeder]**
- CE = 5.0-ft NGVD **[Design condition]**
- EL_{bot} = 2.5-ft NGVD **[Design condition]**
- W = 5.0 ft **[Design condition]**
- $H_2 = EL_{inv} – CE = 7.5 – 5.0 = 2.5$ ft
- $D_u = EL_{top} – CE = 10.0 – 5.0 = 5.0$ ft
- $D_s = CE - EL_{bot} = 5.0 – 2.5 = 2.5$ ft

Check for governing equation:

- Is $D_u > D_s$?; yes (5.0 ft > 2.5 ft)
- Is $W < 2(D_u + D_{s)}$?; yes (5.0 ft < 2(5.0 + 2.5)

Therefore, the standard equation applies:

$$L = \frac{FS\left[(\%WQ)\left(V_{wq}\right) + V_{add}\right]}{K(H_2W + 2H_2D_u - D_u^2 + 2H_2D_s) + (1.39 \times 10^{-4})WD_u}$$

$$L = \frac{2.0[(0.50)(15.0) + 0.00]}{0.000175[(2.5)(5.0) + 2(2.5)(5.0) - 5.0^2 + 2(2.5)(2.5)] + 0.000139(5.0)(5.0)}$$

$$L = 1{,}910.8\ ft$$

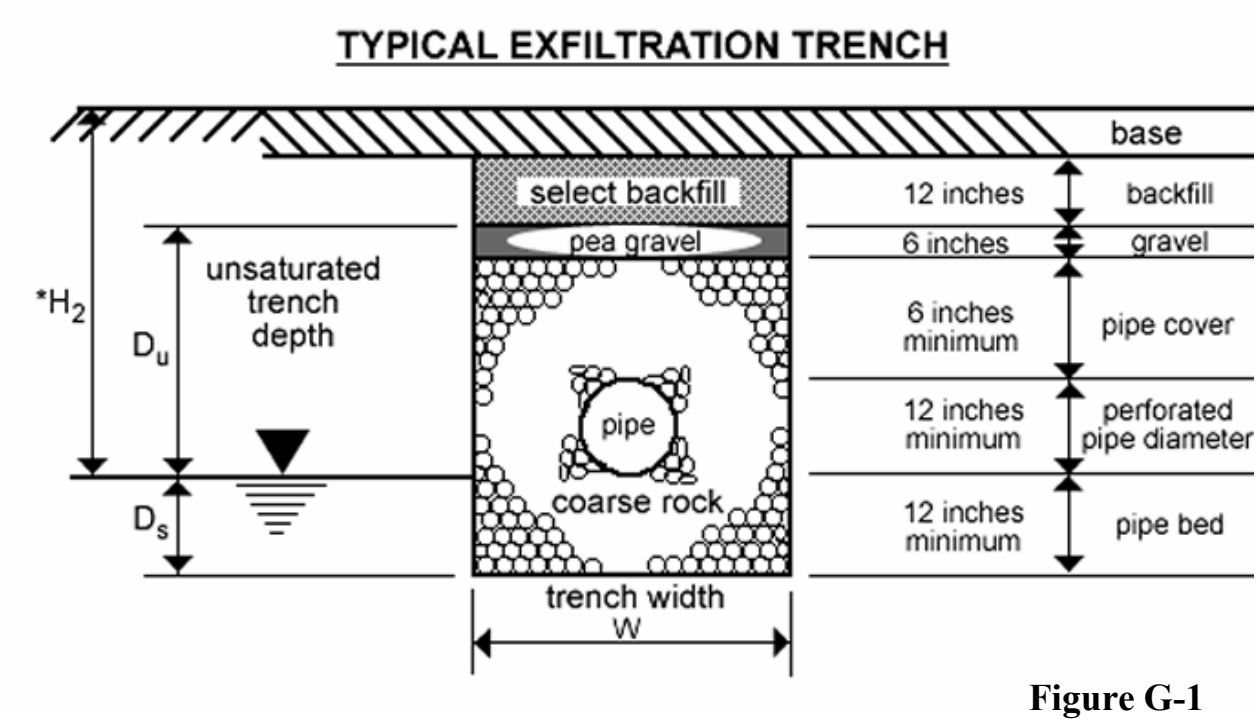


Figure G-1

The value of H_2 to be used in the equation is the effective head on the saturated surface. A weir must be installed at the downstream end of the trench, to create true retention and to establish H_2. To achieve the design retention and exfiltration, the crest of the weir must be no lower than the top of the trench pipe.

C. Incorporation of Exfiltration Trench into Surface Water Management (SWM) Models

Design professionals will often wish to account for the storage capability of the exfiltration trench in their SWM calculations in an effort to establish minimum grading requirements (road crown/parking lot, perimeter berm, finished floor elevations (FFEs) and to demonstrate that a project meets allowable discharge rates. Some SWM modeling software allows for the explicit input of exfiltration trench parameters and the modeling of the ground water/surface water interactions associated with trench. In cases where SWM model software that does not allow for this explicit input of exfiltration trench parameters is used, following are acceptable methods for incorporating the theoretical performance of exfiltration trench into SWM models:

1. Rainfall Depth

   - Convert the volume provided by the exfiltration trench to a depth (typically in inches) by dividing the volume by the project/basin area:

     $$d_{exf} = \frac{V}{A}$$

   - Subtract the depth from the rainfall:

     $$P_{exf} = P - d_{exf}$$

   - Set the initial stage of the model to the top of trench elevation or crest elevation of the controlling weir, whichever is lowest. In reducing the rainfall depth over the project/basin the implicit assumption is made that the trench is “full” and the water table is at the lowest elevation at which it can be discharged;

   - Example:

     P = 7.5 inches

     V = 15.0 ac-in

     A = 10.0-ac

     $$d_{exf} = \frac{10.0\ ac-in}{10\ ac} = 1.0\ in$$

     $$P_{exf} = 7.5 - 1.0 = 6.5\ in$$

2. Soil Storage/Curve Number (CN)

- Convert the volume provided by the exfiltration trench to a depth (typically in inches) by dividing the volume by the project/basin area:

  $$d_{exf} = \frac{V}{A}$$

- If the model being used requires a value for soil storage, add the depth to the soil storage:

  $$S_{exf} = S + d_{exf}$$

- If the model being used requires a value for CN, convert the CN to soil storage using USDA – NRCS techniques, add the depth to the soil storage, and convert back to CN:

  $$CN = \frac{1000}{S + 10}$$

- Set the initial stage of model to the CE;

- Example:

  S = 2.5 inches

  $$CN = \frac{1000}{2.5 + 10} = 80$$

  d_{exf} = 1.0 inches

  $$S_{exf} = 2.5 + 1.0 = 3.5$$

  $$CN_{exf} = \frac{1000}{3.5 + 10} = 74.1$$

3. Stage-Storage/Stage-Volume

   - Rearrange the governing exfiltration trench equation to solve for volume:

     $$V = L[K(H_2W + 2H_2D_u - D_u^2 + 2H_2D_s) + (1.39 \times 10^{-4})WD_u]$$

   - Develop a stage-storage relationship based on increasing H_2 up to the top of trench elevation or crest elevation of the controlling weir, whichever is lowest;

   - Storage will be constant at 100% from the controlling elevation up;

- Incorporate the storage of the trench into the storage of the project/basin at the appropriate elevations;

- Set the initial stage of model to the CE;

- Example:

  L = 1,910.8 feet **[Given]**

  K = 1.75 x 10-4 cfs/ft^2 - ft head **[Design condition**]

  EL_{top} = 10.0-ft NGVD **[Design condition]**

  EL_{inv} = 7.5-ft NGVD **[Design condition; no bleeder]**

  CE = 5.0-ft NGVD **[Design condition]**

  EL_{bot} = 2.5-ft NGVD **[Design condition]**

  W = 5.0 ft **[Design condition]**

  D_u = 5.0 ft

  D_s = 2.5 ft

  H_2 = varies (see table)

Stage (ft NGVD)	H_2 (ft)	Volume (ac-ft)
5.0	0.0	0.00
5.5	0.5	0.14
6.0	1.0	0.41
6.5	1.5	0.69
7.0	2.0	0.97
7.5	2.5	1.25
8.0	N/A	1.25
8.5	N/A	1.25
9.0	N/A	1.25
9.5	N/A	1.25
10.0	N/A	1.25
10.5	N/A	1.25

D. Three field test procedures for determining hydraulic conductivity will be described next. The first is the usual constant head test. The second is the

falling-head test, which may be utilized in areas of excellent percolation, and when difficulty "keeping the hole filled" is encountered. The third is a standard test used by the Florida Department of Transportation.

The design professional is cautioned that, when tests are conducted, site-specific characteristics, such as soil type, geology and hydrologic conditions must be factored into the field test methodology. Actual hydrologic conditions under which the exfiltration trench would be expected to perform must also be considered

1. <u>Usual Condition Test</u>

The usual test performed is an open-hole test which is either uncased or cased with fully perforated casing. The procedure is described as follows:

a. Auger a 6 to 9 inch diameter hole to a depth below the ground surface equivalent to the design depth of trench (usually 4 to 6 feet).

b. Record the distance from the ground surface to the water table prior to the addition of test water.

c. If hole walls are unstable lower screen or fully-perforated casing into the hole.

d. Fill hole with water and maintain water level at ground surface. Record rate of pumping in GPM giving direct readings from water meter at fixed intervals of one minute or greater. Continue recording rate of pumping for 10 minutes following the stabilization of the recorded pumping rate.

Figure G-2 shows a cross section of the test hole with a formula relating the hydraulic conductivity to the field information. The hydraulic conductivity obtained by this method may be either greater or less than the effective trench hydraulic conductivity depending upon the relative hydraulic conductivity of the surface layers.

USUAL OPEN-HOLE TEST

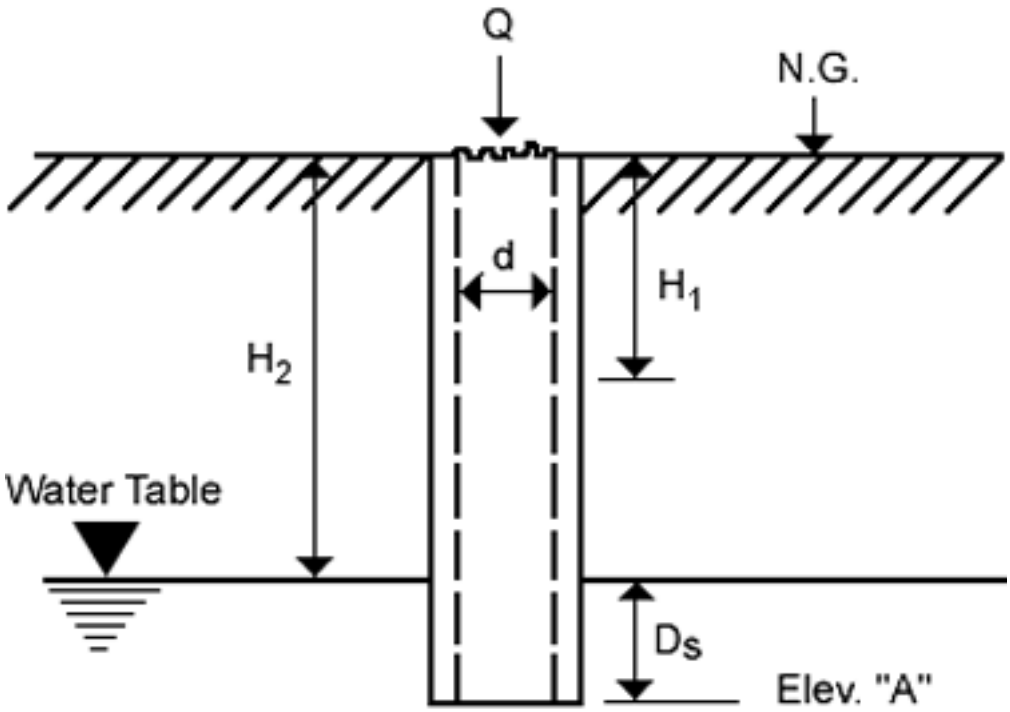


Figure G-2

$$K = \frac{4Q}{\pi d (2H_2^2 + 4H_2D_S + H_2d)}$$

K = Hydraulic Conductivity (cfs/ft.^{2} – ft. head)

Q = "Stabilized" Flow Rate (cfs)

d = Diameter of Test Hole (feet)

H_2 = Depth to Water Table (feet)

D_S = Saturated Hole Depth (feet)

Elev. "A" = Proposed Trench Bottom Elev. (ft NGVD or ft NAVD)

H_1 = Average Head on Unsaturated Hole Surface (ft. head)

2. Falling-head Test

The falling-head test is an open-hole test which is either uncased or cased with fully-perforated casing. The procedure is described as follows:

a. Auger a 6 to 9 inch diameter hole to a depth below the ground surface equivalent to the design depth of the trench (usually 4 to 6 feet).

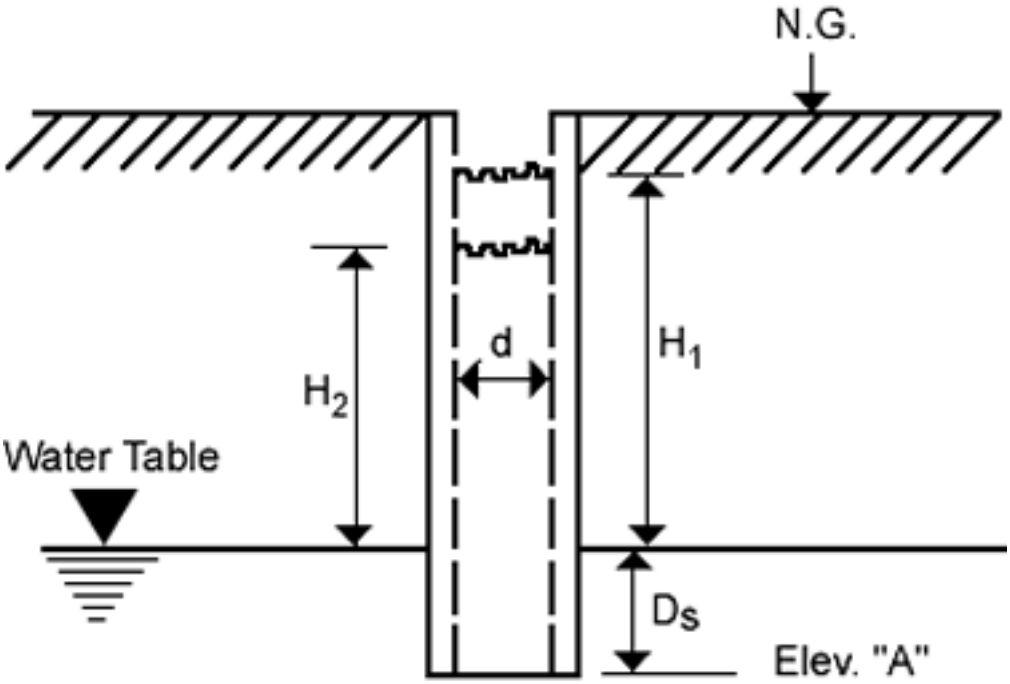
b. Record the distance from the ground surface to the water table prior to the addition of test water.

c. If hole walls are unstable, lower screen or fully-perforated casing into the hole.

d. Fill hole with water and maintain water level at ground surface. Cease adding water and measure the water level versus elapsed time in equal time increments, usually in 15-second increments. Continue measuring water level until it has dropped at least half the distance to the water table.

Figure G-3 shows a cross section of the test hole with a formula relating the hydraulic conductivity to the field information.

FALLING-HEAD OPEN-HOLE TEST



$$K = \frac{d \ln (H_1/H_2)}{(2H_1 + 2H_2 + 4D_S + d)(t_2 - t_1)}$$

Figure G-3

K = Hydraulic Conductivity (cfs/ft.^{2} – ft. head)

d = Diameter of Test Hole (feet)

H_1 = Height of Water in Hole Above Water Table at Time, t_1 (feet)

H_2 = Height of Water in Hole Above Water Table at Time, t_2 (feet)

D_S = Saturated Hole Depth (feet)

Elev. “A” = Proposed Trench Bottom Elev. (ft NGVD or ft NAVD)

t_1, t_2 = Time (seconds)

3. FDOT Standard Test

The Florida Department of Transportation (FDOT) utilizes a standard test for design of seepage trenches in conjunction with highway projects. The FDOT test procedure is as follows:

a. Auger a 7 inch diameter hole to a depth of 10 feet below normal ground surface.

b. Record distance from ground surface to water table prior to addition of test water.

c. Pour 1/8 cubic foot of 1/2 inch diameter gravel in hole to prevent scouring.

d. Lower a 6 inch diameter perforated 10 gauge aluminum casing into hole. Casing to be 9 feet in length with perforations in the bottom 6 feet of the casing.

e. Fill hole with water and maintain water level at ground surface. Record rate of pumping in GPM giving direct readings from water meter at fixed intervals. Use one minute intervals or greater, depending on the hydraulic conductivity of the soil. Continue recording rate of pumping for 10 minutes following the stabilization of the recorded pumping rate.

A schematic cross section of the FDOT test hole is shown in Figure G-4 with a formula which relates the hydraulic conductivity to the field data. The FDOT does not recommend utilization of seepage trenches in areas where this test yields less than six GPM.

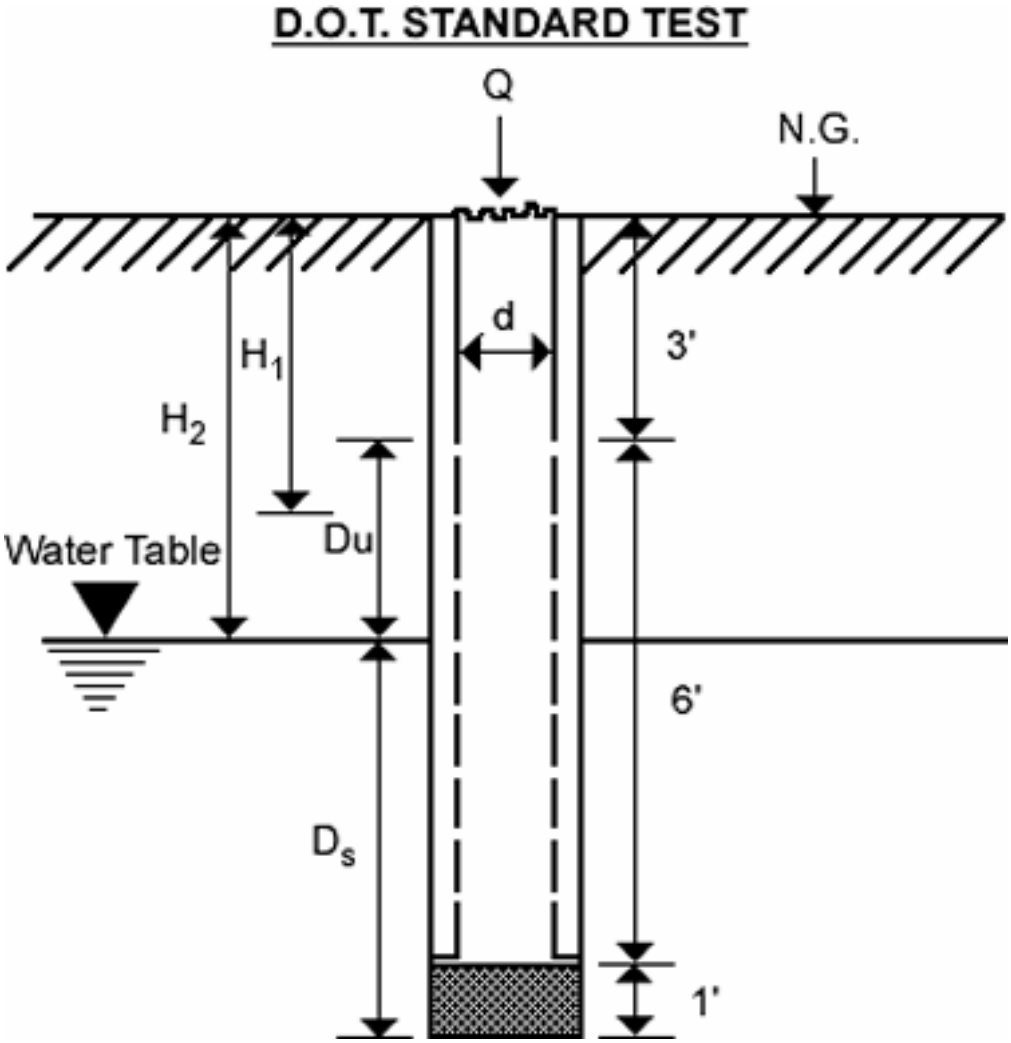


Figure G-4

For H_2 > 3.0-ft

$$K = \frac{4Q}{\pi(20.25H_2 - H_2^2 - 9)}$$

K = hydraulic conductivity (cfs/ft^2-ft head)
Q = "Stabilized" Flow Rate (cfs)
D = Diameter of Test Hole (ft)
D_u = Unsaturated Hole Depth (ft)
D_s = Saturated Hole Depth (ft)
H_1 = Average Head on Unsaturated Hole Surface (ft Head)
H_2 = Depth to Water Table (ft)

For $H_2 \leq 3.0$-ft

$$K = \frac{Q}{11.92H_2}$$

4. Analysis of Test Data

In this section actual test data which was compiled during a field test of the "usual" case will be described and the soil permeability calculated. The test was performed on a piece of property in Broward County, Florida. The test hole was 9 inches in diameter augered to a depth of 6 feet. A 9 inch diameter by 72 inch long perforated casing was set in the hole. The depth to the water table prior to introduction of test water was 5.3 feet below the ground. The field data collected during the test is shown in Table F-1.

Taking the total flow into the test hole during the 75 minute test period and dividing by 75 minutes, since there was no significant variation in flow during the test, yields an average flow rate, Q, of 3.46 GPM which is equivalent to 7.71 x 10^{-3} cfs. The diameter of the test hole, D, was 0.75 foot. The saturated hole depth, D_s, was equal to the depth of the hole, six feet, minus the depth to the water table, 5.3 feet, which is equal to 0.7 feet.

Utilizing the formula from Figure G-2:

$$K = \frac{4Q}{\pi d(2H_2^2 + 4H_2D_s + H_s d)}$$

$$K = \frac{4(0.00771)}{\pi(0.75)[2(5.3^2) + 4(5.3)(0.7) + (5.3)(0.75)]} = 1.75 \times 10^{-4} \frac{cfs}{ft^2 \cdot ft\ head}$$

Table G-1

Broward County - Usual Open-Hole Test

Elapsed Time (Minutes)	Begin Meter Reading	End Meter Reading	Flow (gal)	Q (GPM)
1	0.0	5	5	5.5
2	5.5	11	5	5.5
3	11.0	16	5	5.0
4	16.0	19	3	3.0
5	19.0	22	3	3.5
6	22.5	26	4	4.0
7	26.5	30	3	3.5
8	30.0	33	3	3.5
9	33.5	37	4	4.0
10	37.5	40	3	3.0
11	40.5	44	4	4.0
12	44.5	48	4	4.0
13	48.5	51	3	3.0
14	51.5	55	4	4.0
15	55.5	59	4	4.0
16	59.5	63	3	3.5
17	63.0	67	4	4.0
18	67.0	70	3	3.0
19	70.0	73	3	3.5
20	73.5	77	4	4.0
25	77.5	96	1	3.7
30	96.0	114.5	1	3.7
35	114.5	132.0	1	3.5
40	132.0	154.0	2	4.4
45	154.0	172.5	1	3.7
50	172.5	190.5	1	3.6
55	190.5	208.5	1	3.6
60	208.5	220.0	1	2.3
65	220.0	235.0	1	3.0
70	235.0	247.0	1	2.4
75	247.0	259.5	1	2.5

TABLE G-1 Broward County - Usual Open-Hole Test

I. Flexibility for State Transportation Projects and Facilities

State linear transportation projects and facilities (collectively referred to as “projects” in this section) often have unique design limitations. In recognition of this, subsection 373.413(6), F.S. (2012), requires the Agency to consider and balance the expenditure of public funds for stormwater treatment with the benefits to the public in providing the most cost-efficient and effective method of achieving the treatment objectives of stormwater management systems when reviewing such projects. To accomplish this, alternatives to on-site treatment for water quality will be considered including regional stormwater treatment systems, off-site compensating treatment, and incorporation of off-site runoff into the treatment system for the project.

The incorporation or comingling of off-site runoff into the treatment system for the project is often a more cost effective design when compared to routing off-site runoff around the system. In most cases the comingling of off-site stormwater runoff into the system will also provide for increased pollutant removal when compared to the design option of routing it around the system even if the system is designed to only meet the design and performance standards of Volume II for the runoff from just the on-site project area. However, under some comingling conditions, the design capacity of the on-site system may need to be enlarged in order to provide at least the same level of water quality treatment as if the stormwater runoff was segregated and only runoff from the on-site project area was treated. Although this potential should always be evaluated to some degree in the design, it is an especially important design consideration when the off-site contributing area is much larger than the on-site project area and the expected concentrations of pollutants from the off-site areas are significantly less that those expected by the on-site project area, or when retention-type BMPs are selected.

J. WETLAND BOUNDARY DETERMINATIONS

One of the most important factors to establish early in the project planning stage is the extent of wetlands on the project site. The presence or absence of wetlands can substantially affect the permitting process through the requirements and criteria that must be satisfied in order to obtain an environmental resource permit. The District can assist permit applicants with the determination of wetland boundaries in one of two ways, 1) formal wetland determinations or 2) informal wetland determinations.

Once the wetland lines have been clearly established on a project site, the planning and design work can proceed with a higher level of certainty regarding the permittability of a design. The need for major revisions to project designs should be greatly reduced or eliminated by knowing the extent of the wetlands on a site before committing to a project design. Designing around the limitations of the land (and wetlands) will facilitate the permitting process.

Informal Non-binding Wetland Determinations

The District can provide an informal non-binding wetland determination to a land owner, a party with eminent domain authority or other person who has a legal or equitable interest in the property. An informal determination is not a final agency action and does not bind the District or any other governmental agency in any way.

Section 7.3 of Applicant's Handbook Volume I describes the procedures for an informal wetland determination. A person initiates an informal wetland determination by submitting a written request to the District. Clear and legible aerial photographs with the property boundaries depicted must be submitted with the written request. The District also will need a location map and a copy of the county soils map showing the property. The land owner should arrange to have an environmental consultant or wetland scientist/ ecologist stake and flag the wetland boundaries prior to District staff verifying the wetland limits. The District staff will inspect the property and verify the staked wetland boundaries. The land owner may or may not have the wetland limits surveyed, or mapped using GPS. If a survey is not performed, an approximation of the wetland boundaries may be drawn on aerial photographs for inspection and verification by District staff. Once agreement on the approximation is reached, the District will provide written notification of concurrence with the approximate wetland boundary lines.

Again, informal determinations are not binding on the District or any other agency and should not be considered as a "sign off" by the agency on an exact wetland boundary line. Informal wetland determinations are provided as a service to the regulated community in order to assist with project planning needs as staff time and resources allow.

Formal Wetland Determinations

Application Procedure

The procedures for applying for a Formal Wetland Determination are discussed in Sections 7.0 through 7.2.7 of Applicant's Handbook Volume I. A land owner, a person with legal or equitable interest in a property such as a purchase contract or option, or an entity with the power of eminent domain, may apply for a formal wetland determination by submitting an application to the District. The application must include *Form 62-330.201(1), "Petition for a Formal Determination of the Landward Extend of Wetlands and Other Surface Waters"*, the correct processing fee and some basic information about the property. Items such as location maps, aerial photographs, and proof of ownership or interest, county soils maps and USGS quad maps with the property depicted are typical requirements. The information requirements are listed on Form 62.330.201(1).

The applicant must provide the District with recent aerial photographs which are clear and legible and have the property boundary depicted on the photograph. Aerial photographs may be obtained from a property appraiser's office or from qualified private firms, and should generally be of a scale of 1" = 200' (1:2,400) or 1" = 400' (1:4,800). These are suitable scales for most wetland determinations. Additionally, historical aerial photography or other supplemental material may be useful on some sites depending on the size of the property, type of wetland systems, and the need for larger scale photographs to distinguish vegetative features or smaller scale photographs to establish reference landmarks or waterbodies. Oblique aerial photographs are not suitable for wetland boundary determinations.

Certified Survey

The applicant should arrange to have an environmental consultant or wetland scientist/ ecologist mark the wetland boundaries on the ground with survey staking and/or survey flagging tape prior to contacting District staff to verify the staked wetland lines. After the District has verified the staked/flagged wetland limits, the lines must be surveyed by a Professional Surveyor and Mapper registered in the State of Florida. Three copies of the survey drawings, legal descriptions, and wetland acreage information along with five copies of the survey depicted on aerial photographs must be submitted to the District. If submitted through ePermitting, no paper copies are required. The signed and sealed survey drawings will be used by the District in the preparation of a report detailing the extent of the wetlands on the property. Applicants who can submit the survey data in digital .dxf file format using state plane coordinates east zone, NAD 83, should do so.

Approximate Formal Wetland Determinations

As an alternative to traditional surveying methods, the applicant may in some cases use an approximate method to locate the wetland boundaries. Such methods include GPS

and rectified aerial photographs with the wetland boundaries depicted. An approximate determination method cannot be used if the range of variability of the depicted wetland line is greater than 25 feet.

If an applicant intends to use an approximate wetland determination methodology, the level of accuracy or range of variability and appropriateness of the approximate methodology for the project site should be determined in consultation with District staff. An aerial photograph may be used as the basis for an approximate determination only when it clearly and accurately depicts the wetland boundaries. If a wetland determination cannot be conducted to an appropriate level of accuracy using the approximate methods, either a traditional survey or the GPS approximate method must be used to locate and depict the wetland boundaries.

Once the methodology for an approximate wetland determination has been agreed upon, a depiction of the wetland boundaries on aerial photographs must be submitted. For each type of approximate determination, District staff will verify the wetland boundary depictions and the range of variability by ground truthing with the individual responsible for establishing the wetland boundaries. The range of variability must be determined by comparing points on the wetland boundary lines as depicted on aerial photographs with field located wetland boundary points. The District will determine the number and location of points on each wetland boundary to be compared. Each wetland will have no fewer than three boundary points field verified and a minimum of one field point for every 1000 feet of wetland boundary will be inspected and compared to the depiction on aerial photographs.

The applicant must have the field verified wetland boundary comparison points surveyed. A survey of the comparison points showing their relationship to the GPS or aerial depicted boundary points must be submitted to the District. If changes to the wetland boundary depictions are necessary based on ground truthing and verification, the aerial photographs with the corrected wetland boundary depictions must be submitted to the District. The level of accuracy or maximum range of variability of the wetland boundary lines should be indicated on each aerial photograph and cannot exceed 25 feet on any wetland boundary. The scale of the aerial photographs used in the depiction of the wetland boundary must be large enough to allow verification of the line in the field. A scale of 1" = 200' or 1" = 400' is generally suitable. Also, the width of the line which depicts the boundary should be carefully considered. Depending on the scale of the aerial photograph, a boundary line drawn could be wider than the acceptable range of variability. In general, the smaller the width of the line, the less likelihood of problems in interpreting what it is depicting, both on the aerial photograph and at the site.

If an applicant intends to conduct future activities located within 200 feet of the approximate determination, including the range of variability, the applicant will need to establish the exact wetland boundary either by traditional surveying methods or differentially corrected GPS certified to the minimum technical surveying standards except as provided in section 7.22.

District Determination Report

For each type of formal wetland determination, the District will prepare a staff report with information on the types of wetlands found on the site and showing the wetland boundaries in the form of either survey drawings or aerial photographs or a combination of both. The wetland determination report is issued by the Executive Director of the District. Formal wetland determinations are valid for five years and can be renewed prior to expiration. The issuance of a formal wetland determination is a final agency action and is binding on the District, the Florida Department of Environmental Protection and local governments. This determination is not binding on the Federal government.

District Assistance

Please contact your local service center to discuss the particular needs of a specific project site. The environmental analysts in the service center are experienced with the types of wetlands in the areas they serve and can provide guidance on the best approach to the wetland determination needs of your particular project. Pre-application meetings at the District are used to provide potential applicants with general information about the potential for wetlands occurring on their property. These meetings can be used to discuss the best method for proceeding with either a formal or an informal wetland determination.

K. Elimination or Reduction of Wetland Impacts

During the evaluation of a permit application, District staff must consider the effect a project will have on wetlands and surface waters, both onsite and offsite. This evaluation takes into account various types of proposed impacts including direct physical impacts from dredging or filling, impacts from altered hydroperiods and water levels, and secondary and cumulative impacts. In order for staff to recommend approval of an application, the proposed activity cannot have a net adverse impact on wetland functions or surface water functions.

Section 10.2.1 of the Environmental Resource Permit Applicant's Handbook Vol. I, requires that District staff evaluate whether an applicant has implemented practicable design modifications to eliminate or reduce adverse impacts to wetlands or surface waters. There are several factors that are considered in the staff's evaluation of design modifications and whether or not a modification is practicable for the project.

A practicable modification must be technically possible to implement, must not adversely affect public health or safety, and must be economically viable. A design modification which removes all economic value is not considered a practicable design modification. In order to be considered practicable, a design modification does not need to provide the highest and best use of the property.

Conversely, a modification does not need to remove all economic value from the property in order to be considered not practicable. Factors such as the cost of the modification in relation to the overall cost of the project will be considered, as well as the cost of the modification in relation to the overall environmental benefit of implementing the modification.

A design modification which is different in type or function from the original project is not considered a practicable modification. For example, it would not be practicable to redesign or modify a commercial office building project into a residential subdivision. However, it would be practicable to change the layout of the buildings, parking areas and drainage ponds or to reduce the number of buildings to keep the footprint of the development out of the wetlands. Modifications to the internal layout of the project do not change the type or function of the project.

In the case of linear projects such as roadways, an alternative alignment can be considered a practicable design modification. For non-linear projects, a practicable modification does not mean an alternative project site.

Practicable modifications for secondary and cumulative impacts must also be considered. District staff must consider the expected use of the project and the related or connected aspects of the project that could result in adverse impacts to wetlands or surface waters. Additionally, the staff must consider future activities and projects that are expected to occur as well as existing projects in an analysis of cumulative impacts on wetlands and surface waters. This analysis takes into consideration the "big picture" view as opposed to a site specific location of an impact.

Figures K-1 through K-5 provide examples of project design modifications which are considered practicable.

Elimination or Reduction of Impacts

Applicant's Handbook Volume I, Section 10.2.1

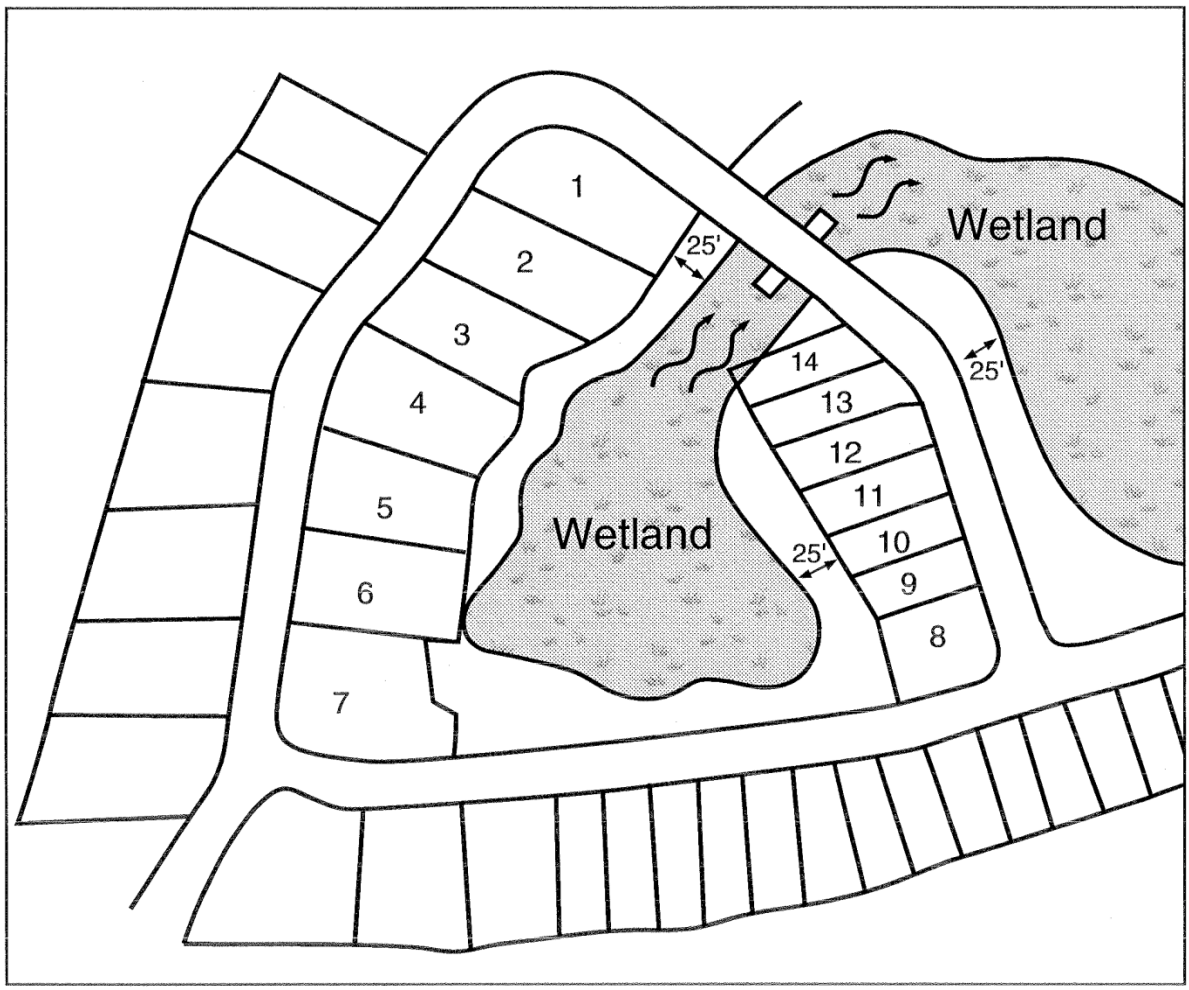


Figure K-1

Typical environmental impacts associated with this project:

1. Fill placed in a wetland for road crossing
2. Lot 14 and associated fill pad extending into wetland.
3. No buffer provided at lot 6.
4. Interruption of surficial hydrology by road crossing and undersized culvert.
5. Fragmentation of wetland habitat by road.

Elimination or Reduction of Impacts

Applicant's Handbook Volume I, Section 10.2.1

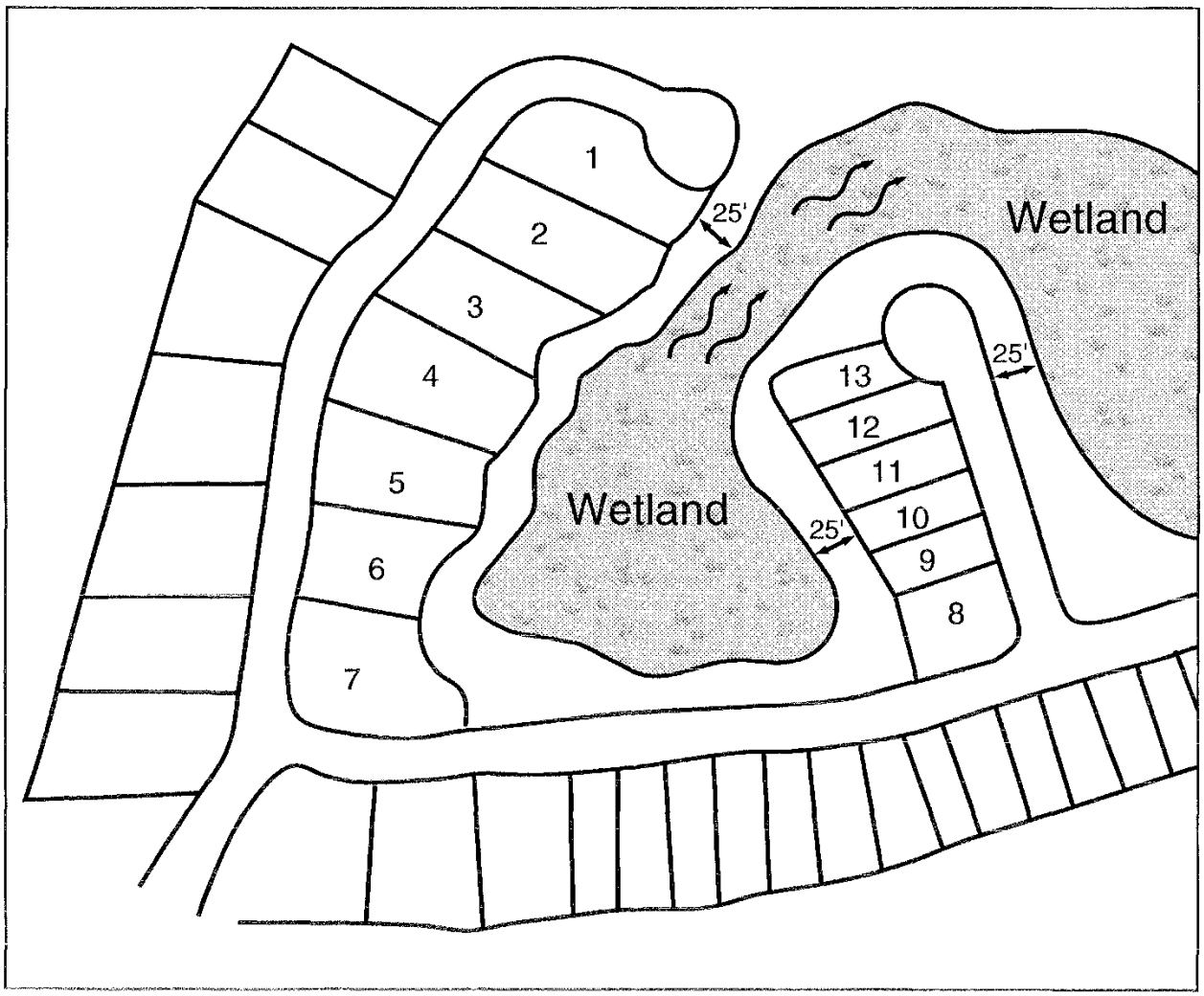


Figure K-2

Project Redesigned to Avoid All Wetland Impacts.

1. Cul–de-sacs used to avoid road crossing
2. Lot 14 and associated fill in wetland eliminated
3. Buffer provided on lot 6
4. Surficial hydrology maintained in wetland
5. Wetland habitat remains intact/ contiguous.

Elimination or Reduction of Impacts

Applicant's Handbook Volume I, Section 10.2.1

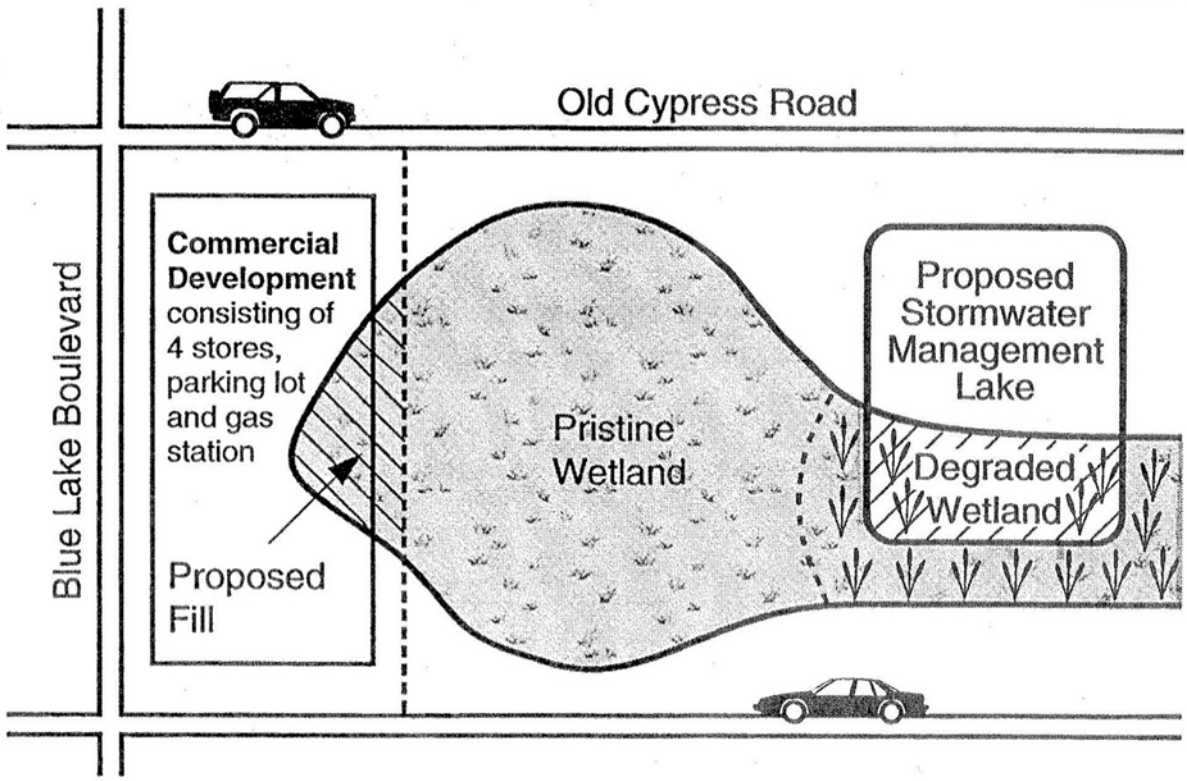


Figure K-3

Types of modifications which meet the criteria of the Applicant's Handbook Volume I, Section 10.2.1:

1. Move development out of high quality areas of wetland with corresponding reduction in number of stores.
2. Reconfigure the stormwater management lake and locate it outside of the wetland
3. Use retaining walls rather than fill slopes to stabilize fill.

Elimination or Reduction of Impacts

Applicant's Handbook Volume I, Section 10.2.1

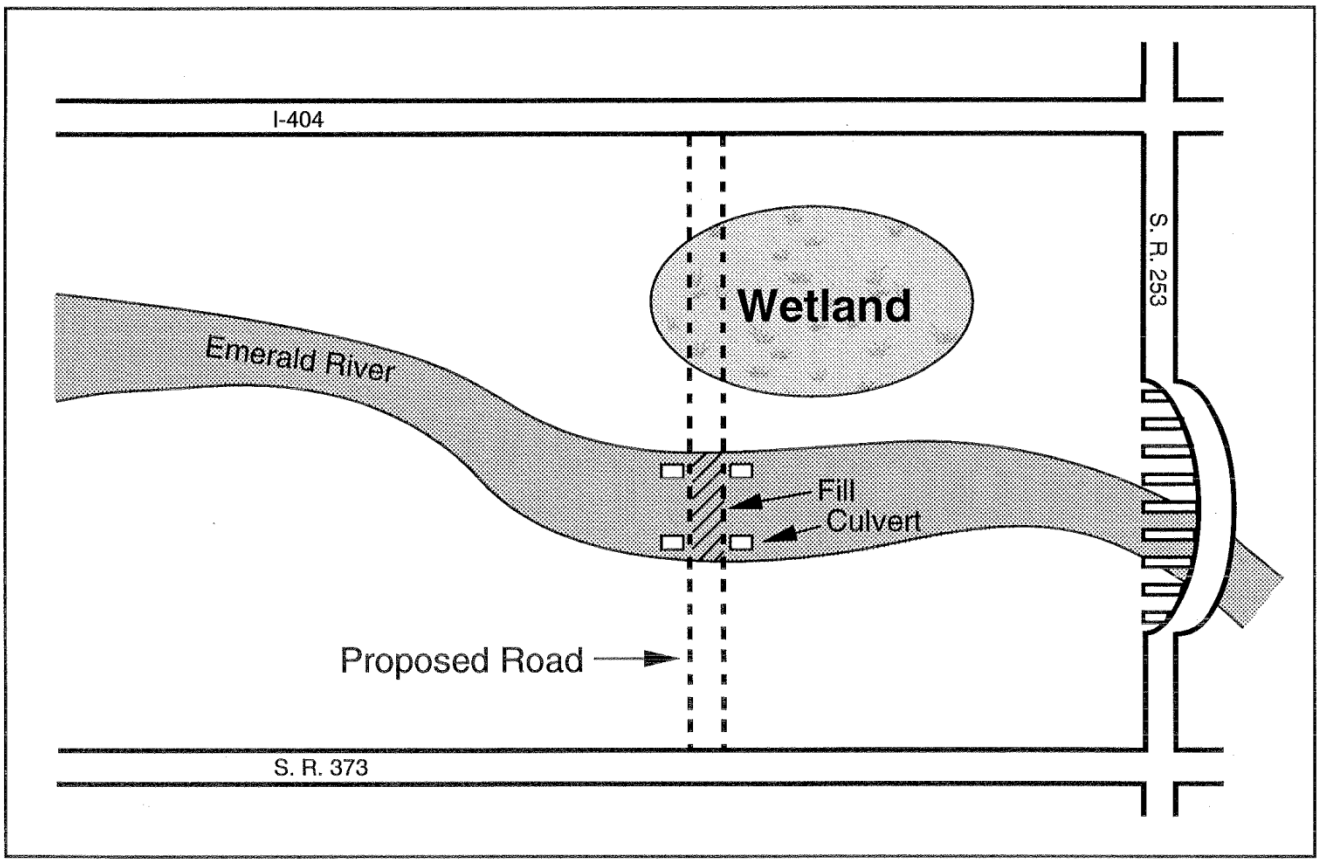


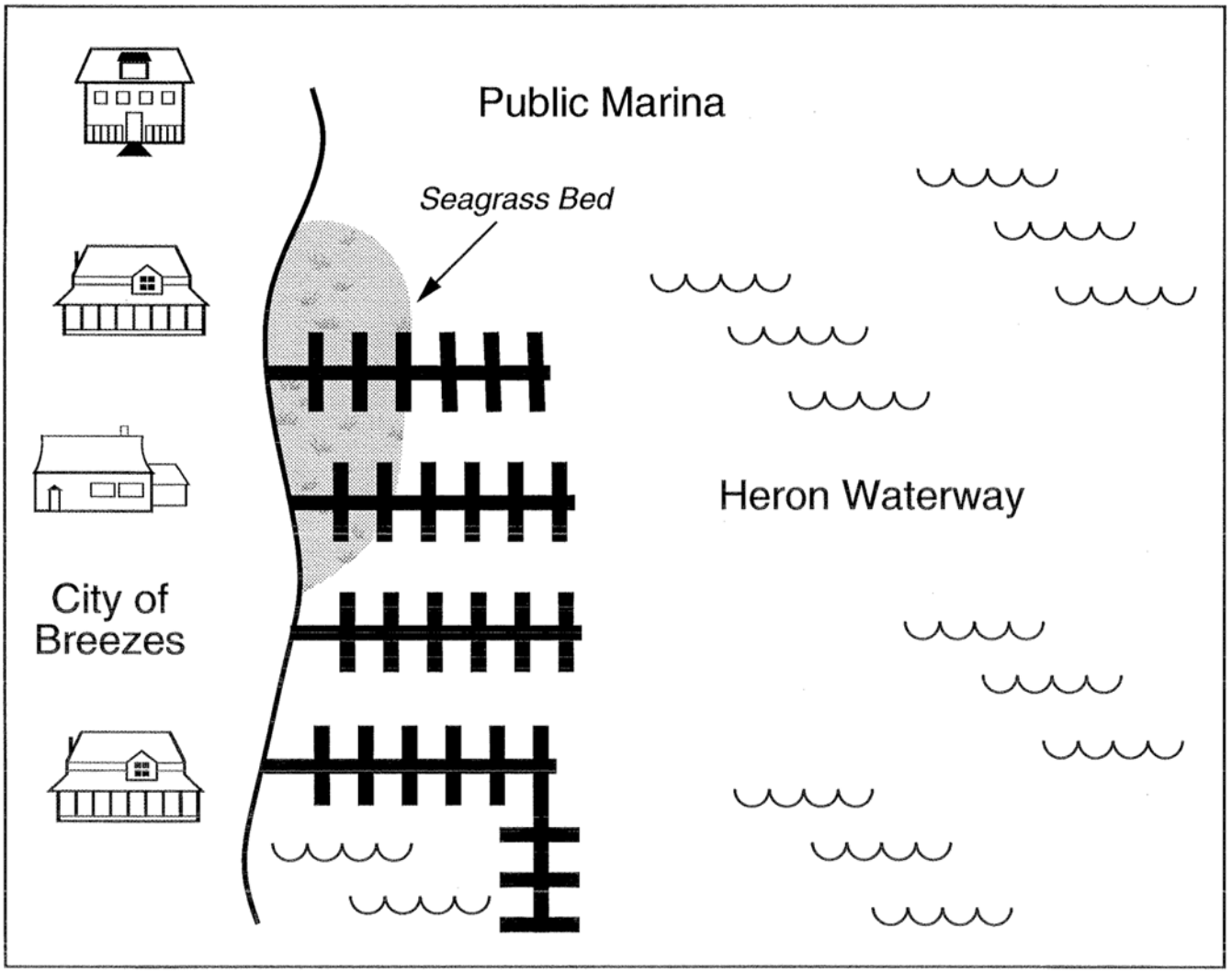
Figure K-4

Types of modifications which meet the criteria of the Applicant's Handbook Volume I, Section 10.2.1:

1. Bridge the Emerald River rather than fill with culverts.
2. Change alignment to avoid isolated wetland, cross river at narrowest point.
3. Widen S.R. 253, if doing so accomplishes the same thing as the construction of the proposed road would.
4. Reduce median width in wetland and river.

Elimination or Reduction of Impacts

Applicant's Handbook Volume I, Section 10.2.1



Types of modifications which meet the criteria of the Applicant's Handbook Volume I, Section 10.2.1:

1. Eliminate slips over sea grasses.
2. Move slips water-wards to avoid shallow depths.
3. Reconfigure slips to avoid sea grasses.
4. Use PVC or concrete pilings instead of CCA treated pilings.

L. Separation of Excavations from Wetlands

The Applicant's Handbook, Volume II, Section 3.12, requires that excavations for proposed surface water management lakes, ditches, canals or borrow pits be separated from wetlands by a distance sufficient to protect the hydrologic regime of the wetlands. The proposed excavation must not create a hydraulic gradient, drain, seepage or preferential flow or other condition, which could adversely impact the hydroperiod of the wetlands. This criterion applies to wetlands to be preserved, created, restored or enhanced.

Possible impacts from lake construction to proximal wetlands include shortened hydroperiods, delayed rewetting at wet season, accelerated draw down approaching dry season, interruption of groundwater interflow into wetlands, interruption of surface water flows into wetlands and reduction in wet season water levels.

Special considerations are required for project designs which involve a wetland to be protected and a water body with a proposed control elevation lower than the elevation of the normal pool or control elevation of the wetland. In this scenario, the applicant will need to submit information to 1) substantiate the reason for using a lower control elevation at the proposed excavation site and 2) provide reasonable assurances that there will be no adverse impacts to the hydroperiod of the wetland. The information should consist of data collected on the hydrologic regime of the wetland, the proposed control elevation or normal pool elevation of the wetland, ground water monitoring data from the location and depth of the proposed excavation, seasonal high water table data at the site of excavation, site topography and gradient calculations.

Assumptions that wetlands are perched or confined from ground water will not be considered by staff as evidence for allowing a lower control elevation in an excavated water body.

There are places in the District where past and/or present activities are responsible for a lowered water table which is adversely impacting wetlands on or adjacent to a site. If there is evidence that such impacts have occurred, wetland preservation cannot be assured by simply maintaining existing conditions. Therefore, existing or current hydrologic conditions alone will not always be a sufficient reason to propose a control elevation which is different from the elevation at the wetland boundary. It may be necessary to re-establish the wetland hydroperiod by using a control elevation different from the one associated with present conditions.

If a control elevation is proposed which is higher than the wetland, site topography and water table information should be submitted to allow staff to evaluate the proposal. For example, a cascading system where the lakes in the upper reach are physically higher than the downstream wetlands may be appropriate for some areas of the District which

have significant topographical variations. If the water table at the location of the proposed excavation is actually higher than the wetland boundary, the data should substantiate the proposal.

The gradient between all onsite and offsite wetlands which may be affected by the control elevation of a proposed water body, including borrow pits, canals and ditches, should be evaluated using the gradient criteria in section 3.12. (See Case Examples below.)

Also, the gradient criteria are not to be construed as a means of circumventing the requirements to establish a control elevation that meets the criteria in sections 3.10 and 3.11 of the Applicant's Handbook, Volume II.

Hydrologic impacts to wetlands are also subject to the criteria for Elimination or Reduction of Impacts, section 10.2, Applicant's Handbook, Volume I.

Definitions

Driving Head (Δh, feet): (See Figure L-1.) The difference in hydraulic head between the elevation of the ground surface at the boundary of the wetland (h_1) and the control elevation of the proposed water body (h_2).

Separation Distance (L, feet): (See Figure L-1.) The horizontal distance measured between the nearest edge of the proposed water body at the control elevation and the boundary of the wetland.

Gradient (▼, dimensionless): (See Figures L-1 and L-2.) The driving head divided by the separation distance.

Case Examples (See Figure L-2.)

A. Case I (▼ ≤ 0.005)

It is presumed that a gradient equal to or less than 0.005 will not result in an adverse impact to the wetland.

B. Case II (0.005 < ▼ < 0.015)

If the gradient is between 0.005 and 0.015, the applicant must provide ground water modeling which demonstrates that the drawdown will not result in adverse impacts to the wetland's hydroperiod. A detailed soil profile constructed from a minimum of three separate sampling locations including permeability testing results must be included. Two-dimensional ground water modeling should be used to accurately represent the

locations of the proposed excavation and drawdown relative to the wetlands.

C. Case III (▼ ≥ 0.015)

If the gradient is equal to or greater than 0.015, the applicant must propose an alternative design or action to eliminate the adverse impacts of the drawdown. The action might be construction of an impermeable barrier between the wetland and the waterbody, or re-design of the project to reduce the gradient.

Lake- Wetland Separation

Applicant's Handbook Volume II, Section 3.12

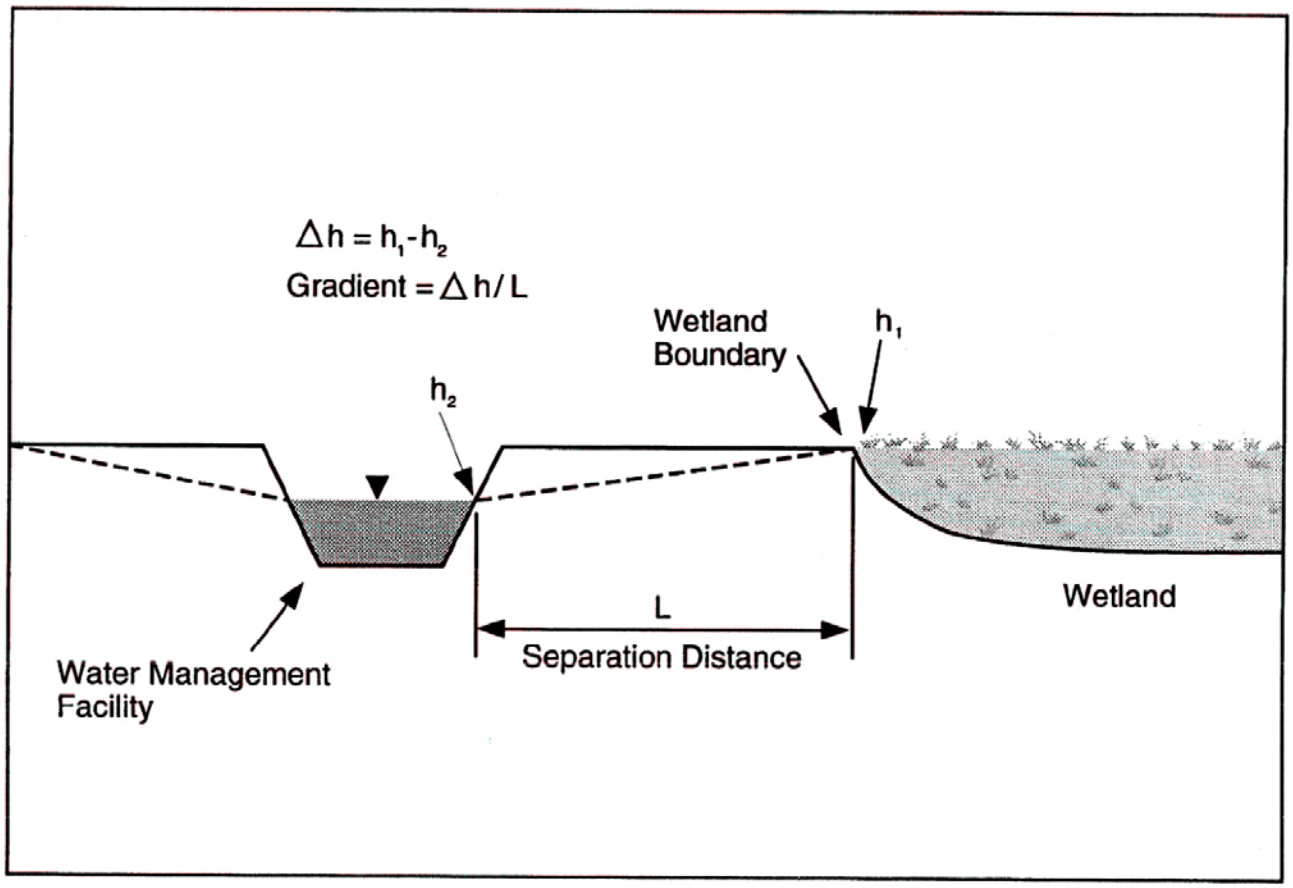


Figure L-1

Hydraulic gradient created between wetland and water management facility

Lake- Wetland Separation

Applicant's Handbook Volume II, Section 3.12

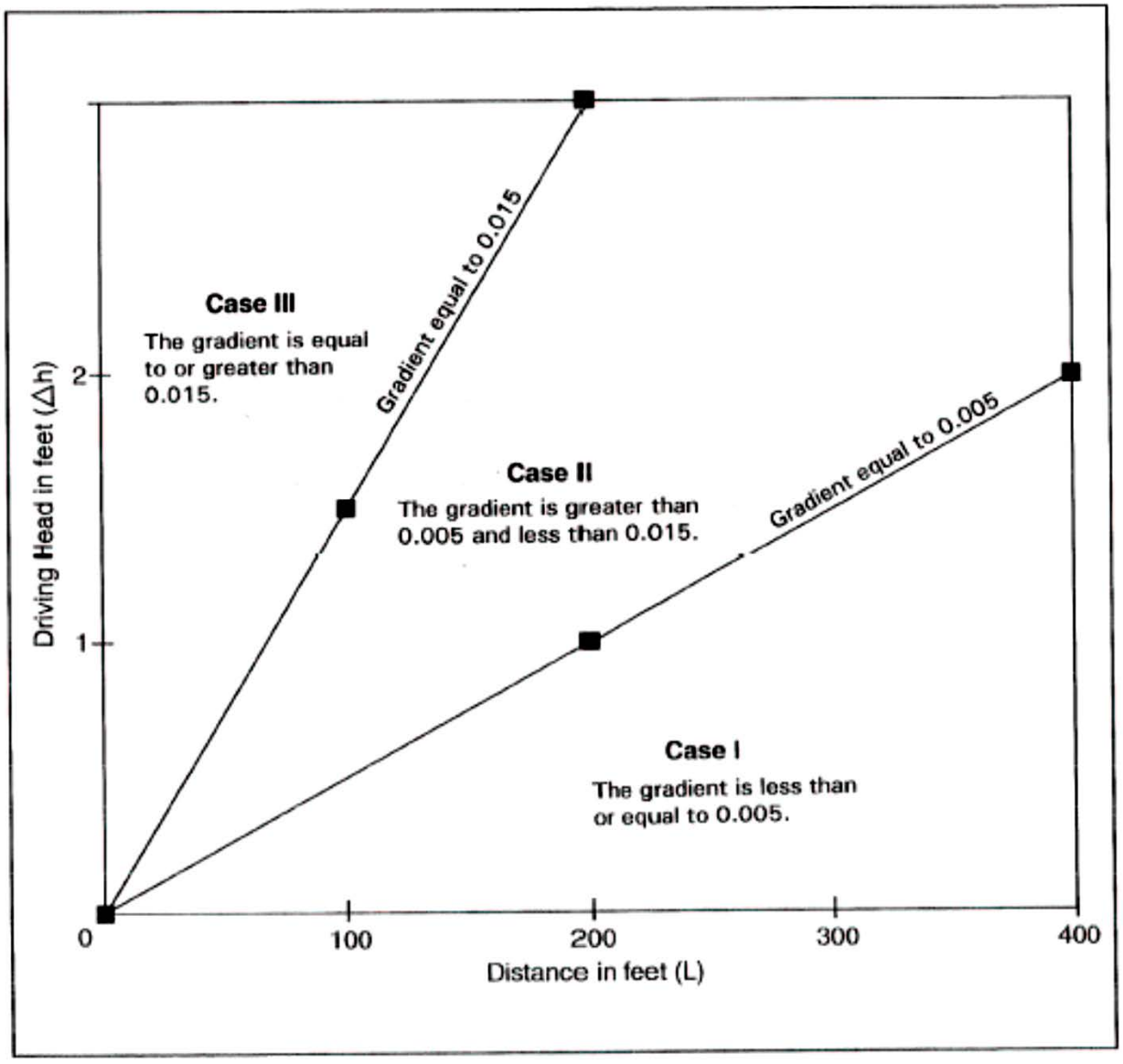


Figure L-2

Case Examples of Hydraulic Gradients:

Examples of different hydraulic gradients depending on 1) distance from wetland boundary to excavation and 2) difference in elevation between natural ground at the wetland boundary and the control elevation of the water management facility.

M. PROTECTION OF WETLAND HYDROPERIODS

Section 10.2.2.4, Water Quantity Impacts to Wetlands and Other Surface Waters, Applicant's Handbook, Volume I, requires that applicants provide reasonable assurance that a proposed project design will not change wetland hydroperiods so as to adversely affect the functions of the wetland system being preserved. Adverse impacts can be caused by increasing or decreasing the depth, duration or frequency of inundation or saturation within a wetland. These factors make up what is commonly referred to as the hydrologic regime of a wetland.

Many projects contain wetlands which are designated to be preserved and incorporated into the project design and surface water management system. Careful consideration of the hydrologic regimes of the preserved wetlands in both a pre-development and a post-development condition is essential for a project with successful wetland preservation. Project designs which change wetland hydrology can be detrimental to the preserved wetlands, unless this change is necessary for improvement (restoration or enhancement) of the wetland.

A design that closely mimics the pre-development hydrologic regime of the wetland will have the best chance of maintaining the ecologic functions of the preserved wetlands over the long term. In the case of wetland restoration or enhancement projects, the design is based on a target wetland hydroperiod which is usually the historic hydrologic regime of the wetland. A well designed project will have less need for maintenance or costly remedial measures due to environmental compliance problems in the future.

Several project components are essential to consider in order to evaluate the effect of the proposed project design on the wetlands. The review of the proposed project will include a comparison of the project control elevation to the elevation of the normal pool and/or seasonal high water *level* of the wetlands and to the elevation of the seasonal high water *table* on the site. District staff will consider how the wetlands are proposed to be incorporated into the surface water management system, how water is proposed to be conveyed to and from the wetlands and at what elevation water enters and leaves the wetlands. Changes to topography and natural drainage patterns of flow into the wetlands will also be evaluated. Additionally, staff will consider how long water stays above the control elevation and how high the water ponds or the peak stage during a rainfall event. This information will be compared to the normal hydrology of a wetland of that type to determine if the project will change the hydrology to the extent that it will adversely impact the wetland.

Definitions

Seasonal High Water Level (SHWL): Elevation of surface water within a wetland which occurs during typical storm events in the wet season. The SHWL is above the normal pool elevation but can be lower than the seasonal high water table within the surrounding upland soil. The SHWL is typically found at or near the wetland boundary.

Seasonal High Water Table (SHWT): The highest average depth of saturation during the wet season. (Refer to Design Aid D for a discussion of the methods and indicators used to establish the SHWT.)

Normal Pool: Elevation of average or sustained wet season water levels in a wetland. It is generally used to establish wetland control elevations.

Hydrologic Indicators: Physical indicators of inundation or saturation which can be easily observed in the field. This includes water marks or stains on structures or woody vegetation, elevated lichen lines and moss collars on trees, algal mats, vegetated tussocks or hummocks, drift lines and rafted debris, and morphological plant adaptations such as adventitious roots or enlarged (buttressed) trunks. For more information on hydrologic indicators please refer to The Florida Wetlands Delineation Manual, 1995, Florida Department of Environmental Protection.

Evaluating Wetland Water Regimes

In order to meet the criteria of Section 10.2.2.4, an evaluation of the pre-development hydroperiod is required for each wetland to be preserved on the project site. This evaluation should include the type of wetland system, elevations (in feet NGVD or NAVD) of the normal pool, the SHWL, and the edge (wetland boundary). Noting the location and elevation of any distinct changes in vegetation zones may also be useful in evaluating the pre-development hydrology of the wetland. The elevation data should be recorded for future reference as should a description of any hydrologic or vegetative indicator observed at the elevation point. This information will allow a wetland scientist or environmental consultant to determine the normal hydrologic patterns of the wetlands on the site.

Special consideration should be given to hydrologic and vegetative indicators observed within the wetland and used in determining the normal pool elevation and seasonal high water level. For the purposes of meeting the criteria of Section 10.2.2.4, the normal pool elevation is commonly considered to be an appropriate indicator of average or sustained wet season water levels in a wetland and is used to set the wetland control elevation. Indicators of the normal pool elevation include the lower edge of moss collars on trees, and an abundance of adventitious roots on woody or herbaceous plants.

Wetland plants naturally occurring below the normal pool elevation are generally more tolerant of sustained inundation than those occurring above normal pool.

The SHWL in a wetland indicates high water stages induced by typical summer storm events during the wet season. Wetland water levels may exceed the SHWL during extreme rainfall events but generally do not remain at those higher elevations for significant periods of time. Plant species that are tolerant of short-term inundation are generally found at elevations between the SHWL and normal pool. Indicators of SHWL include drift lines or rafted debris, distinct lichen lines, and water marks or stains. Filamentous hair-like adventitious roots may also indicate the SHWL, vs thicker perennial adventitious roots which are more indicative of the normal pool elevation. Additionally, the SHWL is typically found at or near the wetland boundary. Plant species that are not particularly tolerant of inundation typically occur at elevations greater than the SHWL. Figures M-1 and M-2 depict normal pool and seasonal high water elevations within a cypress dome.

When conducting an evaluation of wetland hydrologic regimes, it is necessary to be familiar with antecedent rainfall conditions and seasonal wet and dry patterns for the area in question. The observations made in the field should be analyzed in conjunction with prior rainfall conditions and seasonality. All hydrologic data points collected in the wetland should be considered in the determination of the appropriate wetland control elevation. The collection and interpretation of the data should be conducted by an experienced wetland scientist or environmental professional.

Engineering Design Considerations

Development adjacent to wetlands can cause alterations in topography and drainage which must be considered in order for wetland preservation projects to succeed. Development activities have the potential to compact soils adjacent to wetlands, create artificial drainage boundaries, divert historic sheetflow and groundwater flow, change groundwater gradients, lower water tables, increase or decrease surface runoff into wetlands, and impound the runoff which historically dispersed from wetlands through infiltration or sheetflow. Figure M-3 depicts a surface water management system that has lowered the water table to the extent that the hydroperiod of the adjacent wetland has been adversely impacted.

For projects incorporating wetlands into a surface water management system, the applicant must demonstrate that the post-development hydroperiod will be conducive to maintaining (for preservation) or improving (for restoration and enhancement) the pre-development functions of the wetland. Wetlands which become closed impoundments in post-development may become over-inundated or dried out for prolonged periods, causing adverse impacts to the wetland. Designs must provide a way for stormwater to

enter and leave post-development wetland impoundments in a manner which does not cause adverse hydrologic impacts to wetlands. The design must also ensure that water will still be able to reach wetlands in a post-development condition and remain for sufficient periods to maintain wetland functions.

Designs which incorporate wetlands into surface water management systems should provide information about both the post-development water depths in the wetland and the time required for the water level to return to the normal pool elevation (control elevation). Calculations that demonstrate that the above conditions are met for each wetland on the project site should be submitted with the application.

Figure M-4 provides examples of discharge structures which have been designed to protect a wetland incorporated into a surface water management system. The riser culvert allows water to begin to leave the system at the normal pool elevation of the wetland. Water levels may increase for short periods of time following storm events, but are allowed to return gradually to normal pool over a period of several days. The inverted triangular bleeder design provides a slow return to the control elevation for the typical afternoon showers which attempts to mimic pre-development vertical infiltration or lateral movement through the soil column. The weir will discharge the runoff from larger design storms into the surface water management system or receiving body, avoiding prolonged inundation. For typical wet season storm events, this mimics the natural water level fluctuations under pre-development conditions. During extreme storm events, water levels may rise to the SHWL or above, whereupon water is released more rapidly over the weir crest.

Other types of structures may be used to protect wetland hydroperiods depending on site specific conditions such as the type and size of wetland and its relationship to the surface water management system. In some cases a simple drop inlet with a grate at the normal pool elevation of a wetland will provide sufficient hydroperiod protection.

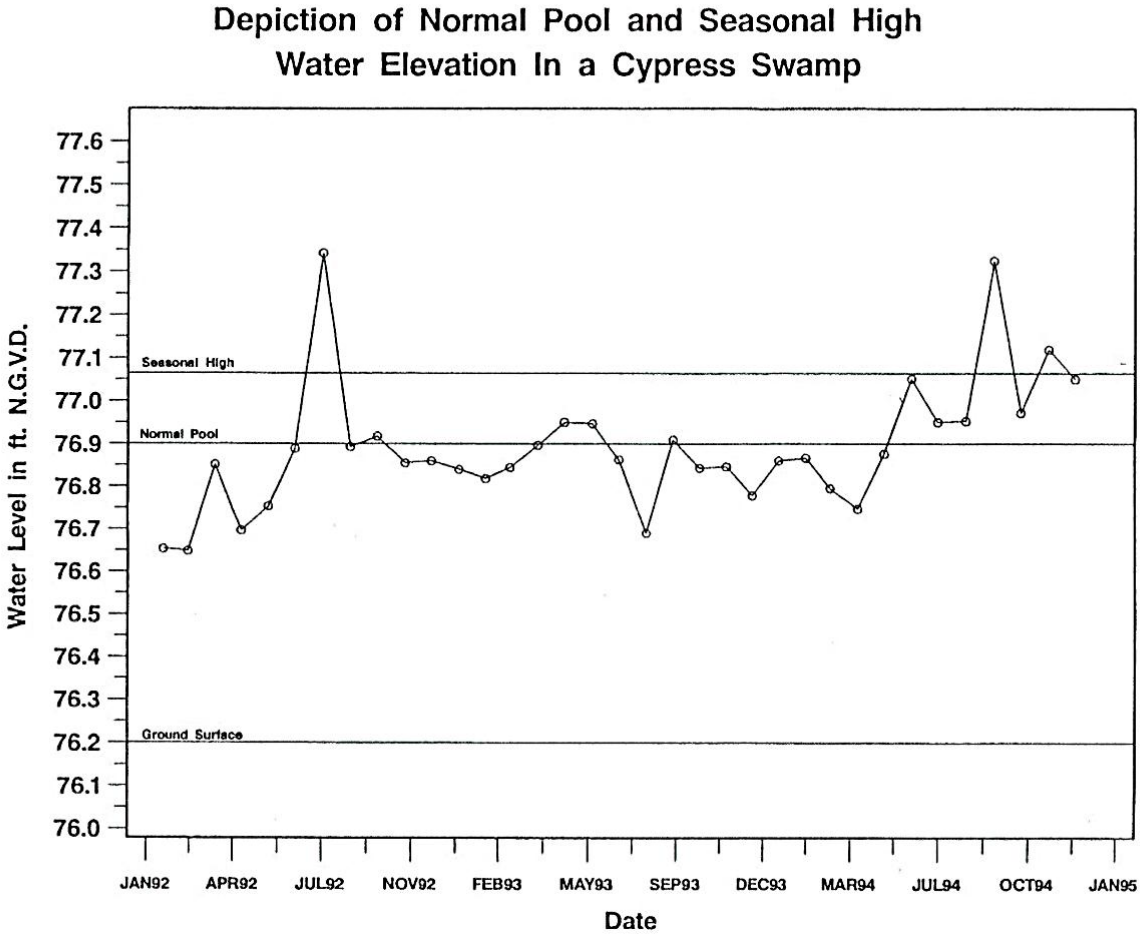

Depiction of Normal Pool and Seasonal High
Water Elevation In a Cypress Swamp
Water Level in ft. N.G.V.D.
77.6
77.5
77.4
77.3
77.2
77.1
77.0
76.9
76.8
76.7
76.6
76.5
76.4
76.3
76.2
76.1
76.0
Seasonal High
Normal Pool
Ground Surface
JAN92
APR92
JUL92
NOV92
FEB93
MAY93
SEP93
DEC93
MAR94
JUL94
OCT94
JAN95
Date

Figure M-1

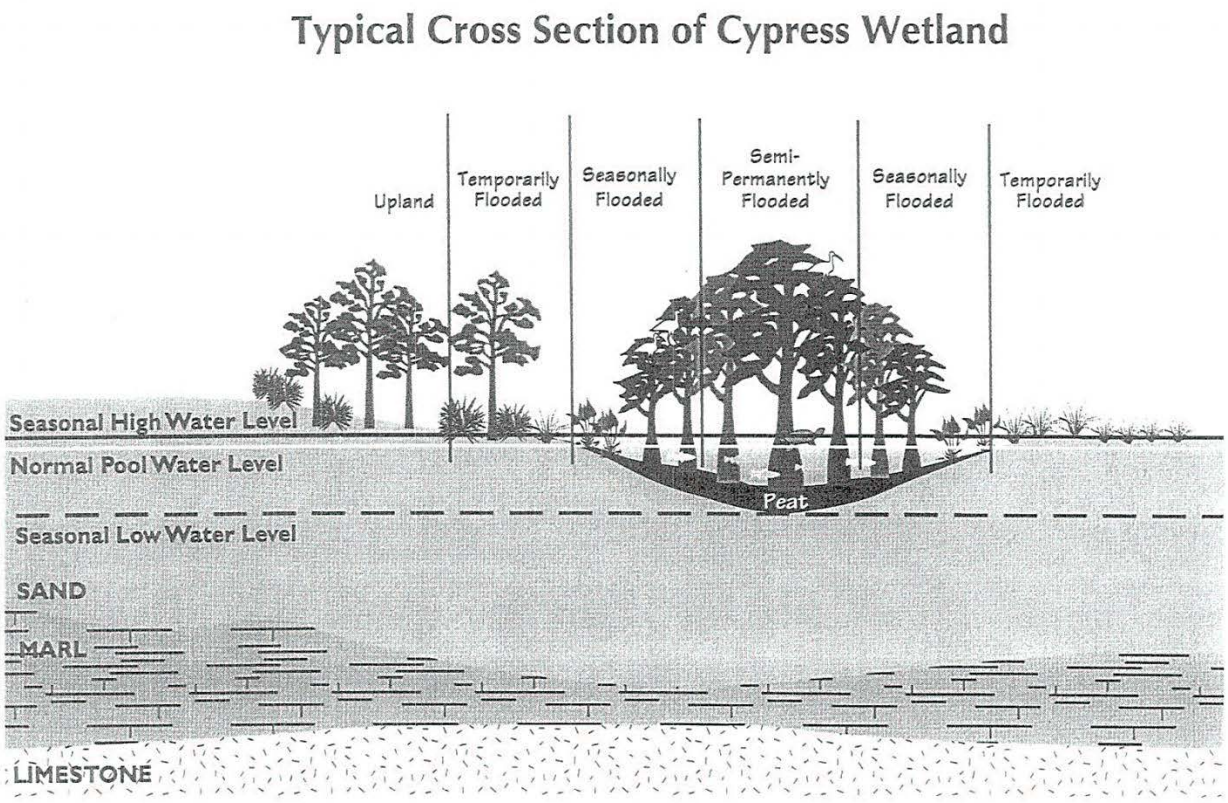

Typical Cross Section of Cypress Wetland
Upland
Temporarily Flooded
Seasonally Flooded
Semi-Permanently Flooded
Seasonally Flooded
Temporarily Flooded
Seasonal High Water Level
Normal Pool Water Level
Seasonal Low Water Level
Peat
SAND
MARL
LIMESTONE

Figure M-2

Typical Cross Section of Wetland Impacted by a Canal

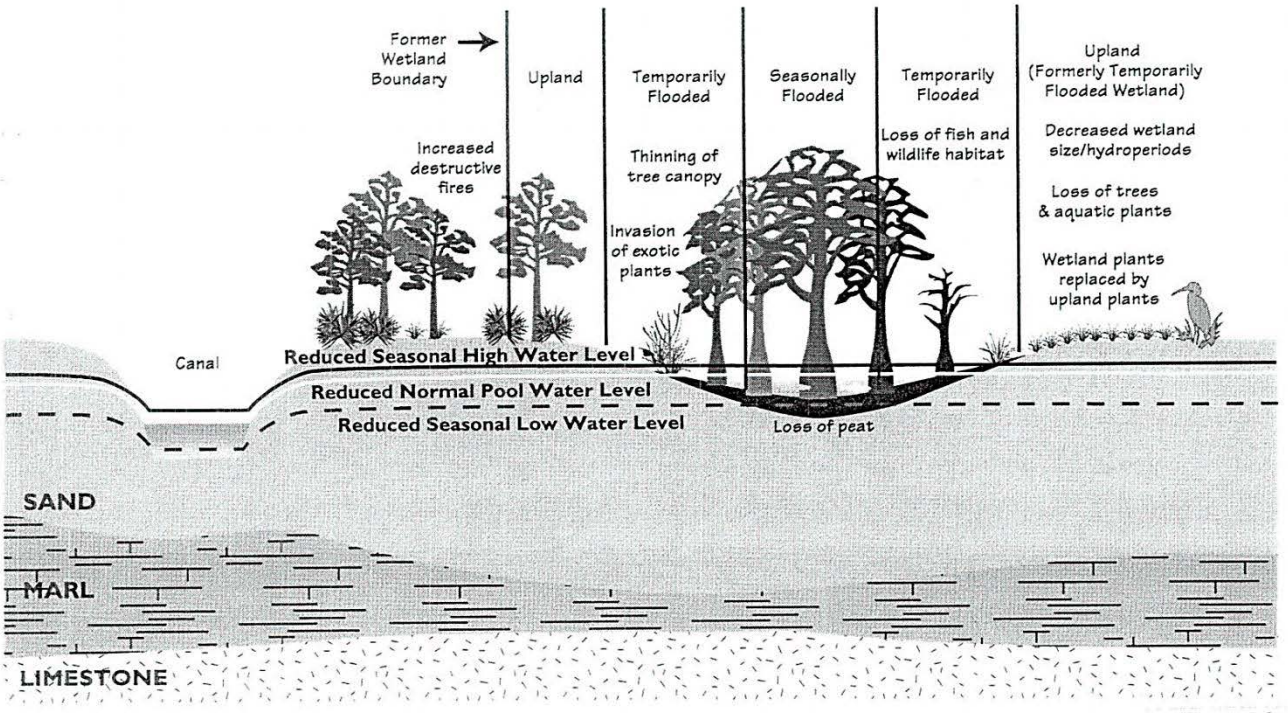
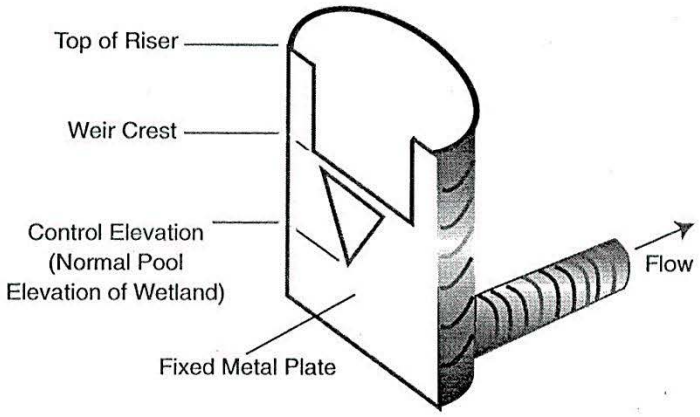
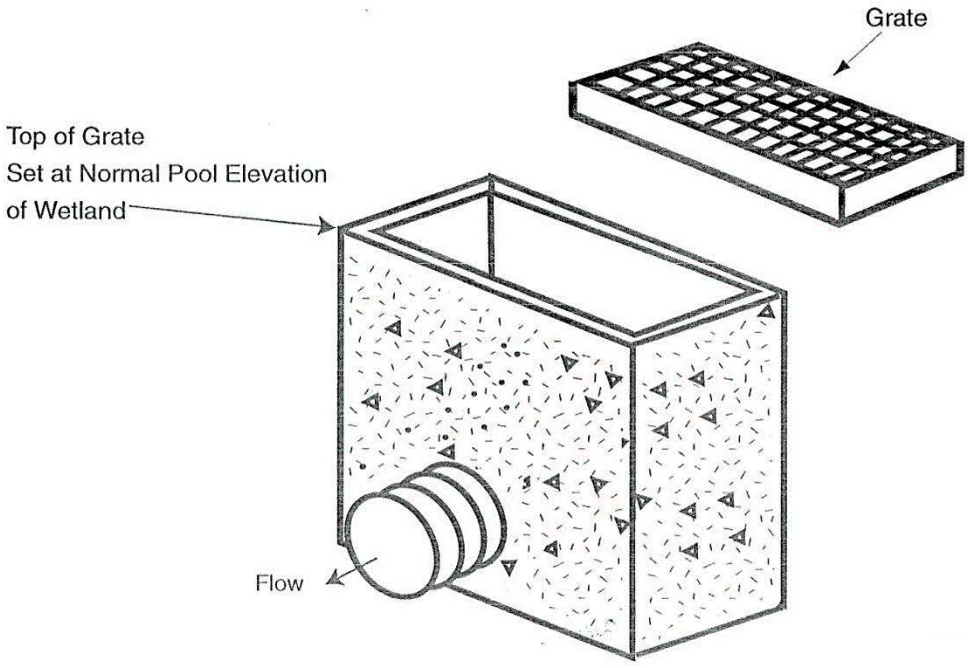


Figure M-3

TYPICAL DISCHARGE/OVERFLOW STRUCTURES FOR WETLAND IMPOUNDMENTS



Riser Culvert



Drop Inlet

Figure M-4

N. Water Quality Inputs and Treatments for Wetland Protection

The criteria of sections 10.2.2, 10.2.7, and 10.2.8 of the Applicant's Handbook, Volume I, require the protection of wetland and surface water functions in order to maintain the abundance, diversity, and habitat of fish, wildlife and listed species. Changes in the quality of water entering a wetland can directly affect the functions it provides. Nutrients can cause changes in vegetation, resulting in not only a proliferation of undesirable exotic and nuisance species, but also the elimination of important native vegetation which provides food and cover for wildlife and listed species. Nutrients can also lower the dissolved oxygen levels in the water column.

Other chemical pollutants such as oils, greases, pesticides and fungicides, can have equally harmful effects on wetlands and the wildlife they support. Certain wetland communities are more sensitive to these types of water quality changes than are other wetlands.

In certain circumstances, development adjacent to protected wetlands may be designed to discharge runoff from portions of the project (such as rear lots) via sheetflow from the developed upland areas into the wetlands. In these cases, it is necessary to consider the type of development discharging the stormwater and the type of wetland receiving the stormwater. The more intense the development, the more likely it is that the stormwater coming from the project will be harmful to the wetland. The quality of the water coming into the wetland from intensive development could potentially alter the functions of the wetland and result in adverse impacts.

Projects adjacent to wetlands will typically include an upland buffer area around the perimeter of the wetland. Upland buffers consisting of native vegetation can provide some treatment of stormwater prior to that water entering the wetland via sheetflow. With low intensity projects such as passive recreational, low-density residential or low-intensity commercial, no other water quality treatment measures may be necessary.

Higher intensity developments may need special precautions in addition to providing an upland buffer in order to prevent water quality impacts to wetland functions. Developments which may need to incorporate some pre-treatment measures prior to discharging into wetlands include those having very intensive land uses or high fertilizer or pesticide applications such as multi-family residential, high-intensity commercial, and golf courses.

As mentioned above, some types of wetlands are more sensitive to water quality changes than are other types. Generally speaking, herbaceous wetland systems such as wet prairies and those that have hydroperiods longer than 240 days are more easily altered or impacted by the quality of water entering the wetland. Projects adjacent to herbaceous wetlands will almost always need to provide some type of treatment prior to discharging stormwater into the wetland in order to prevent adverse impacts.

Figure N-1 depicts a typical design example of a water quality treatment method consisting of a berm and swale to catch and detain stormwater. Other designs may be appropriate depending on site-specific considerations.

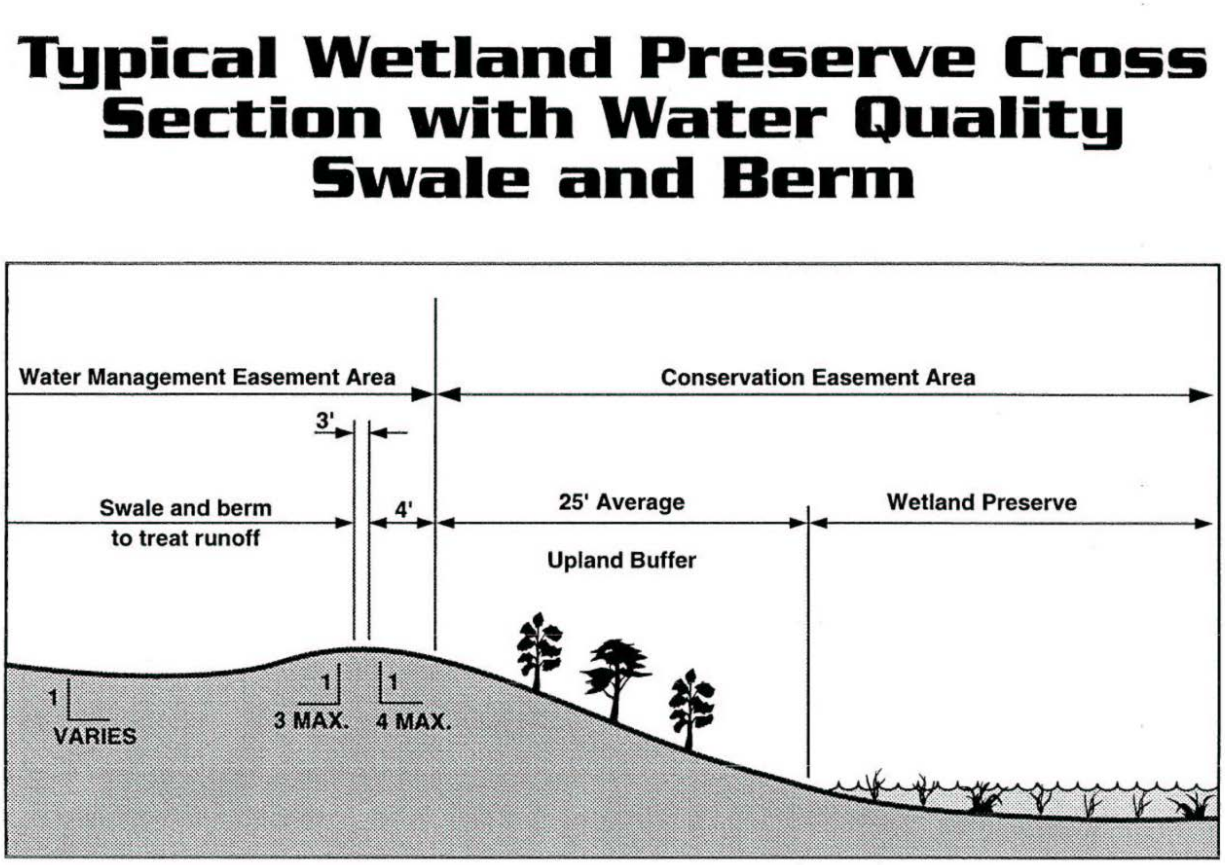


Figure N-1

Certain types of upland development adjacent to wetland preserve areas can result in water quality impacts to wetland systems. These types of developments include heavily fertilized and manicured landscapes such as golf courses or intensely managed lawns. Nutrients, pesticides, fungicides or other harmful substances should be prevented from direct discharge or runoff into sensitive wetland systems. (Refer to AH Volume I, sections 10.2.7 and 10.2.8.)

Water quality swale and berm should be located outside (landward) of upland buffer and placed in a water management easement area.

Runoff from adjacent upland development should be treated prior to entering sensitive wetland systems.

O.Conservation Easements

I. What is a Conservation Easement?

A conservation easement is a document recorded in the public records by a property owner to restrict the type of activity which may be conducted in the conservation easement area. The purpose of a conservation easement is to retain certain property in its natural or mitigated condition. Section 704.06, F.S., which governs conservation easements, provides that a conservation easement "runs with the land." This means that the activity restrictions are automatically binding upon subsequent owners of an interest in the easement area once the easement is recorded.

A conservation easement may be granted to a governmental agency, charitable organization or trust whose purpose is to protect properties of environmental or historical significance. The easement allows the grantee the ability to enforce the activity restrictions on the property by injunction or other civil action and to enter the land at reasonable times to make inspections.

II. How Conservation Easements are used in the Regulatory Program

In the Environmental Resource Permitting program, the granting of conservation easements provides reasonable assurance that a mitigation or preservation area will be maintained in its natural or permitted state in perpetuity. Protection is accomplished by recording the easement in the public records of the county in which the project is located. Additional protection is provided through the prohibition of certain activities within the easement area including, but not limited to, construction of buildings and roads, removal or destruction of vegetation, and activities detrimental to fish and wildlife habitat reservation.

Conservation easements are utilized in a variety of situations. They may be placed over wetlands, upland buffers or upland preservation areas required to be protected and/or mitigated. These areas are generally held in common ownership by a property owner's association or by a governmental entity or are located within individually owned lots.

Several types of conservation easement forms have been developed for use statewide by the regulated public, which are tailored to address particular issues unique to a project. The types of forms are standard, riparian, passive recreation, local government and third party enforcement. For example, the passive recreational conservation easement may allow limited vegetation removal in the easement area to construct passive recreational facilities or the construction of mulched walking or hiking trails, while the riparian conservation easement would allow for the construction of a dock or fishing pier within waterfront lots so as to allow a property owner to utilize riparian rights. In cases of passive use, construction activities are still subject to any federal, state or local government permitting requirements. Additionally, design plans must be submitted to the District for approval through a permit modification prior to construction.

Effective October 1, 2013, these forms have been adopted by rule by DEP as part of the Statewide ERP rulemaking. This means that the forms cannot be modified except for site-specific or unique circumstances. Links to these forms are found below. Attached are the *Joint Deed of Conservation Easement and Agreement* and *Joint Amended Deed of Conservation Easement and Agreement* for projects located only in Broward County. These forms were developed jointly with Broward County to avoid duplication.

It is important that any other person or entity with interests in the property (lien-holder or other easement holder) to be placed under easement subordinate their interests to the conservation easement. The easement form should be fully executed and will be attached to the permit with conditions for the easement to be recorded within a specified amount of time. A sketch or survey and legal description of the proposed easement area should also be submitted with the form.

Conservation easements are intended to be permanent. However, in some circumstances, a portion or all of a conservation easement may be released, if all rule requirements are met, including reduction and elimination of impacts (see section 10.2.7 of Applicant's Handbook Volume I). Release of a conservation easement or any portion of a conservation easement requires approval of the Governing Board. Please contact District staff to discuss the requirements and procedure, if a release is necessary.

Conservation Easement Forms (*hyperlinks*):

Form 62-330.301(8), "Deed of Conservation Easement — Standard"
Form 62-330.301(9), "Deed of Conservation Easement – Standard, With Third Party Beneficiary"
Form 62-330.301(10), "Deed of Conservation Easement — Passive Recreational Uses"
Form 62-330.301(11), "Deed of Conservation Easement — Riparian Uses"
Form 62-330.301(12), "Deed of Conservation Easement for Local Governments"
Form 62-330.301(13), "Deed of Conservation Easement with Third Party Beneficiary Rights to the U.S. Army Corps of Engineers"
Form 62-330.301(14), "Declaration of Restrictive Covenants "
Form 62-330.301(15), "Declaration of Restrictive Covenants -- Insert"
Joint Deed of Conservation Easement and Agreement (Broward)
Joint Amended Deed of Conservation Easement and Agreement (Broward)

For forms incorporated by reference, click here: forms

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

P. Wetland Planting Specifications Guidance Document

(hyperlink to document)

January 27, 2011

South Florida Water Management District

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Q. Noticing Intended Agency Action For an Environmental Resource Permit

(hyperlink to document)

R. ALLOWABLE DISCHARGE VALUES

FOR

PROJECTS WITHIN THE SOUTH FLORIDA

WATER MANAGEMENT DISTRICT

ALLOWABLE DISCHARGE VALUES FOR PROJECTS WITHIN THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT

February 17, 1994

Formerly known as “Appendix 2”

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USE OF APPENDIX 2 TO DETERMINE ALLOWABLE DISCHARGE VALUES

The assignment of allowable discharge values for waterways in south Florida is based on very inexact science. Not only are the properties of the waterway often in doubt, but they are constantly changing. Inflows to the waterway are even more of a mystery, since their varying amounts and times, subject to all the variables of hydrology, are additive if and when they reach the waterway. In south Florida almost all inflows are also constrained by waterway tailwaters at some point in time.

Many of the allowable discharges derived over the years were estimated from a single or minimum number of hydraulic routings of inflows and waterway flows, using traditional hydrologic methods, which didn't provide for sheetflow, out of bank flow, tailwater constraints, reverse flow, pumped discharge, etc. The allowable discharge values which were derived for many of the lower east coast canals were of the form:

$$Q = \left[\frac{a}{A^{0.5}} + b\right] A$$

where: Q = allowable discharge (cubic feet/second)
a and b = constants (conversion units)
A = contributing area (square miles)

The form of the equation was established during the 1920's for the Everglades Agricultural Area (EAA) by unknown parties based on unknown principle. It obviously assigns larger unit discharge values to smaller contributing areas and vice-versa. This makes sense, usually. It presumes inflow hydrograph peaks are not additive (the sum of the parts exceeds the whole at any single point in time). It just so happens it really applies less in the EAA than anywhere else in the District because most contributing areas in the EAA are pumped discharges and thus the peaks are additive. The allowable discharge for the EAA should actually be 0.75 inches per day, the pump capacity of the overall system.

The constants a and b were different for each canal and derived from two points on a curve, one for the discharge for the entire basin and one for an estimated discharge for one square mile. In general the method gave extremely generous allowable discharge values with typical values for one square mile of three to five inches per day.

In addition to the problem caused by pumped discharge peaks being coincident, an additional problem was that many contributing areas were small (high unit discharge) and highly impervious. Thus, their actual discharge was much greater than the allowable discharge formula estimates. The end result is that there is very little correlation between the old allowable discharge formulas and actual discharges. Without basin studies, no one can say how a basin performs.

In recent years, knowledge of the above problem has caused allowable discharge to be computed from the pure division of the waterway capacity by the area of the basin. This would be conservative for an undeveloped basin, but few such basins exist. Many of the basins in

Appendix 2 have received this treatment since publication of earlier versions of Appendix 2.

The new values in Appendix 2 come from many sources, some as described above, a few from basin studies, and others from estimates by the District, local governments, permit applicants, etc. The best available sources were used, but new studies were not conducted.

The end result of the above is a series of values which generally ignore basin size. They range from less than one half inch per day to as much as 12 inches per day. These of course range from a large flat basin to a steeper basin. It is unlikely that there is really that much disparity in south Florida waterways or the discharges to them. It is also likely that the smaller basins should have higher unit area discharges. Therefore, Appendix 2 should be used as follows:

Case 1: If the immediate receiving water is a natural stream, overland sheetflow area, secondary or tertiary man made ditch, swale or other conveyance with undefined capacity; then the post-development instantaneous peak discharge rate should equal the pre-development rate for the approprate design storm event such that new adverse water quantity impacts are not created.

Case 2: If the immediate receiving water is a primary waterway with allowable discharge capacity listed in Appendix 2, then the allowable instantaneous peak discharge rate is the lesser of either the listed value or the value calculated by using the appropriate formula below:

For a 25 year/3 day design storm: $Q = 53A^{0.64}$

For a 25 year/1 day design storm: $Q = 46A^{0.64}$

For a 10 year/3 day design storm: $Q = 30A^{0.64}$

where: Q = allowable discharge (cubic feet/second)

A = contributing area (square miles)

Note: These two cases do not apply to the C-51 Basin. Use the subbasin discharge coefficients for that basin.

The above formulas were derived from the experience gained in many years of issuing permits and reviewing applicants submissions. They generally fit an average basin with an SCS curve number of 65. If an applicant believes either the formula or the listed value are inappropriate, the District will consider other submitted information. It is acknowledged that such conditions as; downstream flow attenuation areas, steep slopes, reduced soil storage and other such factors may make pre-development/post-development values more appropriate. The important factors are:

1) That waterway capacity not be unused,
2) That new adverse impacts are not created,
3) That historic drainage rights are preserved and,
4) Recognition is given to contributing drainage area size when possible.

DRAINAGE BASIN DATA

LAKE KISSIMMEE BASIN (Osceola and Polk Counties)

The design storm is a 10 year event in Osceola County and a 25 year event in Polk County. The allowable discharge rate is 31.1 CSM. See Figures 1 and 2.

LAKE WEOHYAKAPKA BASIN (Polk County)

The design storm is a 25 year event. The allowable discharge rate for projects located in this basin is based on the peak discharge rate after development not exceeding the rate that existed prior to development. See Figures 1 and 3.

LAKE MARIAN BASIN (Osceola County)

The design storm is a 10 year event. The allowable discharge rate is 31.1 CSM. See Figures 1 and 4.

LAKE HATCHINEHA BASIN (Polk and Osceola Counties)

The design storm is a 10 year event in Osceola County and a 25 year event in Polk County. The allowable discharge rates for the various subbasins can be determined from Figure 5 (Drainage Analysis Unit 8/Kissimmee River Above Lake Hatchineha). This illustration was taken from the Surface Water Management Plan which was prepared for Polk County by Envisors, Inc. It covers numerous drainage basins within Polk and Osceola Counties and has been modified by the District in order to reflect allowable discharge rates in units of cfs per square mile (CSM). Also see Figures 1 and 6.

LAKE PIERCE BASIN (Polk County)

The design storm is a 25 year event. The allowable discharge rates for the various subbasins can be determined from Figure 5 (Drainage Analysis Unit 8/Kissimmee River Above Lake Hatchineha). This illustration was taken from the Surface Water Management Plan which was prepared for Polk County by Envisors, Inc. It covers numerous drainage basins within Polk and Osceola Counties and has been modified by the District in order to reflect allowable discharge rates in units of cfs per square mile (CSM). Also see Figures 1 and 7.

HORSE CREEK BASIN (Osceola, Lake and Polk Counties)

Only that portion of this basin that is within Osceola County is within the SFWMD. The design storm is a 10 year event for this area. The allowable discharge rate is 88 CSM. See Figures 1 and 8.

REEDY CREEK BASIN (Polk, Orange, and Osceola Counties)

The design storm is a 10 year event in Osceola County and a 25 year event in Orange and Polk Counties. The allowable discharge rate within Orange County is 67 CSM. The allowable discharge rate for subbasins within Polk and Osceola Counties can be determined from Figure 5 (Drainage Analysis Unit 8/Kissimmee River Above Lake Hatchineha). This illustration was taken from the Surface Water Management Plan which was prepared for Polk County by Envisors, Inc. It covers numerous drainage basins within Polk and Osceola Counties and has been modified by the District in order to reflect allowable discharge rates in units of cfs per square mile (CSM). Also see Figures 1 and 9.

LAKE TOHOPEKALIGA BASIN (Osceola and Orange County)

The design storm is a 10 year event in Osceola County and a 25 year event in Orange County. The allowable discharge rate is 17.5 CSM. See Figures 1 and 10.

SHINGLE CREEK BASIN (Orange and Osceola Counties)

The design storm is a 10 year event in Osceola County and a 25 year event in Orange County. See Figures 1 and 11. The maximum allowable discharge rate for areas located north of Sand Lake Road is 320 CSM. The maximum allowable discharge rate for those areas located south of Sand Lake road, within Orange County, is 192 CSM. For those areas south of Sand lake Road, within Osceola County, the allowable discharge rate is 64 CSM, except for the following areas which should be allowed a maximum rate of 192 CSM.

T25S/R28E/Sections 1, 2, the East half of 3, all of 11 except for that part of the West half of the Southwest quarter which is not presently developed.

T25S/R29E/Sections 5, East portion of 6 and East portion of Northeast quarter of 7 which lie East of Shingle Creek, that part of 8 which lies North of the East-West ditch which approximately bisects this section, the Northwest quarter of 9.

EAST LAKE TOHOPEKALIGA BASIN (Orange and Osceola Counties)

The design storm is a 10 year event in Osceola County and a 25 year event in Orange County. The allowable discharge rate is 16.1 CSM. See Figures 1 and 12.

BOGGY CREEK BASIN (Orange and Osceola Counties)

The design storm is a 25 year event in Orange County and a 10 year event in Osceola County. The allowable discharge rate is 50 CSM. See Figures 1 and 13.

LAKE HART BASIN (Orange and Osceola Counties)

The design storm is a 10 year event in Osceola County and a 25 year event in Orange County. The allowable discharge rate is 10.6 CSM. See Figures 1 and 14.

LAKE MYRTLE BASIN (Osceola and Orange Counties)

The design storm is a 10 year event in Osceola County and a 25 year event in Orange County. The allowable discharge rate is 3.6 CSM. See Figures 1 and 15.

LAKE CYPRESS BASIN (Osceola and Polk Counties)

The design storm is a 10 year event in Osceola County and a 25 year event in Polk County. The allowable discharge rates for the various subbasins can be determined from Figure 5 (Drainage Analysis Unit 8/Kissimmee River Above Lake Hatchineha). This illustration was taken from the Surface Water Management Plan which was prepared for Polk County by Envisors, Inc. It covers numerous drainage basins within Polk and Osceola Counties and has been modified by the District in order to reflect allowable discharge rates in units of cfs per square mile (CSM). The allowable discharge rate for portions of the basin not covered by Figure 5 is 31.1 CSM. Also see Figures 1 and 16.

CANOE CREEK BASIN (Osceola County)

The design storm is a 10 year event. The allowable discharge rate is 31.1 CSM. See Figures 1 and 17.

S-63A BASIN (Osceola County)

The design storm is a 10 year event. The allowable discharge rate is 56.7 CSM. See Figures 1 and 18.

LAKE GENTRY BASIN (Osceola County)

The design storm is a 10 year event. The allowable discharge rate is 13.8 CSM. See Figures 1 and 19.

ALLIGATOR LAKE BASIN (Osceola County)

The design storm is a 10 year event. The allowable discharge rate is 13.0 CSM. See Figures 1 and 20.

L-61W BASIN (Glades County)

The allowable discharge rate for projects located in this basin is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a ten year event. See Figures 21 and 22.

L-61E BASIN (Glades County)

The design storm is a 10 year event. The allowable discharge rate is 40.8 CSM. See Figures 21 and 23.

L-60W BASIN (Glades County)

The design storm is a 10 year event. The allowable discharge rate is 40.8 CSM. See Figures 21 and 24.

L-60E BASIN (Glades County)

The design storm is a 10 year event. The allowable discharge rate is 45.3 CSM. See Figures 21 and 25.

L-59W BASIN (Glades County)

The design storm is a 10 year event. The allowable discharge rate is 45.3 CSM. See Figures 21 and 26.

L-59E BASIN (Glades County)

The allowable discharge rate for projects located in this basin is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 10 year event. See Figures 21 and 27.

S-129 BASIN (Glades County)

The allowable discharge rate is 20.2 CSM. The design storm is a 25 year event. See Figures 21 and 28.

S-127 BASIN (Glades County)

The allowable discharge rate is 20.2 CSM. The design storm is a 25 year event. See Figures 21 and 29.

C-41A (STUB OR BRIGHTON CANAL) BASIN (Glades and Highlands Counties)

The design storm is a 10 year event. The allowable discharge rate is 62.1 CSM. See Figures 21 and 30.

C-41 (HARNEY POND CANAL) BASIN (Glades and Highlands Counties)

The design storm is a 10 year event. The allowable discharge rate is 40.8 CSM. See Figures 21 and 31.

LAKE ISTOKPOGA BASIN (Highlands and Polk Counties)

Figure 32 illustrates the location of numerous subbasins. Table 1 provides allowable discharge rates for each subbasin for various storm events. Use the 10 year storm event. The values were produced as part of the "Lake Istokpoga Feasibility Study" (July 1993, Howard Searcy Consulting Engineers). Also see Figure 21.

C-40 (INDIAN PRAIRIE CANAL) BASIN (Glades and Highlands Counties)

The design storm is a 10 year event. The allowable discharge rate is 45.3 CSM. See Figures 21 and 33.

S-154C BASIN (Okeechobee County)

The allowable discharge rate for projects located in this basin is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a ten year event. See Figures 21 and 34.

S-154 BASIN (Okeechobee County)

The allowable discharge rate is 20.2 CSM. The design storm is a 10 year event. See Figures 21 and 35.

S-133 BASIN (Okeechobee County)

The allowable discharge rate is 15.6 CSM. The design storm is a 25 year event. See Figures 21 and 36.

S-131 BASIN (Glades County)

The allowable discharge rate is 20.5 CSM. The design storm is a 25 year event. See Figures 21 and 37.

C-38 (KISSIMMEE RIVER) BASIN (Osceola, Polk, Okeechobee, and Highland Counties)

This basin includes the following subbasins; S-65A, S-65B, S-65C, S-65D and S-65E. The allowable discharge rate is 31.1 CSM. The design storm is a 10 year event. See Figures 21 and 38 through 42.

C-25 (BELCHER CANAL) BASIN (St.Lucie, Okeechobee, and Indian River Counties)

This conveyance system is designed to prevent flooding from a 10 year storm event. The allowable discharge rate for projects located upstream of S-50 is 23.1 CSM. Downstream of S-50, the allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. See Figures 43 and 44.

C-24 (DIVERSION CANAL-RIM DITCH CANAL) BASIN (St.Lucie and Okeechobee Counties)

This conveyance system is designed to prevent flooding from a 10 year storm event. The allowable discharge rate for projects located upstream of S-49 is 28.1 CSM. See Figures 43 and 45.

C-23 (COUNTY LINE CANAL) BASIN (St.Lucie, Okeechobee, and Martin Counties)

This conveyance system is designed to prevent flooding from a 10 year storm event. The allowable discharge rate for projects located upstream of S-97 is 30.0 CSM. See Figures 43, 46 and 49.

NORTH FORK OF THE ST. LUCIE RIVER BASIN (Martin and St. Lucie Counties)

This basin includes project canal C-23A. The allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 10 year event. See Figures 43, 47 and 49.

C-59 (TAYLOR CREEK-NUBBIN SLOUGH) BASIN (Martin, Okeechobee and St. Lucie Counties)

This canal provides protection from a 10 year storm event. The allowable discharge is 39.6 CSM. See Figures 43, 48 and 49.

TIDAL ST. LUCIE BASIN (Martin County)

The allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 25 year event. See Figures 49 and 50.

C-44 (ST. LUCIE CANAL) BASIN (Martin County)

The allowable discharge rate is limited by the conveyance capacity of numerous drainage spillways constructed along the St. Lucie Canal. The location, drainage area, and discharge capacity of the spillways are described and illustrated in Table 2 and Figure 51. The design storm is a 25 year event. Also see Figure 49.

S-135 BASIN (Martin and Okeechobee Counties)

The allowable discharge rate for this basin is 20.2 CSM. It should be used with a 25 year design storm. See Figures 49 and 52.

S-153 BASIN (Martin County)

This canal was designed for protection from a 10 year storm event. The allowable discharge is 105.5 CSM. See Figures 49 and 53.

S-4 BASIN (Glades and Hendry County)

The design storm is a 25 year event. The allowable discharge rate from agricultural lands is 20.2 CSM. The allowable discharge rate for the City of Clewiston is 107.5 CSM. See Figures 54 and 55.

S-236 BASIN (Palm Beach County)

The design storm is a 25 year event. The allowable discharge rate is 20.2 CSM. See Figures 54 and 56.

S-8 BASIN (Palm Beach and Hendry Counties)

The design storm is a 25 year event. The allowable discharge rate is 20.2 CSM. See Figures 54 and 57.

S-3 BASIN (Palm Beach and Hendry Counties)

The design storm is a 25 year event. The allowable discharge rate is 20.2 CSM. See Figures 54 and 58.

S-7 BASIN (Palm Beach County)

The design storm is a 25 year event. The allowable discharge rate is 20.2 CSM. See Figures 54 and 59.

S-6 BASIN (Palm Beach County)

The design storm is a 25 year event. The allowable discharge rate is 20.2 CSM. See Figures 54 and 60.

S-2 BASIN (Palm Beach County)

The design storm is a 25 year event. The allowable discharge rate is 20.2 CSM. See Figures 54 and 61.

S-5A BASIN (Palm Beach County)

The design storm is a 25 year event. The allowable discharge rate is 20.2 CSM. See Figures 54 and 62.

L-8 BASIN (Palm Beach and Martin Counties)

The design storm is a 25 year event. The allowable discharge rate is 20.2 CSM. See Figures 54 and 63.

HILLSBORO CANAL BASIN (Broward and Palm Beach Counties)

There is no specified design storm for the Hillsboro Canal since it was built prior to the Central and Southern Florida Flood Control Project. A 25 year design event should be utilized though. The allowable discharge rate for areas between S-39 and the Deerfield Lock is 35 CSM. Downstream of the Deerfield Lock, the allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. See Figures 64 and 65.

C-15 BASIN (Palm Beach County)

This canal provides flood protection from a 30 year storm event. A 25 year design storm should be utilized though. The allowable discharge for projects within this basin, upstream of S-40, is 64 CSM. If land development were to occur downstream of S-40, the peak discharge rate after development could not exceed the rate that existed prior to development. See Figures 64 and 66.

C-16 (BOYNTON CANAL) BASIN (Palm Beach County)

This canal provides flood protection from a 30 year storm event. A 25 year design storm should be utilized though. The allowable discharge for projects within this basin, upstream of S-41, is 62.6 CSM. Downstream of S-41, the allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. See Figures 64 and 67.

C-51 (WEST PALM BEACH CANAL) BASIN (Palm Beach County)

Allowable discharge rates are designated for each subbasin served by the C-51 canal. They are to be applied to a 10 year design storm. The discharge coefficients for each subbasin are illustrated in Figure 70. Also see Figures 64, 68 and 69.

C-17 (EARMAN RIVER CANAL) BASIN (Palm Beach County)

This canal provides flood protection from a 30 year storm event. A 25 year design storm should be utilized though. The allowable discharge for projects within this basin, upstream of S-44, is 62.7 CSM. Downstream of S-44, the allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. See Figures 64 and 71.

C-18 BASIN (Palm Beach County)

Allowable discharges within this basin are based upon the recommendations contained within the SFWMD's Technical Publication 88-11, "Flood Management Study of the C-18 Basin, August 1988". Figure 73 illustrates the subbasins within the study area and their corresponding discharge coefficients. Allowable discharge rates should be applied to the 25 year design storm. Also see Figures 64 and 72.

C-9 (SNAKE CREEK CANAL) BASIN (Dade and Broward Counties)

The allowable discharge rate for the eastern subbasin is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The allowable discharge for the western subbasin is 20 CSM. The boundary between the subbasins is Flamingo Road in Broward County and N.W. 67th Ave. in Dade County. The design storm is a 25 year event. See Figures 74, 75 and 76.

C-10 (HOLLYWOOD CANAL) BASIN (Broward County)

The allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 25 year event. See Figures 74 and 77.

C-11 (SOUTH NEW RIVER CANAL) BASIN (Broward County)

The allowable discharge rate is 20 CSM, west of Structure 13A and 40 CSM, east of 13A. These rates are based on pump capacities of 20 CSM at pump stations S-9 and S-13, in addition to the spillway capacity at S-13. The design storm is a 25 year event. See Figures 74, 78 and 79.

NORTH NEW RIVER CANAL BASIN (Broward County)

The area of the eastern basin is 7 square miles. The western basin drains 23 square miles. The boundary between the two basins is approximately State Road 817. This basin provides flood protection from the 25 year storm event. The allowable discharge rate for the area between S-34 and the Sewell Lock is 70.8 CSM. Downstream of the Sewell Lock the allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. See Figures 74, 80 and 81.

C-12 (PLANTATION CANAL) BASIN (Broward County)

This conveyance was designed to provide flood protection from the 25 year storm event. The allowable discharge rate for projects located upstream of structure S-33 is 76.7 CSM. This value was calculated by dividing the 920 cfs removal rate by the approximate drainage area (12 square miles). The allowable discharge rate for projects located downstream of S-33 is based on the peak discharge rate after development not exceeding the rate that existed prior to development. See Figures 74 and 82.

NORTH FORK MIDDLE RIVER BASIN (Broward County)

This basin receives flows from a 5 square mile area located north of the eastern C-13 basin. The allowable discharge rate for this basin is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 25 year event. See Figures 74 and 83.

C-13 (MIDDLE RIVER CANAL) BASIN (Broward County)

This conveyance was designed to provide flood protection from the 25 year storm event. The allowable discharge rate for projects located downstream of structure S-36 (i.e. the eastern basin) is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The allowable discharge rate for projects located upstream of S-36 (i.e. the western basin) is 52 CSM. This value was calculated by dividing the design discharge rate at S-36 (1560 cfs) by the approximate drainage area (30 square miles). See Figures 74, 84 and 85.

OLD POMPANO CANAL BASIN (Broward County)

This conveyance was designed to provide flood protection from the 25 year storm event. The allowable discharge rate, downstream of G-57, is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The allowable discharge rate for the portion of the basin between G-65 and G-57 is 72 CSM. See Figures 74 and 86.

C-14 (CYPRESS CREEK CANAL) BASIN (Broward County)

This conveyance is divided into an eastern and western section with regard to design flood protection. The boundary between the two basins is Farm Road. The eastern and western basins were designed to handle flows from 30 and 10 year storm events respectively. A 25 year

design storm should be used in the eastern basin instead of a 30 year event. The allowable discharge rate, within C-14, downstream of S-37A, is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The allowable discharge rate for other areas within the C-14 basin is 69.2 CSM. See Figures 74, 87 and 88.

THE NORTH AND SOUTH MODEL LAND CANAL BASINS (Dade County)

The allowable discharge rate is 16.0 CSM. The design storm is a 25 year event. See Figures 89 and 90.

THE FLORIDA CITY CANAL BASIN (Dade County)

The allowable discharge rate is 43.5 CSM. The design storm is a 25 year event. See Figures 89 and 91.

THE NORTH CANAL BASIN (Dade County)

The allowable discharge rate is 43.5 CSM. The design storm is a 25 year event. See Figures 89 and 92.

HOMESTEAD AIR FORCE BASE BASIN (Dade County)

The Homestead AFB is drained by the Military Canal. The allowable discharge rate is 191.5 CSM. The design storm is a 25 year event. See Figures 89 and 93.

C-103 BASIN (Dade County)

This basin contains a system of three conveyances (i.e. C-103, C-103N,and C-103S). In addition, the North Canal and the Florida City Canal also drain through this basin via the west borrow canal of L-31E. The allowable discharge rate is 43.5 CSM. The design storm is a 25 year event. See Figures 89 and 94.

C-102 BASIN (Dade County)

This system of conveyances (i.e. C-102 and C-102N) was designed to provide flood protection from the 10 year storm. The allowable discharge rate is 52.4 CSM. See Figures 89 and 95.

C-1 (BLACK CREEK CANAL) BASIN (Dade County)

The allowable discharge rate is 45.8 CSM. This value is based upon the design capacity of the system during a 10 year storm event. See Figures 89 and 96.

C-100 BASIN (Dade County)

This basin is also known as the Cutler Drainage Basin. This system of conveyances (i.e. C-100, C-100A, C-100B, and C-100C) was designed to provide flood protection from the 10 year storm. The allowable discharge rate is 56.6 CSM. See Figures 89 and 97.

C-2 (SNAPPER CREEK) BASIN (Dade County)

The allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 25 year event. See Figures 89 and 98.

C-3 (CORAL GABLES CANAL) BASIN (Dade County)

This conveyance system was designed to provide flood protection from the 25 year storm event. Downstream of structure G-97, the allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. Upstream of G-97, the allowable discharge rate is 54 CSM. See Figures 89 and 99.

C-4 (TAMIAMI CANAL) BASIN (Dade County)

The allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 25 year event. See Figures 89 and 100.

C-5 (COMFORT CANAL) BASIN (Dade County)

The allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 25 year event. See Figures 89 and 101.

C-6 (MIAMI CANAL) BASIN (Dade County)

The allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 25 year event. See Figures 89 and 102.

C-7 (LITTLE RIVER CANAL) BASIN (Dade County)

The allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 25 year event. See Figures 89 and 103.

C-8 (BISCAYNE CANAL) BASIN (Dade County)

The allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 25 year event. See Figures 89 and 104.

SIX MILE CYPRESS (Lee County)

The allowable discharge rate is 37.1 CSM. This rate is based on the Needles report. The design storm is a 25 year event. See Figure 105.

HANCOCK CREEK (Lee County)

The allowable discharge rate is 64 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

MARSH POINT (Lee County)

The allowable discharge rate is 108 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

COHN BRANCH (Lee County)

The allowable discharge rate is 64 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

DAUGHTREY CREEK (Lee County)

The allowable discharge rate is 27 CSM for areas located upstream of Nalle Grade Road. Downstream of Nalle Grade road, the allowable rate is 48 CSM. These values are from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

DAUGHTREY CREEK-EAST BRANCH (Lee County)

The allowable discharge rate is 81 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

CHAPEL BRANCH (Lee County)

The allowable discharge rate is 81 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

BAYSHORE CREEK (Lee County)

The allowable discharge rate is 81 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

POPASH CREEK (Lee County)

The allowable discharge rate is 81 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

STROUD CREEK (Lee County)

The allowable discharge rate is 81 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

TROUT CREEK (Lee County)

The allowable discharge rate is 39 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

OTTER CREEK (Lee County)

The allowable discharge rate is 39 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

TELEGRAPH CREEK (Lee County)

The allowable discharge rate is 39 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

BEDMAN CREEK (Lee County)

The allowable discharge rate is 58 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

HICKEY CREEK (Lee County)

The allowable discharge rate is 65 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

ORANGE RIVER (Lee County)

The allowable discharge rate is 55 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

MULLOCK CREEK (Lee County)

The allowable discharge rate is 69 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

ESTERO RIVER (Lee County)

The allowable discharge rate is 42 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

HALFWAY CREEK (Lee County)

The allowable discharge rate is 60 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

SPRING CREEK (Lee County)

The allowable discharge rate is 81 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

C-19 BASIN (Glades County)

The allowable discharge for this conveyance is 57.8 CSM. The design storm is a 25 year event. See Figure 106.

CALOOSAHATCHEE RIVER (Glades, Hendry and Lee Counties)

The allowable discharge rate is 30.1 CSM for areas within this basin that are not discussed someplace else within this appendix. This rate is based upon Corps of Engineers design criteria. The design storm is a 25 year event. See Figure 124.

IMPERIAL RIVER (Lee County)

The allowable discharge rate is 59 CSM for areas west of Bonita Grande Drive. Areas east of Bonita Grande Drive are allowed 25 CSM. These values are from the Lee County Surface Water Management Plan (June 1991). The design storm is a 25 year event. See Figures 105 and 108.

TEN MILE CANAL (Lee County)

The allowable discharge rate for the majority of the basin is 64 CSM. This rate is based on the Needles report. Approximately 2,033 acres of this basin drains through the Harper Bothers Farm (SWM Permit #36-00736-S). The allowable discharge, for this area, has been determined, by previous permit action, to be 43 CSM. The design storm is a 25 year event. See Figures 105, 107 and 109.

HENDRY CREEK (Lee County)

The allowable discharge rate is 102 CSM upstream of the Lakes Park weir. Other areas within the basin should be allowed 131 CSM. These values are from the Lee County SurfaceWater Management Plan (June 1991). The design storm is a 25 year event. See Figures 105 and 110.

COW SLOUGH (Lee County)

The allowable discharge rate should be determined based on a pre versus post development analysis according to the Lee County Surface Water Management Plan (June 1991). The design storm is a 25 year event. See Figures 105 and 111.

DEEP LAGOON BASIN (Lee County)

The allowable discharge rate is 50 CSM until the McGregor Boulevard culverts are enlarged. Once the culverts are enlarged, the rate may be increased to 96 CSM. The design storm is a 25 year event. See Figures 105 and 112.

WHISKEY CREEK (Lee County)

The allowable discharge rate is 108 CSM for areas north of College Parkway. For areas south of the Parkway, the rate is 40 CSM. These rates are from the Lee County Surface Water Managment Plan (June 1991). The design storm is a 25 year event. See Figures 105 and 113.

BILLY CREEK (Lee County)

The allowable discharge rate is 64 CSM. This rate is from the Lee County Surface Water Management Plan (June 1991). The design storm is a 25 year event. See Figures 105 and 114.

POWELL CREEK (Lee County)

The allowable discharge rate for previously undeveloped areas is 20 CSM. The rate for areas which are being redeveloped is 108 CSM. These rates have been taken from the Lee County Surface Water Management Plan (June 1991). The design storm is a 25 year event. See Figures 105 and 115.

YELLOW FEVER CREEK-EAST BRANCH (Lee County)

The allowable discharge rate should be determined by a pre versus post development analysis. The calculated rate should not exceed 64 CSM, however, since the Lee County Surface Water Management Plan (June 1991) indicates that the system is overburdened. The design storm is a 25 year event. See Figures 105 and 116.

YELLOW FEVER CREEK (Lee County)

The allowable discharge rate is 96 CSM. This rate is from the Lee County Surface Water Management Plan (June 1991). The design storm is a 25 year event. See Figures 105 and 117.

GATOR SLOUGH BASIN (Lee County)

The allowable discharge rate is 64 CSM downstream of a breakpoint located 2,590 feet southwest of U.S. 41. Upstream of this breakpoint, the allowable rate is 29 CSM. This rate is from the Lee County Surface Water Management Plan (June 1991). The design storm is a 25 year event. See Figures 105 and 118.

C-139, Feeder Canal and L-28 Basins (AKA L-1, L-2, L-3 AND L-2W) Hendry County

The allowable discharge rate is 11.5 CSM. This rate is based upon District canal design criteria. The design storm is a 25 year event. See Figure 119.

DEVILS GARDEN WATER CONTROL DISTRICT (Hendry County)

The allowable discharge rate is 20.2 CSM. The design storm is a 25 year event. See Figure 119.

AIRPORT ROAD CANAL (Collier County)

The allowable discharge rate is 25.6 CSM if the project is located North of Vanderbilt Beach Road and 38.4 CSM if the project is located South of Vanderbilt Beach Road. This rate has been established by Collier County. The design storm is a 25 year event. See Figure 126.

DISTRICT SIX (Collier County)

The allowable discharge rate is 38.4 CSM. This rate has been established by Collier County. The design storm is a 25 year event. See Figure 120.

GOLDEN GATE CANAL (Collier County)

The allowable discharge rate is 64 CSM. This rate has been established by Collier County. The design storm is a 25 year event. See Figure 120.

COCOHATCHEE RIVER (Collier County)

The allowable discharge rate is 25.6 CSM. This rate has been established by Collier County per Ordinance 90-10. The design storm is a 25 year event. See Figure 120.

LELY CANAL (Collier County)

The allowable discharge rate is 38.4 CSM. This rate has been established by Collier County. The design storm is a 25 year event. See Figure 126.

FAKAHATCHEE STRAND (Collier County)

The allowable discharge rate is 32 CSM. This rate was established by a pre versus post development analysis. The design storm is a 25 year event. See Figure 120.

AREAS OF WESTERN COLLIER COUNTY NOT IDENTIFIED ABOVE

The allowable discharge rate is 38.4 CSM. The design storm is a 25 year event. See Figure 120.

NORTH COLONIAL WATERWAY (Lee County)

The allowable discharge rate is 37.1 CSM. This rate is based upon canal design criteria. The design storm is a 25 year event. See Figure 121.

LAKES PARK (Lee County)

The allowable discharge rate is 102.4 CSM. This rate has been established by Lee County. The design storm is a 25 year event. See Figure 125.

TOWNSEND CANAL (Hendry County)

The allowable discharge rate is 30.1 CSM. This rate is based upon Corps of Engineers design criteria. The design storm is a 25 year event. See Figures 122 and 124.

TIDAL AREAS (All Counties)

The allowable discharge rate is based on the proposed projects peak runoff rate after development not exceeding the rate which existed prior to development. This analysis should consider the effect, if any, that tidal fluctuations have on the projects ability to discharge through its control structure as well as through conveyances further downstream . The tide data used in the analysis should utilize the Mean Higher High Water (MHHW) datum. This datum should be derived for the tide station which is closest to the proposed project site. The design storm is a 25 year event.

CHARLOTTE COUNTY

The historic allowable discharge rate for eastern Charlotte County is 26.9 CSM. The design storm is a 25 year event. See Figure 123.

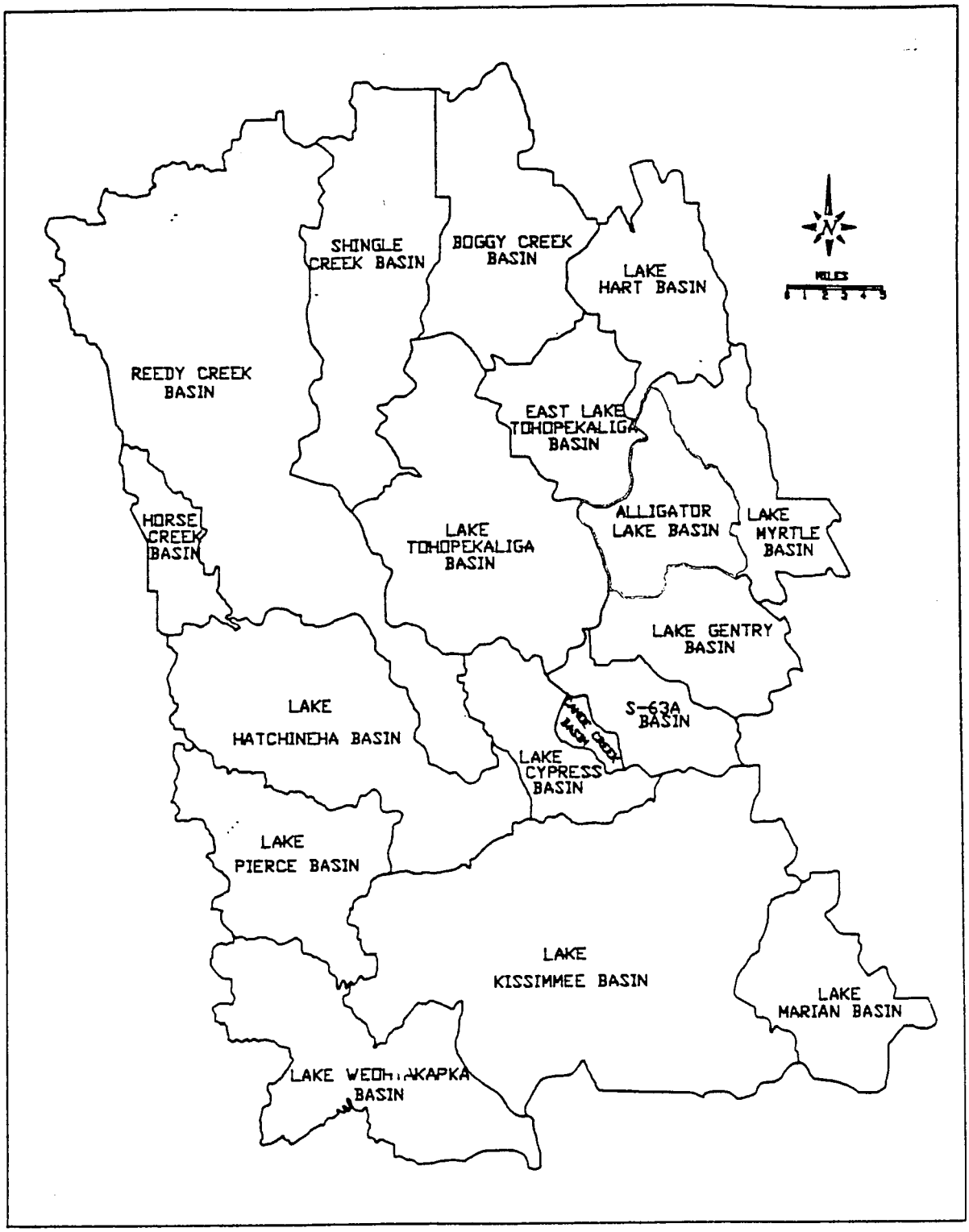


FIGURE 1 RELATIVE LOCATIONS OF UPPER KISSIMMEE RIVER DRAINAGE BASINS

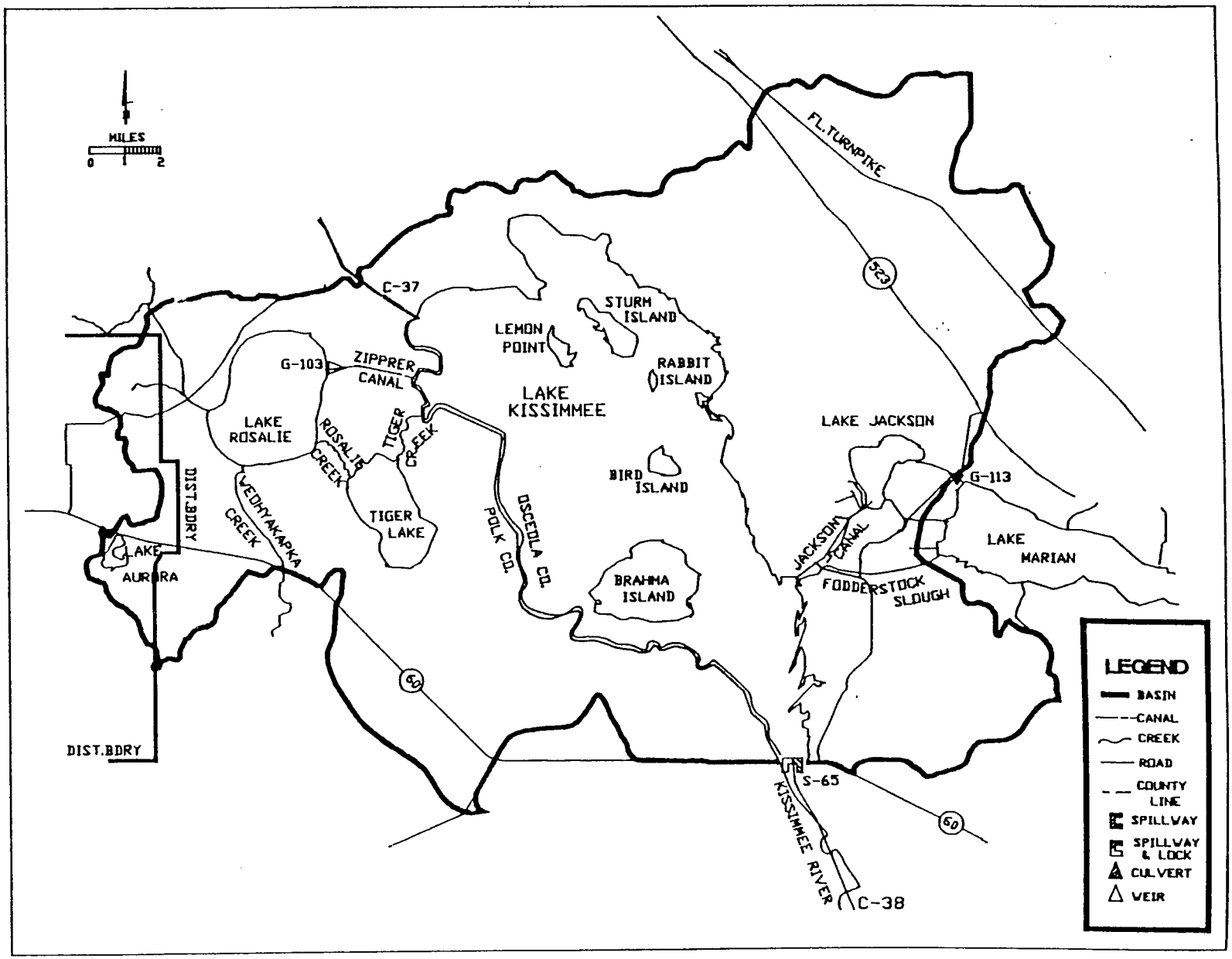


FIGURE 2 Lake Kissimmee Basin (172,300 acres).

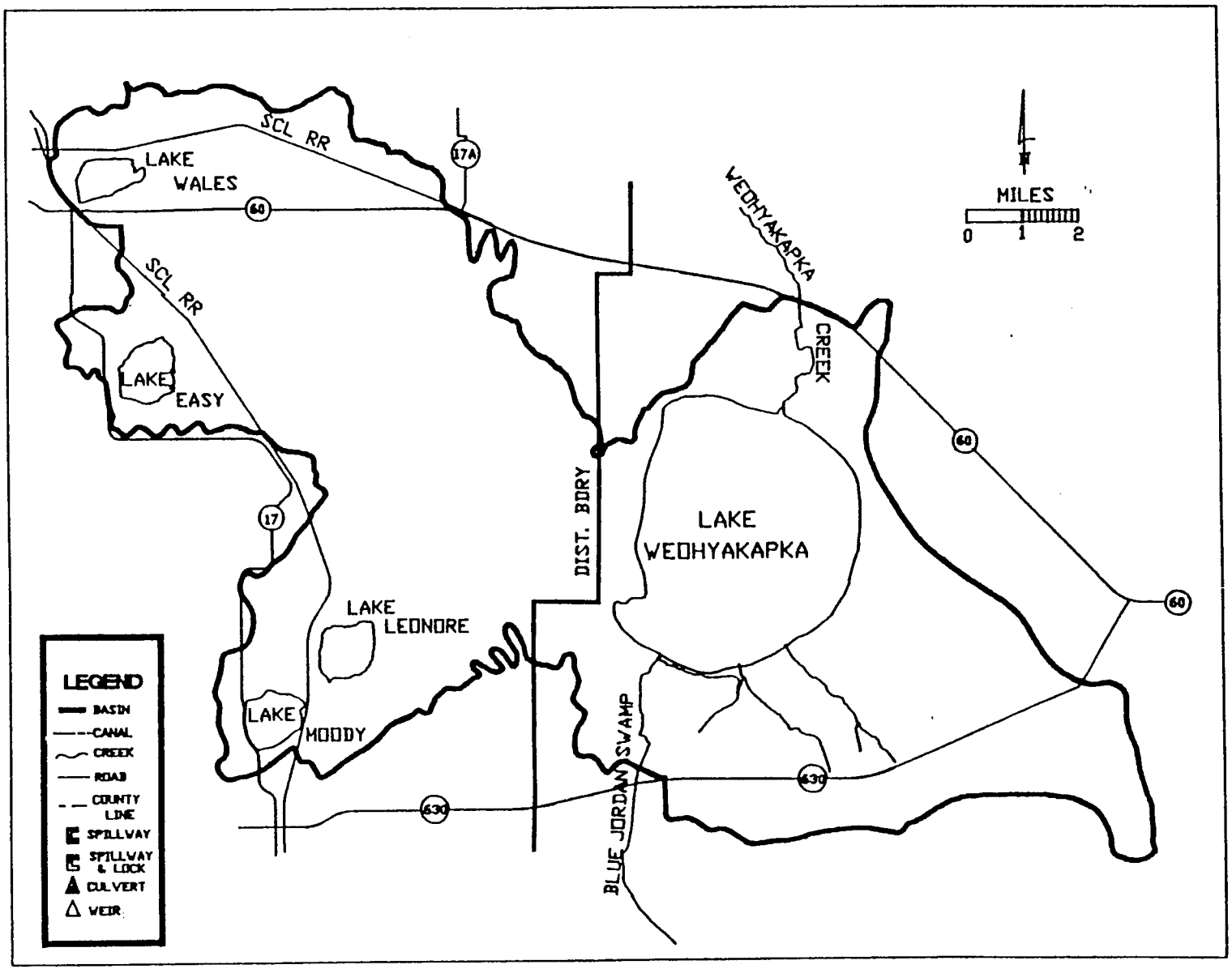


FIGURE 3 Lake Weohyakapka Basin (62,600 acres).

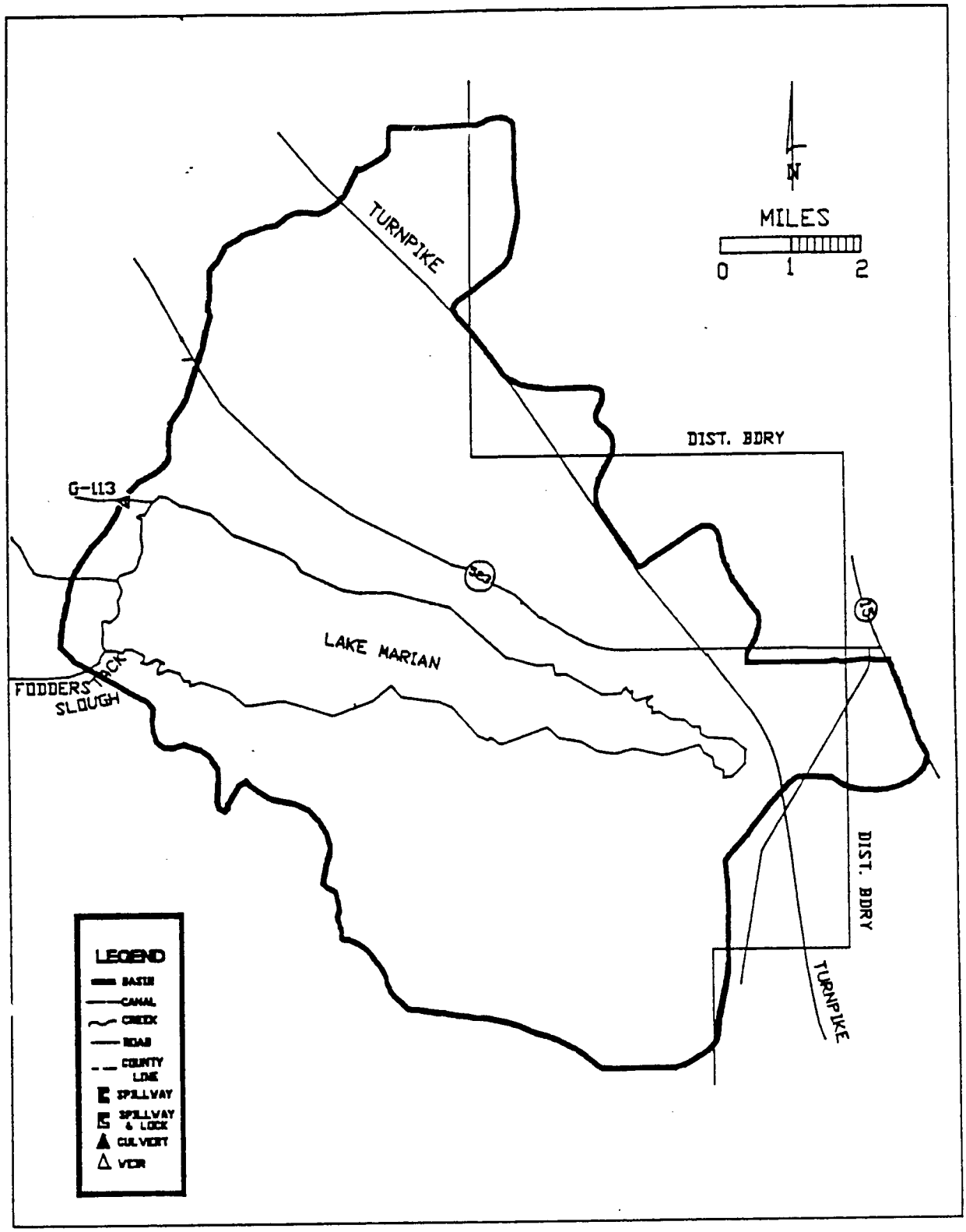


FIGURE 4 Lake Marian Basin (37,040 acres).

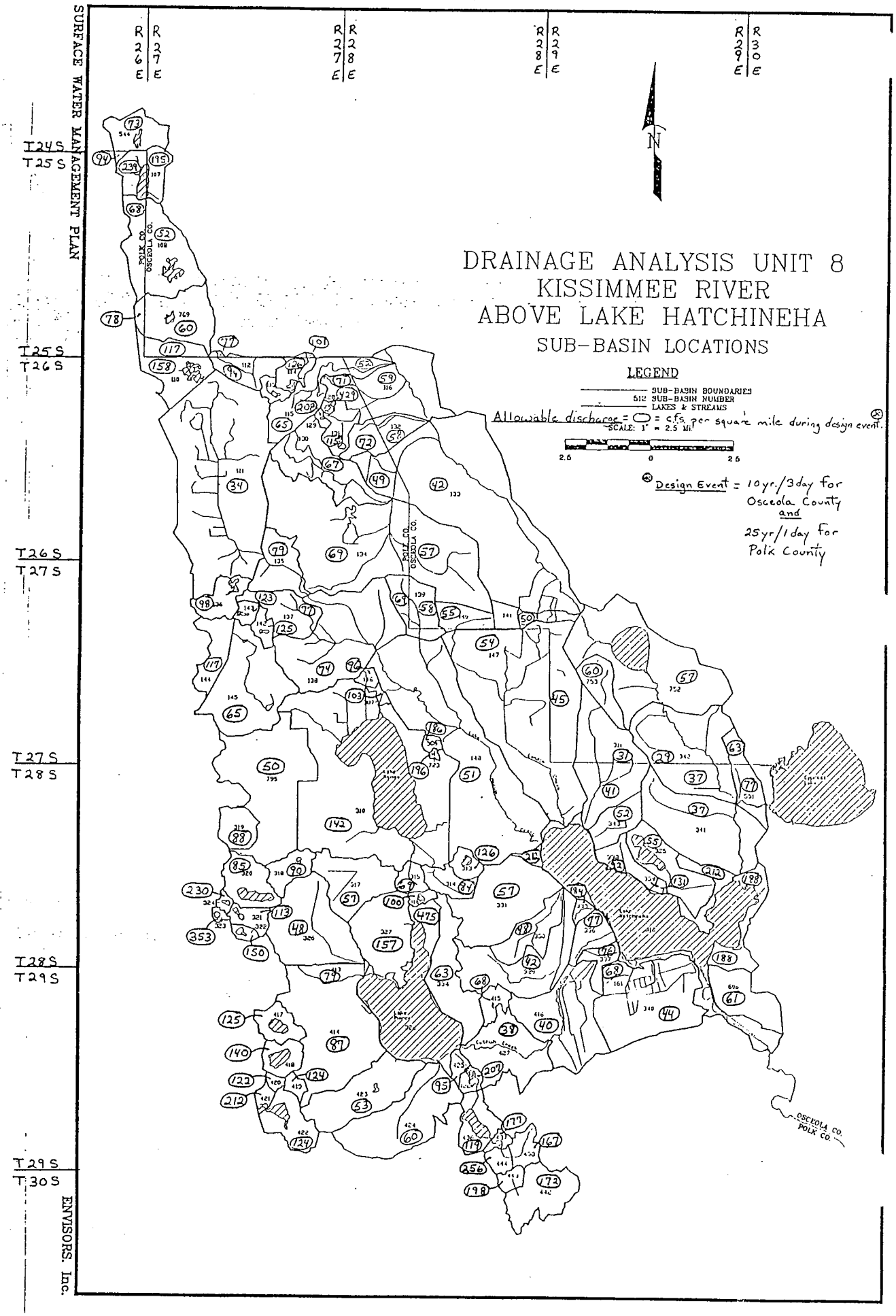

SURFACE WATER MANAGEMENT PLAN
R 26 E
R 27 E
R 28 E
R 29 E
R 30 E
T24S
T25S
T26S
T27S
T28S
T29S
T30S
N
DRAINAGE ANALYSIS UNIT 8
KISSIMMEE RIVER
ABOVE LAKE HATCHINEHA
SUB-BASIN LOCATIONS
LEGEND
SUB-BASIN BOUNDARIES
512 SUB-BASIN NUMBER
LAKES & STREAMS
Allowable discharge = ○ = c.f.s. per square mile during design event.
SCALE: 1" = 2.5 Mi
2.5 0 2.5
Design Event = 10yr./3day for Osceola County and 25yr/1day for Polk County
OSCEOLA CO.
POLK CO.
ENVISORS, Inc.

Figure 5

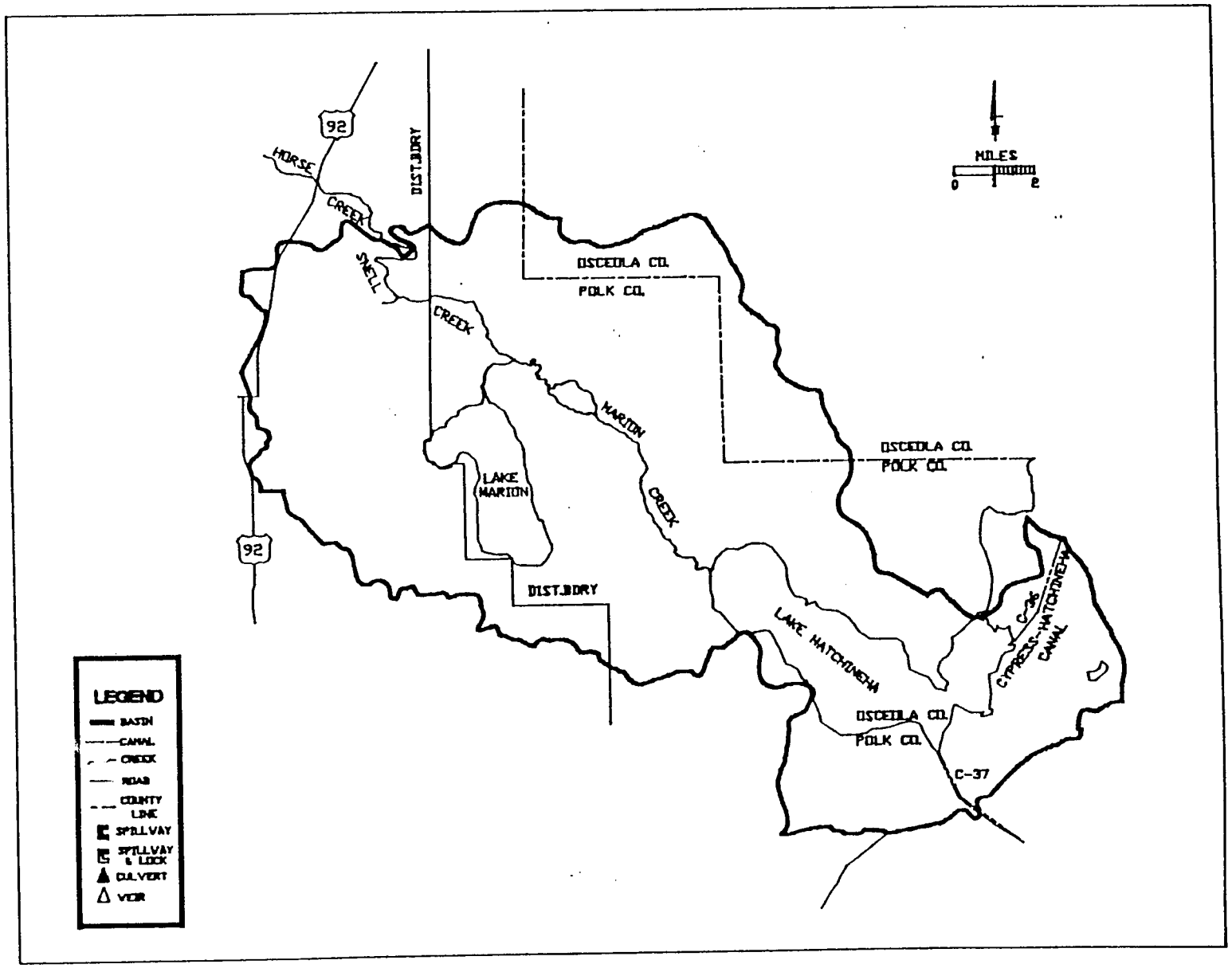


FIGURE 6 Lake Hatchineha Basin (82,250 acres).

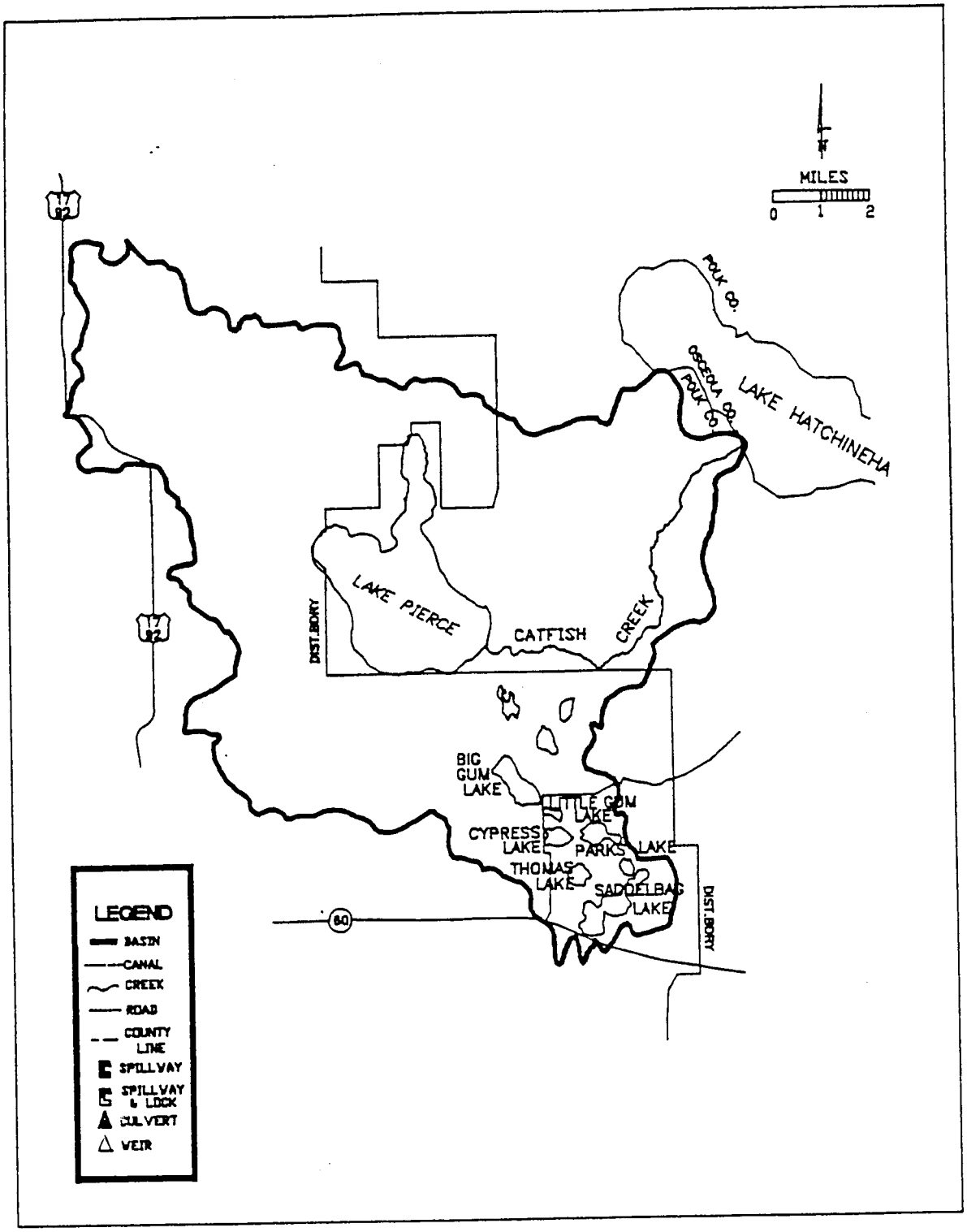


FIGURE 7 Lake Pierce Basin (48,610 acres).

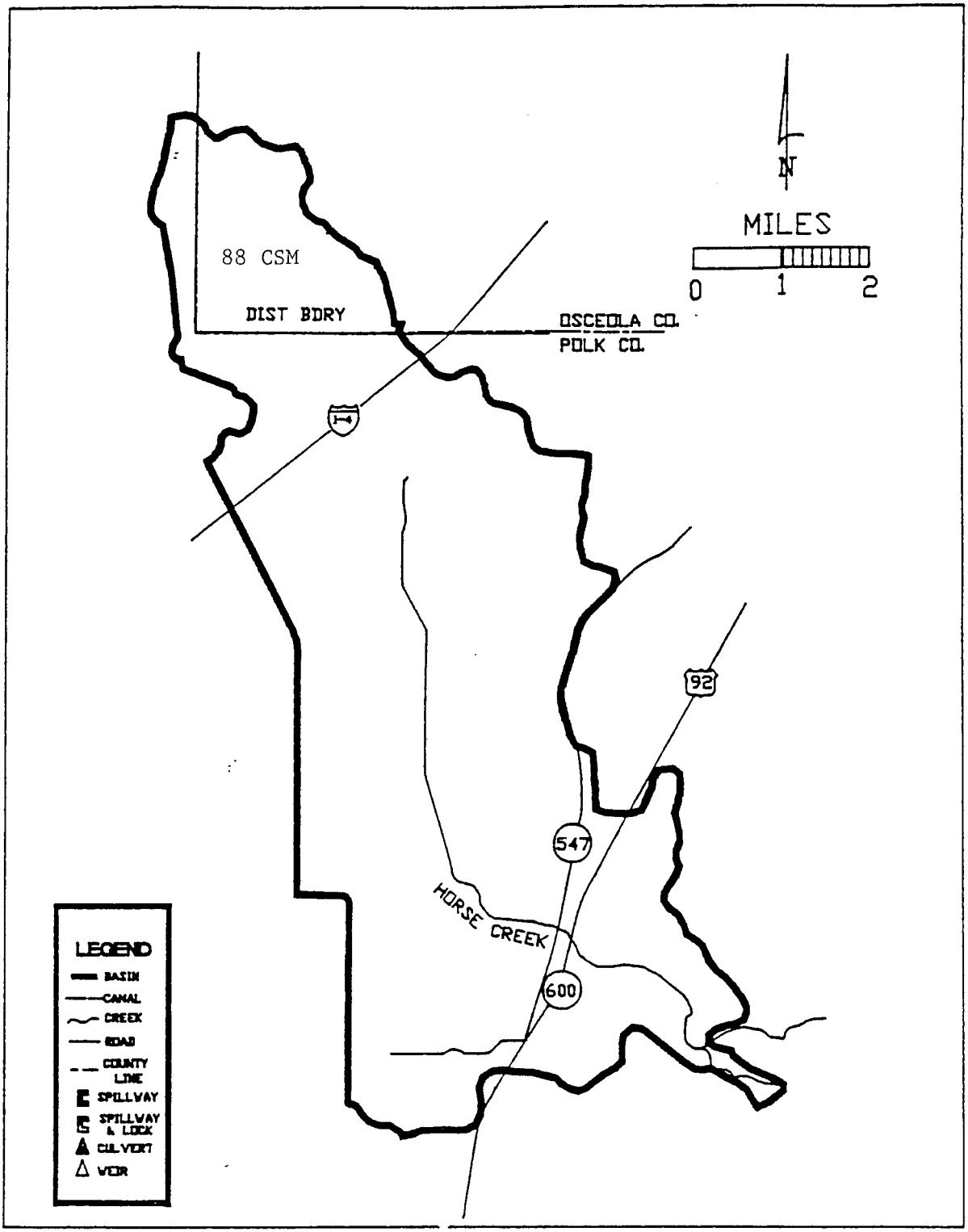


FIGURE 8 Horse Creek Basin (16,960 acres).

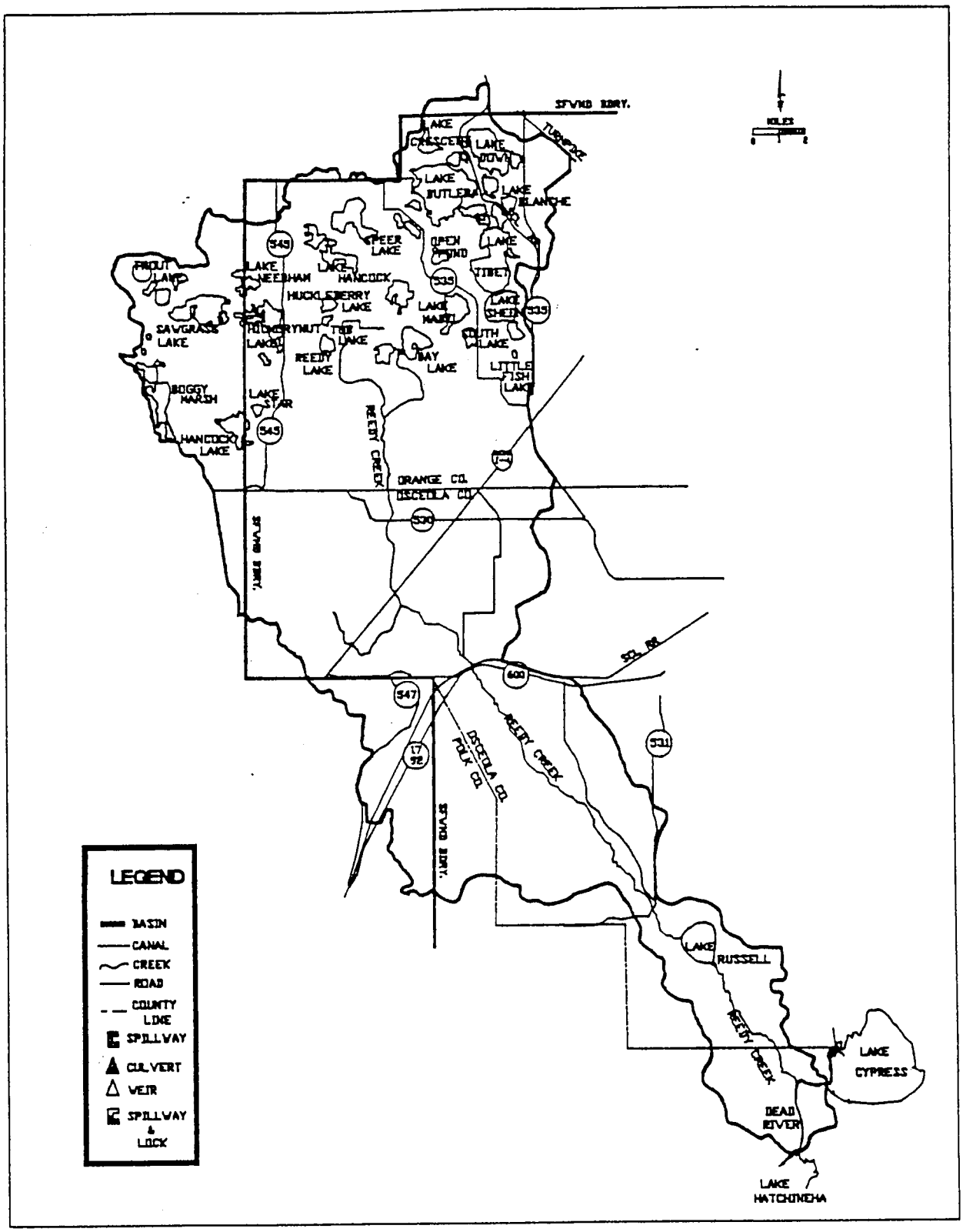


FIGURE 9 Reedy Creek Basin (172,200 acres).

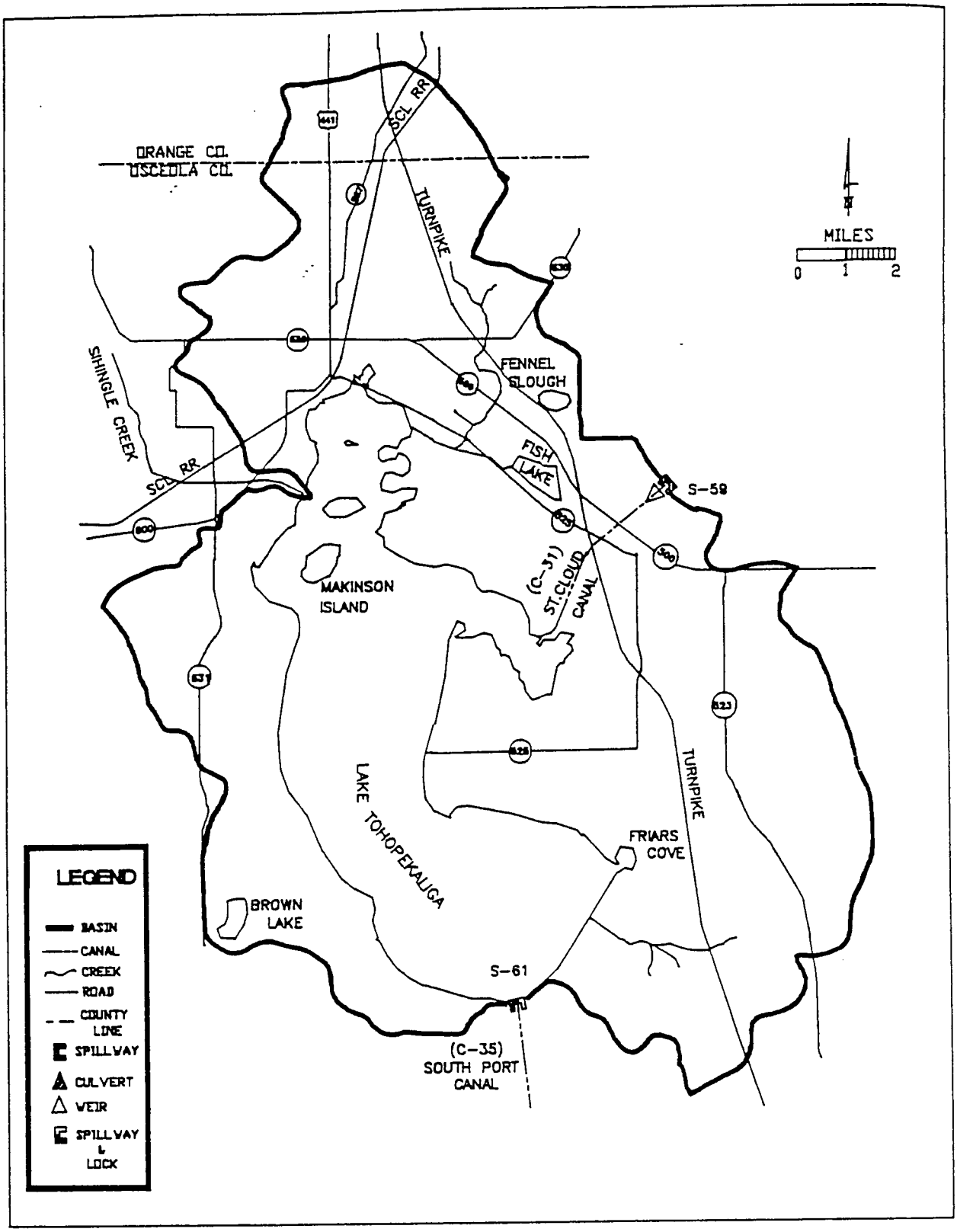


FIGURE 10 Lake Tohopekaliga Basin (84,130 acres).

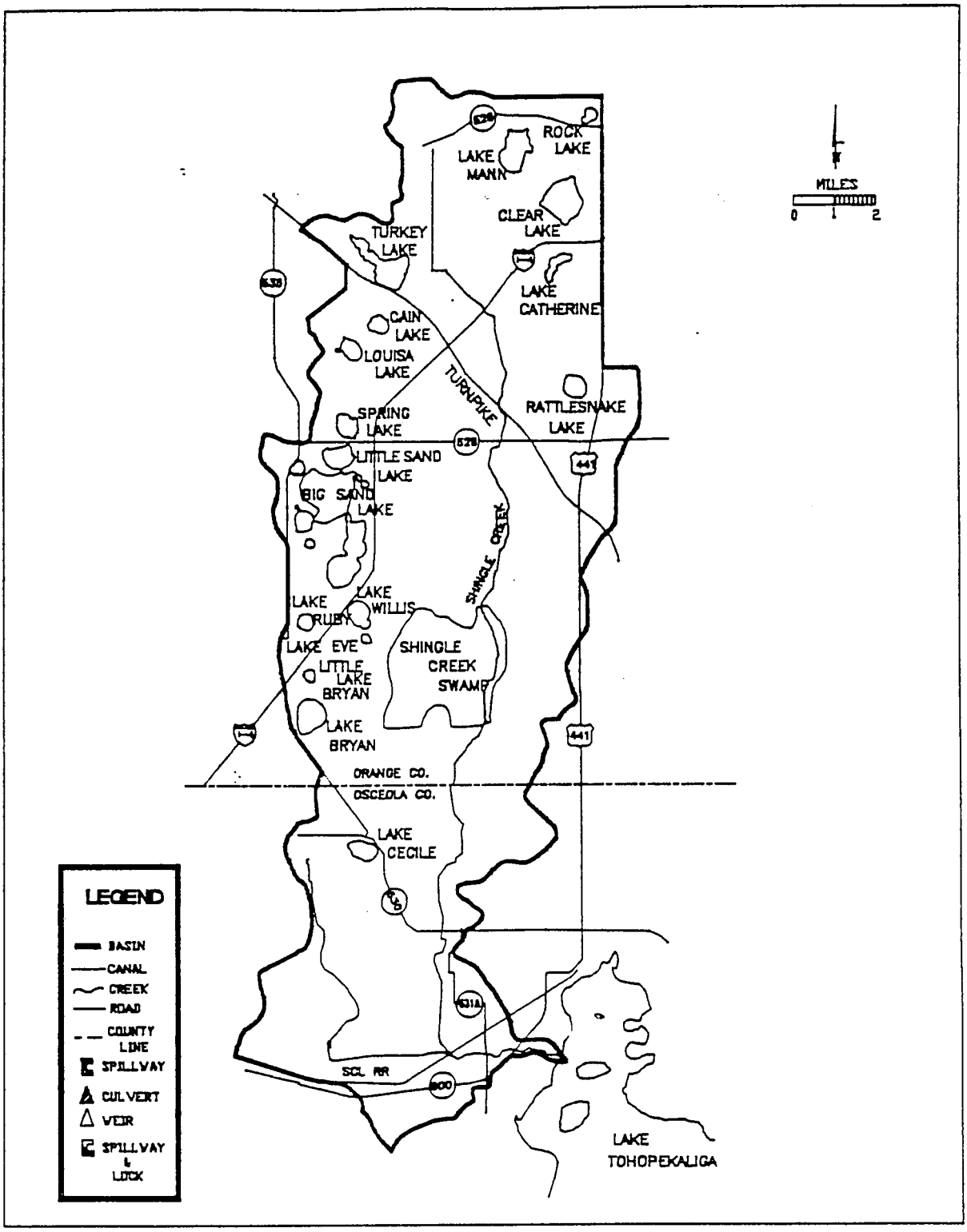


FIGURE // Shingle Creek Basin (71,310 acres).

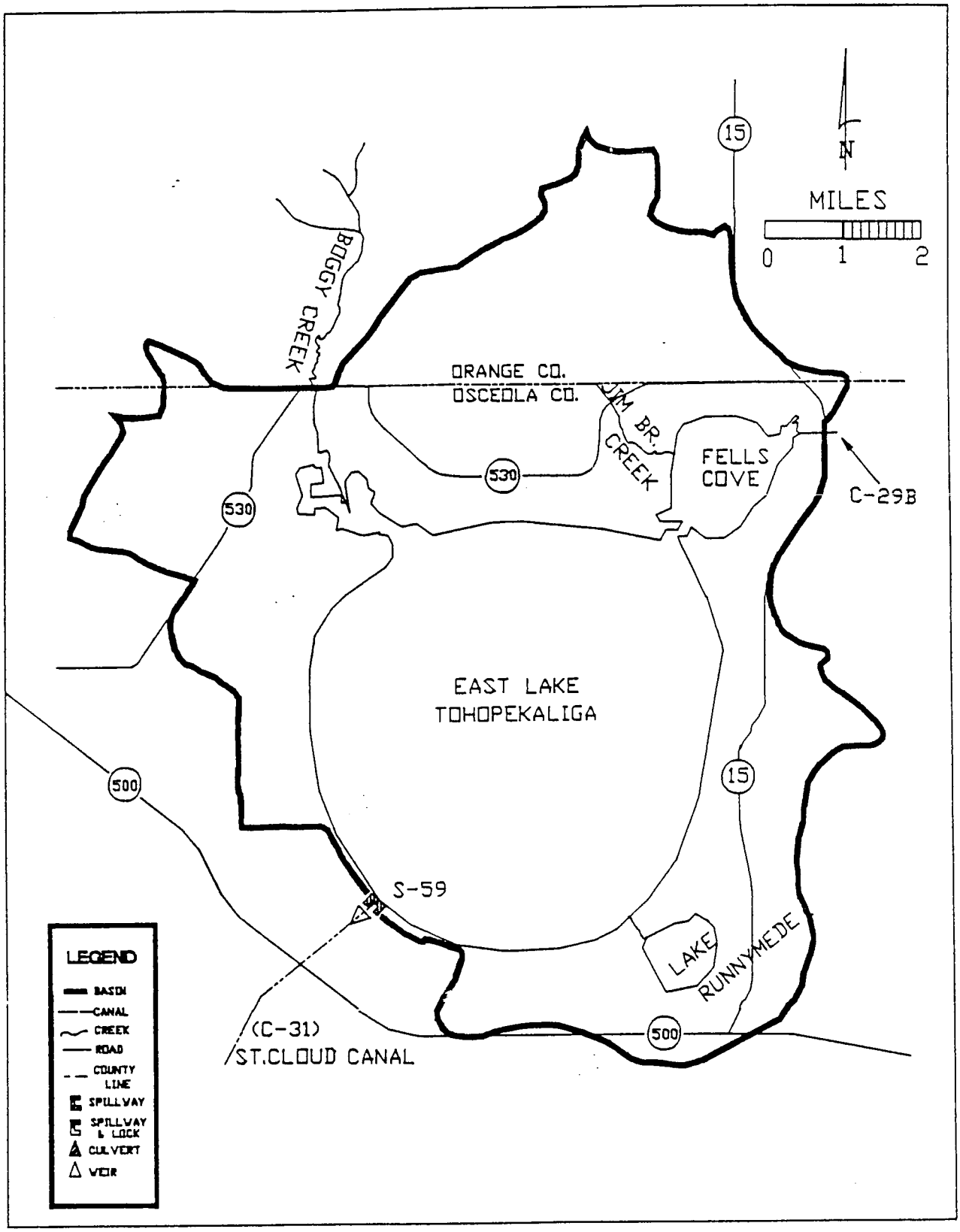


FIGURE 12 East Lake Tohopekaliga Basin (32,540 acres).

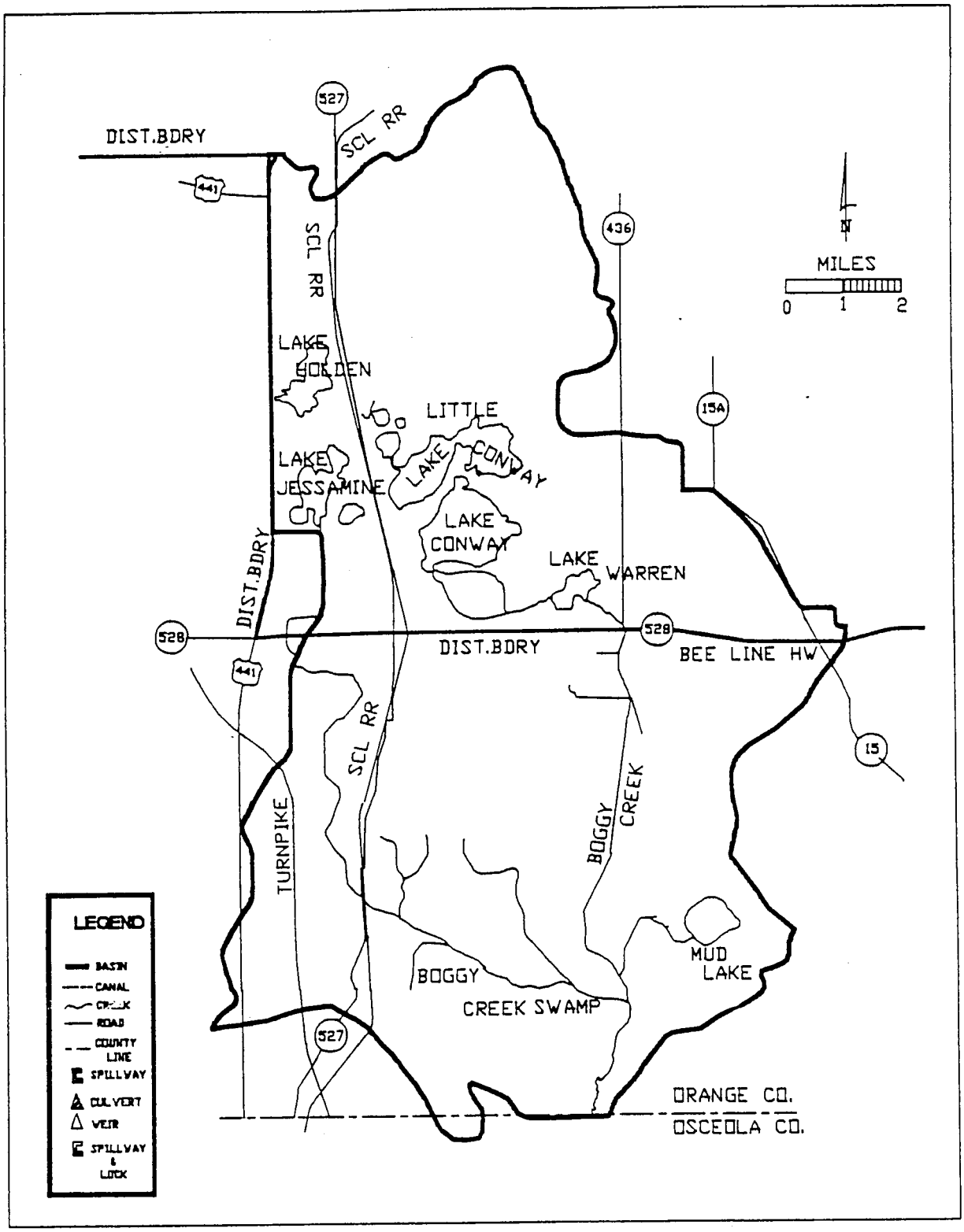


FIGURE 13 Boggy Creek Basin (55,600 acres).

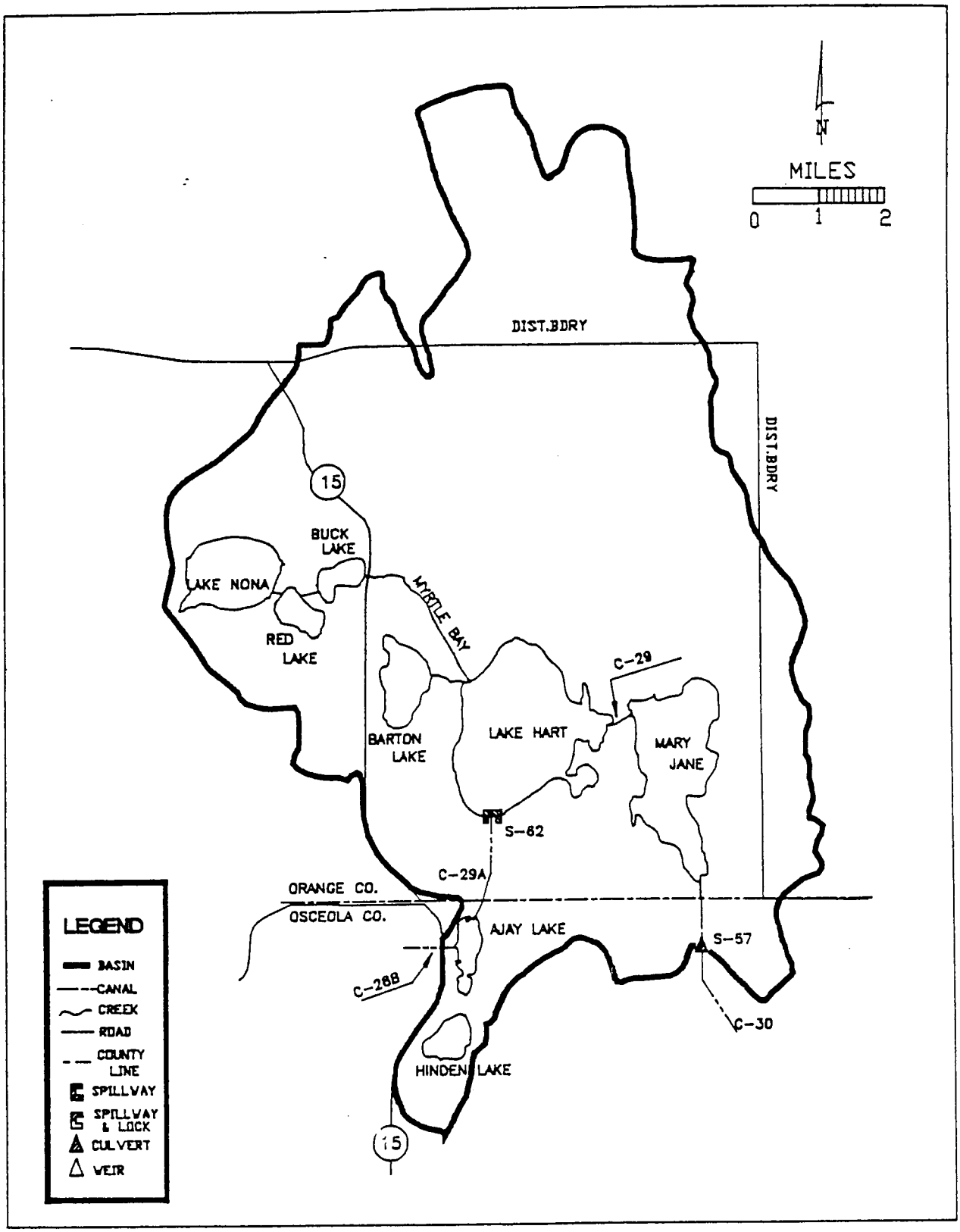


FIGURE 14 Lake Hart Basin (38,530 acres).

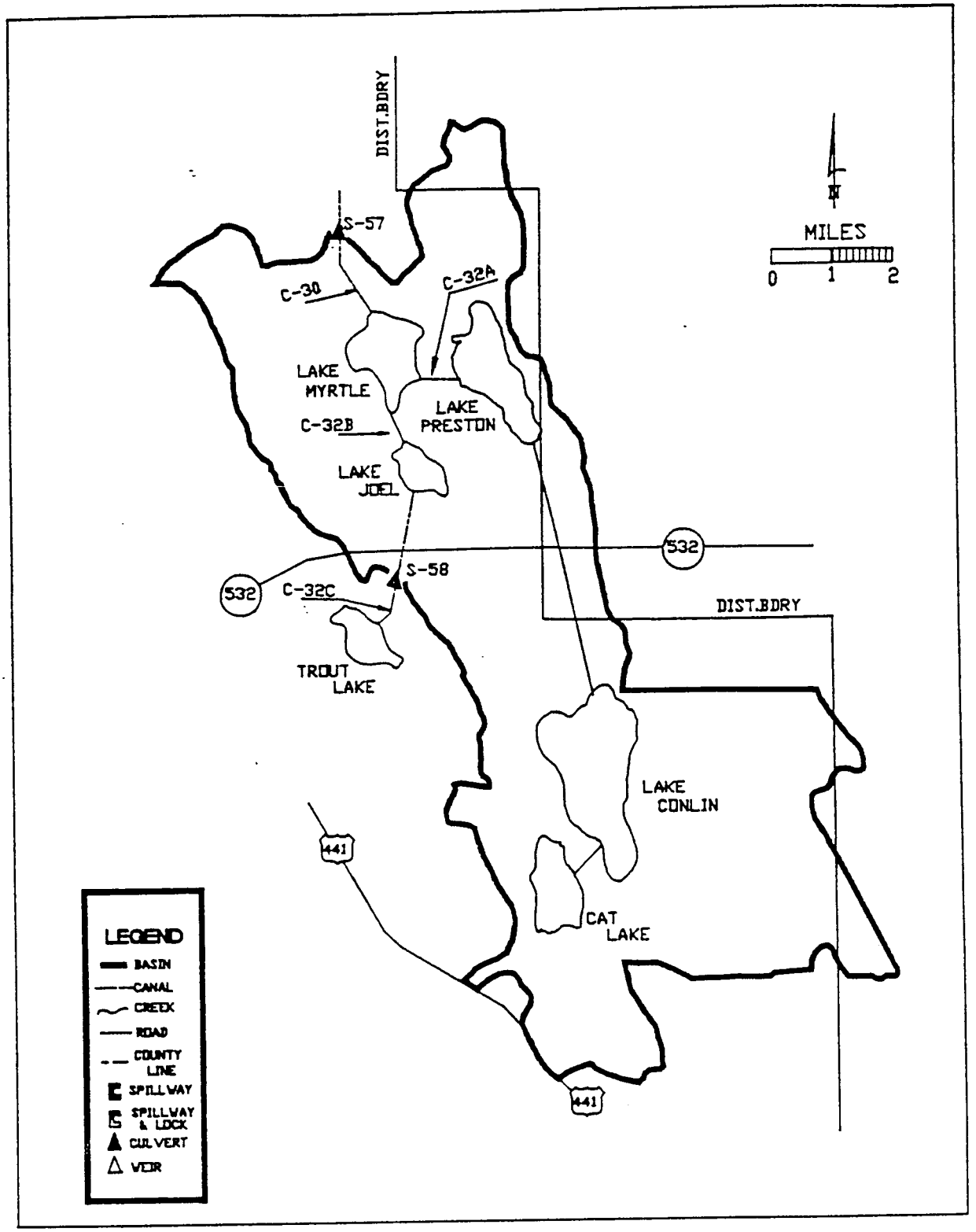


FIGURE 15 Lake Myrtle Basin (30,435 acres).

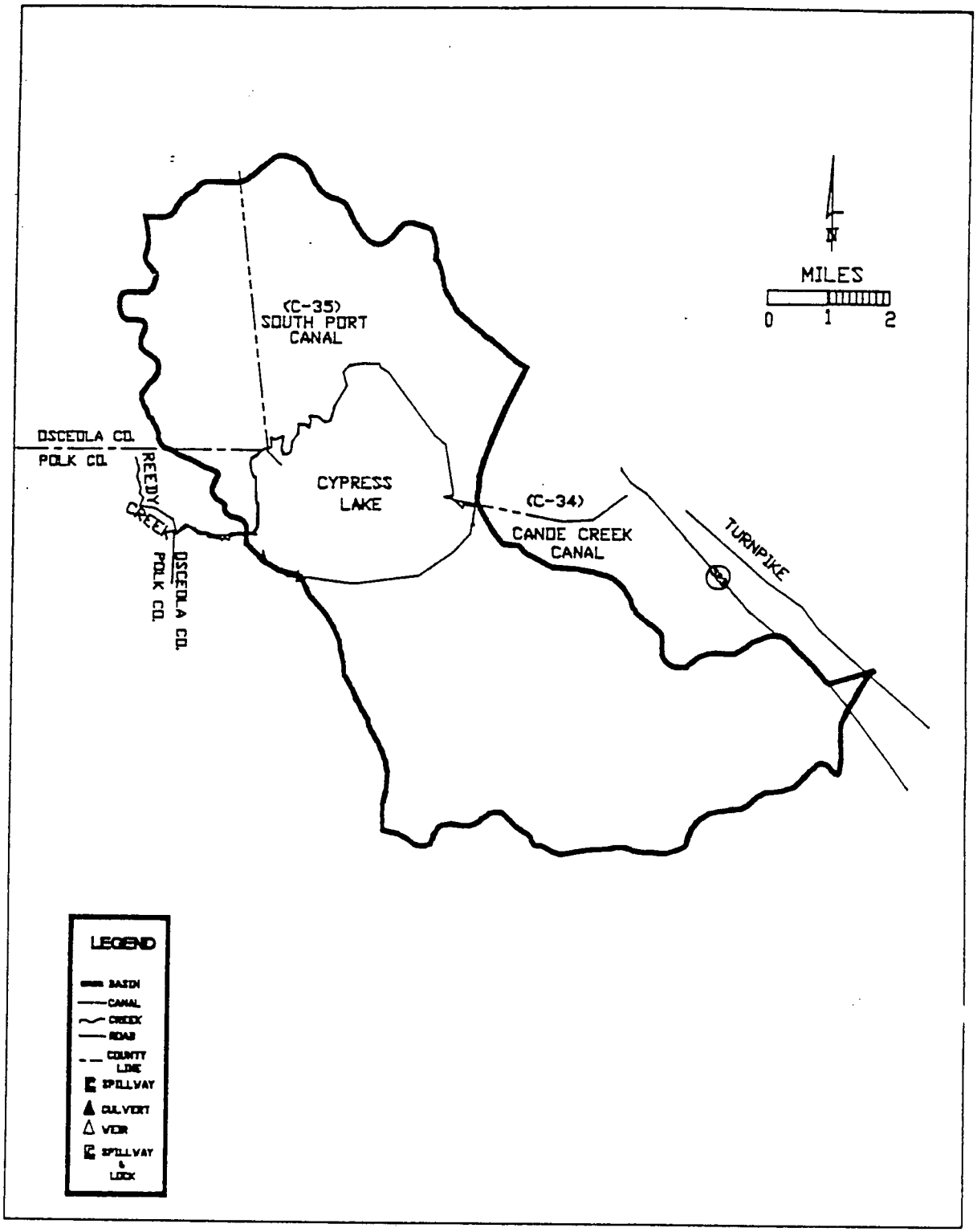


FIGURE 16 Lake Cypress Basin (27,170 acres).

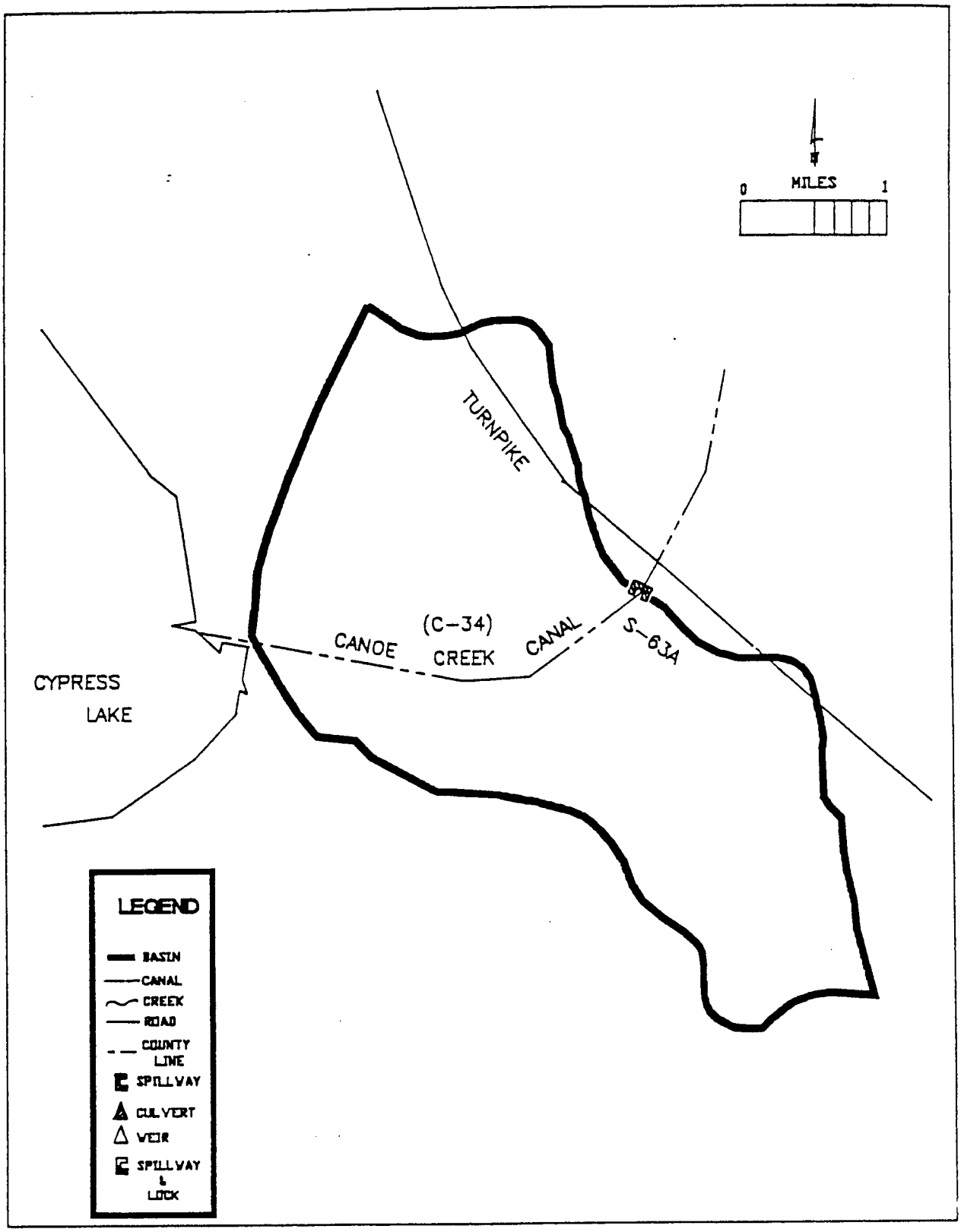


FIGURE 17 Canoe Creek Basin (4,440 acres).

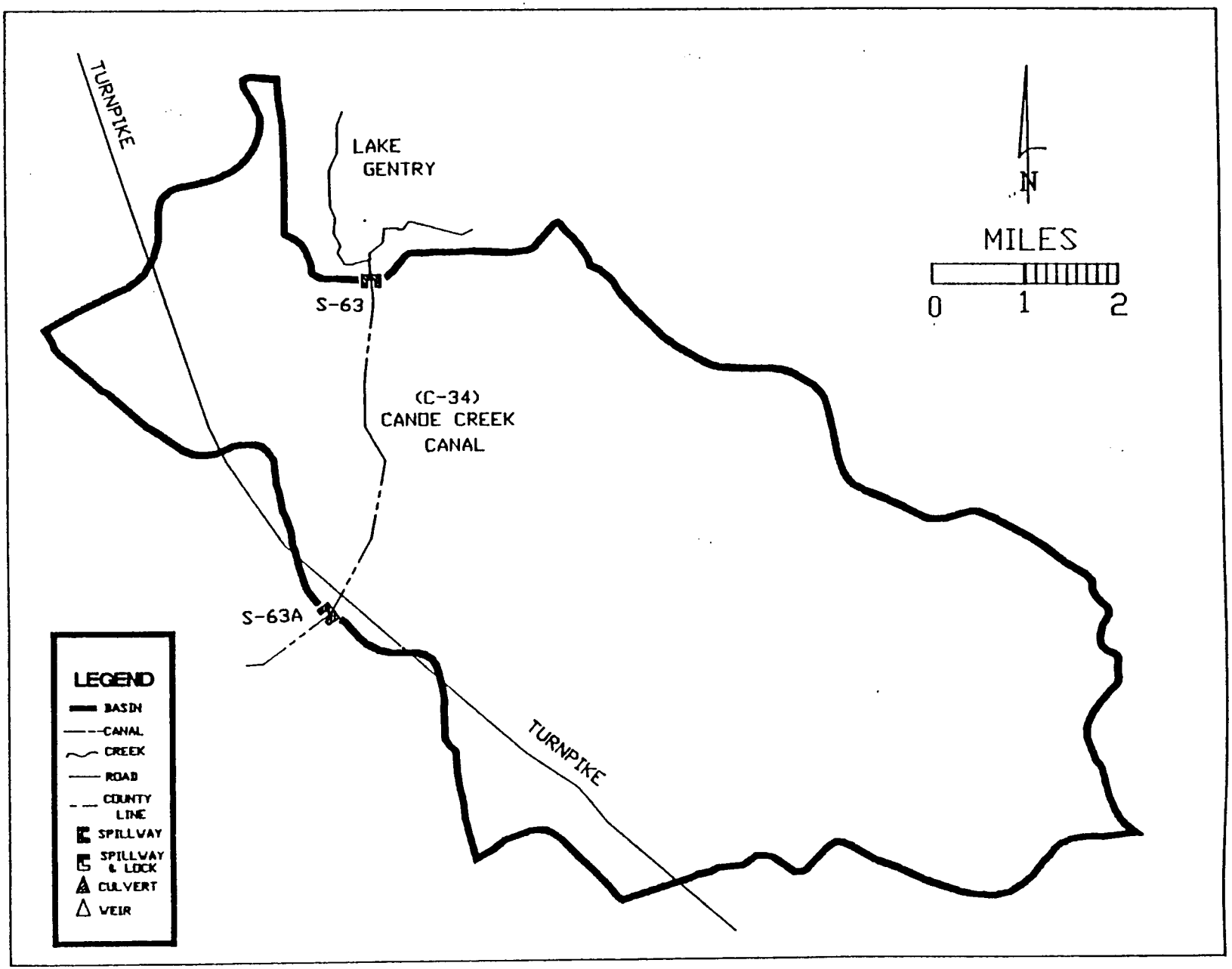


FIGURE 18 S-63A Basin (22,570 acres).

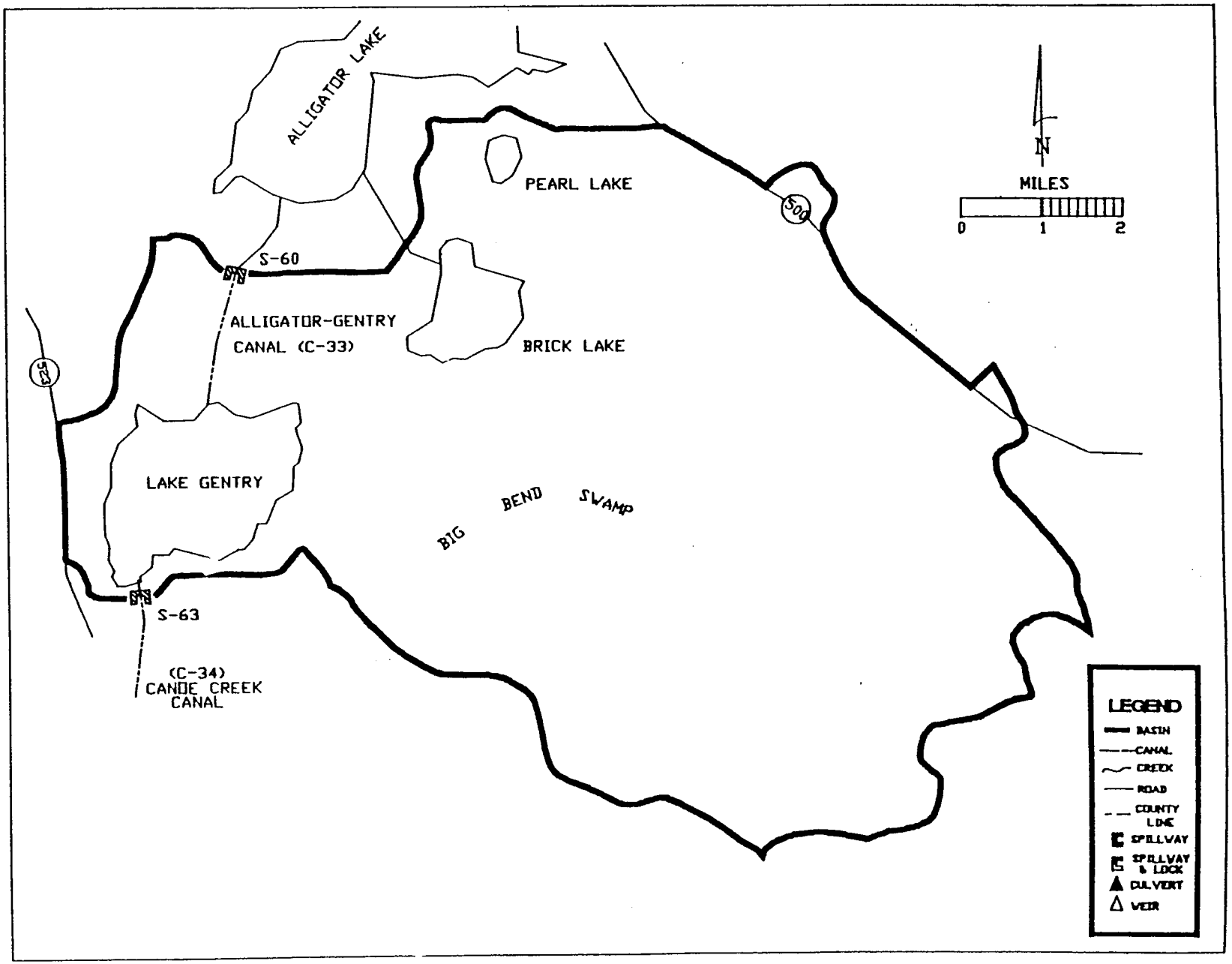


FIGURE 19 Lake Gr Basin (33,115 acres).

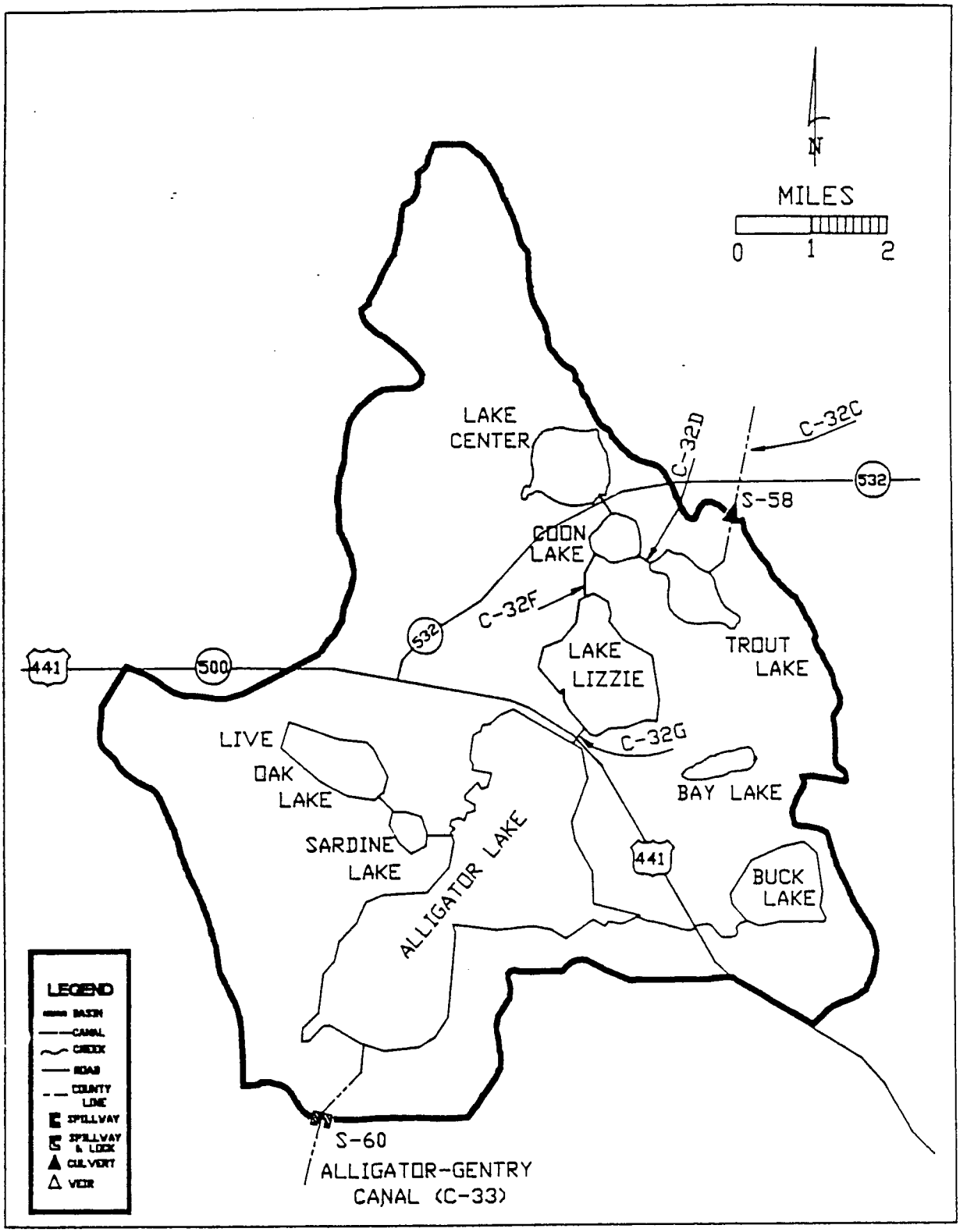


FIGURE 20 Alligator Lake Basin (29,985 acres).

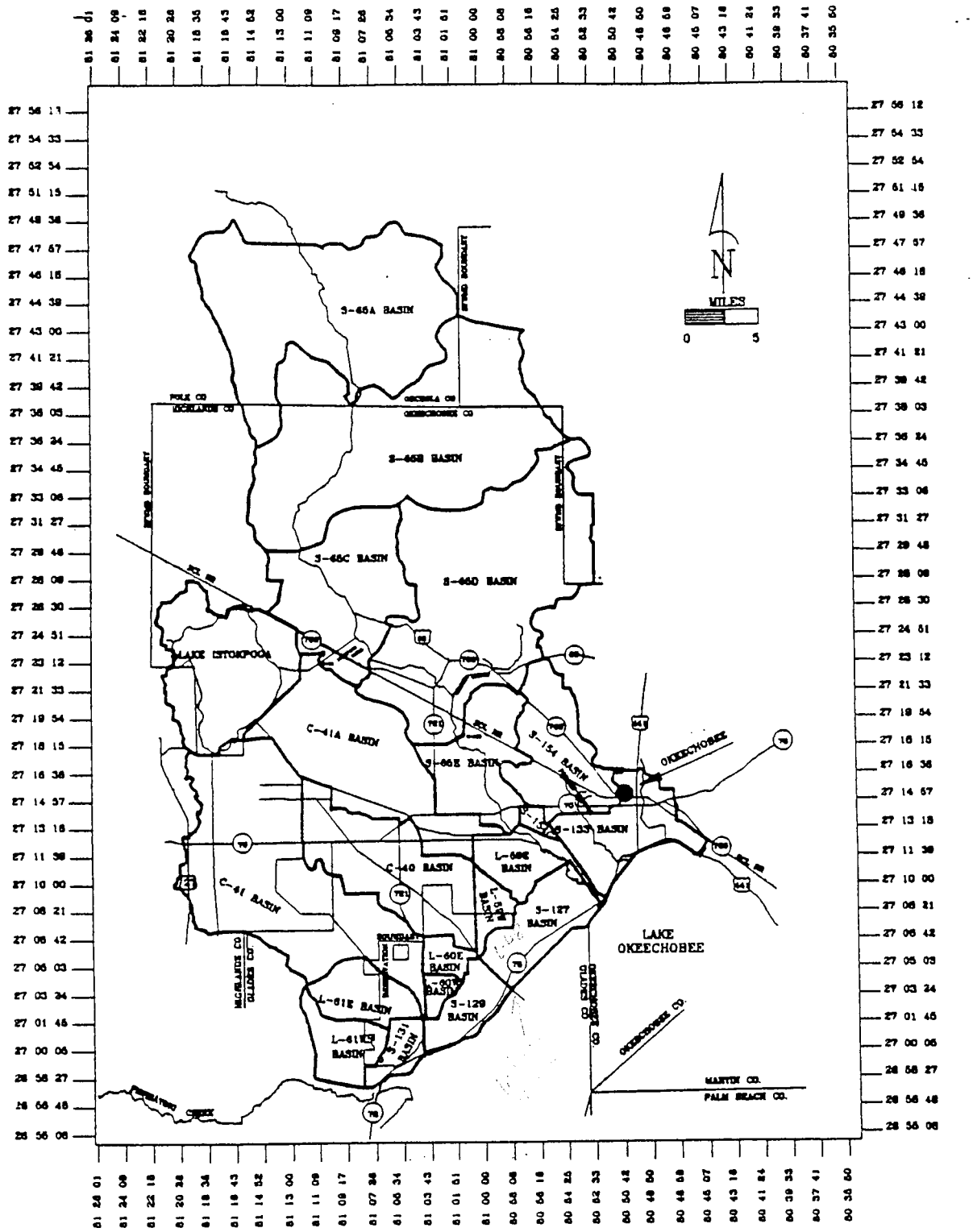


FIGURE 2/ Lower Kissimmee River and Lake Istokpoga Basins

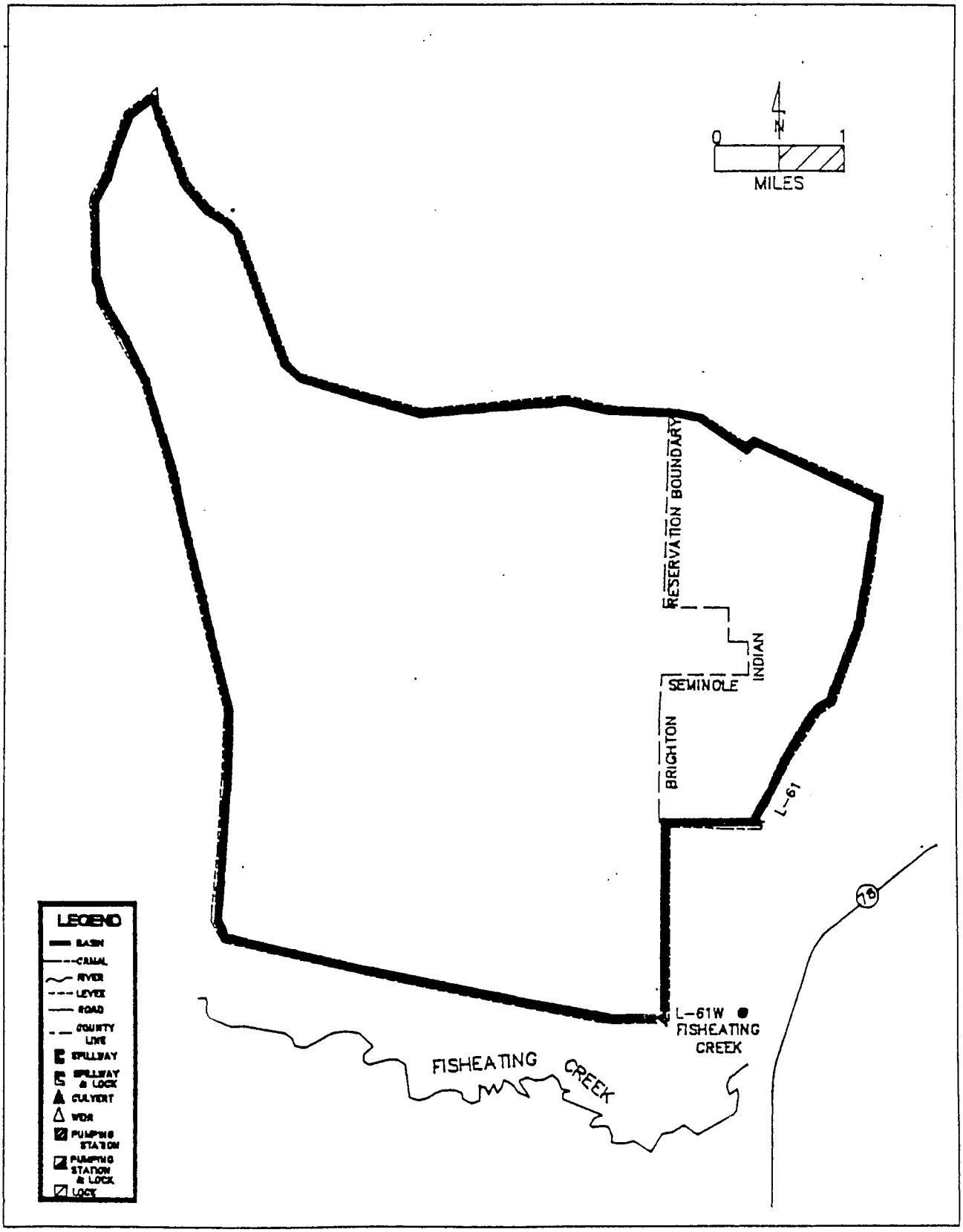


FIGURE 22 L-61W Basin Map

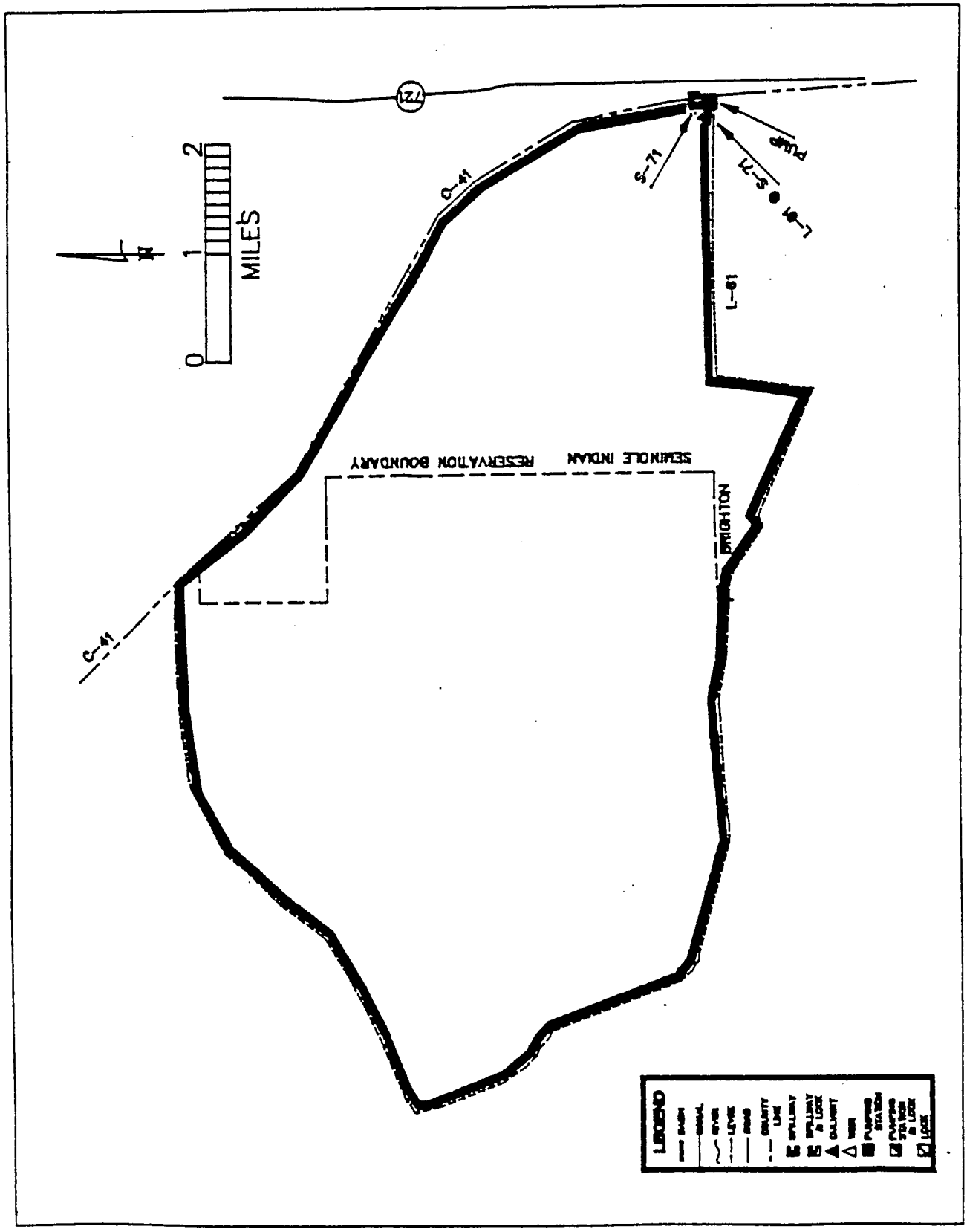


FIGURE 23 L-61E Basin Map

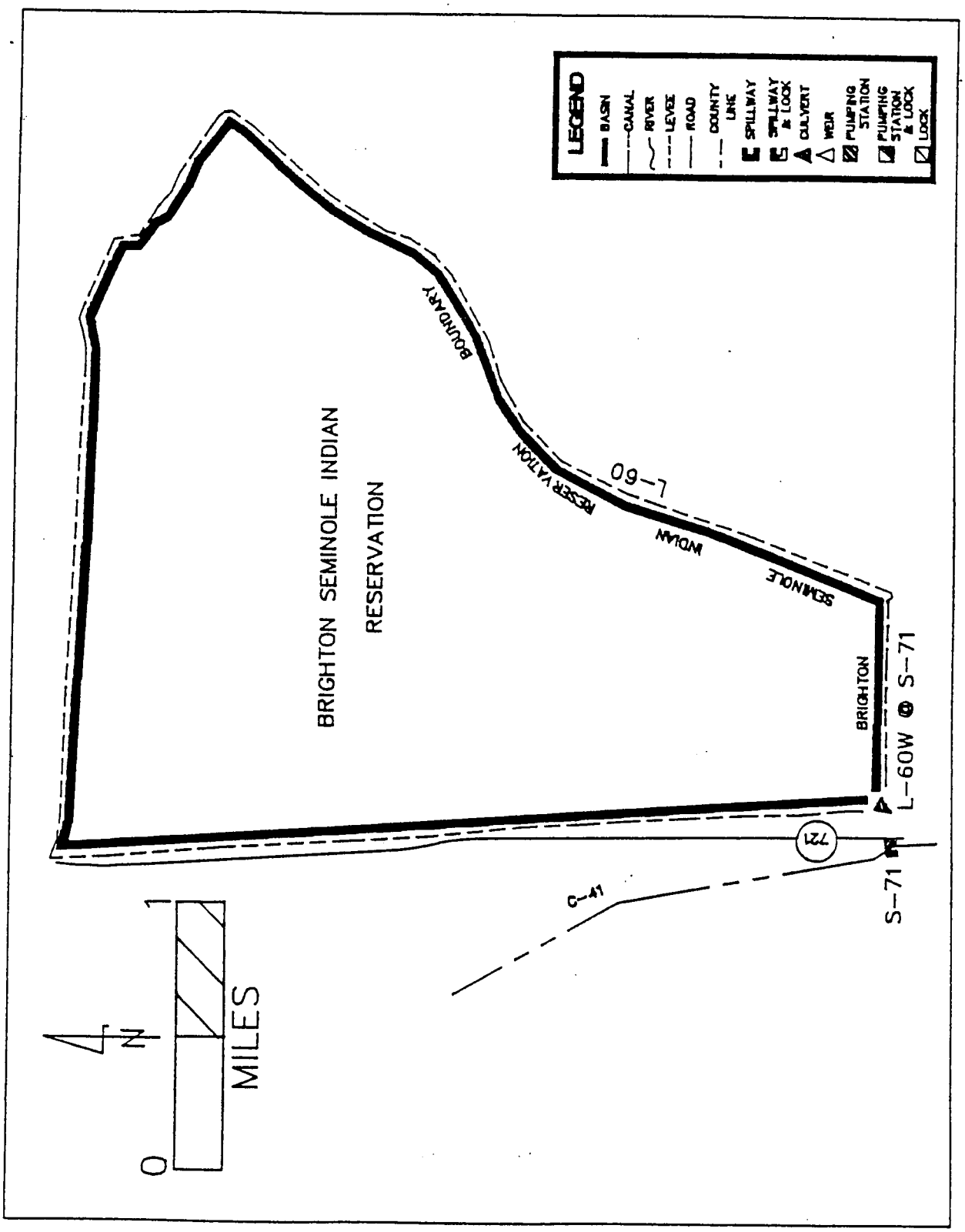


FIGURE 24 L-60W Basin Map

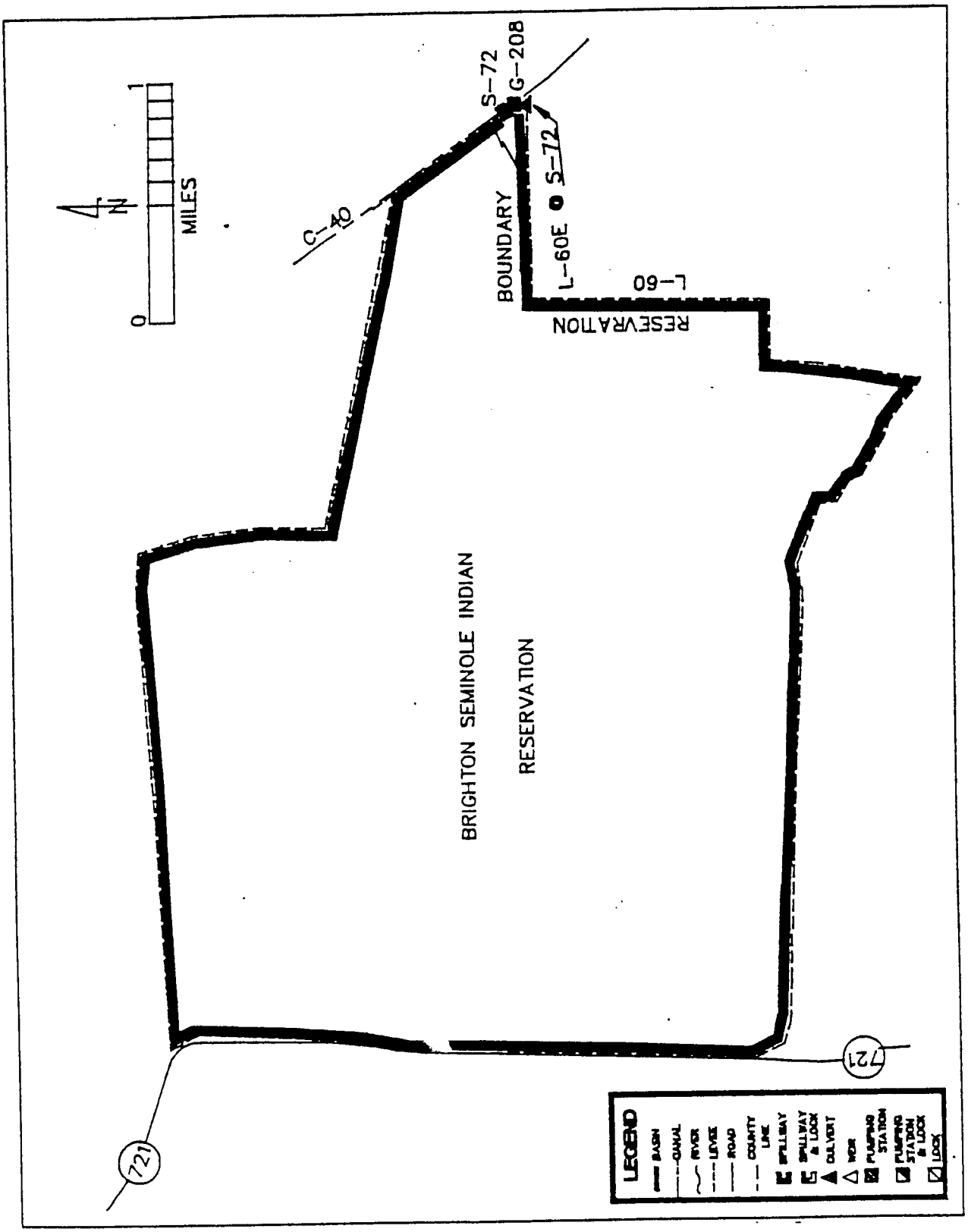


FIGURE 25 L-60E Basin Map

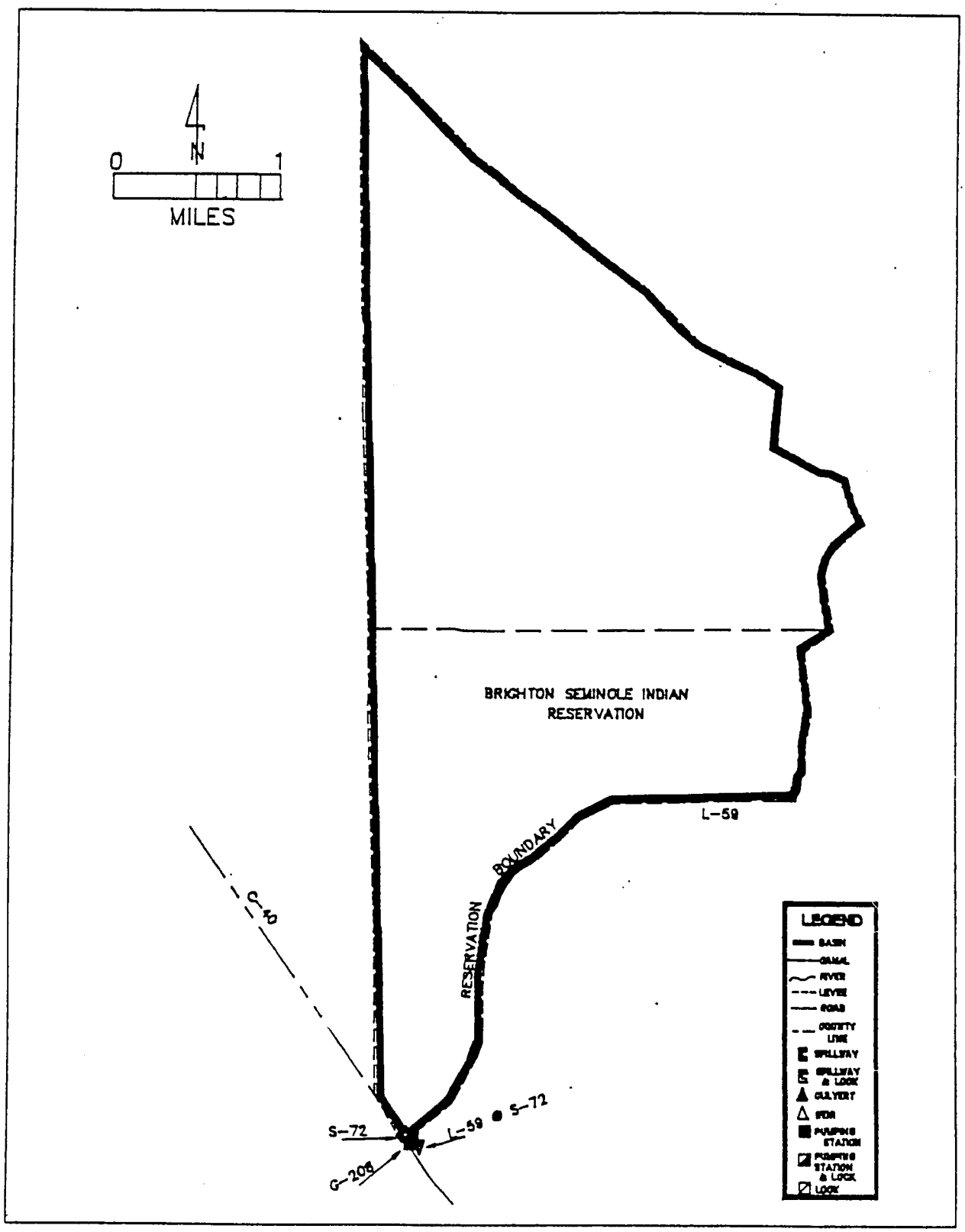


FIGURE 26 L-59W Basin Map

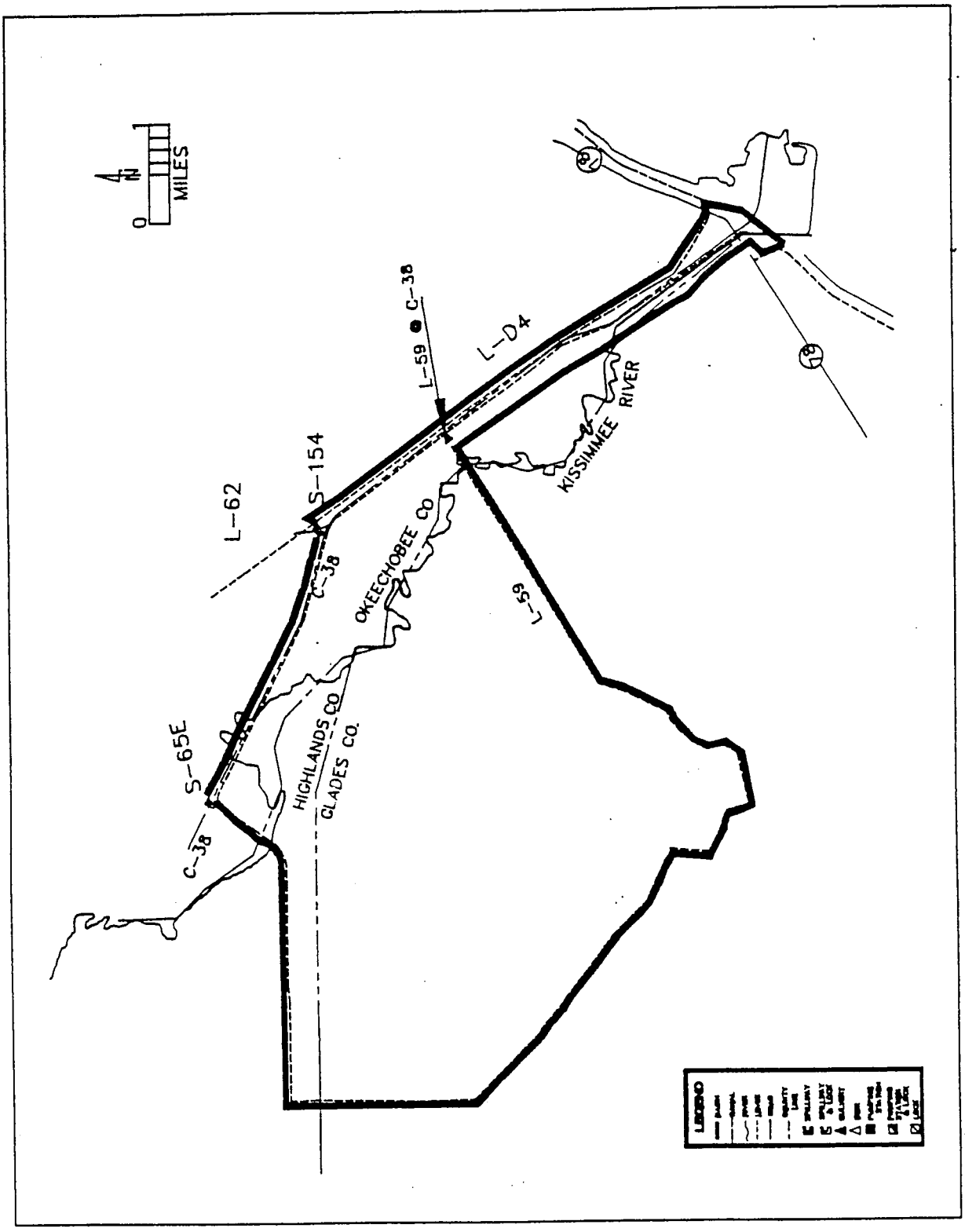


FIGURE 27 L-59E Basin Map

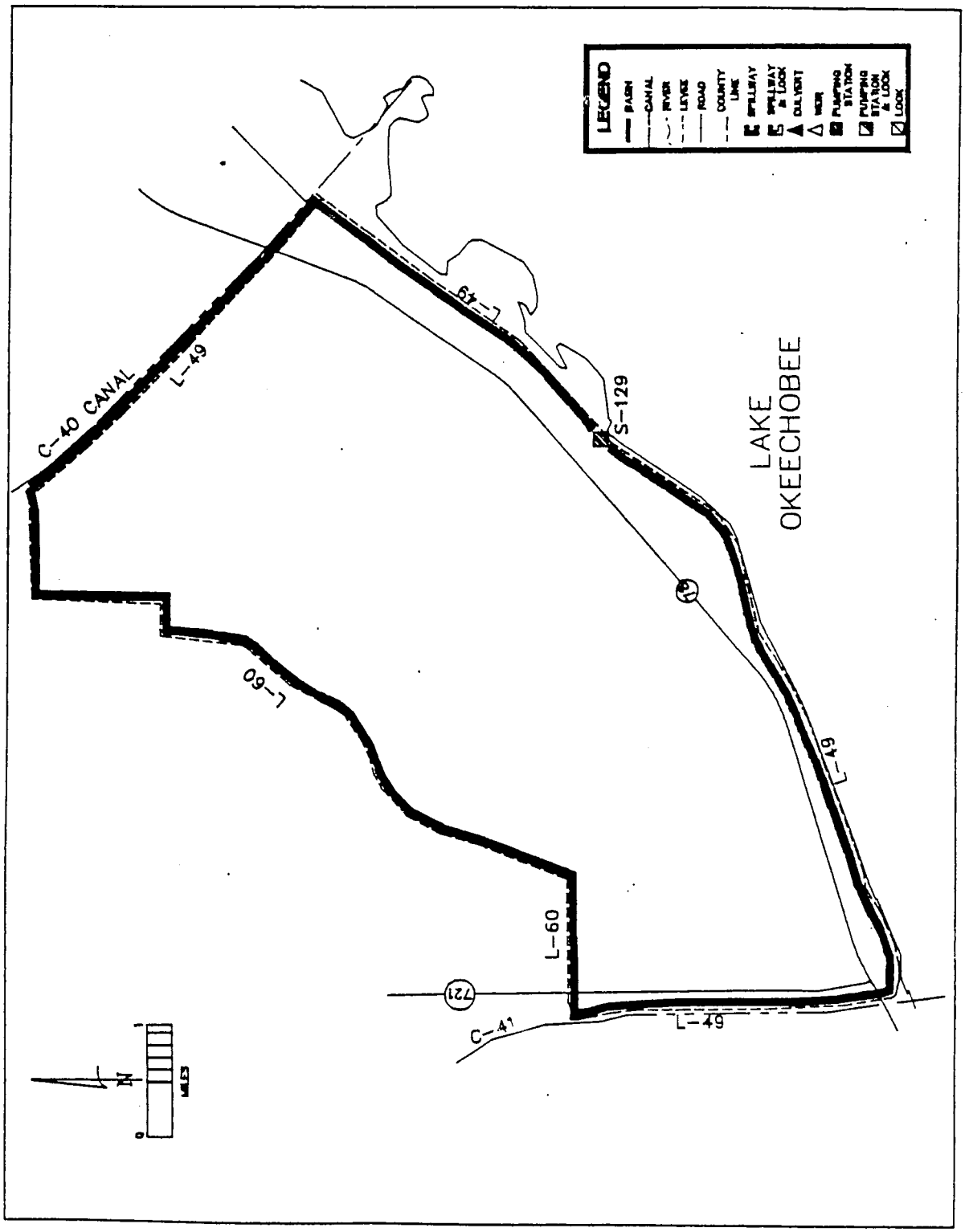


FIGURE 28. S-129 Basin Map

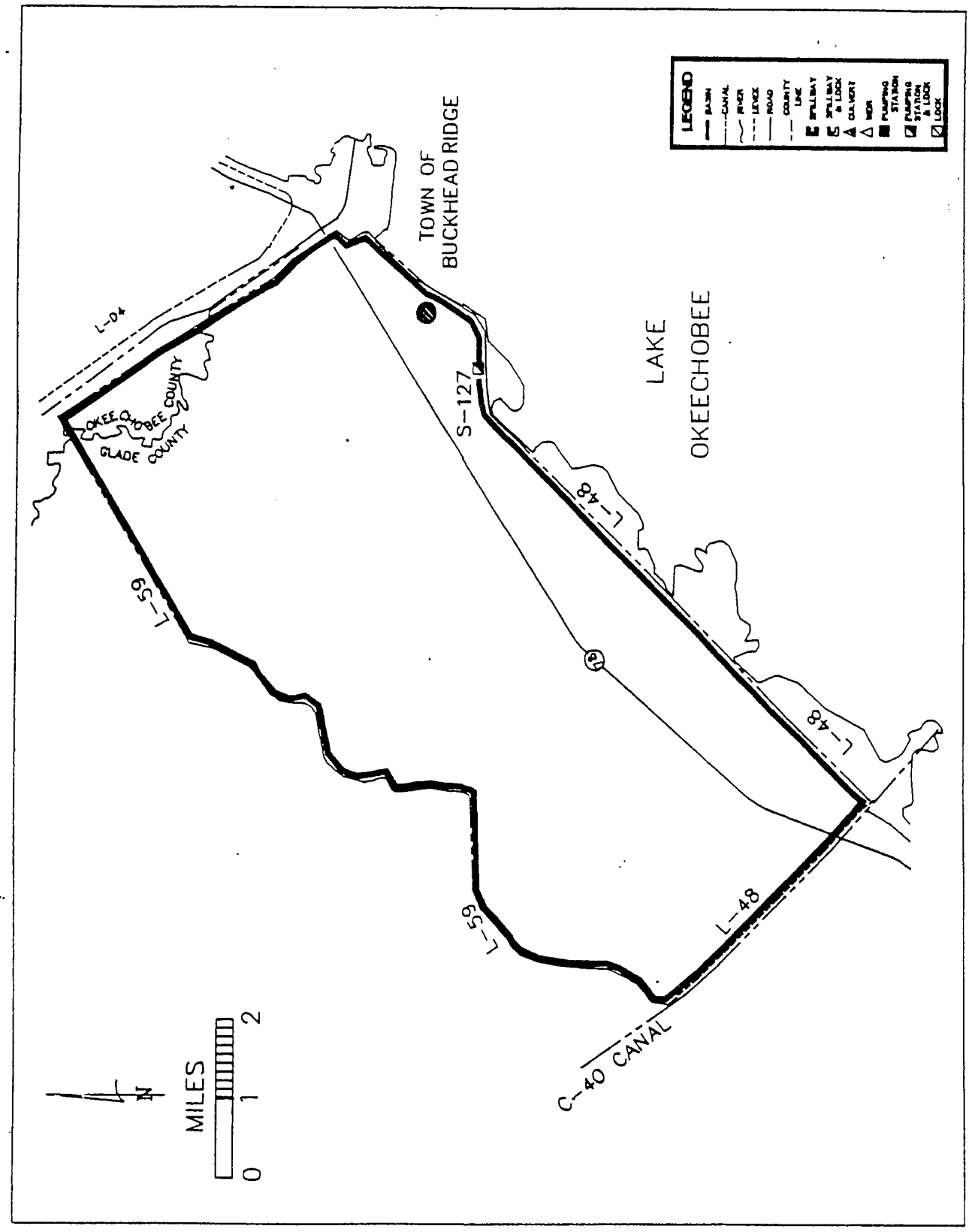


FIGURE 29 S-127 Basin Map

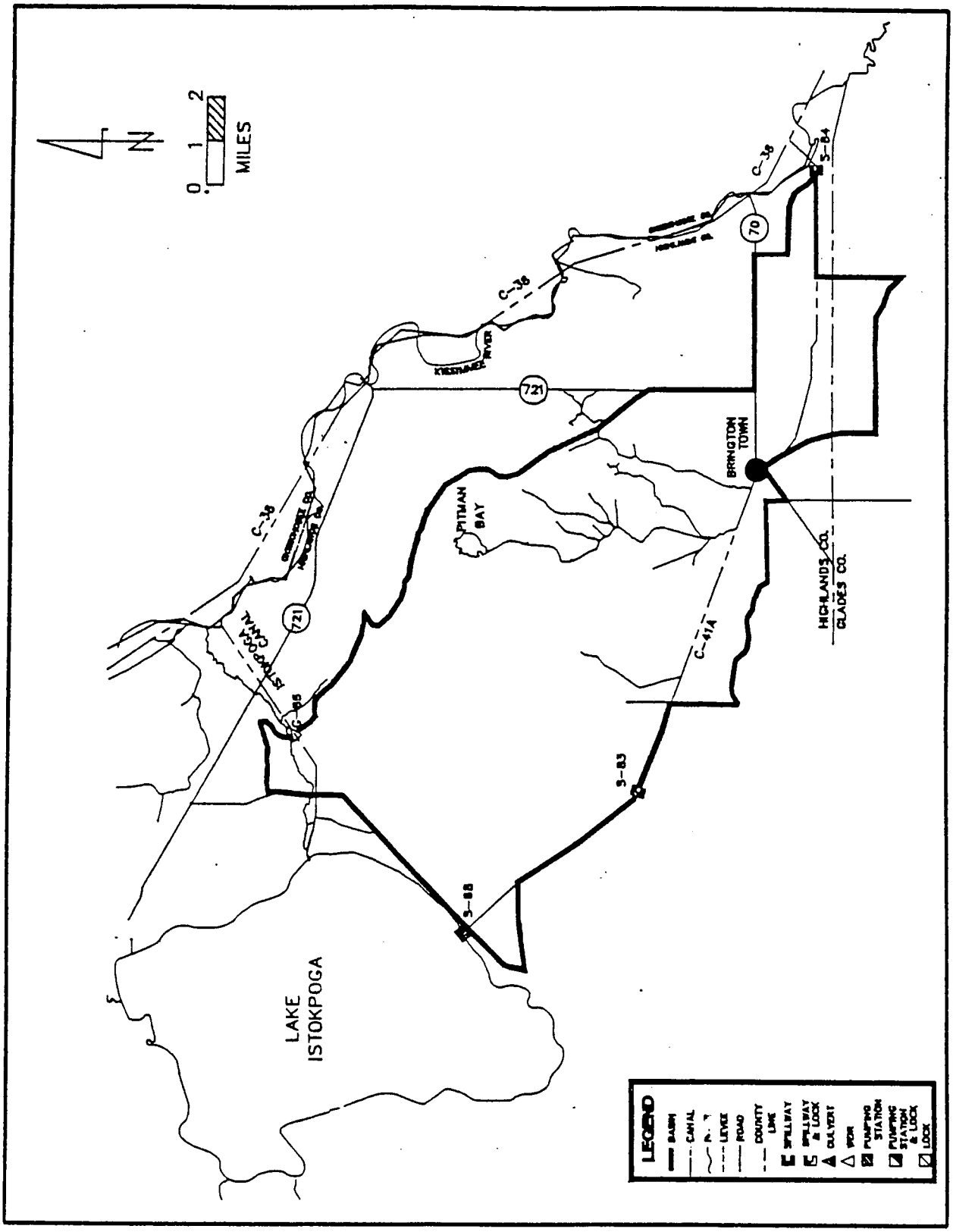


FIGURE 30 C-41A Basin Map

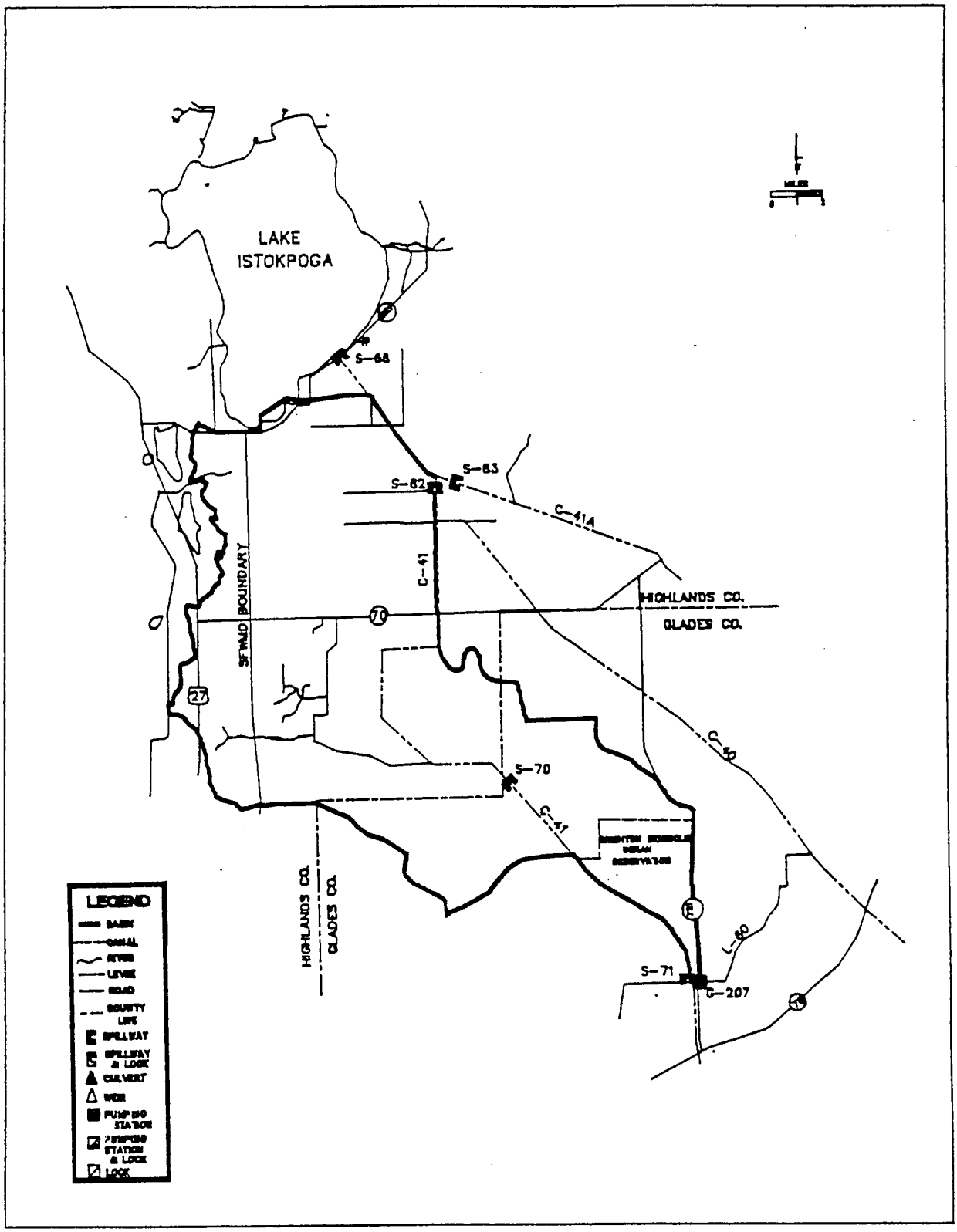


FIGURE 3/ C-41 Basin Map

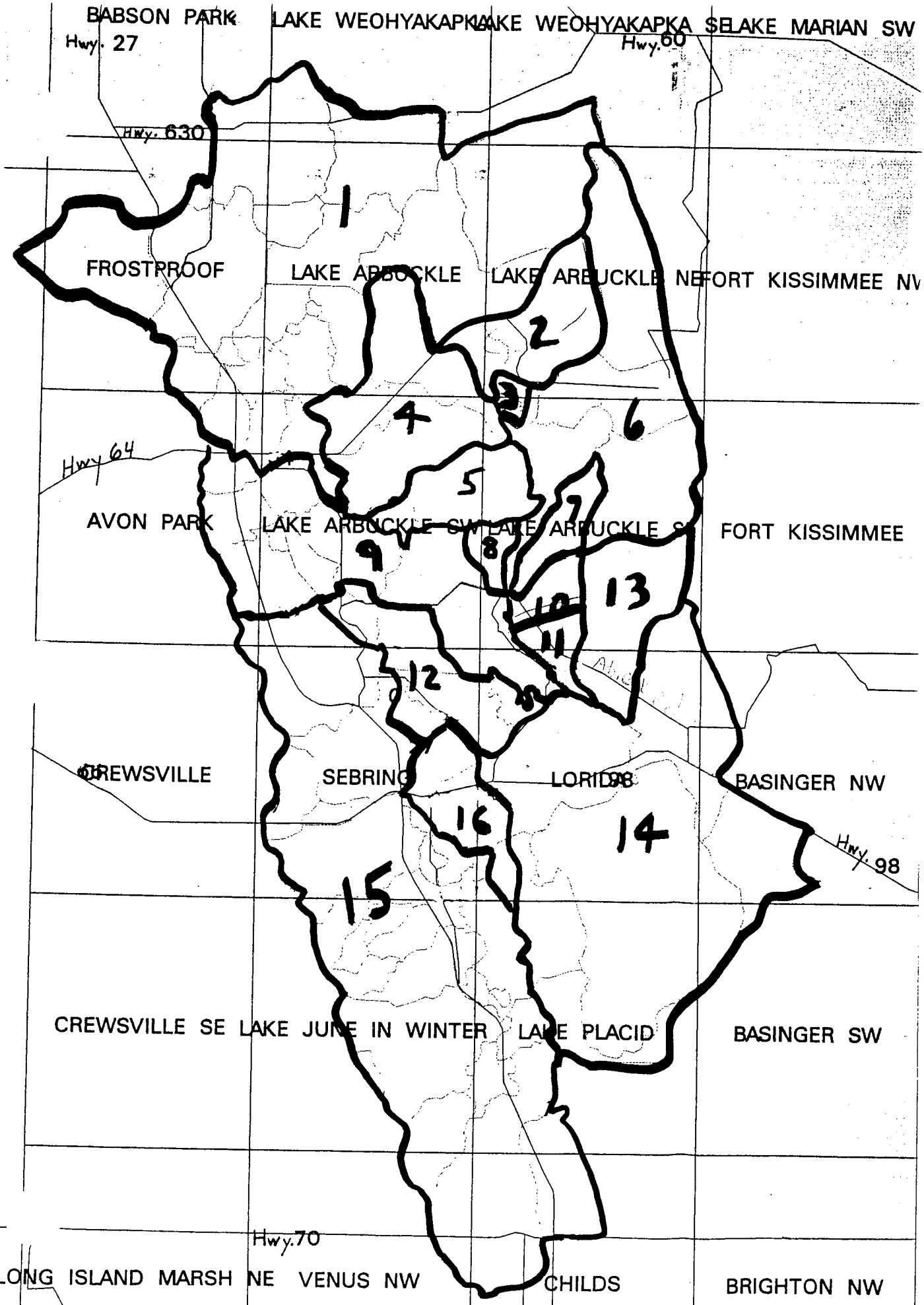


FIGURE 32 LOCATION OF LAKE ISTOKPOGA DRAINAGE SUBBASINS

TABLE 1 DISCHARGE VALUES FOR LAKE ISTOKPOGA DRAINAGE SUBBASINS

Basin	Inflow Point	Area (sq. mi.)	Cubic Feet per Second per Square Mile (csm) SPF	100-Year	50-Year	10-Year	5-Year
1	Arbuckle 0.00	179.34	17.95	14.89	12.38	7.14	6.13
2	Arbuckle 1.25	14.41	251.91	201.25	180.43	124.91	111.03
3	Arbuckle 4.17	1.33	254.14	201.50	184.21	142.11	125.56
4	Arbuckle 5.83	28.56	161.06	129.55	112.04	68.28	57.42
5	Arbuckle 8.03	12.04	192.69	149.50	99.67	18.27	10.80
6	Arbuckle 9.50	45.35	73.87	48.73	34.62	14.33	12.35
7	Arbuckle 12.0	5.88	173.47	137.76	120.75	81.63	68.03
8	Arbuckle 13.0	2.96	253.38	202.70	179.05	128.38	108.11
9	Arbuckle 14.0	39.58	111.42	86.15	56.85	10.11	6.06
10	Arbuckle 15.5	3.96	247.47	196.97	166.67	85.86	73.23
11	Arbuckle 17.3	4.39	250.57	200.46	177.68	109.34	91.12
12	Arbuckle 19.5	20.73	7.81	5.84	3.14	0.53	0.39
13	Arbuckle 20.5	15.84	198.86	152.15	125.63	64.39	53.03
14	Local Inflows	64.9	231.12	184.90	160.25	93.99	73.96
15	Josephine 0.0	132.67	43.72	32.03	23.37	7.16	4.90
16	Josephine 2.0	11.15	178.48	133.63	80.72	9.87	7.17
	Average	36.44	165.50	129.88	107.34	60.39	50.58
	Maximum	179.34	254.14	202.70	184.21	142.11	125.56
	Minimum	1.33	7.81	5.84	3.14	0.53	0.39

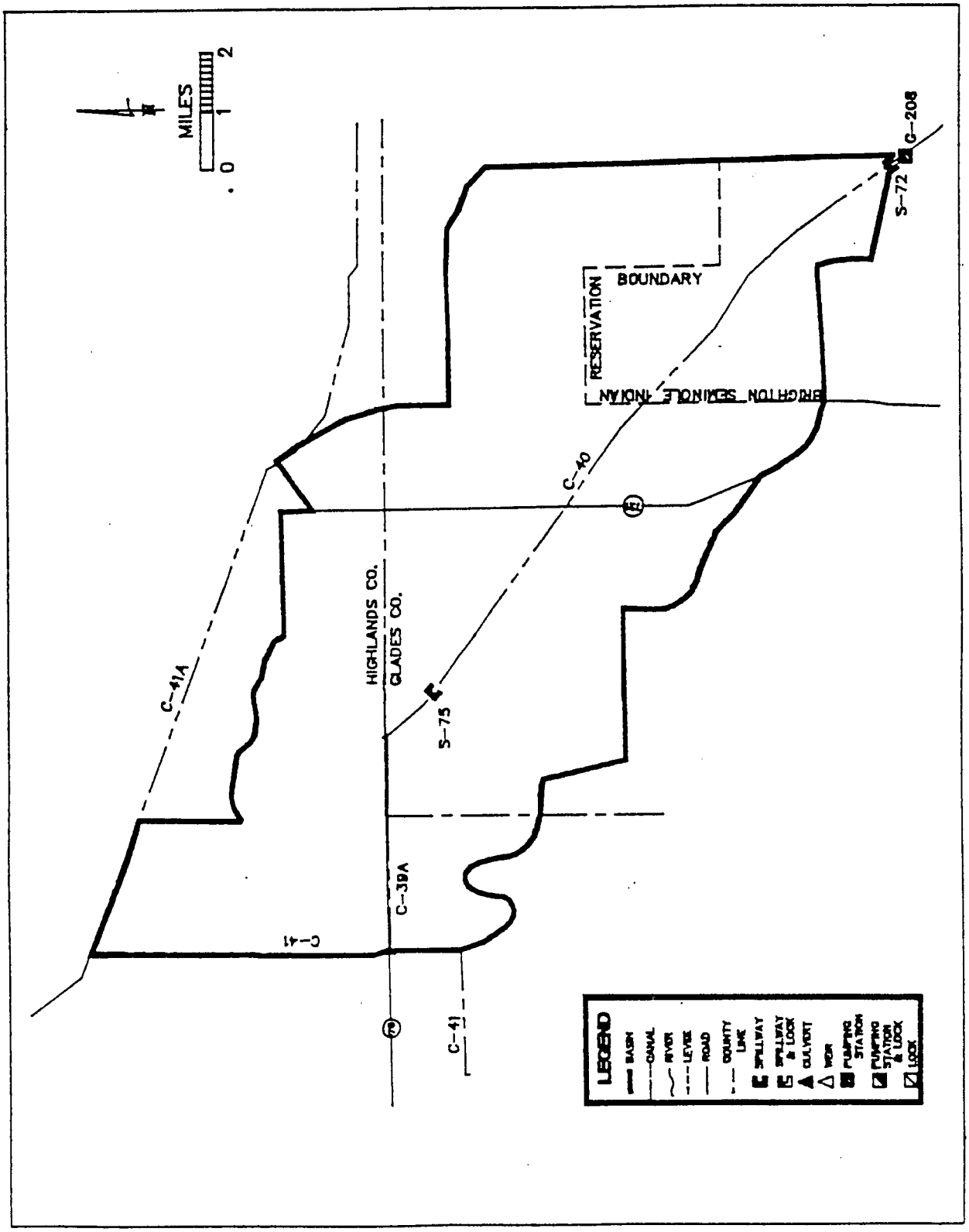


FIGURE 33 C-40 Basin Map

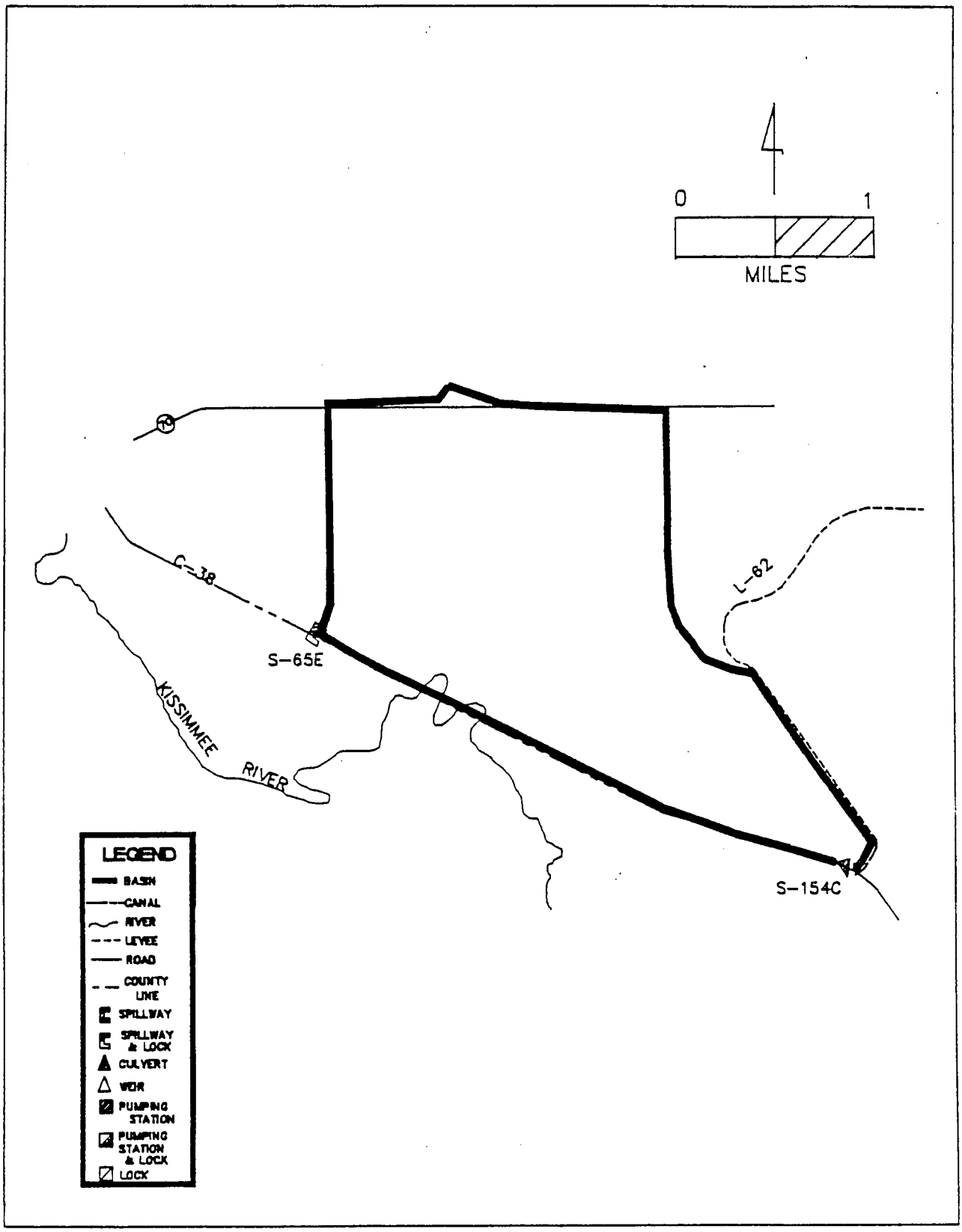


FIGURE 34 S-154C Basin Map

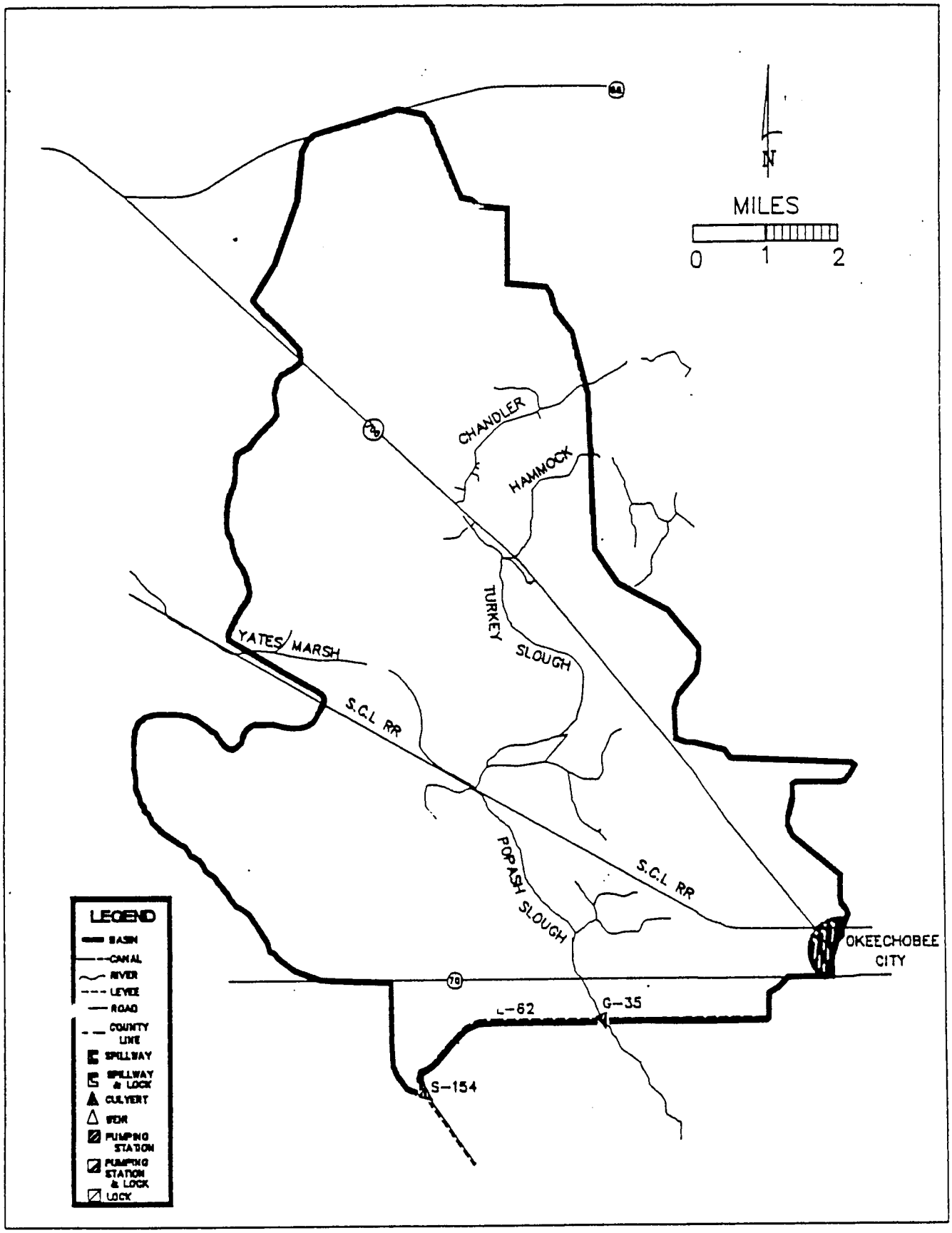


FIGURE 35 S-154 Basin Map

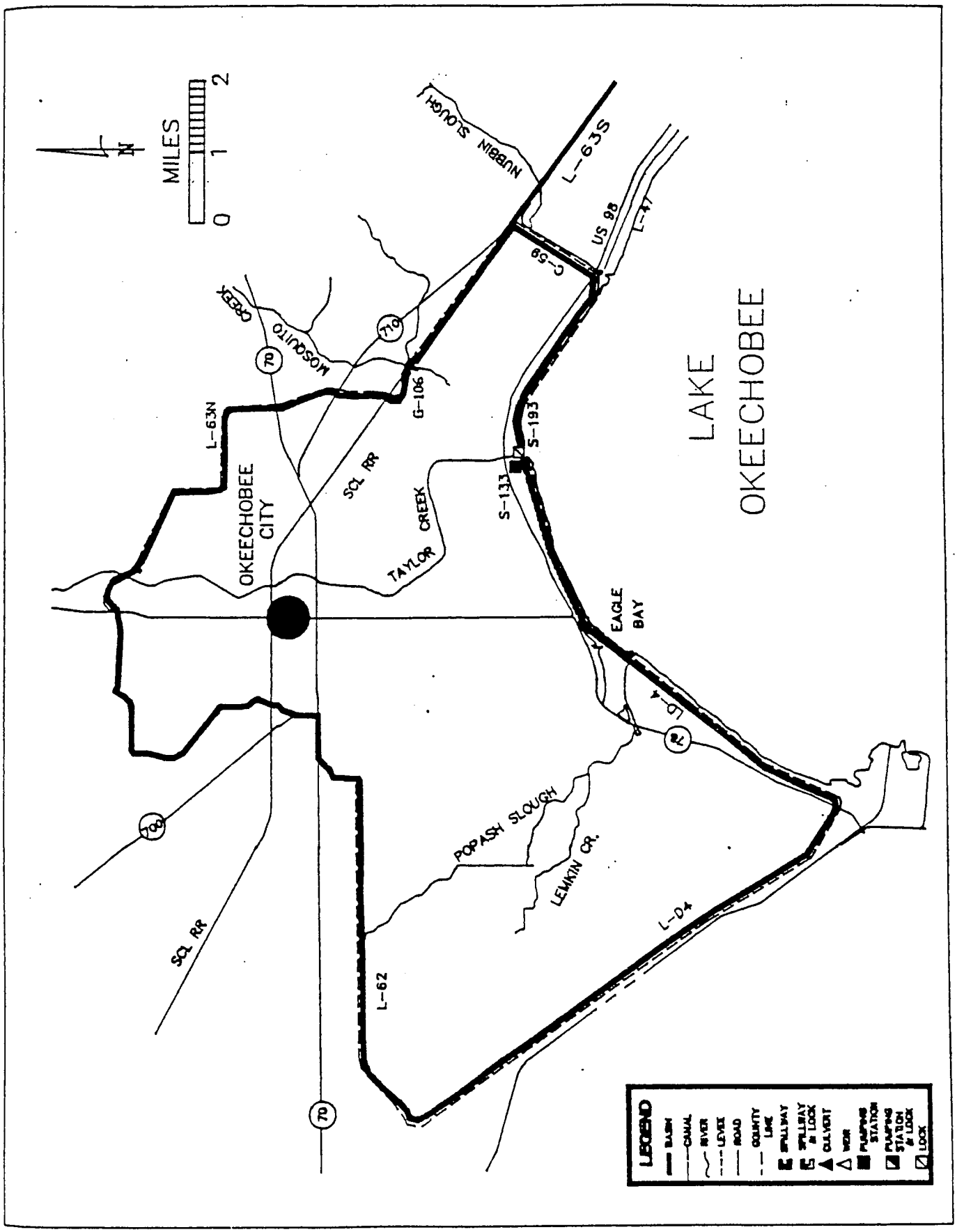


FIGURE 36 S-133 Basin Map

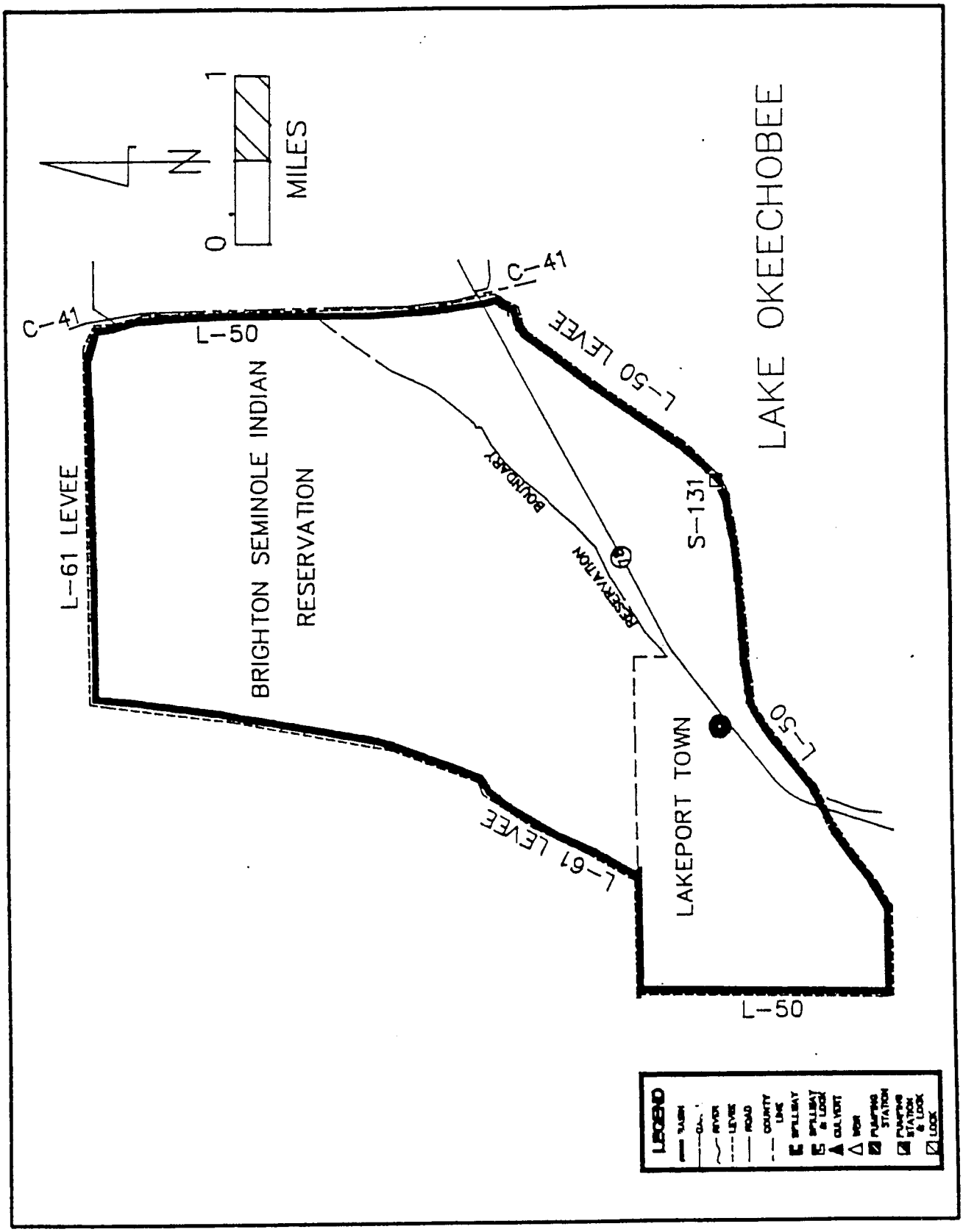


FIGURE 37 S-131 Basin Map

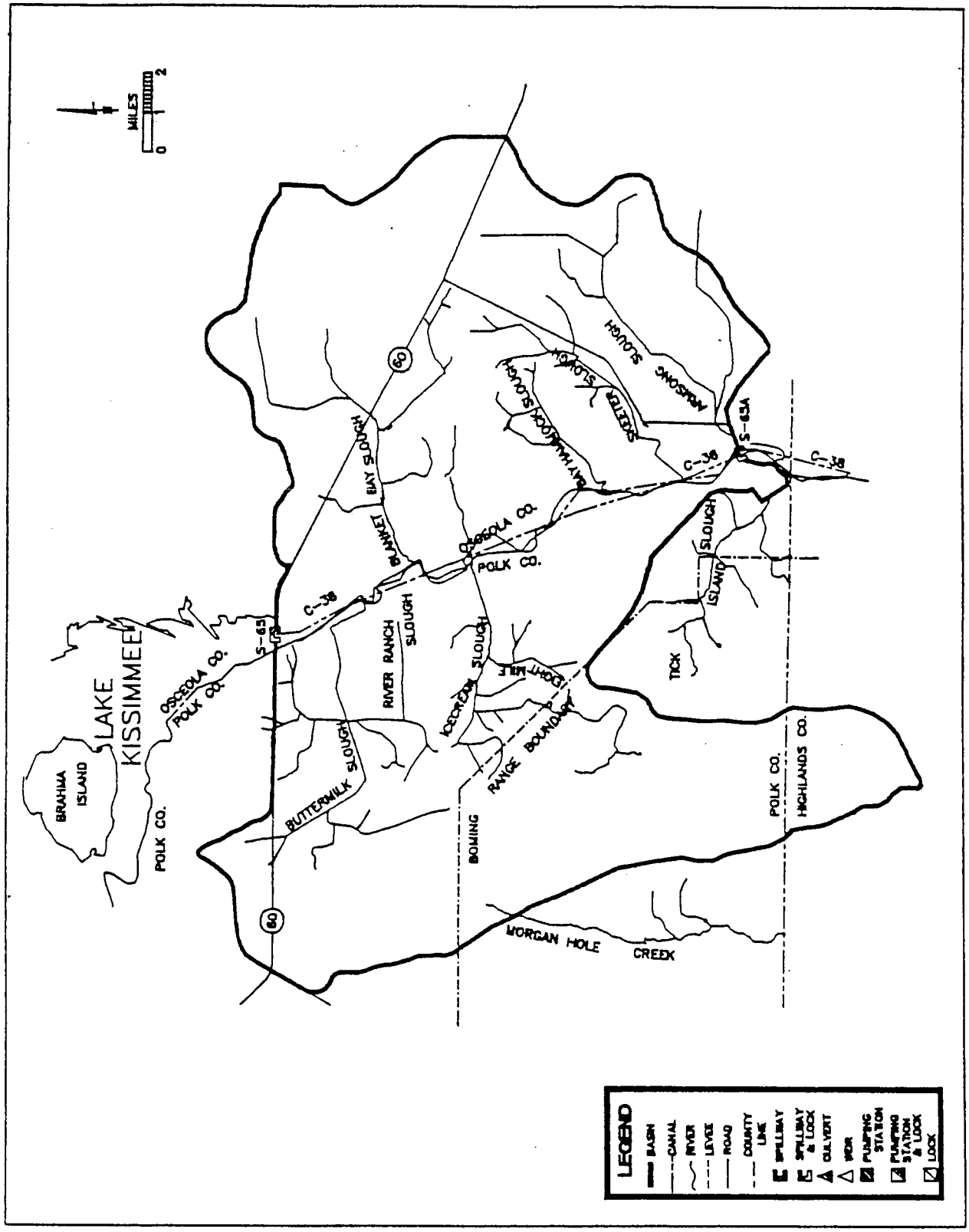


FIGURE 38 S-65A Basin Map

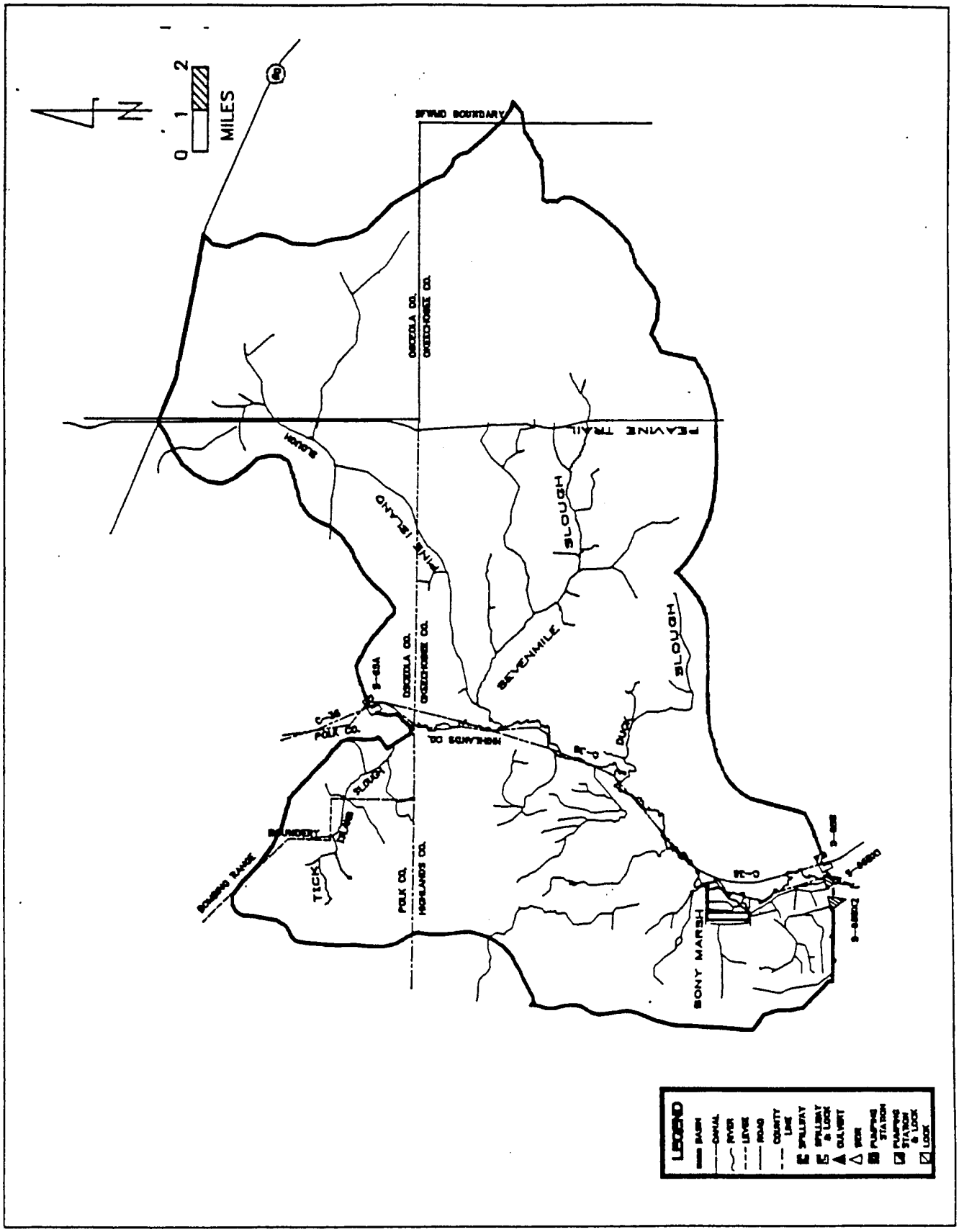


FIGURE 39 S-65B Basin Map

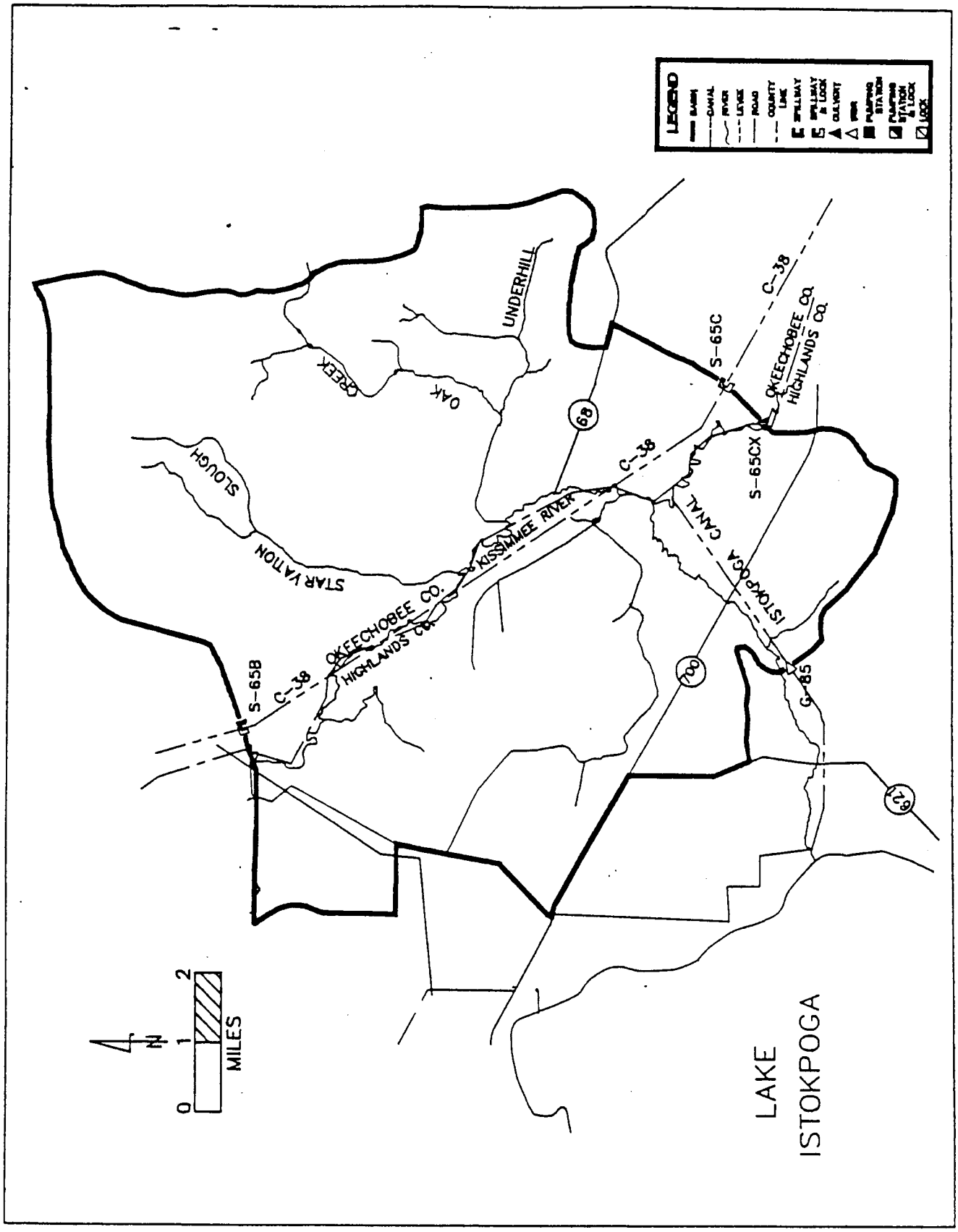


FIGURE 40 S-65C Basin Map

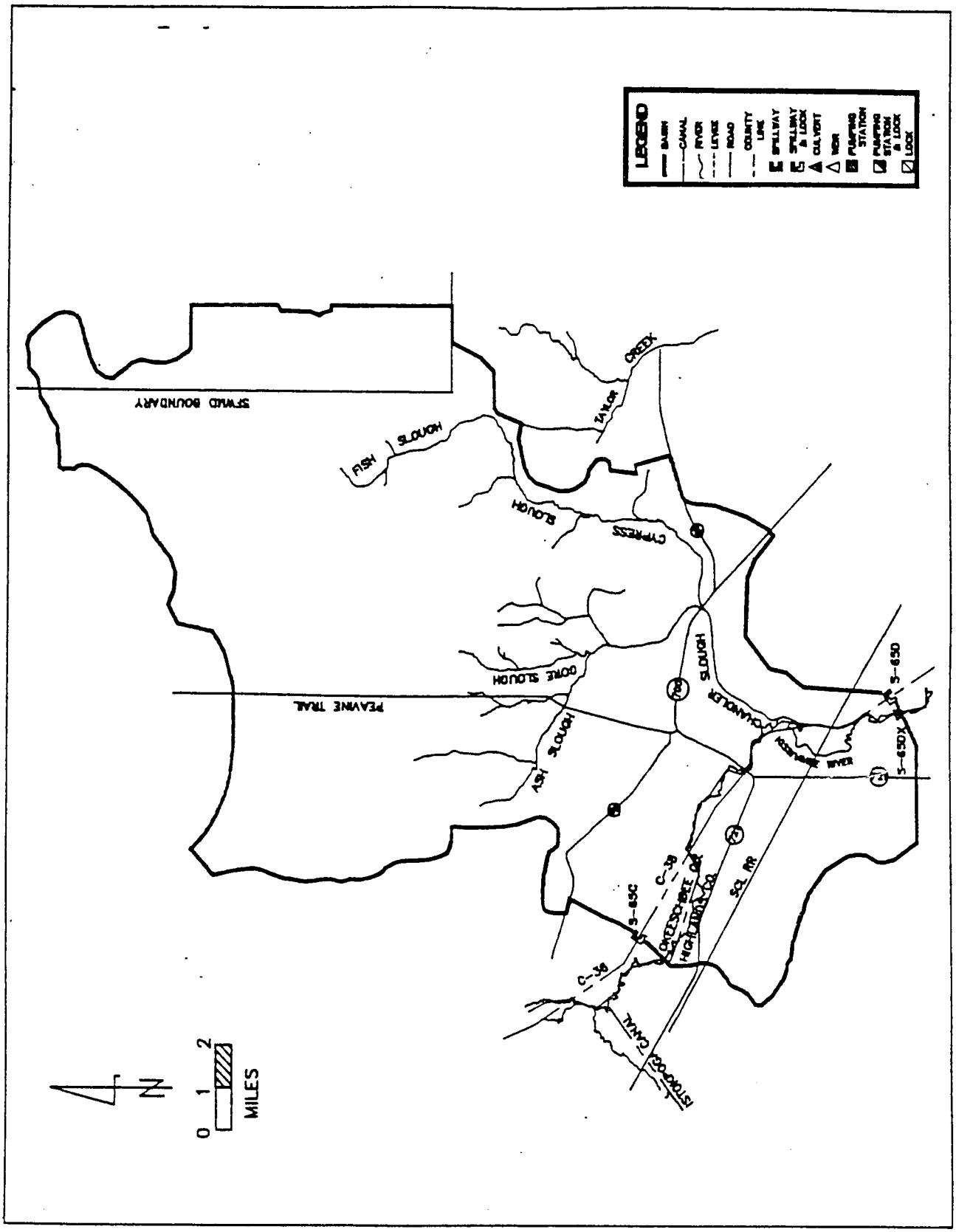


FIGURE 41 S-65D Basin Map

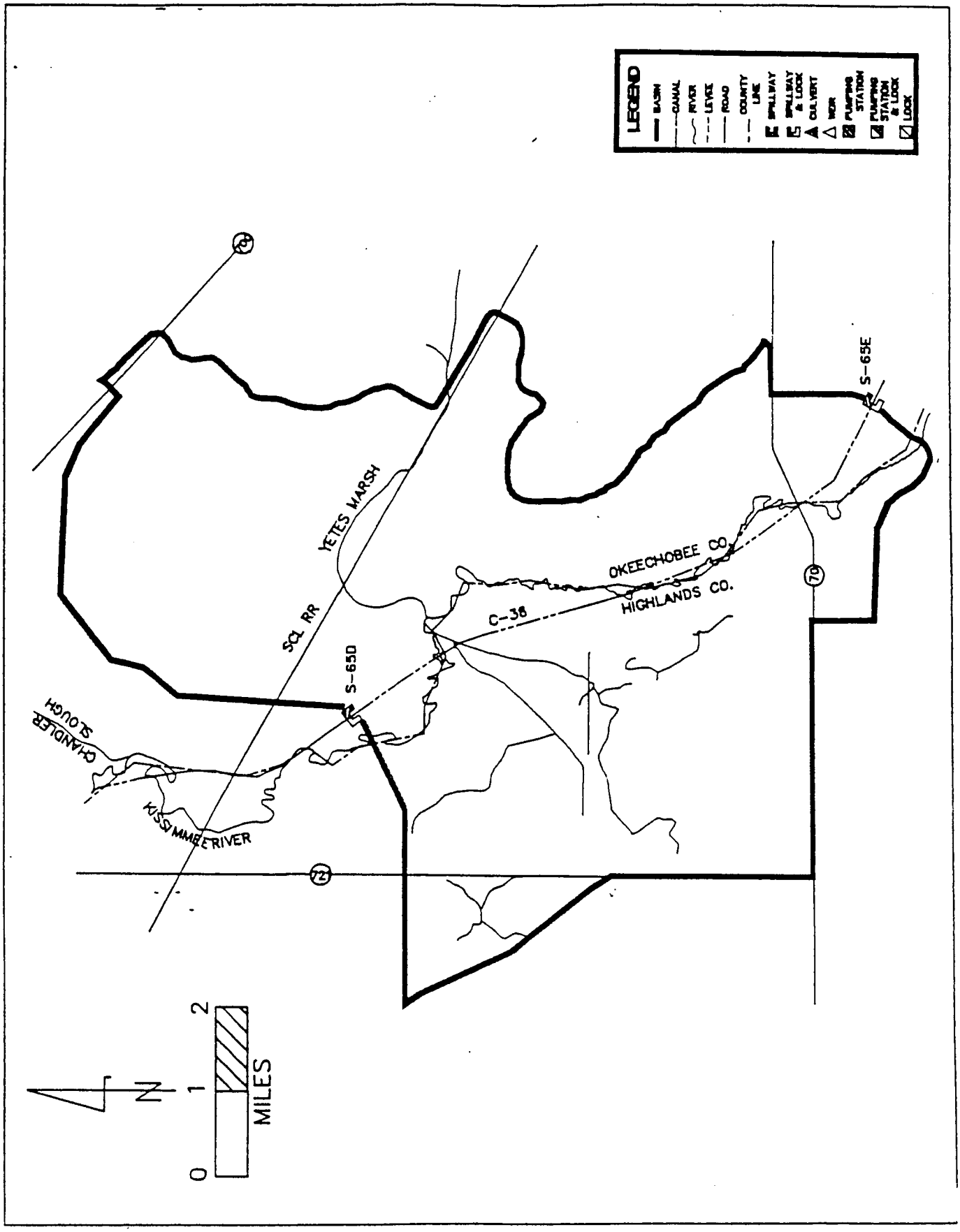


FIGURE 42 S-65E Basin Map

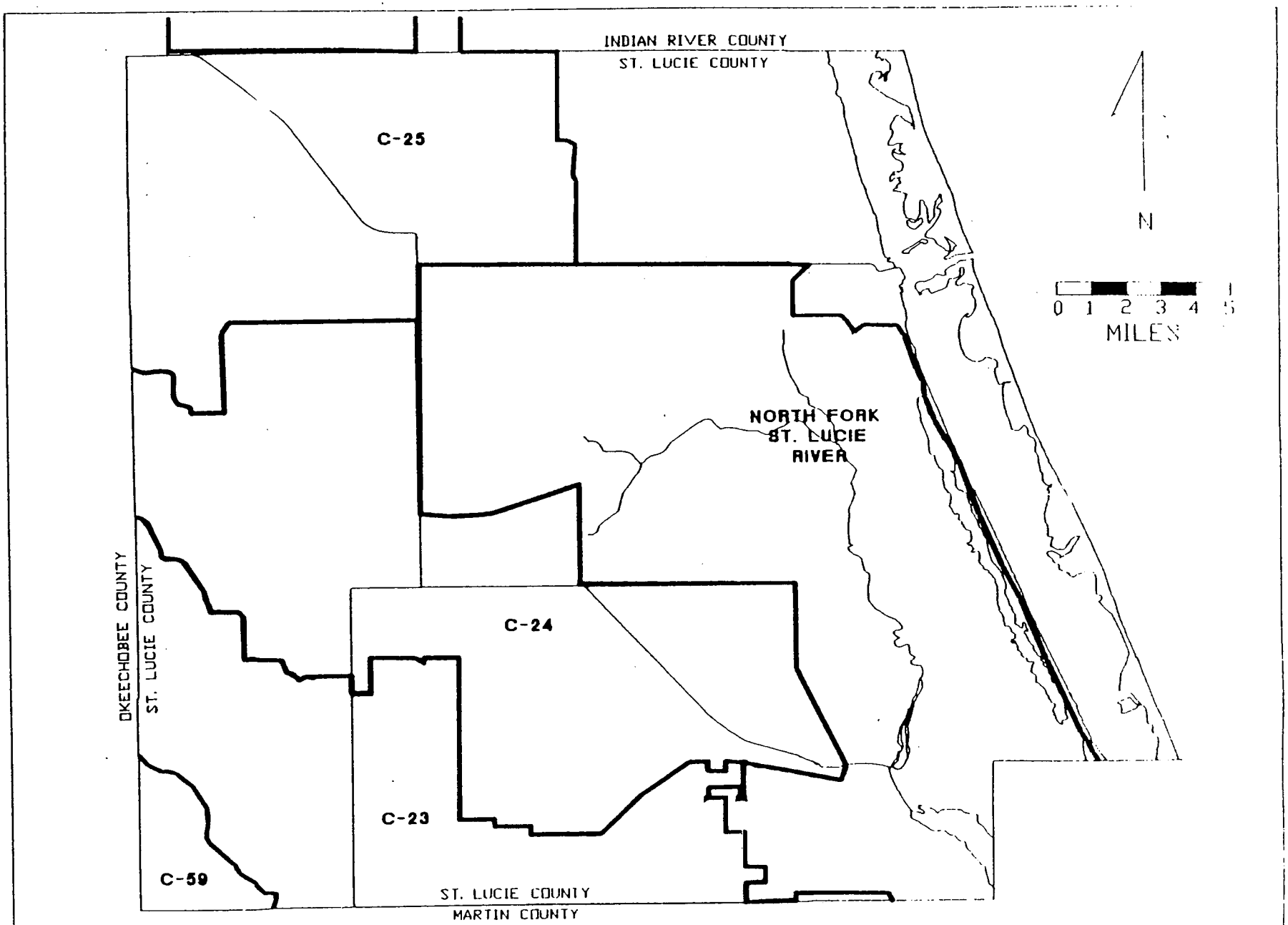


FIGURE 13 ST. LUCIE COUNTY DRAINAGE BASINS

C-25 BASIN

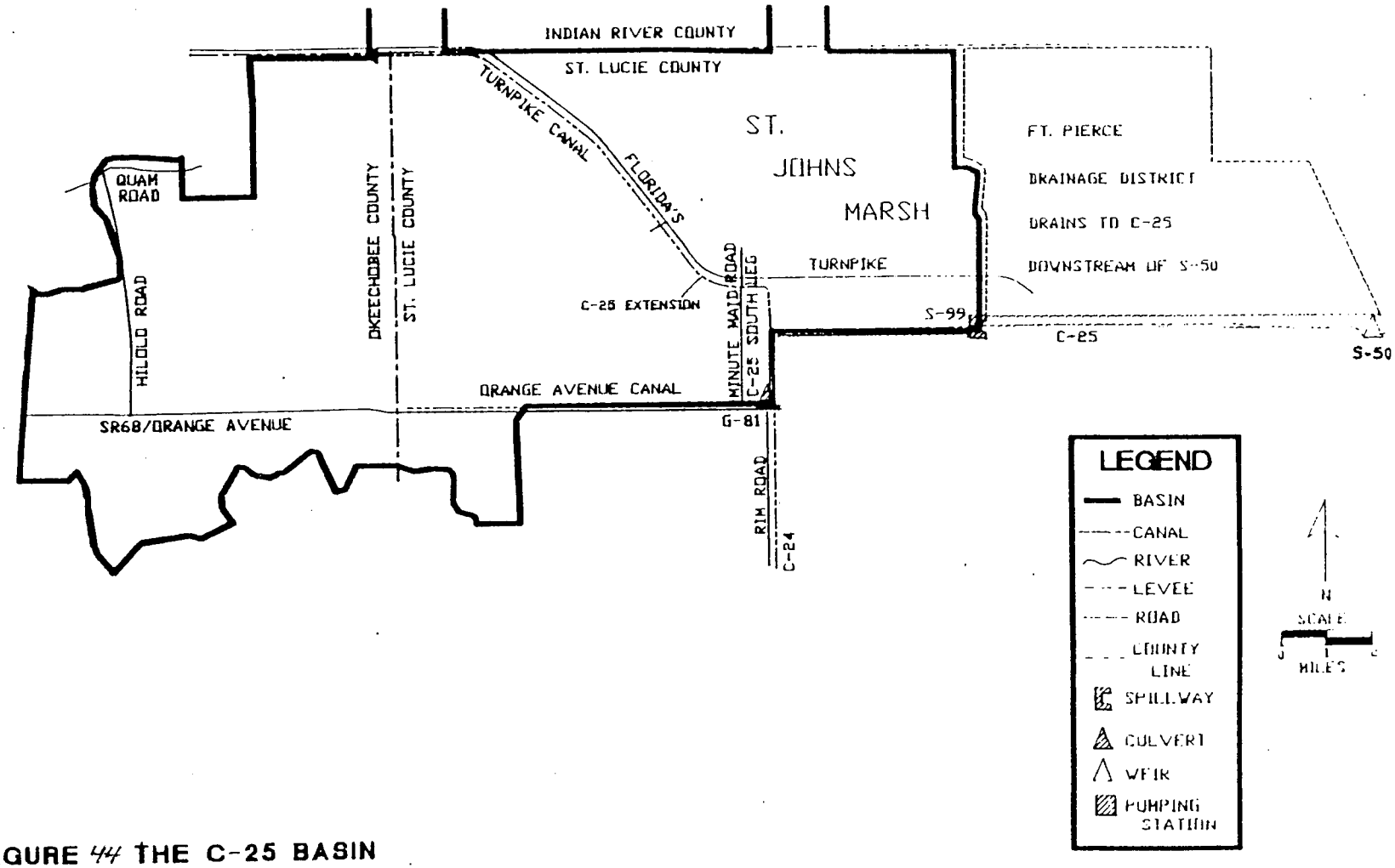


FIGURE 44 THE C-25 BASIN

C-24 BASIN

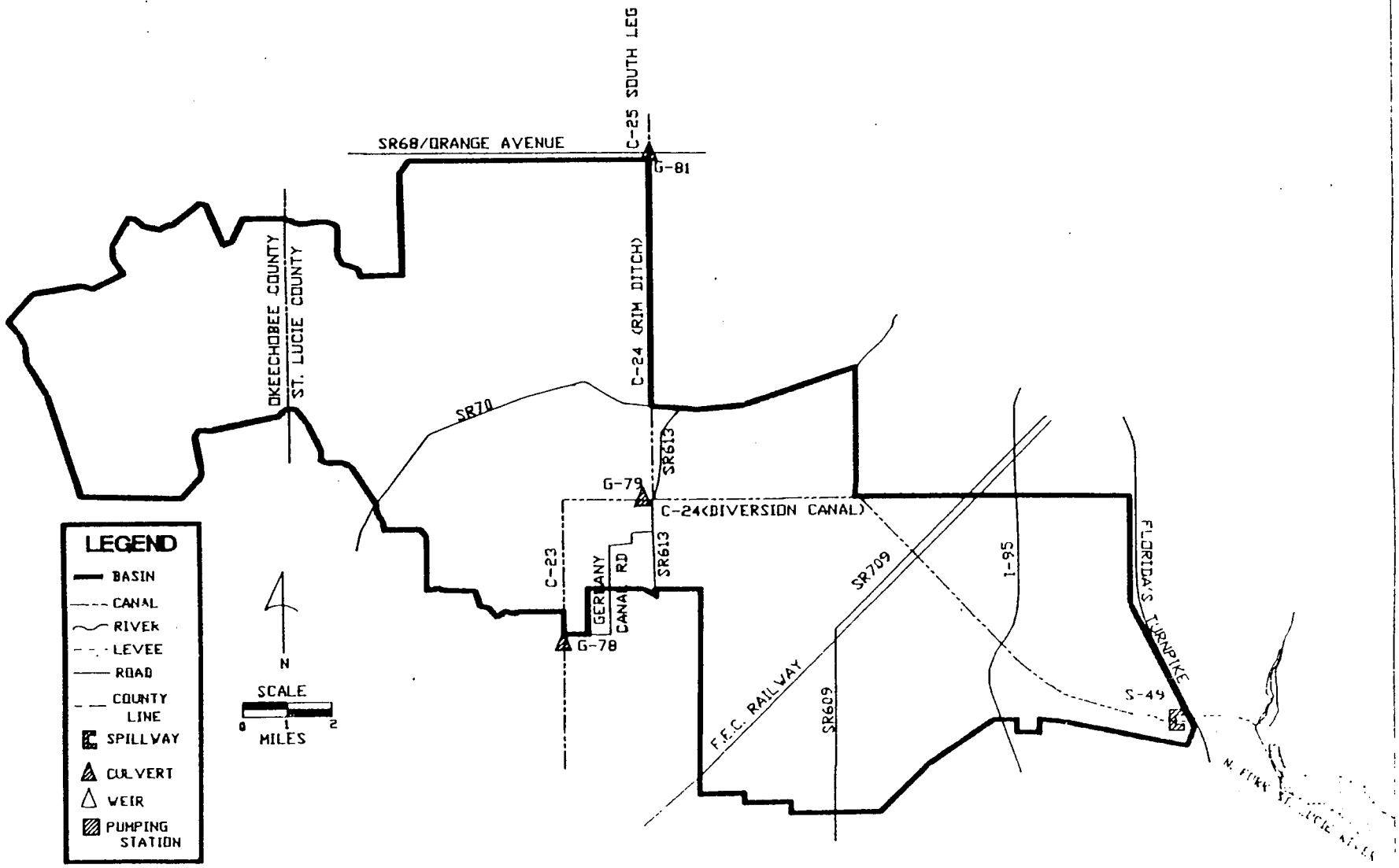


FIGURE 45 THE C-24 BASIN

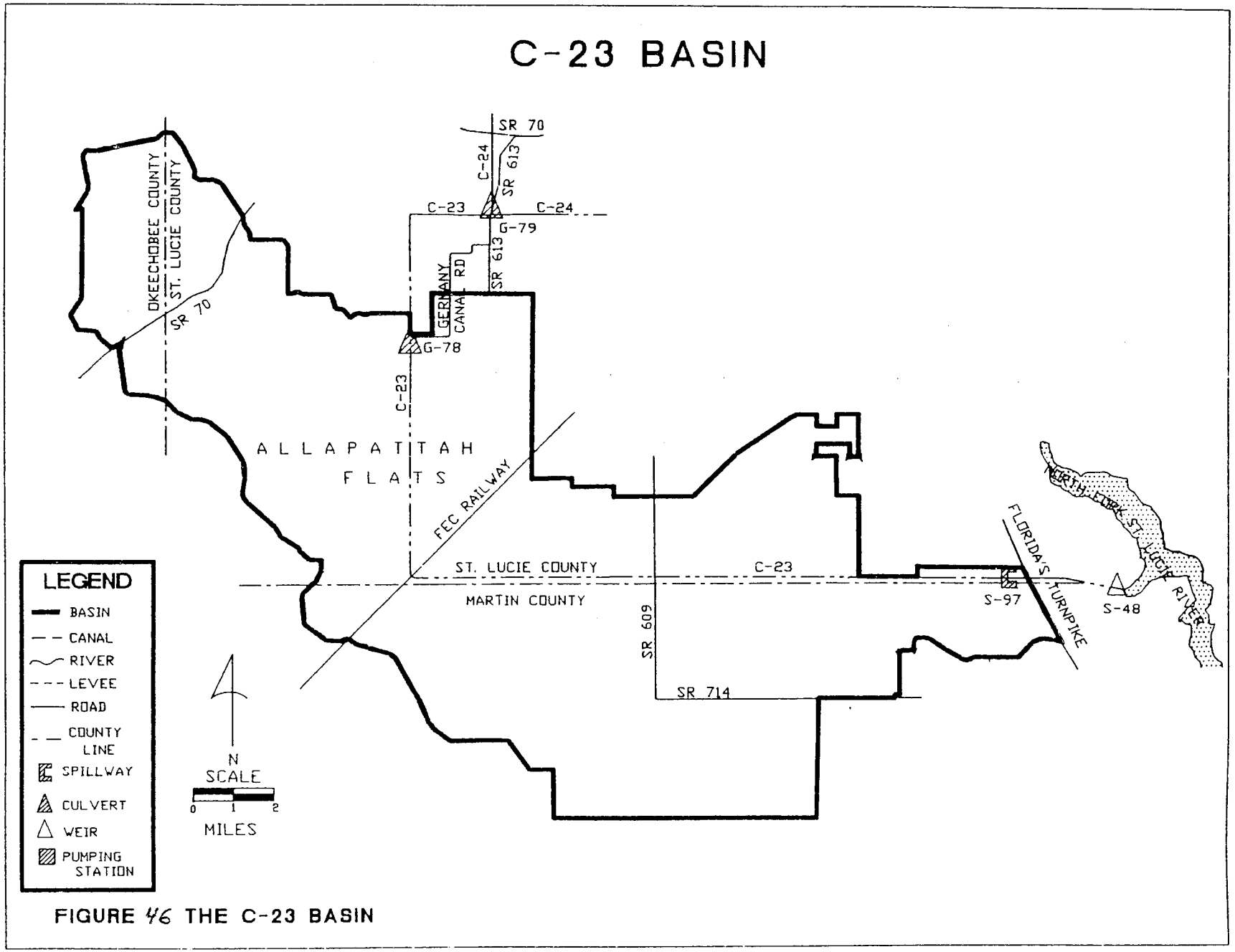


FIGURE 46 THE C-23 BASIN

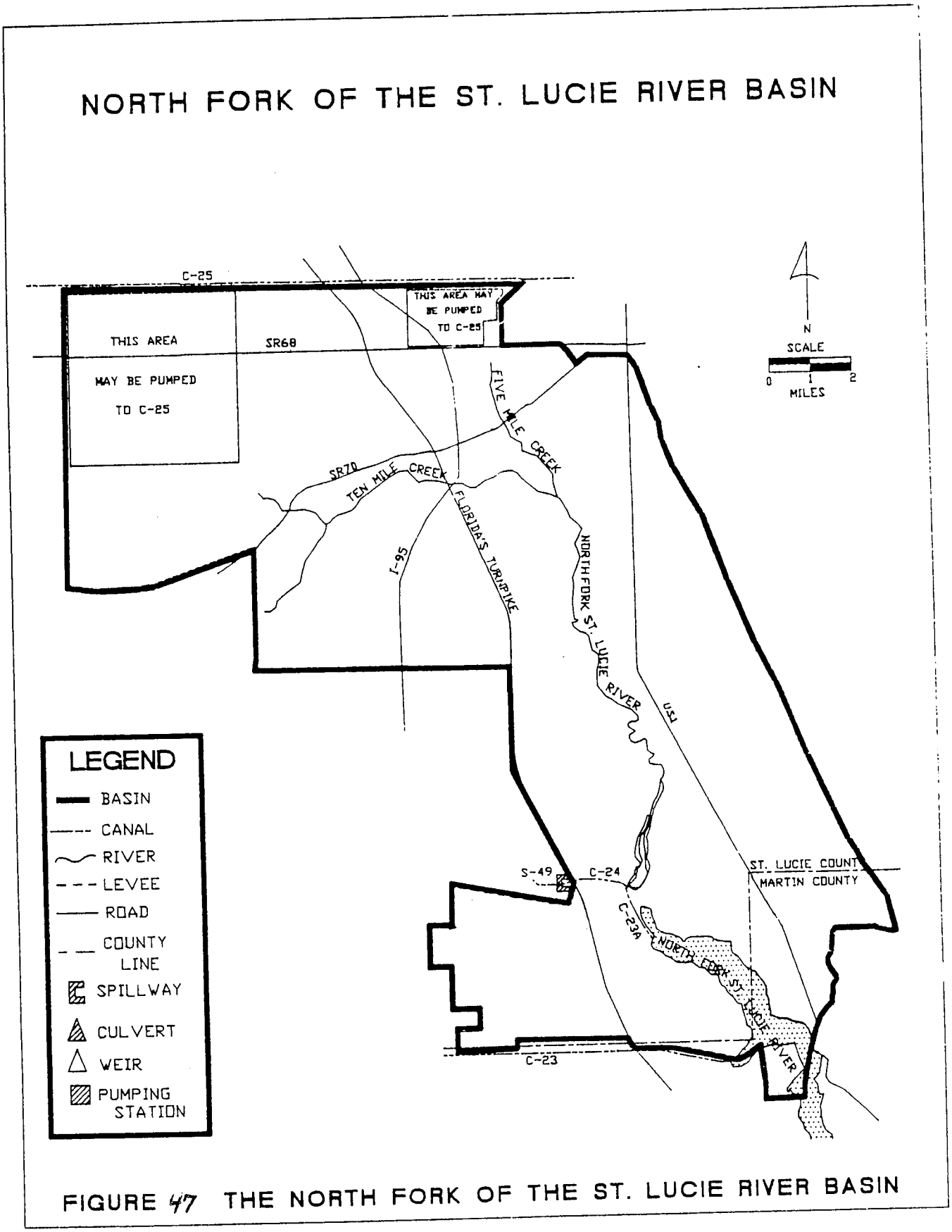


FIGURE 47 THE NORTH FORK OF THE ST. LUCIE RIVER BASIN

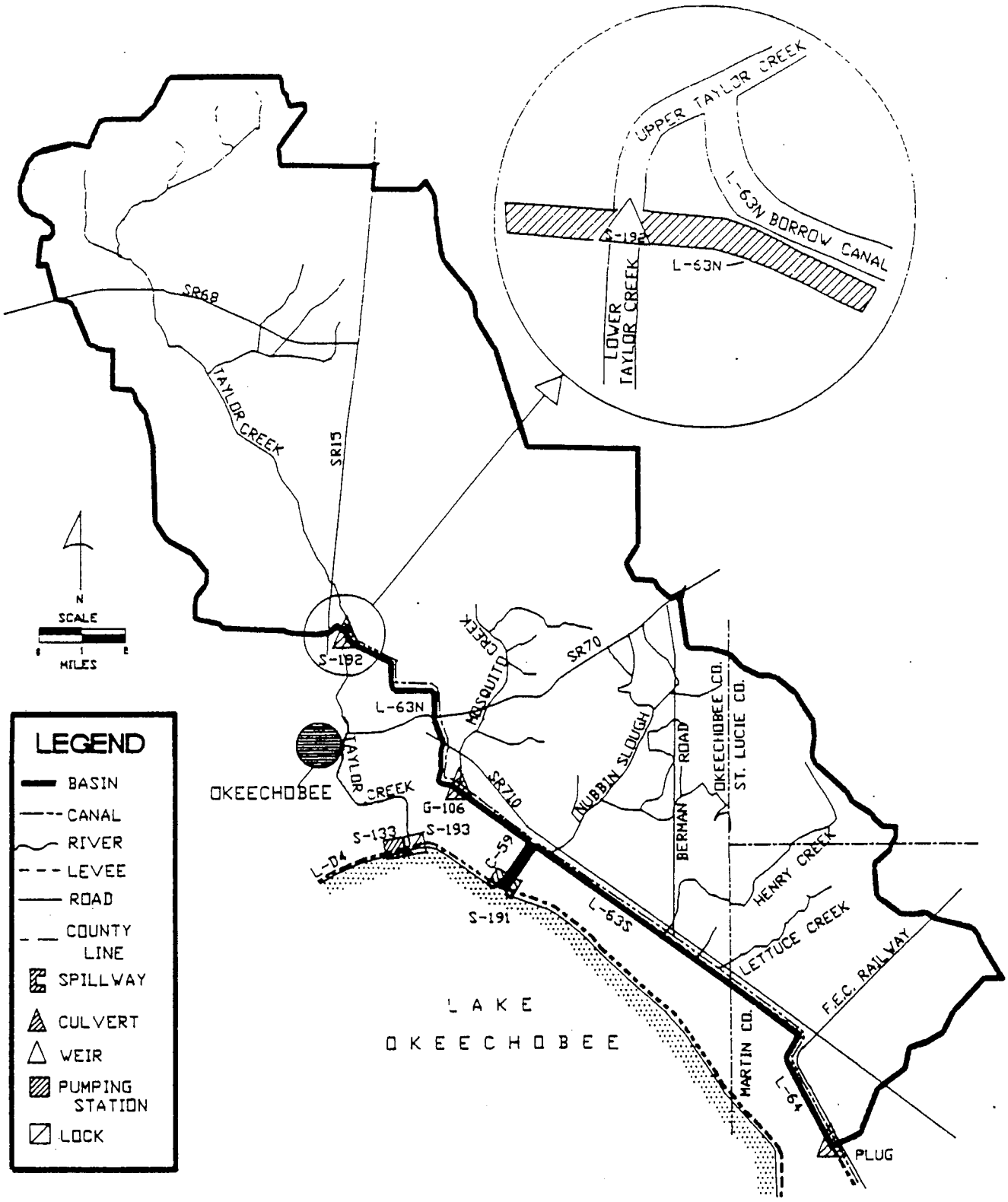


FIGURE 48 THE C-59 BASIN

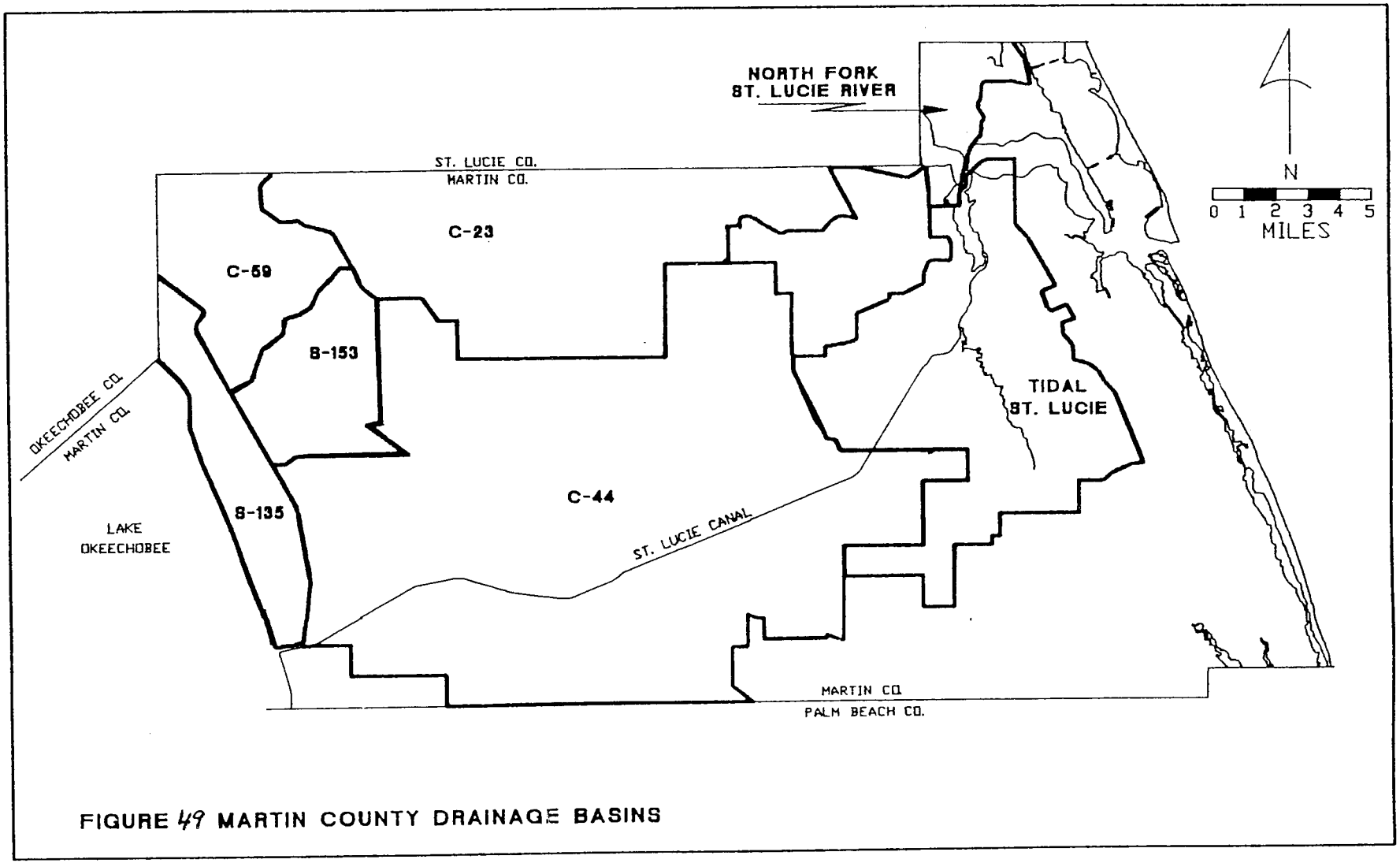


FIGURE 49 MARTIN COUNTY DRAINAGE BASINS

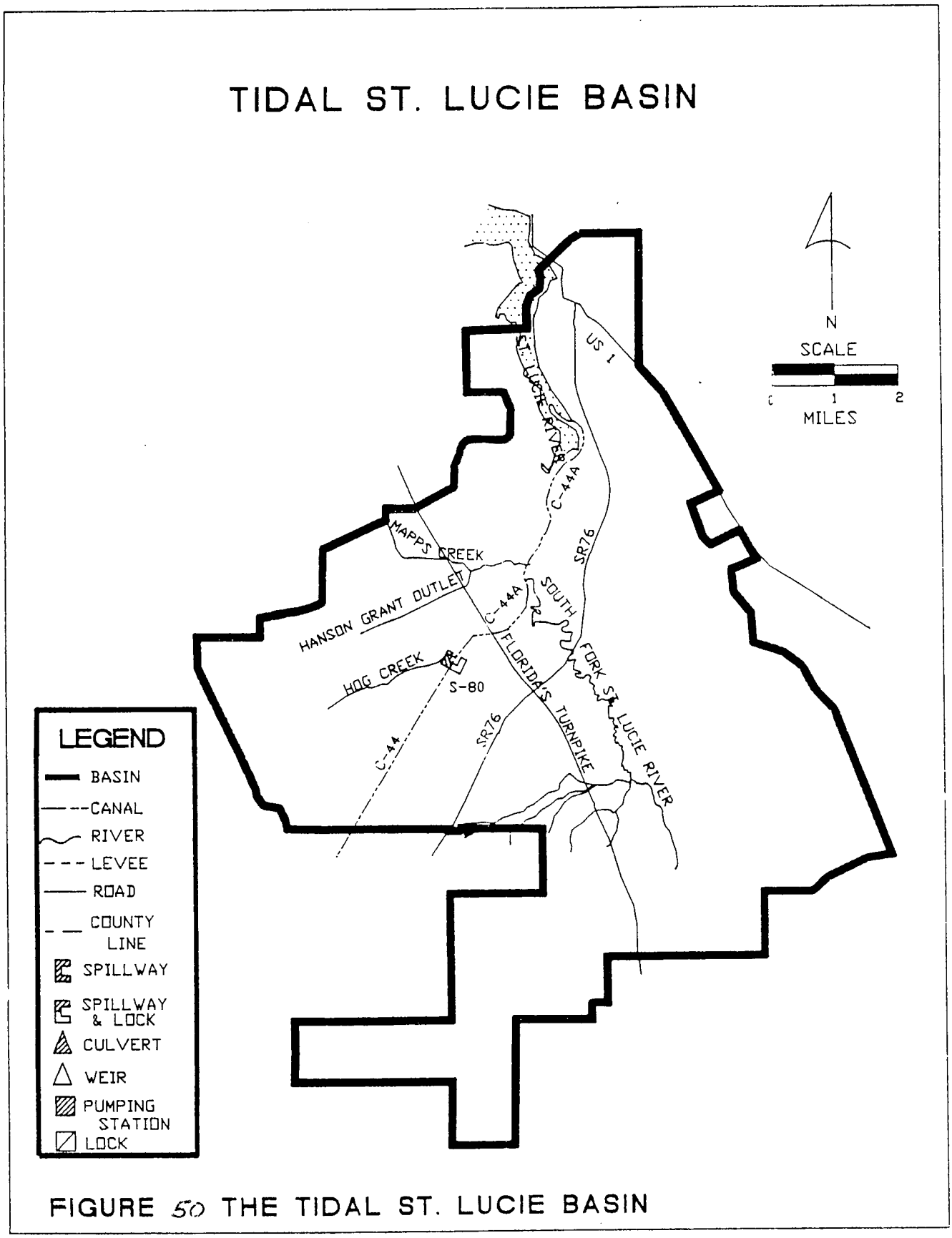


FIGURE 50 THE TIDAL ST. LUCIE BASIN

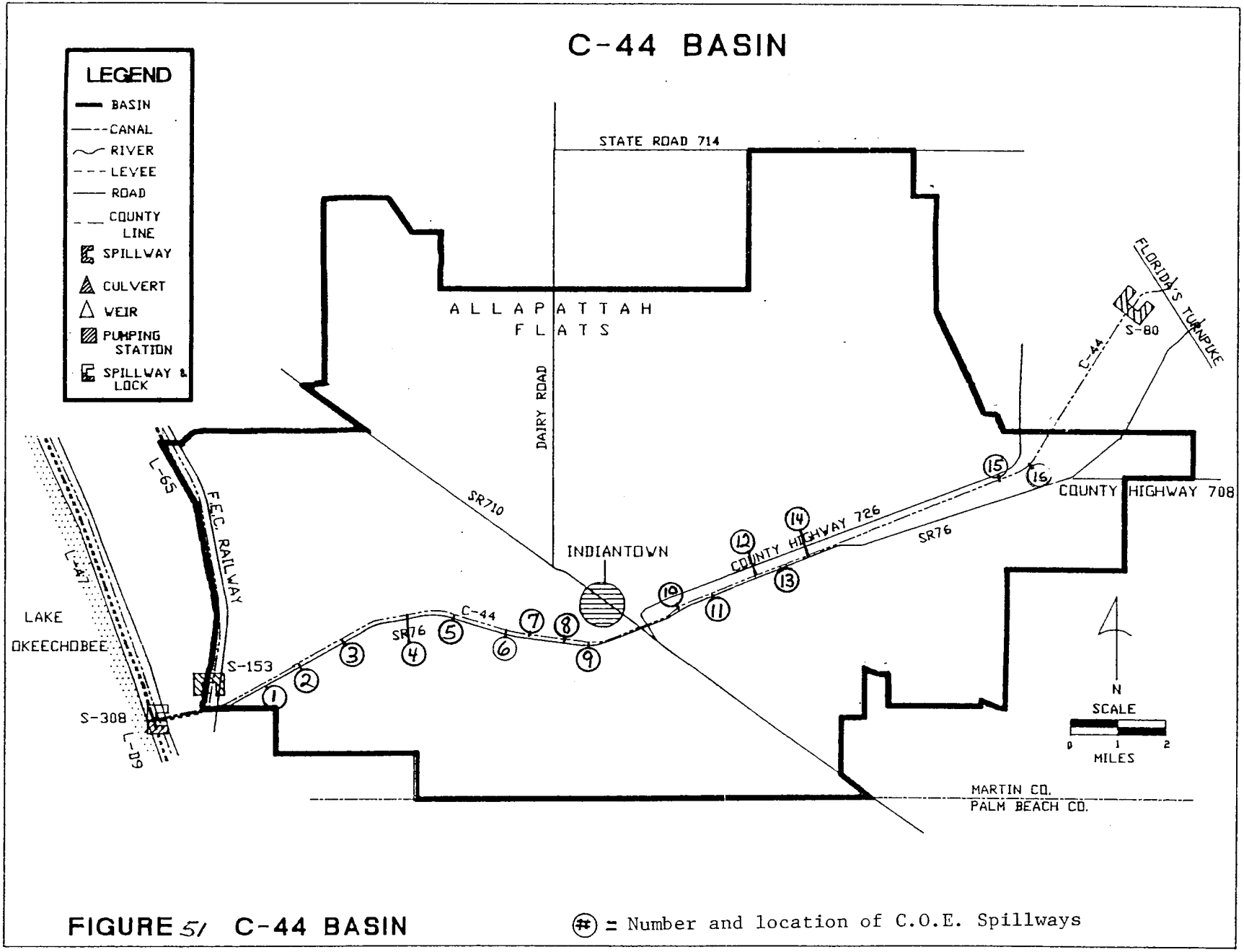


FIGURE 51 C-44 BASIN

(#) = Number and location of C.O.E. Spillways

Table 2

CORPS OF ENGINEERS SPILLWAYS ON THE ST. LUCIE CANAL (C-44)

NAME AND NUMBER	SECTION	TOWNSHIP	RANGE	
1. Myaca 196.2 CSM	13	40S	37E	2600' E of 14/13 S line along river bank 4.22 sq. miles. Drainage area 828 cfs discharge capacity south side.
2. "A" 231.28 CSM	13	40S	37E	400' W of 37/38 R line along R bank 1.79 sq. miles. Drainage area 414 cfs discharge capacity south side.
3. "B" 324 CSM	8	40S	38E	2500' E of 37/38 R line along R bank 1.37 sq. miles. Drainage area 444 cfs discharge capacity south side.
4. "C" 285 CSM	4	40S	38E	500' W of 4/3 S line along R bank 2.11 sq. miles. Drainage area 602 cfs discharge capacity south side.
5. "D" 445 CSM	10	40S	38E	400' W of 10/11 S line along R bank 1.04 sq. miles. Drainage area 463 cfs drainage capacity south side.
6. "E" 280 CSM	11	40S	38E	100' W of 11/12 S line along bank 2.19 sq. miles. Drainage area 614 cfs discharge capacity south side.
7. West End 245 CSM	12	40S	38E	600' E of 11/12 S line along R bank 3.0 sq. miles. Drainage area 735 cfs discharge capacity north side.
8. Indiantown 192 CSM	7	40S	39E	On the 38/39 range line 14.32 sq. miles. Drainage area 27,500 cfs. Discharge capacity north side.
9. "F" 146.9 CSM	7	40S	39E	2600' E of 38/39 range line 4.05 sq. miles. Drainage area 595 cfs discharge capacity south side.
10. Allaphata #1 109.68 CSM	4	40S	39E	2800' W of 4/3 sectionline 42.85 sq. miles. Drainage area 4700 cfs discharge capacity north side.
11. "G" 192.2 CSM	4	40S	39E	100' W of 4/3 sectionline 4.50 sq. miles. Drainage area 865 c discharge capacity south side.

Table 2 (continued)
CORPS OF ENGINEERS SPILLWAYS ON THE ST. LUCIE CANAL (C-44)

con't.

NAME AND NUMBER	SECTION	TOWNSHIP	RANGE	
12. Allaphata #2 528 cfs from original drainage area boundaries need to be redefined.	3	40S	39E	1200' W of 2/3 sectionline 0.7 sq. miles drainage area 390 cfs discharge capacity north side.
13. "H" 253.8 CSM	2	40S	39E	1200' E of 2/3 sectionline 1.59 sq. miles drainage area 495 cfs discharge capacity south side.
14. "MID" Q=98.5 CSM	35	39S	39E	200' W of 35/36 sectionline 22.43 sq. miles drainage area 2210 cfs discharge capacity north side.
15. Cane Slough 149.03 CSM	27	39S	40E	1200' E of 27/28 sectionline 18.05 sq. miles drainage area 2690 cfs discharge capacity north side.
16. "I" 184 CSM	22	39S	40E	25' W of 22/23 sectionline 4.00 sq. miles drainage area 736 cfs discharge capacity "I" south side.

CSM = Cubic Feet per Second per Square MILE

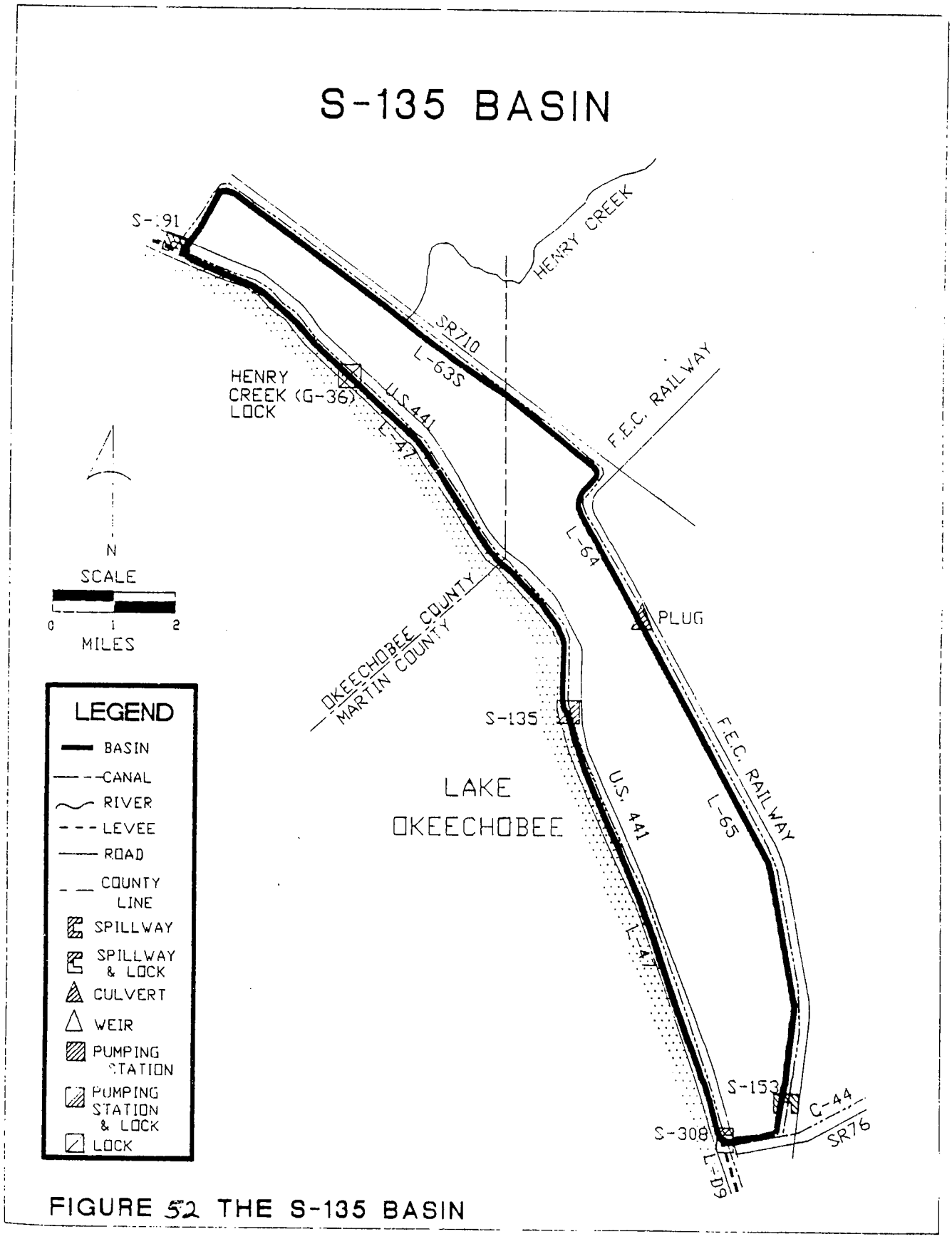


FIGURE 52 THE S-135 BASIN

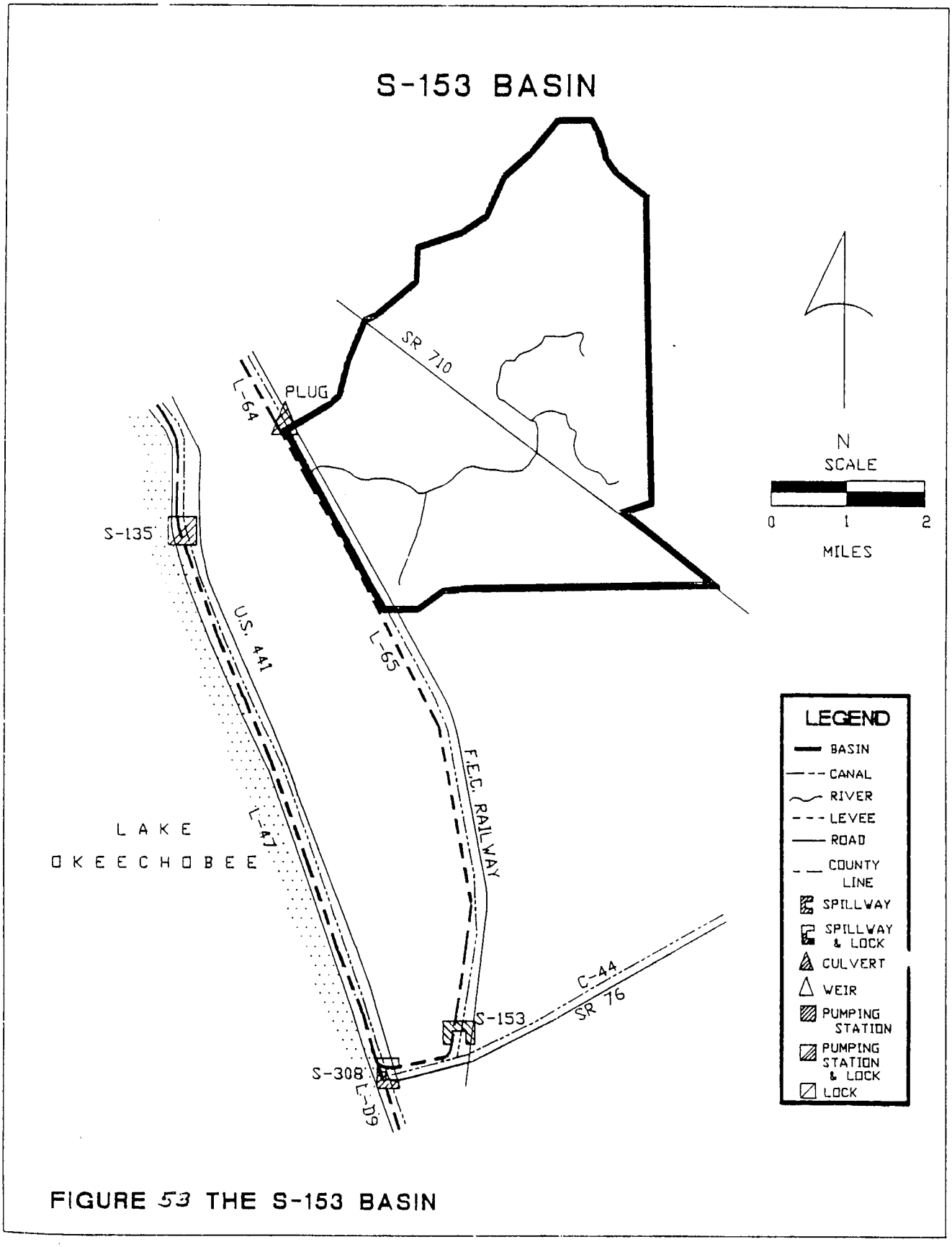


FIGURE 53 THE S-153 BASIN

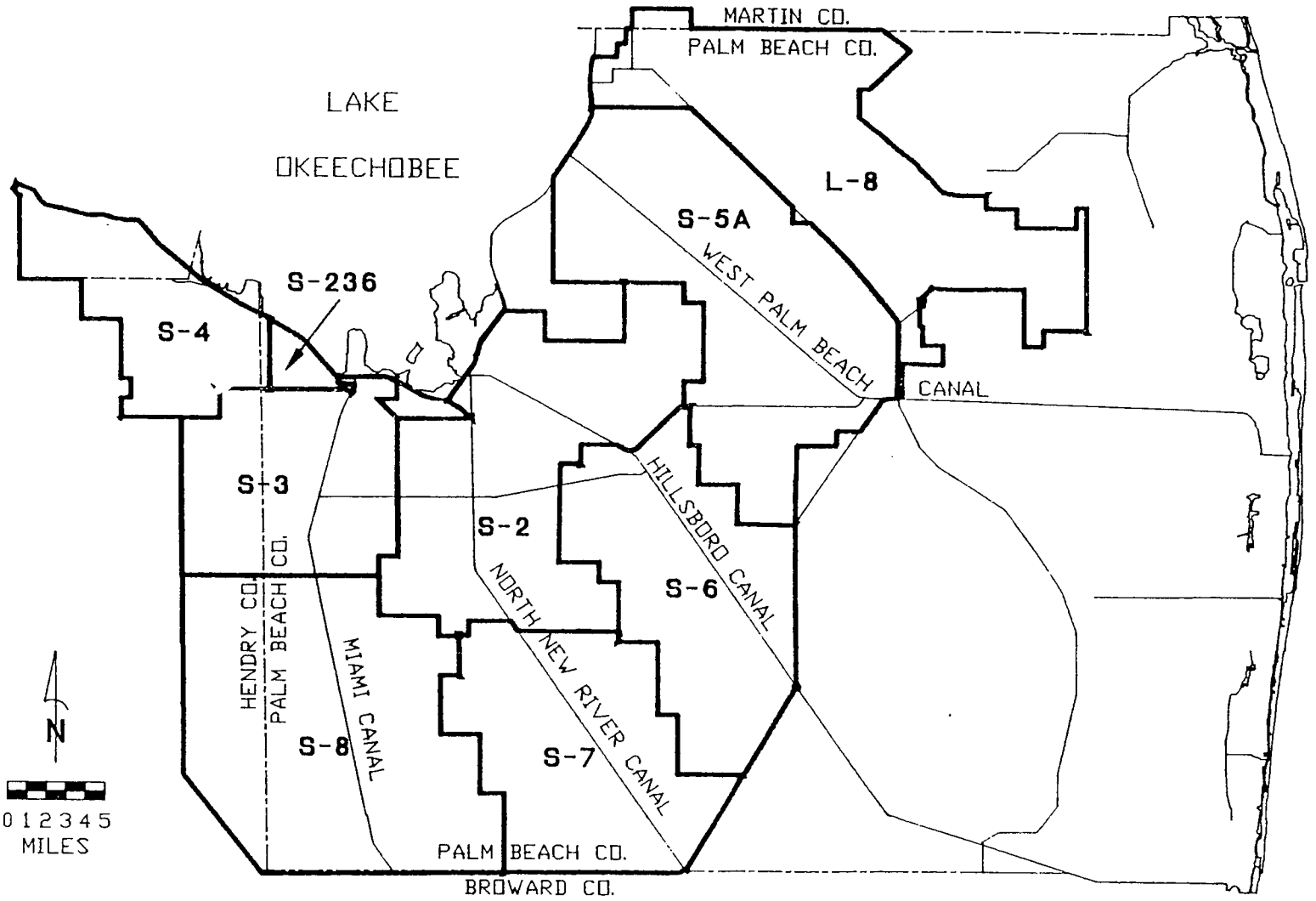


FIGURE 54 THE EVERGLADES AGRICULTURAL AREA DRAINAGE BASINS

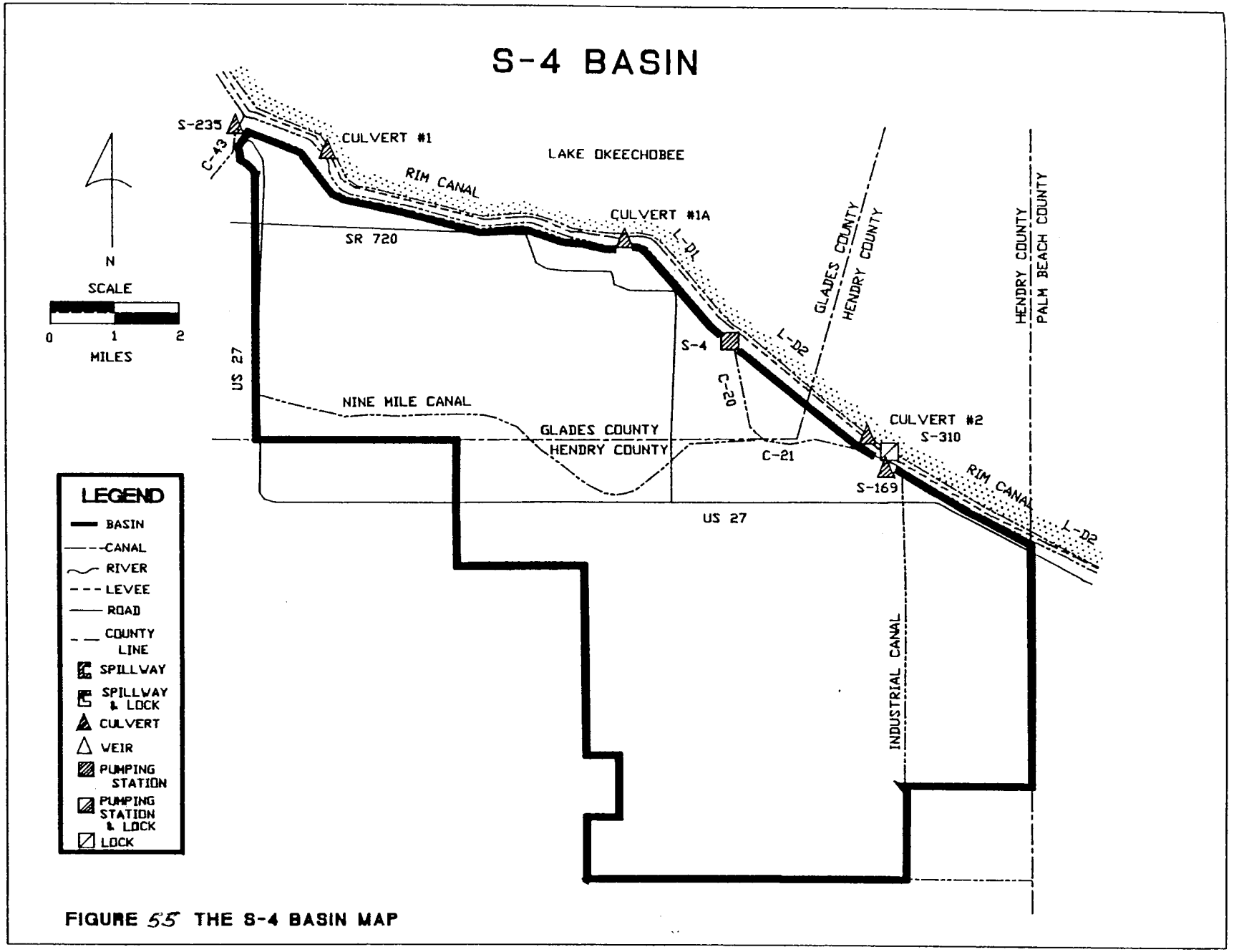


FIGURE 55 THE S-4 BASIN MAP

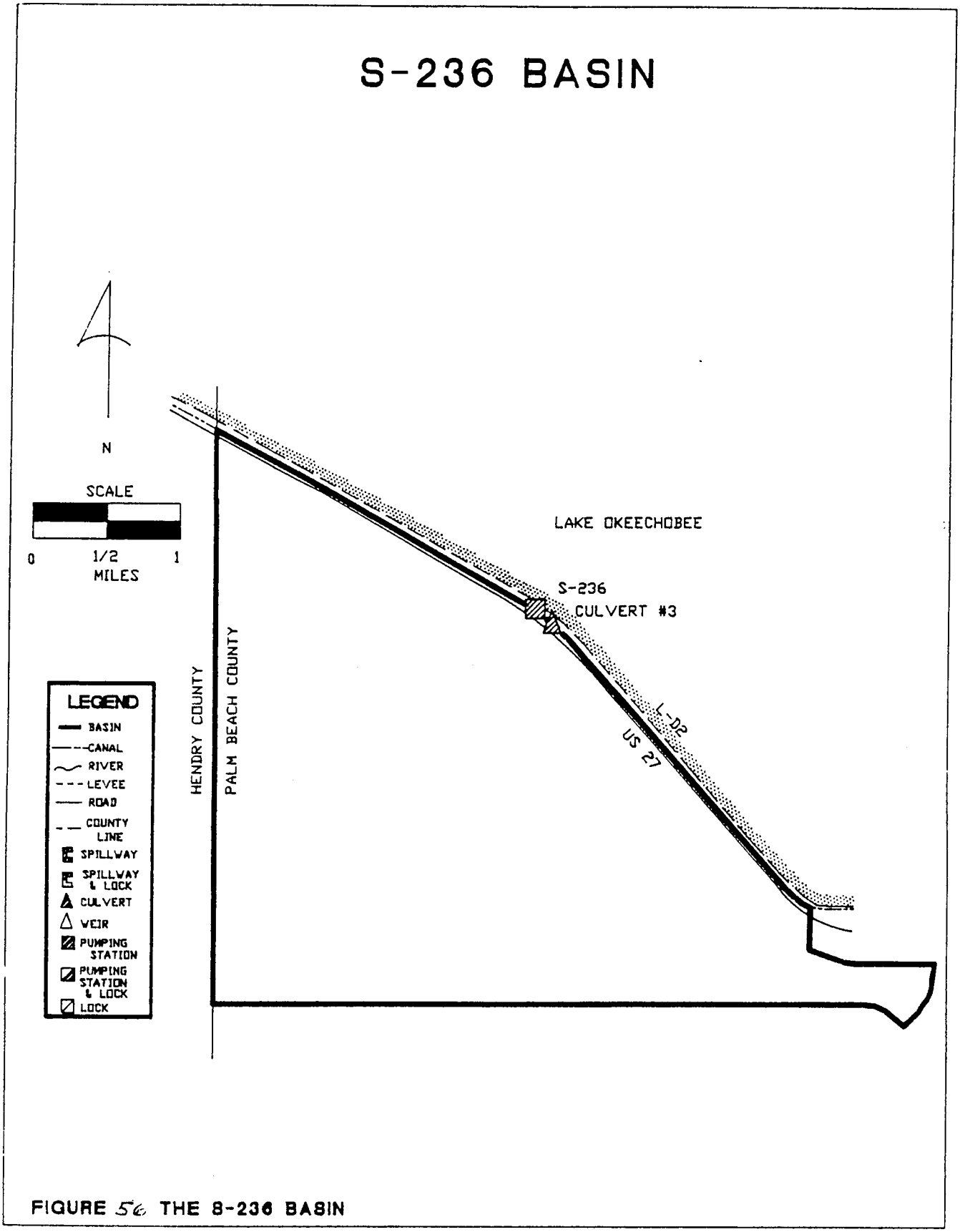


FIGURE 56 THE S-236 BASIN

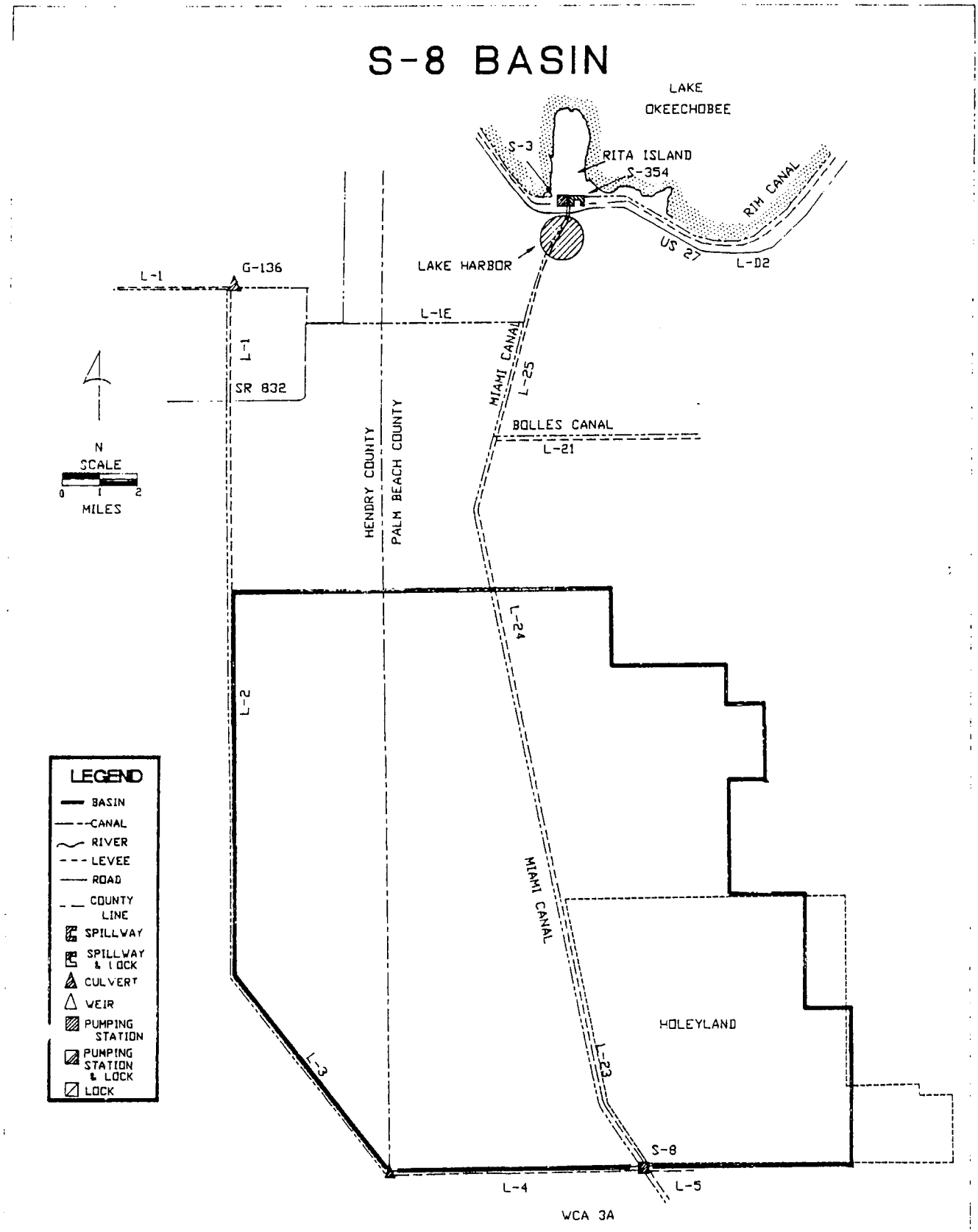


FIGURE 57 THE S-8 BASIN MAP

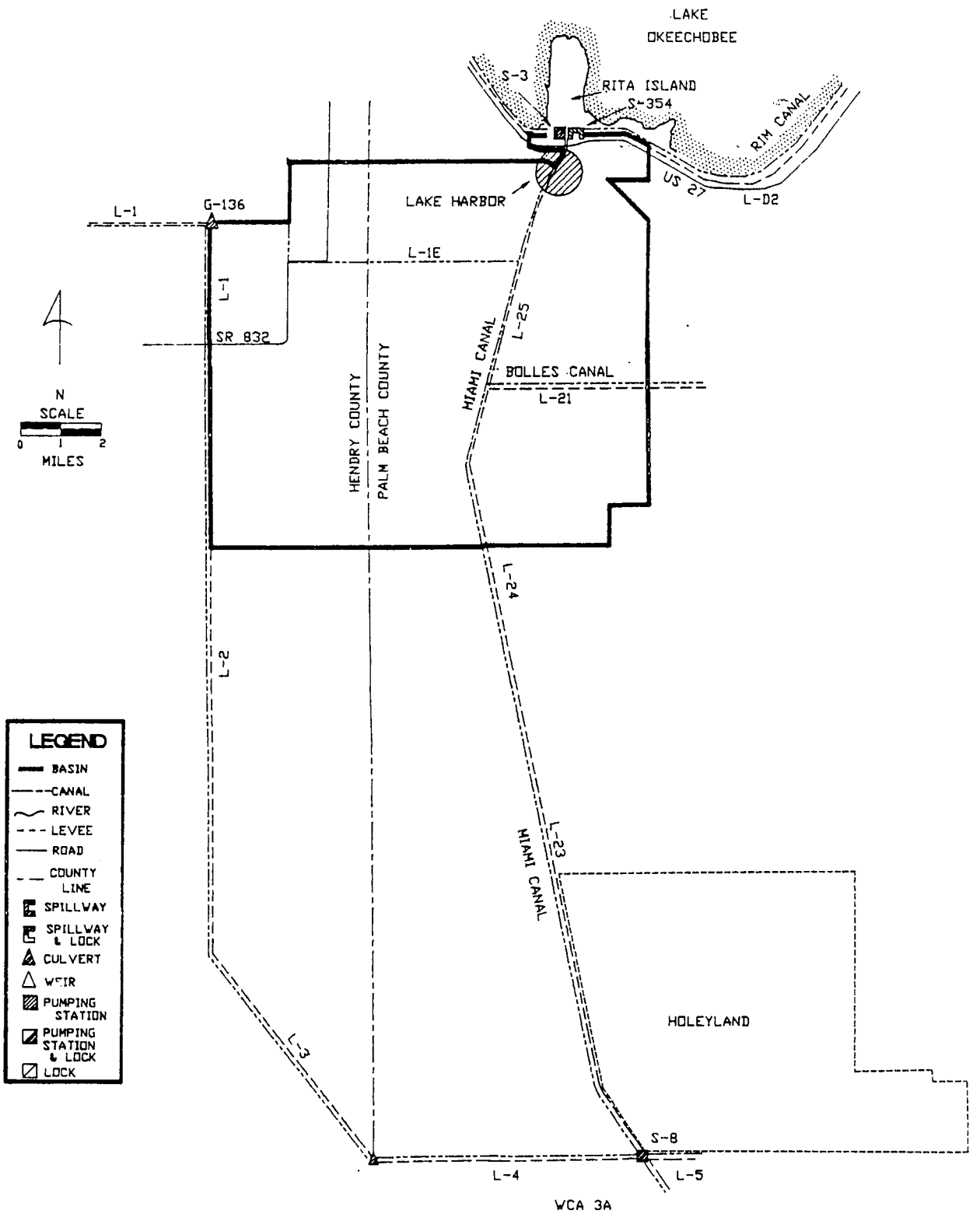


FIGURE 58 THE S-3 BASIN MAP

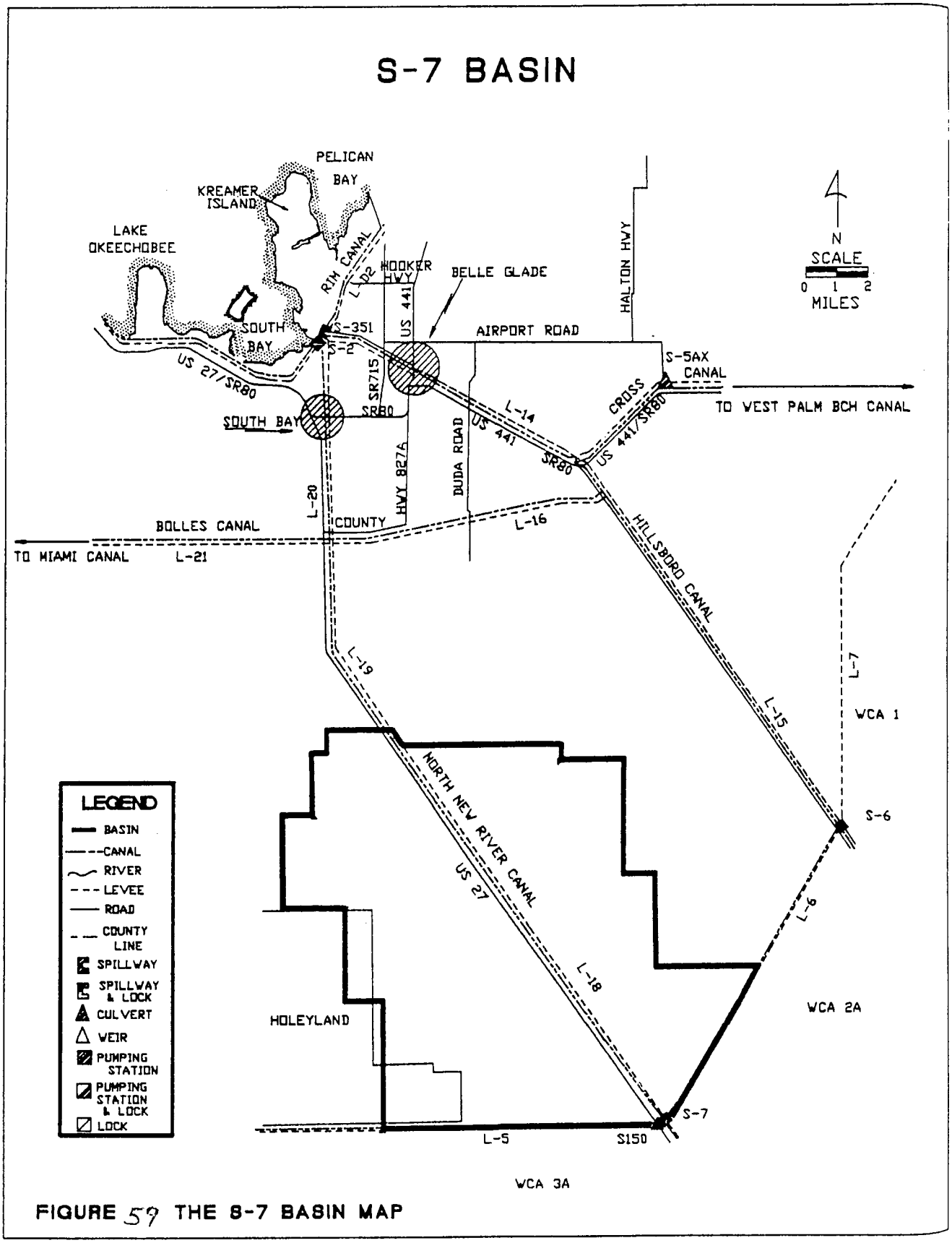


FIGURE 59 THE S-7 BASIN MAP

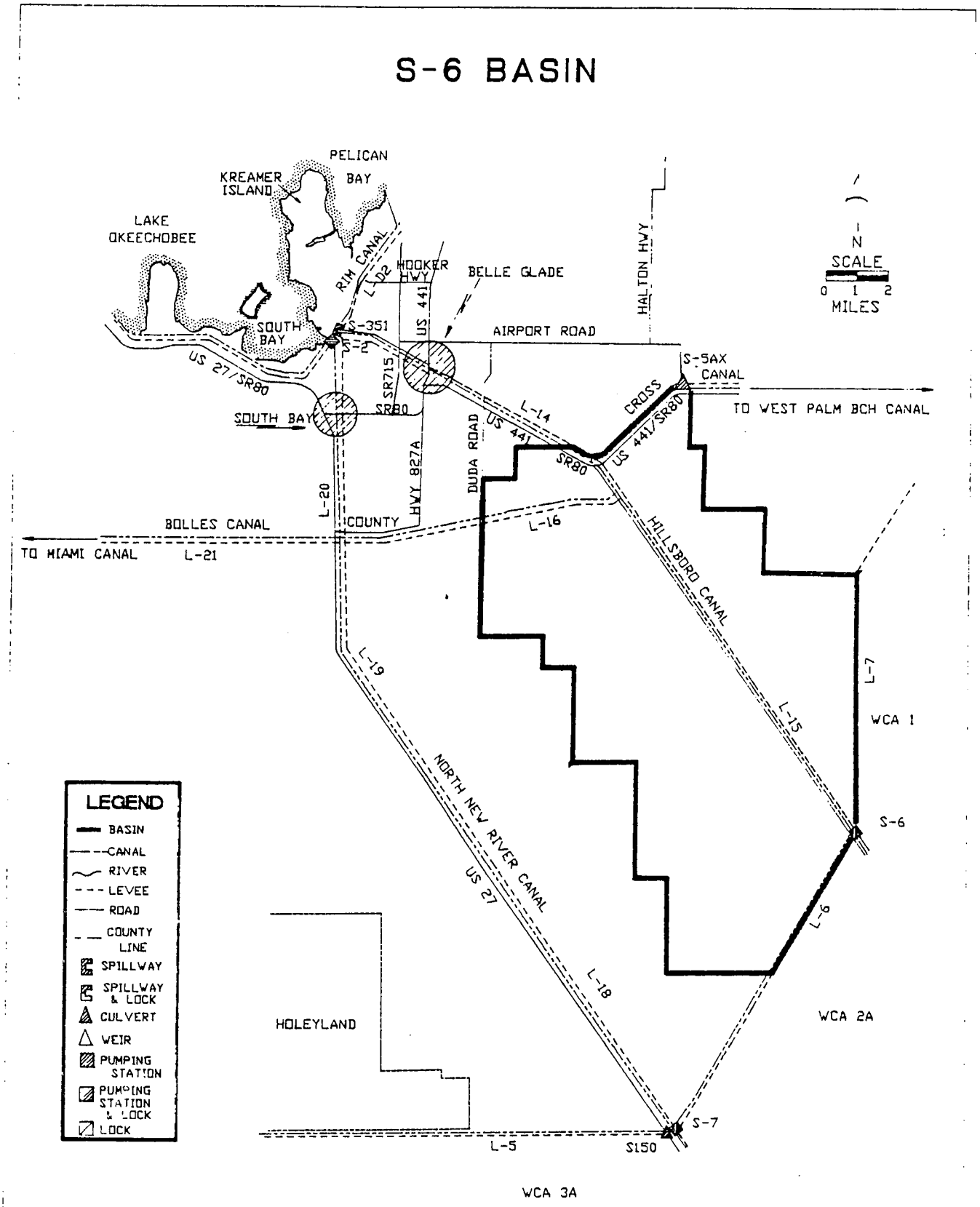


FIGURE 60 THE S-6 BASIN MAP

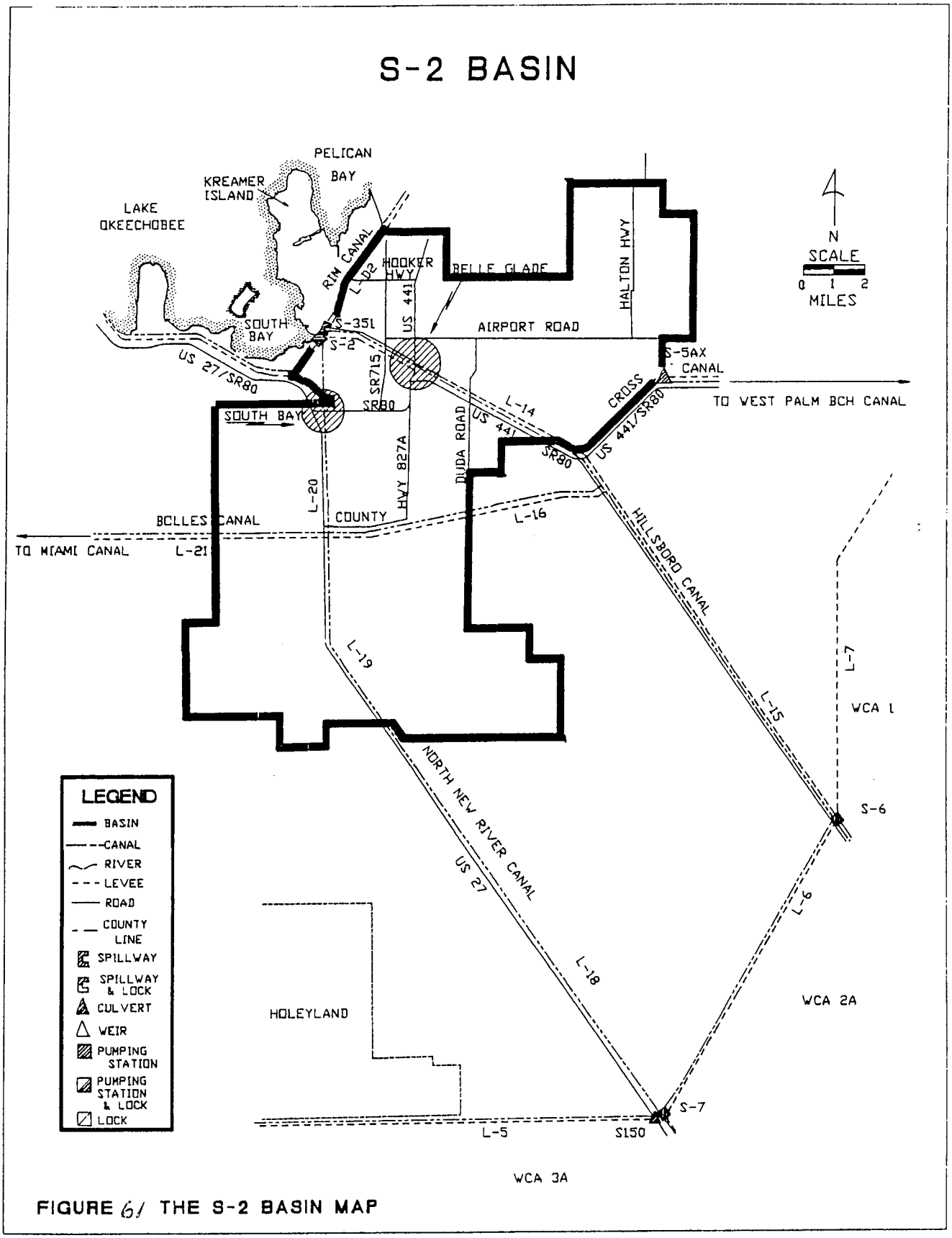


FIGURE 61 THE S-2 BASIN MAP

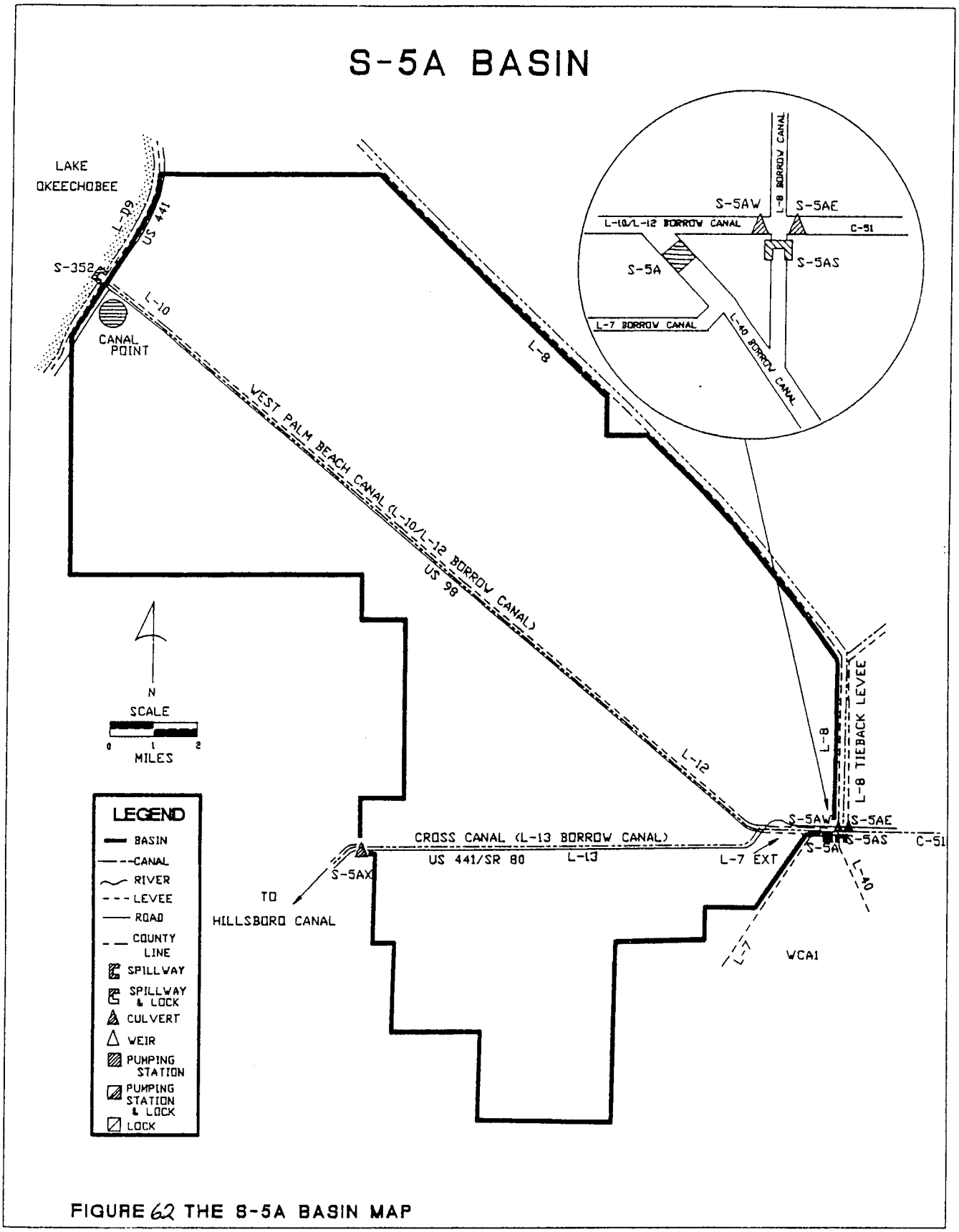


FIGURE 62 THE S-5A BASIN MAP

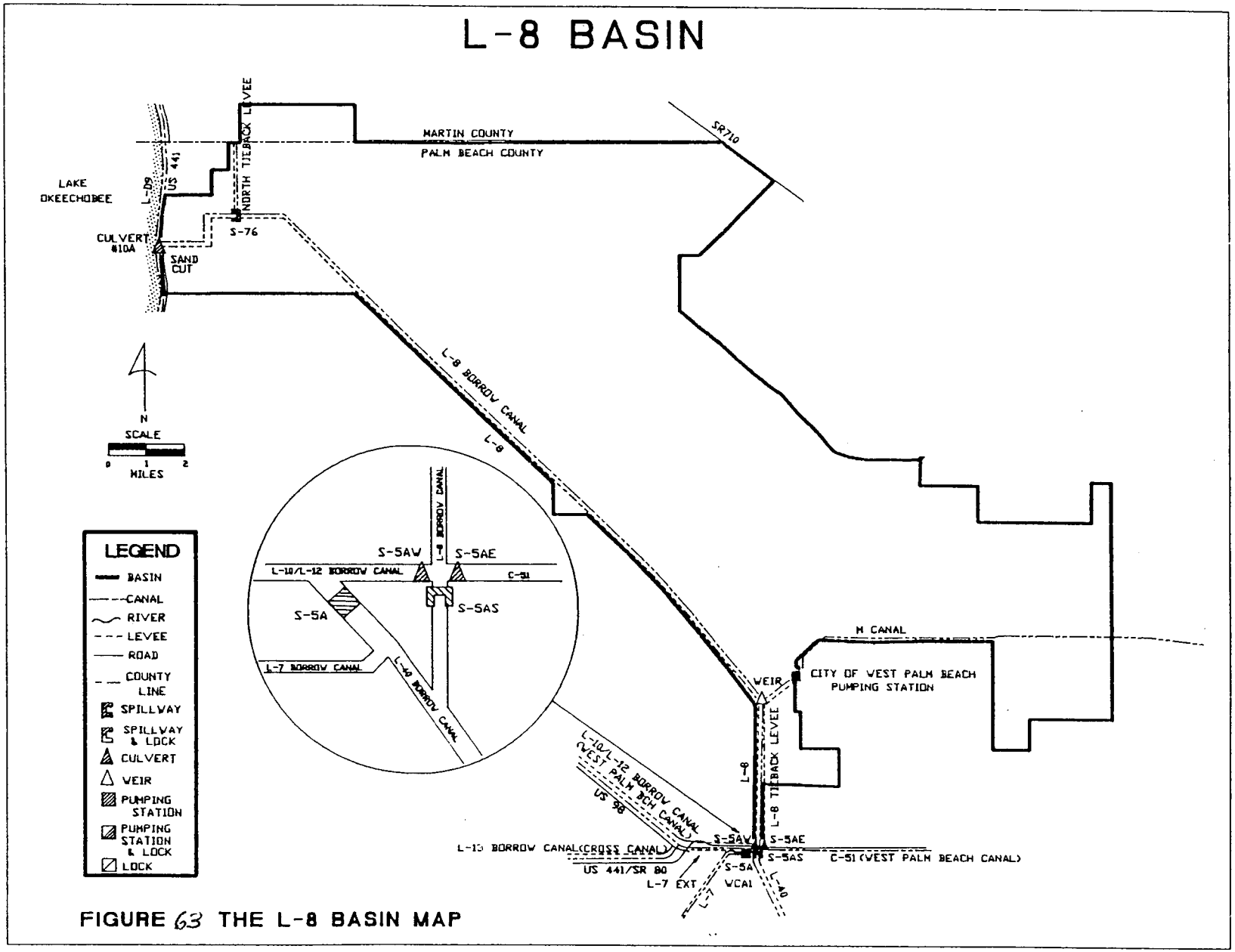


FIGURE 63 THE L-8 BASIN MAP

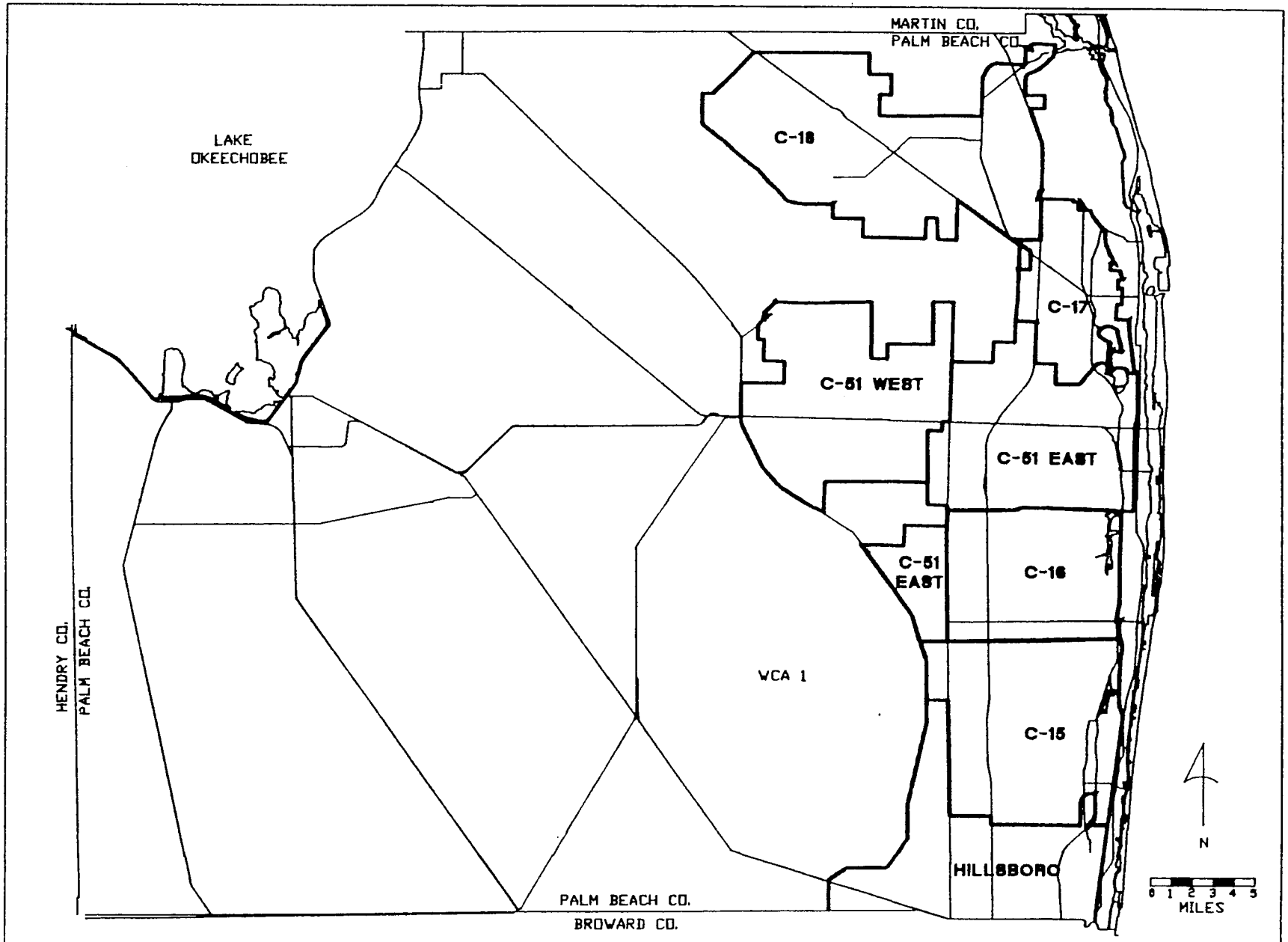


FIGURE 64 PALM BEACH COUNTY DRAINAGE BASINS

HILLSBORO CANAL BASIN

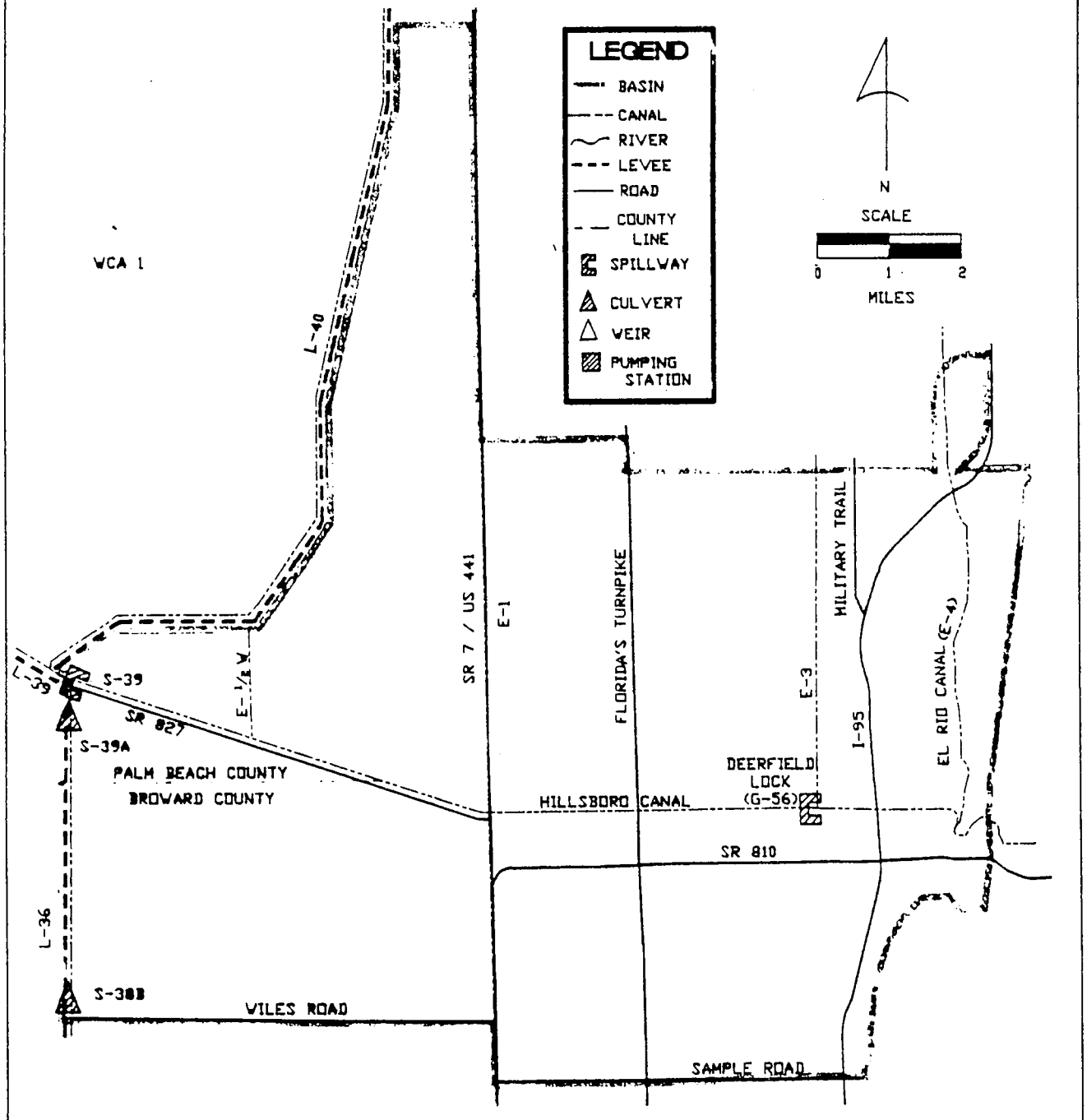


FIGURE 65 THE HILLSBORO CANAL BASIN

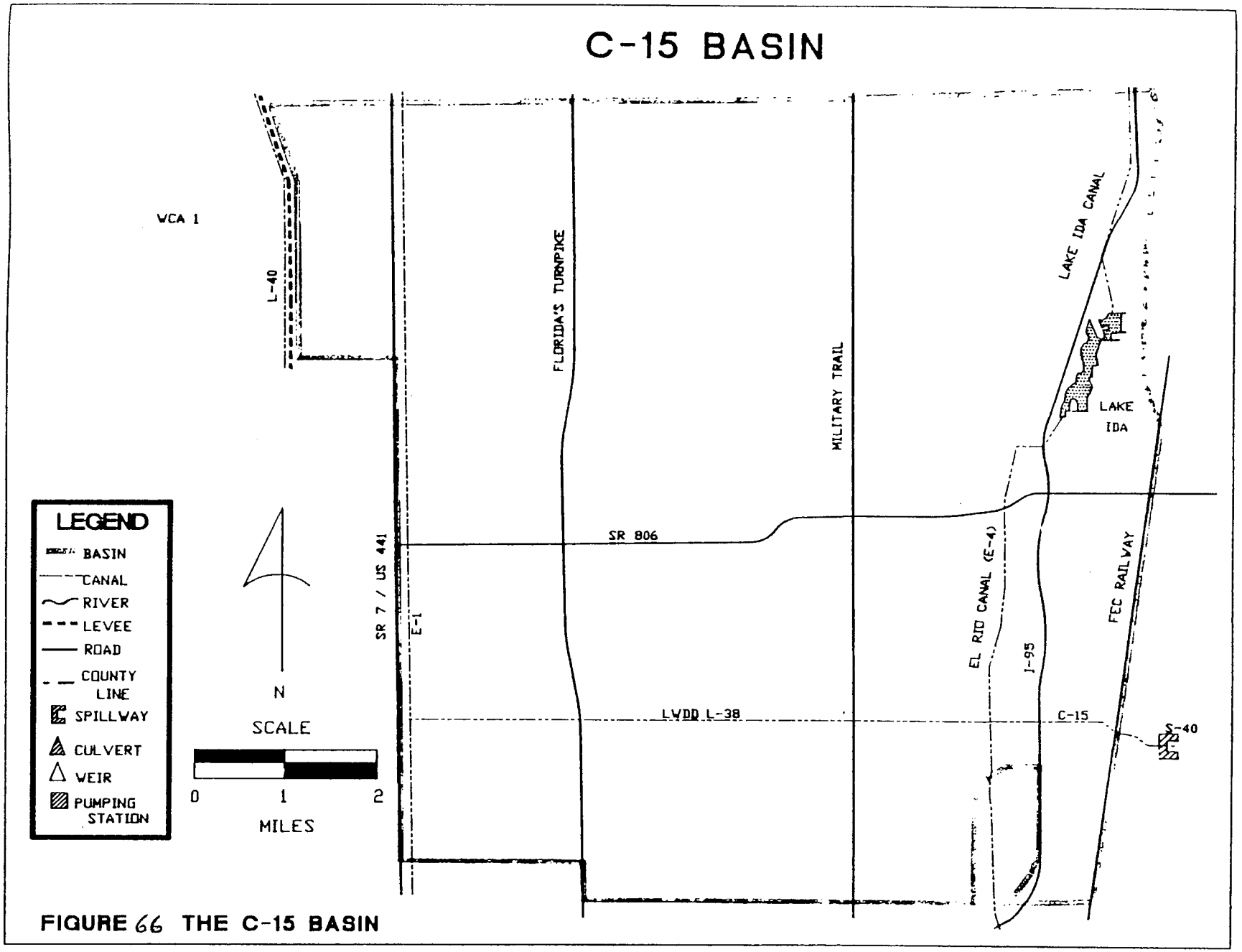


FIGURE 66 THE C-15 BASIN

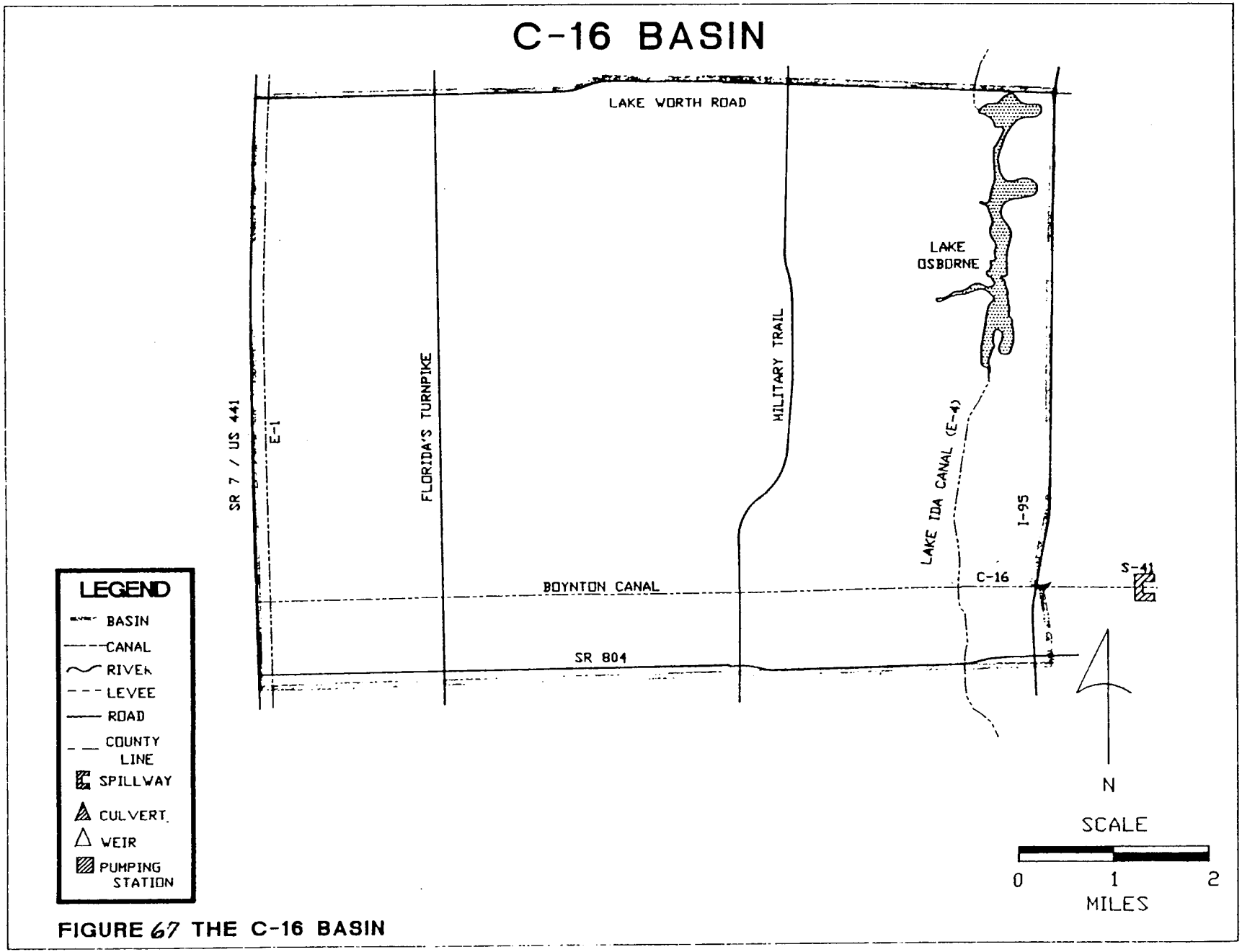


FIGURE 67 THE C-16 BASIN

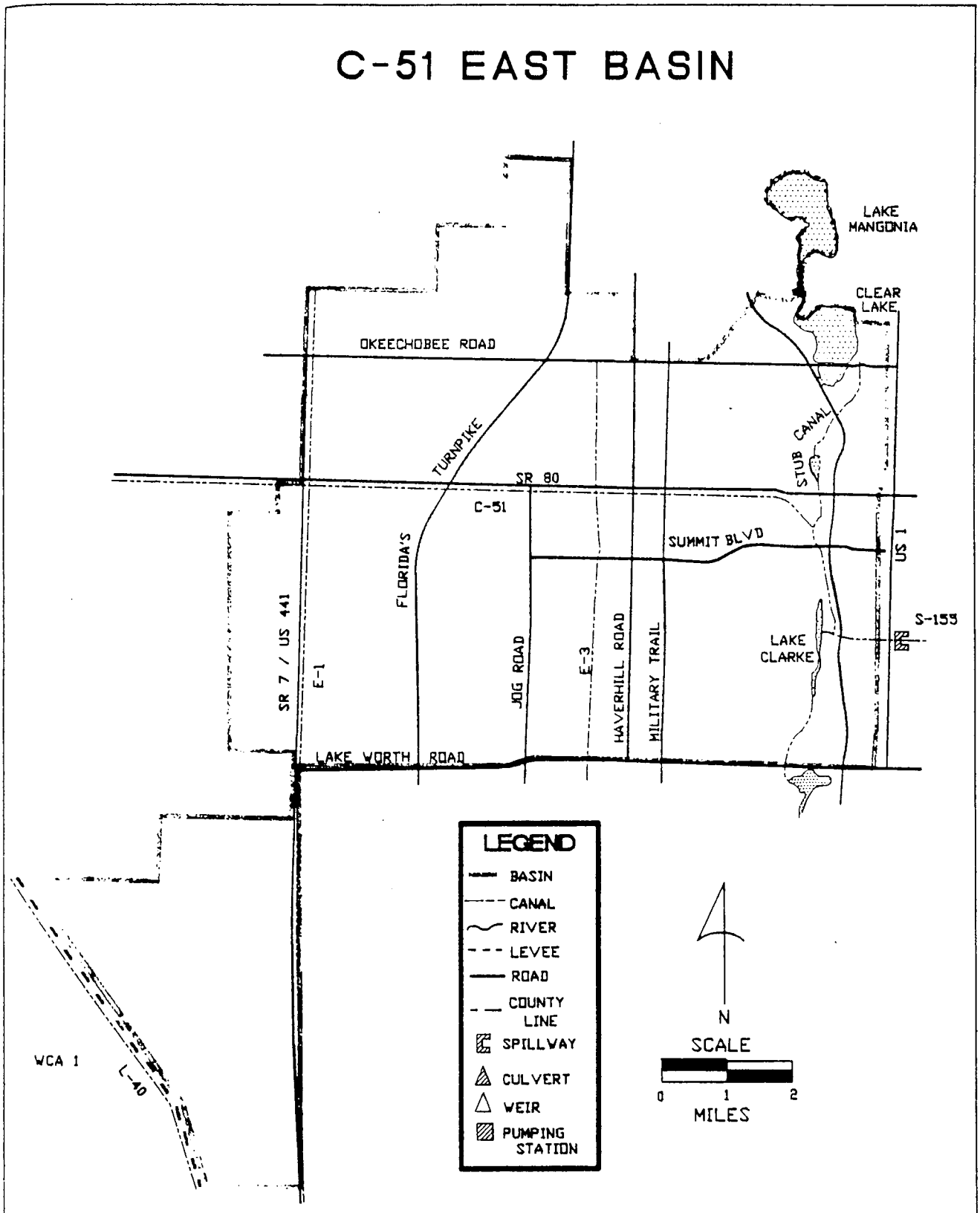


FIGURE 68 THE C-51 EAST BASIN

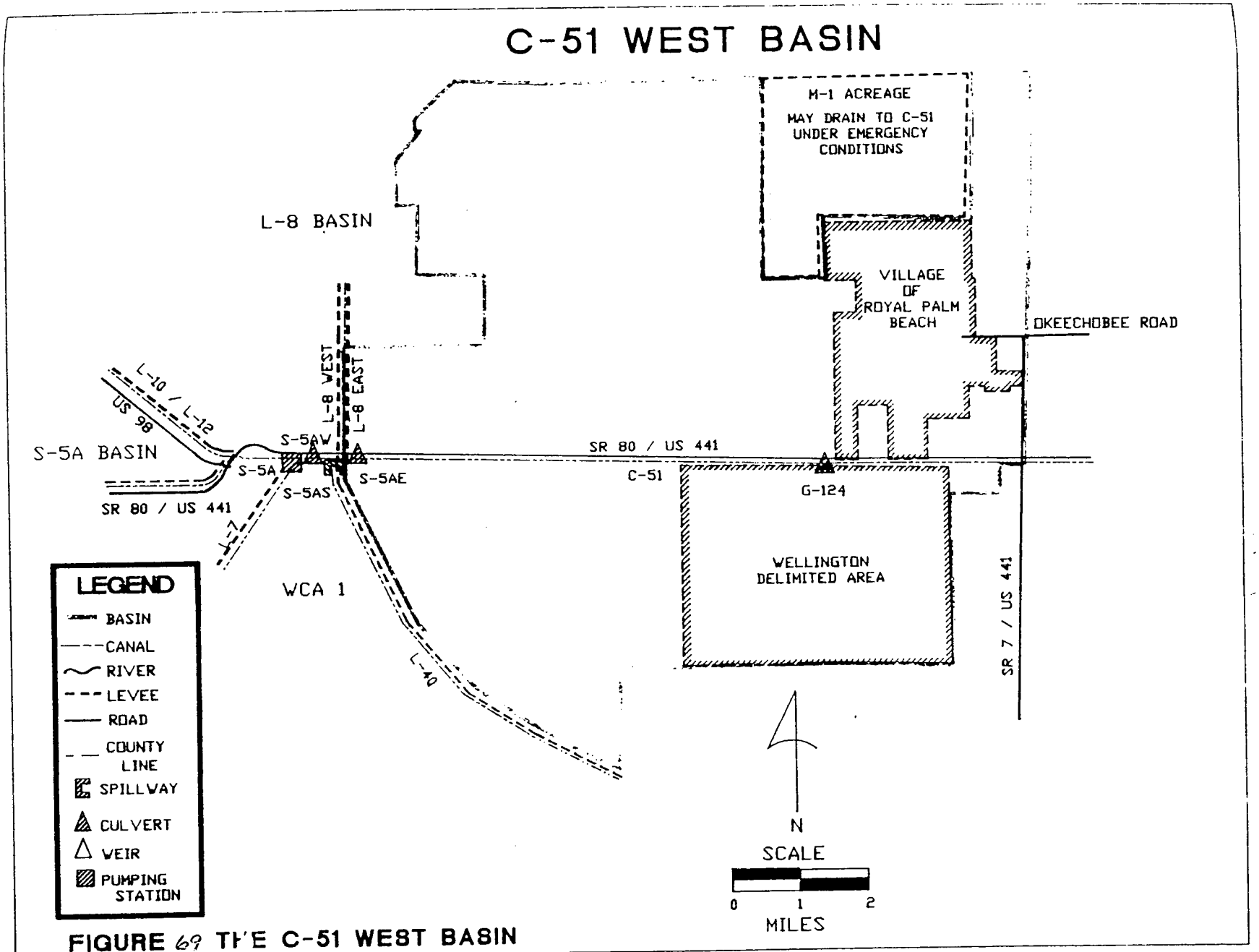
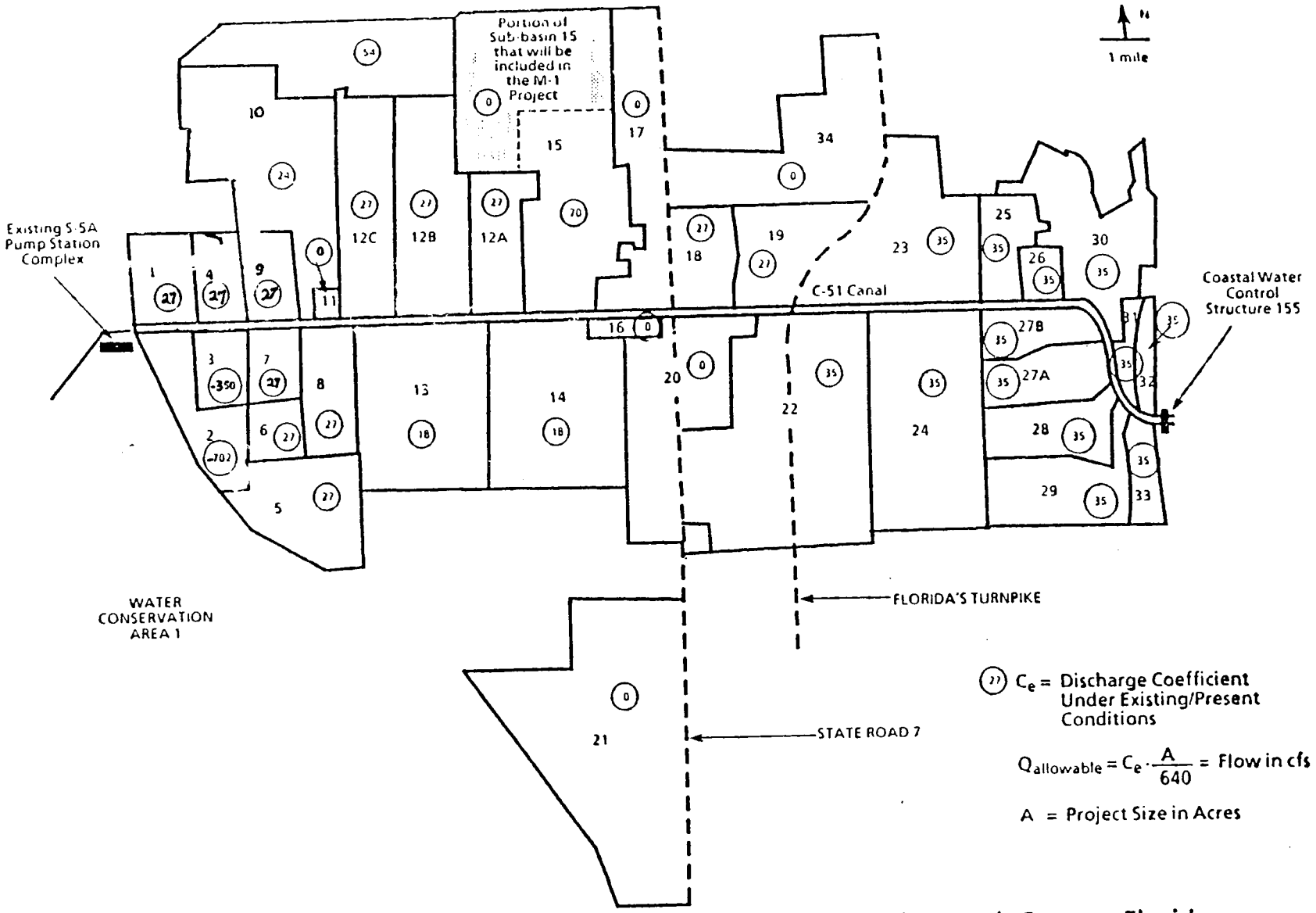


FIGURE 69 THE C-51 WEST BASIN



Discharge Coefficients for the Sub-basins of the C-51 Basin in Palm Beach County, Florida.

Figure 70

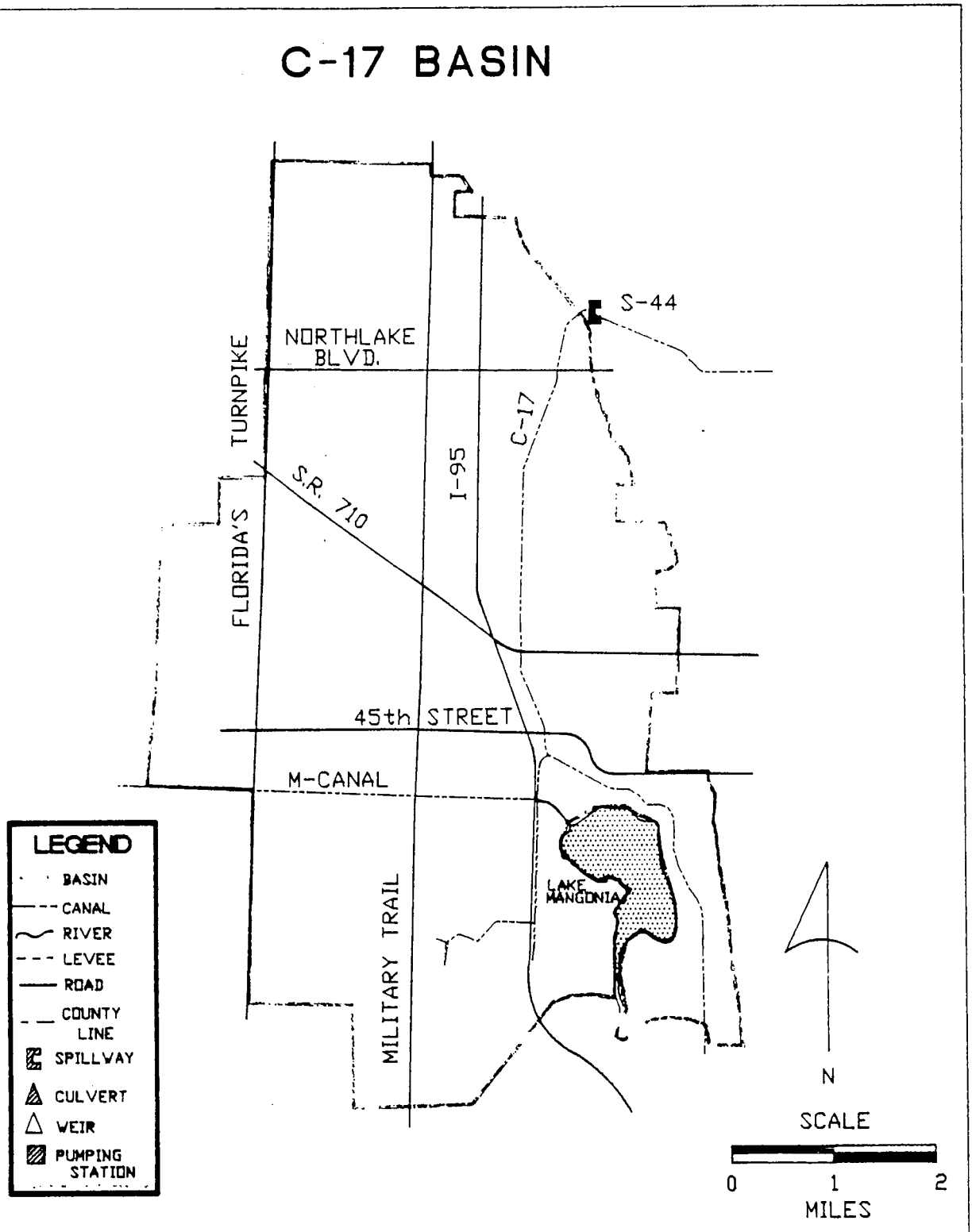


FIGURE 7/ THE C-17 (EARMAN RIVER CANAL) BASIN

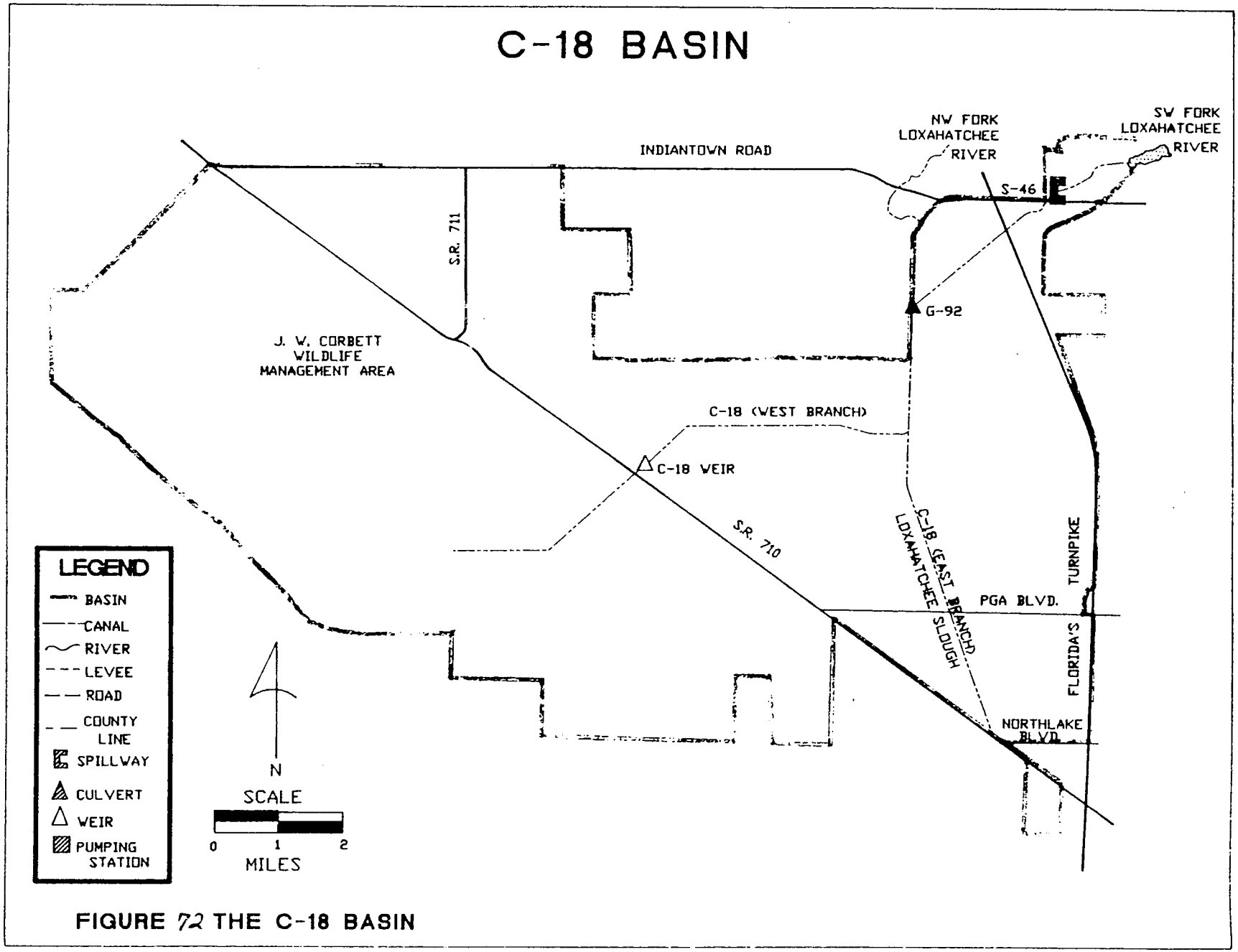


FIGURE 72 THE C-18 BASIN

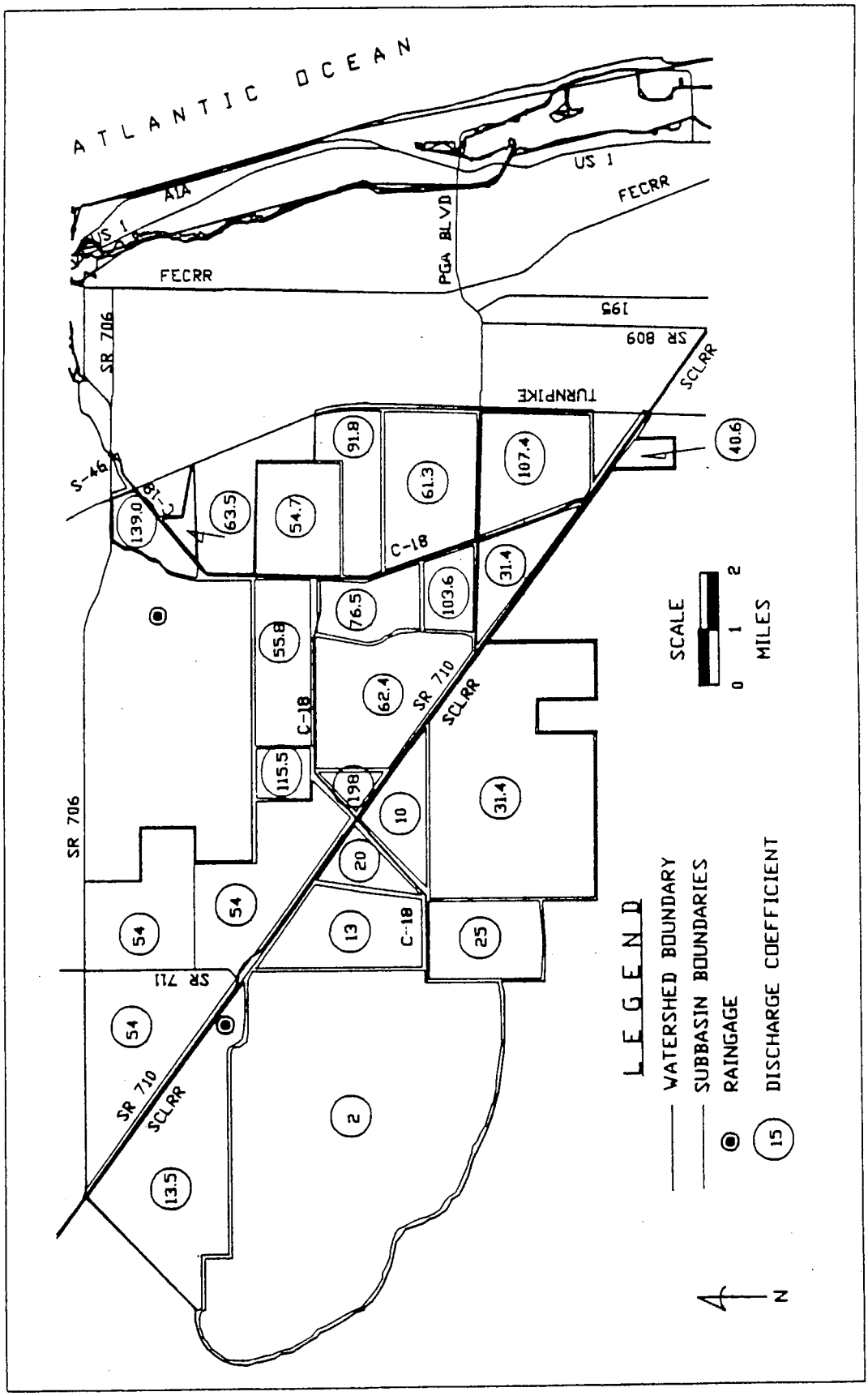


FIGURE 73 Discharge Coefficient, Ce, for New Development. Permitted Discharge Qp = Ce * A/640 Where A is Drainage Area in Acres

DISCHARGE COEFFICIENTS FOR SUBBASINS IN THE C-18 BASIN

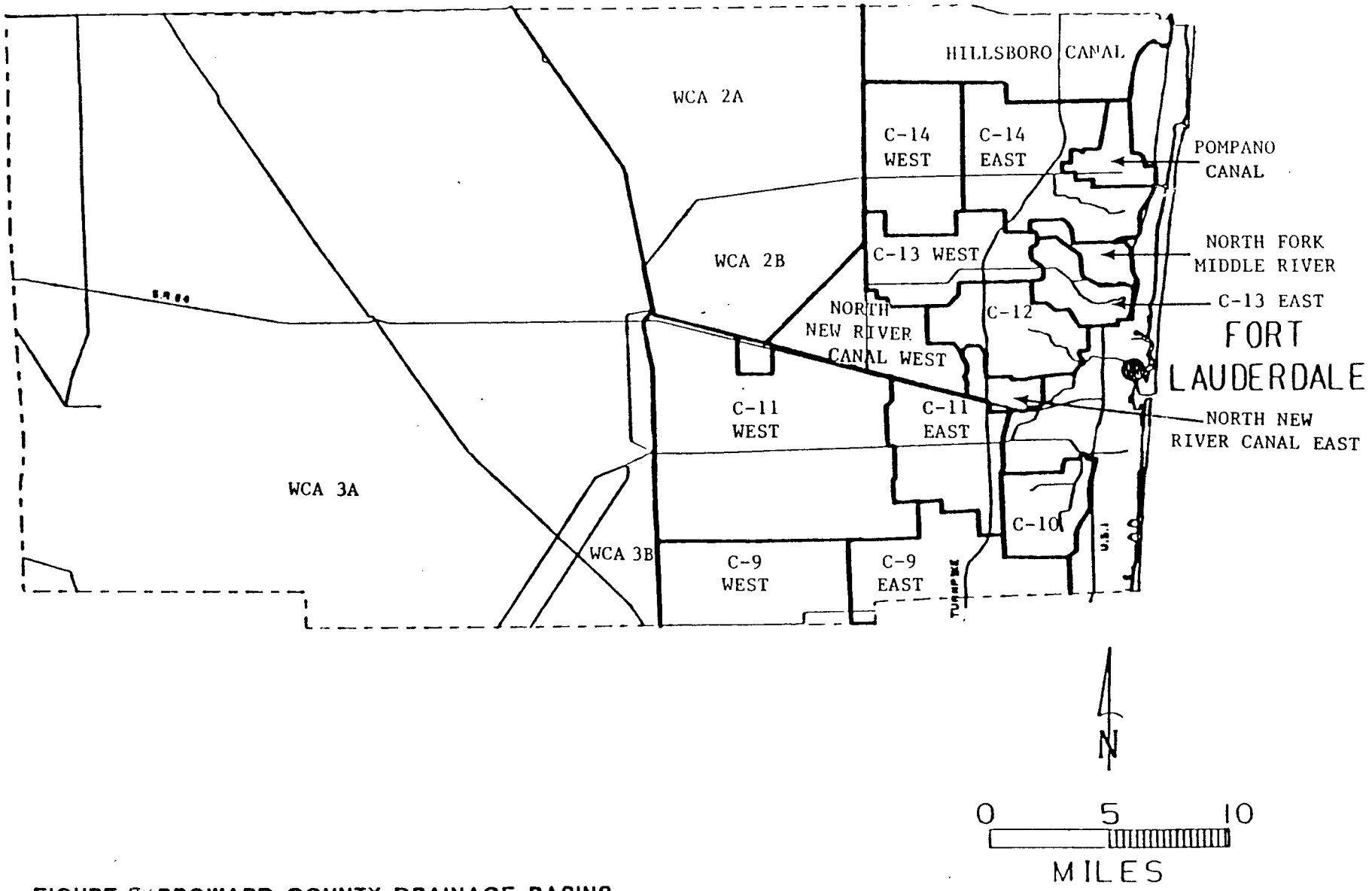


FIGURE 7y BROWARD COUNTY DRAINAGE BASINS

C-9 WEST

~29.000 ACRES

~11.000 ACRES DADE

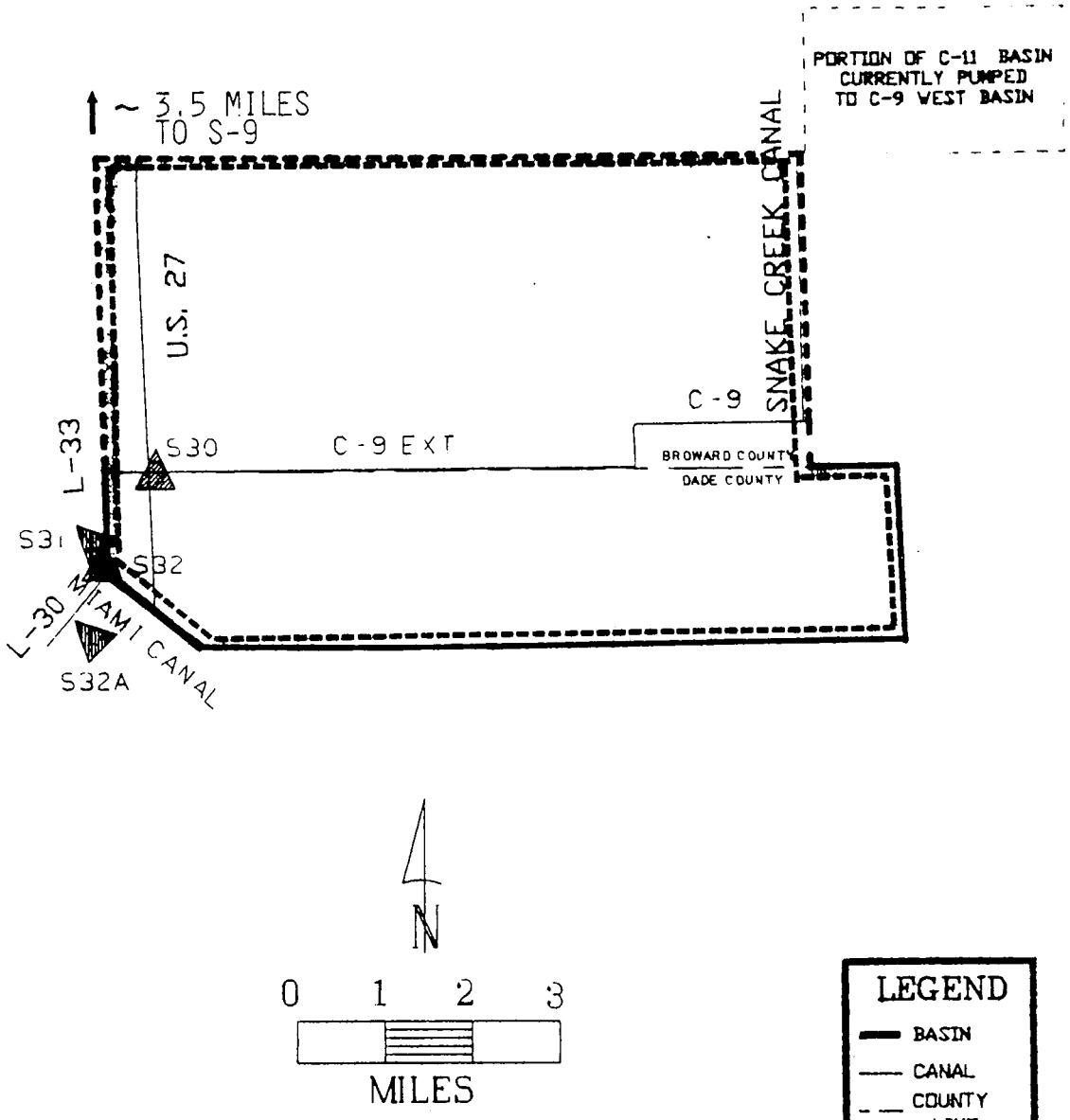
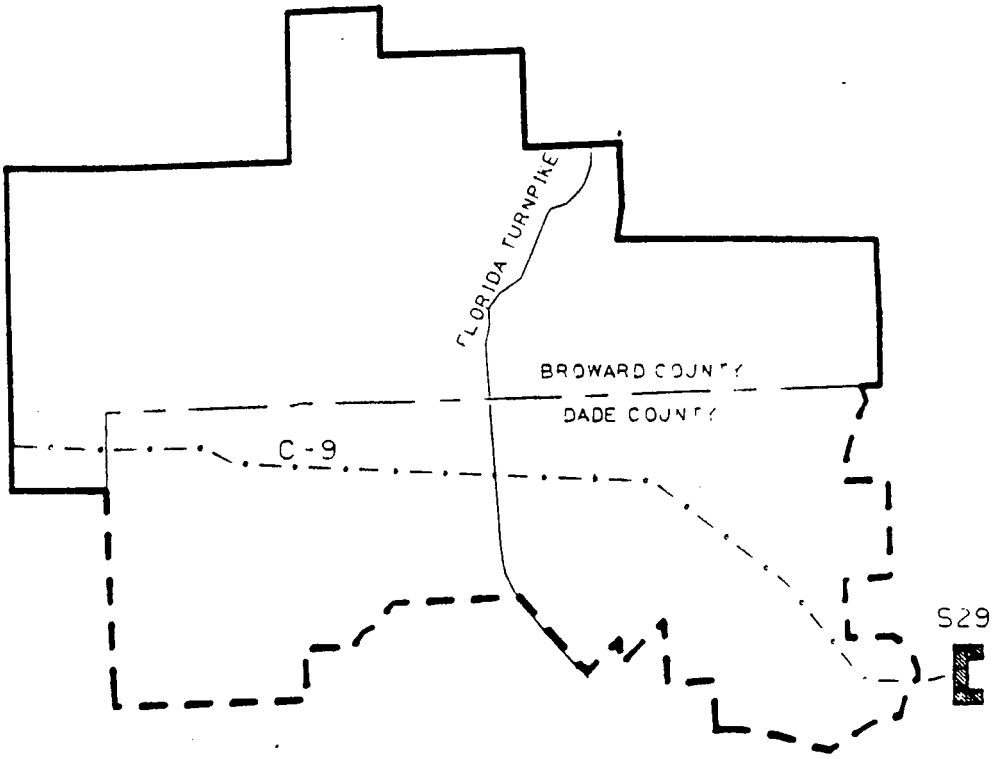


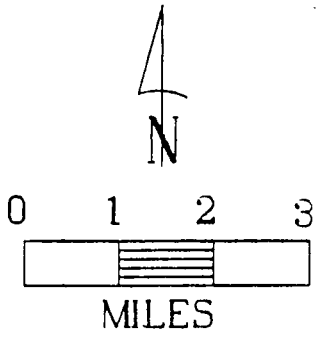
FIGURE 75 C-9 WEST BASIN MAP

C-9 EAST BASIN

34.000 ACRES

16.000 ACRES BROWARD





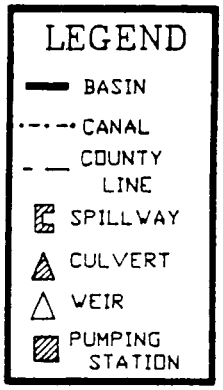


FIGURE 76 C-9 EAST BASIN MAP

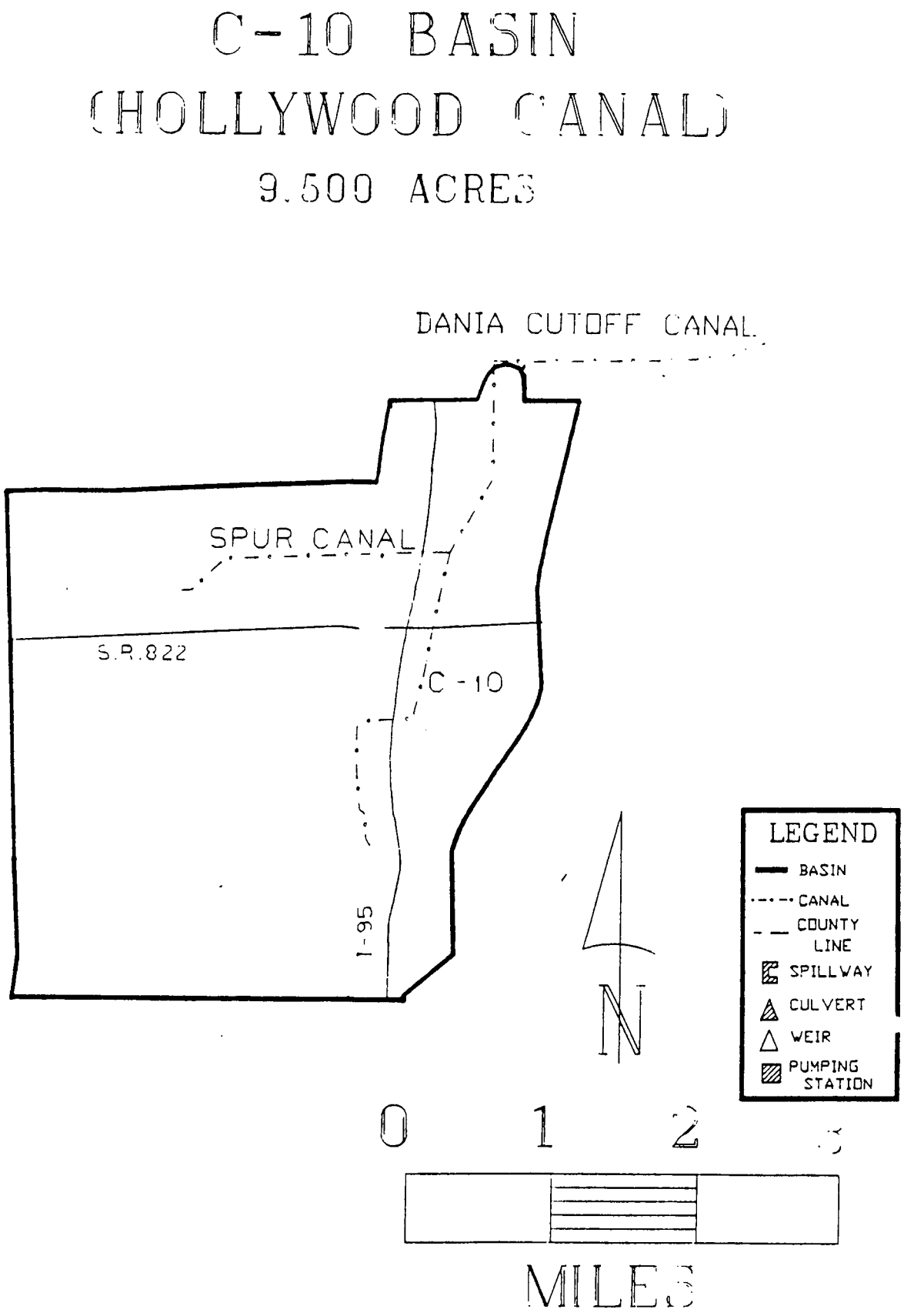


FIGURE 77 C-10 BASIN MAP

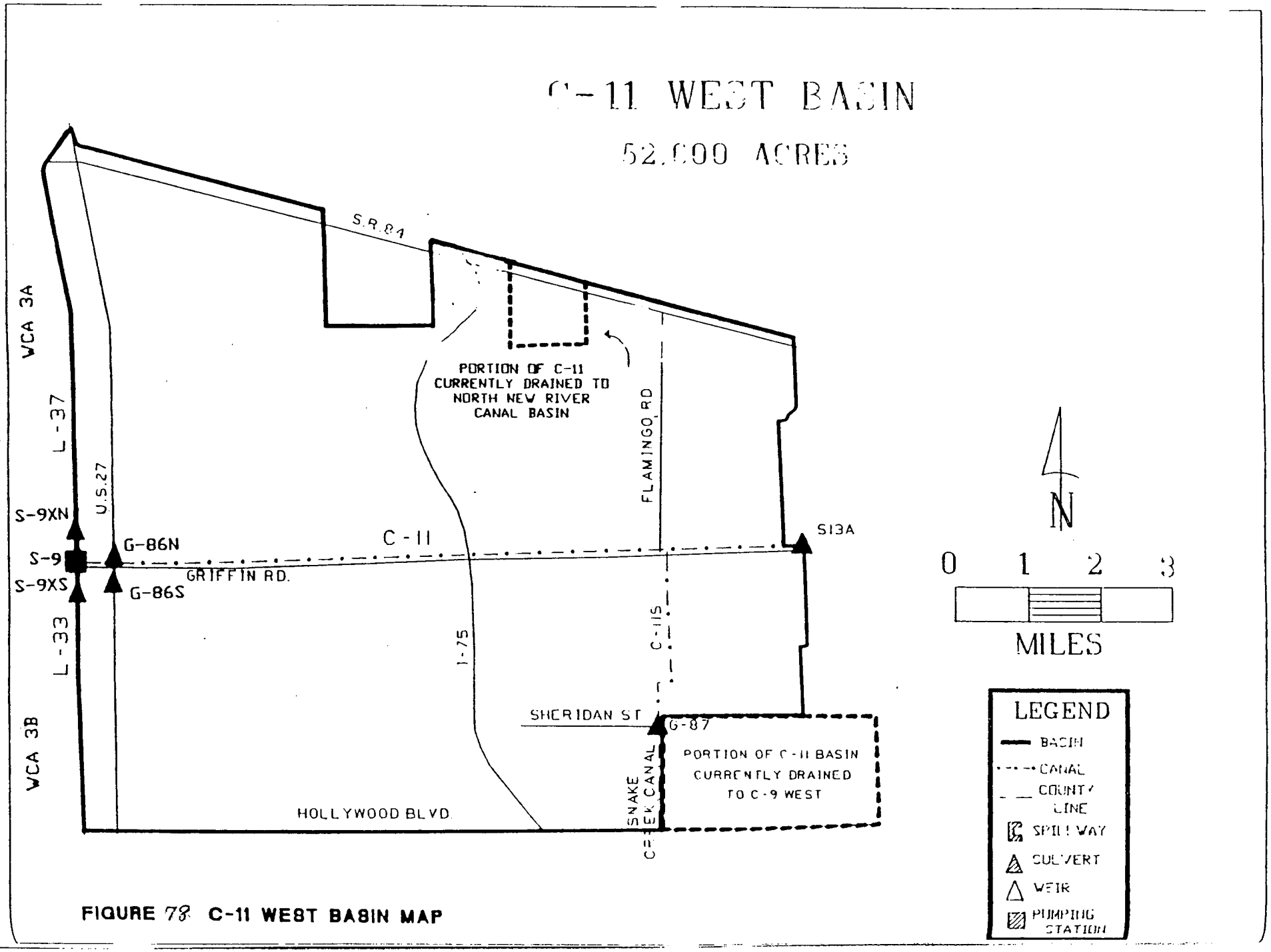


FIGURE 78 C-11 WEST BASIN MAP

C-11 EAST
15,000 ACRES

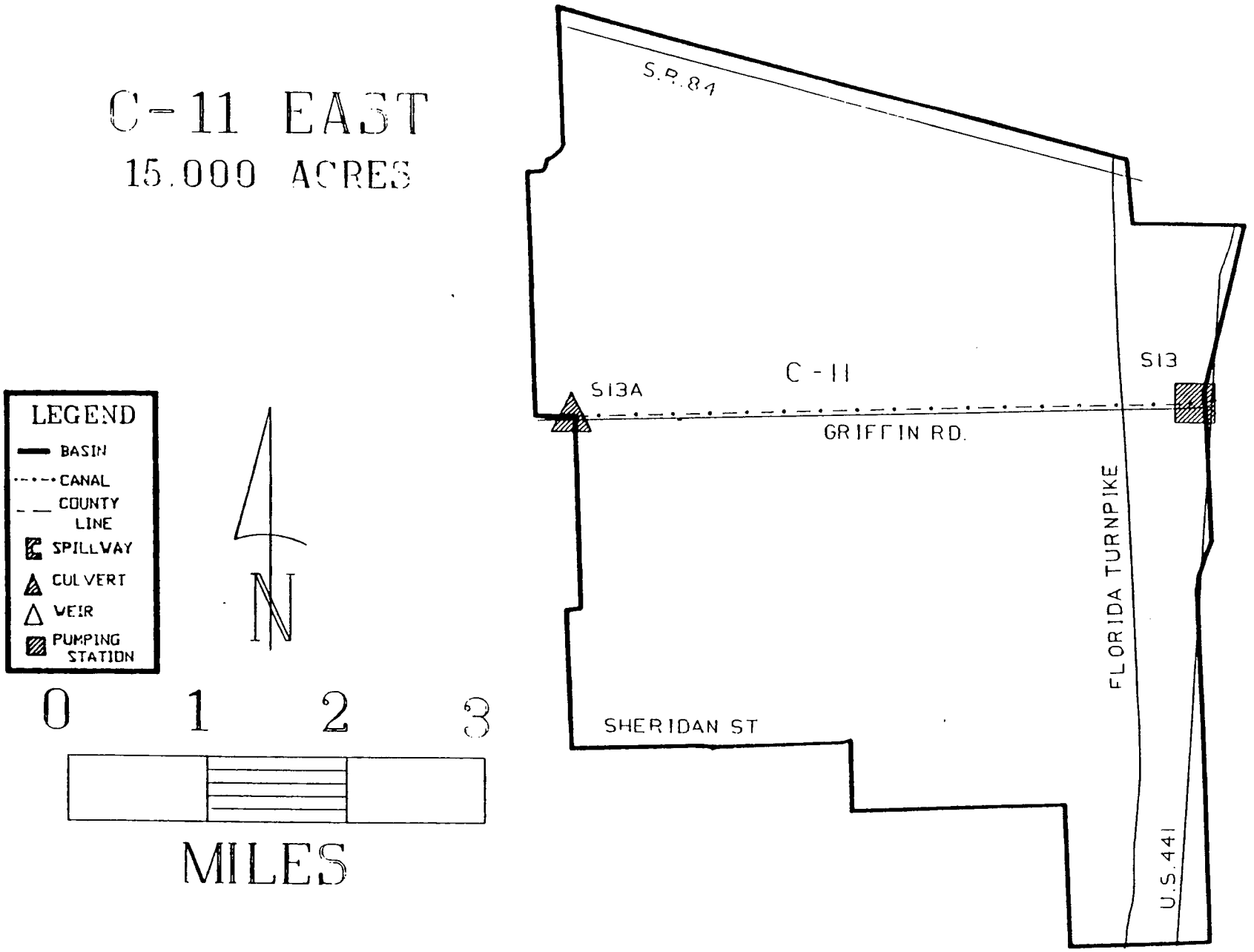


FIGURE 79 C-11 EAST BASIN MAP

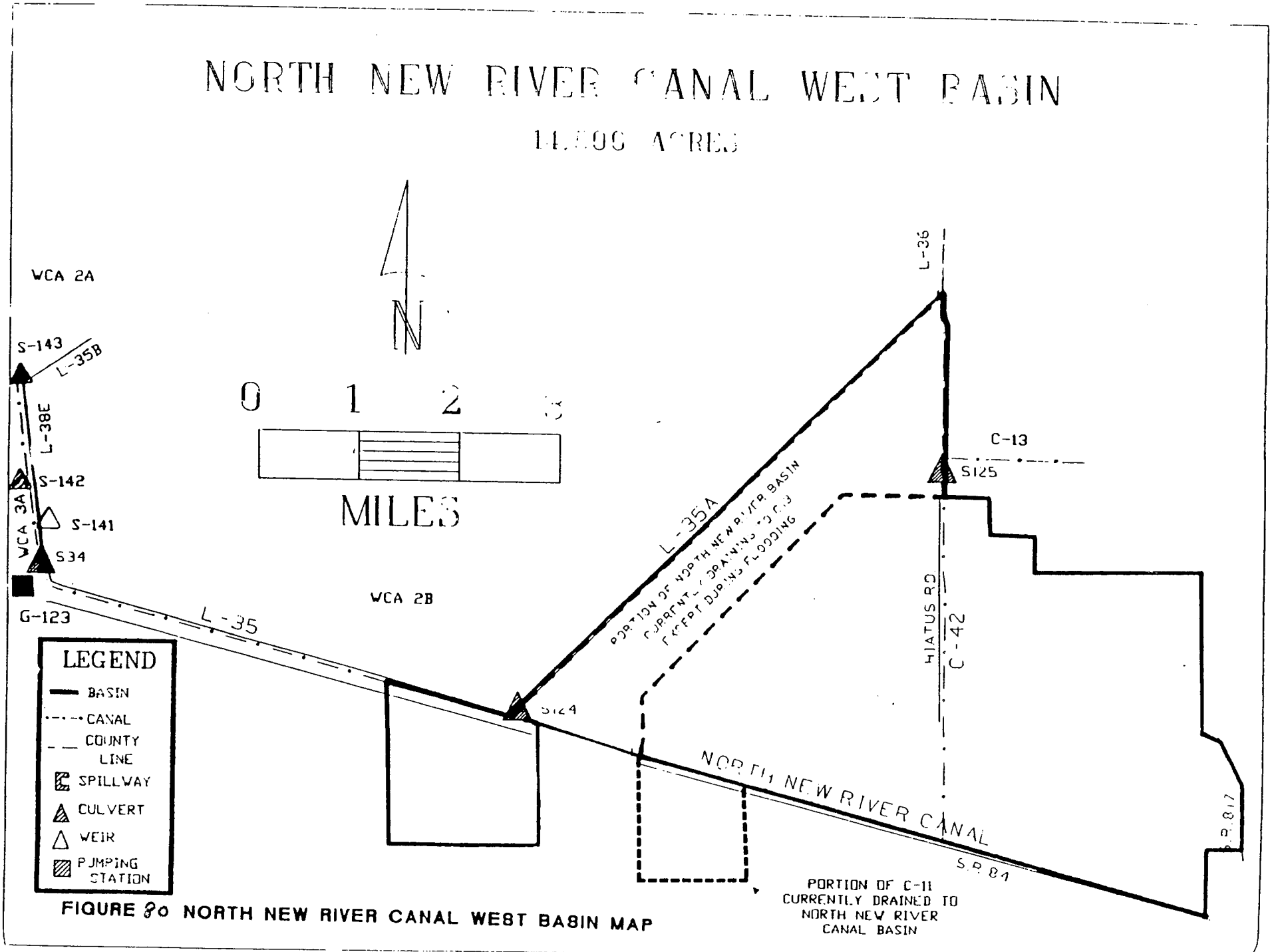


FIGURE 8o NORTH NEW RIVER CANAL WEST BASIN MAP

NORTH NEW RIVER CANAL EAST BASIN

4,800 ACRES

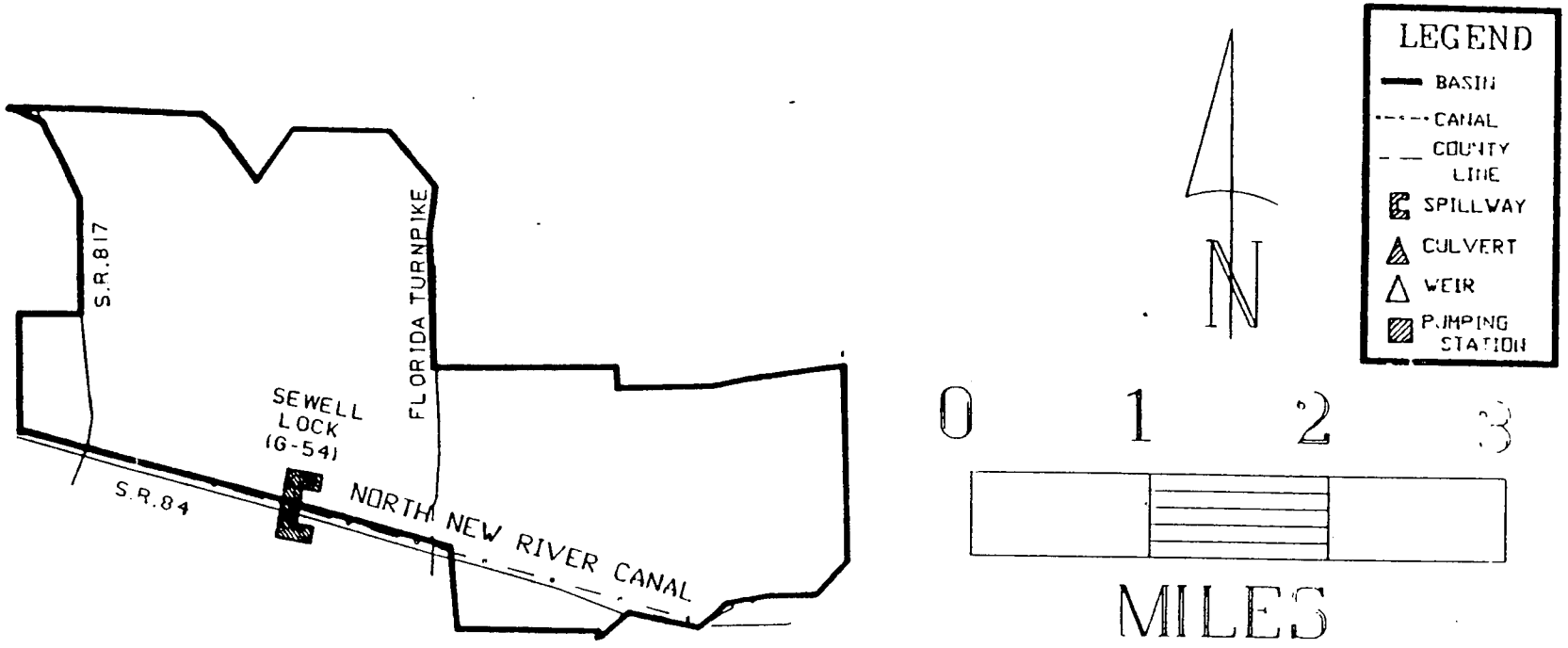


FIGURE 3/ NORTH NEW RIVER CANAL EAST BASIN MAP

C-12 BASIN
(PLANTATION CANAL)
12,100 ACRES

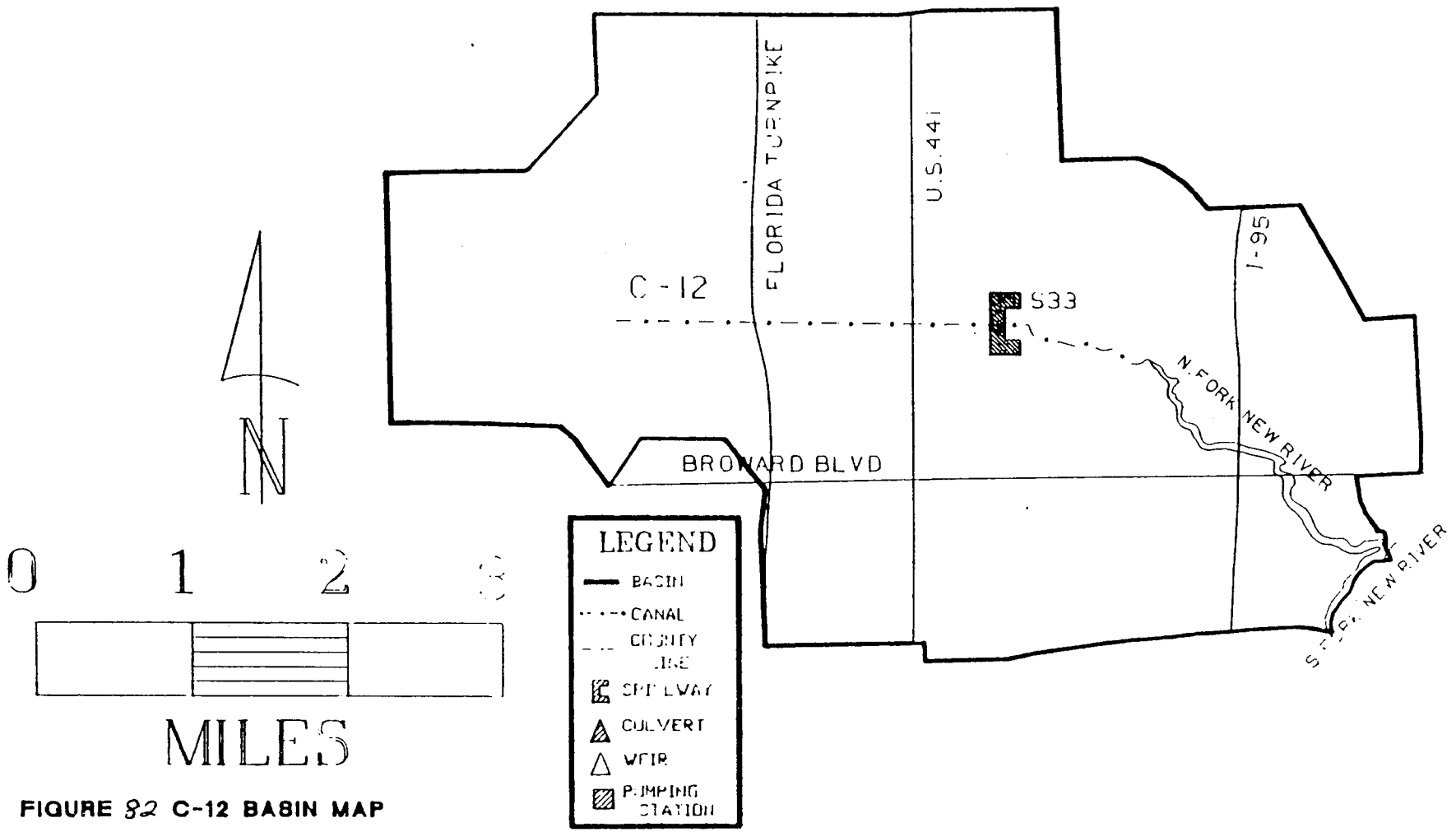


FIGURE 82 C-12 BASIN MAP

NORTH FORK MIDDLE RIVER

3,400 ACRES

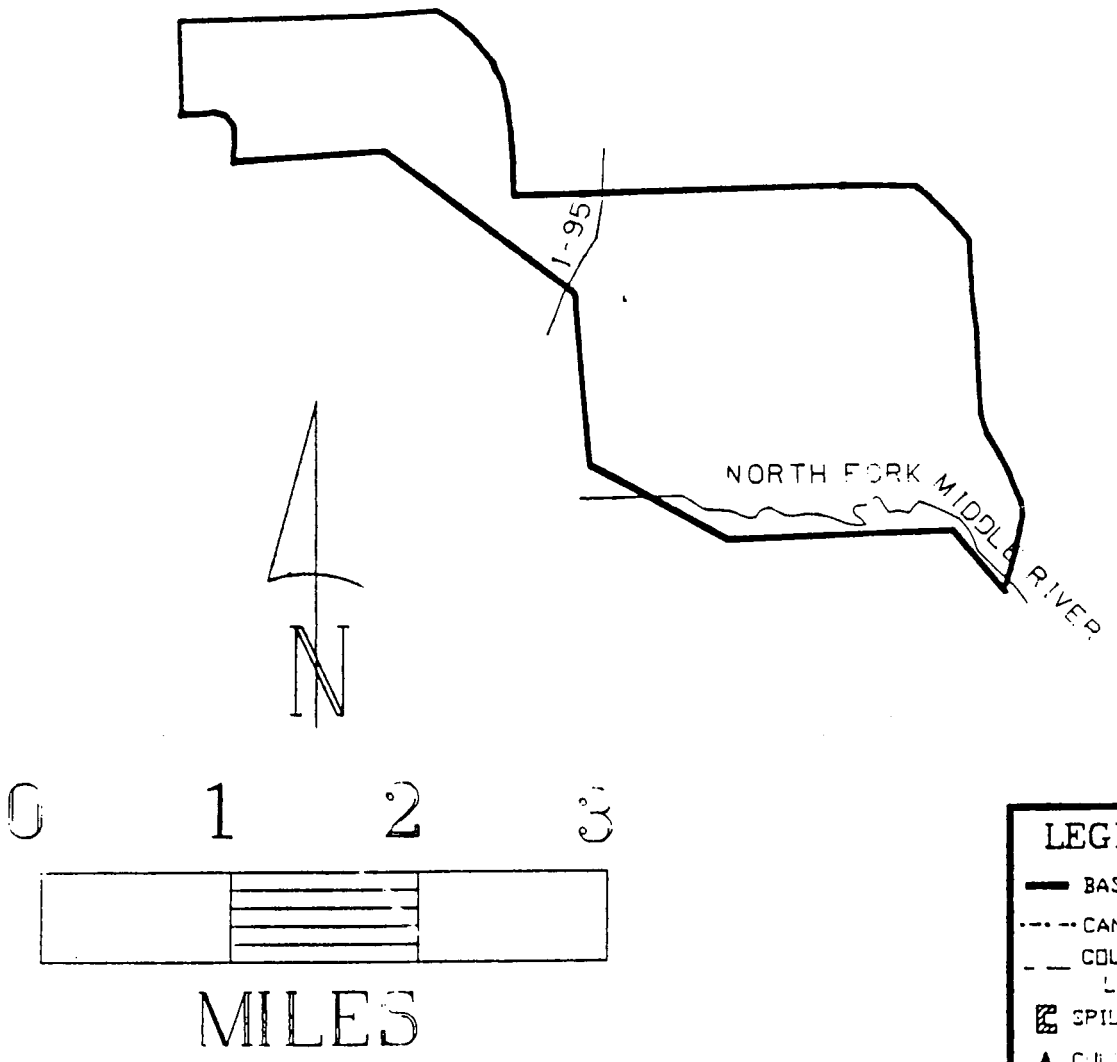


FIGURE 83 NORTH FORK MIDDLE RIVER BASIN MAP

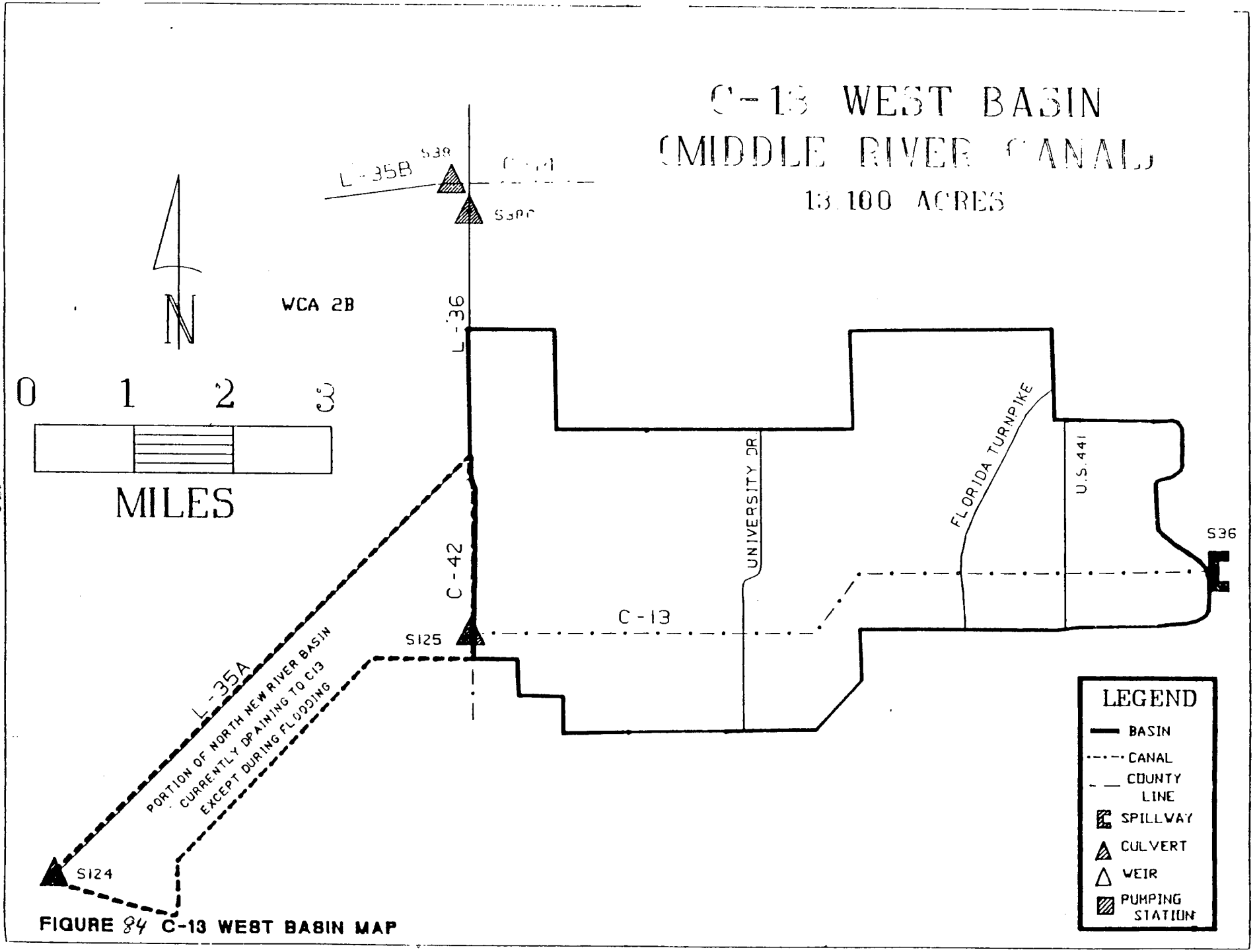


FIGURE 84 C-13 WEST BASIN MAP

C-13 EAST BASIN
(MIDDLE RIVER CANAL)
5,000 ACRES

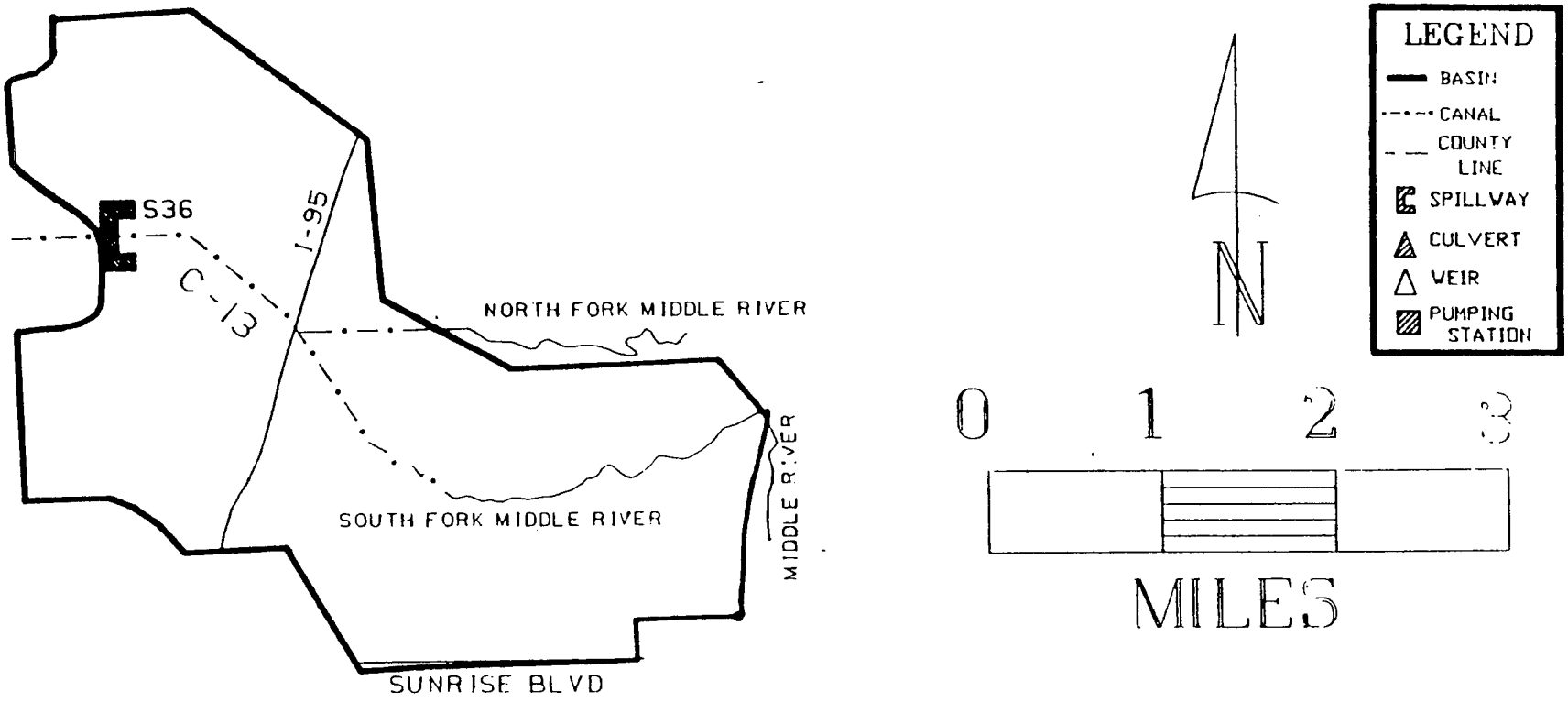
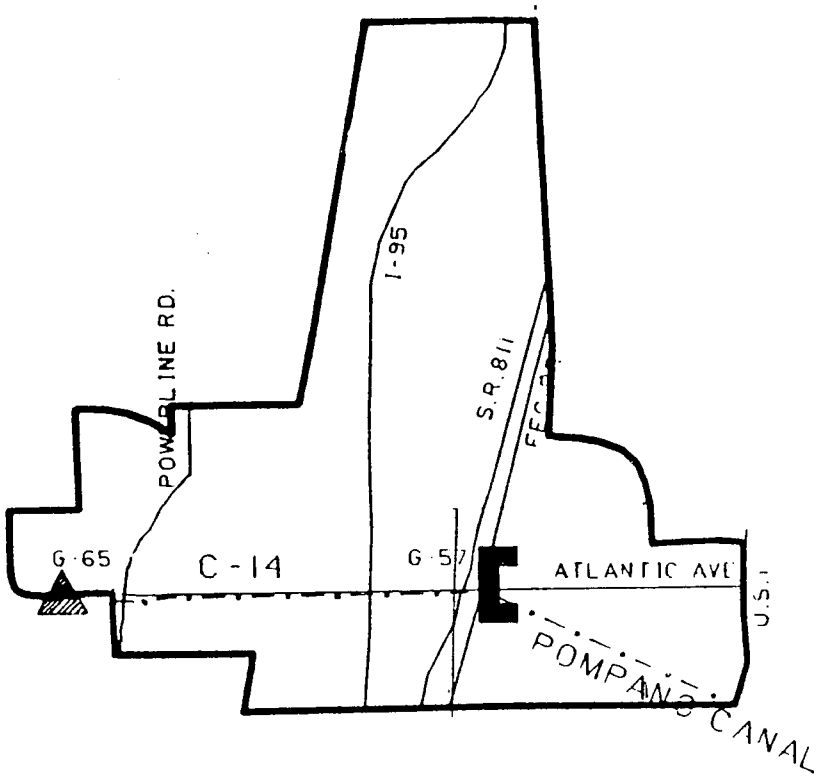
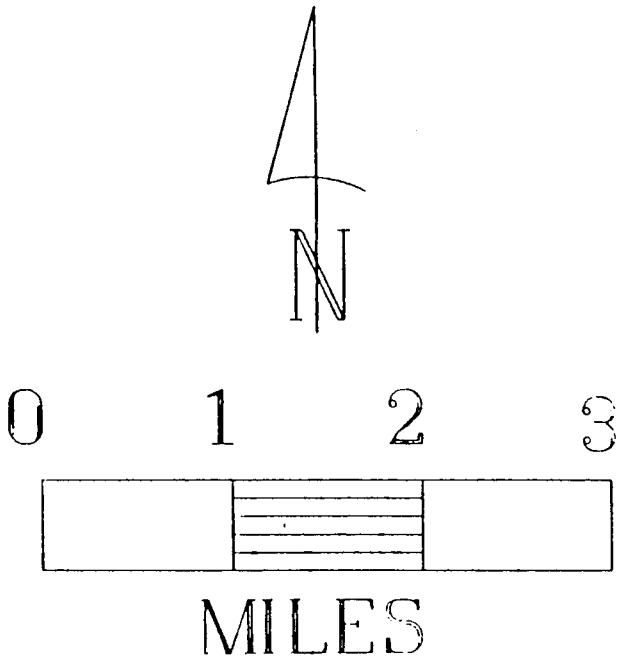


FIGURE 35 C-13 EAST BASIN MAP

POMPANO CANAL

4,000 ACRES





LEGEND

- BASIN
- CANAL
- COUNTY LINE
- SPILLWAY
- CULVERT
- WEIR
- PUMPING STATION

FIGURE 86 POMPANO CANAL BASIN MAP

C-14 WEST BASIN
(CYPRESS CREEK)

15,800 ACRES

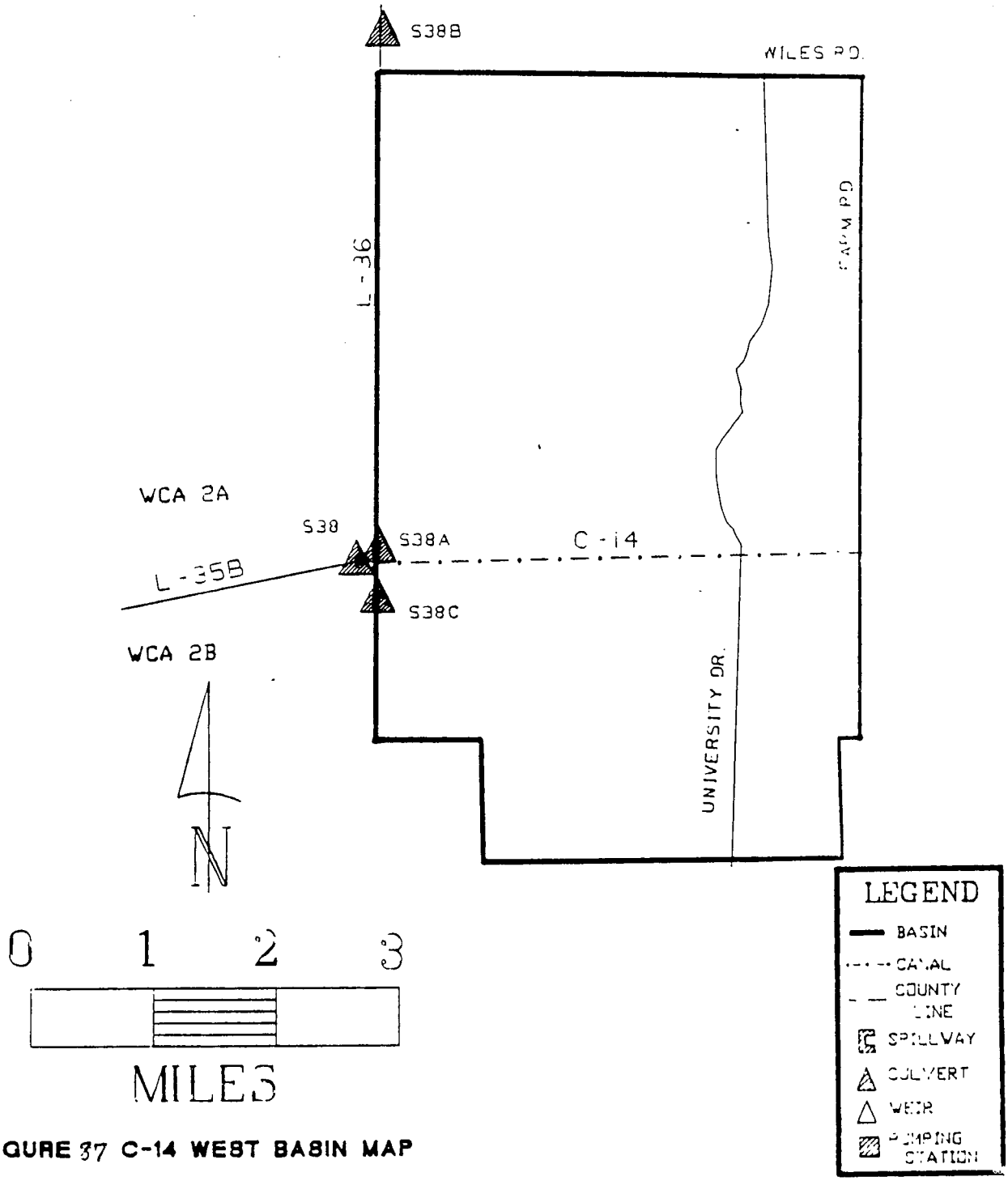


FIGURE 37 C-14 WEST BASIN MAP

C-14 EAST BASIN
(CYPRESS CREEK CANAL)
21,600 ACRES

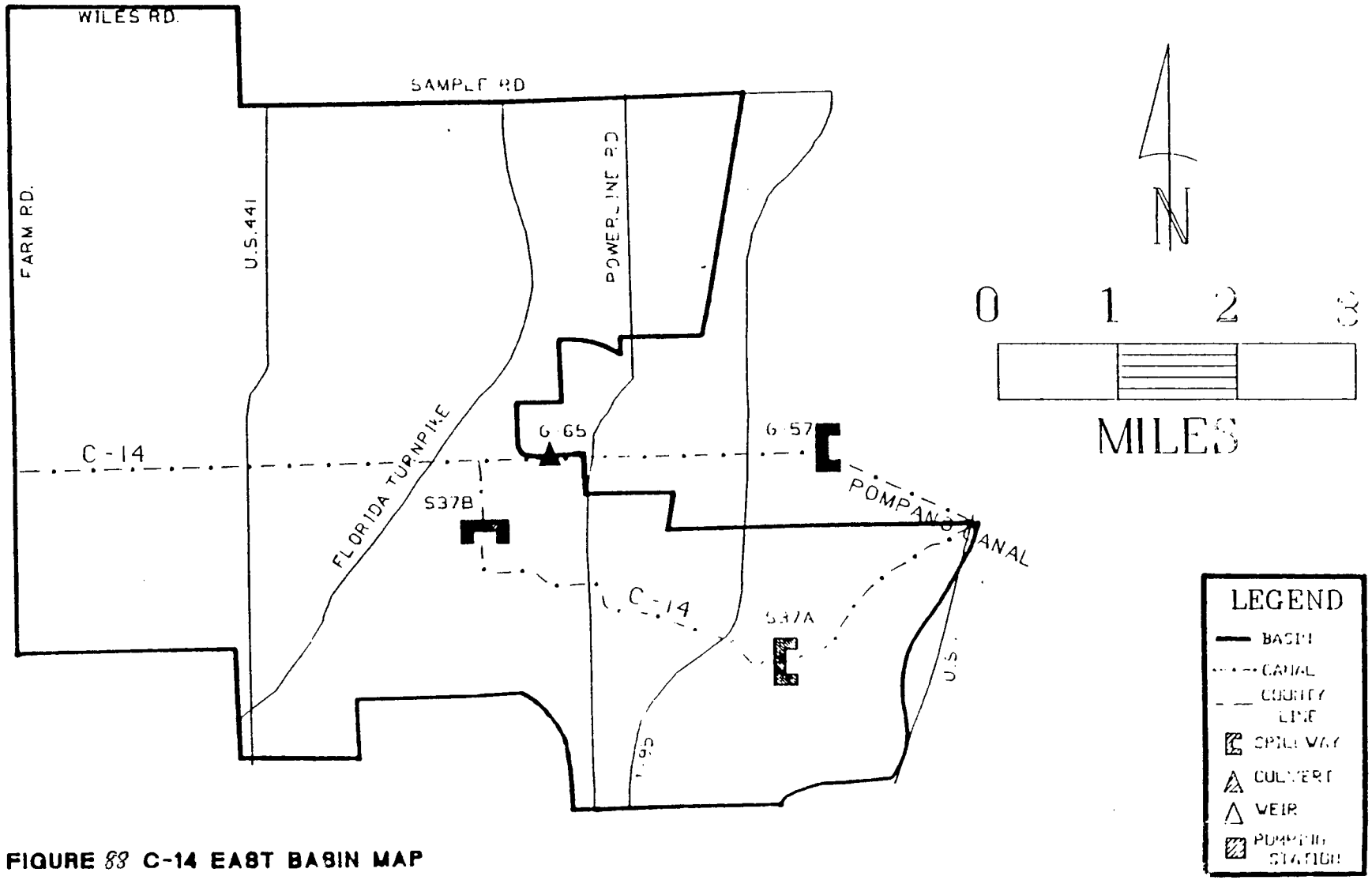


FIGURE 83 C-14 EAST BASIN MAP

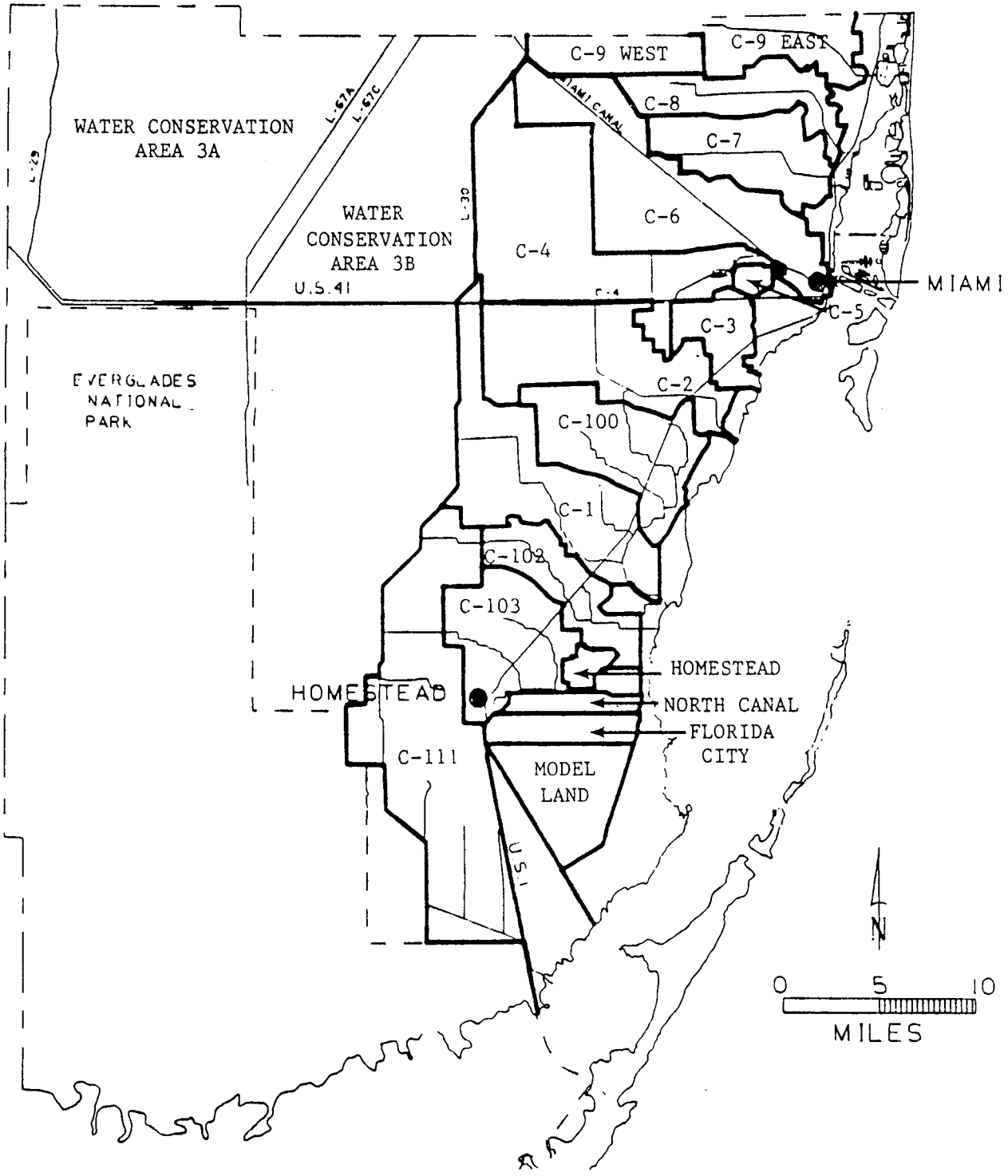
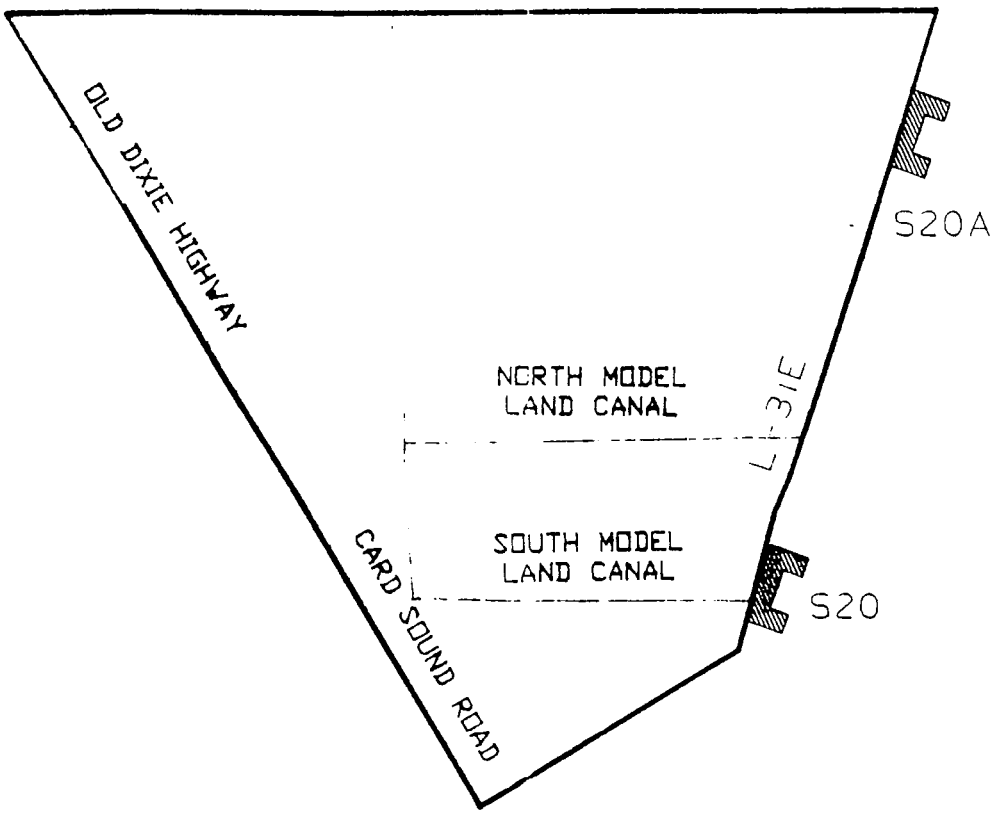
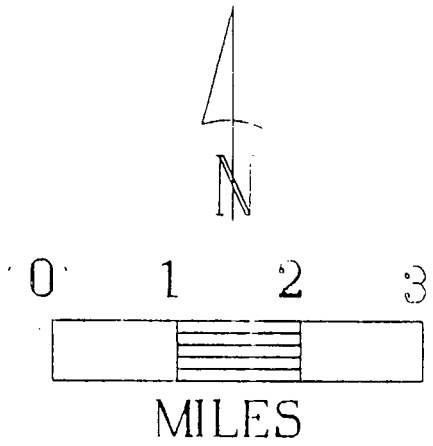


FIGURE 89 DADE COUNTY DRAINAGE BASINS

MODEL LAND

~ 18,000 ACRES

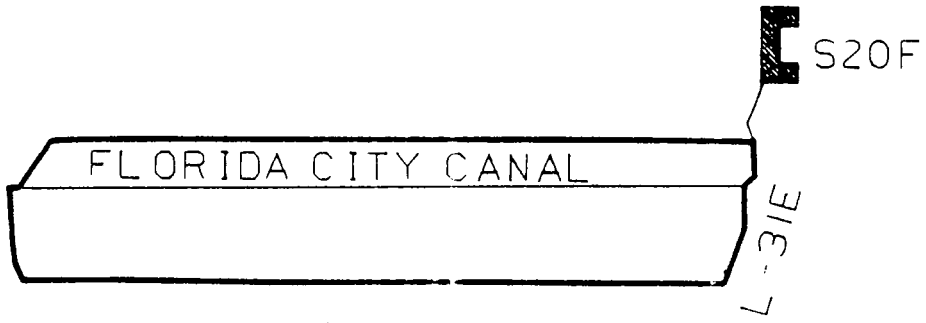


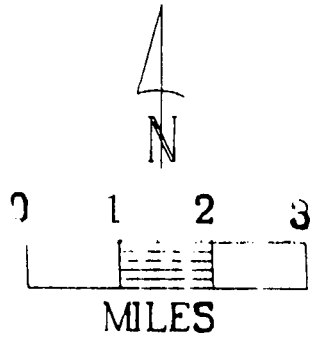


LEGEND

- BASIN
- CANAL
- COUNTY LINE
- AREA B
- SPILLWAY
- CULVERT
- WEIR
- PUMPING STATION

FIGURE 90 MODEL LAND CANAL BASIN MAP





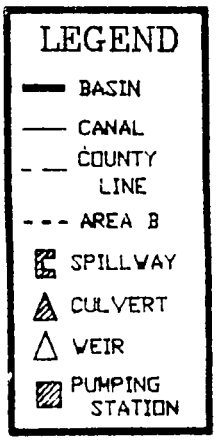


FIGURE 9/ FLORIDA CITY CANAL BASIN MAP

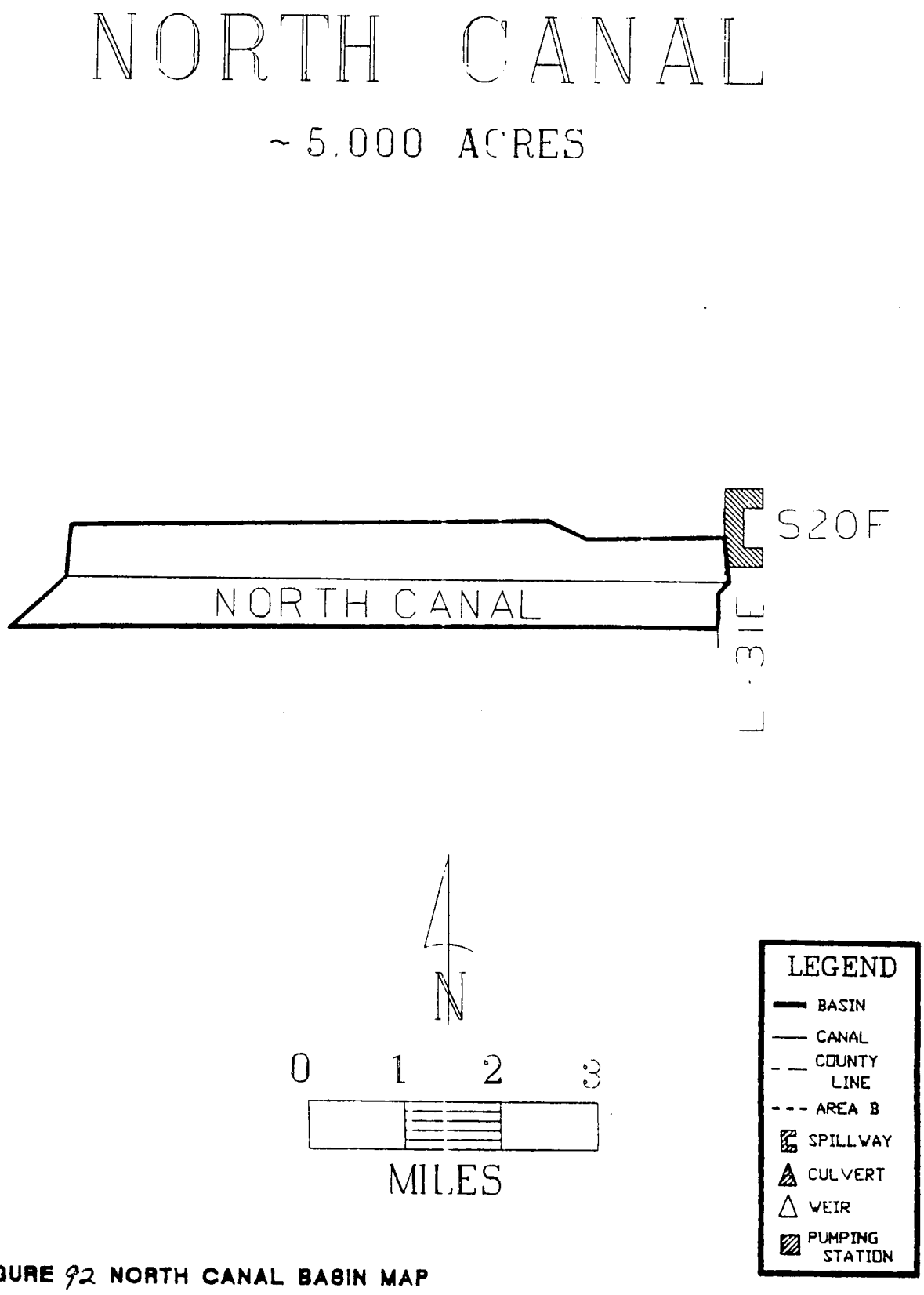


FIGURE 92 NORTH CANAL BASIN MAP

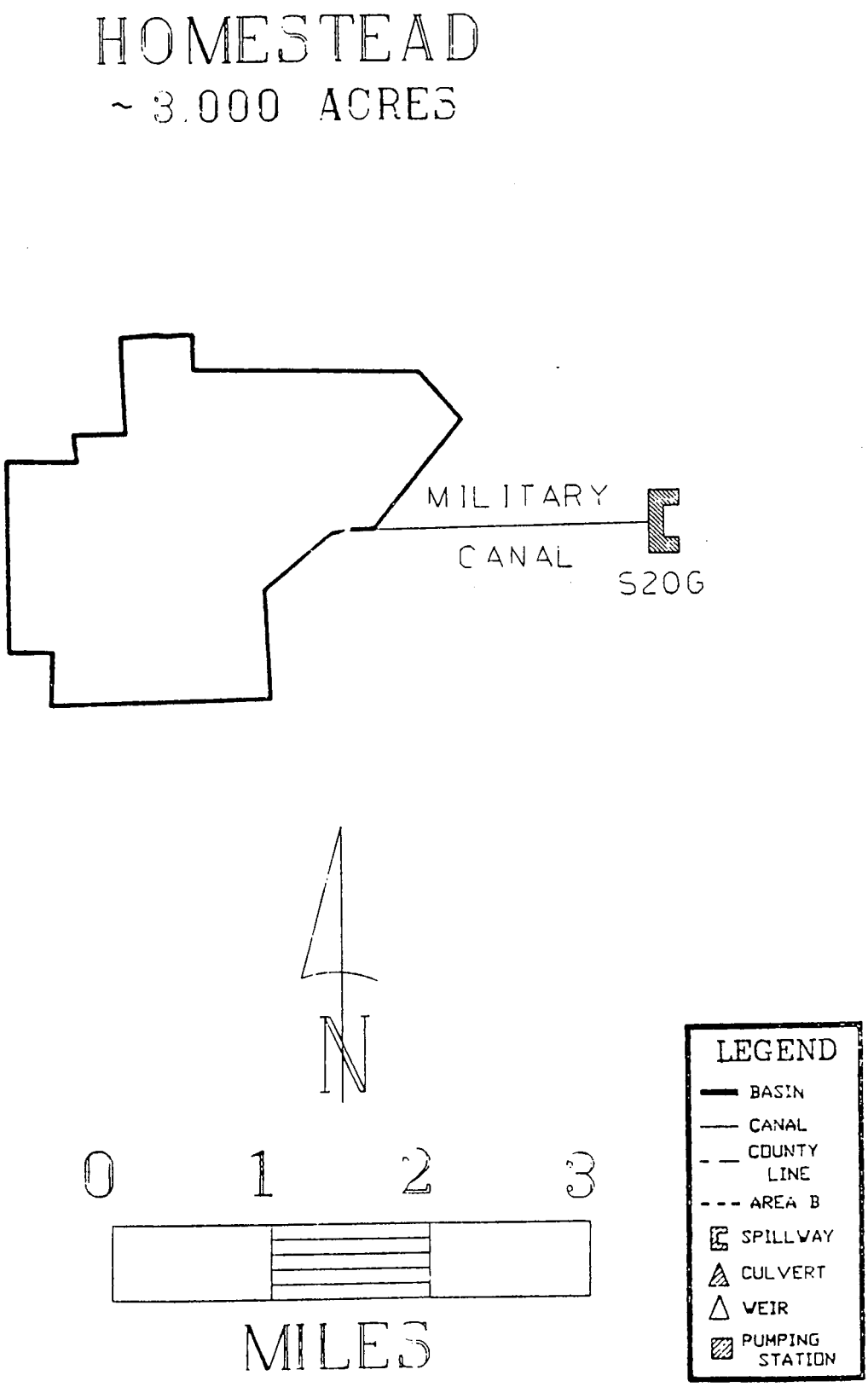


FIGURE 93 HOMESTEAD BASIN MAP

C-103

~26,000 ACRES

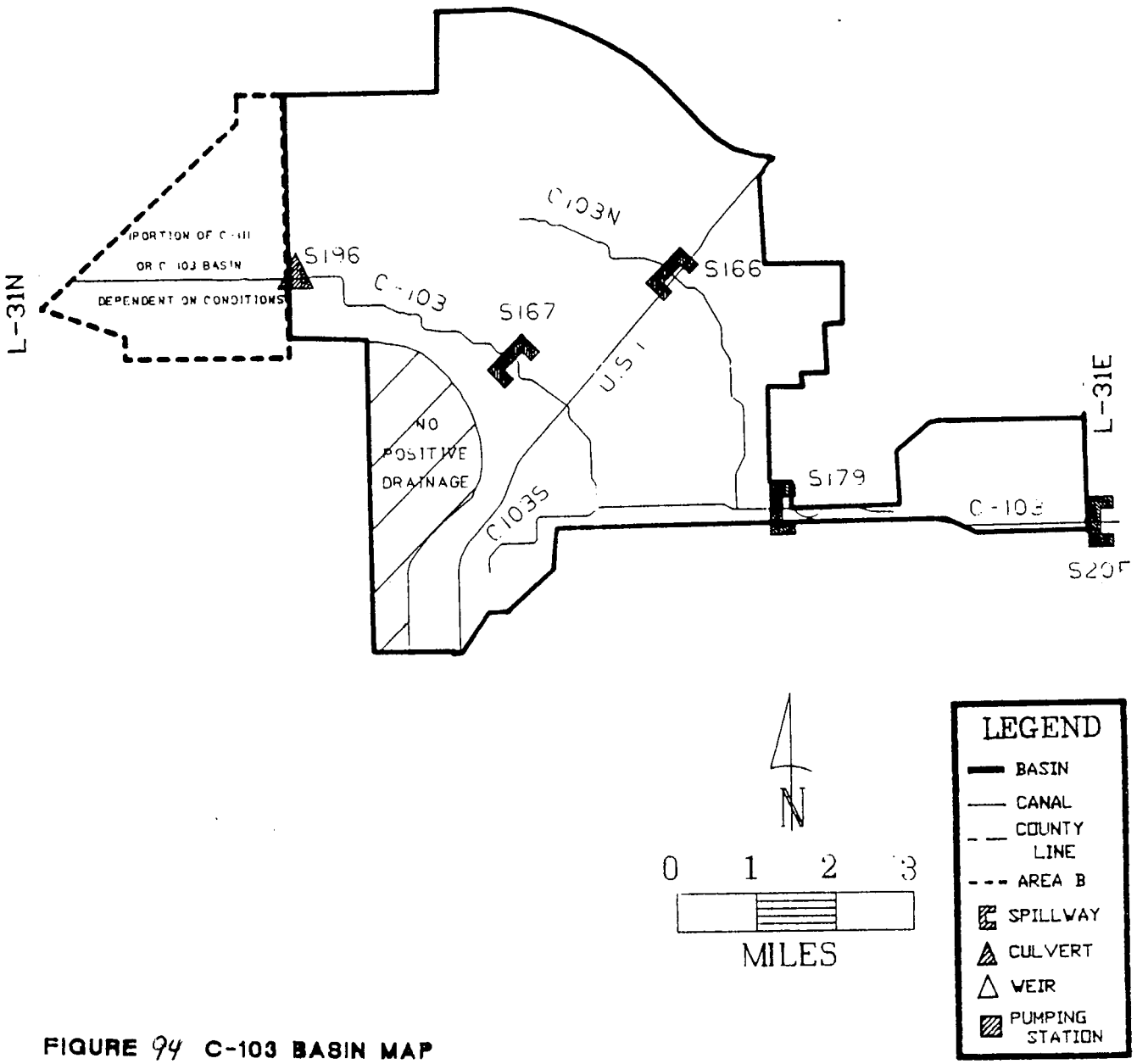


FIGURE 94 C-103 BASIN MAP

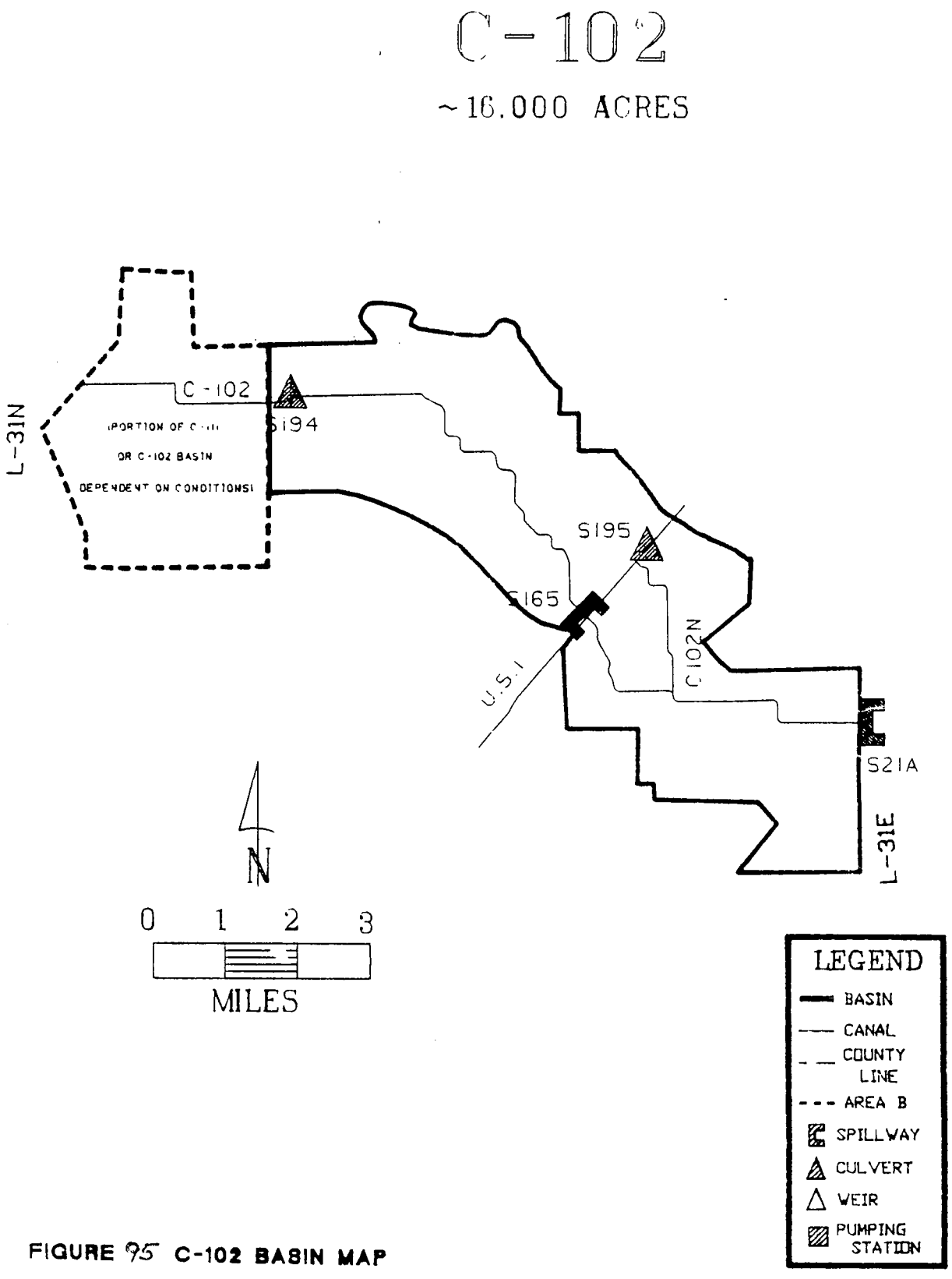


FIGURE 95 C-102 BASIN MAP

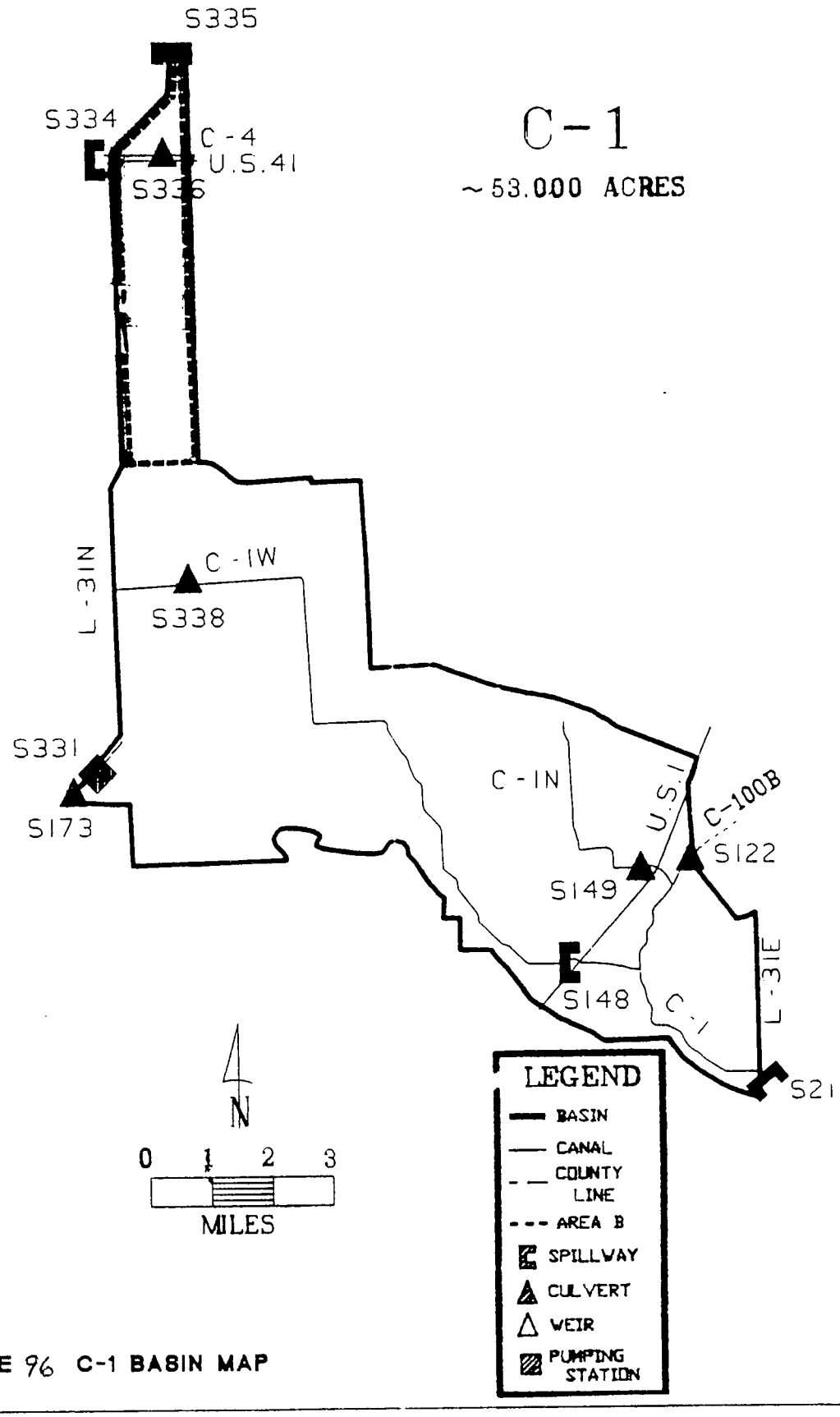


FIGURE 96 C-1 BASIN MAP

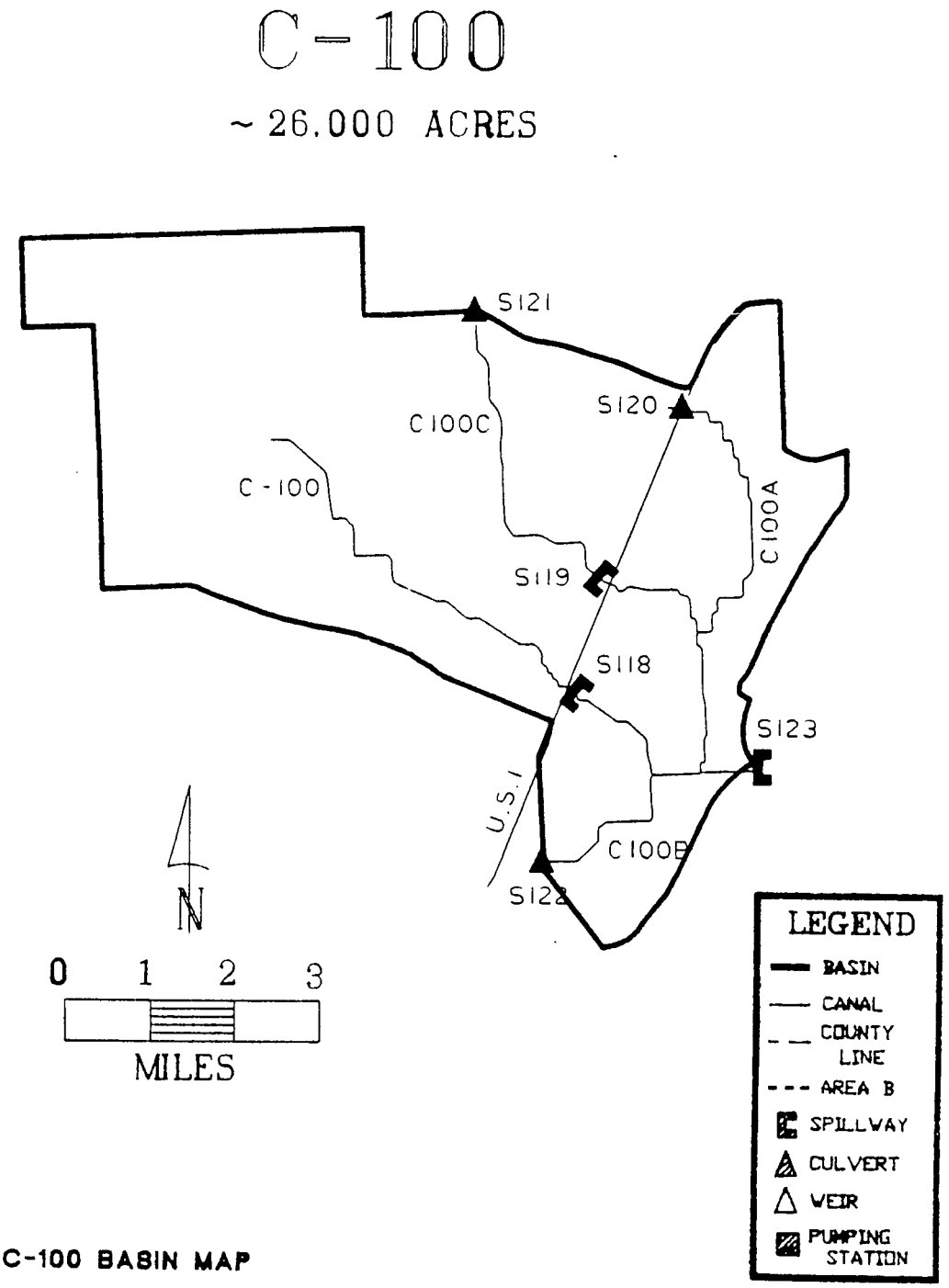


FIGURE 97 C-100 BASIN MAP

C-2

~34,000 ACRES

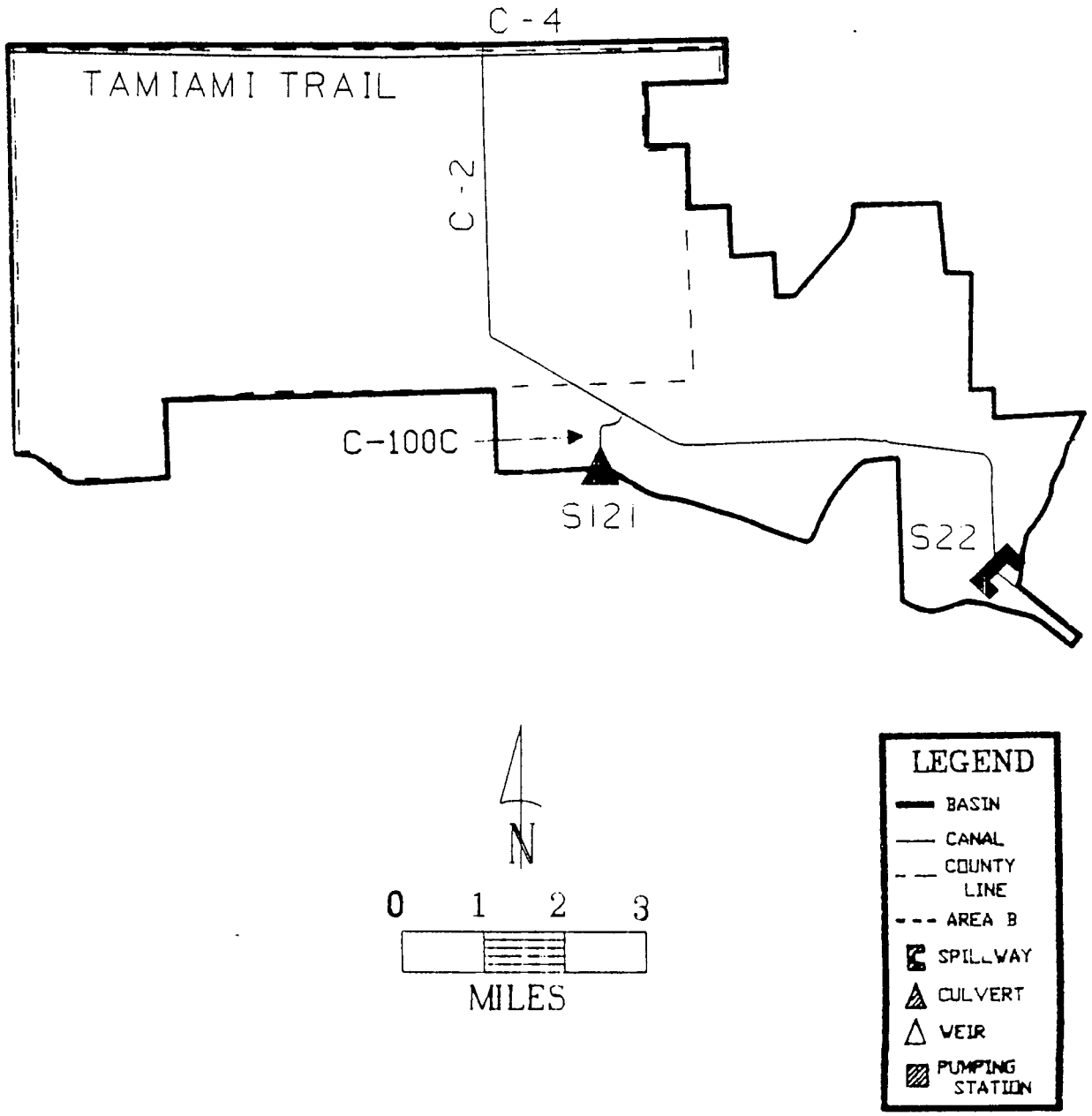


FIGURE 98 C-2 BASIN MAP

C-3

~10,000 ACRES

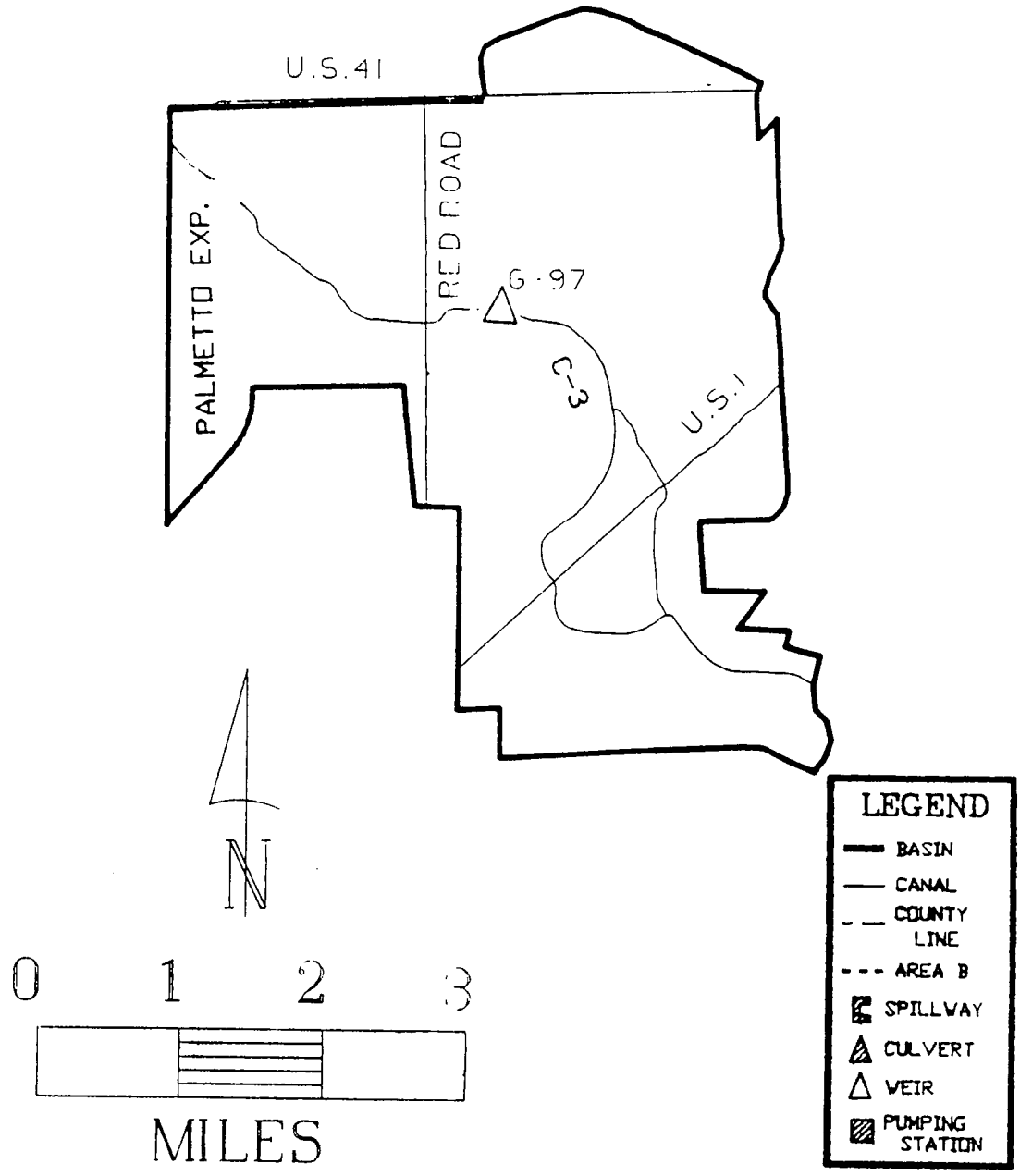


FIGURE 99 C-3 BASIN MAP

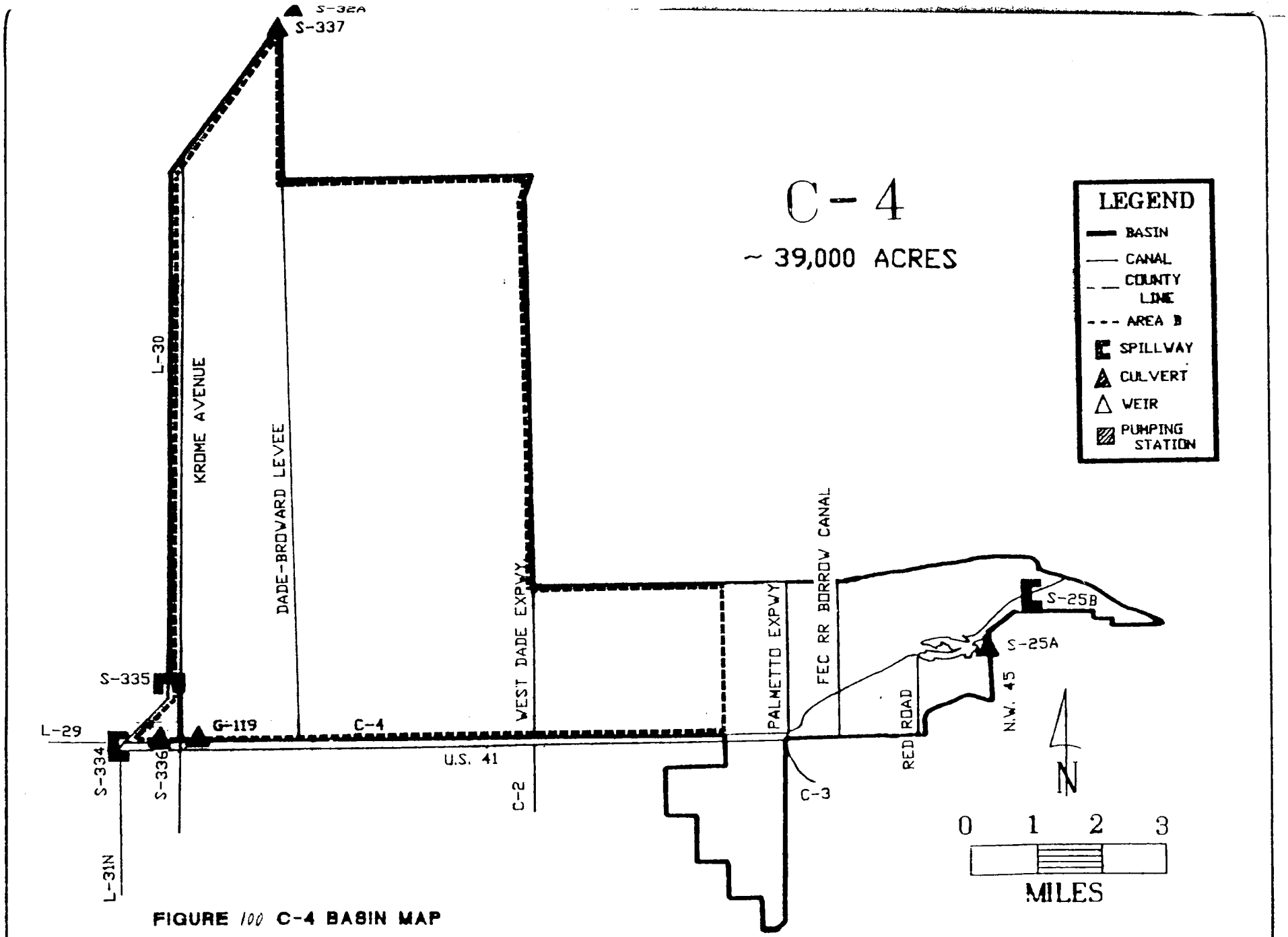
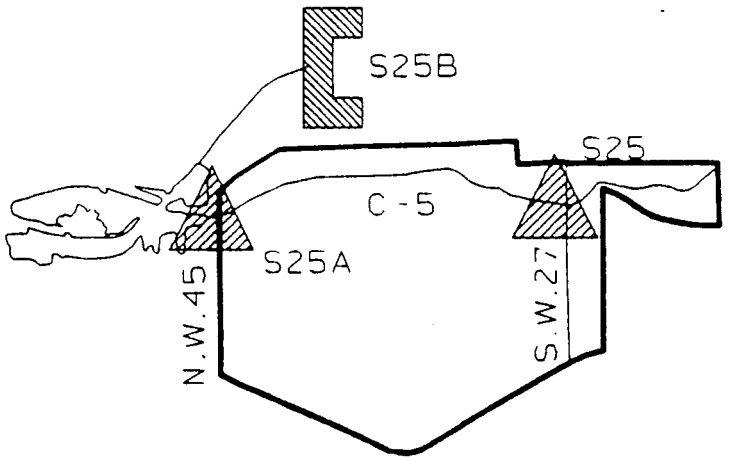
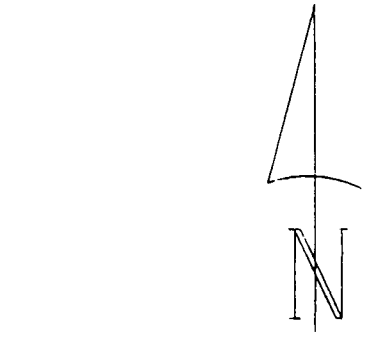


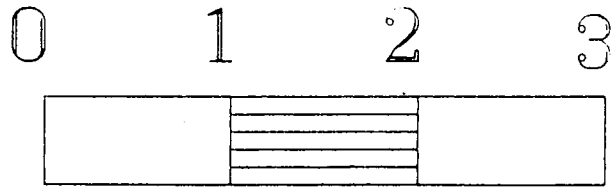
FIGURE 100 C-4 BASIN MAP

C-5

~1,400 ACRES







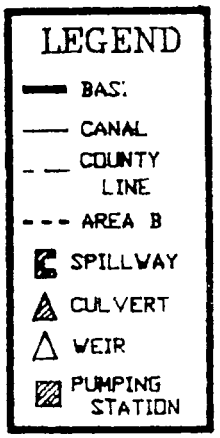


FIGURE 101 C-5 BASIN MAP

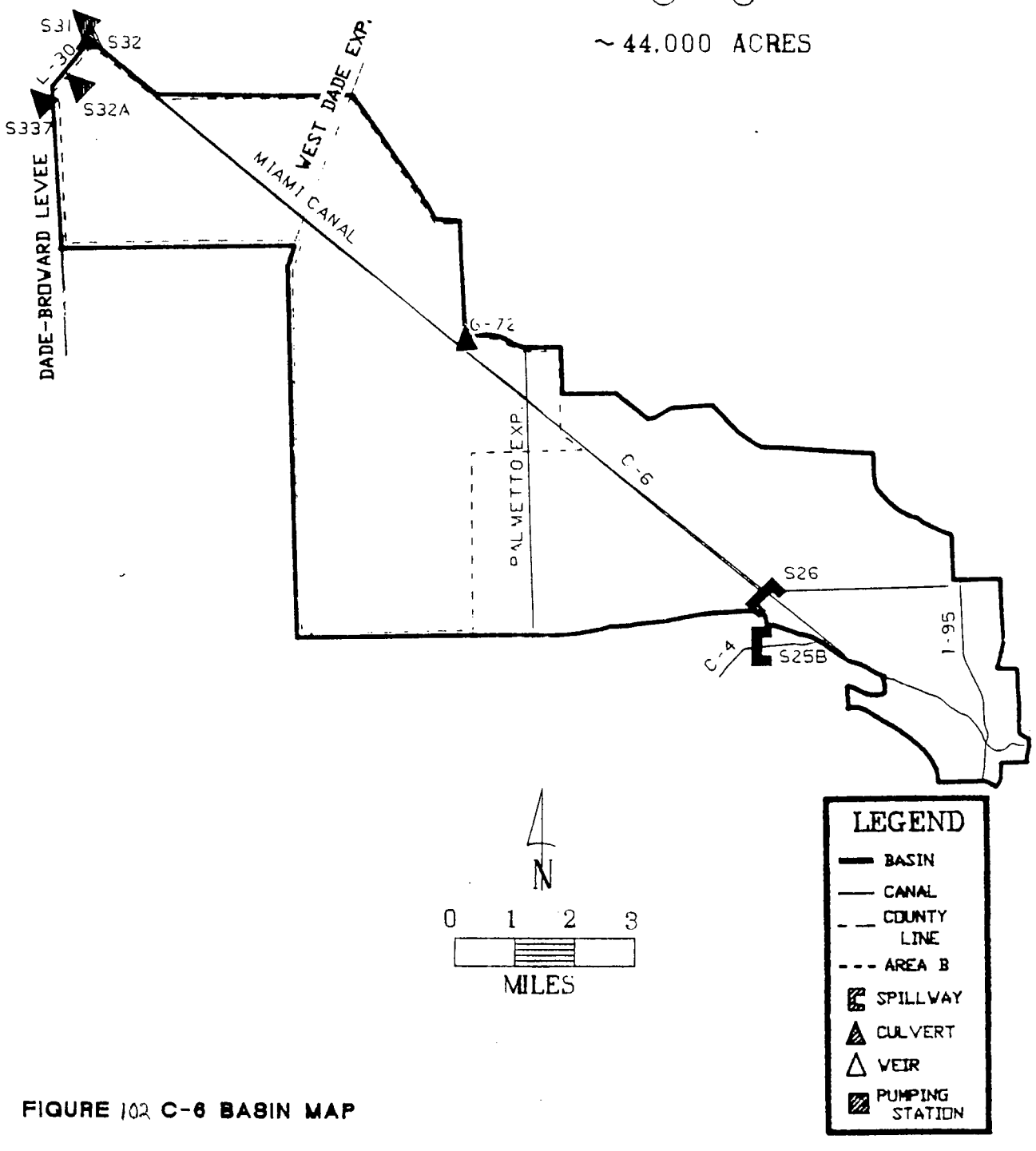


FIGURE 102 C-6 BASIN MAP

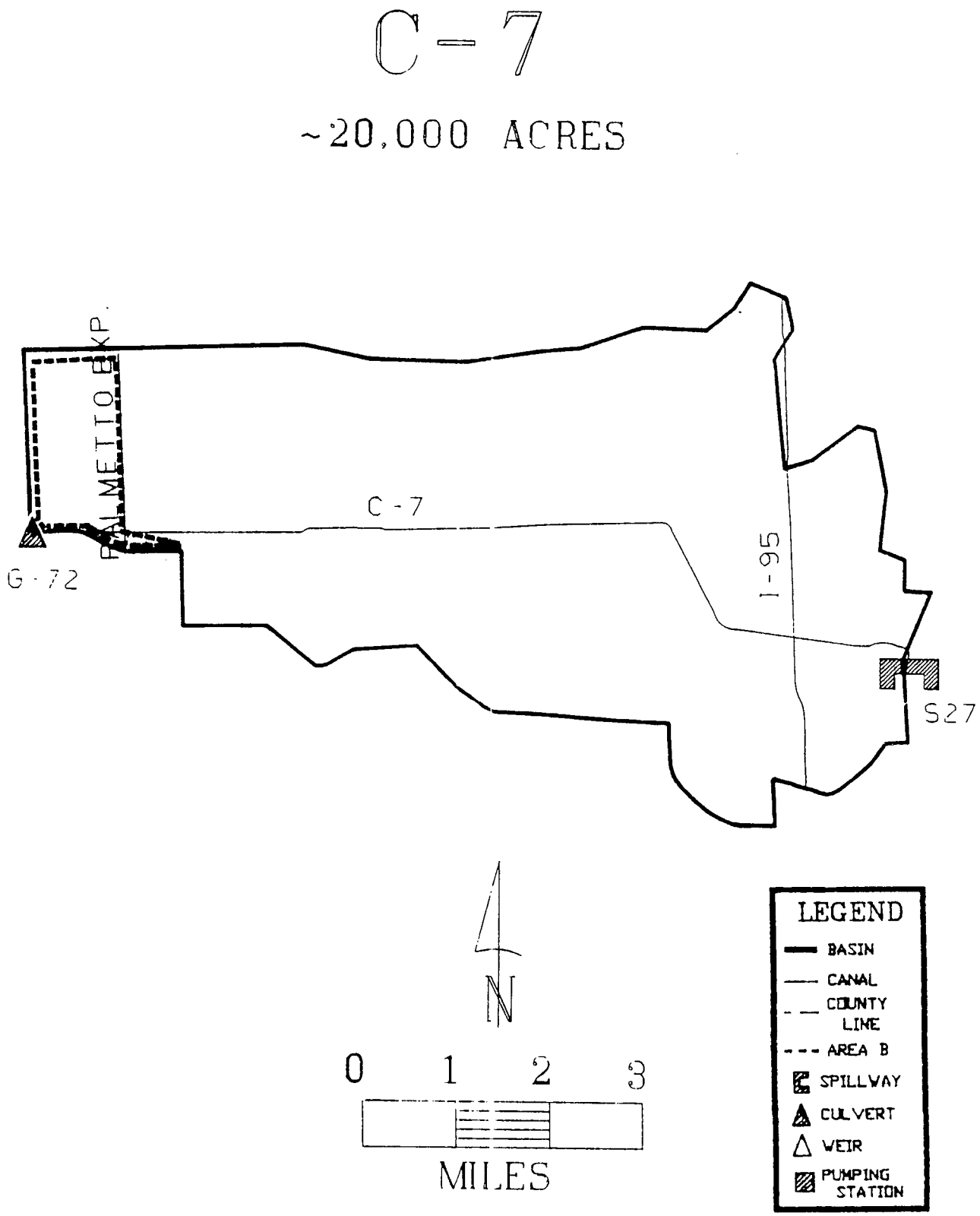


FIGURE 703 C-7 BASIN MAP

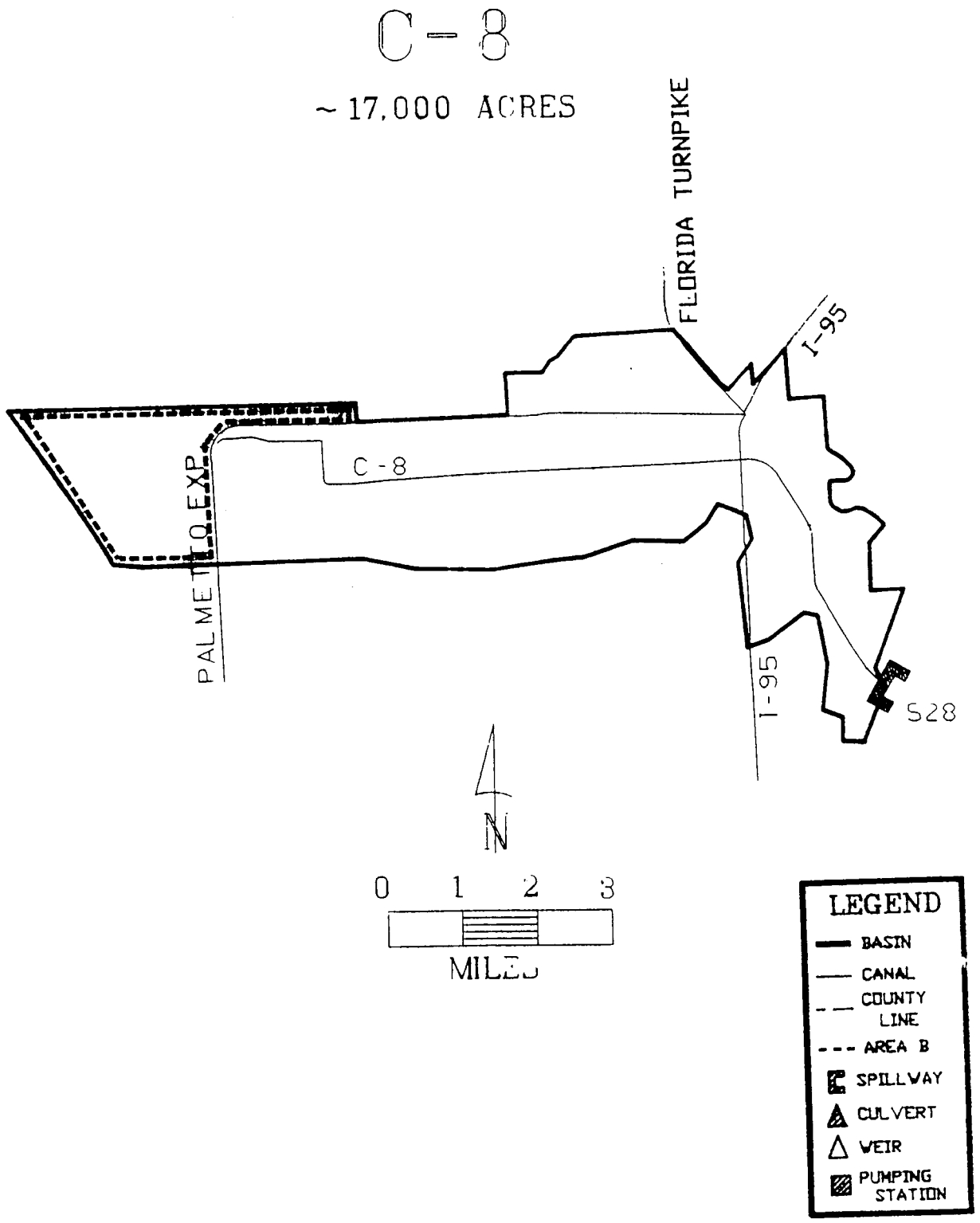
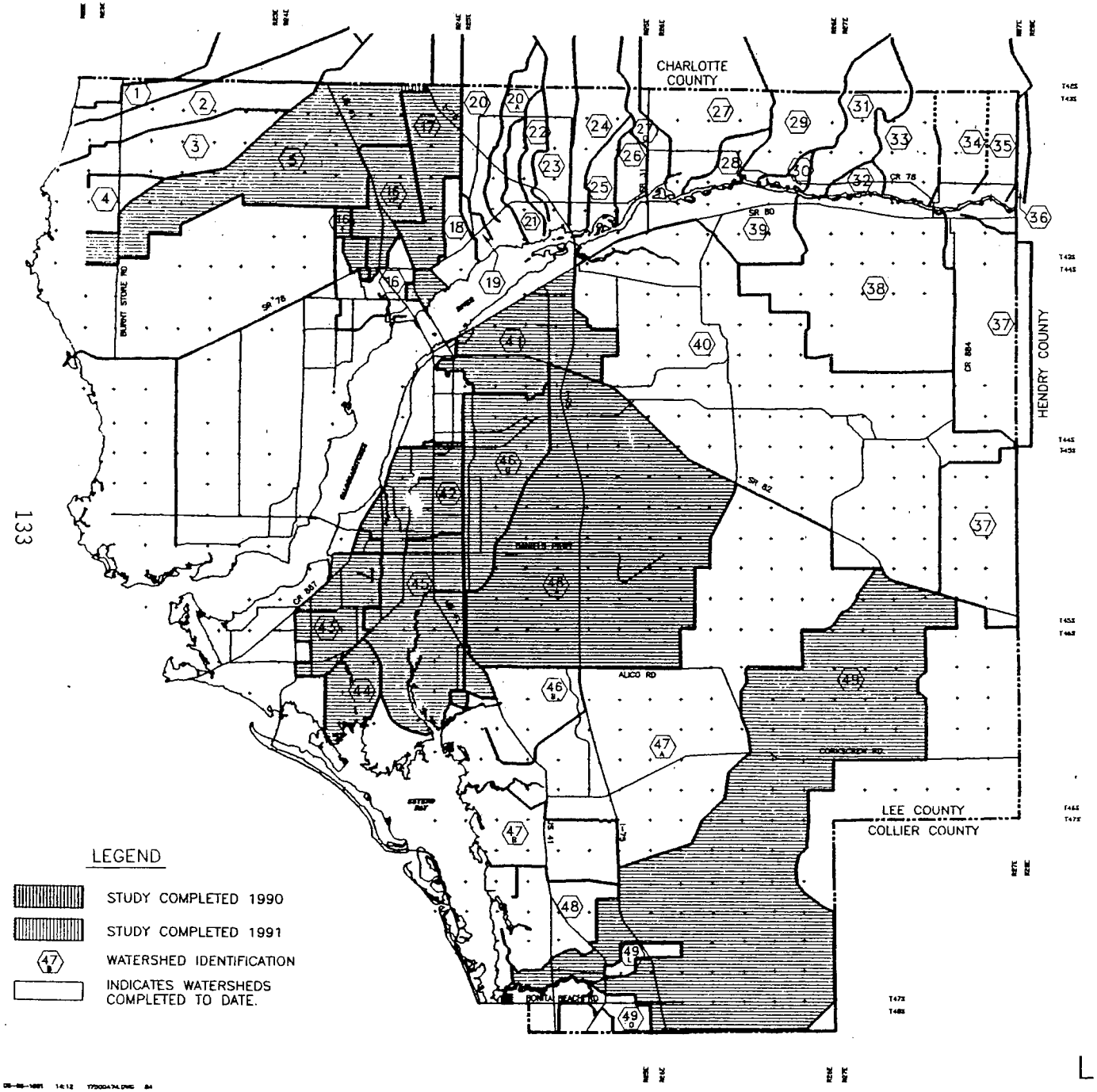


FIGURE 104 C-8 BASIN MAP



1	YUCCA PEN CREEK
2	DURDEN CREEK
3	GREENWELL BRANCH
4	LONGVIEW RUN
5	GATOR SLOUGH
16	HANCOCK CREEK
16-Y	YELLOW FEVER CREEK
16-E	YELLOW FEVER - EAST BRANCH
17	POWELL CREEK
18	MARSH POINT
19	COHN BRANCH
20	DAUGHTREY CREEK
20-A	DAUGHTREY - EAST BRANCH
21	CHAPEL BRANCH
22	BAYSHORE CREEK
23	POPASH CREEK
24	STROUD CREEK
25	PALM CREEK
26	KICKAPOO CREEK
27-O	OWL CREEK
27	TROUT CREEK
28	OTTER CREEK
29	TELEGRAPH CREEK
30	FRANKLIN RUN
31	FICHTER BRANCH
32	PARK BRANCH
33	CYPRESS CREEK
34	SPANISH CREEK
35	MILLER'S GULLY
36	COUNTY LINE
37	BEDMAN CREEK
38	HICKEY CREEK
39	OLGA
40	ORANGE RIVER
41	BILLY CREEK
42	WHISKEY CREEK
43	DEEP LAGOON
44	COW CREEK
45	HENDRY CREEK
46-A	SIX MILE CYPRESS
46-B	MULLOCK CREEK
46-C	TENMILE CANAL
47-A	ESTERO RIVER
47-B	HALFWAY CREEK
48	SPRING CREEK
49	IMPERIAL RIVER
49-L	LEITNER CREEK
49-O	OAK CREEK

SCALE 1" = 5 MILES

N

COMPLETED WATERSHEDS IN LEE COUNTY MASTER PLAN

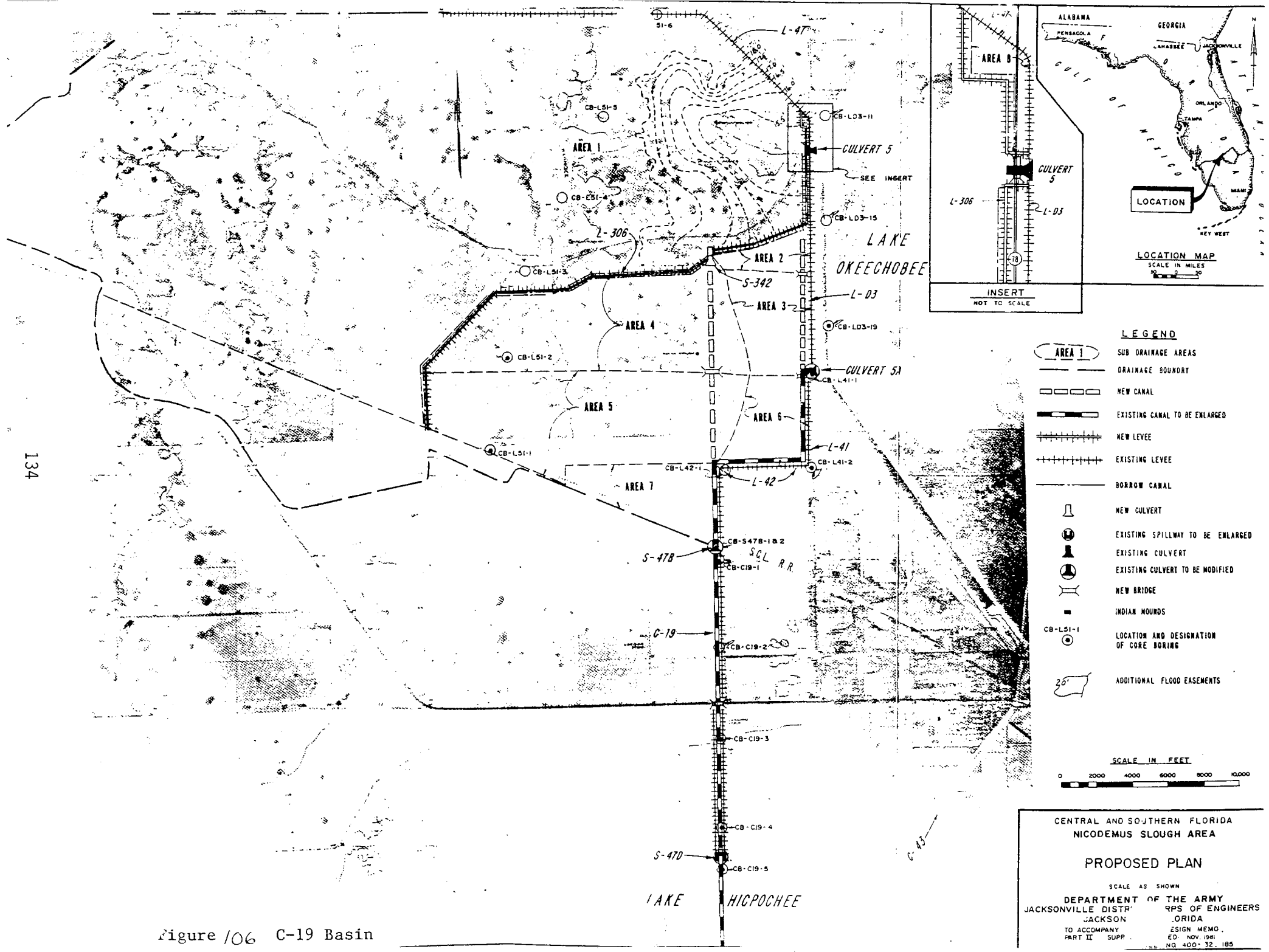
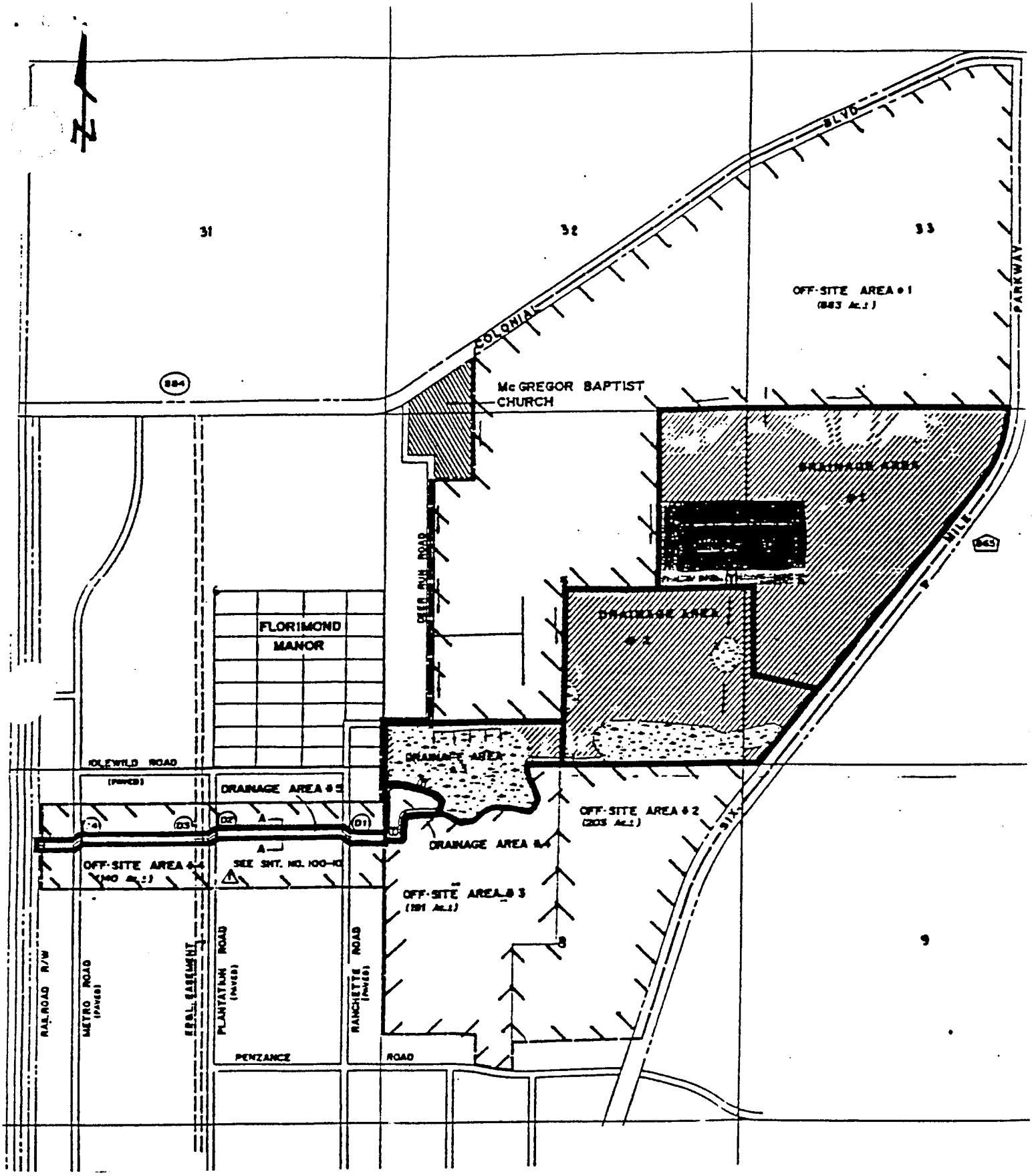


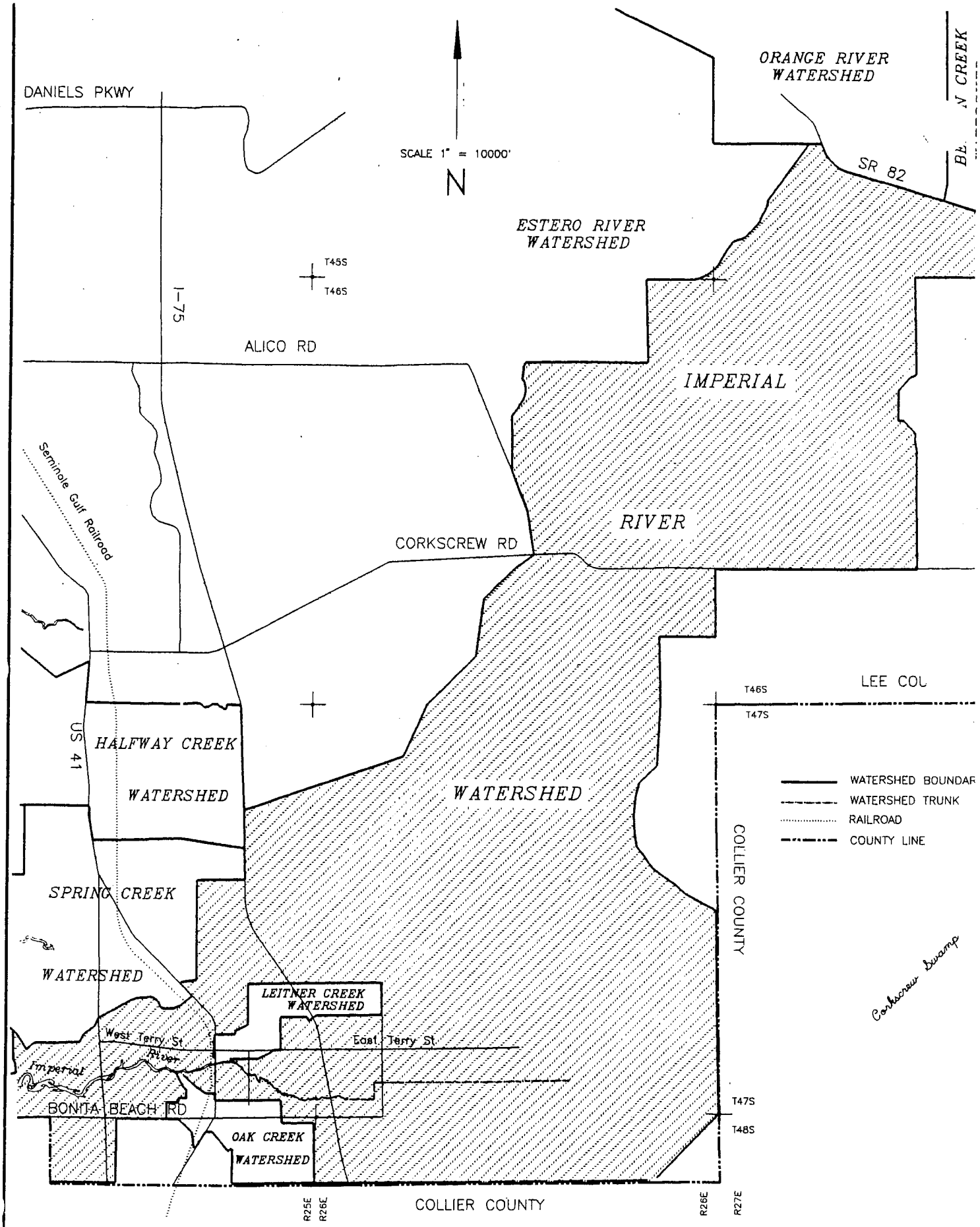
Figure 106 C-19 Basin



PROJECT: HARPER BROTHERS FARM * 2,033.4 ACRE BASIN

LOCATION: LEE COUNTY, S32,33/T44S/R25E & S4,5,7,8,9/T45S/R25E

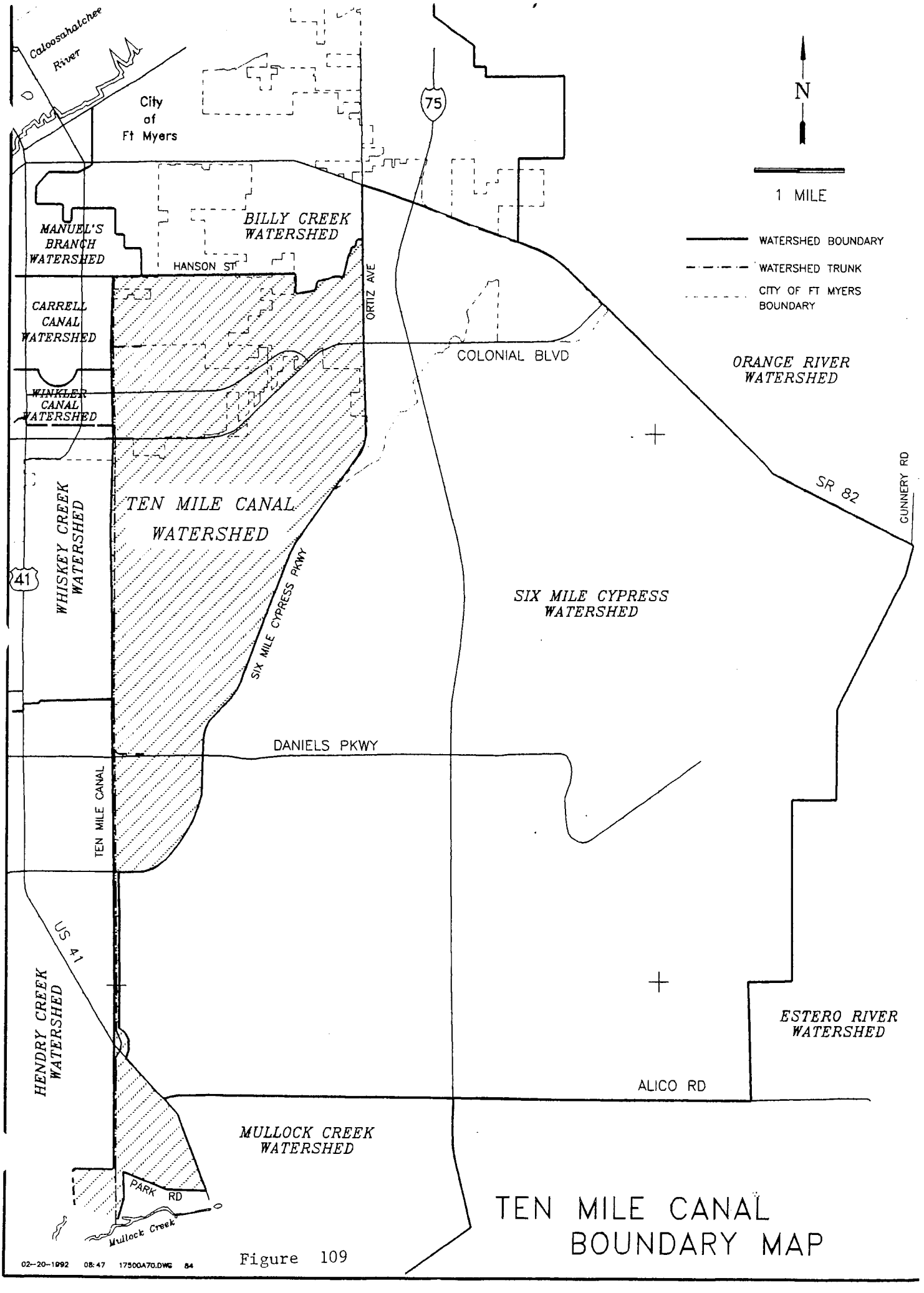
Figure 107



IMPERIAL RIVER BOUNDARY MAP

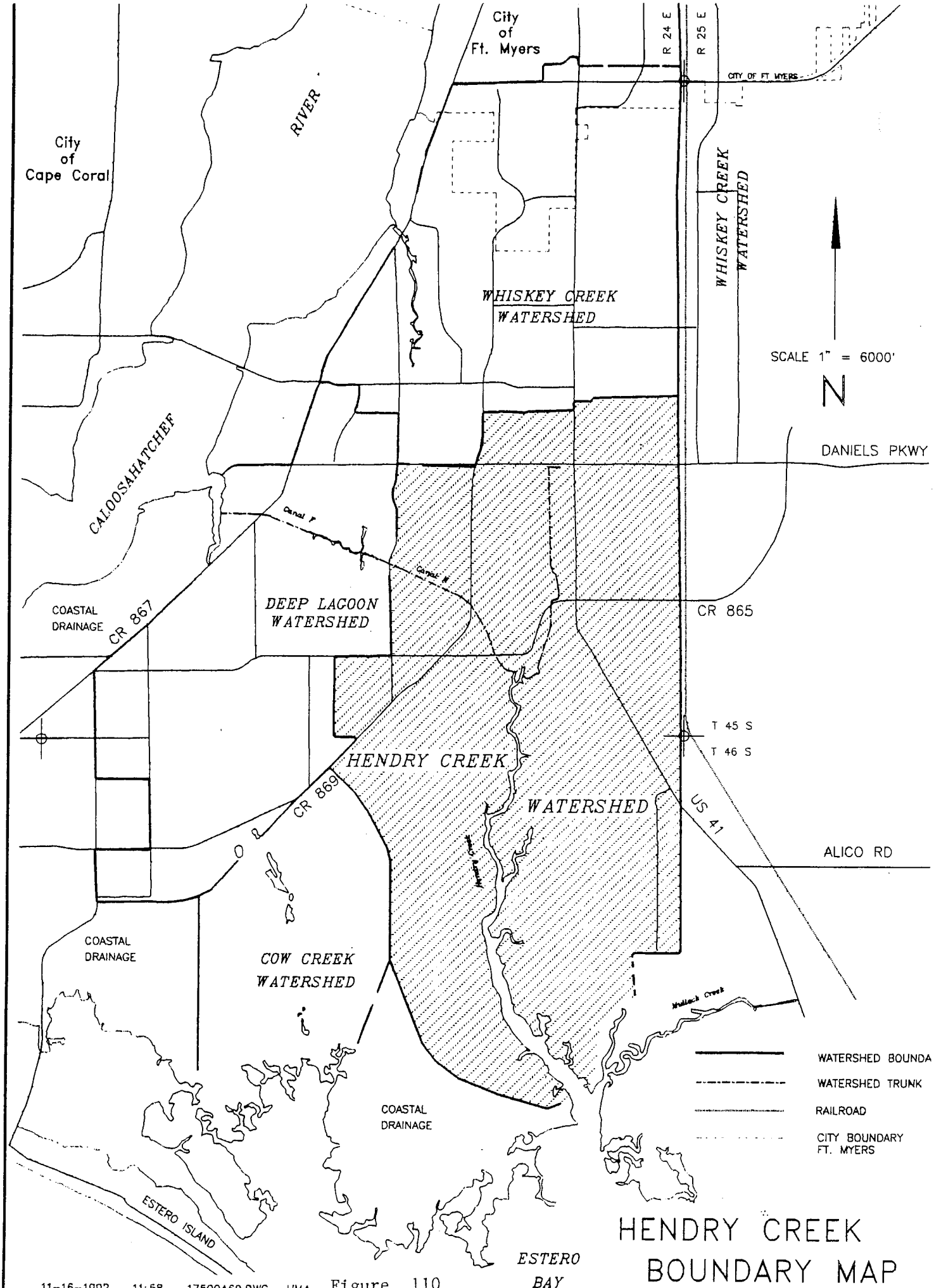
06-06-1991 15:45 17500A71.DWG 84

Figure 108

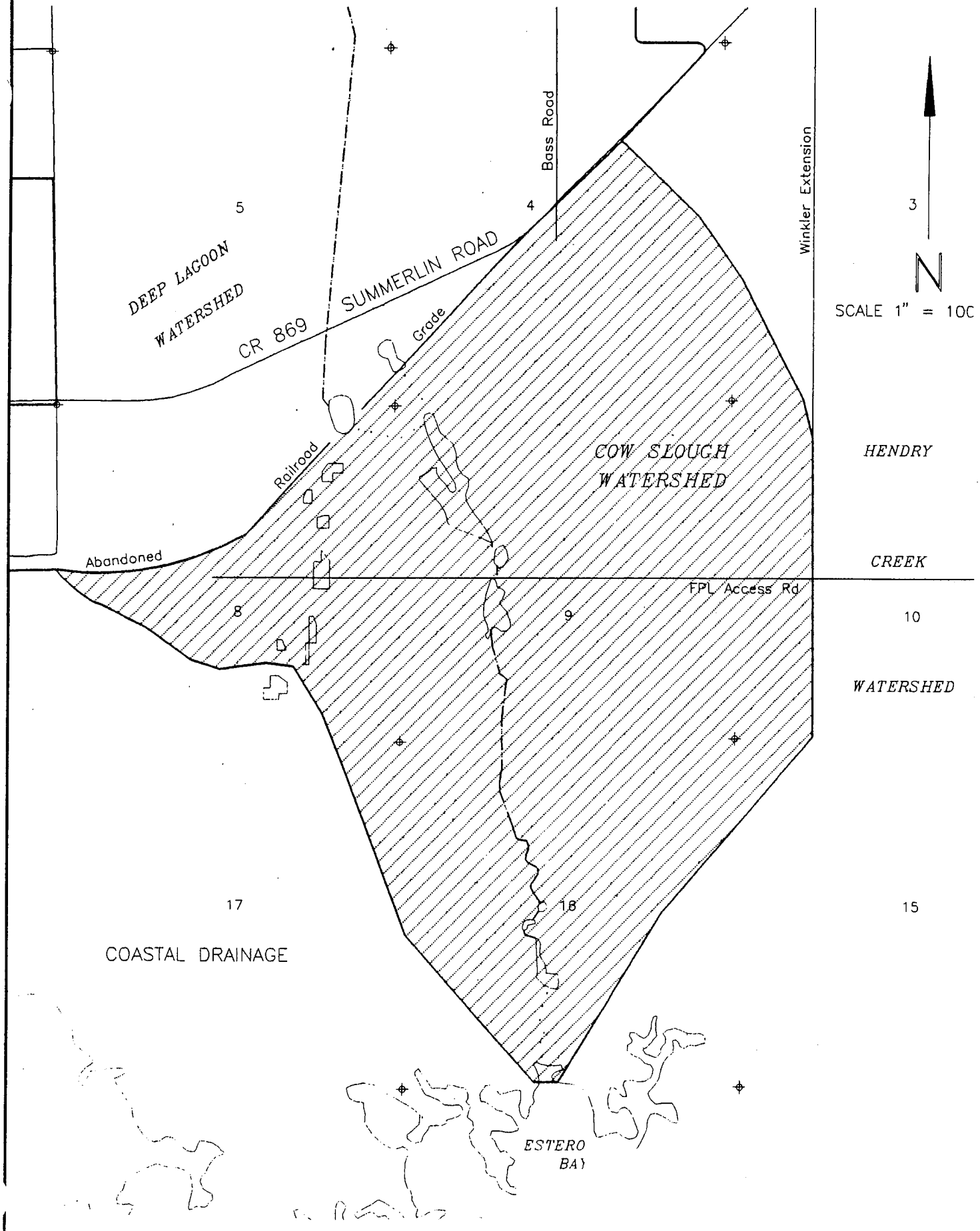


TEN MILE CANAL
BOUNDARY MAP

Figure 109



11-16-1992 11:58 17500A69.DWG HMA Figure 110



COW SLOUGH
BOUNDARY MAP

Figure 111

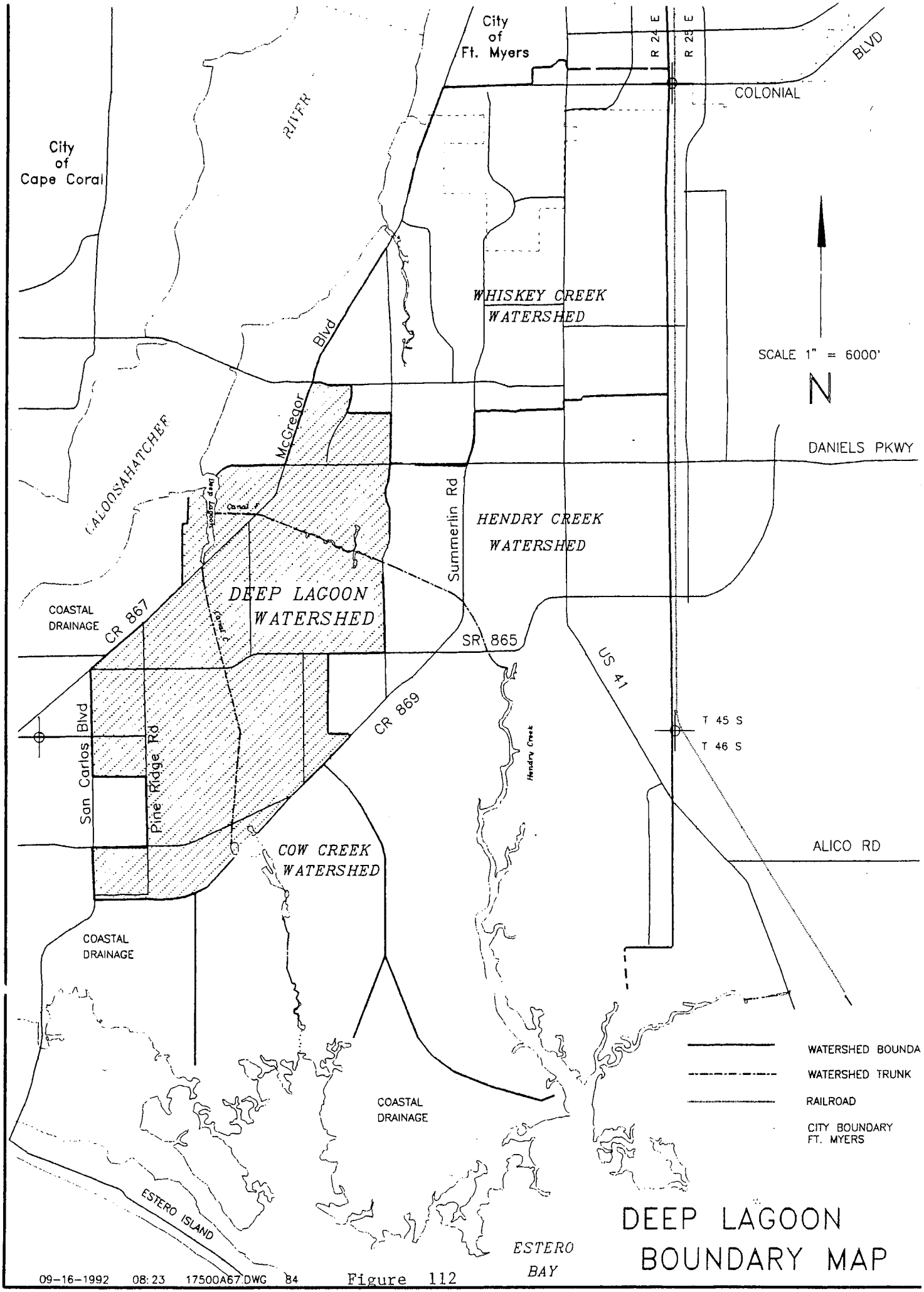

City of Ft. Myers
R 24 E
R 25 E
BLVD
COLONIAL
City of Cape Coral
RIVER
WHISKEY CREEK WATERSHED
SCALE 1" = 6000'
N
McGregor Blvd
DANIELS PKWY
CALOOSAHATCHEE
Summerlin Rd
HENDRY CREEK WATERSHED
DEEP LAGOON WATERSHED
COASTAL DRAINAGE
CR 867
SR 865
US 41
CR 869
T 45 S
T 46 S
San Carlos Blvd
Pine Ridge Rd
Hendry Creek
COW CREEK WATERSHED
ALICO RD
COASTAL DRAINAGE
WATERSHED BOUNDA
WATERSHED TRUNK
RAILROAD
CITY BOUNDARY FT. MYERS
COASTAL DRAINAGE
ESTERO ISLAND
ESTERO BAY
DEEP LAGOON BOUNDARY MAP
09-16-1992 08:23 17500A67.DWG 84

Figure 112

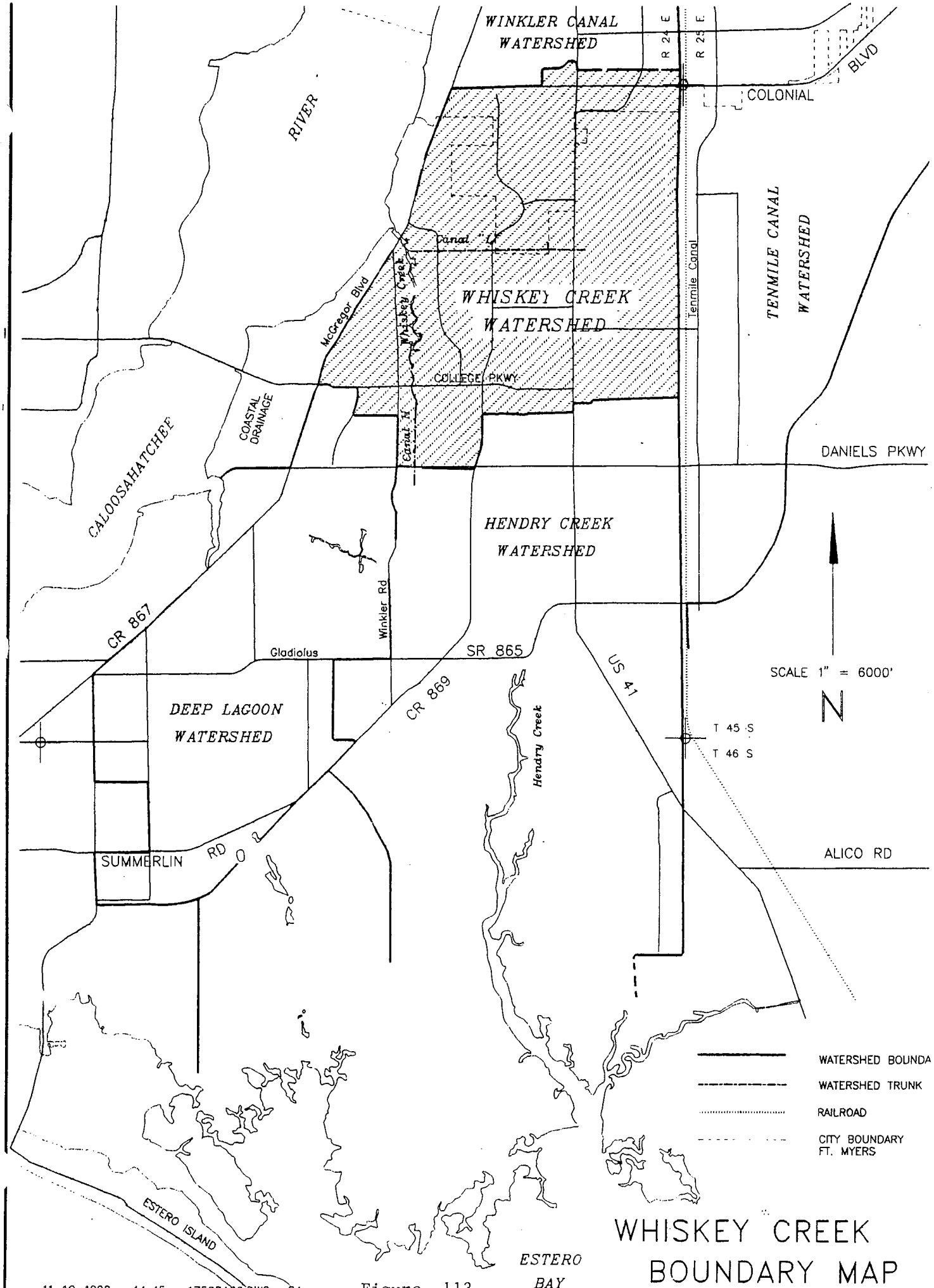

WINKLER CANAL WATERSHED
R 24 E
R 25 E
COLONIAL BLVD
RIVER
Canal "L"
Whiskey Creek
McGregor Blvd
WHISKEY CREEK WATERSHED
Tenmile Canal
TENMILE CANAL WATERSHED
COLLEGE PKWY
COASTAL DRAINAGE
Canal "H"
DANIELS PKWY
CALOOSAHATCHEE
HENDRY CREEK WATERSHED
Winkler Rd
CR 867
Gladiolus
SR 865
US 41
CR 869
SCALE 1" = 6000'
N
DEEP LAGOON WATERSHED
Hendry Creek
T 45 S
T 46 S
SUMMERLIN RD
ALICO RD
WATERSHED BOUNDA
WATERSHED TRUNK
RAILROAD
CITY BOUNDARY FT. MYERS
ESTERO ISLAND
ESTERO BAY
WHISKEY CREEK BOUNDARY MAP
11-10-1992 14:45 17500A66.DWG 84

Figure 113

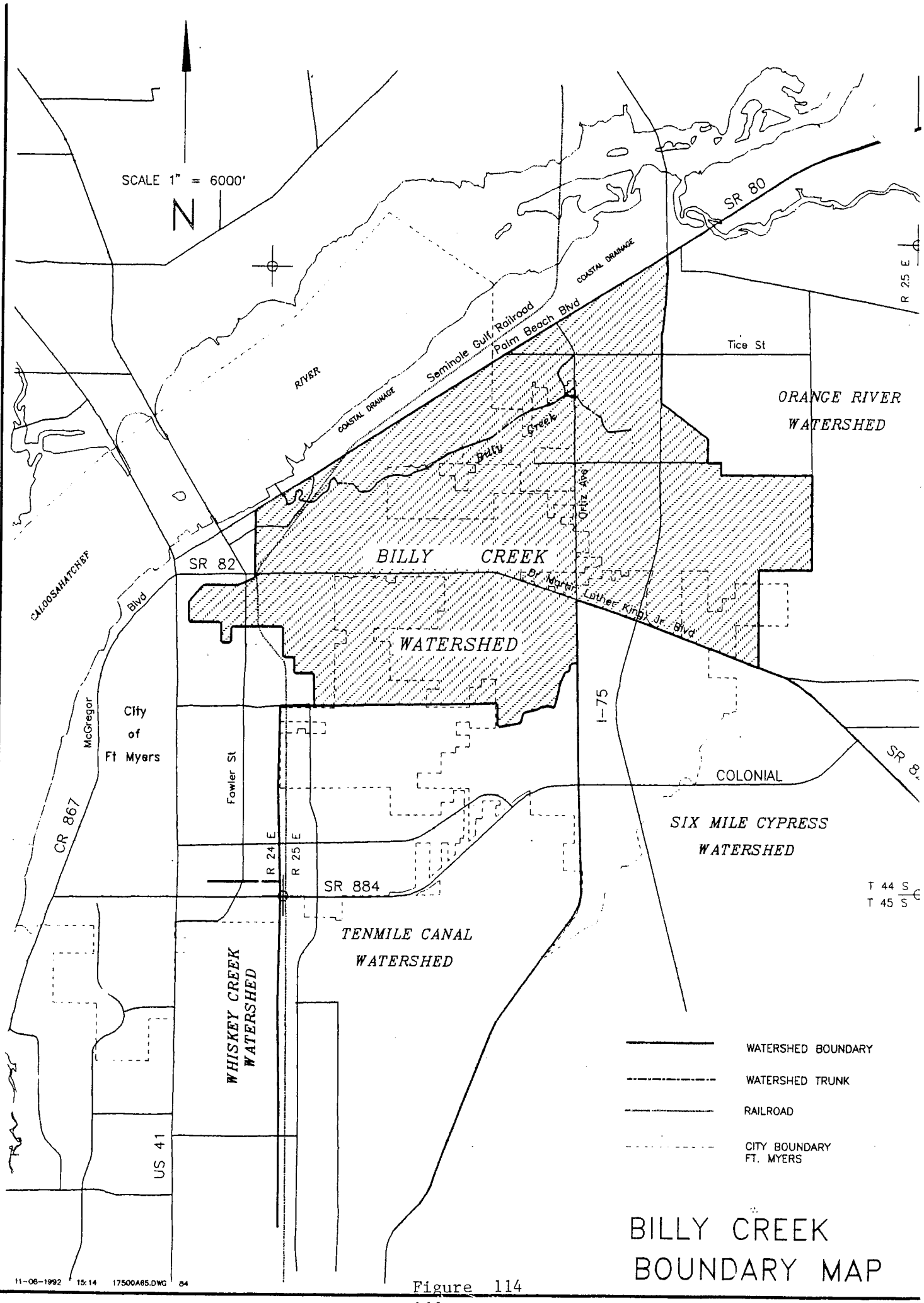

SCALE 1" = 6000'
N
SR 80
R 25 E
Tice St
Seminole Gulf Railroad
Palm Beach Blvd
COASTAL DRAINAGE
COASTAL DRAINAGE
RIVER
ORANGE RIVER
WATERSHED
Billy Creek
Ortiz Ave
BILLY CREEK
WATERSHED
SR 82
CALOOSAHATCHEE
Blvd
Dr. Martin Luther King, Jr. Blvd
City
of
Ft Myers
McGregor
Fowler St
I-75
COLONIAL
SR 8
CR 867
R 24 E
R 25 E
SR 884
SIX MILE CYPRESS
WATERSHED
T 44 S
T 45 S
TENMILE CANAL
WATERSHED
WHISKEY CREEK
WATERSHED
US 41
WATERSHED BOUNDARY
WATERSHED TRUNK
RAILROAD
CITY BOUNDARY
FT. MYERS
BILLY CREEK
BOUNDARY MAP
11-06-1992 15:14 17500A85.DWG 84

Figure 114

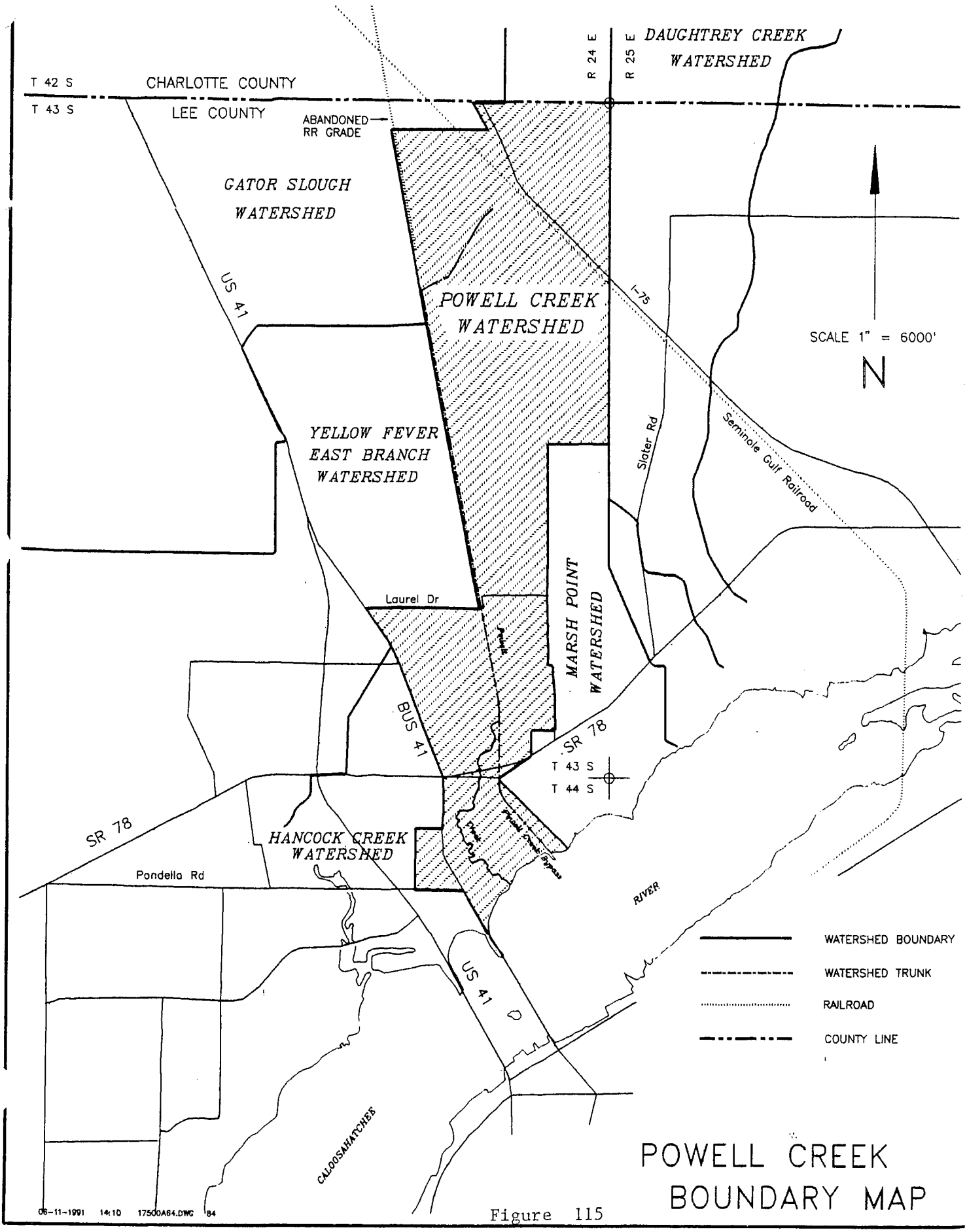
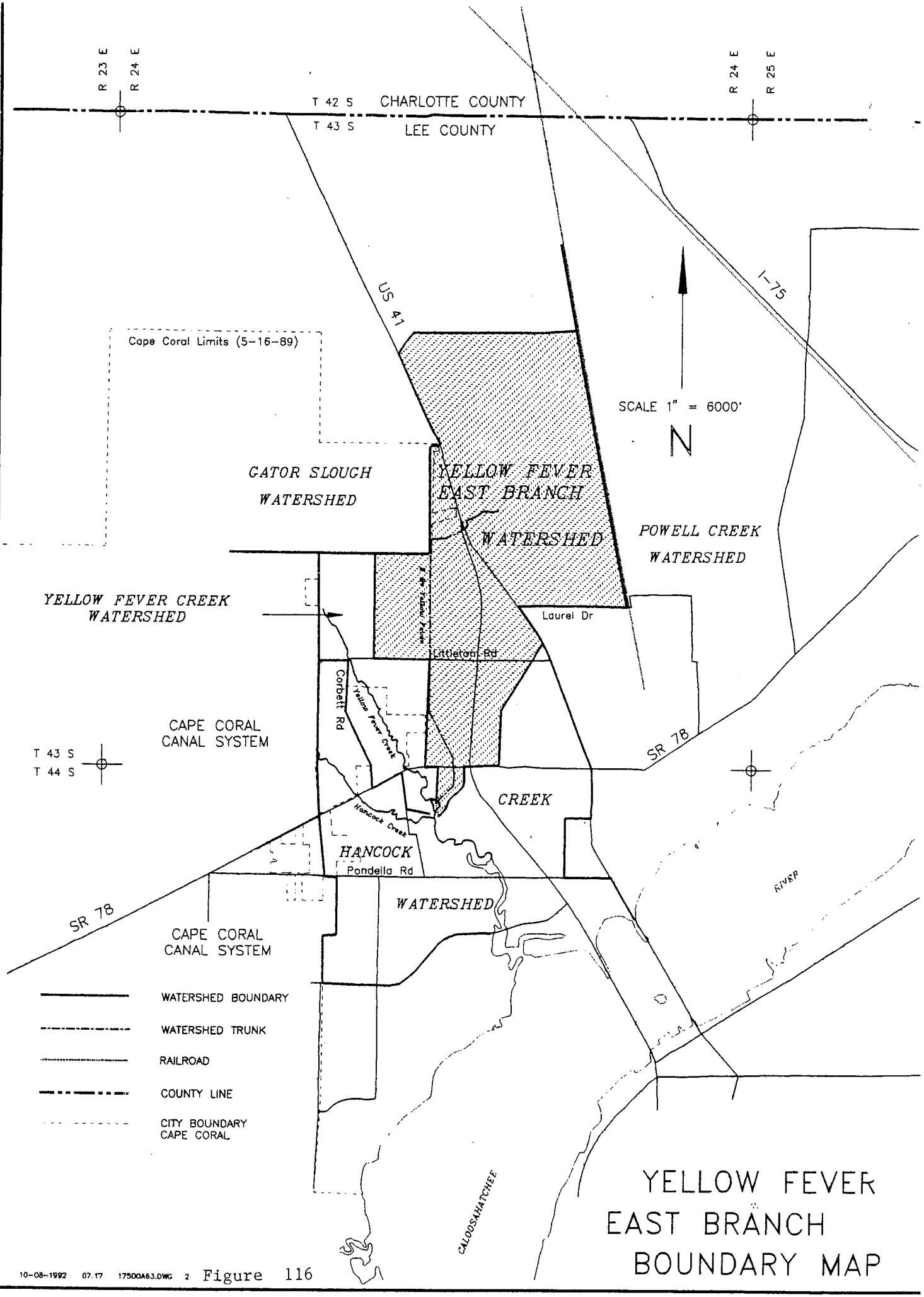
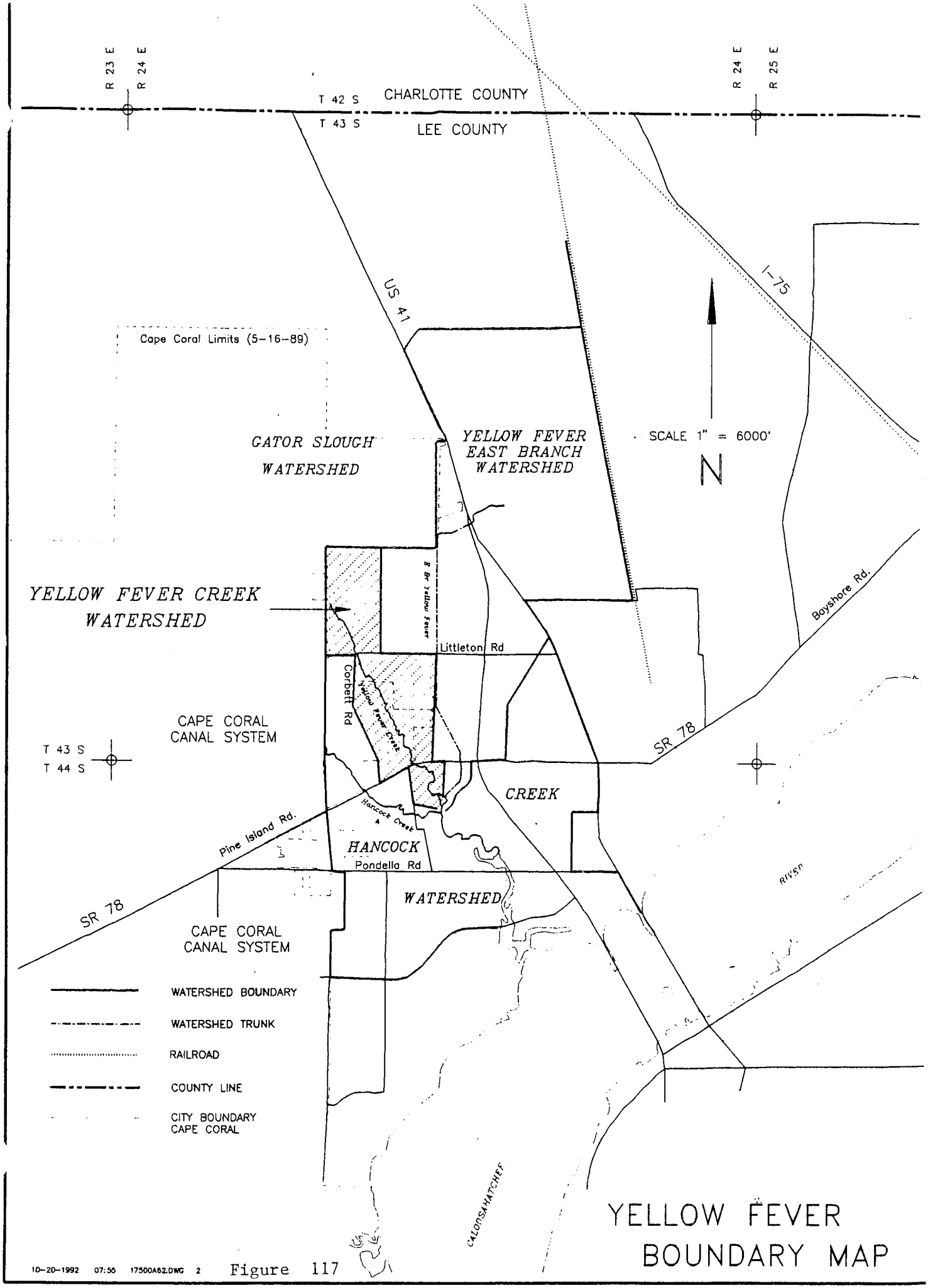

T 42 S
T 43 S
CHARLOTTE COUNTY
LEE COUNTY
ABANDONED RR GRADE
R 24 E
R 25 E
DAUGHTREY CREEK WATERSHED
GATOR SLOUGH WATERSHED
US 41
POWELL CREEK WATERSHED
I-75
SCALE 1" = 6000'
N
YELLOW FEVER EAST BRANCH WATERSHED
Slater Rd
Seminole Gulf Railroad
Laurel Dr
MARSH POINT WATERSHED
BUS 41
SR 78
T 43 S
T 44 S
SR 78
HANCOCK CREEK WATERSHED
Pondella Rd
RIVER
US 41
CALOOSAHATCHEE
WATERSHED BOUNDARY
WATERSHED TRUNK
RAILROAD
COUNTY LINE
POWELL CREEK BOUNDARY MAP
06-11-1991 14:10 17500A64.DWG 84

Figure 115



10-08-1992 07.17 17500A63.DWG 2 Figure 116



YELLOW FEVER BOUNDARY MAP

10-20-1992 07:55 17500A62.DWG 2

Figure 117

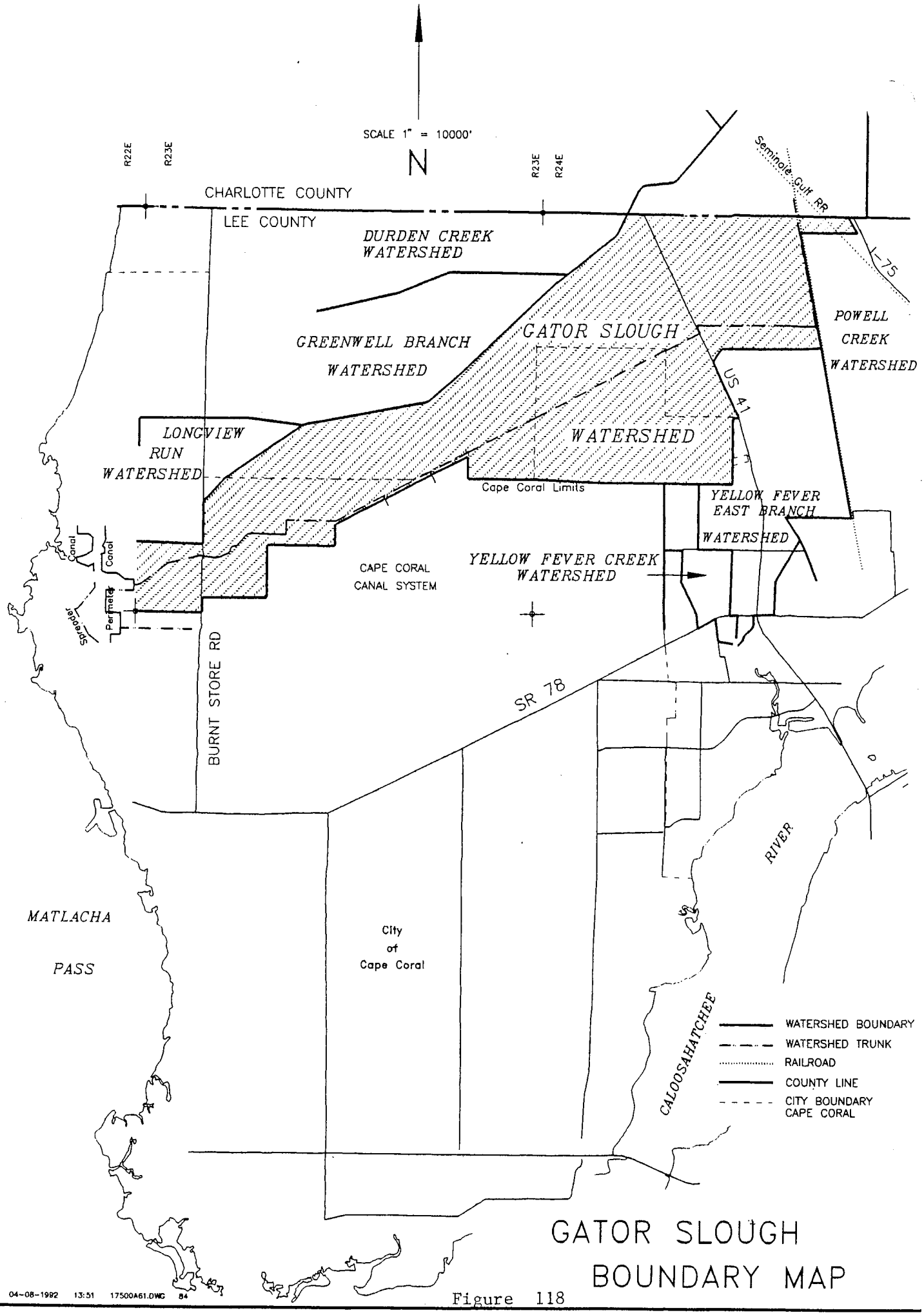
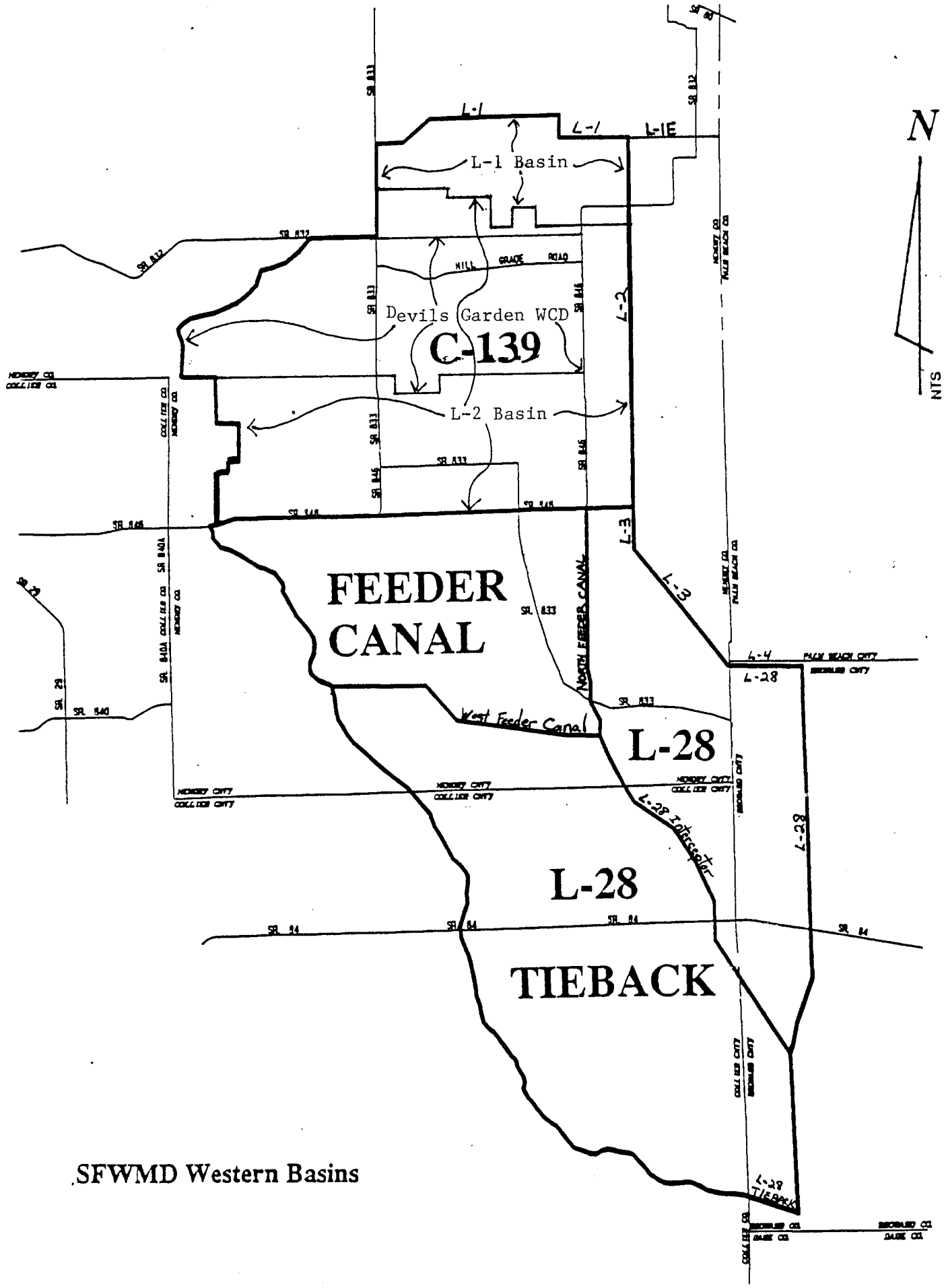
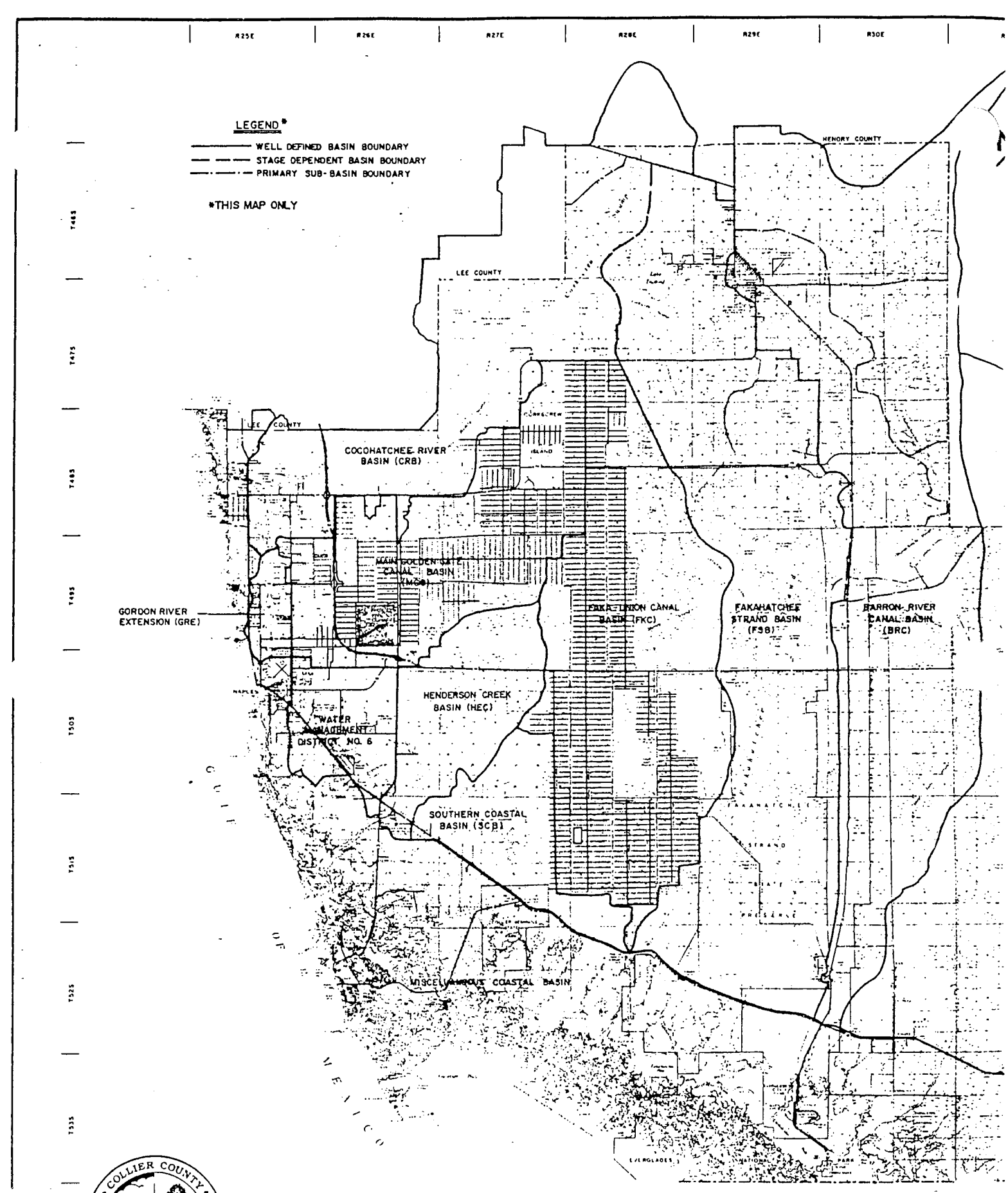

SCALE 1" = 10000'
N
R22E
R23E
R23E
R24E
CHARLOTTE COUNTY
LEE COUNTY
Seminole Gulf RR
I-75
DURDEN CREEK WATERSHED
GREENWELL BRANCH WATERSHED
GATOR SLOUGH WATERSHED
POWELL CREEK WATERSHED
US 41
LONGVIEW RUN WATERSHED
Cape Coral Limits
YELLOW FEVER EAST BRANCH WATERSHED
YELLOW FEVER CREEK WATERSHED
CAPE CORAL CANAL SYSTEM
Canal
Canal
Spreader
Permeter
BURNT STORE RD
SR 78
RIVER
MATLACHA PASS
City of Cape Coral
CALOOSAHATCHEE
WATERSHED BOUNDARY
WATERSHED TRUNK
RAILROAD
COUNTY LINE
CITY BOUNDARY CAPE CORAL
GATOR SLOUGH BOUNDARY MAP
04-08-1992 13:51 17500A61.DWG 84

Figure 118



SFWMD Western Basins

Figure 119



COLLIER COUNTY STORMWATER MANAGEMENT PROGRAM

Figure 120 Western Collier County Drainage Basins

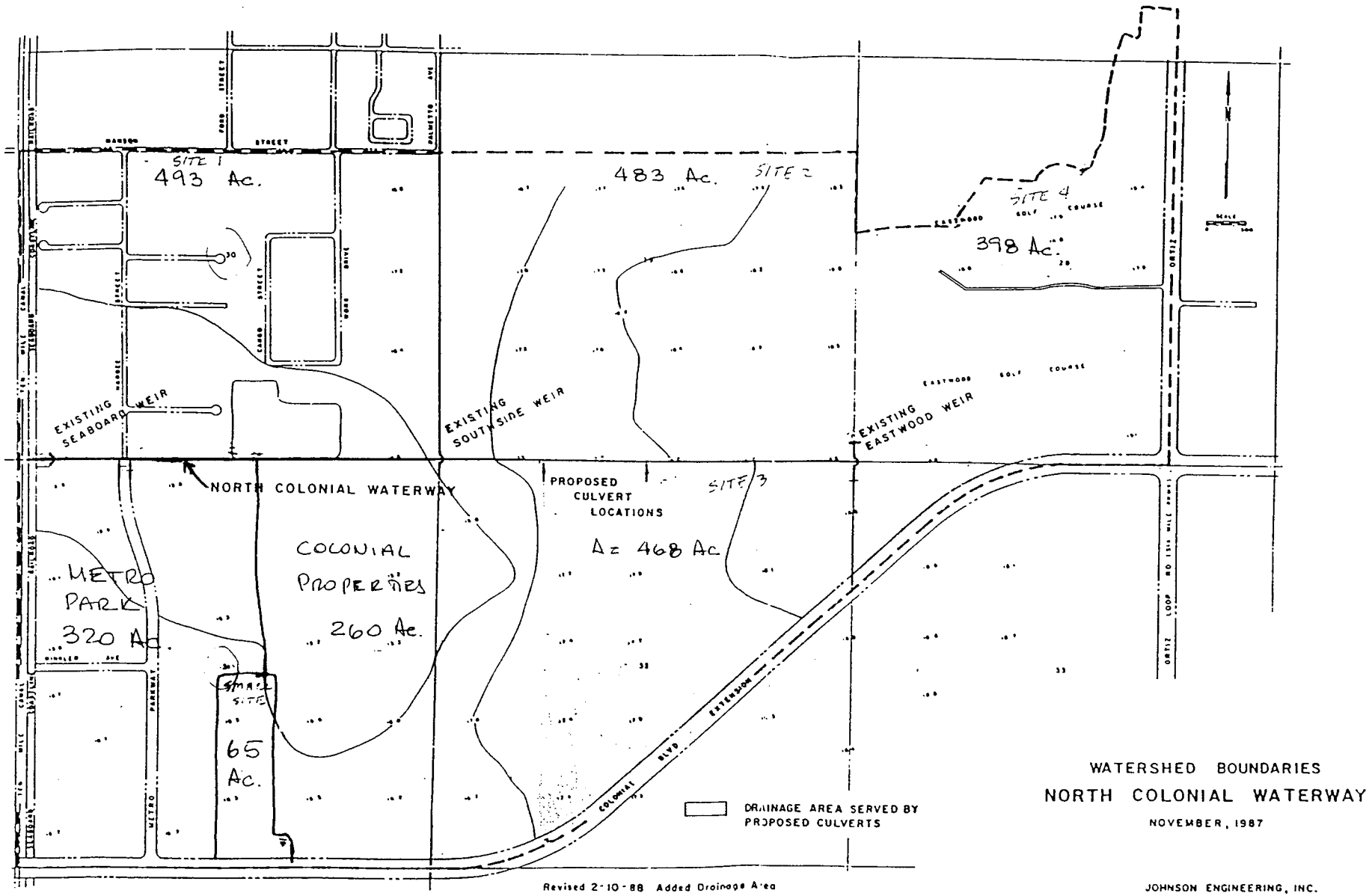


Figure 12/ North Colonial Waterway Drainage Basin

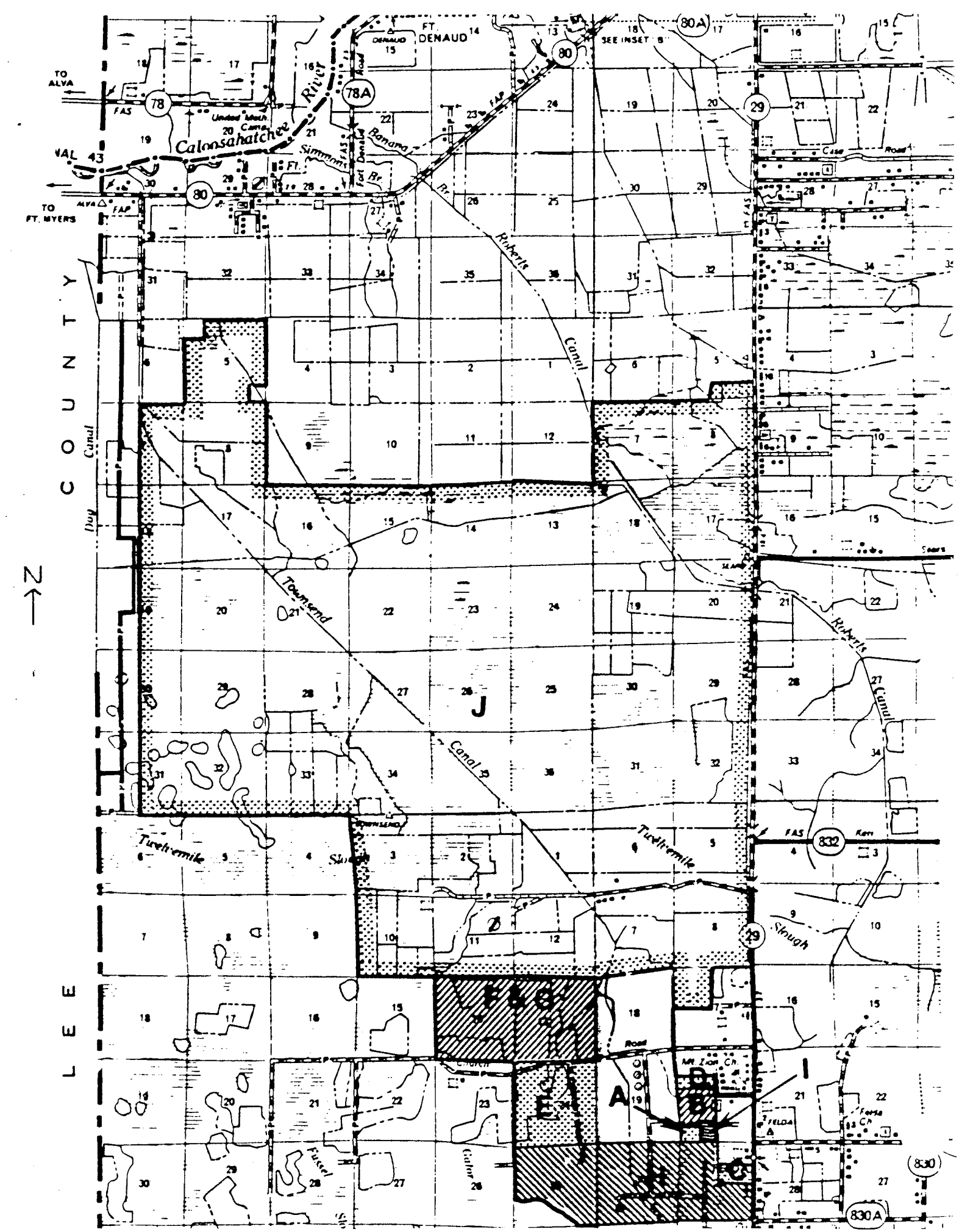
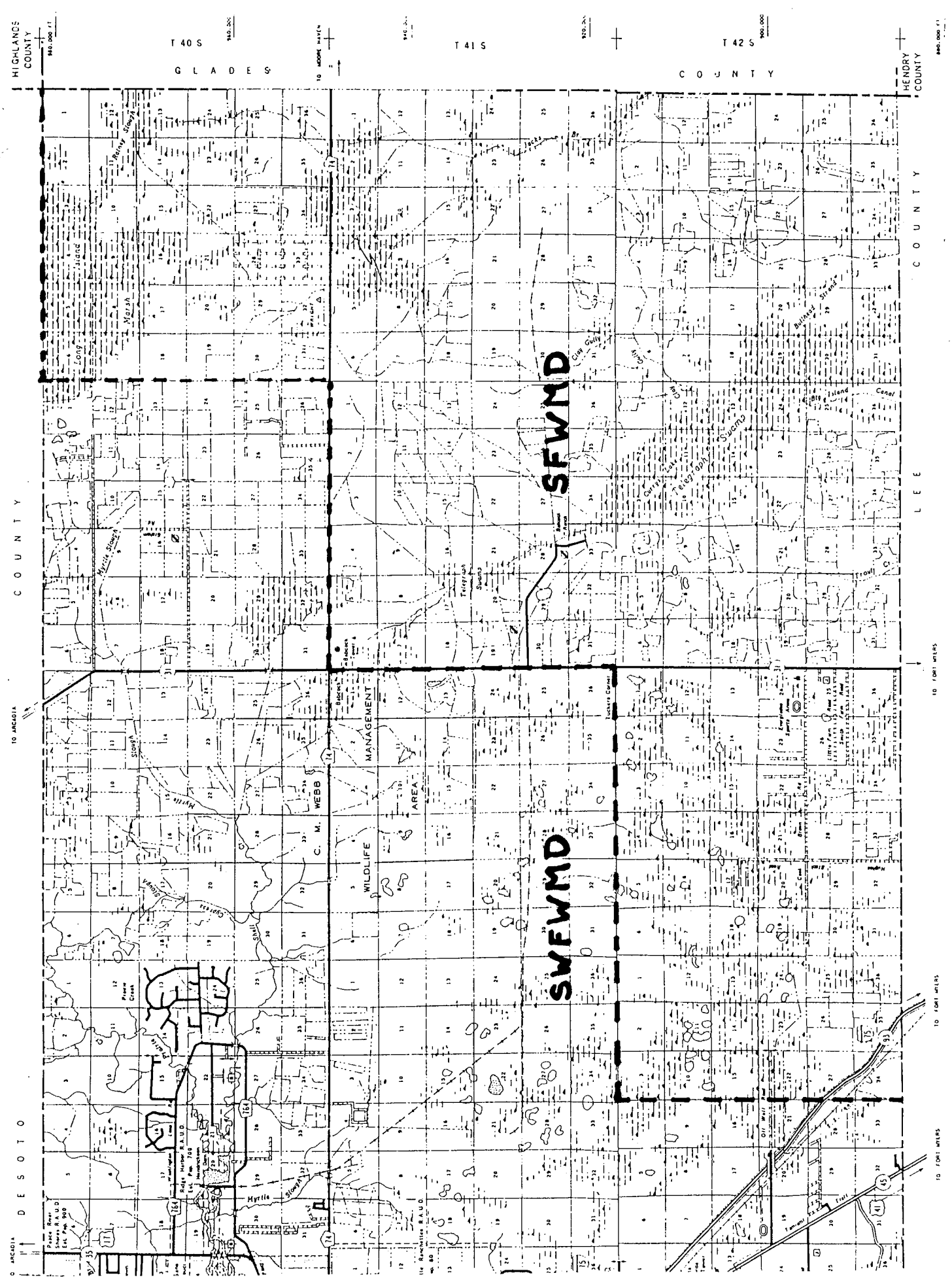


Figure 122 Townsend Canal Drainage Basin


HIGHLANDS COUNTY
T 40 S
T 41 S
T 42 S
GLADES
COUNTY
HENDRY COUNTY
LEE
COUNTY
DESOTO
COUNTY
SFWMD
SWFWMD
C. M. WEBB
WILDLIFE
MANAGEMENT
AREA
Telegraph Swamp
Myrtle Slough
Long Island Marsh
Clay Gully
Bullhead Strand
Big Island Canal
Tucker's Corner
Myrtle Slough
Shell Cypress Slough
Pioneer Creek
Ridge Harbor R.A.U.D.
Peace River Shores R.A.U.D.
Tamiami Trail
TO ARCADIA
TO FORT MYERS
TO MOORE HAVEN

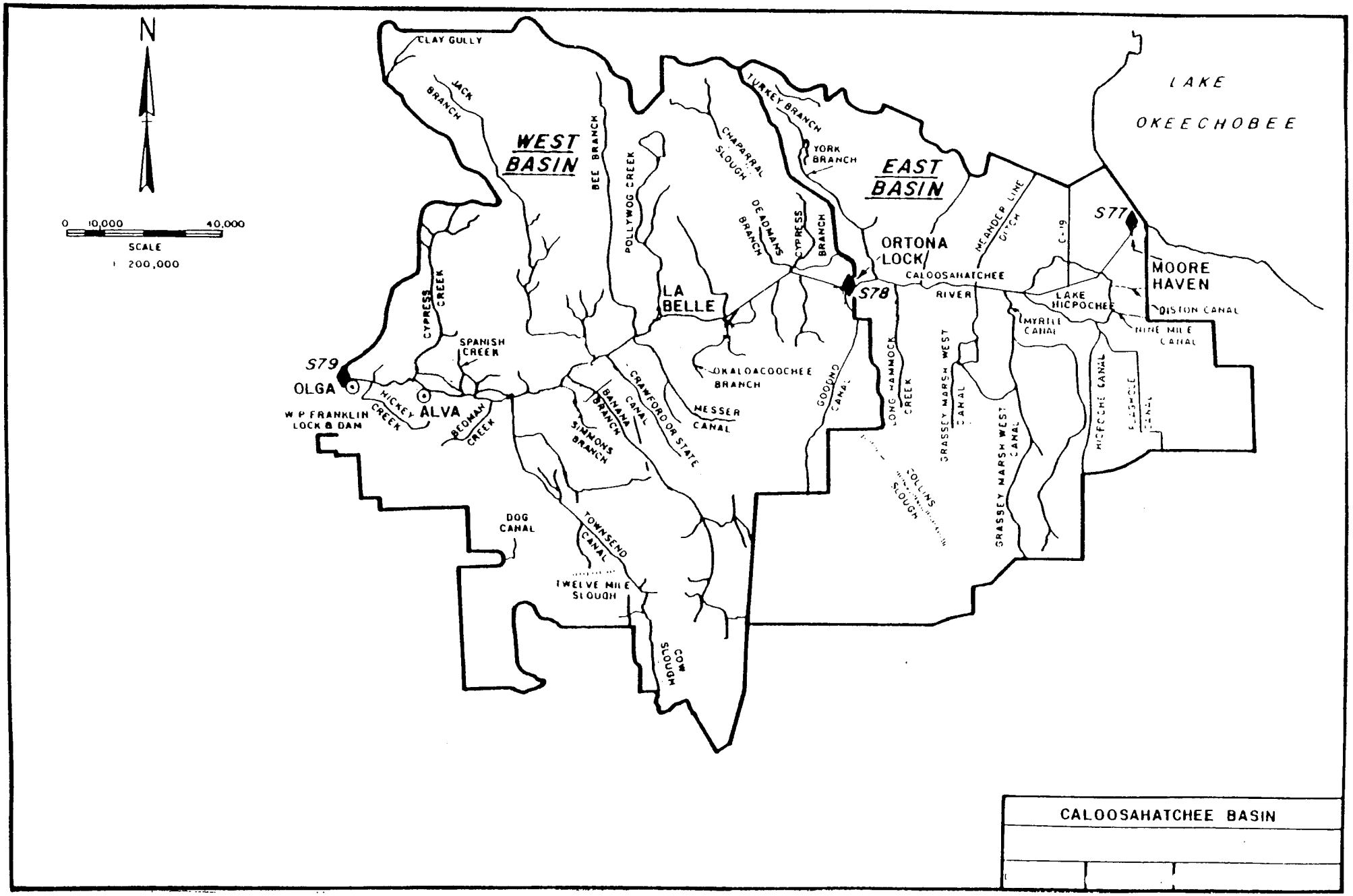


Figure 24 Location of Caloosahatchee Basin

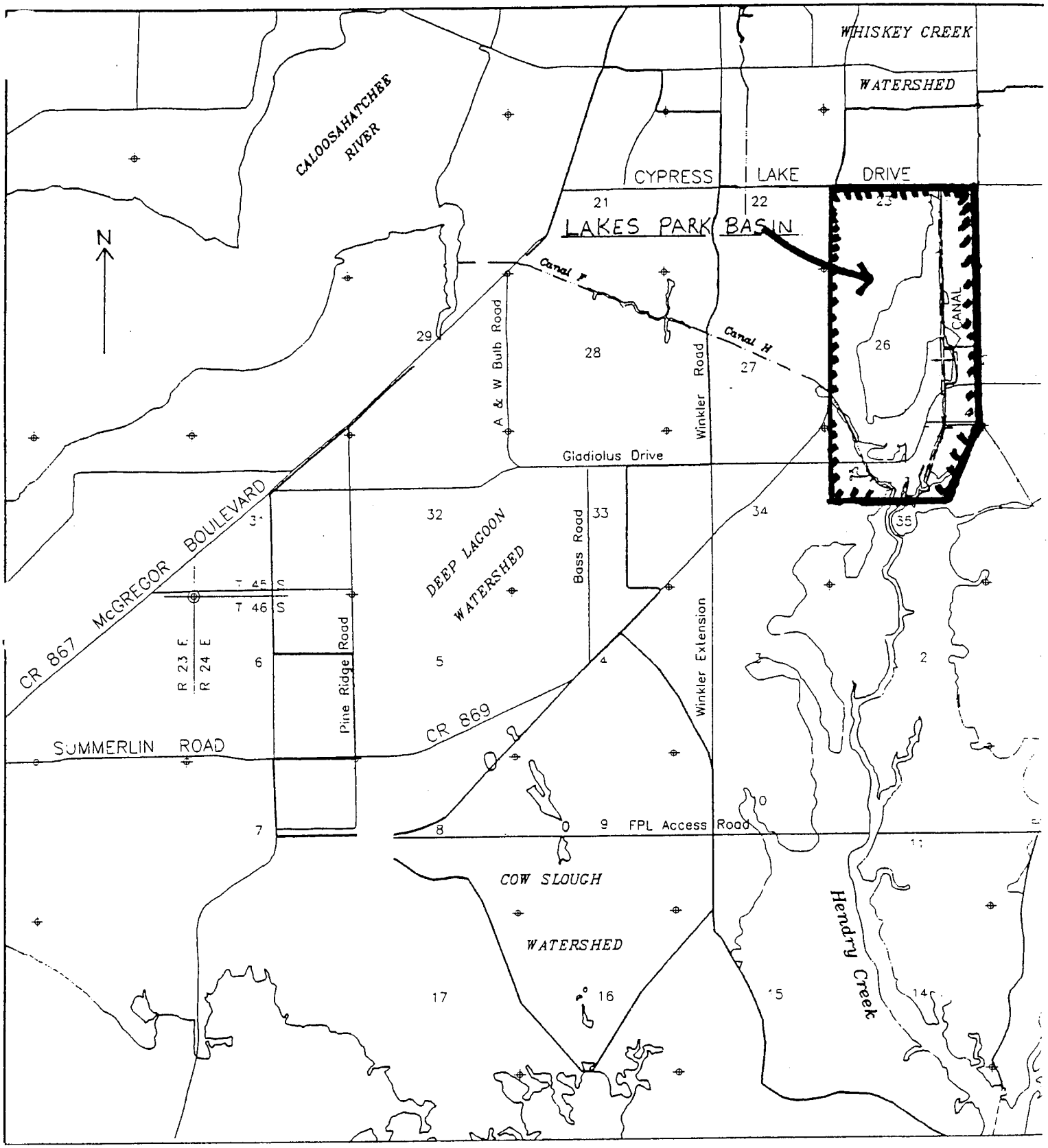


Figure 125 Location Of Lakes Park Basin

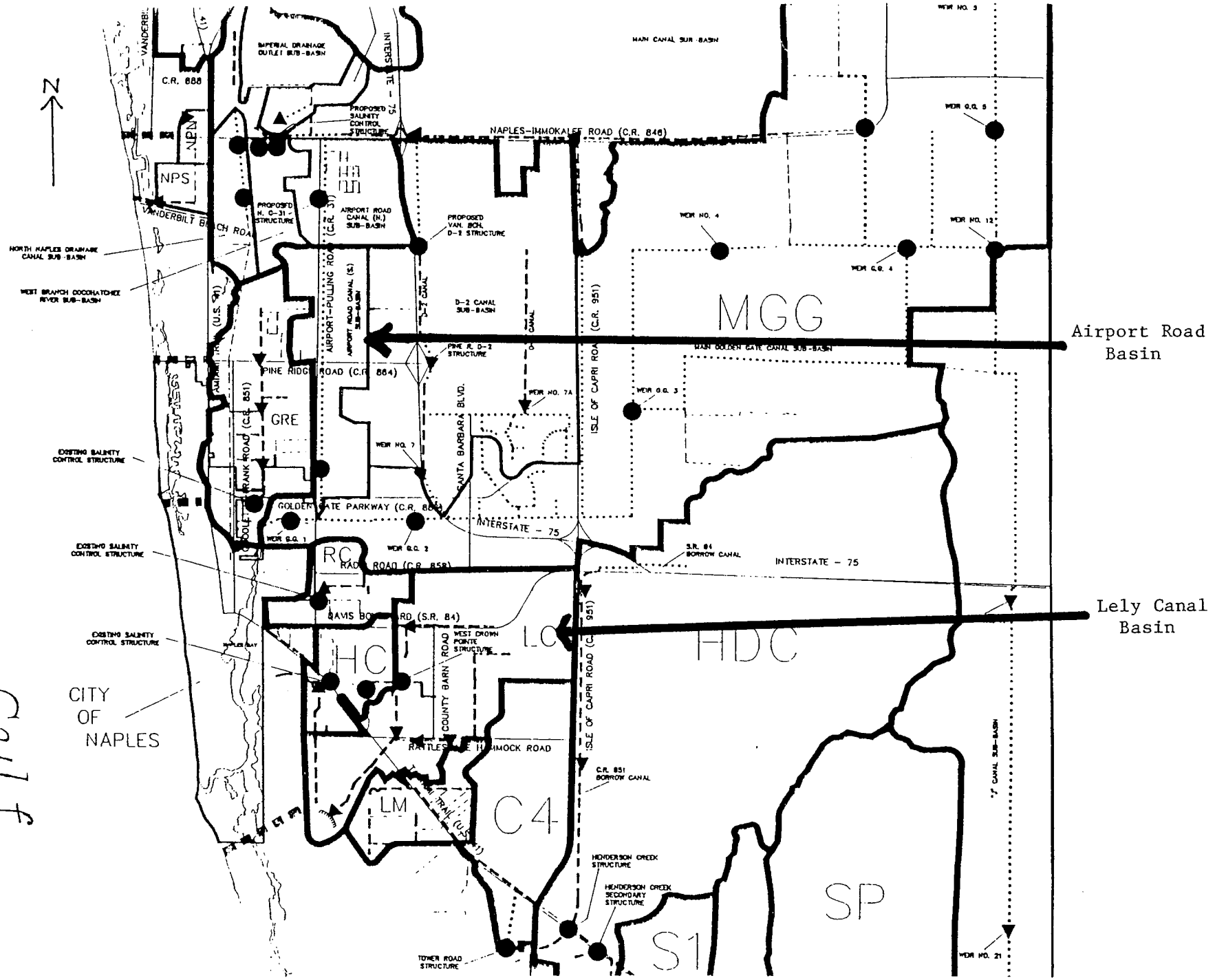


Figure 126 Location Of Airport Canal B[illegible] And Lely Canal Basin

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Telegraph Creek Basin	21
Bedman Creek Basin	21
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USE OF APPENDIX 2 TO DETERMINE ALLOWABLE DISCHARGE VALUES

The assignment of allowable discharge values for waterways in south Florida is based on very inexact science. Not only are the properties of the waterway often in doubt, but they are constantly changing. Inflows to the waterway are even more of a mystery, since their varying amounts and times, subject to all the variables of hydrology, are additive if and when they reach the waterway. In south Florida almost all inflows are also constrained by waterway tailwaters at some point in time.

Many of the allowable discharges derived over the years were estimated from a single or minimum number of hydraulic routings of inflows and waterway flows, using traditional hydrologic methods, which didn't provide for sheetflow, out of bank flow, tailwater constraints, reverse flow, pumped discharge, etc. The allowable discharge values which were derived for many of the lower east coast canals were of the form:

$$Q = \left[\frac{a}{A^{0.5}} + b\right] A$$

where: Q = allowable discharge (cubic feet/second)
a and b = constants (conversion units)
A = contributing area (square miles)

The form of the equation was established during the 1920's for the Everglades Agricultural Area (EAA) by unknown parties based on unknown principle. It obviously assigns larger unit discharge values to smaller contributing areas and vice-versa. This makes sense, usually. It presumes inflow hydrograph peaks are not additive (the sum of the parts exceeds the whole at any single point in time). It just so happens it really applies less in the EAA than anywhere else in the District because most contributing areas in the EAA are pumped discharges and thus the peaks are additive. The allowable discharge for the EAA should actually be 0.75 inches per day, the pump capacity of the overall system.

The constants a and b were different for each canal and derived from two points on a curve, one for the discharge for the entire basin and one for an estimated discharge for one square mile. In general the method gave extremely generous allowable discharge values with typical values for one square mile of three to five inches per day.

In addition to the problem caused by pumped discharge peaks being coincident, an additional problem was that many contributing areas were small (high unit discharge) and highly impervious. Thus, their actual discharge was much greater than the allowable discharge formula estimates. The end result is that there is very little correlation between the old allowable discharge formulas and actual discharges. Without basin studies, no one can say how a basin performs.

In recent years, knowledge of the above problem has caused allowable discharge to be computed from the pure division of the waterway capacity by the area of the basin. This would be conservative for an undeveloped basin, but few such basins exist. Many of the basins in

Appendix 2 have received this treatment since publication of earlier versions of Appendix 2.

The new values in Appendix 2 come from many sources, some as described above, a few from basin studies, and others from estimates by the District, local governments, permit applicants, etc. The best available sources were used, but new studies were not conducted.

The end result of the above is a series of values which generally ignore basin size. They range from less than one half inch per day to as much as 12 inches per day. These of course range from a large flat basin to a steeper basin. It is unlikely that there is really that much disparity in south Florida waterways or the discharges to them. It is also likely that the smaller basins should have higher unit area discharges. Therefore, Appendix 2 should be used as follows:

Case 1: If the immediate receiving water is a natural stream, overland sheetflow area, secondary or tertiary man made ditch, swale or other conveyance with undefined capacity; then the post-development instantaneous peak discharge rate should equal the pre-development rate for the approprate design storm event such that new adverse water quantity impacts are not created.

Case 2: If the immediate receiving water is a primary waterway with allowable discharge capacity listed in Appendix 2, then the allowable instantaneous peak discharge rate is the lesser of either the listed value or the value calculated by using the appropriate formula below:

For a 25 year/3 day design storm: $Q = 53A^{0.64}$

For a 25 year/1 day design storm: $Q = 46A^{0.64}$

For a 10 year/3 day design storm: $Q = 30A^{0.64}$

where: Q = allowable discharge (cubic feet/second)

A = contributing area (square miles)

Note: These two cases do not apply to the C-51 Basin. Use the subbasin discharge coefficients for that basin.

The above formulas were derived from the experience gained in many years of issuing permits and reviewing applicants submissions. They generally fit an average basin with an SCS curve number of 65. If an applicant believes either the formula or the listed value are inappropriate, the District will consider other submitted information. It is acknowledged that such conditions as; downstream flow attenuation areas, steep slopes, reduced soil storage and other such factors may make pre-development/post-development values more appropriate. The important factors are:

1) That waterway capacity not be unused,
2) That new adverse impacts are not created,
3) That historic drainage rights are preserved and,
4) Recognition is given to contributing drainage area size when possible.

DRAINAGE BASIN DATA

LAKE KISSIMMEE BASIN (Osceola and Polk Counties)

The design storm is a 10 year event in Osceola County and a 25 year event in Polk County. The allowable discharge rate is 31.1 CSM. See Figures 1 and 2.

LAKE WEOHYAKAPKA BASIN (Polk County)

The design storm is a 25 year event. The allowable discharge rate for projects located in this basin is based on the peak discharge rate after development not exceeding the rate that existed prior to development. See Figures 1 and 3.

LAKE MARIAN BASIN (Osceola County)

The design storm is a 10 year event. The allowable discharge rate is 31.1 CSM. See Figures 1 and 4.

LAKE HATCHINEHA BASIN (Polk and Osceola Counties)

The design storm is a 10 year event in Osceola County and a 25 year event in Polk County. The allowable discharge rates for the various subbasins can be determined from Figure 5 (Drainage Analysis Unit 8/Kissimmee River Above Lake Hatchineha). This illustration was taken from the Surface Water Management Plan which was prepared for Polk County by Envisors, Inc. It covers numerous drainage basins within Polk and Osceola Counties and has been modified by the District in order to reflect allowable discharge rates in units of cfs per square mile (CSM). Also see Figures 1 and 6.

LAKE PIERCE BASIN (Polk County)

The design storm is a 25 year event. The allowable discharge rates for the various subbasins can be determined from Figure 5 (Drainage Analysis Unit 8/Kissimmee River Above Lake Hatchineha). This illustration was taken from the Surface Water Management Plan which was prepared for Polk County by Envisors, Inc. It covers numerous drainage basins within Polk and Osceola Counties and has been modified by the District in order to reflect allowable discharge rates in units of cfs per square mile (CSM). Also see Figures 1 and 7.

HORSE CREEK BASIN (Osceola, Lake and Polk Counties)

Only that portion of this basin that is within Osceola County is within the SFWMD. The design storm is a 10 year event for this area. The allowable discharge rate is 88 CSM. See Figures 1 and 8.

REEDY CREEK BASIN (Polk, Orange, and Osceola Counties)

The design storm is a 10 year event in Osceola County and a 25 year event in Orange and Polk Counties. The allowable discharge rate within Orange County is 67 CSM. The allowable discharge rate for subbasins within Polk and Osceola Counties can be determined from Figure 5 (Drainage Analysis Unit 8/Kissimmee River Above Lake Hatchineha). This illustration was taken from the Surface Water Management Plan which was prepared for Polk County by Envisors, Inc. It covers numerous drainage basins within Polk and Osceola Counties and has been modified by the District in order to reflect allowable discharge rates in units of cfs per square mile (CSM). Also see Figures 1 and 9.

LAKE TOHOPEKALIGA BASIN (Osceola and Orange County)

The design storm is a 10 year event in Osceola County and a 25 year event in Orange County. The allowable discharge rate is 17.5 CSM. See Figures 1 and 10.

SHINGLE CREEK BASIN (Orange and Osceola Counties)

The design storm is a 10 year event in Osceola County and a 25 year event in Orange County. See Figures 1 and 11. The maximum allowable discharge rate for areas located north of Sand Lake Road is 320 CSM. The maximum allowable discharge rate for those areas located south of Sand Lake road, within Orange County, is 192 CSM. For those areas south of Sand lake Road, within Osceola County, the allowable discharge rate is 64 CSM, except for the following areas which should be allowed a maximum rate of 192 CSM.

T25S/R28E/Sections 1, 2, the East half of 3, all of 11 except for that part of the West half of the Southwest quarter which is not presently developed.

T25S/R29E/Sections 5, East portion of 6 and East portion of Northeast quarter of 7 which lie East of Shingle Creek, that part of 8 which lies North of the East-West ditch which approximately bisects this section, the Northwest quarter of 9.

EAST LAKE TOHOPEKALIGA BASIN (Orange and Osceola Counties)

The design storm is a 10 year event in Osceola County and a 25 year event in Orange County. The allowable discharge rate is 16.1 CSM. See Figures 1 and 12.

BOGGY CREEK BASIN (Orange and Osceola Counties)

The design storm is a 25 year event in Orange County and a 10 year event in Osceola County. The allowable discharge rate is 50 CSM. See Figures 1 and 13.

LAKE HART BASIN (Orange and Osceola Counties)

The design storm is a 10 year event in Osceola County and a 25 year event in Orange County. The allowable discharge rate is 10.6 CSM. See Figures 1 and 14.

LAKE MYRTLE BASIN (Osceola and Orange Counties)

The design storm is a 10 year event in Osceola County and a 25 year event in Orange County. The allowable discharge rate is 3.6 CSM. See Figures 1 and 15.

LAKE CYPRESS BASIN (Osceola and Polk Counties)

The design storm is a 10 year event in Osceola County and a 25 year event in Polk County. The allowable discharge rates for the various subbasins can be determined from Figure 5 (Drainage Analysis Unit 8/Kissimmee River Above Lake Hatchineha). This illustration was taken from the Surface Water Management Plan which was prepared for Polk County by Envisors, Inc. It covers numerous drainage basins within Polk and Osceola Counties and has been modified by the District in order to reflect allowable discharge rates in units of cfs per square mile (CSM). The allowable discharge rate for portions of the basin not covered by Figure 5 is 31.1 CSM. Also see Figures 1 and 16.

CANOE CREEK BASIN (Osceola County)

The design storm is a 10 year event. The allowable discharge rate is 31.1 CSM. See Figures 1 and 17.

S-63A BASIN (Osceola County)

The design storm is a 10 year event. The allowable discharge rate is 56.7 CSM. See Figures 1 and 18.

LAKE GENTRY BASIN (Osceola County)

The design storm is a 10 year event. The allowable discharge rate is 13.8 CSM. See Figures 1 and 19.

ALLIGATOR LAKE BASIN (Osceola County)

The design storm is a 10 year event. The allowable discharge rate is 13.0 CSM. See Figures 1 and 20.

L-61W BASIN (Glades County)

The allowable discharge rate for projects located in this basin is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a ten year event. See Figures 21 and 22.

L-61E BASIN (Glades County)

The design storm is a 10 year event. The allowable discharge rate is 40.8 CSM. See Figures 21 and 23.

L-60W BASIN (Glades County)

The design storm is a 10 year event. The allowable discharge rate is 40.8 CSM. See Figures 21 and 24.

L-60E BASIN (Glades County)

The design storm is a 10 year event. The allowable discharge rate is 45.3 CSM. See Figures 21 and 25.

L-59W BASIN (Glades County)

The design storm is a 10 year event. The allowable discharge rate is 45.3 CSM. See Figures 21 and 26.

L-59E BASIN (Glades County)

The allowable discharge rate for projects located in this basin is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 10 year event. See Figures 21 and 27.

S-129 BASIN (Glades County)

The allowable discharge rate is 20.2 CSM. The design storm is a 25 year event. See Figures 21 and 28.

S-127 BASIN (Glades County)

The allowable discharge rate is 20.2 CSM. The design storm is a 25 year event. See Figures 21 and 29.

C-41A (STUB OR BRIGHTON CANAL) BASIN (Glades and Highlands Counties)

The design storm is a 10 year event. The allowable discharge rate is 62.1 CSM. See Figures 21 and 30.

C-41 (HARNEY POND CANAL) BASIN (Glades and Highlands Counties)

The design storm is a 10 year event. The allowable discharge rate is 40.8 CSM. See Figures 21 and 31.

LAKE ISTOKPOGA BASIN (Highlands and Polk Counties)

Figure 32 illustrates the location of numerous subbasins. Table 1 provides allowable discharge rates for each subbasin for various storm events. Use the 10 year storm event. The values were produced as part of the "Lake Istokpoga Feasibility Study" (July 1993, Howard Searcy Consulting Engineers). Also see Figure 21.

C-40 (INDIAN PRAIRIE CANAL) BASIN (Glades and Highlands Counties)

The design storm is a 10 year event. The allowable discharge rate is 45.3 CSM. See Figures 21 and 33.

S-154C BASIN (Okeechobee County)

The allowable discharge rate for projects located in this basin is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a ten year event. See Figures 21 and 34.

S-154 BASIN (Okeechobee County)

The allowable discharge rate is 20.2 CSM. The design storm is a 10 year event. See Figures 21 and 35.

S-133 BASIN (Okeechobee County)

The allowable discharge rate is 15.6 CSM. The design storm is a 25 year event. See Figures 21 and 36.

S-131 BASIN (Glades County)

The allowable discharge rate is 20.5 CSM. The design storm is a 25 year event. See Figures 21 and 37.

C-38 (KISSIMMEE RIVER) BASIN (Osceola, Polk, Okeechobee, and Highland Counties)

This basin includes the following subbasins; S-65A, S-65B, S-65C, S-65D and S-65E. The allowable discharge rate is 31.1 CSM. The design storm is a 10 year event. See Figures 21 and 38 through 42.

C-25 (BELCHER CANAL) BASIN (St.Lucie, Okeechobee, and Indian River Counties)

This conveyance system is designed to prevent flooding from a 10 year storm event. The allowable discharge rate for projects located upstream of S-50 is 23.1 CSM. Downstream of S-50, the allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. See Figures 43 and 44.

C-24 (DIVERSION CANAL-RIM DITCH CANAL) BASIN (St.Lucie and Okeechobee Counties)

This conveyance system is designed to prevent flooding from a 10 year storm event. The allowable discharge rate for projects located upstream of S-49 is 28.1 CSM. See Figures 43 and 45.

C-23 (COUNTY LINE CANAL) BASIN (St.Lucie, Okeechobee, and Martin Counties)

This conveyance system is designed to prevent flooding from a 10 year storm event. The allowable discharge rate for projects located upstream of S-97 is 30.0 CSM. See Figures 43, 46 and 49.

NORTH FORK OF THE ST. LUCIE RIVER BASIN (Martin and St. Lucie Counties)

This basin includes project canal C-23A. The allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 10 year event. See Figures 43, 47 and 49.

C-59 (TAYLOR CREEK-NUBBIN SLOUGH) BASIN (Martin, Okeechobee and St. Lucie Counties)

This canal provides protection from a 10 year storm event. The allowable discharge is 39.6 CSM. See Figures 43, 48 and 49.

TIDAL ST. LUCIE BASIN (Martin County)

The allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 25 year event. See Figures 49 and 50.

C-44 (ST. LUCIE CANAL) BASIN (Martin County)

The allowable discharge rate is limited by the conveyance capacity of numerous drainage spillways constructed along the St. Lucie Canal. The location, drainage area, and discharge capacity of the spillways are described and illustrated in Table 2 and Figure 51. The design storm is a 25 year event. Also see Figure 49.

S-135 BASIN (Martin and Okeechobee Counties)

The allowable discharge rate for this basin is 20.2 CSM. It should be used with a 25 year design storm. See Figures 49 and 52.

S-153 BASIN (Martin County)

This canal was designed for protection from a 10 year storm event. The allowable discharge is 105.5 CSM. See Figures 49 and 53.

S-4 BASIN (Glades and Hendry County)

The design storm is a 25 year event. The allowable discharge rate from agricultural lands is 20.2 CSM. The allowable discharge rate for the City of Clewiston is 107.5 CSM. See Figures 54 and 55.

S-236 BASIN (Palm Beach County)

The design storm is a 25 year event. The allowable discharge rate is 20.2 CSM. See Figures 54 and 56.

S-8 BASIN (Palm Beach and Hendry Counties)

The design storm is a 25 year event. The allowable discharge rate is 20.2 CSM. See Figures 54 and 57.

S-3 BASIN (Palm Beach and Hendry Counties)

The design storm is a 25 year event. The allowable discharge rate is 20.2 CSM. See Figures 54 and 58.

S-7 BASIN (Palm Beach County)

The design storm is a 25 year event. The allowable discharge rate is 20.2 CSM. See Figures 54 and 59.

S-6 BASIN (Palm Beach County)

The design storm is a 25 year event. The allowable discharge rate is 20.2 CSM. See Figures 54 and 60.

S-2 BASIN (Palm Beach County)

The design storm is a 25 year event. The allowable discharge rate is 20.2 CSM. See Figures 54 and 61.

S-5A BASIN (Palm Beach County)

The design storm is a 25 year event. The allowable discharge rate is 20.2 CSM. See Figures 54 and 62.

L-8 BASIN (Palm Beach and Martin Counties)

The design storm is a 25 year event. The allowable discharge rate is 20.2 CSM. See Figures 54 and 63.

HILLSBORO CANAL BASIN (Broward and Palm Beach Counties)

There is no specified design storm for the Hillsboro Canal since it was built prior to the Central and Southern Florida Flood Control Project. A 25 year design event should be utilized though. The allowable discharge rate for areas between S-39 and the Deerfield Lock is 35 CSM. Downstream of the Deerfield Lock, the allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. See Figures 64 and 65.

C-15 BASIN (Palm Beach County)

This canal provides flood protection from a 30 year storm event. A 25 year design storm should be utilized though. The allowable discharge for projects within this basin, upstream of S-40, is 64 CSM. If land development were to occur downstream of S-40, the peak discharge rate after development could not exceed the rate that existed prior to development. See Figures 64 and 66.

C-16 (BOYNTON CANAL) BASIN (Palm Beach County)

This canal provides flood protection from a 30 year storm event. A 25 year design storm should be utilized though. The allowable discharge for projects within this basin, upstream of S-41, is 62.6 CSM. Downstream of S-41, the allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. See Figures 64 and 67.

C-51 (WEST PALM BEACH CANAL) BASIN (Palm Beach County)

Allowable discharge rates are designated for each subbasin served by the C-51 canal. They are to be applied to a 10 year design storm. The discharge coefficients for each subbasin are illustrated in Figure 70. Also see Figures 64, 68 and 69.

C-17 (EARMAN RIVER CANAL) BASIN (Palm Beach County)

This canal provides flood protection from a 30 year storm event. A 25 year design storm should be utilized though. The allowable discharge for projects within this basin, upstream of S-44, is 62.7 CSM. Downstream of S-44, the allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. See Figures 64 and 71.

C-18 BASIN (Palm Beach County)

Allowable discharges within this basin are based upon the recommendations contained within the SFWMD's Technical Publication 88-11, "Flood Management Study of the C-18 Basin, August 1988". Figure 73 illustrates the subbasins within the study area and their corresponding discharge coefficients. Allowable discharge rates should be applied to the 25 year design storm. Also see Figures 64 and 72.

C-9 (SNAKE CREEK CANAL) BASIN (Dade and Broward Counties)

The allowable discharge rate for the eastern subbasin is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The allowable discharge for the western subbasin is 20 CSM. The boundary between the subbasins is Flamingo Road in Broward County and N.W. 67th Ave. in Dade County. The design storm is a 25 year event. See Figures 74, 75 and 76.

C-10 (HOLLYWOOD CANAL) BASIN (Broward County)

The allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 25 year event. See Figures 74 and 77.

C-11 (SOUTH NEW RIVER CANAL) BASIN (Broward County)

The allowable discharge rate is 20 CSM, west of Structure 13A and 40 CSM, east of 13A. These rates are based on pump capacities of 20 CSM at pump stations S-9 and S-13, in addition to the spillway capacity at S-13. The design storm is a 25 year event. See Figures 74, 78 and 79.

NORTH NEW RIVER CANAL BASIN (Broward County)

The area of the eastern basin is 7 square miles. The western basin drains 23 square miles. The boundary between the two basins is approximately State Road 817. This basin provides flood protection from the 25 year storm event. The allowable discharge rate for the area between S-34 and the Sewell Lock is 70.8 CSM. Downstream of the Sewell Lock the allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. See Figures 74, 80 and 81.

C-12 (PLANTATION CANAL) BASIN (Broward County)

This conveyance was designed to provide flood protection from the 25 year storm event. The allowable discharge rate for projects located upstream of structure S-33 is 76.7 CSM. This value was calculated by dividing the 920 cfs removal rate by the approximate drainage area (12 square miles). The allowable discharge rate for projects located downstream of S-33 is based on the peak discharge rate after development not exceeding the rate that existed prior to development. See Figures 74 and 82.

NORTH FORK MIDDLE RIVER BASIN (Broward County)

This basin receives flows from a 5 square mile area located north of the eastern C-13 basin. The allowable discharge rate for this basin is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 25 year event. See Figures 74 and 83.

C-13 (MIDDLE RIVER CANAL) BASIN (Broward County)

This conveyance was designed to provide flood protection from the 25 year storm event. The allowable discharge rate for projects located downstream of structure S-36 (i.e. the eastern basin) is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The allowable discharge rate for projects located upstream of S-36 (i.e. the western basin) is 52 CSM. This value was calculated by dividing the design discharge rate at S-36 (1560 cfs) by the approximate drainage area (30 square miles). See Figures 74, 84 and 85.

OLD POMPANO CANAL BASIN (Broward County)

This conveyance was designed to provide flood protection from the 25 year storm event. The allowable discharge rate, downstream of G-57, is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The allowable discharge rate for the portion of the basin between G-65 and G-57 is 72 CSM. See Figures 74 and 86.

C-14 (CYPRESS CREEK CANAL) BASIN (Broward County)

This conveyance is divided into an eastern and western section with regard to design flood protection. The boundary between the two basins is Farm Road. The eastern and western basins were designed to handle flows from 30 and 10 year storm events respectively. A 25 year

design storm should be used in the eastern basin instead of a 30 year event. The allowable discharge rate, within C-14, downstream of S-37A, is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The allowable discharge rate for other areas within the C-14 basin is 69.2 CSM. See Figures 74, 87 and 88.

THE NORTH AND SOUTH MODEL LAND CANAL BASINS (Dade County)

The allowable discharge rate is 16.0 CSM. The design storm is a 25 year event. See Figures 89 and 90.

THE FLORIDA CITY CANAL BASIN (Dade County)

The allowable discharge rate is 43.5 CSM. The design storm is a 25 year event. See Figures 89 and 91.

THE NORTH CANAL BASIN (Dade County)

The allowable discharge rate is 43.5 CSM. The design storm is a 25 year event. See Figures 89 and 92.

HOMESTEAD AIR FORCE BASE BASIN (Dade County)

The Homestead AFB is drained by the Military Canal. The allowable discharge rate is 191.5 CSM. The design storm is a 25 year event. See Figures 89 and 93.

C-103 BASIN (Dade County)

This basin contains a system of three conveyances (i.e. C-103, C-103N,and C-103S). In addition, the North Canal and the Florida City Canal also drain through this basin via the west borrow canal of L-31E. The allowable discharge rate is 43.5 CSM. The design storm is a 25 year event. See Figures 89 and 94.

C-102 BASIN (Dade County)

This system of conveyances (i.e. C-102 and C-102N) was designed to provide flood protection from the 10 year storm. The allowable discharge rate is 52.4 CSM. See Figures 89 and 95.

C-1 (BLACK CREEK CANAL) BASIN (Dade County)

The allowable discharge rate is 45.8 CSM. This value is based upon the design capacity of the system during a 10 year storm event. See Figures 89 and 96.

C-100 BASIN (Dade County)

This basin is also known as the Cutler Drainage Basin. This system of conveyances (i.e. C-100, C-100A, C-100B, and C-100C) was designed to provide flood protection from the 10 year storm. The allowable discharge rate is 56.6 CSM. See Figures 89 and 97.

C-2 (SNAPPER CREEK) BASIN (Dade County)

The allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 25 year event. See Figures 89 and 98.

C-3 (CORAL GABLES CANAL) BASIN (Dade County)

This conveyance system was designed to provide flood protection from the 25 year storm event. Downstream of structure G-97, the allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. Upstream of G-97, the allowable discharge rate is 54 CSM. See Figures 89 and 99.

C-4 (TAMIAMI CANAL) BASIN (Dade County)

The allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 25 year event. See Figures 89 and 100.

C-5 (COMFORT CANAL) BASIN (Dade County)

The allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 25 year event. See Figures 89 and 101.

C-6 (MIAMI CANAL) BASIN (Dade County)

The allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 25 year event. See Figures 89 and 102.

C-7 (LITTLE RIVER CANAL) BASIN (Dade County)

The allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 25 year event. See Figures 89 and 103.

C-8 (BISCAYNE CANAL) BASIN (Dade County)

The allowable discharge rate is based on the peak discharge rate after development not exceeding the rate that existed prior to development. The design storm is a 25 year event. See Figures 89 and 104.

SIX MILE CYPRESS (Lee County)

The allowable discharge rate is 37.1 CSM. This rate is based on the Needles report. The design storm is a 25 year event. See Figure 105.

HANCOCK CREEK (Lee County)

The allowable discharge rate is 64 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

MARSH POINT (Lee County)

The allowable discharge rate is 108 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

COHN BRANCH (Lee County)

The allowable discharge rate is 64 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

DAUGHTREY CREEK (Lee County)

The allowable discharge rate is 27 CSM for areas located upstream of Nalle Grade Road. Downstream of Nalle Grade road, the allowable rate is 48 CSM. These values are from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

DAUGHTREY CREEK-EAST BRANCH (Lee County)

The allowable discharge rate is 81 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

CHAPEL BRANCH (Lee County)

The allowable discharge rate is 81 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

BAYSHORE CREEK (Lee County)

The allowable discharge rate is 81 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

POPASH CREEK (Lee County)

The allowable discharge rate is 81 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

STROUD CREEK (Lee County)

The allowable discharge rate is 81 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

TROUT CREEK (Lee County)

The allowable discharge rate is 39 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

OTTER CREEK (Lee County)

The allowable discharge rate is 39 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

TELEGRAPH CREEK (Lee County)

The allowable discharge rate is 39 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

BEDMAN CREEK (Lee County)

The allowable discharge rate is 58 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

HICKEY CREEK (Lee County)

The allowable discharge rate is 65 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

ORANGE RIVER (Lee County)

The allowable discharge rate is 55 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

MULLOCK CREEK (Lee County)

The allowable discharge rate is 69 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

ESTERO RIVER (Lee County)

The allowable discharge rate is 42 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

HALFWAY CREEK (Lee County)

The allowable discharge rate is 60 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

SPRING CREEK (Lee County)

The allowable discharge rate is 81 CSM. This value is from the Lee County Surface Water Management Plan (December 1992). The design storm is a 25 year event. See Figure 105.

C-19 BASIN (Glades County)

The allowable discharge for this conveyance is 57.8 CSM. The design storm is a 25 year event. See Figure 106.

CALOOSAHATCHEE RIVER (Glades, Hendry and Lee Counties)

The allowable discharge rate is 30.1 CSM for areas within this basin that are not discussed someplace else within this appendix. This rate is based upon Corps of Engineers design criteria. The design storm is a 25 year event. See Figure 124.

IMPERIAL RIVER (Lee County)

The allowable discharge rate is 59 CSM for areas west of Bonita Grande Drive. Areas east of Bonita Grande Drive are allowed 25 CSM. These values are from the Lee County Surface Water Management Plan (June 1991). The design storm is a 25 year event. See Figures 105 and 108.

TEN MILE CANAL (Lee County)

The allowable discharge rate for the majority of the basin is 64 CSM. This rate is based on the Needles report. Approximately 2,033 acres of this basin drains through the Harper Bothers Farm (SWM Permit #36-00736-S). The allowable discharge, for this area, has been determined, by previous permit action, to be 43 CSM. The design storm is a 25 year event. See Figures 105, 107 and 109.

HENDRY CREEK (Lee County)

The allowable discharge rate is 102 CSM upstream of the Lakes Park weir. Other areas within the basin should be allowed 131 CSM. These values are from the Lee County SurfaceWater Management Plan (June 1991). The design storm is a 25 year event. See Figures 105 and 110.

COW SLOUGH (Lee County)

The allowable discharge rate should be determined based on a pre versus post development analysis according to the Lee County Surface Water Management Plan (June 1991). The design storm is a 25 year event. See Figures 105 and 111.

DEEP LAGOON BASIN (Lee County)

The allowable discharge rate is 50 CSM until the McGregor Boulevard culverts are enlarged. Once the culverts are enlarged, the rate may be increased to 96 CSM. The design storm is a 25 year event. See Figures 105 and 112.

WHISKEY CREEK (Lee County)

The allowable discharge rate is 108 CSM for areas north of College Parkway. For areas south of the Parkway, the rate is 40 CSM. These rates are from the Lee County Surface Water Managment Plan (June 1991). The design storm is a 25 year event. See Figures 105 and 113.

BILLY CREEK (Lee County)

The allowable discharge rate is 64 CSM. This rate is from the Lee County Surface Water Management Plan (June 1991). The design storm is a 25 year event. See Figures 105 and 114.

POWELL CREEK (Lee County)

The allowable discharge rate for previously undeveloped areas is 20 CSM. The rate for areas which are being redeveloped is 108 CSM. These rates have been taken from the Lee County Surface Water Management Plan (June 1991). The design storm is a 25 year event. See Figures 105 and 115.

YELLOW FEVER CREEK-EAST BRANCH (Lee County)

The allowable discharge rate should be determined by a pre versus post development analysis. The calculated rate should not exceed 64 CSM, however, since the Lee County Surface Water Management Plan (June 1991) indicates that the system is overburdened. The design storm is a 25 year event. See Figures 105 and 116.

YELLOW FEVER CREEK (Lee County)

The allowable discharge rate is 96 CSM. This rate is from the Lee County Surface Water Management Plan (June 1991). The design storm is a 25 year event. See Figures 105 and 117.

GATOR SLOUGH BASIN (Lee County)

The allowable discharge rate is 64 CSM downstream of a breakpoint located 2,590 feet southwest of U.S. 41. Upstream of this breakpoint, the allowable rate is 29 CSM. This rate is from the Lee County Surface Water Management Plan (June 1991). The design storm is a 25 year event. See Figures 105 and 118.

C-139, Feeder Canal and L-28 Basins (AKA L-1, L-2, L-3 AND L-2W) Hendry County

The allowable discharge rate is 11.5 CSM. This rate is based upon District canal design criteria. The design storm is a 25 year event. See Figure 119.

DEVILS GARDEN WATER CONTROL DISTRICT (Hendry County)

The allowable discharge rate is 20.2 CSM. The design storm is a 25 year event. See Figure 119.

AIRPORT ROAD CANAL (Collier County)

The allowable discharge rate is 25.6 CSM if the project is located North of Vanderbilt Beach Road and 38.4 CSM if the project is located South of Vanderbilt Beach Road. This rate has been established by Collier County. The design storm is a 25 year event. See Figure 126.

DISTRICT SIX (Collier County)

The allowable discharge rate is 38.4 CSM. This rate has been established by Collier County. The design storm is a 25 year event. See Figure 120.

GOLDEN GATE CANAL (Collier County)

The allowable discharge rate is 64 CSM. This rate has been established by Collier County. The design storm is a 25 year event. See Figure 120.

COCOHATCHEE RIVER (Collier County)

The allowable discharge rate is 25.6 CSM. This rate has been established by Collier County per Ordinance 90-10. The design storm is a 25 year event. See Figure 120.

LELY CANAL (Collier County)

The allowable discharge rate is 38.4 CSM. This rate has been established by Collier County. The design storm is a 25 year event. See Figure 126.

FAKAHATCHEE STRAND (Collier County)

The allowable discharge rate is 32 CSM. This rate was established by a pre versus post development analysis. The design storm is a 25 year event. See Figure 120.

AREAS OF WESTERN COLLIER COUNTY NOT IDENTIFIED ABOVE

The allowable discharge rate is 38.4 CSM. The design storm is a 25 year event. See Figure 120.

NORTH COLONIAL WATERWAY (Lee County)

The allowable discharge rate is 37.1 CSM. This rate is based upon canal design criteria. The design storm is a 25 year event. See Figure 121.

LAKES PARK (Lee County)

The allowable discharge rate is 102.4 CSM. This rate has been established by Lee County. The design storm is a 25 year event. See Figure 125.

TOWNSEND CANAL (Hendry County)

The allowable discharge rate is 30.1 CSM. This rate is based upon Corps of Engineers design criteria. The design storm is a 25 year event. See Figures 122 and 124.

TIDAL AREAS (All Counties)

The allowable discharge rate is based on the proposed projects peak runoff rate after development not exceeding the rate which existed prior to development. This analysis should consider the effect, if any, that tidal fluctuations have on the projects ability to discharge through its control structure as well as through conveyances further downstream . The tide data used in the analysis should utilize the Mean Higher High Water (MHHW) datum. This datum should be derived for the tide station which is closest to the proposed project site. The design storm is a 25 year event.

CHARLOTTE COUNTY

The historic allowable discharge rate for eastern Charlotte County is 26.9 CSM. The design storm is a 25 year event. See Figure 123.

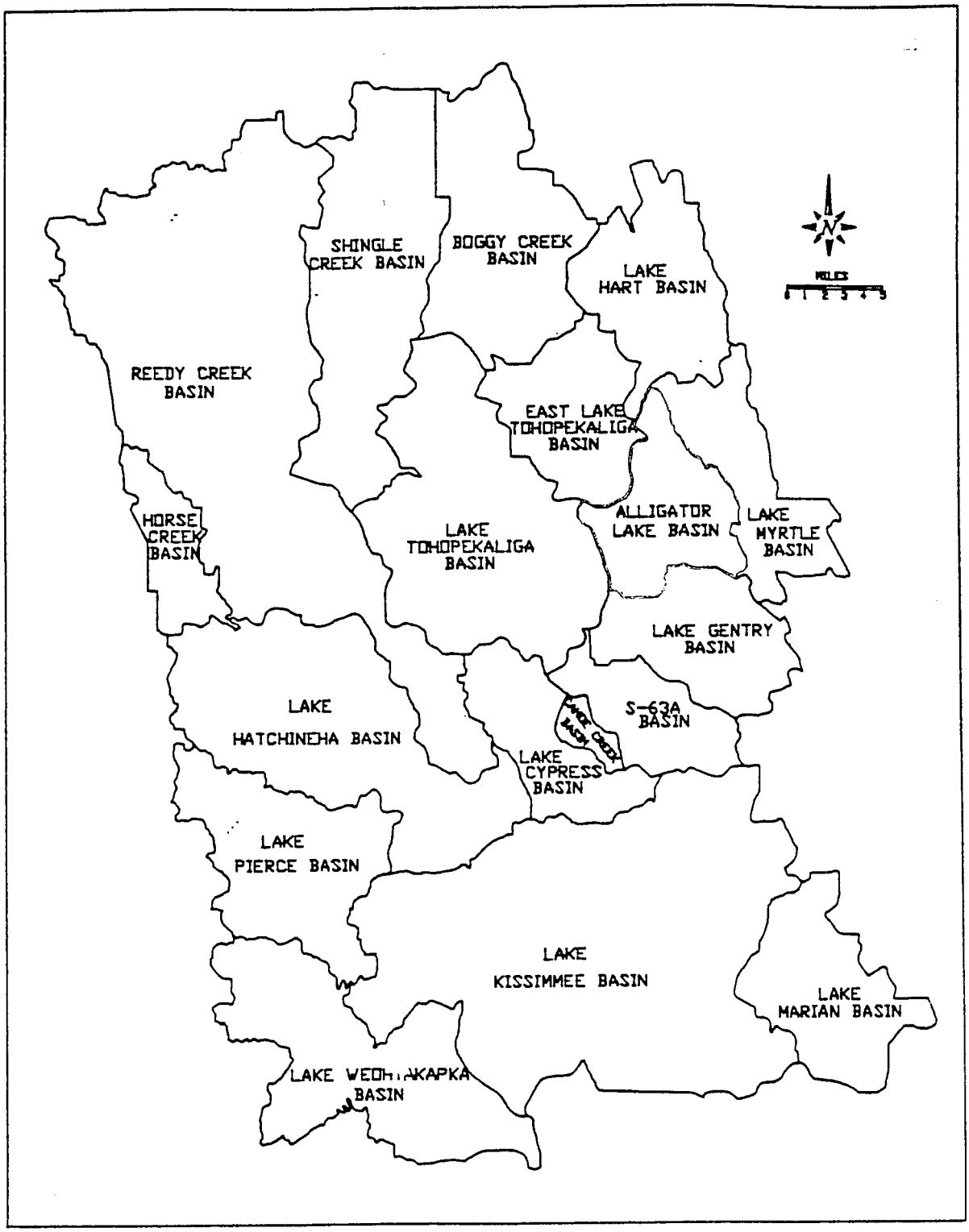


FIGURE 1 RELATIVE LOCATIONS OF UPPER KISSIMMEE RIVER DRAINAGE BASINS

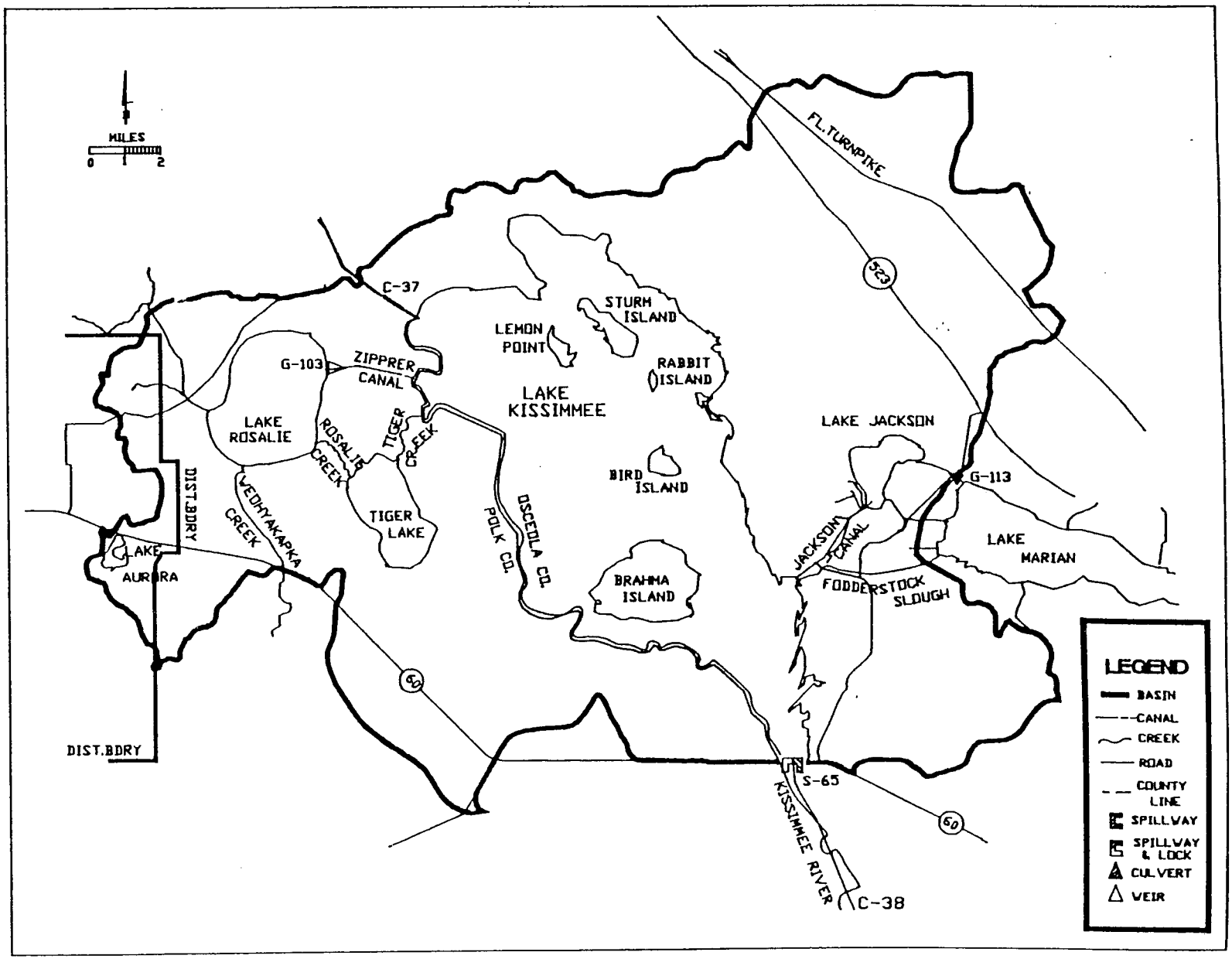


FIGURE 2 Lake Kissimmee Basin (172,300 acres).

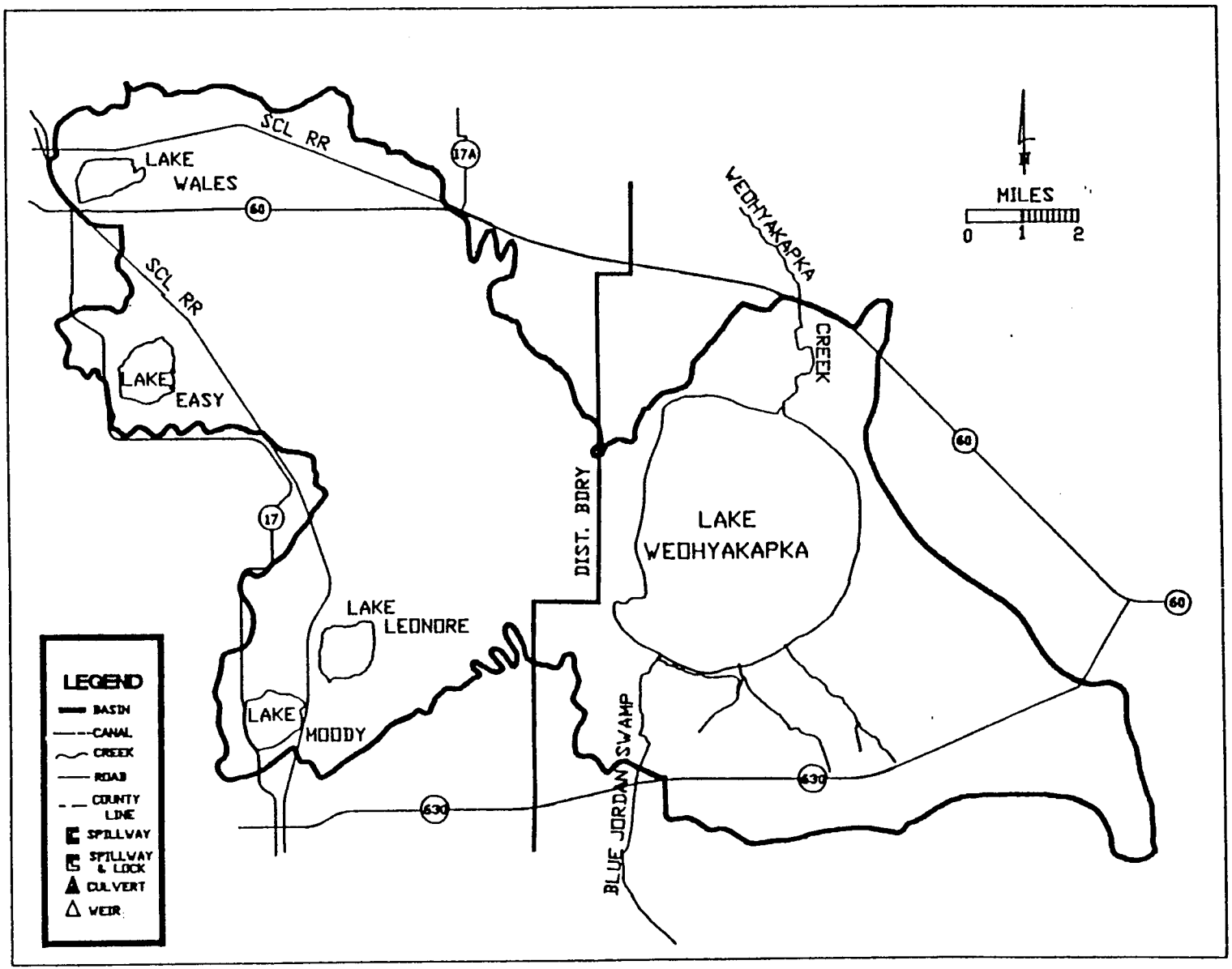


FIGURE 3 Lake Weohyakapka Basin (62,600 acres).

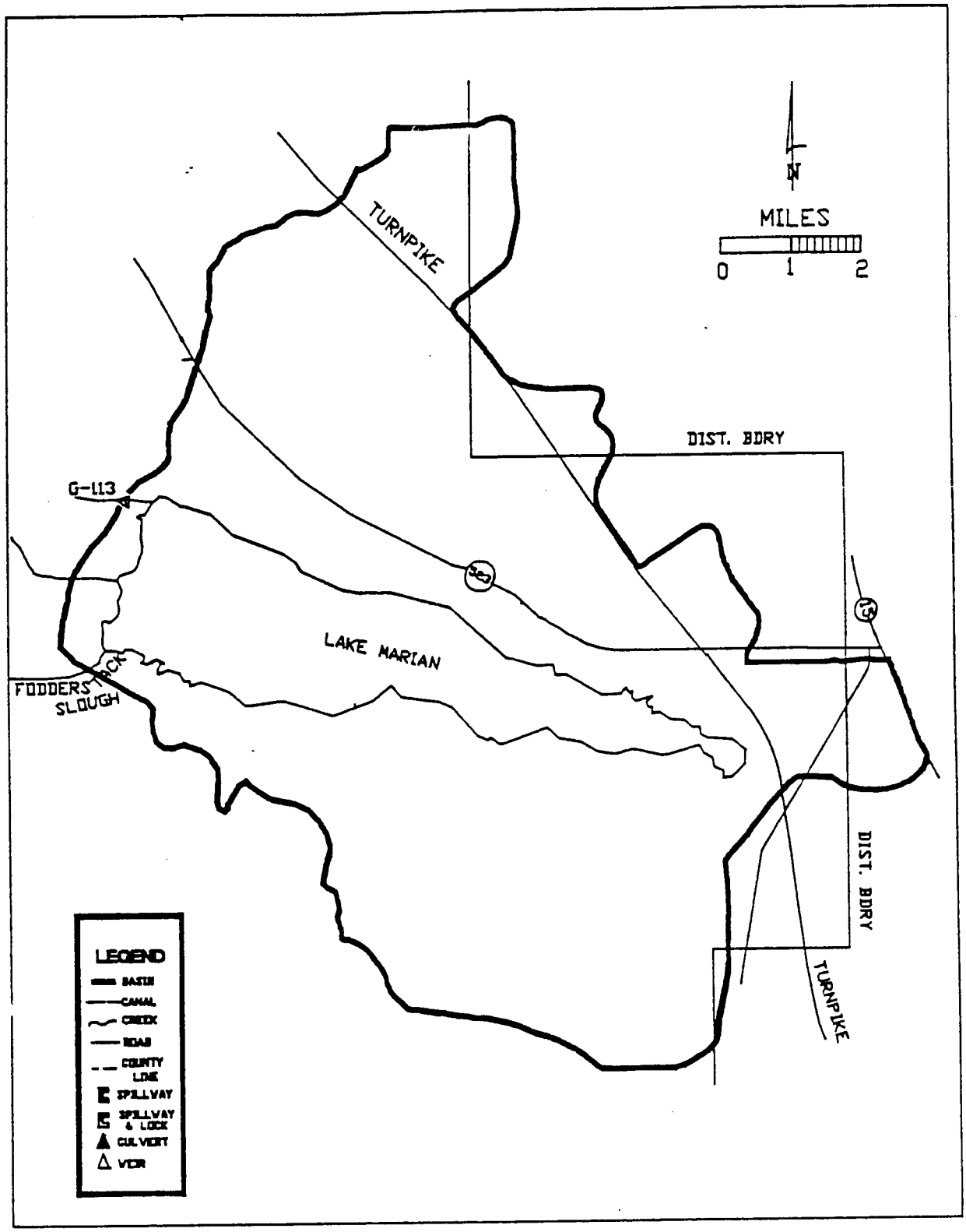


FIGURE 4 Lake Marian Basin (37,040 acres).

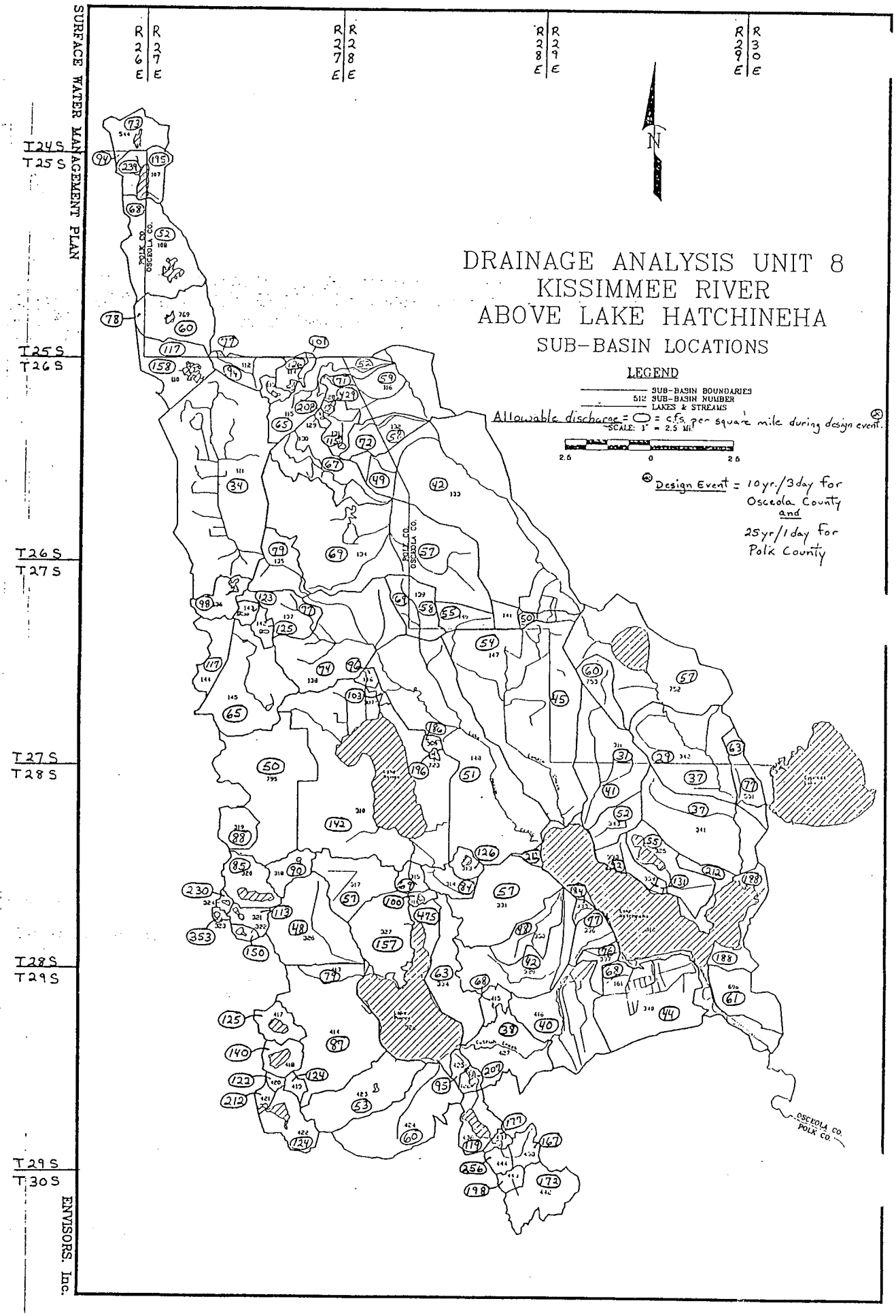

SURFACE WATER MANAGEMENT PLAN
R 26 E
R 27 E
R 28 E
R 29 E
R 30 E
T24S
T25S
T26S
T27S
T28S
T29S
T30S
N
DRAINAGE ANALYSIS UNIT 8
KISSIMMEE RIVER
ABOVE LAKE HATCHINEHA
SUB-BASIN LOCATIONS
LEGEND
SUB-BASIN BOUNDARIES
512 SUB-BASIN NUMBER
LAKES & STREAMS
Allowable discharge = ○ = c.f.s. per square mile during design event.
SCALE: 1" = 2.5 Mi
2.5 0 2.5
Design Event = 10yr./3day for Osceola County and 25yr/1day for Polk County
OSCEOLA CO.
POLK CO.
ENVISORS, Inc.

Figure 5

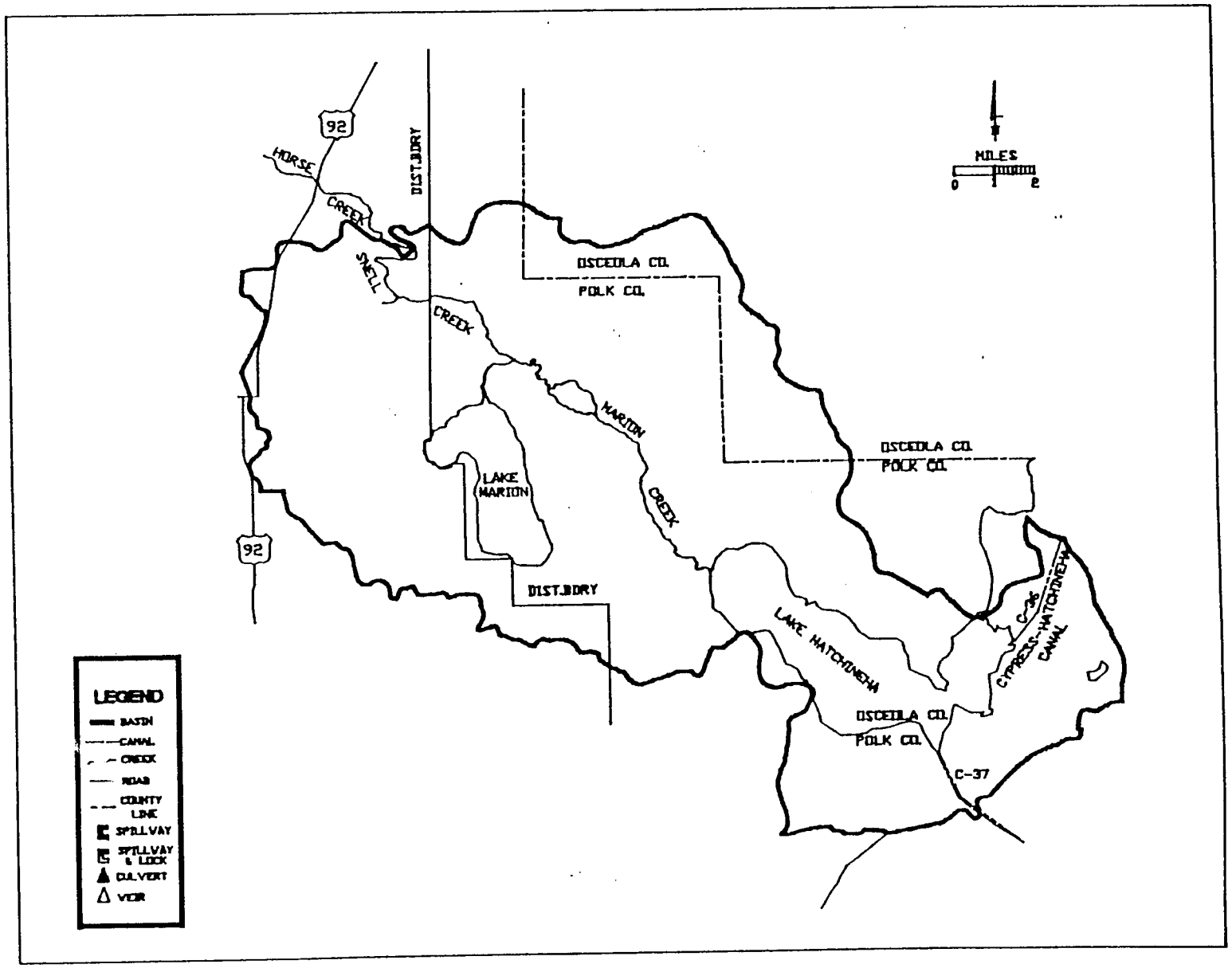


FIGURE 6 Lake Hatchineha Basin (82,250 acres).

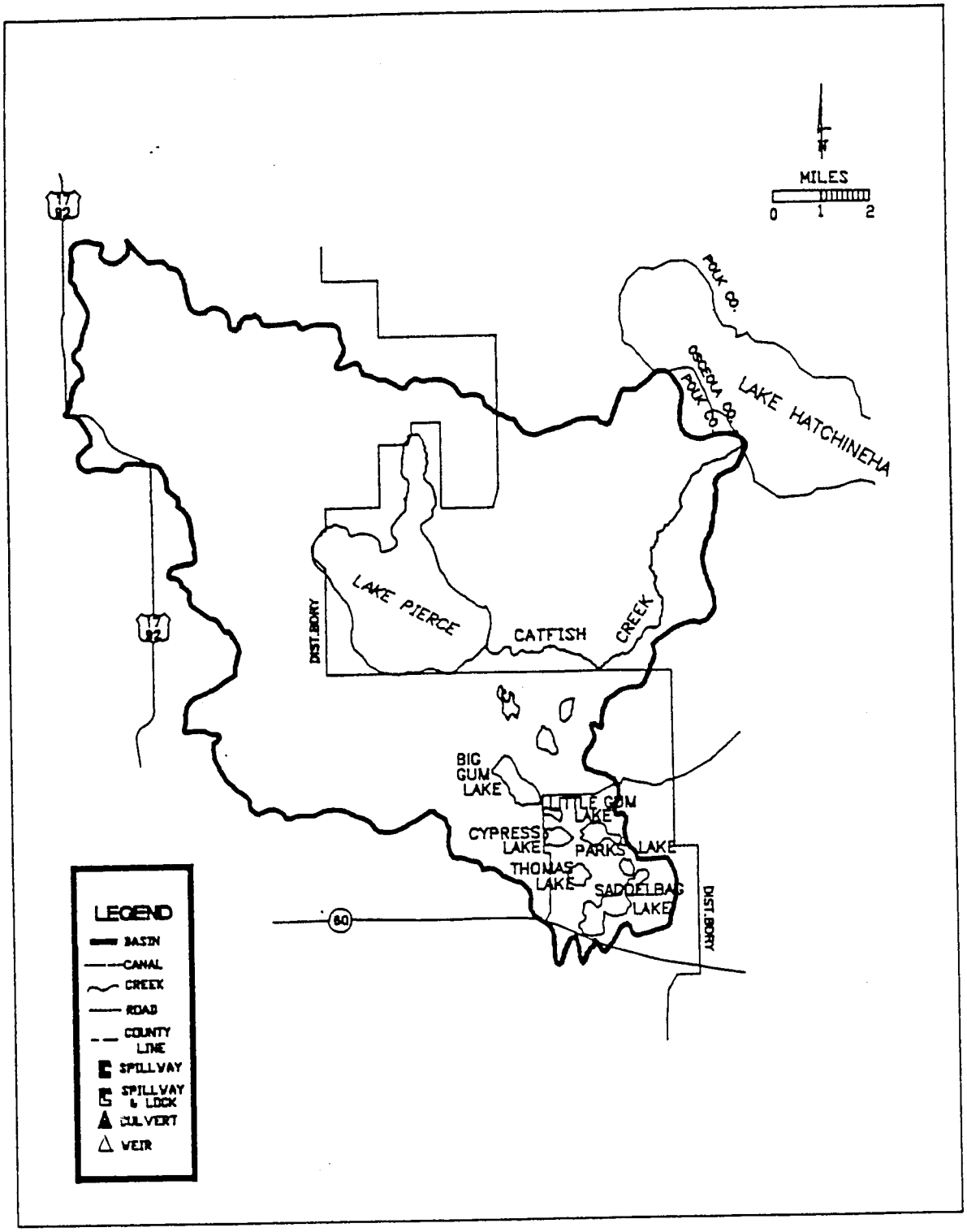


FIGURE 7 Lake Pierce Basin (48,610 acres).

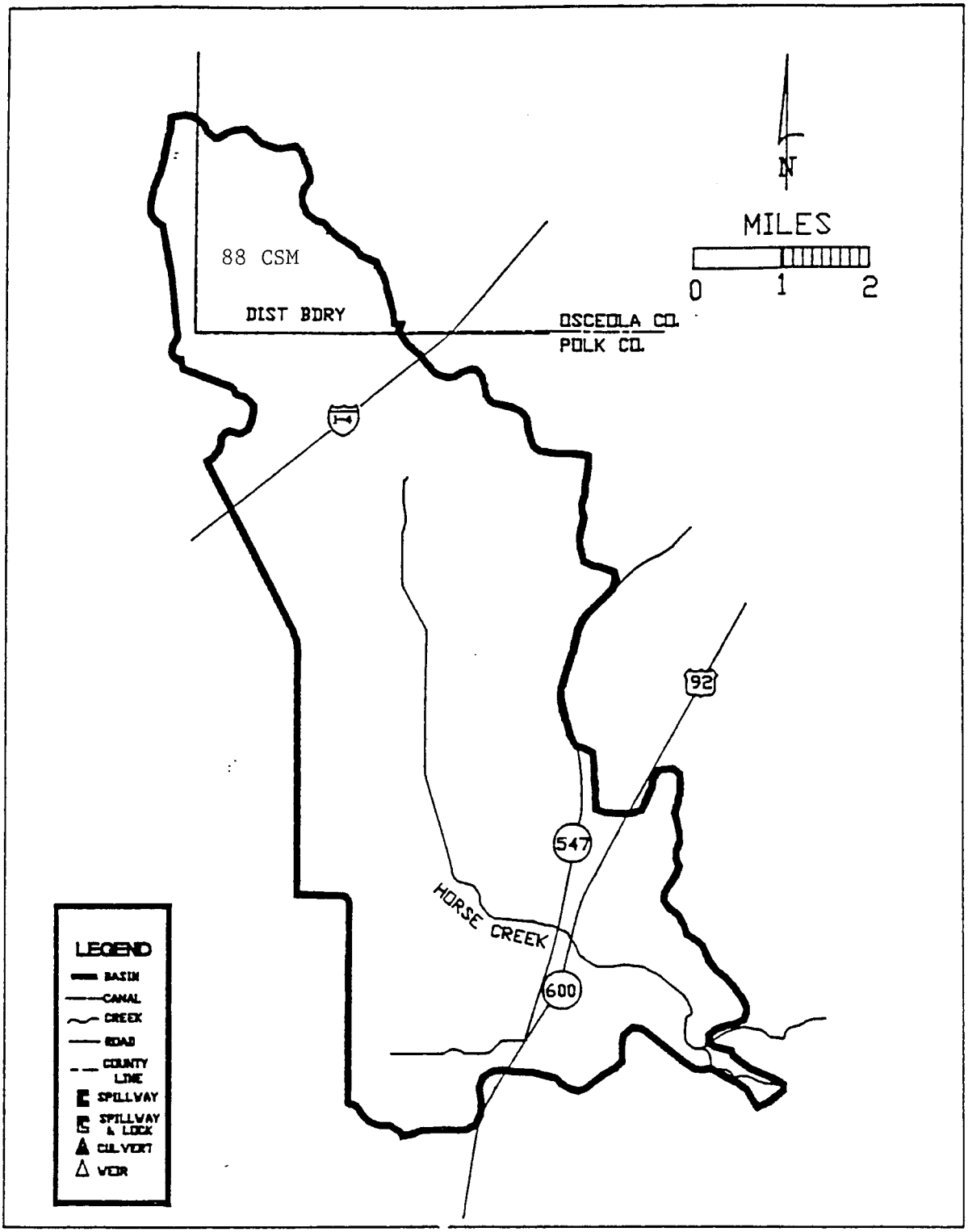


FIGURE 8 Horse Creek Basin (16,960 acres).

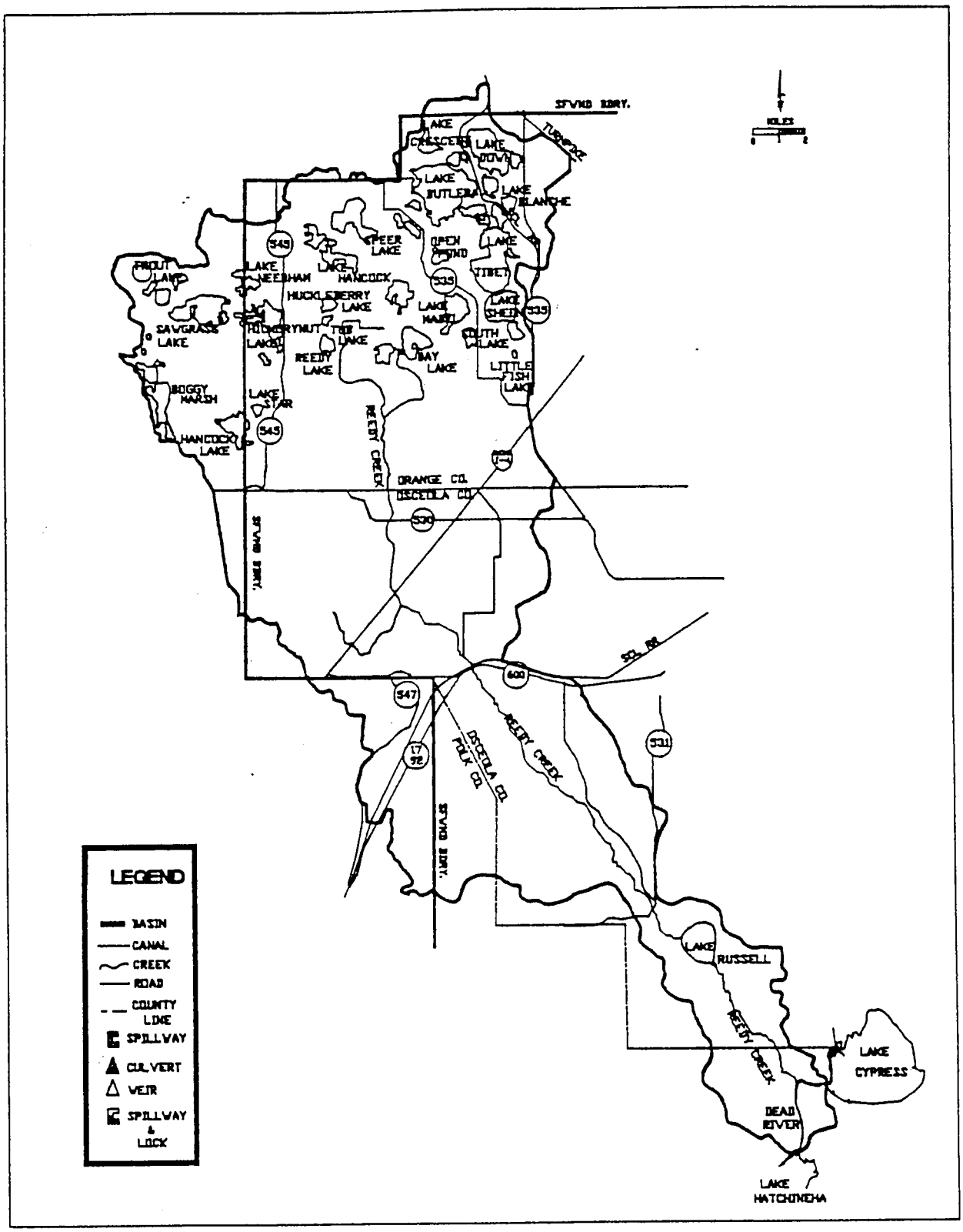


FIGURE 9 Reedy Creek Basin (172,200 acres).

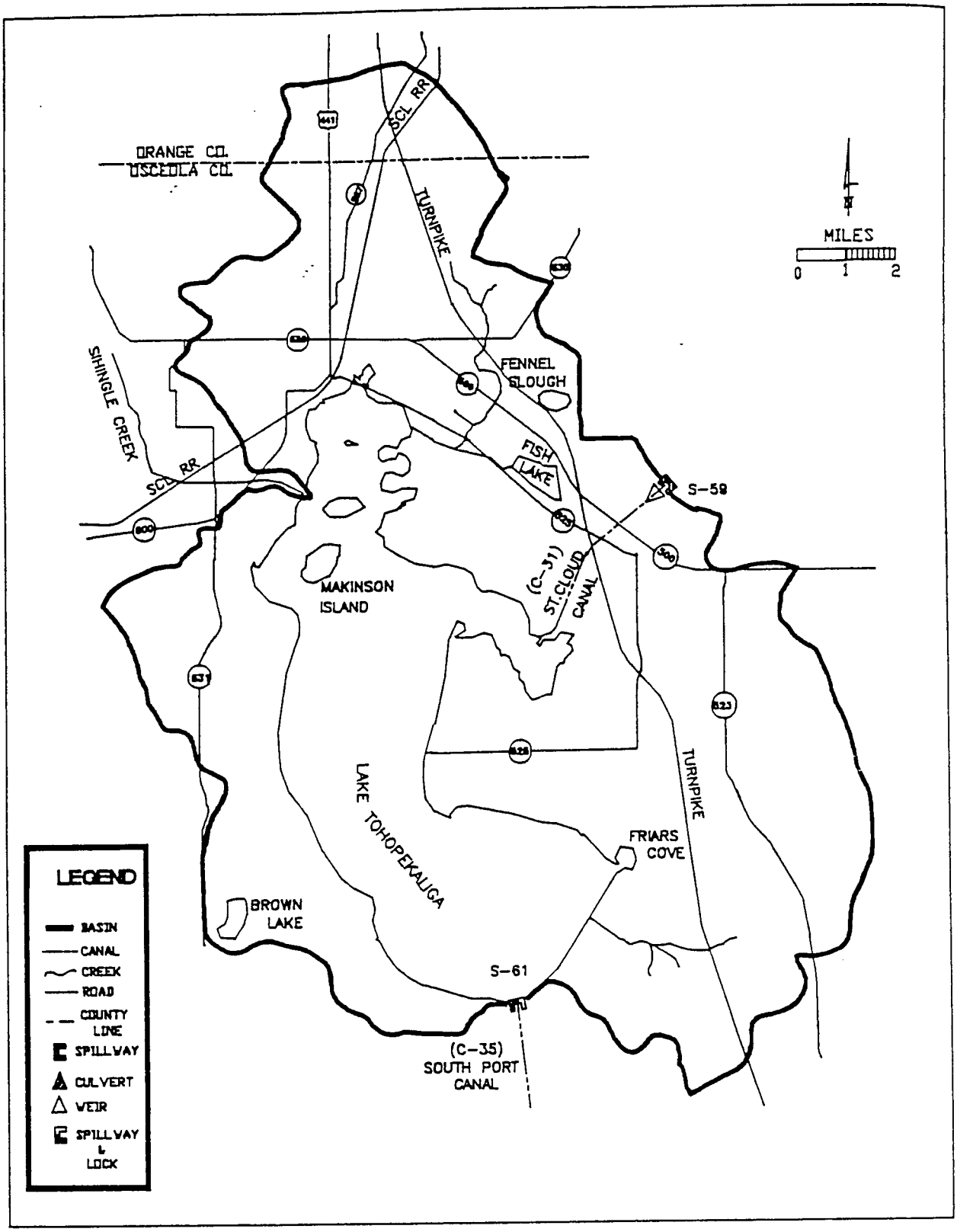


FIGURE 10 Lake Tohopekaliga Basin (84,130 acres).

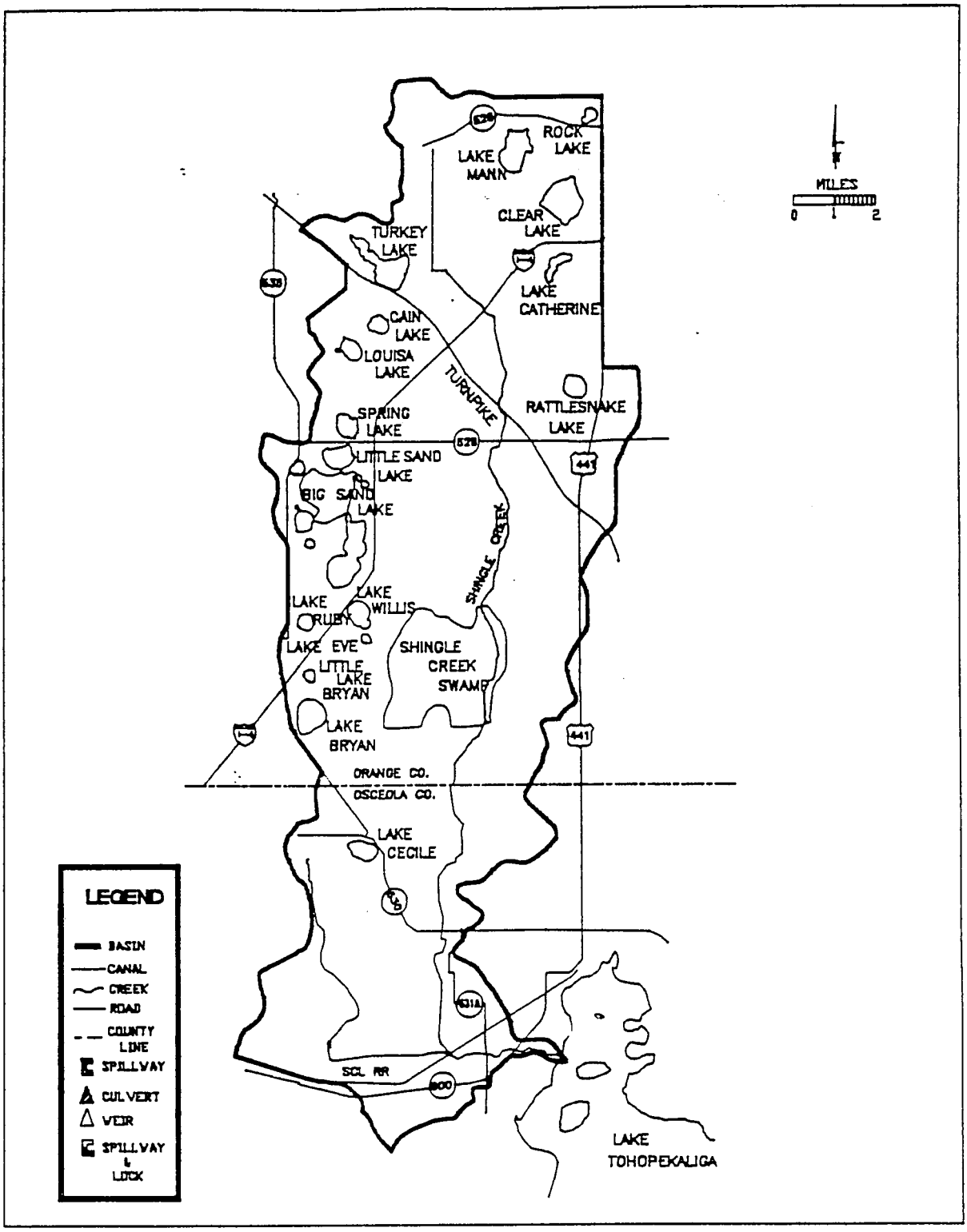


FIGURE // Shingle Creek Basin (71,310 acres).

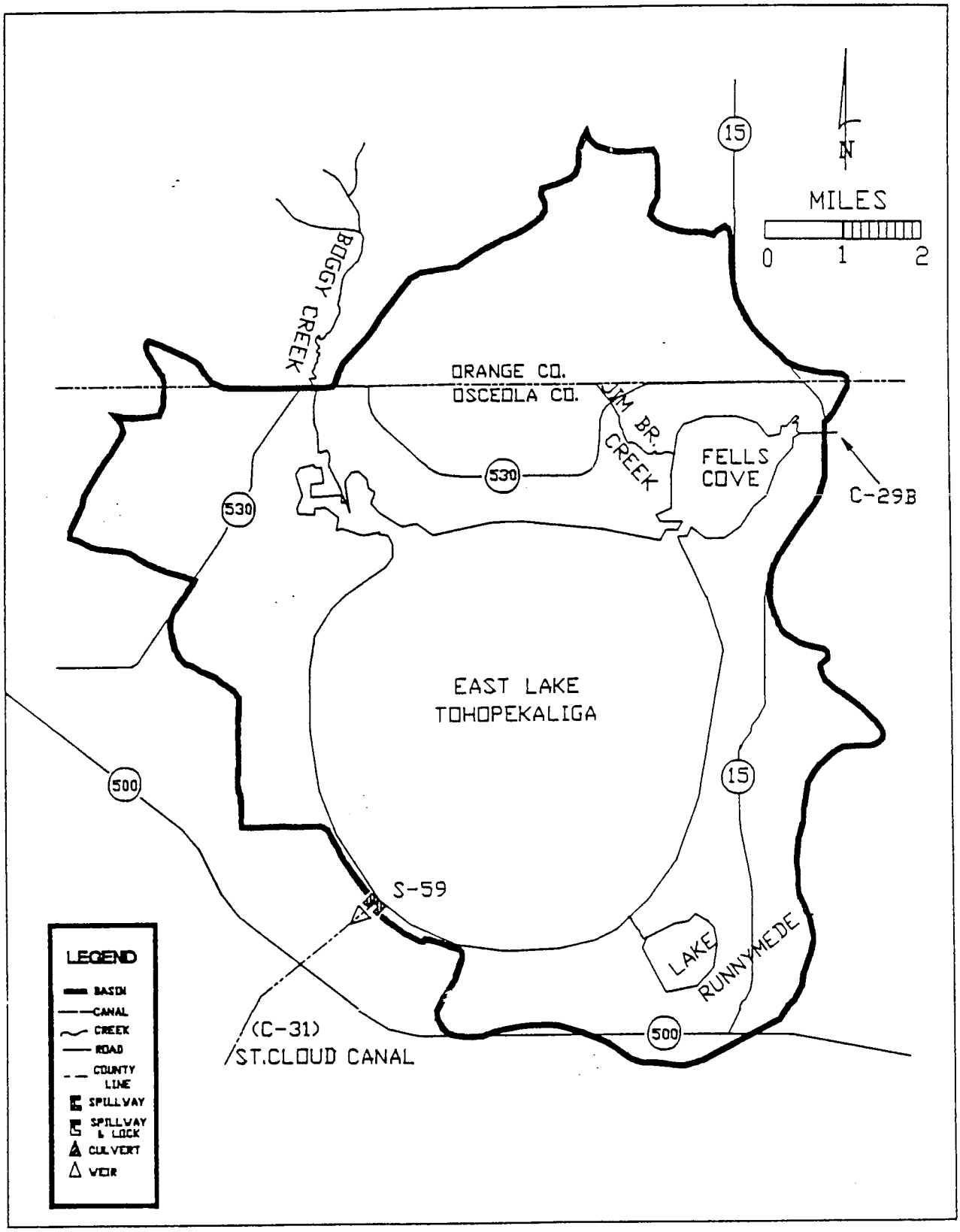


FIGURE 12 East Lake Tohopekaliga Basin (32,540 acres).

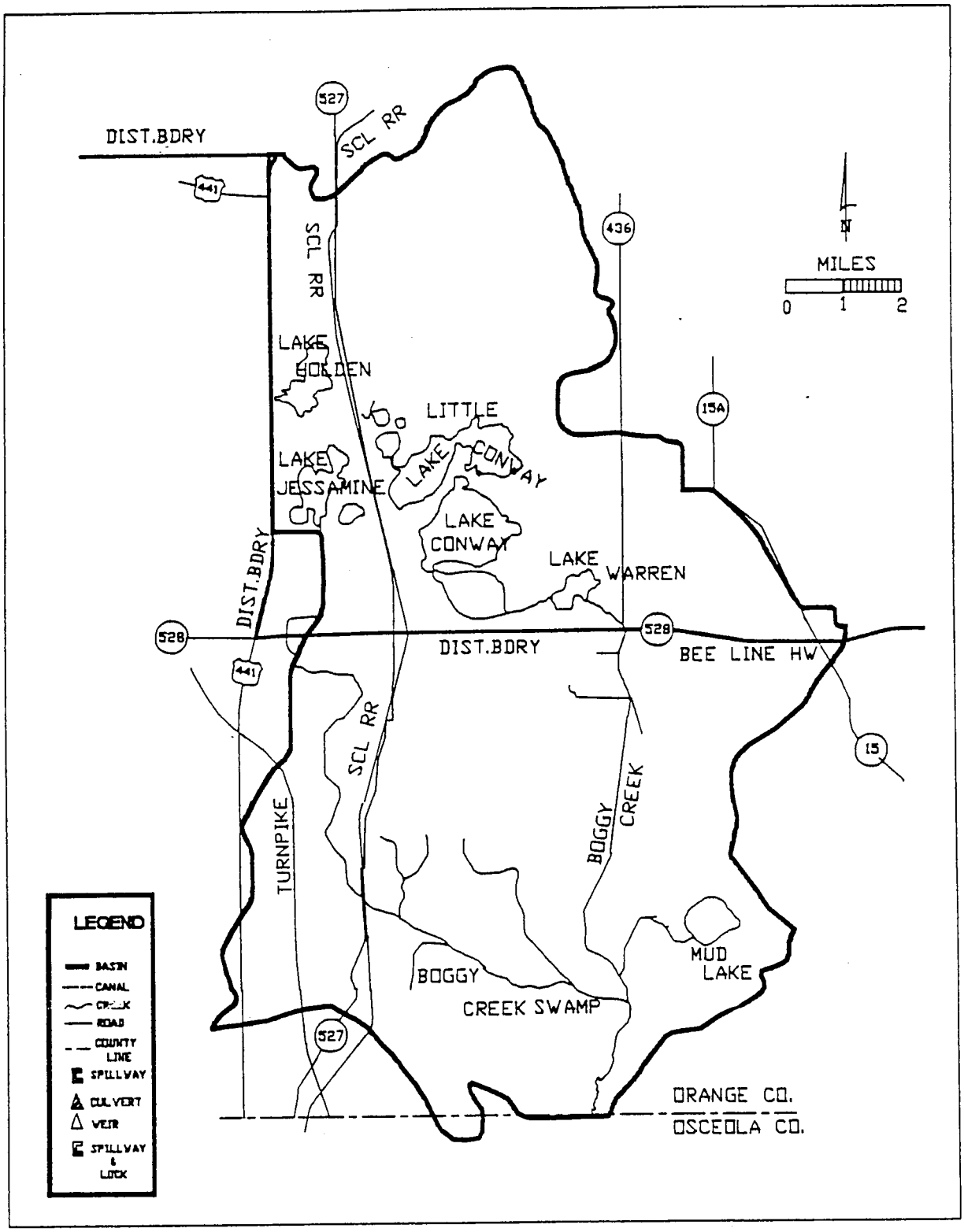


FIGURE 13 Boggy Creek Basin (55,600 acres).

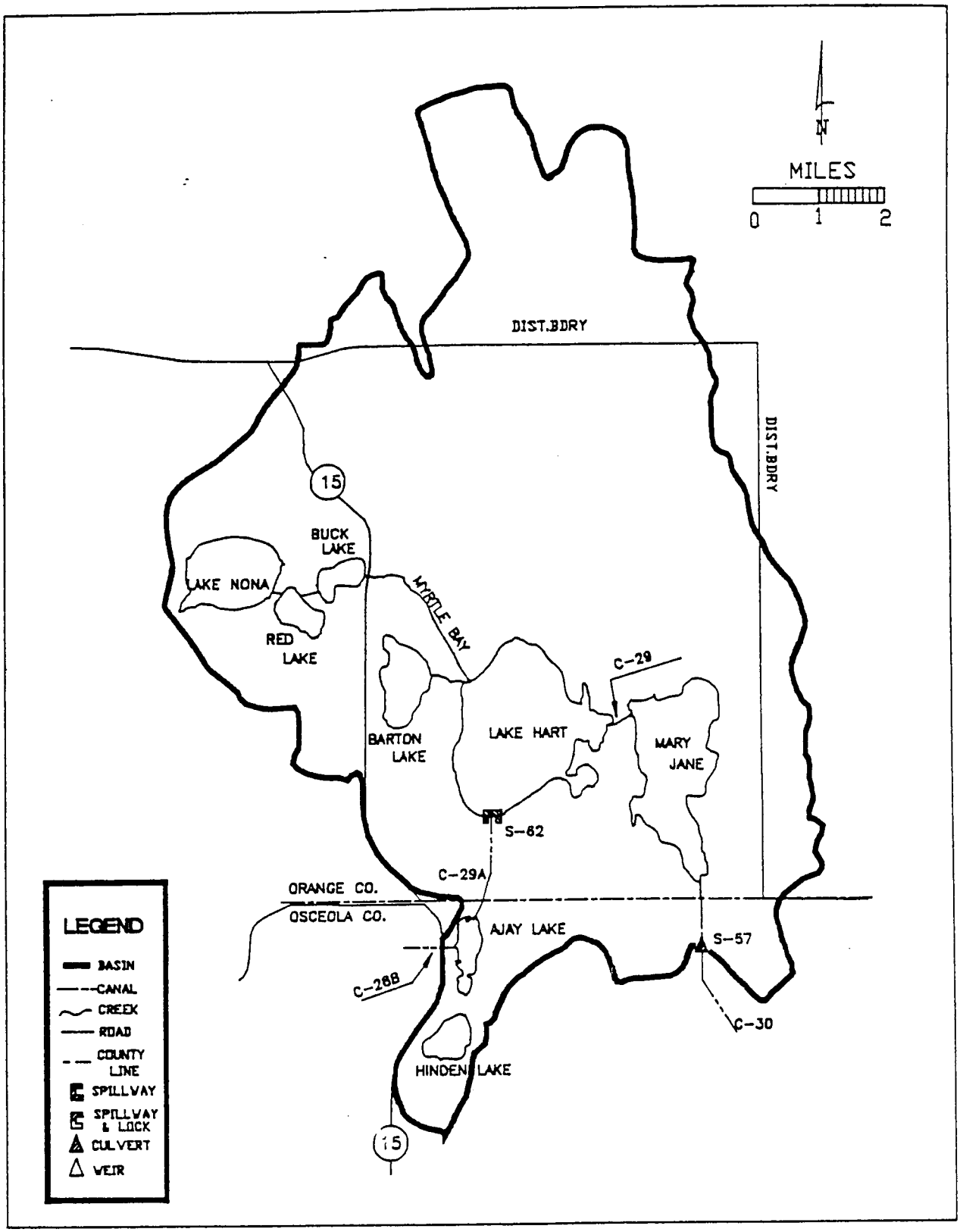


FIGURE 14 Lake Hart Basin (38,530 acres).

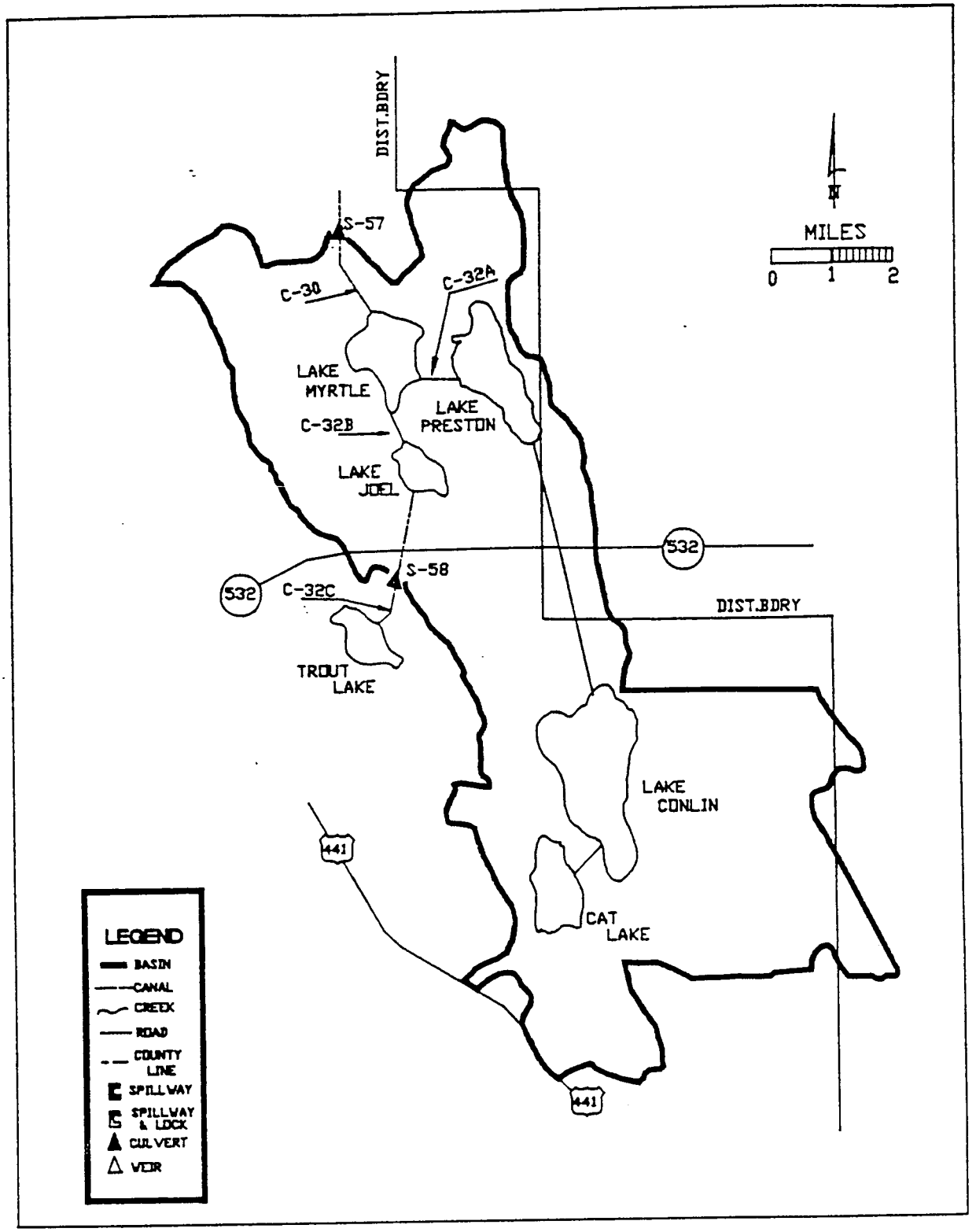


FIGURE 15 Lake Myrtle Basin (30,435 acres).

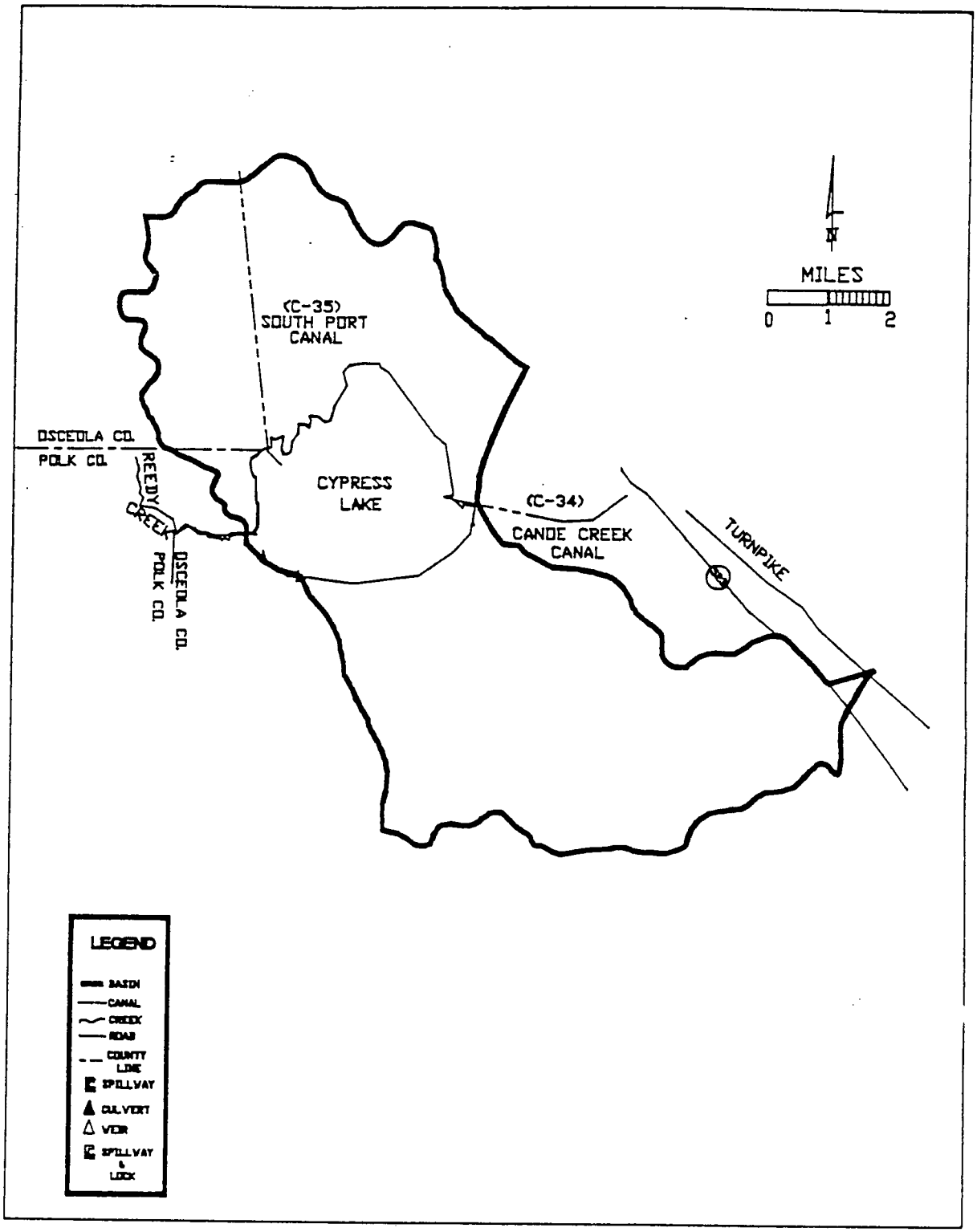


FIGURE 16 Lake Cypress Basin (27,170 acres).

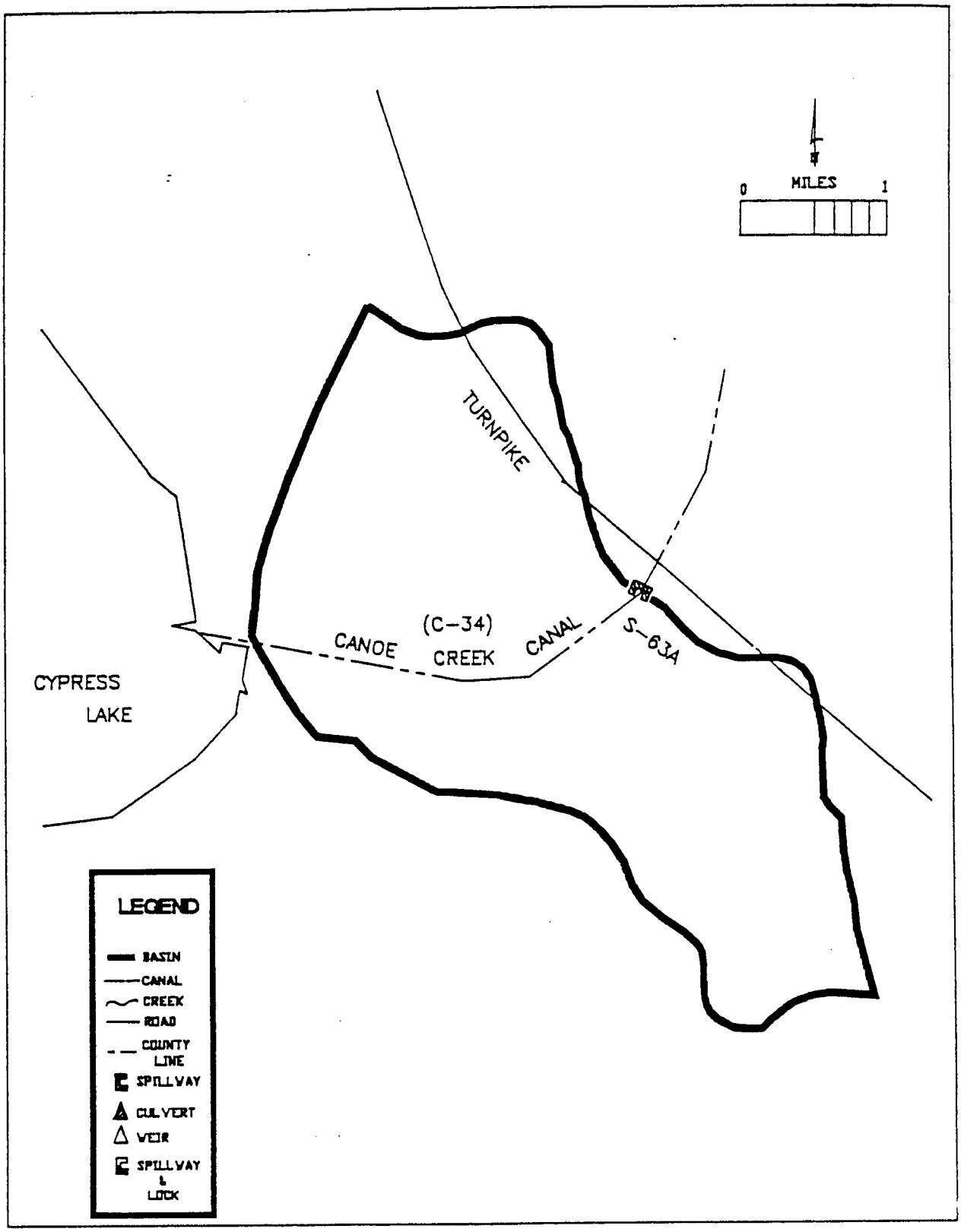


FIGURE 17 Canoe Creek Basin (4,440 acres).

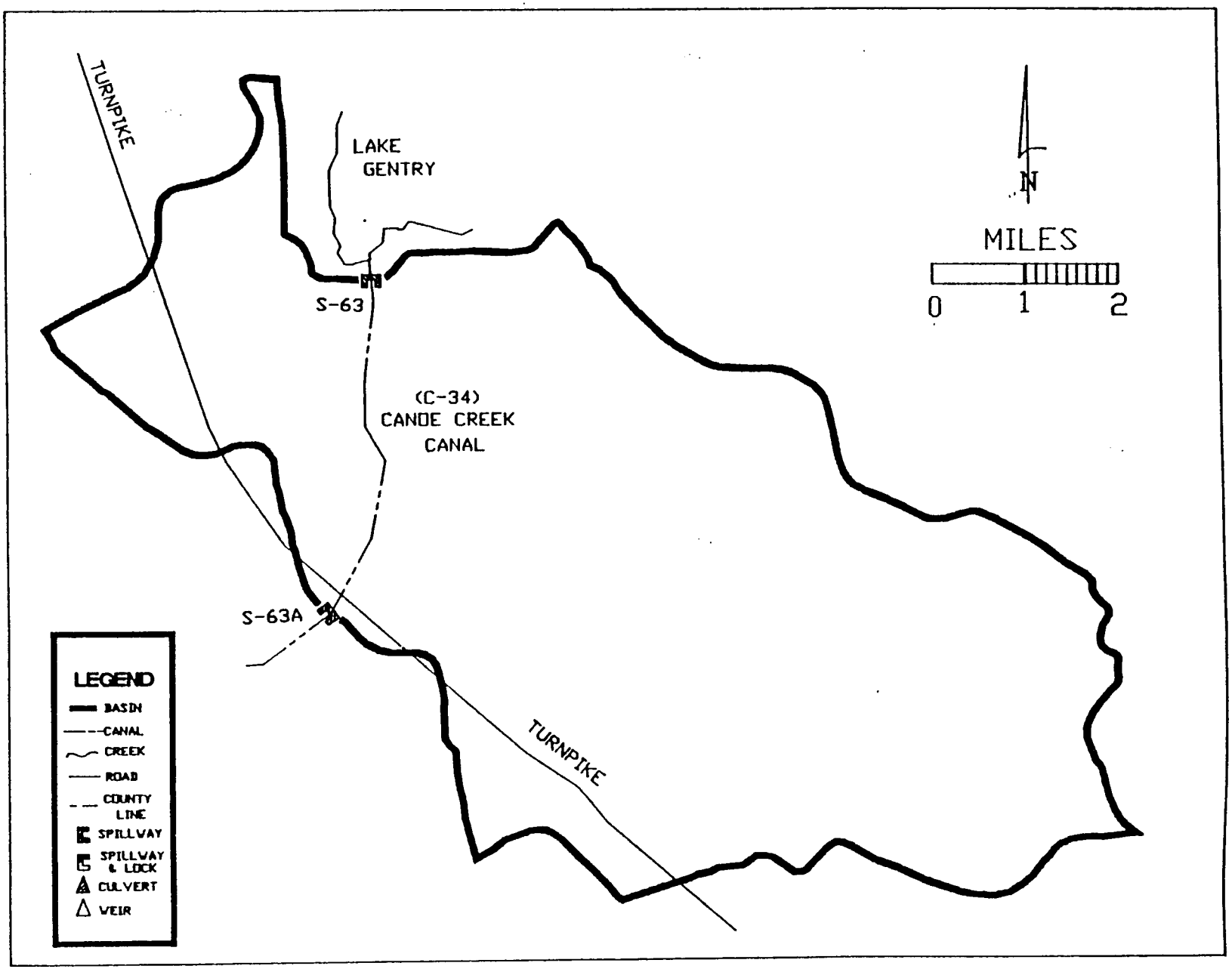


FIGURE 18 S-63A Basin (22,570 acres).

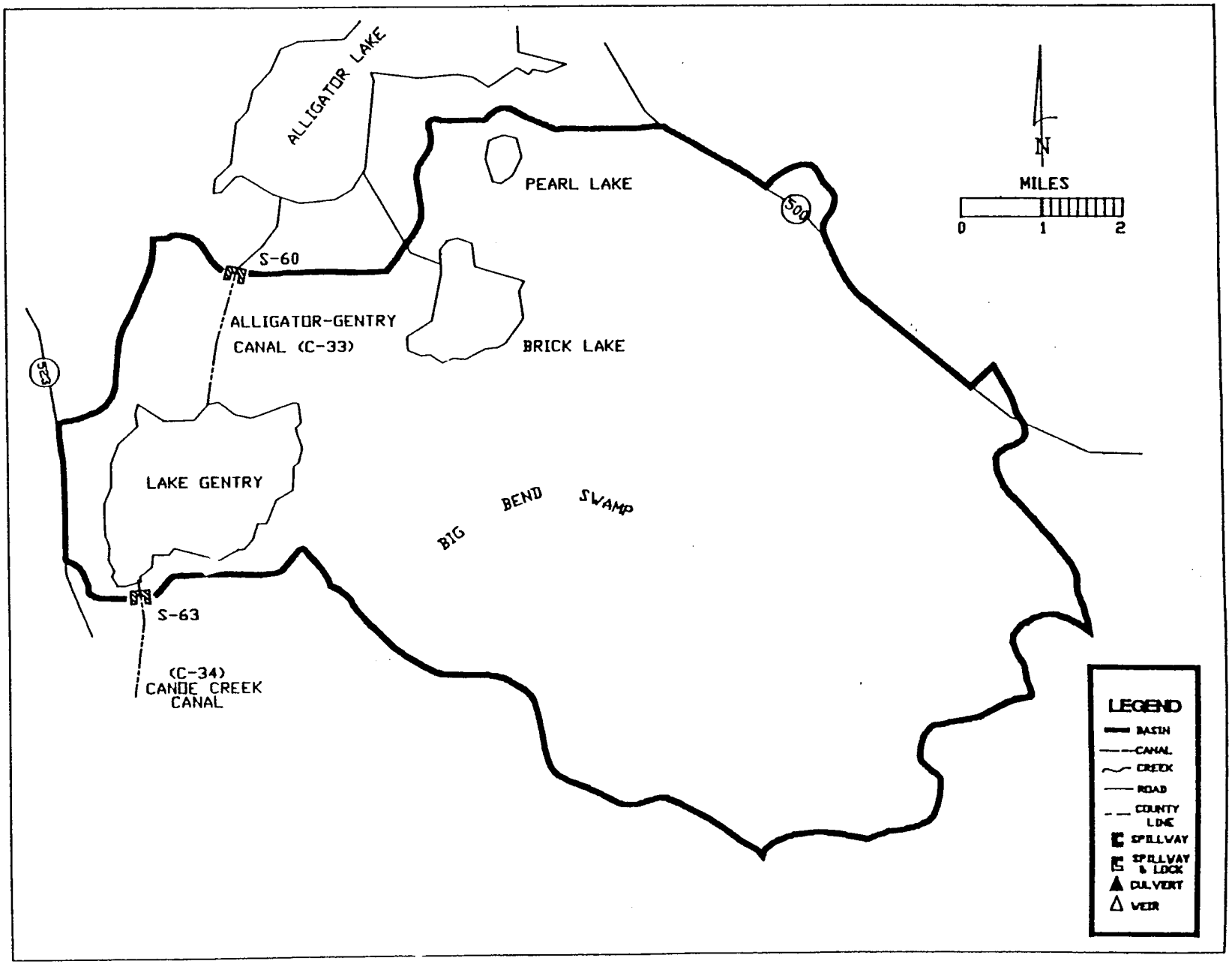


FIGURE 19 Lake Gr Basin (33,115 acres).

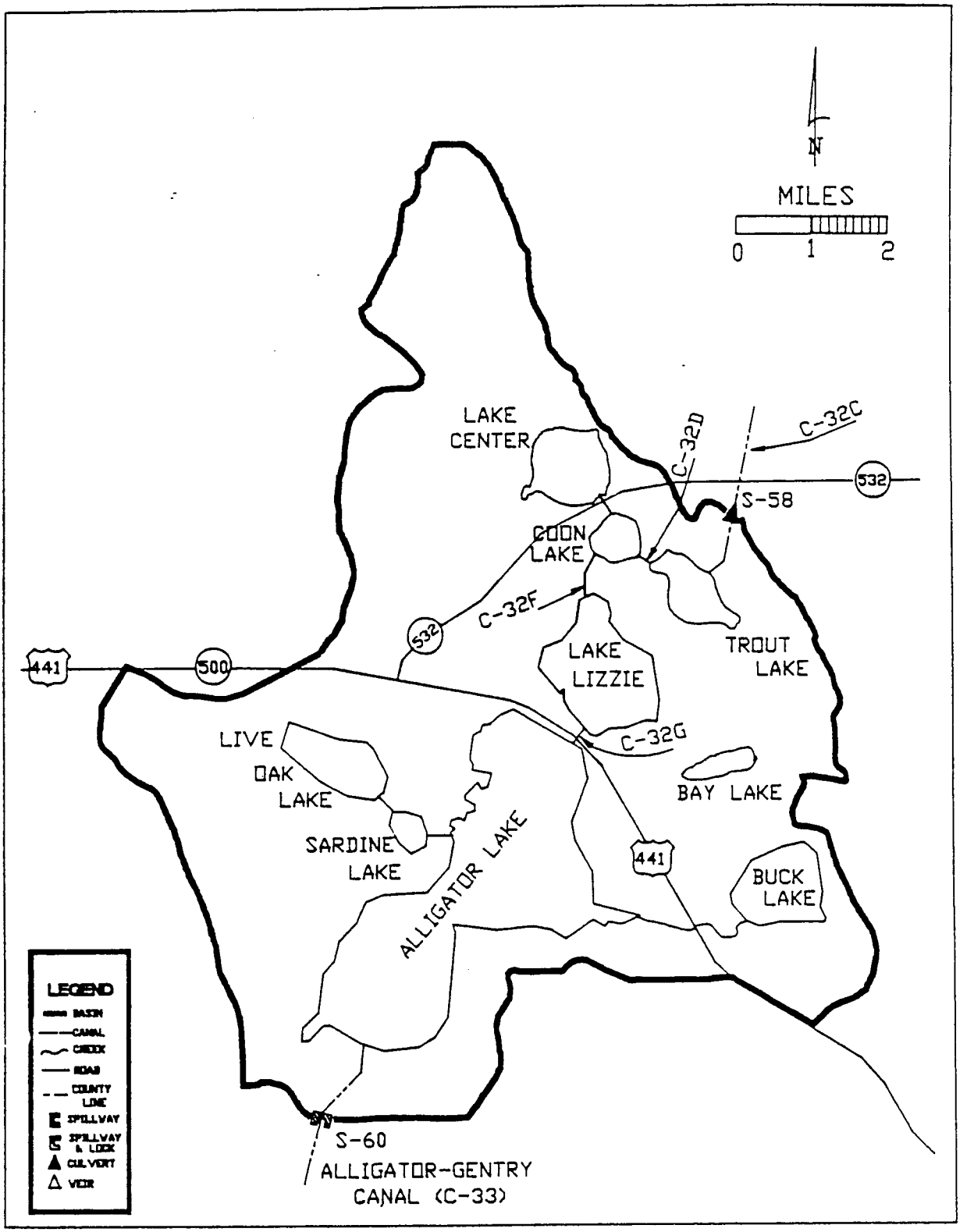


FIGURE 20 Alligator Lake Basin (29,985 acres).

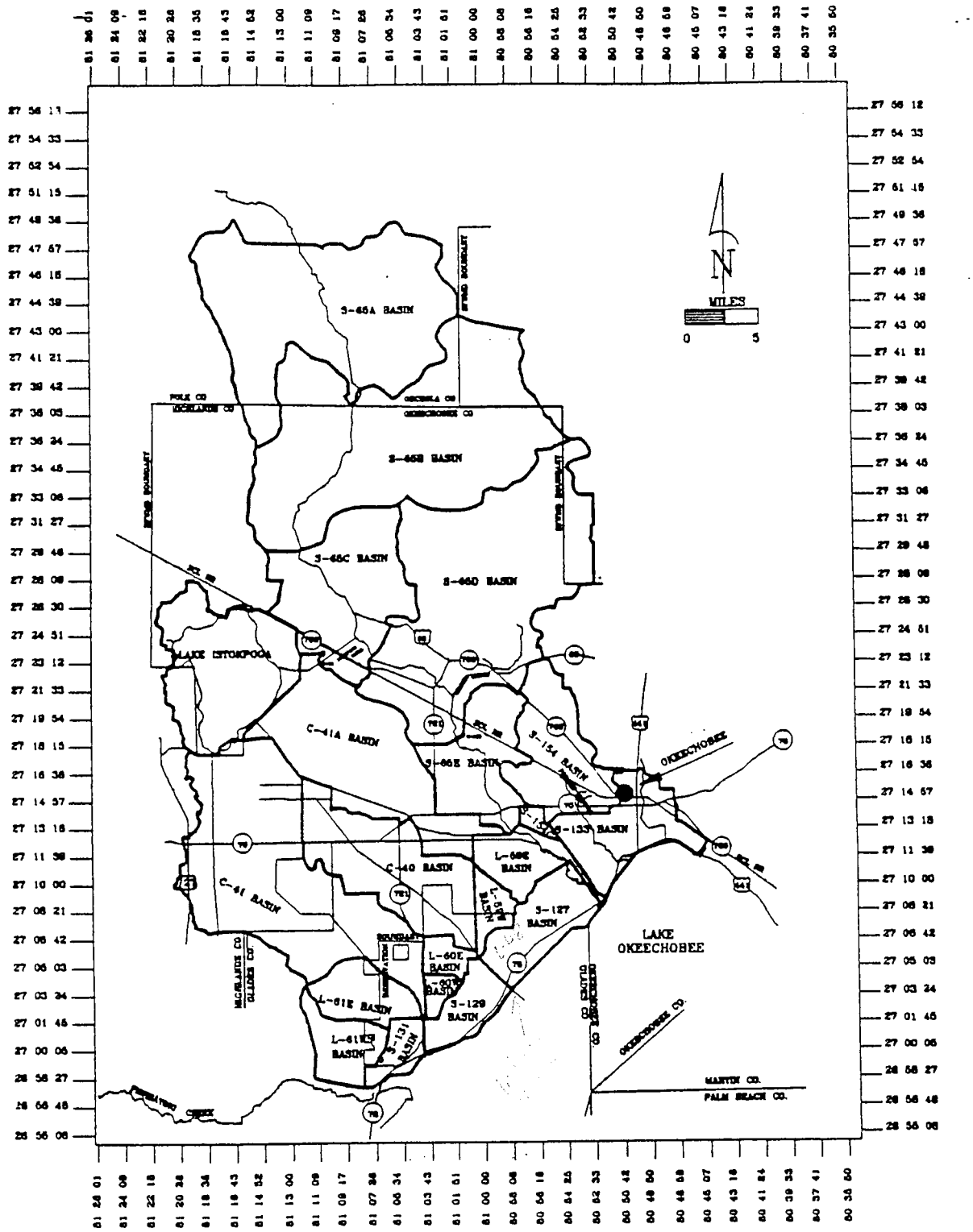


FIGURE 2/ Lower Kissimmee River and Lake Istokpoga Basins

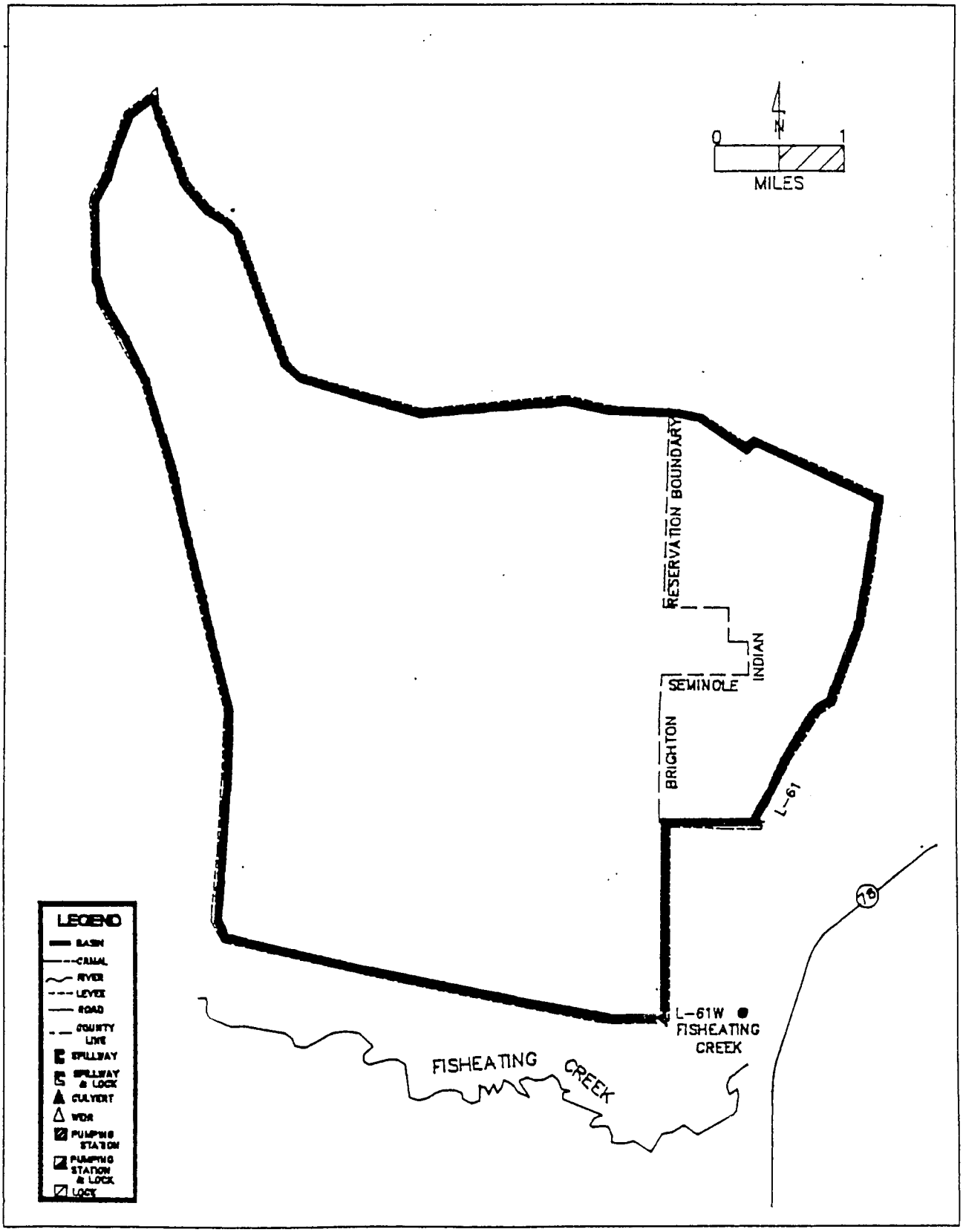


FIGURE 22 L-61W Basin Map

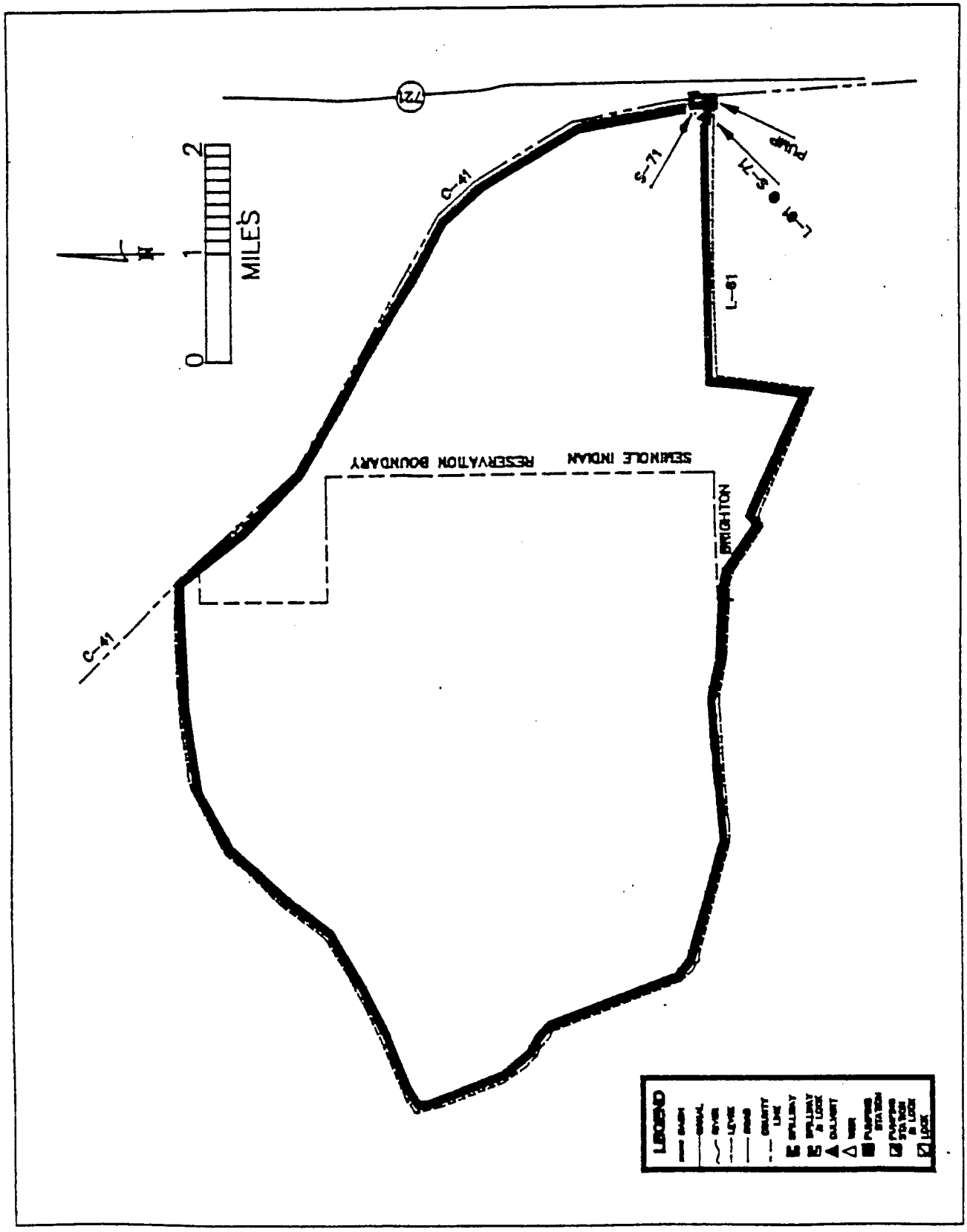


FIGURE 23 L-61E Basin Map

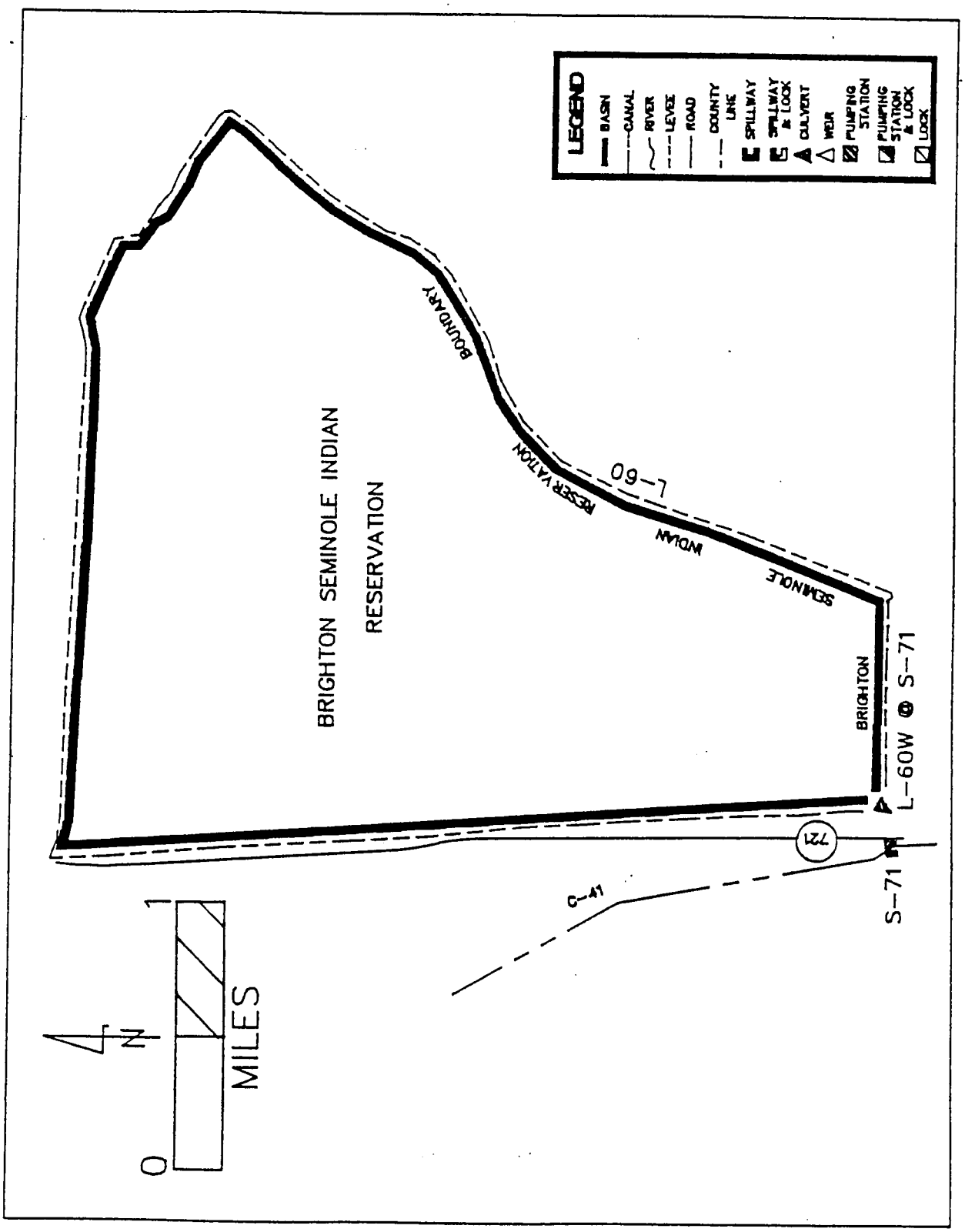


FIGURE 24 L-60W Basin Map

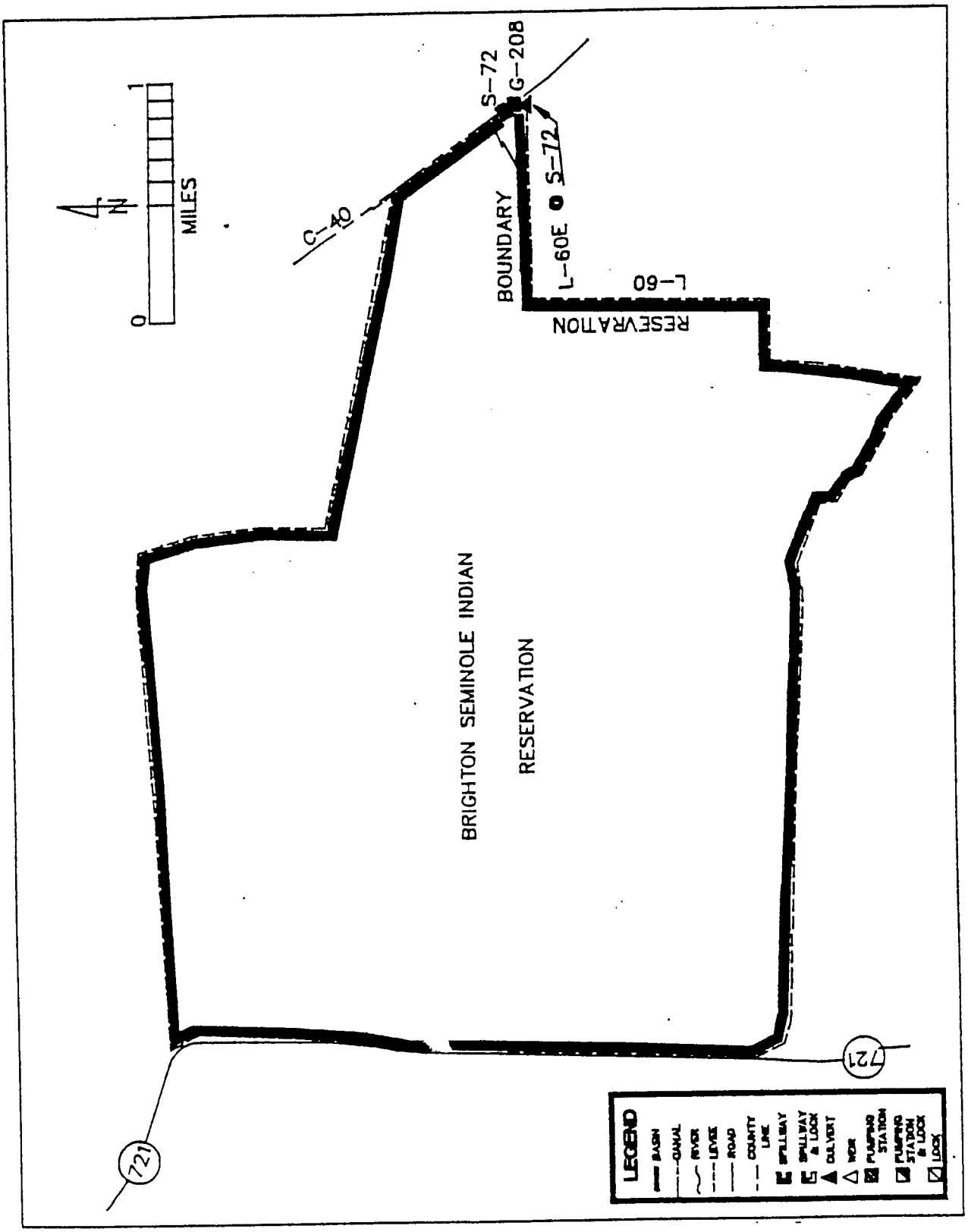


FIGURE 25 L-60E Basin Map

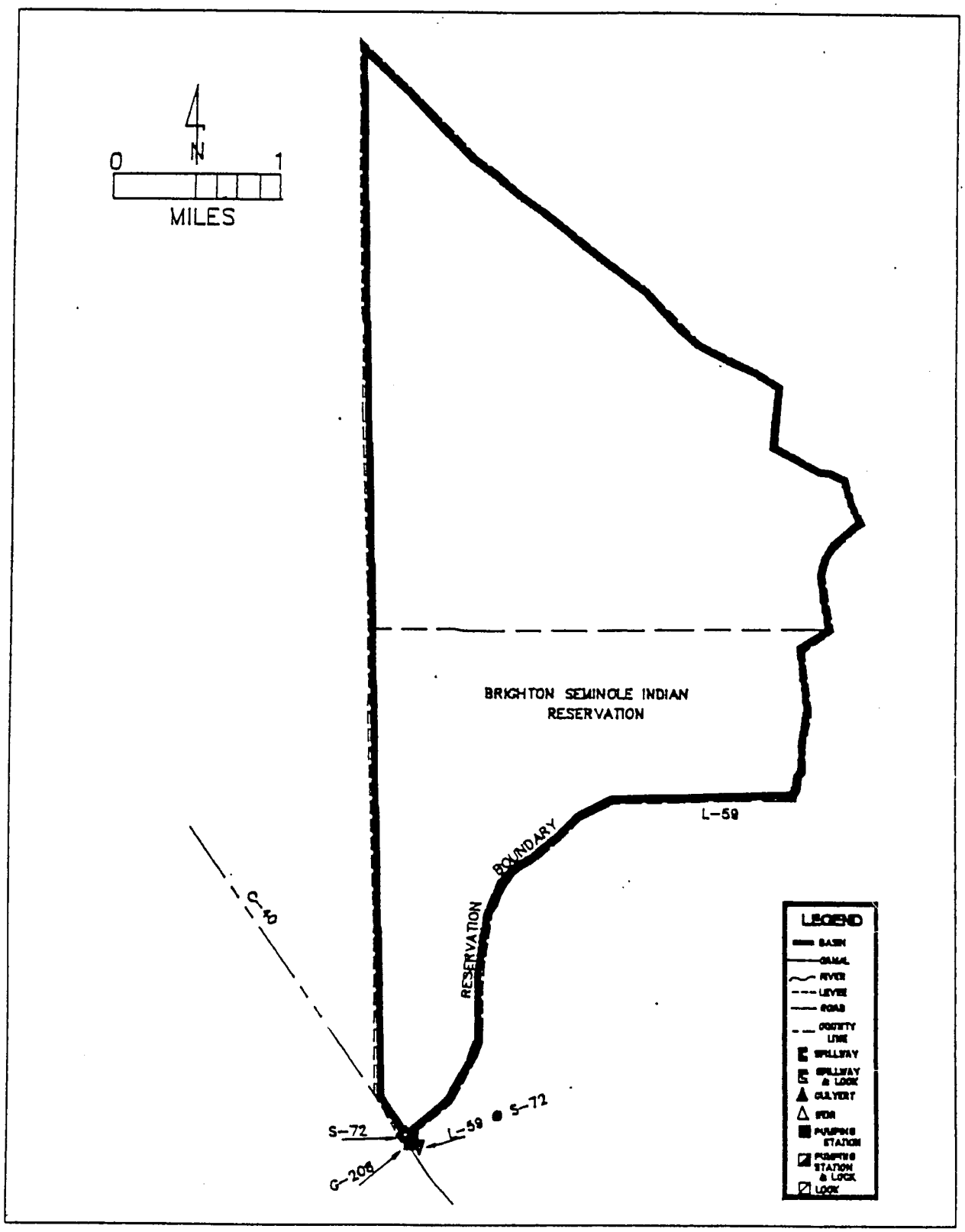


FIGURE 26 L-59W Basin Map

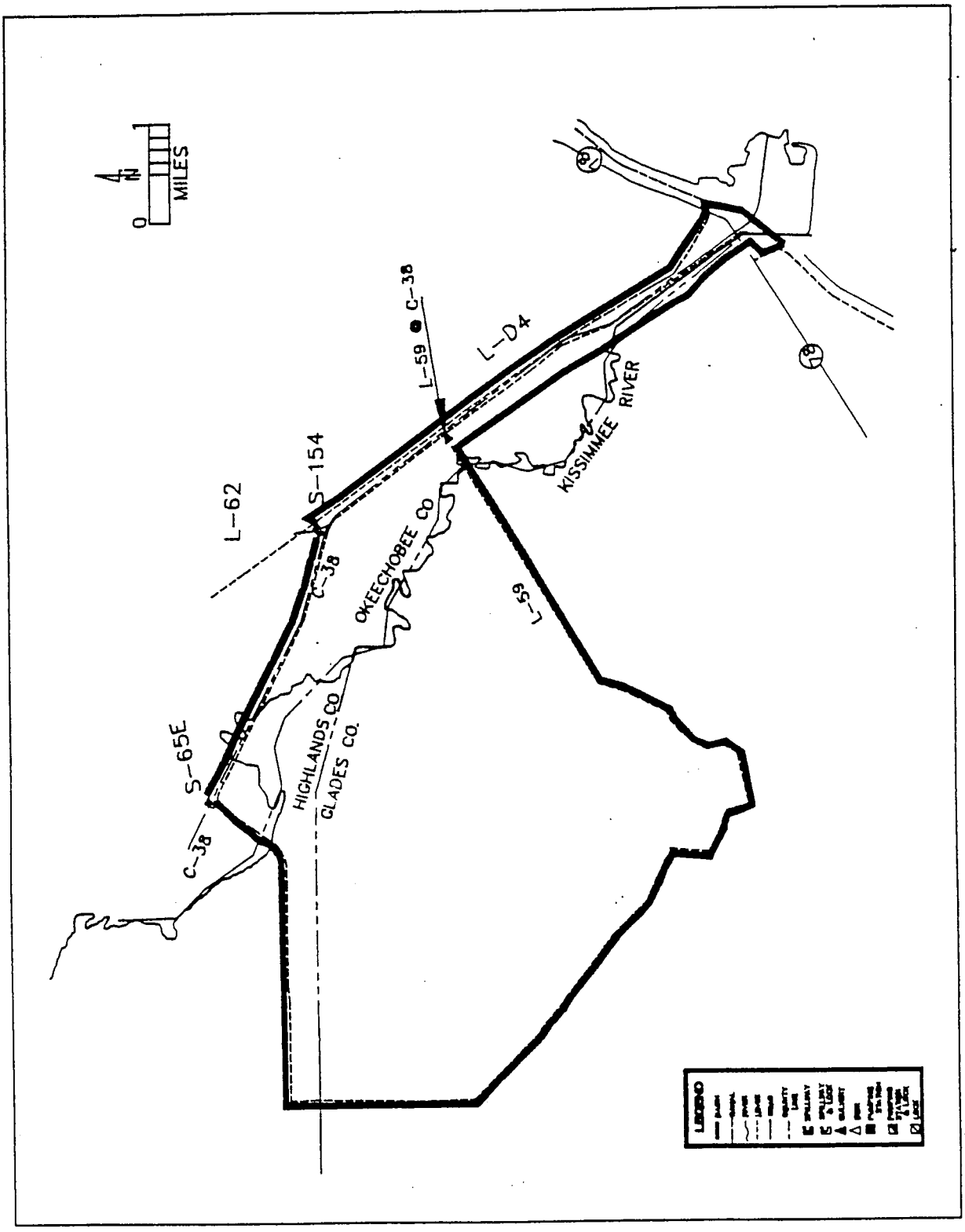


FIGURE 27 L-59E Basin Map

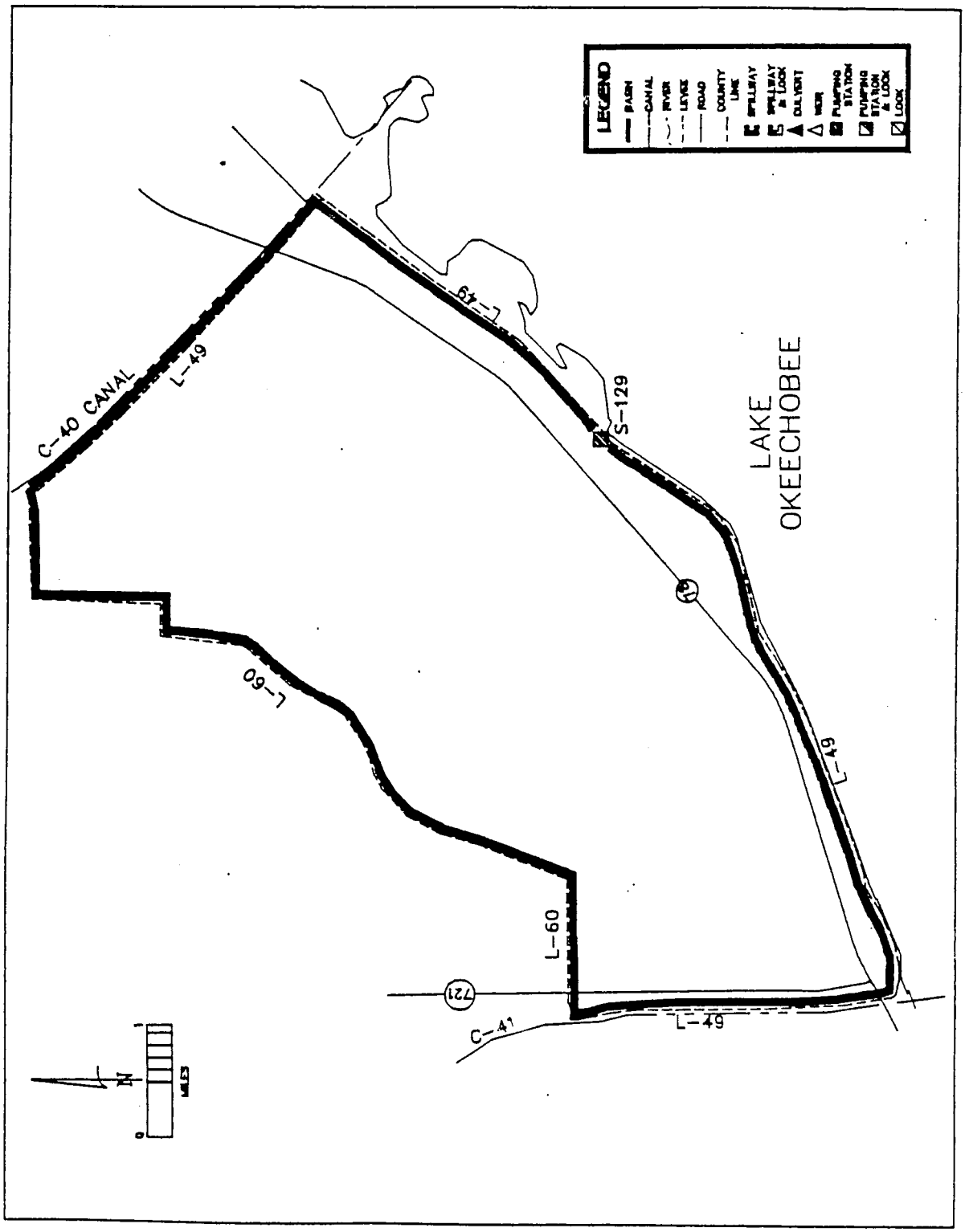


FIGURE 28. S-129 Basin Map

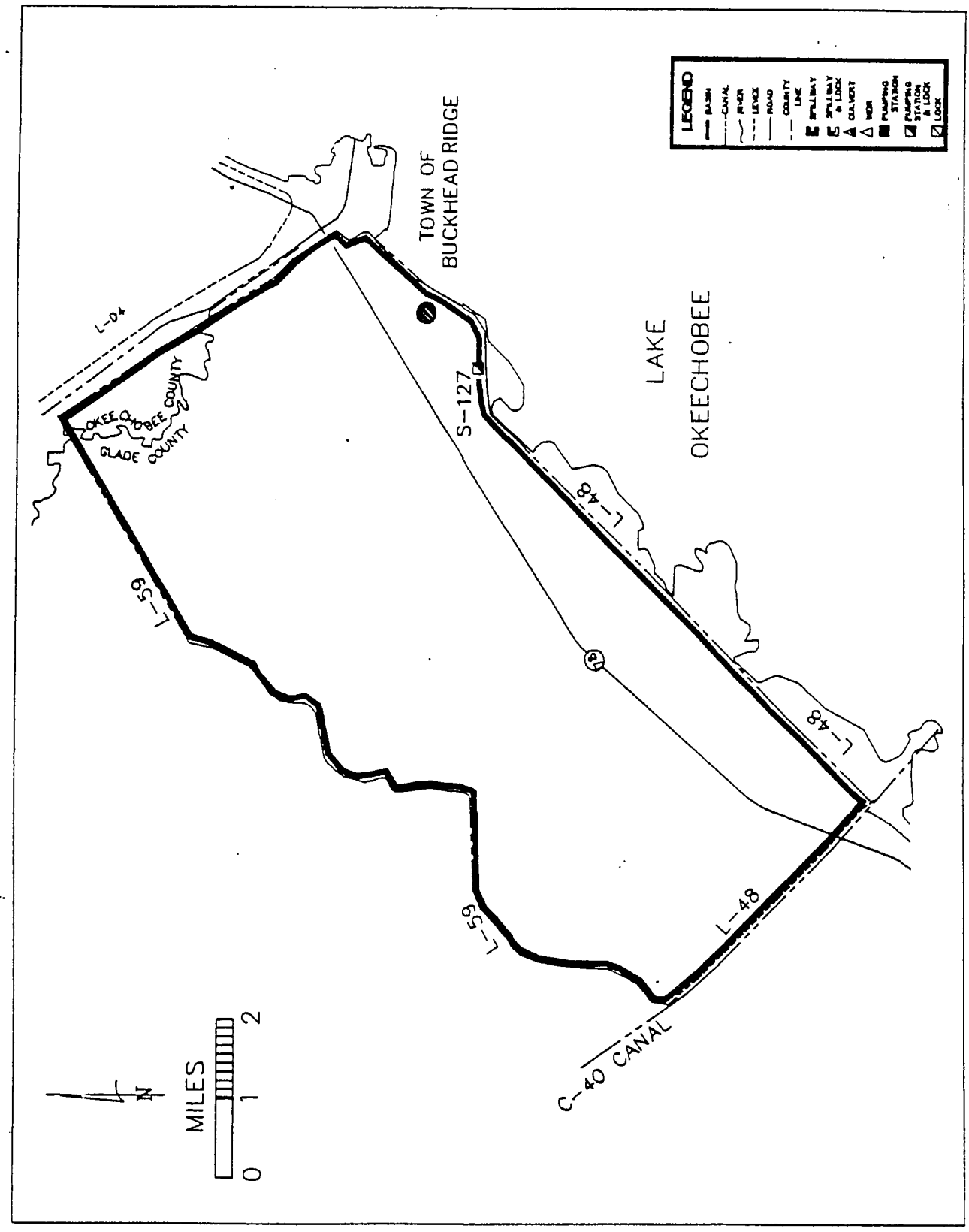


FIGURE 29 S-127 Basin Map

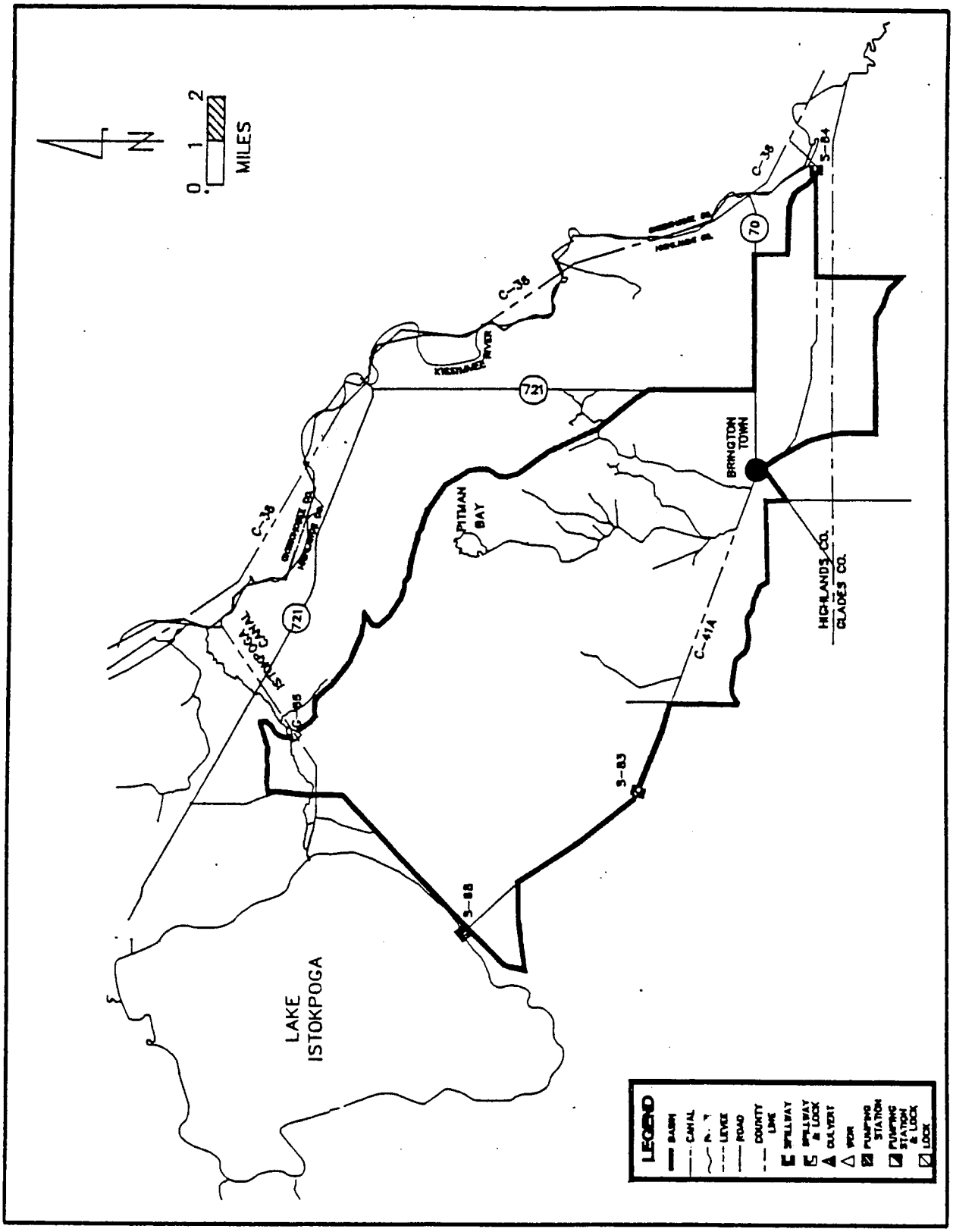


FIGURE 30 C-41A Basin Map

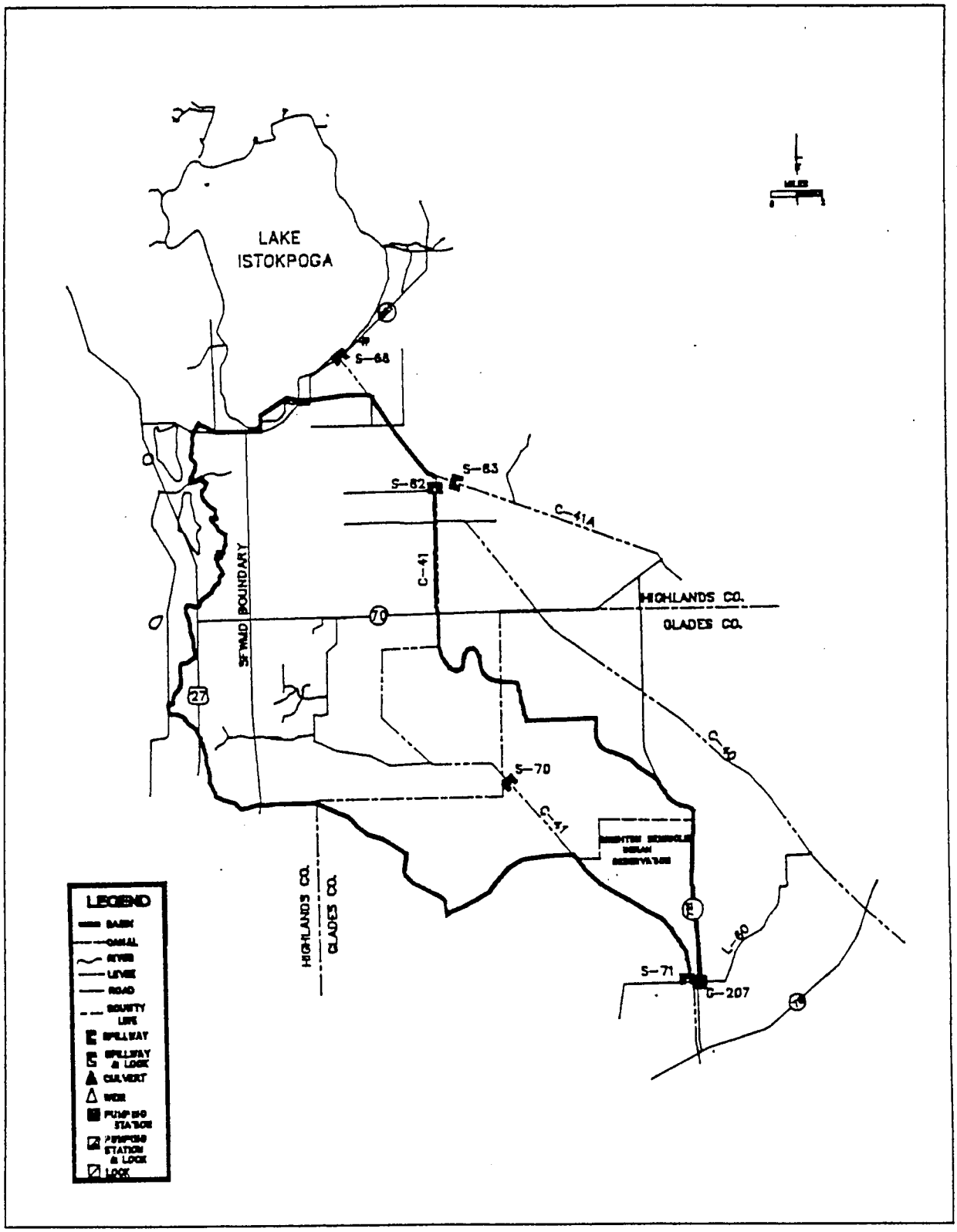


FIGURE 3/ C-41 Basin Map

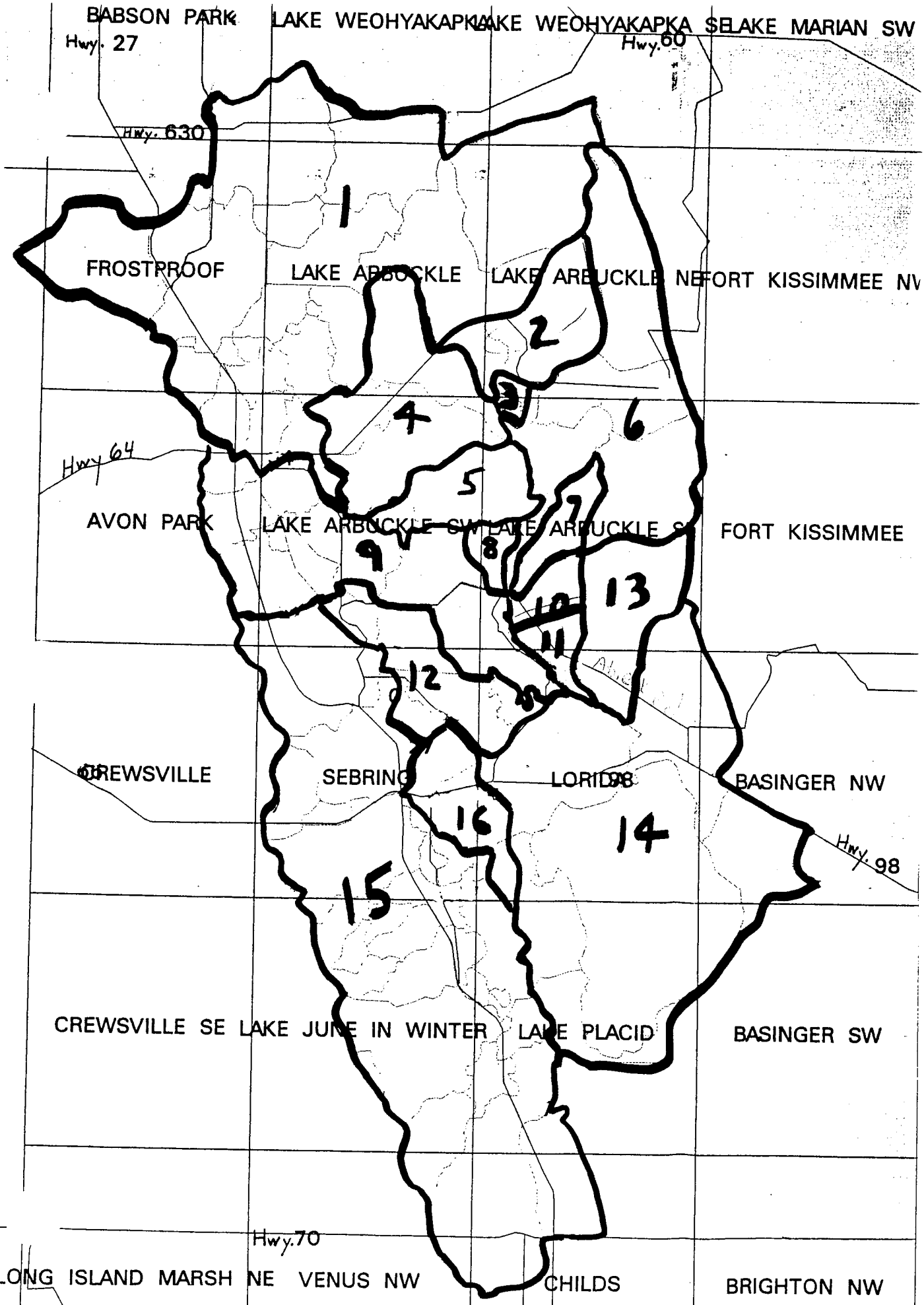


FIGURE 32 LOCATION OF LAKE ISTOKPOGA DRAINAGE SUBBASINS

TABLE 1 DISCHARGE VALUES FOR LAKE ISTOKPOGA DRAINAGE SUBBASINS

Basin	Inflow Point	Area (sq. mi.)	Cubic Feet per Second per Square Mile (csm) SPF	100-Year	50-Year	10-Year	5-Year
1	Arbuckle 0.00	179.34	17.95	14.89	12.38	7.14	6.13
2	Arbuckle 1.25	14.41	251.91	201.25	180.43	124.91	111.03
3	Arbuckle 4.17	1.33	254.14	201.50	184.21	142.11	125.56
4	Arbuckle 5.83	28.56	161.06	129.55	112.04	68.28	57.42
5	Arbuckle 8.03	12.04	192.69	149.50	99.67	18.27	10.80
6	Arbuckle 9.50	45.35	73.87	48.73	34.62	14.33	12.35
7	Arbuckle 12.0	5.88	173.47	137.76	120.75	81.63	68.03
8	Arbuckle 13.0	2.96	253.38	202.70	179.05	128.38	108.11
9	Arbuckle 14.0	39.58	111.42	86.15	56.85	10.11	6.06
10	Arbuckle 15.5	3.96	247.47	196.97	166.67	85.86	73.23
11	Arbuckle 17.3	4.39	250.57	200.46	177.68	109.34	91.12
12	Arbuckle 19.5	20.73	7.81	5.84	3.14	0.53	0.39
13	Arbuckle 20.5	15.84	198.86	152.15	125.63	64.39	53.03
14	Local Inflows	64.9	231.12	184.90	160.25	93.99	73.96
15	Josephine 0.0	132.67	43.72	32.03	23.37	7.16	4.90
16	Josephine 2.0	11.15	178.48	133.63	80.72	9.87	7.17
	Average	36.44	165.50	129.88	107.34	60.39	50.58
	Maximum	179.34	254.14	202.70	184.21	142.11	125.56
	Minimum	1.33	7.81	5.84	3.14	0.53	0.39

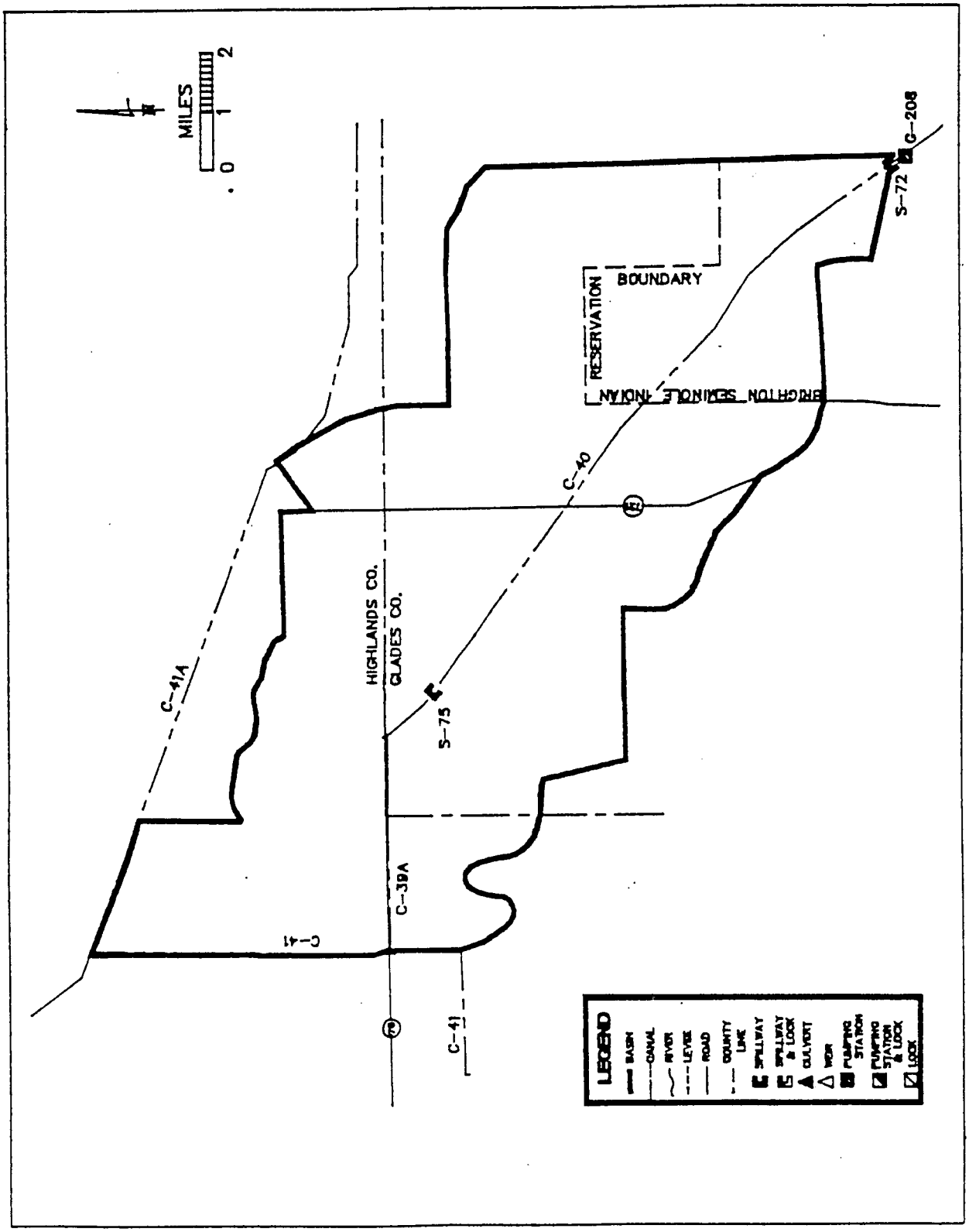


FIGURE 33 C-40 Basin Map

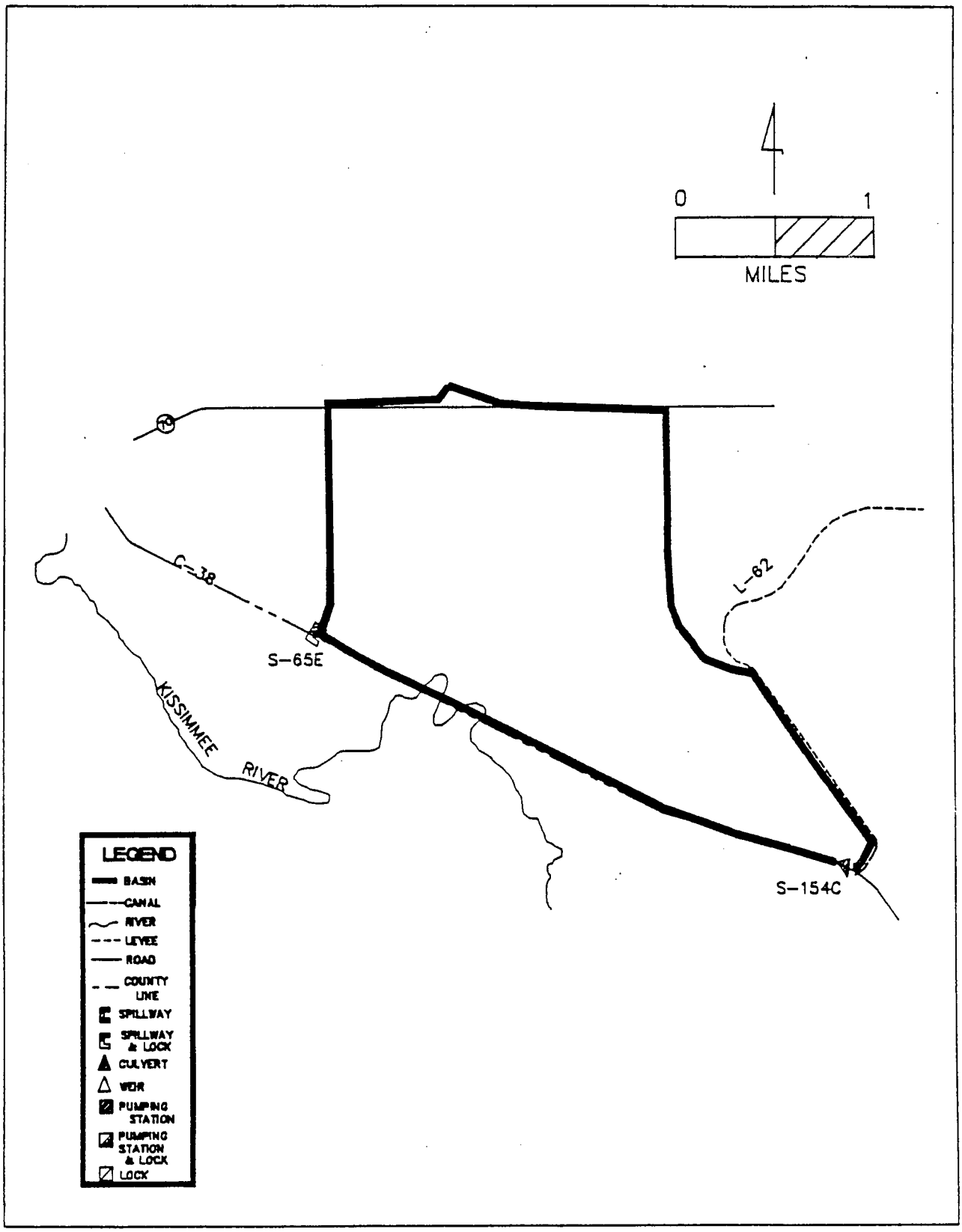


FIGURE 34 S-154C Basin Map

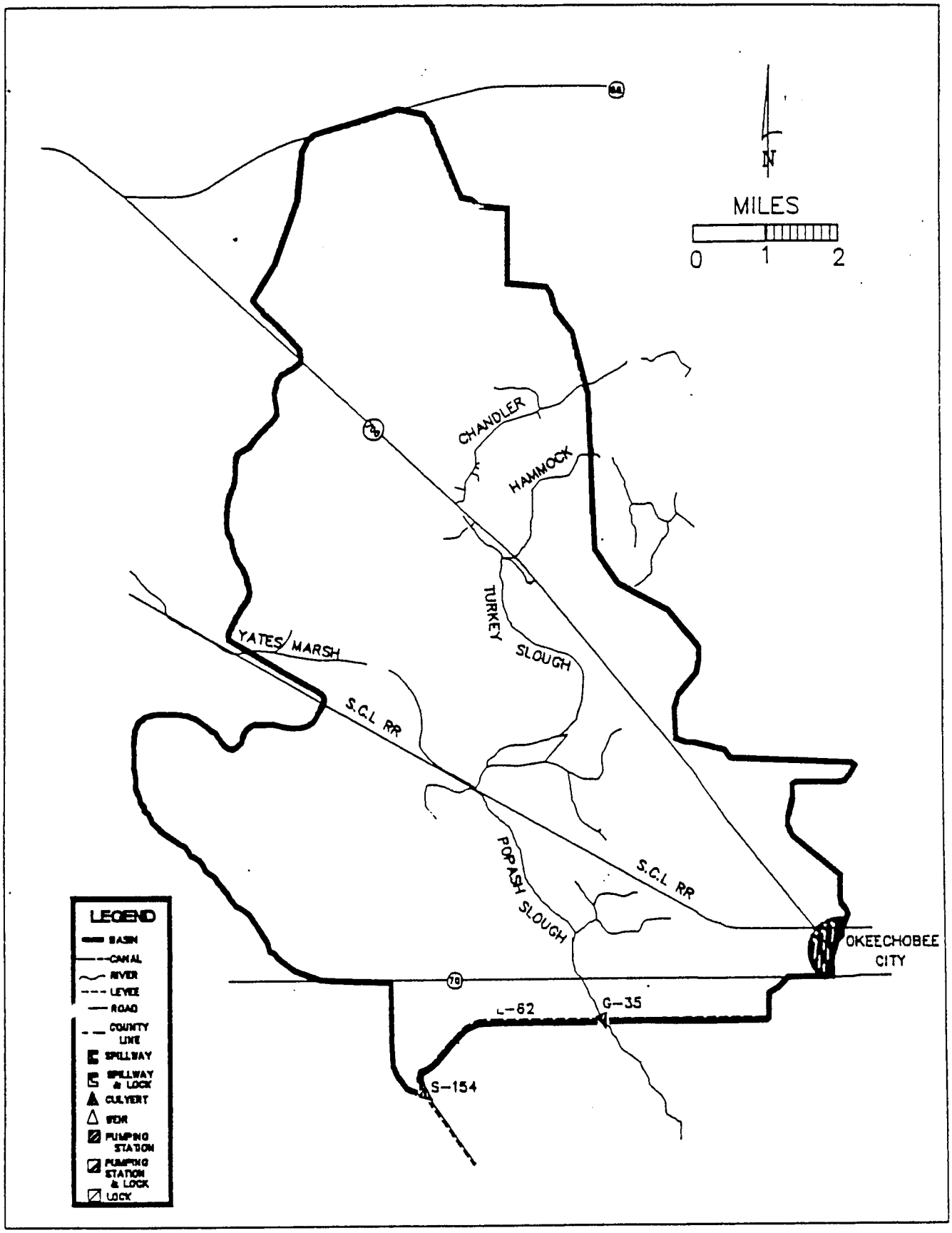


FIGURE 35 S-154 Basin Map

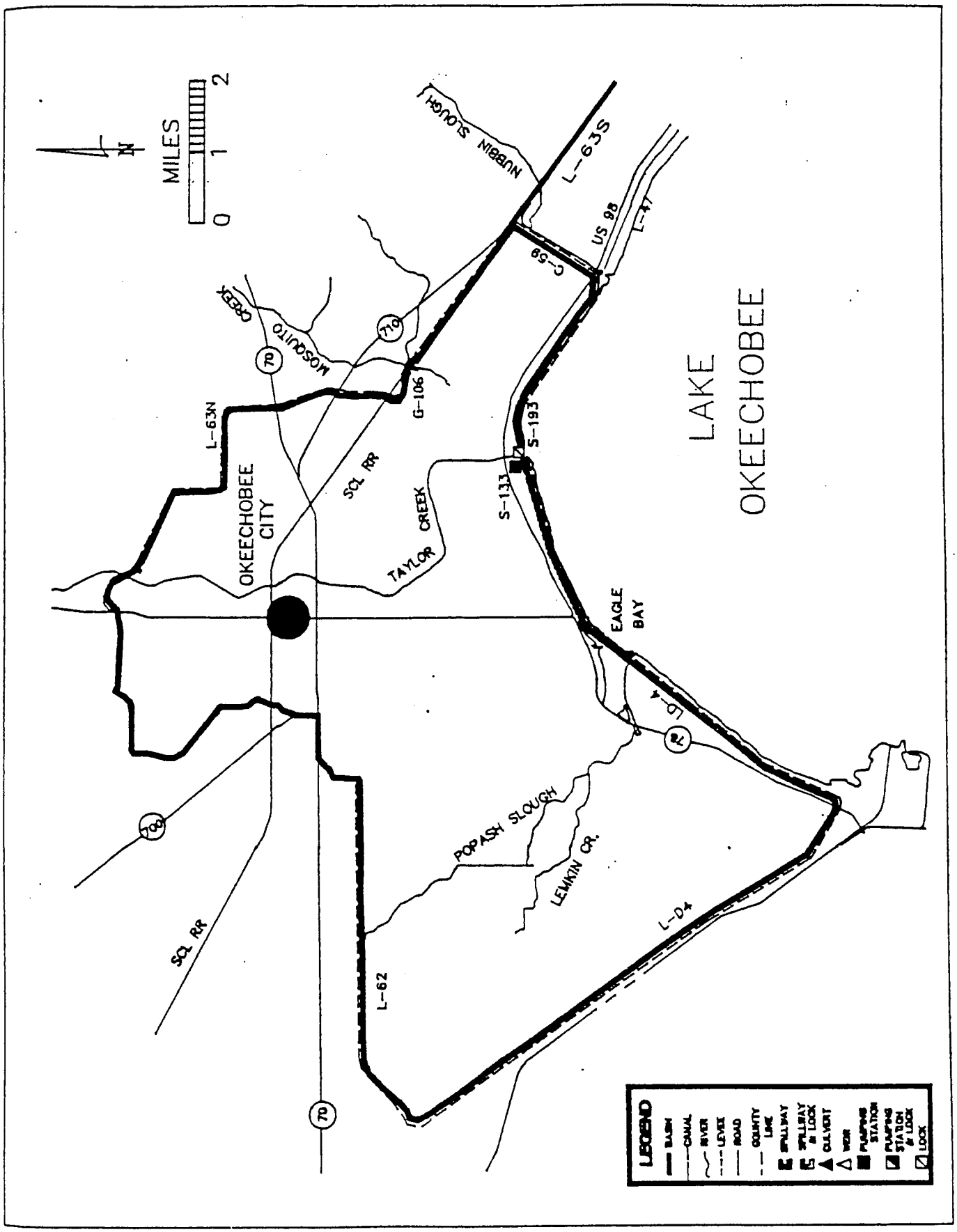


FIGURE 36 S-133 Basin Map

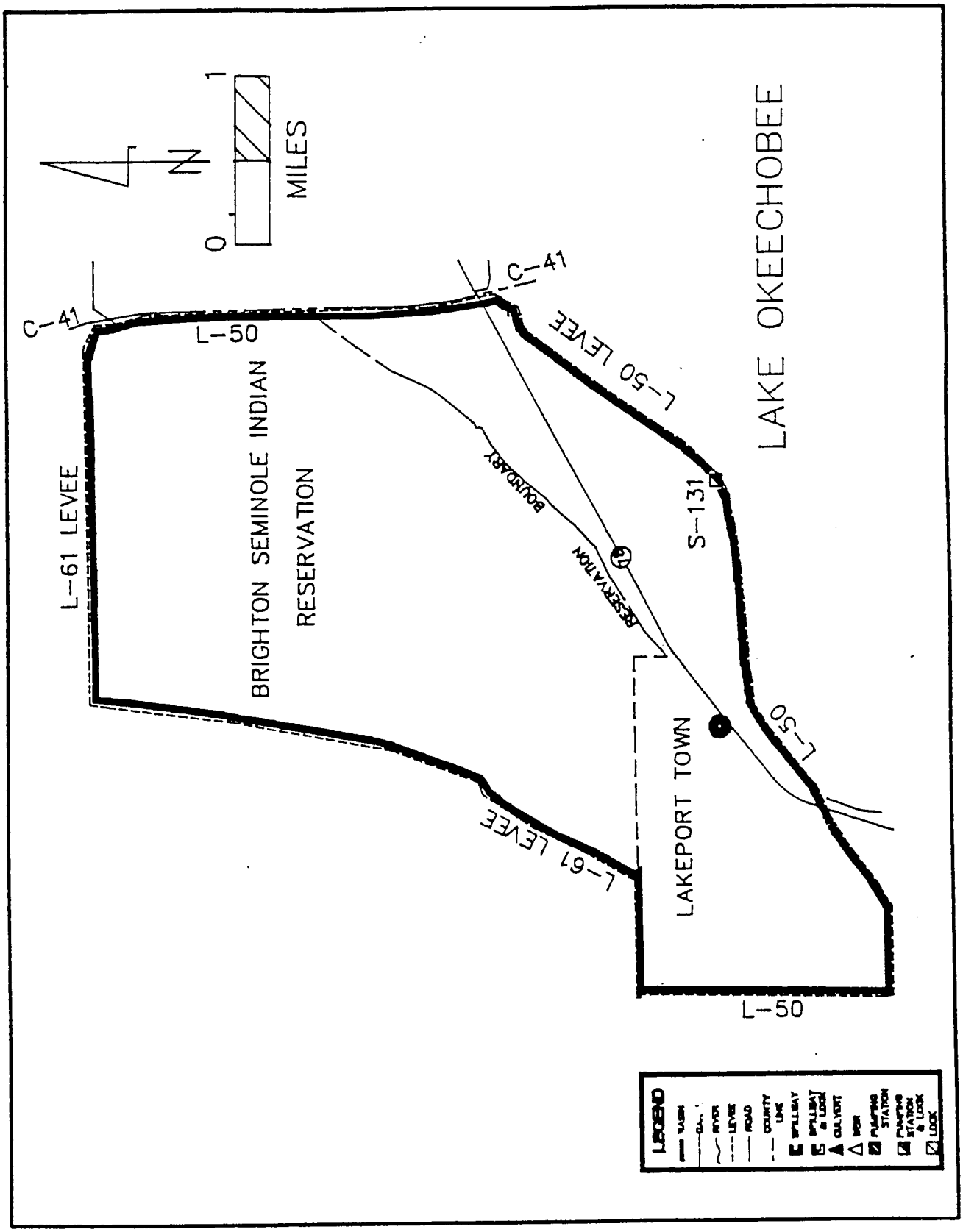


FIGURE 37 S-131 Basin Map

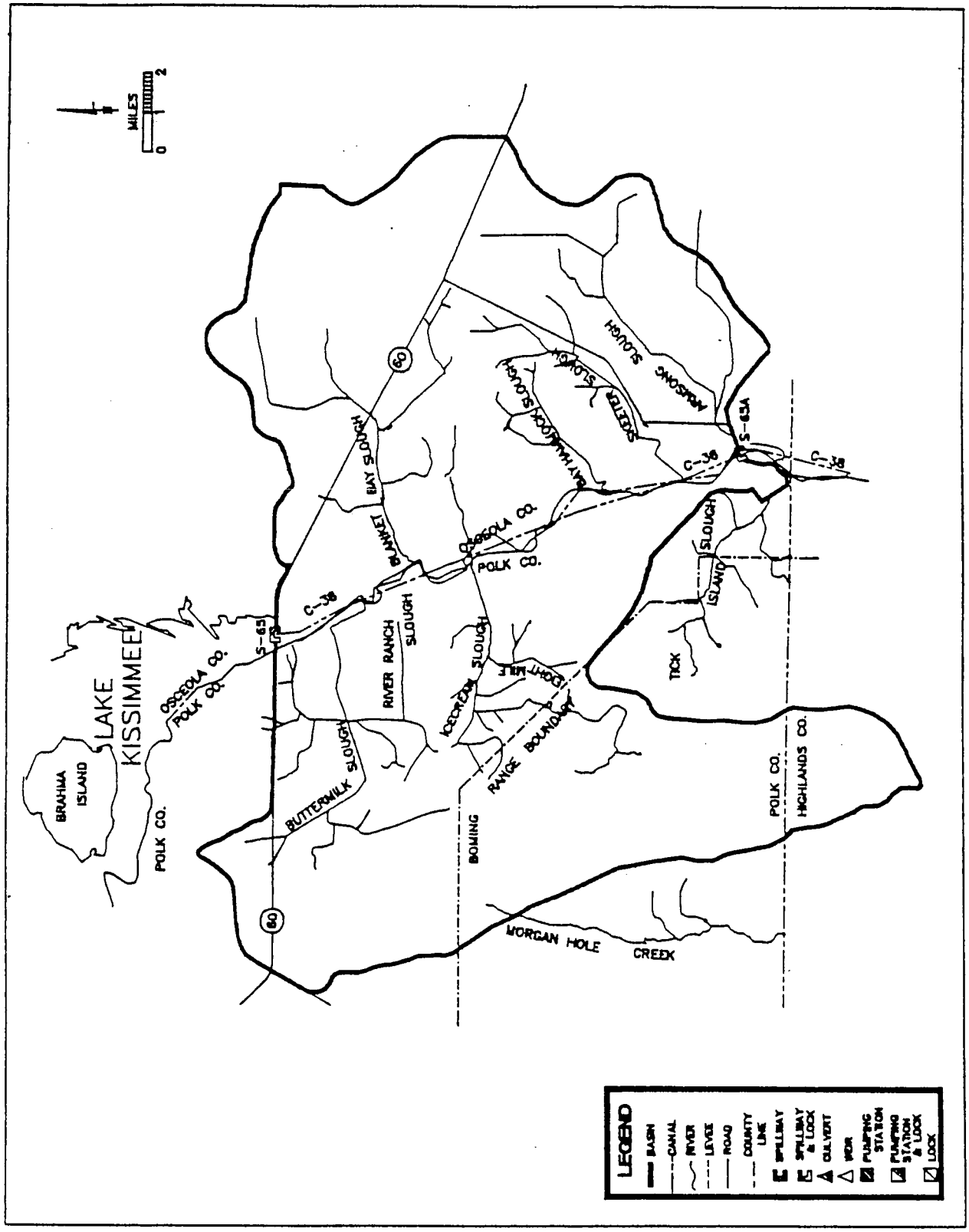


FIGURE 38 S-65A Basin Map

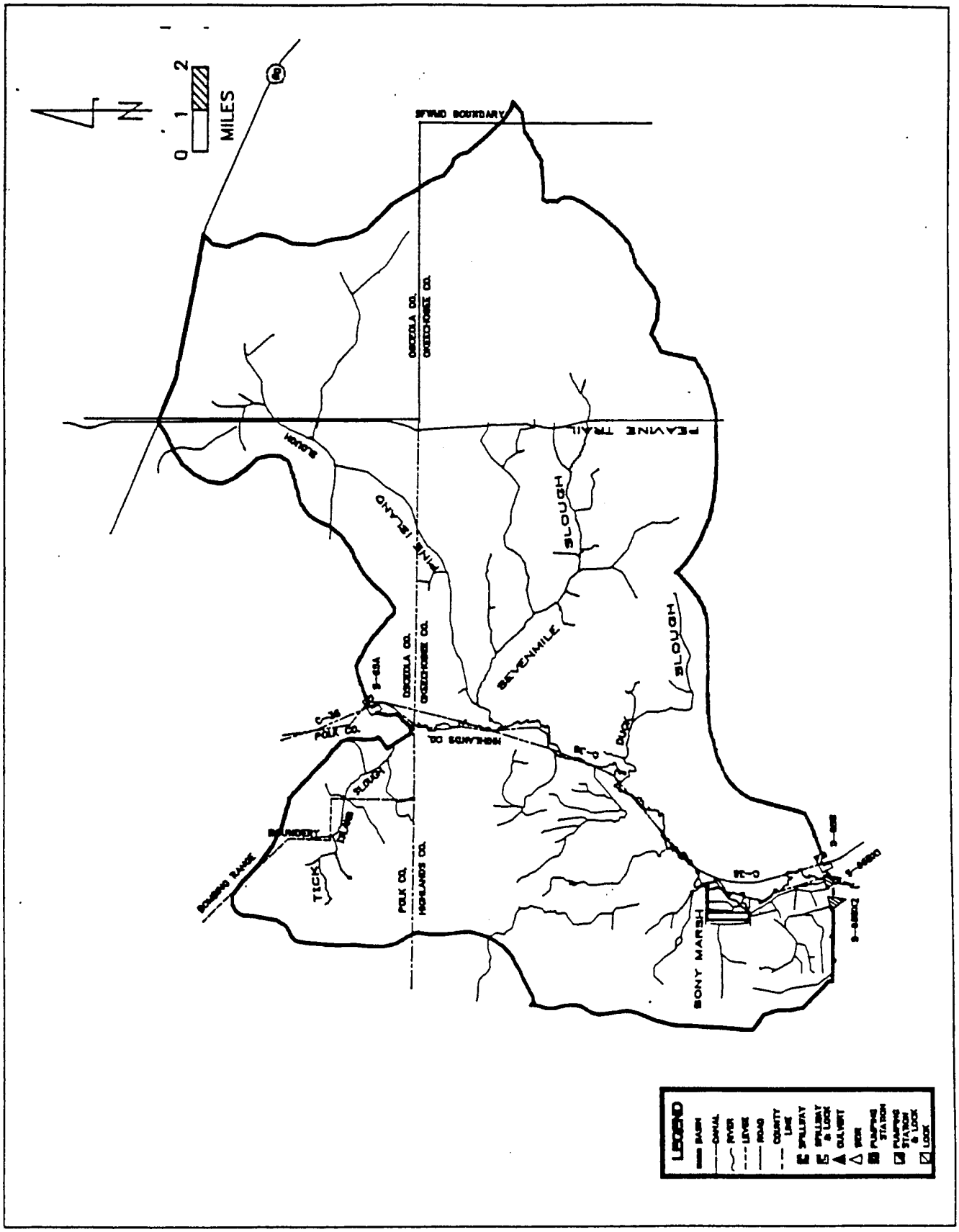


FIGURE 39 S-65B Basin Map

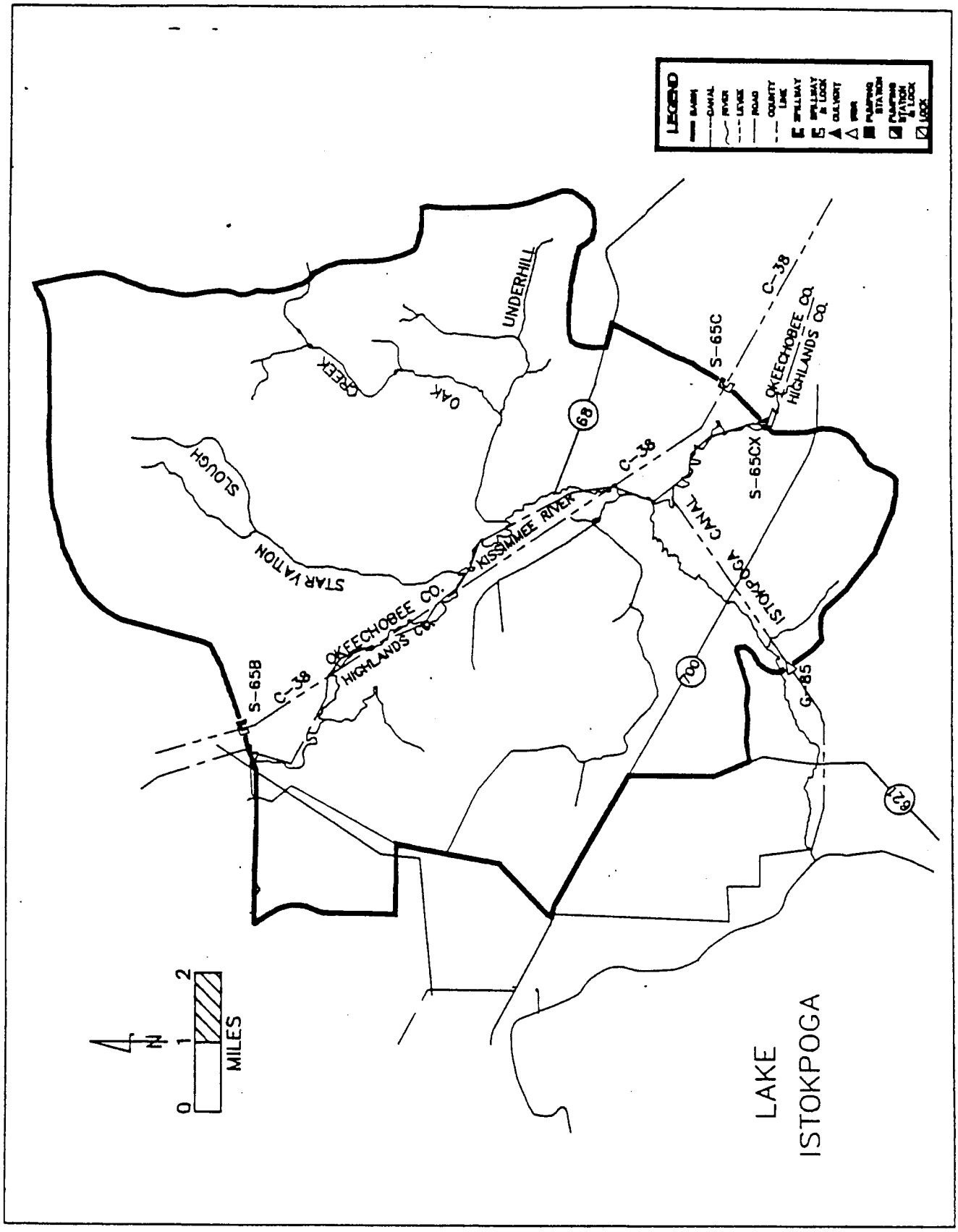


FIGURE 40 S-65C Basin Map

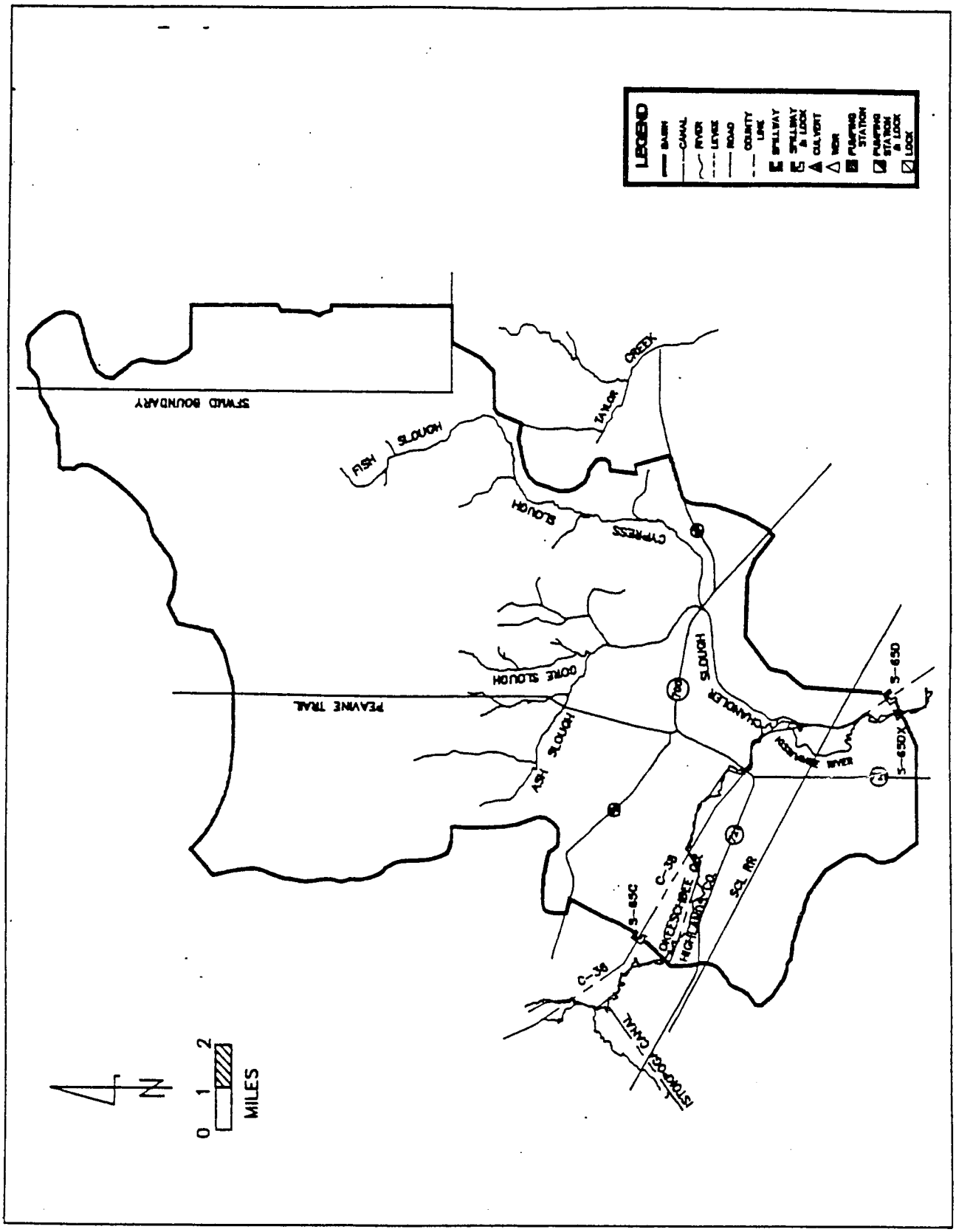


FIGURE 41 S-65D Basin Map

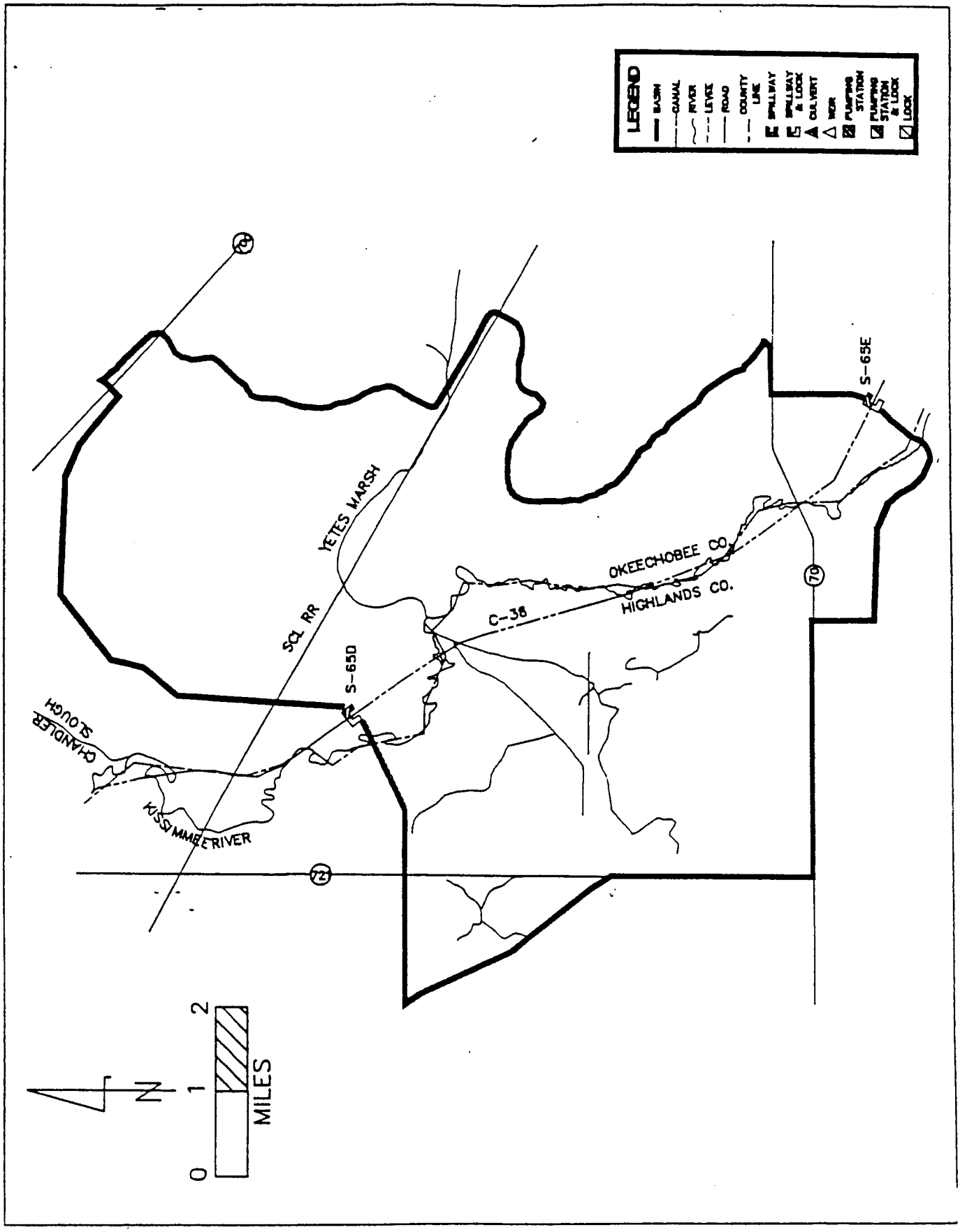


FIGURE 42 S-65E Basin Map

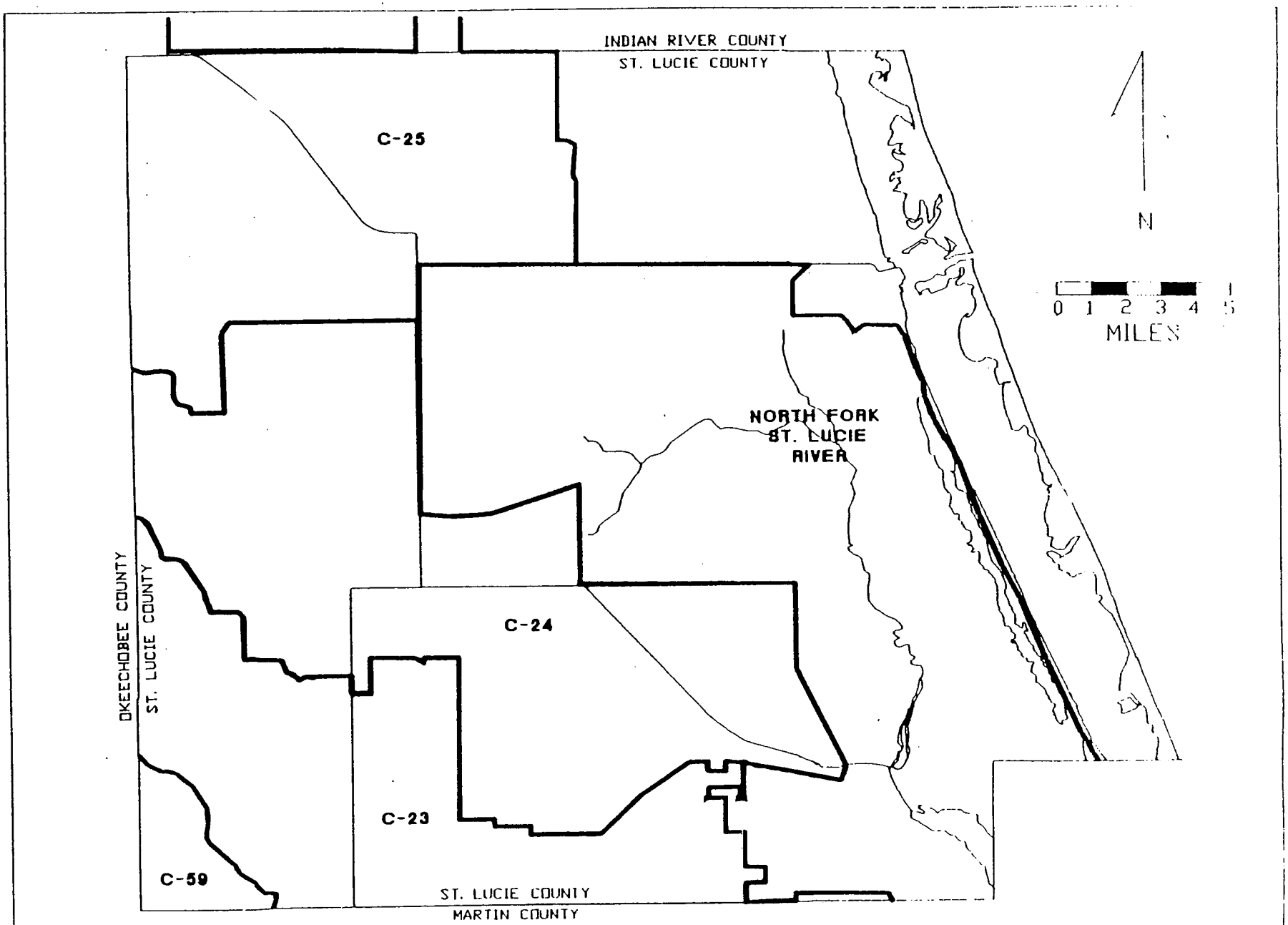


FIGURE 13 ST. LUCIE COUNTY DRAINAGE BASINS

C-25 BASIN

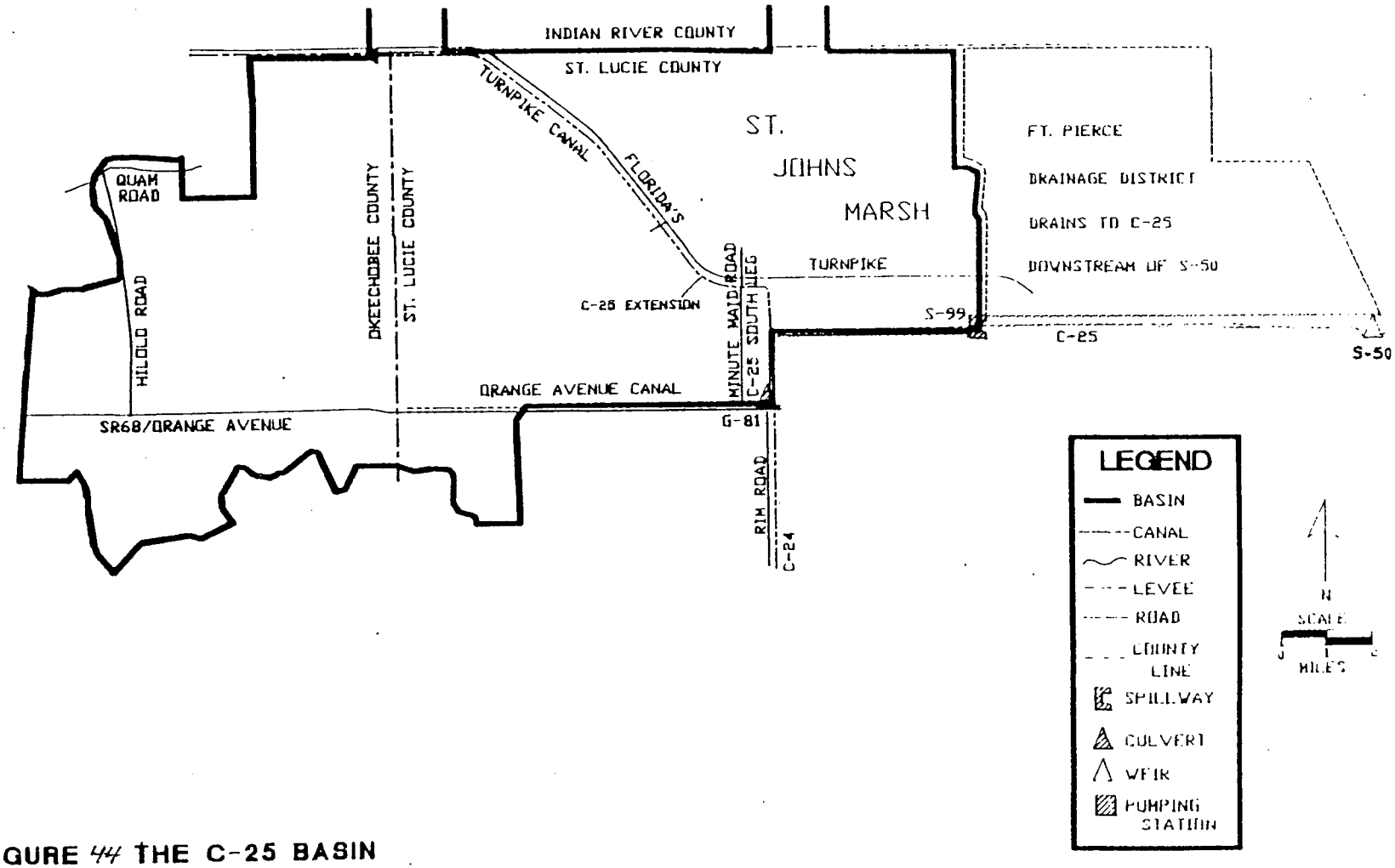


FIGURE 44 THE C-25 BASIN

C-24 BASIN

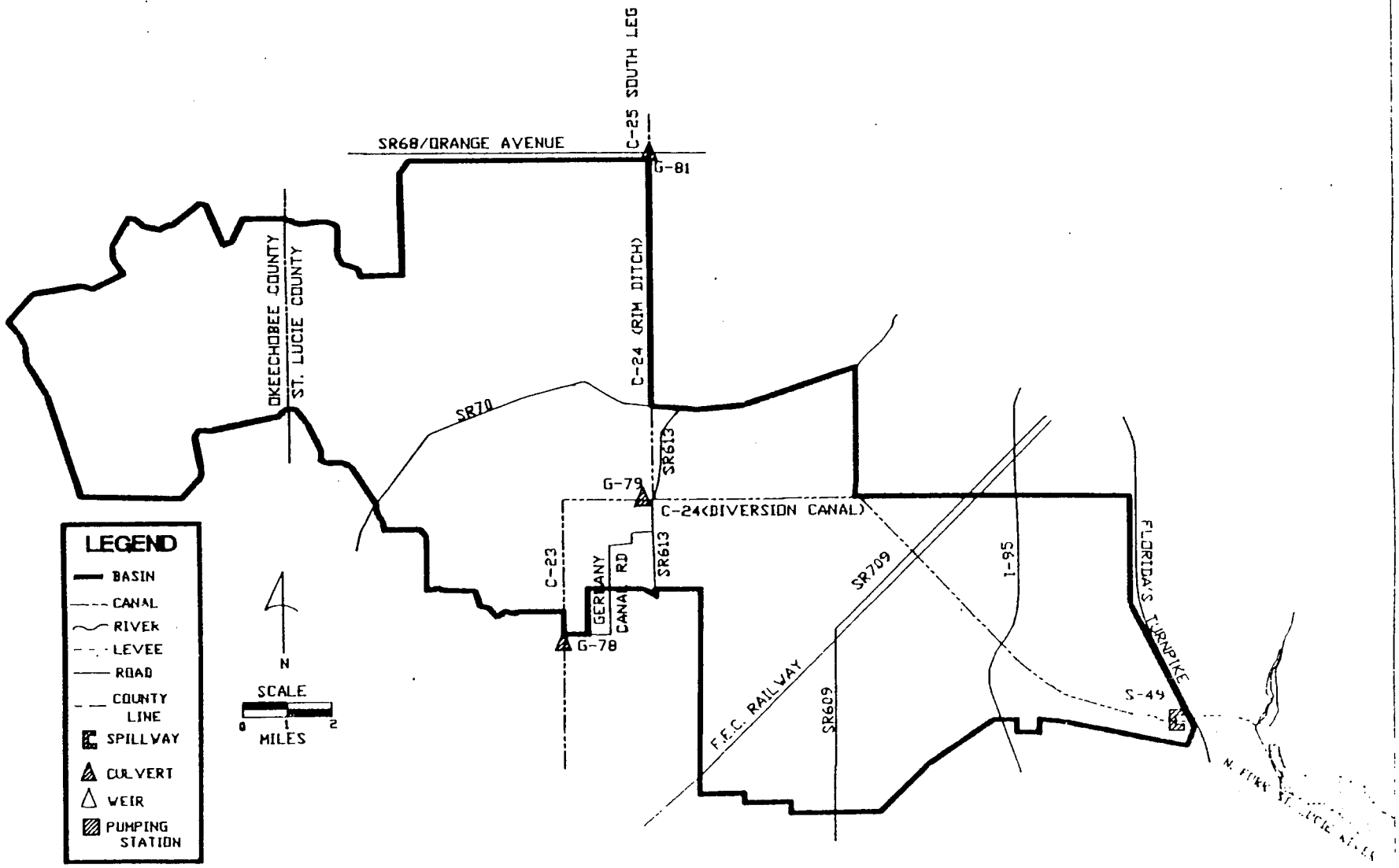


FIGURE 45 THE C-24 BASIN

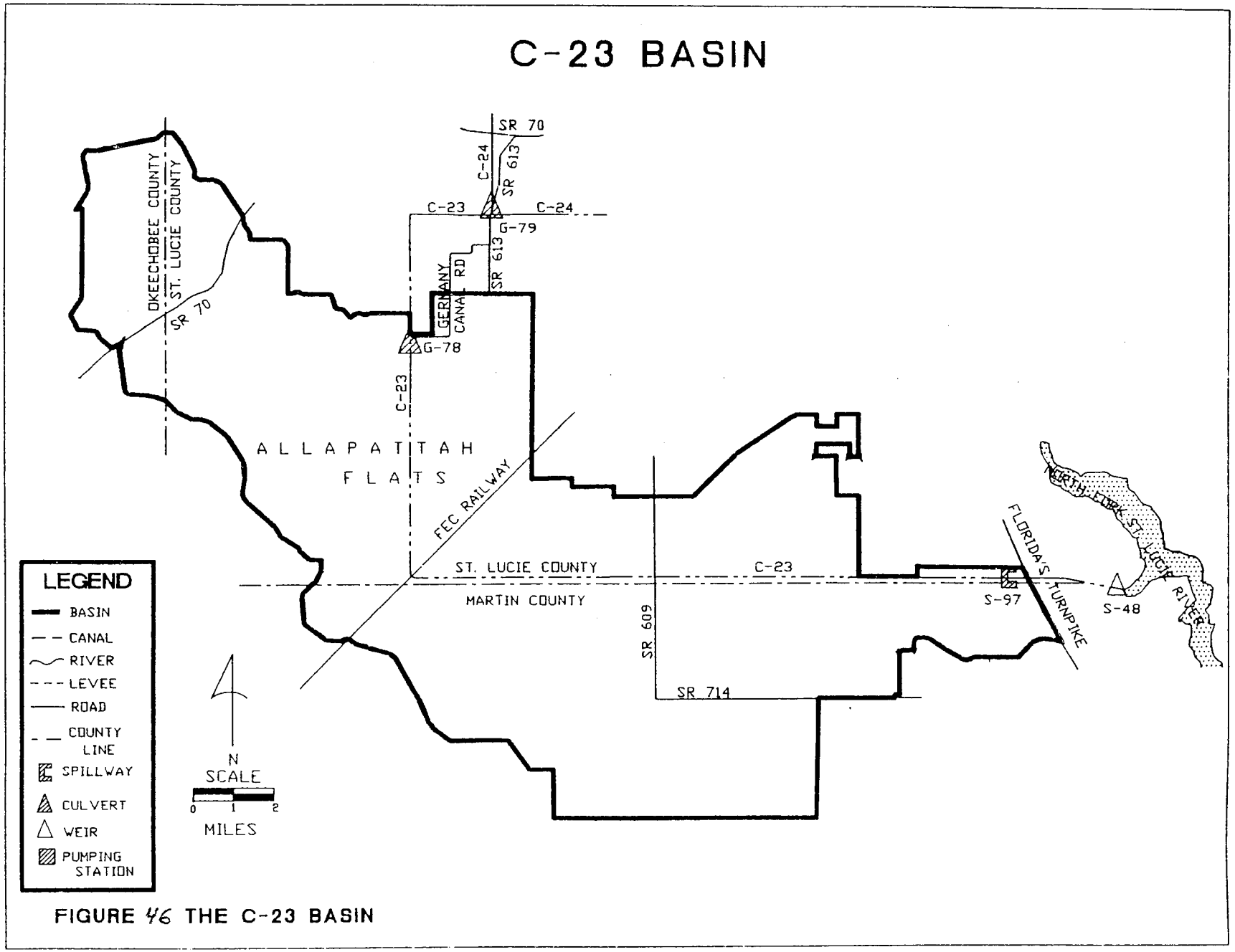


FIGURE 46 THE C-23 BASIN

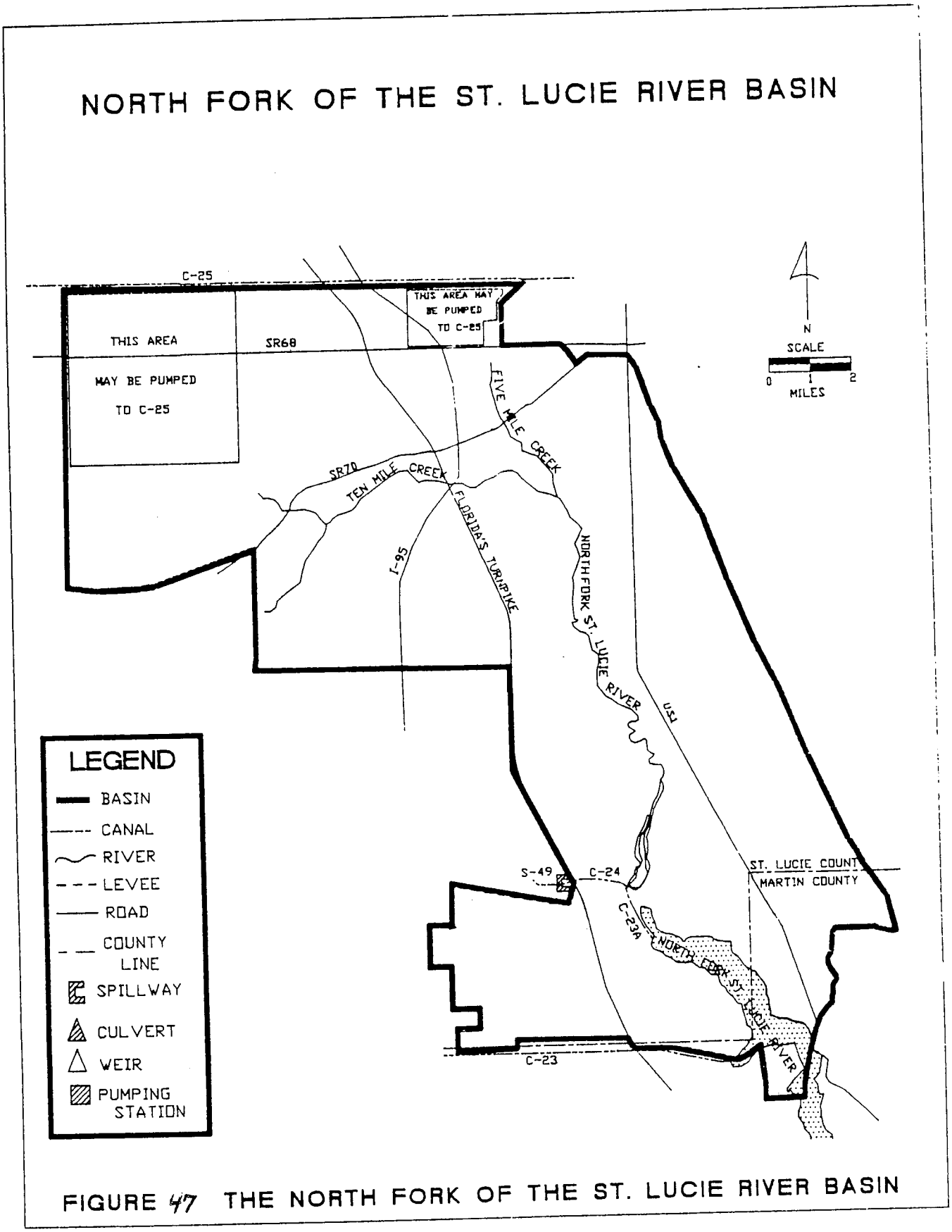


FIGURE 47 THE NORTH FORK OF THE ST. LUCIE RIVER BASIN

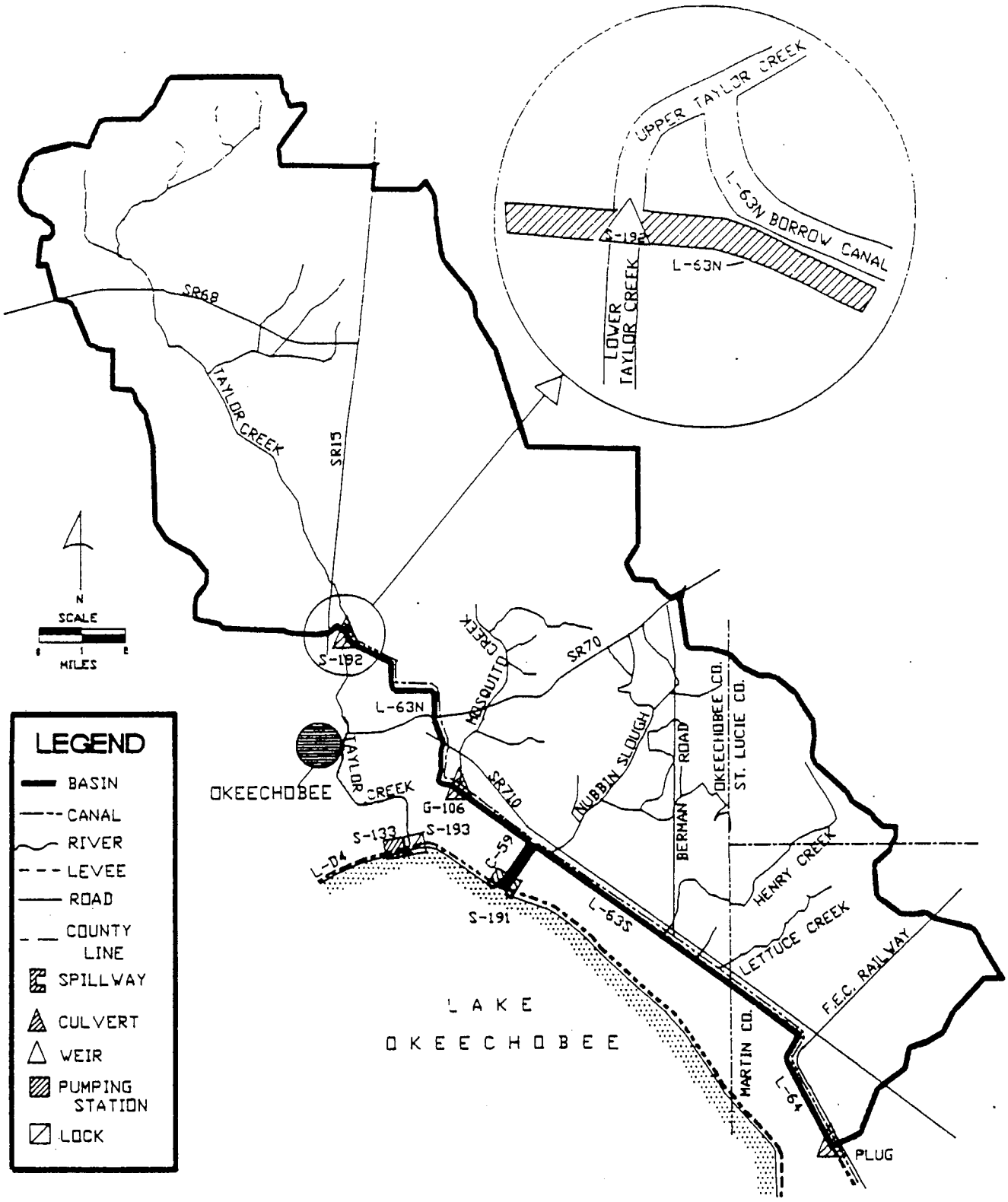


FIGURE 48 THE C-59 BASIN

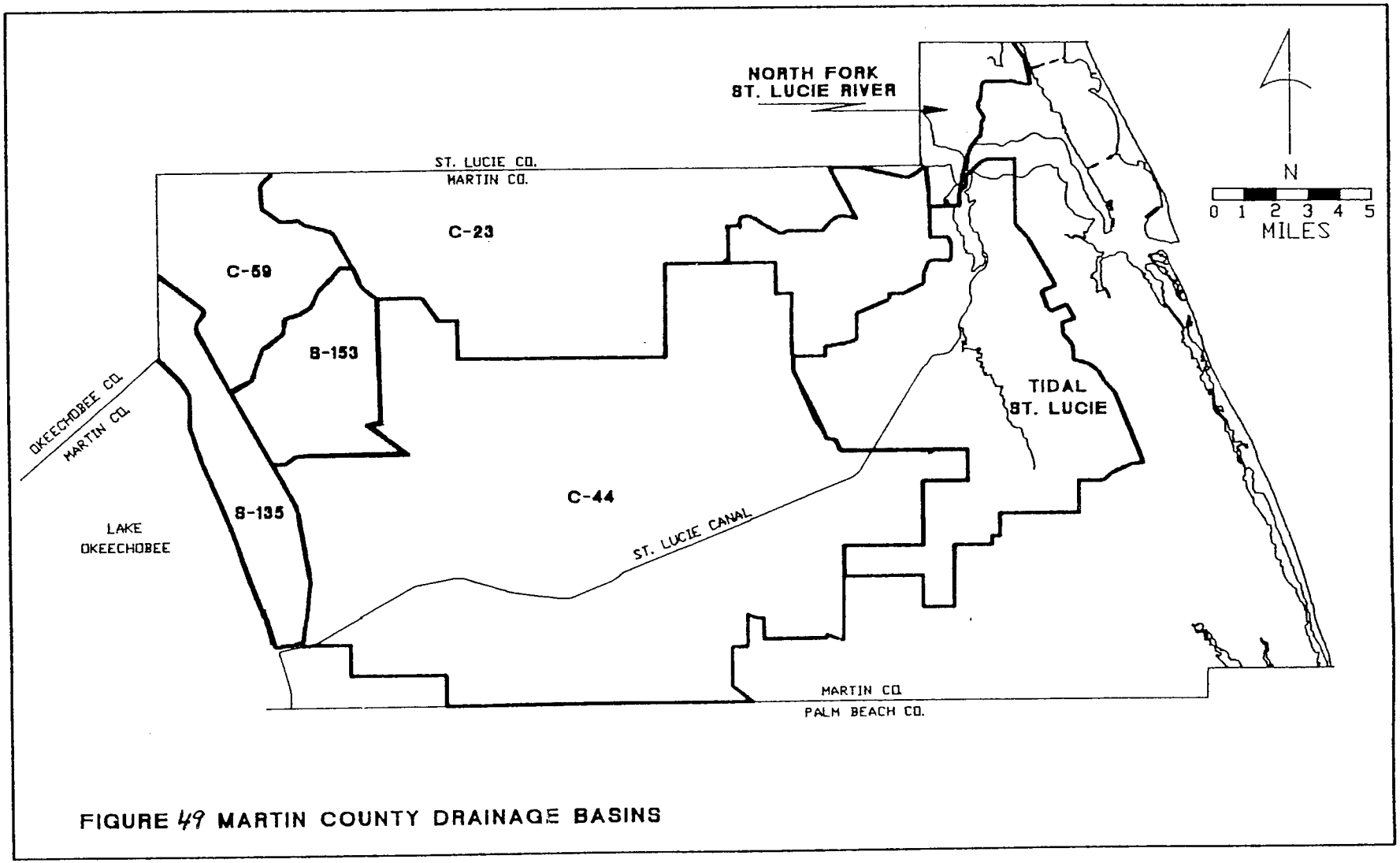


FIGURE 49 MARTIN COUNTY DRAINAGE BASINS

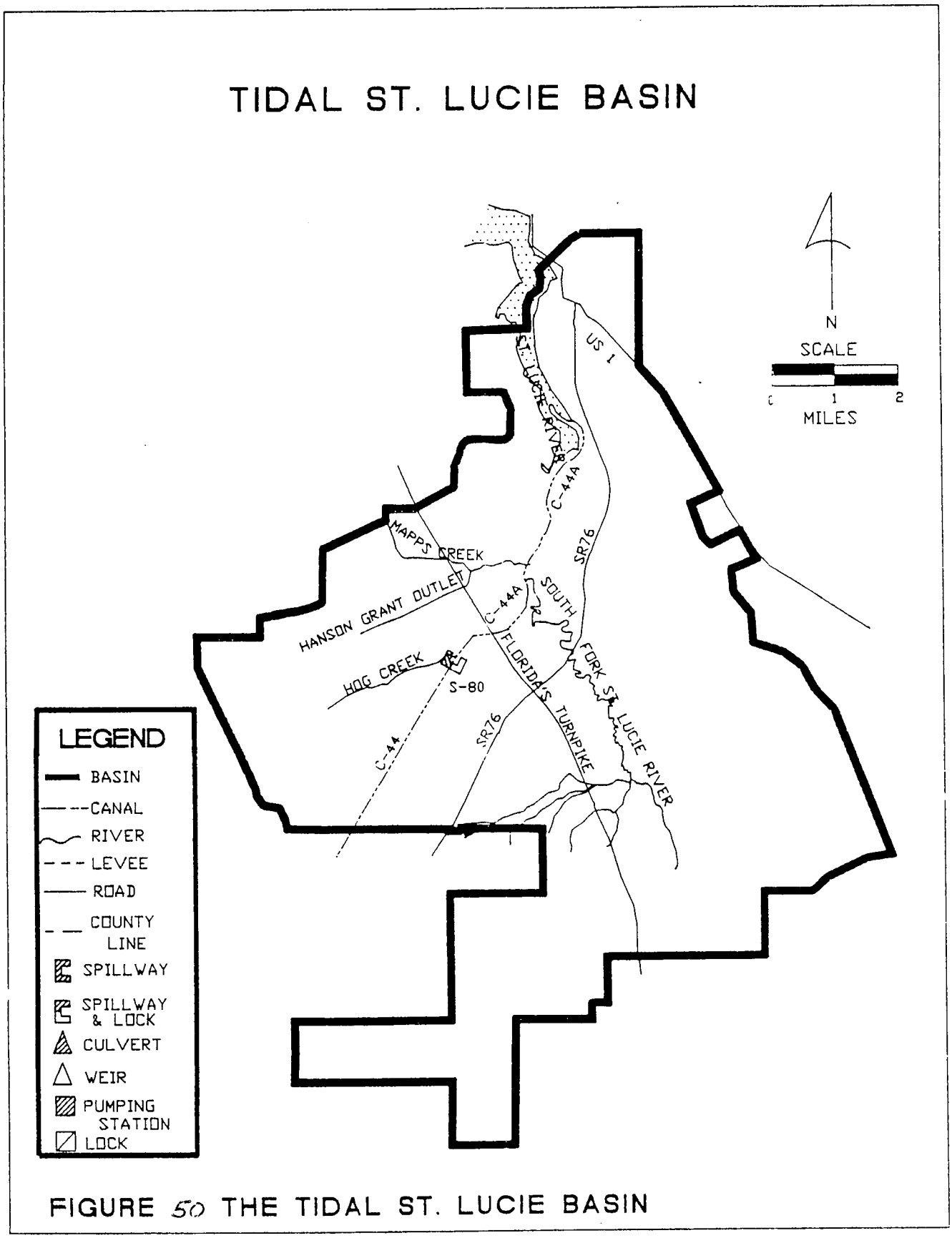


FIGURE 50 THE TIDAL ST. LUCIE BASIN

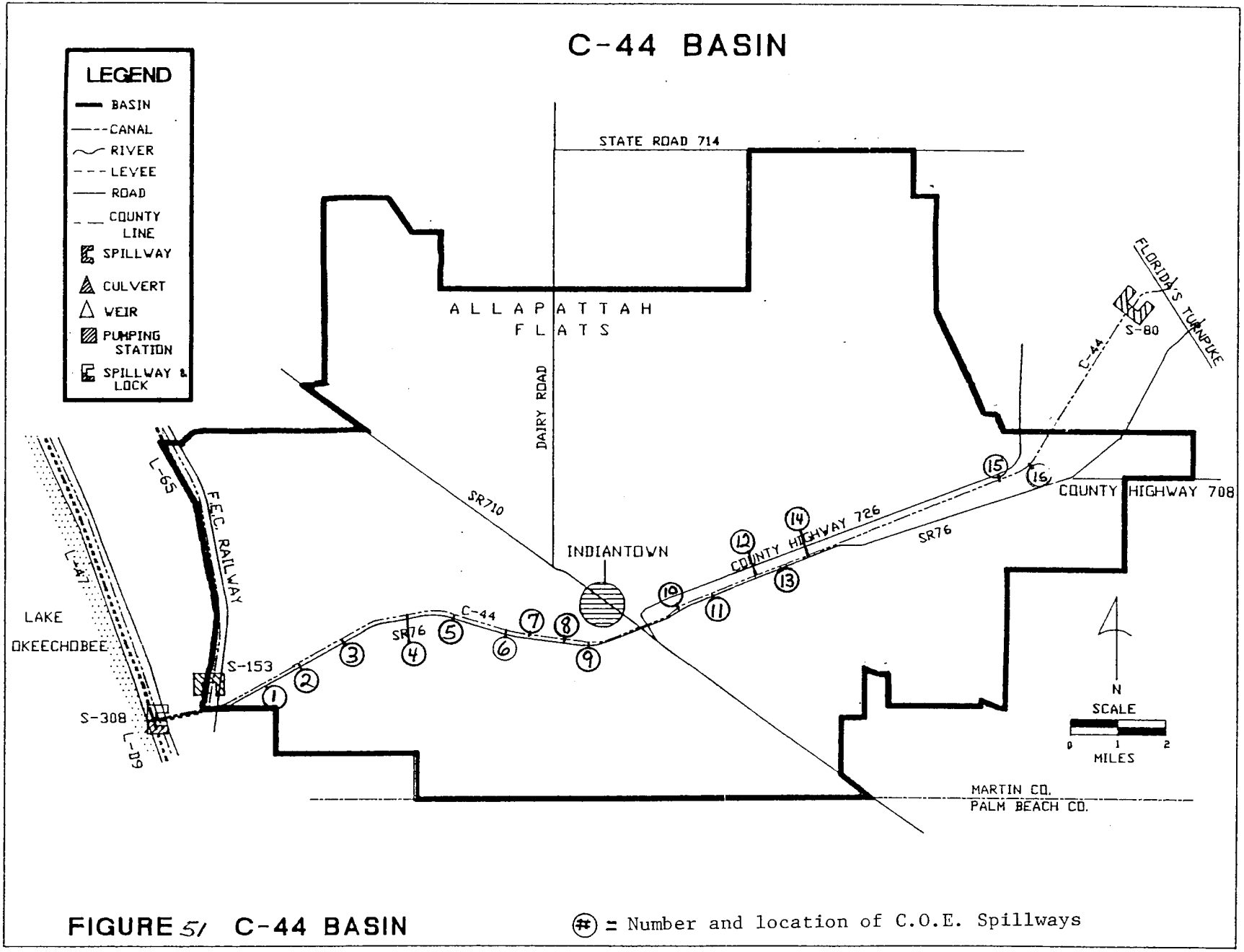


FIGURE 51 C-44 BASIN

(#) = Number and location of C.O.E. Spillways

Table 2

CORPS OF ENGINEERS SPILLWAYS ON THE ST. LUCIE CANAL (C-44)

NAME AND NUMBER	SECTION	TOWNSHIP	RANGE	
1. Myaca 196.2 CSM	13	40S	37E	2600' E of 14/13 S line along river bank 4.22 sq. miles. Drainage area 828 cfs discharge capacity south side.
2. "A" 231.28 CSM	13	40S	37E	400' W of 37/38 R line along R bank 1.79 sq. miles. Drainage area 414 cfs discharge capacity south side.
3. "B" 324 CSM	8	40S	38E	2500' E of 37/38 R line along R bank 1.37 sq. miles. Drainage area 444 cfs discharge capacity south side.
4. "C" 285 CSM	4	40S	38E	500' W of 4/3 S line along R bank 2.11 sq. miles. Drainage area 602 cfs discharge capacity south side.
5. "D" 445 CSM	10	40S	38E	400' W of 10/11 S line along R bank 1.04 sq. miles. Drainage area 463 cfs drainage capacity south side.
6. "E" 280 CSM	11	40S	38E	100' W of 11/12 S line along bank 2.19 sq. miles. Drainage area 614 cfs discharge capacity south side.
7. West End 245 CSM	12	40S	38E	600' E of 11/12 S line along R bank 3.0 sq. miles. Drainage area 735 cfs discharge capacity north side.
8. Indiantown 192 CSM	7	40S	39E	On the 38/39 range line 14.32 sq. miles. Drainage area 27,500 cfs. Discharge capacity north side.
9. "F" 146.9 CSM	7	40S	39E	2600' E of 38/39 range line 4.05 sq. miles. Drainage area 595 cfs discharge capacity south side.
10. Allaphata #1 109.68 CSM	4	40S	39E	2800' W of 4/3 sectionline 42.85 sq. miles. Drainage area 4700 cfs discharge capacity north side.
11. "G" 192.2 CSM	4	40S	39E	100' W of 4/3 sectionline 4.50 sq. miles. Drainage area 865 c discharge capacity south side.

Table 2 (continued)
CORPS OF ENGINEERS SPILLWAYS ON THE ST. LUCIE CANAL (C-44)

con't.

NAME AND NUMBER	SECTION	TOWNSHIP	RANGE	
12. Allaphata #2 528 cfs from original drainage area boundaries need to be redefined.	3	40S	39E	1200' W of 2/3 sectionline 0.7 sq. miles drainage area 390 cfs discharge capacity north side.
13. "H" 253.8 CSM	2	40S	39E	1200' E of 2/3 sectionline 1.59 sq. miles drainage area 495 cfs discharge capacity south side.
14. "MID" Q=98.5 CSM	35	39S	39E	200' W of 35/36 sectionline 22.43 sq. miles drainage area 2210 cfs discharge capacity north side.
15. Cane Slough 149.03 CSM	27	39S	40E	1200' E of 27/28 sectionline 18.05 sq. miles drainage area 2690 cfs discharge capacity north side.
16. "I" 184 CSM	22	39S	40E	25' W of 22/23 sectionline 4.00 sq. miles drainage area 736 cfs discharge capacity "I" south side.

CSM = Cubic Feet per Second per Square MILE

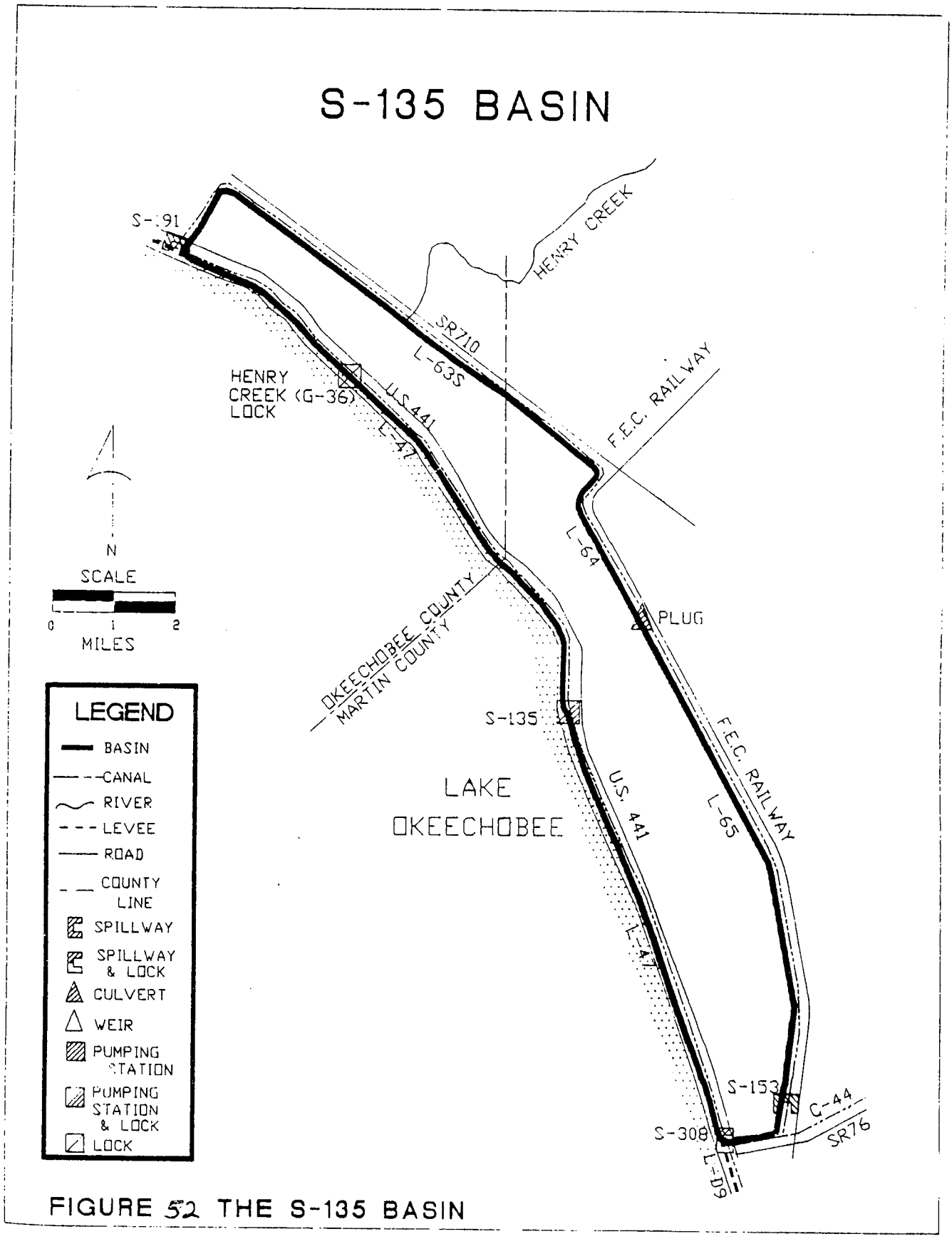


FIGURE 52 THE S-135 BASIN

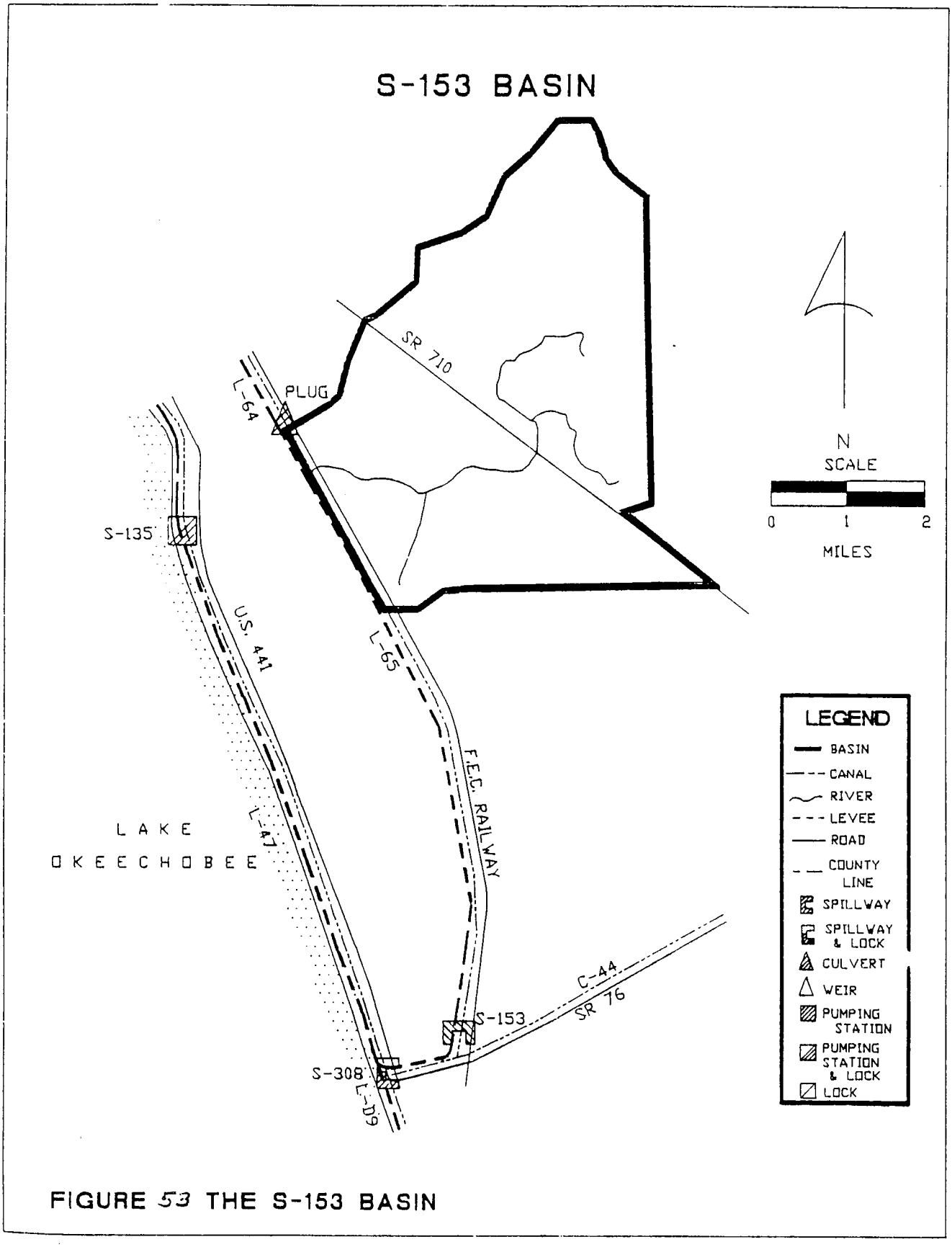


FIGURE 53 THE S-153 BASIN

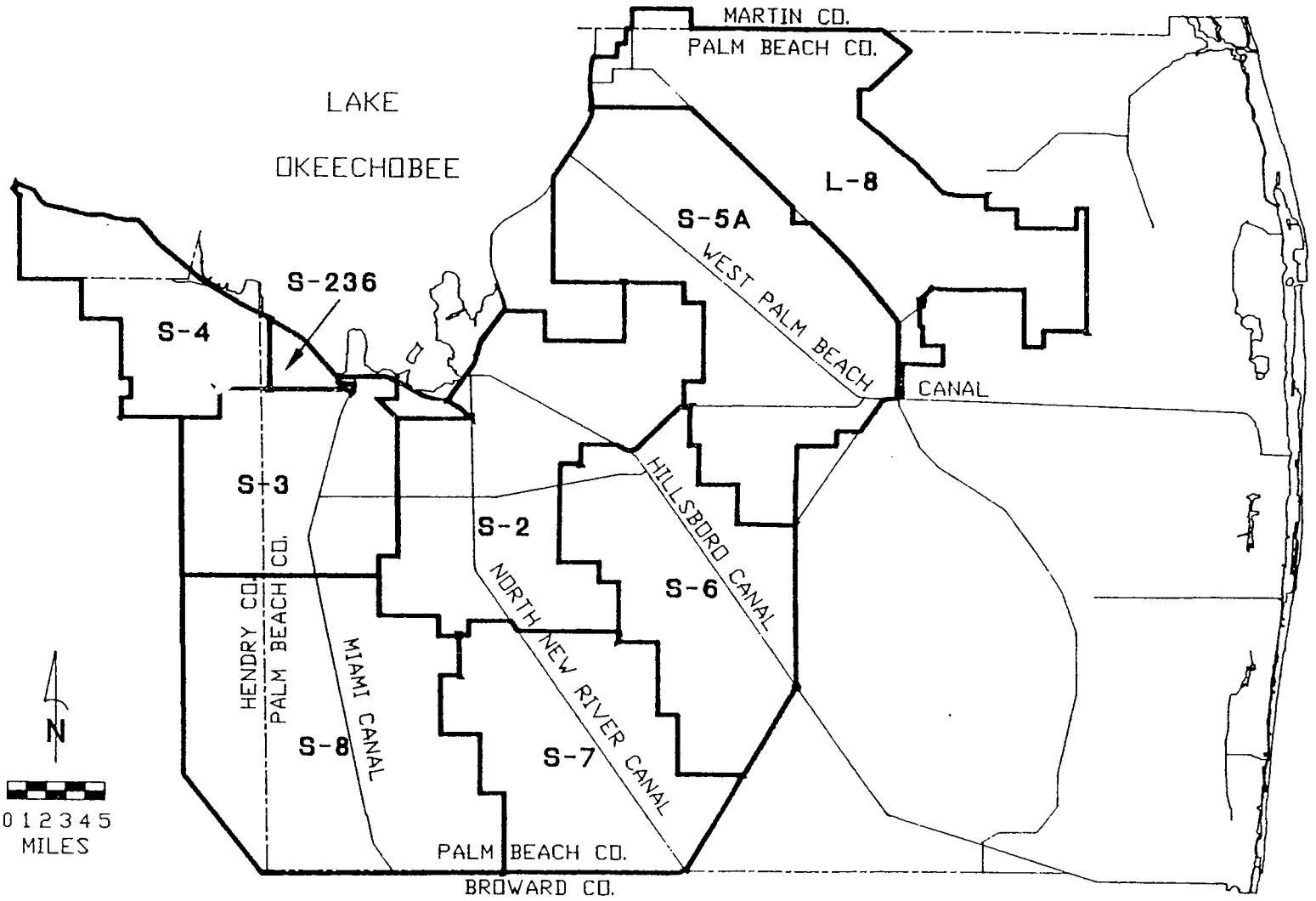


FIGURE 54 THE EVERGLADES AGRICULTURAL AREA DRAINAGE BASINS

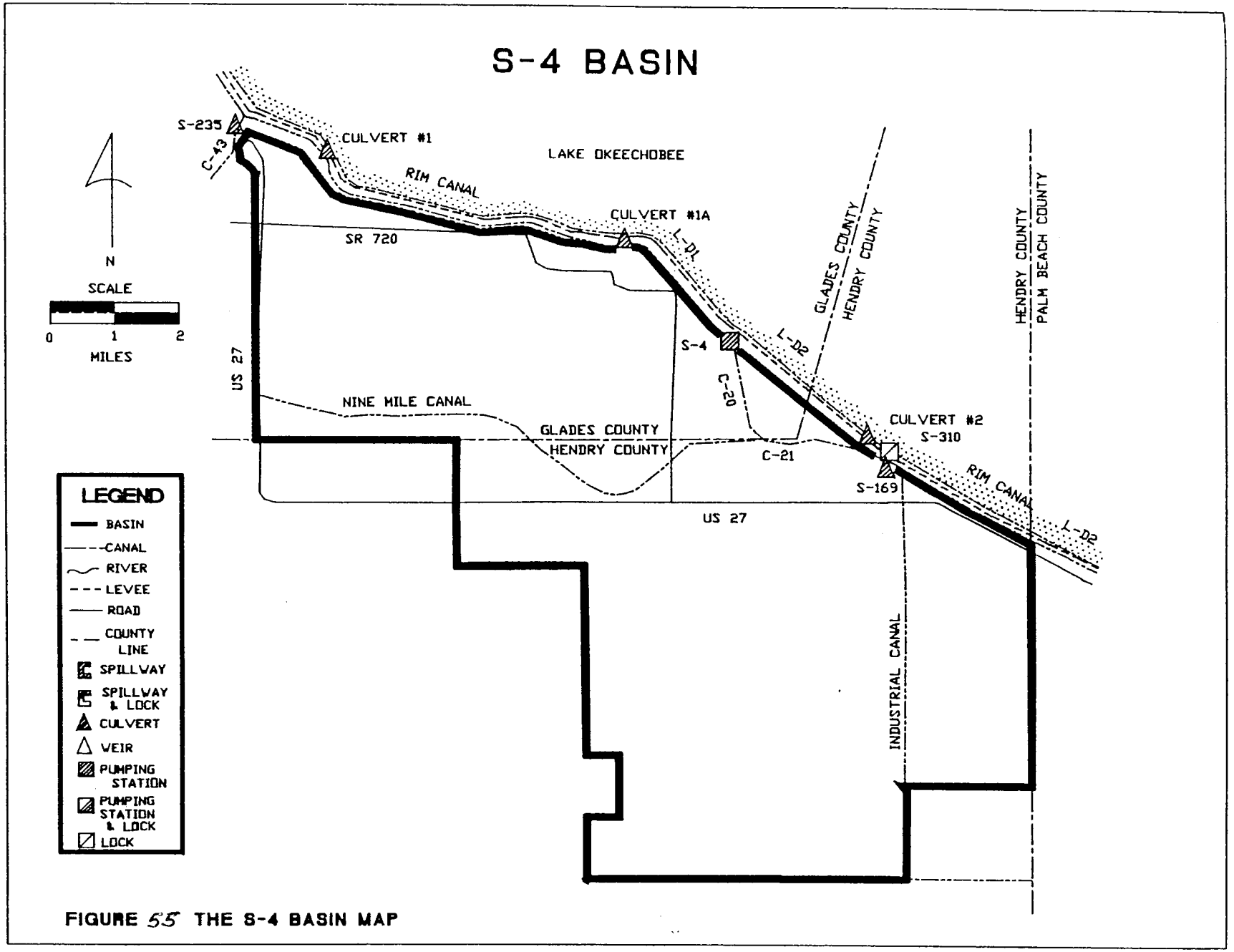


FIGURE 55 THE S-4 BASIN MAP

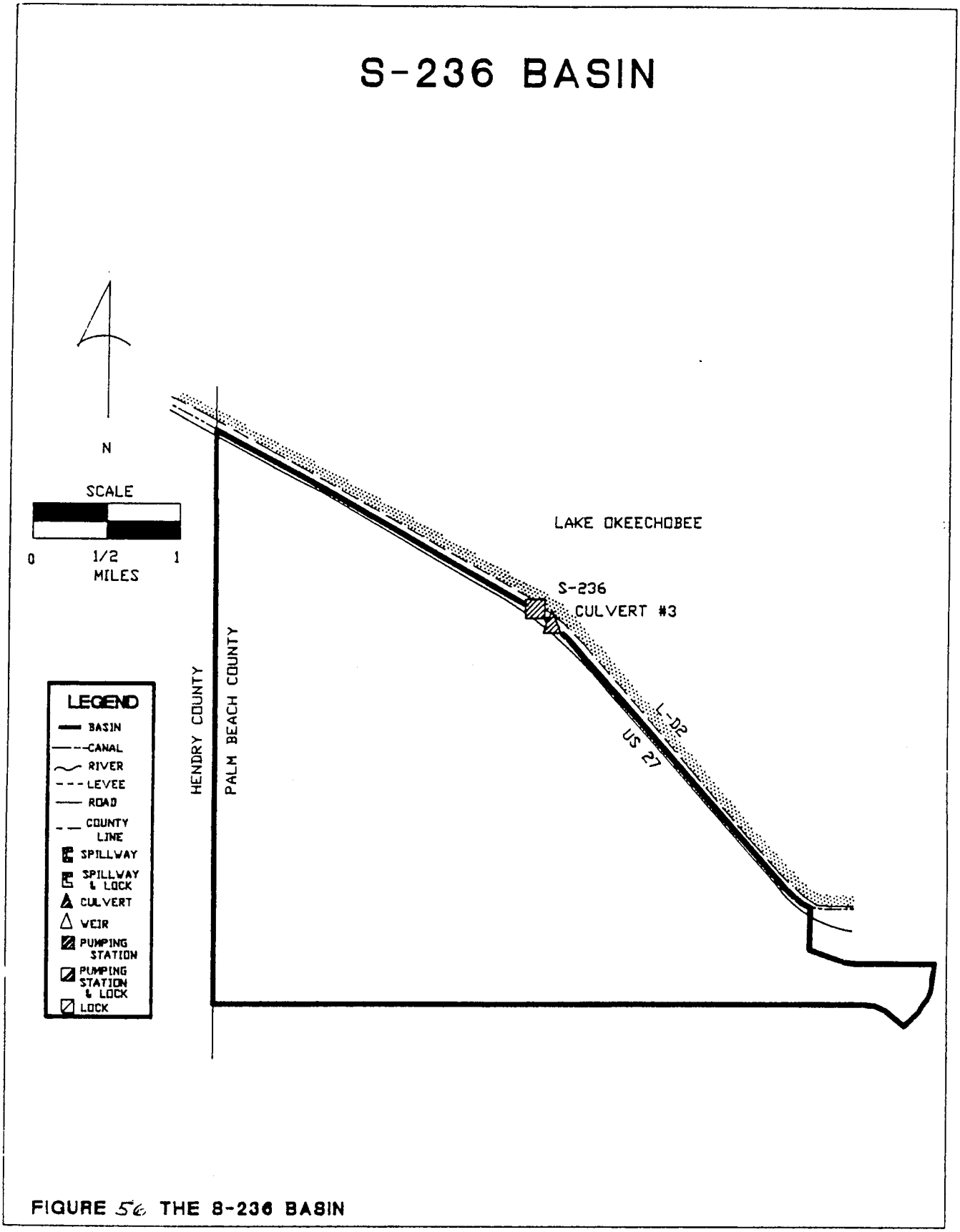


FIGURE 56 THE S-236 BASIN

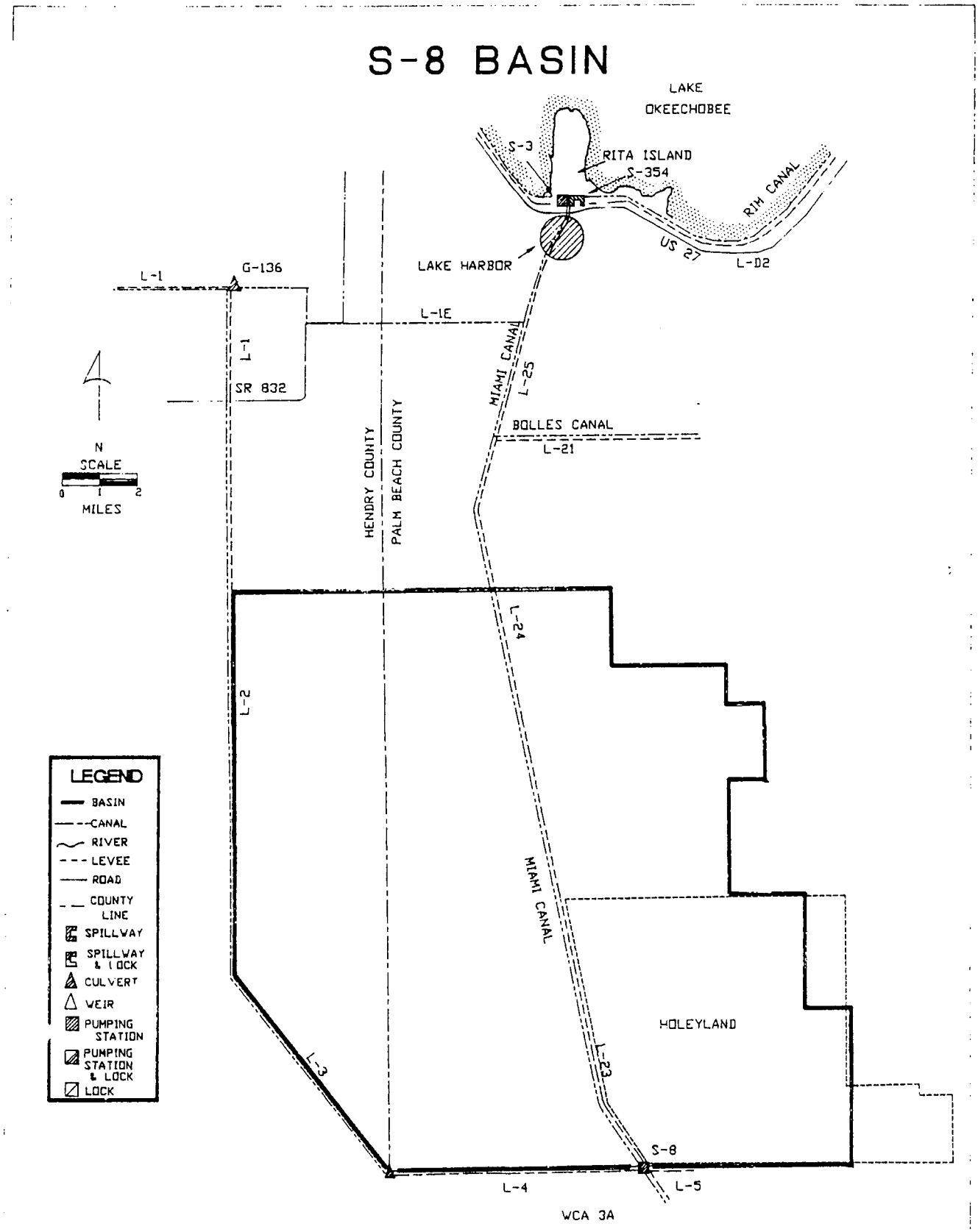


FIGURE 57 THE S-8 BASIN MAP

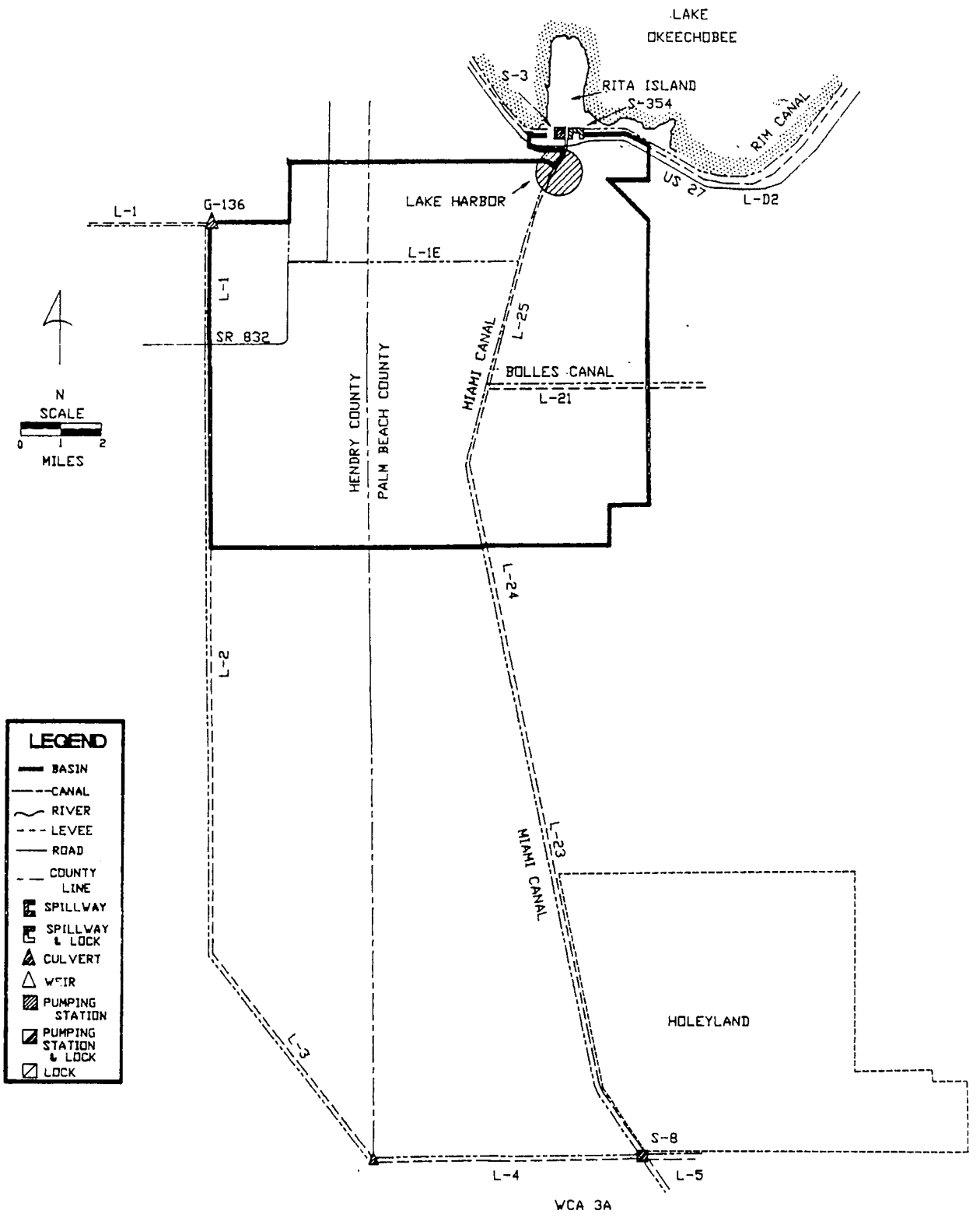


FIGURE 58 THE S-3 BASIN MAP

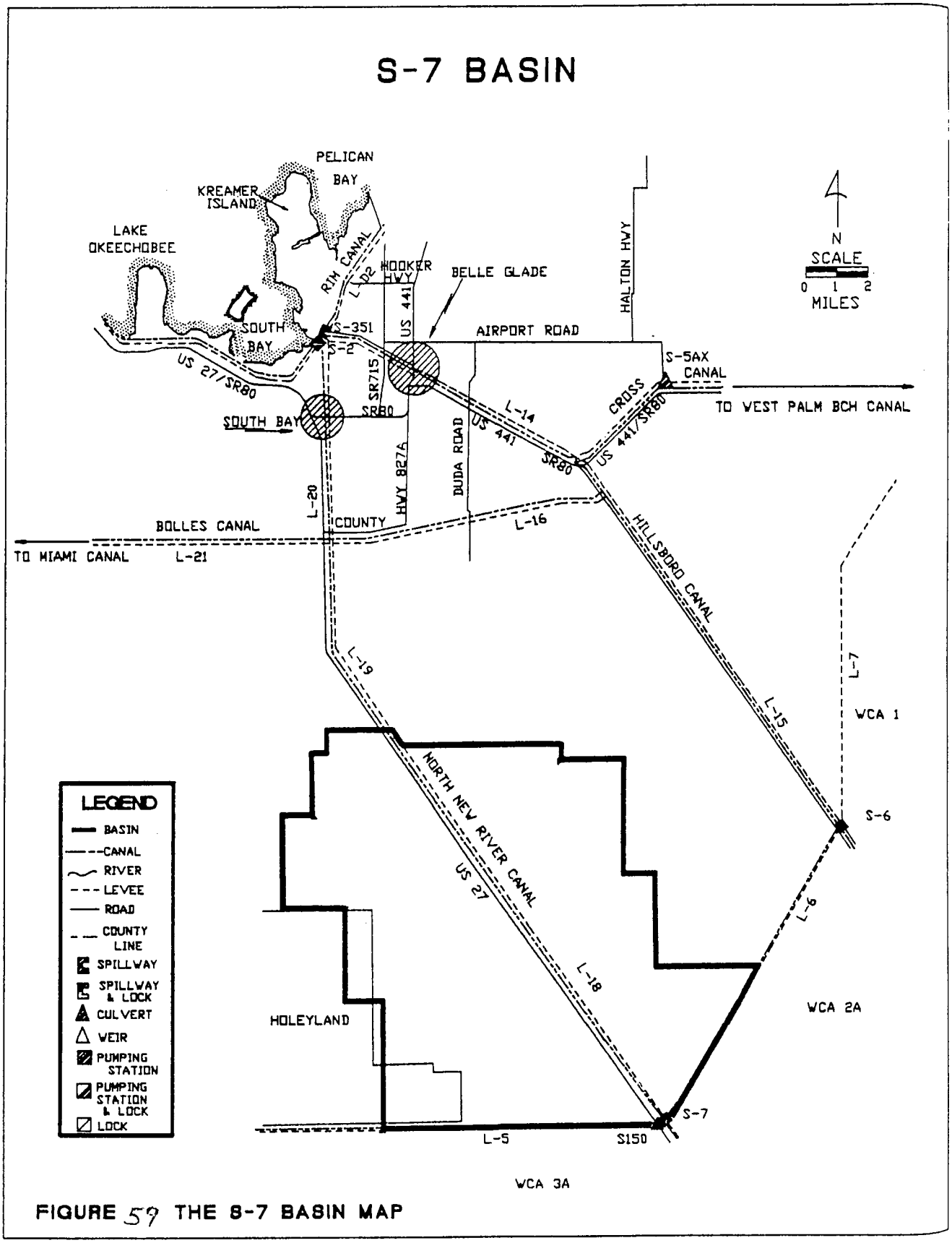


FIGURE 59 THE S-7 BASIN MAP

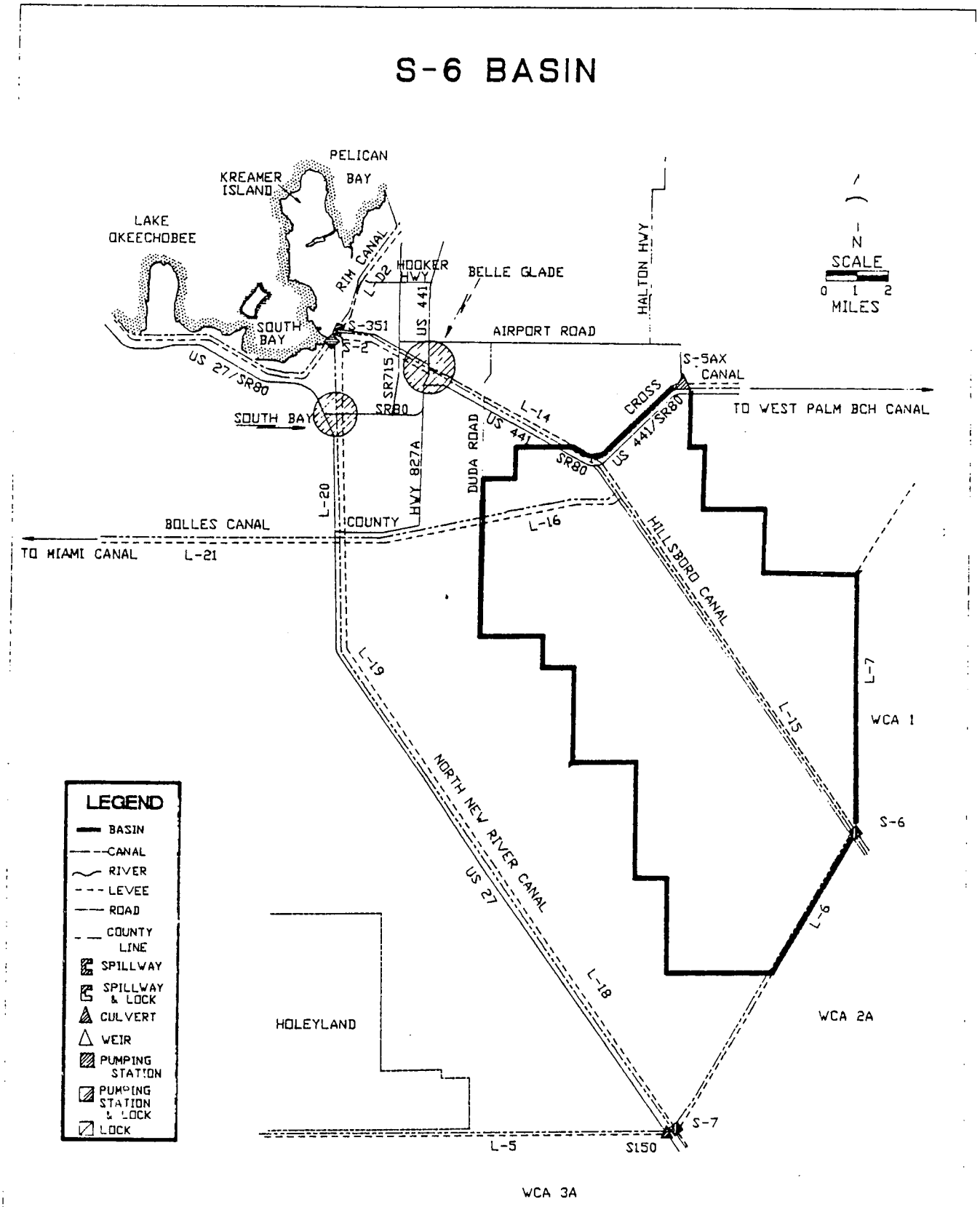


FIGURE 60 THE S-6 BASIN MAP

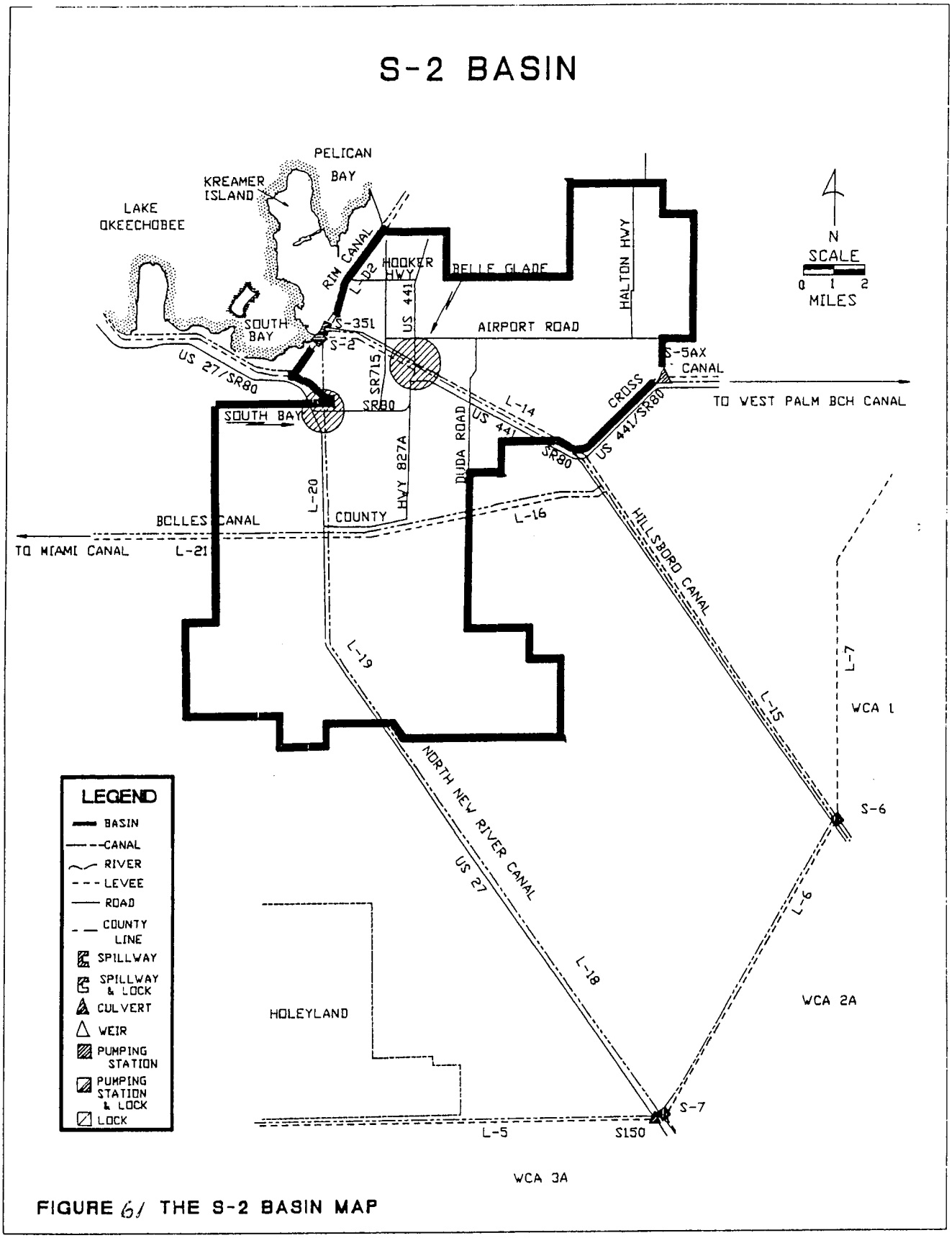


FIGURE 61 THE S-2 BASIN MAP

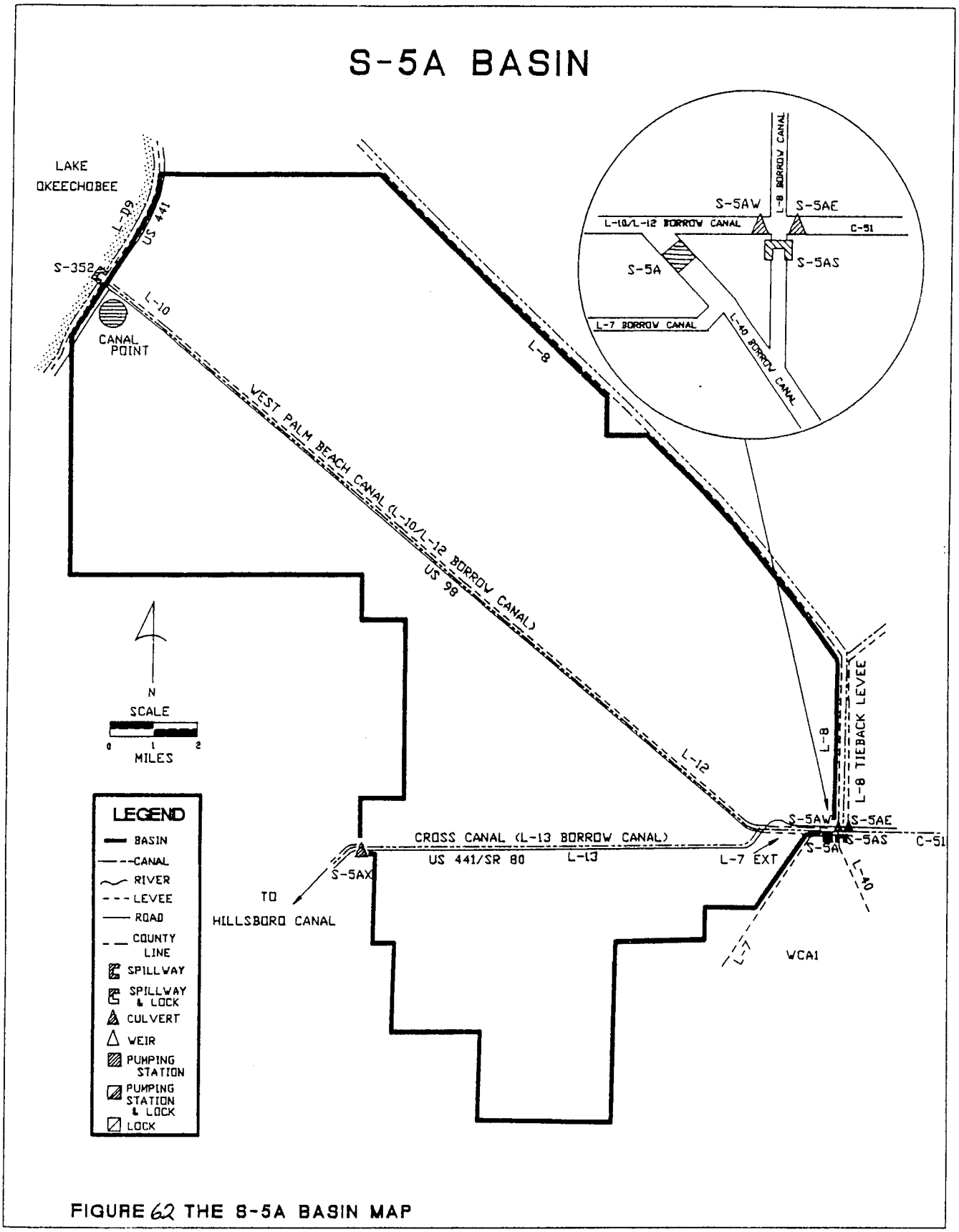


FIGURE 62 THE S-5A BASIN MAP

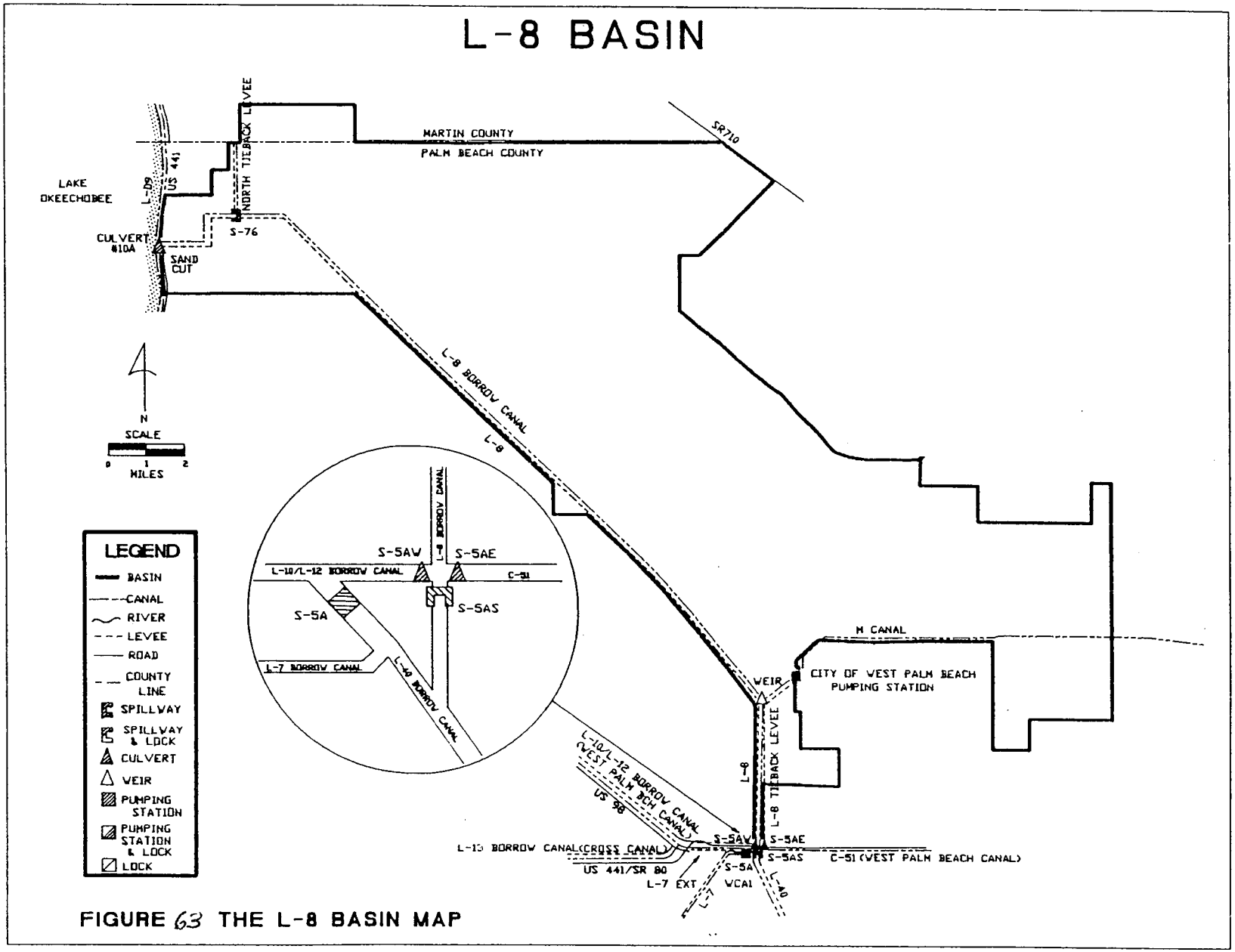


FIGURE 63 THE L-8 BASIN MAP

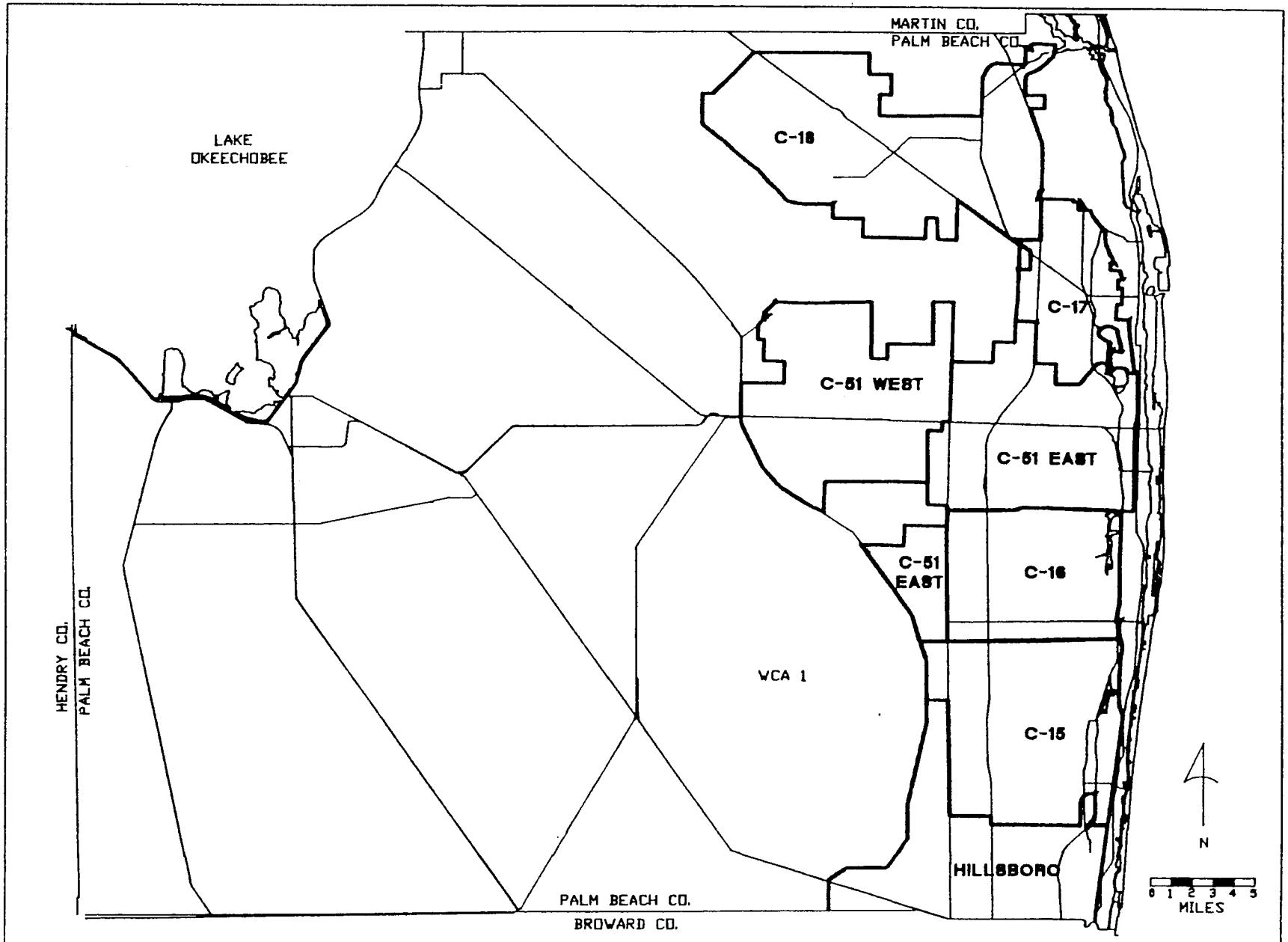


FIGURE 64 PALM BEACH COUNTY DRAINAGE BASINS

HILLSBORO CANAL BASIN

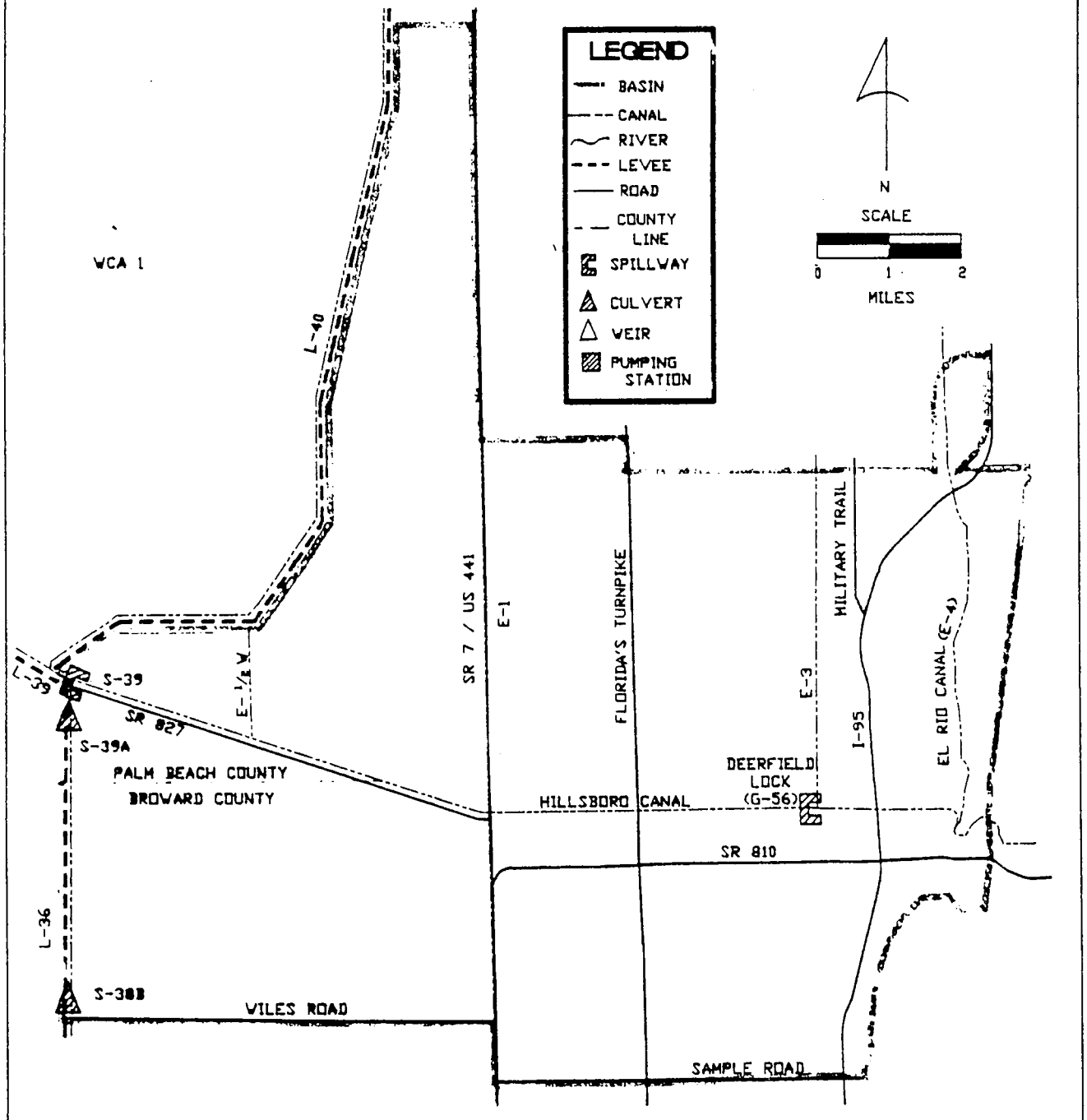


FIGURE 65 THE HILLSBORO CANAL BASIN

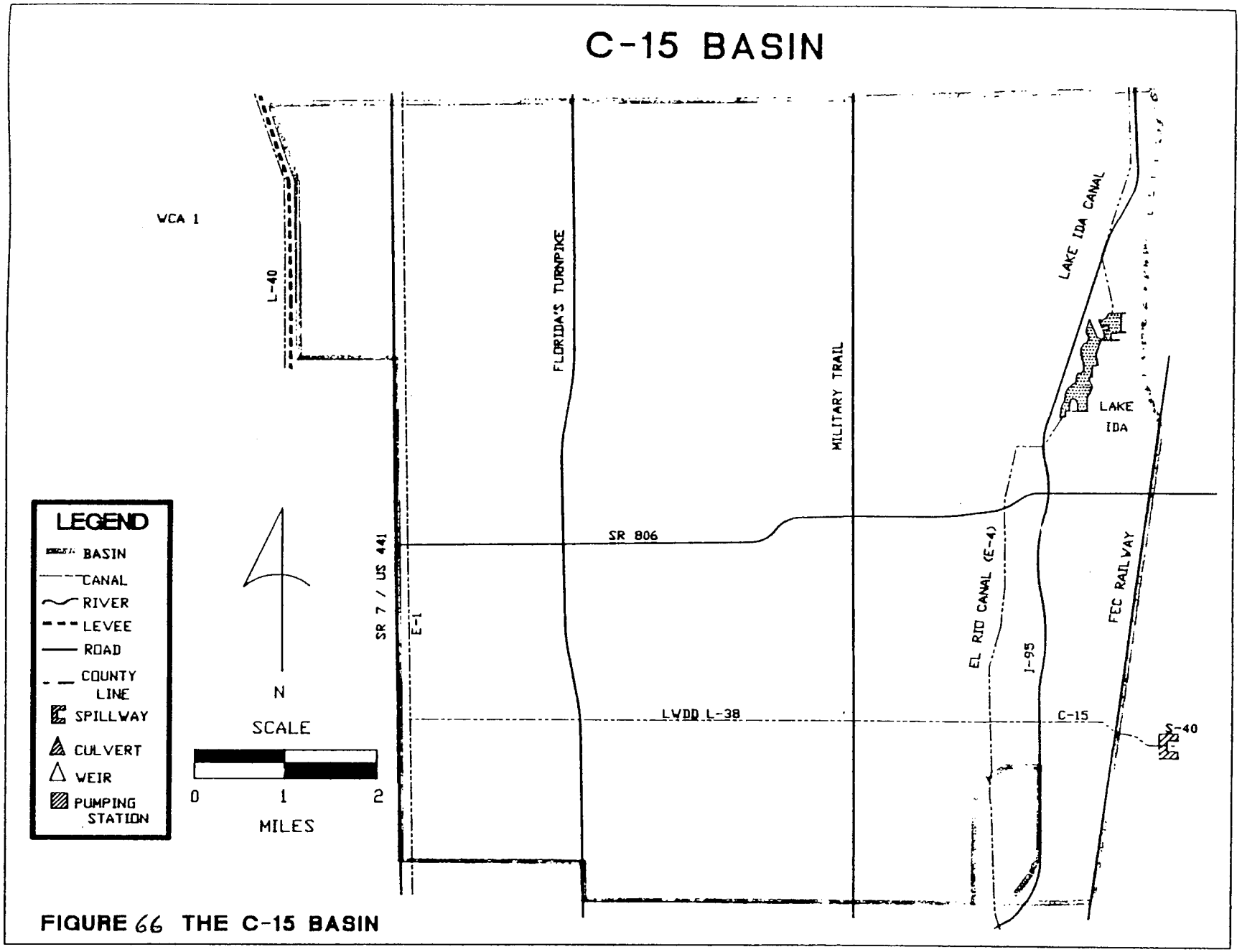


FIGURE 66 THE C-15 BASIN

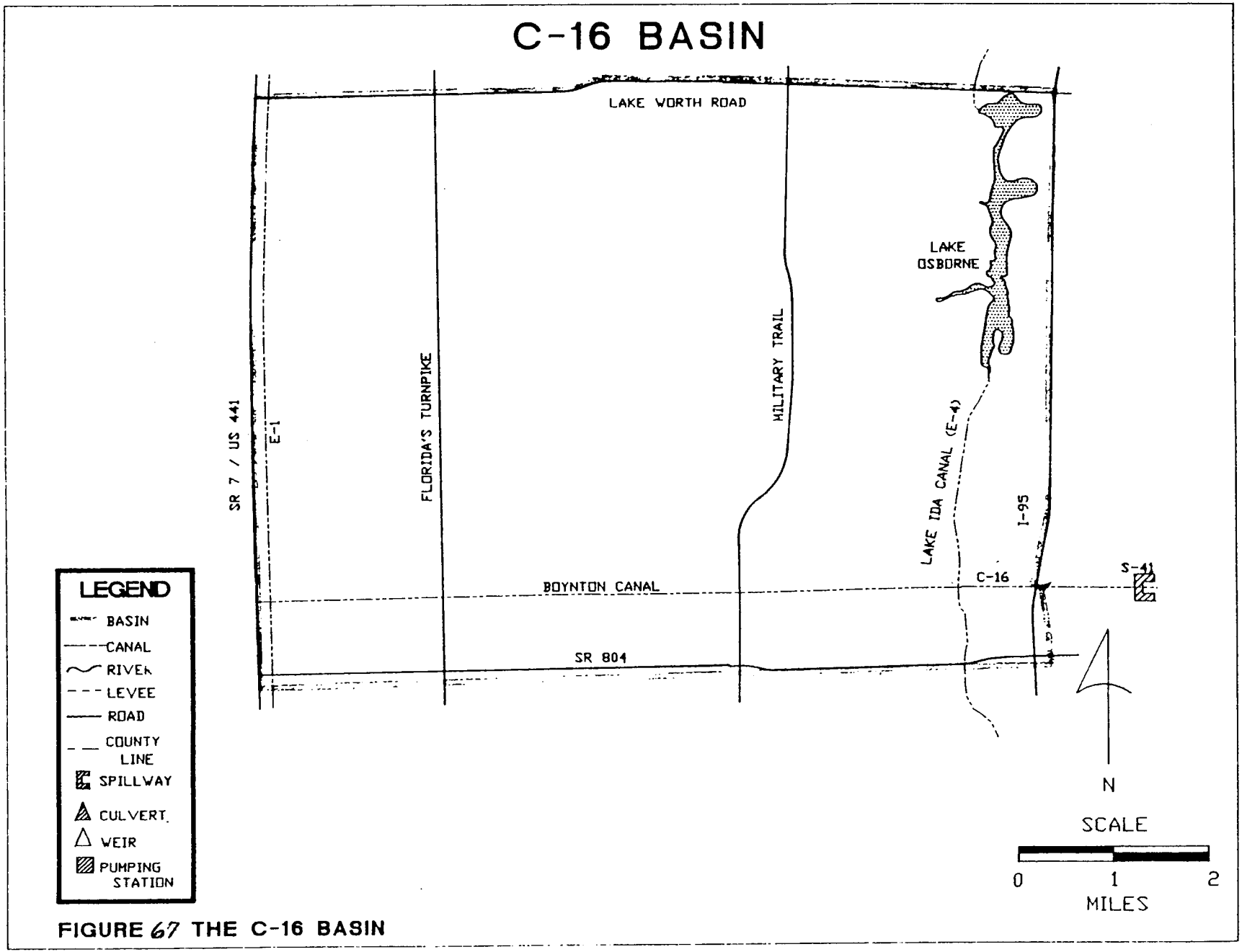


FIGURE 67 THE C-16 BASIN

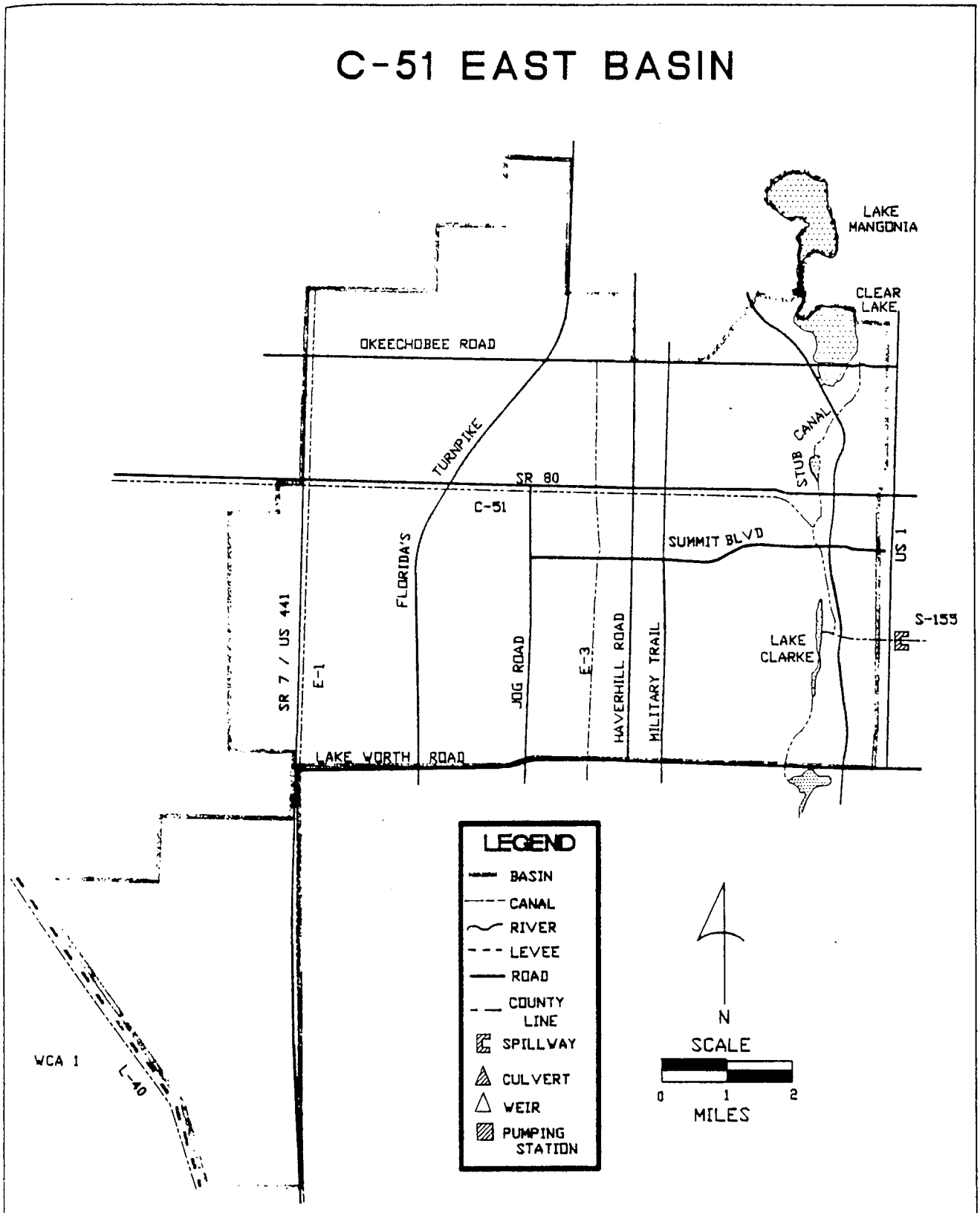


FIGURE 68 THE C-51 EAST BASIN

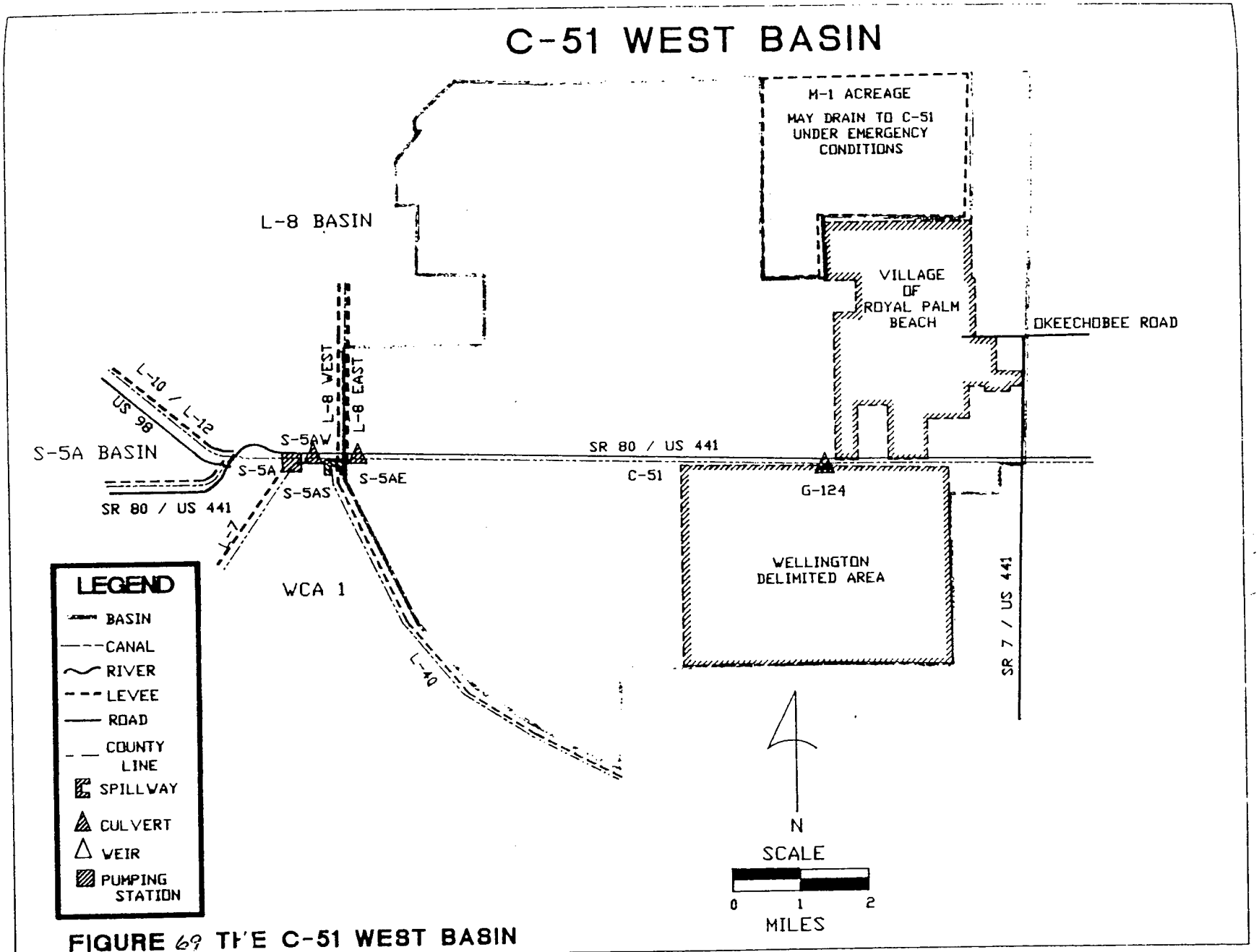
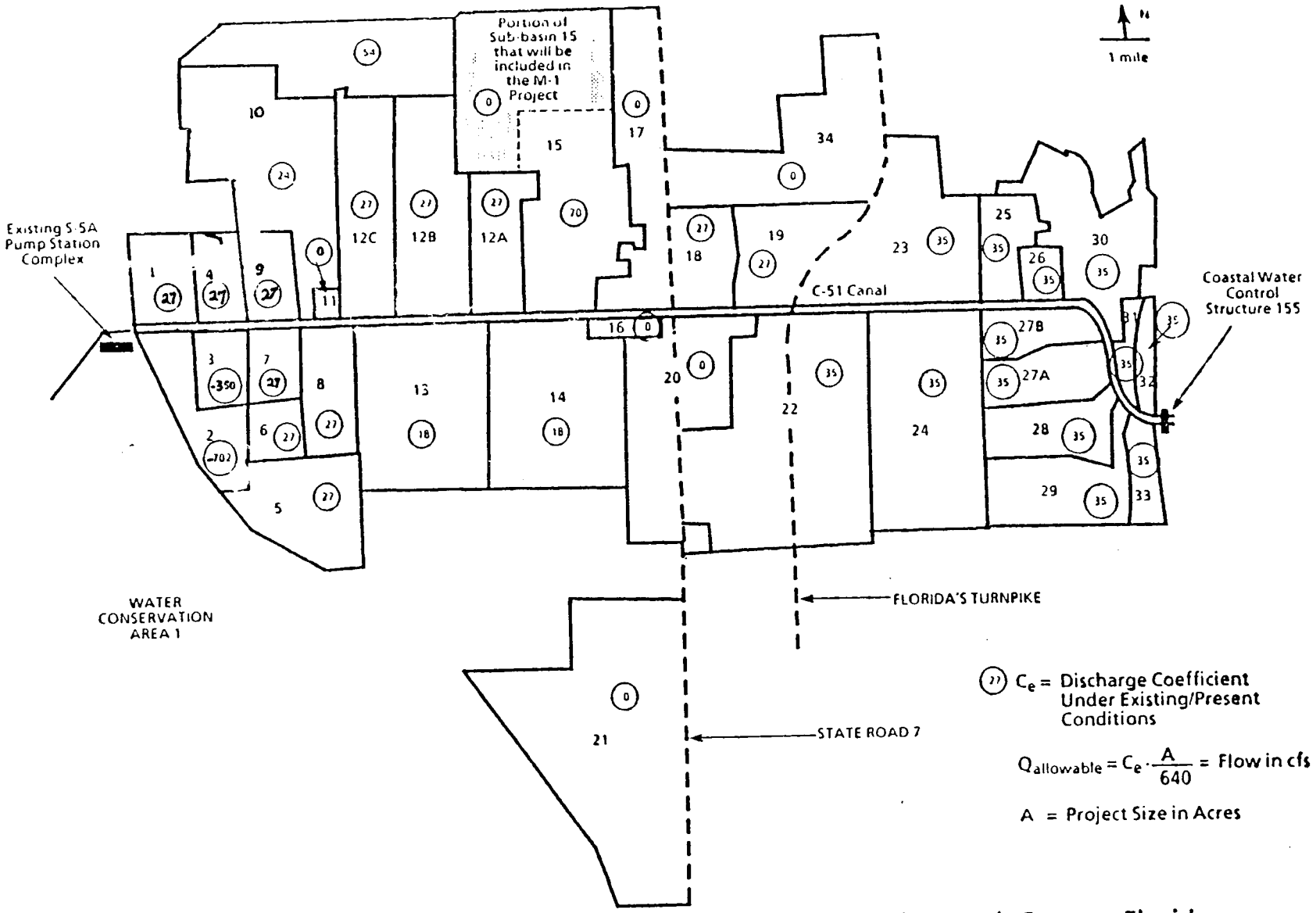


FIGURE 69 THE C-51 WEST BASIN



Discharge Coefficients for the Sub-basins of the C-51 Basin in Palm Beach County, Florida.

Figure 70

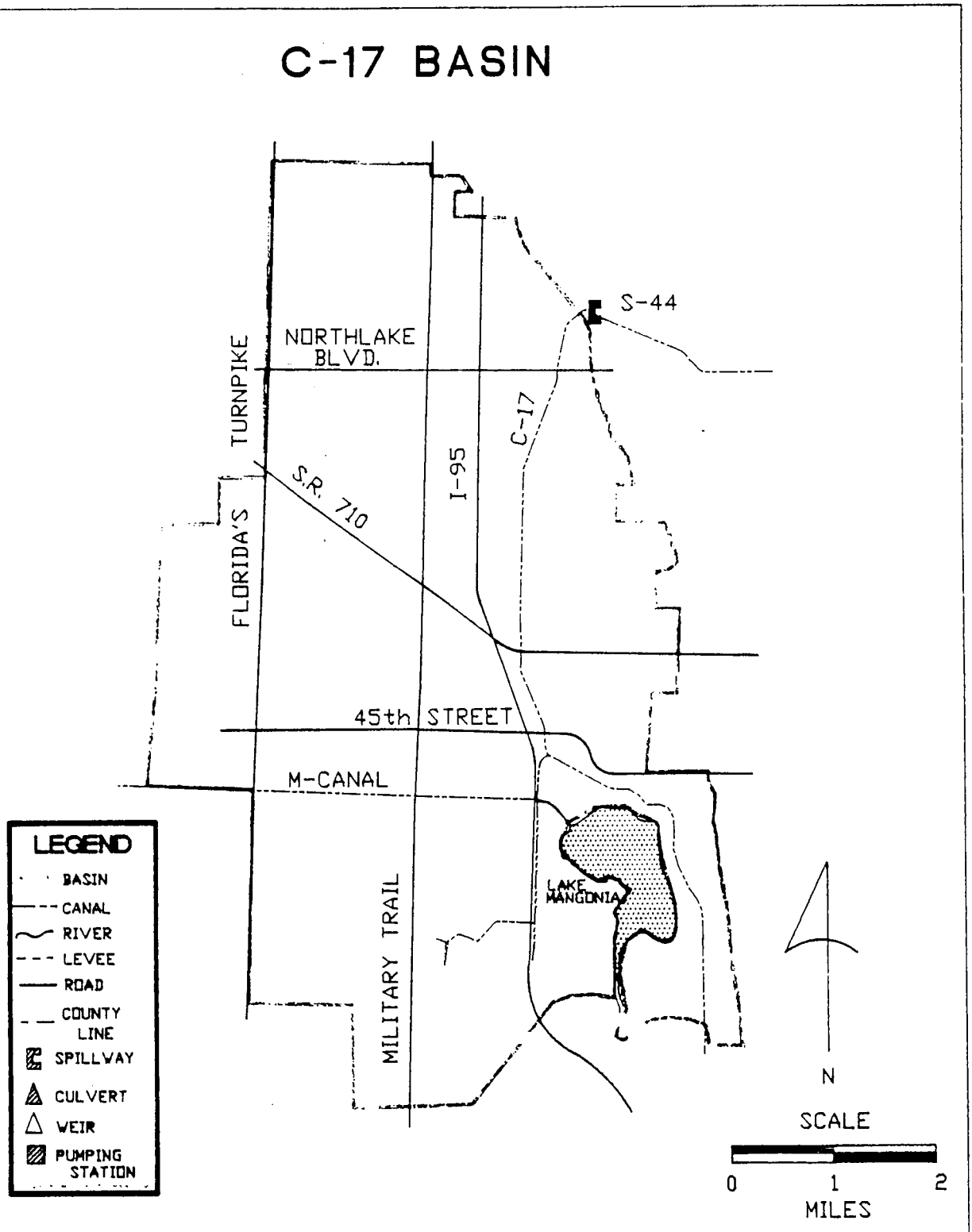


FIGURE 7/ THE C-17 (EARMAN RIVER CANAL) BASIN

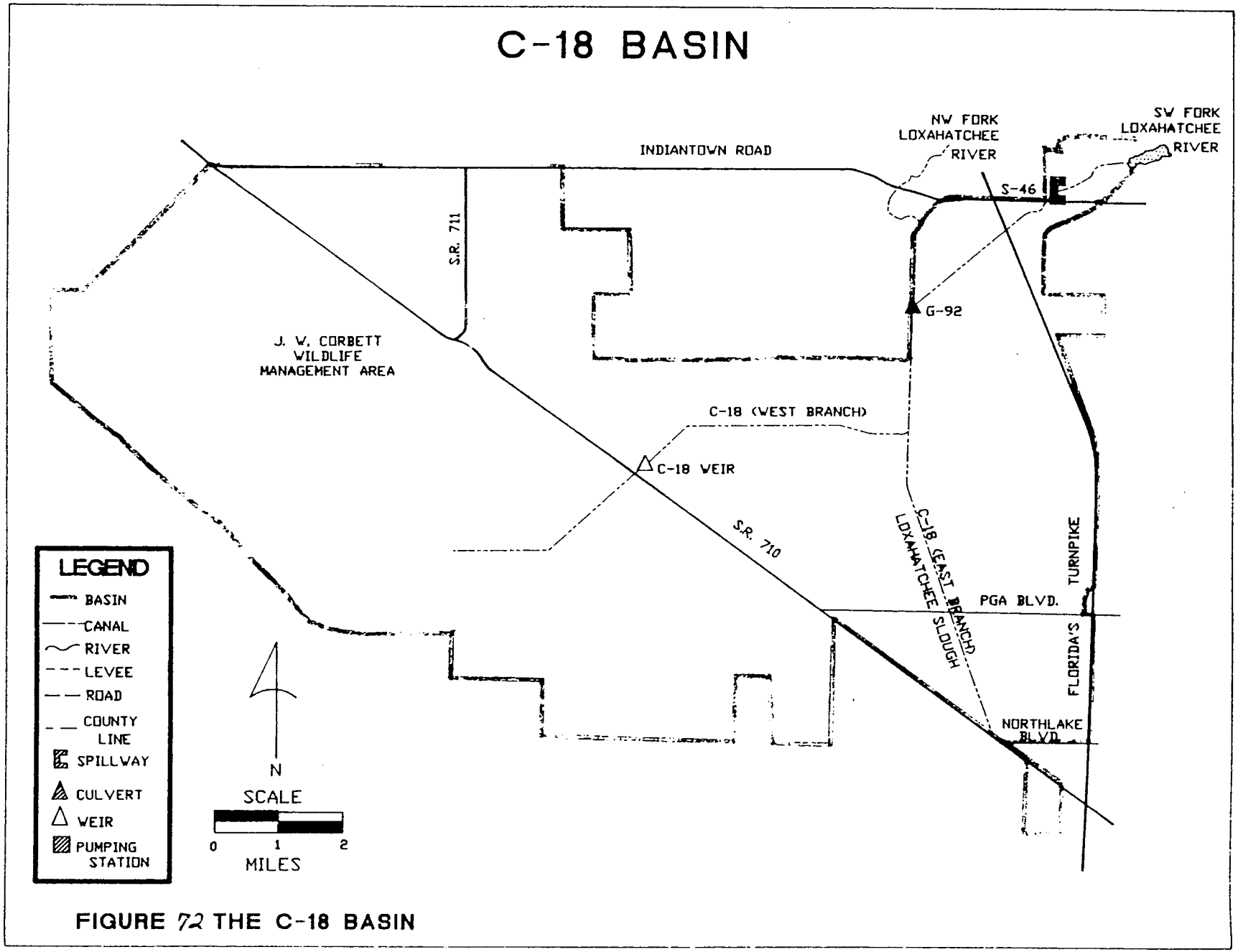


FIGURE 72 THE C-18 BASIN

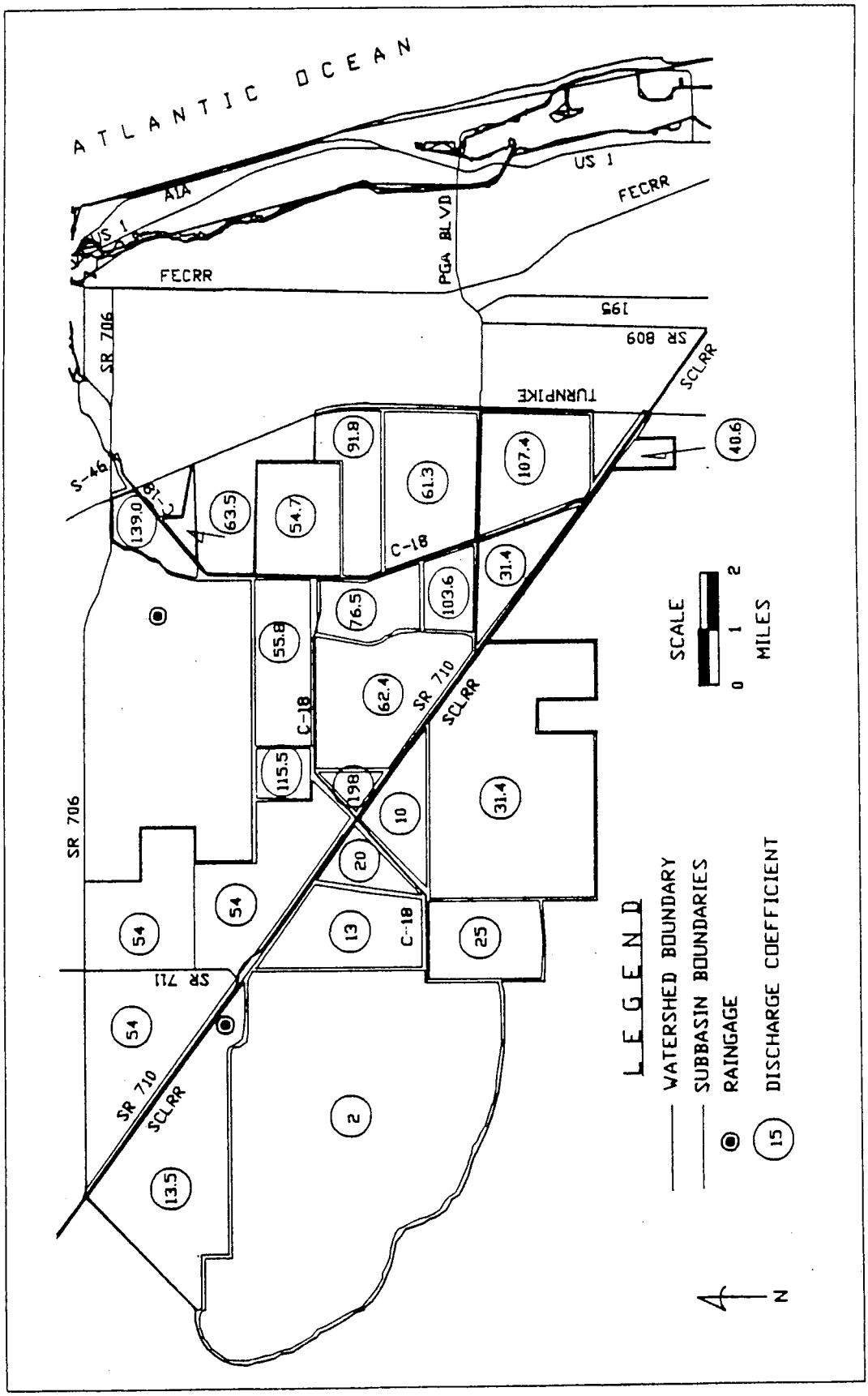


FIGURE 73 Discharge Coefficient, Ce, for New Development. Permitted Discharge Qp = Ce * A/640 Where A is Drainage Area in Acres

DISCHARGE COEFFICIENTS FOR SUBBASINS IN THE C-18 BASIN

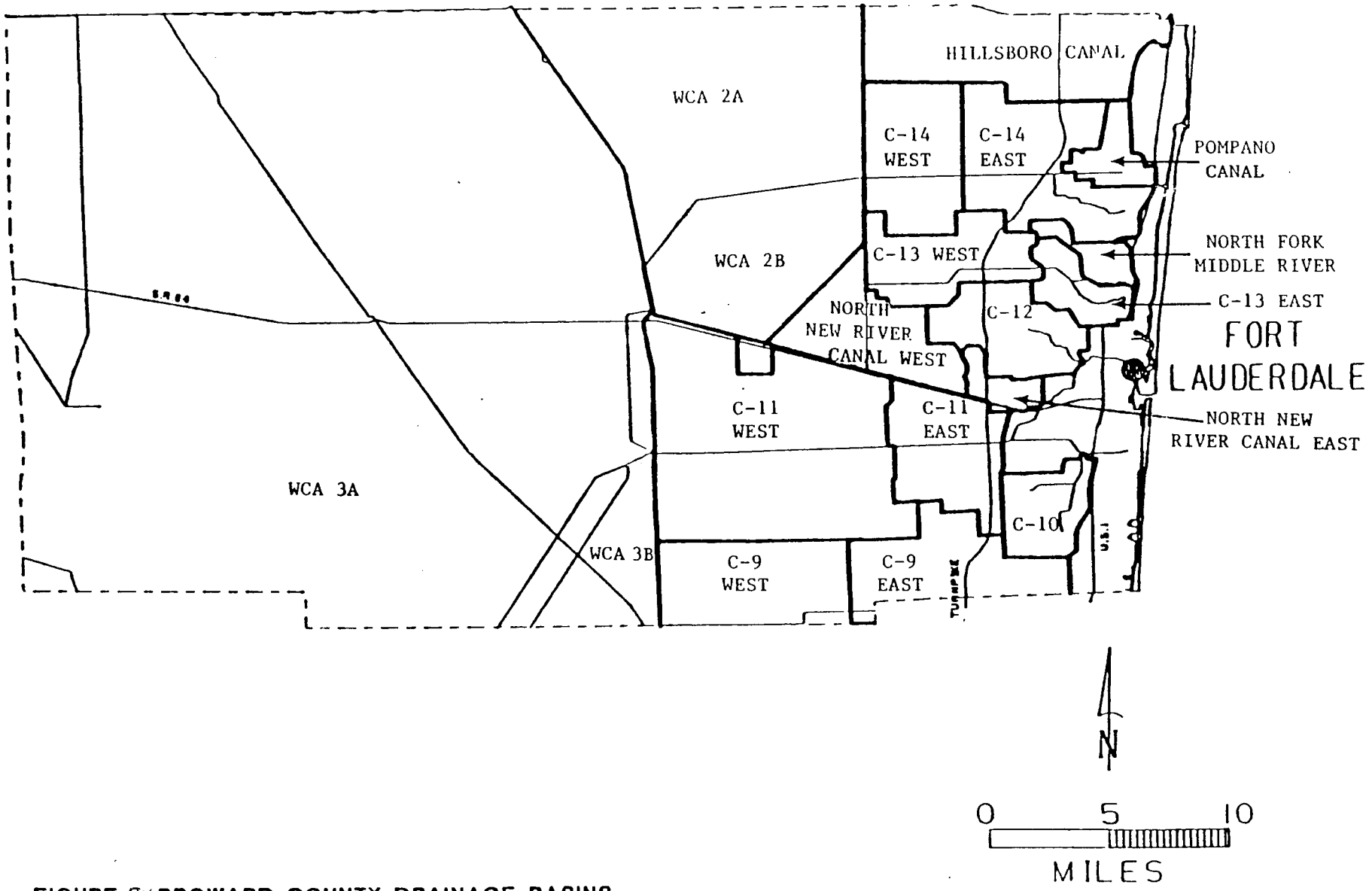


FIGURE 7y BROWARD COUNTY DRAINAGE BASINS

C-9 WEST

~29.000 ACRES

~11.000 ACRES DADE

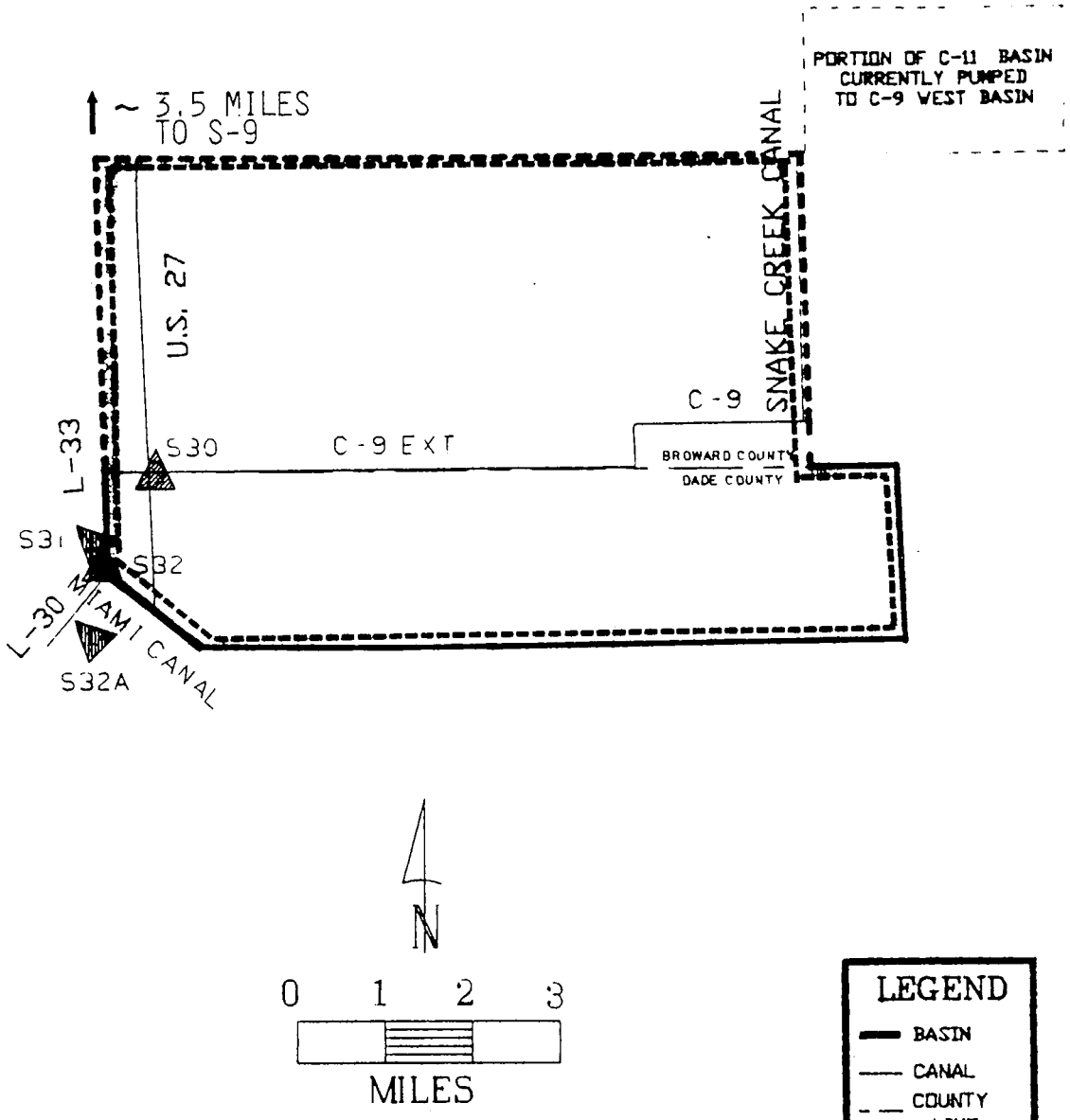
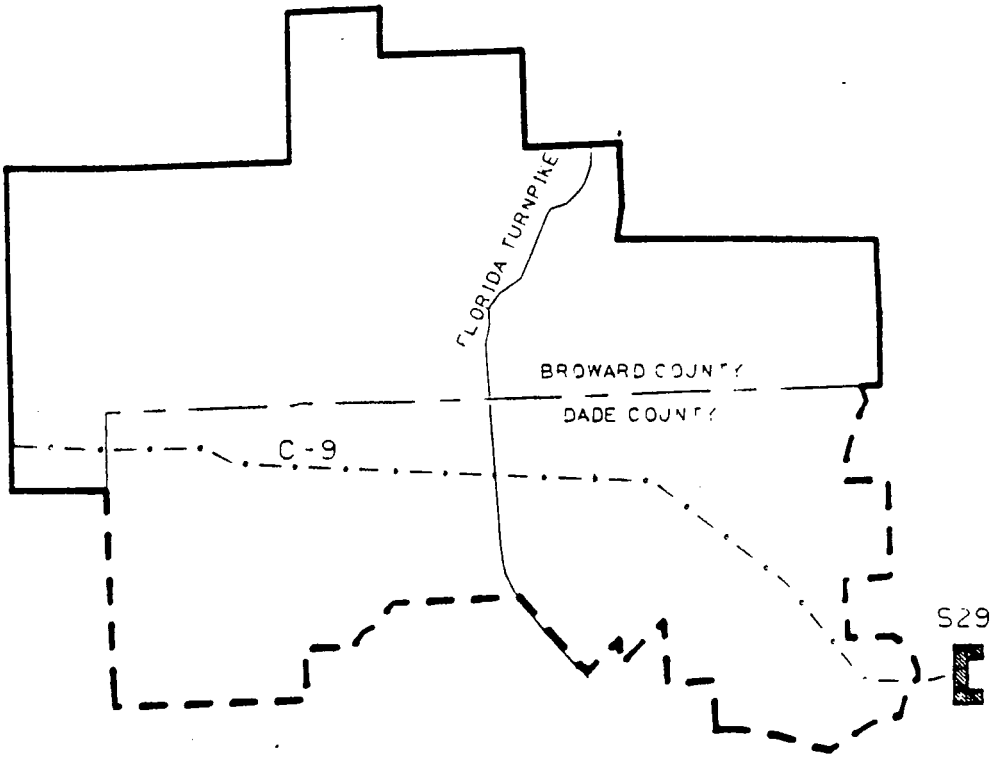


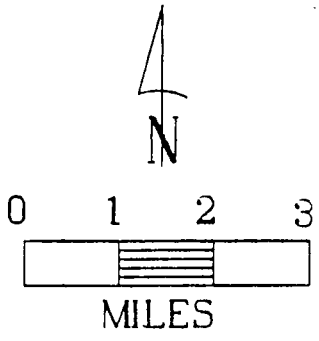
FIGURE 75 C-9 WEST BASIN MAP

C-9 EAST BASIN

34.000 ACRES

16.000 ACRES BROWARD





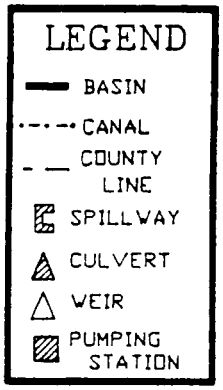


FIGURE 76 C-9 EAST BASIN MAP

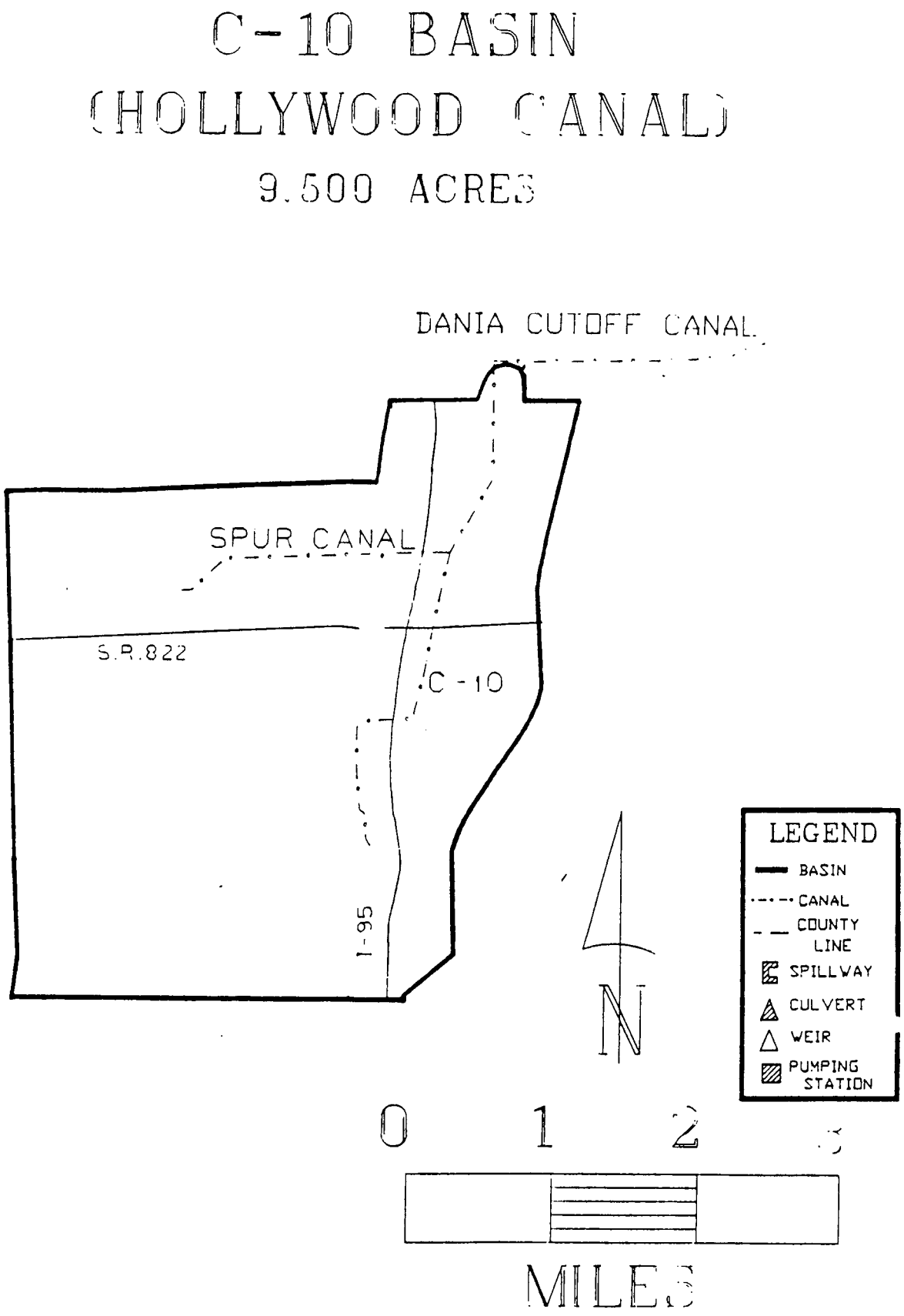


FIGURE 77 C-10 BASIN MAP

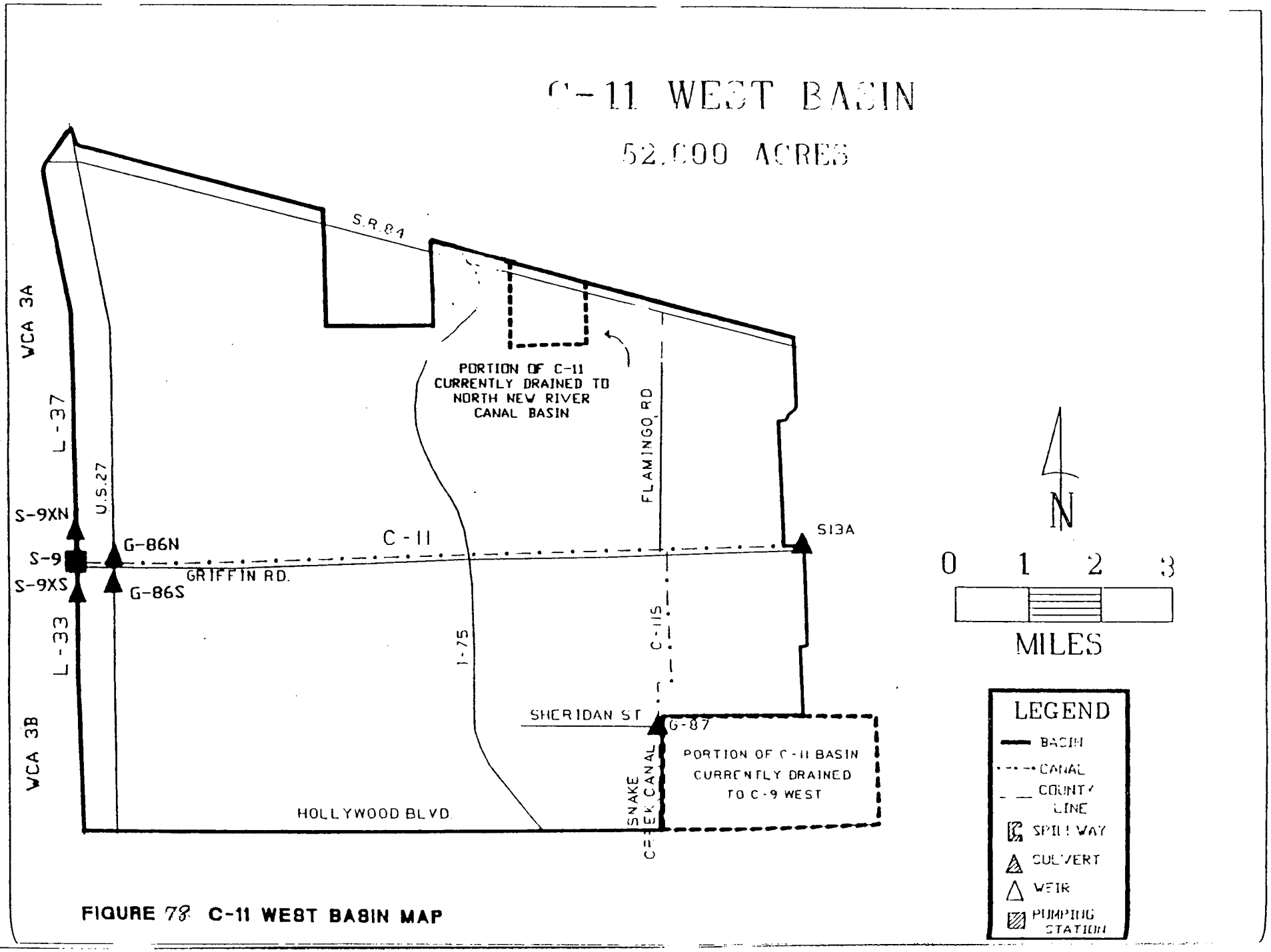


FIGURE 78 C-11 WEST BASIN MAP

C-11 EAST
15,000 ACRES

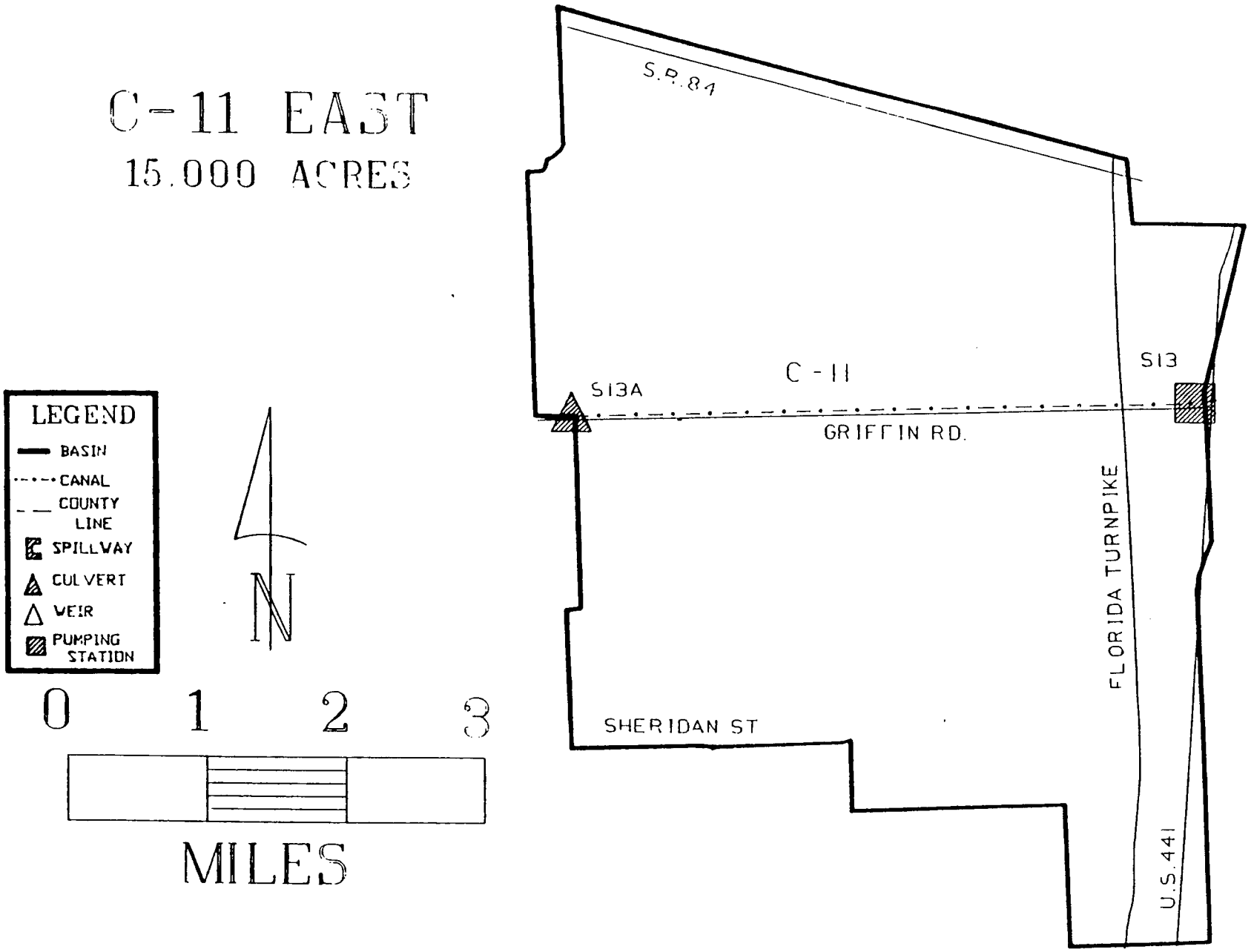


FIGURE 79 C-11 EAST BASIN MAP

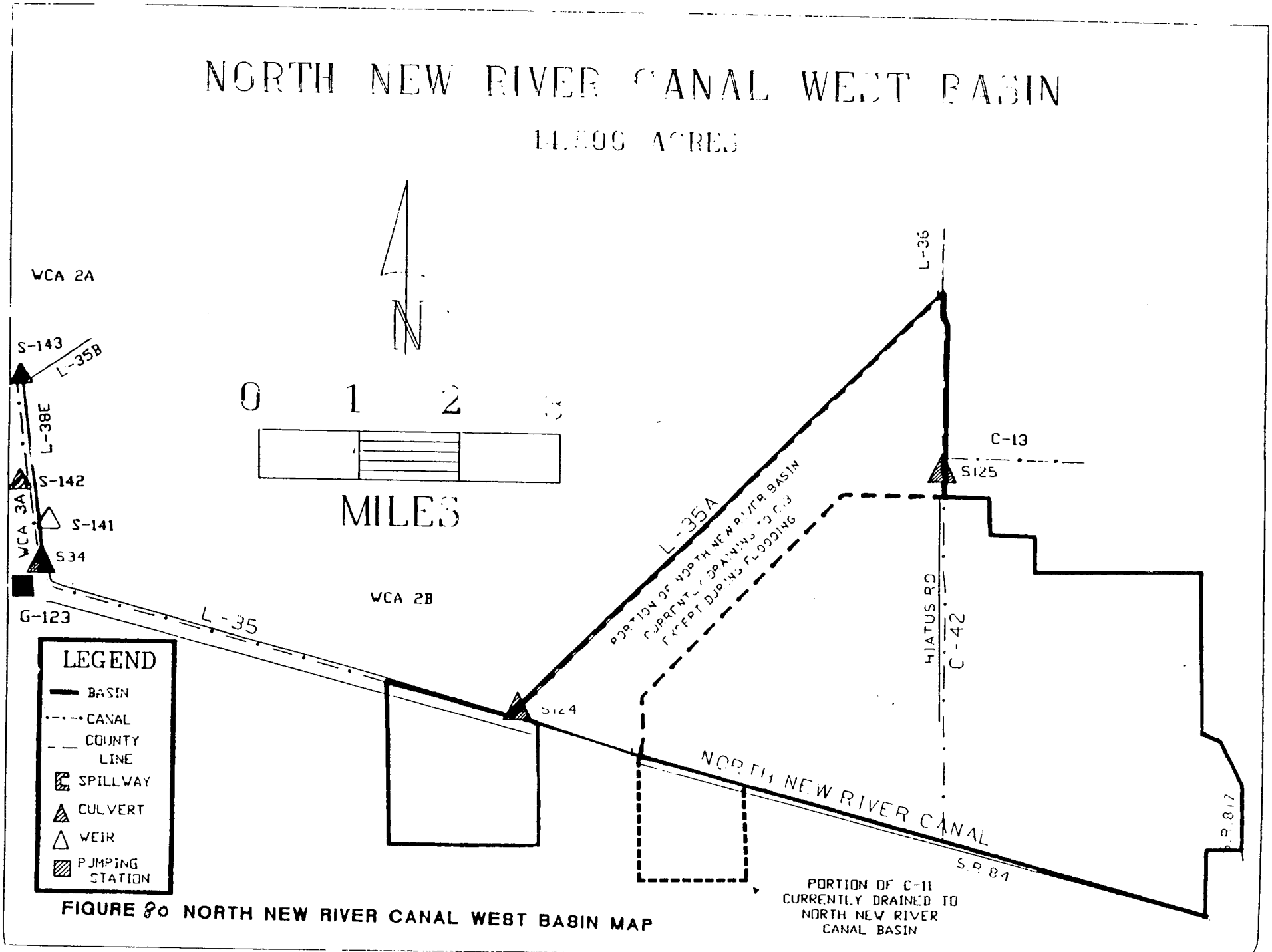


FIGURE 8o NORTH NEW RIVER CANAL WEST BASIN MAP

NORTH NEW RIVER CANAL EAST BASIN

4,800 ACRES

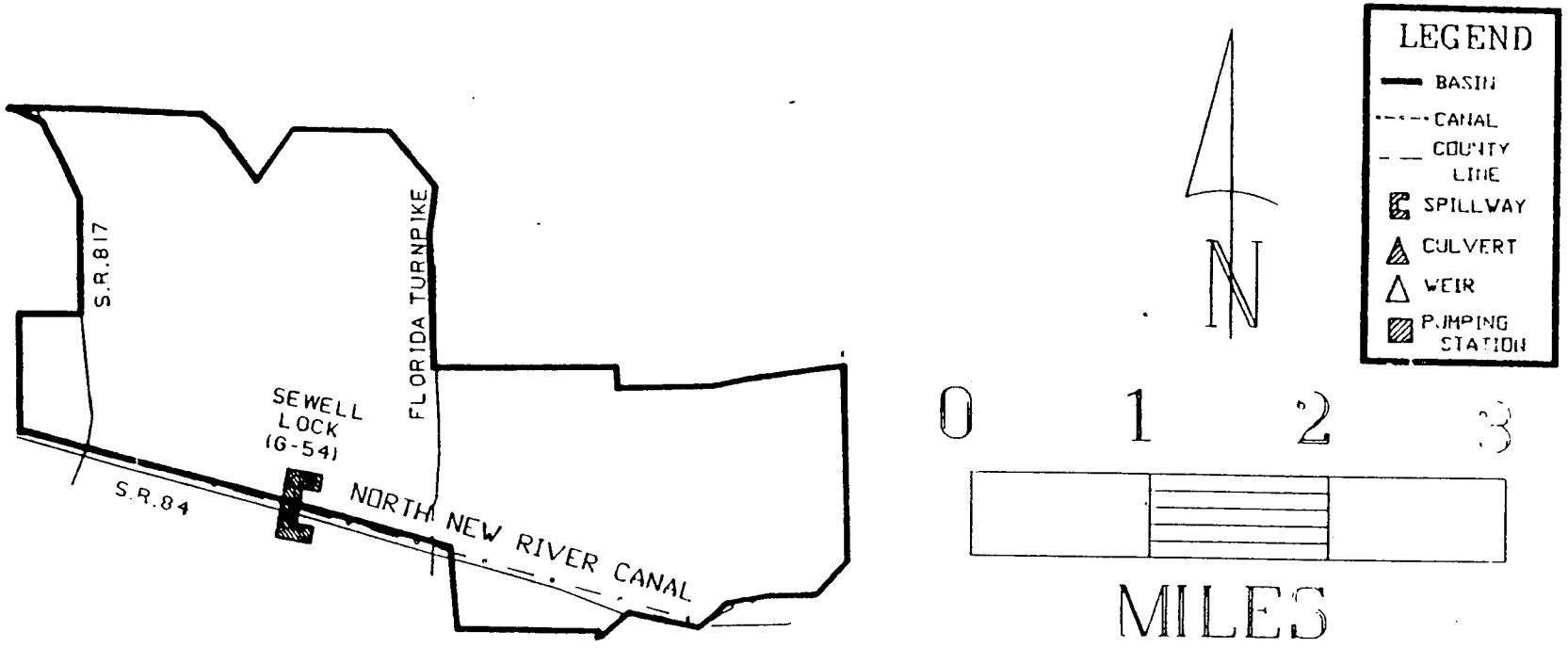


FIGURE 3/ NORTH NEW RIVER CANAL EAST BASIN MAP

C-12 BASIN
(PLANTATION CANAL)
12,100 ACRES

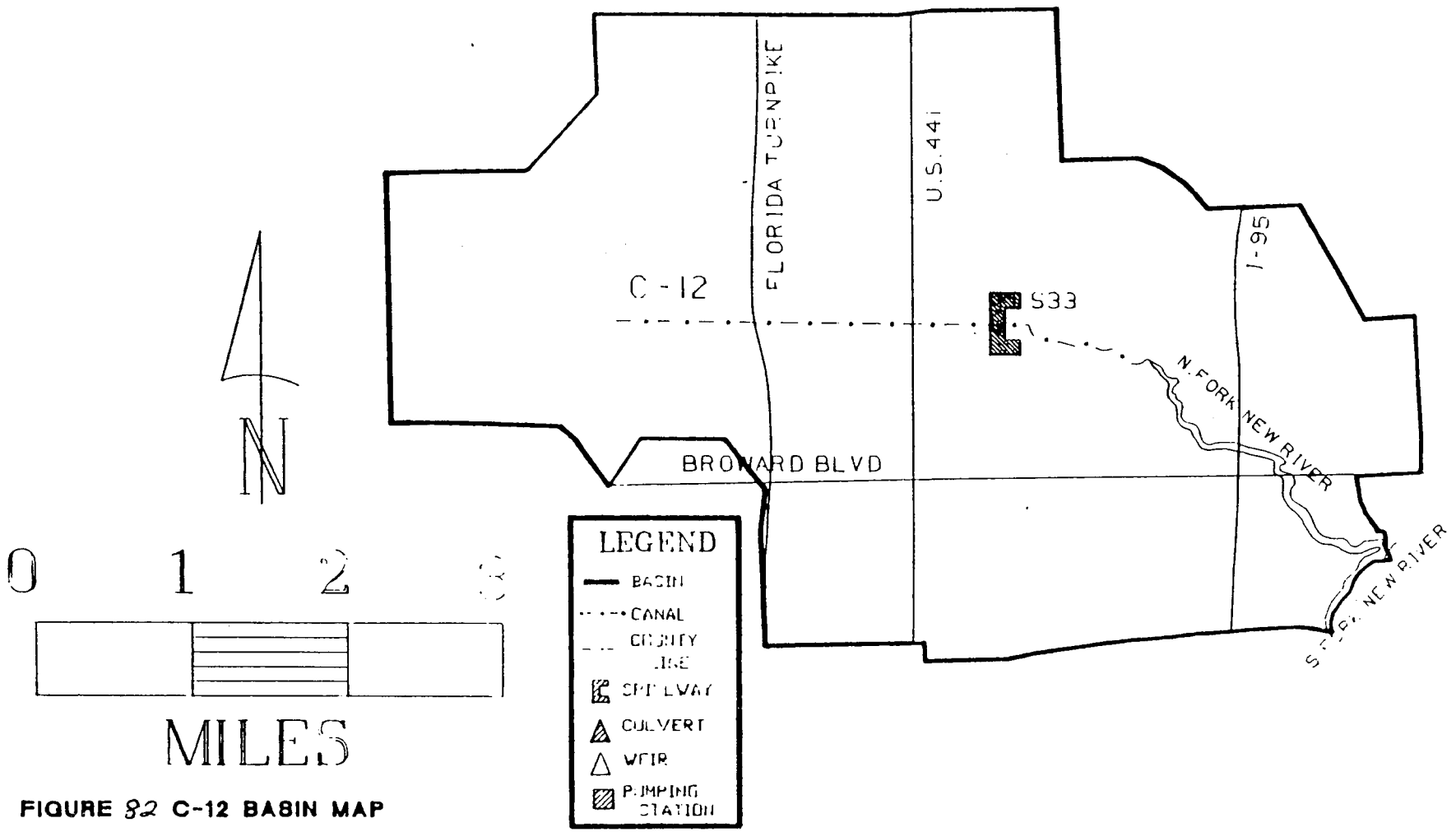


FIGURE 82 C-12 BASIN MAP

NORTH FORK MIDDLE RIVER

3,400 ACRES

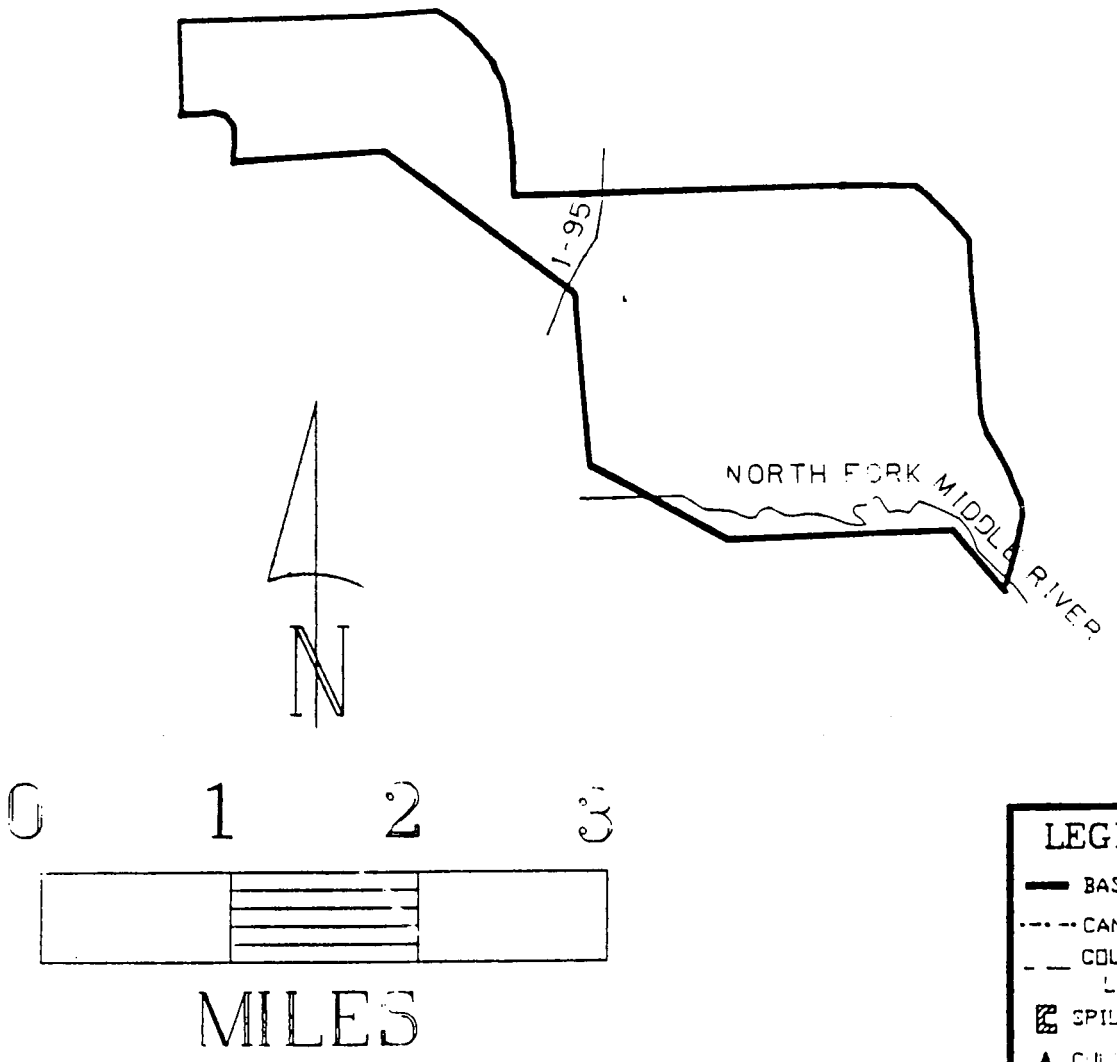


FIGURE 83 NORTH FORK MIDDLE RIVER BASIN MAP

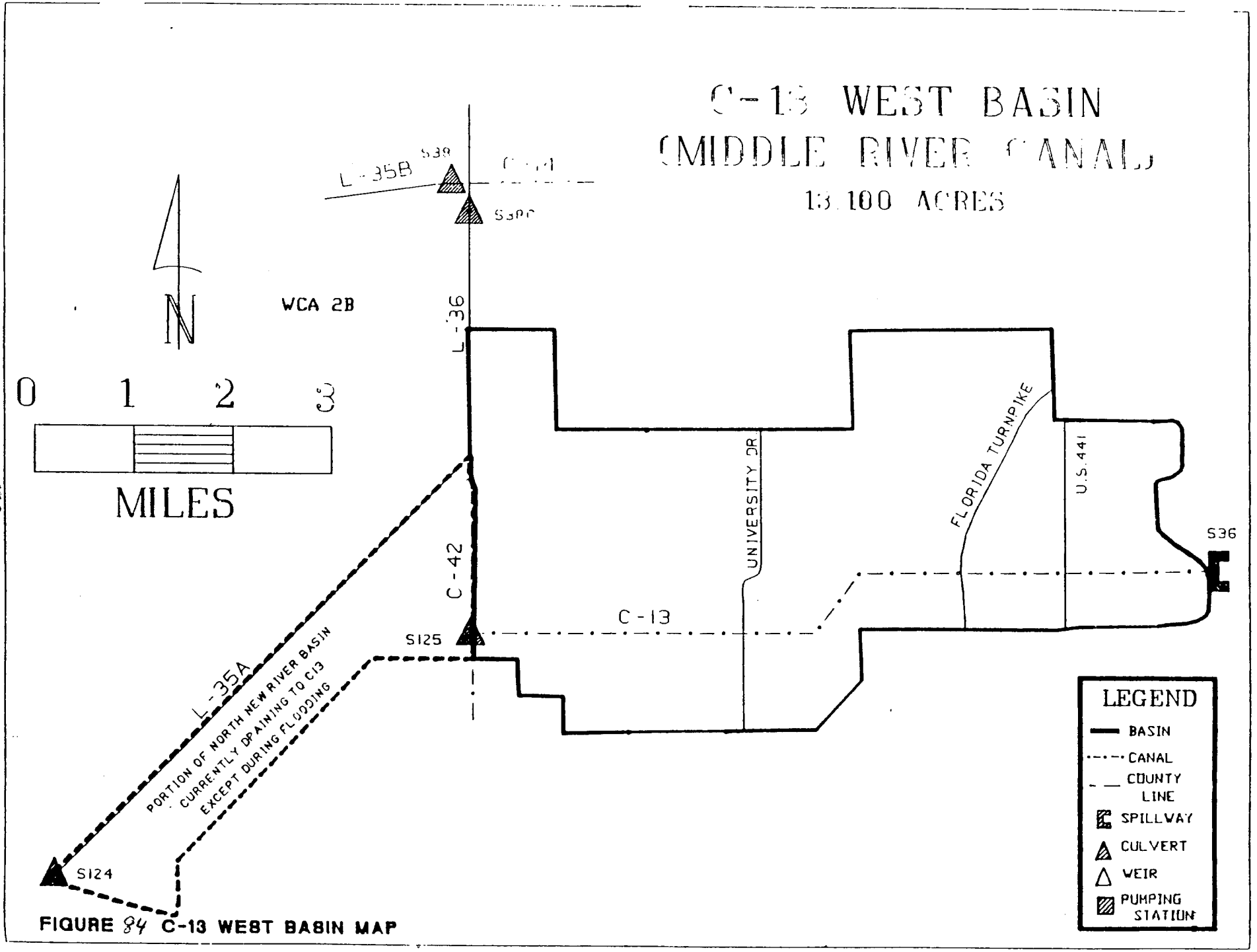


FIGURE 84 C-13 WEST BASIN MAP

C-13 EAST BASIN
(MIDDLE RIVER CANAL)
5,000 ACRES

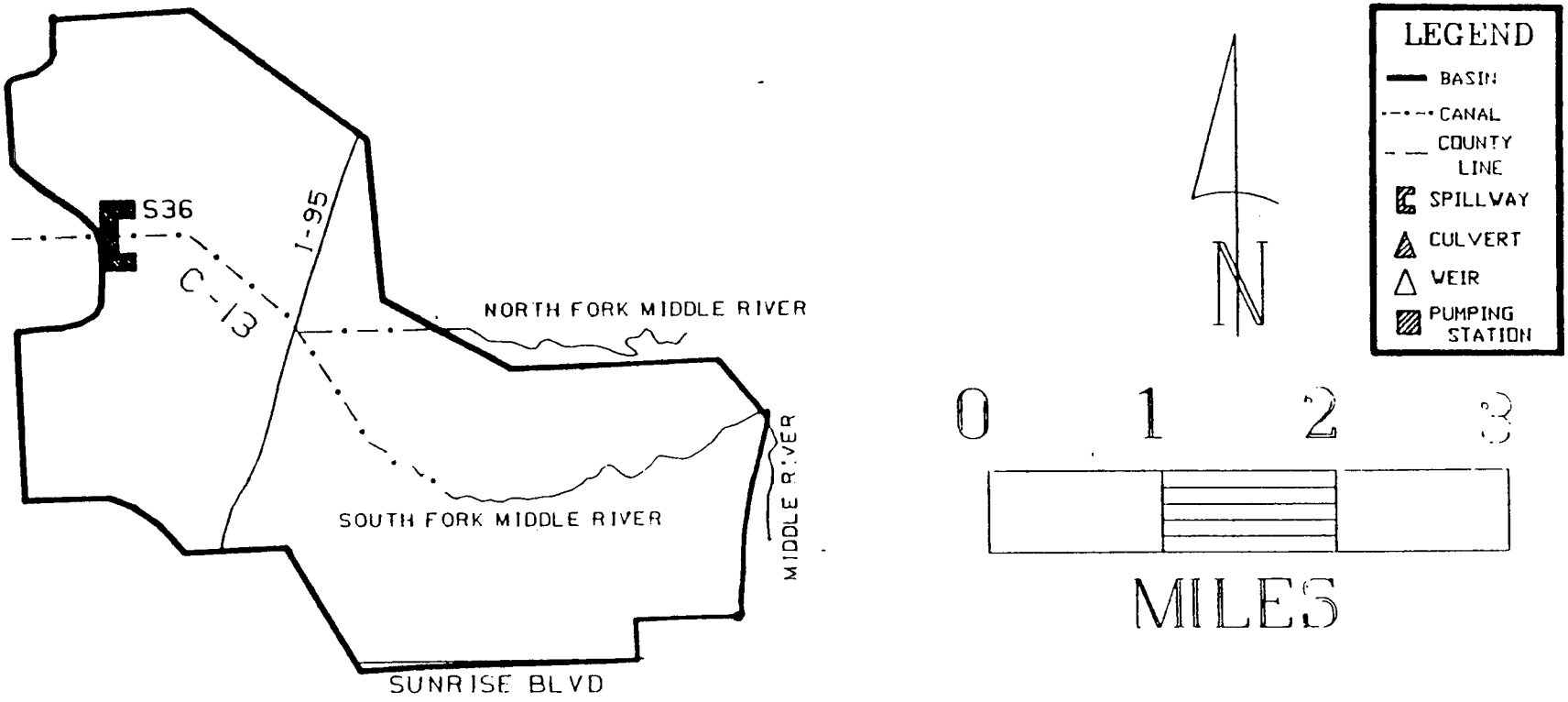
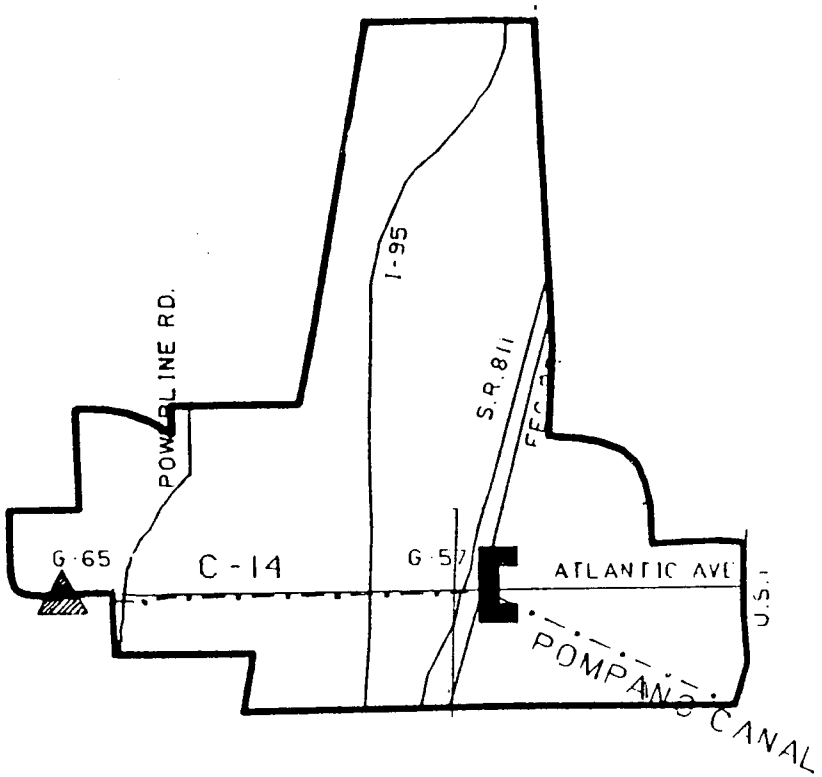
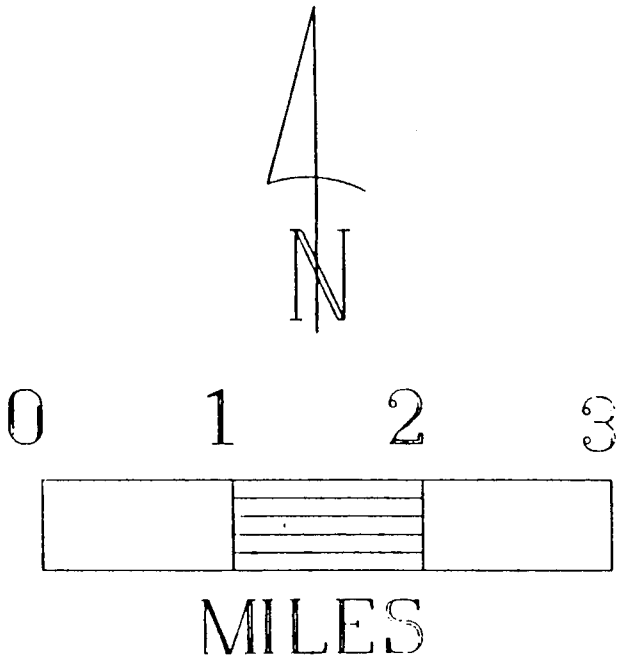


FIGURE 35 C-13 EAST BASIN MAP

POMPANO CANAL

4,000 ACRES





LEGEND

- BASIN
- CANAL
- COUNTY LINE
- SPILLWAY
- CULVERT
- WEIR
- PUMPING STATION

FIGURE 86 POMPANO CANAL BASIN MAP

C-14 WEST BASIN
(CYPRESS CREEK)

15,800 ACRES

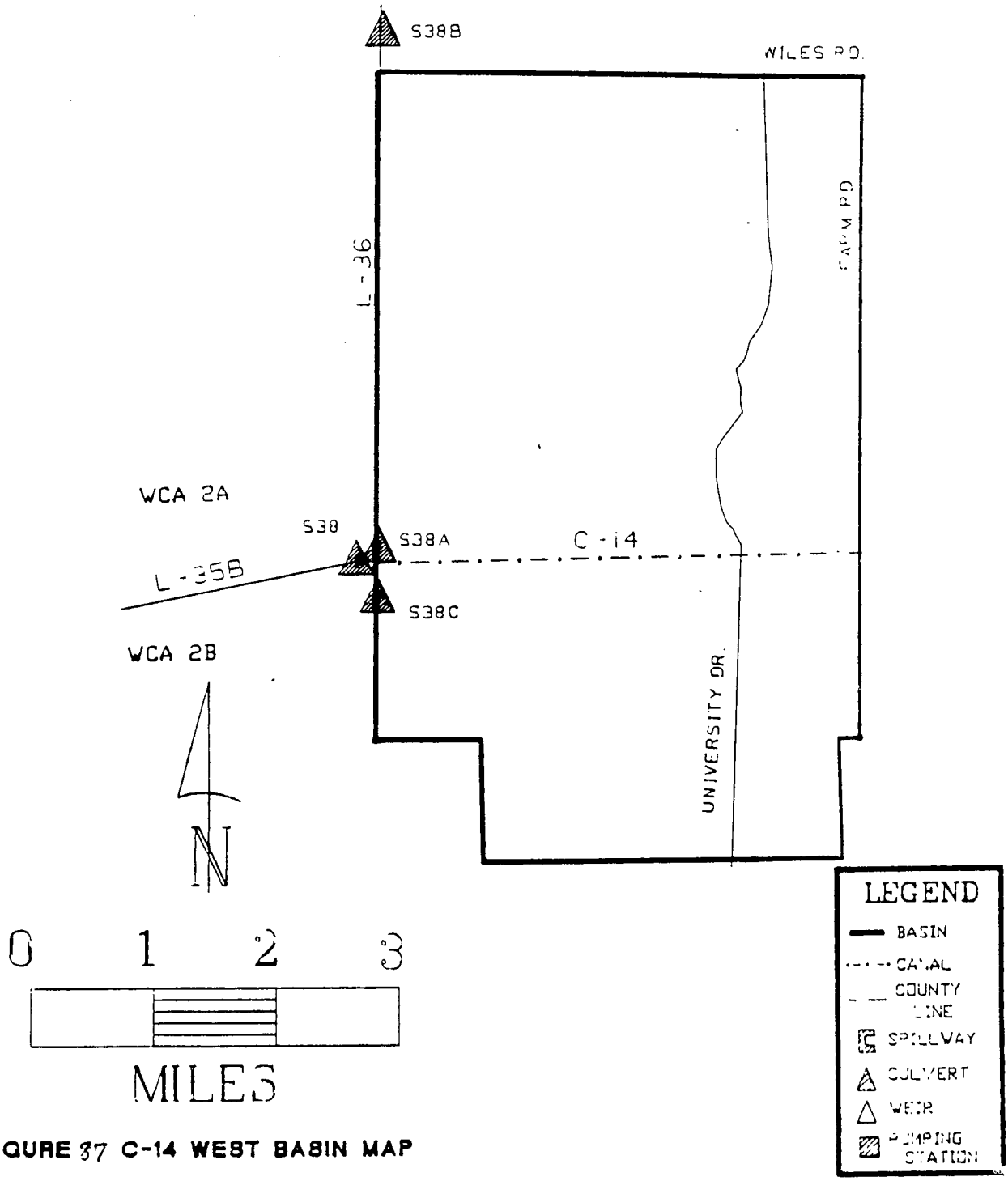


FIGURE 37 C-14 WEST BASIN MAP

C-14 EAST BASIN
(CYPRESS CREEK CANAL)
21,600 ACRES

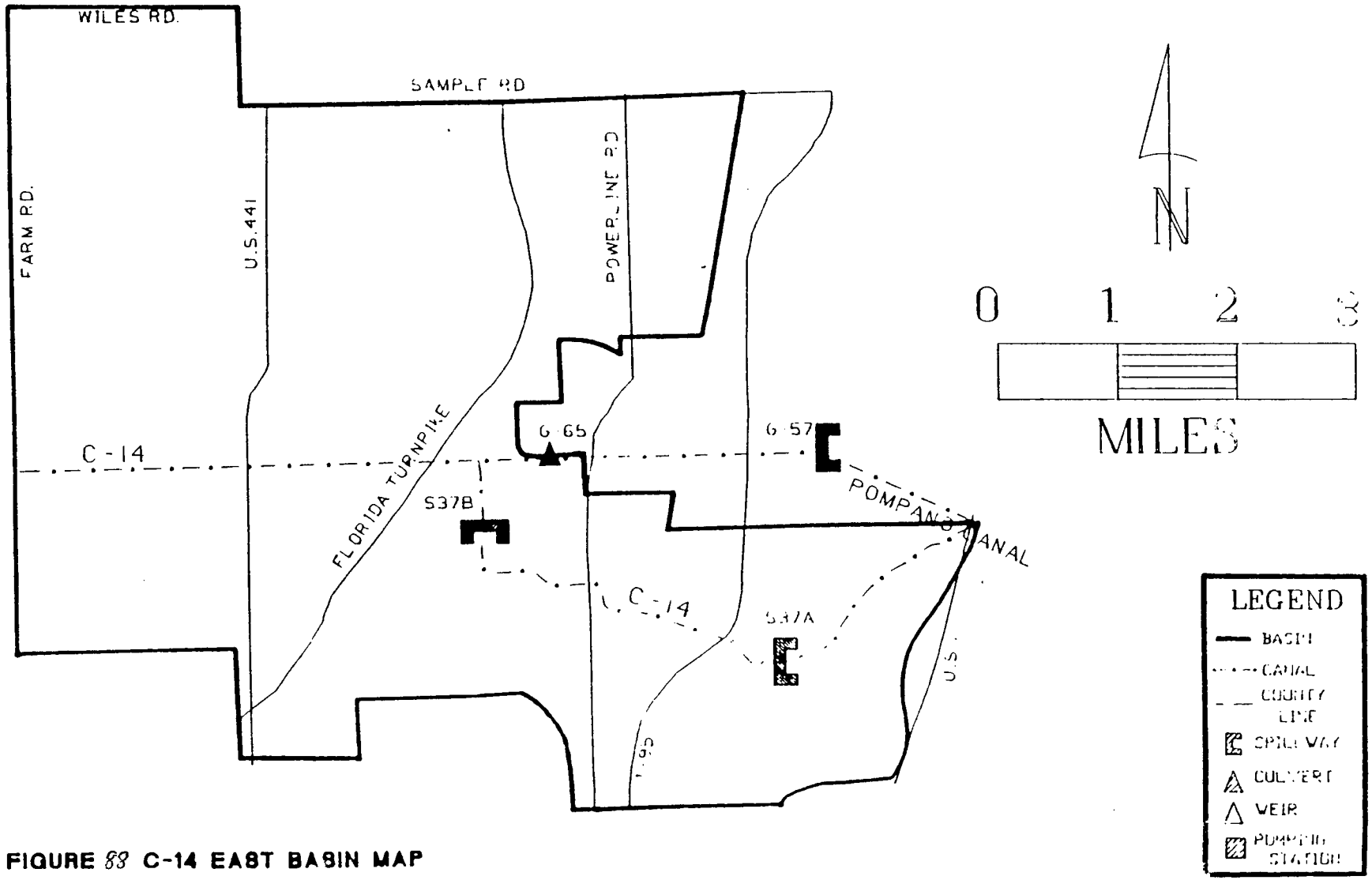


FIGURE 83 C-14 EAST BASIN MAP

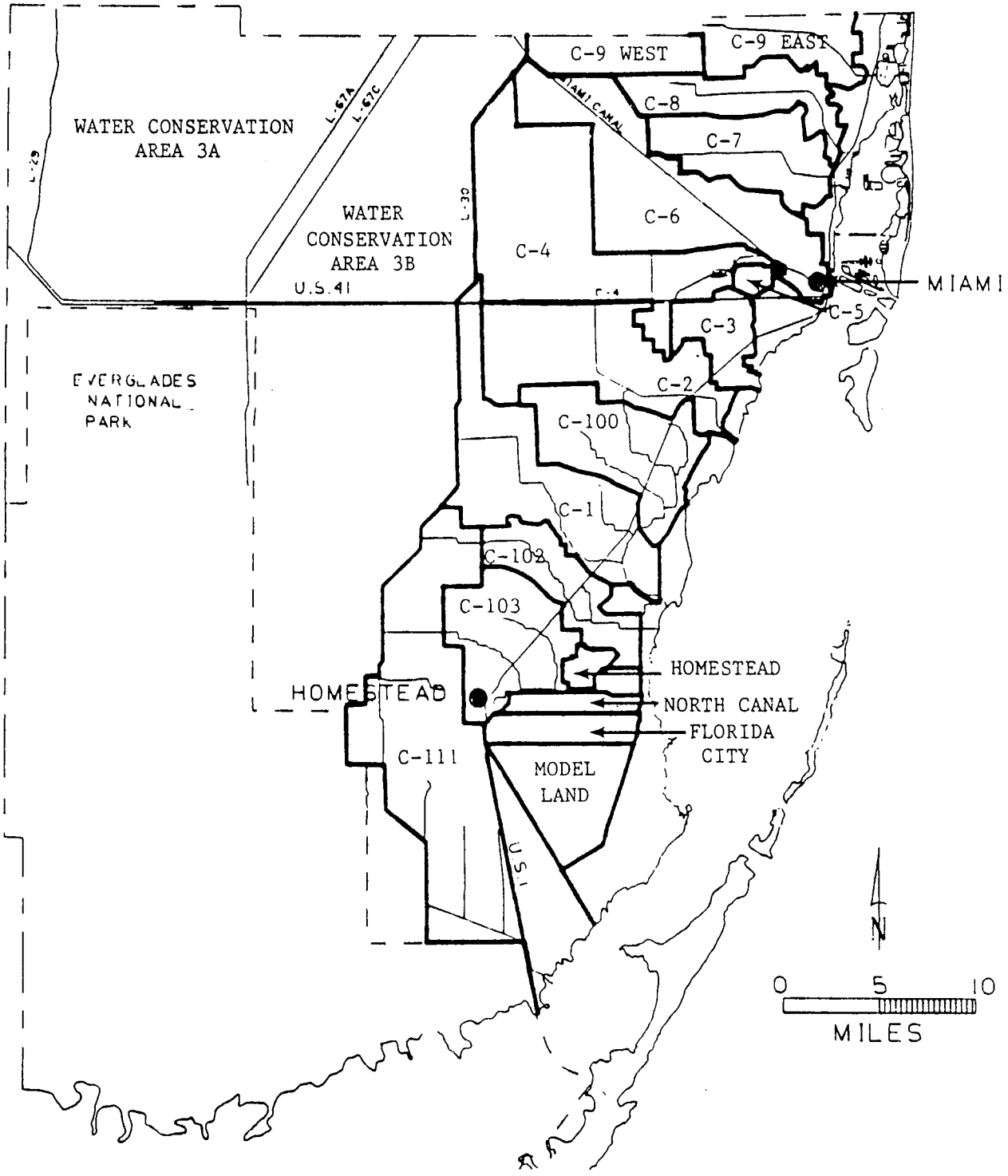
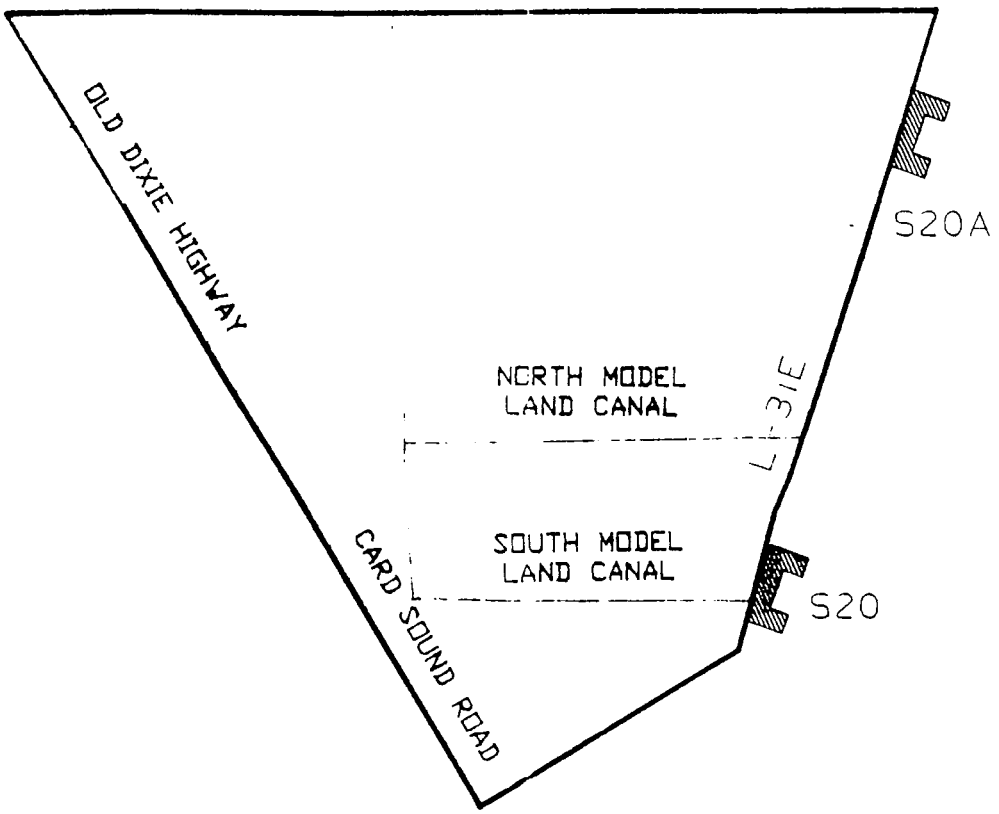
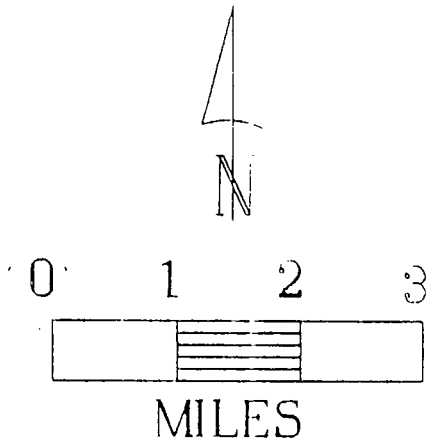


FIGURE 89 DADE COUNTY DRAINAGE BASINS

MODEL LAND

~ 18,000 ACRES

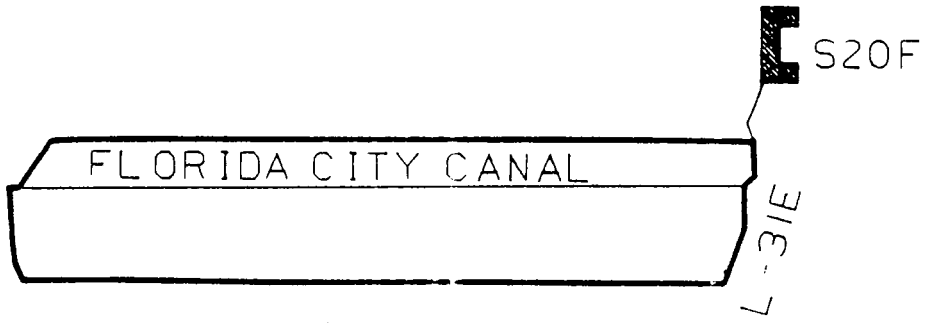


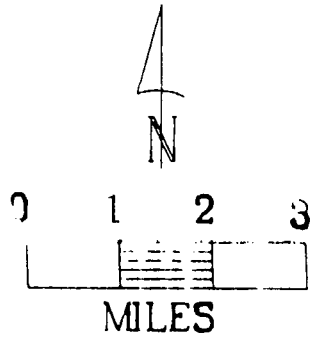


LEGEND

- BASIN
- CANAL
- COUNTY LINE
- AREA B
- SPILLWAY
- CULVERT
- WEIR
- PUMPING STATION

FIGURE 90 MODEL LAND CANAL BASIN MAP





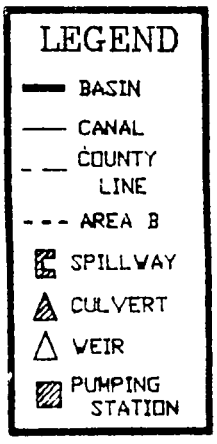


FIGURE 9/ FLORIDA CITY CANAL BASIN MAP

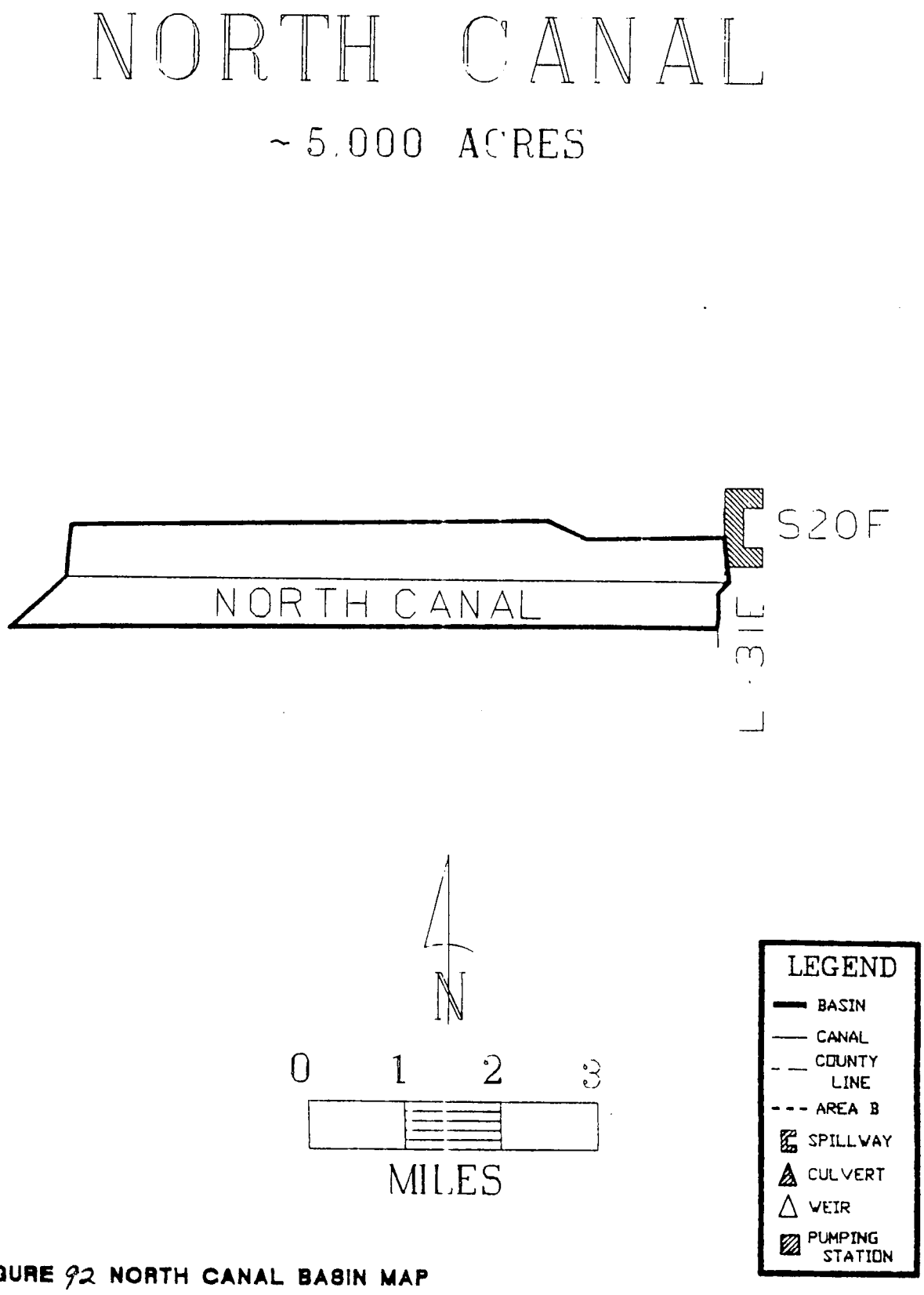


FIGURE 92 NORTH CANAL BASIN MAP

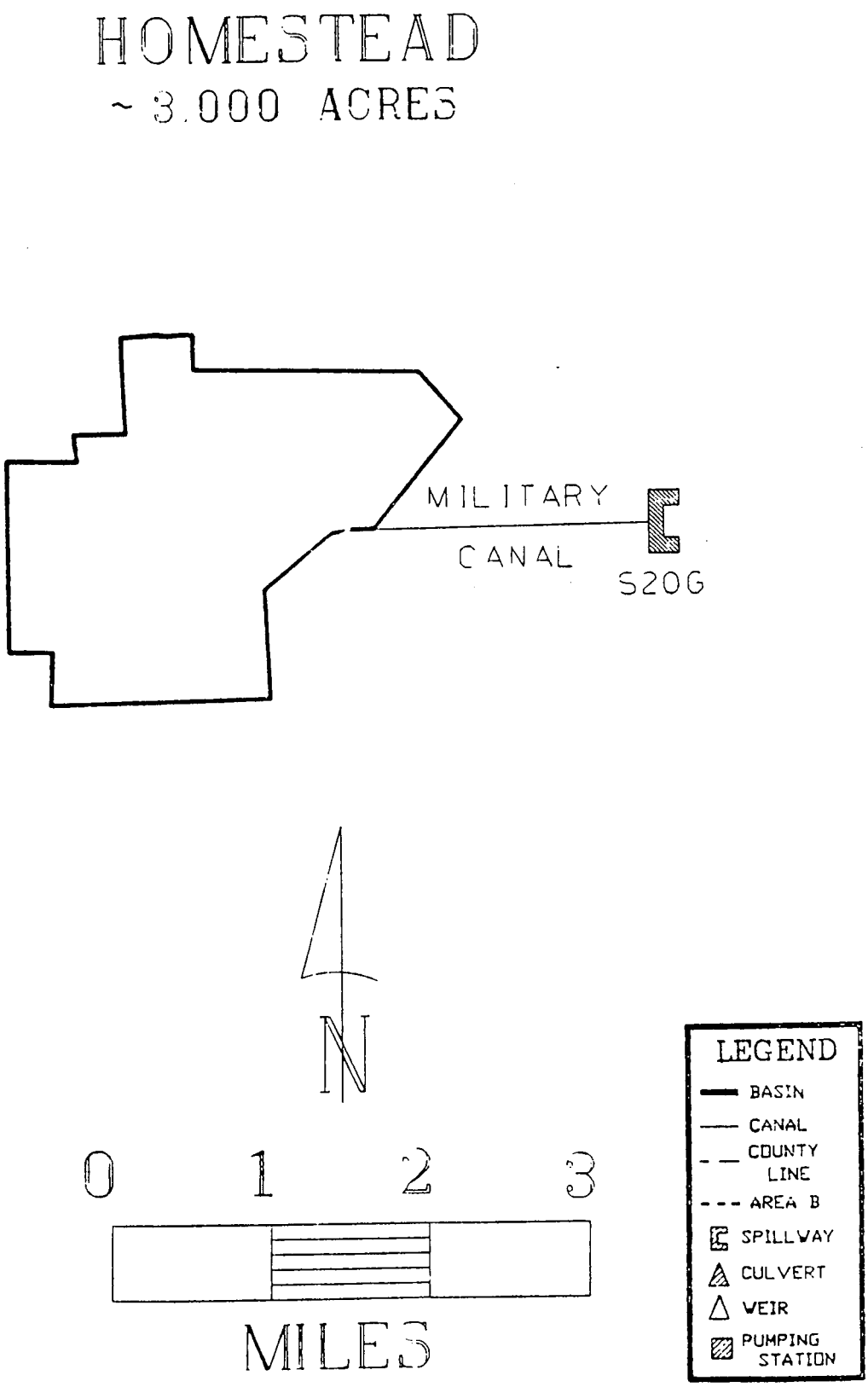


FIGURE 93 HOMESTEAD BASIN MAP

C-103

~26,000 ACRES

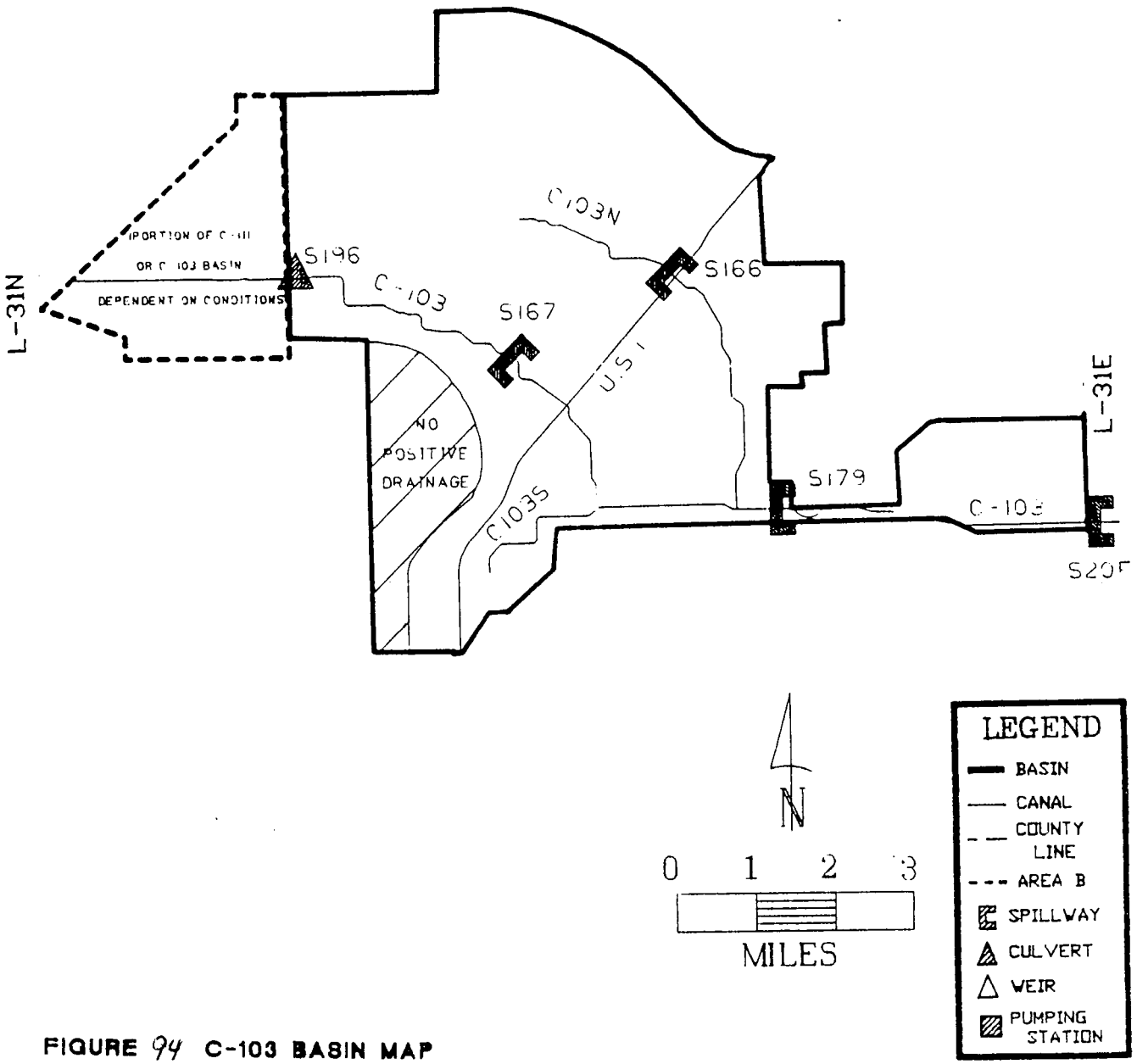


FIGURE 94 C-103 BASIN MAP

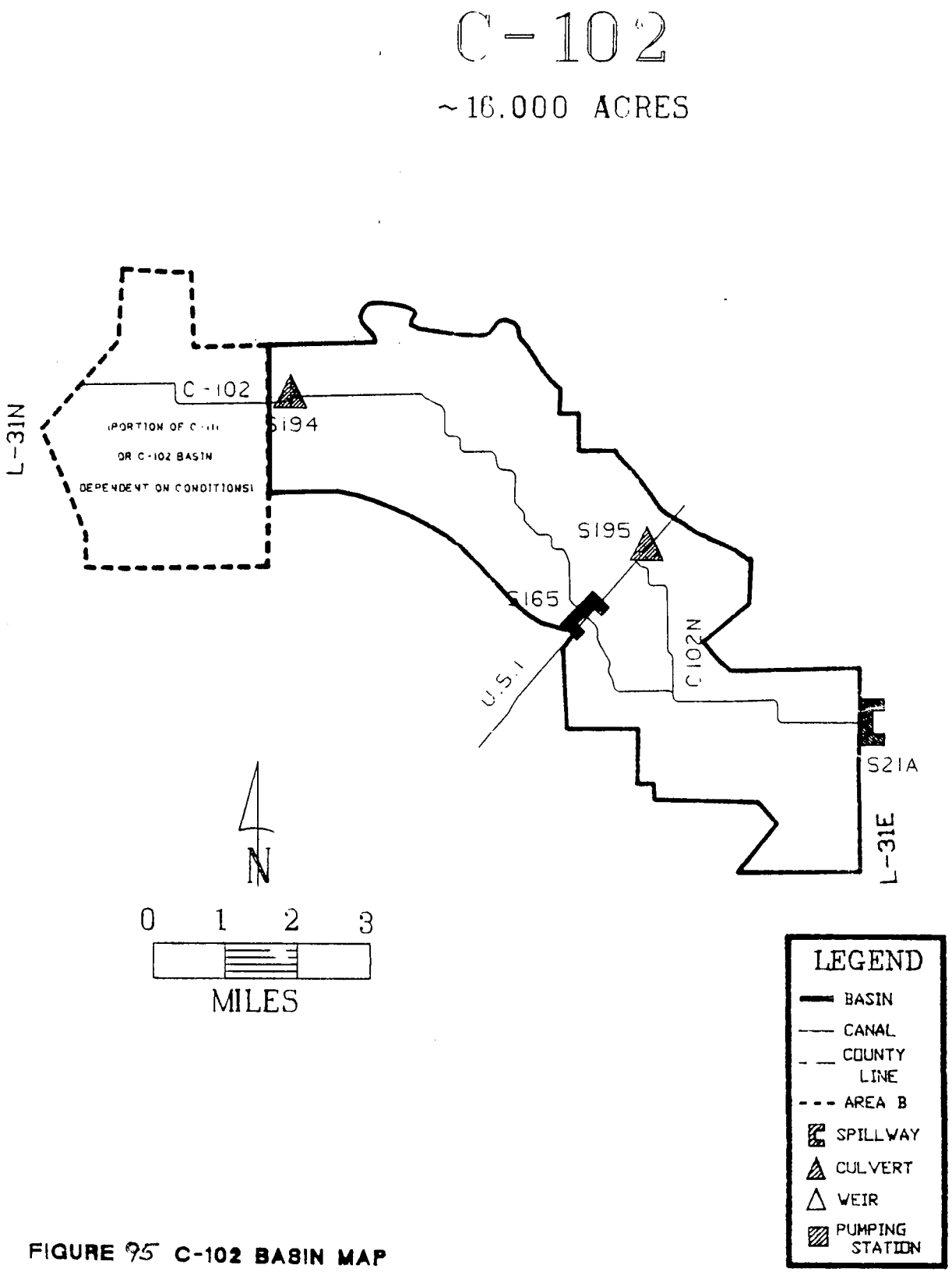


FIGURE 95 C-102 BASIN MAP

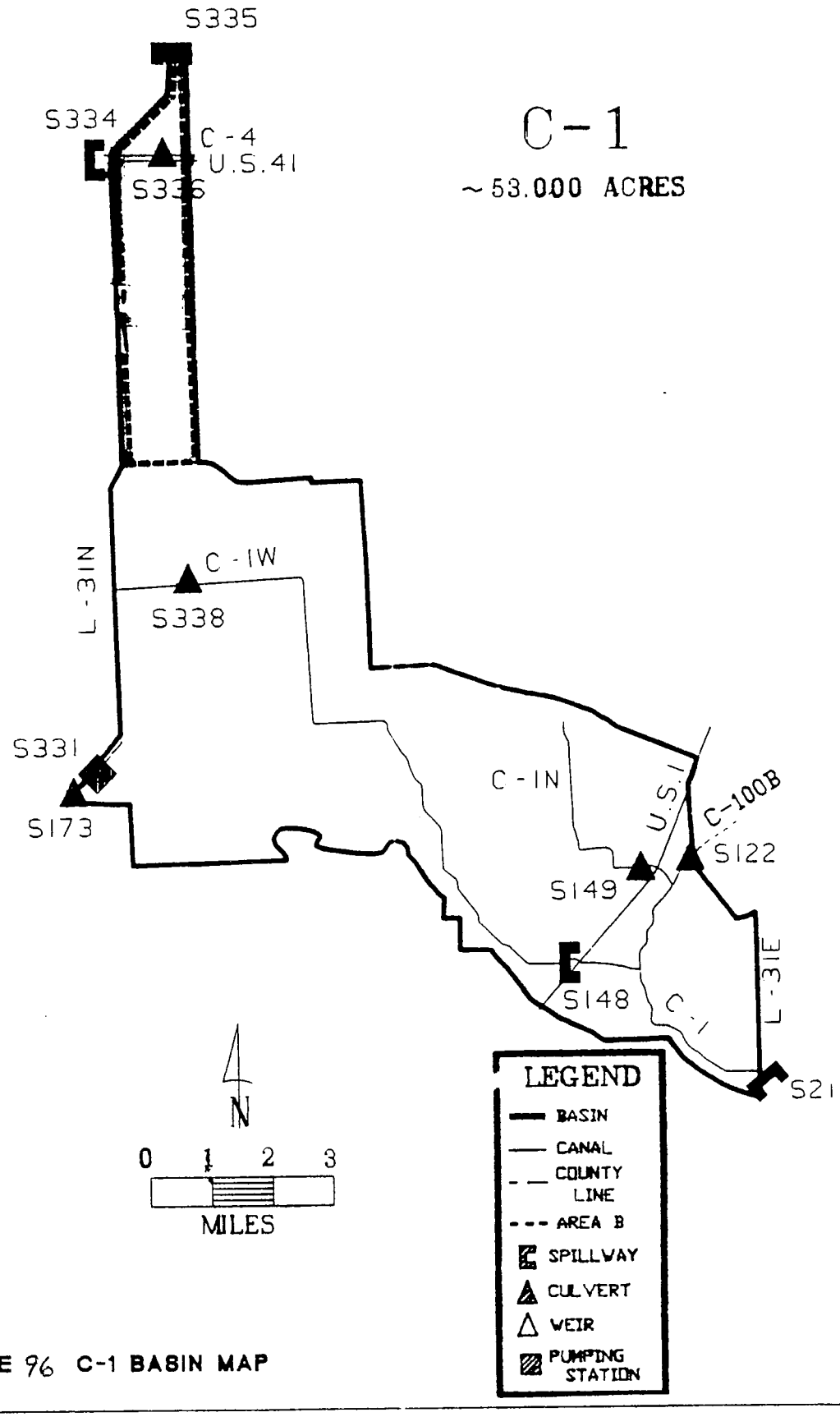


FIGURE 96 C-1 BASIN MAP

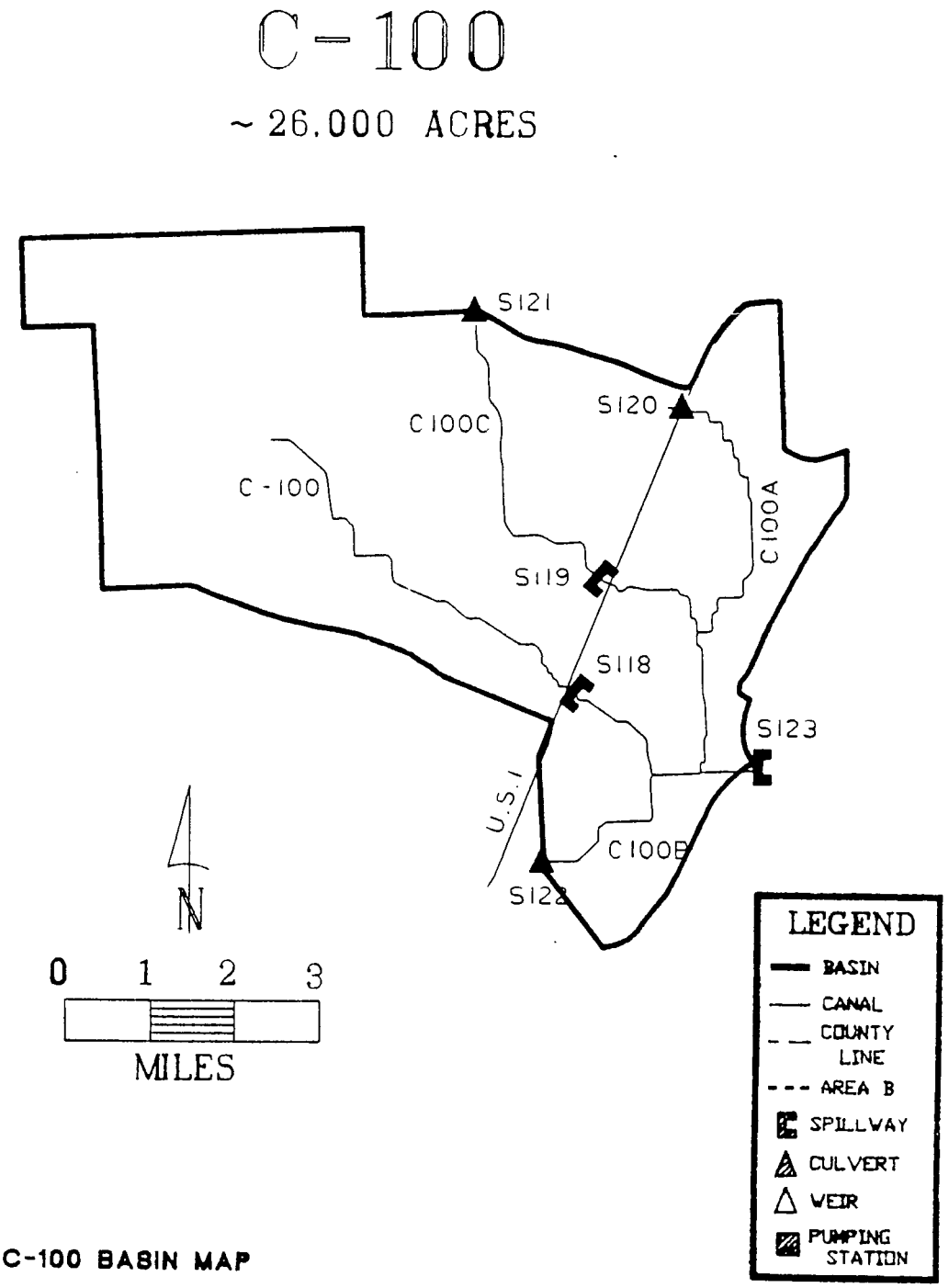


FIGURE 97 C-100 BASIN MAP

C-2

~34,000 ACRES

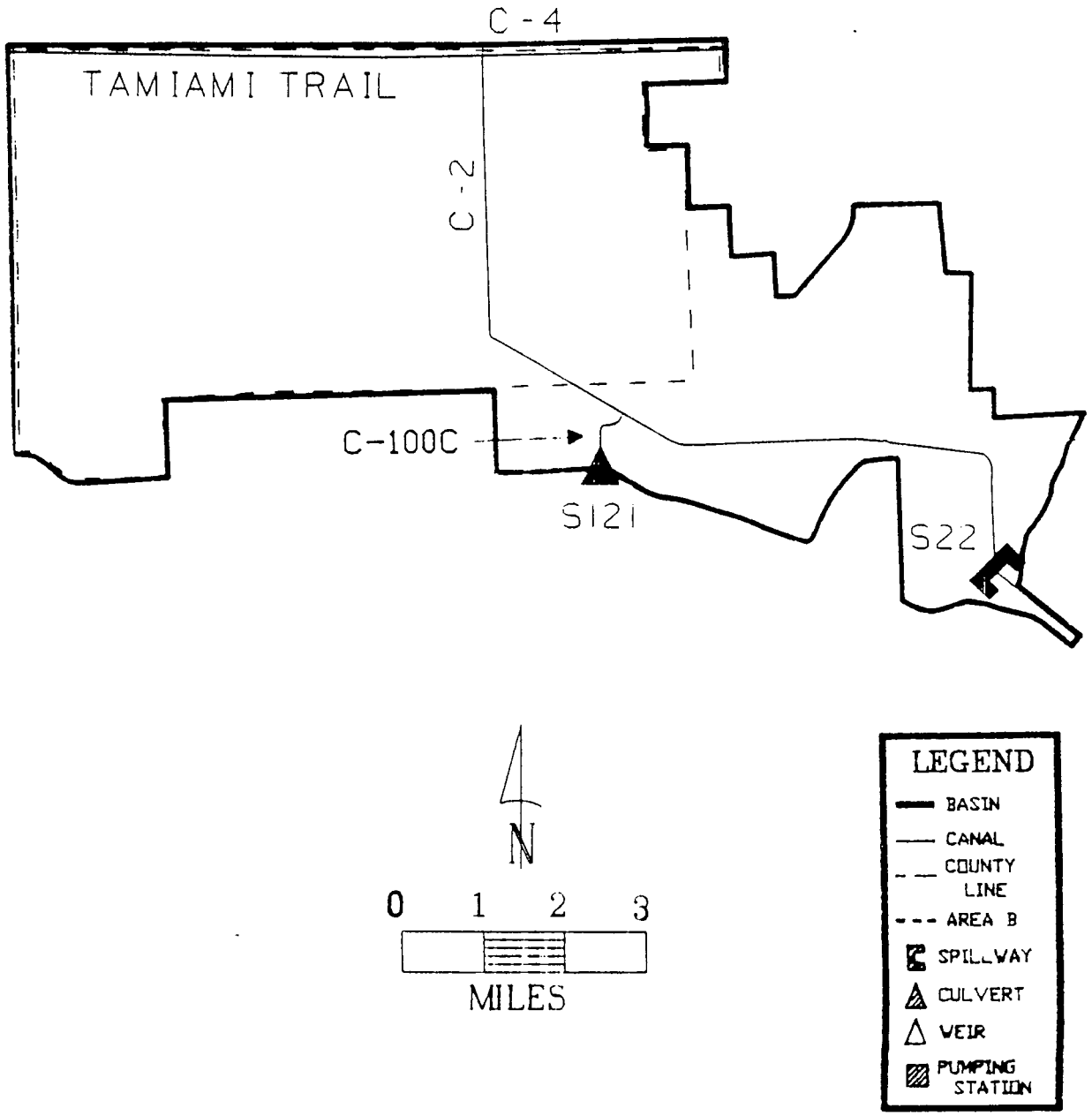


FIGURE 98 C-2 BASIN MAP

C-3

~10,000 ACRES

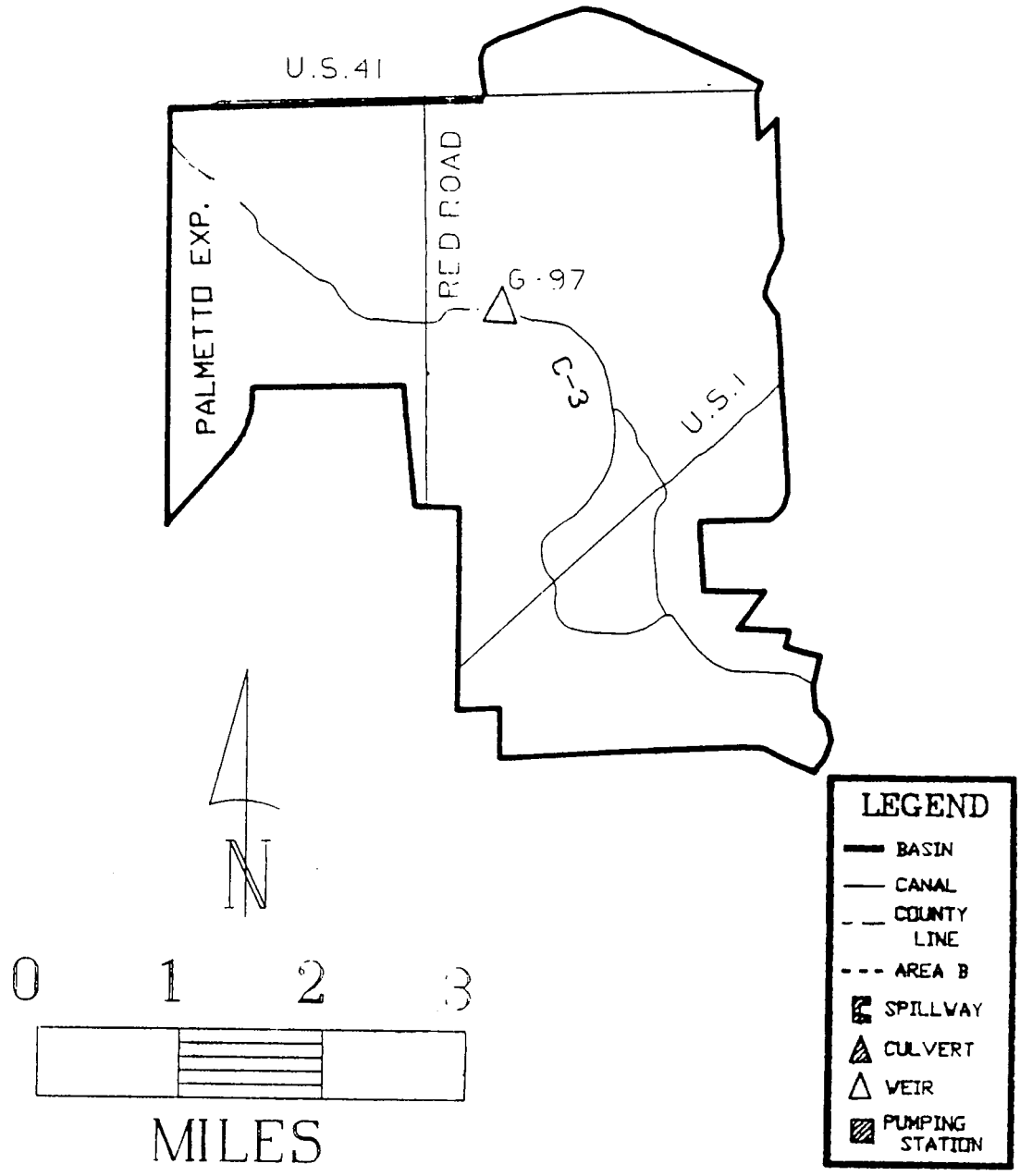


FIGURE 99 C-3 BASIN MAP

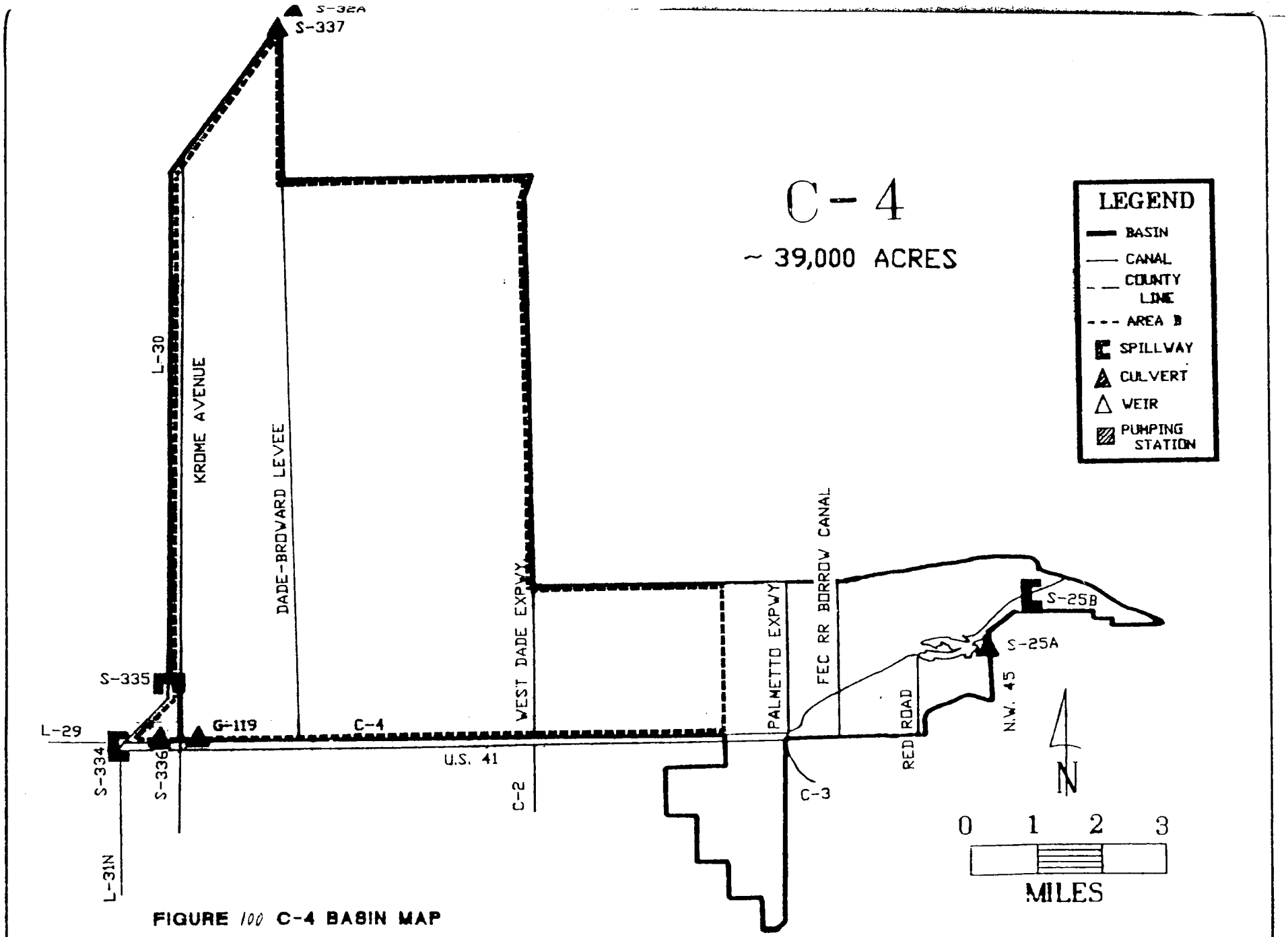
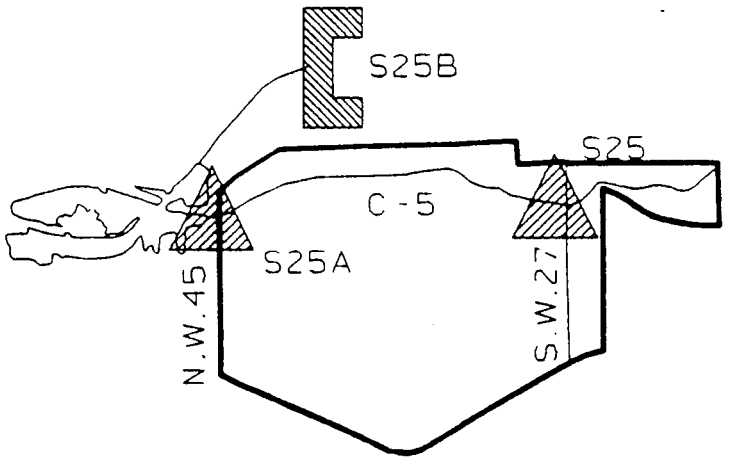
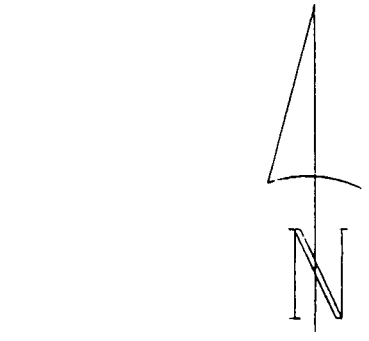


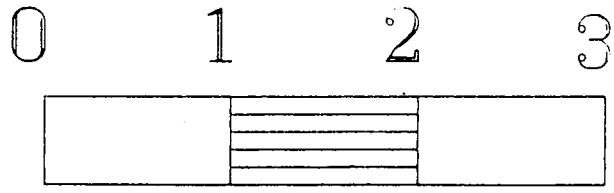
FIGURE 100 C-4 BASIN MAP

C-5

~1,400 ACRES







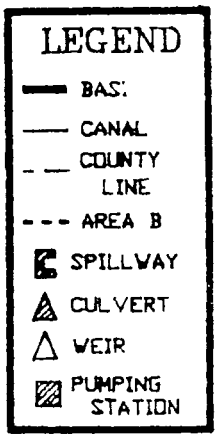


FIGURE 101 C-5 BASIN MAP

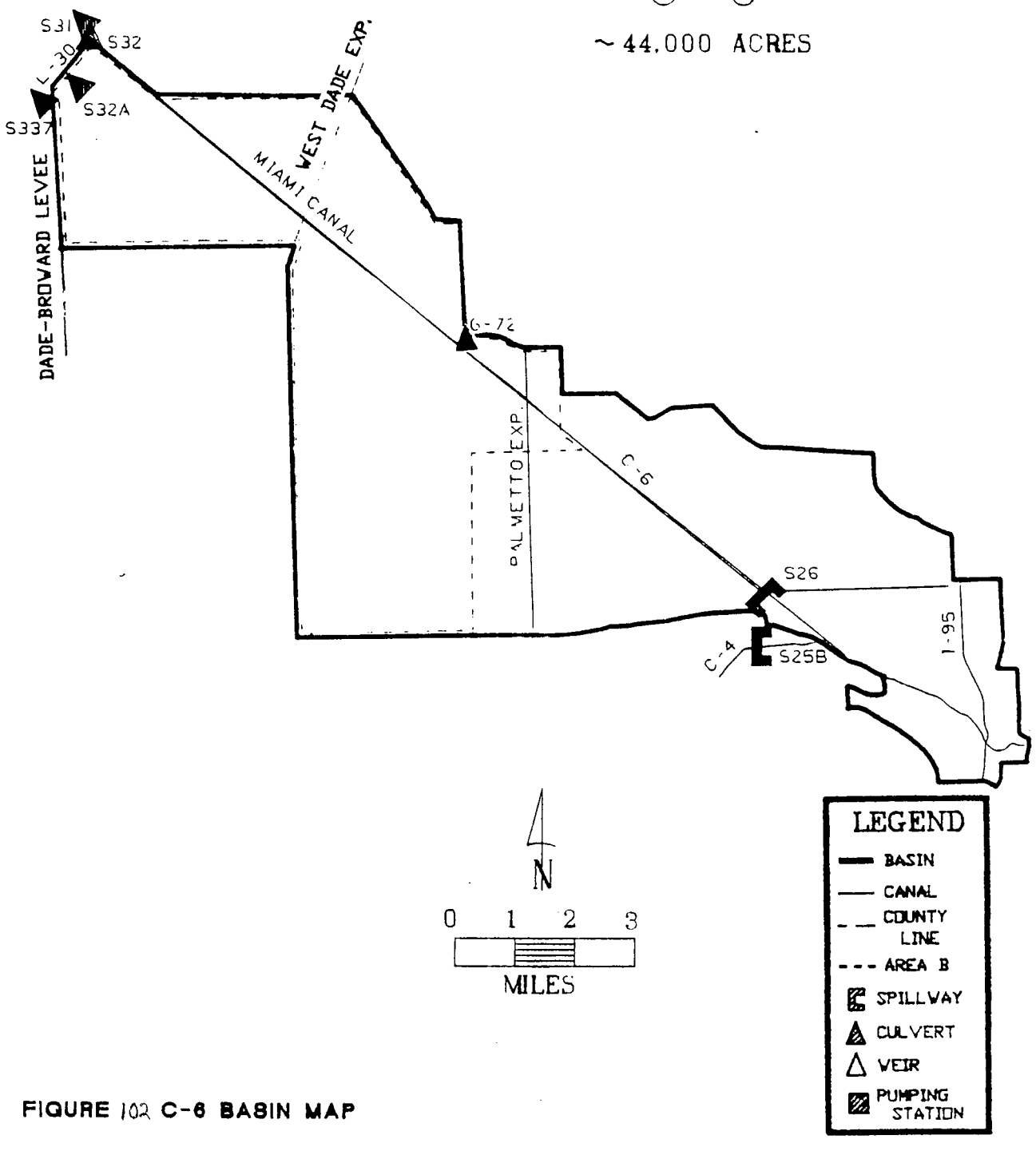


FIGURE 102 C-6 BASIN MAP

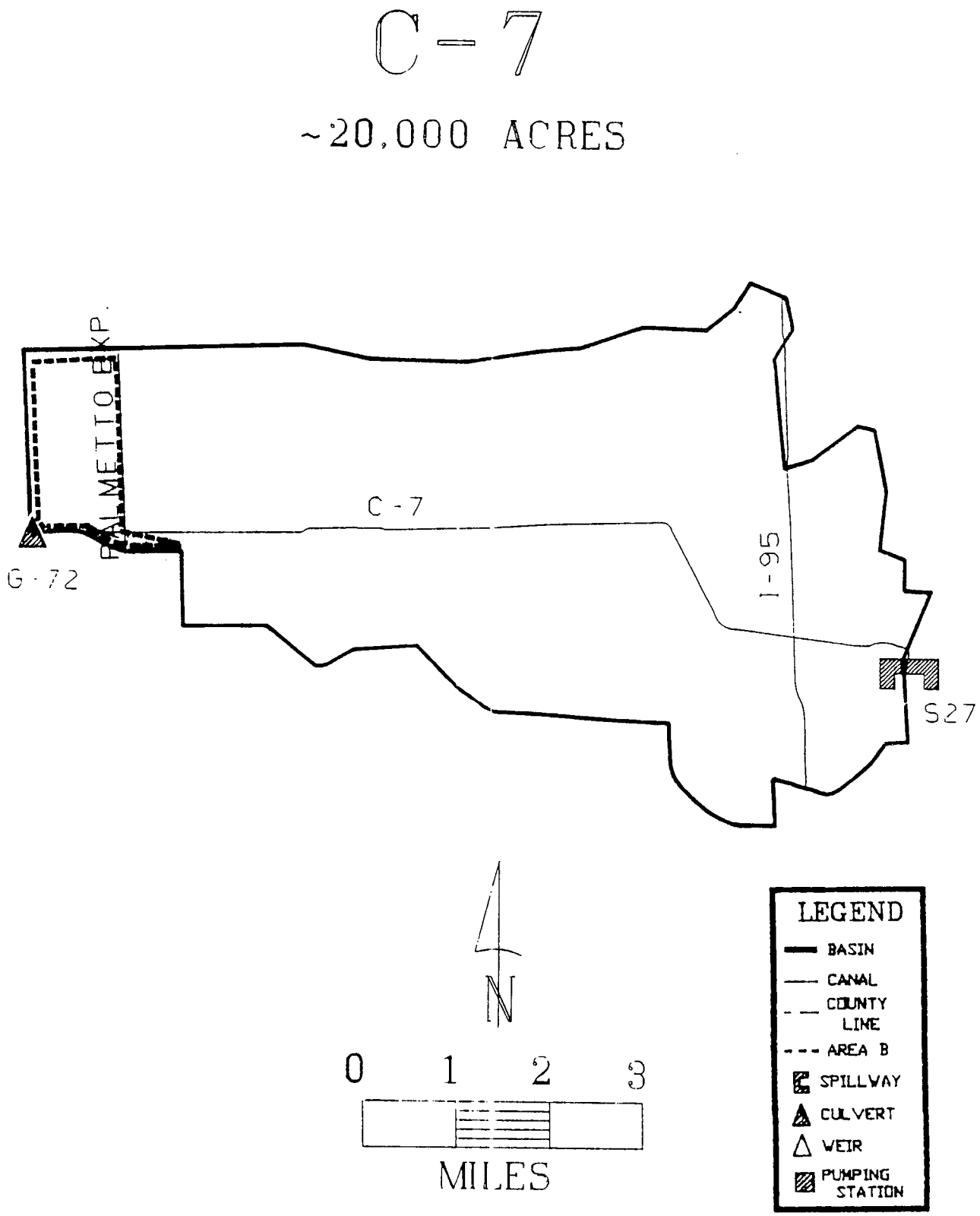


FIGURE 703 C-7 BASIN MAP

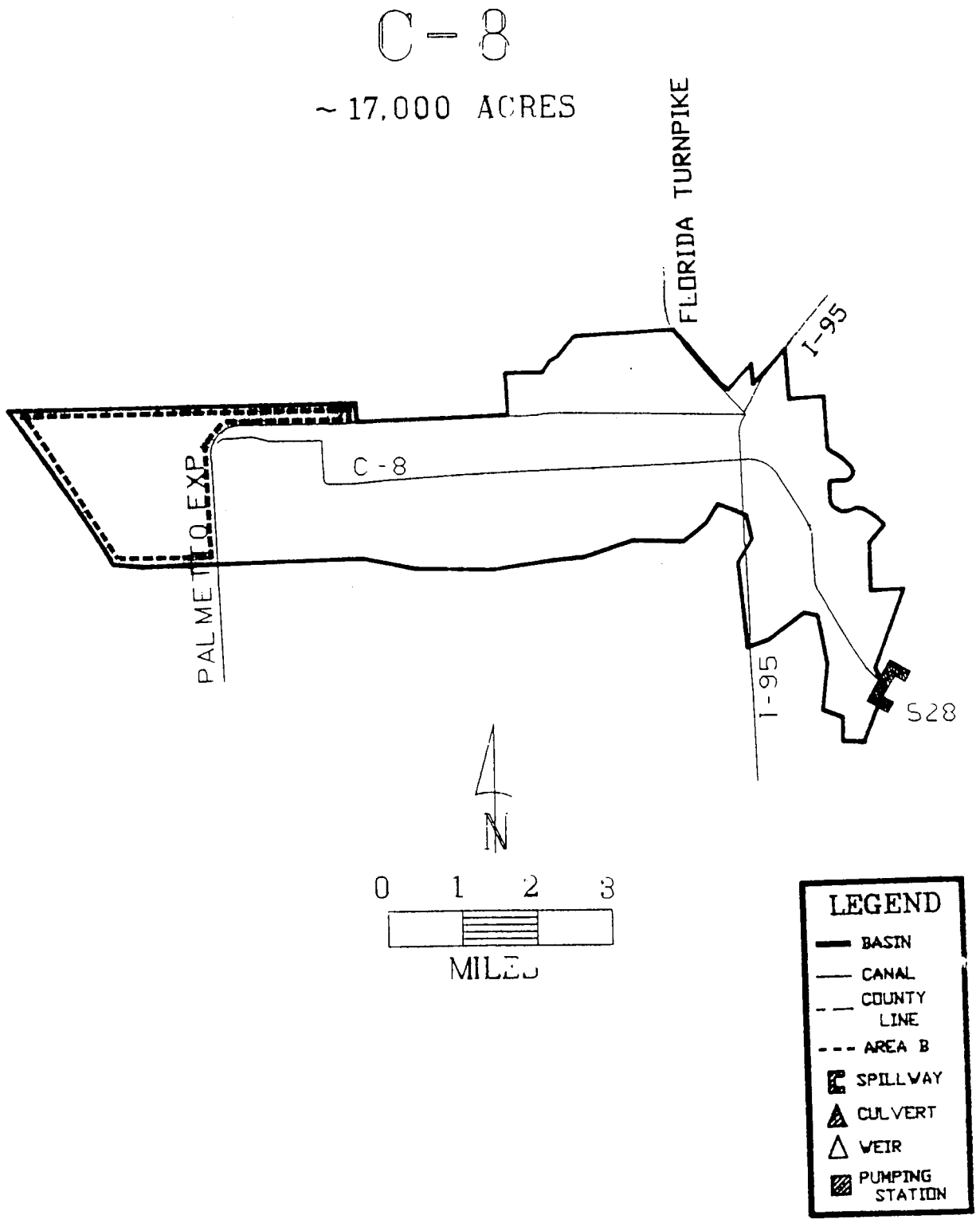
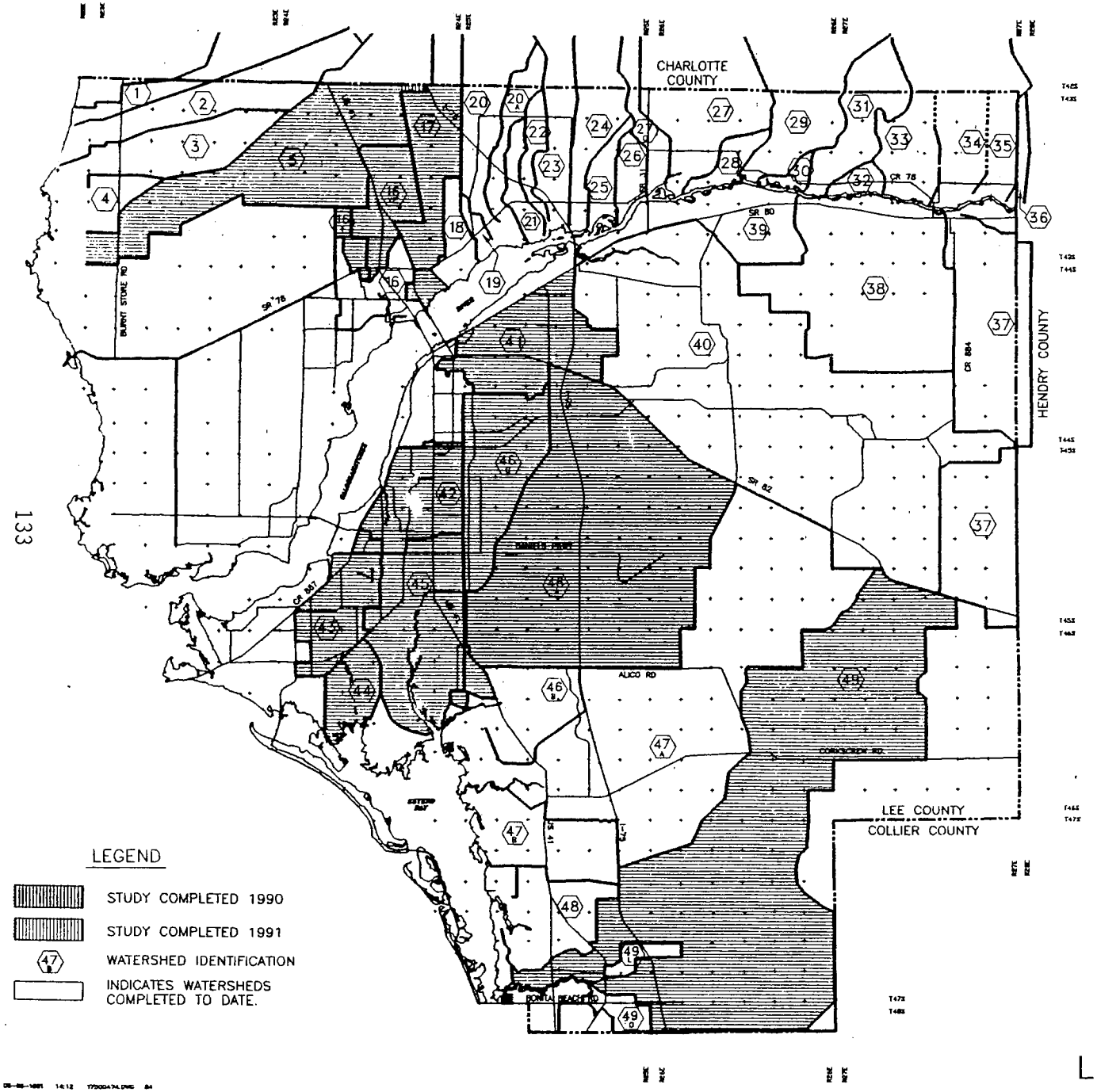


FIGURE 104 C-8 BASIN MAP



1	YUCCA PEN CREEK
2	DURDEN CREEK
3	GREENWELL BRANCH
4	LONGVIEW RUN
5	GATOR SLOUGH
16	HANCOCK CREEK
16-Y	YELLOW FEVER CREEK
16-E	YELLOW FEVER - EAST BRANCH
17	POWELL CREEK
18	MARSH POINT
19	COHN BRANCH
20	DAUGHTREY CREEK
20-A	DAUGHTREY - EAST BRANCH
21	CHAPEL BRANCH
22	BAYSHORE CREEK
23	POPASH CREEK
24	STROUD CREEK
25	PALM CREEK
26	KICKAPOO CREEK
27-O	OWL CREEK
27	TROUT CREEK
28	OTTER CREEK
29	TELEGRAPH CREEK
30	FRANKLIN RUN
31	FICHTER BRANCH
32	PARK BRANCH
33	CYPRESS CREEK
34	SPANISH CREEK
35	MILLER'S GULLY
36	COUNTY LINE
37	BEDMAN CREEK
38	HICKEY CREEK
39	OLGA
40	ORANGE RIVER
41	BILLY CREEK
42	WHISKEY CREEK
43	DEEP LAGOON
44	COW CREEK
45	HENDRY CREEK
46-A	SIX MILE CYPRESS
46-B	MULLOCK CREEK
46-C	TENMILE CANAL
47-A	ESTERO RIVER
47-B	HALFWAY CREEK
48	SPRING CREEK
49	IMPERIAL RIVER
49-L	LEITNER CREEK
49-O	OAK CREEK

SCALE 1" = 5 MILES

N

COMPLETED WATERSHEDS IN LEE COUNTY MASTER PLAN

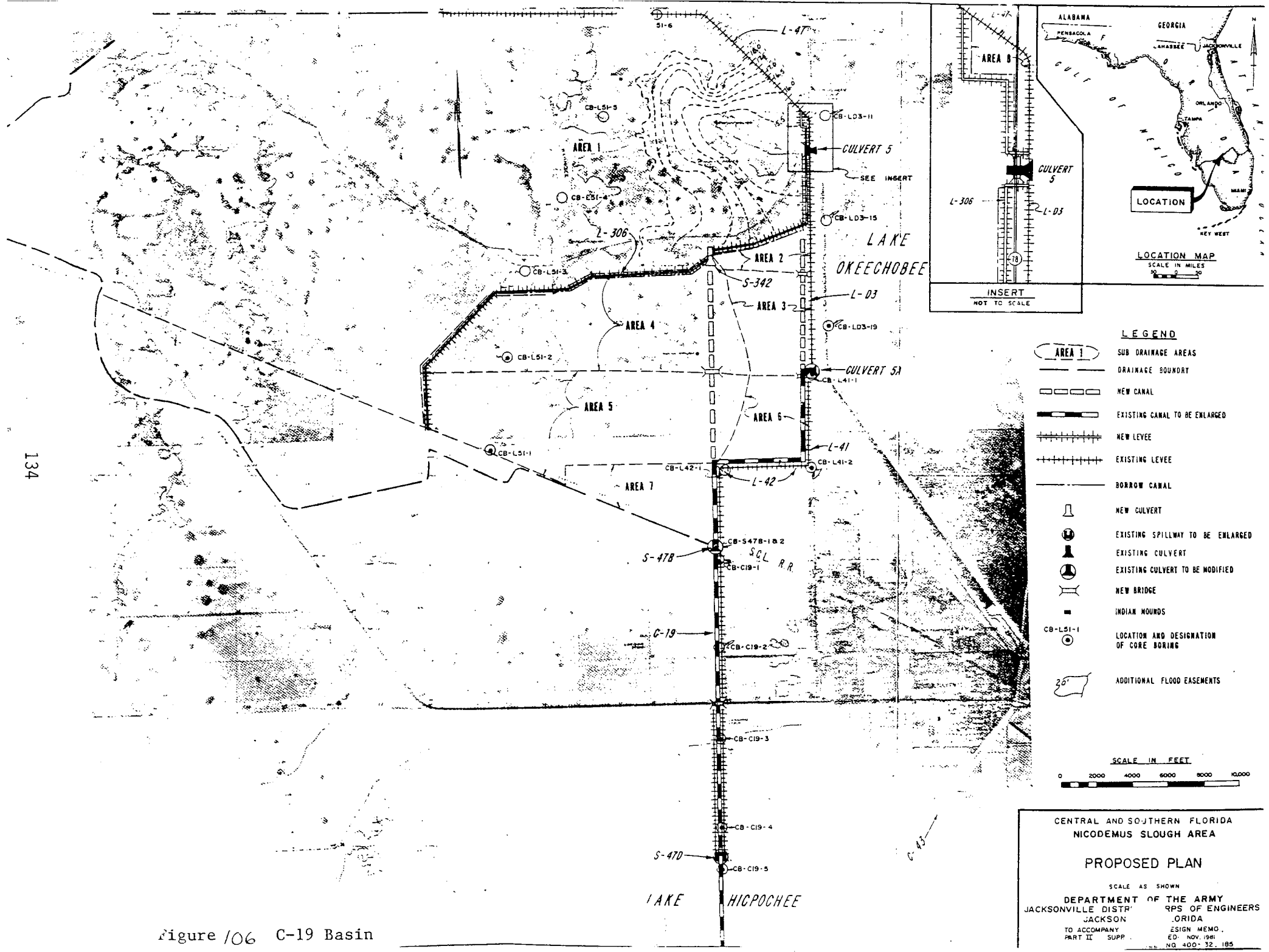
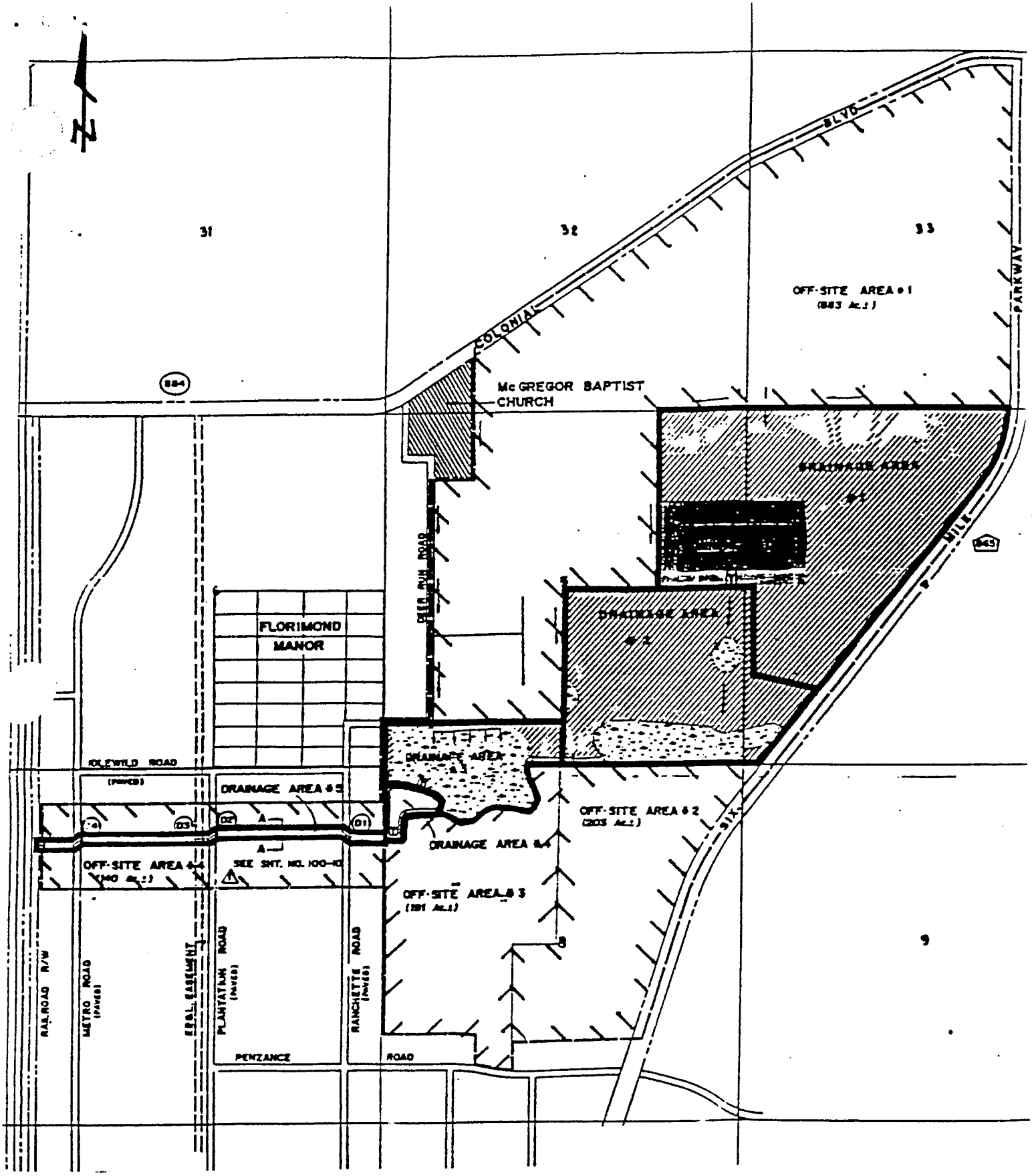


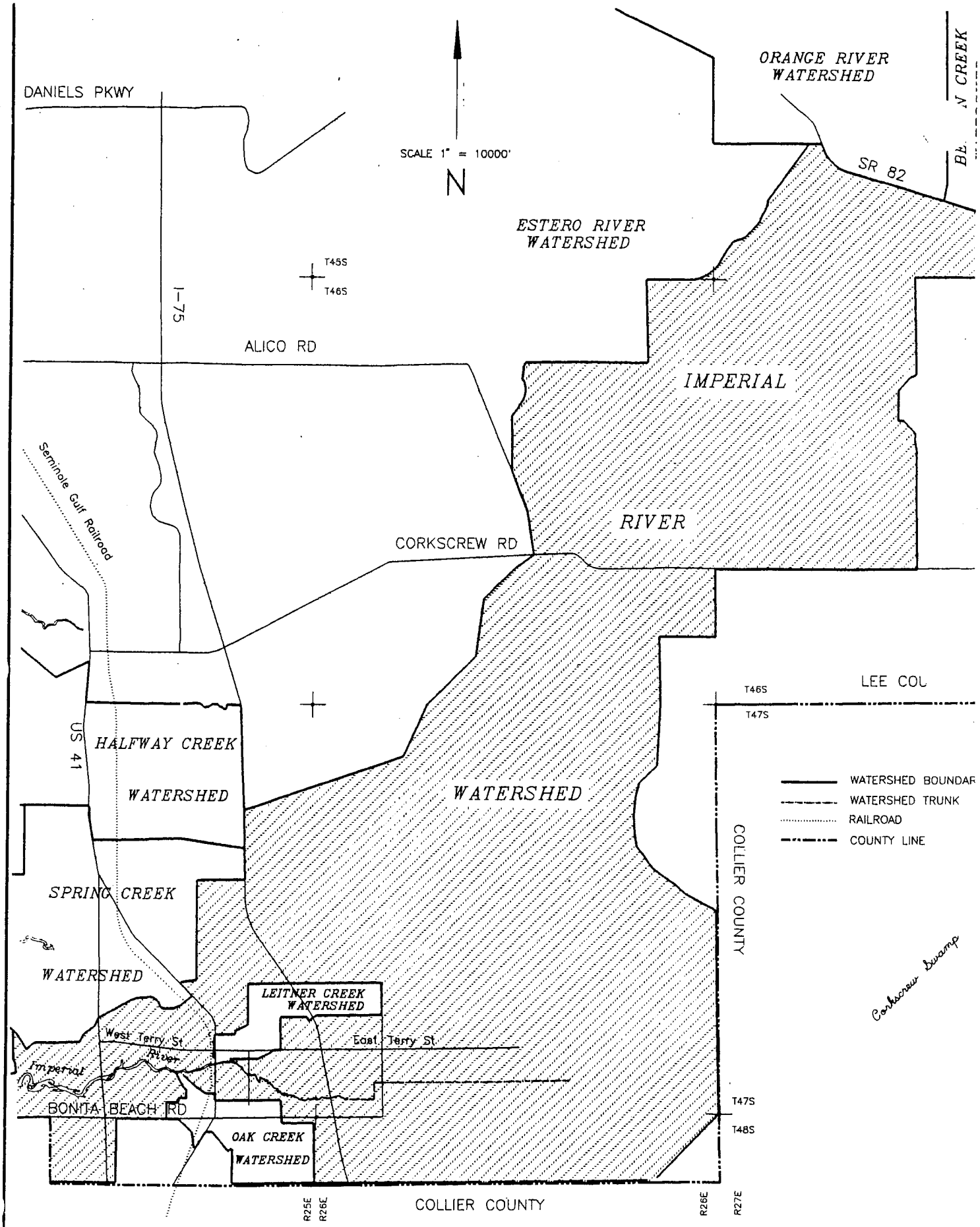
Figure 106 C-19 Basin



PROJECT: HARPER BROTHERS FARM * 2,033.4 ACRE BASIN

LOCATION: LEE COUNTY, S32,33/T44S/R25E & S4,5,7,8,9/T45S/R25E

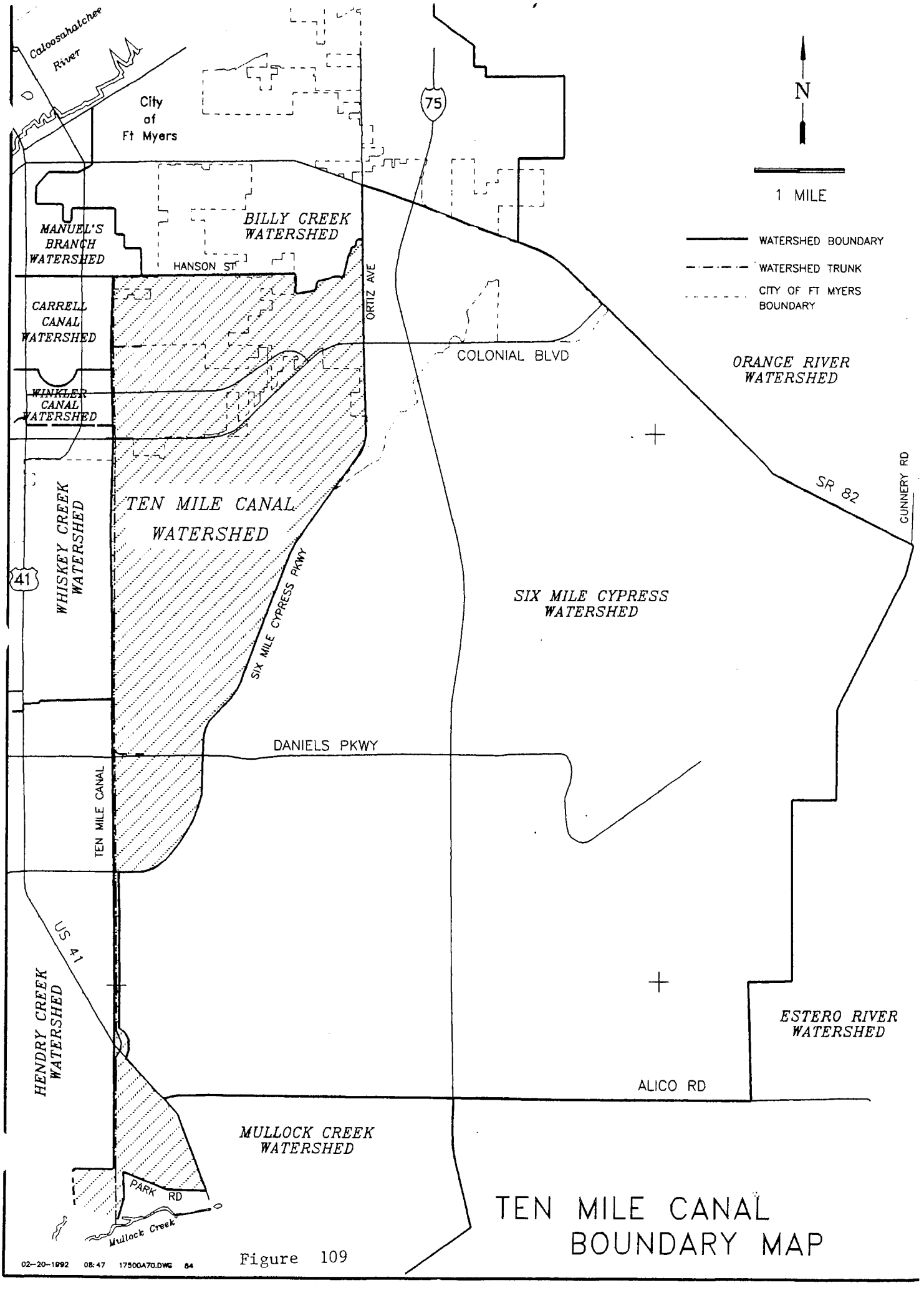
Figure 107



IMPERIAL RIVER BOUNDARY MAP

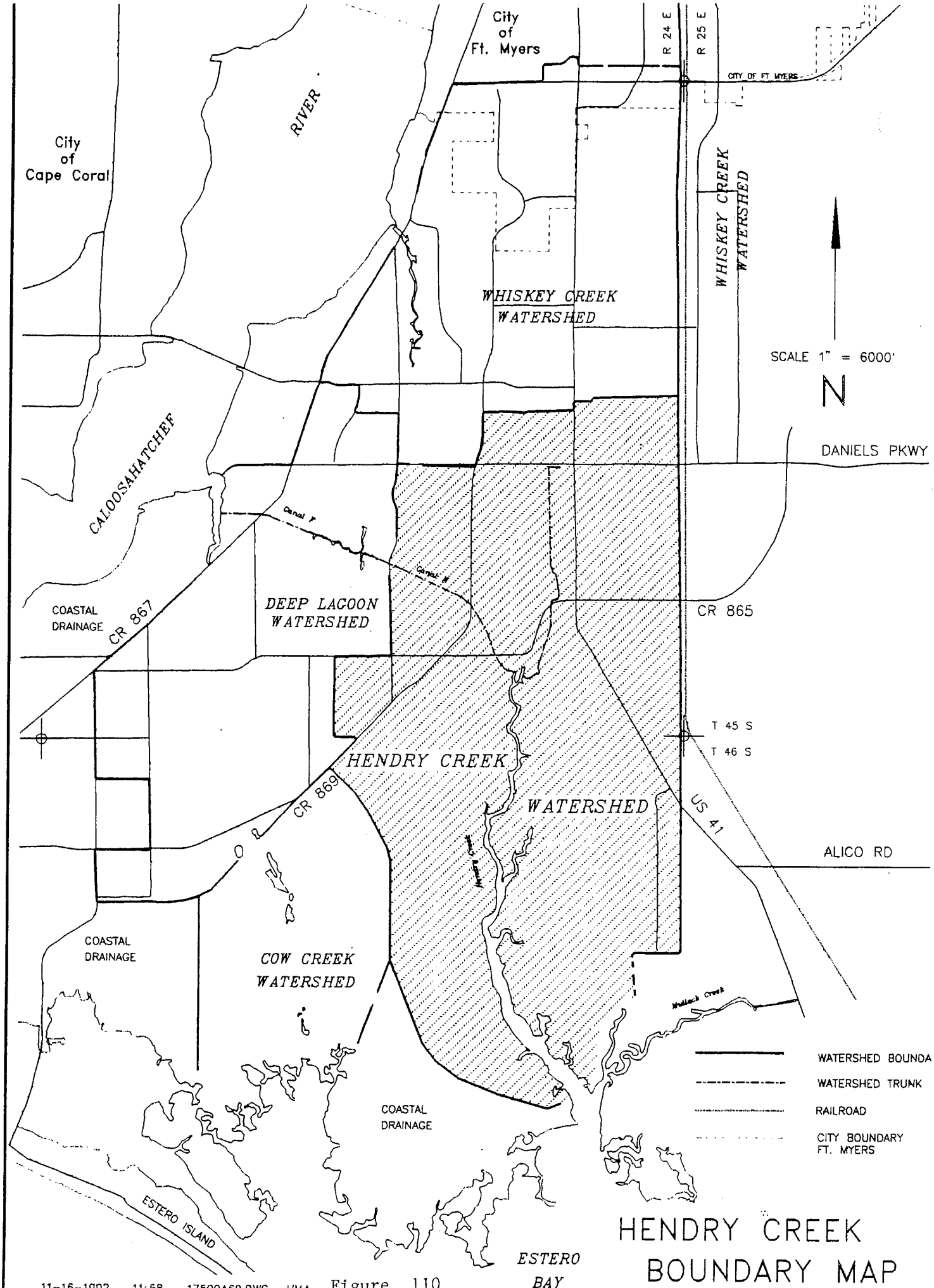
06-06-1991 15:45 17500A71.DWG 84

Figure 108

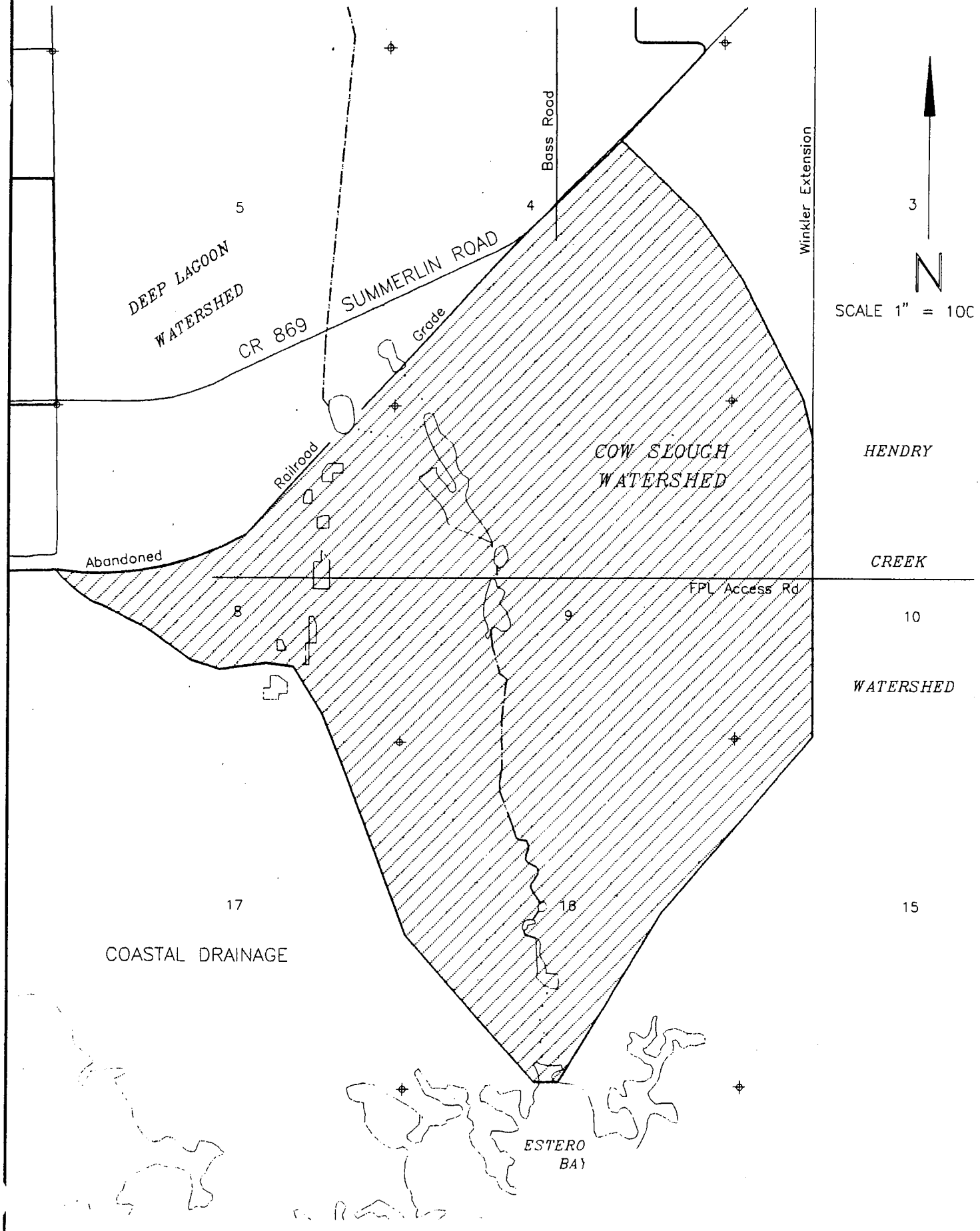


TEN MILE CANAL
BOUNDARY MAP

Figure 109



11-16-1992 11:58 17500A69.DWG HMA Figure 110



COW SLOUGH
BOUNDARY MAP

Figure 111

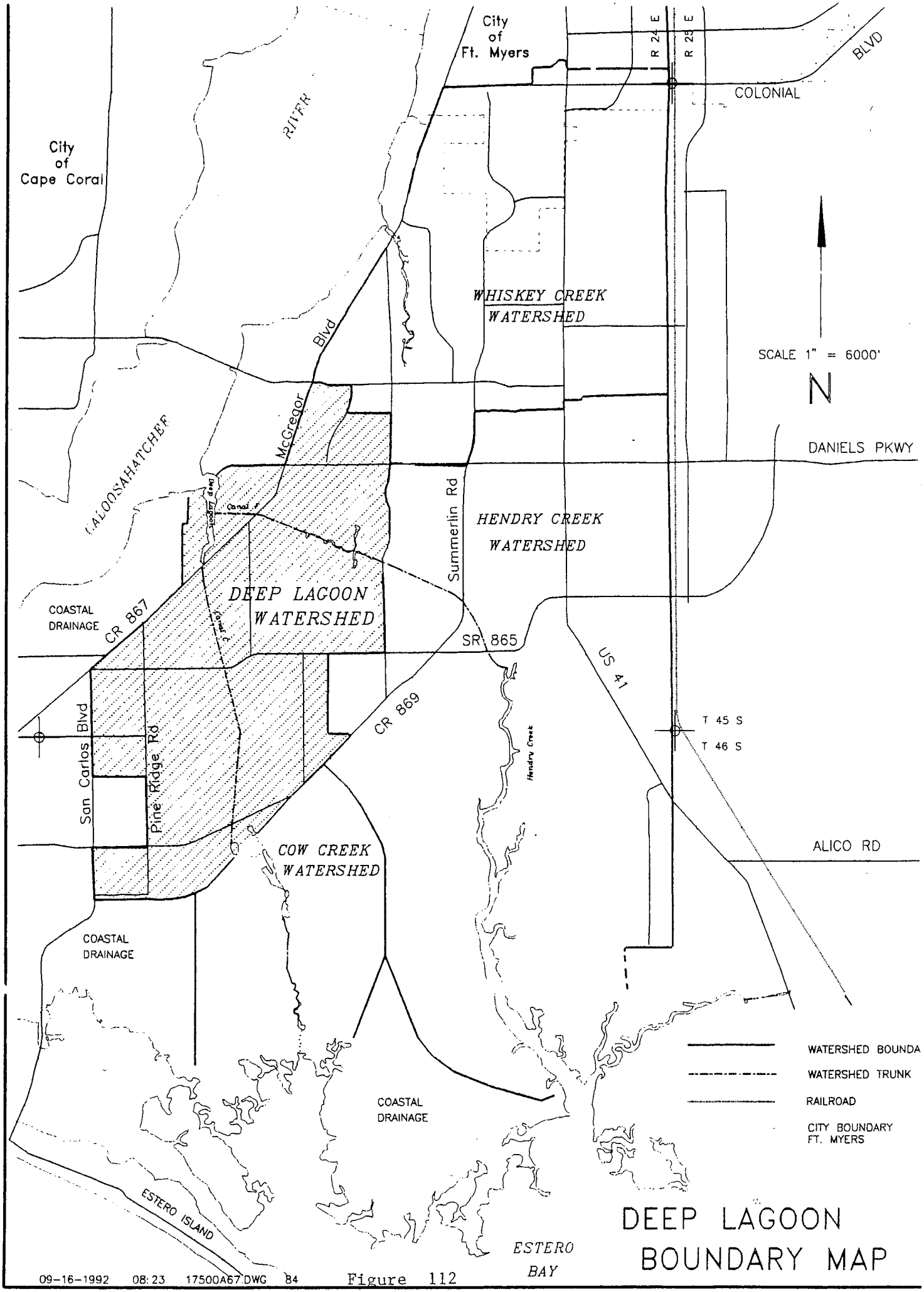

City of Ft. Myers
R 24 E
R 25 E
BLVD
COLONIAL
City of Cape Coral
RIVER
WHISKEY CREEK WATERSHED
SCALE 1" = 6000'
N
McGregor Blvd
DANIELS PKWY
CALOOSAHATCHEE
Summerlin Rd
HENDRY CREEK WATERSHED
DEEP LAGOON WATERSHED
COASTAL DRAINAGE
CR 867
SR 865
US 41
CR 869
T 45 S
T 46 S
San Carlos Blvd
Pine Ridge Rd
Hendry Creek
COW CREEK WATERSHED
ALICO RD
COASTAL DRAINAGE
WATERSHED BOUNDA
WATERSHED TRUNK
RAILROAD
CITY BOUNDARY FT. MYERS
COASTAL DRAINAGE
ESTERO ISLAND
ESTERO BAY
DEEP LAGOON BOUNDARY MAP
09-16-1992 08:23 17500A67.DWG 84

Figure 112

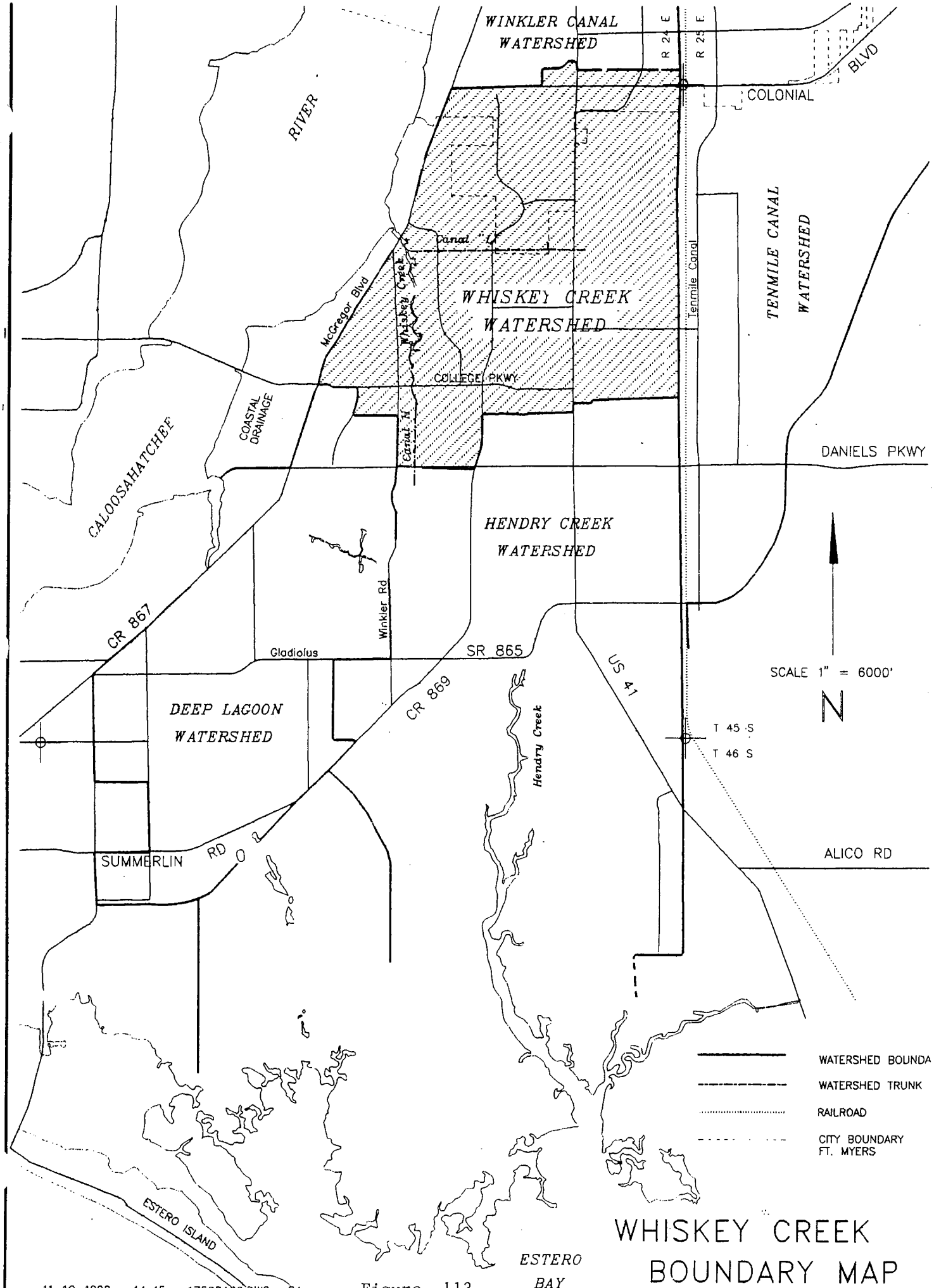

WINKLER CANAL WATERSHED
R 24 E
R 25 E
COLONIAL BLVD
RIVER
Canal "L"
Whiskey Creek
McGregor Blvd
WHISKEY CREEK WATERSHED
Tenmile Canal
TENMILE CANAL WATERSHED
COLLEGE PKWY
COASTAL DRAINAGE
Canal "H"
DANIELS PKWY
CALOOSAHATCHEE
HENDRY CREEK WATERSHED
Winkler Rd
CR 867
Gladiolus
SR 865
US 41
CR 869
SCALE 1" = 6000'
N
DEEP LAGOON WATERSHED
Hendry Creek
T 45 S
T 46 S
SUMMERLIN RD
ALICO RD
WATERSHED BOUNDA
WATERSHED TRUNK
RAILROAD
CITY BOUNDARY FT. MYERS
ESTERO ISLAND
ESTERO BAY
WHISKEY CREEK BOUNDARY MAP
11-10-1992 14:45 17500A66.DWG 84

Figure 113

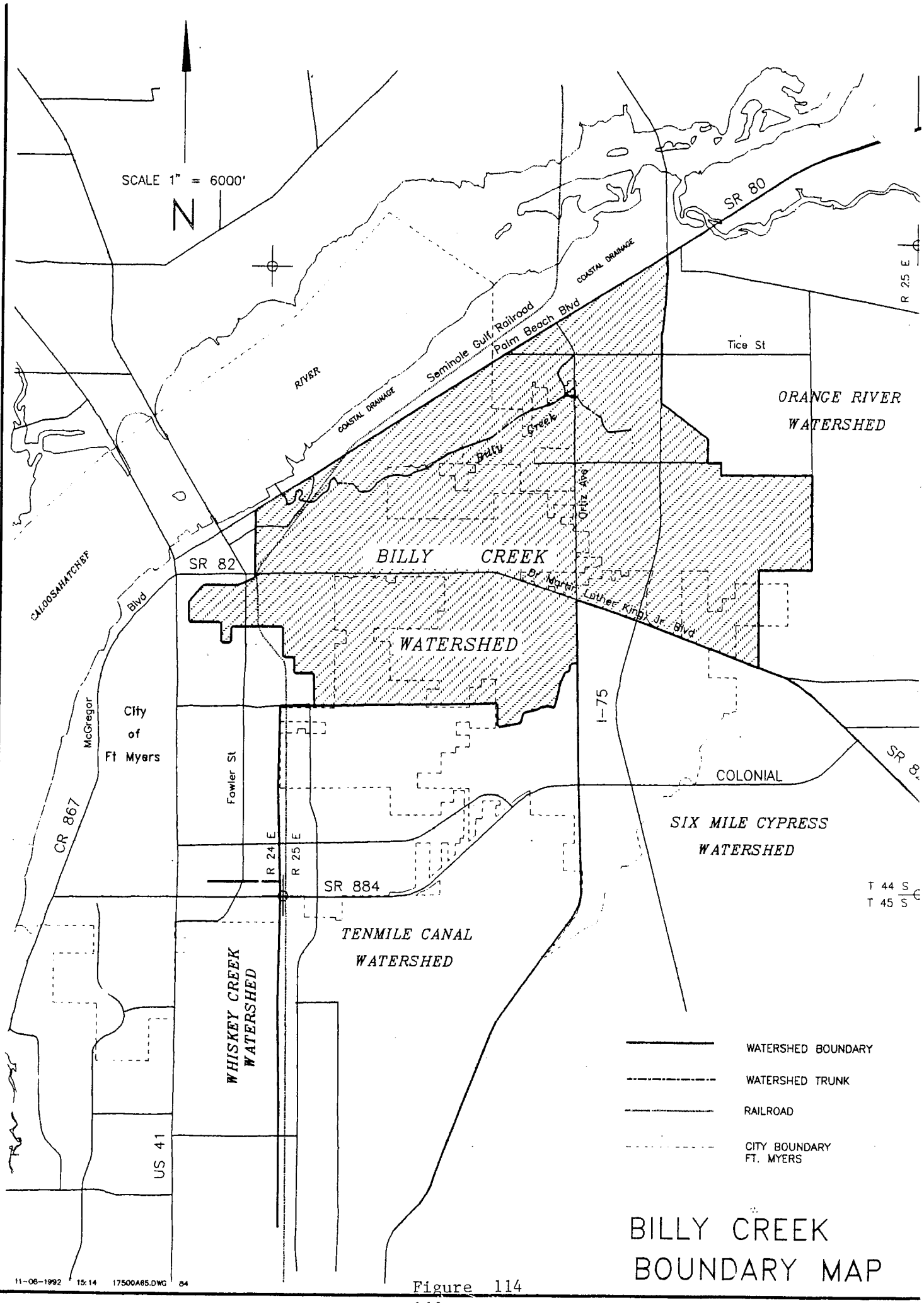

SCALE 1" = 6000'
N
SR 80
R 25 E
Tice St
Seminole Gulf Railroad
Palm Beach Blvd
COASTAL DRAINAGE
COASTAL DRAINAGE
RIVER
ORANGE RIVER
WATERSHED
Billy Creek
Ortiz Ave
BILLY CREEK
WATERSHED
SR 82
CALOOSAHATCHEE
Blvd
Dr. Martin Luther King, Jr. Blvd
City
of
Ft Myers
McGregor
Fowler St
I-75
COLONIAL
SR 8
CR 867
R 24 E
R 25 E
SR 884
SIX MILE CYPRESS
WATERSHED
T 44 S
T 45 S
TENMILE CANAL
WATERSHED
WHISKEY CREEK
WATERSHED
US 41
WATERSHED BOUNDARY
WATERSHED TRUNK
RAILROAD
CITY BOUNDARY
FT. MYERS
BILLY CREEK
BOUNDARY MAP
11-06-1992 15:14 17500A85.DWG 84

Figure 114

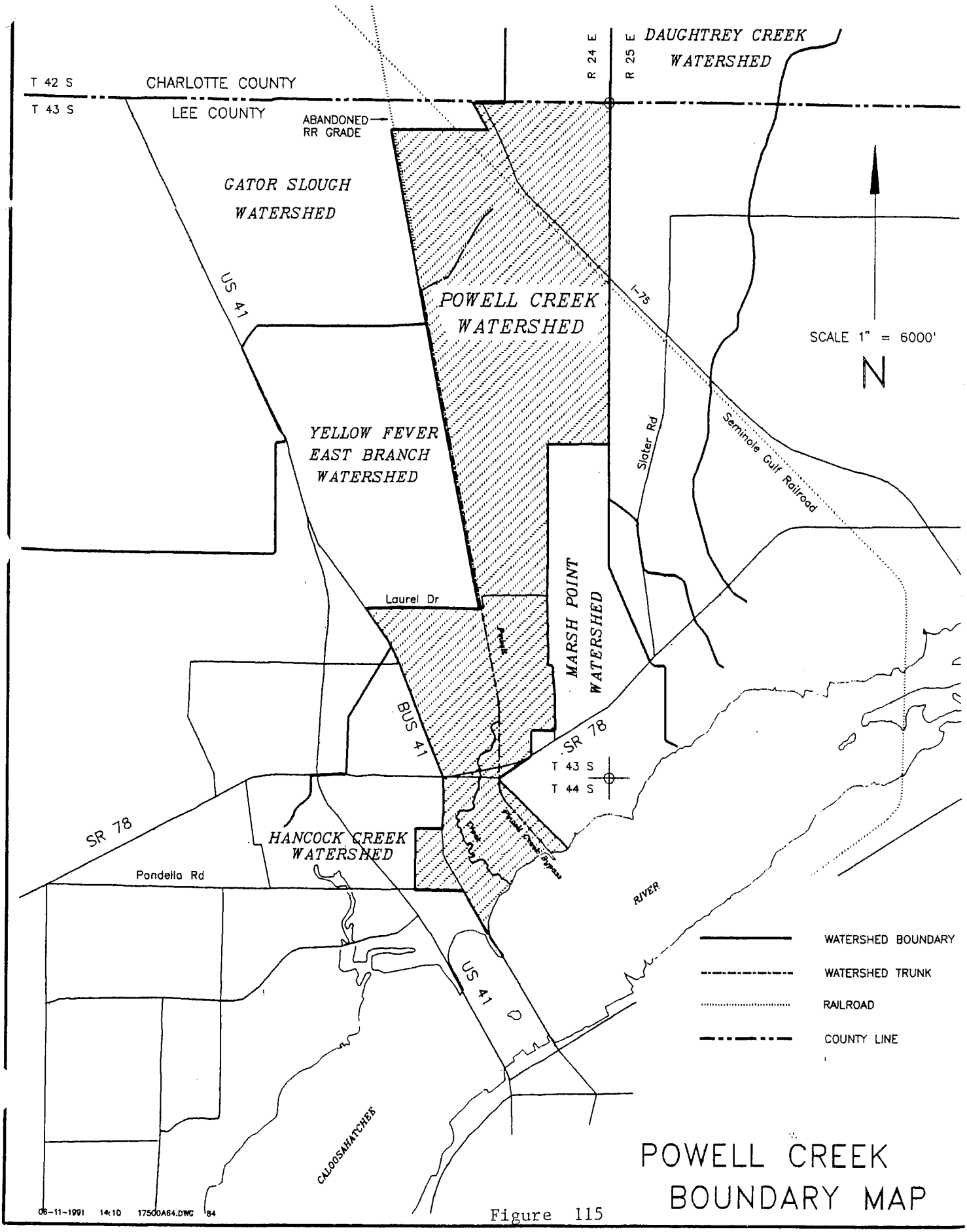
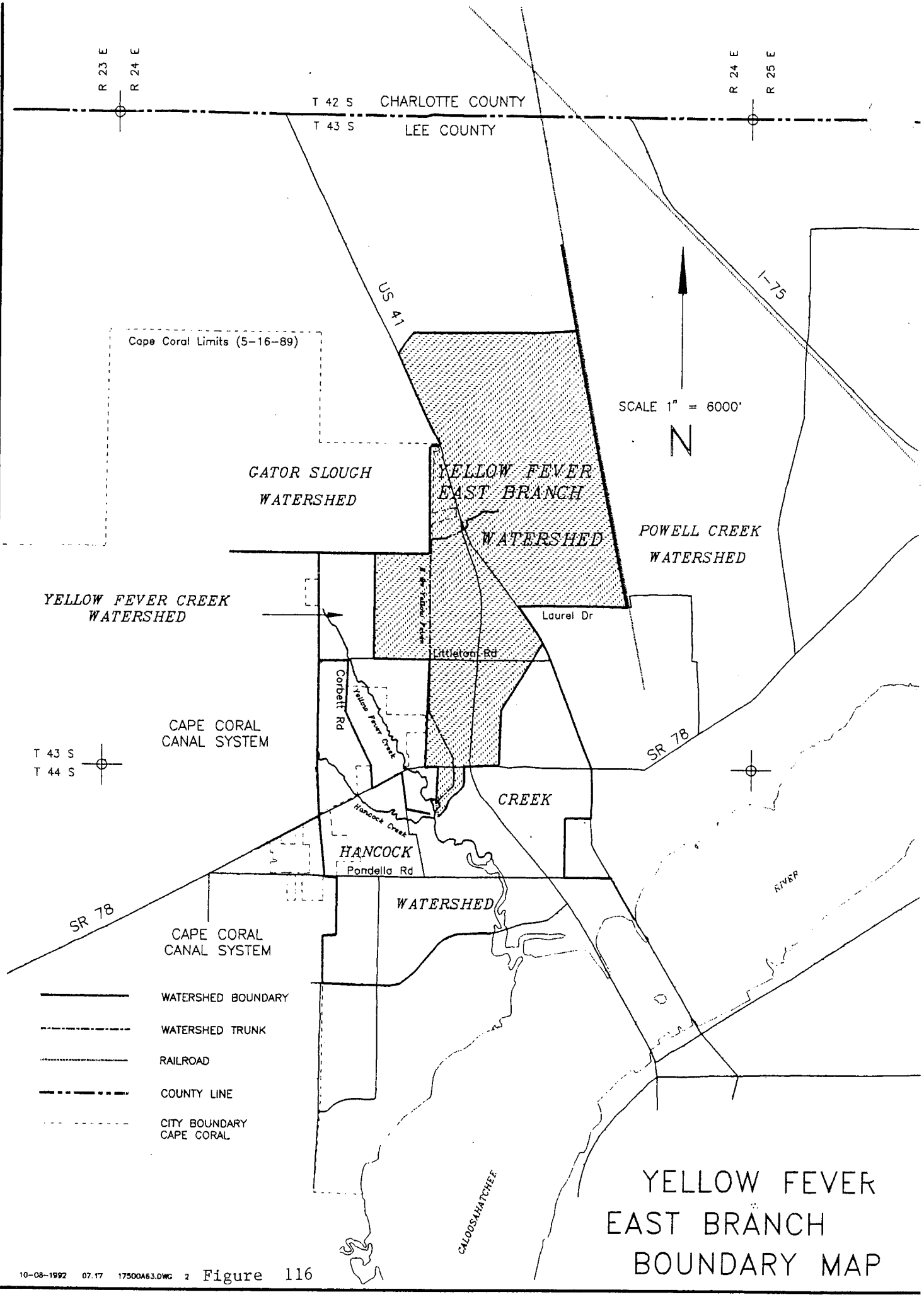
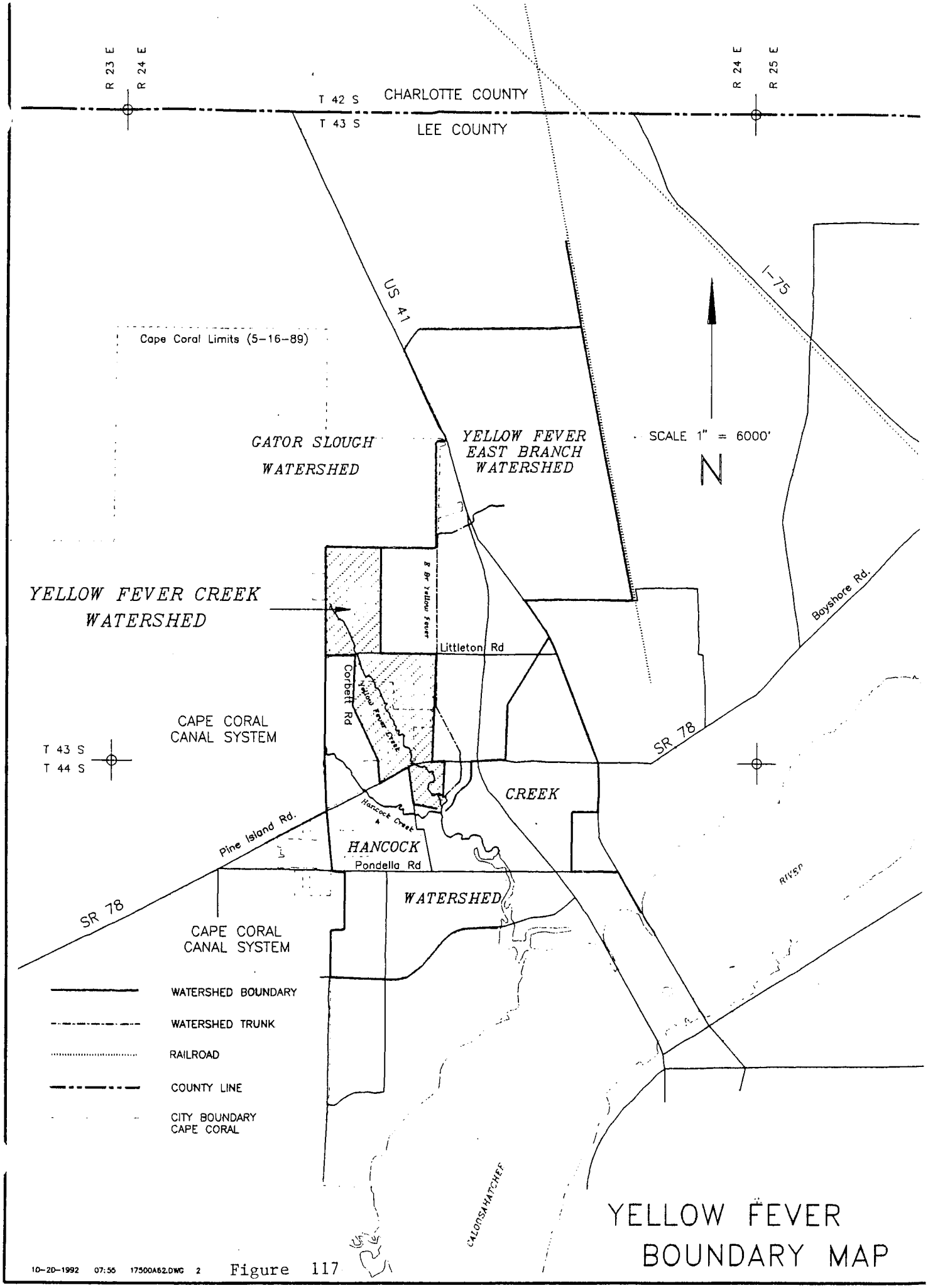

T 42 S
T 43 S
CHARLOTTE COUNTY
LEE COUNTY
ABANDONED RR GRADE
R 24 E
R 25 E
DAUGHTREY CREEK WATERSHED
GATOR SLOUGH WATERSHED
US 41
POWELL CREEK WATERSHED
I-75
SCALE 1" = 6000'
N
YELLOW FEVER EAST BRANCH WATERSHED
Slater Rd
Seminole Gulf Railroad
Laurel Dr
MARSH POINT WATERSHED
BUS 41
SR 78
T 43 S
T 44 S
SR 78
HANCOCK CREEK WATERSHED
Pondella Rd
RIVER
US 41
CALOOSAHATCHEE
WATERSHED BOUNDARY
WATERSHED TRUNK
RAILROAD
COUNTY LINE
POWELL CREEK BOUNDARY MAP
06-11-1991 14:10 17500A64.DWG 84

Figure 115



10-08-1992 07.17 17500A63.DWG 2 Figure 116



YELLOW FEVER BOUNDARY MAP

10-20-1992 07:55 17500A62.DWG 2

Figure 117

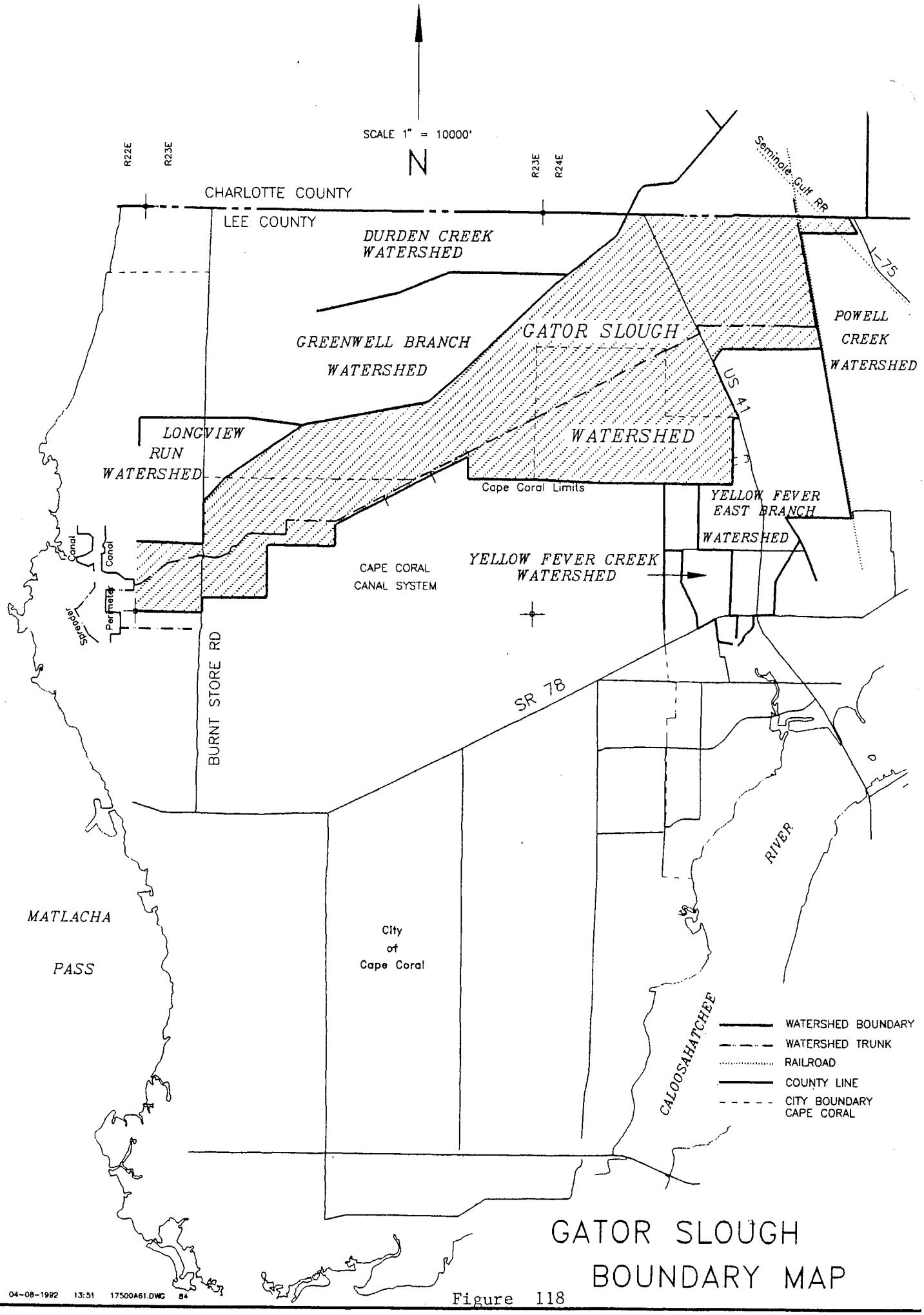
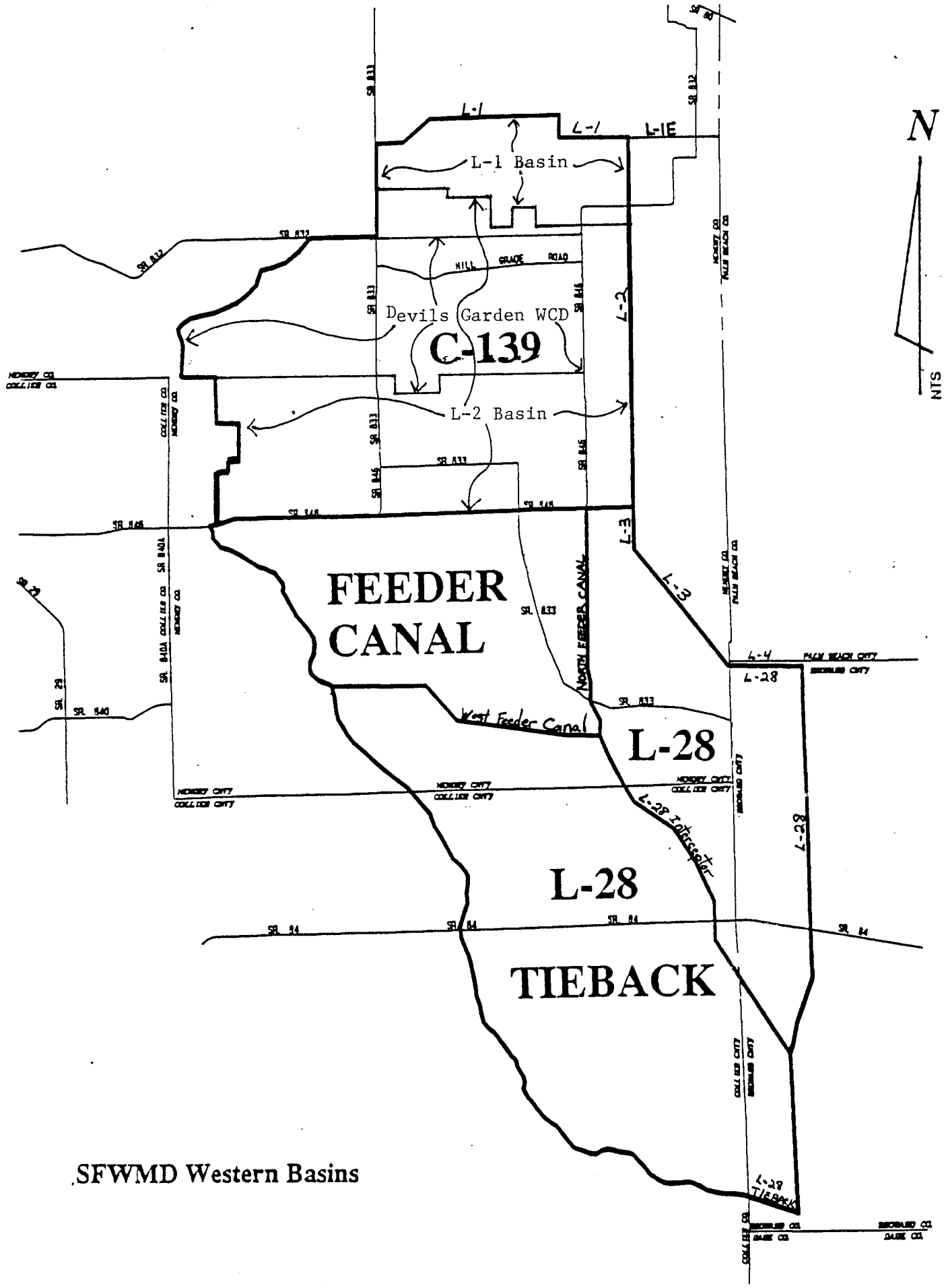
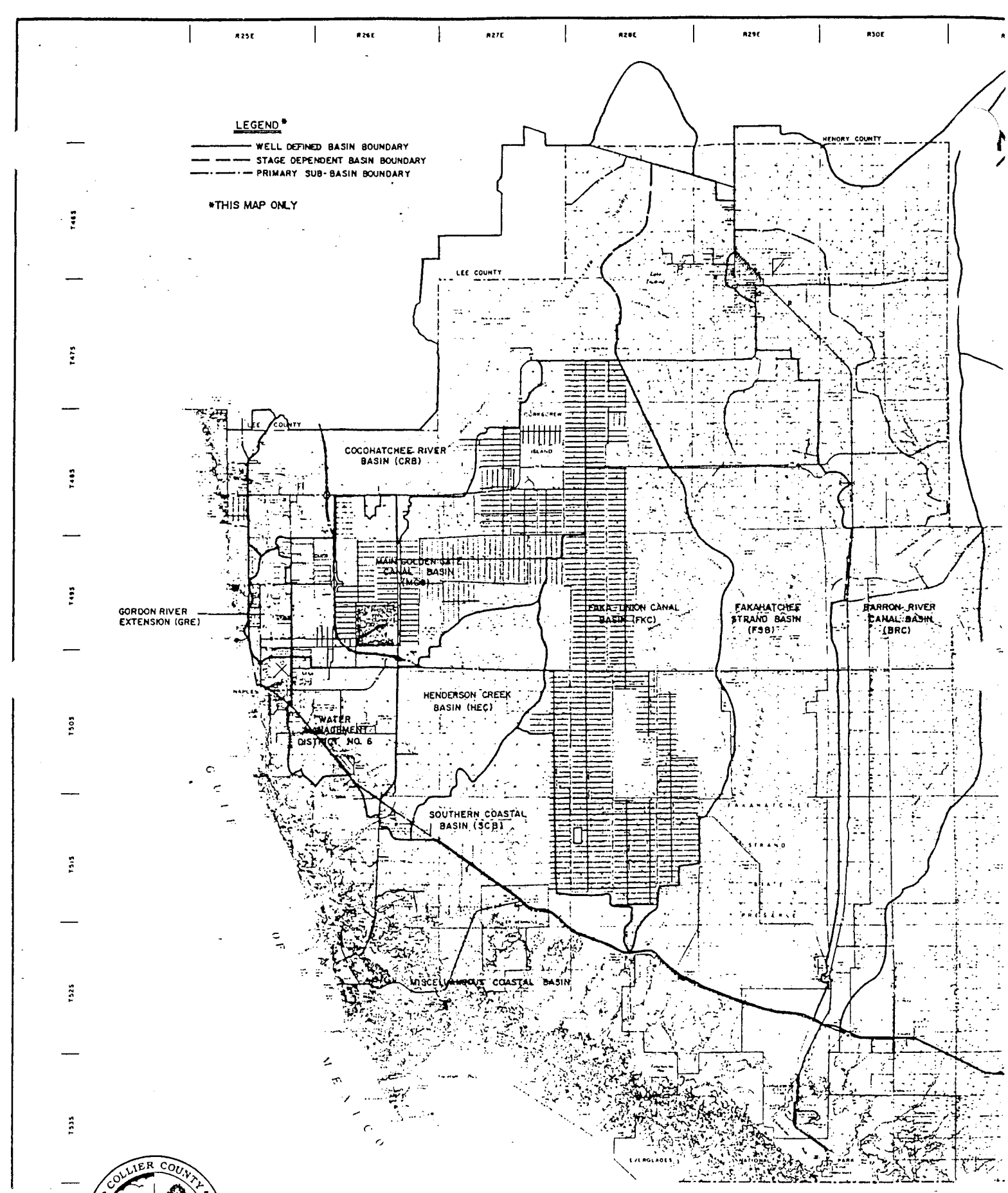

SCALE 1" = 10000'
N
R22E
R23E
R23E
R24E
CHARLOTTE COUNTY
LEE COUNTY
Seminole Gulf RR
I-75
DURDEN CREEK WATERSHED
GREENWELL BRANCH WATERSHED
GATOR SLOUGH WATERSHED
POWELL CREEK WATERSHED
US 41
LONGVIEW RUN WATERSHED
Cape Coral Limits
YELLOW FEVER EAST BRANCH WATERSHED
YELLOW FEVER CREEK WATERSHED
CAPE CORAL CANAL SYSTEM
Canal
Canal
Spreader
Permeter
BURNT STORE RD
SR 78
RIVER
MATLACHA PASS
City of Cape Coral
CALOOSAHATCHEE
WATERSHED BOUNDARY
WATERSHED TRUNK
RAILROAD
COUNTY LINE
CITY BOUNDARY CAPE CORAL
GATOR SLOUGH BOUNDARY MAP
04-08-1992 13:51 17500A61.DWG 84

Figure 118



SFWMD Western Basins

Figure 119



COLLIER COUNTY STORMWATER MANAGEMENT PROGRAM

Figure 120 Western Collier County Drainage Basins

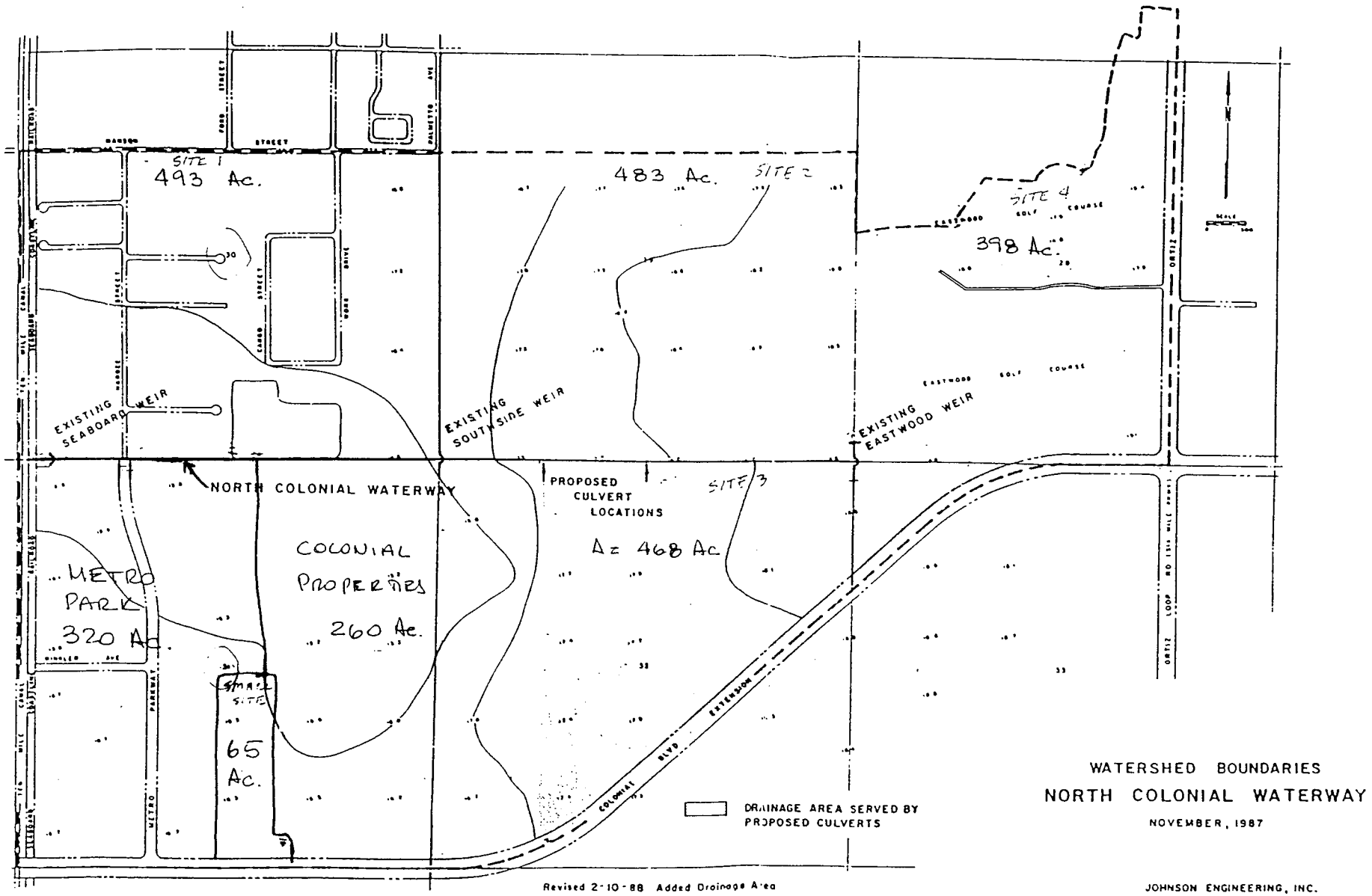


Figure 12/ North Colonial Waterway Drainage Basin

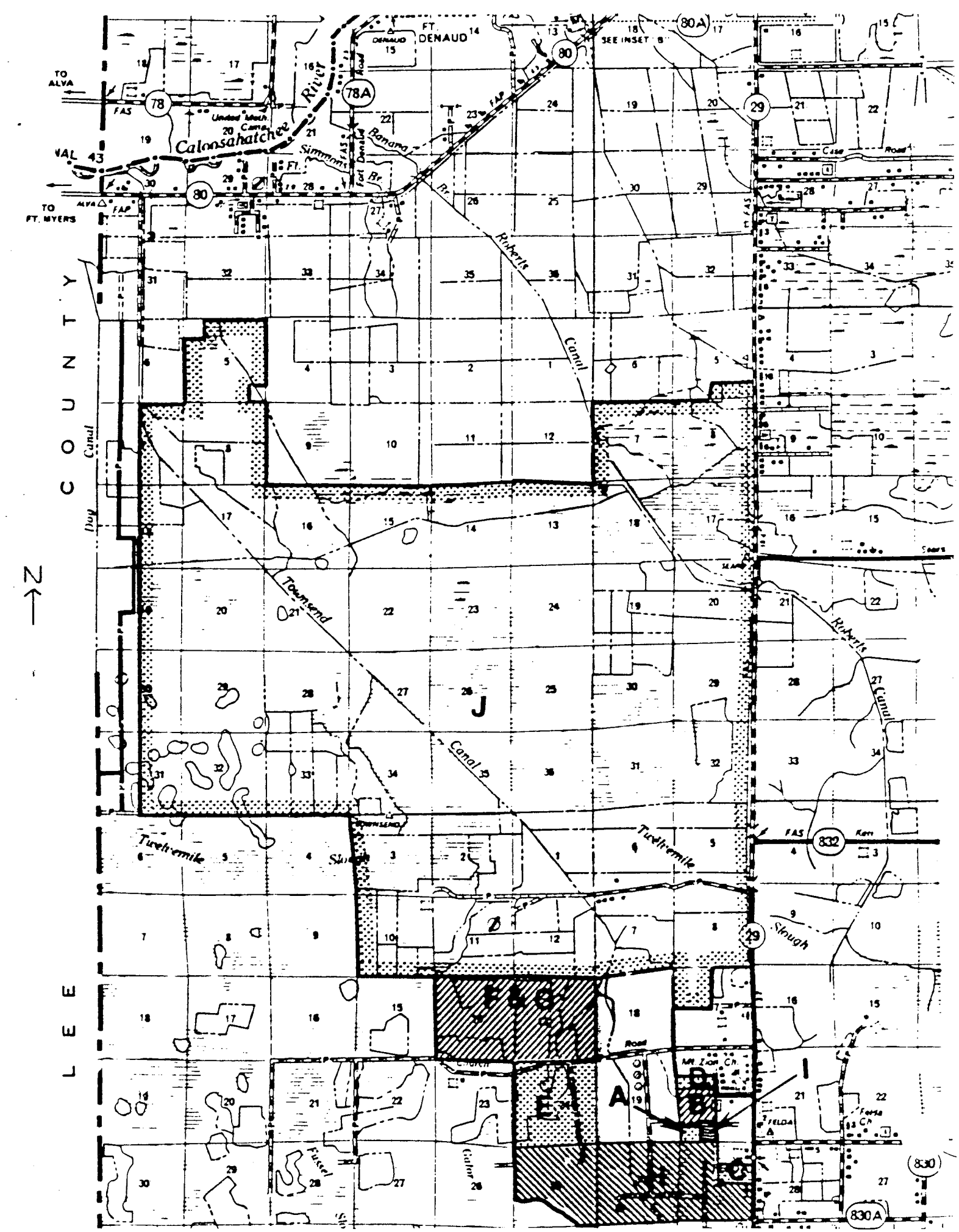
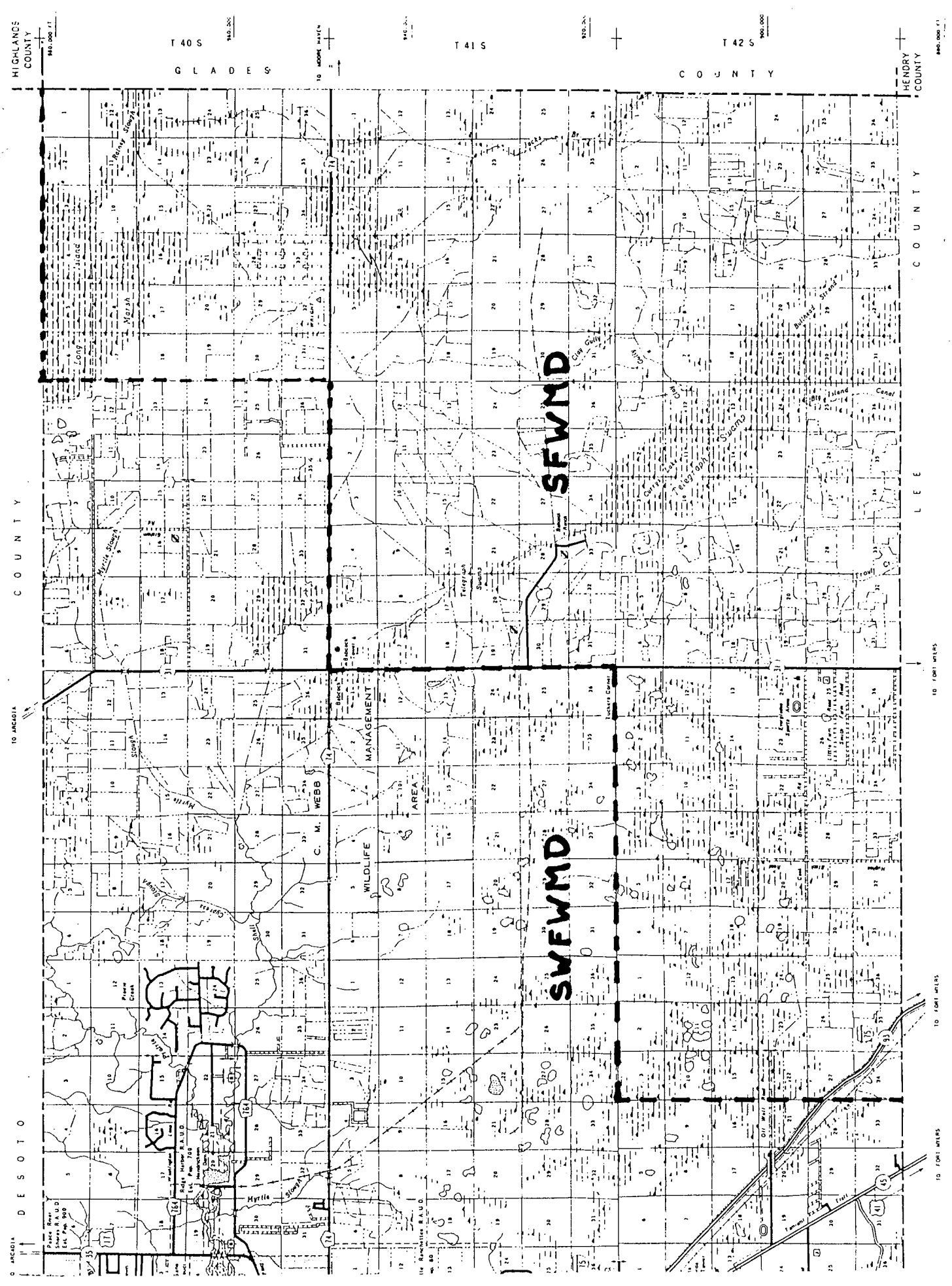


Figure 122 Townsend Canal Drainage Basin


HIGHLANDS COUNTY
T 40 S
T 41 S
T 42 S
GLADES
COUNTY
HENDRY COUNTY
LEE
COUNTY
DESOTO
COUNTY
SFWMD
SWFWMD
C. M. WEBB
WILDLIFE
MANAGEMENT
AREA
Telegraph Swamp
Myrtle Slough
Long Island Marsh
Clay Gully
Bullhead Strand
Big Island Canal
Tucker's Corner
Myrtle Slough
Shell Cypress Slough
Pioneer Creek
Ridge Harbor R.A.U.D.
Peace River Shores R.A.U.D.
Tamiami Trail
TO ARCADIA
TO FORT MYERS
TO MOORE HAVEN

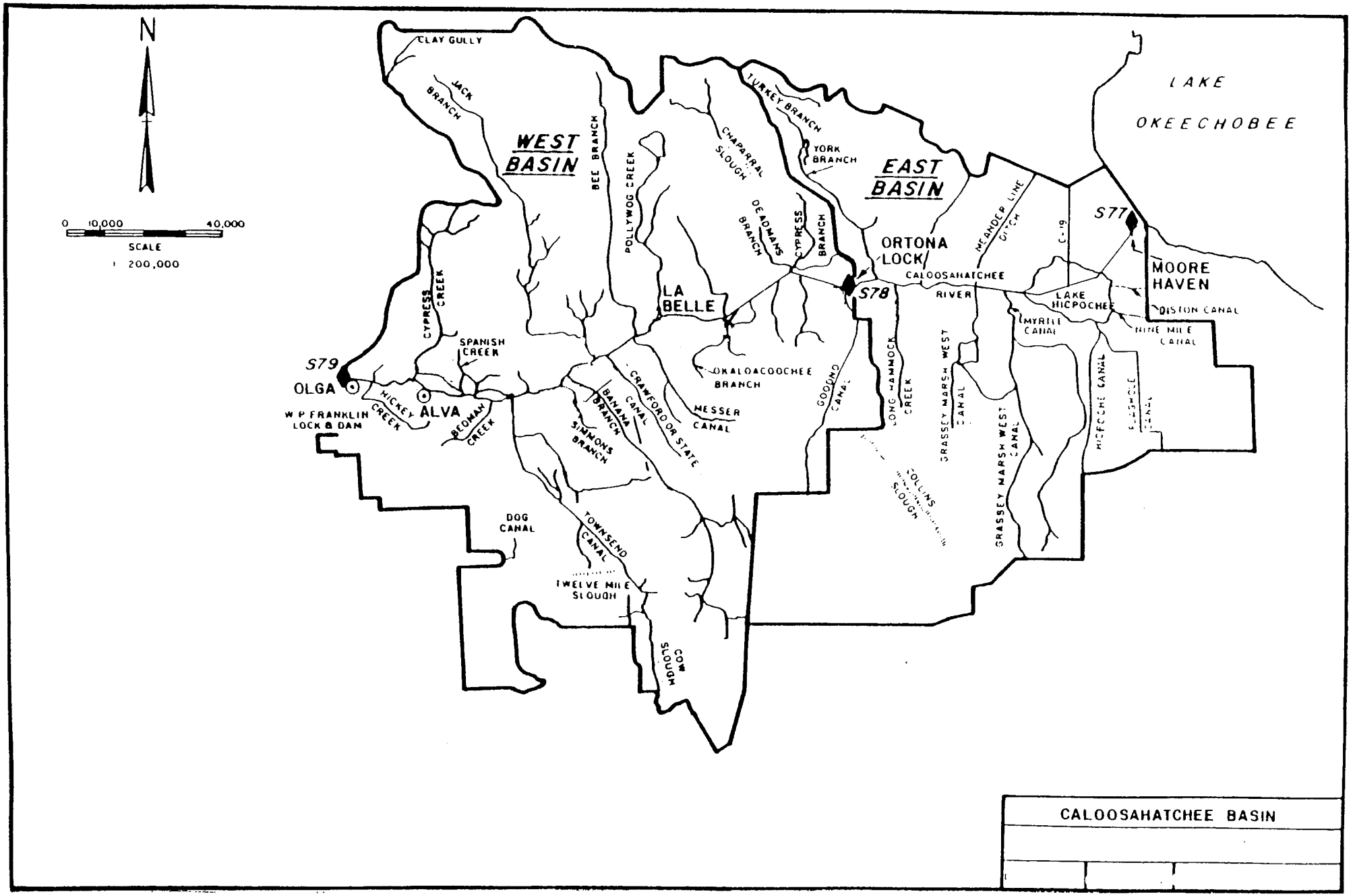


Figure 24 Location of Caloosahatchee Basin

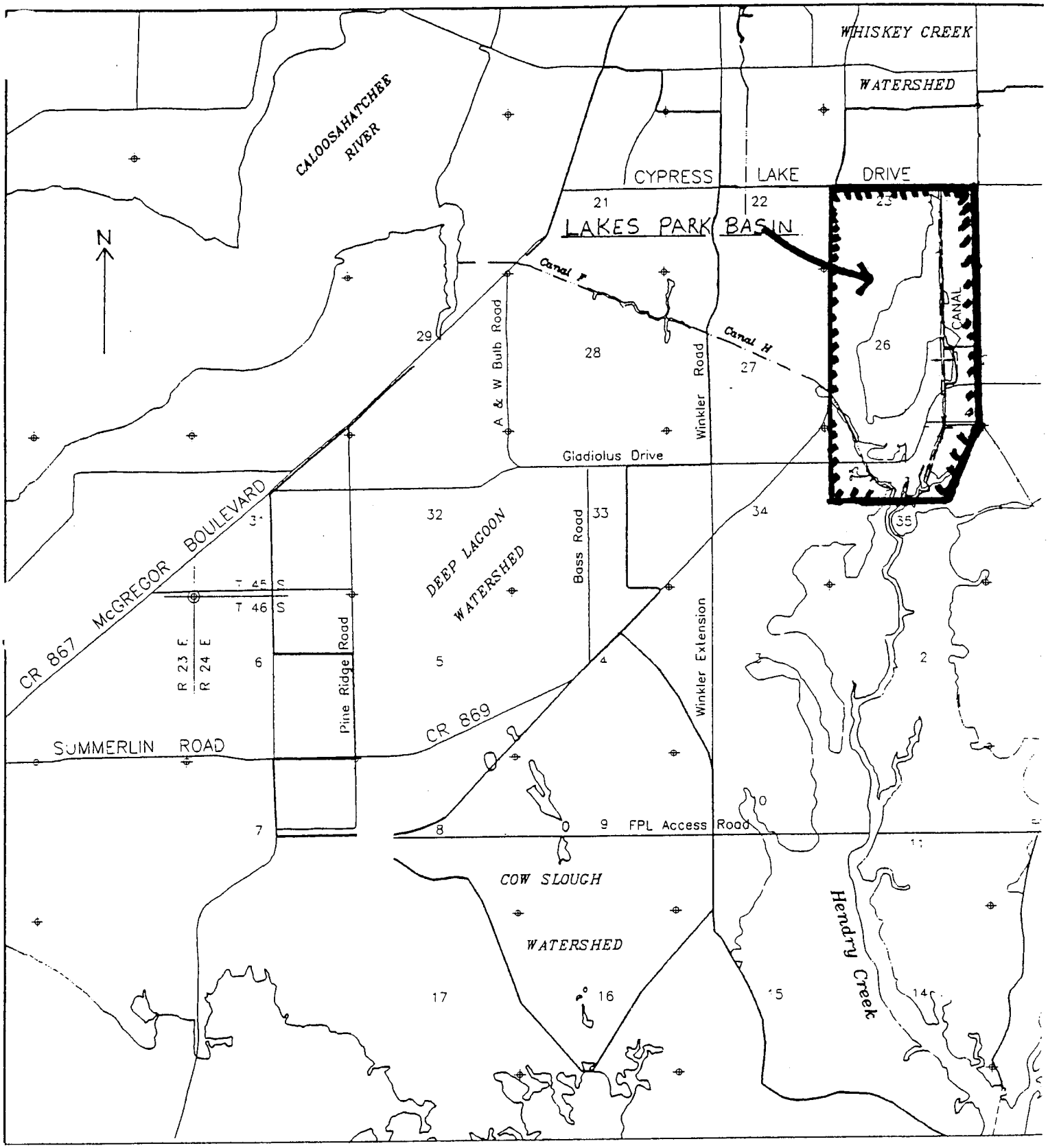


Figure 125 Location Of Lakes Park Basin

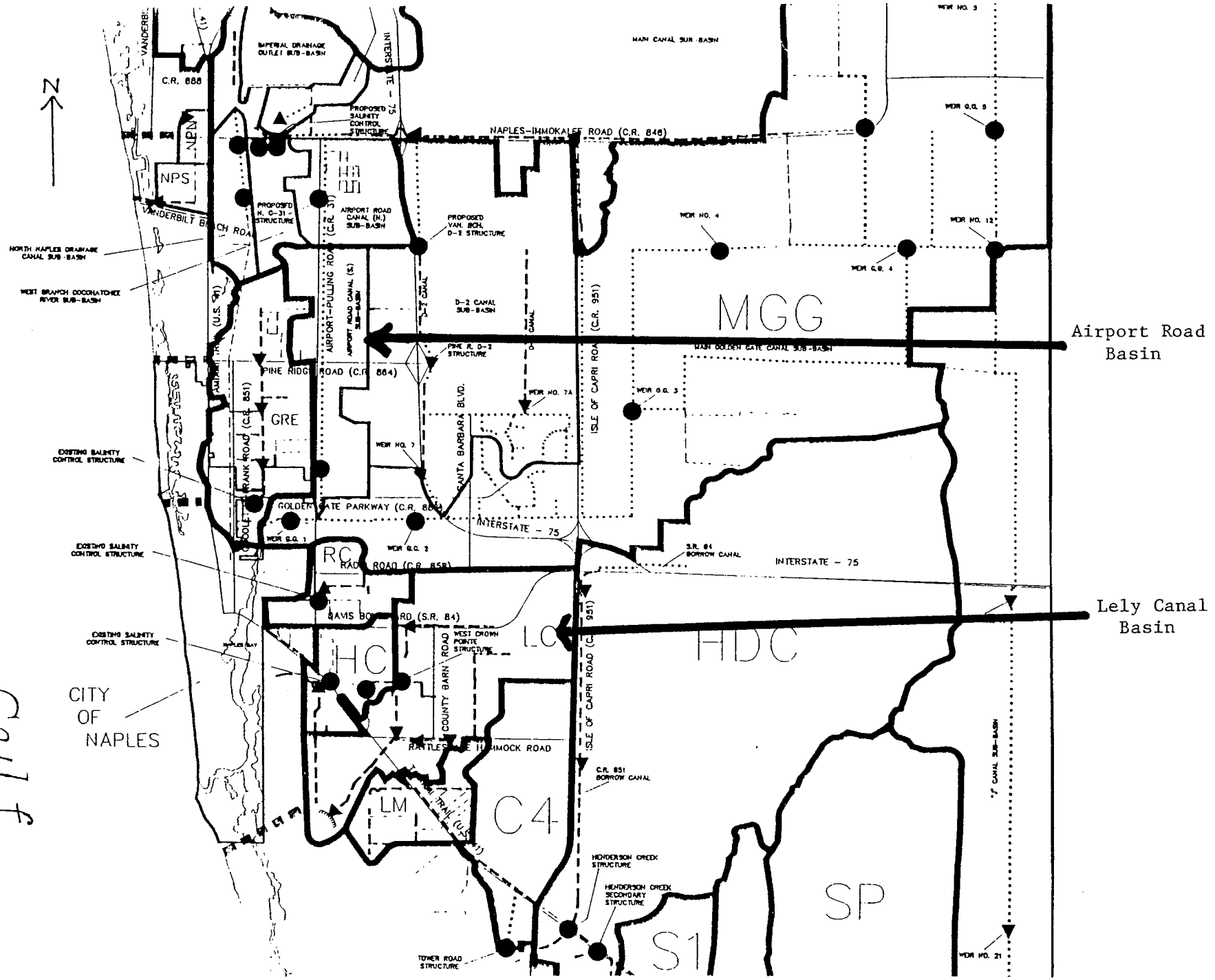


Figure 126 Location Of Airport Canal B[illegible] And Lely Canal Basin

Sections S - T
Under Construction

S - Design Example Agriculture
T - Design Example Major Impoundment

U. DESIGN EXAMPLE

FOR

EXFILTRATION TRENCH

I. Given

A. Proposed acreages

1.	Lake	=	1 ac
2.	Roofs	=	5 ac
3.	Other paving	=	8 ac
4.	Green areas	=	2 ac
5.	Total	=	16 ac

B. Other

1. An existing canal, along one border of the property, will be the receiving body.

2. The receiving body regulated stage is elevation 8.0' NGVD.

3. The existing average site grade is about elevation 17' NGVD.

4. The site soil drains well. Three percolation tests yield an average hydraulic conductivity of

1.2×10^{-4} cfs/(sq ft - ft of head).

5. Average wet season water table elevation is 8.25' NGVD.

6. Current zoning is "Commerical".

II. Design Criteria

A. Quality

1. If a wet detention system, then whichever is the greater of

   a. The first inch of runoff from the entire site.

   b. The amount of 2.5 in. times the percentage of impervious.

2. If a dry detention system, then 75% of the volume required for wet detention.

3. If a retention system, then 50% of the volume required.

4. Because the site zoning is "Commercial", at least 0.5 in. of dry detention or retention pretreatment shall be provided.

5. Any detention system shall be designed to discharge not more than 0.5 in. of the detained volume per day. A V-shaped configuration is desirable.

B. Quantity

1. The allowable discharge for the basin in which this project is located is 50 csm for a 25-year 3-day storm.

2. First floors are desired to be no lower than elevation 18.5' NGVD.

3. Parking areas.

a. Are proposed to range in elevation from 16.0' to 17.5' NGVD.

b. Shall be at least 2 ft above the control elevation.

III. Computations

A. Quality

1. Compute the first inch of runoff from the entire developed site.

= 1 in. x 16 ac x 1 ft/12 in.

= 1.3 ac-ft for the first inch of runoff.

2. Compute 2.5 in. times the percentage of imperviousness.

a. Site area, for water quality pervious/impervious calculation only

= Total project - (lake + roof)

= 16 ac - (1 ac + 5 ac)

= 10 ac site area, for water quality pervious/impervious.

b. Impervious area, for water quality pervious/impervious calculations only

= (Site area for water quality pervious/impervious) - pervious

= 10 ac - 2 ac

= 8 ac impervious area, for water quality pervious/impervious.

c. Percentage of imperviousness for water quality.

= Impervious area for water quality x 100%
Site area for water quality

= (8 ac/10 ac) x 100%

= 80% impervious

d. For 2.5 in. times the percentage impervious

= 2.5 in. x 0.80

= 2.00 in. to be treated

e. Compute volume required for quality detention

= inches to be treated x (total site - lake)

= 2.00 in. x (16 ac - 1 ac) x 1 ft/12 in.

= 2.00 in. x 15 ac x 1 ft/12 in.

= 2.5 ac-ft required detention storage

3. Since the 2.5 ac-ft are greater than the 1.3 ac-ft computed for the first inch of runoff, the volume of 2.5 ac-ft controls. (The system proposed is wet detention, so no volume reductions are possible.)

4. Because this is a project on commercial zoned land, 0.5 in. of dry detention or retention pretreatment must be provided.

= 0.5 in. x (total site - lake)

= 0.5 in. x (16 ac - 1 ac) x 1 ft/12 in.

= 0.6 ac-ft required for pretreatment

5. Compute credit for placing some system inlets in grassed swales.

a. Given:

i. Each inlet in a grassed swale drains about 0.75 acre.

ii. A typical grassed swale will consist of an area about 15 ft long and 5 ft wide. The inlet will be considered a negligible part of the area.

iii. No other pervious areas drain into the grassed swale.

b. Compute ratio of impervious to pervious area.

i. Pervious area

= 15 ft x 5 ft

= 75 sq ft pervious area.

ii. Impervious area

= 0.75 ac x 43,560 sq ft/ac

= 32,670 sq ft impervious area.

iii. Compute Impervious : Pervious ratio

= 32,670 sq ft : 75 sq ft

= 436:1

A ratio of 436:1results in negligible credit.

6. It is proposed that the dry pretreatment be accomplished totally by exfiltration trench, and to utilize the lake for aesthetics and wet detention. Since the system should be designed to maintain the water table, and the average site grade is at elevation 17' NGVD, the control elevation shall be 11.0' NGVD. (Note: average wet season water table elevation is 8.25' NGVD.)

7. Compute volume to be treated in the lake

= Total Quality Volume - Dry Pretreatment Volume

= 2.5 ac-ft - 0.6 ac-ft

= 1.9 ac-ft to be detained in the lake.

B. Trench

1. Design Criteria

a. A minimum of 2 ft of paving and backfill will be required above the trench.

b. Minimum parking area elevation is 16.0' NGVD.

c. Trench width shall be 3 ft.

d. Since control elevation is 11.0' NGVD and average wet season water table is 8.25' NGVD, assume the water table in the vicinity of the trench, once the project is built, to be at elevation 10.5' NGVD.

e. For trench to be considered dry, the average wet season water table must be no higher than the invert of the trench pipe. For this system, the trench bed will extend down to elevation 11' NGVD. The pipe invert will be at elevation 12' NGVD.

f. A weir must be installed at the downstream end of the trench system, both to create true retention and to establish the value of H_2. The weir crest must be no lower than the top of the trench pipe.

The weir crest elevation will be 16.0' NGVD.

2. Compute trench length

a. $L = V/(K(H_2W + 2H_2Du - Du^2 + 2H_2D_s) + (1.39 \times 10^{-4})WDu)$

L = Length of trench required (feet)

V = Volume to be exfiltrated (ac-in.)

W = Trench width (feet)

K = Hydraulic conductivity (cfs/sq ft - ft head)

H_2 = Depth to water table (feet)

Du = Non-saturated trench depth (feet)

D_s = Saturated trench depth (feet)

b. In this project, L is to be determined

V = 0.6 ac-ft = 7.2 ac-in.

W = 3 ft

K = 1.2×10^{-4} cfs/(sq ft - ft of head)

*H_2 = 5 ft

**Du = 3 ft

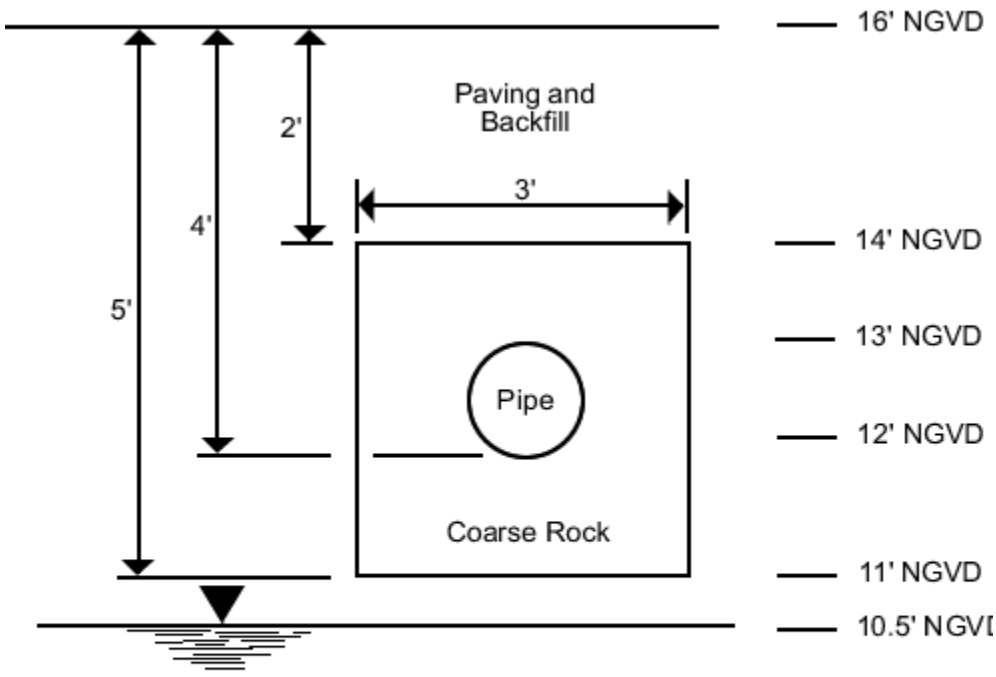
D_s = 0

*H_2 can extend no lower than the trench bottom.

**Du is the entire trench depth, from elevations 11 to 14' NGVD, because the water table is below the trench bottom.

c. $$L = \frac{7.2}{1.2\times10^{-4}\times((5\times3)+(2\times5\times3)-(3\times3)+(2\times5\times0))+((1.39\times10^{-4})\times3\times3)}$$

= 1,290, say 1,300 l.f. of trench for dry retention.



CROSS SECTION OF PROPOSED EXFILTRATION TRENCH

Figure U-1

C. Other considerations

The proposed lake-trench system should be checked to be certain it provides adequate storage for road and parking lot protection, can meet design storm discharge criteria, and can provide adequate floor protection. This would include a control structure on the lake discharge route.

V. DESIGN EXAMPLE

FOR

FLOOD PLAIN STORAGE COMPENSATION

The following design example is not intended to serve as a definitive analysis in situations where potential impacts to a floodplain area are considered. In addition to the basic calculation of runoff volume from a 100-year 3-day rainfall event and the on-site stage relative to the floodplain stage, other significant resource issues must be considered.

The impact on conveyance of flows in a floodplain is not covered in this example, but must be considered in the design of a particular surface water management system.

In addition, if a volume of runoff is proposed to be detained in a developed portion of a site, consideration must be given to the timing of the contribution of runoff to the floodplain from a project control structure. In many cases, determining that the on-site runoff volume can be detained for a period of time sufficient to protect the floodplain, while at the same time providing on-site flood protection, will be difficult.

The most straightforward approach to demonstrating that adverse impacts to a floodplain will not result, is to compensate for fill in the floodplain by creating storage accessible to the floodplain in another part of the project area. This can be accomplished by excavation, equivalent to the fill volume, between the water table and existing ground. Opportunities for excavation within the floodplain will be constrained by other resource considerations, such as wetland preservation.

I. General

In paragraph 3.6 of the *Applicant's Handbook Volume II*, it is stated "No net encroachment into the floodplain, between the average wet season water table and that encompassed by the 100 year event, which will adversely affect the existing rights of others, will be allowed." With regard to runoff storage, this means the volume of useful storage available to the stream shall not be decreased as a result of the proposed development.

It should be noted that this policy is based on the assumption that flood plain conveyance can also be maintained, and any additional considerations, such as wetlands preservation, are not a complicating factor.

II. "Exporter" or "Importer"

A. To begin the analysis, there are three values which must be computed:

1. Site predevelopment 100-year 3-day storm runoff volume.

2. Site predevelopment storage available to the basin during the 100-year flood.

3. The difference between items 1 and 2 above.

B. If the difference is positive (runoff volume is larger than available storage), then the project site is contributing runoff to the basin. Such a site is called an <u>exporter</u> of basin runoff.

C. Example: A basin runoff volume exporter

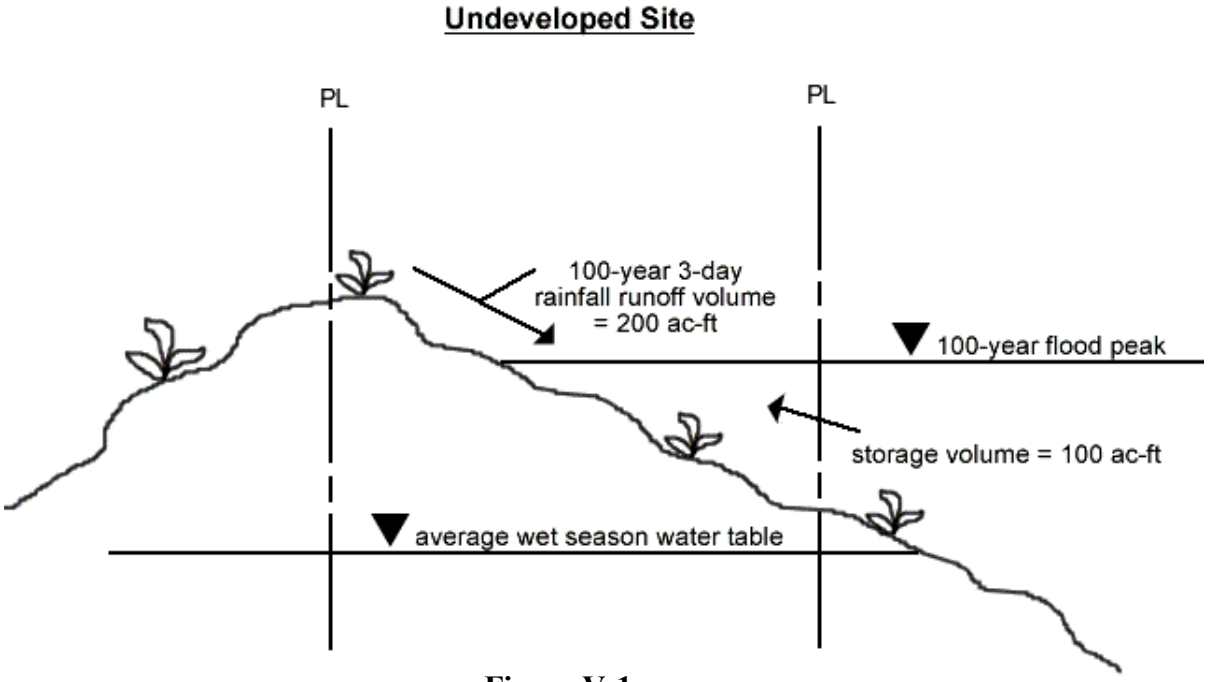


Figure V-1

1. First, check to see if the site is an exporter or importer:

   (Site predevelopment runoff volume) - (Site predevelopment storage available to the stream)

   = (200 ac-ft) - (100 ac-ft)

   = + 100 ac-ft.

   The volume difference is positive; the undeveloped site is indeed a basin runoff volume exporter.

2. For a developed project on this exporting site, the volume exported after development should not exceed that which would have been exported from the undeveloped site.

   The design below meets that criteria.

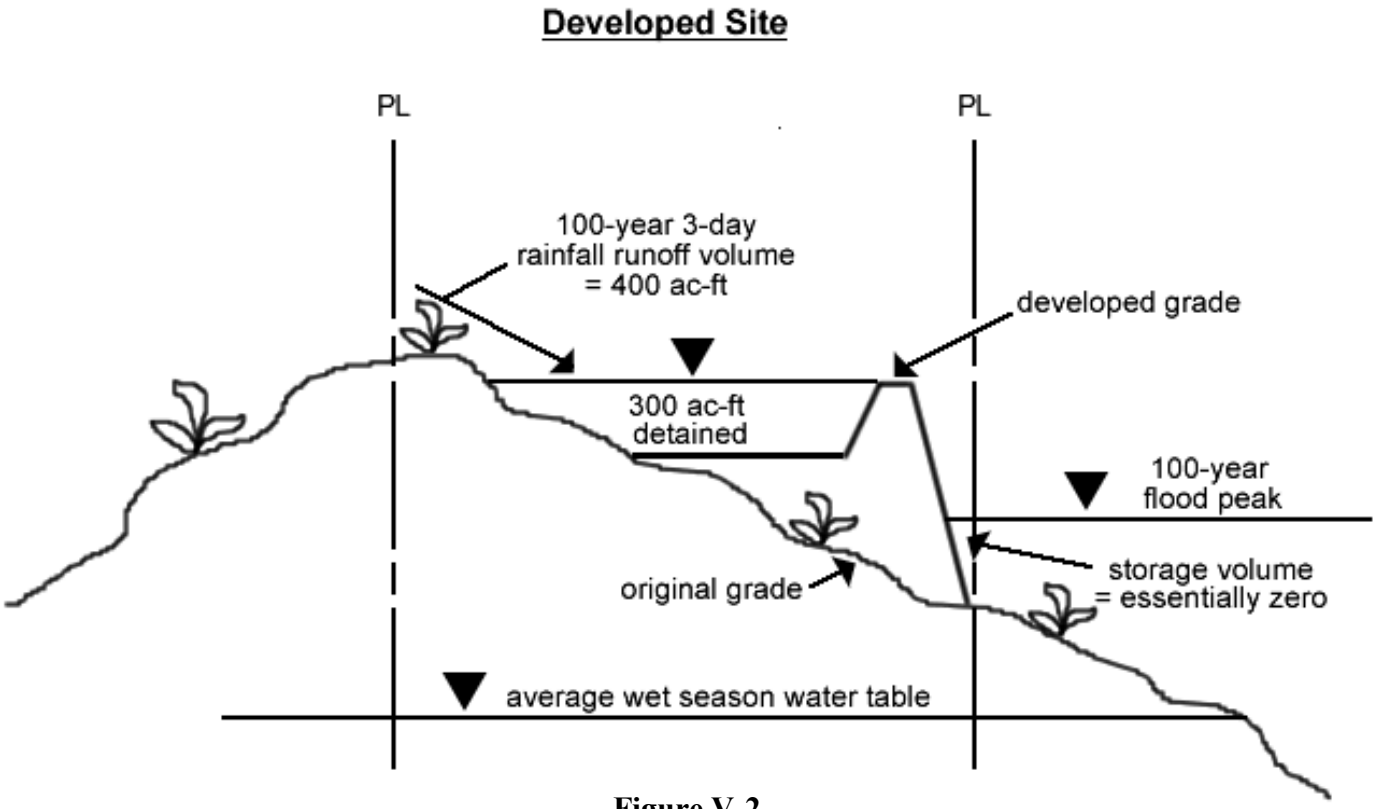


Figure V-2

The site meets criteria because the site grading is such that, while the 100-year 3-day storm runoff volume is 400 ac-ft, the site is storing 300, so the net effect of the project is the same: 100-ac-ft are contributed to the basin; all else from the site is stored on-site.

D. If the difference is negative (runoff volume is less than available storage), then the project site is accepting runoff from the basin and is, therefore, an <u>importer</u> of basin runoff.

E. Example: A basin runoff volume importer.

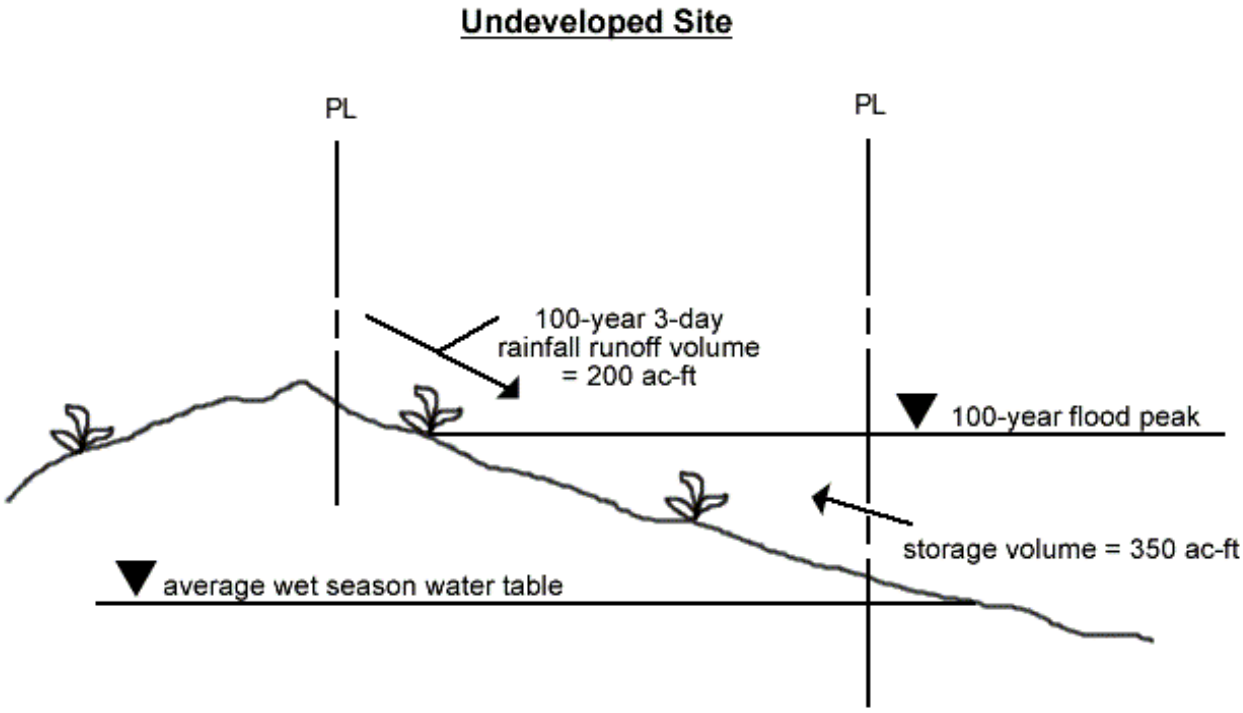


Figure V-3

1. First check to see if the site is an exporter or importer:

   (Site predevelopment runoff volume) - (Site predevelopment storage available to the stream)

   = (200 ac-ft) - (350 ac-ft)

   = <u>-150 ac-ft.</u>

   The volume difference is negative; the undeveloped site is indeed a basin runoff volume <u>importer</u>.

2. Since the 150 ac-ft were available to the basin prior to site development, 150 ac-ft must be available to the basin after development. (Also, as was stated before, any wetlands must be preserved and flood plain conveyance may not be reduced.)

3. The developed site must then be divided into two parts.

   a. One part must be hydraulically contiguous to the water body, and must be capable of storing at least the volume available to the basin prior to development – in this case, 150 ac-ft.

   b. The second part can be developed, but must be graded so that the runoff from the 100-year 3-day rainfall is detained, with no uncontrolled discharge.

4. The design below meets that criteria.

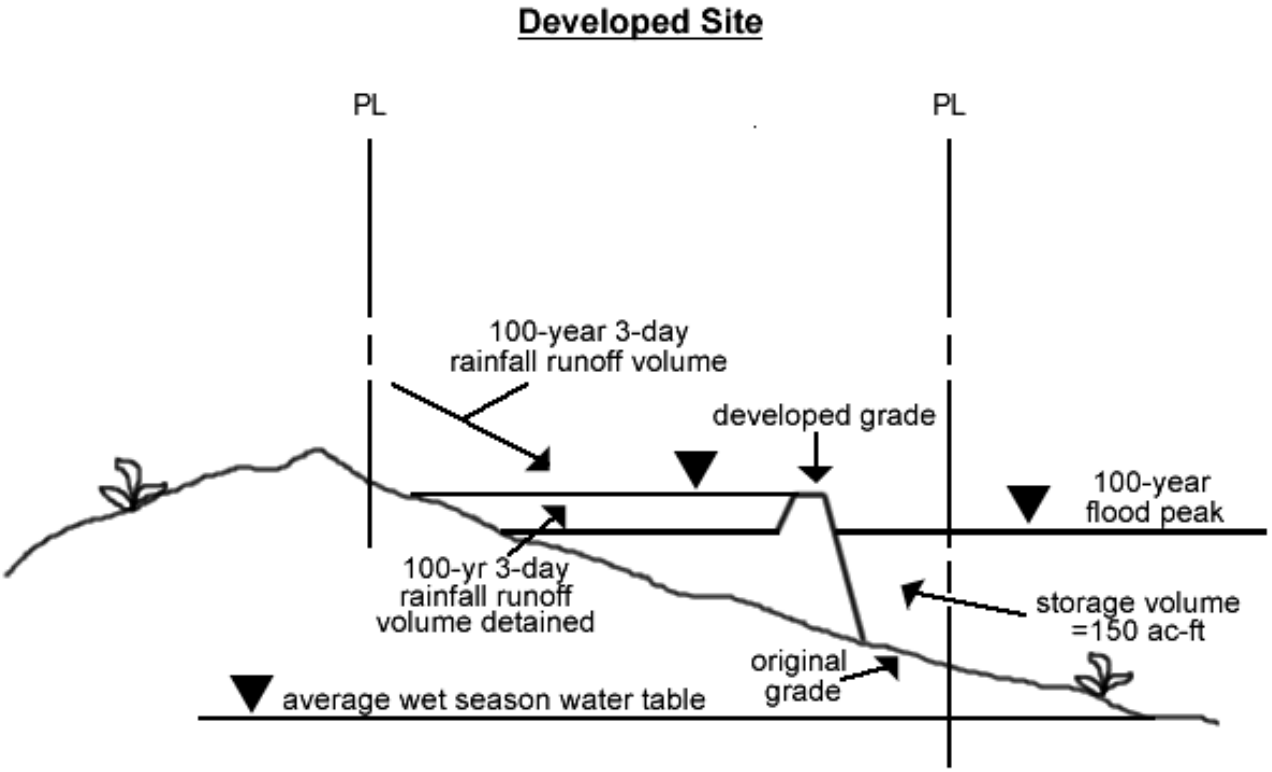


Figure V-4

It is worth noting that in this case, because a substantial amount of the site had served as basin storage, some of the site had to remain as storage area, and the volume of developed-site runoff had to be reduced accordingly.

III. Design Example

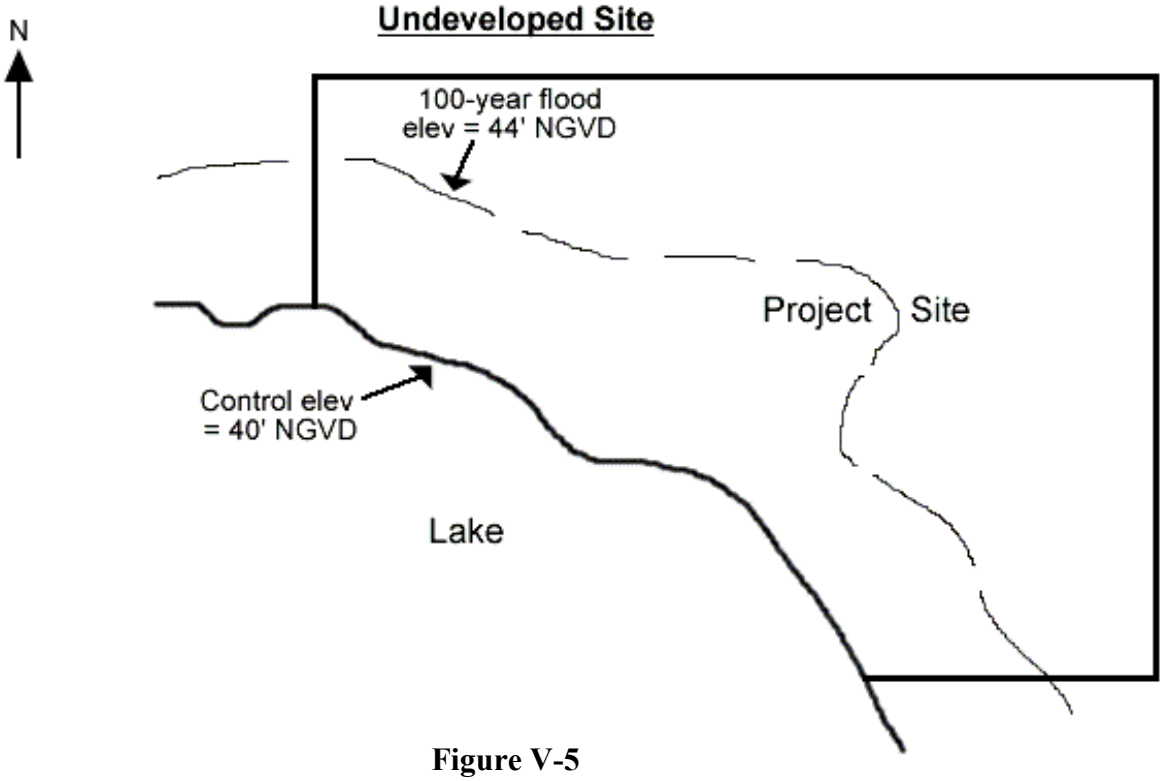


Figure V-5

A. Given:

1. Receiving body control elevation = 40’ NGVD.

2. Receiving body 100-year flood elevation = 44’ NGVD.

3. On-site storage at peak of 100-year flood = 96 ac-ft.

4. The 100-year 3-day rainfall runoff volume = 32 ac-ft.

B. Check if the undeveloped site is a basin runoff volume importer or exporter

(Site predevelopment runoff volume) - (Site predevelopment storage available to the lake)

= (32 ac-ft) - (96 ac-ft)

= -64 ac-ft.

Since the difference is negative, the undeveloped project site is an importer.

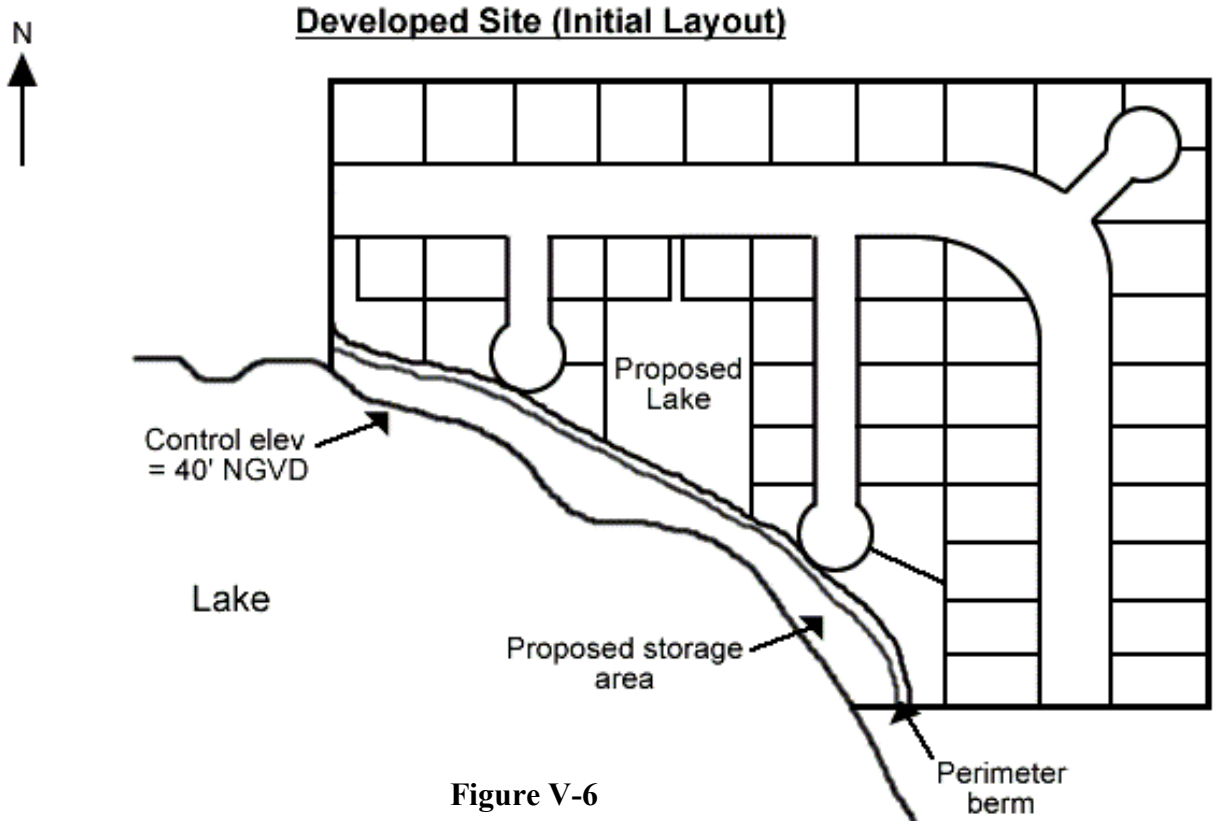


Figure V-6

C. Initial Design Parameters

1. Site is less than 40% impervious.

2. The computed 100-year 3-day runoff volume is 50 ac-ft.

3. Site perimeter grading, lot grading, and the proposed lake configuration are such that 50 ac-ft can be detained above the control elevation of 40' NGVD before discharge into the lake via perimeter grade overtopping occurs. (This is based on zero discharge.)

D. Design Check

1. This import site must store at least 64 ac-ft in the proposed storage area between elevations 40' and 44' NGVD. If there are more than 64 ac-ft, a shifting of the perimeter berm lakeward – resulting in more developable land – could be warranted.

   If there are less than 64 ac-ft available in the proposed storage area, a shifting of the berm land-ward – resulting in less developable land and changed design parameters – would be necessary.

IV. Project Design

Whereas an exporter site merely must store some or all of its own rainfall contribution to the floodplain, an importer site must store all of its own rainfall plus off-site water which flows on to or backs up on to the site. Therefore, an exporter site has the choice of combining on-site storage in the developed area plus storage in undeveloped areas directly connected to the floodplain in any combination which equals the rainfall on the total site.

An importer site does not have the same choice because it must store the off-site generated floodwater in an area directly connected to the floodplain. This includes the rainfall on the undeveloped area. The runoff from the developed area can be stored either in the developed area or in the undeveloped area, however it will usually be more feasible to store all or most of it in the developed area.

The storing of water in separate areas creates two separate 100 year elevations, one the original floodplain elevation and the other the developed site elevation. The design of the separate systems must be done in such a way that the connection between the two is minimal, usually bleeddown only, so the developed area does not drain down to the floodplain area. Projects will require routing calculations to demonstrate that discharge is not excessive during the 100 year event, but still adequate for the discharge design storm and road protection events.

The only ways the floodplain storage area could be reduced in size and the developed area increased are:

1. by intercepting off-site upstream discharge to the floodplain on the developed site. This would cause an additional increase to the 100 year elevation on the developed site.

2. by excavating the undeveloped area down to the average water table elevation, if not in conflict with environmental constraints.

In summary, fill can only be brought into the floodplain from excavation above the water table elsewhere in the floodplain, or by compensation in an amount equal to a volume created by expanding the floodplain through dike removal, etc.

For a fairly level site where average elevations can be used, which is totally in the floodplain, which did not interrupt off-site flows, and which proposed to excavate the undeveloped area down to the average wet season water table (awswt), the maximum percentage of developable area (including on-site water storage area) would equal:

$$\frac{\text{Average existing site elevation - awswt}}{\text{100 year floodplain elevation - awswt}} \times 100\%$$

For the previous example in which the 100 year elevation was 44 and the average water table elevation was 40, if the average site elevation was 42, the maximum percent developable area including proposed lake would be:

$$\frac{42 - 40}{44 - 40} \times 100\% = 50\%$$

W. DESIGN EXAMPLE

FOR

AN INDUSTRIAL SITE

SITE PLAN VIEW
N.T.S.

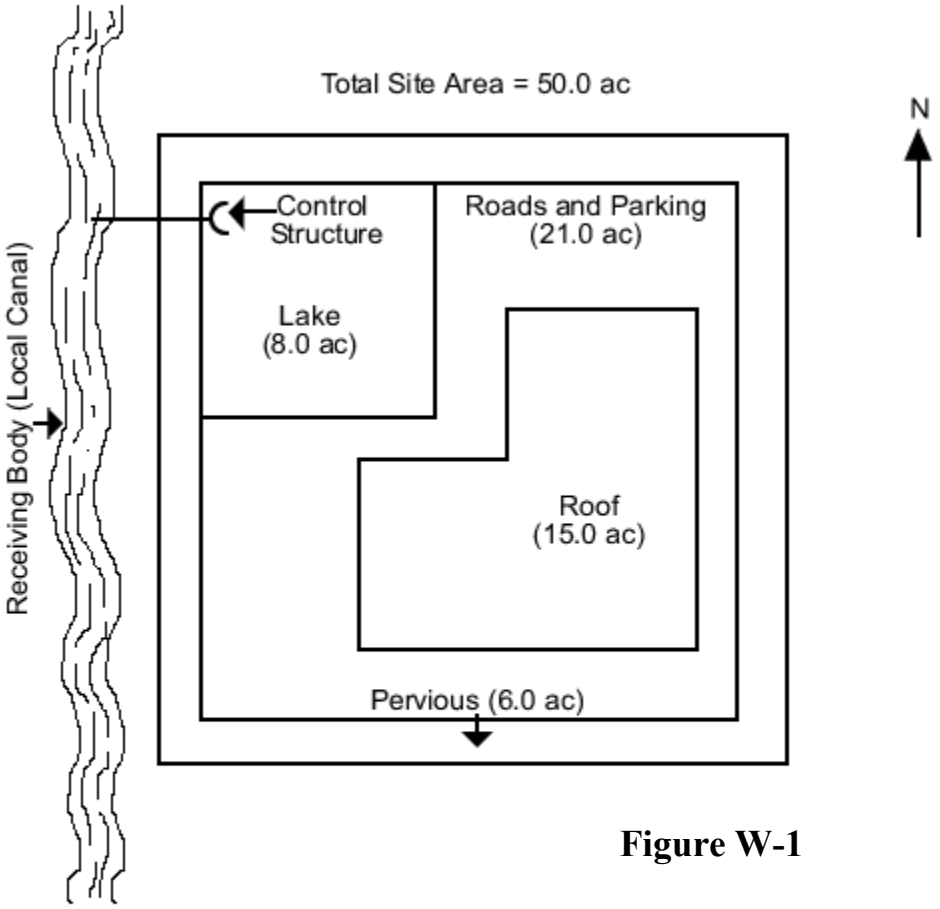


Figure W-1

I. Given

A. Acreages

1. Total = 50.0 ac

2. Impervious

a. Building (roof) = 15.0 ac

b. Roads and parking = 21.0 ac

3. Lake = 8.0 ac

4. Pervious = 6.0 ac

B. Minimum elevations

1. Roads and parking = 14.0' NGVD

2. Floors = 16.5' NGVD

C. Zoning: "Industrial"

D. Allowable discharge: project is in a basin where the peak discharge is established by District criteria as 70 csm. No flows from or onto off-site areas need to be considered.

E. Water level elevations

1. Average wet season water table = 9.0' NGVD

2. Receiving canal water level = 8.5' NGVD

F. Design storm rainfall amounts

1. Roads (10-year 24-hour event) = 11.0 in.

2. Design (25-year 72-hour event) = 17.5 in.

3. Floors (100-year 72-hour event) = 24.5 in.

II. Design Criteria

A. Quality

1. If a wet detention system, then whichever is the greater of

a. The first inch of runoff from the entire site.

b. The amount of 2.5 inches times the percentage of imperviousness.

2. If a dry detention system, then 75% of the volume required for wet detention.

3. If a retention system, then 50% of the volume required.

4. Because the site zoning is "Industrial", at least 0.5 inch of dry detention or retention pretreatment shall be provided.

5. Any detention system shall be designed to discharge not more than 0.5 inch of the detained volume per day. A V-shaped configuration is desirable.

B. Quantity

1. Roads

a. Centerlines are desired to be no lower than elevation 14.0' NGVD.

b. Shall be at least 2 ft above the control elevation.

2. The allowable discharge for the basin in which this project is located is 70 csm for a 25-year 3-day storm.

3. First floors are desired to be no lower than elevation 16.5' NGVD.

III. Computations

A. Quality

1. Compute the first inch of runoff from the developed project:

= 1 in. x 50.0 ac x (1 ft/12 in.)

= <u>4.2 ac-ft</u> for the first inch of runoff.

2. Compute 2.5 inches times the percentage of imperviousness:

a. Site area for water quality pervious/impervious calculations <u>only</u>

= Total project - (water surface + roof)

= 50.0 ac - (8.0 ac + 15.0 ac)

= 50.0 ac - 23.0 ac

= <u>27.0 ac</u> of site area for water quality pervious/impervious.

b. Impervious area for water quality pervious/impervious calculations only

= (Site area for water quality pervious/impervious) - pervious

= 27.0 ac - 6.0 ac

= 21.0 ac of impervious area for water quality pervious/impervious.

c. Percentage of imperviousness for water quality

$$= \frac{\text{Impervious area for water quality}}{\text{Site area for water quality}} \times 100\%$$

= (21.0 ac/27.0 ac) x 100%

= 78% impervious.

d. For 2.5 inches times the percentage impervious

= 2.5 in. x percentage impervious

= 2.5 in. x 0.78

= 1.95 in. to be treated.

e. Compute volume required for quality detention

= inches to be treated x (total site - lake)

= 1.95 in. x (50.0 ac - 8.0 ac) x (1 ft/12 in.)

= 1.95 in. x 42.0 ac x (1 ft/12 in.)

= 6.8 ac-ft required detention storage.

3. Since the 6.8 ac-ft are greater than the 4.2 ac-ft computed for the first inch of runoff, the volume of 6.8 ac-ft controls.

(The system proposed is wet detention, so no volume reductions are possible.)

4. Compute 0.5 inch of pretreatment (which shall include roof areas)

= 0.5 in. x (total site - lake)

= 0.5 in. x (50.0 ac - 8.0 ac) x (1 ft/12 in.)

= 0.5 in. x 42.0 ac x (1 ft/12 in.)

= 1.8 ac-ft required for pretreatment.

This volume is required, regardless of whether dry detention or retention is utilized. It can be considered as available storage for the road, allowable discharge, and minimum floor storms only if it is achieved by a detention system, or exfiltration trench, or if the applicant can demonstrate that the site has excellent soil percolation rates which will remain excellent for an indefinite period of time. It will not be considered as available for storage if it is based on a retention system which relies only on natural percolation and evaporation as the mechanisms for re-achieving a dry state.

For this example, it is assumed that dry retention is achieved through exfiltration trench, the design of which will not be addressed herein.

5. Compute required lake volume

= Total required detention - pretreatment

= 6.8 ac-ft - 1.8 ac-ft

= 5.0 ac-ft required lake volume.

B. Project surface storage

1. Assumptions

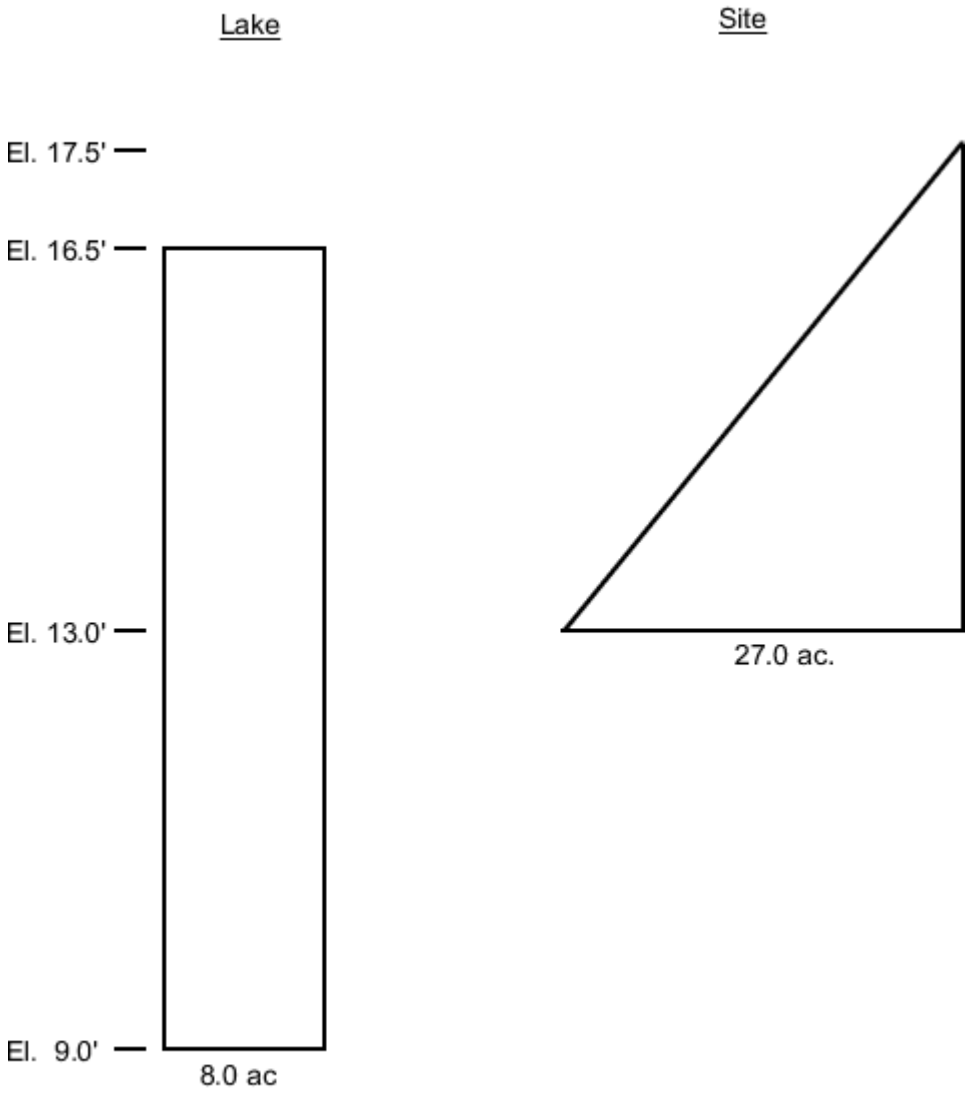
a. Lake storage begins at a control elevation which is the given average wet season water table elevation of 9.0' NGVD.

b. Lake storage is vertical over the 8.0 ac of lake surface area.

c. Site storage is linear, starting with some reaches of roadside swales which will be 1 foot lower than the road centerline. If the minimum road centerline elevation is 14.0' NGVD, the minimum elevation for computing site storage will then be 1 foot lower, or 13.0' NGVD. (Note: There may be isolated small areas at lower elevations, but such spots are not considered to be typical of the general site grading plan, for runoff-storage purposes.)

Some of the site will be graded as much as 1 foot higher than the minimum floor, or up to elevation 17.5' NGVD. Perimeter grading, including road access, will be at least as high as the peak of the 25-year 72-hour (design) storm.

SITE STORAGE DIAGRAMS



2. Develop project stage-storage curve.

Stage (ft NGVD)	Storage		
	Lake (ac-ft)	Site (ac-ft)	Project (ac-ft)
9.0	0	0	0
10.0	8.0 x 1.0 = 8.0	0	8.0
11.0	8.0 x 2.0 = 16.0	0	16.0
12.0	8.0 x 3.0 = 24.0	0	24.0
13.0	8.0 x 4.0 = 32.0	0	32.0
14.0	8.0 x 5.0 = 40.0	((1.0/4.5) x 27.0 ac) x (1.0 ft/2) = 3.0	43.0
15.0	8.0 x 6.0 = 48.0	((2.0/4.5) x 27.0 ac) x (2.0 ft/2) = 12.0	60.0
16.0	8.0 x 7.0 = 56.0	((3.0/4.5) x 27.0 ac) x (3.0 ft/2) = 27.0	83.0
16.5*	8.0 x 7.5 = 60.0	((3.5/4.5) x 27.0 ac) x (3.5 ft/2) = 36.8	96.8

*There is no need to extend the stage-storage curve beyond the minimum floor elevation, since no flooding higher than that is allowed.

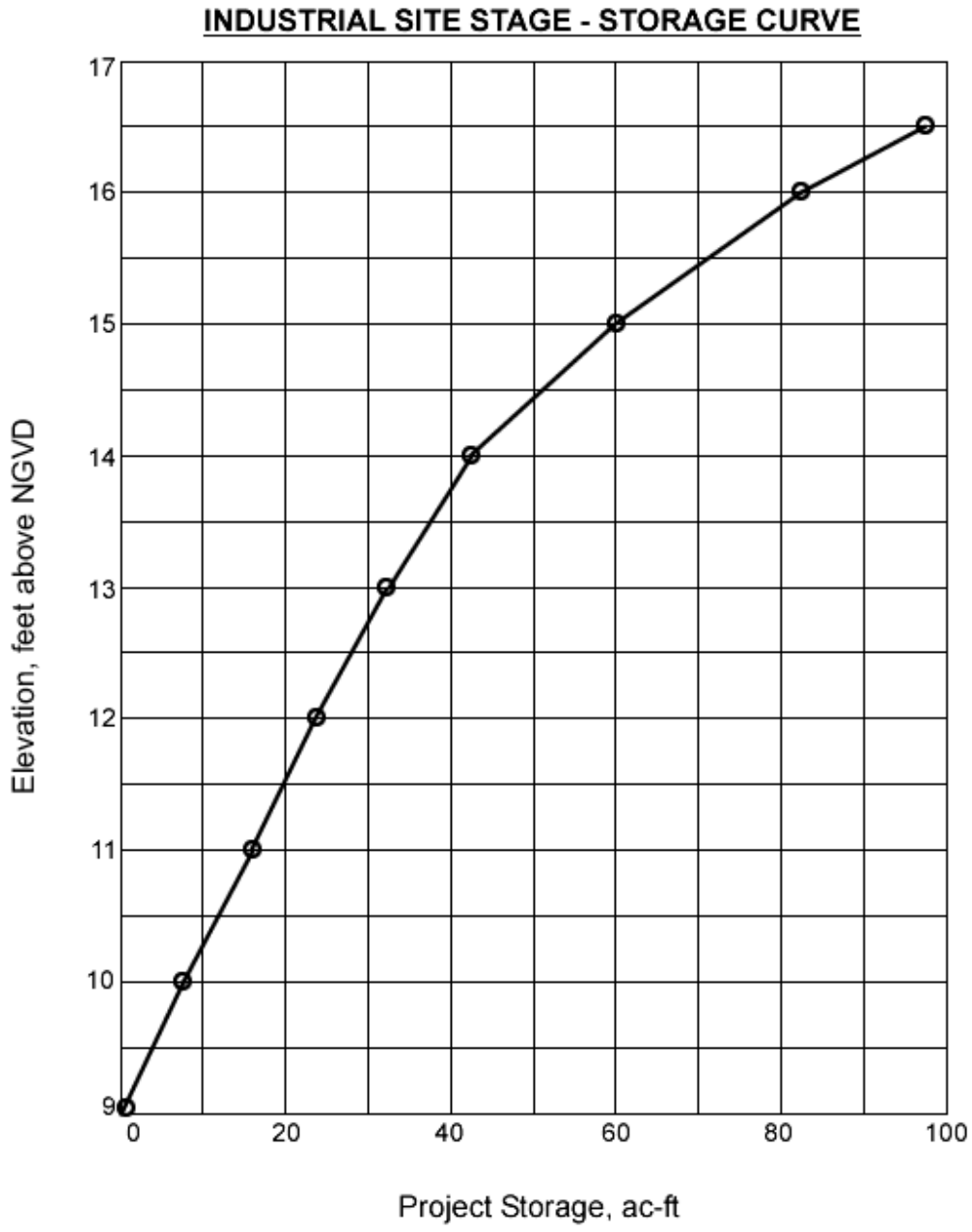

INDUSTRIAL SITE STAGE - STORAGE CURVE
Elevation, feet above NGVD
17
16
15
14
13
12
11
10
9
0
20
40
60
80
100
Project Storage, ac-ft

Figure W-2

C. Control structure weir crest elevation.

1. Set the control structure weir crest high enough to store the lake volume quantity of 5.0 ac-ft required to meet quality criteria.

2. The weir crest should be set no lower than elevation 9.6' NGVD, according to the stage-storage curve.

D. Size the control structure detention discharge weir.

1. Assumptions

a. A V-notch weir is desirable.

b. The size shall be such as to discharge not more than 0.5 inch of the detained volume per day.

2. Computations

a. Volume to be discharged per day

= 0.5 in. x (total site area - lake)

= 0.5 in. x (50.0 ac - 8.0 ac) x (1 ft/12 in.)

= 0.5 in. x 42.0 ac x (1 ft/12 in.)

= 1.8 ac-ft maximum volume to be discharged per day.

b. Compute V-notch angle

$\theta = 2 (\tan^{-1} ((0.492\ V)/H^{2.5}))$

where:

θ = V-notch angle, degrees

V = Volume to be discharged in 24 hours, ac-ft

H = Head on vertex of notch, feet

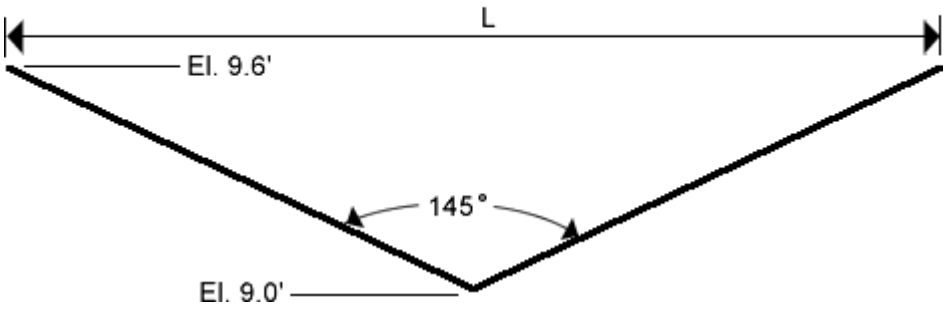
$= 2 \tan^{-1} ((0.492 \times 1.8 \text{ ac-ft})/(0.6 \text{ ft})^{2.5})$

$= 2 \tan^{-1} (3.18)$

= 2 x 72.5 degrees

= Say, 145 degrees for a V-notch angle.

Detention Discharge Weir



c. Compute the weir width (L) at elevation 9.6' NGVD

(L/2)/0.6' = tan (145°/2)

L/2 = 0.6' x tan 72.5°

L = 1.2' x tan 72.5°

= 3.8 ft (say, 46 inches) wide weir at elevation 9.6' NGVD.

E. Size the allowable peak discharge weir.

1. Allowable discharge is 70 csm

= (70 cfs/sq mi) x project size

= (70 cfs/sq mi) x 50.0 ac x (1sq mi/640 ac)

= 5.5 cfs (say, 6 cfs) allowable discharge for this project.

2. Determine soil storage for the developed site.

a. Compute impervious for soil storage

= Lakes (100%)	= 8.0 ac
+ Buildings (100%)	= 15.0 ac
+ Roads and parking (100%)	= 21.0 ac
Total	= 44.0 ac of impervious.

b. Compute pervious acreage

= Total acreage - impervious acreage

= 50.0 ac - 44.0 ac

= 6.0 ac of pervious.

c. Compute depth to average wet season water table

= Average finished site grade elevation - average wet season water table elevation

= 15' NGVD - 9' NGVD

= 6 feet.

d. Determine available soil moisture storage (*assume coastal soils for this example*).

i. For these typical soils, depth of storage available through percolation during a 3-day event will be 4 feet.

ii. The pervious areas will have been compacted during site development, so a 25% reduction in naturally occurring void spaces will result.

iii. From the water storage section of the design aids soil storage of 8.18 inches will be available under pervious areas.

e. Compute composite site soil moisture storage (S)

= (pervious acres/total site acres) x soil storage available under pervious areas

= (6.0 ac/50.0 ac) x 8.18 in.

= 1.0 in. of soil storage available over the entire site.

3. Determine the maximum possible stage (zero discharge) during a design storm (25-year 72-hour event).

a. Total rainfall (P) was given to be 17.5 inches.

b. Calculate total runoff in inches (Q)

$= (P - 0.2S)^2 / (P + 0.8S)$

$= \dfrac{(17.5 \text{ in.} - (0.2 \times 1.0 \text{ in.}))^2}{17.5 \text{ in.} + (0.8 \times 1.0 \text{ in.})}$

$= (17.3 \text{ in.})^2 / 18.3 \text{ in.}$

= 16.4 in. of total runoff (Q).

c. Calculate total runoff volume

= Q x Project acreage

= 16.4 in. x 50.0 ac x (1 ft/12 in.)

= 68.3 ac-ft of runoff.

d. The zero-discharge stage of the design storm is taken from the previously developed project stage-storage curve and is 15.4' NGVD.

4. Determine the peak discharge weir dimensions.

a. The maximum design head would be 15.4' NGVD - 9.6' NGVD

= 5.8'. Try a design head of 5.0 ft for sizing the weir.

b. Computer weir length.

i. Basic equation is $Q = 3.13LH^{1.5}$

ii. Rearranged, $L = Q/(3.13 \times (H)^{1.5})$

where:

L = weir length, ft

Q = design discharge, cfs

H = design head on weir, ft

iii. If Q = 6 cfs and H = 5.0 ft, then

$L = 6 \text{ cfs}/(3.13 \times (5.0 \text{ ft})^{1.5})$

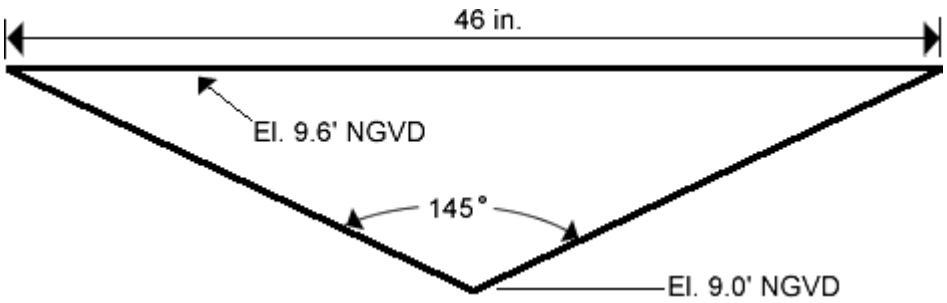
$= 6/(3.13 \times 11.2)$

$= 6/35.1$

= 0.17 ft, say 2 inches weir length

c. This is smaller than the topwidth of the detention discharge weir. Try using the detention discharge opening as the entire outflow control structure.

d. Sketch of trial outfall control structure



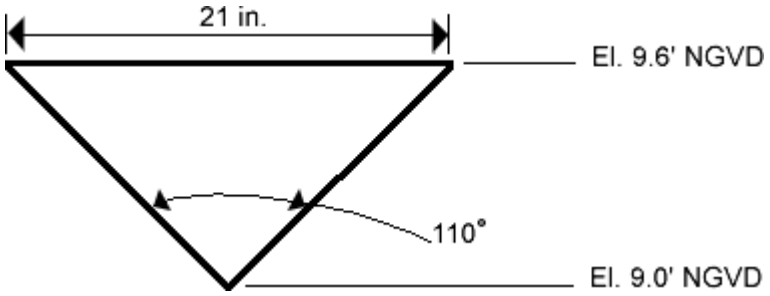
e. Check the allowable peak discharge.

i. The allowable discharge rate was previously computed to be about 6 cfs.

ii. The peak discharge of the routed 25-year 72-hour event was computed to be in excess of 11 cfs. (The computations are not included.) This is considerably more than allowable of 6 cfs, therefore, the trial outfall structure is not adequate.

f. Try using a smaller orifice angle. This will result in discharging less than 0.5 inch of the detained volume per day, which is certainly not in violation of District criteria.

g. Sketch of proposed outfall control structure.



h. The control structure shall include a baffle, to intercept debris before they flow into the receiving body or clog the discharge weir.

F. Check the proposed minimum building floor elevation.

1. By definition, the minimum building floor elevation shall be at least as high as the 100-year 72-hour storm zero discharge runoff.

2. Compute 100-year 72-hour zero discharge runoff volume.

a. Total rainfall (P) was given to be 24.5 inches.

b. Calculate total runoff in inches (Q)

$= (P - 0.2S)^2 / (P + 0.8S)$

$= \frac{(24.5 \text{ in.} - (0.2 \times 1.0 \text{ in.}))^2}{24.5 \text{ in.} + (0.8 \times 1.0 \text{ in.})}$

$= (24.3 \text{ in.})^2 / 25.3 \text{ in.}$

= 23.3 in. of total runoff (Q).

c. Calculate total runoff volume

= Q x Project acreage

= 23.3 in. x 50.0 ac x (1 ft/12 in.)

= 97.1 ac-ft of runoff.

d. From Figure W-2, the zero discharge stage of the 100-year 72-hour storm is 16.5' NGVD.

e. Since the proposed minimum floor elevation is 16.5' NGVD,

the proposed minimum floor elevation is adequate.

G. Check the proposed minimum road elevation.

1. By definition, the minimum road elevation shall be at least as high as the routed 10-year 24-hour storm.

2. The routed 10-year, 24-hour storm peaked at elevation 13.34' NGVD. (See pages W-16 and W-17.) That is lower than the proposed minimum road elevation of 14.0' NGVD, therefore

the proposed minimum road elevation is adequate.

H. Check the allowable peak discharge.

1. The allowable discharge rate was previously computed to be about 6 cfs.

2. The routed 25-year, 72-hour event peaked at 5.9 cfs. (See pages W-18, -19, and -20.) Therefore

the proposed outfall control structure is adequate.

I. The outfall pipe to the receiving body should be large enough so that the design storm discharge does not come under culvert control.

Project Name: Design Example for An Industrical Site
Reviewer: User
Project Number: Industrial Site
Period Begin: Jan 01, 2000;0000 hr End: Jan 02, 2000;0600 hr Duration: 30 hr
Time Step: 0.2 hr, Iterations: 10

Basin 1: Industrial Project

Method: Santa Barbara Unit Hydrograph Rainfall Distribution: SFWMD - 24 hr Design Frequency: 10
1 Day Rainfall: 11 inches
Area: 50 acres
Ground Storage: 1 inches
Time of Concentration: 0.5 hours
Initial Stage: 9 ft NGVD

Stage (Ft NGVD)	Storage {acre-ft}
9.00	0.00
10.00	8.00
11.00	16.00
12.00	24.00
13.00	32.00
14.00	43.00
15.00	60.00
16.00	83.00
16.50	96.80

Offsite Receiving Body: Local Canal

Time (hr)	Stage (Ft NGVD)
0.00	8.50
4000.00	8.50

Structure: 1

From Basin: Industrial Project
To Basin: Local Canal
Structure Type: Gravity
Weir: None
Bleeder: Inv-Tri, Invert Elev = 9 ft NGVD, Height = 0.6 ft
Width = 1.75 ft
Default Coefs: Weir Coef = 2.5, Orifice Coef = 0.6
Pipe: None

Time (hr)	Cumulative Rainfall (in)	Instant Runoff (cfs)	Current Discharge (cfs)	Cumulative Discharge (acre-ft)	Head Water Stage (ft NGVD)	Tail Water Stage (ft NGVD)
0.00	0.00	0.00	0.00	0.00	9.00	8.50
1.00	0.11	0.00	0.00	0.00	9.00	8.50
2.00	0.22	0.03	0.00	0.00	9.00	8.50
3.00	0.35	1.04	0.00	0.00	9.01	8.50
4.00	0.50	2.41	0.00	0.00	9.02	8.50
5.00	0.68	4.50	0.00	0.00	9.06	8.50
6.00	0.91	7.01	0.02	0.00	9.12	8.50
7.00	1.19	9.72	0.07	0.00	9.20	8.50
8.00	1.51	12.49	0.21	0.02	9.32	8.50
9.00	1.88	15.83	0.52	0.05	9.46	8.50
10.00	2.34	20.38	1.23	0.12	9.64	8.50
11.00	2.96	29.02	1.73	0.25	9.87	8.50
12.00	7.22	243.59	3.06	0.44	10.87	8.50
13.00	8.44	78.12	4.32	0.77	12.32	8.50
14.00	9.00	33.70	4.66	1.15	12.80	8.50
15.00	9.35	19.33	4.80	1.54	13.00	8.50
16.00	9.68	16.86	4.86	1.94	13.10	8.50
17.00	9.88	10.83	4.90	2.34	13.16	8.50
18.00	10.08	10.02	4.93	2.75	13.20	8.50
19.00	10.27	9.91	4.95	3.16	13.24	8.50
20.00	10.47	9.90	4.98	3.57	13.28	8.50
21.00	10.60	7.05	4.99	3.98	13.30	8.50
22.00	10.74	6.66	5.00	4.39	13.31	8.50
23.00	10.87	6.61	5.01	4.81	13.33	8.50
24.00	11.00	6.61	5.02	5.22	13.34	8.50
25.00	11.00	0.89	5.00	5.64	13.32	8.50

26.00	11.00	0.12	4.98	6.05	13.29	8.50
27.00	11.00	0.02	4. 96	6.46	13.25	8.50
28.00	11.00	0.00	4.94	6. 87	13.21	8.50
29.00	11.00	0.00	4.91	7.27	13.18	8.50
30.00	11.00	0.00	4.89	7.68	13.14	8.50

STRUCTURE MAXIMUM AND MINIMUM DISCHARGES

Struc	Max (cfs)	Time (hr)	Min (cfs)	Time (hr)
1	5.02	24.20	0.00	0.00

BASIN MAXIMUM AND MINIMUM STAGES

Basin	Max (ft)	Time (hr)	Min (ft)	Time (hr)
Industrial Pro	13.34	24.20	9.00	0.00

BASIN WATER BUDGETS (all units in acre-ft)

Basin	Total Runoff	Structure Inflow	Structure Outflow	Initial Storage	Final Storage	Residual
Industrial Pro	41.17	0.00	7.64	0.00	33.54	0.00

Project Name: Design Example for an Industrial Site
Reviewer: User
Project: Industrial Site
Period Begin: Jan 01, 2000;0000 hr End: Jan 04, 2000;1800 hr Duration: 90 hr
Time Step: 0.2 hr, Iterations: 10

Basin 1: Industrial Project

Method: Santa Barbara Unit Hydrograph Rainfall Distribution: SFWMD -
3day Design Frequency: 25 year
1 Day Rainfall: 13
inches
Area: 50 acres
Ground Storage: 1
inches
Time of Concentration: 0.5 hours
Initial Stage: 9 ft
NGVD

Stage (Ft NGVD)	Storage {acre-ft}
9.00	0.00
10.00	8.00
11.00	16.00
12.00	24.00
13.00	32.00
14.00	43.00
15.00	60.00
16.00	83.00
16.50	96.80

Offsite Receiving Body: Local Canal

Time (hr)	Stage (Ft NGVD)
0.00	8.50
4000.00	8.50

Structure: 1

From Basin: Industrial Project
To Basin: Local Canal
Structure Type: Gravity
Weir: None
Bleeder: Inv-Tri, Invert Elev = 9 ft NGVD, Height = 0.6 ft
Width = 1.75 ft
Default Coefs: Weir Coef = 2.5, Orifice Coef = 0:6
Pipe: None

Time (hr)	Cumulative Rainfall (in)	Instant Runoff (cfs)	Current Discharge (cfs)	Cumulative Discharge (acre-ft)	Head Water Stage (ft NGVD)	Tail Water Stage (ft NGVD)

0.00	0.00	0.00	0.00	0.00	9.00	8.50
1.00	0.08	0.00	0.00	0.00	9.00	8.50
2.00	0.16	0.00	0.00	0.00	9.00	8.50
3.00	0.24	0.10	0.00	0.00	9.00	8.50
4.00	0.32	0.55	0.00	0.00	9.00	8.50
5.00	0.40	0.99	0.00	0.00	9.01	8.50
6.00	0.47	1.36	0.00	0.00	9.02	8.50
7.00	0.55	1.67	0.00	0.00	9.04	8.50
8.00	0.63	1.93	0.00	0.00	9.06	8.50
9.00	0.71	2.14	0.01	0.00	9.08	8.50
10.00	0.79	2.32	0.01	0.00	9.10	8.50
11.00	0.87	2.48	0.02	0.00	9.13	8.50
14.00	1.11	2.84	0.07	0.01	9.21	8.50
15.00	1.19	2.93	0.10	0.02	9.24	8.50
16.00	1.27	3.01	0.13	0.03	9.27	8.50
17.00	1.34	3.08	0.17	0.04	9.30	8.50
18.00	1.42	3.15	0.22	0.06	9.33	8.50
19.00	1.50	3.21	0.28	0.08	9.36	8.50
20.00	1.58	3.26	0.34	0.11	9.39	8.50
21.00	1.66	3.31	0.41	0.14	9.42	8.50
22.00	1.74	3.35	0.49	0.18	9.45	8.50
23.00	1.82	3.39	0.57	0.22	9.48	8.50
24.00	1.90	3.42	0.66	0.27	9.51	8.50
25.00	2.01	4.84	0.79	0.33	9.54	8.50
26.00	2.13	5.08	0.95	0.41	9.58	8.50
27.00	2.24	5.16	1.20	0.50	9.63	8.50
28.00	2.36	5.21	1.30	0.60	9.67	8.50
29.00	2.47	5.25	1.40	0.72	9.71	8.50
30.00	2.59	5.29	1.48	0.84	9.75	8.50
31.00	2.71	5.33	1.57	0.96	9.79	8.50
32.00	2.82	5.36	1.64	1.10	9.82	8.50
33.00	2.94	5.38	1.72	1.24	9.86	8.50
34.00	3.05	5.41	1.78	1.38	9.90	8.50
35.00	3.17	5.43	1.85	1.53	9.94	8.50
36.00	3.28	5.46	1.91	1.69	9.97	8.50
37.00	3.40	5.48	1.97	1.85	10.01	8.50
38.00	3.51	5.49	2.03	2.02	10.05	8.50
39.00	3.63	5.51	2.08	2.19	10.08	8.50
40.00	3.74	5.53	2.14	2.36	10.12	8.50
41.00	3.86	5.54	2.19	2.54	10.15	8.50
42.00	3.97	5.55	2.24	2.72	10.19	8.50
43.00	4.09	5.57	2.29	2.91	10.22	8.50
44.00	4.21	5.58	2.33	3.10	10.25	8.50
45.00	4.32	5.59	2.38	3.30	10.29	8.50
46.00	4.44	5.60	2.42	3.50	10.32	8.50
47.00	4.55	5.61	2.47	3.70	10.35	8.50
48.00	4.67	5.62	2.51	3.90	10.39	8.50
49.00	4.80	6.24	2.55	4.11	10.42	8.50
50.00	4.93	6.33	2.60	4.33	10.46	8.50
51.00	5.08	7.46	2.66	4.54	10.51	8.50
52.00	5.25	8.41	2.72	4.77	10.56	8.50
53.00	5.47	10.76	2.80	5.00	10.63	8.50
54.00	5.75	13.31	2.91	5.23	10.73	8.50
55.00	6.07	15.90	3.04	5.48	10.85	8.50
56.00	6.45	18.50	3.19	5.74	10.99	8.50
57.00	6.89	21.92	3.36	6.01	11.17	8.50
58.00	7.44	26.89	3.56	6.30	11.39	8.50
59.00	8.16	36.94	3.81	6.60	11.67	8.50
60.00	13.19	294.49	4.71	6.95	12.88	8.50
61.00	14.64	93.67	5.49	7.39	14.12	8.50
62.00	15.30	40.20	5.64	7.85	14.38	8.50
63.00	15.72	23.00	5.71	8.32	14.50	8.50
64.00	16.11	20.05	5.75	8.79	14.57	8.50
65.00	16.34	12.88	5.77	9.27	14.62	8.50
66.00	16.57	11.91	5.79	9.75	14.65	8.50
67.00	16.81	11.78	5.81	10.23	14.68	8.50
68.00	17.04	11.76	5.82	10.71	14.71	8.50
69.00	17.20	8.37	5.83	11.19	14.73	8.50
70.00	17.35	7.91	5.84	11.67	14.74	8.50

71.00	17.51	7.85	5.85	12.15	14.75	8.50
72.00	17.67	7.84	5.85	12.64	14.76	8.50
73.00	17.67	1.06	5.84	13.12	14.75	8.50
74.00	17.67	0.14	5.83	13.60	14.72	8.50
75.00	17.67	0.02	5.81	14.09	14.69	8.50
76.00	17.67	0.00	5.80	14.57	14.66	8.50
77.00	17.67	0.00	5.78	15.04	14.64	8.50
78.00	17.67	0.00	5.77	15.52	14.61	8.50
79.00	17.67	0.00	5.75	16.00	14.58	8.50
80.00	17.67	0.00	5.74	16.47	14.55	8.50
81.00	17.67	0.00	5.72	16.95	14.52	8.50
82.00	17.67	0.00	5.71	17.42	14.50	8.50
83.00	17.67	0.00	5.69	17.89	14.47	8.50
84.00	17.67	0.00	5.67	18.36	14.44	8.50
85.00	17.67	0.00	5.66	18.83	14.41	8.50
86.00	17.67	0.00	5.64	19.29	14.39	8.50
87.00	17.67	0.00	5.63	19.76	14.36	8.50
88.00	17.67	0.00	5.61	20.22	14.33	8.50
89.00	17.67	0.00	5.60	20.69	14.30	8.50
90.00	17.67	0.00	5.58	21.15	14.28	8.50

STRUCTURE MAXIMUM AND MINIMUM DISCHARGES

Struc	Max (cfs)	Time (hr)	Min (cfs)	Time (hr)
1	5.85	72.20	0.00	0.00

BASIN MAXIMUM AND MINIMUM STAGES

Basin	Max (ft)	Time (hr)	Min (ft)	Time (hr)
Industrial Pro	14.76	72.20	9.00	0.00

BASIN WATER BUDGETS (all units in acre-ft)

Basin	Total Runoff	Structure Inflow	Structure Outflow	Initial Storage	Final Storage	Residual
Industrial Pro	68.82	0.00	21.10	0.00	47.72	0.00

X. DESIGN EXAMPLE

FOR

A MULTI-FAMILY RESIDENTIAL SITE

I. Given

A. Acreage

1. Total = 95.0 ac

2. Impervious

a. Buildings (roofs) = 9.3 ac

b. Roads and parking = 41.7 ac

3. Lakes = 10.0 ac

4. Pervious = 34.0 ac

B. Minimum elevations

1. Roads and parking = 9.0' NGVD

2. Floors = 11.5' NGVD

C. Design storm allowable discharge has been determined to be 37 cfs.

D. Water level elevations

1. Average wet season water table in the vicinity of the lakes = 5.5' NGVD.

2. Receiving body water level has been determined not to affect discharge rates.

(Note: Proposed minimum road grade (9.0' NGVD) is more than 2 ft above the average wet season water table, or control elevation, of 5.5' NGVD. This is a criteria which is occasionally overlooked in initial designs.)

E. Rainfall amounts (24-hour)

1. Roads (10-year) = 9.0 in.

2. Design (25-year) = 11.0 in. (this will be adjusted to a 72-hour event later)

3. Floors (100-year) = 14.0 in. (this will be adjusted to a 72-hour event later)

SITE PLAN VIEW
(N.T.S.)

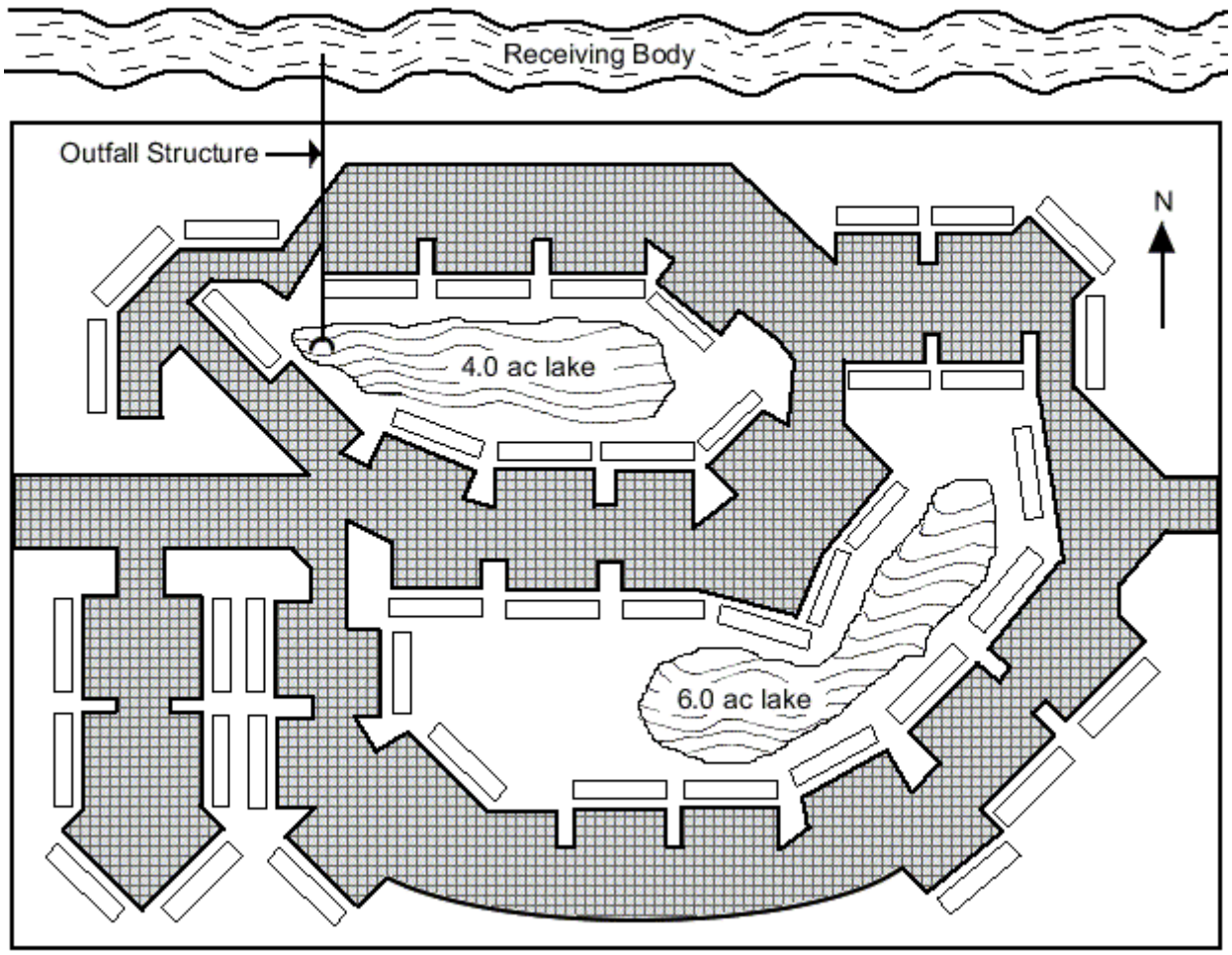


Figure X-1

II. Design Criteria

A. Quality

1. Since this is proposed as a wet detention system, then whichever is the greater of:

a. The first inch of runoff from the entire site, or

b. The amount of 2.5 inches times the percentage of imperviousness.

2. If this residentially-zoned site were discharging directly into sensitive receiving waters (example: Outstanding Florida Waters), then it might have to provide at least 0.5 inch of dry detention or retention pretreatment. (This will be discussed later in more detail.)

3. Any detention system shall be designed to discharge not more than 0.5 inch of the detained volume per day. A V-shaped configuration is desirable.

B. Quantity

1. The allowable peak discharge is 37 cfs during a 25-year 3-day storm.

2. First floors are desired to be no lower than elevation 11.5' NGVD.

3. Roads and parking are desired to be no lower than elevation 9.0' NGVD.

III. Computations

A. Quality

1. Compute the first inch of runoff from the developed project:

= 1 in. x 95 ac x (1 ft/12 in.)

= 7.9 ac-ft for the first inch of runoff.

2. Compute 2.5 inches times the percentage of imperviousness:

a. Site area for water quality pervious/impervious calculations only:

= Total project - (water surface + roof)

= 95 ac - (10 ac + 9.3 ac)

= 95 ac - 19.3 ac

= 75.7 ac of site area for water quality pervious/impervious.

b. Impervious area for water quality pervious/impervious calculations only:

= (Site area for water quality pervious/impervious) - pervious

= 75.7 ac - 34.0 ac

= 41.7 ac of impervious area for water quality pervious/impervious.

c. Percentage of imperviousness for water quality:

= (Impervious area for water quality/Site area for water quality) x 100%

= (41.7 ac/75.7 ac) x 100%

= 55% impervious

d. For 2.5 inches times the percentage impervious:

= 2.5 in. x 0.55

= 1.38 in. to be treated.

e. Compute volume required for water quality detention:

= inches to be treated x (total site - lakes)

= 1.38 in. x (95 ac - 10 ac) x (1 ft/12 in.)

= 9.8 ac-ft required detention storage.

3. Since the 9.8 ac-ft are greater than the 7.9 ac-ft computed for the first inch of runoff, the volume of 9.8 ac-ft controls.

(Note: The system proposed is wet detention, so no volume reductions are possible.)

4. Sidelight: Pretreatment

a. If this project were discharging directly to a sensitive receiving body, it would have to provide at least 0.5 inch of dry detention or retention pretreatment, because it is more than 40% impervious. The receiving body is not a sensitive one, but the numbers will be computed now, strictly to illustrate the process.

b. Compute 0.5 inch of pretreatment

= 0.5 in. x (total site - lakes)

= 0.5 in. x (95 ac - 10 ac) x (1 ft/12 in.)

= 3.5 ac-ft required for pretreatment.

This volume would be required regardless of whether dry detention or retention were utilized. It would be considered as available storage for the road, design, and minimum floor storms if it were a detention system, or utilized properly-designed exfiltration trench. It would not be considered as available for storage if it were a retention system which relied only on natural percolation and evaporation as the mechanisms for re-achieving a dry state.

c. Compute the resulting lake volume:

= Total required detention - pretreatment

= 9.8 ac-ft - 3.5 ac-ft

= 6.3 ac-ft required lake volume.

B. SCS Curve Number

1. Even though the control elevation is 5.5' NGVD, it is assumed that the water table will vary from 5.5' NGVD at the lakes to about 7' NGVD at the project boundaries. Consequently an average site water table elevation of 6.25' NGVD will be assumed.

2. The average site finished grades will vary from the lowest inlets in the parking lots (9.0' NGVD), to a little above the 11.5' NGVD floor elevations (say 12' NGVD). Therefore, average site grade elevation will be 10.5' NVD.

3. The average depth to water table will be

= average site grade elevation - average site water table elevation

= 10.5' NGVD - 6.25' NGVD

= 4.25 ft; 4 ft is the maximum depth of percolation assumed possible in three days for the soils on this site.

4. From the soil storage table, assuming the 25% compaction and 4 ft to the water table, up to 8.18 inches of moisture can be stored in the soil under pervious areas.

5. Compute available soil storage

= storage available x pervious areas

= 8.18 in. x 34 ac x 1 ft/12 in.

= 23.2 ac-ft available soil storage onsite.

6. Convert available soil storage to site-wide moisture storage, S

S = available soil storage onsite/site area

= ((23.2 ac-ft)/(95 ac)) x (12 in./1 ft)

= 2.93 in. of site-wide soil storage, S

7. SCS Curve Number, CN

CN = 1000/(S + 10)

= 1000/(2.93 + 10)

= 77: SCS Curve Number

C. Project surface storage

1. Assumptions

a. Lake storage begins at a control elevation which is the given 5.5' NGVD.

b. Lake storage is vertical over the 10 ac of lake surface area.

c. Site storage is linear, starting at the minimum road elevation of 9.0' NGVD up through 12.0' NGVD.

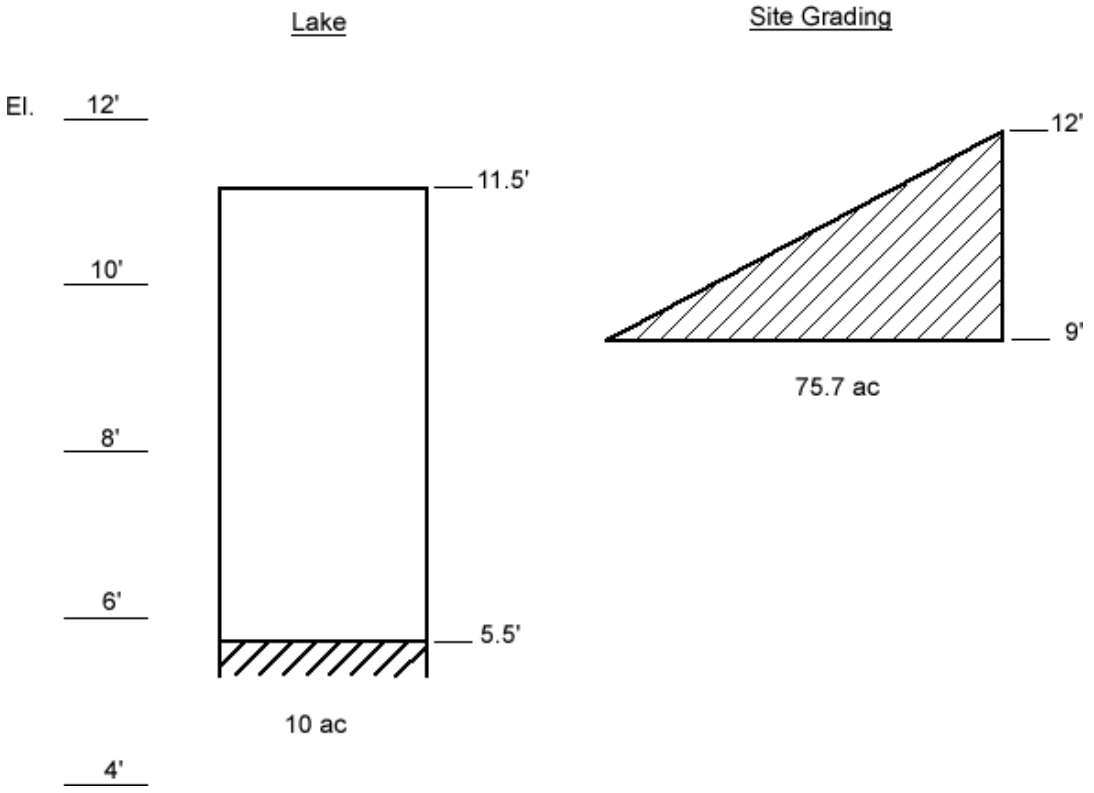
d. Area of developed site grading:

= Total area - (lakes + buildings)

= 95 ac - (10 ac + 9.3 ac)

= 75.7 ac for developed site grading.

2. Stage-Storage Schematic Diagrams



3. Stage-storage curve data

Stage (ft NGVD)	Storage: Lake (ac-ft)	Storage: Site Grading (ac-ft)	Storage: Total (ac-ft)
5.5	0' x 10 ac = 0	0	0
6.5	1' x 10 ac = 10	0	10
7.5	2' x 10 ac = 20	0	20
8.5	3' x 10 ac = 30	0	30
9.0	3.5' x 10 ac = 35	0	35
9.5	4' x 10 ac = 40	((0.5/3) x 75.7 ac) x (0.5 ft/2) = 3.2	43.2
10.0	4.5' x 10 ac = 45	((1.0/3) x 75.7 ac) x (1.0 ft/2) = 12.6	57.6
10.5	5' x 10 ac = 50	((1.5/3) x 75.7 ac) x (1.5 ft/2) = 28.4	78.4
11.0	5.5' x 10 ac = 55	((2.0/3) x 75.7 ac) x (2.0 ft/2) = 50.5	105.5
11.5	6' x 10 ac = 60	((2.5/3) x 75.7 ac) x (2.5 ft/2) = 78.8	138.8

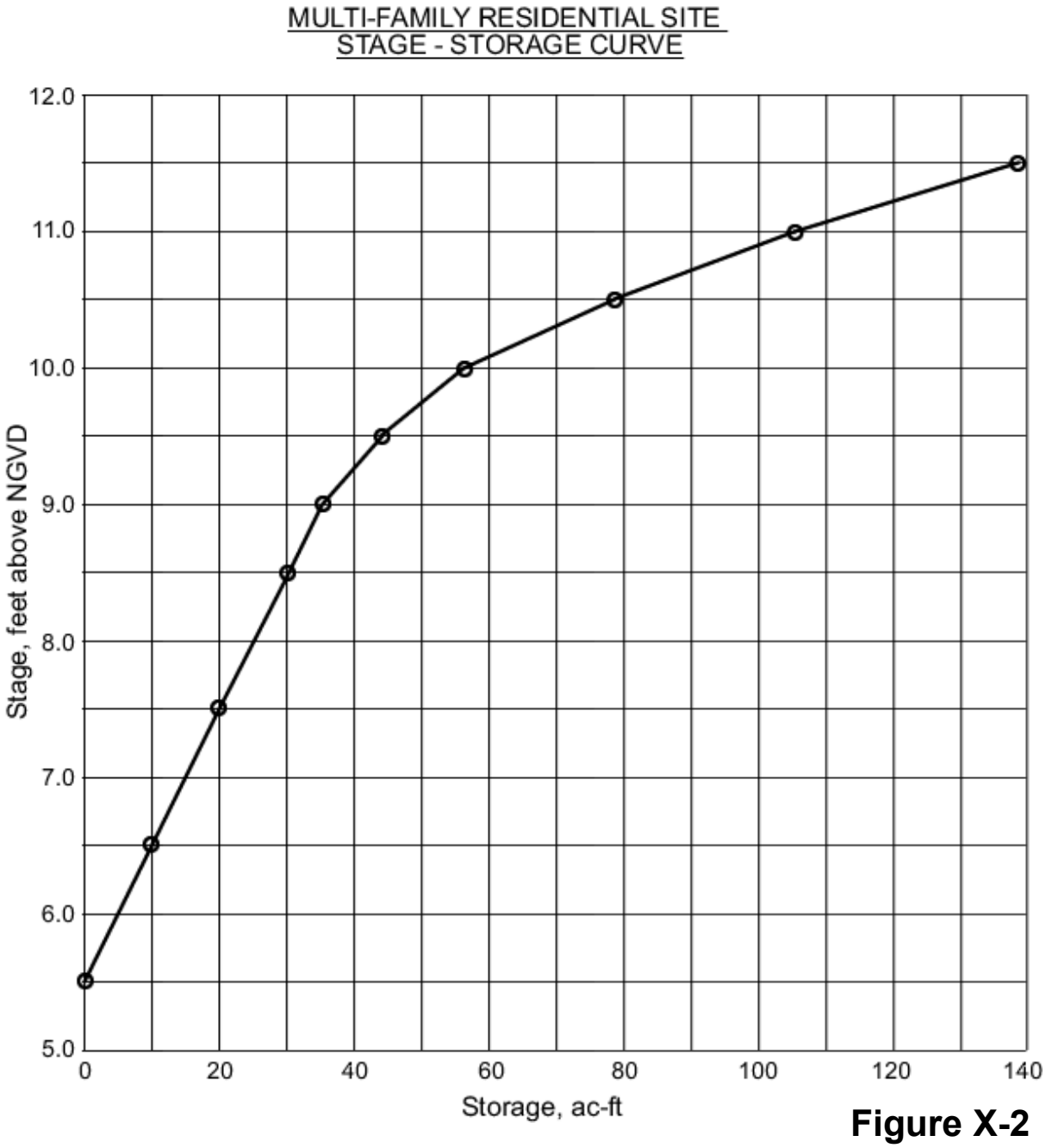

MULTI-FAMILY RESIDENTIAL SITE
STAGE - STORAGE CURVE
Stage, feet above NGVD
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
0
20
40
60
80
100
120
140
Storage, ac-ft

Figure X-2

D. Control structure weir crest elevation.

1. Set the crest high enough to store the required quality volume quantity of 9.8 ac-ft.

2. From the stage-storage curve, the weir crest should be set at elevation 6.5' NGVD.

E. Control structure weir crest length.

1. Runoff from the design storm (25-year 3-day).

a. Rainfall amount for a three-day event

= 1-day rainfall x 1.359

= 11.0 in. x 1.359

= 14.95 in. rainfall in three days.

b. Runoff in inches (Q)

$Q = (P - (0.2 \times S))^2 / (P + (0.8 \times S))$

$= \frac{(14.95 \text{ in.} - (0.2 \times 2.93 \text{ in.}))^2}{(14.95 \text{ in.} + (0.8 \times 2.93 \text{ in.}))}$

$= (14.95 \text{ in.} - 0.59 \text{ in.})^2 / (14.95 \text{ in.} + 2.34 \text{ in.})$

$= (14.36 \text{ in.})^2 / 17.29 \text{ in.}$

= 11.9 in. of runoff from the 25-year 3-day storm.

c. Runoff volume

= inches of runoff x site area

= 11.9 in. x 95 ac x 1 ft/12 in.

= 94.2 ac-ft runoff volume.

2. The zero-discharge stage corresponding to 94.2 ac-ft is 10.8' NGVD.

3. The maximum design head would then be 10.8' NGVD - 6.5' NGVD = 4.3'. Therefore, try a design head of 4.0 ft for sizing the weir.

4. Compute weir length.

   a. Basic equation is $Q = 3.13LH^{1.5}$

   b. Rearranged, $L = Q/(3.13 \times (H)^{1.5})$

      Where: L = weir length, ft
      Q = design discharge, cfs
      H = design head on weir, ft

   c. If Q = 37 cfs and H = 4 ft, then

      $L = 37 \text{ cfs}/(3.13 \times (4 \text{ ft})^{1.5})$

      $= 37/(3.13 \times 8.0)$

      $= 37/25.04$

      = say, 1.5 ft weir length.

F. Size the control structure detention discharge weir.

1. Criteria

   a. A V-notch is desirable.

   b. A triangular or circular orifice may be necessary.

   c. Size the weir (or orifice), to discharge no more than 0.5 inch of the detention volume in 24 hours.

2. Volume to be discharged in the first 24 hours is 0.5 inch of the required detention.

   = 0.5 in. x (total site - lakes)

   = 0.5 in. x (95 ac - 10 ac) x (1 ft/12 in.)

   = 3.5 ac-ft.

3. Design head

   = weir crest elevation - control elevation

   = 6.5' NGVD - 5.5' NGVD

   = 1 ft.

4. From the "Required V-Notch Size" design aid, for a total head of 1 ft and a desired detention volume of 3.5 ac-ft to be discharged in 24 hours, an angle of about 120 degrees is required.

   This would result in a V-notch weir with a width at elevation 6.5' NGVD greater than the 1.5 ft required for the sharp-crested weir. For various reasons, it is deemed unacceptable to alter other segments of the project until all reasonable control structure design possibilities have been exhausted.

One approach is to utilize the 1.5-ft long sharp-crested weir and a V-notch weir with an angle considerably less than the 120° required to obtain the maximum discharge rate of the required quality detention volume. This will result in a maximum discharge rate less than that allowed.

Since the minimum acceptable V-notch invert angle is 20°, the structure will incorporate that feature.

5. In order to avoid culvert control of the discharge, the outfall pipe from the control structure to the receiving body is recommended to be sized so as to pass the allowable design flow at about one-half of the estimated design head. For this project, the design head is four feet, so the culvert will be sized to pass 37 cfs at two feet of head along about 400 l.f. of circular concrete pipe flowing full. From other sources, a 30" diameter culvert should be sufficient.

6. The outfall structure will consist of a baffle, a 20° V-notch weir, a 1.5 ft long sharp-crested weir, and 400 l.f. of RCP culvert, as shown in Figure XG-3.

IV. Check storm stages and discharges.

A. Minimum building floor elevation.

1. The rainfall of the 100-year 3-day storm

= (1-day amount) x 1.359

= 14.0 in. x 1.359

= 19.0 in.

2. Inches of runoff, Q

$= (P - (0.2 \times S))^2 / (P + (0.8 \times S))$

$= (19.0 \text{ in.} - (0.2 \times 2.93 \text{ in.}))^2 / (19.0 \text{ in.} + (0.8 \times 2.93 \text{ in.}))$

$= (19.0 \text{ in.} - 0.6 \text{ in.})^2 / (19.0 \text{ in.} + 2.3 \text{ in.})$

$= (18.4 \text{ in.})^2 / 21.3 \text{ in.}$

= <u>15.89 in.</u> of runoff.

3. Volume of runoff

= (in. of runoff) x (project area)

= 15.89 in. x 95 ac x 1 ft / 12 in.

= <u>125.8 ac-ft</u> required storage (zero discharge).

4. From the stage-storage curve, 125.8 ac-ft corresponds to an elevation of 11.3' NGVD. Since the proposed minimum floor elevation is 11.5' NGVD,

the proposed minimum floor is acceptable.

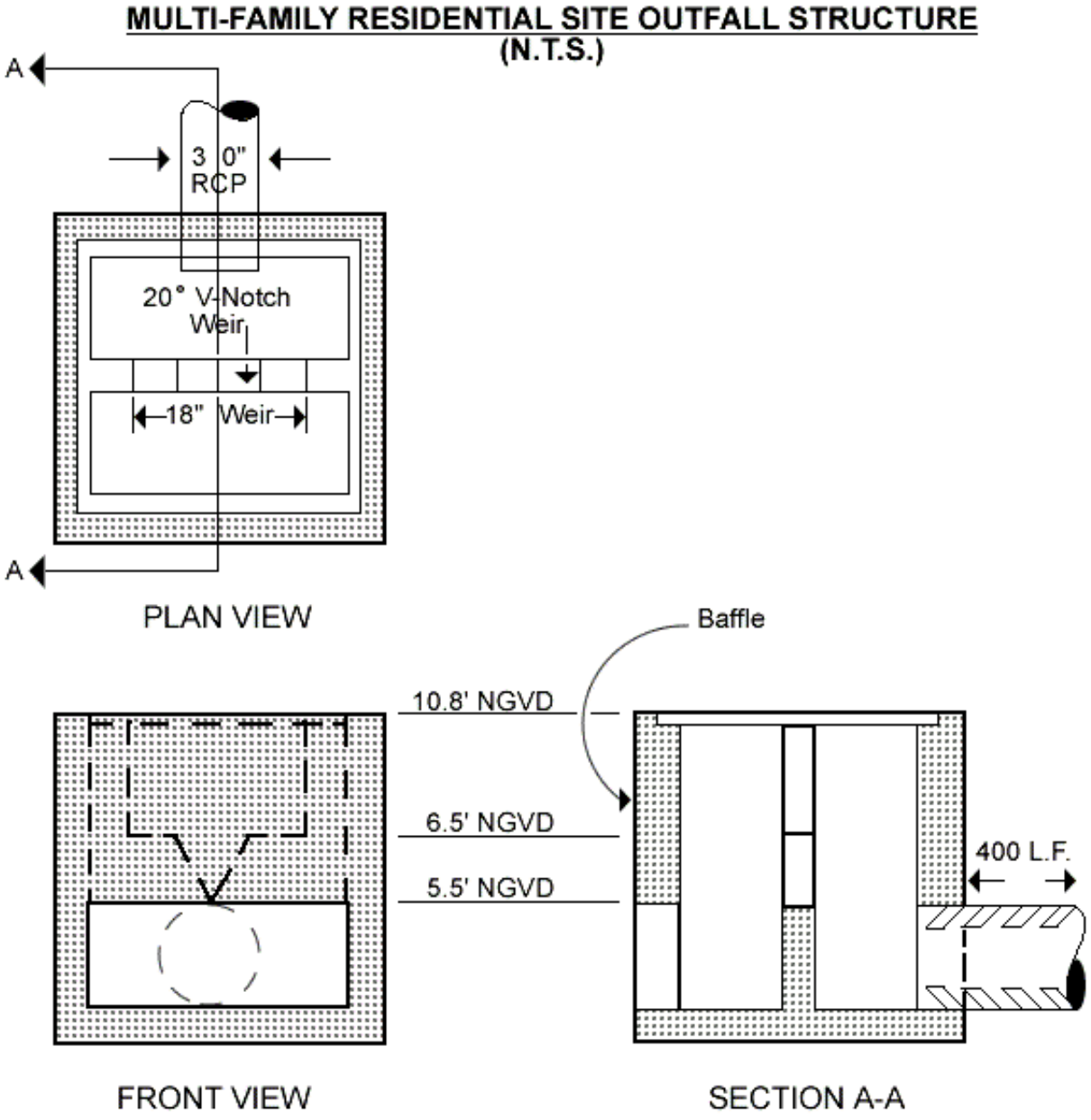

MULTI-FAMILY RESIDENTIAL SITE OUTFALL STRUCTURE
(N.T.S.)
A
3 0"
RCP
20° V-Notch
Weir
18" Weir
A
PLAN VIEW
Baffle
10.8' NGVD
6.5' NGVD
5.5' NGVD
400 L.F.
FRONT VIEW
SECTION A-A

Figure X-3

B. Roads versus local criteria

1. The minimum road grade must be at least 2 feet above control elevation, which is 5.5' NGVD. Since minimum proposed road elevation is 9.0' NGVD, the criteria are satisfied.

2. The minimum road grade must also be no lower than the peak of the 10-year 1-day storm, a local criteria. From the flood routing of that event, a peak elevation of 9.0' NGVD (to the nearest tenth of a foot) will occur. (See pages X-16 and X-17.) Since the proposed minimum road elevation is 9.0' NGVD,

the proposed minimum road elevation is acceptable.

C. Allowable peak discharge

1. The allowable peak discharge is 37 cfs. From the flood routing of that event, a peak discharge of 35.1 cfs will occur. (See pages X-18, -19, and -20). Since the routed peak discharge is less than that allowed,

the proposed outfall structure design is adequate.

Project Name: Design Example for a Multi-Family Residential Site
Reviewer: User
Project Number: Multi-family Residential Site
Period Begin: Jan 01, 2000;0000 hr End: Jan 02, 2000;1100 hr Duration: 35 hr
Time Step: 0.2 hr, Iterations: 10

Basin 1: Multi-family Residential Project

Method: Santa Barbara Unit Hydrograph year
Rainfall Distribution: SFWMD - 24 hr
Design Frequency: 10
1 Day Rainfall: 9 inches
Area: 95 acres
Ground Storage: 2.93 inches
Time of Concentration: 0.6 hours
Initial Stage: 5.5 ft NGVD

Stage (Ft NGVD)	Storage {acre-ft}
5.50	0.00
6.50	10.00
7.50	20.00
8.50	30.00
9.00	35.00
9.50	43.20
10.00	57.60
10.50	78.40
11.00	105.50
11.50	138.80

Offsite Receiving Body: Receiving Body

Time (hr)	Stage (Ft NGVD)
0.00	0.00
4000.00	0.00

Structure: 1

From Basin: Multi-family Residential Project
To Basin: Receiving Body
Structure Type: Gravity
Weir: Sharp Crested, Crest Elev = 6.5 ft NGVD Length = 1.5 ft
Bleeder: V-Notch, Invert-Elev = 5.5 ft NGVD, Top Elev = 6.5 ft NGVD
Angle = 20 deg
Default Coefs: Weir Coef = 2.5, Orifice Coef = 0.6
Pipe: Diameter = 2.5 ft, Manning's n = 0.012, Length = 400 ft
US Invert Elev = 3 ft NGVD, DS Invert Elev 3 ft NGVD, no flap gate

Time (hr)	Cumulative Rainfall (in)	Instant Runoff (cfs)	Current Discharge (cfs)	Cumulative Discharge (acre-ft)	Head Water Stage (ft NGVD)	Tail Water Stage (ft NGVD)
0.00	0.00	0.00	0.00	0.00	5.50	0.00
1.00	0.09	0.00	0.00	0.00	5.50	0.00
2.00	0.18	0.00	0.00	0.00	5.50	0.00
3.00	0.29	0.00	0.00	0.00	5.50	0.00
4.00	0.41	0.00	0.00	0.00	5.50	0.00
5.00	0.56	0.00	0.00	0.00	5.50	0.00
6.00	0.75	0.88	0.00	0.00	5.50	0.00
7.00	0.97	3.31	0.00	0.00	5.52	0.00
8.00	1.23	6.58	0.00	0.00	5.56	0.00
9.00	1.54	10.83	0.00	0.00	5.63	0.00
10.00	1.92	16.79	0.01	0.00	5.92	0.00
11.00	2.42	27.47	0.05	0.00	5.92	0.00
12.00	5.90	283.20	1.42	0.04	6.79	0.00
13.00	6.90	114.34	12.39	0.72	8.28	0.00
14.00	7.36	52.68	17.65	2.04	8.79	0.00
15.00	7.65	29.87	19.51	3.61	8.96	0.00
16.00	7.92	24.87	20.09	5.25	9.01	0.00
17.00	8.08	16.28	20.05	6.91	9.01	0.00
18.00	8.24	14.68	19.66	8.55	8.97	0.00
19.00	8.41	14.41	19.20	10.16	8.93	0.00
20.00	8.57	14.39	18.78	11.72	8.89	0.00
21.00	8.68	10.51	18.18	13.24	8.84	0.00

22.00	8.78	9.79	17.47	14.71	8.77	0.00
23.00	8.89	9.66	16.81	16.12	8.71	0.00
24.00	9.00	9.65	16.20	17.48	8.66	0.00
25.00	9.00	1.82	15.25	18.78	8.57	0.00
26.00	9.00	0.34	14.08	19.98	8.45	0.00
27.00	9.00	0.07	12.98	21.09	8.34	0.00
28.00	9.00	0.01	11.98	22.11	8.24	0.00
29.00	9.00	0.00	11.08	23.06	8.14	0.00
30.00	9.00	0.00	10.27	23.93	8.05	0.00
31.00	9.00	0.00	9.53	24.74	7.97	0.00
32.00	9.00	0.00	8.87	25.5	7.90	0.00
33.00	9.00	0.00	8.26	26.2	7.83	0.00
34.00	9.00	0.00	7.71	26.85	7.76	0.00
35.00	9.00	0.00	7.21	27.47	7.70	0.00

STRUCTURE MAXIMUM AND MINIMUM DISCHARGES

Struc	Max (cfs)	Time (hr)	Min (cfs)	Time (hr)
1	20.13	16.40	0.00	0.00

BASIN MAXIMUM AND MINIMUM STAGES

Basin	Max (ft)	Time (hr)	Min (ft)	Time (hr)
Multi-family R	9.01	16.40	5.50	0.00

BASIN WATER BUDGETS (all units in acre-ft)

Basin	Total Runoff	Structure Inflow	Structure Outflow	Initial Storage	Final Storage	Residual
Multi-family R	49.39	0.00	27.40	0.00	21.99	0.00

Project Name: Design Example for a Multi-Family Residential Site
Reviewer: User
Project Number: Multi-family Residential Site
Period Begin: Jan 01, 2000;0000 hr End: Jan 04, 2000;2300 hr Duration: 95 hr
Time Step: 0.2 hr, Iterations: 10

Basin 1: Industrial Project

Method: Santa Barbara Unit Hydrograph
Rainfall Distribution: SFWMD - 3day
Design Frequency: 25 year
1 Day Rainfall: 11inches
Area: 95 acres
Ground Storage: 2.93 inches
Time of Concentration: 0.6 hours
Initial Stage: 5.5 ft NGVD

Stage (Ft NGVD)	Storage {acre-ft}
5.50	0.00
6.50	10.00
7.50	20.00
8.50	30.00
9.00	35.00
9.50	43.20
10.00	57.60
10.50	78.40
11.00	105.50
11.50	138.80

Offsite Receiving Body: Local Canal

Time (hr)	Stage (Ft NGVD)
0.00	0.00
4000.00	0.00

Structure: 1

From Basin: Multi-family Residential Project
To Basin: Receiving Body
Structure Type: Gravity
Weir: Sharp Crested, Crest Elev = 6.5 ft NGVD Length = 1.5 ft

Bleeder: V-Notch, Invert-Elev = 5.5 ft NGVD, Top Elev = 6.5 ft NGVD
Angle = 20 deg
Default Coefs: Weir Coef = 2.5, Orifice Coef = 0.6
Pipe: Diameter = 2.5 ft, Manning's n = 0.012, Length = 400 ft
US Invert Elev = 3 ft NGVD, DS Invert Elev 3 ft NGVD, no flap gate

Time (hr)	Cumulative Rainfall (in)	Instant Runoff (cfs)	Current Discharge (cfs)	Cumulative Discharge (acre-ft)	Head Water Stage (ft NGVD)	Tail Water Stage (ft NGVD)
0.00	0.00	0.00	0.00	0.00	5.50	0.00
1.00	0.07	0.00	0.00	0.00	5.50	0.00
2.00	0.13	0.00	0.00	0.00	5.50	0.00
3.00	0.20	0.00	0.00	0.00	5.50	0.00
4.00	0.27	0.00	0.00	0.00	5.50	0.00
5.00	0.33	0.00	0.00	0.00	5.50	0.00
6.00	0.40	0.00	0.00	0.00	5.50	0.00
7.00	0.47	0.00	0.00	0.00	5.50	0.00
8.00	0.54	0.00	0.00	0.00	5.50	0.00
9.00	0.60	0.01	0.00	0.00	5.50	0.00
10.00	0.67	0.20	0.00	0.00	5.50	0.00
11.00	0.74	0.45	0.00	0.00	5.50	0.00
12.00	0.80	0.71	0.00	0.00	5.51	0.00
13.00	0.87	0.94	0.00	0.00	5.52	0.00
14.00	0.94	1.17	0.00	0.00	5.52	0.00
15.00	1.00	1.38	0.00	0.00	5.53	0.00
16.00	1.07	1.57	0.00	0.00	5.55	0.00
17.00	1.14	1.76	0.00	0.00	5.56	0.00
18.00	1.20	1.94	0.00	0.00	5.58	0.00
19.00	1.27	2.10	0.00	0.00	5.59	0.00
20.00	1.34	2.26	0.00	0.00	5.61	0.00
21.00	1.41	2.41	0.00	0.00	5.63	0.00
22.00	1.47	2.55	0.00	0.00	5.65	0.00
23.00	1.54	2.68	0.01	0.00	5.67	0.00
24.00	1.61	2.81	0.01	0.00	5.69	0.00
25.00	1.70	4.07	0.01	0.00	5.72	0.00
26.00	1.80	4.49	0.02	0.00	5.76	0.00
27.00	1.90	4.75	0.02	0.00	5.8	0.00
28.00	2.00	4.97	0.03	0.01	5.84	0.00
29.00	2.09	5.16	0.04	0.01	5.88	0.00
30.00	2.19	5.34	0.05	0.01	5.92	0.00
31.00	2.29	5.51	0.07	0.02	5.97	0.00
32.00	2.39	5.67	0.08	0.02	6.01	0.00
33.00	2.48	5.82	0.10	0.03	6.06	0.00
34.00	2.58	5.96	0.13	0.04	6.11	0.00
35.00	2.68	6.09	0.15	0.05	6.15	0.00
36.00	2.78	6.22	0.18	0.07	6.2	0.00
37.00	2.88	6.33	0.22	0.08	6.25	0.00
38.00	2.97	6.44	0.26	0.10	6.31	0.00
39.00	3.07	6.55	0.30	0.13	6.36	0.00
40.00	3.17	6.65	6.65	0.35	6.41	0.00
41.00	3.27	6.74	6.74	0.40	6.46	0.00
42.00	3.36	6.83	6.83	0.50	6.51	0.00
43.00	3.46	6.92	6.92	0.61	6.57	0.00
44.00	3.56	7.00	7.00	0.76	6.62	0.00
45.00	3.66	7.07	7.07	0.92	6.67	0.00
46.00	3.75	7.15	7.15	1.11	6.72	0.00
47.00	3.85	7.22	7.22	1.31	6.77	0.00
48.00	3.95	7.28	7.28	1.52	6.82	0.00
49.00	4.06	8.11	8.11	1.76	6.87	0.00
50.00	4.17	8.32	8.32	2.01	6.92	0.00
51.00	4.30	9.80	9.80	2.32	6.98	0.00
52.00	4.44	11.12	11.12	2.67	7.04	0.00
53.00	4.63	14.27	14.27	3.15	7.12	0.00
54.00	4.86	17.87	17.87	3.80	7.23	0.00
55.00	5.14	21.64	21.64	4.66	7.36	0.00
56.00	5.46	25.53	25.53	5.76	7.51	0.00
57.00	5.83	30.57	30.57	7.14	7.69	0.00
58.00	6.29	37.93	37.93	8.96	7.91	0.00
59.00	6.91	52.27	52.27	11.50	8.19	0.00
60.00	11.16	406.34	406.34	23.03	9.26	0.00
61.00	12.39	156.72	156.72	32.73	10.02	0.00
62.00	12.95	69.97	69.97	34.62	10.16	0.00

63.00	13.30	38.96	38.96	35.07	10.20	0.00
64.00	13.63	32.11	32.11	35.06	10.20	0.00
65.00	13.83	20.94	20.94	34.79	10.18	0.00
66.00	14.02	18.84	18.84	34.38	10.15	0.00
67.00	14.22	18.45	18.45	33.96	10.12	0.00
68.00	14.42	18.39	18.39	33.55	10.08	0.00
69.00	14.55	13.42	13.42	33.06	10.05	0.00
70.00	14.69	12.48	12.48	32.53	10.01	0.00
71.00	14.82	12.31	12.31	31.82	9.96	0.00
72.00	14.95	12.28	12.28	31.10	9.90	0.00
73.00	14.95	2.32	2.32	30.17	9.83	0.00
74.00	14.95	0.44	0.44	29.10	9.75	0.00
75.00	14.95	0.08	0.08	28.06	9.67	0.00
76.00	14.95	0.02	0.02	27.06	9.59	0.00
77.00	14.95	0.00	0.00	26.10	9.51	0.00
78.00	14.95	0.00	24.64	53.16	9.39	0.00
79.00	14.95	0.00	23.18	55.12	9.27	0.00
80.00	14.95	0.00	21.84	56.97	9.16	0.00
81.00	14.95	0.00	20.6	58.71	9.05	0.00
82.00	14.95	0.00	19.11	60.35	8.92	0.00
83.00	14.95	0.00	17.45	61.85	8.77	0.00
84.00	14.95	0.00	15.97	63.21	8.63	0.00
85.00	14.95	0.00	14.65	64.47	8.51	0.00
86.00	14.95	0.00	13.48	65.62	8.39	0.00
87.00	14.95	0.00	12.43	66.68	8.28	0.00
88.00	14.95	0.00	11.48	67.66	8.19	0.00
89.00	14.95	0.00	10.63	68.57	8.09	0.00
90.00	14.95	0.00	9.86	69.41	8.01	0.00
91.00	14.95	0.00	9.16	70.19	7.93	0.00
92.00	14.95	0.00	8.53	70.91	7.86	0.00
93.00	14.95	0.00	7.96	71.59	7.79	0.00
94.00	14.95	0.00	7.44	72.22	7.73	0.00
95.00	14.95	0.00	6.96	72.81	7.67	0.00

STRUCTURE MAXIMUM AND MINIMUM DISCHARGES

Struc	Max (cfs)	Time (hr)	Min (cfs)	Time (hr)
1.00	35.09	63.40	0.00	0.00

BASIN MAXIMUM AND MINIMUM STAGES

Basin	Max (ft)	Time (hr)	Min (ft)	Time (hr)
Multi-family R	10.20	63.40	5.50	0.00

BASIN WATER BUDGETS (all units in acre-ft)

Basin	Total Runoff	Structure Inflow	Structure Outflow	Initial Storage	Final Storage	Residual
Multi-family R	94.41	0.00	72.74	0.00	21.67	0.00

Part IV

Post-permit Considerations

Y. MAINTENANCE OF STORMWATER WATER MANAGEMENT SYSTEMS

The efficiency of a stormwater management system will normally decrease over time unless the system is periodically maintained. A significant reduction in flow capacity can usually be attributed to partial blockages of the conveyance system. Once flow capacity is compromised, flooding of the project may result. The following is a list of maintenance items that should be performed as necessary in order to ensure that the stormwater management system operates as designed. This list, or one similar in nature, should be given to the property/homeowners association at the time they accept responsibility for operation and maintenance of the storm water management system.

Swales

Once a grassed swale has been constructed property, the only routine maintenance required is mowing. Additional work may be required since it is normal for the bottom of the swale to fill in slowly over time due to the accumulation of particulate matter settling out of the stormwater runoff. The centerline elevation of the swale should be maintained no higher than the minimum elevation of any upstream driveway aprons through the swale.

The optimum time to inspect the grade of a swale is during a rainfall event immediately after the swale has been mowed. If the swale bottom is too high, it can cause water to be ponded upstream. Water can also accumulate if the bottom of the swale is significantly lower than the elevation of any downstream aprons. Ponded water is not necessarily bad, unless soil conditions hinder percolation. If percolation is poor, swale maintenance is critical for proper operation of the drainage system.

Certain common practices can actually accelerate the need for swale maintenance. When a swale is planted with trees and shrubs, the plantings can impact the treatment volume and the rate of flow. Shrubs and trees placed in swales should be along the swale edges as opposed to along the centerline.

In many areas, individuals park vehicles within the swales. This practice can be detrimental in several ways. Petroleum products leaking from motor vehicles parked in swales can enter the water management system. If the grass dies from exposure to these products, soil erosion can result. Eroded areas should be re-sodded as soon as possible. In addition to contamination, the weight of a vehicle can alter the grade of the swale if the ground is saturated. If this occurs, the proper grade can usually be easily re-established while the ground is still soft.

Stormwater Inlets

Most stormwater inlets are fitted with a grate to prevent the introduction of debris into the stormwater pipe system. The grates should be inspected periodically and any accumulated debris removed. Over a period of time, sediment can build up within the bottom of inlet structures. If the sediment is not removed, it can migrate into the pipe system. Sediment can be easily removed from the inlet structure, but once it begins to build up in the pipe system, flushing or vacuuming may be required in order to remove it.

Detention/Retention Areas

All pipe entrances and exits should be inspected to ensure that they are not buried beneath debris, soil or vegetation. Any blockages should be removed. If any bare soil is exposed, it should be stabilized (such as with sod, etc.) to prevent erosion. Dry water management areas should be mowed regularly. Water control structures should be inspected to ensure that any v-notches, slots, orifices or other control devices are not blocked by debris.

Culverts

The ends of culverts need to remain clear of blockages. If the culvert is crushed, it should be restored to original dimensions. Corrugated metal pipe culverts can rust over time. This is usually evident by the creation of a small depression immediately above the faulty pipe. The depression is caused by soil falling into the pipe. If the depression is filled, it will continue to reappear. When this situation occurs, the pipe should be excavated and repaired or replaced, depending on the extent of the corrosion.

Outfall Structures

Each outfall structure (also called the discharge control structure) and associated baffles or other trash collectors should be periodically inspected to ensure it is neither blocked by debris nor in need of repair. Any blockages should be removed. Structure elevations and dimensions should be annually compared to current permit information and restored to permitted conditions if needed.

Z. MANAGEMENT AND MAINTENANCE OF ENVIRONMENTAL AREAS

After a project has been permitted and constructed with a designated environmental preserve area, that area will need to be managed and maintained. Environmental preserve areas may consist of wetland preservation areas, upland buffers, upland preservation areas, wetland mitigation areas, or a combination of these. The management and maintenance needs of environmental areas are not so different from other grounds or landscaped areas within the project, except that the maintenance will likely be much less frequent.

Management Plans

Often a permitted project is turned over to an operating entity other than the original permittee. The permit may require that monitoring reports on mitigation areas be submitted for a specified period of years, that exotic or nuisance vegetation be removed, that a minimum coverage of wetland vegetation be maintained, or that other special conditions be met during the phase of the project for which the operating entity will be responsible.

The operating entity should be advised of all permit requirements and financial responsibilities associated with the environmental preserve areas which remain in effect during the operation phase of the project. It is wise to develop an overall management plan for the preserve areas in the same manner as plans are developed for the maintenance of any common grounds or landscaped areas. Preserve area management plans should specify the responsible entity for implementing the management plan and list all management and maintenance requirements of the environmental preserve areas. These requirements should be clearly spelled out for the operating entity and become a part of any property owner's association documents. A management plan that is properly implemented will help ensure that the project stays in compliance with the permit and special conditions, and help to prevent future problems due to a lack of understanding of the operating entity's responsibilities.

Maintenance

Preserve areas should be kept free from undesirable exotic and nuisance vegetation (such as those listed by the Exotic Pest Plant Council) which may appear over time or encroach from adjacent lands. Landscapes which contain exotic or nuisance vegetation will likely be a continual seed source of unwanted vegetation. If the seed source is not eliminated, it will continue to present a problem for the preserve area and be a continual maintenance issue.

Preserve areas should be kept free of trash and debris. There is a tendency for some people to use open areas, including preserve areas, as dumping grounds for yard trimmings and debris. Sometimes land owners do not know that an area within or adjacent to their property has been designated as an environmental preservation area. Property owners should be notified of the locations or boundaries of all environmental

preserves and instructed in the types of activities that can and cannot be conducted there. Posting signs which indicate the location of preserve areas is a simple and convenient method to reduce encroachment into the preserve areas. Figure Z-1 shows a typical preserve area notification sign and the placement at the preserve boundary.

Conservation Easements

When an environmental preserve area is designated as a conservation easement, there are legal restrictions imposed on the activities that can be conducted within the boundaries of the easement. The restricted activities are specified in Subsection 704.06(1), F.S., and are as follows:

(a) Construction or placing of buildings, roads, signs, billboards or other advertising, utilities, or other structures on or above the ground.

(b) Dumping or placing of soil or other substance or material as landfill or dumping or placing of trash, waste, or unsightly or offensive materials.

(c) Removal or destruction of trees, shrubs, or other vegetation.

(d) Excavation, dredging, or removal of loam, peat, gravel, soil, rock, or other material substance in such manner as to affect the surface.

(e) Surface use except for purposes that permit the land or water area to remain predominantly in its natural condition.

(f) Activities detrimental to drainage, flood control, water conservation, erosion control, soil conservation, or fish and wildlife habitat preservation.

(g) Acts or uses detrimental to such retention of land or water areas.

(h) Acts or uses detrimental to the preservation of the structural integrity or physical appearance of sites or properties of historical, architectural, archaeological, or cultural significance.

Environmental Education

Educational brochures, management plans incorporated into association documents, posted signs and the promotion of activities compatible with environmental purposes are useful tools in ensuring compliance with the permit conditions. When the preserve is promoted as an area for observing and photographing wildlife, enjoying the aesthetics and quiet of a natural area, watching butterflies, birding, hiking on nature trails, or other passive recreational activities, it becomes an attraction to be protected.
Providing information to operating entities and property owners via association documents on the types of activities that are permitted and are not permitted in the

preserve is important. Notification and education can go a long way toward ensuring the long-term integrity of environmental preserve areas. If the areas are clearly identified, and if efforts are made to educate property and project owners about the importance of the preserve areas, compliance with the Environmental Resource Permit is much more likely.

Post Construction Measures
To Prevent Impacts to Wetlands

Use of Signs to Notify Property Owners of Preserve Boundaries

PRESERVE
BOUNDARY LINE

No alternations permitted
to soil, vegetation or water.

Environmentally
Sensitive Area

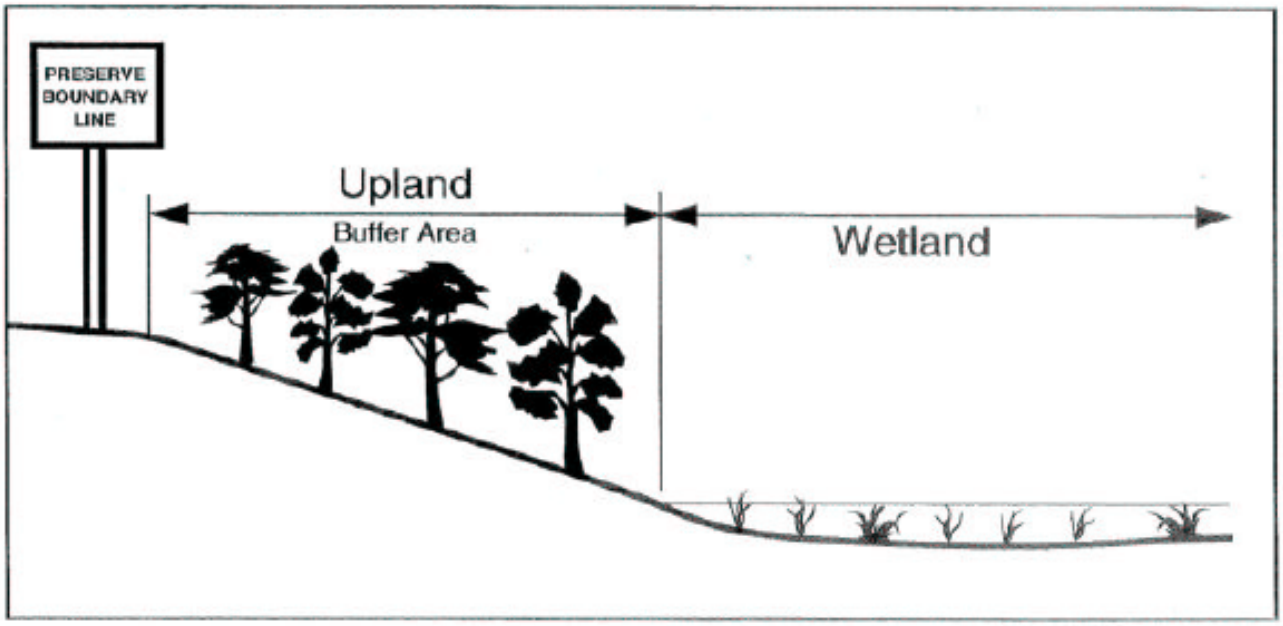
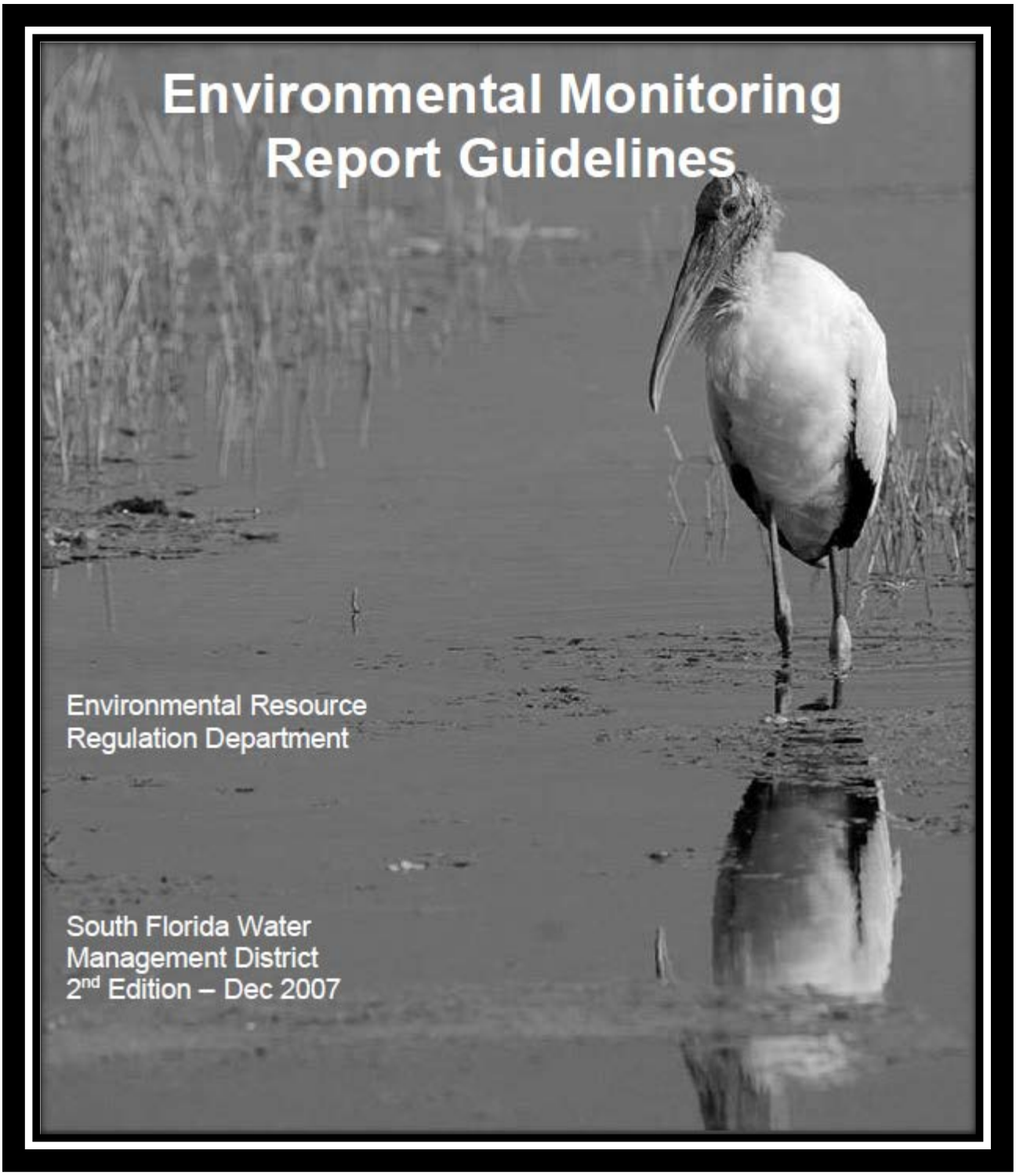


Figure Z-1

For the Environmental Monitoring Report Guidelines, click here