DRAFT

PERMIT INFORMATION MANUAL
VOLUME IV
MANAGEMENT AND STORAGE OF SURFACE WATERS

APPENDIX 2
ALLOWABLE DISCHARGE VALUES FOR PROJECTS WITHIN THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT
February 17, 1994

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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.

0.09 cfs/ac

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.

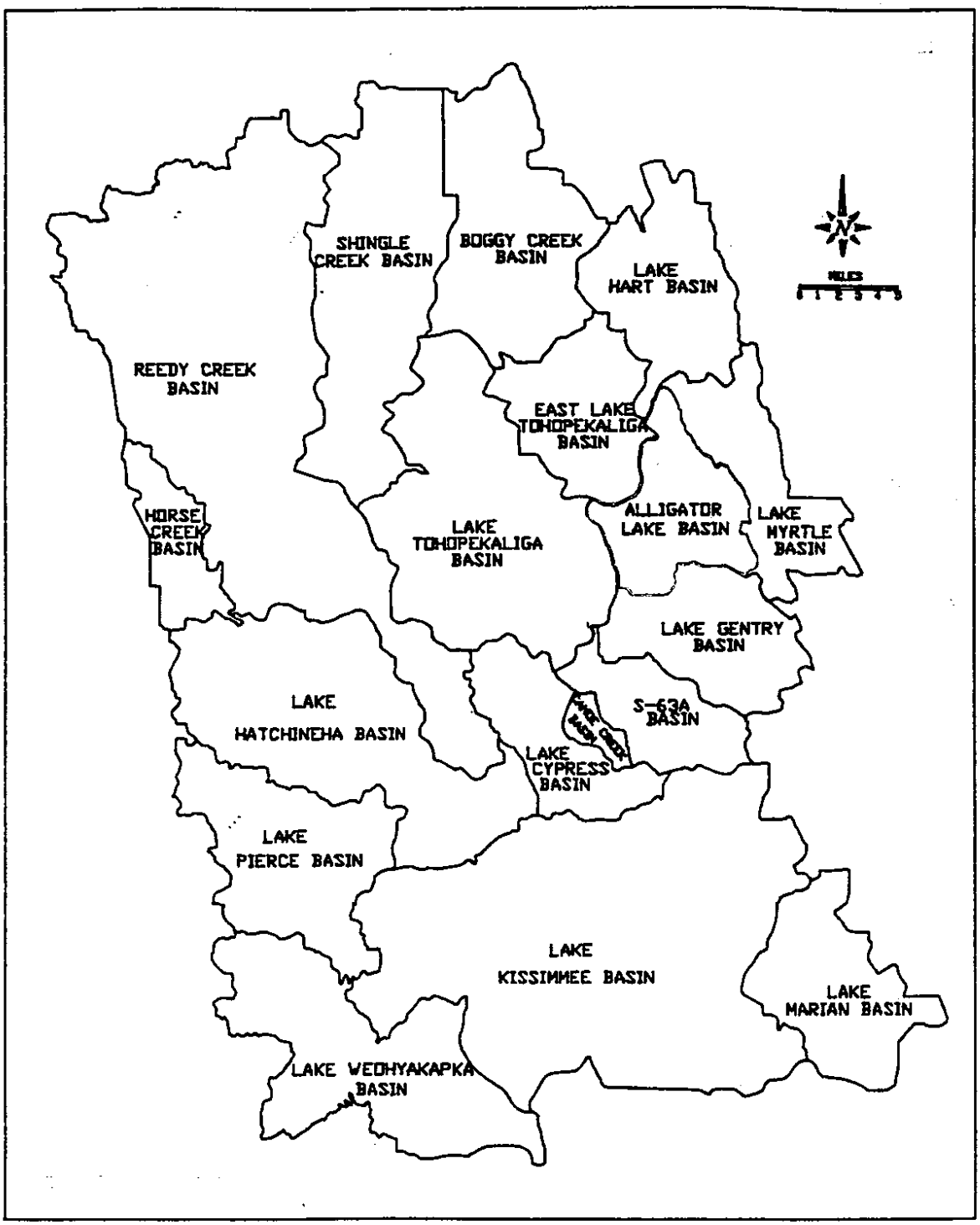


FIGURE 1 RELATIVE LOCATIONS OF UPPER KISSIMMEE RIVER DRAINAGE BASINS

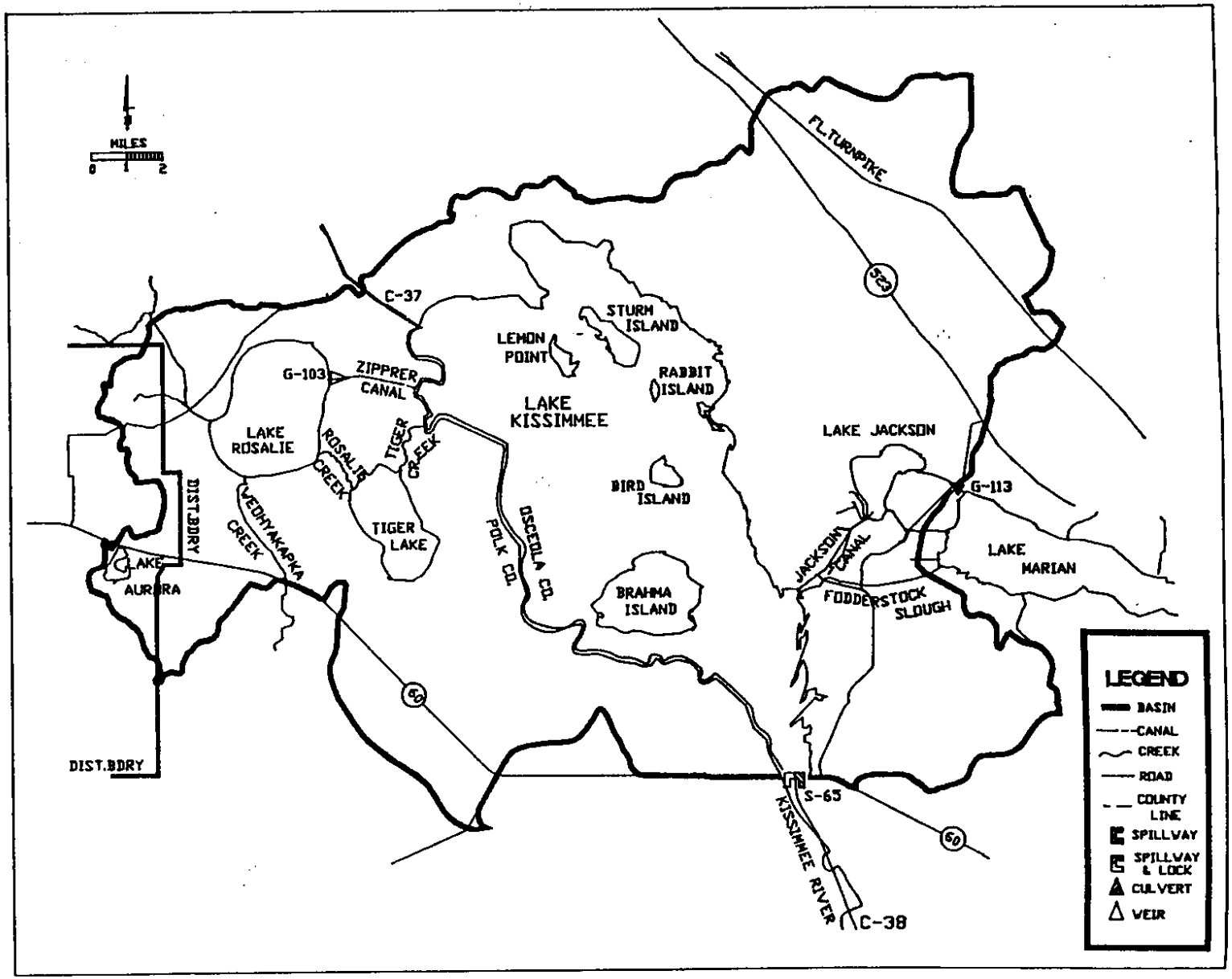


FIGURE 2 Lake Kissimmee Basin (172,300 acres).

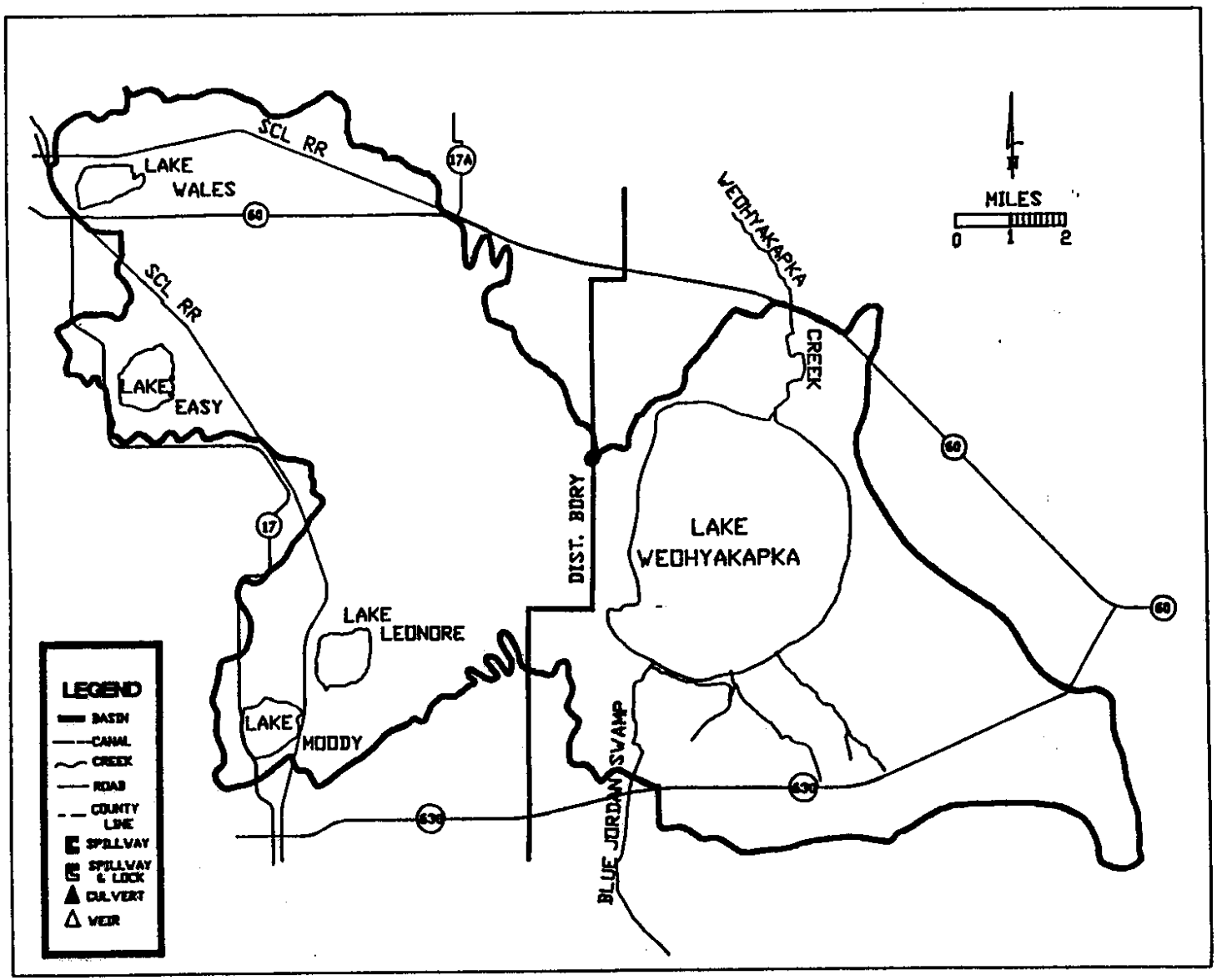


FIGURE 3 Lake Weohyakapka Basin (62,600 acres).

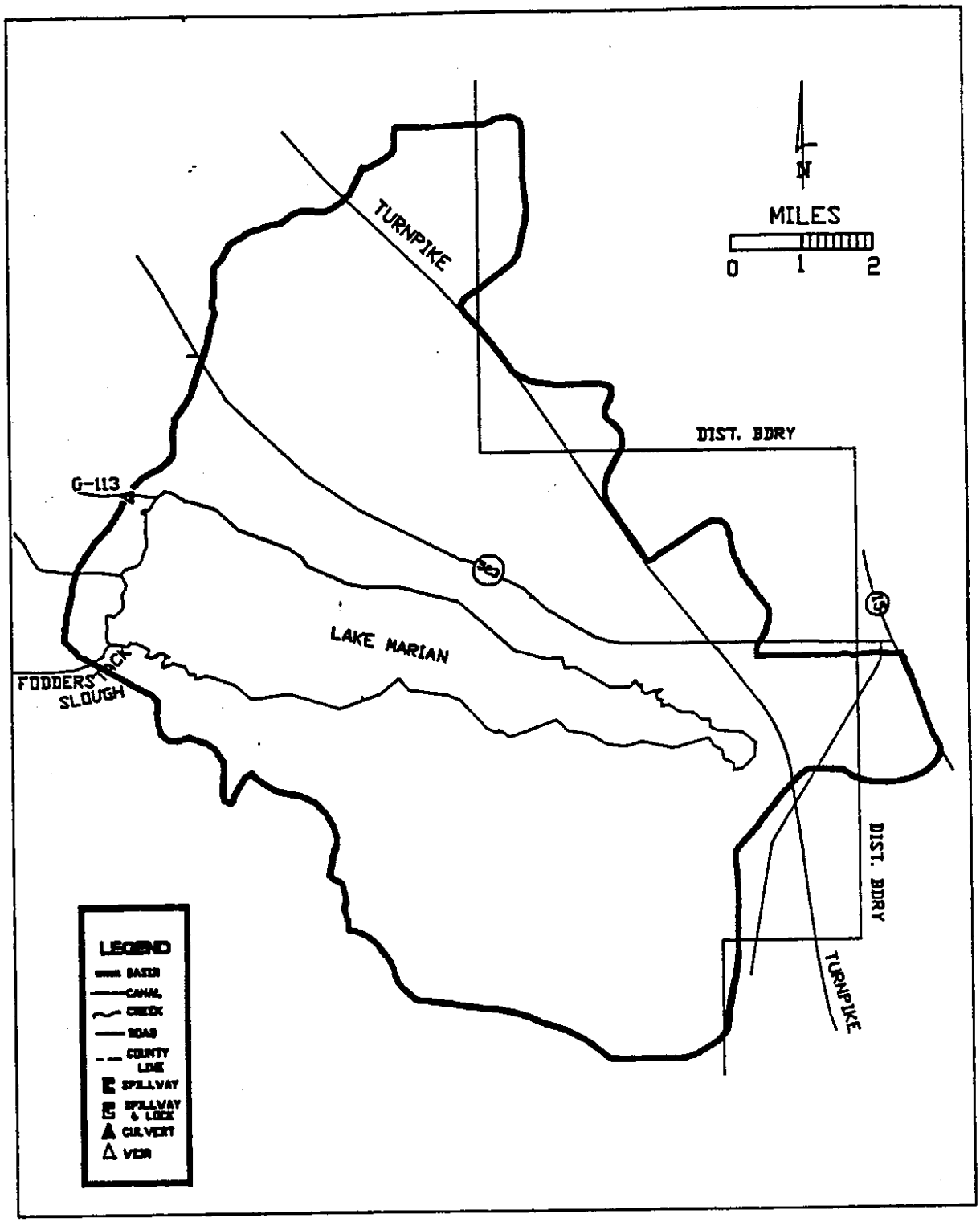


FIGURE 4 Lake Marian Basin (37,040 acres).

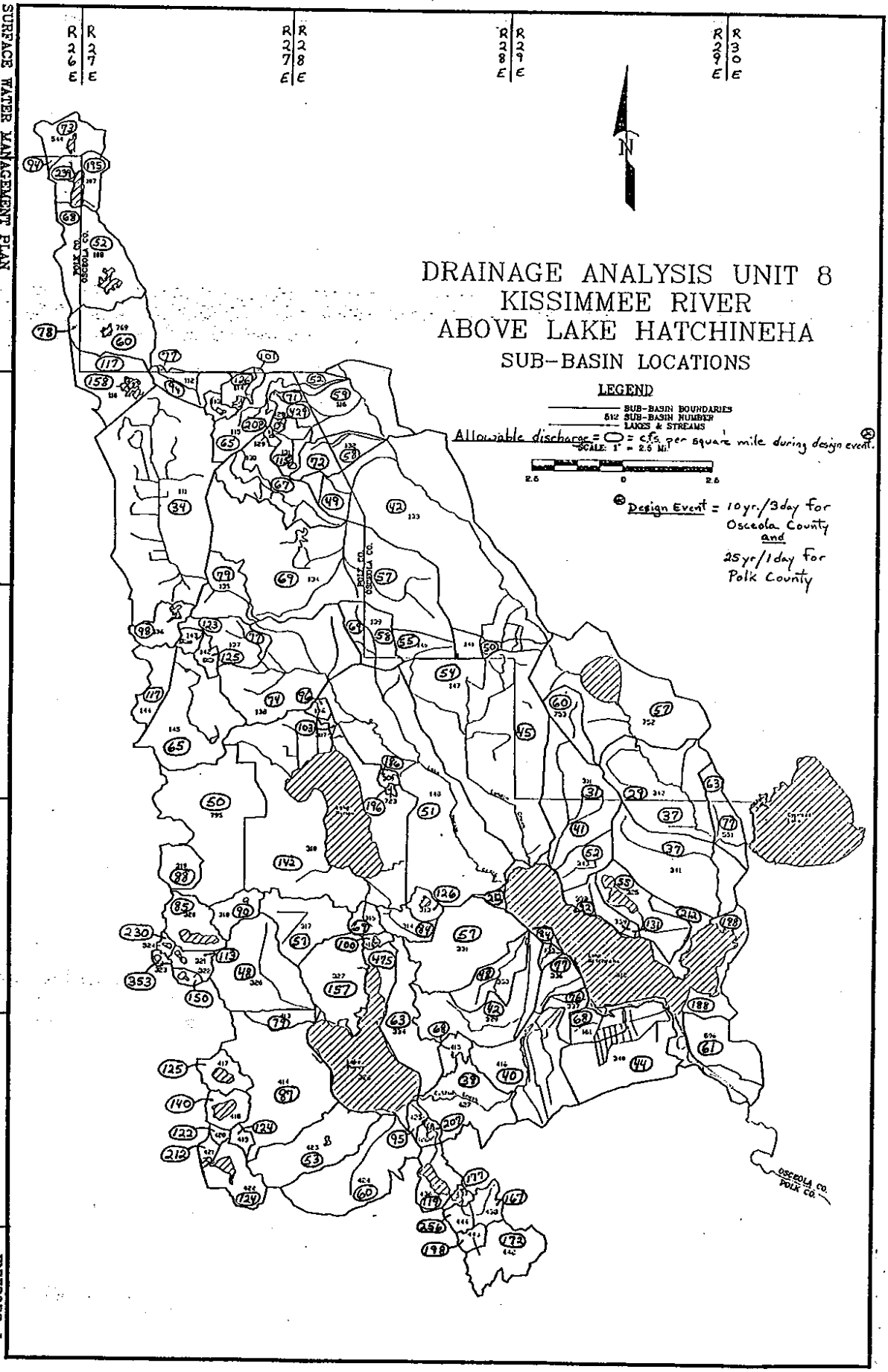

SURFACE WATER MANAGEMENT PLAN
R 26 E
R 27 E
R 28 E
R 29 E
R 30 E
T24S
T25S
T26S
T27S
T28S
T29S
T30S
N
DRAINAGE ANALYSIS UNIT 8
KISSIMMEE RIVER
ABOVE LAKE HATCHINEHA
SUB-BASIN LOCATIONS
LEGEND
SUB-BASIN BOUNDARIES
512 SUB-BASIN NUMBER
LAKES & STREAMS
Allowable discharge = ⑤ = c.f.s. per square mile during design event.
SCALE: 1" = 2.5 MI.
2.5 0 2.5
⑤ Design Event = 10 yr./3 day for Osceola County and 25 yr./1 day for Polk County
OSCEOLA CO.
POLK CO.
ENVISORS, Inc.

Figure 5

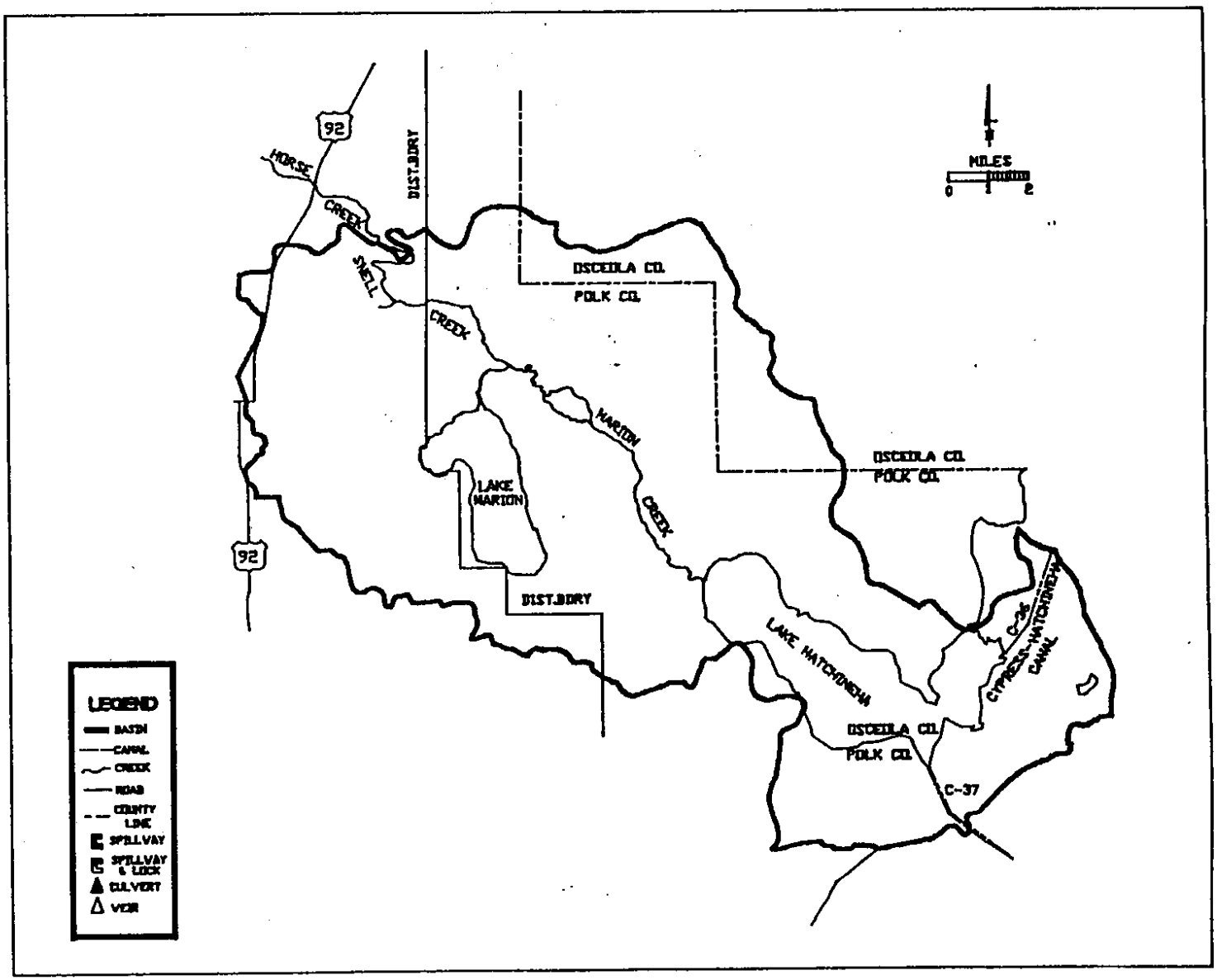


FIGURE 6 Lake Hatchineha Basin (82,250 acres).

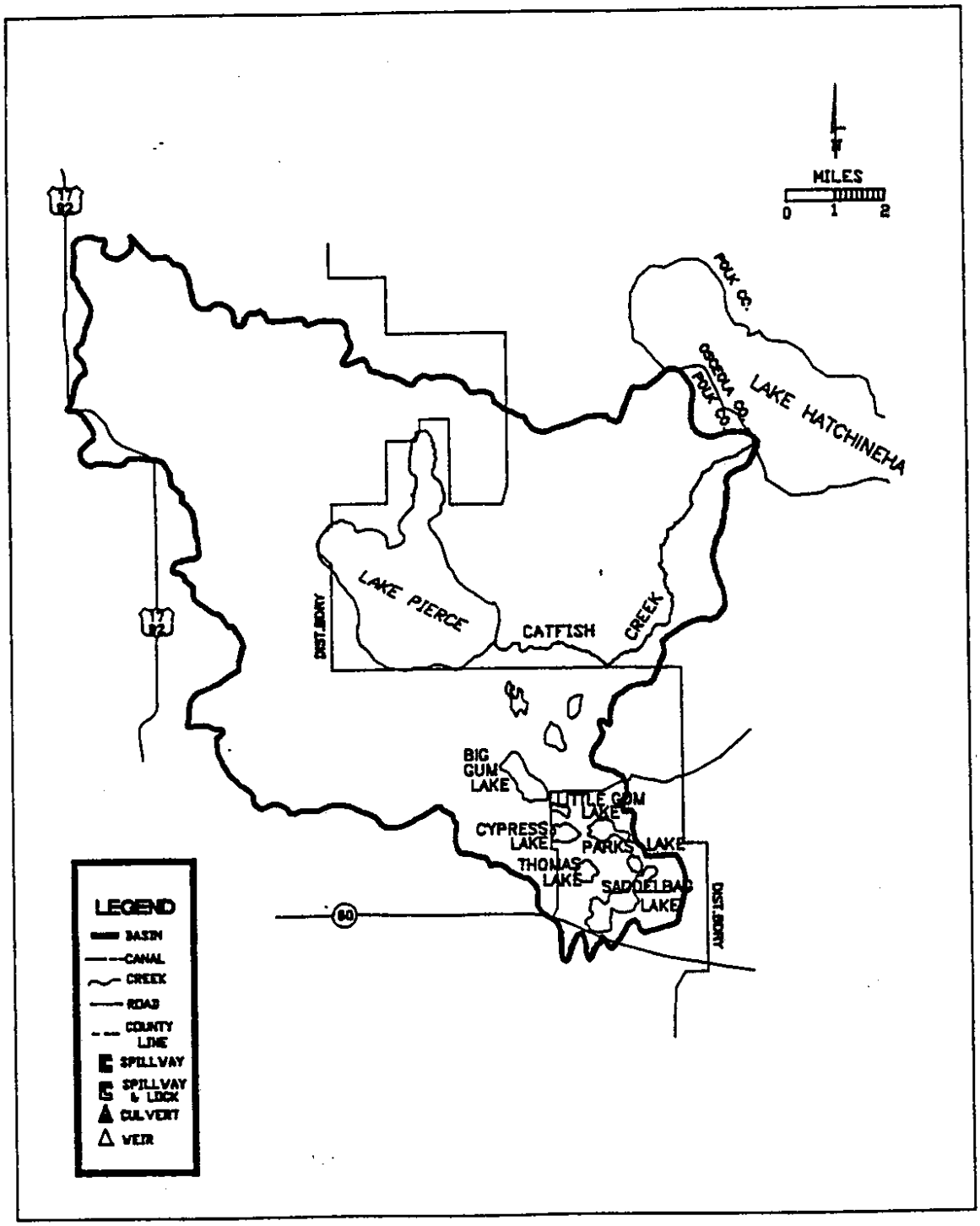


FIGURE 7 Lake Pierce Basin (48,610 acres).

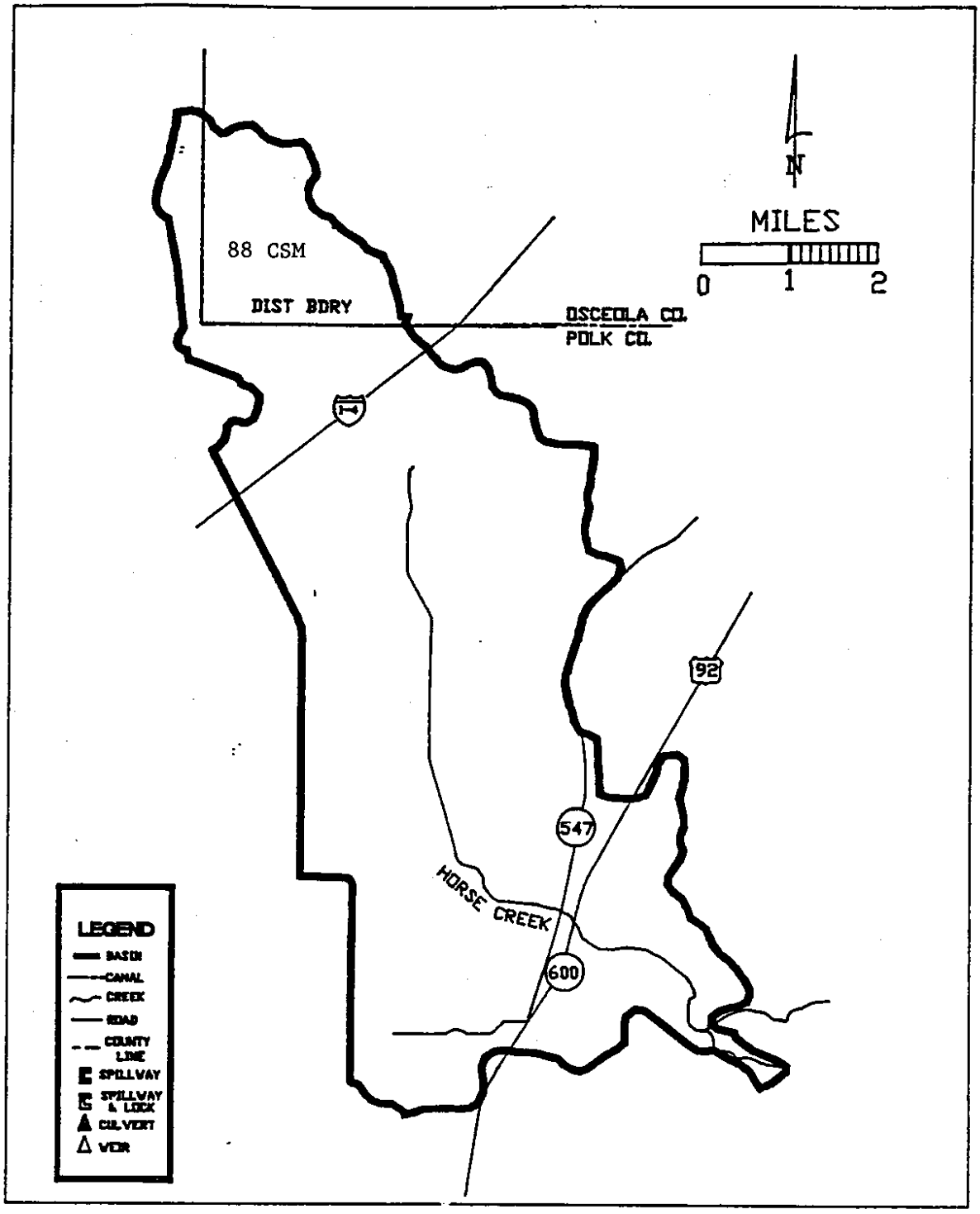


FIGURE 8 Horse Creek Basin (16,960 acres).

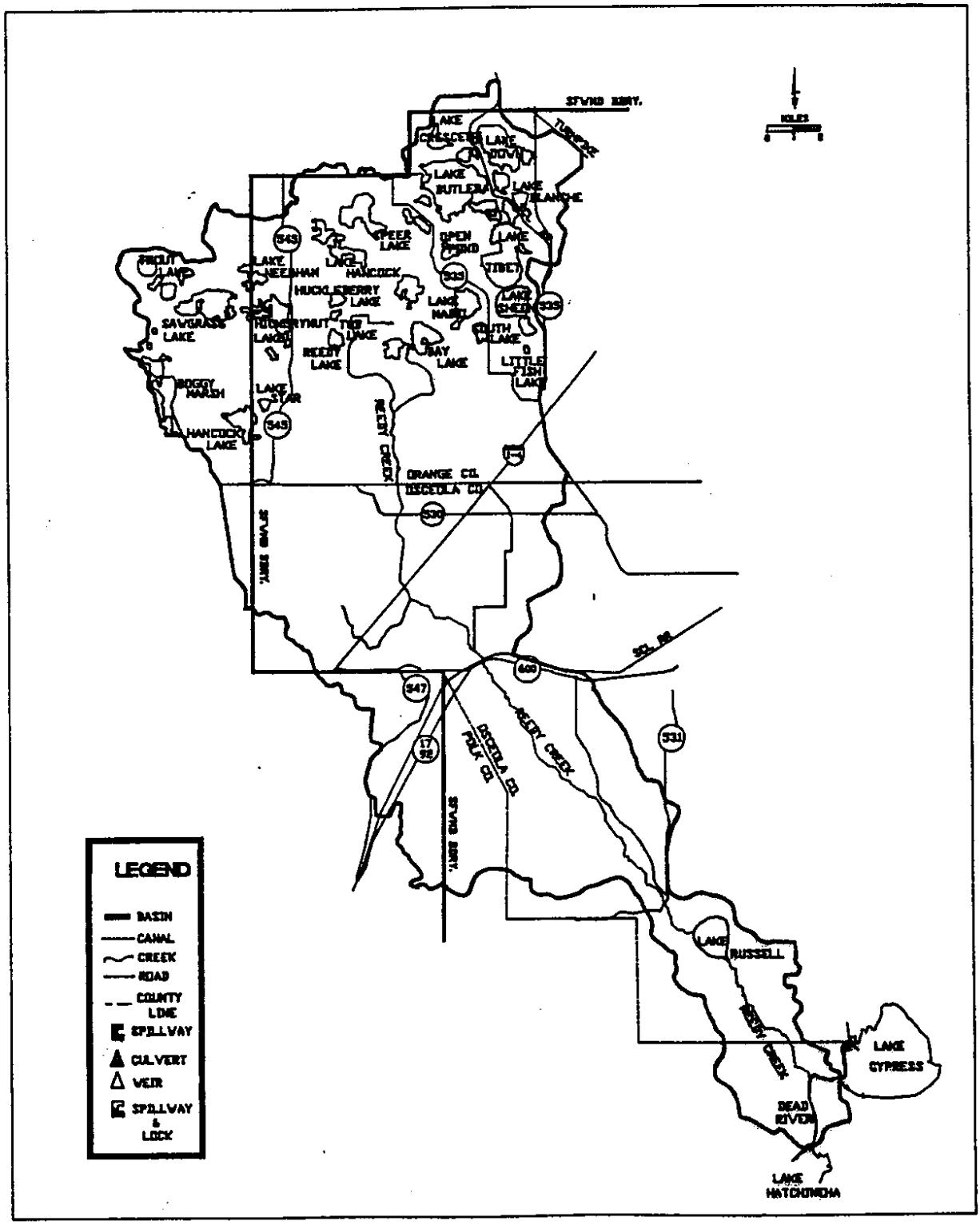


FIGURE 9 Reedy Creek Basin (172,200 acres).

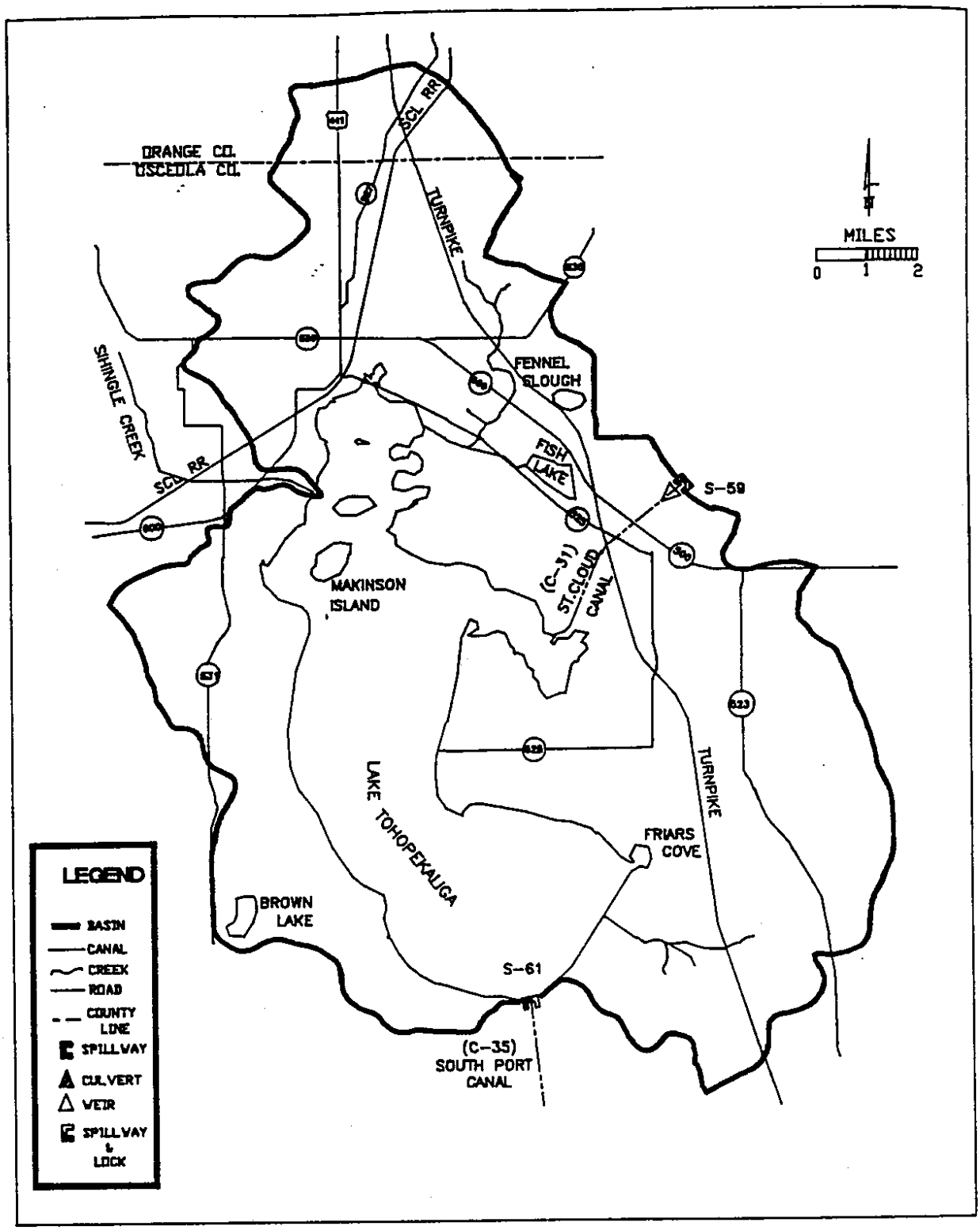


FIGURE 10 Lake Tohopekaliga Basin (84,130 acres).

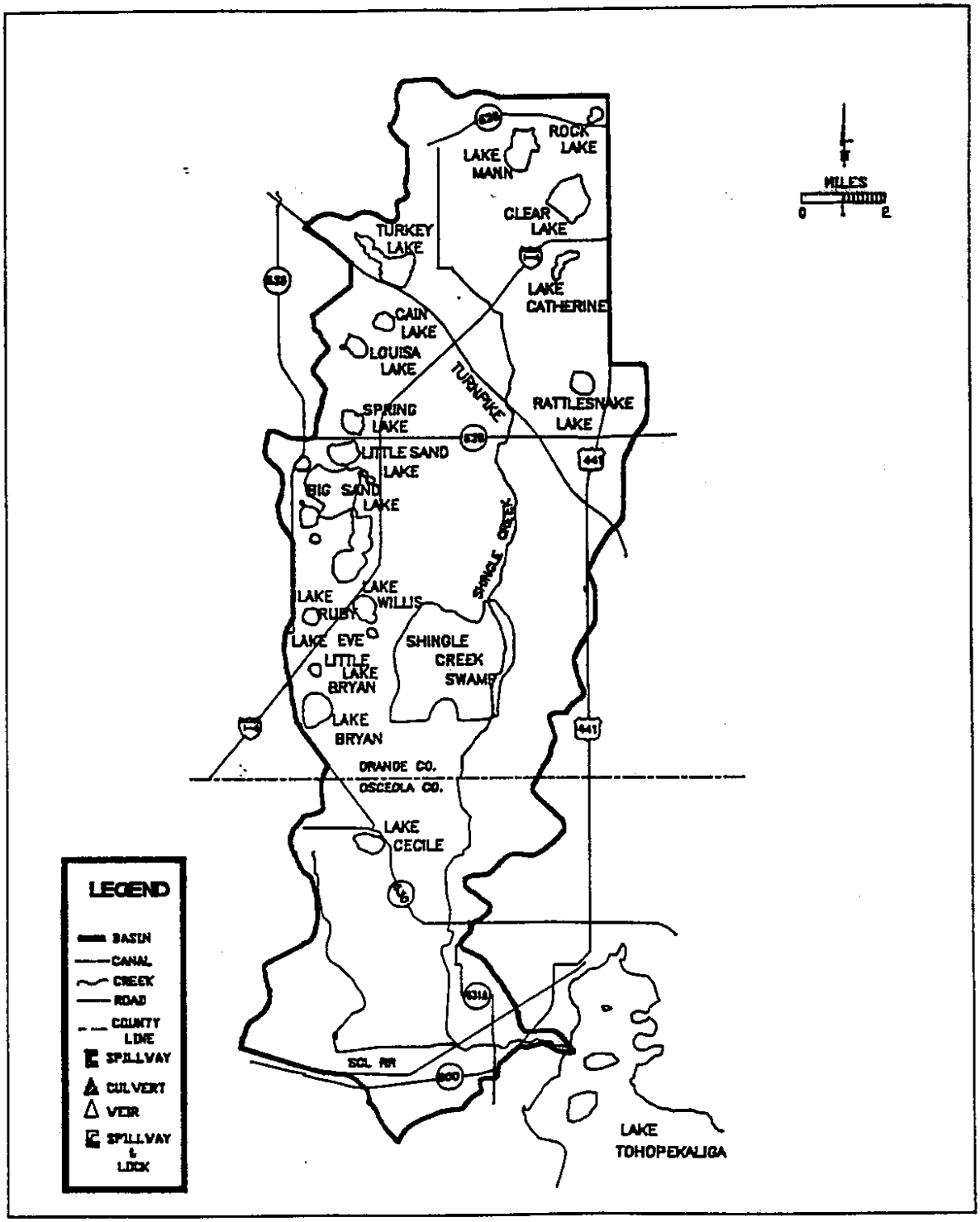


FIGURE // Shingle Creek Basin (71,310 acres).

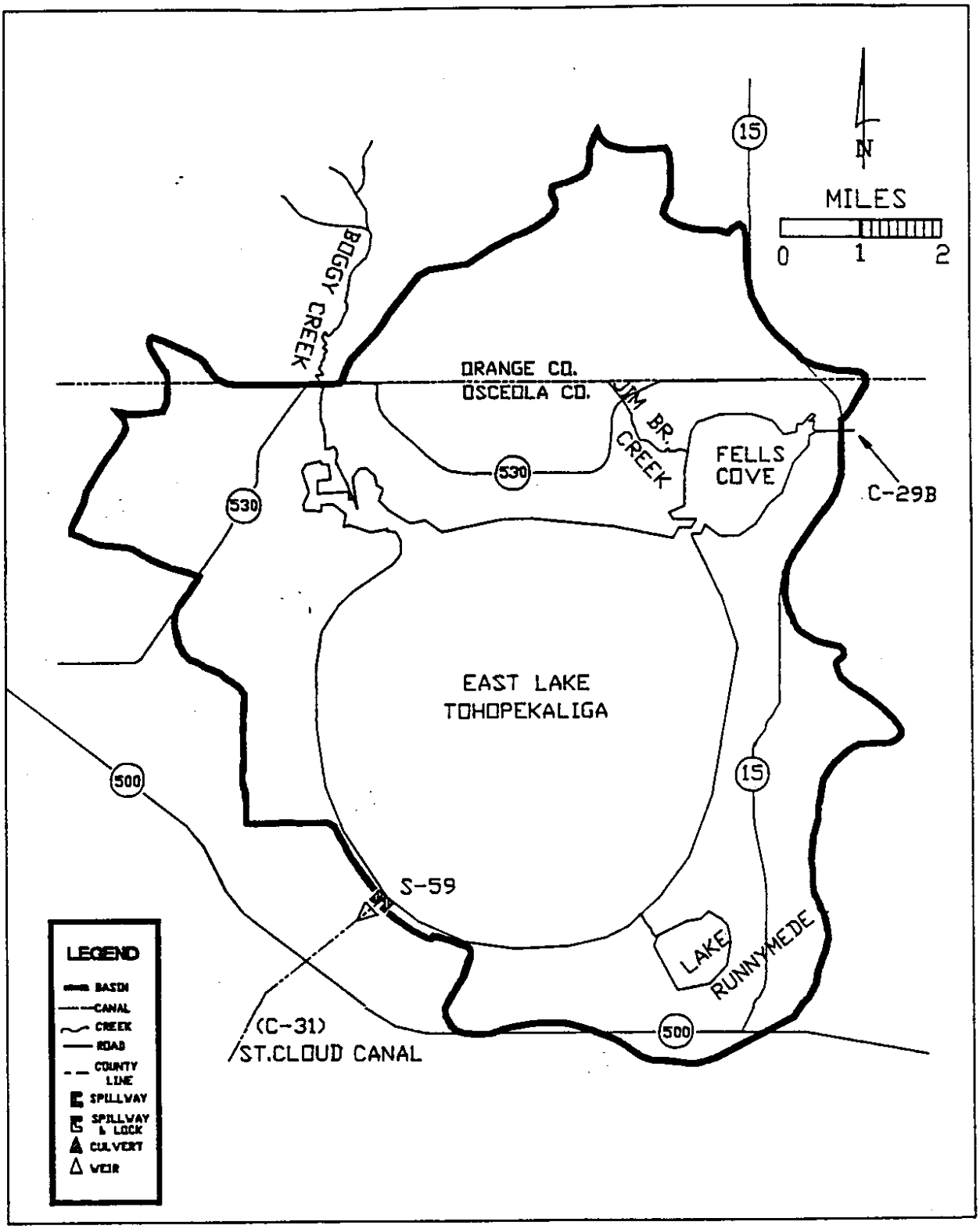


FIGURE 12 East Lake Tohopekaliga Basin (32,540 acres).

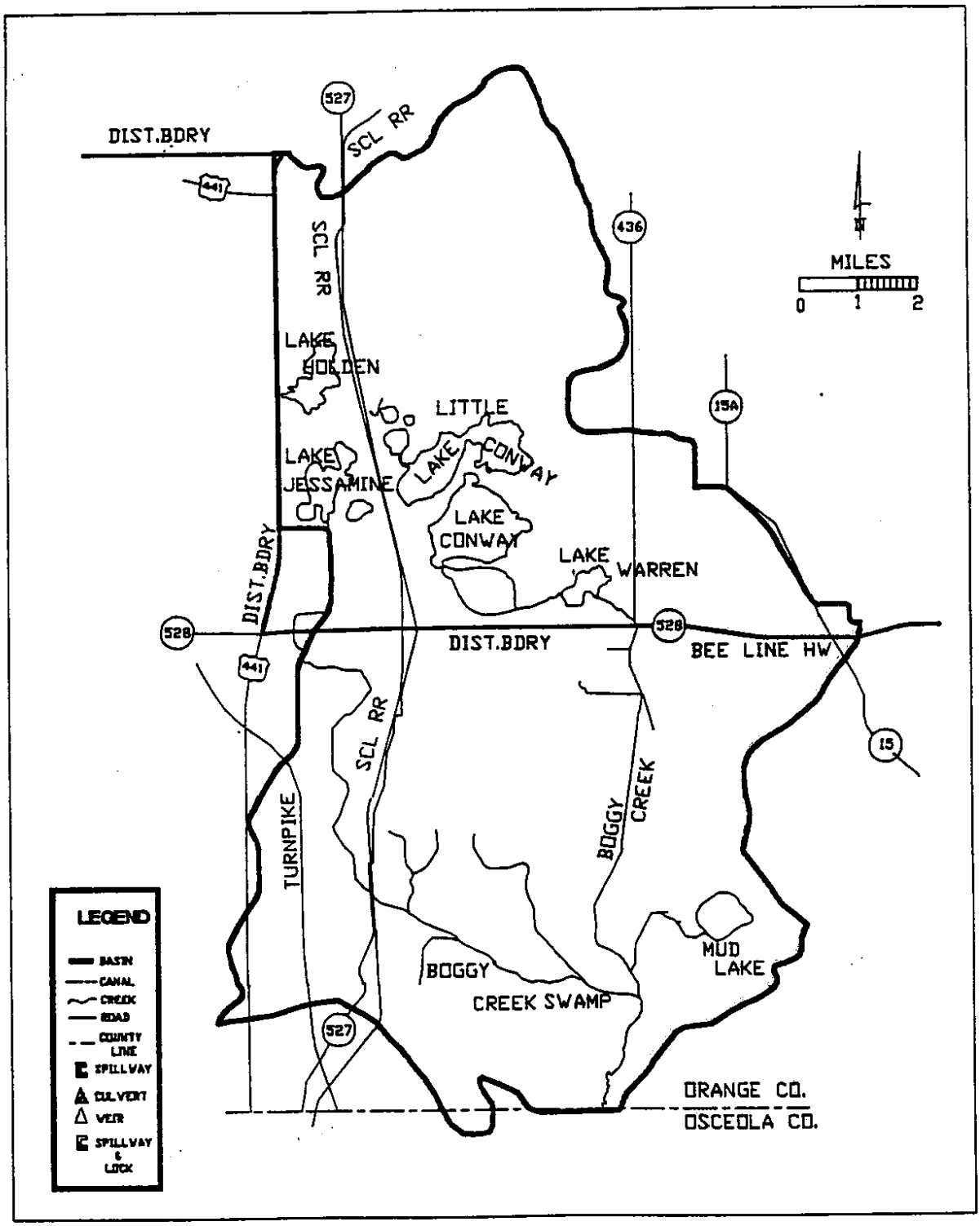


FIGURE 13 Boggy Creek Basin (55,600 acres).

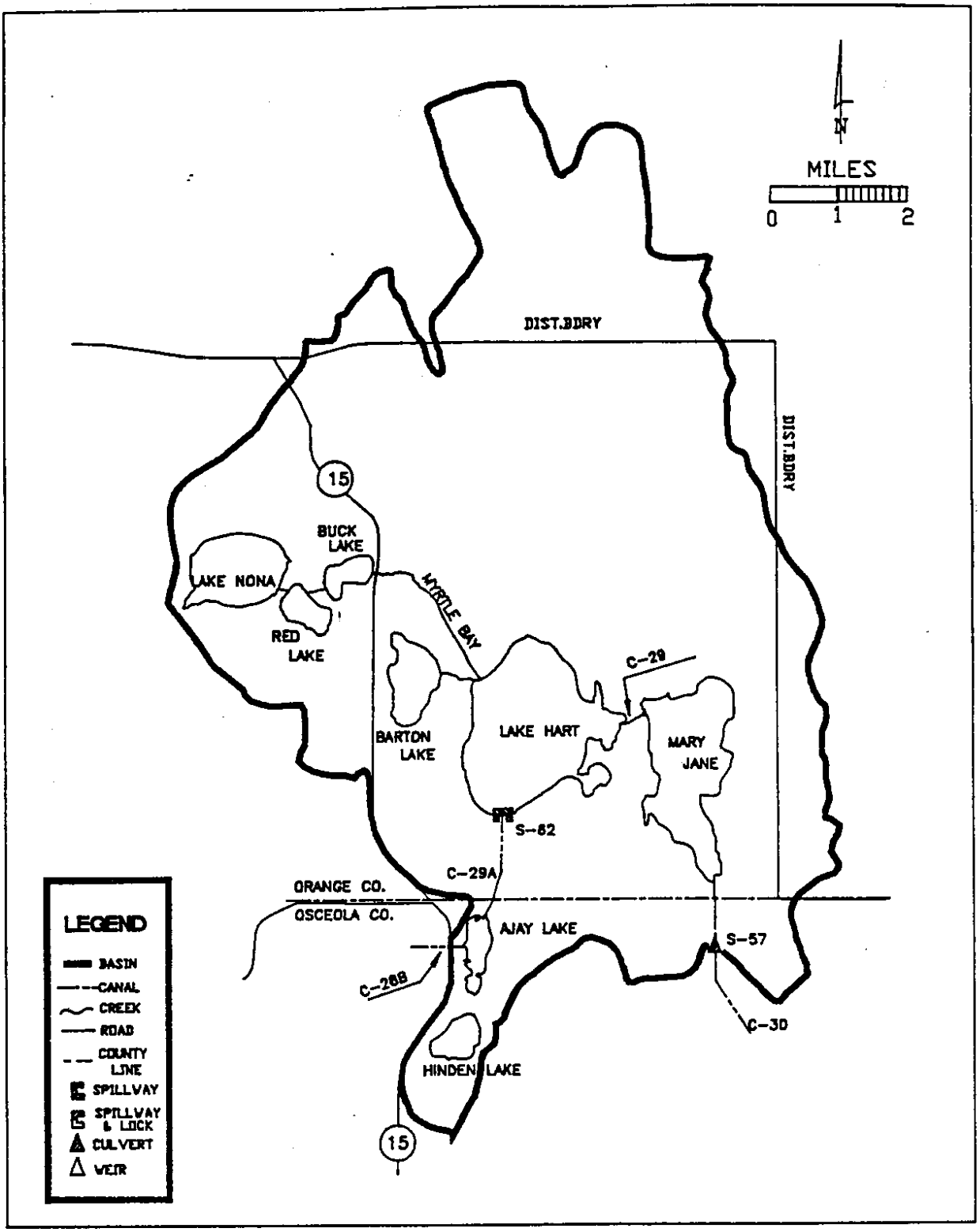


FIGURE 14 Lake Hart Basin (38,530 acres).

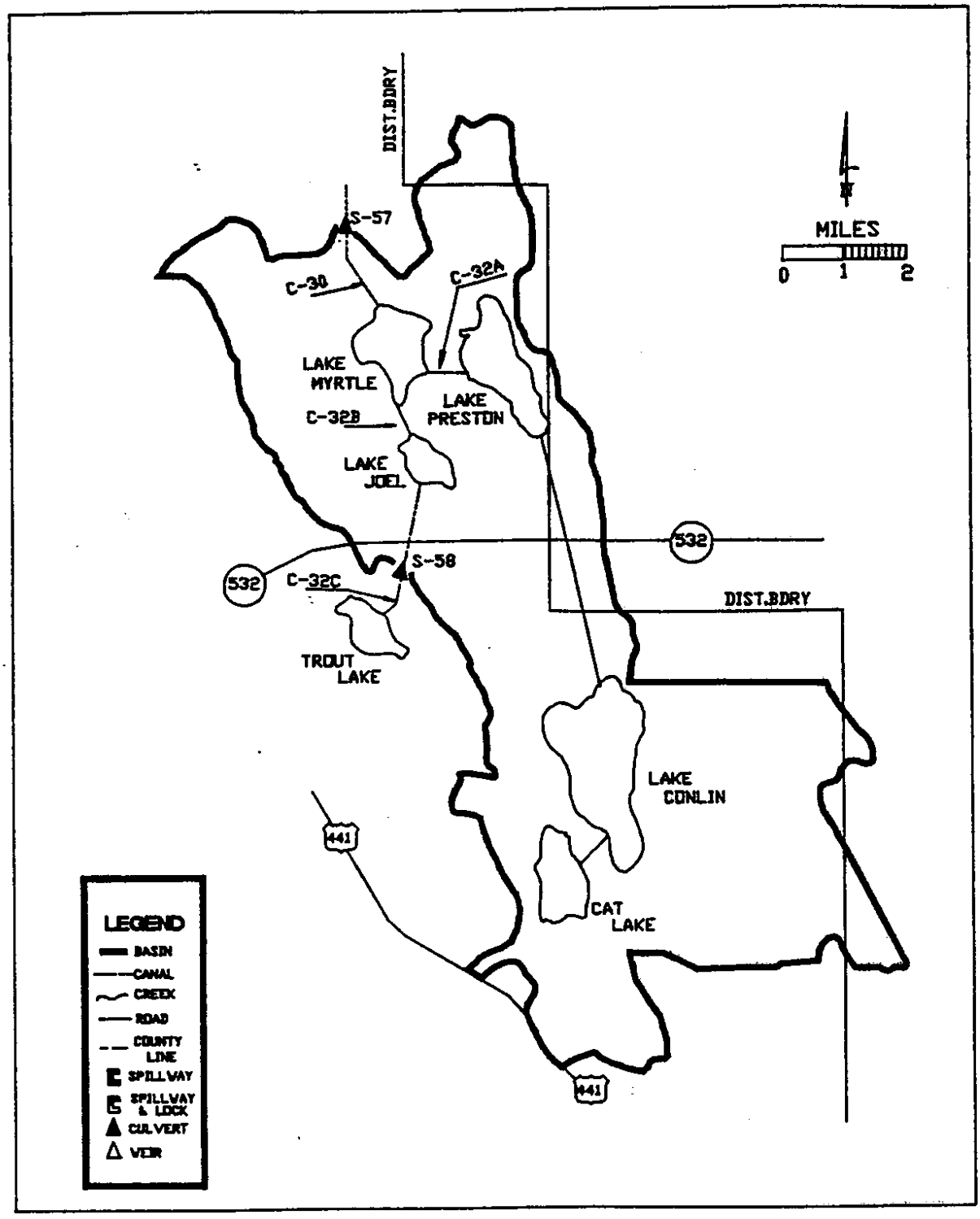


FIGURE 15 Lake Myrtle Basin (30,435 acres).

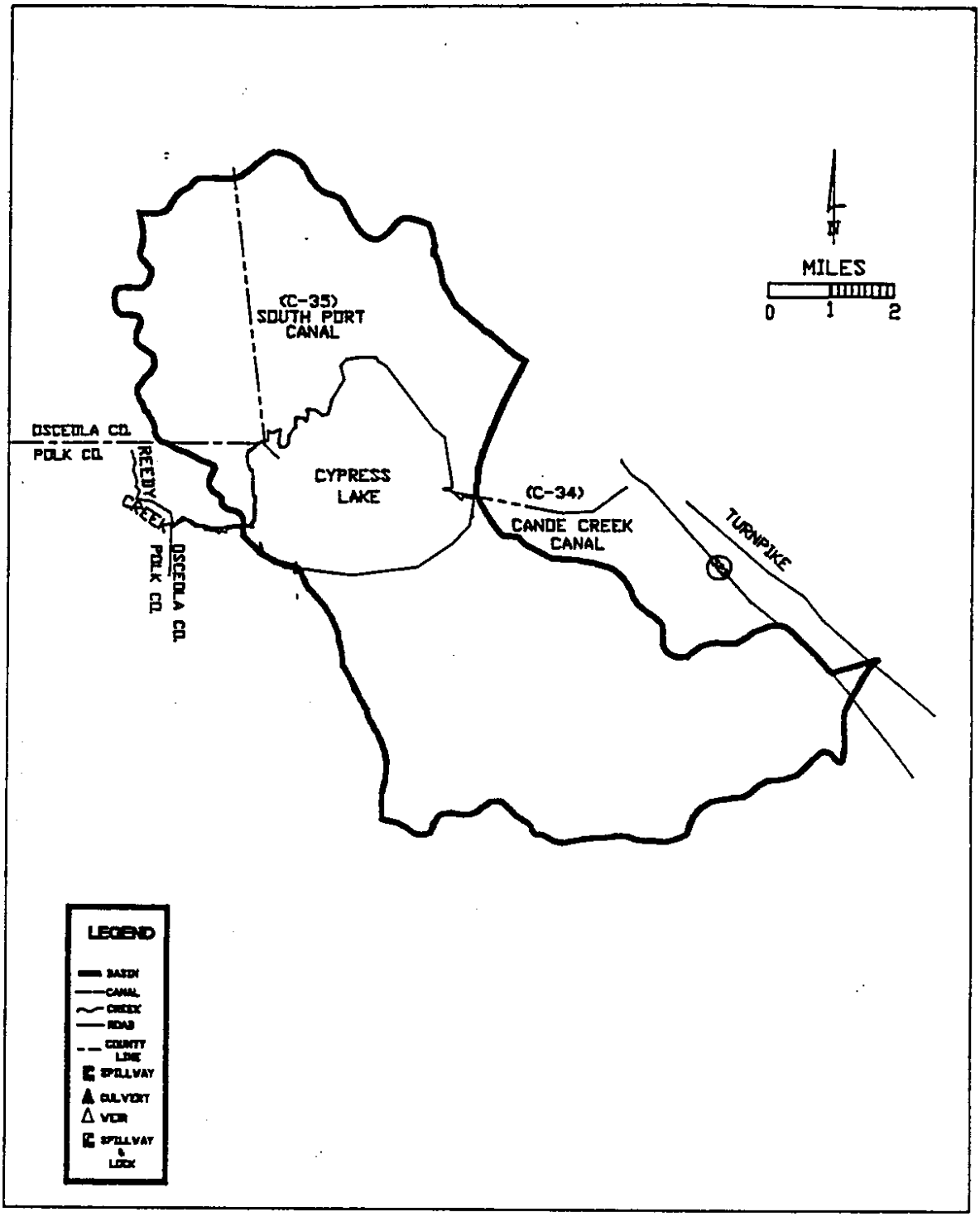


FIGURE 16 Lake Cypress Basin (27,170 acres).

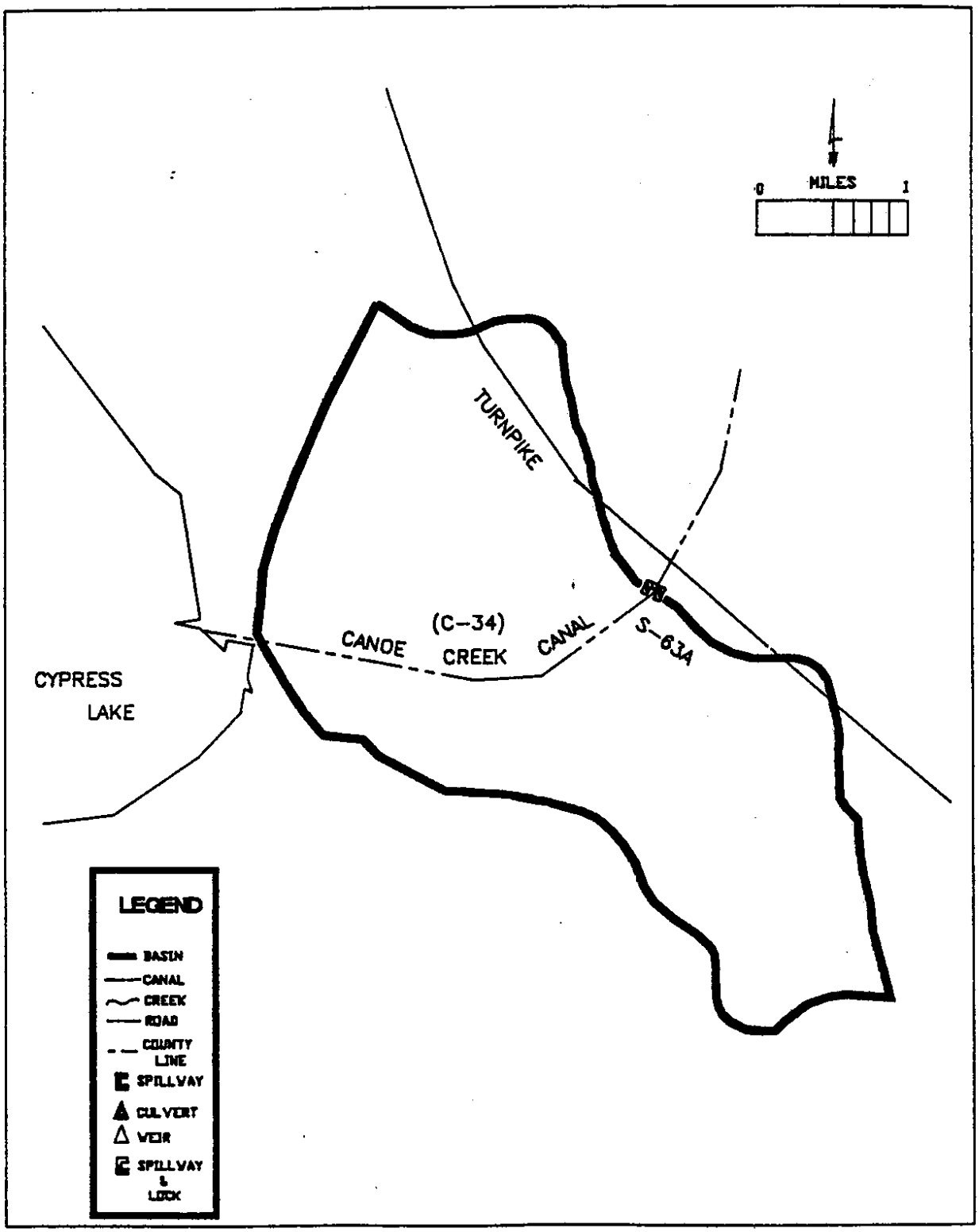


FIGURE 17 Canoe Creek Basin (4,440 acres).

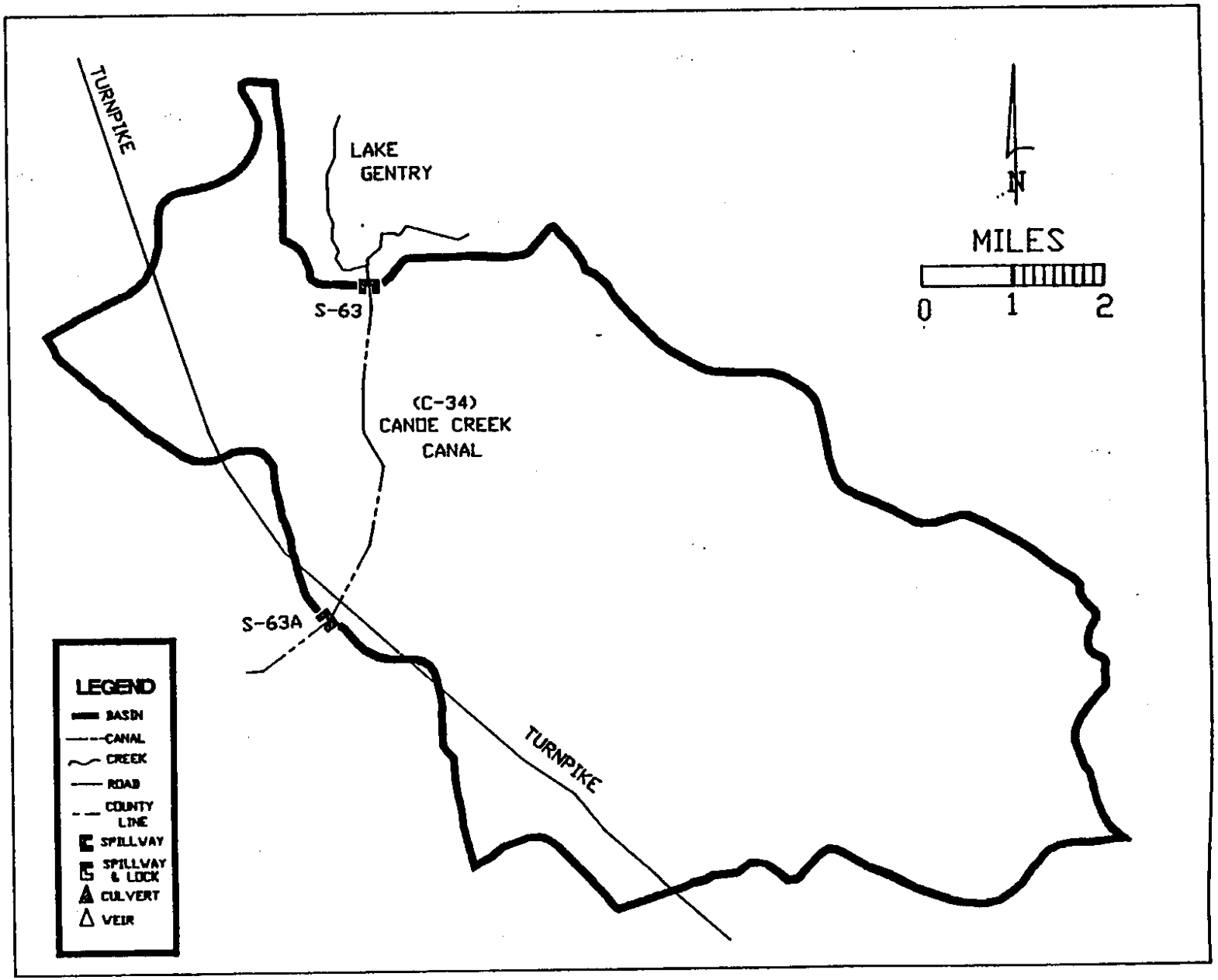


FIGURE 18 S-63A Basin (22,570 acres).

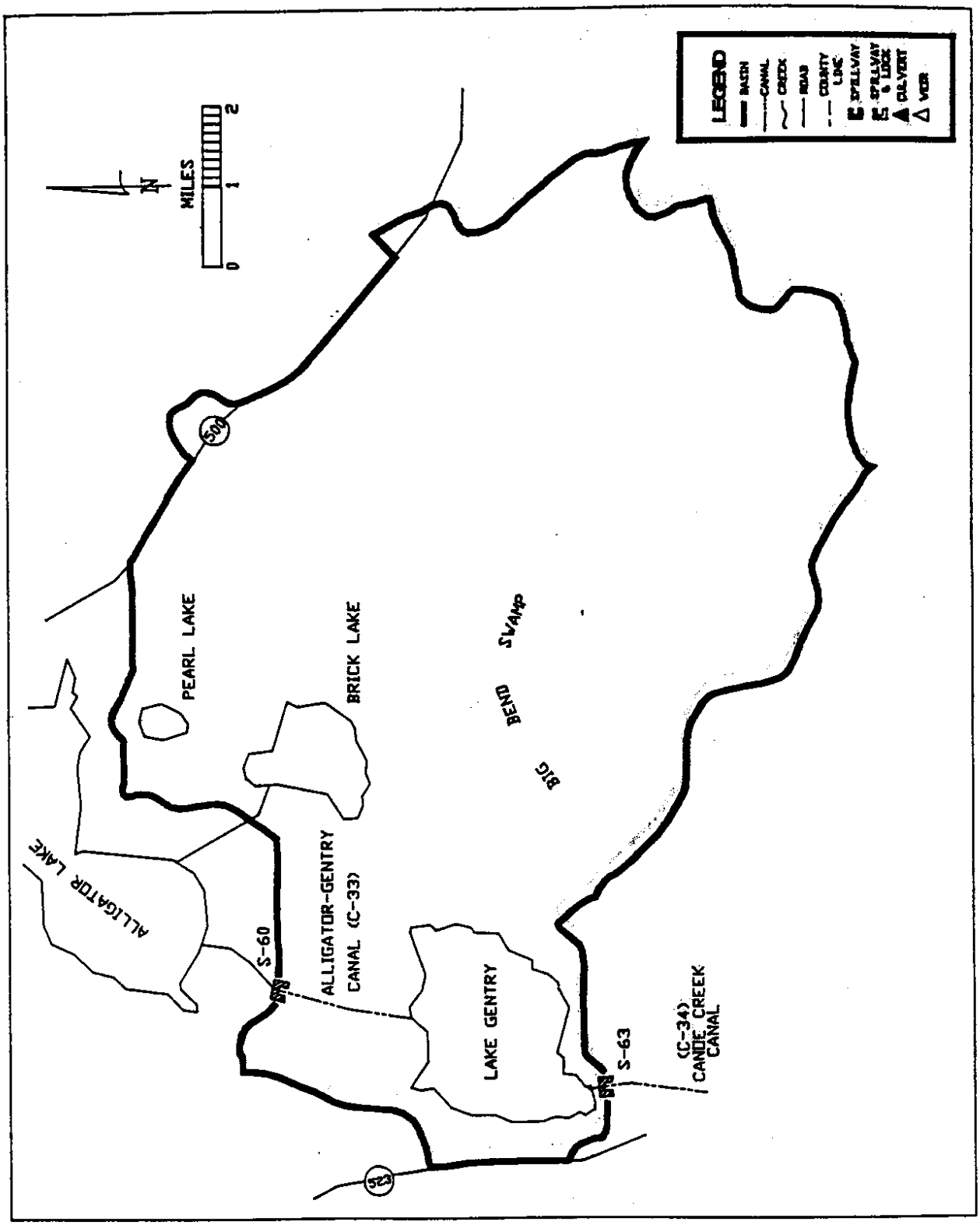


FIGURE 19 Lake Gentry Basin (33,115 acres).

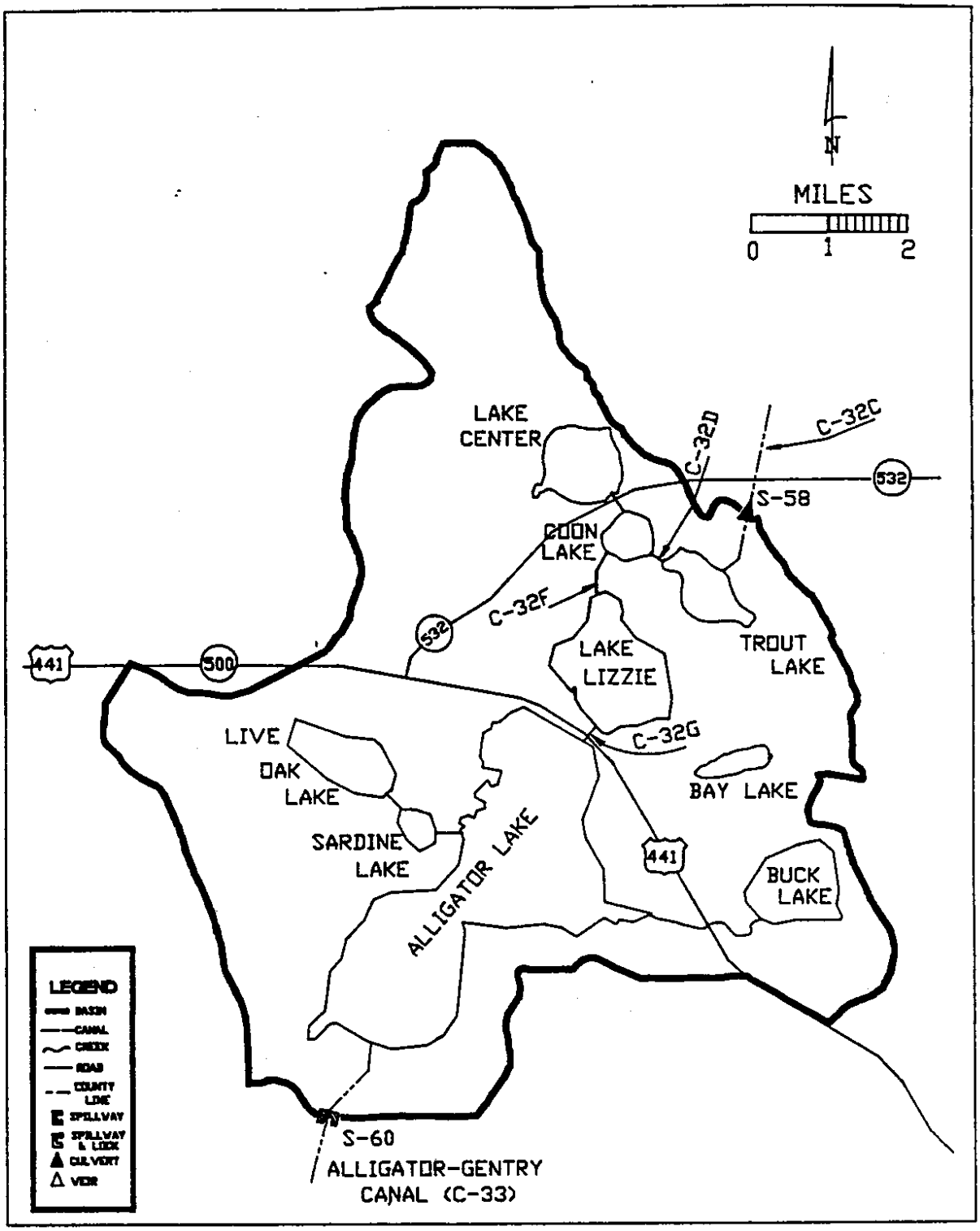


FIGURE 20 Alligator Lake Basin (29,985 acres).

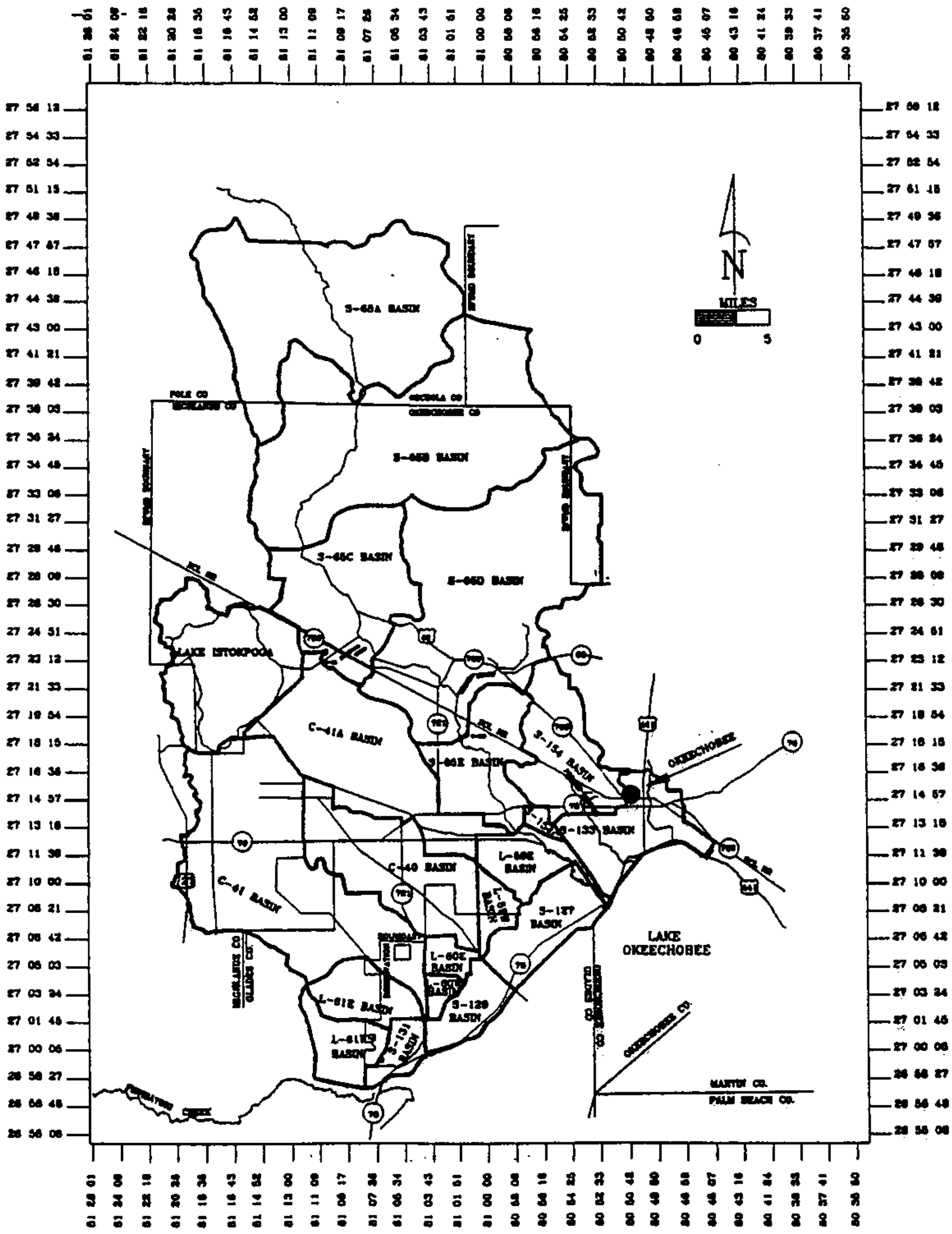


FIGURE 2/ Lower Kissimmee River and Lake Istokpoga Basins

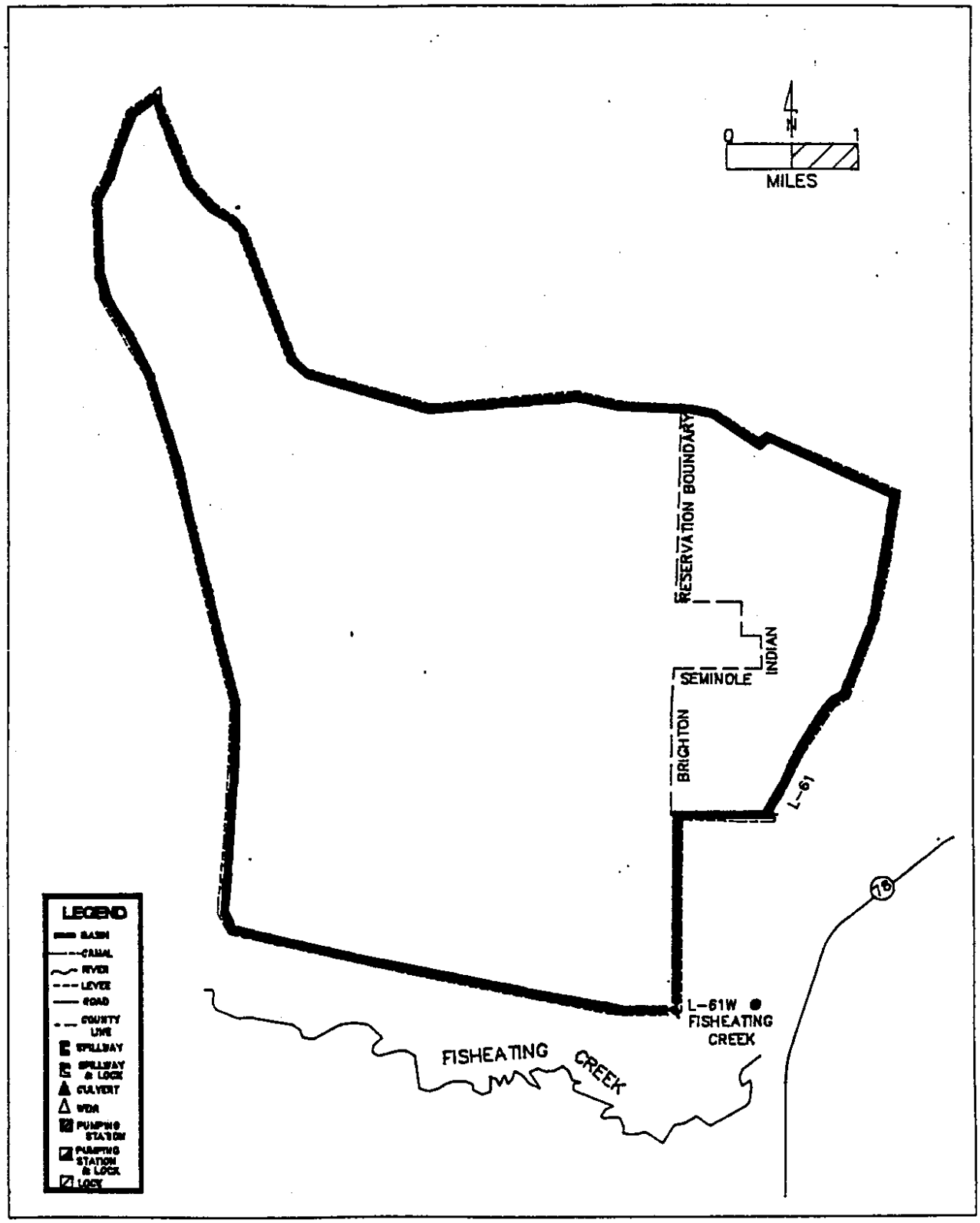


FIGURE 22 L-61W Basin Map

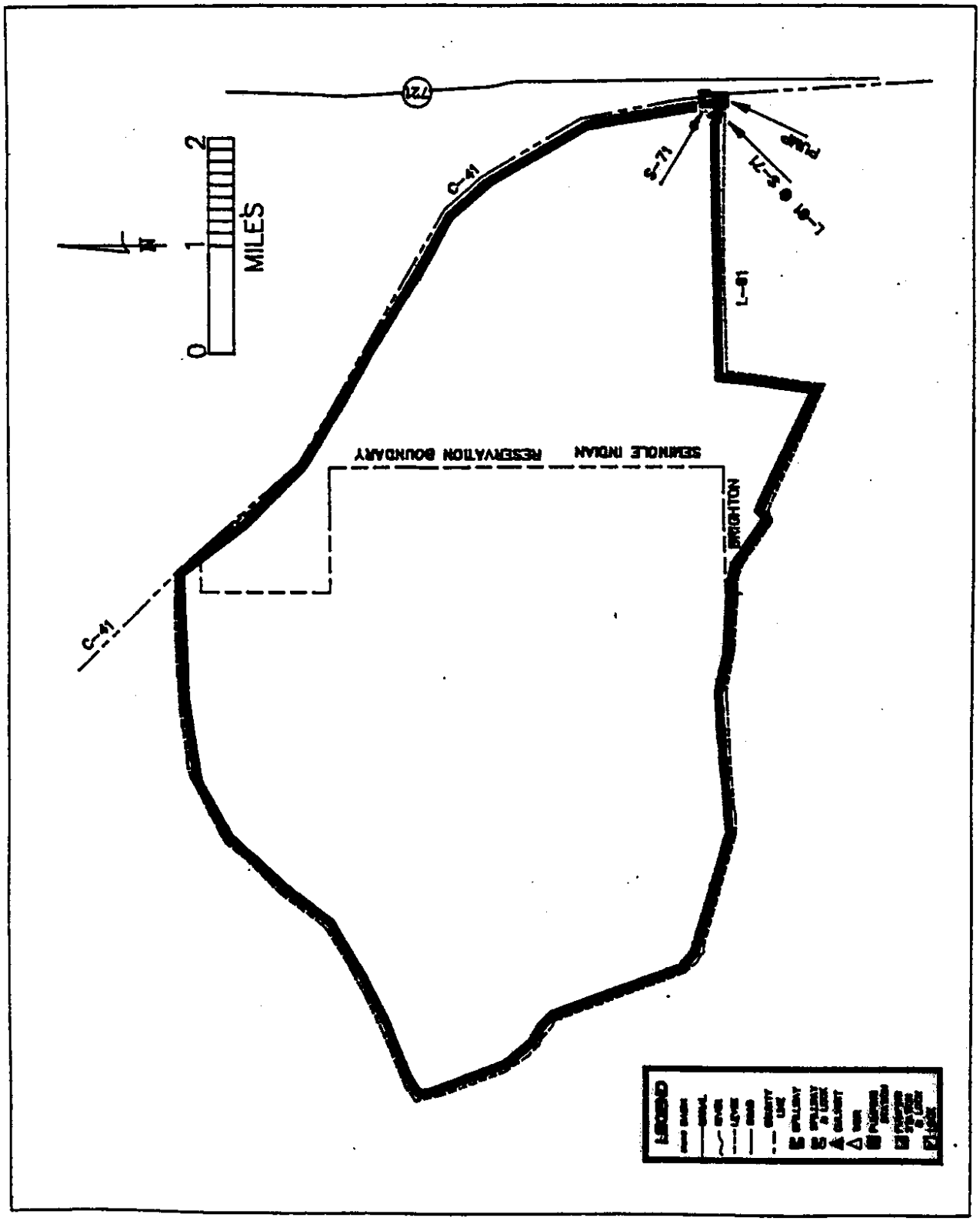


FIGURE 23 L-61E Basin Map

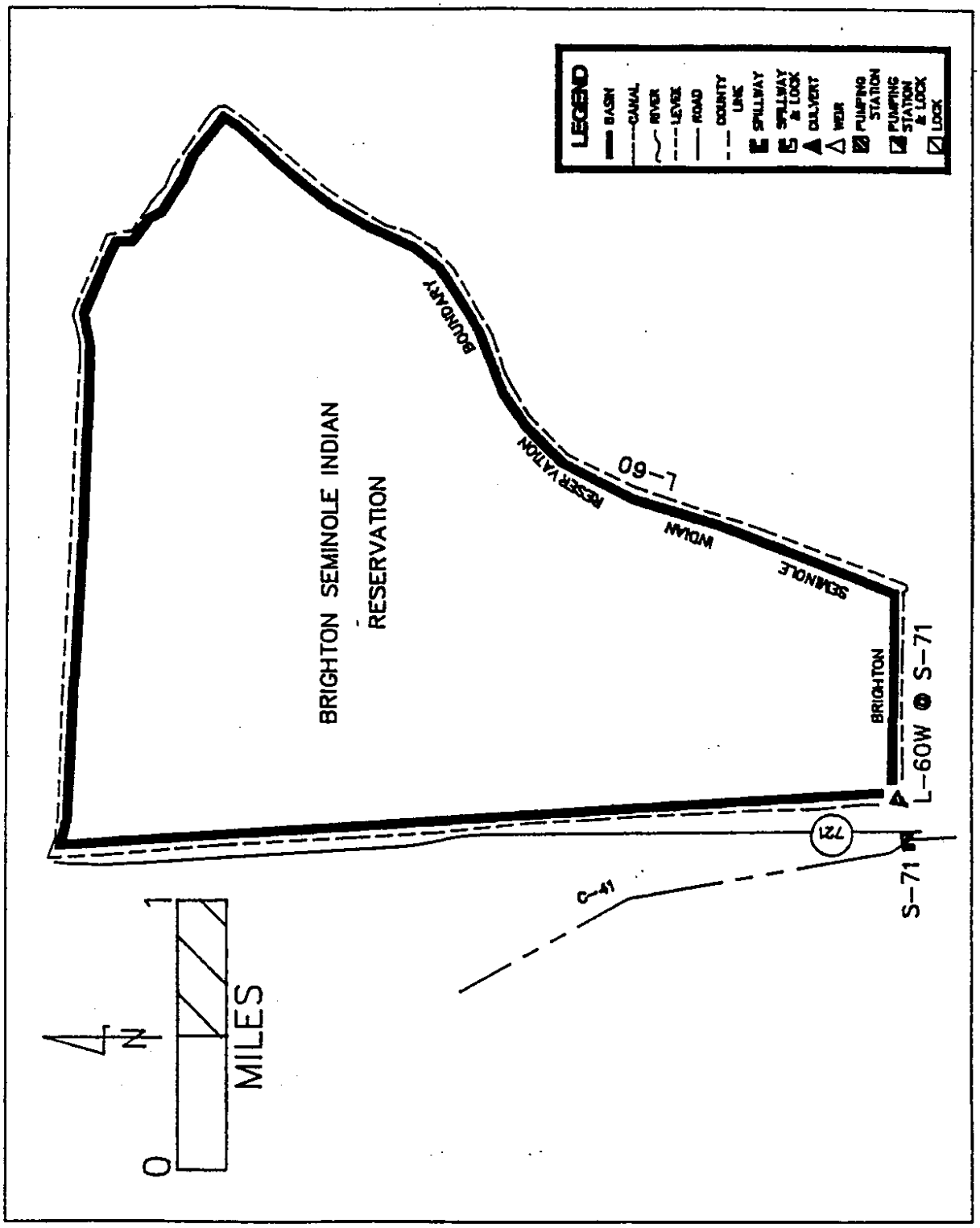


FIGURE 24 L-60W Basin Map

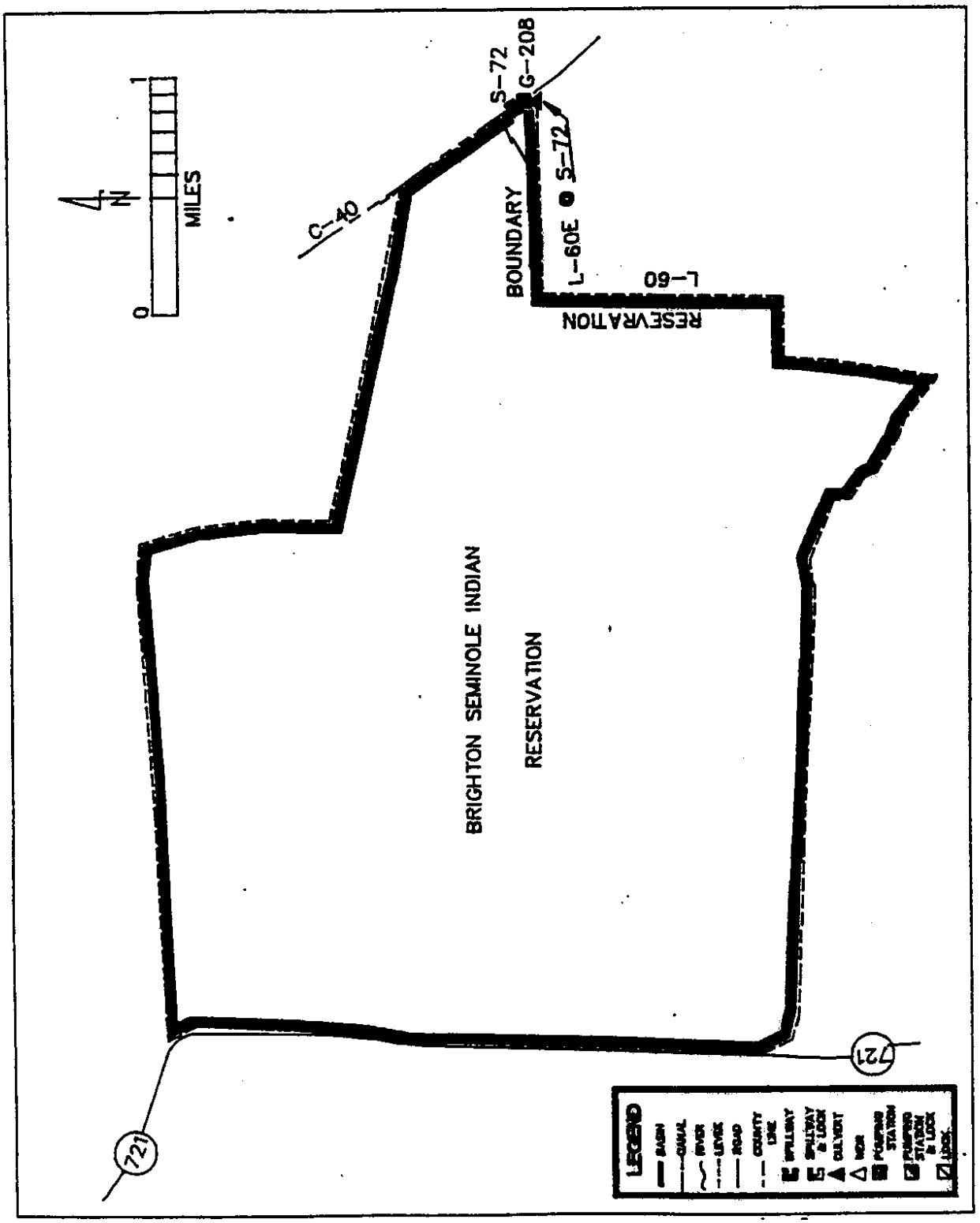


FIGURE 25 L-60E Basin Map

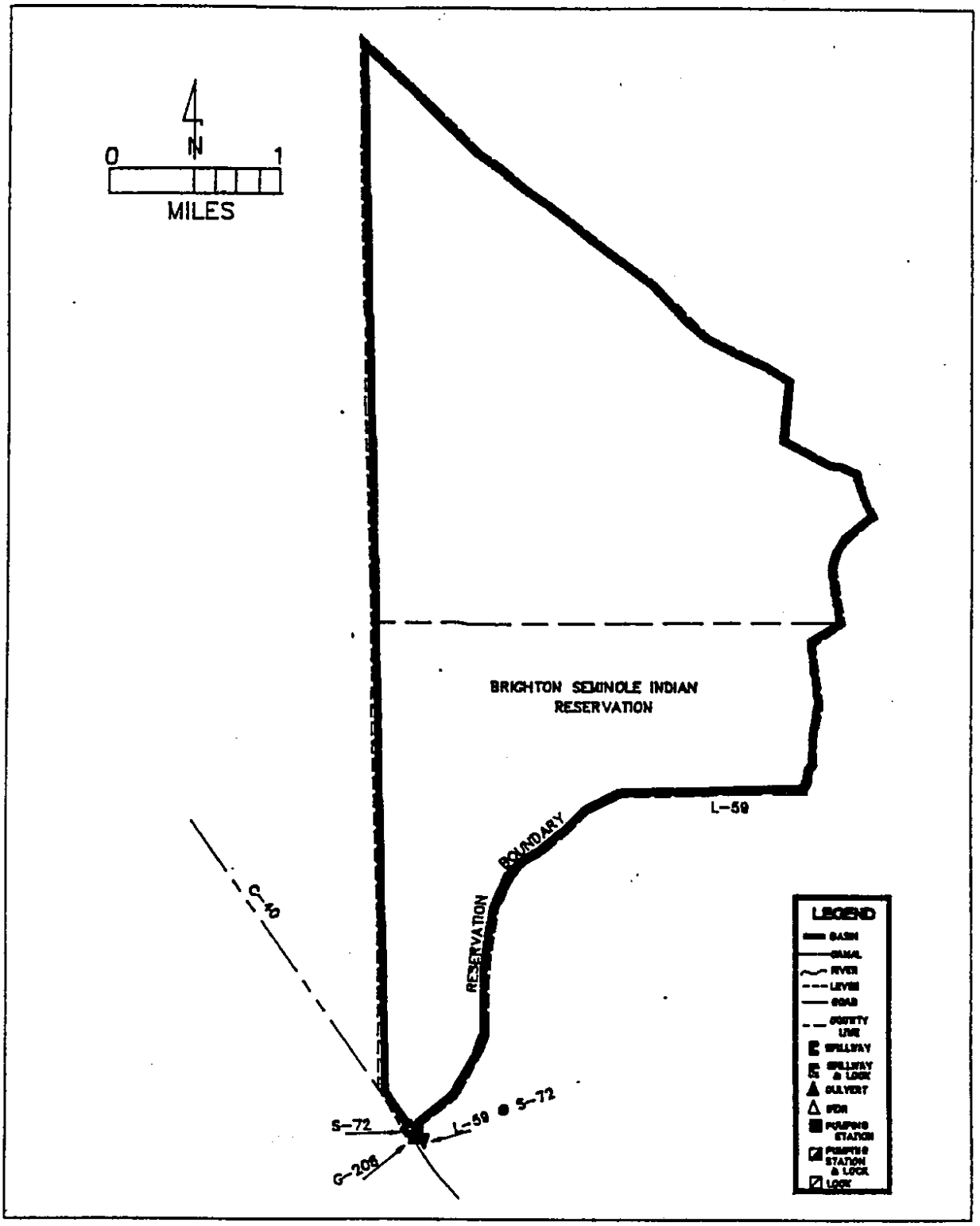


FIGURE 26 L-59W Basin Map

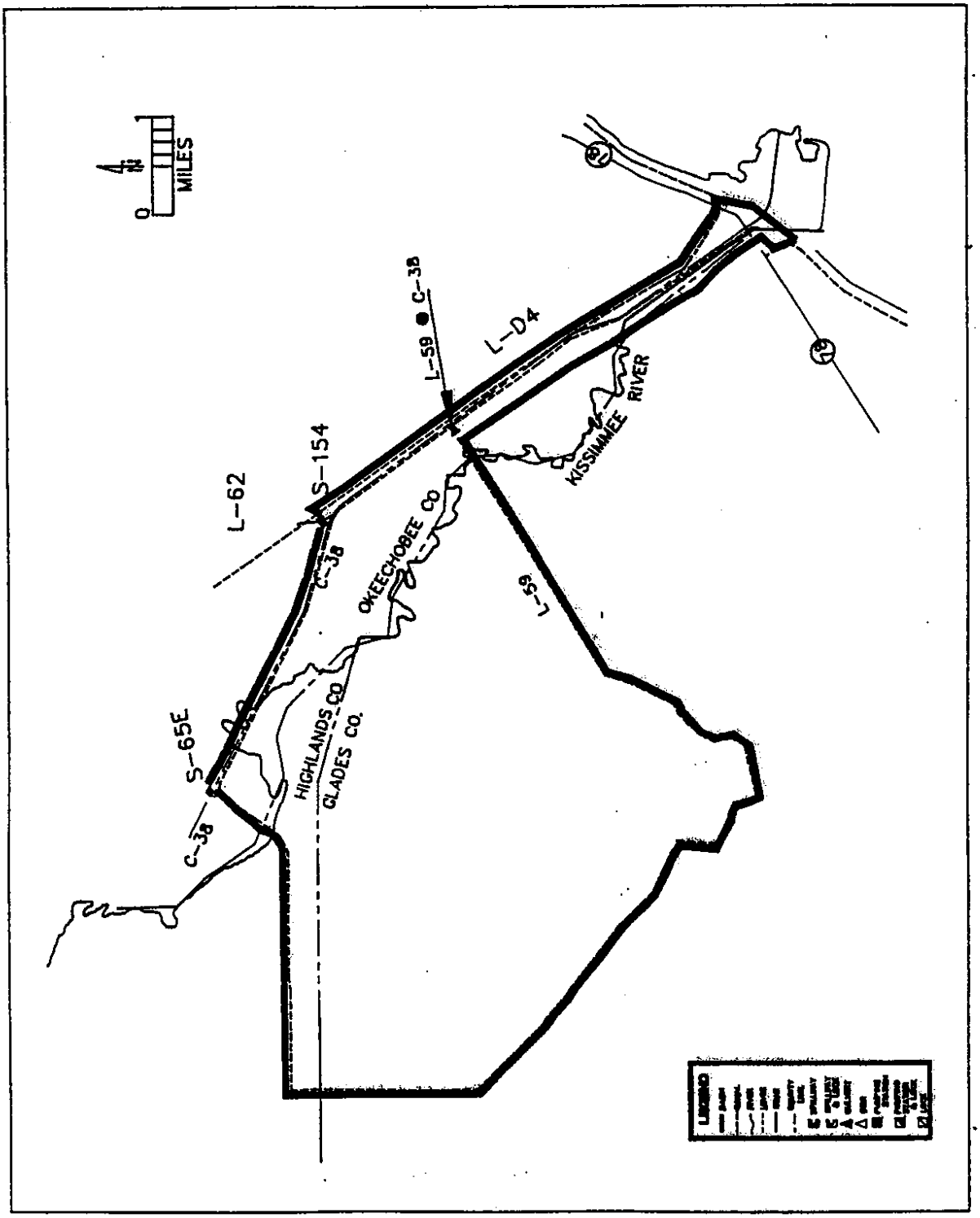


FIGURE 27 L-59E Basin Map

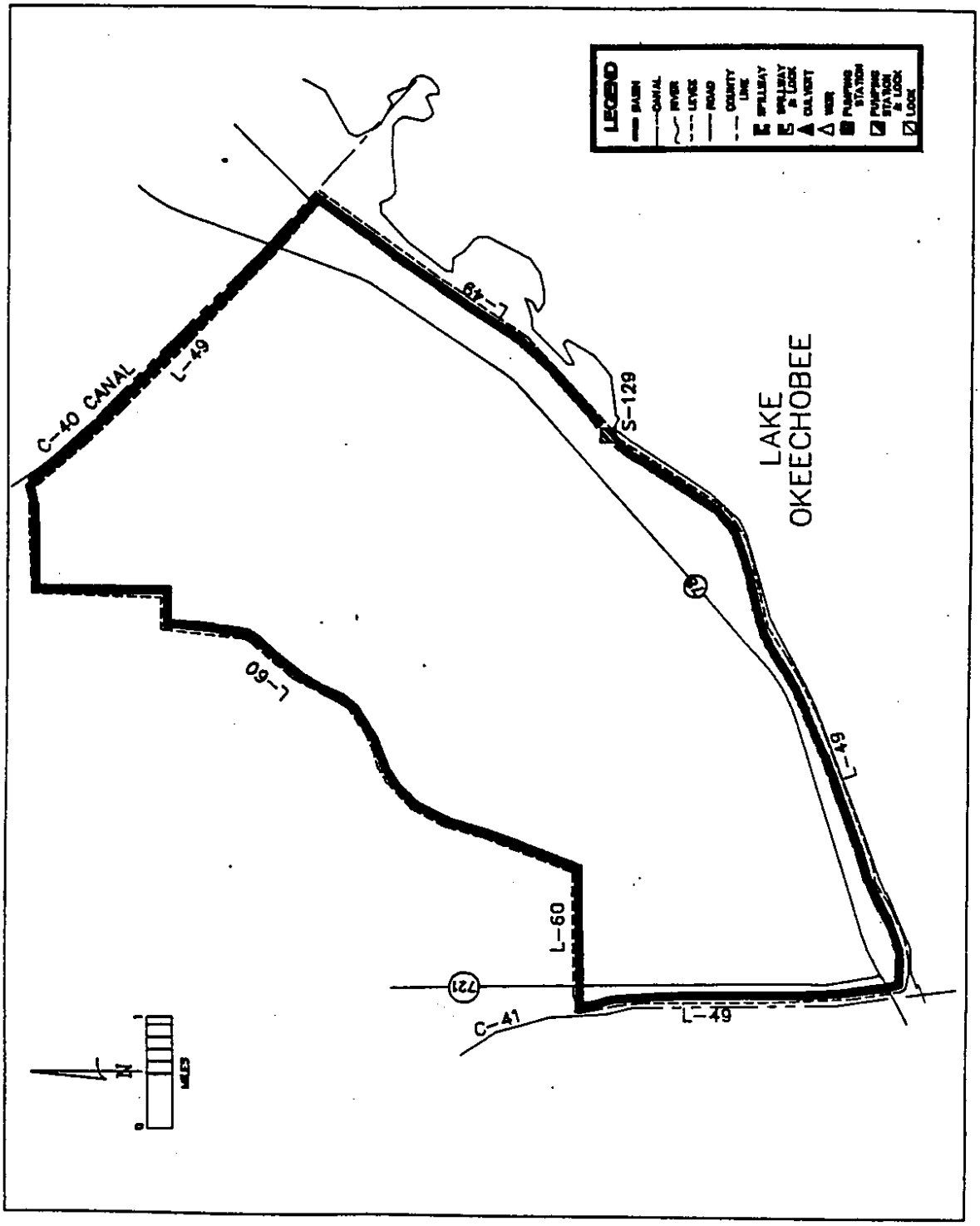


FIGURE 28. S-129 Basin Map

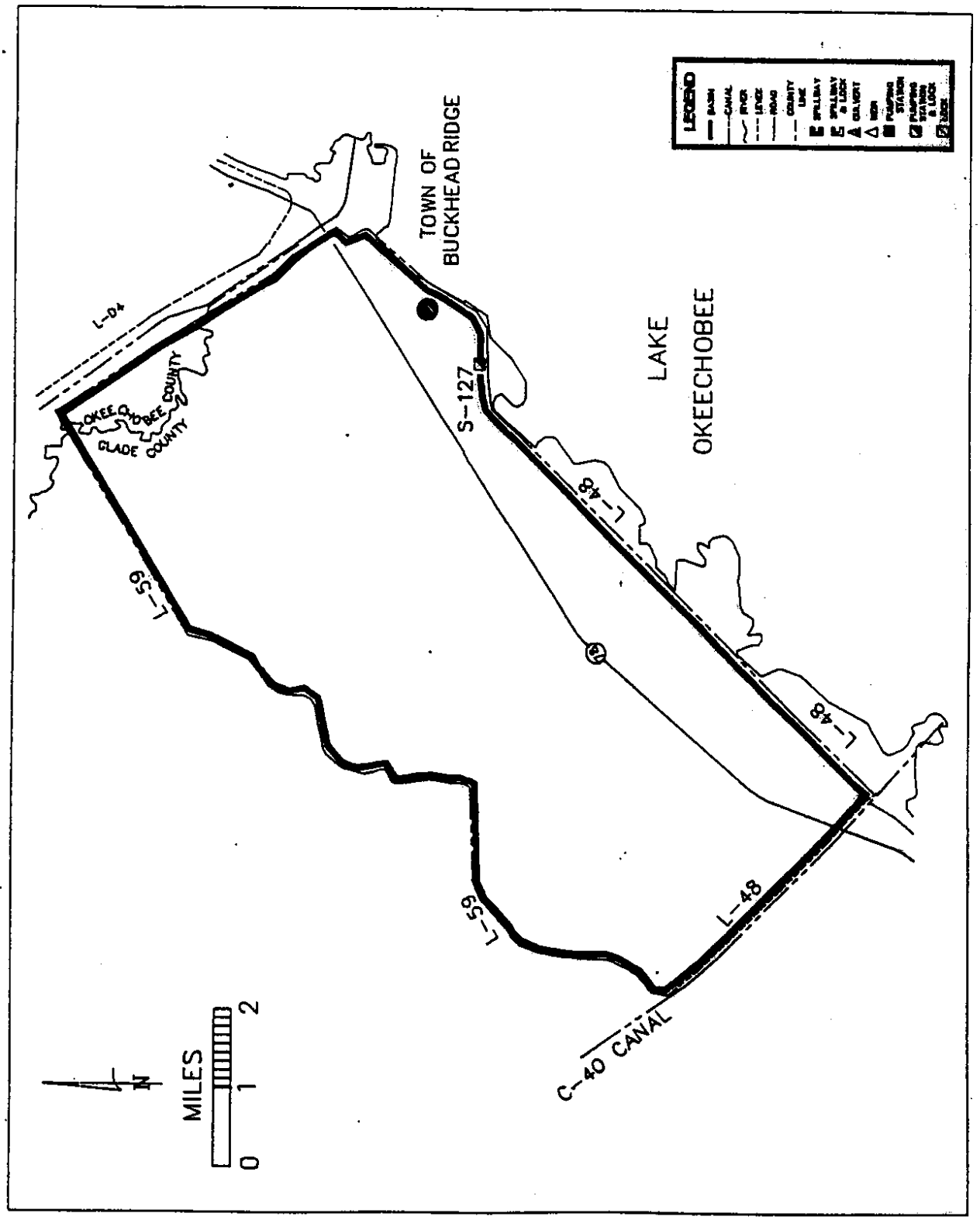


FIGURE 29 S-127 Basin Map

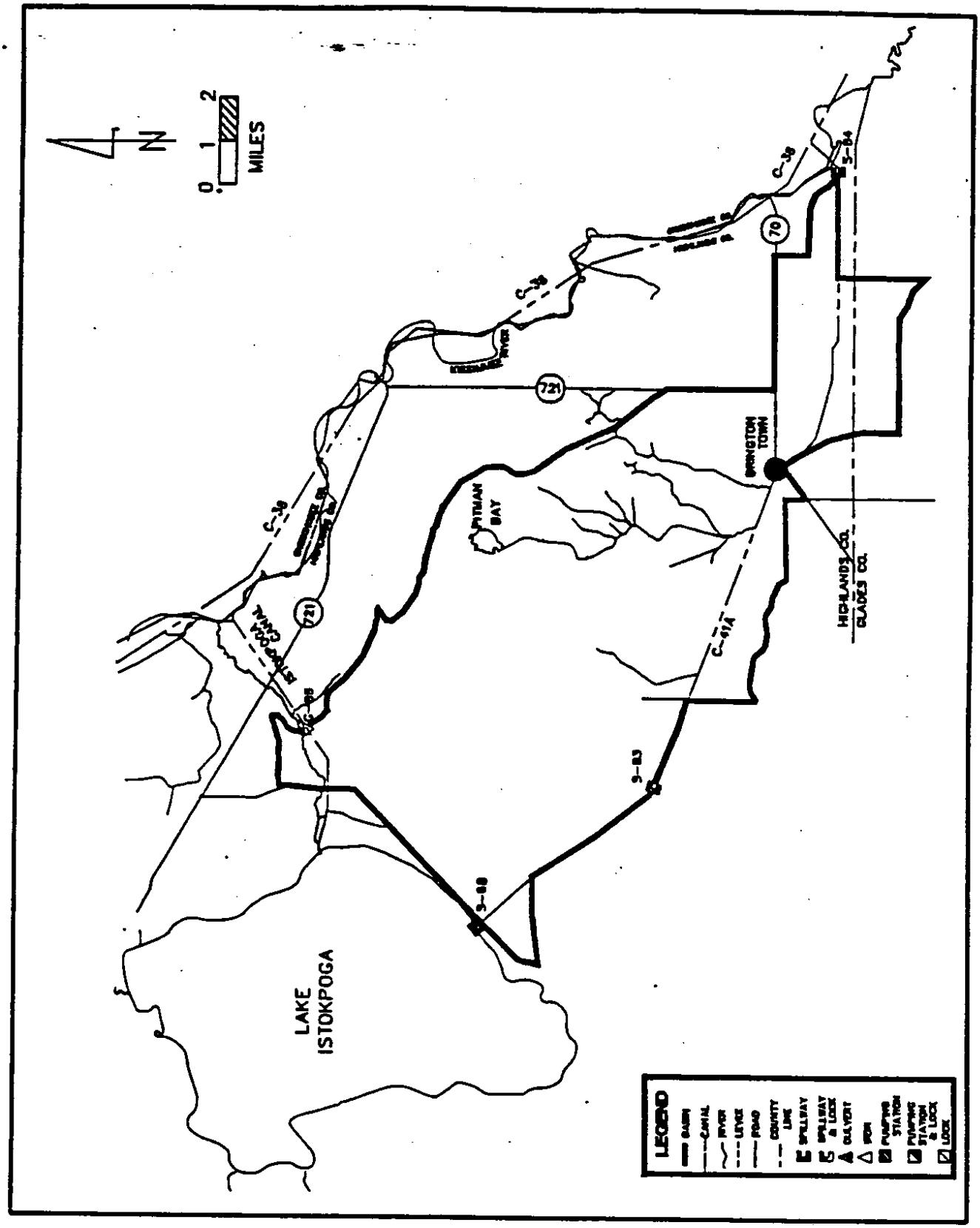


FIGURE 30 C-41A Basin Map

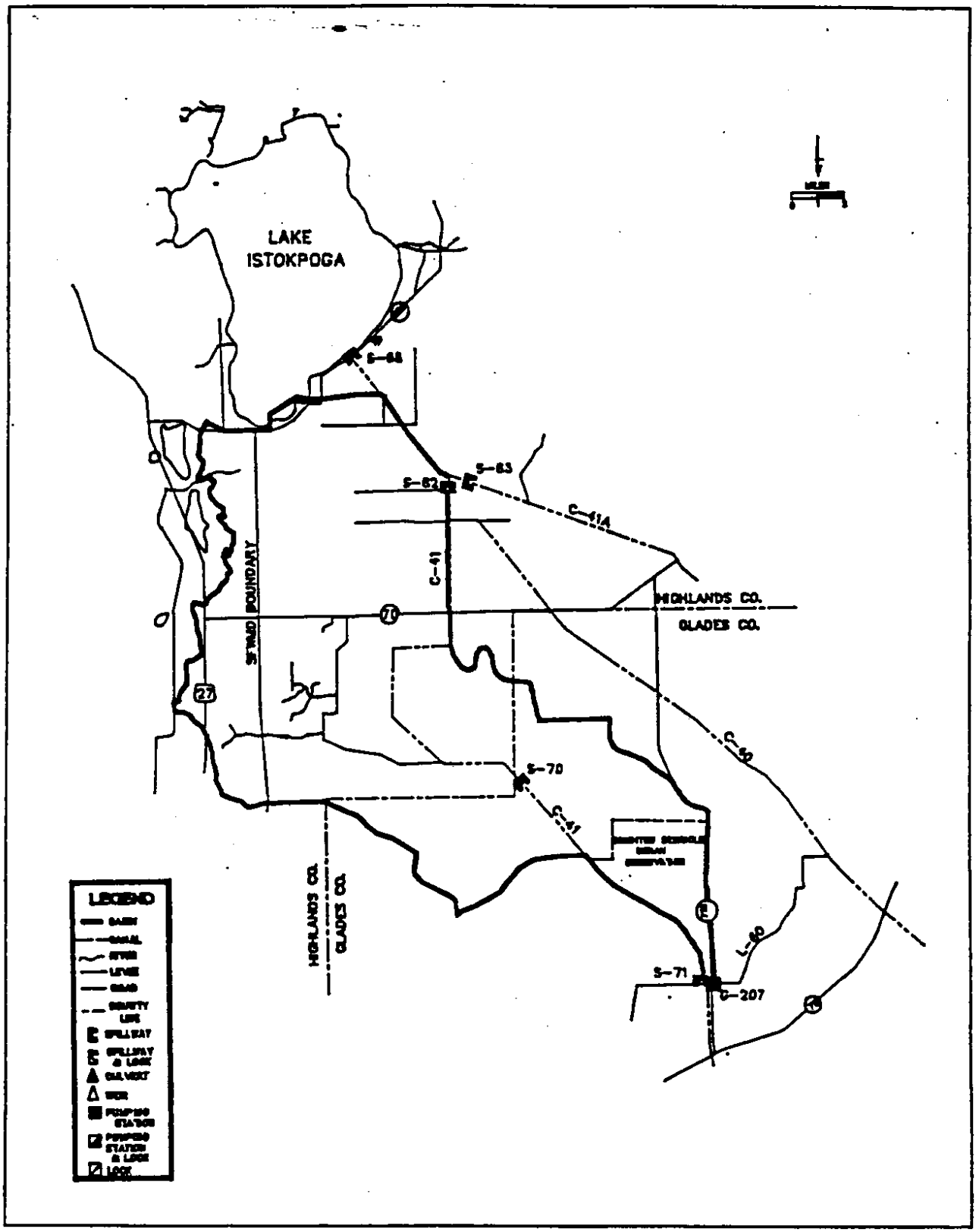


FIGURE 3/ C-41 Basin Map

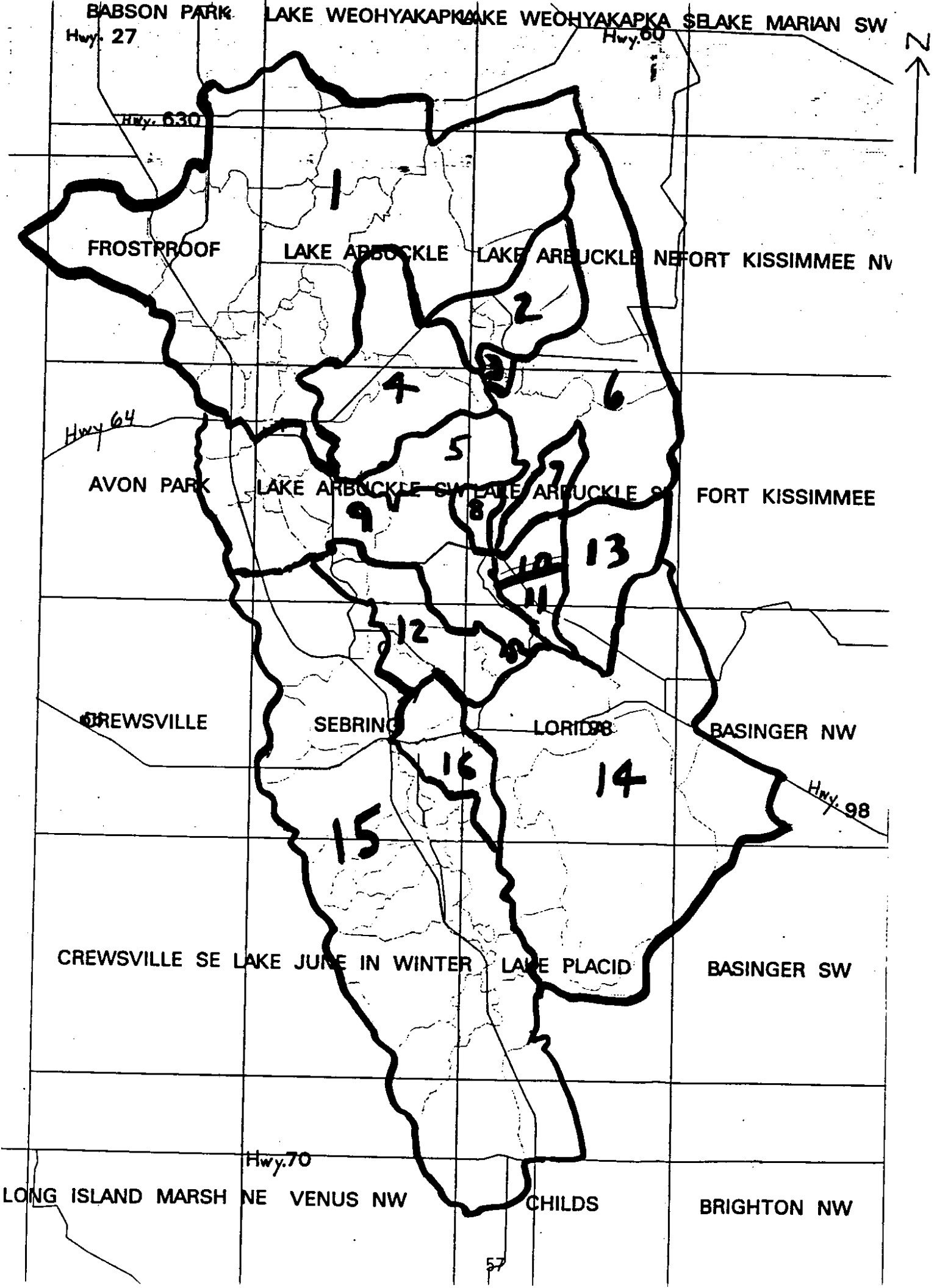


FIGURE 32 LOCATION OF LAKE ISTOKPOGA DRAINAGE SUBBASINS

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

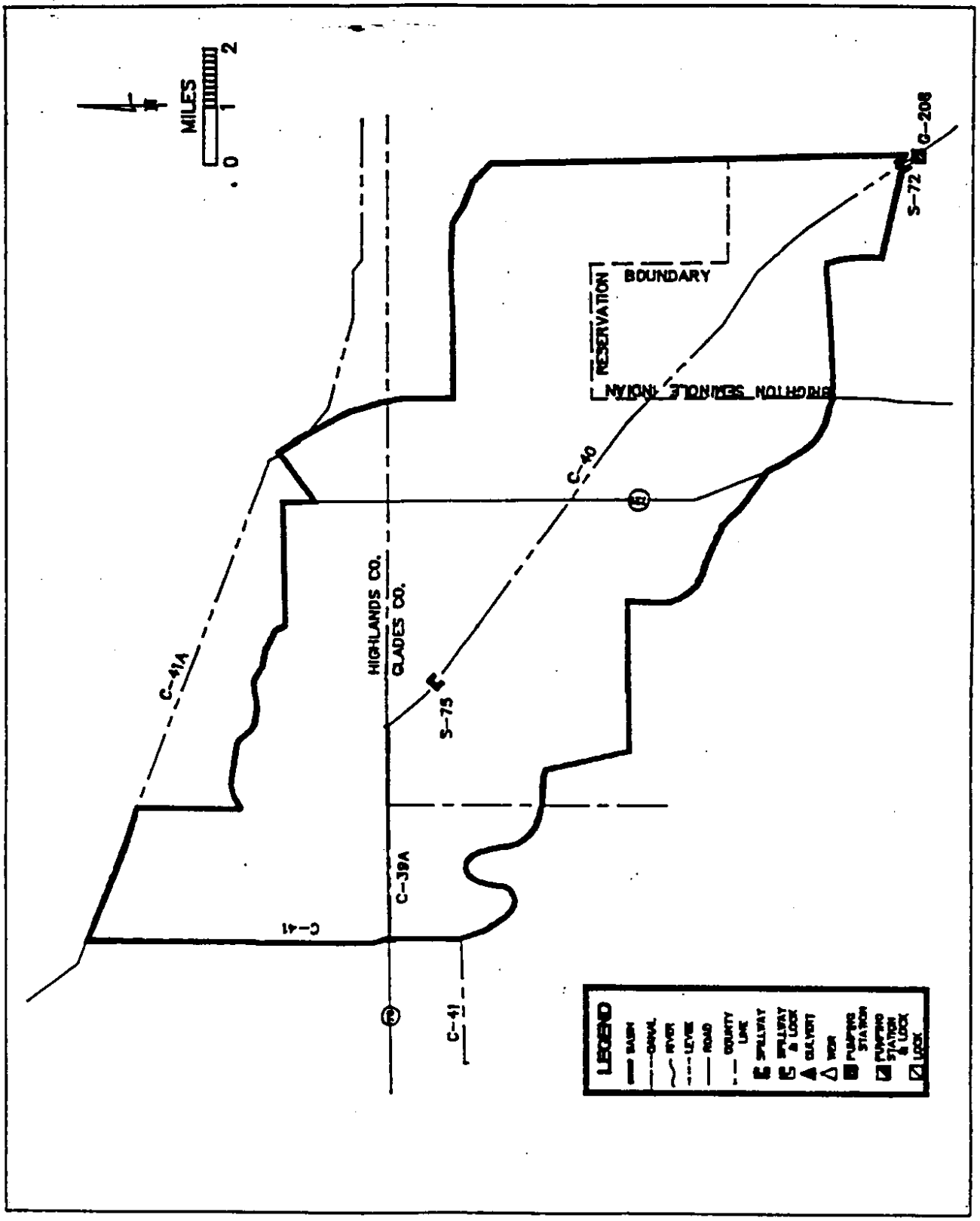


FIGURE 33 C-40 Basin Map

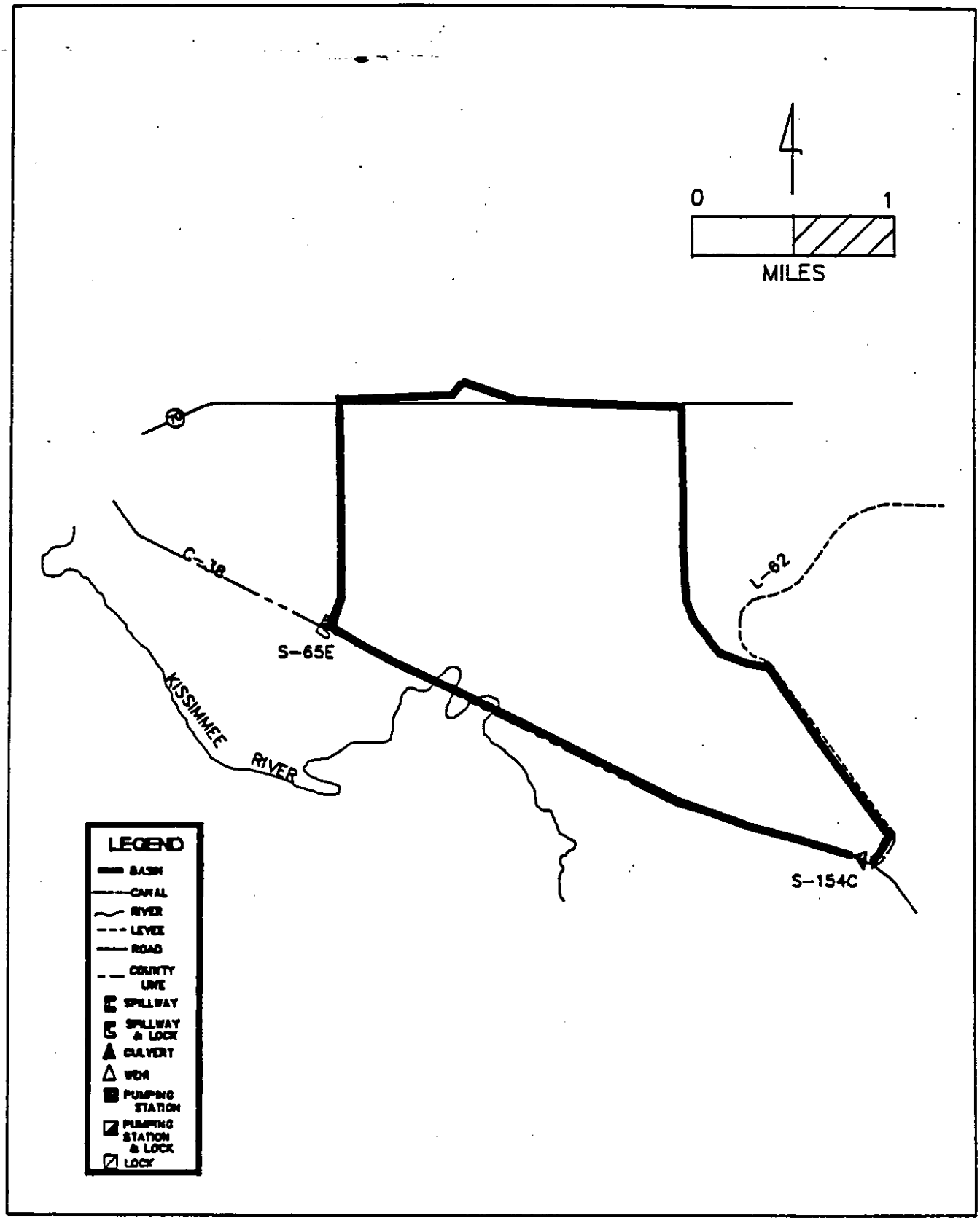


FIGURE 34 S-154C Basin Map

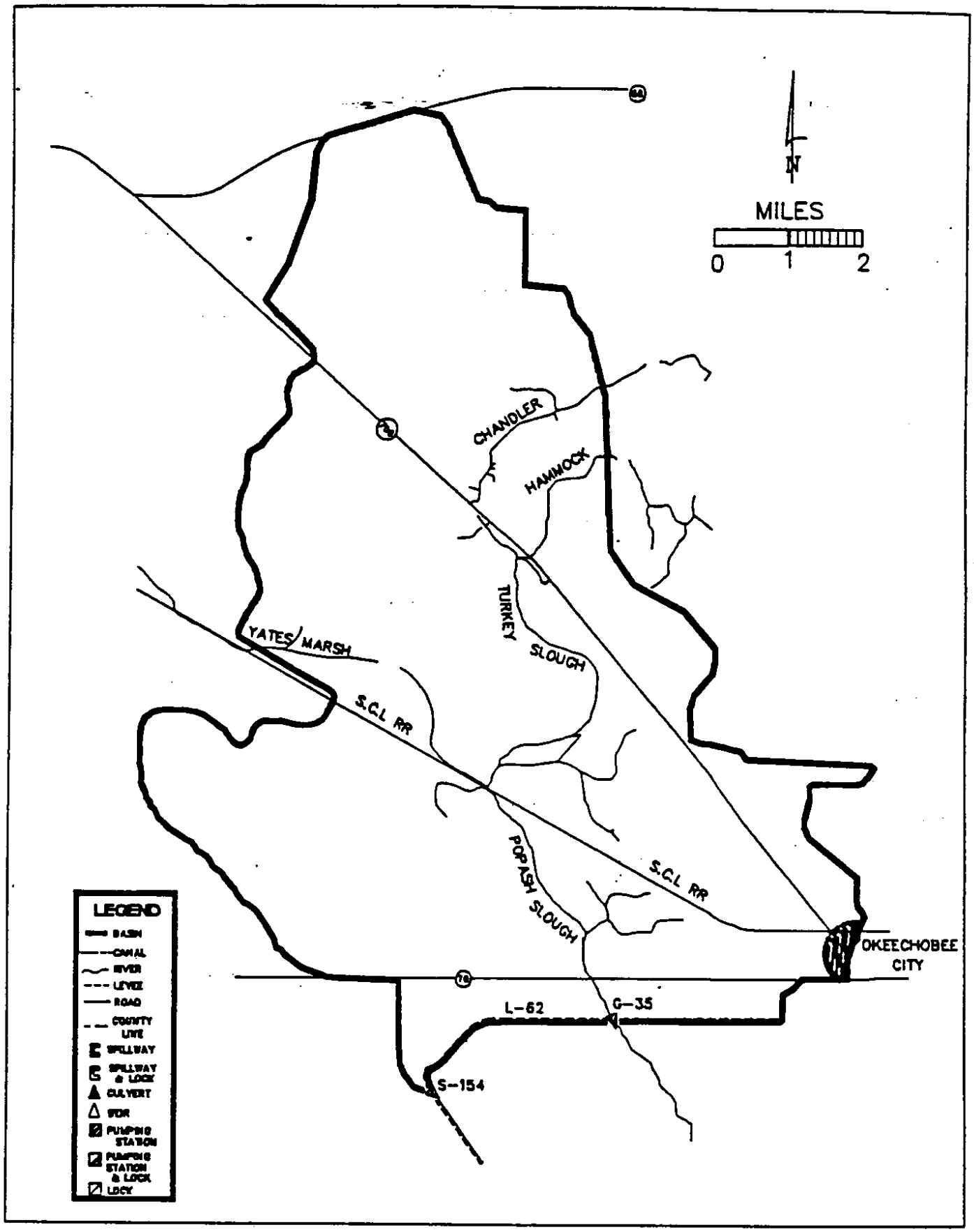


FIGURE 35 S-154 Basin Map

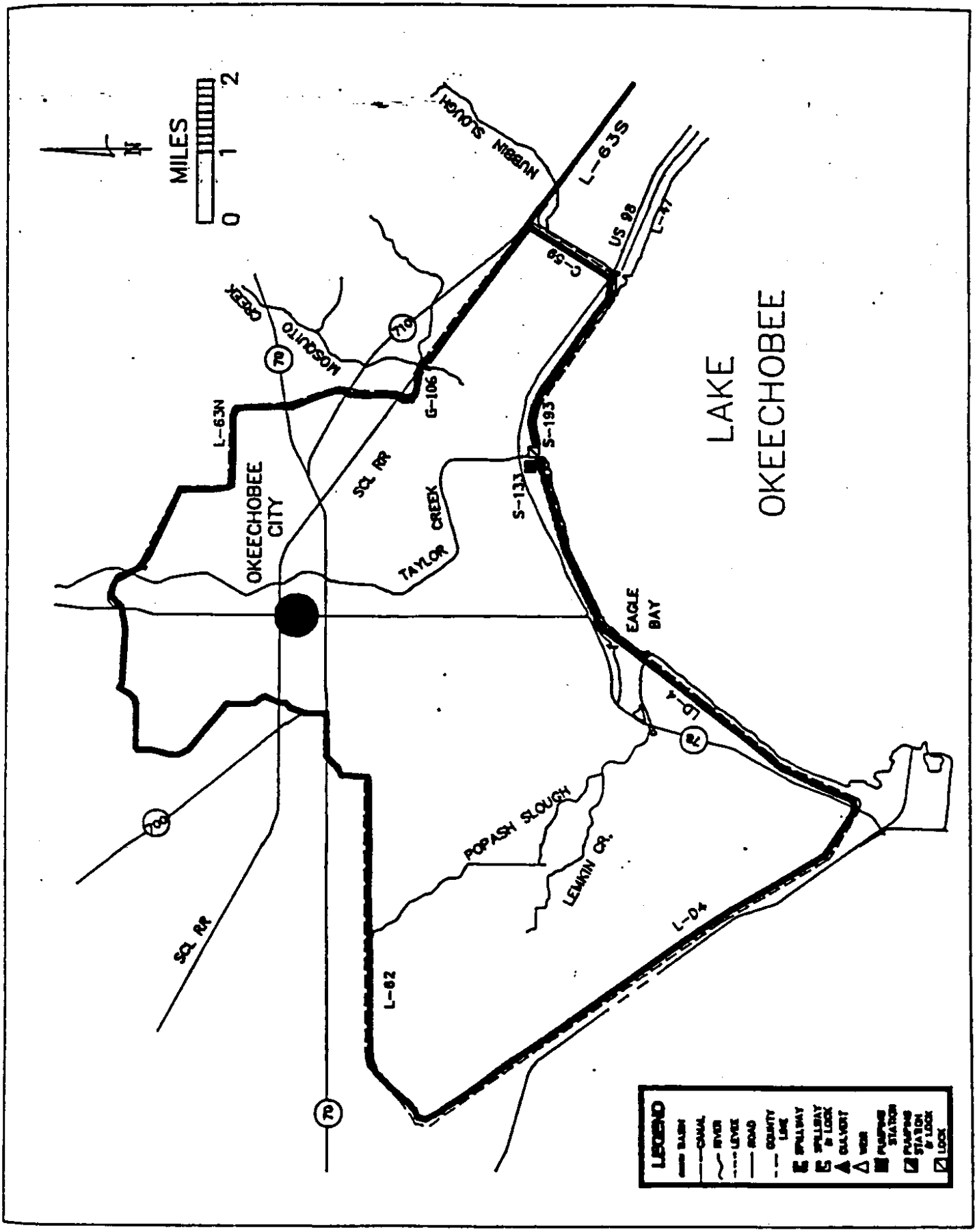


FIGURE 36 S-133 Basin Map

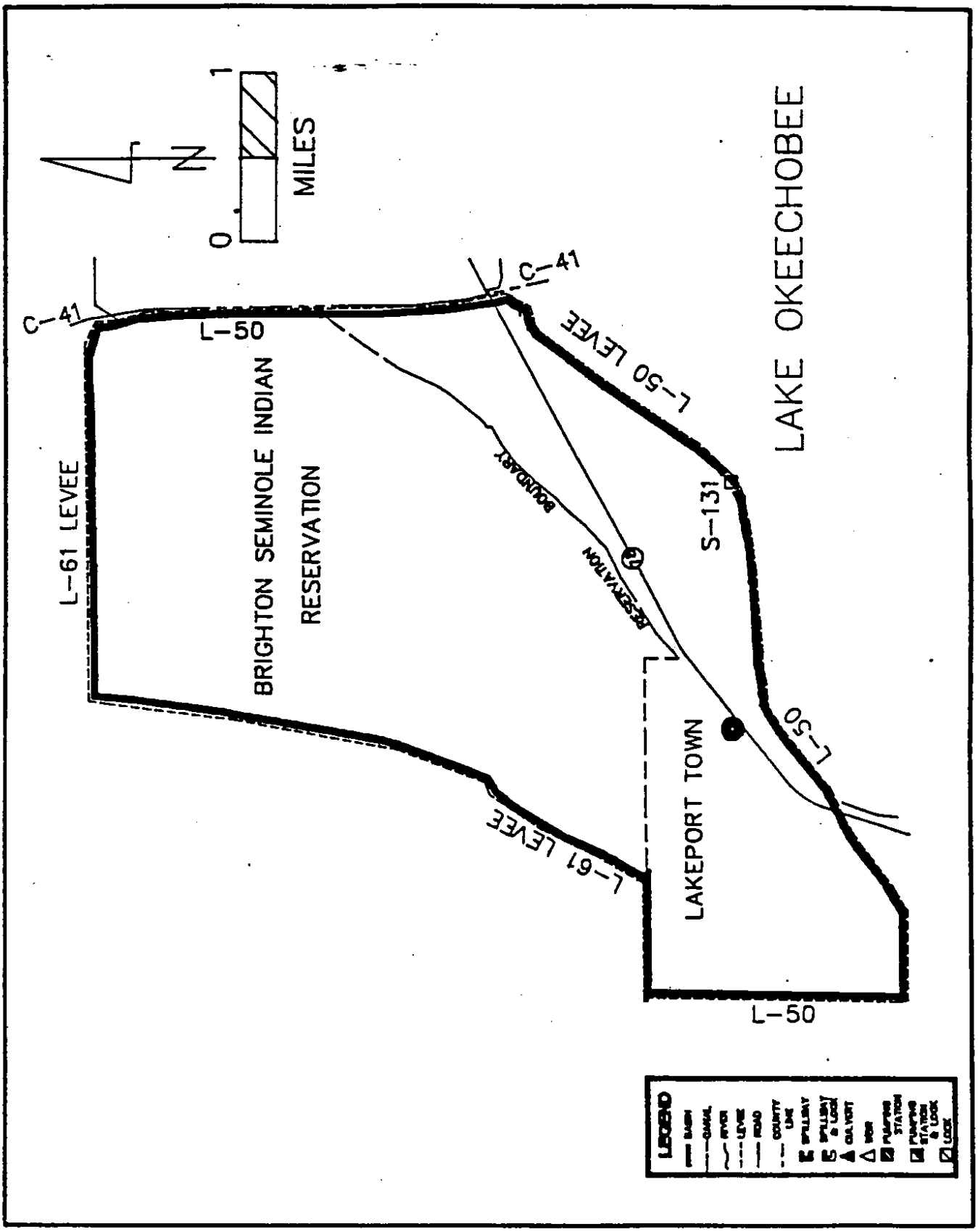


FIGURE 37 S-131 Basin Map

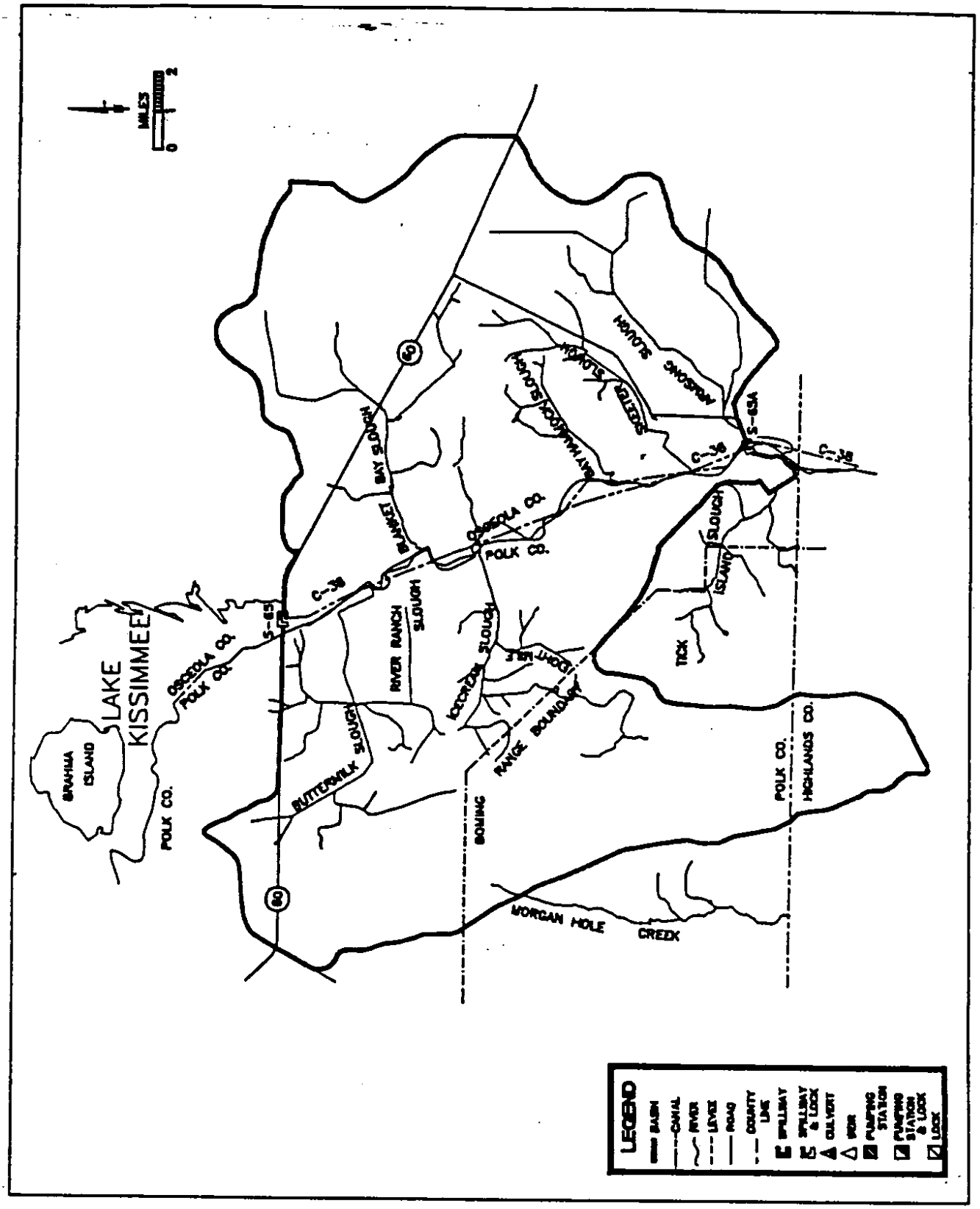


FIGURE 38 S-65A Basin Map

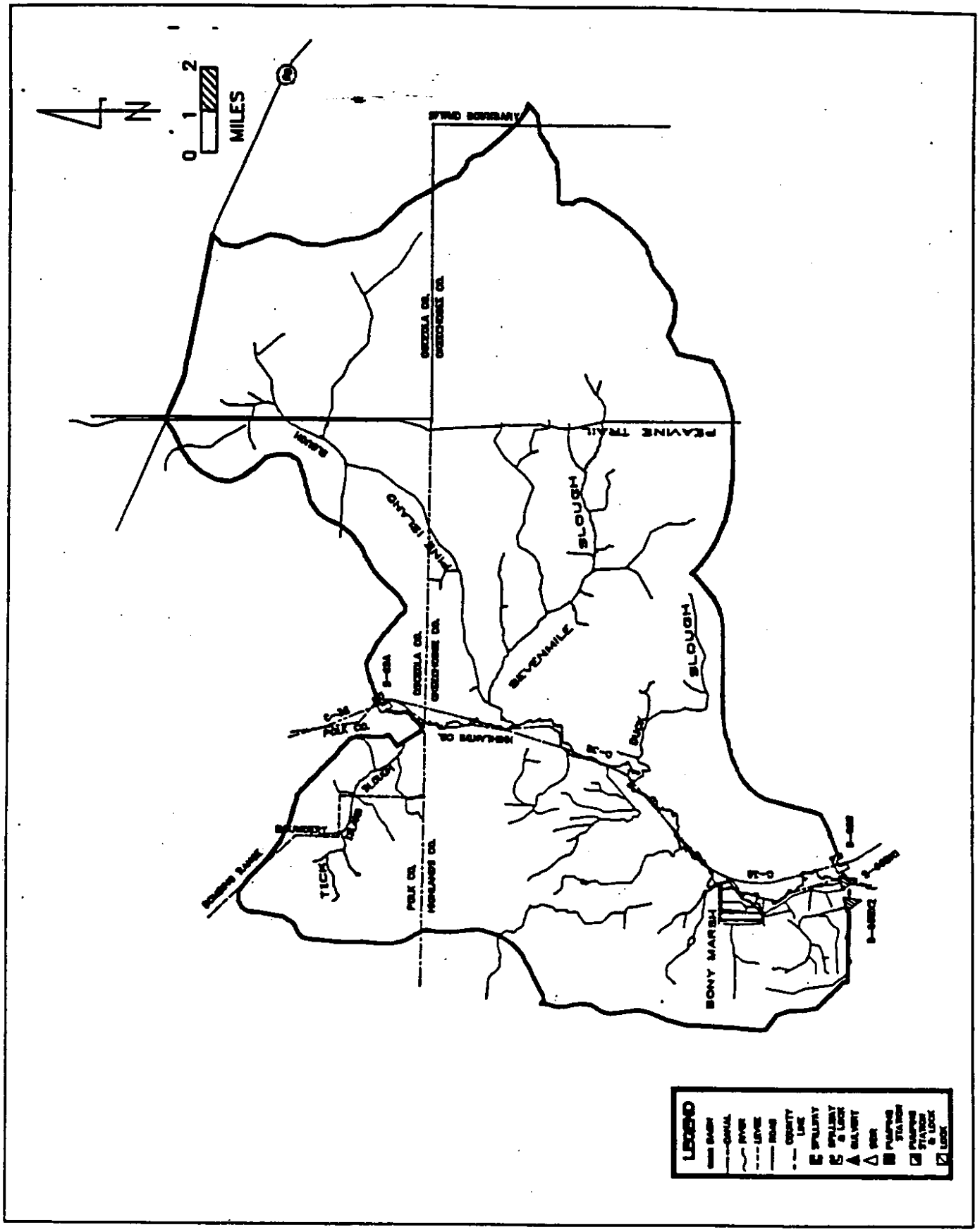


FIGURE 39 S-65B Basin Map

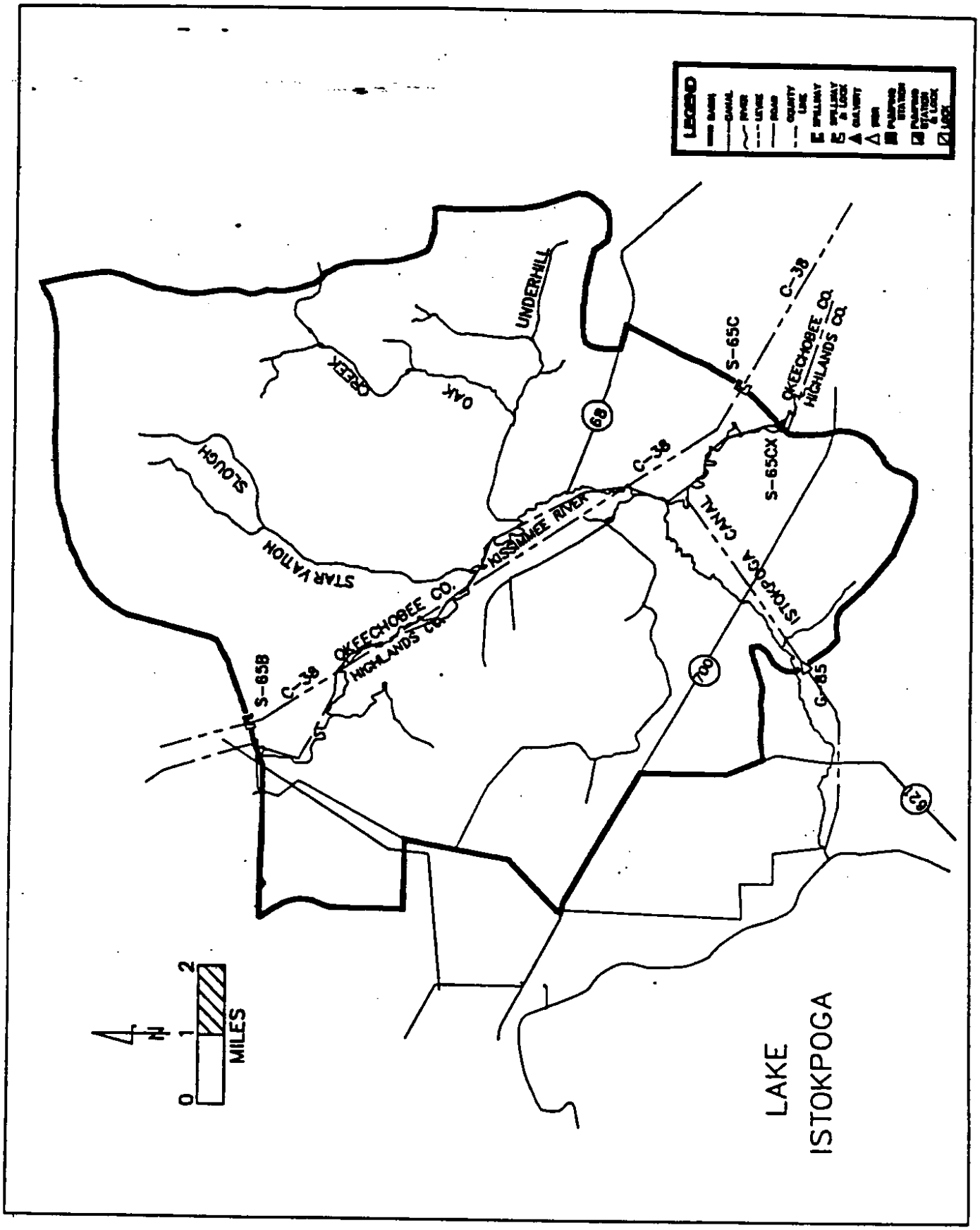


FIGURE 10 S-65C Basin Map

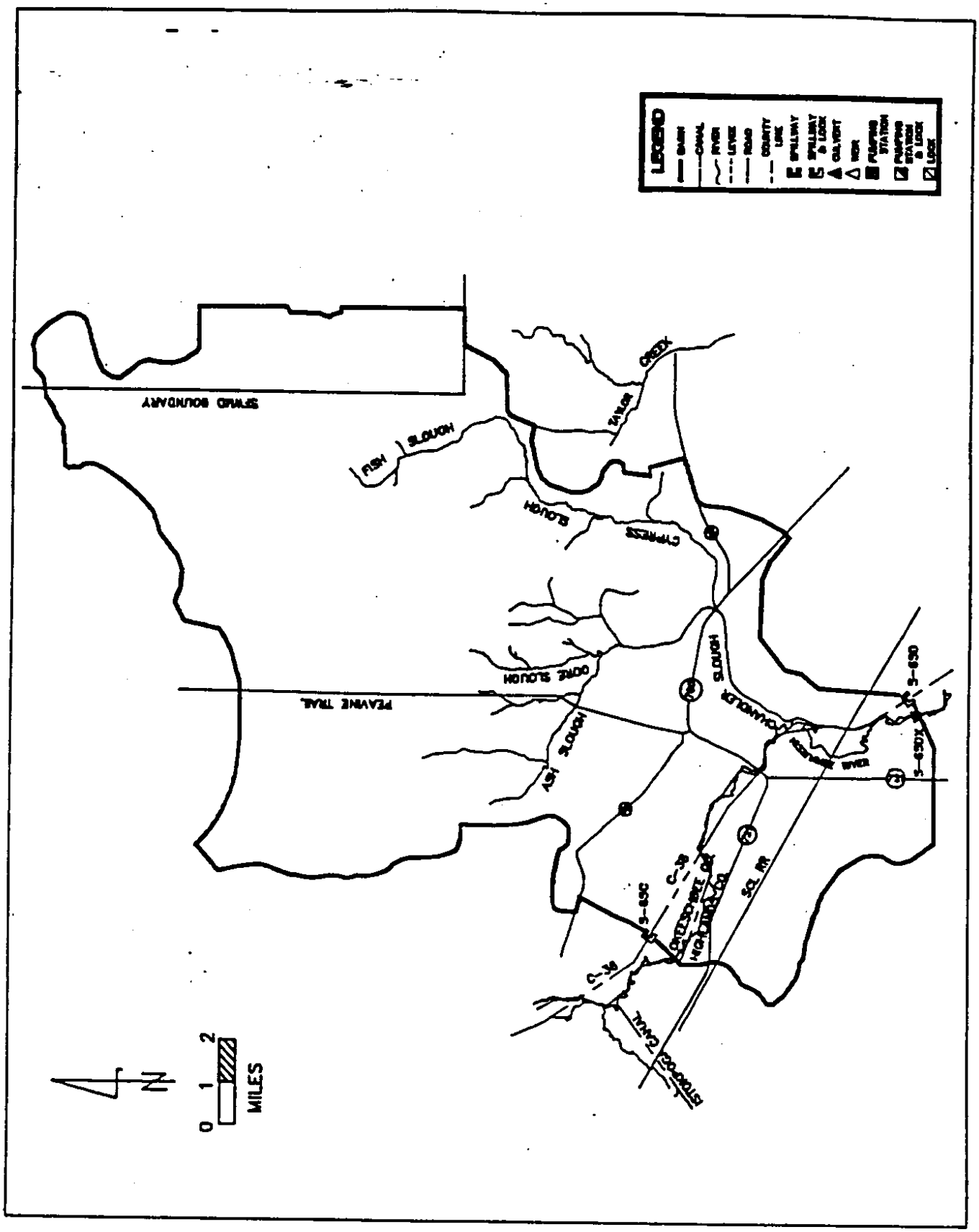


FIGURE 41 S-65D Basin Map

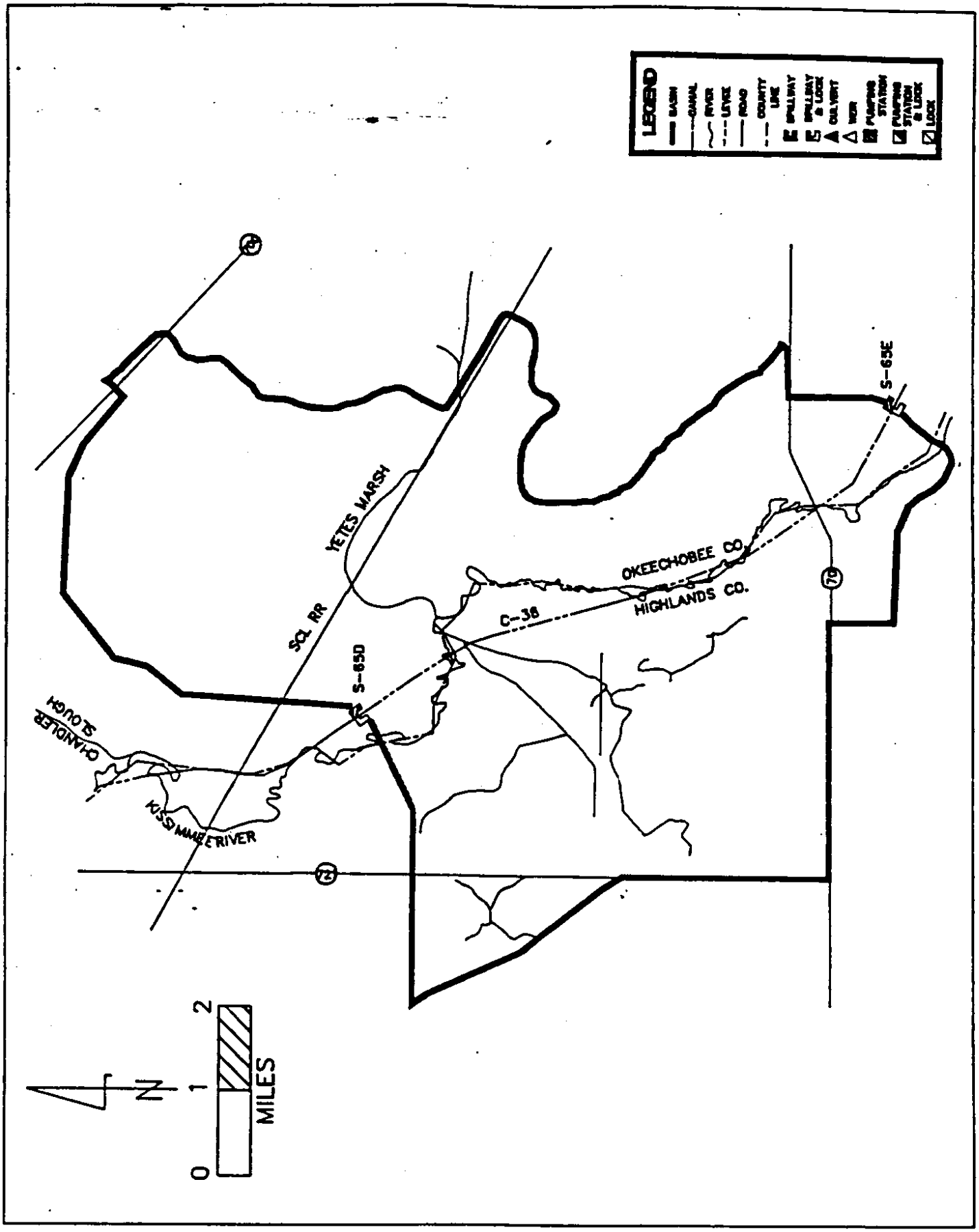


FIGURE 42 S-65E Basin Map

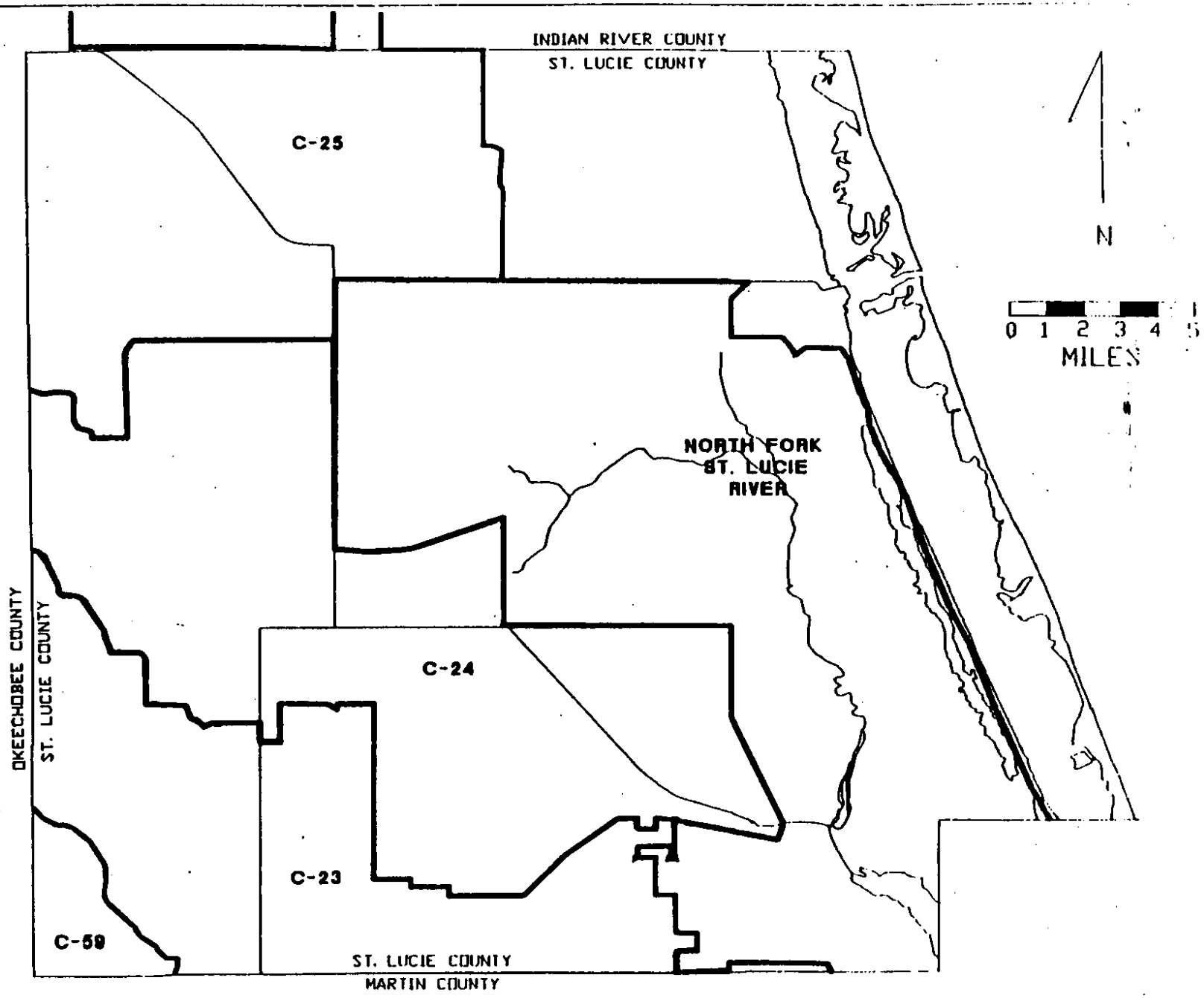


FIGURE 43 ST. LUCIE COUNTY DRAINAGE BASINS

C-25 BASIN

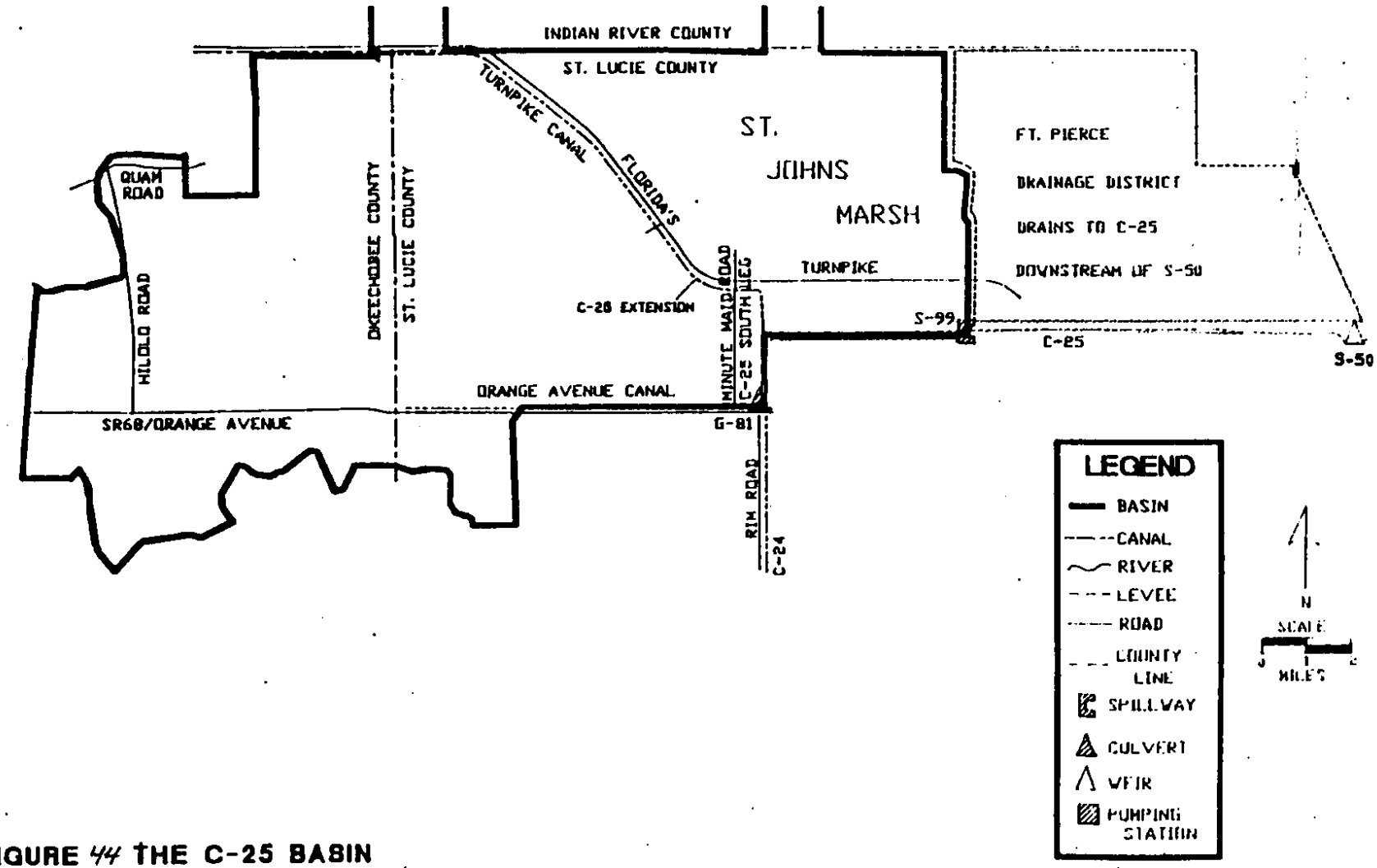


FIGURE 44 THE C-25 BASIN

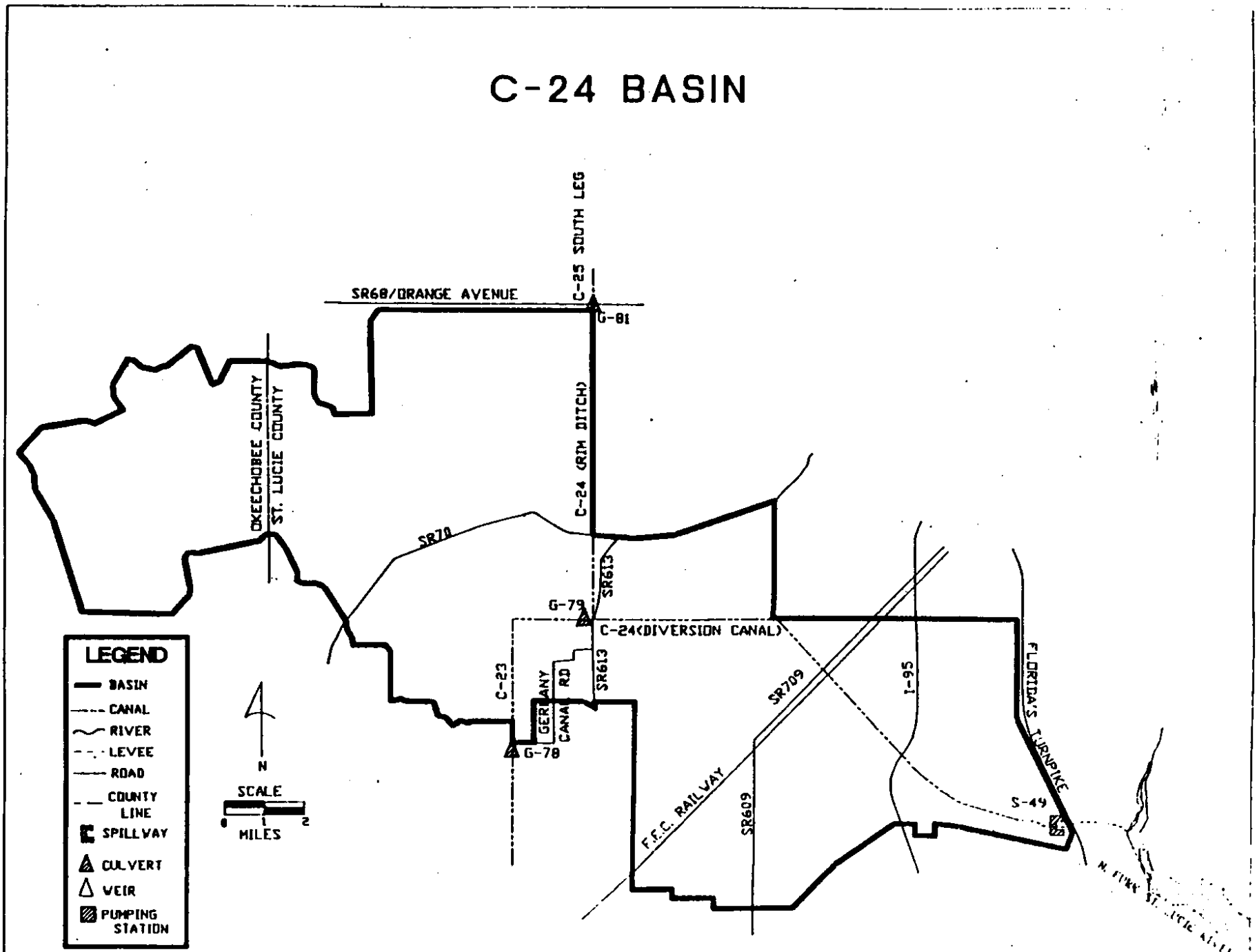


FIGURE 45 THE C-24 BASIN

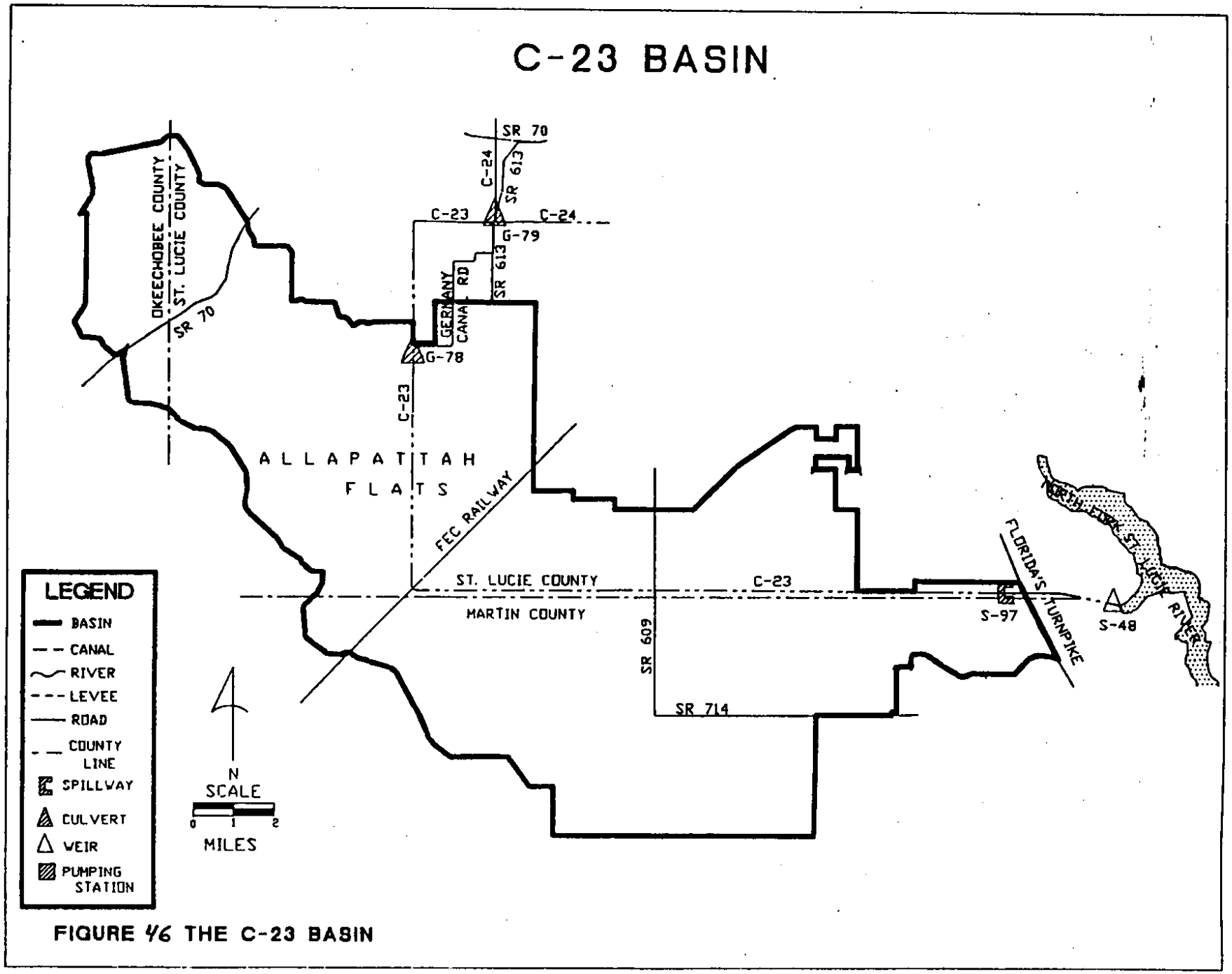


FIGURE 46 THE C-23 BASIN

NORTH FORK OF THE ST. LUCIE RIVER BASIN

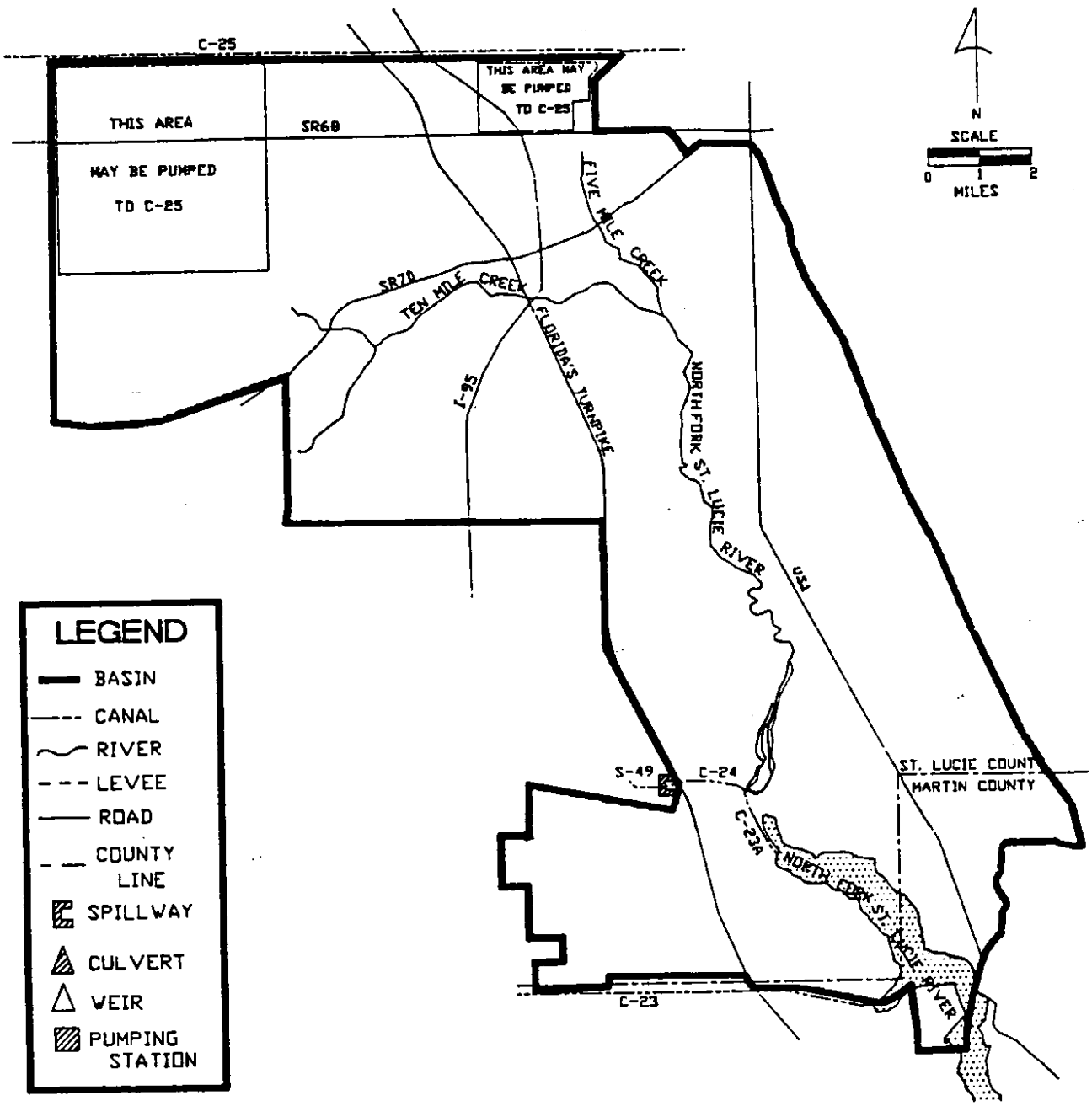


FIGURE 47 THE NORTH FORK OF THE ST. LUCIE RIVER BASIN

C-59 BASIN

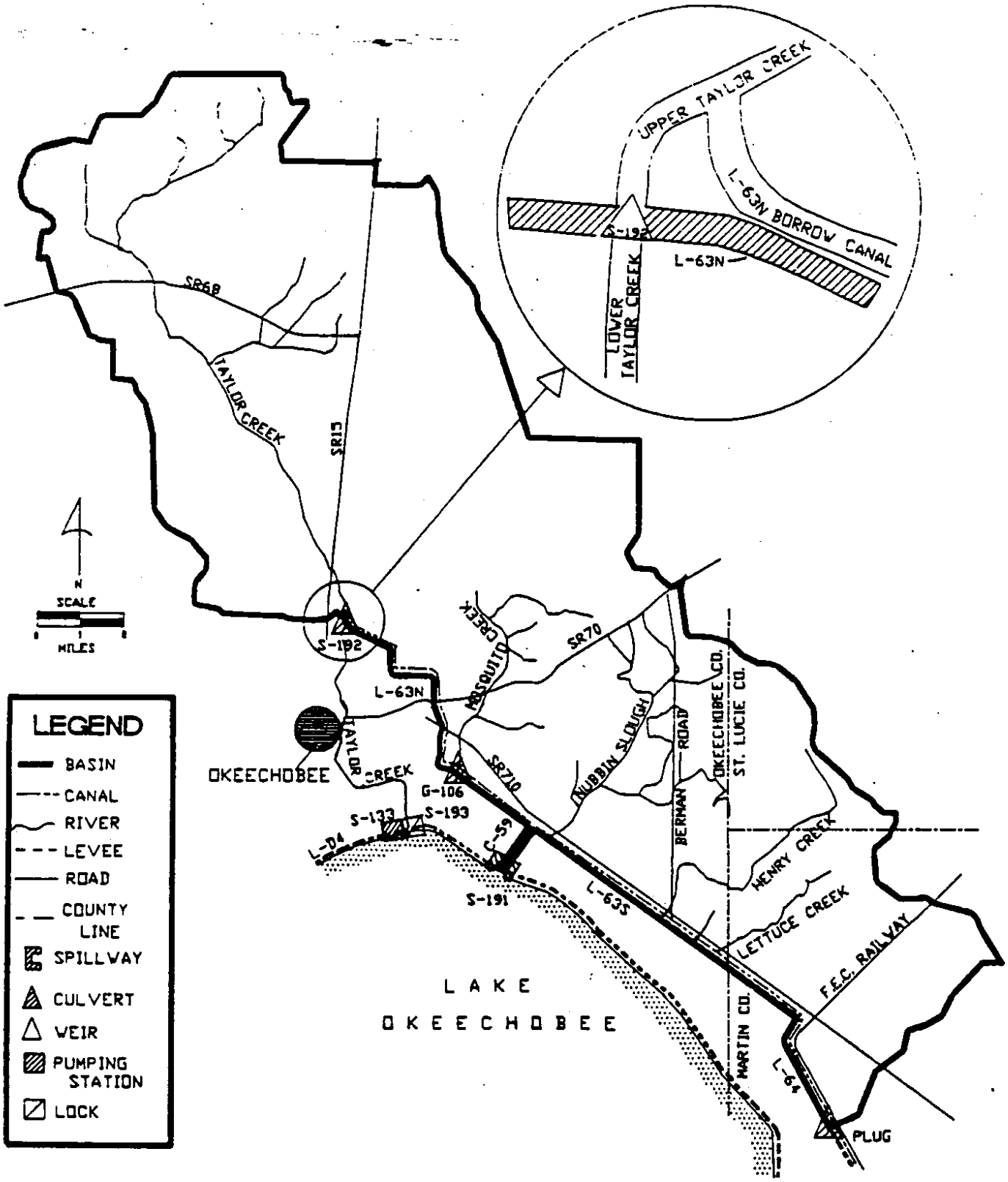


FIGURE 48 THE C-59 BASIN

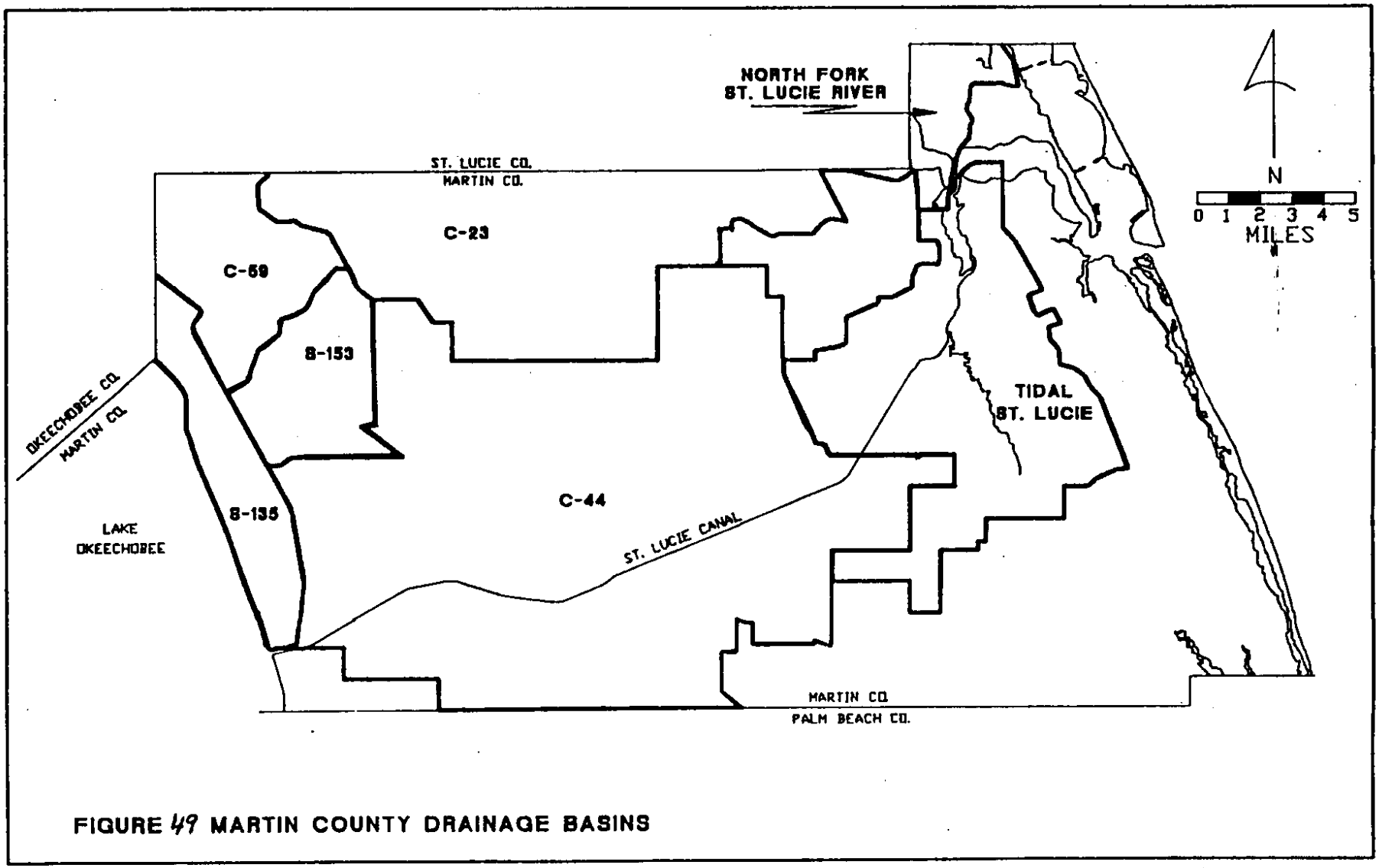


FIGURE 49 MARTIN COUNTY DRAINAGE BASINS

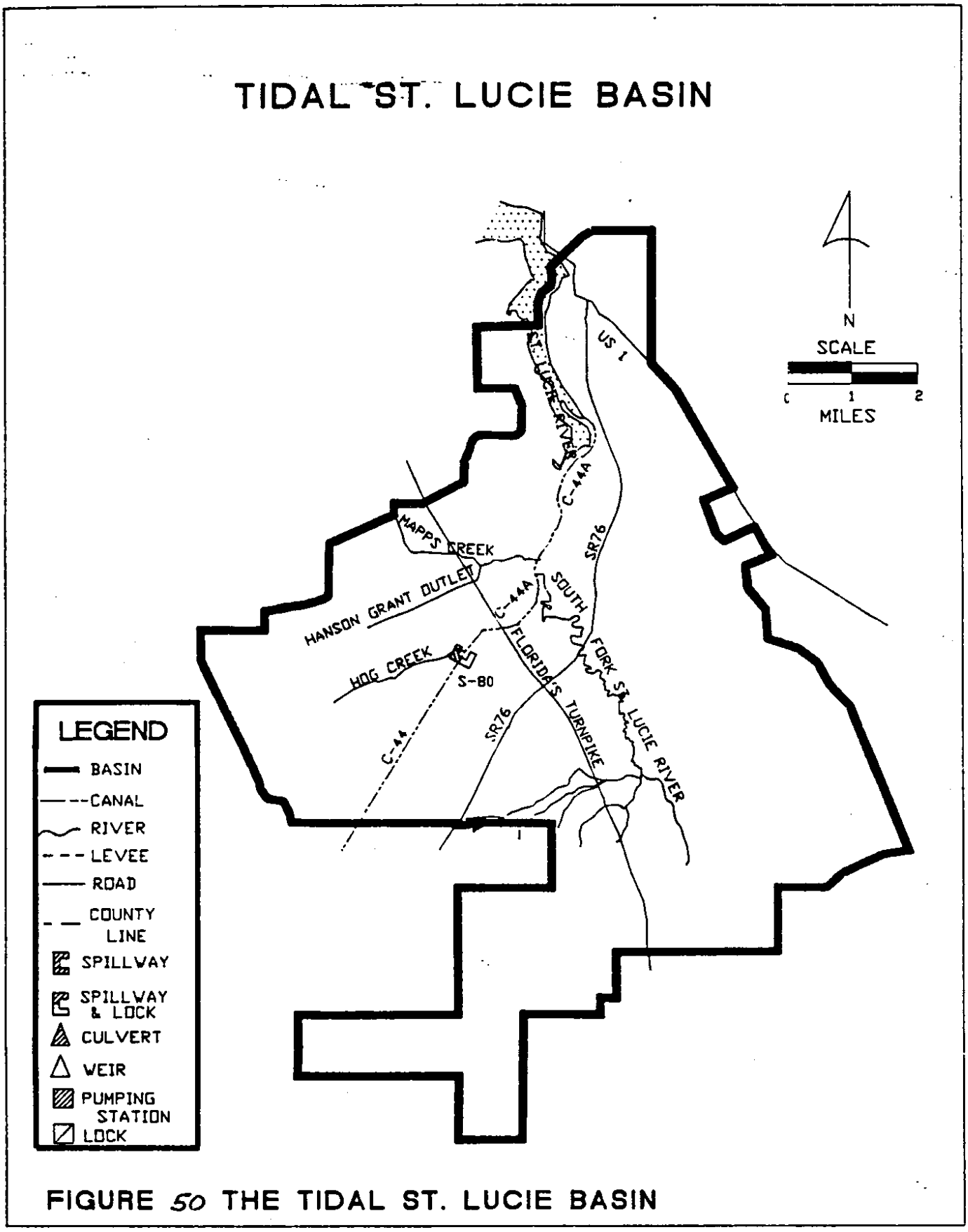


FIGURE 50 THE TIDAL ST. LUCIE BASIN

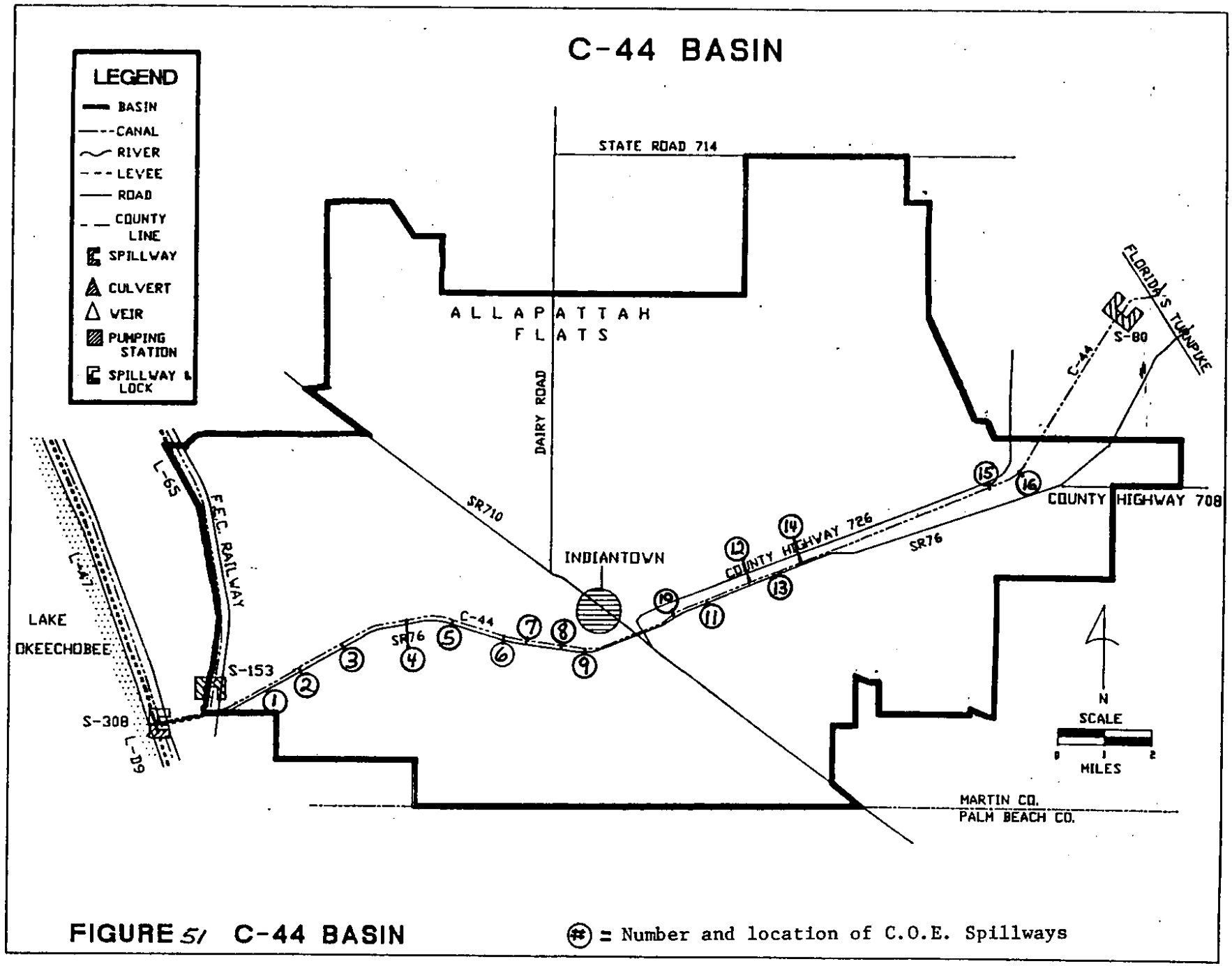


FIGURE 51 C-44 BASIN

(#) = 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 cfs 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

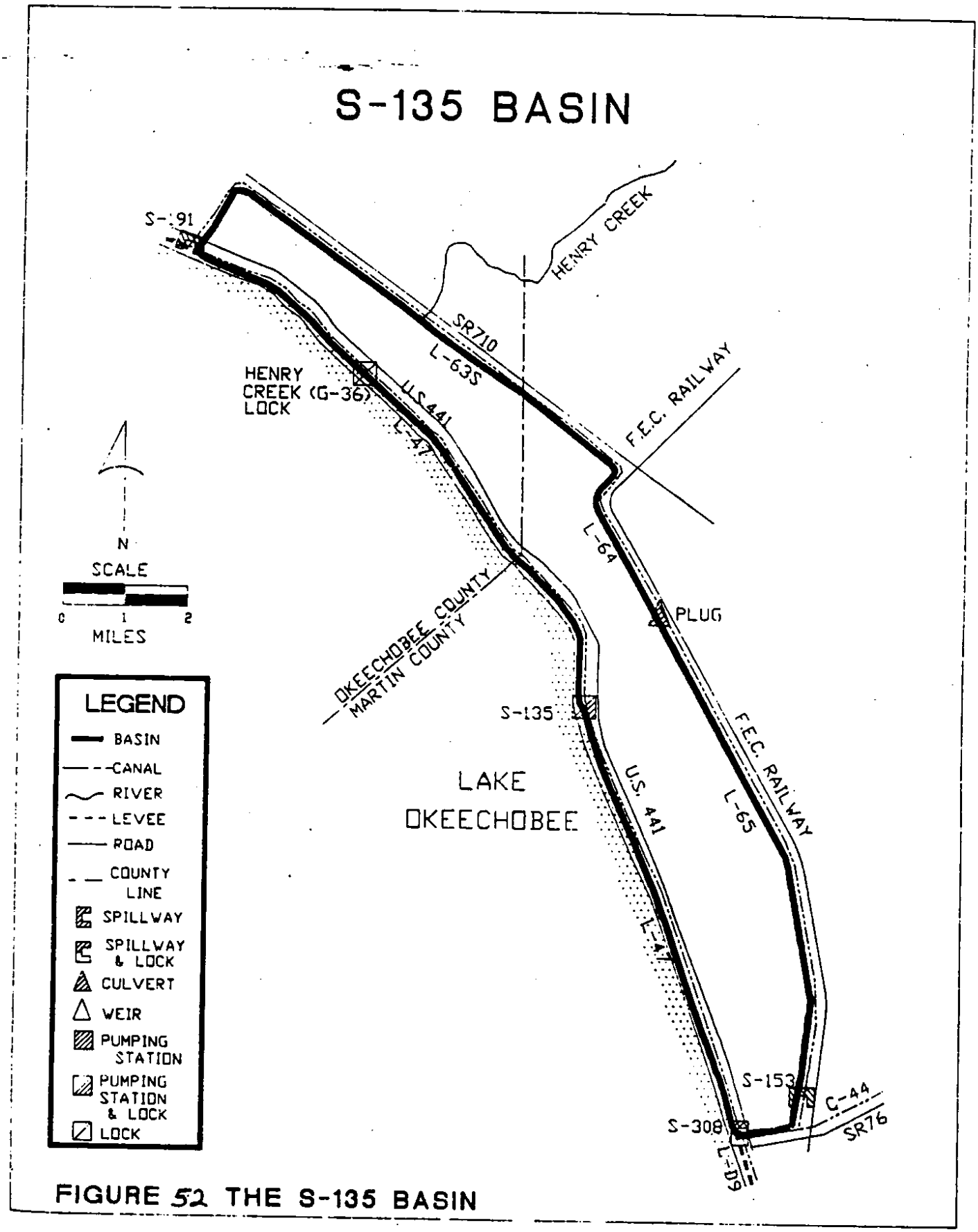


FIGURE 52 THE S-135 BASIN

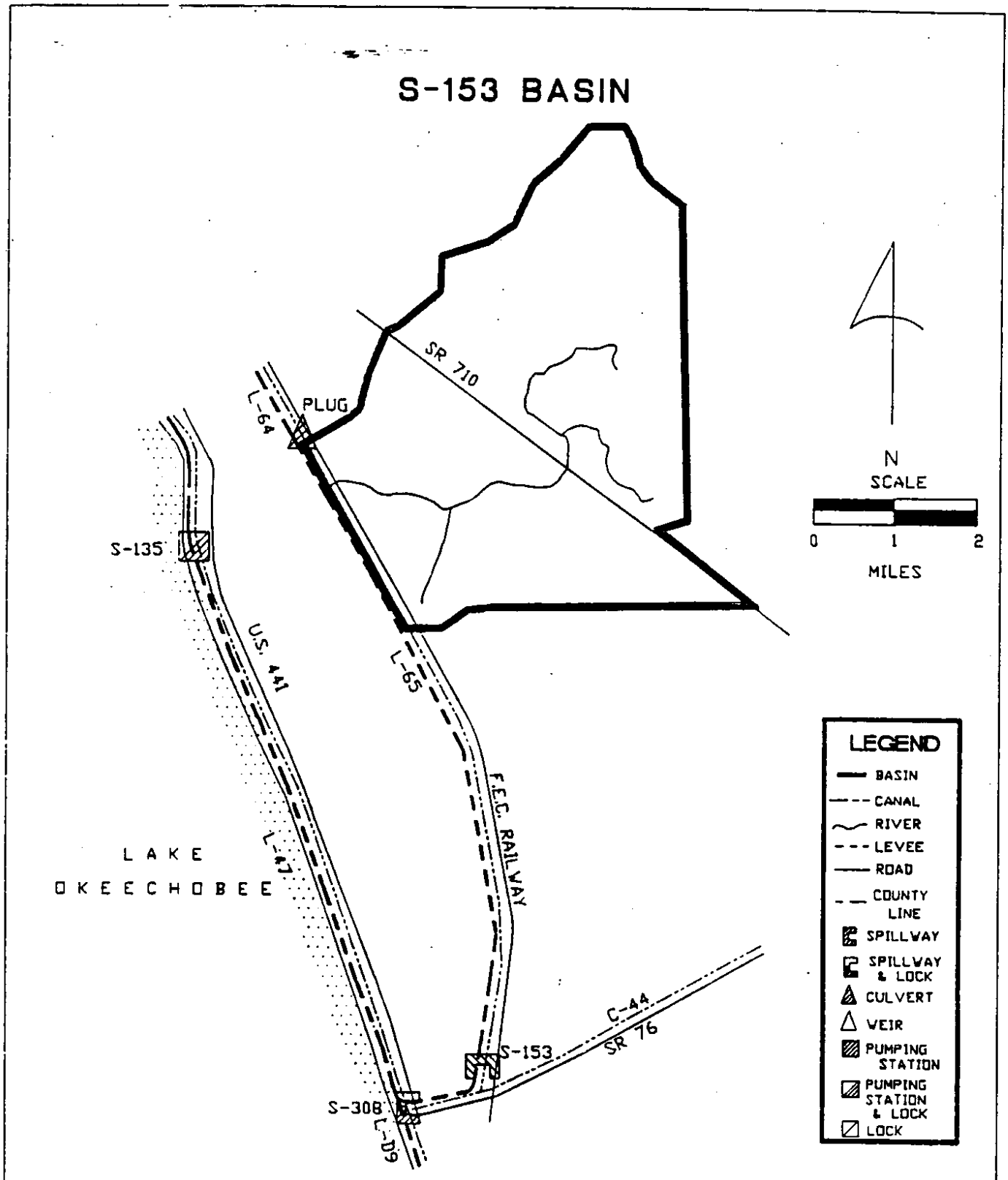


FIGURE 53 THE S-153 BASIN

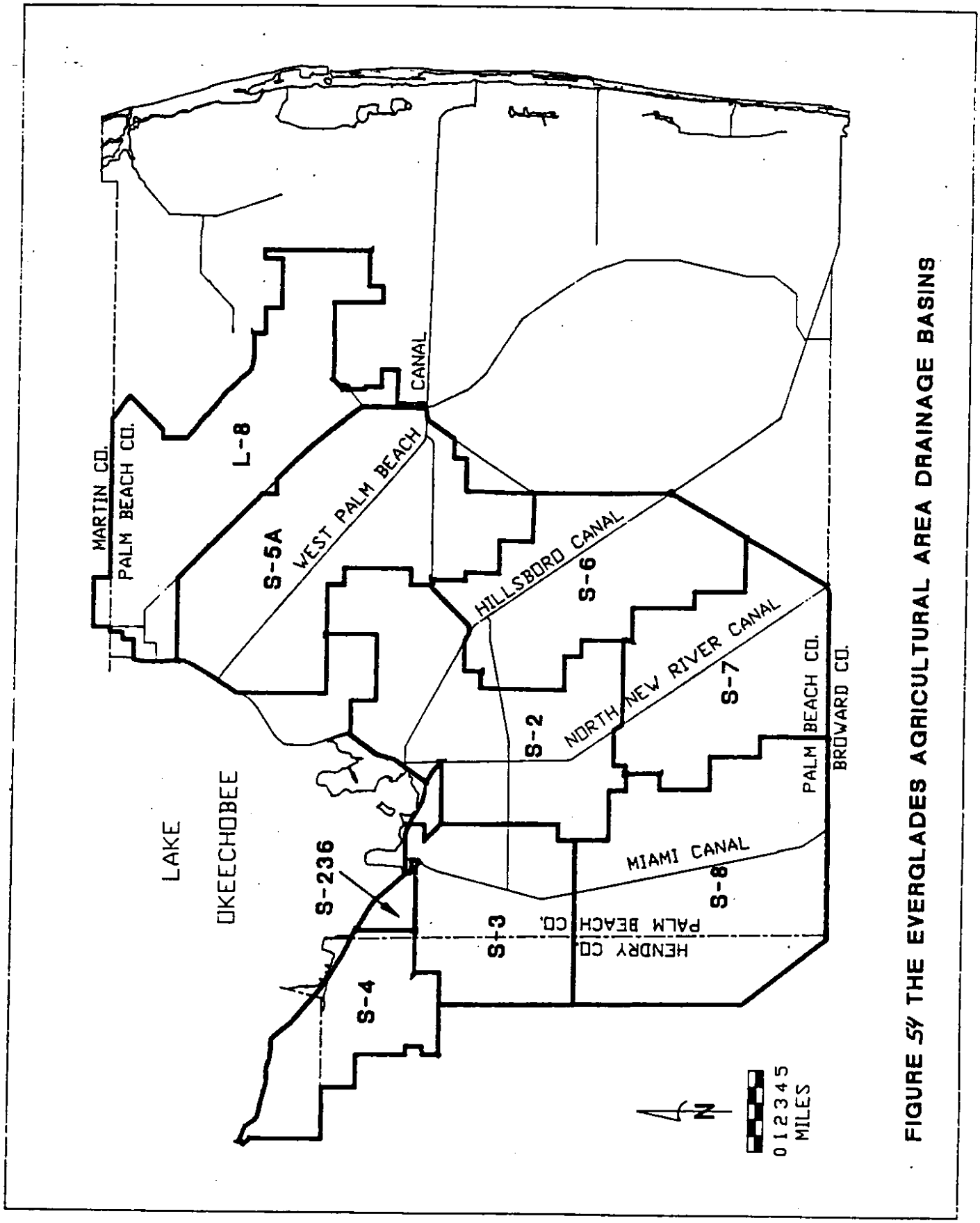


FIGURE 5Y THE EVERGLADES AGRICULTURAL AREA DRAINAGE BASINS

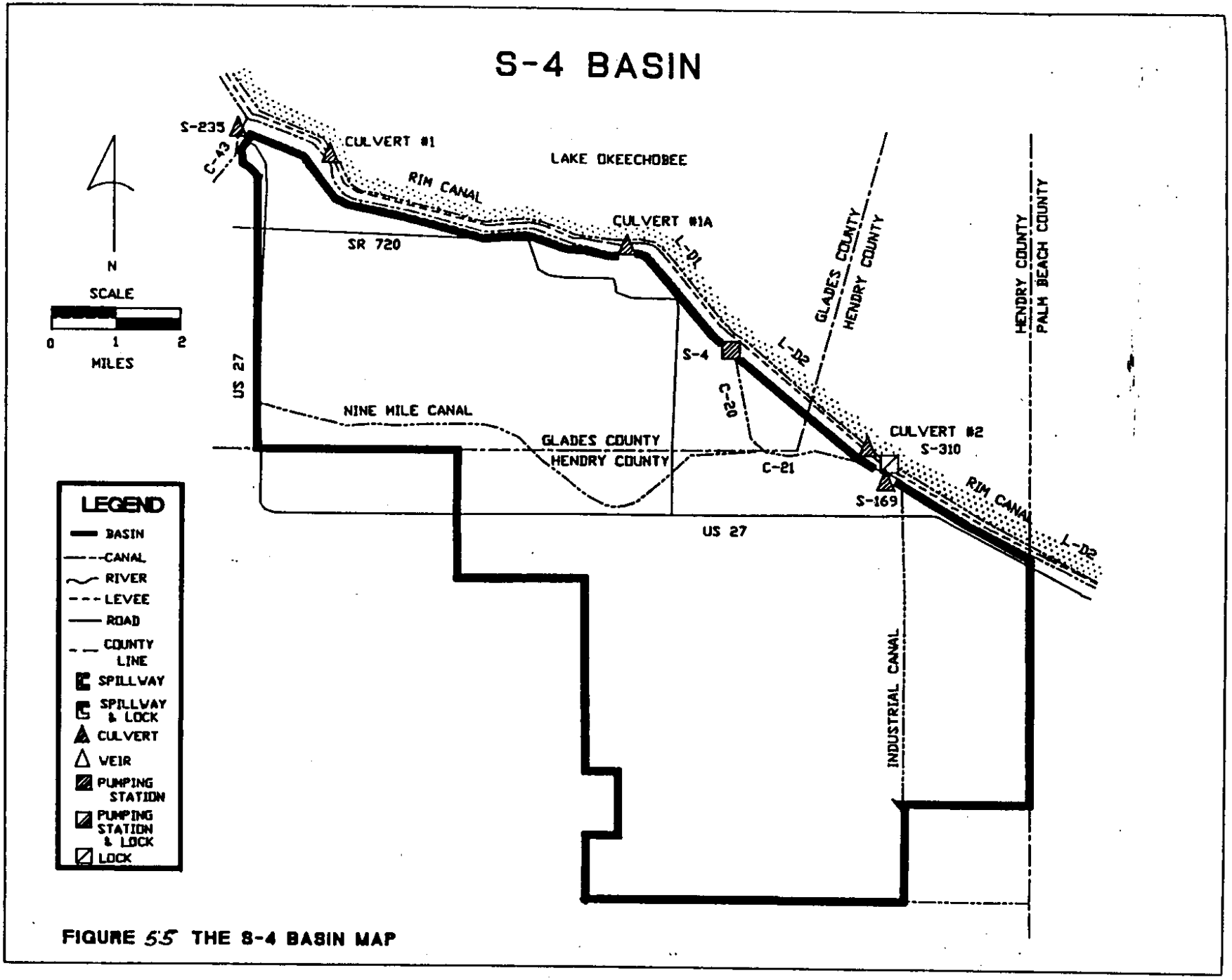


FIGURE 5.5 THE S-4 BASIN MAP

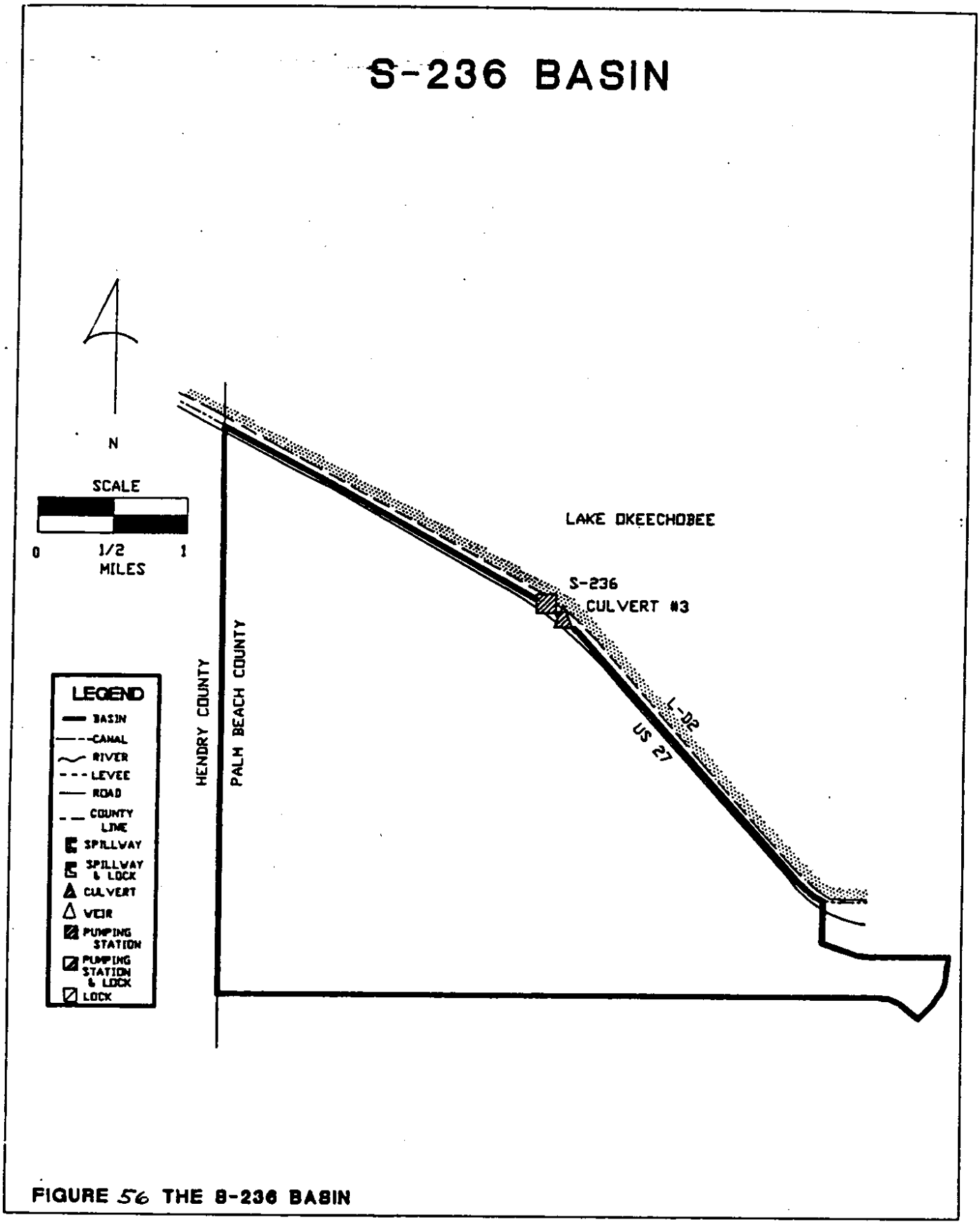


FIGURE 56 THE S-236 BASIN

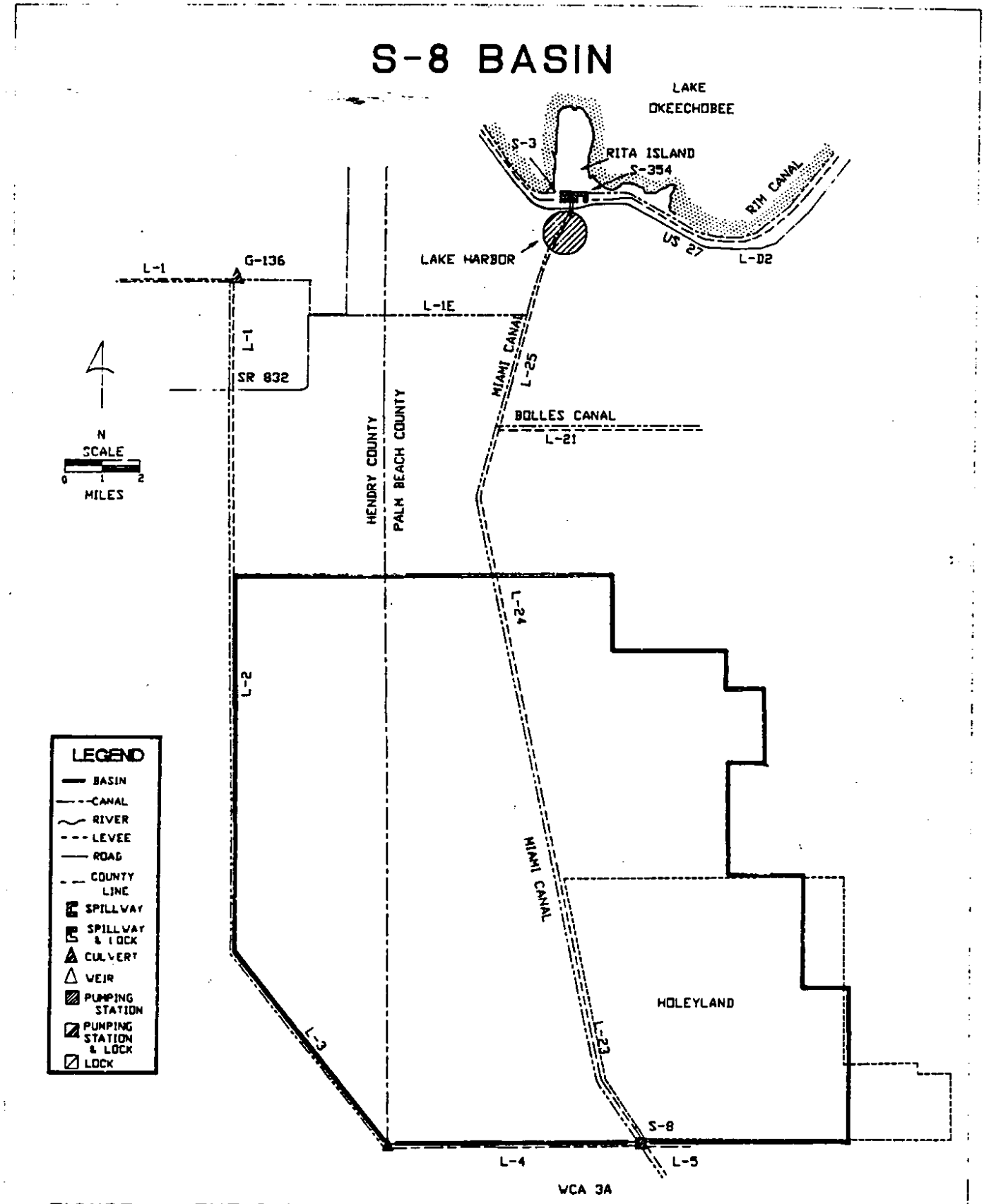


FIGURE 57 THE S-8 BASIN MAP

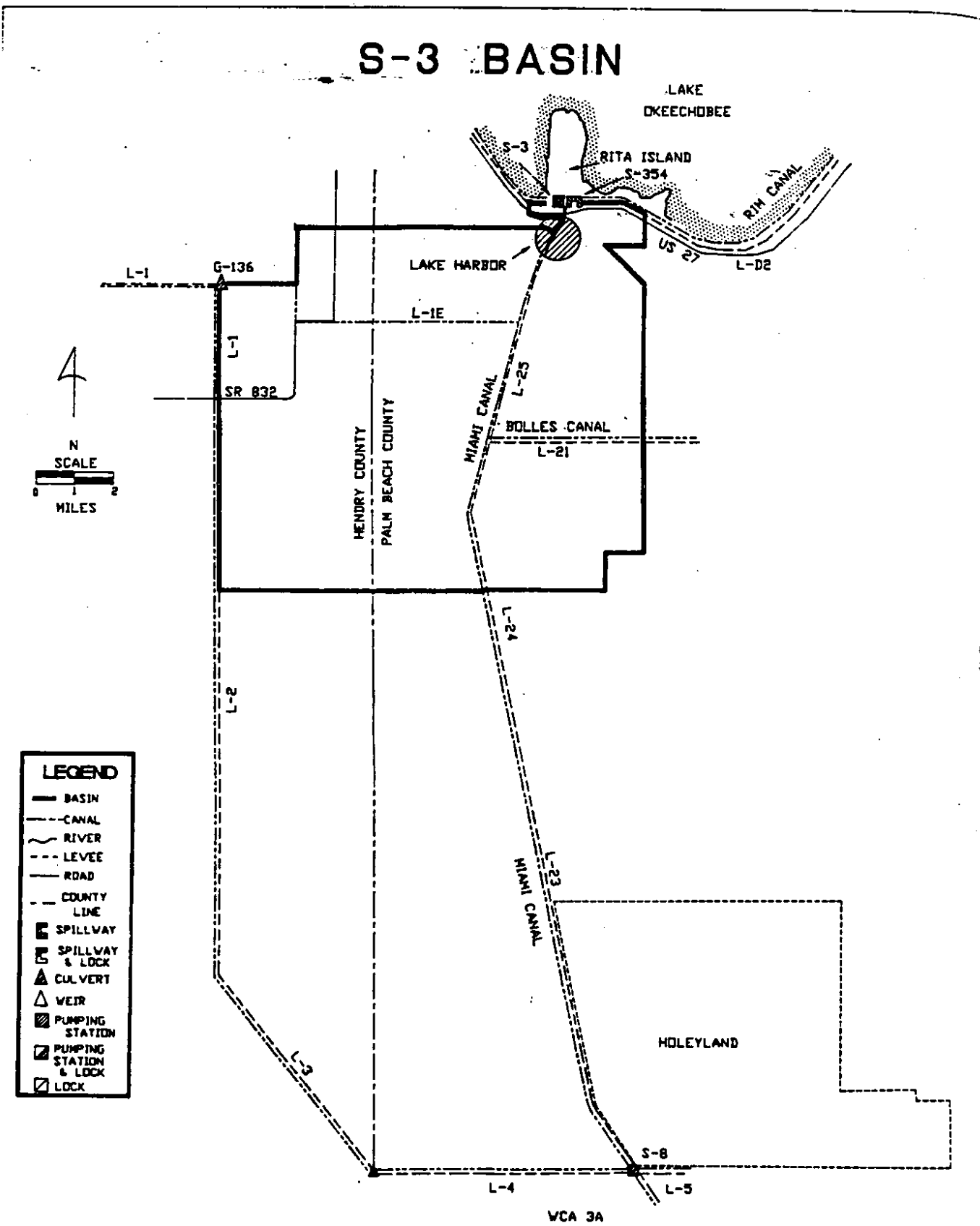


FIGURE 58 THE S-3 BASIN MAP

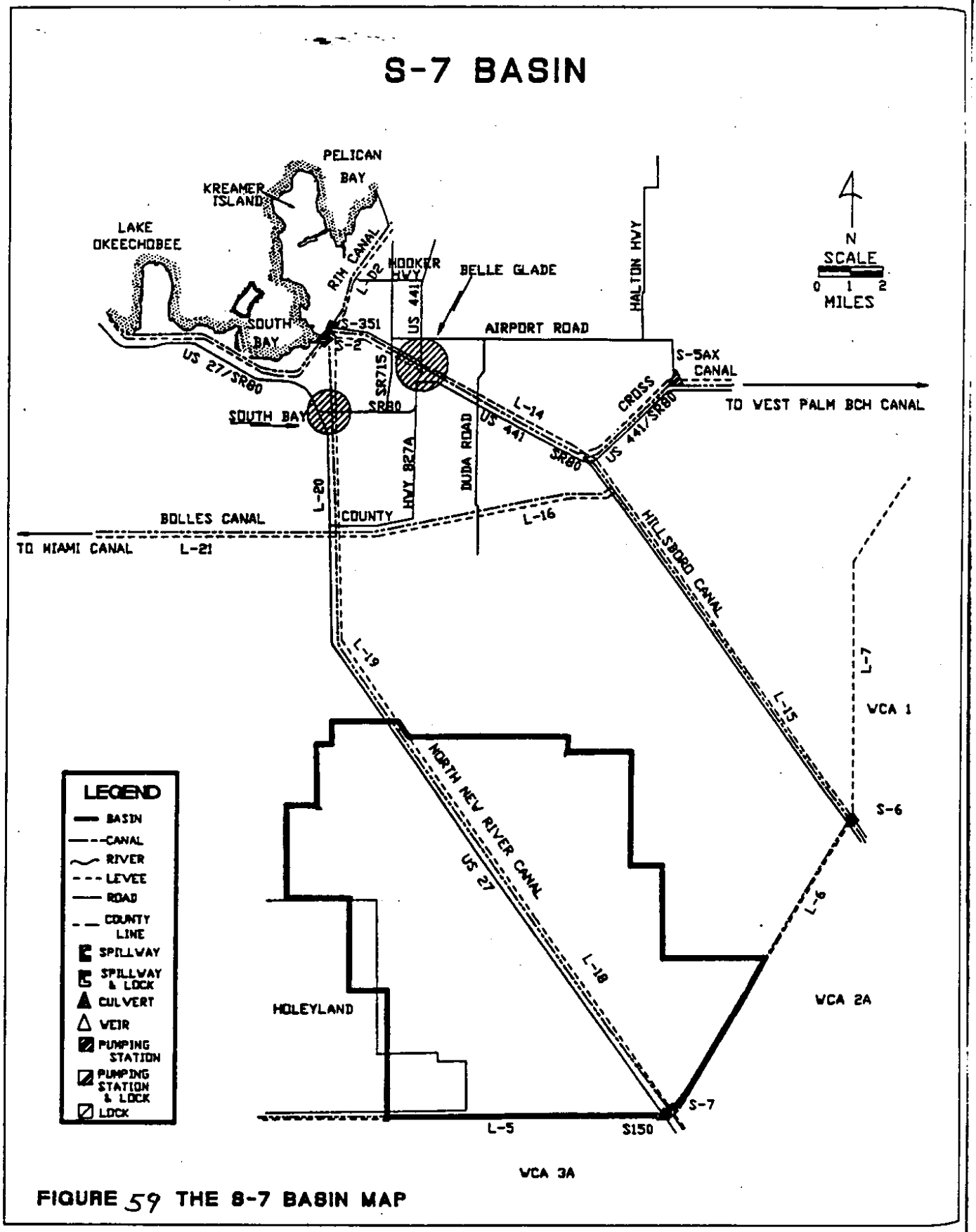


FIGURE 59 THE S-7 BASIN MAP

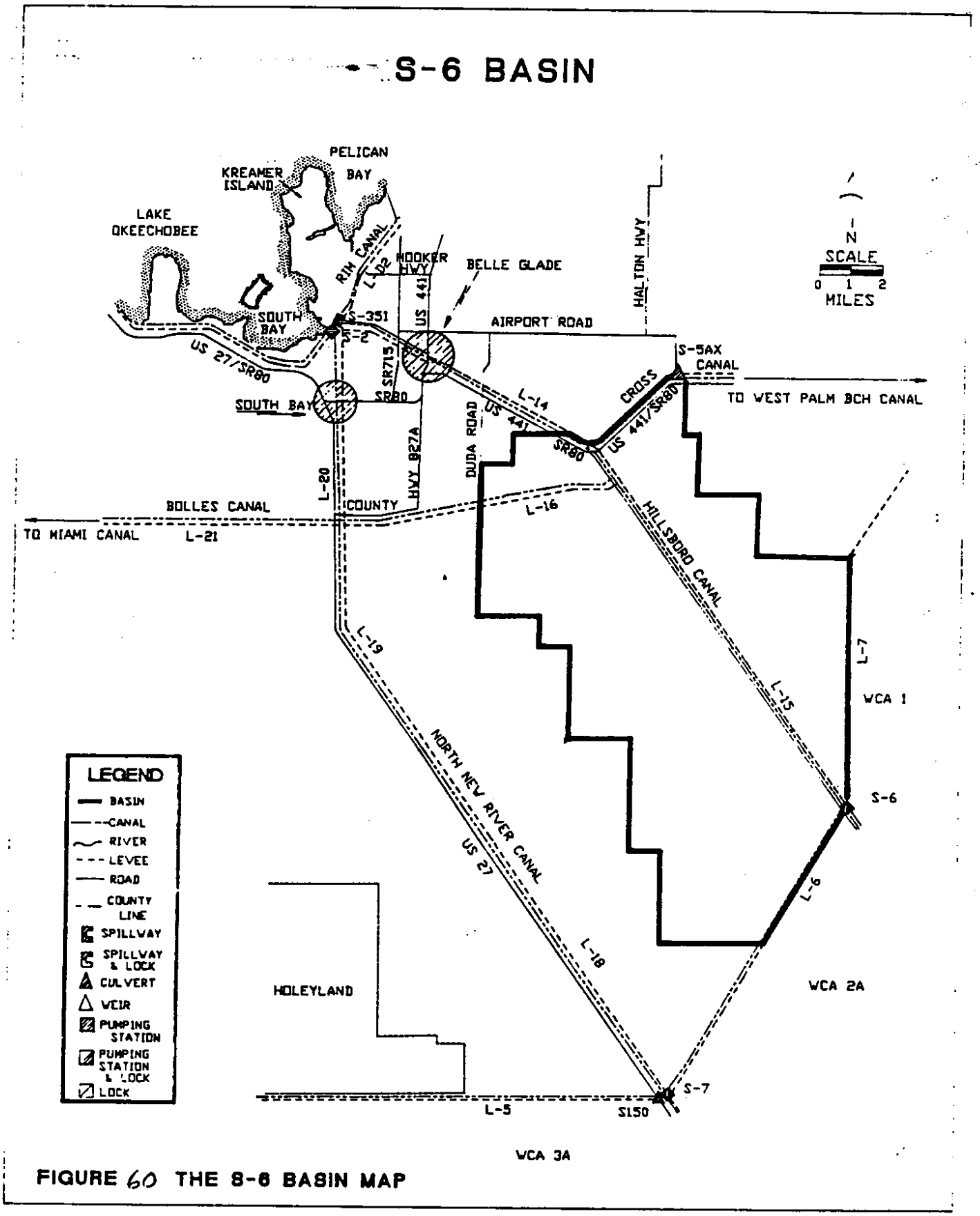


FIGURE 60 THE S-6 BASIN MAP

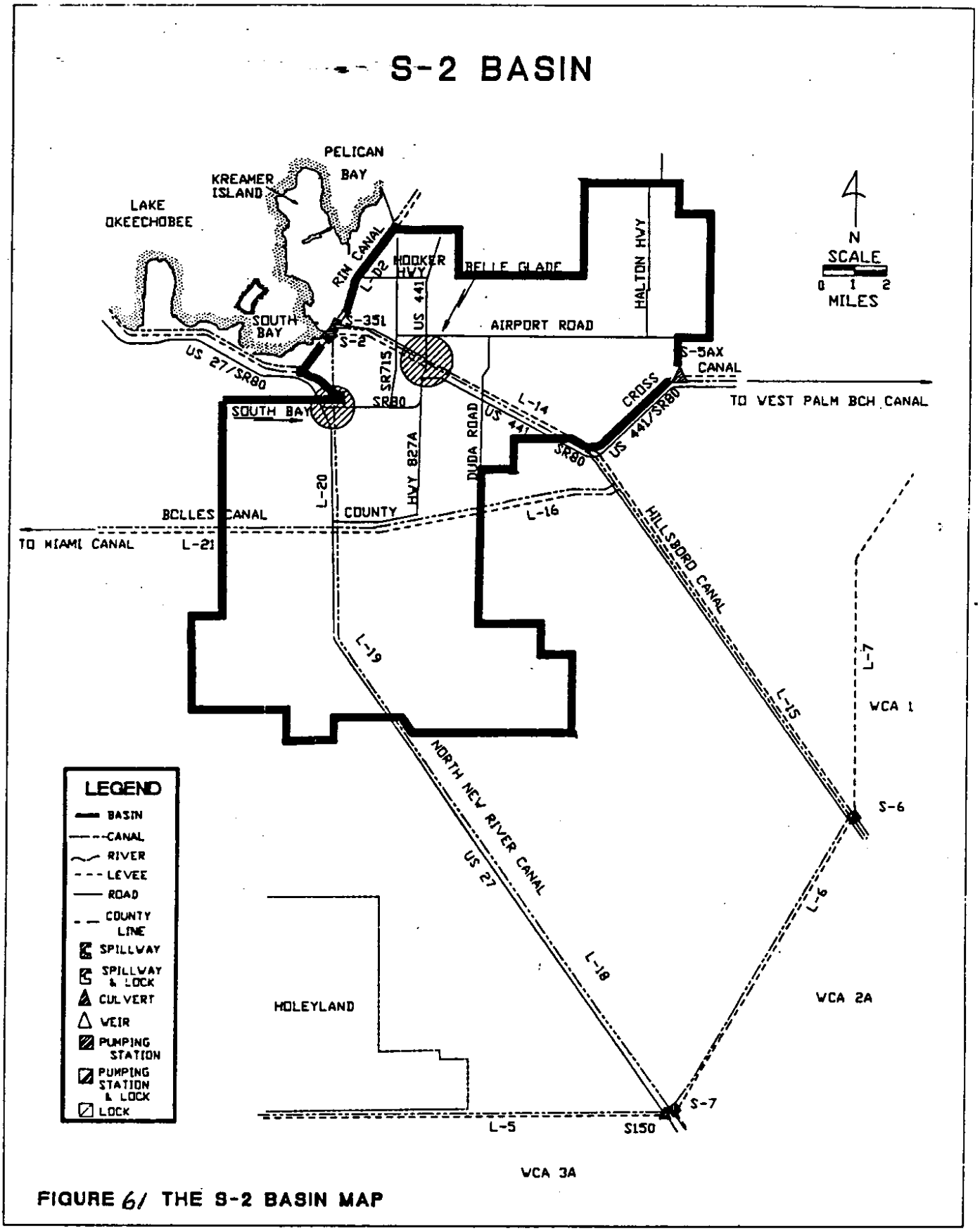


FIGURE 6/ THE S-2 BASIN MAP

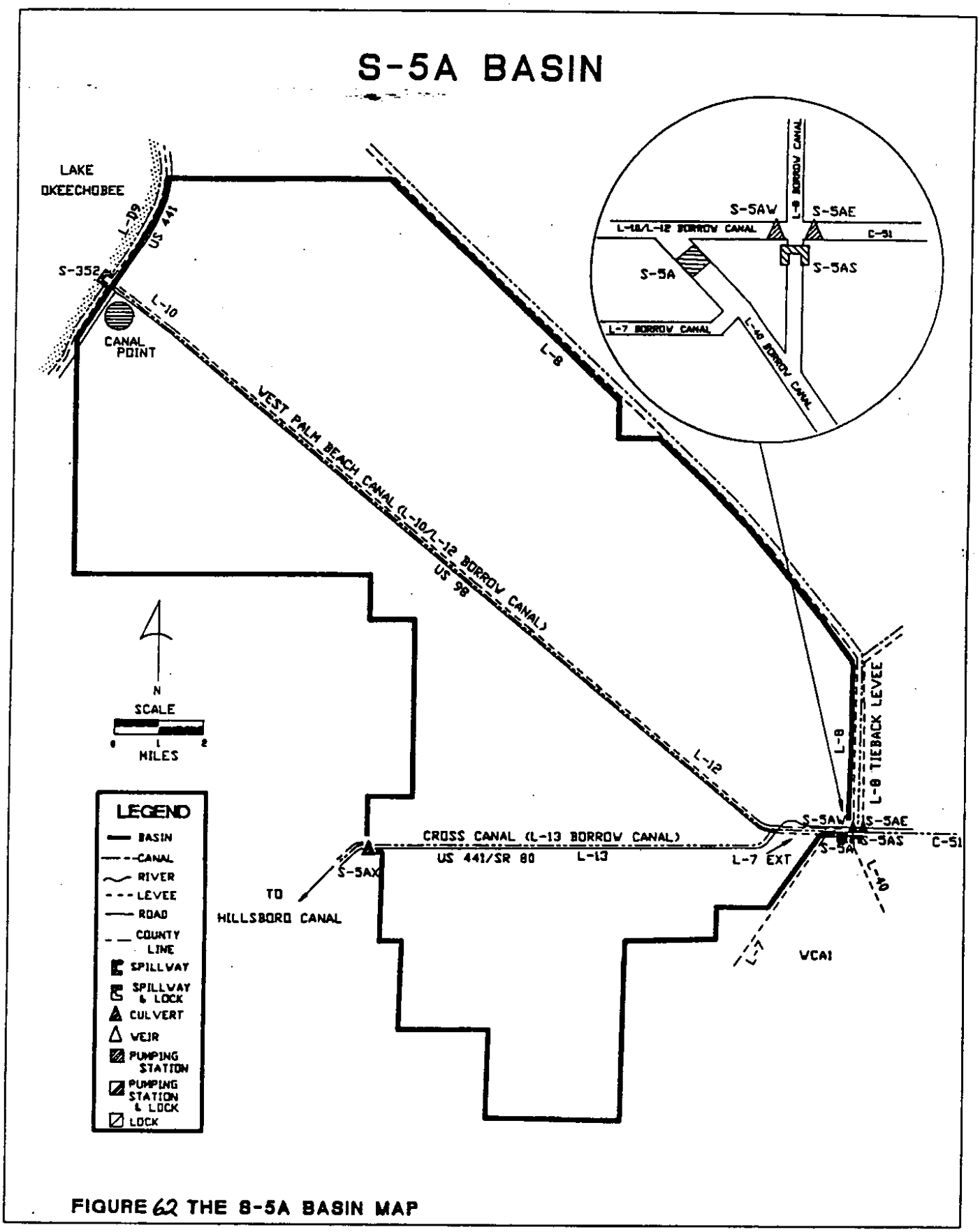


FIGURE 62 THE S-5A BASIN MAP

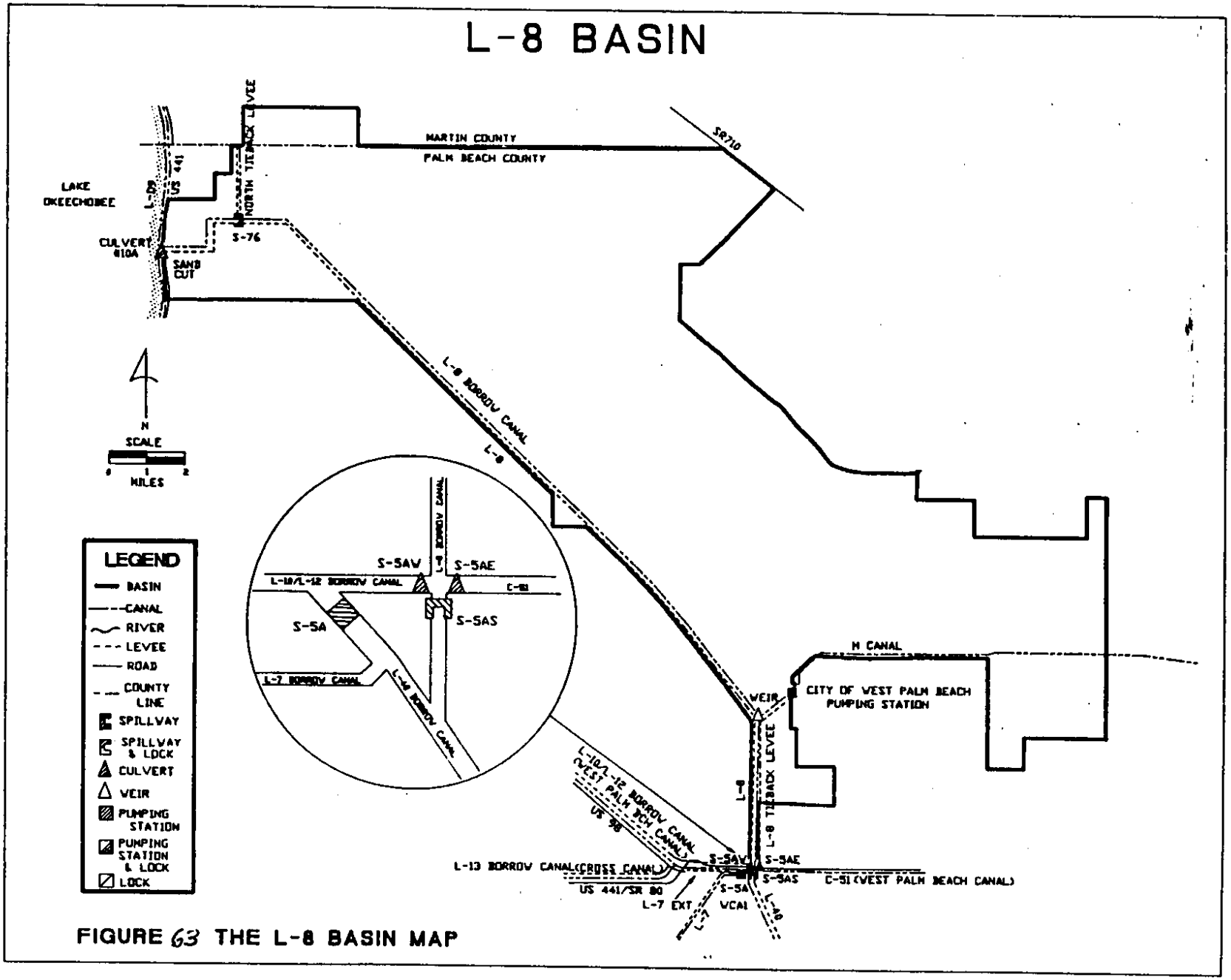


FIGURE 63 THE L-8 BASIN MAP

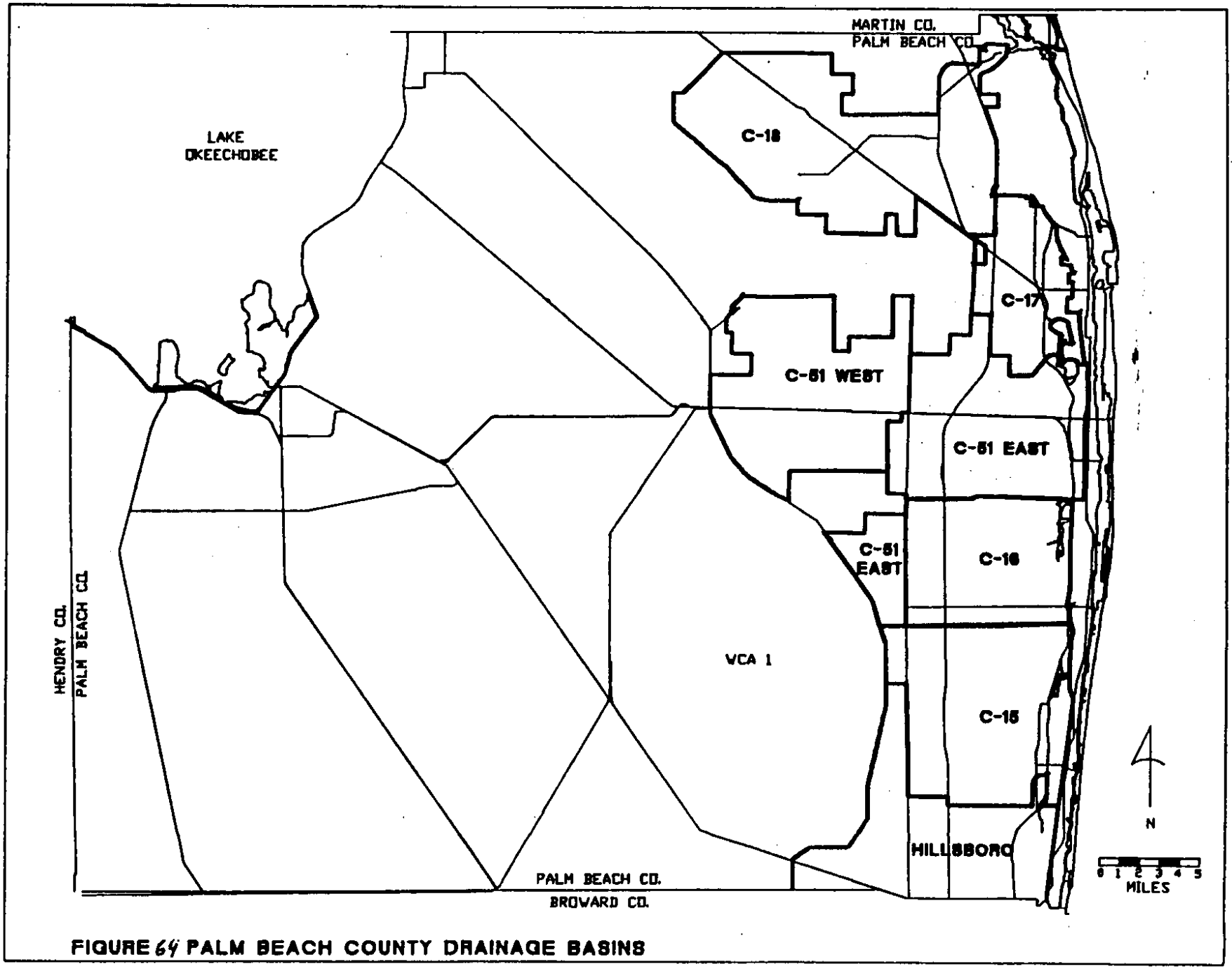


FIGURE 64 PALM BEACH COUNTY DRAINAGE BASINS

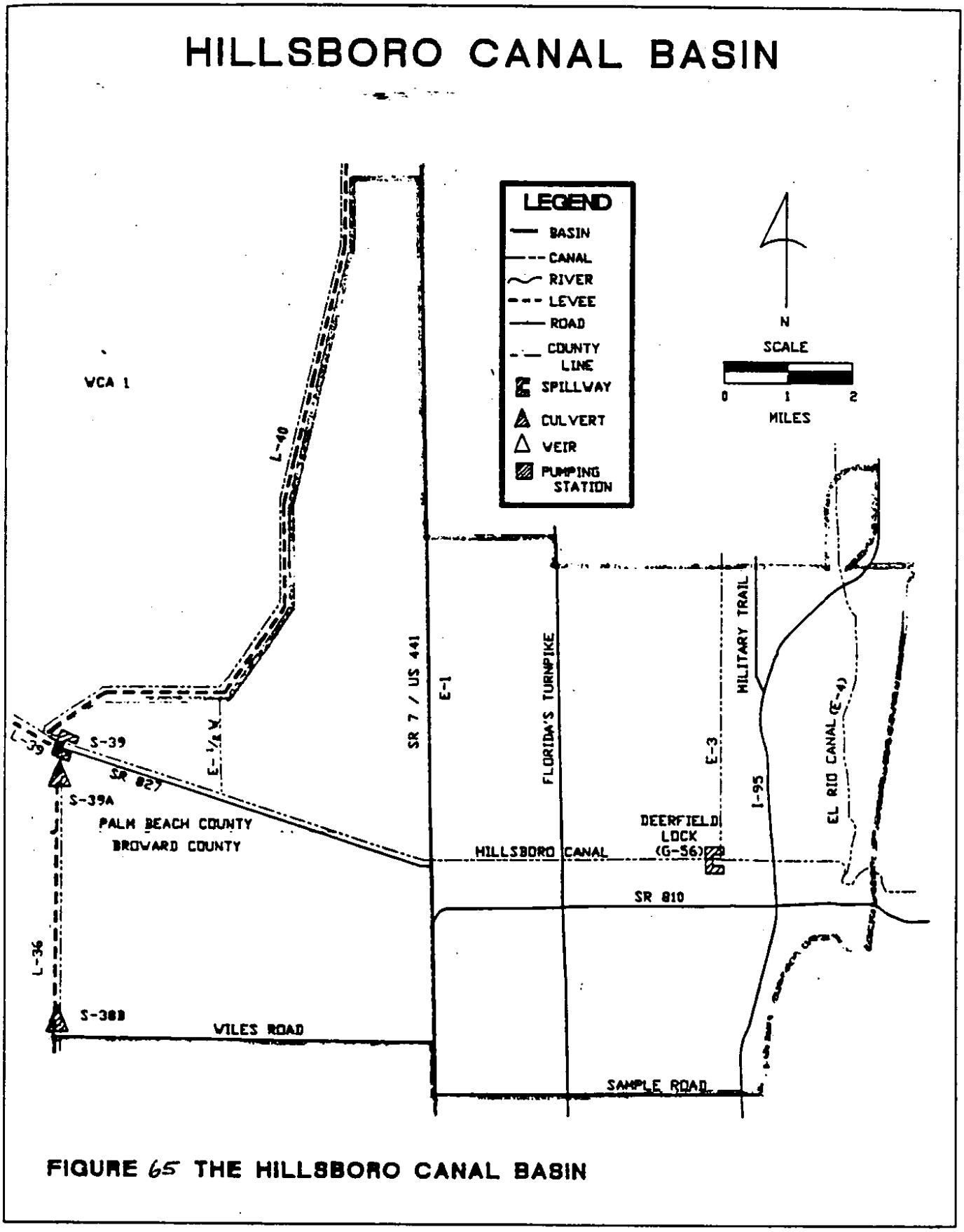


FIGURE 65 THE HILLSBORO CANAL BASIN

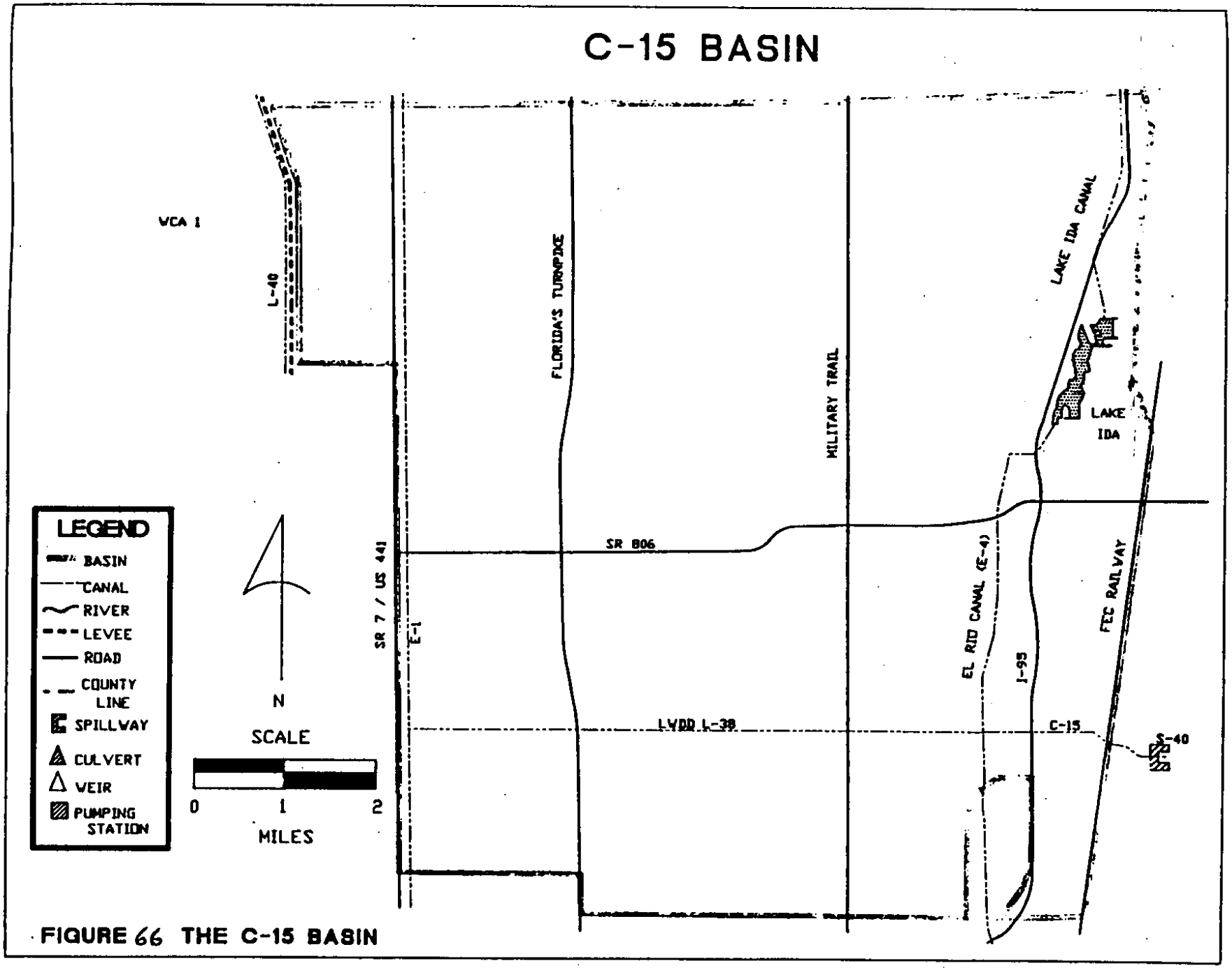


FIGURE 66 THE C-15 BASIN

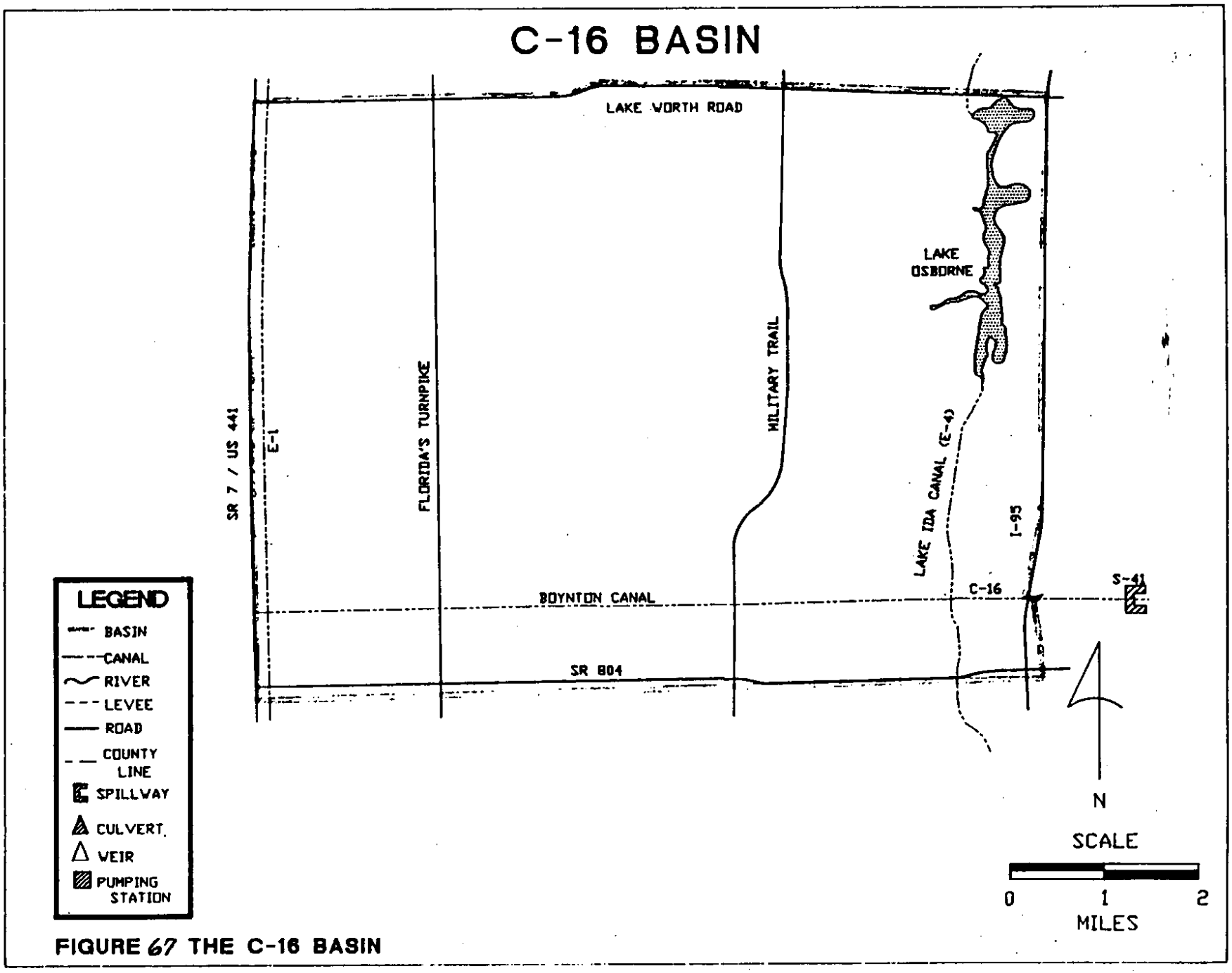


FIGURE 67 THE C-16 BASIN

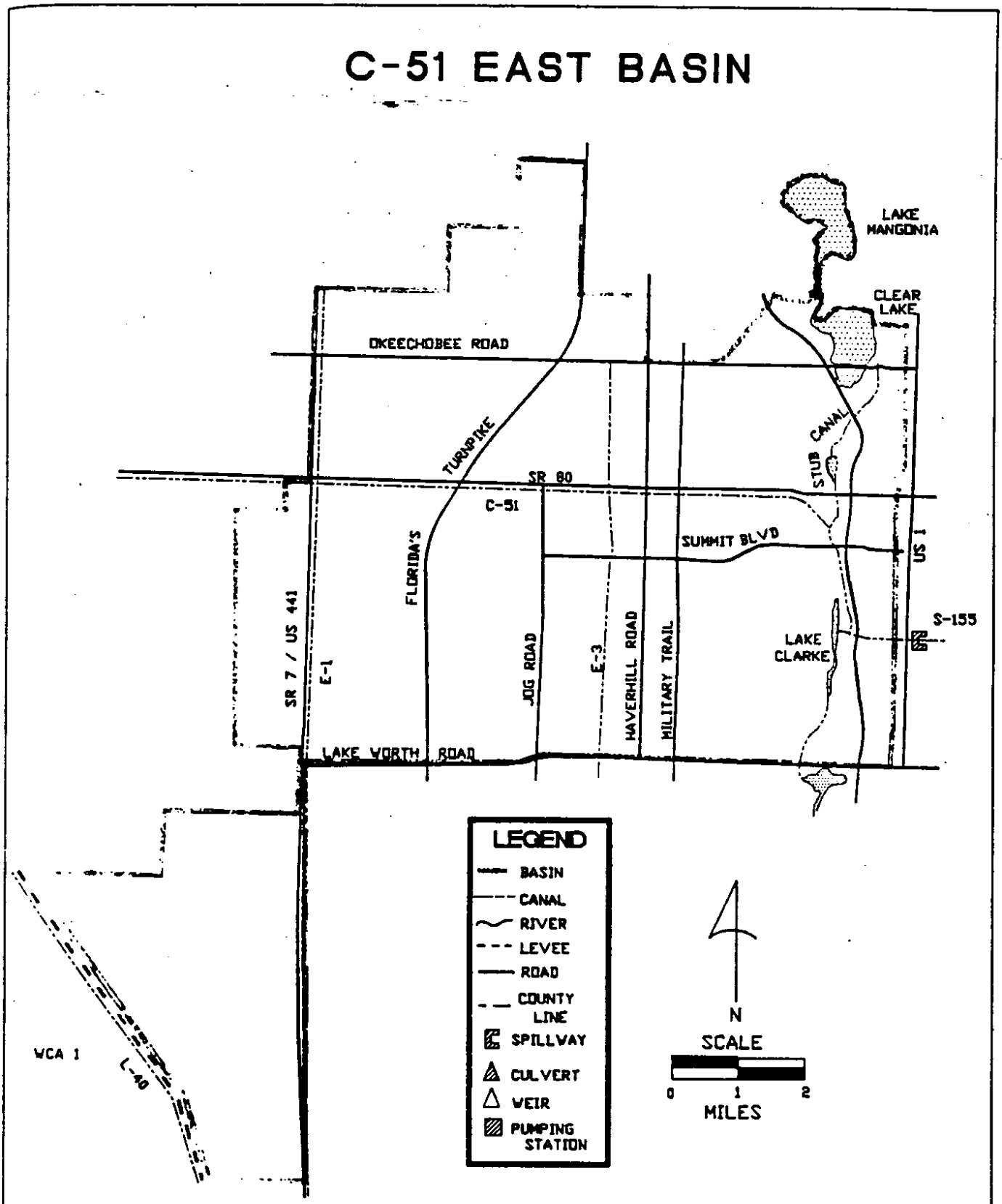


FIGURE 68 THE C-51 EAST BASIN

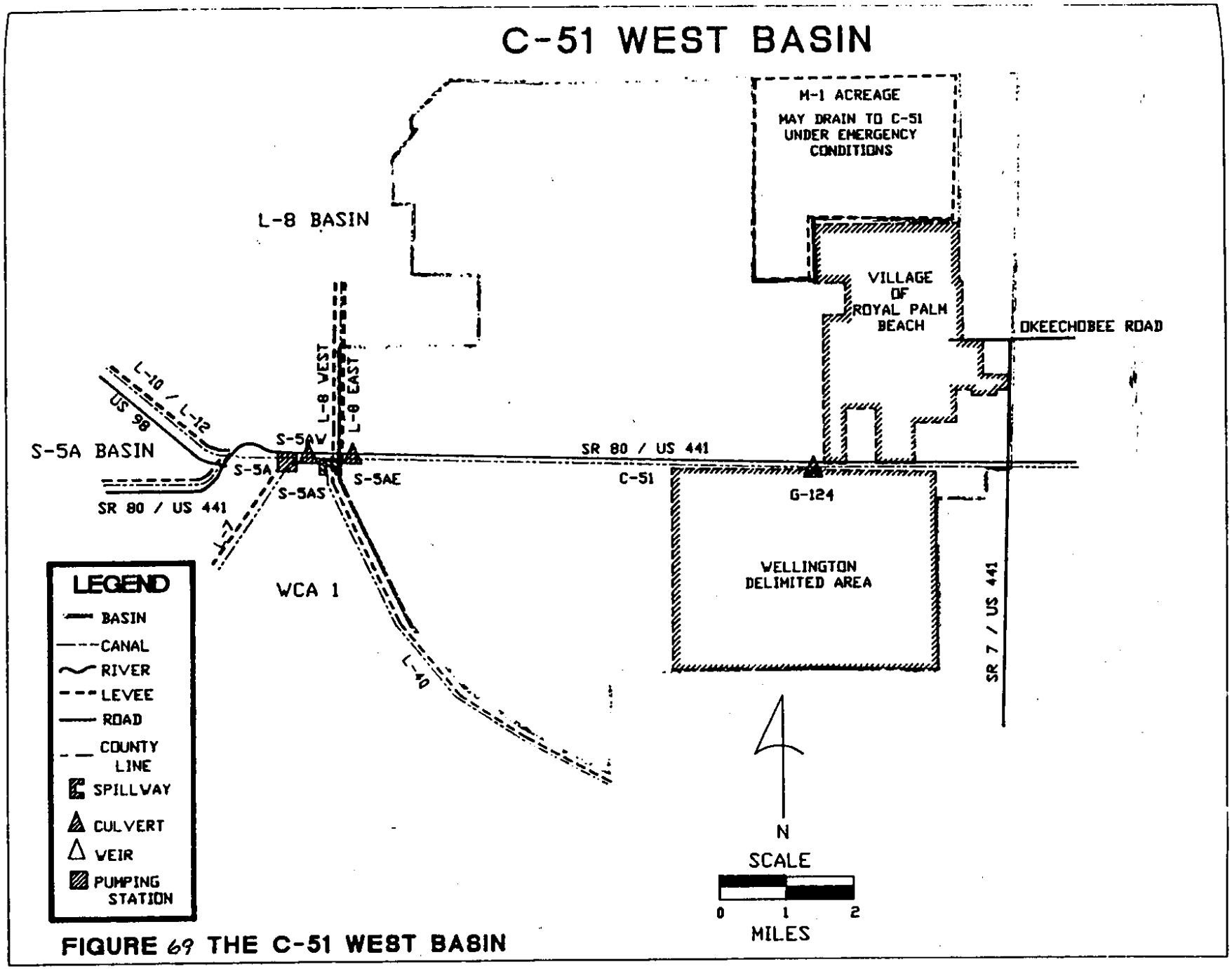
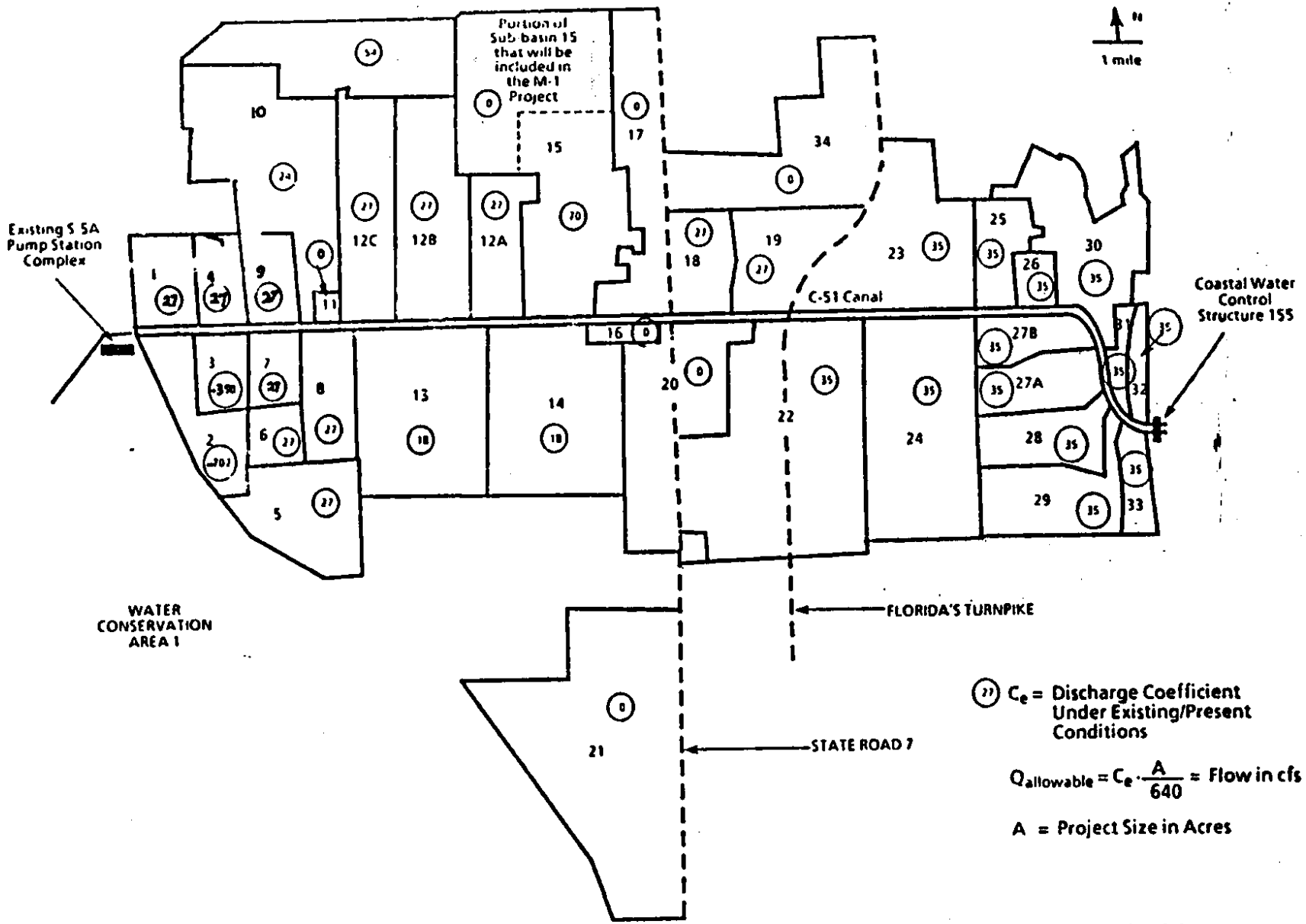


FIGURE 69 THE C-51 WEST BASIN



Discharge Coefficients for the Sub-basins of the C-51 Basin in Palm Beach County, Florida.

Figure 70

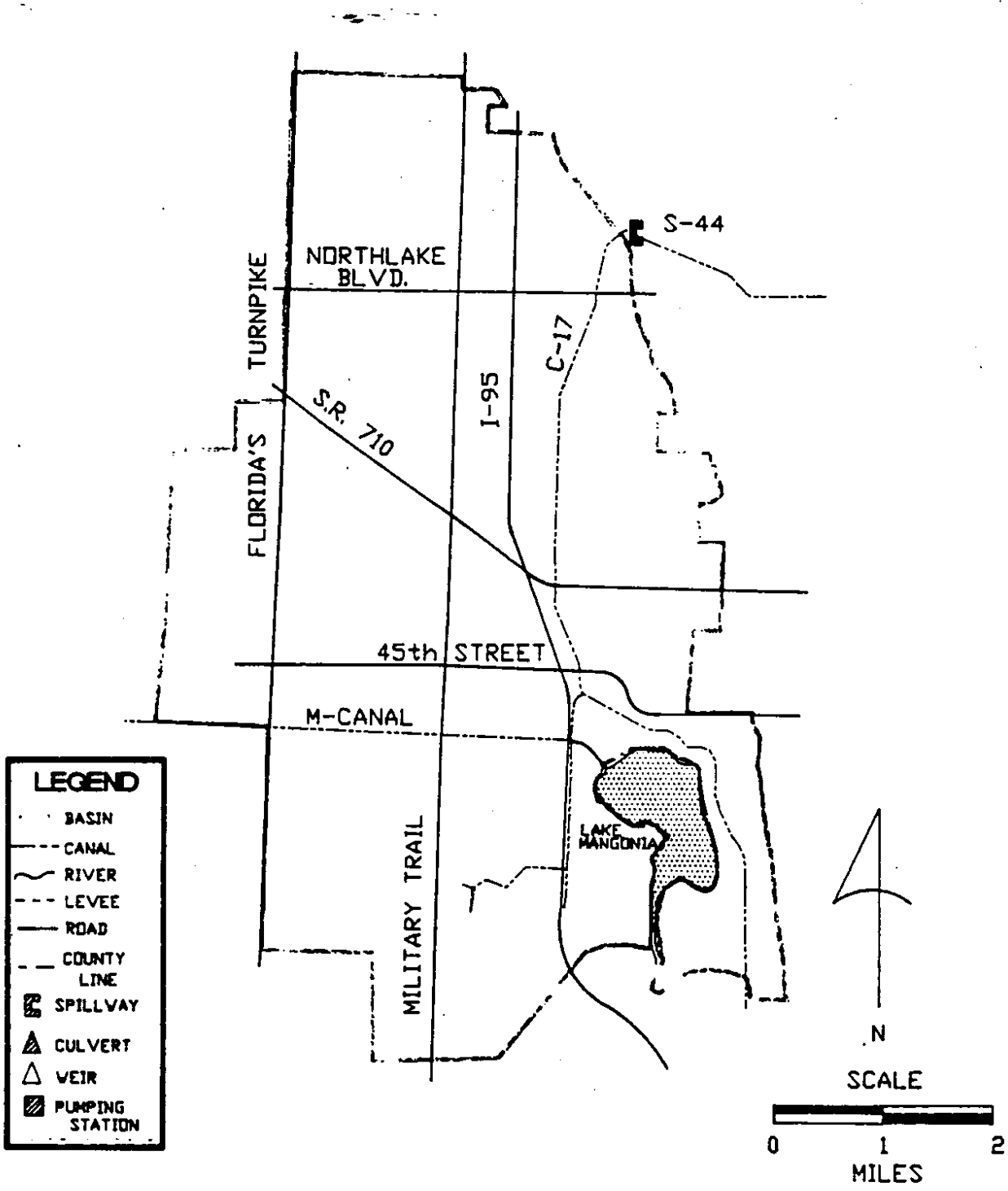


FIGURE 7/ THE C-17 (EARMAN RIVER CANAL) BASIN

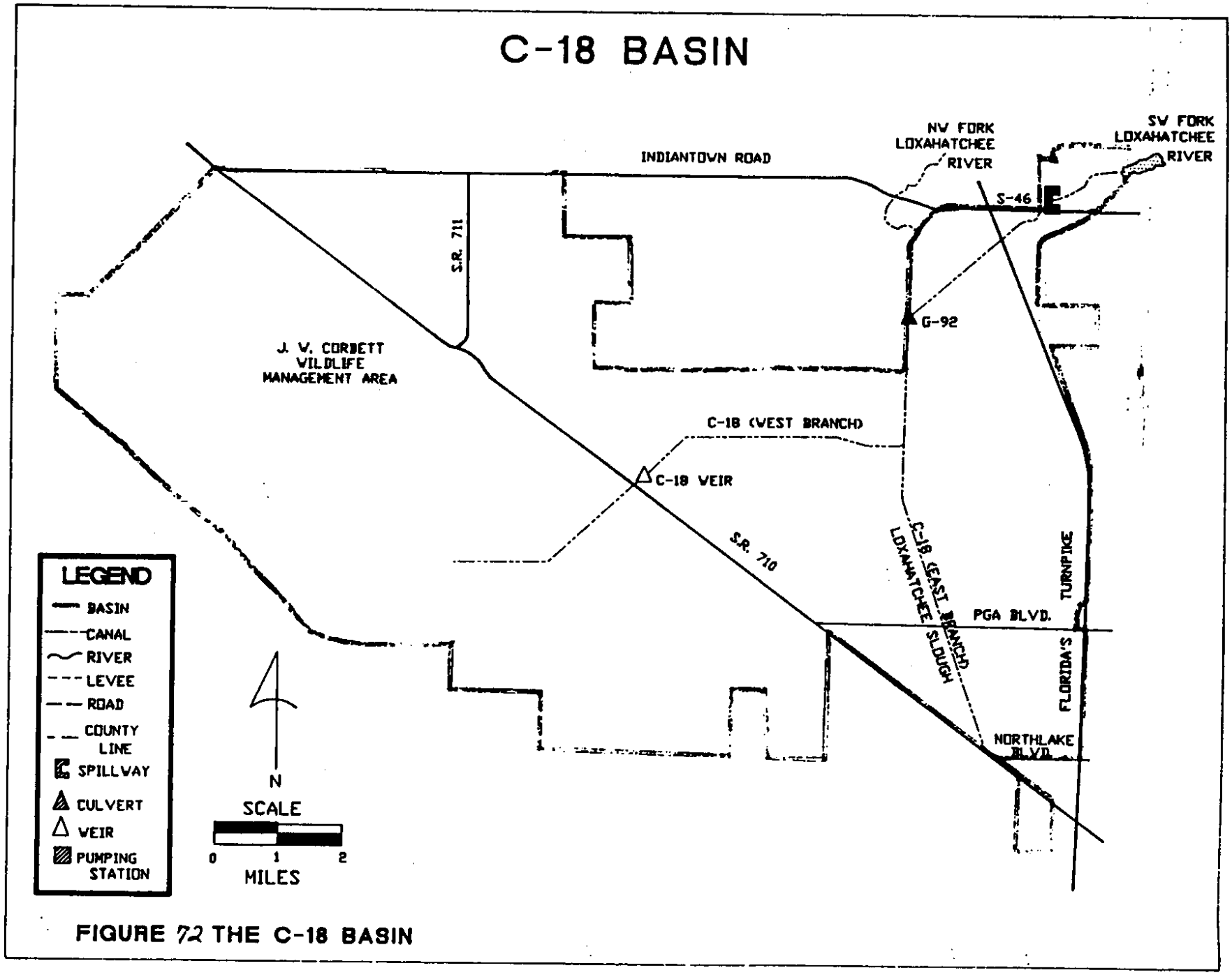


FIGURE 72 THE C-18 BASIN

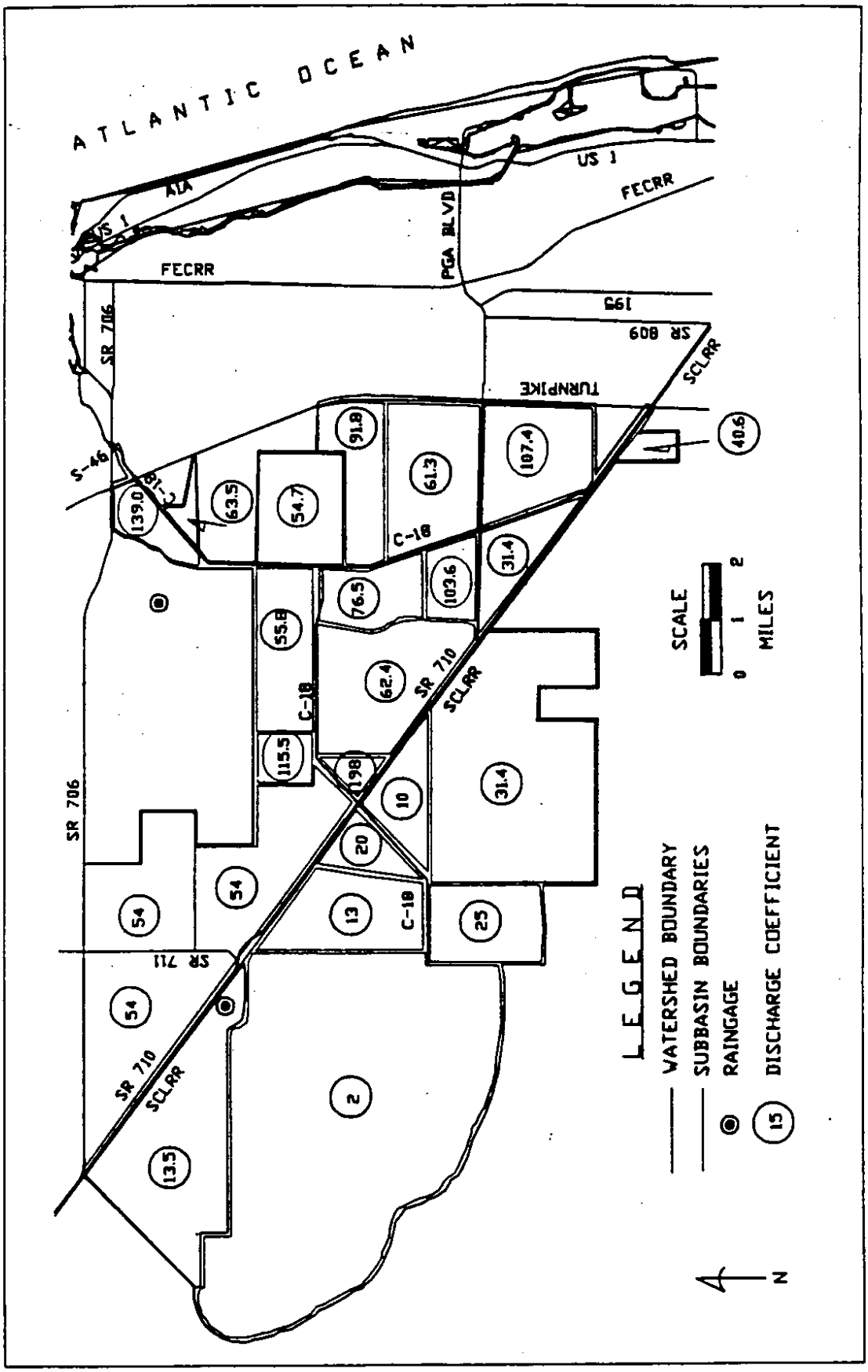


FIGURE 73 Discharge Coefficient, Ce, for New Development. Permitted Discharge Qp = Ce * A/640 Where A is Drainage Area in Acres

DISCHARGE COEFFICIENTS FOR SUBBASINS IN THE C-18 BASIN

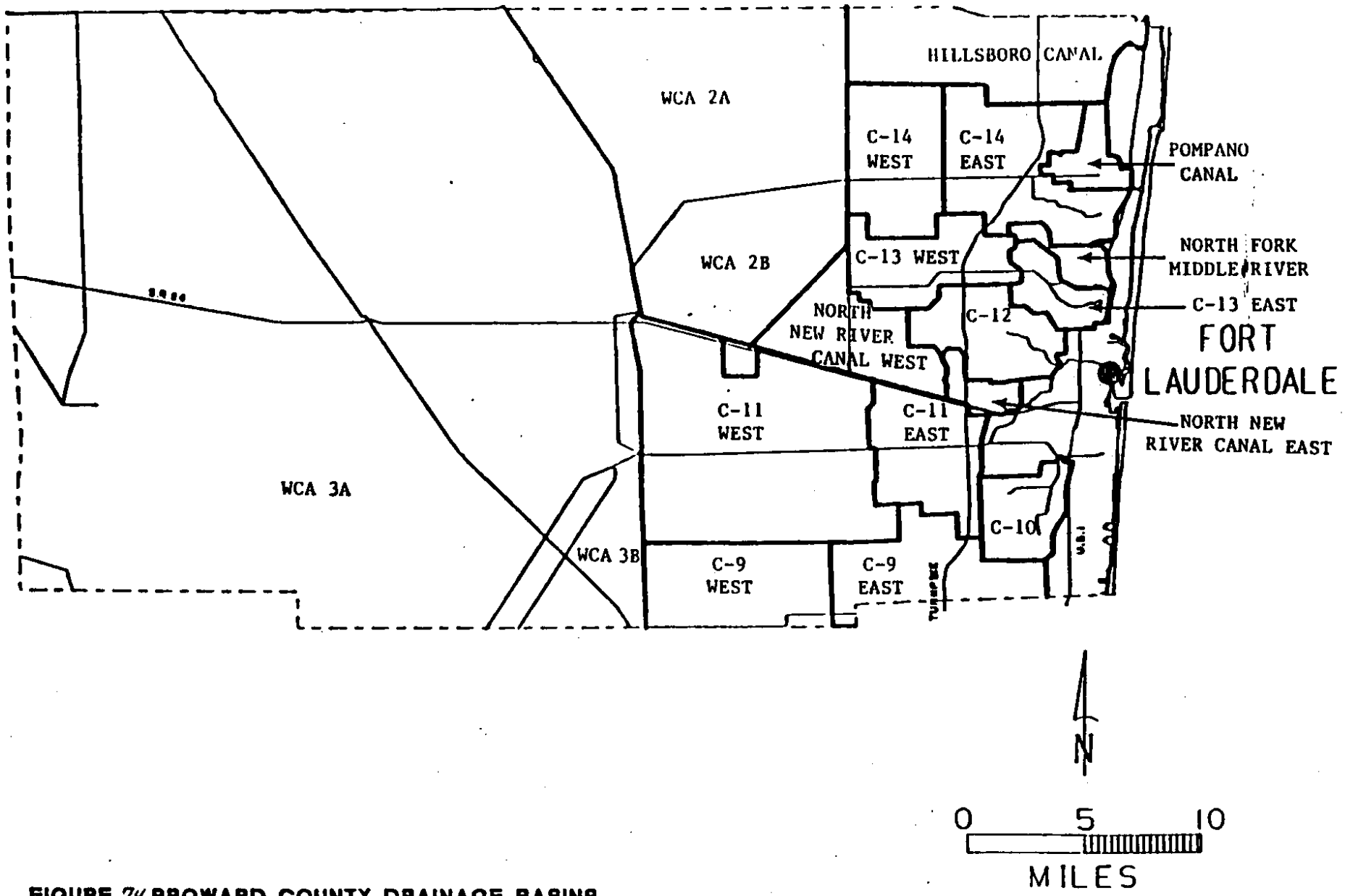
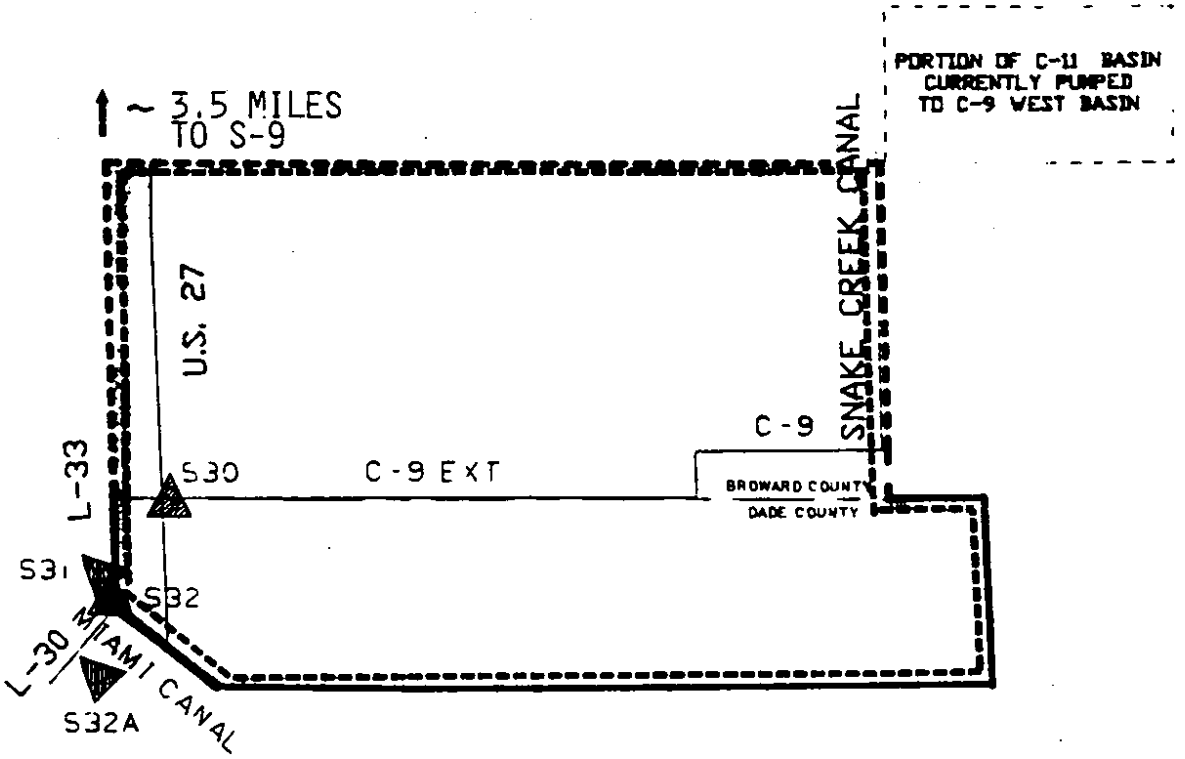


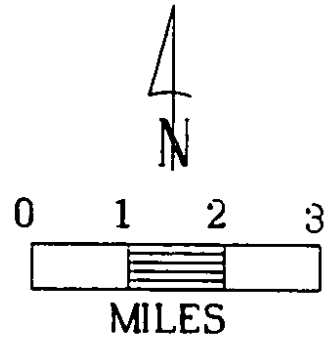
FIGURE 7/ BROWARD COUNTY DRAINAGE BASINS

C-9 WEST

~29.000 ACRES

~11.000 ACRES DADE





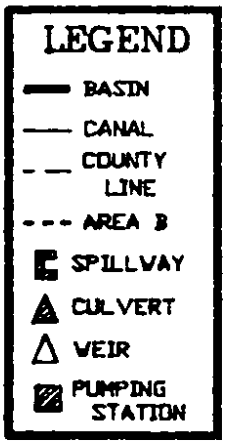
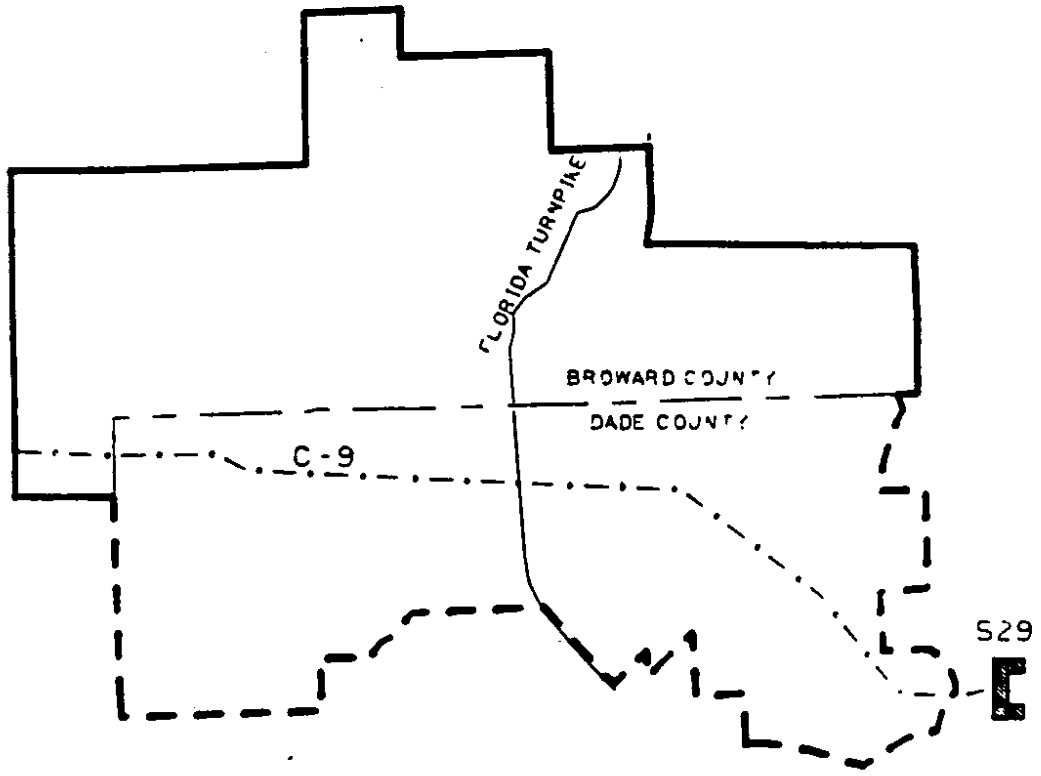


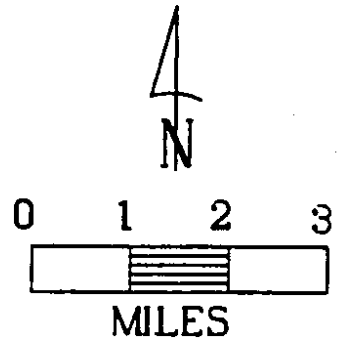
FIGURE 75 C-9 WEST BASIN MAP

C-9 EAST BASIN

34.000 ACRES

16.000 ACRES BROWARD





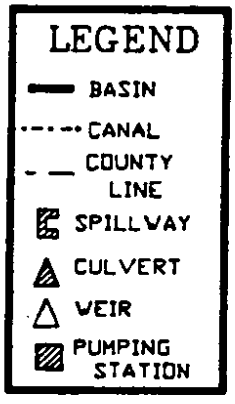


FIGURE 76 C-9 EAST BASIN MAP

C-10 BASIN
(HOLLYWOOD CANAL)
9,500 ACRES

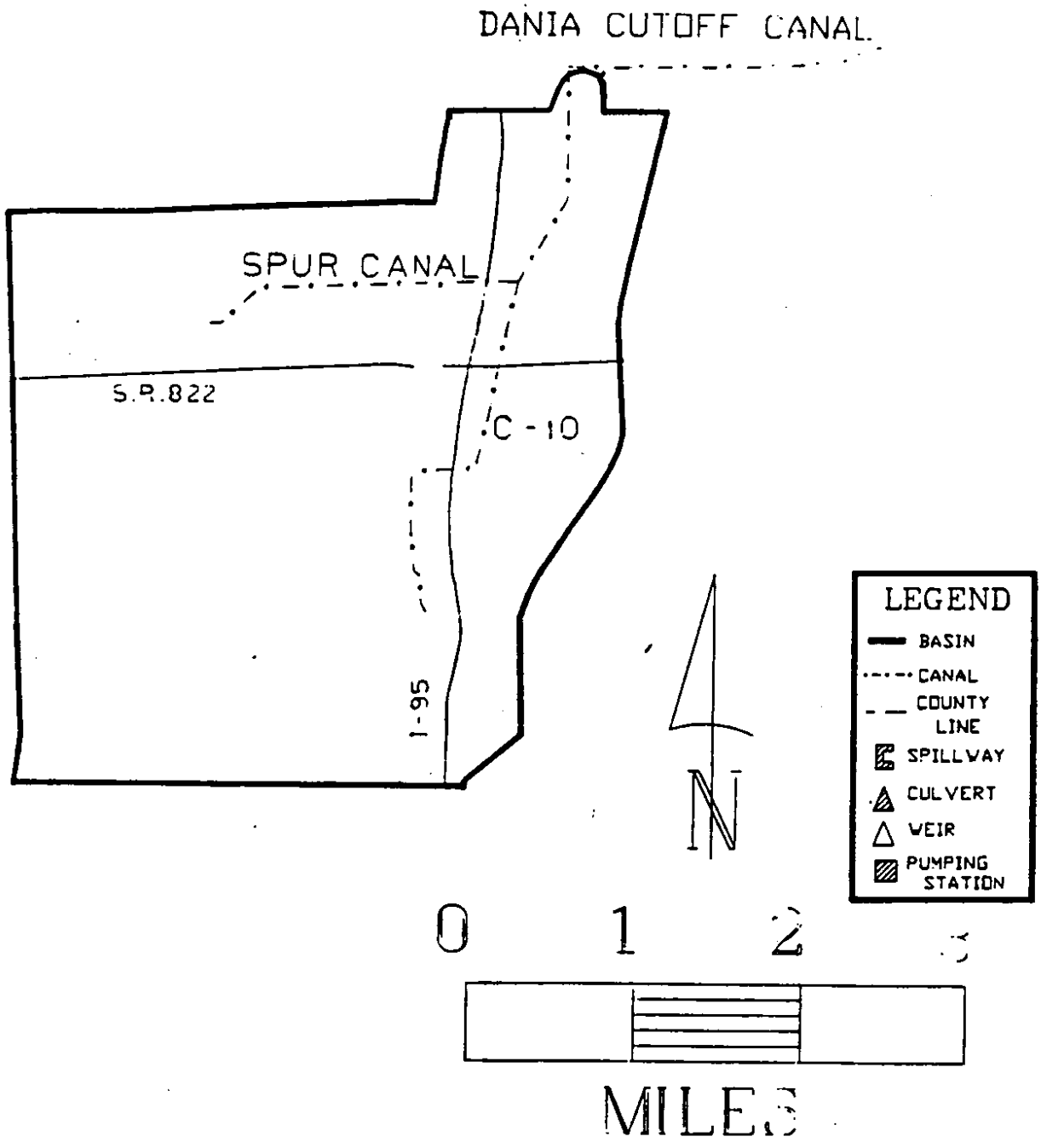


FIGURE 77 C-10 BASIN MAP

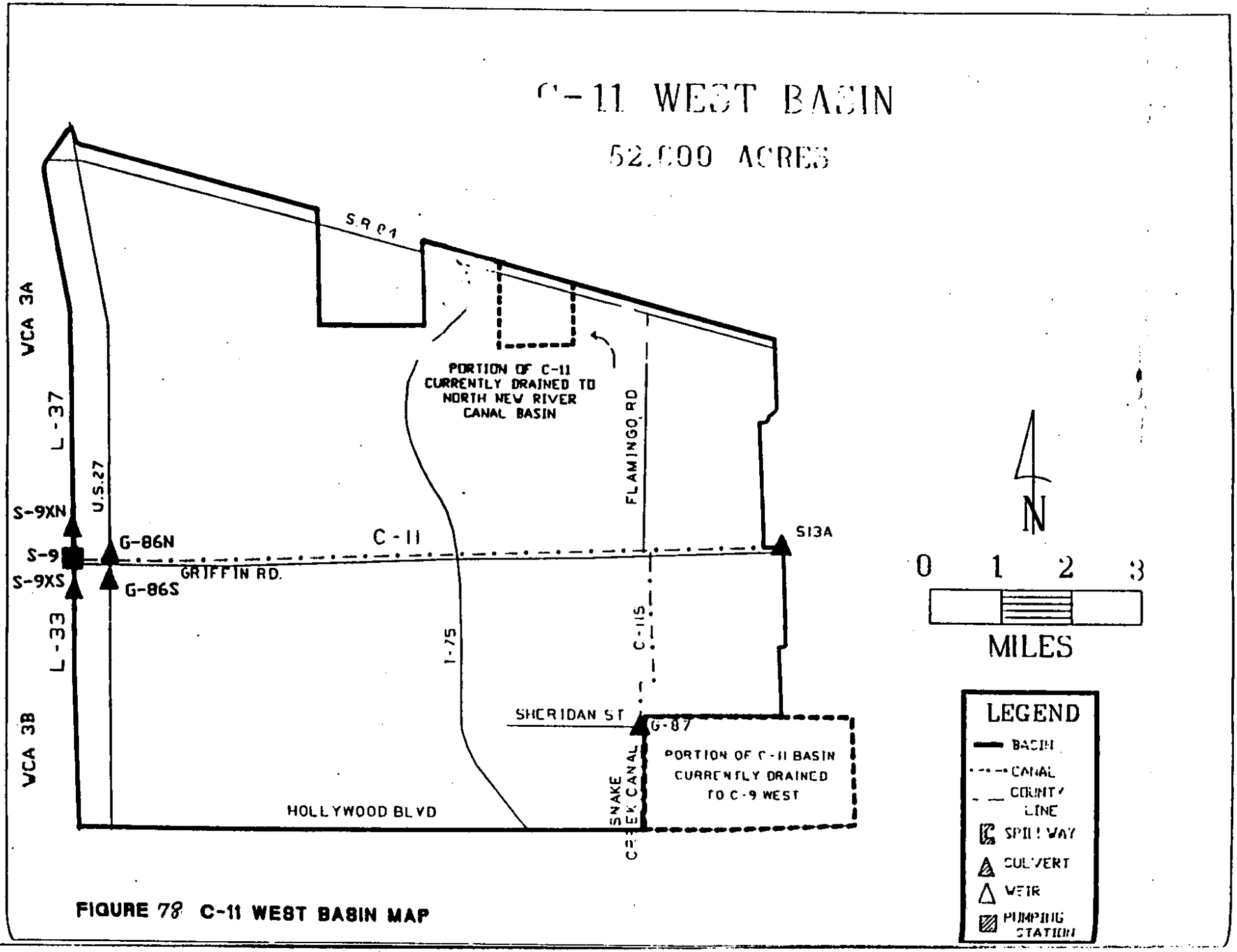


FIGURE 78 C-11 WEST BASIN MAP

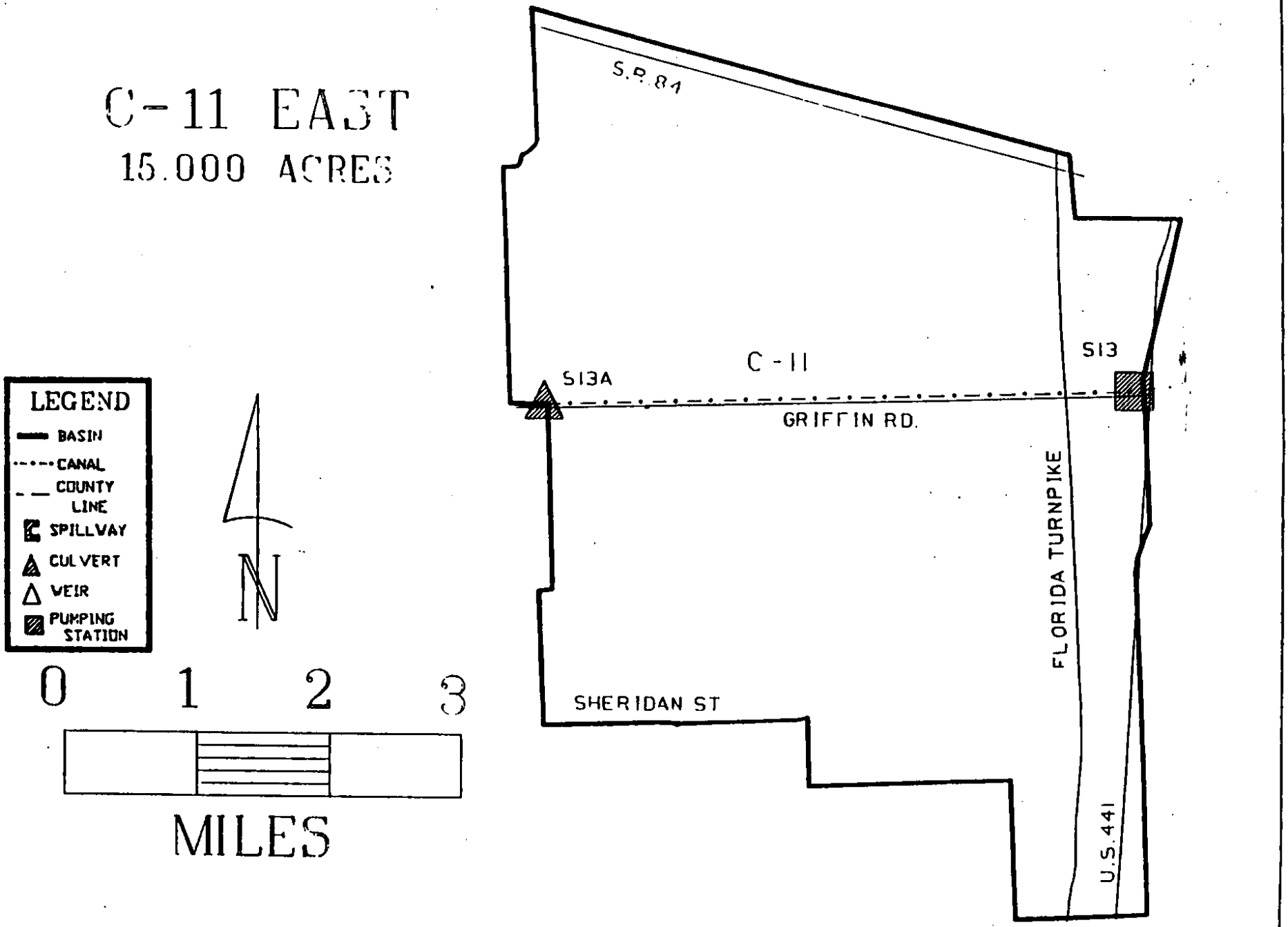


FIGURE 79 C-11 EAST BASIN MAP

NORTH NEW RIVER CANAL WEST BASIN

11,106 ACRES

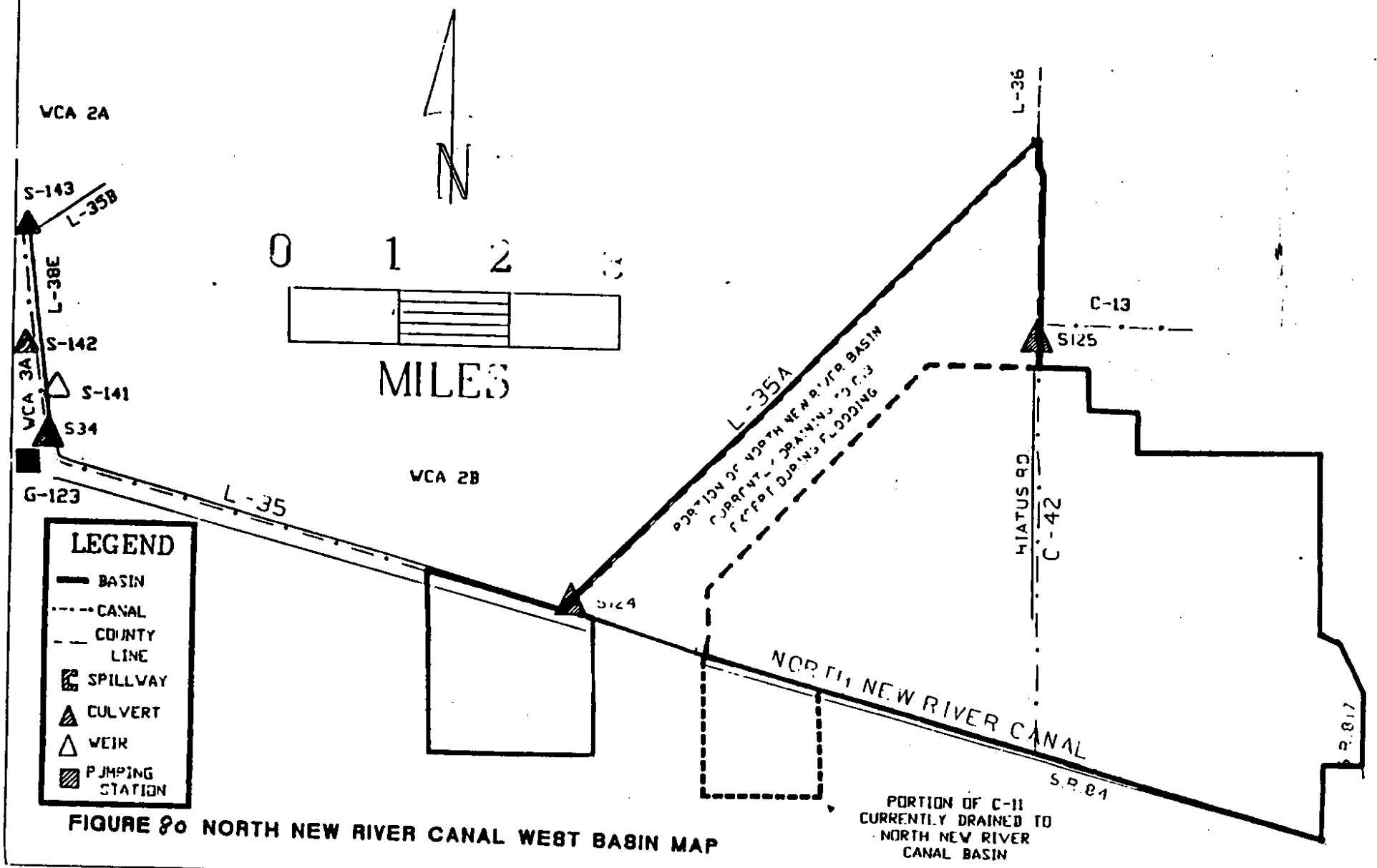


FIGURE 8o NORTH NEW RIVER CANAL WEST BASIN MAP

NORTH NEW RIVER CANAL EAST BASIN

4,200 ACRES

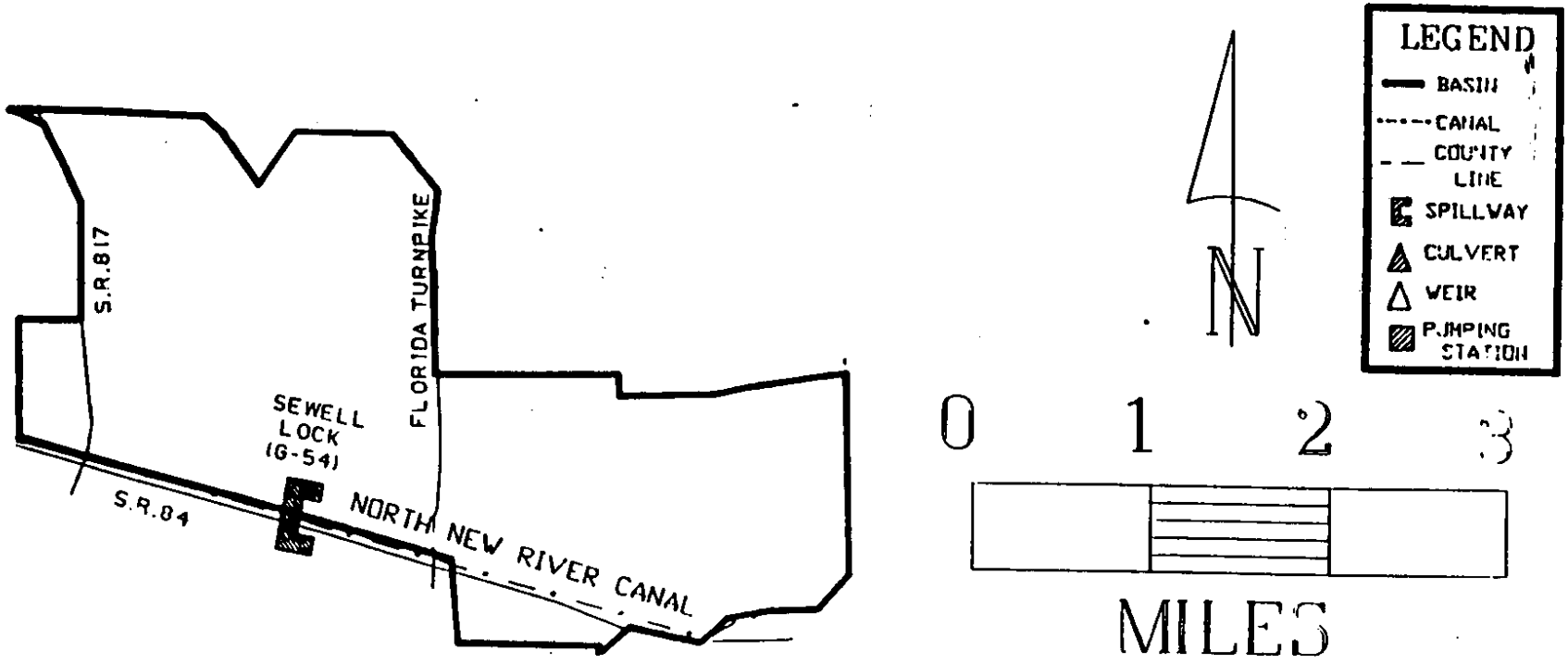


FIGURE 8/ NORTH NEW RIVER CANAL EAST BASIN MAP

C-12 BASIN
(PLANTATION CANAL)
12,100 ACRES

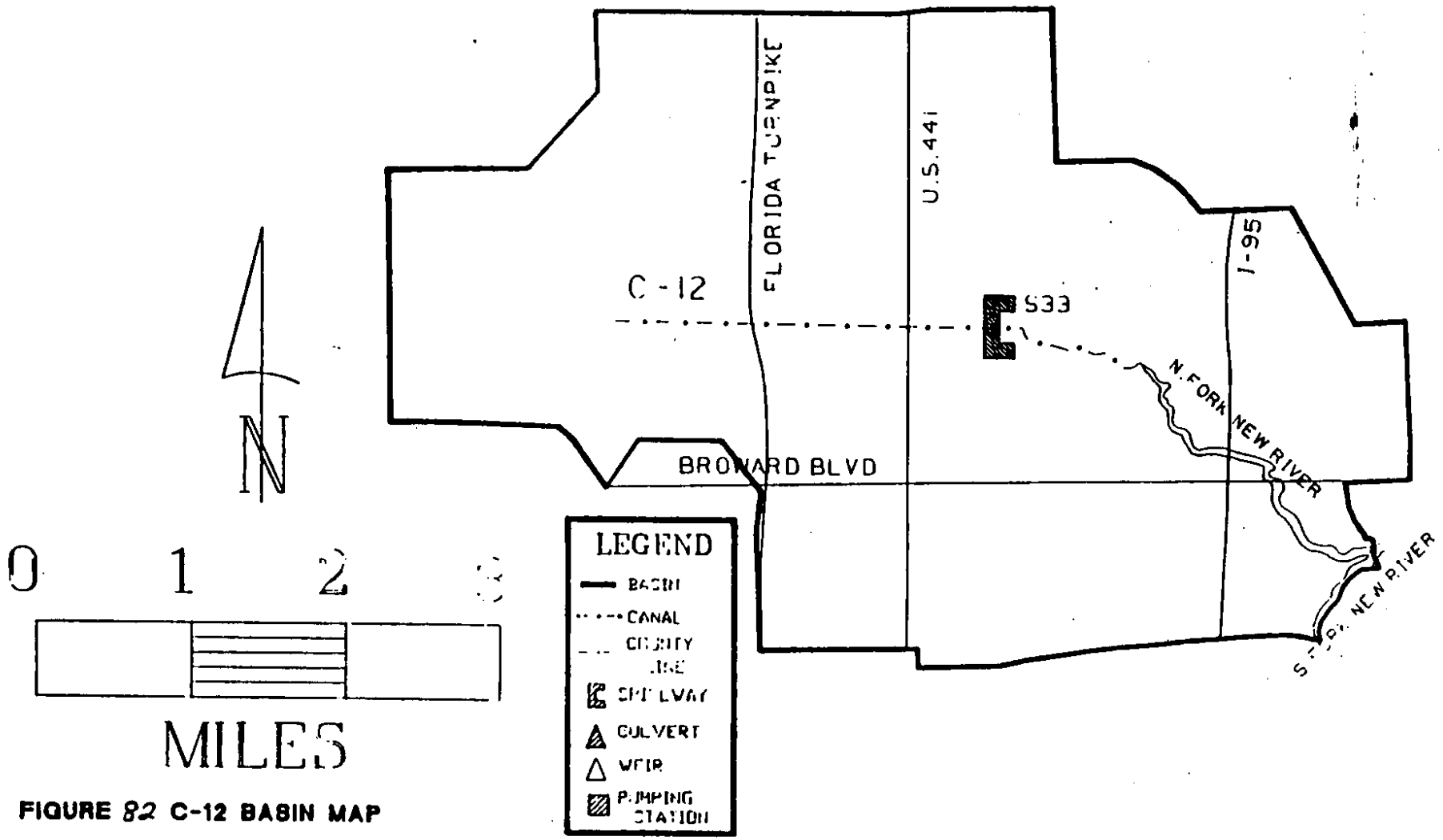


FIGURE 82 C-12 BASIN MAP

NORTH FORK MIDDLE RIVER

3,400 ACRES

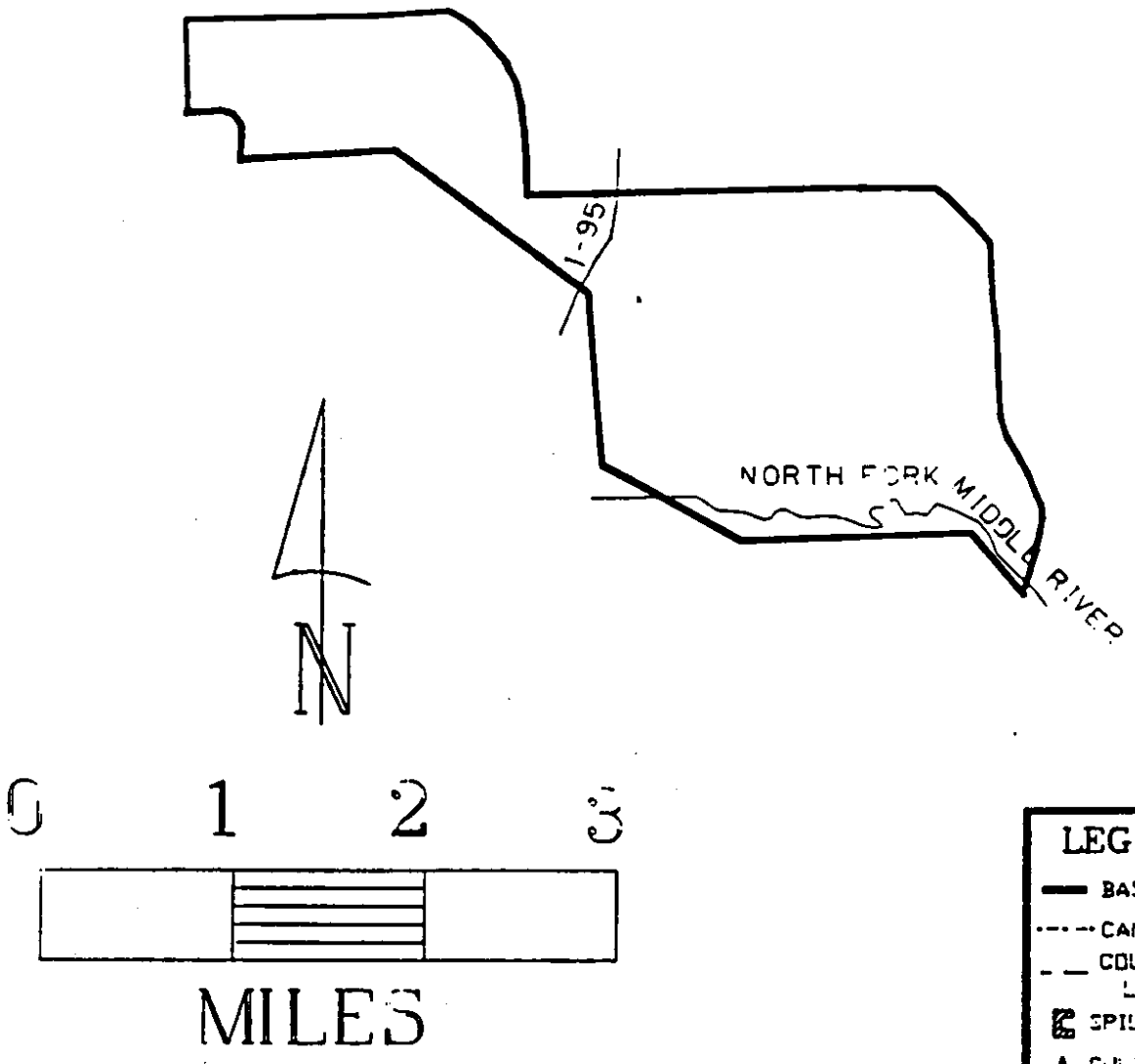


FIGURE 83 NORTH FORK MIDDLE RIVER BASIN MAP

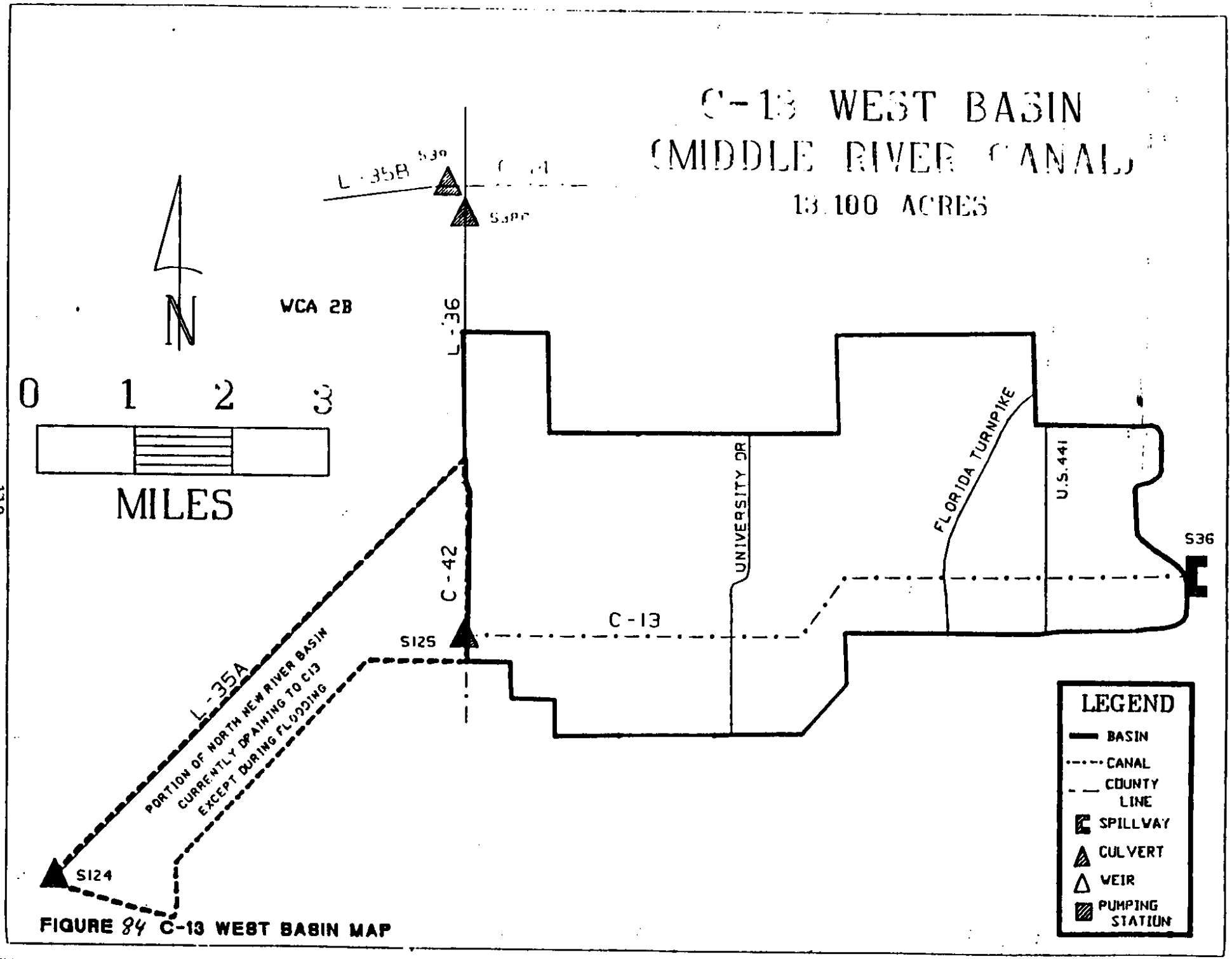


FIGURE 84 C-13 WEST BASIN MAP

C-13 EAST BASIN
(MIDDLE RIVER CANAL)
5,309 ACRES

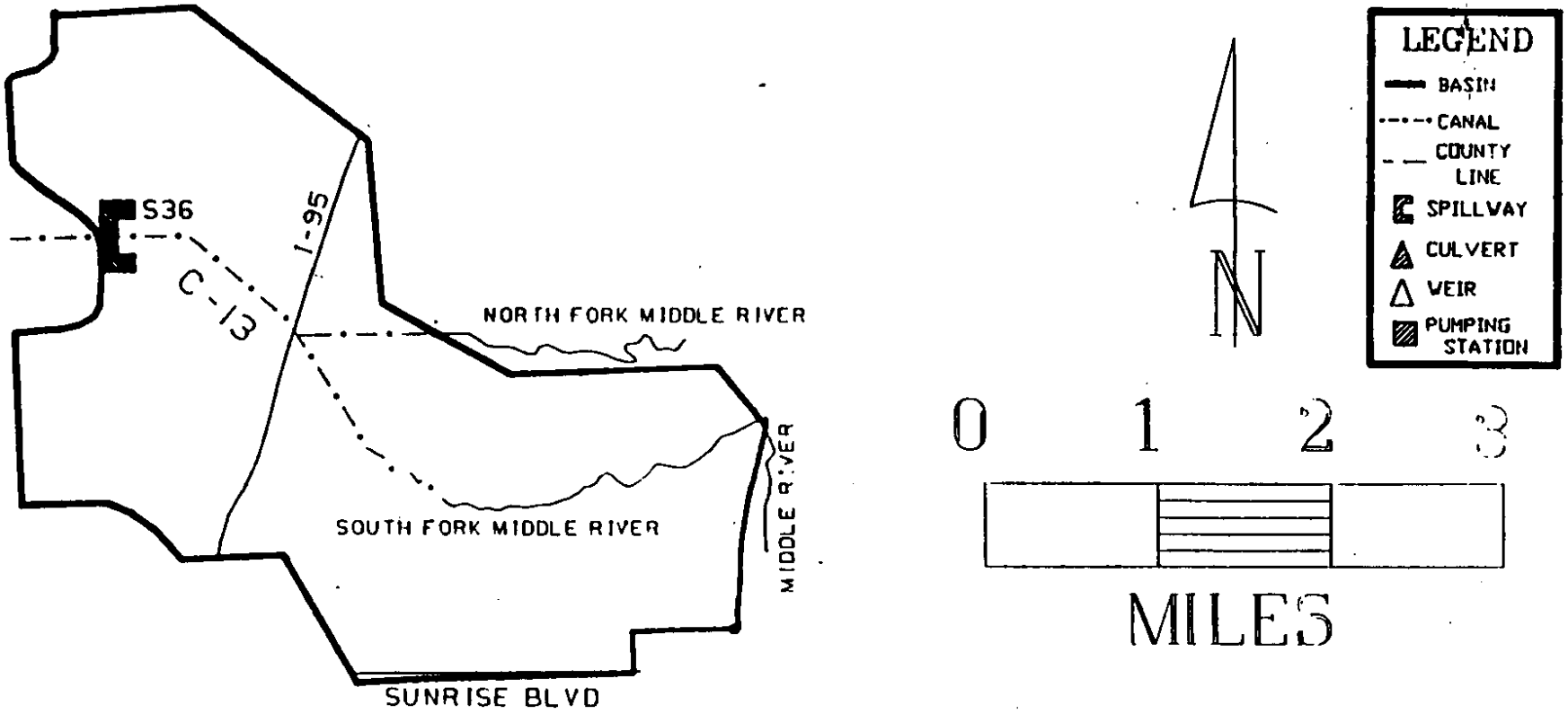
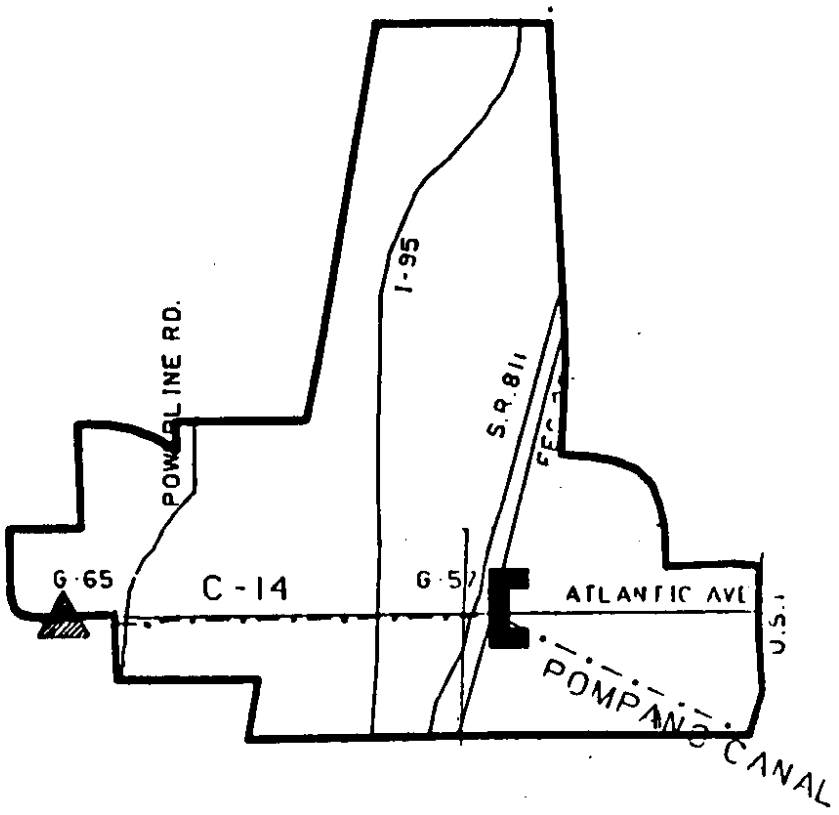


FIGURE 85 C-13 EAST BASIN MAP

POMPANO CANAL

4,000 ACRES



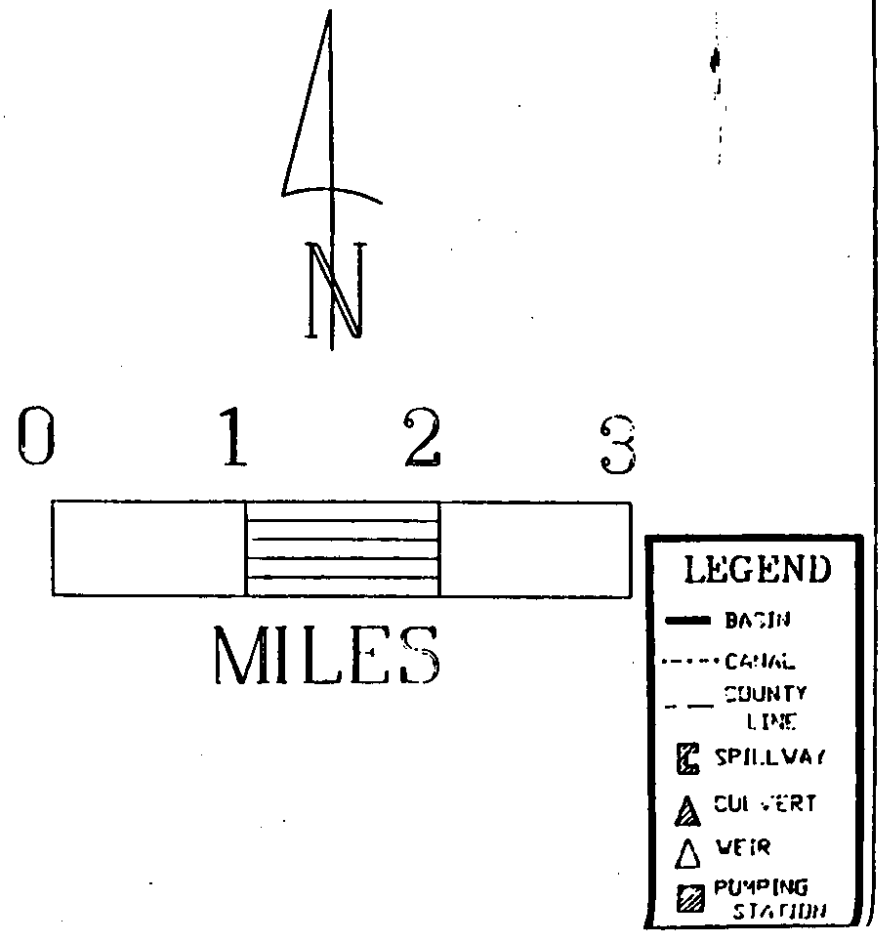


FIGURE 86 POMPANO CANAL BASIN MAP

C-14 WEST BASIN
(CYPRESS CREEK)

15,800 ACRES

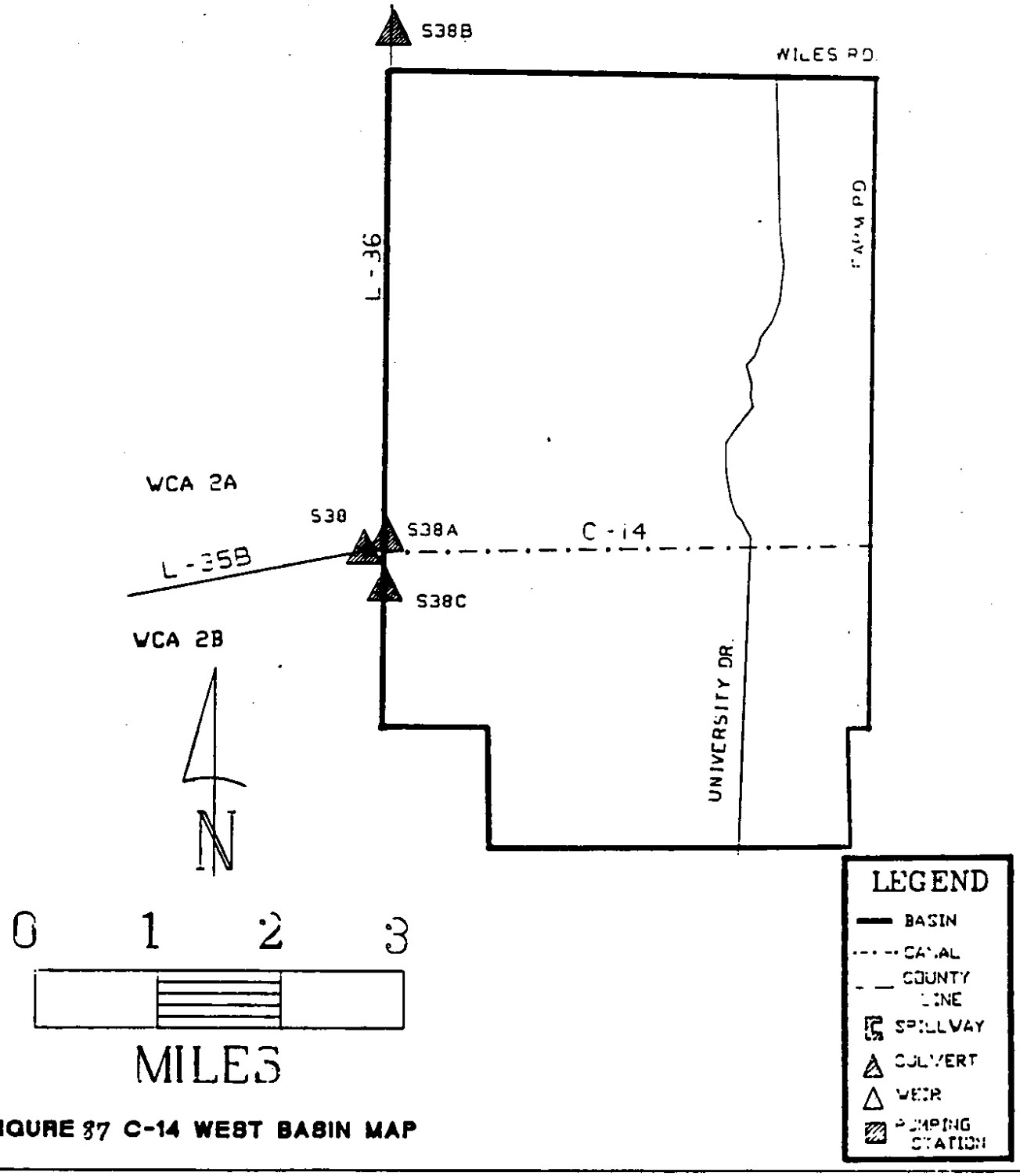


FIGURE 37 C-14 WEST BASIN MAP

C-14 EAST BASIN
(CYPRESS CREEK CANAL)
21,600 ACRES

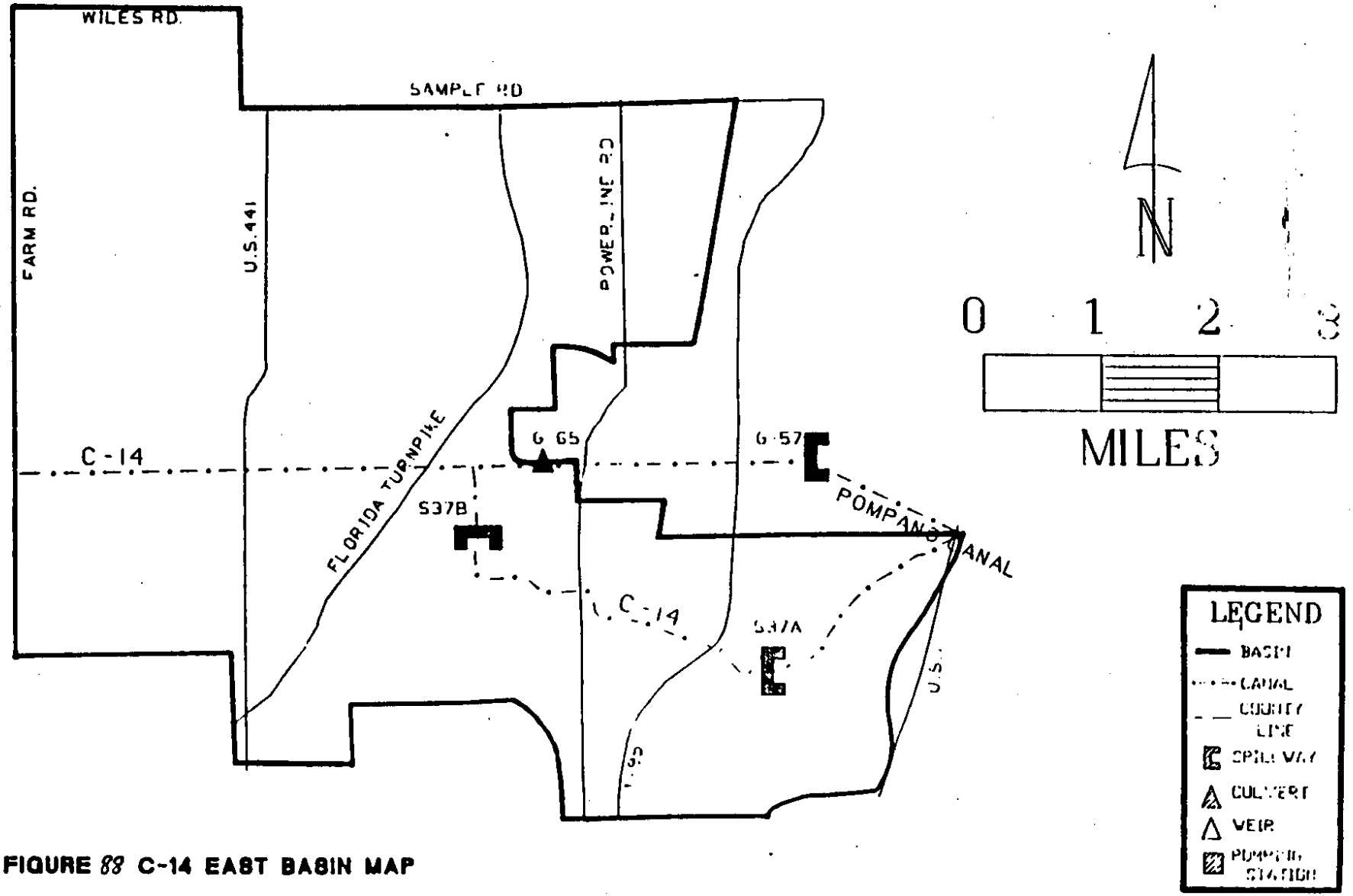


FIGURE 88 C-14 EAST BASIN MAP

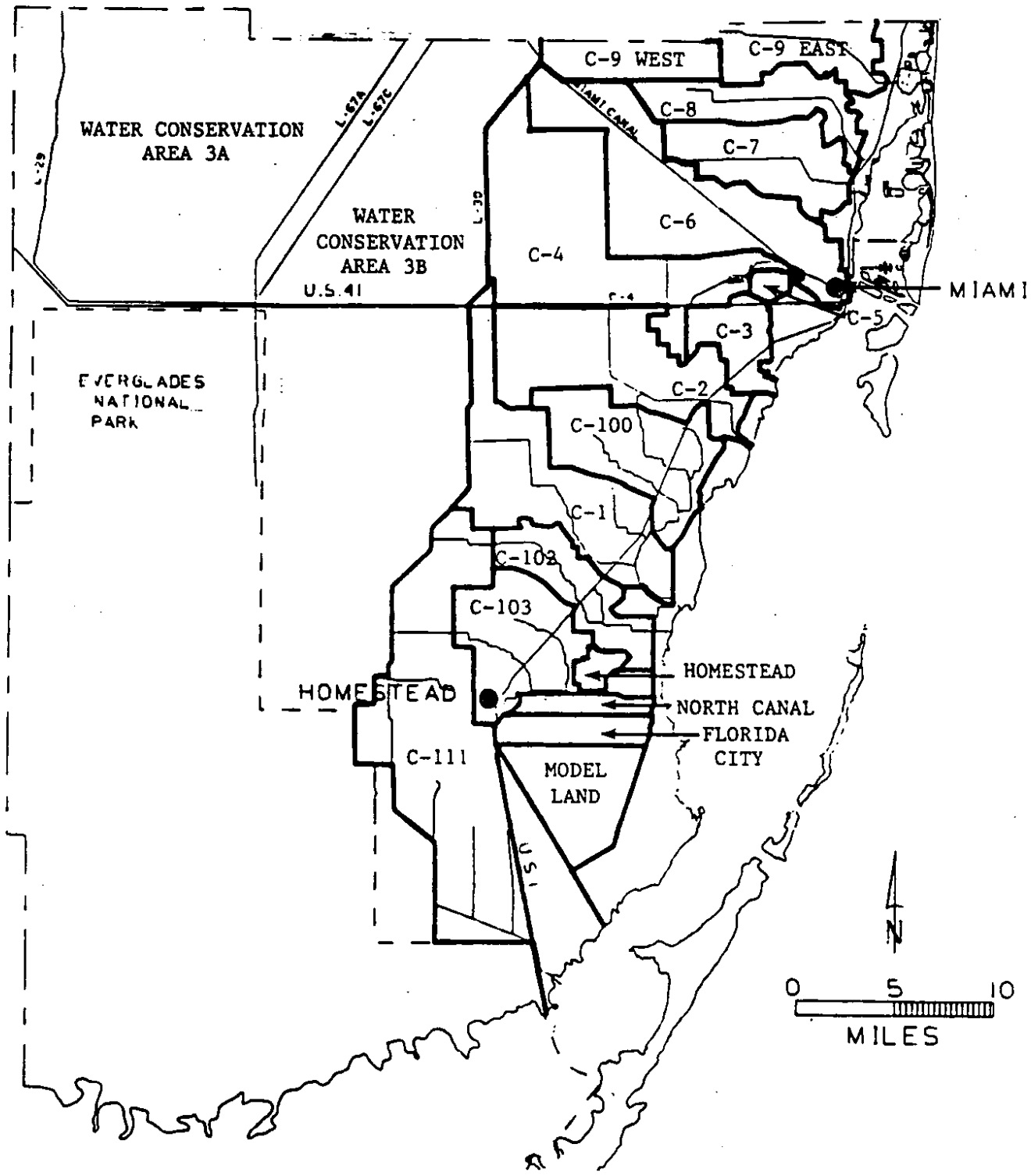


FIGURE 89 DADE COUNTY DRAINAGE BASINS

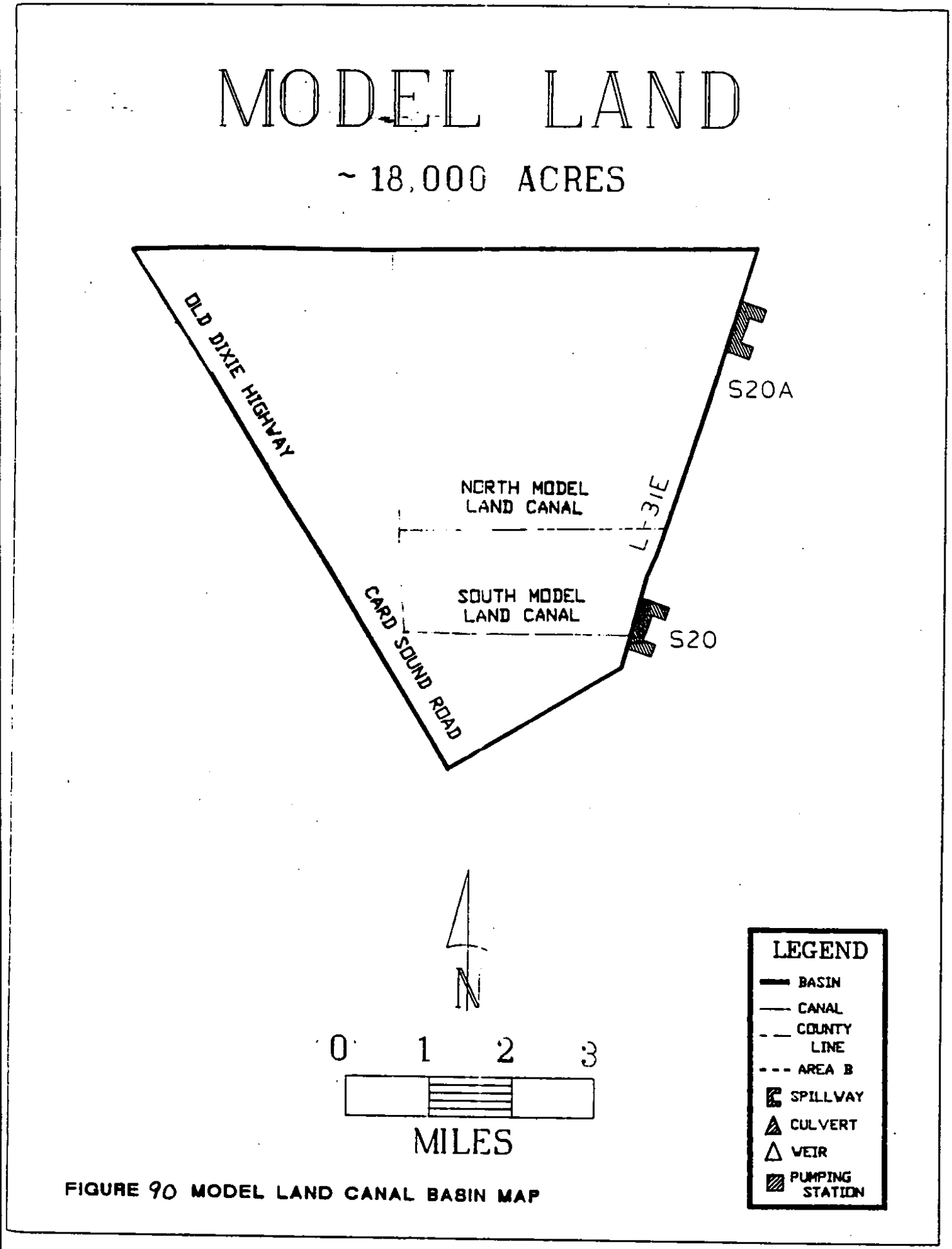
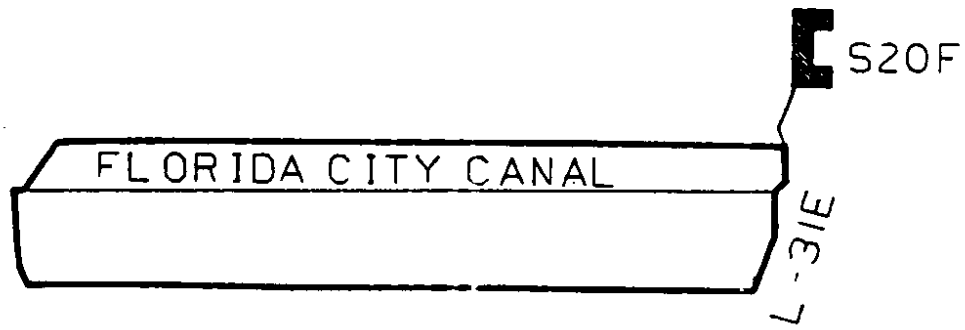
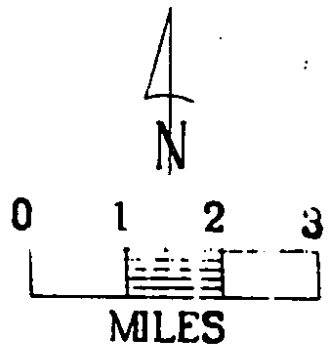


FIGURE 90 MODEL LAND CANAL BASIN MAP

FLORIDA CITY

~ 8,000 ACRES





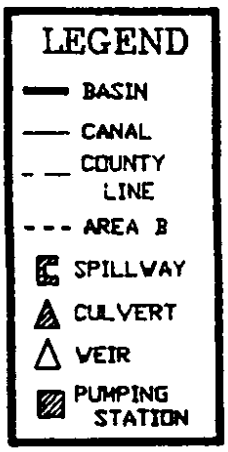
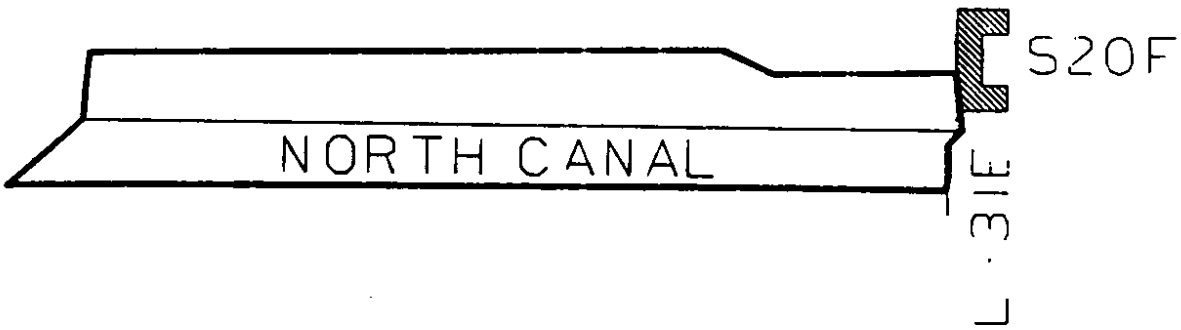
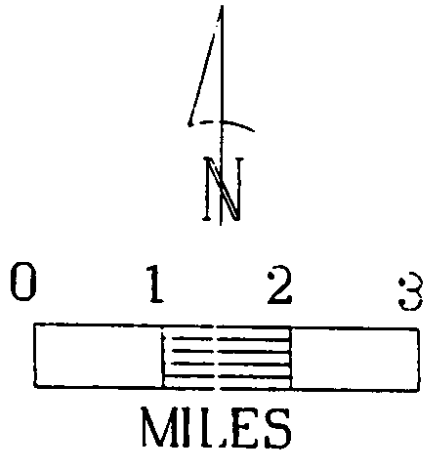


FIGURE 9/ FLORIDA CITY CANAL BASIN MAP

NORTH CANAL

~ 5,000 ACRES





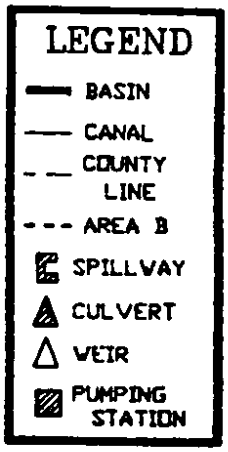
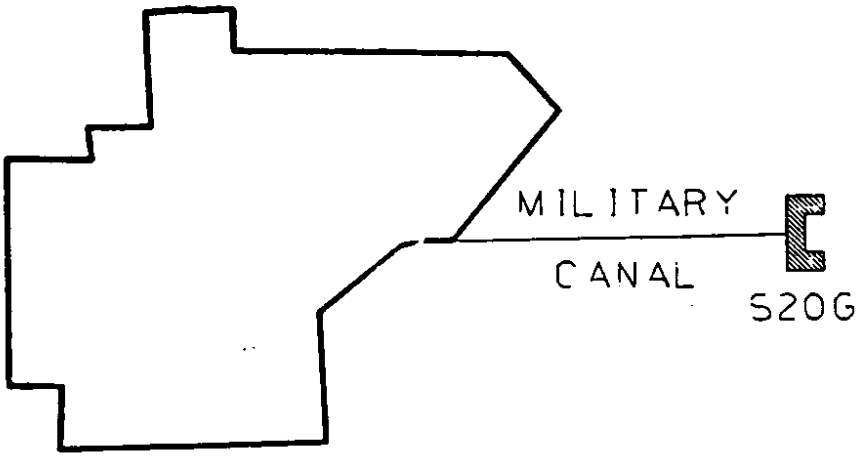
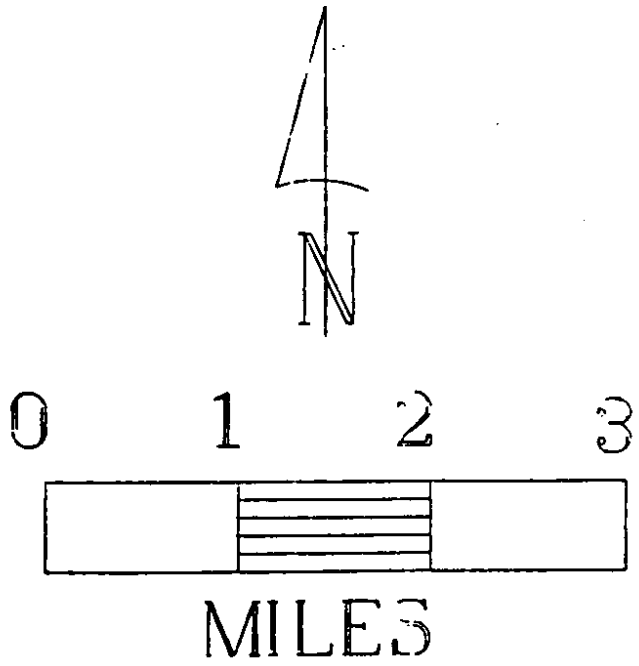


FIGURE 92 NORTH CANAL BASIN MAP

HOMESTEAD
~ 3,000 ACRES





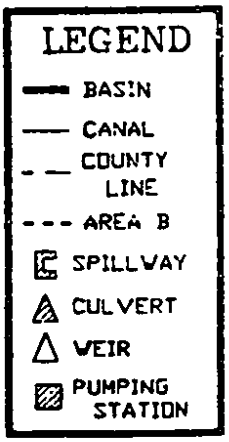
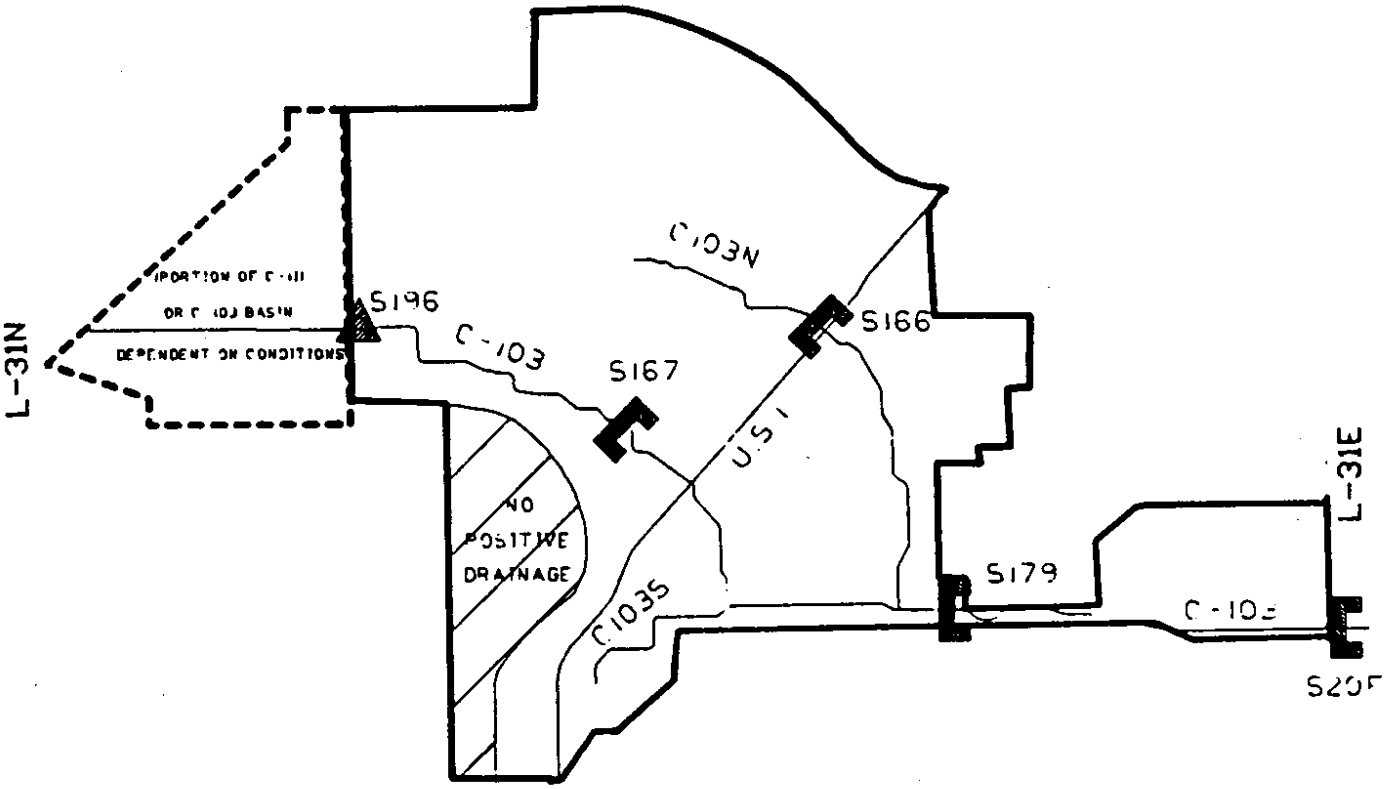
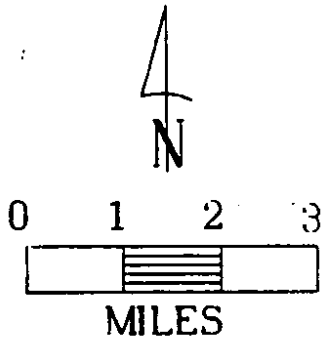


FIGURE 93 HOMESTEAD BASIN MAP

C-103

~26.000 ACRES





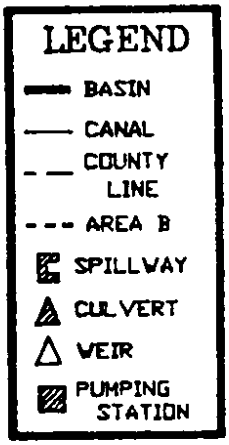


FIGURE 94 C-103 BASIN MAP

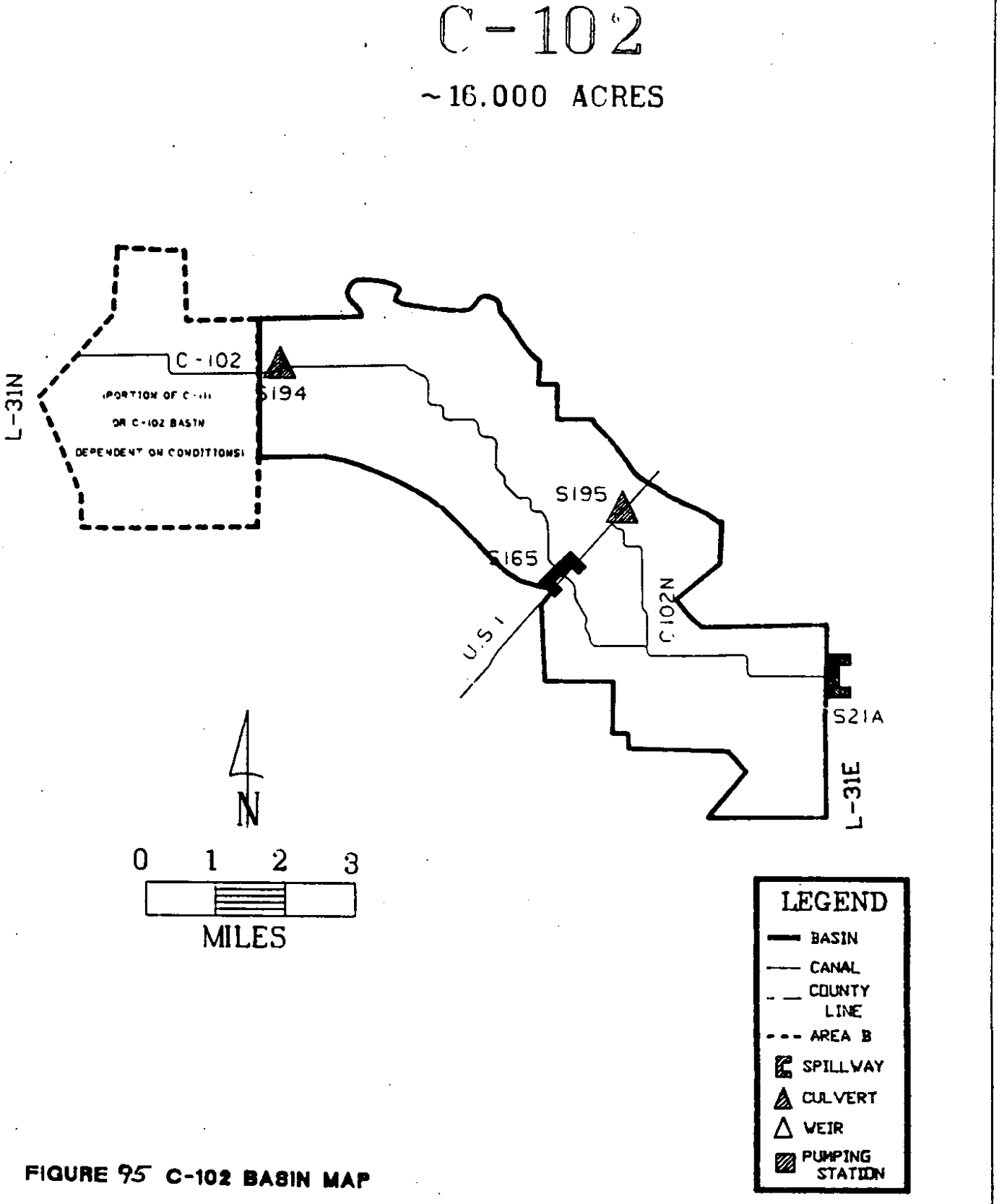


FIGURE 95 C-102 BASIN MAP

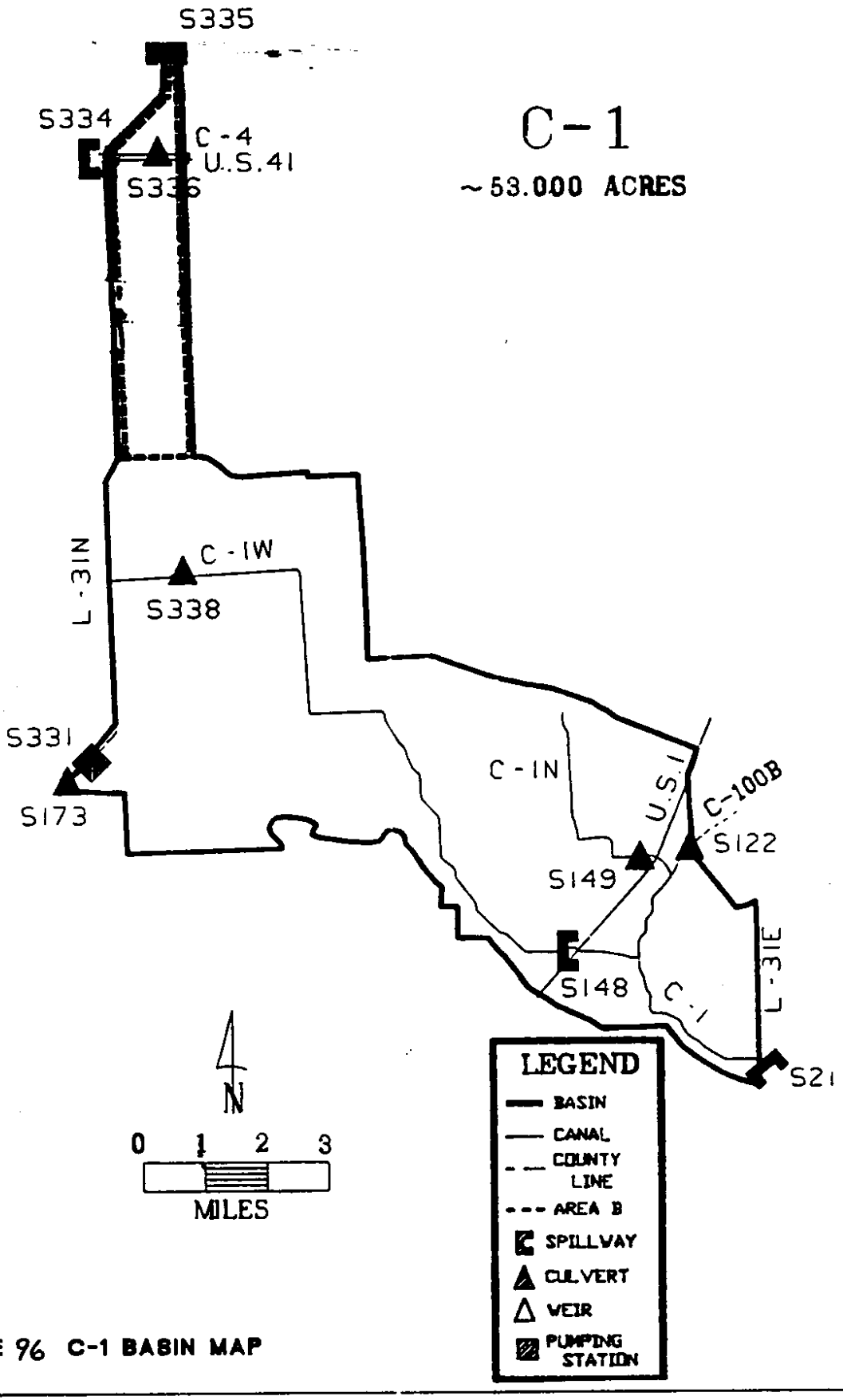


FIGURE 96 C-1 BASIN MAP

C-100

~ 26,000 ACRES

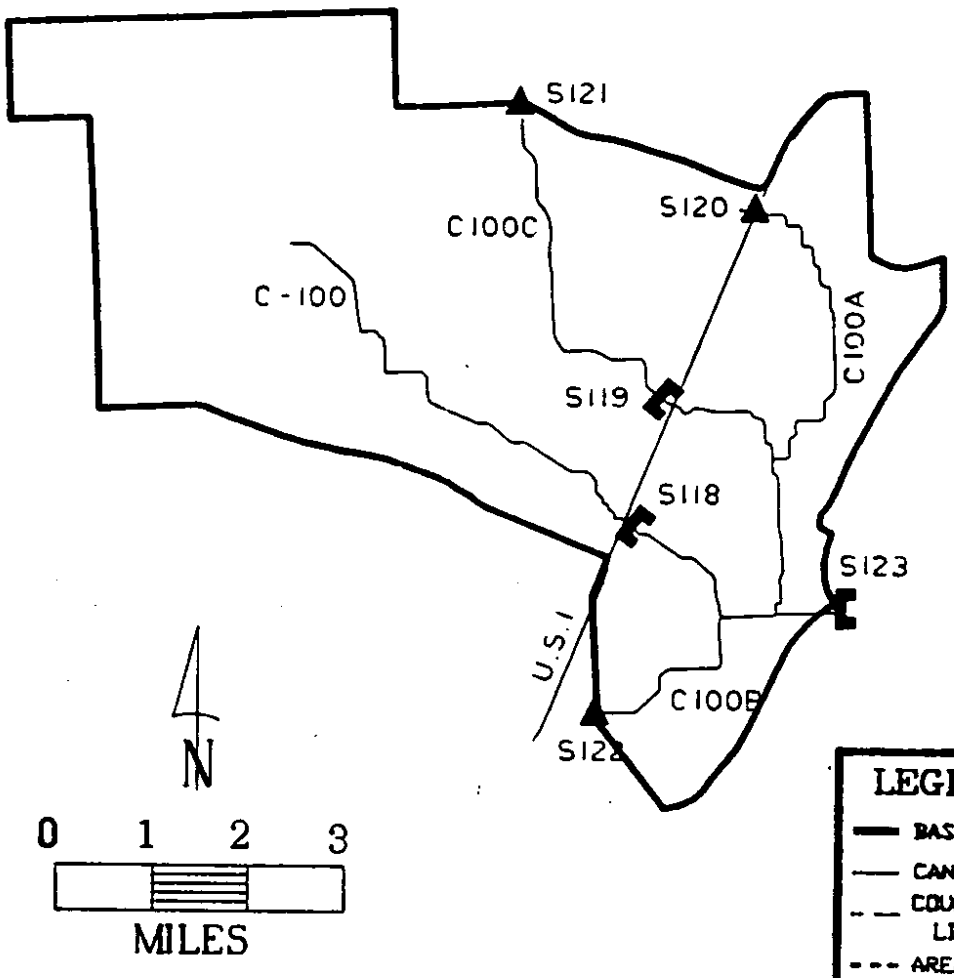


FIGURE 77 C-100 BASIN MAP

C-2

~34.000 ACRES

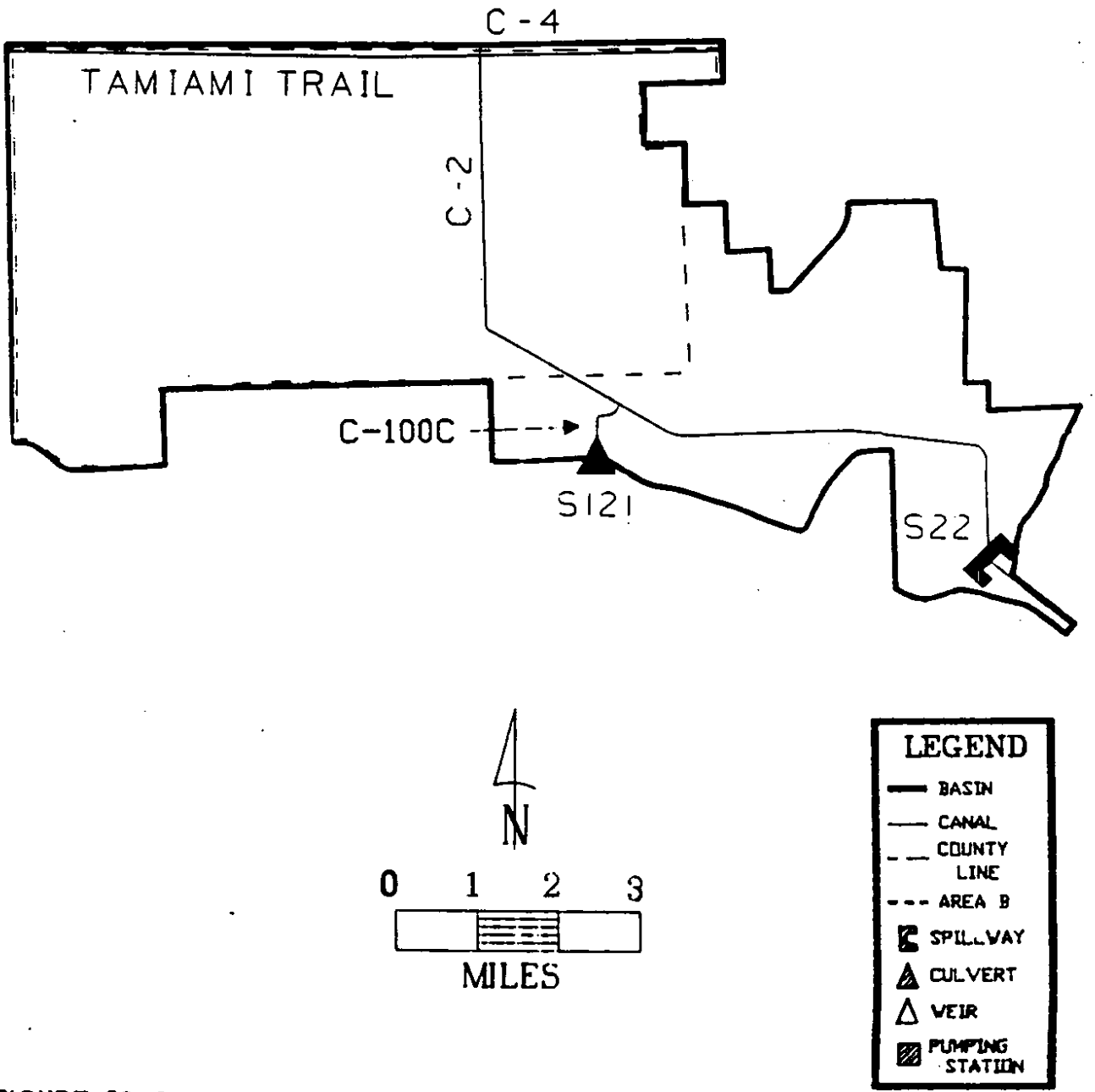


FIGURE 98 C-2 BASIN MAP

C-3

~10,000 ACRES

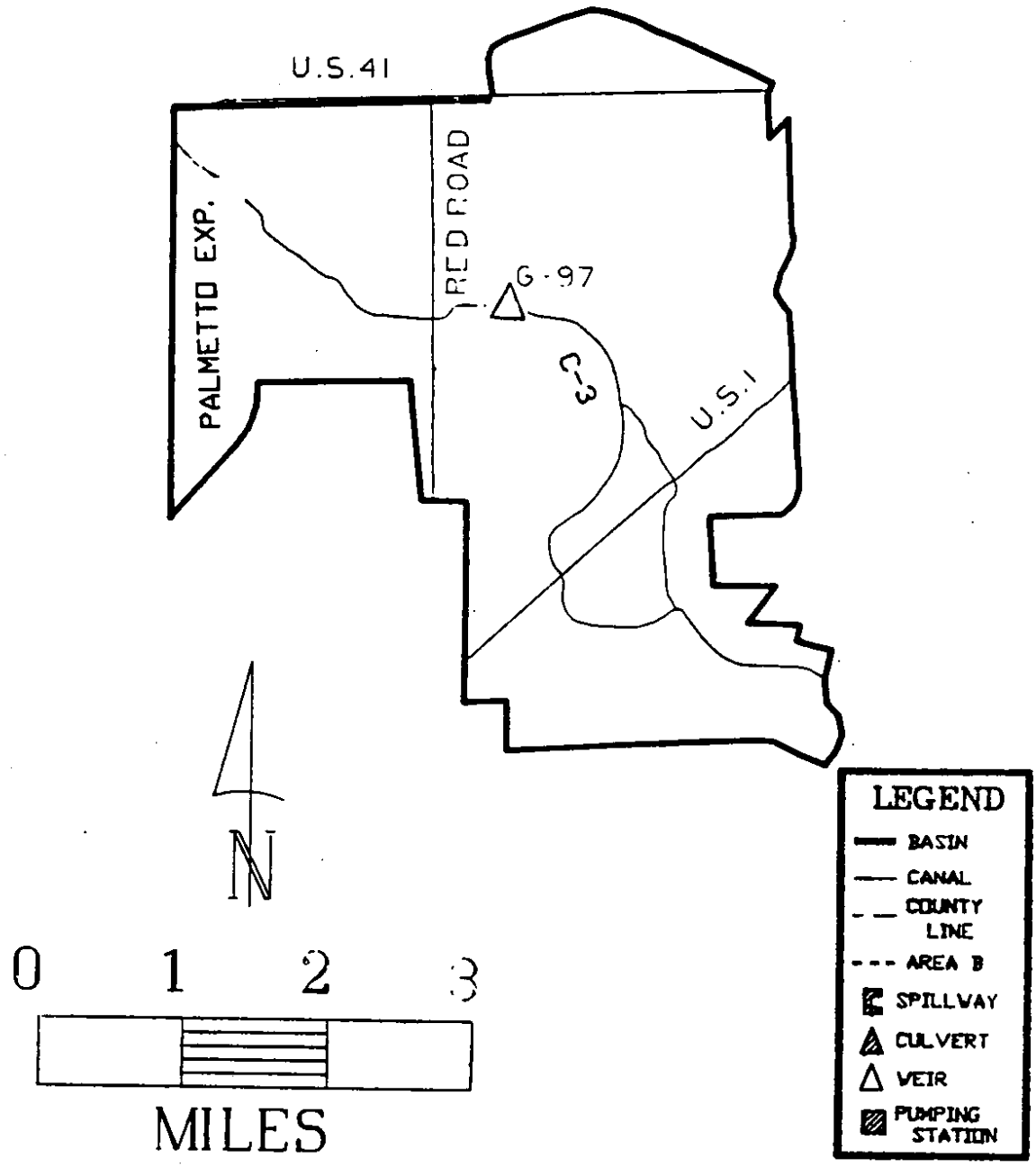


FIGURE 99 C-3 BASIN MAP

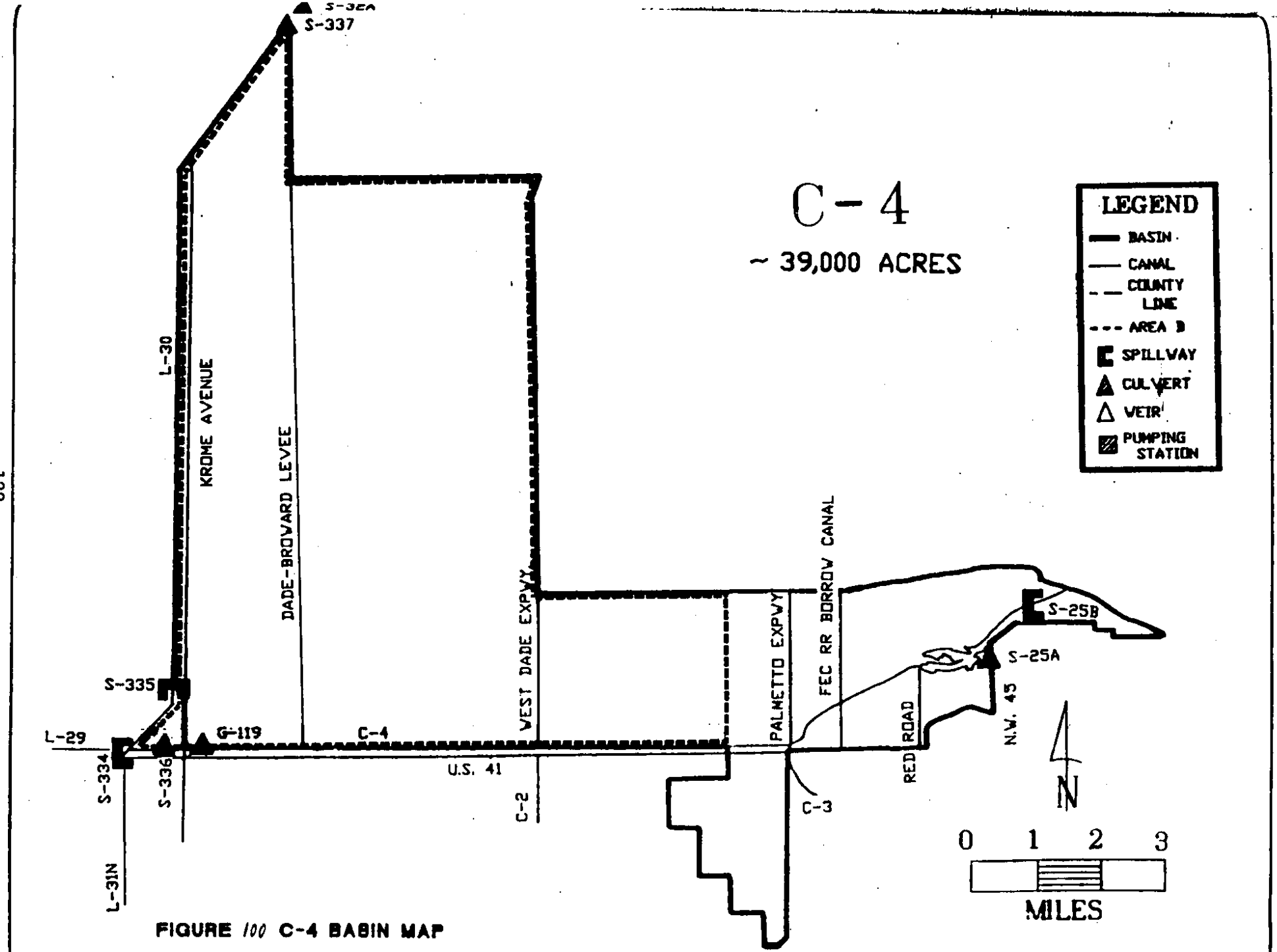
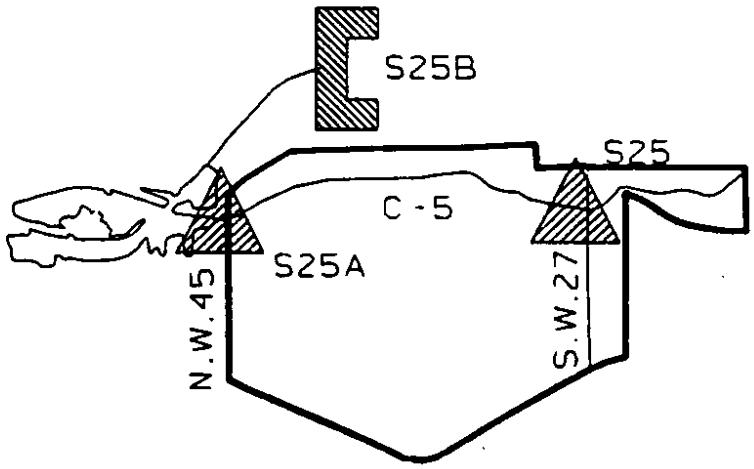
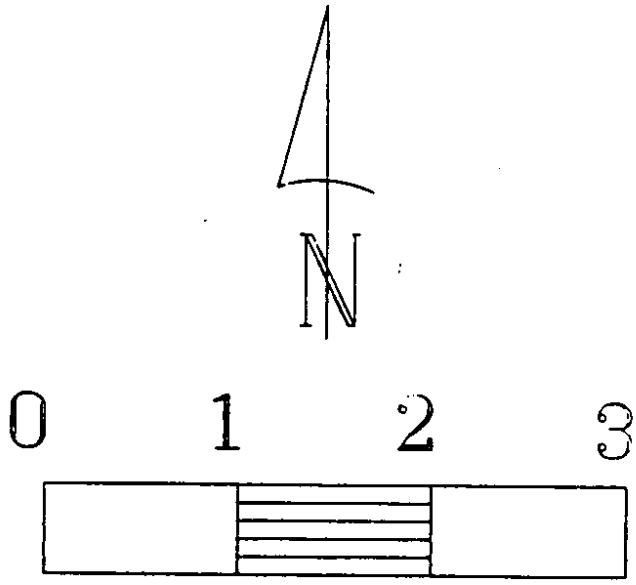


FIGURE 100 C-4 BASIN MAP

C-5

~1,400 ACRES





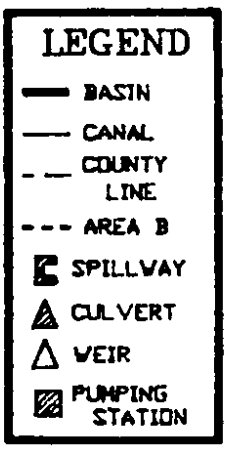


FIGURE 101 C-5 BASIN MAP

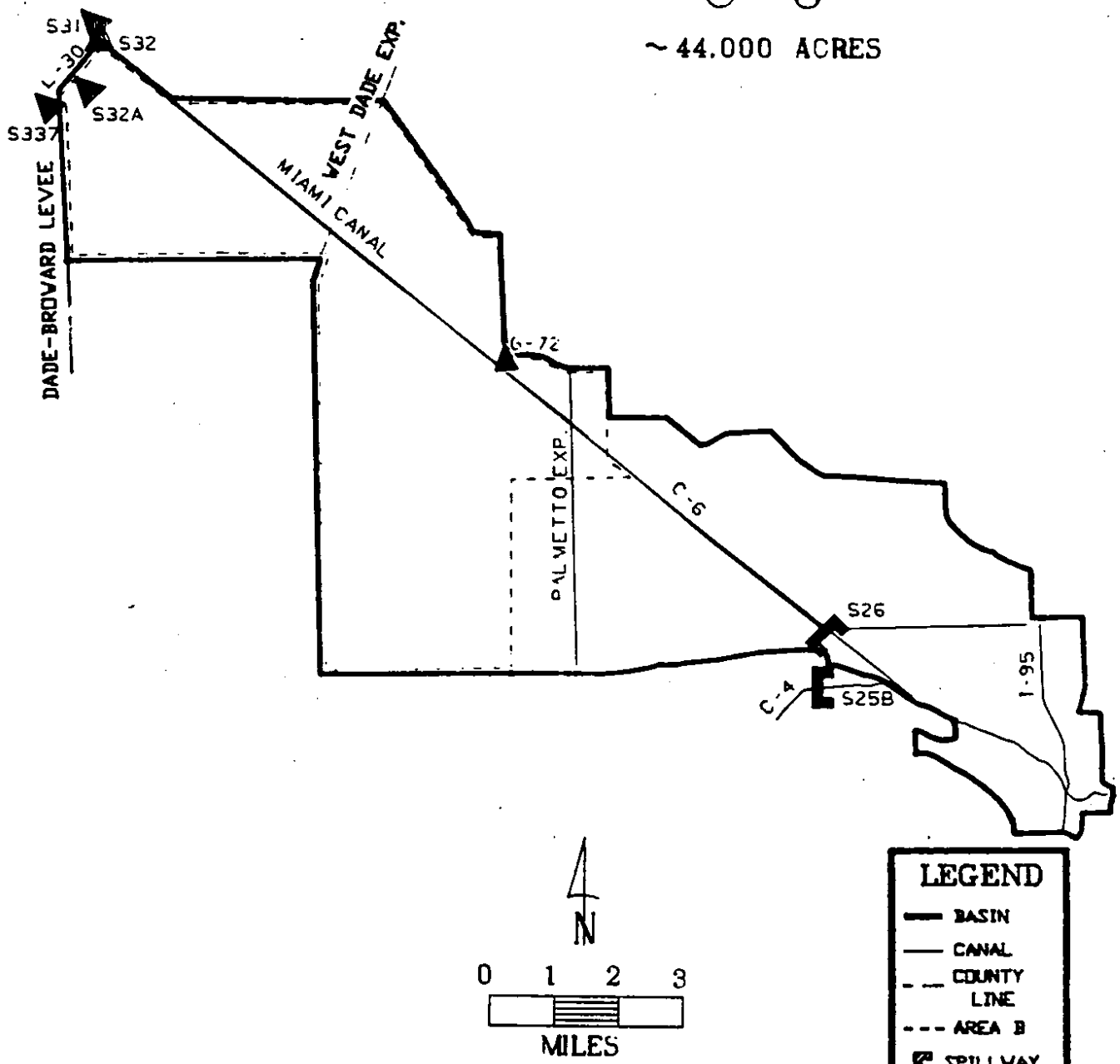
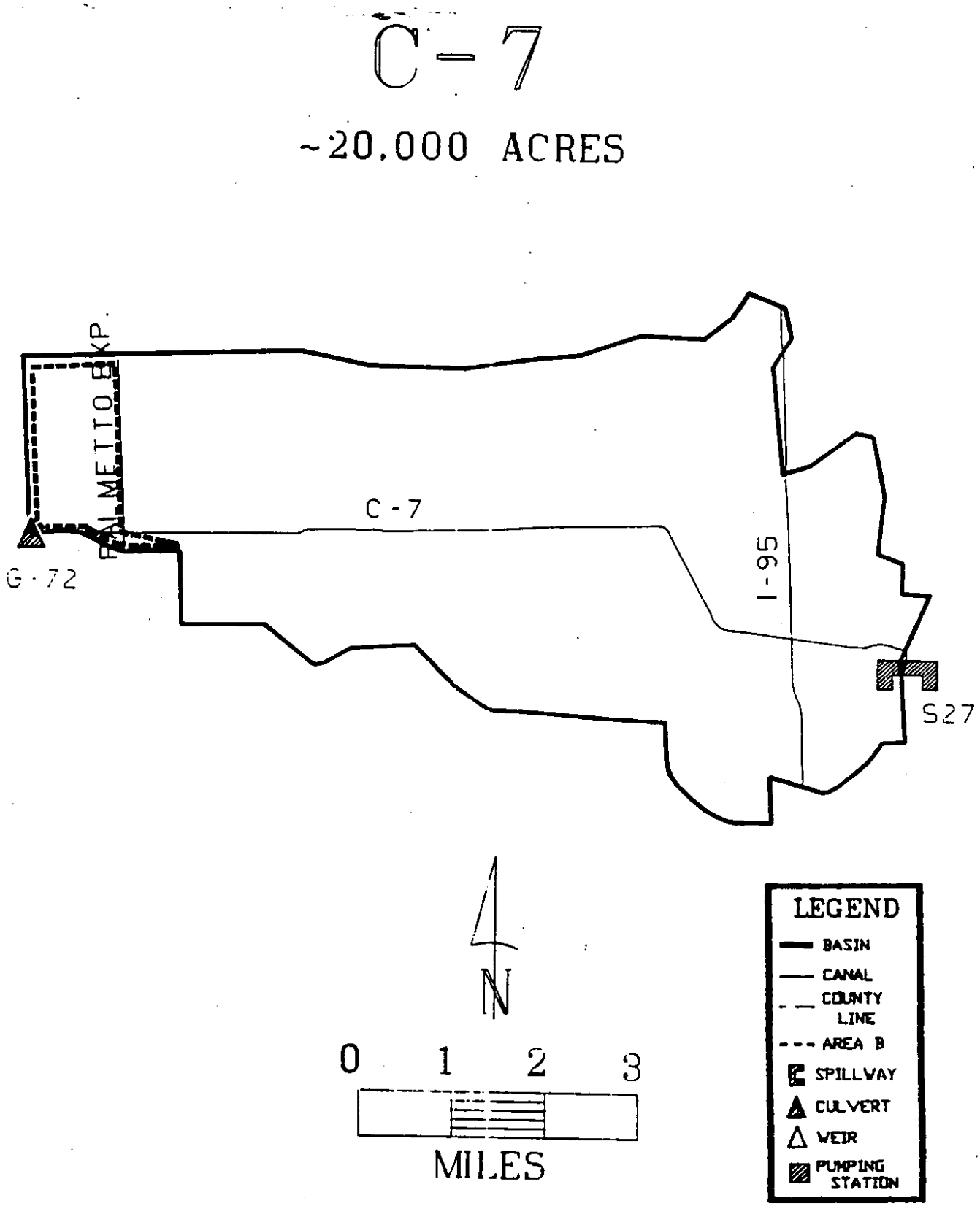


FIGURE 102 C-6 BASIN MAP



FIQURE 103 C-7 BASIN MAP

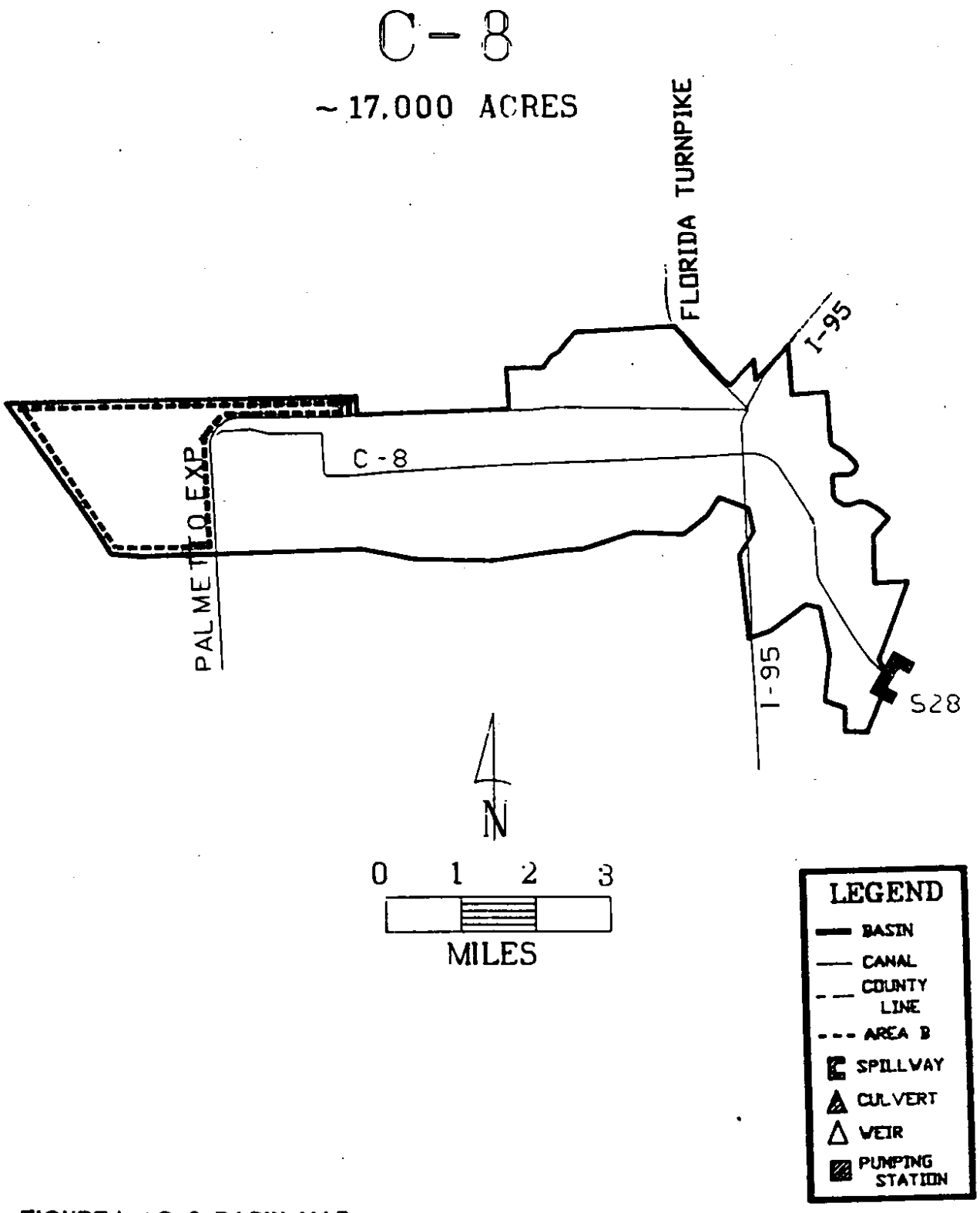
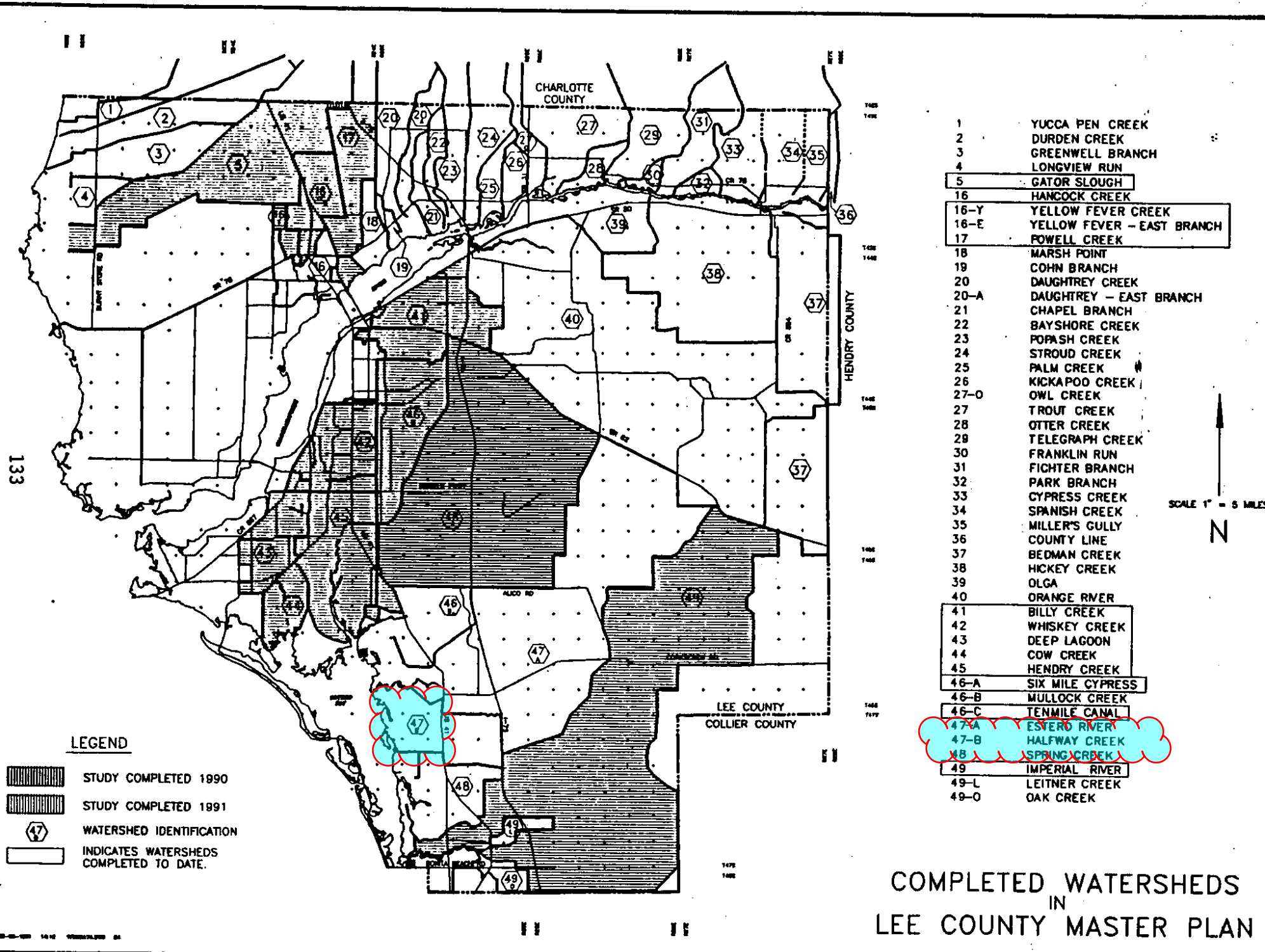
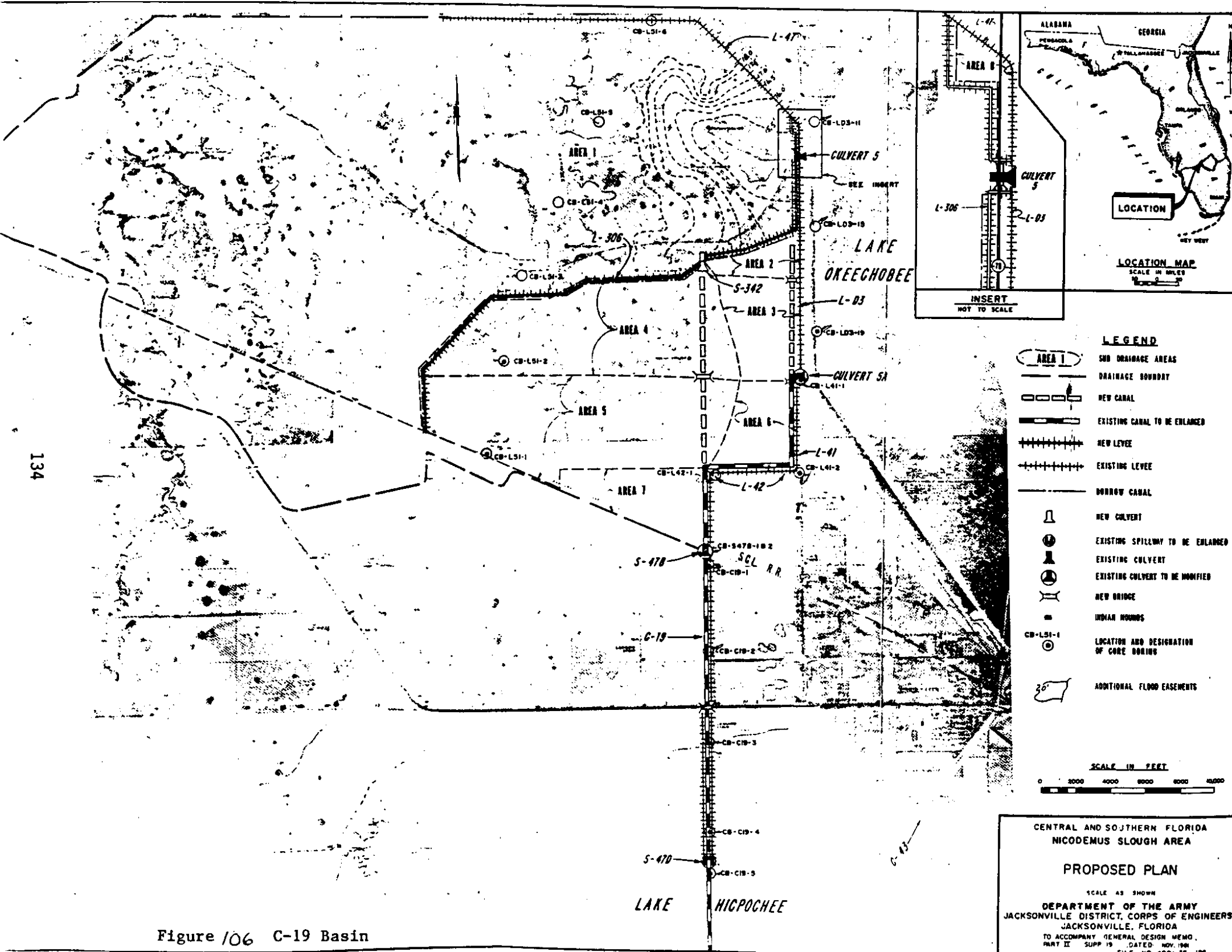


FIGURE 104 C-8 BASIN MAP



COMPLETED WATERSHEDS IN LEE COUNTY MASTER PLAN



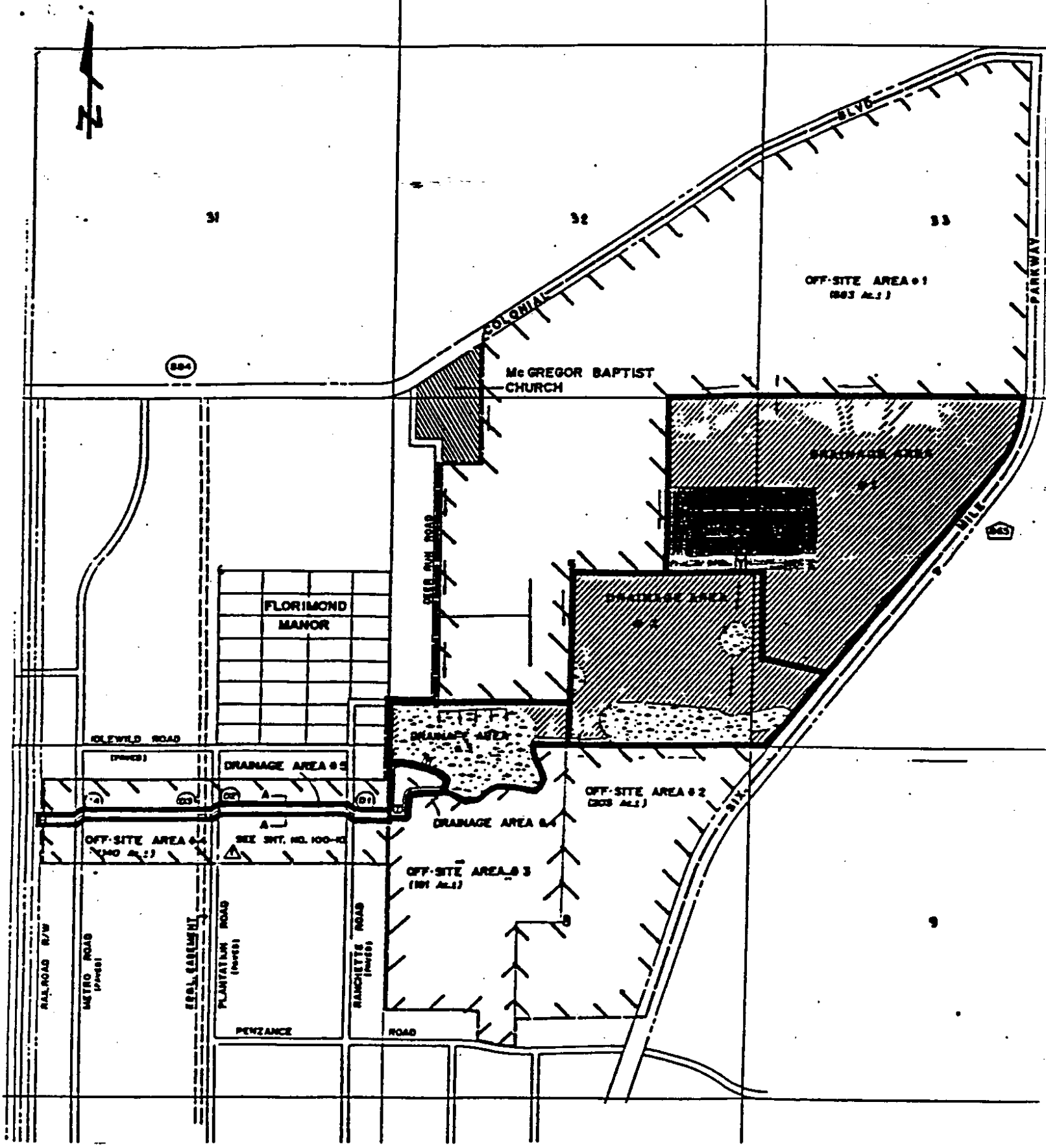
CENTRAL AND SOUTHERN FLORIDA
NICODEMUS SLOUGH AREA

PROPOSED PLAN

SCALE AS SHOWN

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA
TO ACCOMPANY GENERAL DESIGN MEMO.
PART II SUPP 19 DATED NOV. 1961

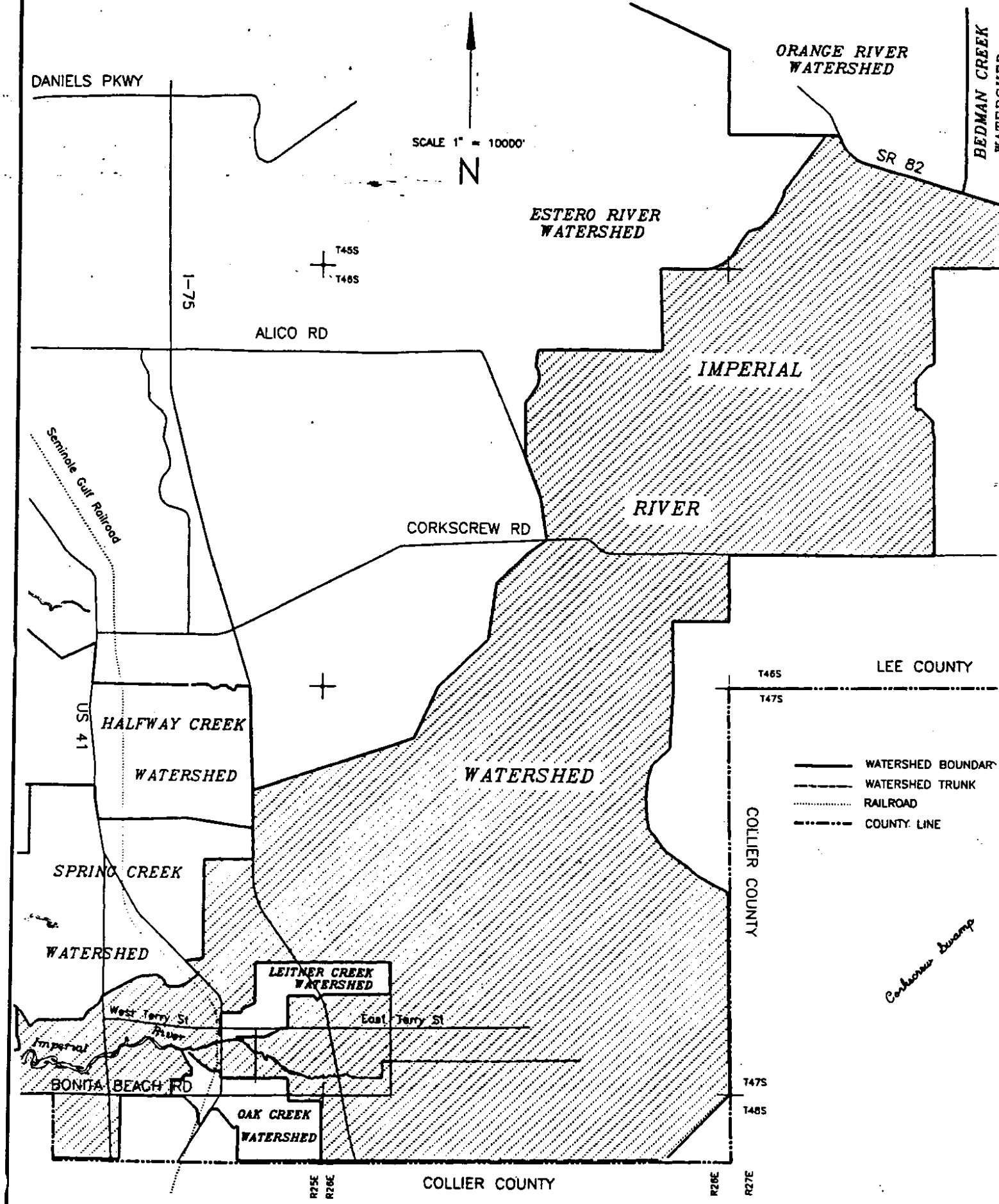
Figure 106 C-19 Basin



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

Figure 108

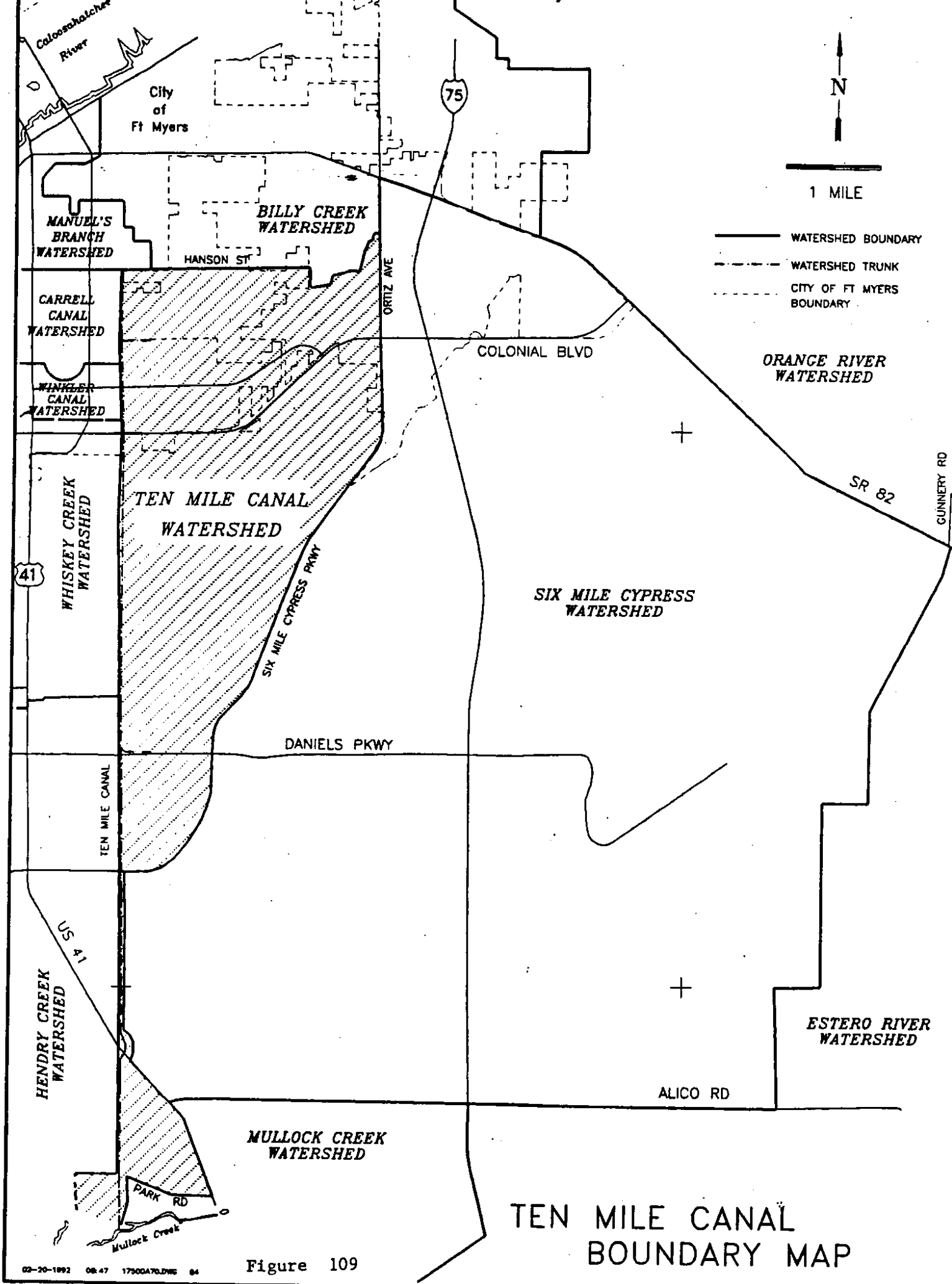


Figure 109

TEN MILE CANAL BOUNDARY MAP

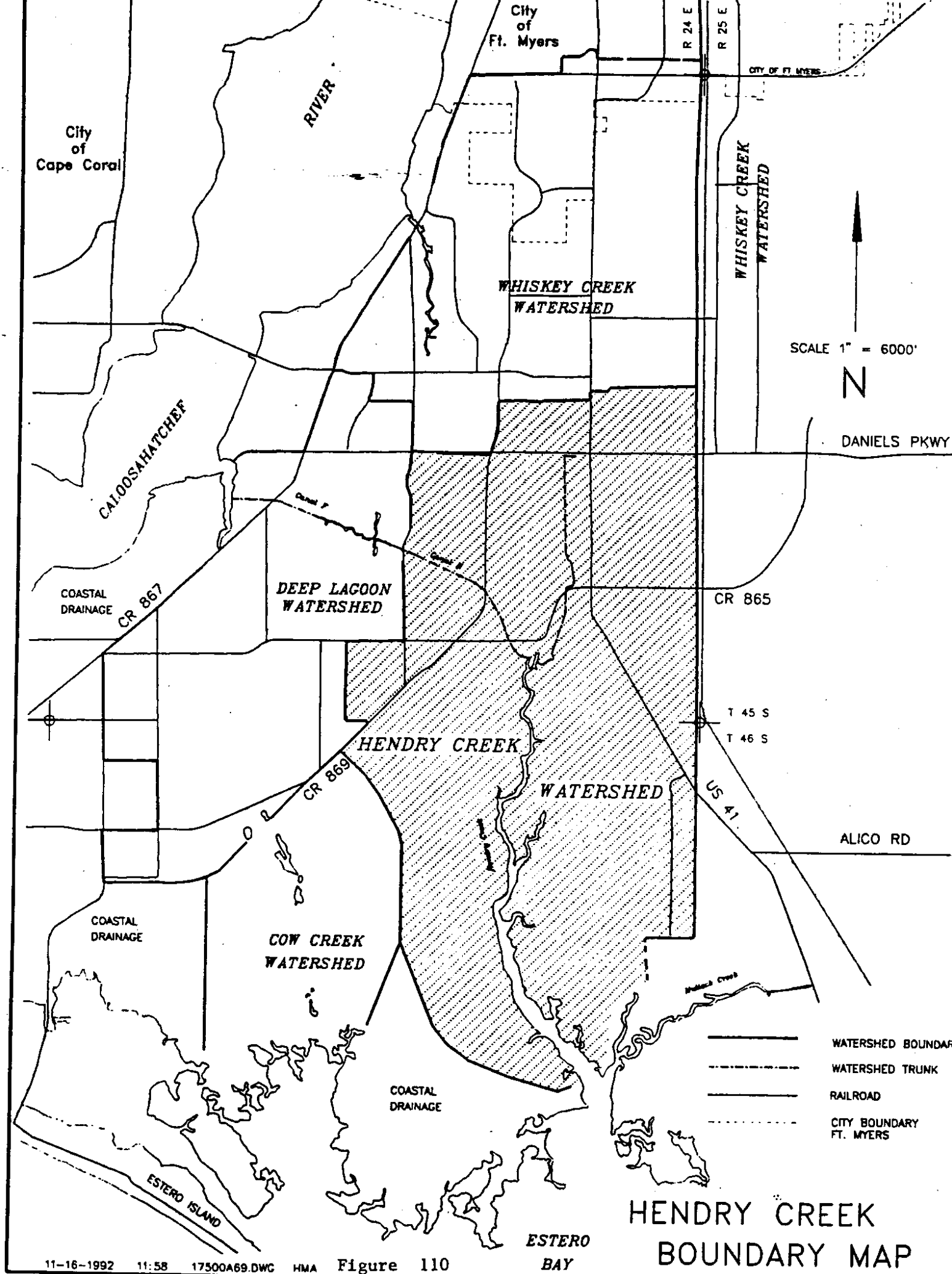
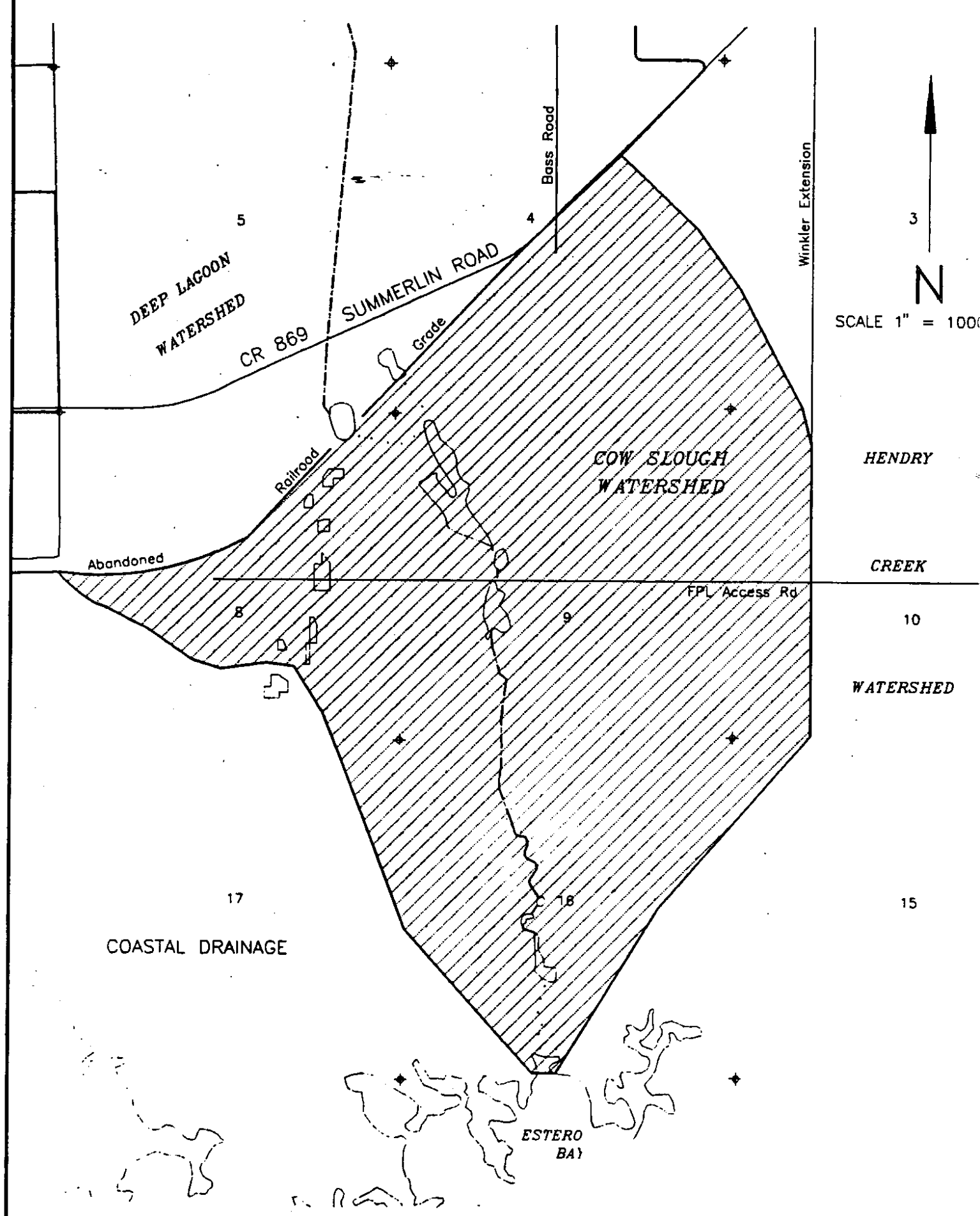

City of Ft. Myers
R 24 E
R 25 E
CITY OF FT MYERS
City of Cape Coral
RIVER
WHISKEY CREEK WATERSHED
WHISKEY CREEK WATERSHED
SCALE 1" = 6000'
N
DANIELS PKWY
CALOOSAHATCHEE
Canal 1
Canal 2
COASTAL DRAINAGE
CR 867
DEEP LAGOON WATERSHED
CR 865
T 45 S
T 46 S
HENDRY CREEK
WATERSHED
CR 869
US 41
ALICO RD
COASTAL DRAINAGE
COW CREEK WATERSHED
Hendry Creek
COASTAL DRAINAGE
WATERSHED BOUNDAR
WATERSHED TRUNK
RAILROAD
CITY BOUNDARY FT. MYERS
ESTERO ISLAND
ESTERO BAY
HENDRY CREEK BOUNDARY MAP
11-16-1992 11:58 17500A69.DWG HMA

Figure 110



COW SLOUGH BOUNDARY MAP

Figure 111

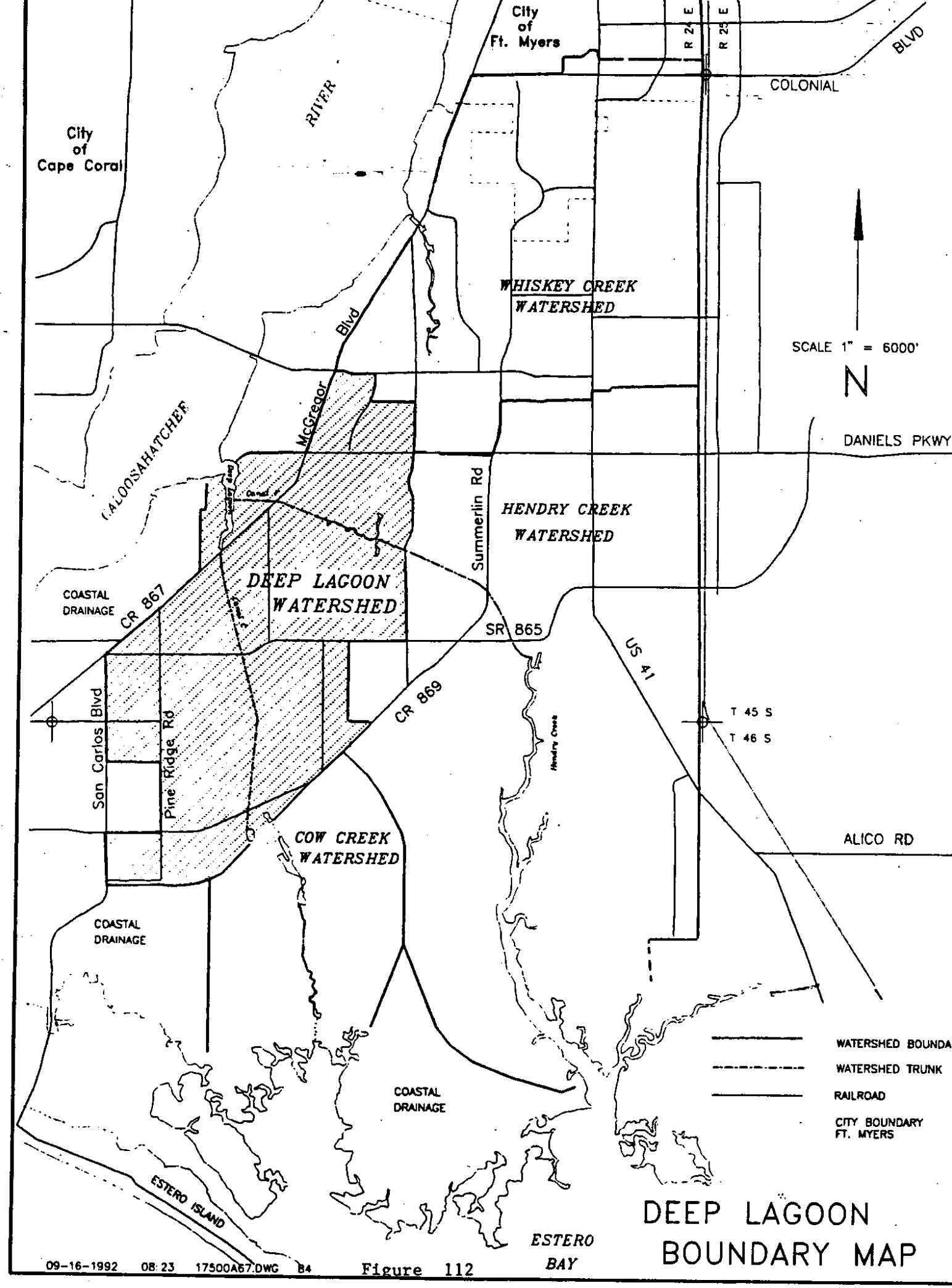

City of Ft. Myers
R 24 E
R 25 E
COLONIAL BLVD
RIVER
City of Cape Coral
WHISKEY CREEK WATERSHED
Blvd
SCALE 1" = 6000'
N
McGregor
CALOOSAHATCHEE
DANIELS PKWY
Summerlin Rd
HENDRY CREEK WATERSHED
DEEP LAGOON WATERSHED
COASTAL DRAINAGE
CR 867
SR 865
US 41
CR 869
San Carlos Blvd
Pine Ridge Rd
T 45 S
T 46 S
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 B4

Figure 112

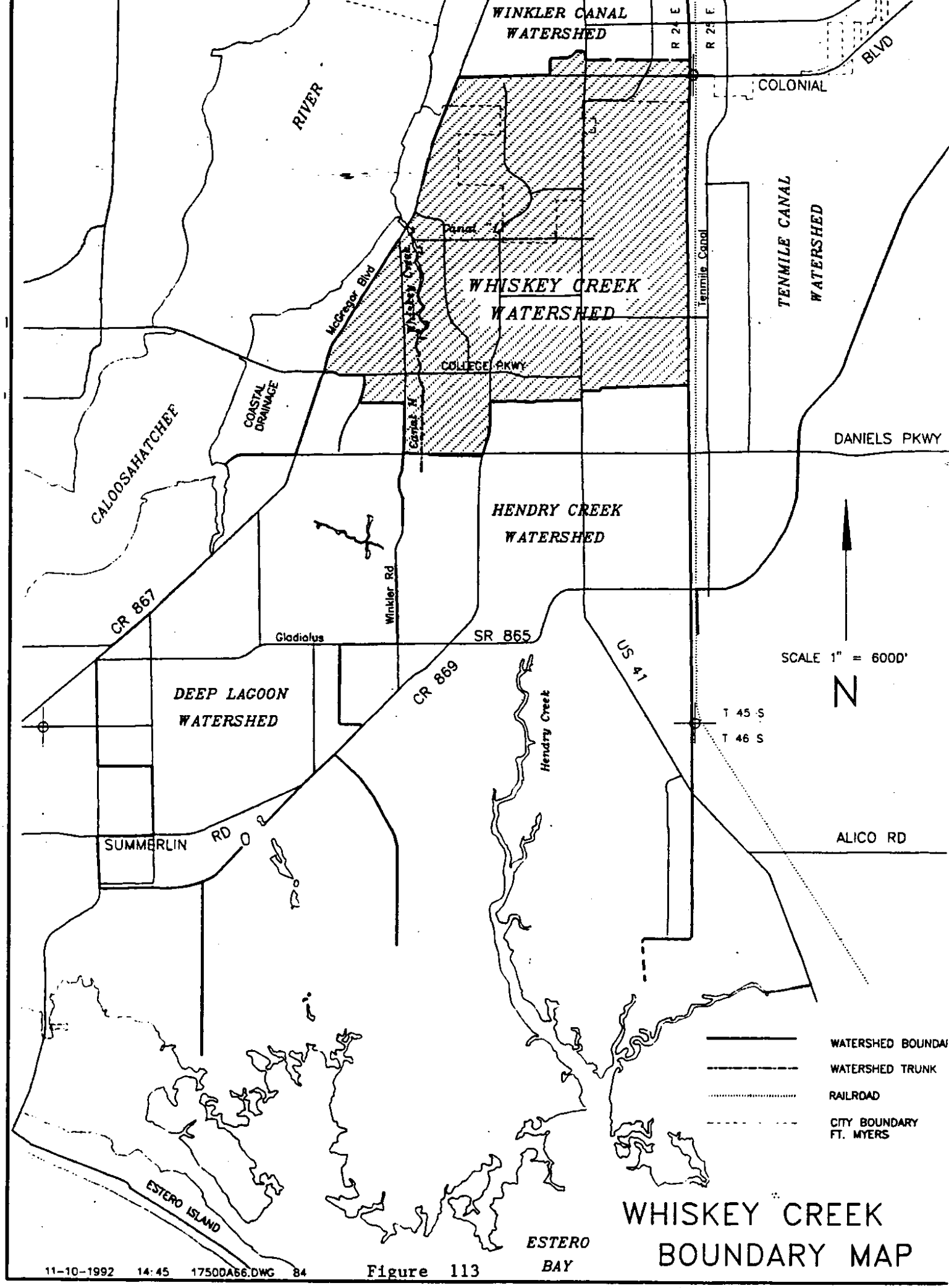

WINKLER CANAL WATERSHED
R 24 E
R 25 E
BLVD
COLONIAL
RIVER
WHISKEY CREEK WATERSHED
McGregor Blvd
Whiskey Creek
Canal 4
Canal 3
Tenmile Canal
TENMILE CANAL WATERSHED
COLLEGE PKWY
COASTAL DRAINAGE
CALOOSAHATCHEE
DANIELS PKWY
HENDRY CREEK WATERSHED
Winkler Rd
CR 867
Gladiolus
SR 865
CR 869
US 41
DEEP LAGOON WATERSHED
Hendry Creek
T 45 S
T 46 S
SCALE 1" = 6000'
N
SUMMERLIN RD
ALICO RD
WATERSHED BOUNDAI
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

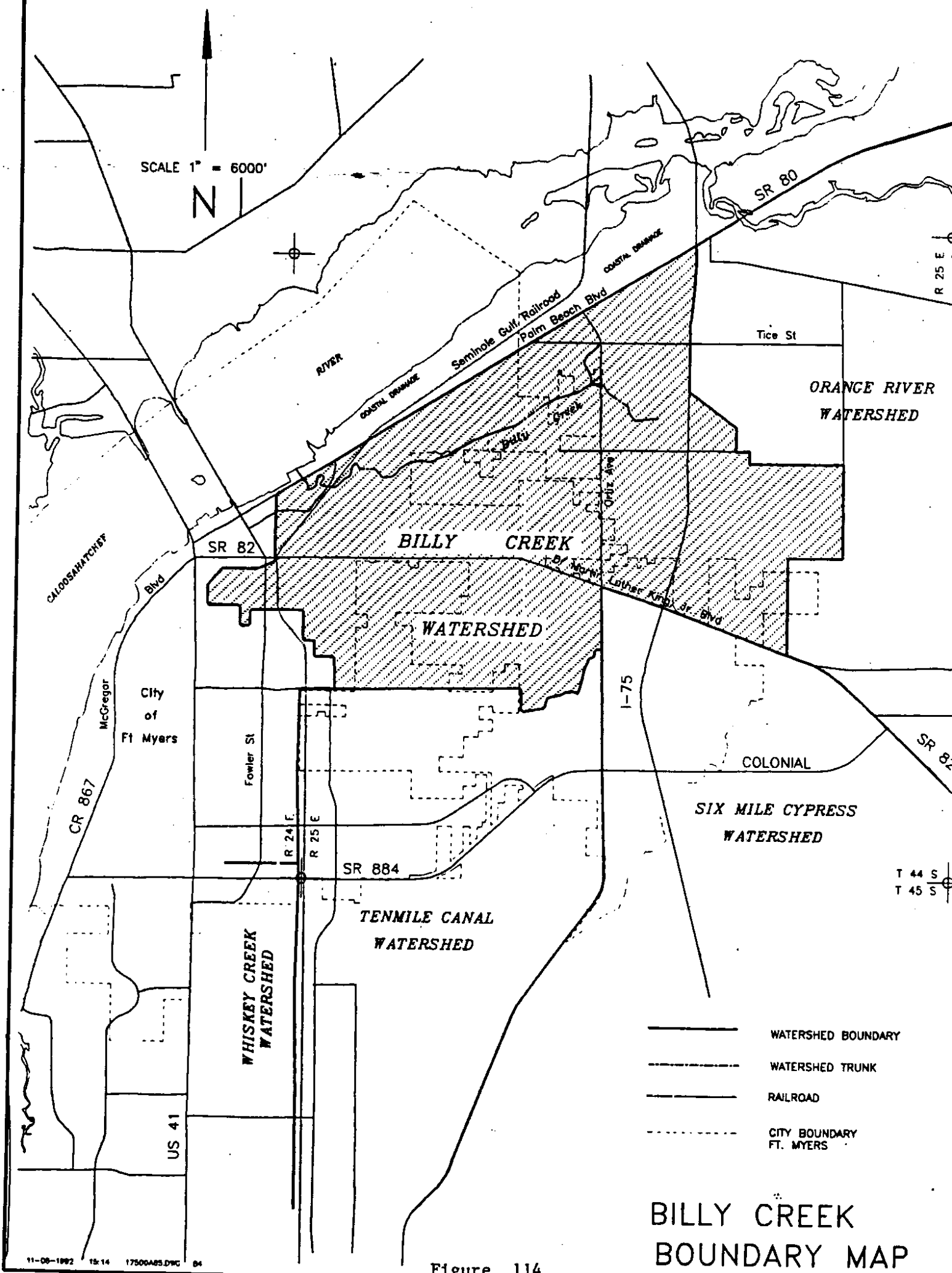

SCALE 1" = 6000'
N
SR 80
Tice St
ORANGE RIVER
WATERSHED
Seminole Gulf Railroad
Palm Beach Blvd
COASTAL DRAINAGE
RIVER
Billy Creek
Ortiz Ave
BILLY CREEK
WATERSHED
SR 82
CALOOSAHATCHEE
Blvd
Dr. Martin Luther King Jr. Blvd
City
of
Ft Myers
McGregor
CR 867
Fowler St
I-75
COLONIAL
SIX MILE CYPRESS
WATERSHED
R 24 E
R 25 E
SR 884
TENMILE CANAL
WATERSHED
WHISKEY CREEK
WATERSHED
US 41
T 44 S
T 45 S
WATERSHED BOUNDARY
WATERSHED TRUNK
RAILROAD
CITY BOUNDARY
FT. MYERS
BILLY CREEK
BOUNDARY MAP
11-08-1992 15:14 17500A85.DWG 84

Figure 114

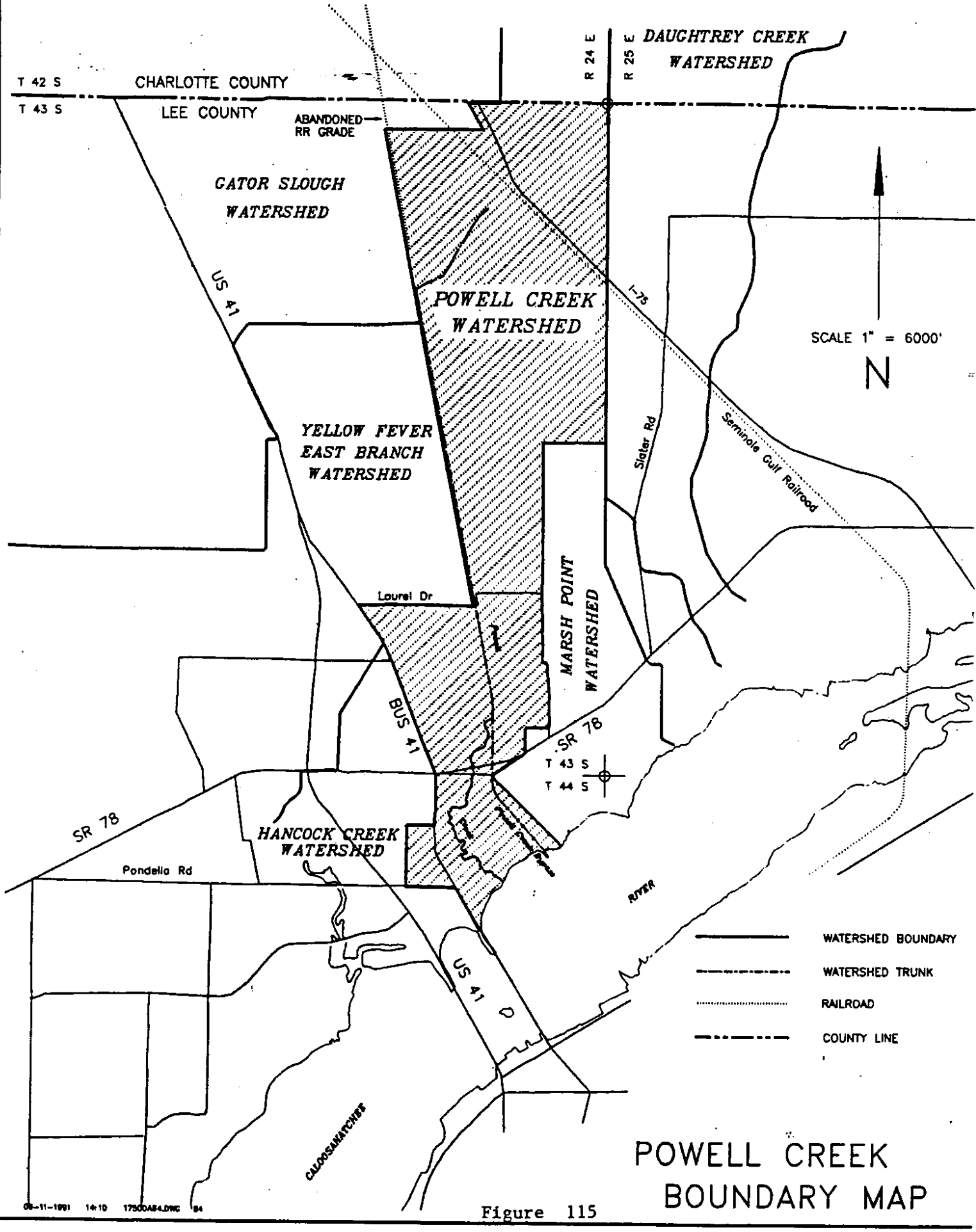

T 42 S
T 43 S
CHARLOTTE COUNTY
LEE COUNTY
R 24 E
R 25 E
DAUGHTREY CREEK WATERSHED
ABANDONED RR GRADE
GATOR SLOUGH WATERSHED
US 41
POWELL CREEK WATERSHED
I-75
SCALE 1" = 6000'
N
YELLOW FEVER EAST BRANCH WATERSHED
Slater Rd
Seminole Gulf Railroad
Laurel Dr
MARSH POINT WATERSHED
BUS 41
SR 78
T 43 S
T 44 S
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 17500AB4.DWG 84

Figure 115

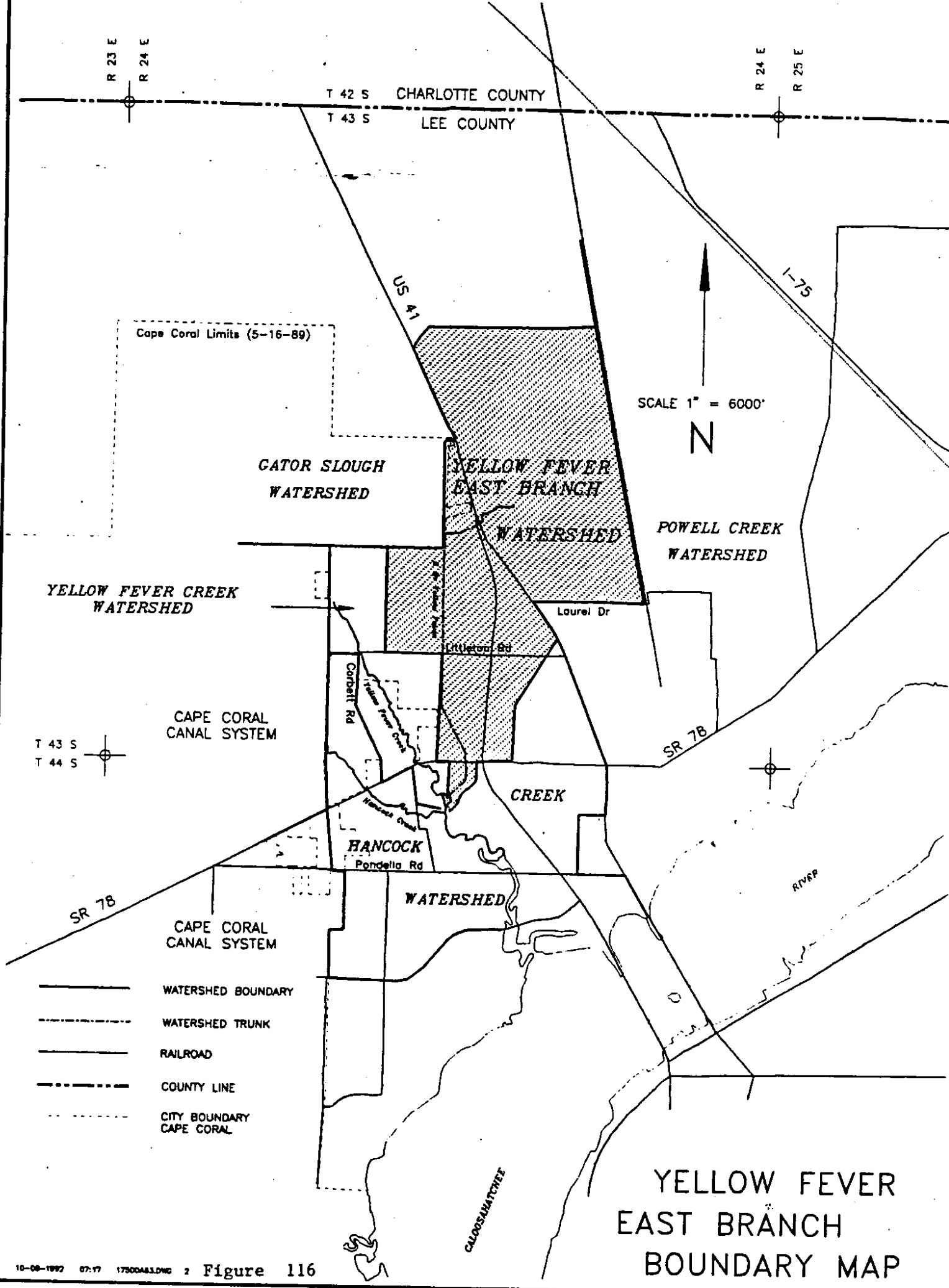

R 23 E
R 24 E
R 24 E
R 25 E
T 42 S
T 43 S
CHARLOTTE COUNTY
LEE COUNTY
US 41
I-75
Cape Coral Limits (5-16-89)
SCALE 1" = 6000'
N
GATOR SLOUGH
WATERSHED
YELLOW FEVER
EAST BRANCH
WATERSHED
POWELL CREEK
WATERSHED
YELLOW FEVER CREEK
WATERSHED
Laurel Dr
Littleroot Rd
Corbett Rd
CAPE CORAL
CANAL SYSTEM
T 43 S
T 44 S
SR 78
CREEK
HANCOCK
Pondella Rd
WATERSHED
SR 78
CAPE CORAL
CANAL SYSTEM
RIVER
CALOOSAHATCHEE
WATERSHED BOUNDARY
WATERSHED TRUNK
RAILROAD
COUNTY LINE
CITY BOUNDARY
CAPE CORAL
YELLOW FEVER
EAST BRANCH
BOUNDARY MAP
10-08-1992 07:17 17500A83.DWG 2

Figure 116

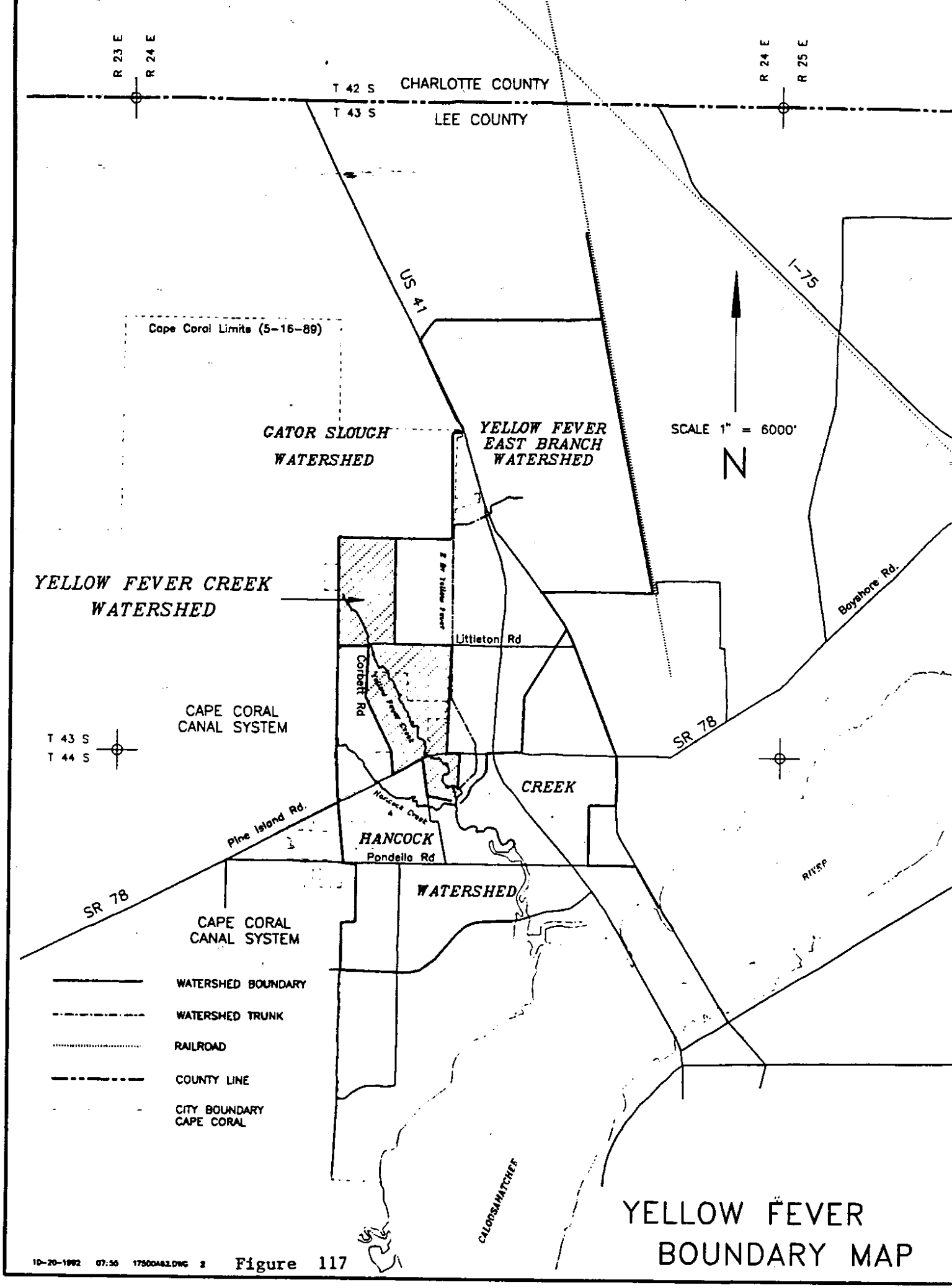
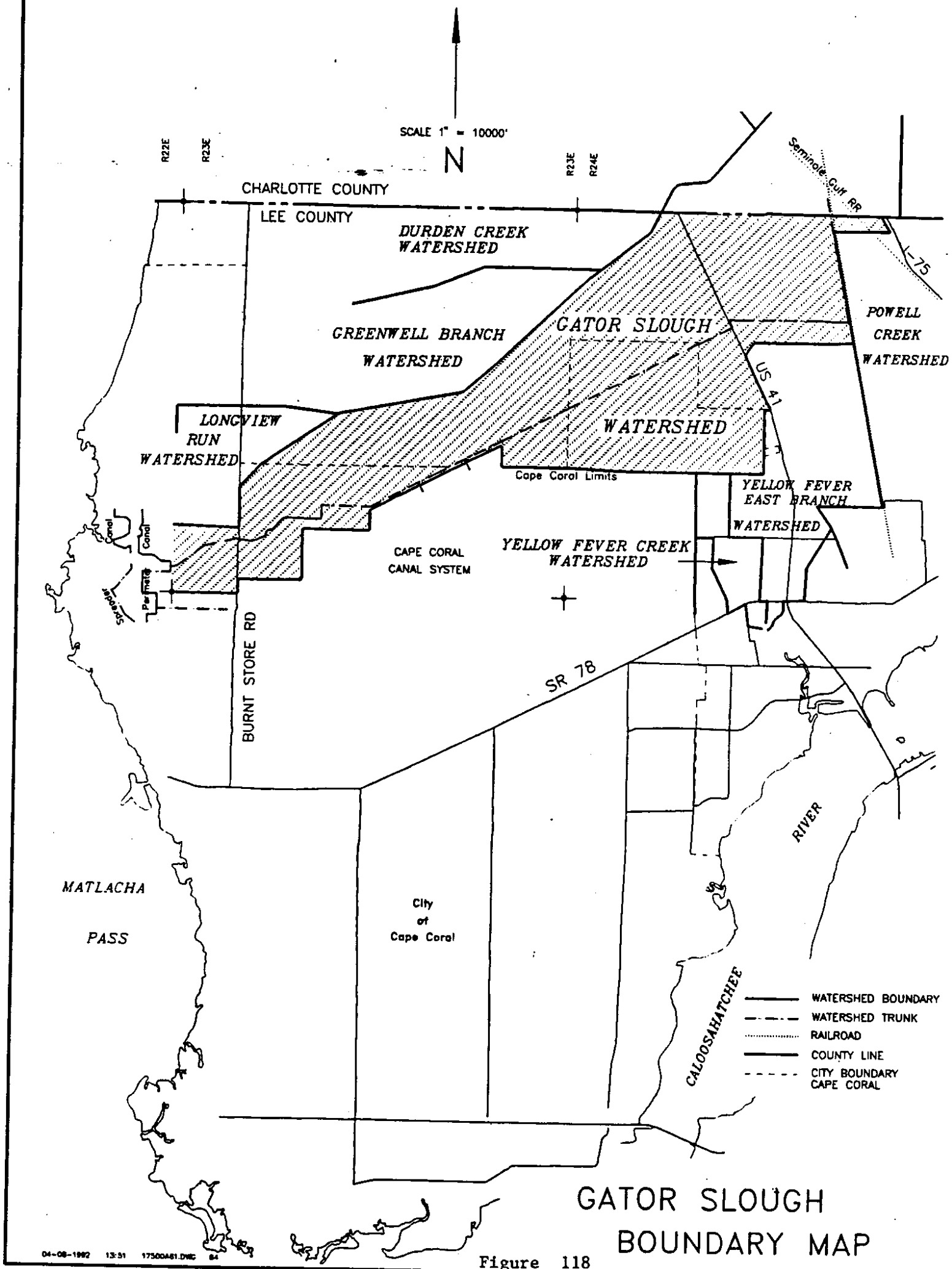
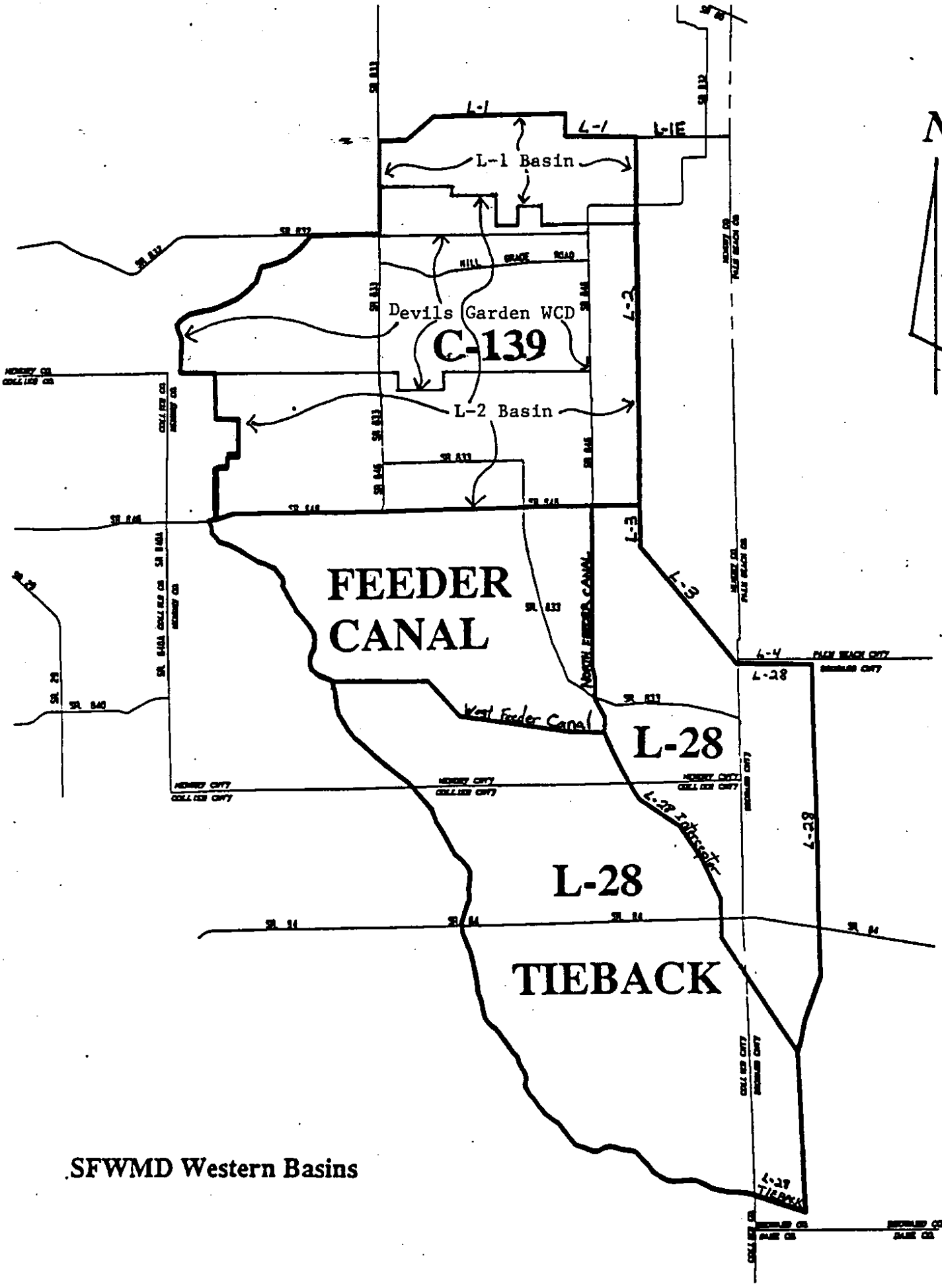

R 23 E
R 24 E
R 24 E
R 25 E
T 42 S
T 43 S
CHARLOTTE COUNTY
LEE COUNTY
US 41
I-75
Cape Coral Limits (5-16-89)
GATOR SLOUGH
WATERSHED
YELLOW FEVER
EAST BRANCH
WATERSHED
SCALE 1" = 6000'
N
YELLOW FEVER CREEK
WATERSHED
Littleton Rd
Corbett Rd
Bayshore Rd.
CAPE CORAL
CANAL SYSTEM
T 43 S
T 44 S
SR 78
CREEK
Pine Island Rd.
HANCOCK
Pondella Rd
WATERSHED
SR 78
CAPE CORAL
CANAL SYSTEM
WATERSHED BOUNDARY
WATERSHED TRUNK
RAILROAD
COUNTY LINE
CITY BOUNDARY
CAPE CORAL
CALOOSAHATCHEE
YELLOW FEVER
BOUNDARY MAP
10-20-1992 07:55 17500A82.DWG 2

Figure 117



GATOR SLOUGH
BOUNDARY MAP

Figure 118



SFWMD Western Basins

Figure 119

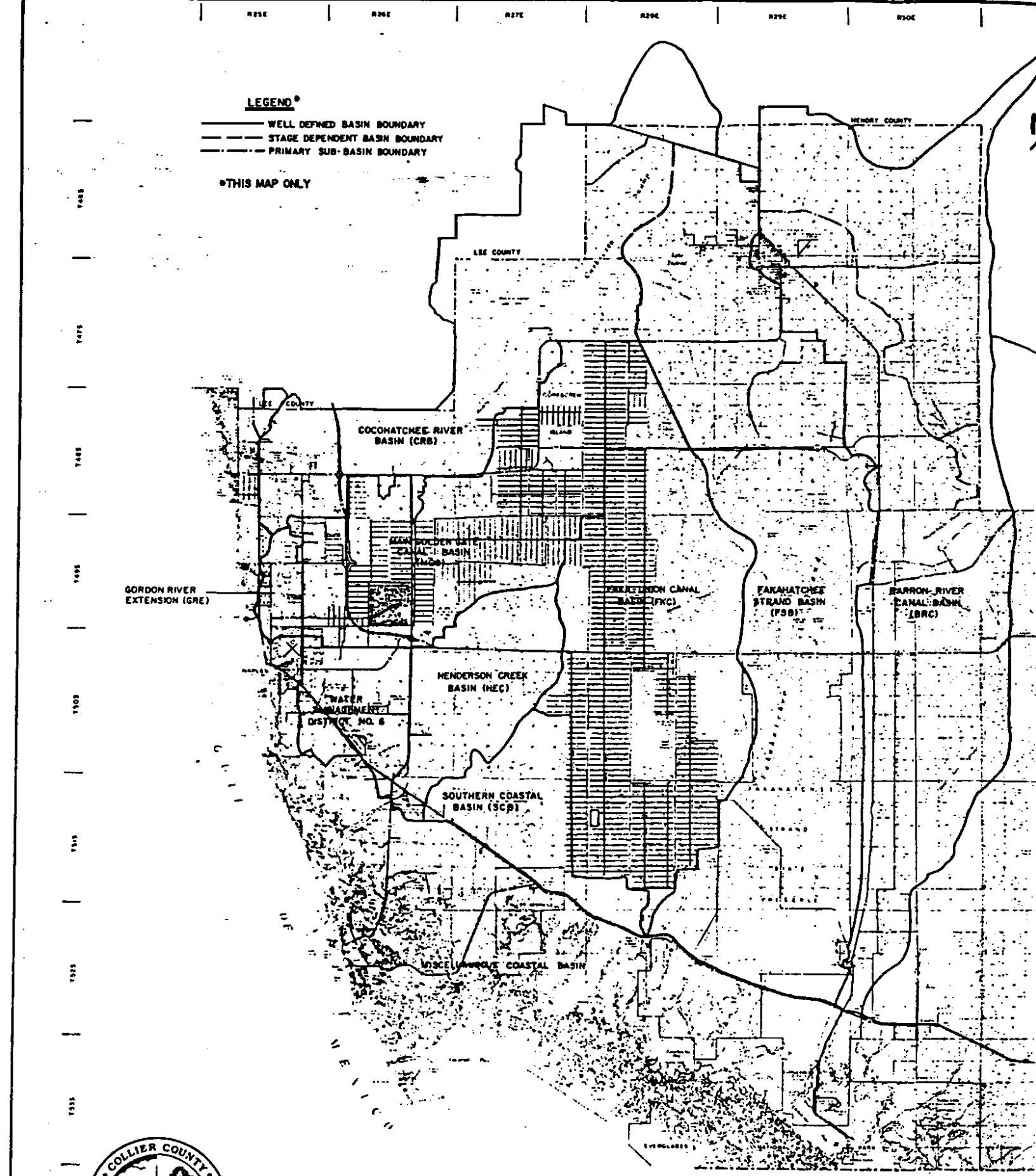


Figure 120 Western Collier County Drainage Basins

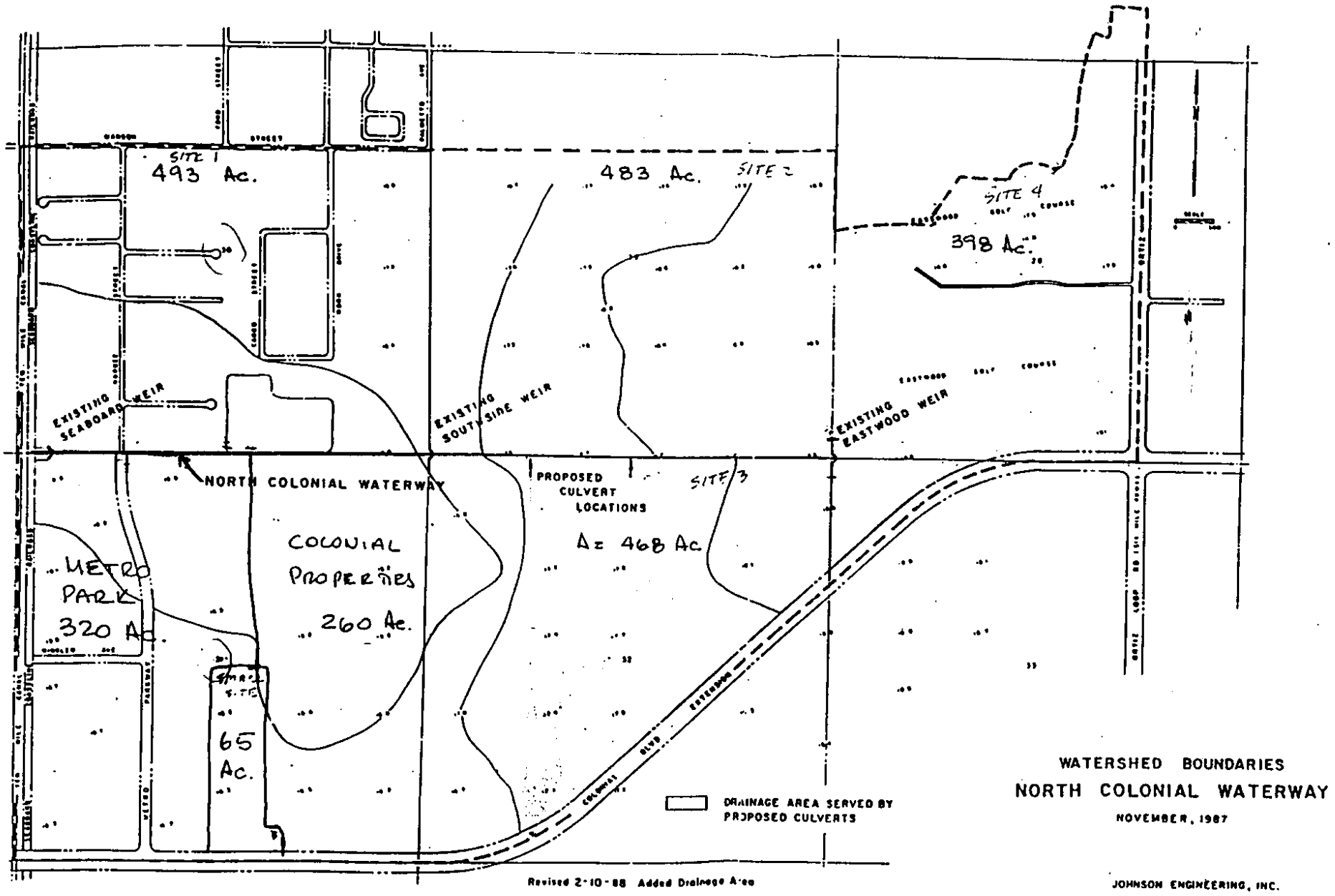


Figure 12/ North Colonial Waterway Drainage Basin

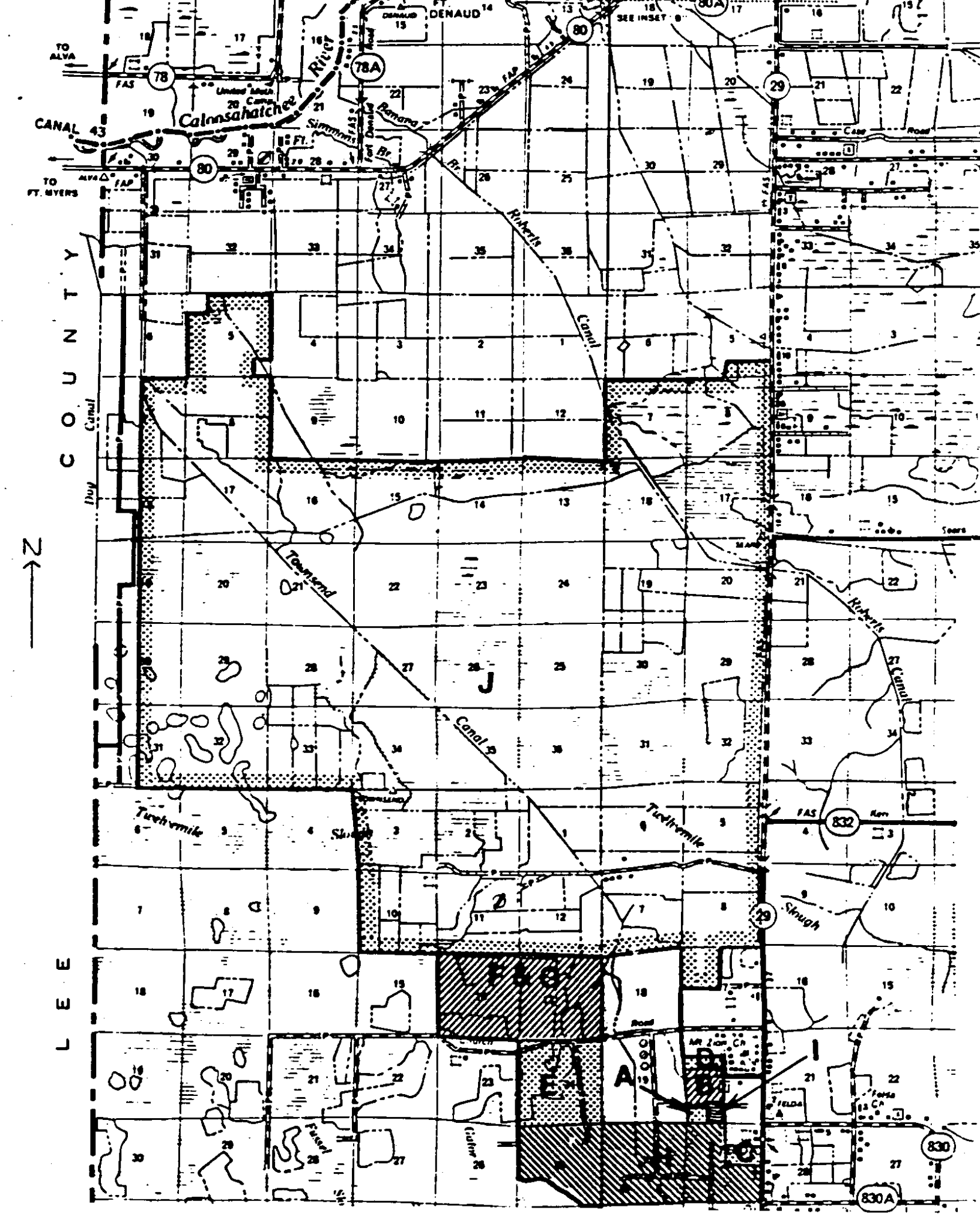
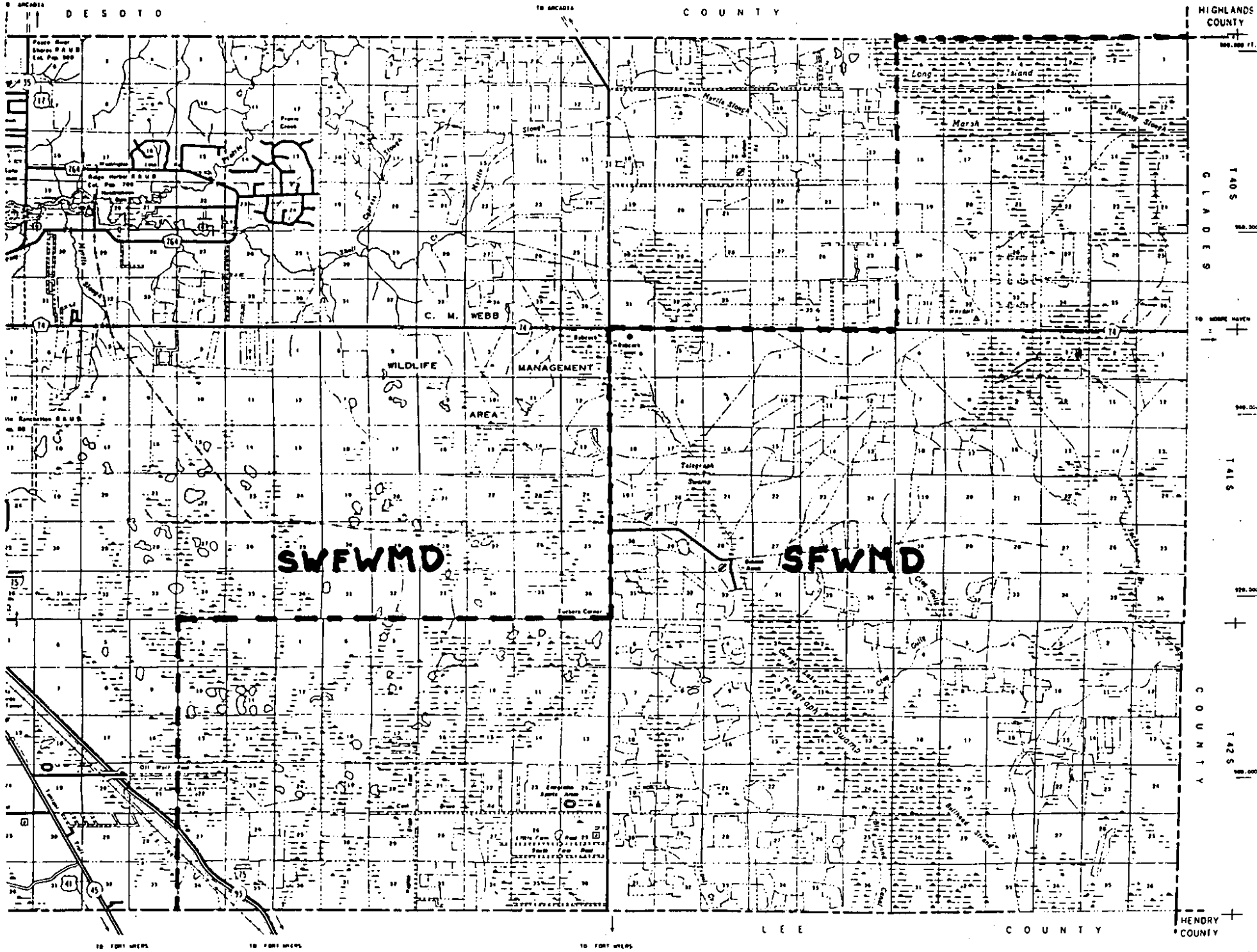


Figure 22 Townsend Canal Drainage Basin


DESOTO
COUNTY
HIGHLANDS COUNTY
LEE
COUNTY
HENDRY COUNTY
C. M. WEBB
WILDLIFE
MANAGEMENT
AREA
SWFWMD
SFWMD
Long Island Marsh
Myrtle Slough
Raines Slough
Telegraph Swamp
Turners Corner
T40S
T41S
T42S
GLADES COUNTY

151

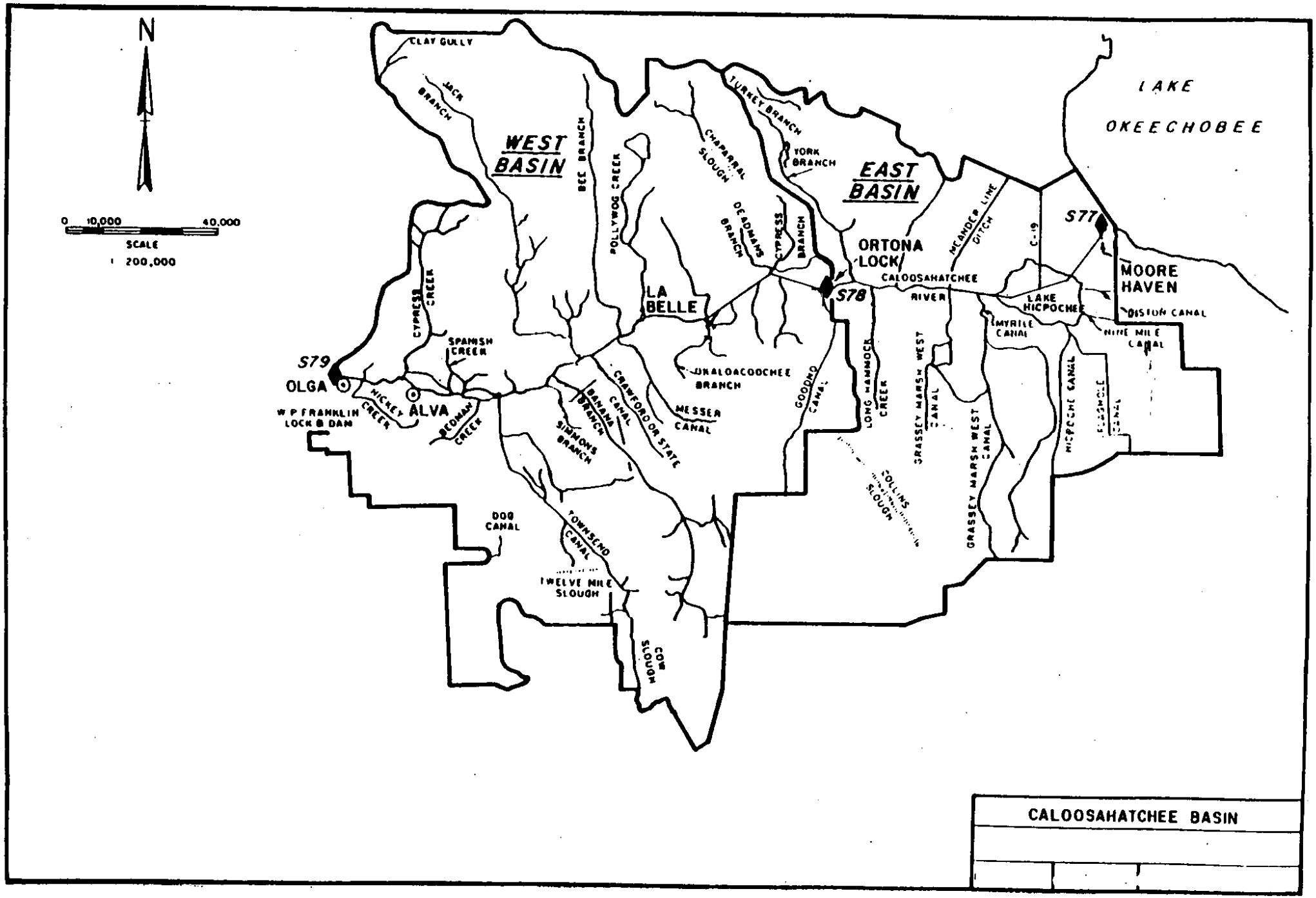


Figure 24 Location of Caloosahatchee Basin

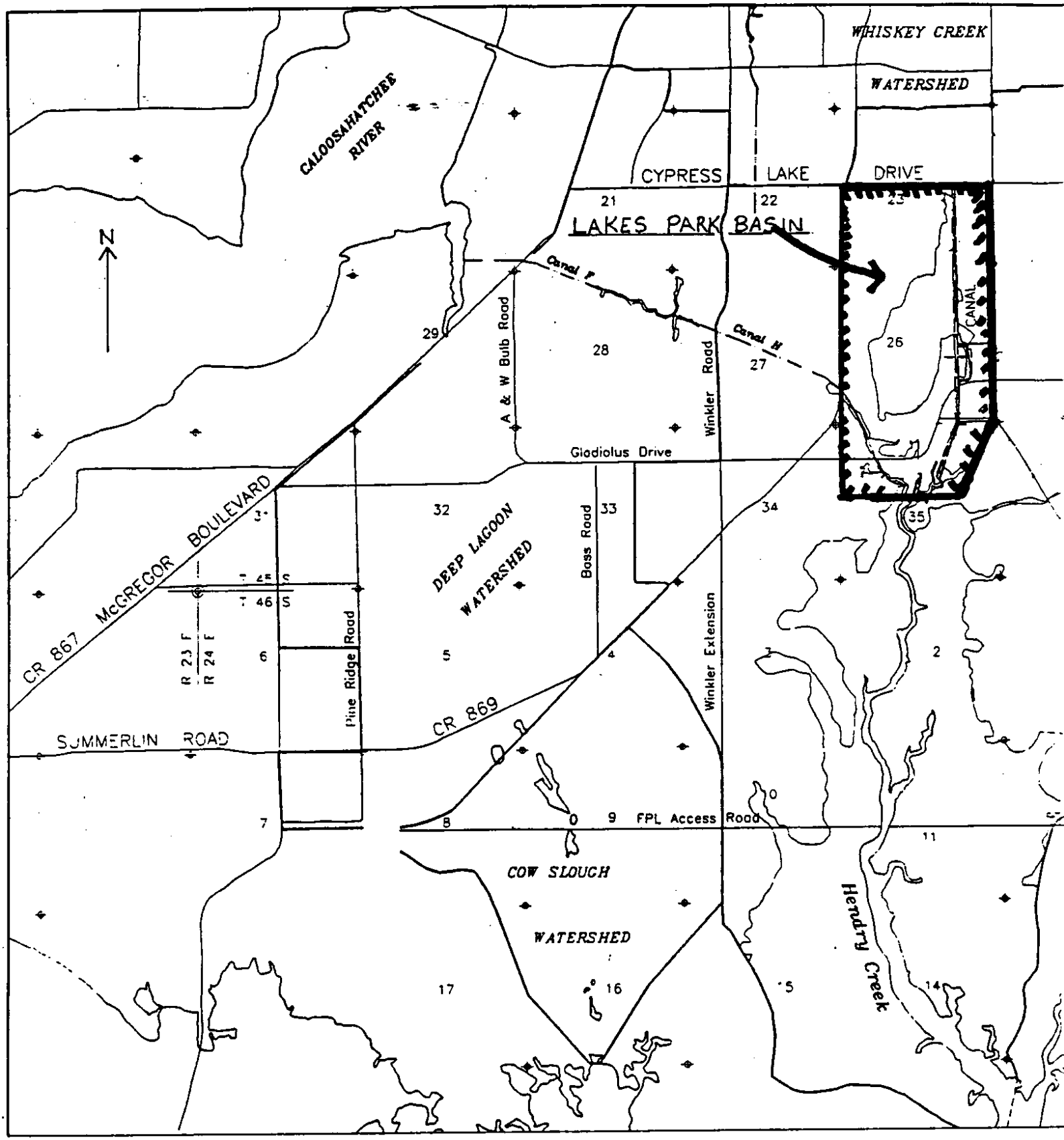


Figure 125 Location Of Lakes Park Basin

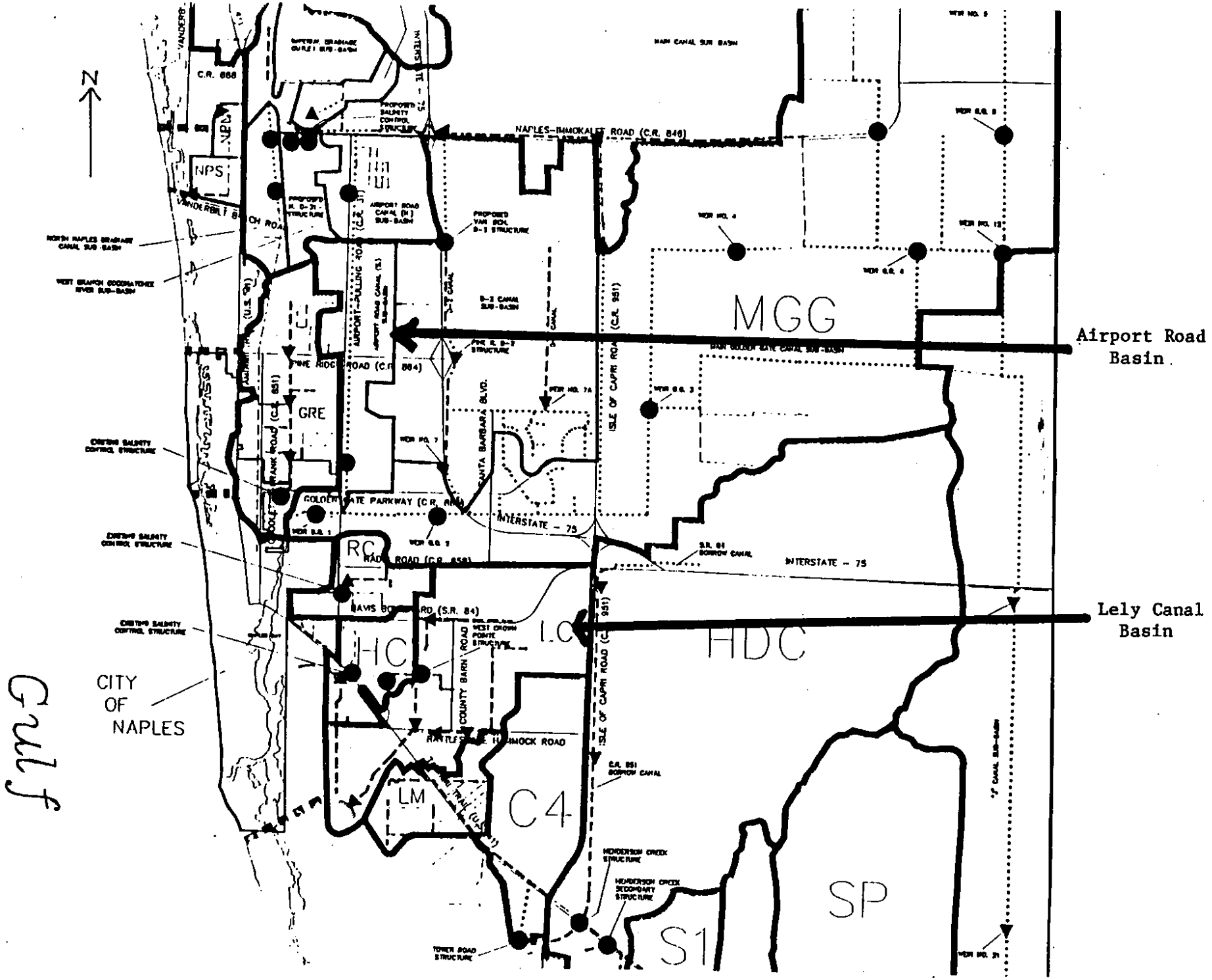


Figure 126 Location Of Airport Canal Basin And Lely Canal Basin