NORTH CAROLINA DEPARTMENT OF CRIME CONTROL

AND PUBLIC SAFETY

FINAL REPORT

PCB WASTE DISPOSAL SITE

WARREN COUNTY, N.C.

SEPTEMBER, 1983

Prepared By:

SOLID AND HAZARDOUS WASTE MANAGEMENT BRANCH
ENVIRONMENTAL HEALTH SECTION
DIVISION OF HEALTH SERVICES
NORTH CAROLINA DEPARTMENT OF HUMAN RESOURCES

FINAL REPORT
PCB WASTE DISPOSAL SITE
WARREN COUNTY

Introduction

The decision to remove the approximately 40,000 cubic yards of PCB contaminated soil along public roads by the state of North Carolina was based upon the availability of a secure disposal facility. Such a facility is regulated under the Toxic Substances Control Act (TSCA) administered by the United States Environmental Protection Agency.

The State of North Carolina applied for permission to utilize a 140-acre tract of land, owned by the State and located in Warren County, to construct, operate, and maintain an Annex II PCB Landfill. The site and operational plans were approved conditionally by the Environmental Protection Agency in correspondence dated June 4, 1979. Additional conditions were added on December 14, 1981.

Pre-Operation Phase Activities

The North Carolina Solid and Hazardous Waste Management Branch was chosen by the PCB Remedial Action Project coordinators in the Department of Crime Control and Public Safety to ensure construction and environmental monitoring compliance with the Environmental Protection Agency's approval conditions. This was made clear in a pre-construction meeting located at the site on June 10, 1982.

Of primary importance in pre-operation activities was the establishment of background data on groundwater and surface water around the site. This is imperative for any long-term environmental monitoring program associated with such disposal facilities. The initial groundwater monitoring wells were constructed according to the Environmental Protection Agency approved standards when general site construction started (June 21, 1982). These wells were found to be unsatisfactory by the North Carolina Division of Environmental Management and replacement wells were installed, with the Environmental Protection Agency's approval the first week of July. One of these replacement wells was vandalized on August 5, 1982, and was again reinstalled. The Environmental Protection Agency stated that the "closing out" of unusable groundwater monitoring using cement would not jeopardize the collection of representative groundwater samples from monitoring wells in the immediate vicinity. Groundwater and surface water background chemical data was collected using the Environmental Protection Agency-approved methodologies and analytical techniques (see attachment I).

Vandals damaged the 30-mil PVC liner on August 21 or August 22, 1983. Repairs were made and certified by a representative of the liner supplier. The Environmental Protection Agency inspected the repair work on August 27, 1982, and gave verbal approval at that time to continue construction.

Inspections by the North Carolina Division of Environmental Management to ensure compliance with North Carolina Sedimentation and Erosion Control Laws were conducted on August 3, 1982, and August 25, 1982 (see attachments II and III).

Measurements of in-place saturated hydraulic conductivities of the clay liner were taken on September 12, 1982, in accordance with Environmental Protection Agency permit conditions. All measurements showed the liner to meet or exceed regulatory requirement (see attachment IV).

Operation Phase Activities

Placement of the contaminated soil into the prepared landfill commenced on September 15, 1982. The last load of contaminated soil was delivered on November 17, 1982. The total volume of contaminated soil was estimated at just under the projected 40,000 cubic yards. An attempt to calculate the average concentrations of PCB in the contaminated soil was made on October 7, 1982, following advice given by Mr. Ralph Jennings, Toxic Substances Section, Environmental Protection Agency. Composite samples were collected at six locations in the contaminated soil fill. Each sample consisted of a composite of material from six foot deep borings. The average concentration of PCB's in the landfill as determined by the October 7, 1982, sampling event was 135 ppm (see attachment V).

Operational phase monitoring of groundwater, surface water, and surface water sediments was conducted on October 5, 1982, and October 28, 1982 (see attachment I).

Post-Operational Phase Activities

Final placement of the topsoil covering over the clay and PVC cap was impeded by wet weather conditions. The North Carolina Division of Environmental Management inspected the landfill for compliance with erosion control regulations on November 5, 1982 and November 17, 1982 (see attachment II). The lack of an adequate stabilized topsoil cover resulted in the uncovering of the PVC cap due to accelerated erosion during January, 1983. The lack of the topsoil covering's weight on the PVC cap allowed decomposition gases to accumulate in bubbles under the PVC cap instead of being forced through the gas vent located at a single location at the center of the landfill. These bubbles were pierced and temporary venting pipes installed to prevent gas buildup until weather conditions allowed the contractor to repair the PVC cap and finish the placement of topsoil.

Analyses of gases venting from the single permanent vent and the temporary vents by the North Carolina Department of Human Resources and the United States Environmental Protection Agency showed them to consist primarily of methane with concentrations of PCB's far below OSHA standards.

Post-operational phase environmental monitoring of groundwater, surface water, and surface water sediments was permformed on November 29, 1982, and May 16, 1983. Identical monitoring events will occur each November and May until the United States Environmental Protection Agency Regional Administrator and appropriate authorities of North Carolina determine otherwise.

The pumping of the landfill's leachate collection system to remove rainwater that accumulated during the operational phase commenced on March 7, 1983. Over 5,000 gallons of water were removed and treated in the site's treatment works by June 1, 1983. Any effluent from the treatment works met the Environmental Protection Agency's drinking water standards for PCB's.

Final construction of the landfill was completed on July 14, 1983. The State of North Carolina accepted the site conditionally on July 15, 1983. All keys to locks at the facility are in the custody of the North Carolina Solid and Hazardous Waste Management Branch.

The Environmental Protection Agency permit conditions identifying post-closure maintenance of the PCB landfill specify monthly inspections of the physical structures at the landfill and the leachate collection/detection sumps in addition to the twice a year environmental monitoring program. The Solid and Hazardous Waste Management Branch retains responsibility for these actions until directed otherwise by the Secretary of the Department of Human Resources.

Ronald H. Levine, M.D., M.P.H.
STATE HEALTH DIRECTOR

DIVISION OF HEALTH SERVICES
P.O. Box 2091
Raleigh, N.C. 27602-2091

June 30, 1983

MEMORANDUM

TO: O. W. Strickland, Head
Solid & Hazardous Waste Management Branch
Environmental Health Section

FROM: Thomas C. Karnoski, Environmental Engineer TCK
Solid & Hazardous Waste Management Branch
Environmental Health Section

SUBJECT: Environmental Monitoring of the PCB Disposal Facility

Environmental monitoring of the PCB disposal facility to identify releases from the landfill consists of select sampling and analyses of groundwater, surface water, and surface water sediments. Analytical parameters dictated by EPA are pH, specific conductivity, and total PCB for groundwater and surface water and total PCB for surface water sediments. All sampling, analytical, and security chain of custody procedures rigidly follow EPA and N. C. Division of Health Services accepted methodologies.

Locations of the four groundwater monitoring wells were designated by EPA as were the four surface water and surface water sediment sampling points (see attachment).

The following identifies the dates that environmental monitoring events took place:

Pre-Operation Monitoring of Groundwater to Determine Background Quality

August 20, 1982
August 30, 1982
September 6, 1982

Pre-Operational Monitoring of Surface Water and Surface Water Sediments to Determine Background Quality

July 7, 1982
August 3, 1982
August 10, 1982

Operational Phase Monitoring of Groundwater, Surface Water and Surface Water Sediments

October 5, 1982
October 28, 1982

Post-Operational Phase Monitoring of Groundwater, Surface Water, and Surface Water Sediments (to occur indefinitely twice each year)

November 29, 1982
May 16, 1983

To date, all monitoring activity has indicated no release of PCB's are occurring at the disposal facility. All analytical data is available as a part of public record.

A functional aspect of the landfill's design is a mechanism to remove free liquid from the waste mass and hence eliminate material that has migration (or release) potential. Pumping of the leachate collection system commenced on March 7, 1983 and continued at various intervals through June 1, 1983.

Approximately 5,000 gallons of free liquids were removed from the landfill and treated at the landfill's treatment works. Below are dates where water analytical work was conducted on influent and effluent water of the treatment system:

March 7, 11, 14, 16, 21, 22, 23, 24, 28, 29, 30
April 1, 5, 7, 11, 12, 13, 14, 18, 19, 20, 25, 26, 27
May 10, 25
June 1

The highest concentration of PCB's detected in the influent water was 2.47 ppb [2.47 (10^{-7})% by weight]. All effluent analyses show PCB concentrations less than .1 ppb [1(10^{-8})% by weight]. Attached are allowable concentrations of PCB's in food and feed products according to 29 CFR 109(B). Effluent from the treatment works meets EPA drinking water standards.

Over fifty-five private drinking water wells from residents in the area around the landfill were sampled in January of 1983. All analytical data showed no detectable levels of PCB's.

TCK:ct

Attachments

Attachment II

LANDFILL INSPECTION REPORT

NAME: PCB LANDFILL LOCATION: SR 1604 (WARREN C

RESPONSIBLE: — COUNTY: — CITY OR TOWN

STATE GOVERN. OTHER (SPECIFY)

1. Was erosion and sediment control plan prepared? ✓ yes _____ no, if yes, by whom SVERDUP & PARCEL.

2. Was plan reviewed by Land Quality Section prior to initiation of landfill operat
✓ yes _____ no

3. Is the plan presently being followed? ✓ yes _____ no

4. Has plan been followed at anytime prior to inspection? ✓ yes _____ no

5. If plan has been followed previously and now is not being followed, explain as why and how. Who is responsible? N/A

6. Size of landfill and details as to extent under development at time of inspecti
≃8-9 Ac.

Location of any and all watercourses that could be damaged by sediment. _____
DRAINAGE EVENTUALLY TO RICHNECK CRK. GO NORT

7. Type and extent of offsite (beyond property boundaries) sedimentation problems have taken place or are presently taking place. Explain: NONE NOTI

8. Have local and state personnel responsible for landfill activities been cooper and demonstrated a willingness to make the program succeed? ✓ yes _____
Explain: SOME MAINTENANCE OF SILT FENCE AT NE CORNER OR LANDFILL HAS BEEN PERFORMED.

9. Corrective action needed: SILT FENCE AT NE CORNE HAS FILLED AGAIN & IS IN NEED OF MAINTENANCE. AREA NORTH OF HOLDING POND HAS NOT BEEN CORRECTED (TRACES OF SEDI

10. Recommendations; CLEAN OUT SILT FENCE AS NOTED IN ITEM #9 AND CONTINUE GENERAL MAINTEN OF DEVICES AS NEEDED. ALSO ATTEND TO AREA NORTH OF HOLDING POND. RECOMMENDATI WERE MADE TO CONSTRUCTION SUPERINTENDAN (JIM LINEBERGER, JR.) AT THE SITE.

Regional Engineer

RRO Region

8-3-82 Date

Attachment III

LANDFILL INSPECTION REPORT

NAME: PCB LANDFILL LOCATION: SR 1604 (WAR

RESPONSIBLE: — COUNTY: — CITY OR TOWN

STATE GOVERN OTHER (SPECIFY)

1. Was erosion and sediment control plan prepared? ✓ yes ____ no, if yes, whom SVERDUP + PARCEL.

2. Was plan reviewed by Land Quality Section prior to initiation of landfill ope:

✓ yes ____ no

3. Is the plan presently being followed? ✓ yes ____ no

4. Has plan been followed at anytime prior to inspection? ✓ yes ____ no

5. If plan has been followed previously and now is not being followed, explain a why and how. Who is responsible? N/A

6. Size of landfill and details as to extent under development at time of inspe:

≃ 8 AC. DISTURBED - LANDFILL EXCAVATED + HOLD POND UNDER CONSTRUCTION.

Location of any and all watercourses that could be damaged by sediment. ____

DRAINAGE EVENTUALLY TO RICHNECK CRK. GEN.

7. Type and extent of offsite (beyond property boundaries) sedimentation proble have taken place or are presently taking place. Explain: NONE No

8. Have local and state personnel responsible for landfill activities been coop and demonstrated a willingness to make the program succeed? ✓ yes ____

Explain: ____

9. Corrective action needed: SILT FENCE AT NE CORNER OF LANDFILL IS IN NEED OF MAINTENANCE. DIVERSION SWALES AND/OR EXTENSION OF SILT FENCES ARE NEEDED NORTH OF HOLDING POND.

IN THIS [redacted]). SILT FENCE AT STOCKPILE AREA IN SE CORNER OF SITE NEEDS MAINTENANCE.

10. Recommendations; ITEMS IN #9 DISCUSSED WITH JIM LINEBERGER, JR. AT SITE. I RECOMMEND CONTACT WITH CRIME CONTROL & PUBLIC SAFETY TO INSURE THAT MAINTENANCE ITEMS ARE ADDRESSED TO PREVENT OFF SITE SEDIMENTATION.

Regional Engineer

R120 Region

8-25-82 Date

9-1-82: I SPOKE WITH BILL PHILLIPS, CRIME CONTROL AND PUBLIC SAFETY, AND REITERATED THE COMMENTS MADE TO THE CONTRACTOR 8-25-82. HE INDICATED THAT THEY WILL INSURE THAT THE CONTRACTOR FOLLOWS UP ON OUR RECOMMENDATIONS.

I RECOMMEND THAT THE SITE BE RE-INSPECTED IN ABOUT 15 DAYS TO DETERMINE COMPLIANCE.

SOIL & MATERIAL ENGINEERS INC. ENGINEERING-TESTING-INSPECTION

3109 Spring Forest Road, Box 58069, Raleigh, NC 27658-8069, Phone (919) 872-2660

September 14, 1982

Sverdrup & Parcel Associates, Inc.
2211 W. Meadowview Road
Suite 114
Greensboro, North Carolina 27409

Attention: Mr. Frank B. Rainey, Jr., P.E.

Subject: Permeability Test Results of
In-Place Clay Liner
PCB Landfill Site
Warren County, North Carolina
S&ME Job No. 053-82-240-A

Gentlemen:

As requested by Sverdrup & Parcel Associates, undisturbed samples were taken of the in-place clay liner at the subject project for permeability testing. Five (5) laboratory permeability tests were performed on representative samples taken at the locations indicated on the attached tabulation of test results. Falling head permeability tests were performed in accordance with procedures outlined in the Corps of Engineers Engineering Manual 1110-2-1906, Appendix VII. The tests reveal that the in-situ clay liner material has permeability values ranging from 3.0×10^{-8} to 1.0×10^{-7} cm/sec. See attached Tabulation of Falling Head Permeability test results.

If you have any questions, please contact us.

Very truly yours,

SOIL & MATERIAL ENGINEERS, INC.

John R. Browning, P.E.
Manager Construction Services

JRB:mgm

Attachment

cc: Secretary of Crime Control and Public Safety
Attention: Mr. William Phillips

TABULATION OF FALLING HEAD PERMEABILITY TEST RESULTS OF IN-PLACE CLAY LINER PCB LANDFILL SITE

Test Number	Test Location	Permeability coefficient (cm/se
1	10035 N 9850 E	6.0×10^{-8}
2	10035 N 9750 E	3.6×10^{-8}
3	10135 N 9800 E	1.0×10^{-7}
4	10320 N 9750 E	3.0×10^{-8}
5	10320 N 9850 E	6.6×10^{-8}

Attachment V

North Carolina Department of
Crime Control & Public Safety
512 N. Salisbury Street P. O. Box 27687 Raleigh, N.C. 27611 (919) 733-2126

James B. Hunt, Jr., Governor Herman R. Clark, Secretary

October 11, 1982

COPY

Mr. Al Hanke
Environmental Scientist
EPA, Region IV
345 Courtland St., NE
Atlanta, GA 30365

Re: Contaminated Soil Concentration
PCB Landfill
Warren County, NC

Dear Al:

Enclosed is a copy of the state analysis of the six soil samples taken from the landfill on October 5, 1982.

Sincerely,

William W. Phillips, Jr.

William W. Phillips, Jr.
Assistant to the Secretary

WWPjr:jj
Enc.

cc: O. W. Strickland
Bill Raney
Joe Lennon
Frank B. Rainey, Jr.

Attachment V

North Carolina Department of Human Resources
Division of Health Services
Occupational Health Laboratory
P. O. Box [illegible], Raleigh, N.C.

ANALYSIS REPORT

CHAIN OF CUSTODY RECORD

Company: PCB LANDFILL

Address: WARREN Co.

Service Requested: PCB

Sample Taken On: 10/5/82 By: I. KARNOSKI

Submitted To Laboratory On: 10/7/82 By: I. KARNOSKI

Date of Analysis: 10/8/82 - 10/11/82 Date Reported: 10/11/82

Analyzed By: Green, Noble, Hobbs

Collector's Name: [illegible] Telephone: (919) 733-2178

LABORATORY NUMBER	SAMPLE NUMBER	DESCRIPTION	REMARKS	RESULTS IN ppm Wt/Wt
		CONTAMINATED SOILS		
04070	1A			46.1
04071	2A			156.4
04072	3A			160.3
04073	4A			86.8
04074	5A			151.3
04075	6A			209.2

Average 135.8

COMMENTS:

REPORTED BY: John R. McCall
Chief, Occupational Health Lab

LANDFILL INSPECTION REPORT

NAME: PCB LANDFILL LOCATION: SR 1604 (WARREN Co.

RESPONSIBLE: _____ COUNTY: _____ CITY OR TOWN

STATE GOV. OTHER (SPECIFY)

1. Was erosion and sediment control plan prepared? ✓ yes _____ no, if yes, by whom SVERDUP & PARCEL.

2. Was plan reviewed by Land Quality Section prior to initiation of landfill operat
✓ yes _____ no

3. Is the plan presently being followed? ✓ yes _____ no

4. Has plan been followed at anytime prior to inspection? ✓ yes _____ no

5. If plan has been followed previously and now is not being followed, explain as t why and how. Who is responsible? N/A

6. Size of landfill and details as to extent under development at time of inspecti
~8 AC.

Location of any and all watercourses that could be damaged by sediment. _____
DRAINAGE TO RICHNECK CRK. (GEN. NORTH)

7. Type and extent of offsite (beyond property boundaries) sedimentation problems have taken place or are presently taking place. Explain: NONE NOTED BEYOND PROPERTY, HOWEVER SOME SEDIMENT IS BEING LOST PAST DEVICES

8. Have local and state personnel responsible for landfill activities been cooper and demonstrated a willingness to make the program succeed? ✓ yes _____
Explain: _____

9. Corrective action needed: SILT FENCES NEED REPAIR, MAINT. +/OR REPLACEMENT IN VARIOUS LOCATIONS AROUND PERIMETER OF FILL AND STOCKPILE. SLOPES NEED STABILIZATION

10. Recommendations; SEE #9. CONTACT CRIME CONTROL + PUBLIC SAFETY OFFICE ABOUT DEFICIENCIES ASAP

John L. Holley, Regional Engineer
RRO Region
11-5-82 Date
+ 11-17-82 NO CHANGE

MADE RECOMMENDAT TO FOREMAN AT SITE

11-18-82: SPOKE WITH BILL PHILLIPS AND NOTIFIED HIM OF PROBLEMS AT SITE AS DESCRIB IN THIS REPORT. I NOTED THAT WE WILL REINSP. SITE IN ABOUT 1 WEEK TO DETERMINE COMPLIANCE.

North Carolina Department of Natural Resources & Community Development
James B. Hunt, Jr., Governor
Joseph W. Grimsley, Secretary

DIVISION OF ENVIRONMENTAL MANAGEMENT
December 20, 1982

M E M O R A N D U M

To: William W. Phillips, Jr.
PCB Cleanup Project Officer

From: H. E. Mew, Jr., Coordinator
Enforcement and Emergency Response

Subject: Final Report
Activity 4--Sampling

All requirements under Activity 4 of the Superfund contract have been completed. Laboratory results and sample location descriptions are listed in the appendices. Endpoints on all strips have been located and all trench samples taken. Erosion samples were identified, sampled, and picked up where necessary. All reports of possible contamination sites were investigated and samples taken. Each of these tasks is described in more detail below.

Strip Endpoint Delineation

Endpoint sampling was carried out in accordance with the sampling procedures documented in Appendix 7. Each sample location was logged in a log book, copies of which are available in the Division of Environmental Management's (DEM's) Central Files.

Originally, long segments of contaminated roadside had been identified for endpoint sampling. Within these long segments the PCB had been discharged intermittently. In discussions with EPA and other state agencies involved in the pickup, it was decided to identify and sample each of the intermittent strips. A Department of Transportation (DOT) representative for each effected DOT district accompanied DEM samplers and identified where the contaminated strips had been marked. Photographs were taken of all endpoint locations.

The strips were numbered consecutively and located on a set of 13 maps, see Appendix 1. The maps were developed based on a logical grouping of strips and and a map size which could be easily photocopied. A master map showing all locations of individual maps is included in the notebook pocket of the original of this report. A description of each strip is included in Appendix 2 of this report. For each strip the following information is provided: the map number locating the strip; the road number and whether it is a designated state route (NC), a county state road (SR), or a United States designated highway (US); the county in which the road is located; the length of the contaminated shoulder; the starting point of the contamination; the direction along the road; and the ending point of the contamination. Information is provided on the DOT division and district number, and the strip is also related to previous segment designations.

The "Segment" information correlates various designations which have been given to the contaminated strips over the years. The first column locates the strip within a lettered segment. These lettered segments were used before a complete listing of strips was developed. The letters have also been used to label sample locations. A working map showing these letter designations is contained in the notebook pocket of the original report. The second column under "segment" lists the original segment number containing the strip, and these segments are mapped in the sampling plan in Appendix 7. The third column relates the strips to the original list of 51 contaminated roadways (210.97 miles) contained in the PCB Project EIS and other documents.

The criteria used for designating strips was that the contamination had to be continuous and that it was located on a single road within a single county. If, for example, a single continuous strip crossed a county line, it was divided into two strips for administrative purposes. Endpoint samples were only taken at the endpoints of contamination, and the entire contaminated shoulder between endpoints was picked up.

Appendix 2 also shows sample results. The starting point, "S-point," and ending point, "E-point," of each strip is identified with a sample number, e.g., S-1A. This is strictly an administrative designation, and where contamination is continuous, a road intersection designates a strip starting or ending point. The column labeled "212D-#" shows an EPA laboratory number. All official results from EPA laboratories and contracted laboratory have been submitted with this final report and are available in DEM Central Files. These results are in "212D-#" order for easy reference. Laboratory results from the DEM laboratory and Department of Human Resources (DHR) laboratory are show in Appendices 8 and 9. There was a thirty or more day turnaround period for all samples sent to EPA laboratories.

Laboratory results are shown in total parts per million ("Tot. ppm") of PCB in Appendix 2. Laboratory printouts are in micrograms per kilogram for both Aroclor 1242 and Aroclor 1260. These results were combined and converted to parts per million for this report. Most analyses were only taken to one part per million as a cutoff.

Endpoint samples were a composite of three individual cores. The EPA definition of 50 ppm PCB was used as the criteria for contamination. Thus, if a composite sample showed a concentration greater than 17 ppm, the endpoint was extended until sampling indicated that the endpoint of contamination had been found. The results of this resampling is shown in Appendix 2. Where two or more stips were picked up continuously because of unacceptable sample results, Appendix 2 notes this combining. To insure quality control and quality assurance, randomly selected samples were split among various laboratories. These results are also shown in Appendix 2.

In developing the list of strips all possible contaminated roadways were identified. Some of these, sampling results verified, did not contain PCB's. An example of this is strip 61 on NC 58 in Franklin County between Centerville and the Warren County Line. This site had been identified in the earlier EIS, but DOT personnel in the area were certain no PCB had been discharged in that area. Extensive sampling on both sides of the road confirmed this. Strips 74 and 75 in Wake County had also been suspected of having PCB's, but sampling and discussions with DOT personnel confirmed no PCB's.

Erosion Site Locations

All erosion sites were identified and sampled in accordance with the sampling plan in Appendix 7. These sites are described in Appendix 5 and located on the maps in Appendix 1. Of the four erosion sites identified, only one showed elevated PCB levels, and the erosion fan at that site was picked up.

Miscellaneous Sample Results

At various times throughout the sampling activity reports were received of potential PCB-contaminated roadways. Each of these reports was investigated and samples taken. The results of these investigations are listed in Appendix 6. There was no indication in any of these investigations that PCB had been discharged in areas other than those being cleaned up.

Miscellaneous samples were also taken for other reasons. In two incidents small amounts of contaminated soil had spilled from DOT trucks transporting the material to the landfill. Each area was checked after the material had been picked up. In Warren County material had been stored from an earlier test pickup. This storage area was tested after the material had been removed to the landfill and resampled after additional soil had been removed.

Trench Sample Results

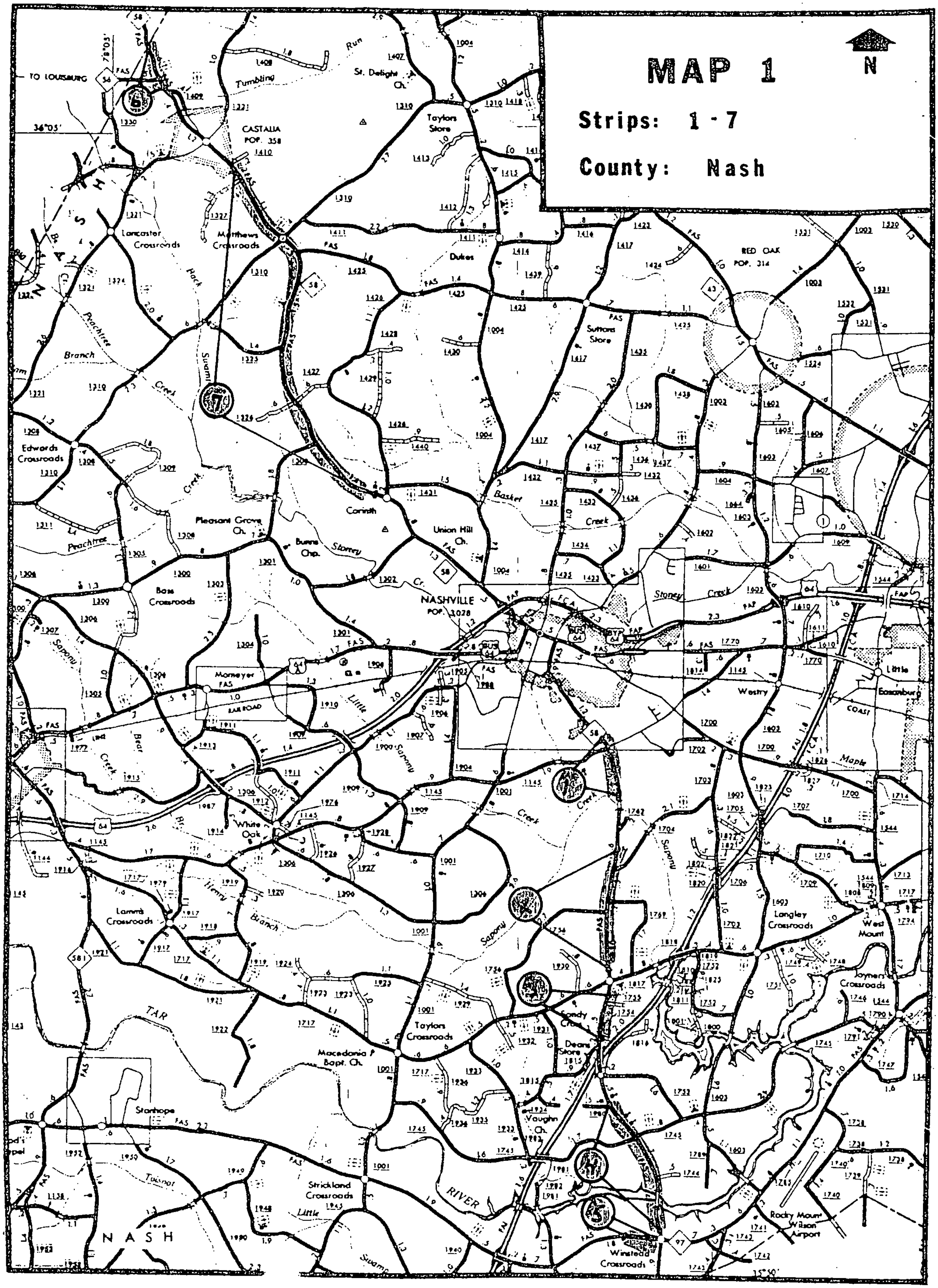
The first-day trench samples were taken following the sample plan in Appendix 7. Based on conversations with state and EPA officials the sampling plan was modified for the remaining trench samples. This modified plan called for a sample to be taken every mile. Each sample was taken by removing all soil in a strip 30 inches across the trench and one inch square in cross-sectional area. All soil sampled at each site was mixed in a container and a pint jar filled from material in the container. This proved to be an effective sampling technique and is recommended for sampling of this type.

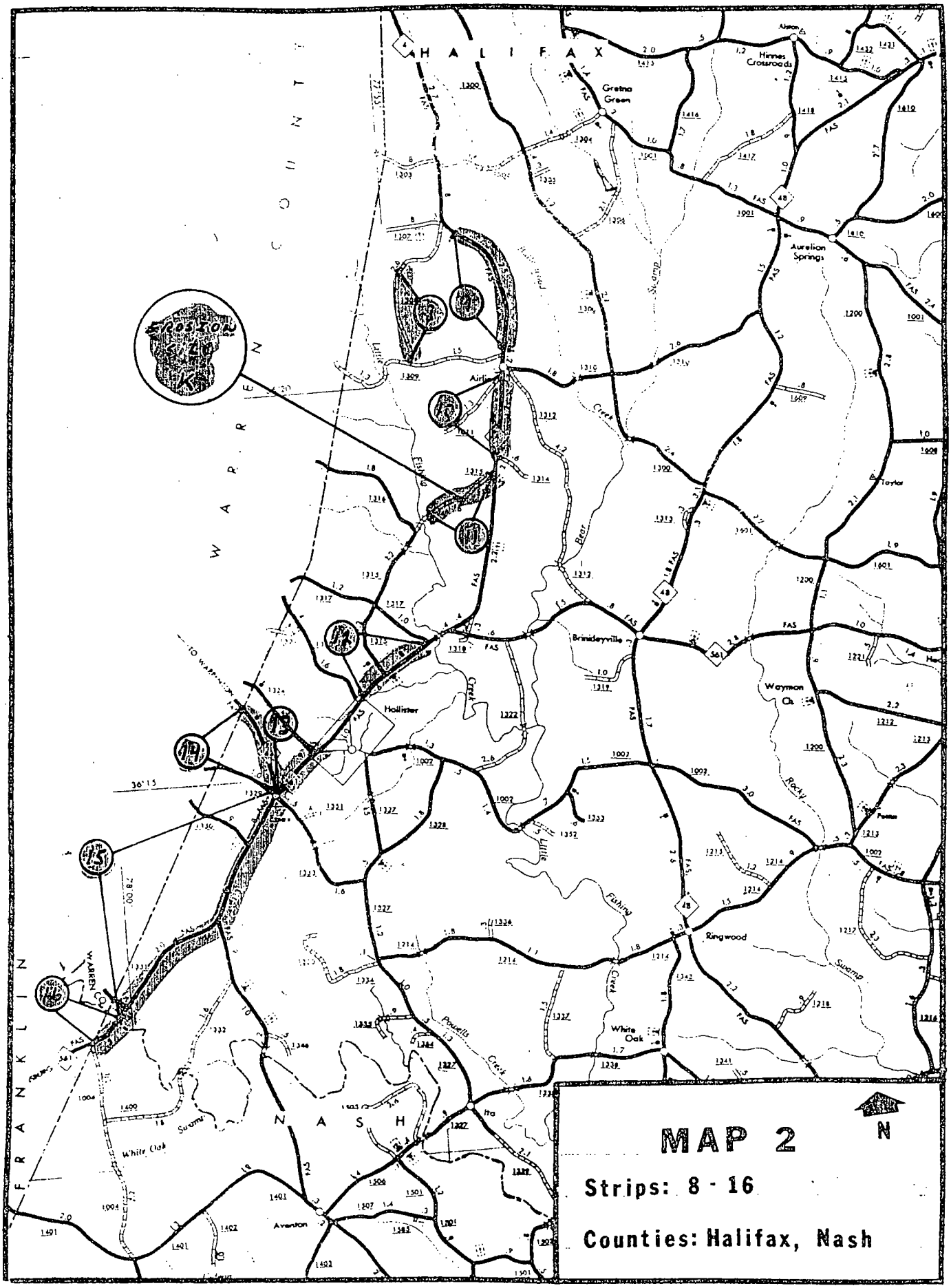
Maps showing locations of the trench samples are contained in Appendix 3, and a description and laboratory results are contained in Appendix 4. The same station and 212D numbers were used for trench samples, and laboratory printouts on these results are available in DEM Central Files. If trench sampling showed elevated PCB levels, additional soil was removed and the area resampled. Where a trench area had been refilled, the area was first resampled, and if elevated samples were found, additional soil was picked up and the area resampled.

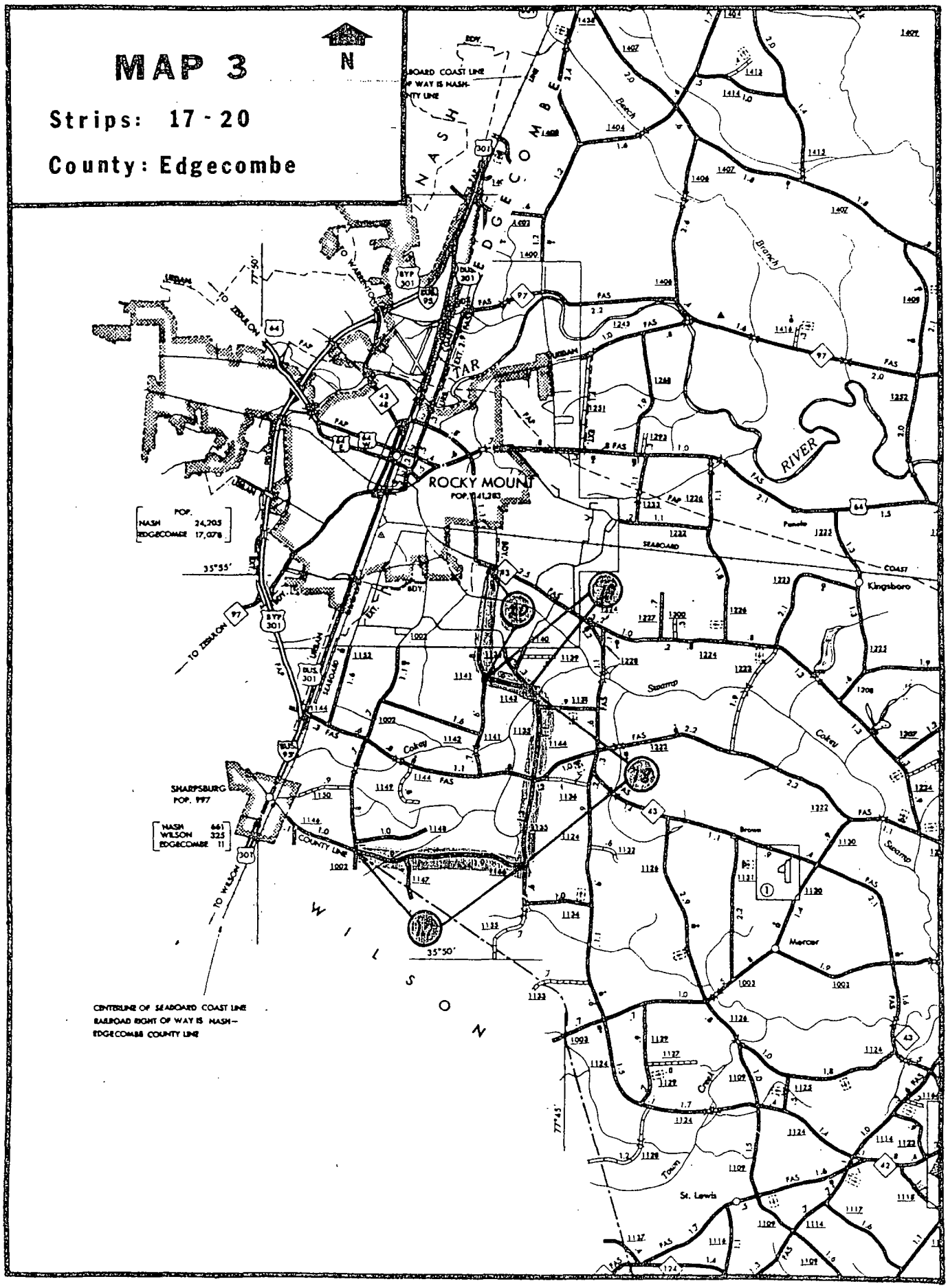
Project Records

The Division of Environmental Management has been involved with the PCB project since the material was first discharged in 1978. All division records on this project are being placed in the division's central files, and from there will be properly archived in accordance with appropriate schedules.

cc: Paul Wilms


MAP 1
N
Strips: 1 - 7
County: Nash
TO LOUISBURG
CASTALIA
POP. 358
Taylors Store
St. Delight Ch.
Tumbling Run
Lancaster Crossroads
Matthews Crossroads
Dukes
RED OAK
POP. 314
Suttons Store
Peachtree Branch
Edwards Crossroads
Pleasant Grove Ch.
Corinth
Union Hill Ch.
Burns Chp.
Stoney Cr.
Basket Creek
Bass Crossroads
NASHVILLE
POP. 3,028
Momeyer
RAILROAD
Westry
Little Easonburg
COAST
Maple
Little Sapony Creek
Bear Creek
White Oak
Henry Branch
Lamms Crossroads
Langley Crossroads
West Mount
Joyners Crossroads
TAR
Taylors Crossroads
Macedonia Bapt. Ch.
Sandy Cross
Deans Store
Stanhope
Vaughn Ch.
Tucsnot
Strickland Crossroads
RIVER
Little
NASH
Winstead Crossroads
Rocky Mount Wilson Airport
36°05'
78°05'
35°50'

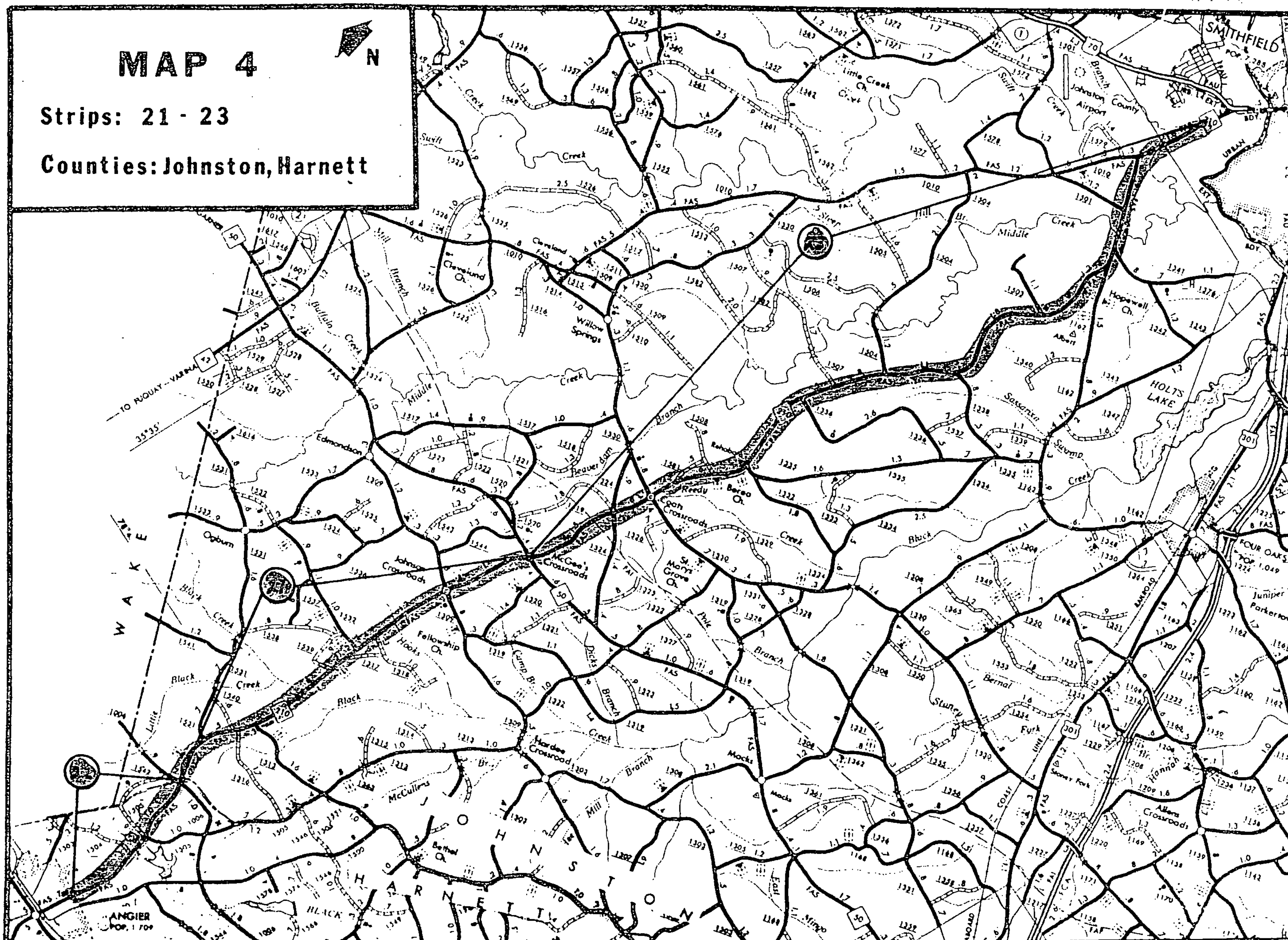

HALIFAX
WARREN COUNTY
FRANKLIN
NASH
Gretna Green
Hinnes Crossroads
Aurelian Springs
Airlie
Taylor
Brinkleyville
Hollister
Waymon Ch.
Ringwood
White Oak
Aventon
Fishing Creek
Rocky Swamp
Powells Creek
Bear Swamp
EROSION SOIL K
MAP 2
Strips: 8 - 16
Counties: Halifax, Nash
N


MAP 3
Strips: 17 - 20
County: Edgecombe
N
NASH
EDGECOMBE
WILSON
TAR
RIVER
ROCKY MOUNT
POP. 41,283
SHARPSBURG
POP. 997
POP.
NASH 24,705
EDGECOMBE 17,078
NASH 661
WILSON 325
EDGECOMBE 11
35°55'
35°50'
77°45'
77°50'
TO ZEBULON
TO WILSON
CENTERLINE OF SEABOARD COAST LINE RAILROAD RIGHT OF WAY IS NASH-EDGECOMBE COUNTY LINE
Kingsboro
Mercer
St. Lewis
Parker
Brown
Swamp
Canal
Branch
SEABOARD COAST LINE
COUNTY LINE

MAP 4

Strips: 21 - 23

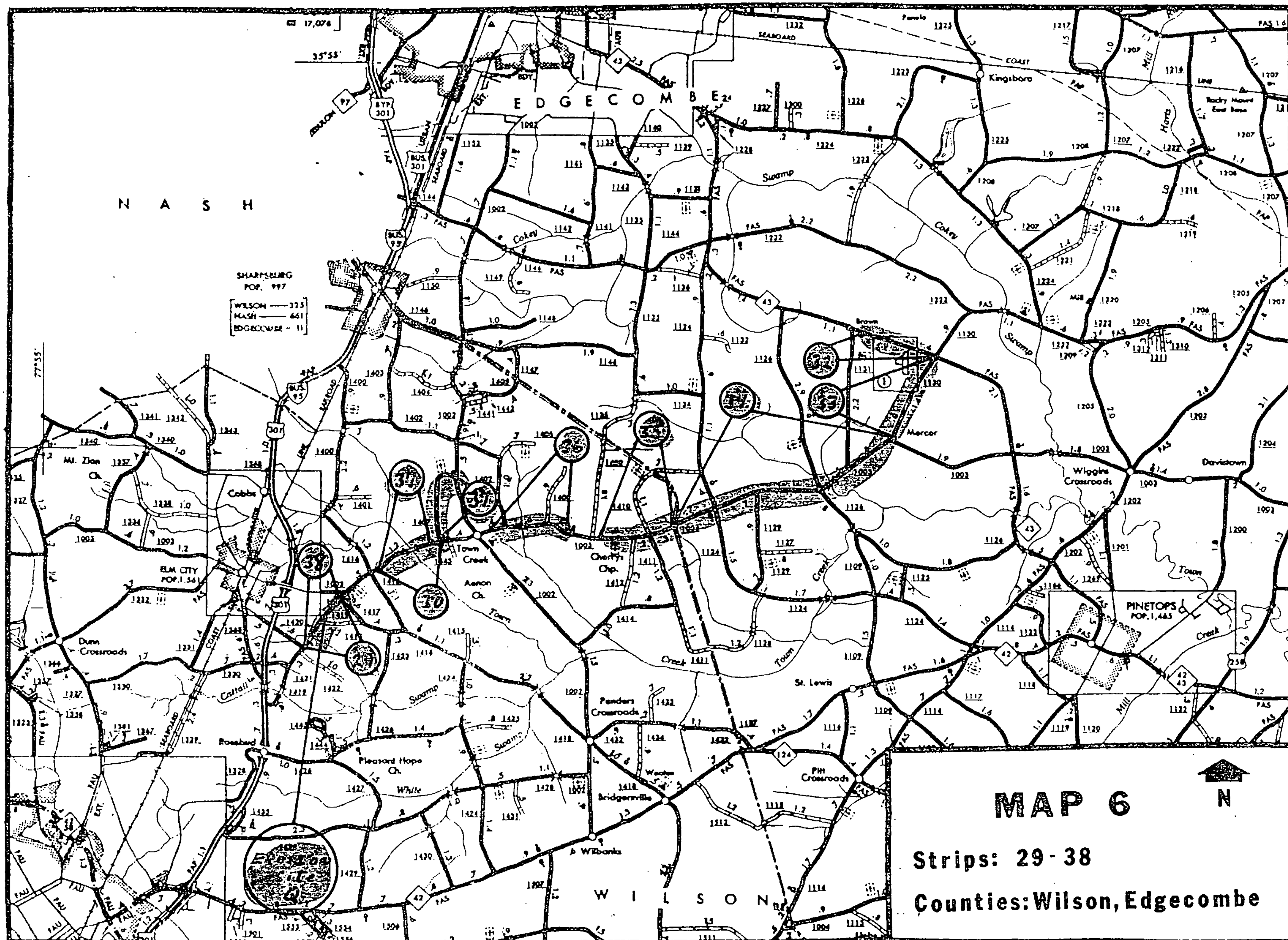
Counties: Johnston, Harnett



MAP 5

Strips: 24 - 28

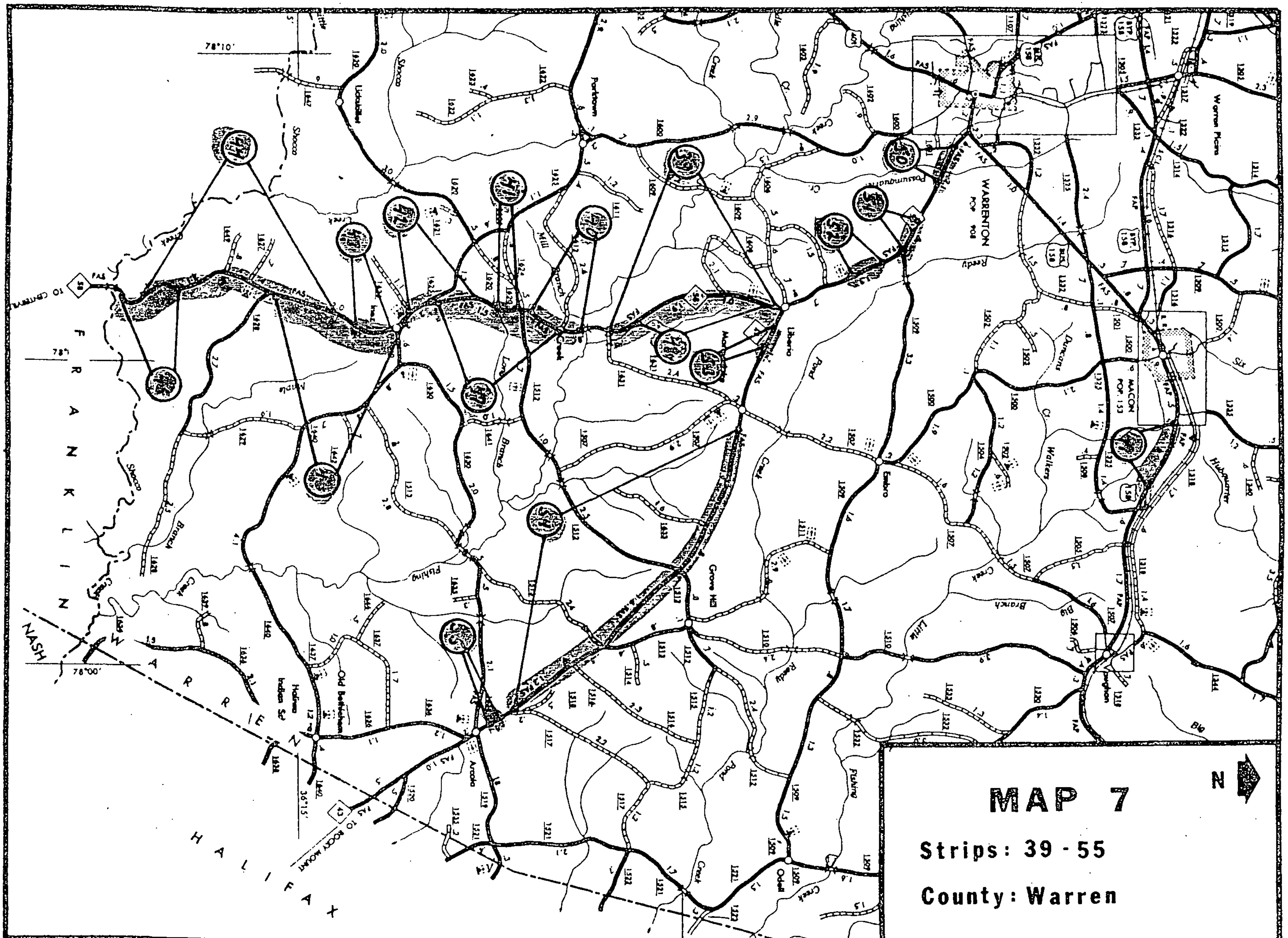
County: Nash



MAP 6

Strips: 29 - 38

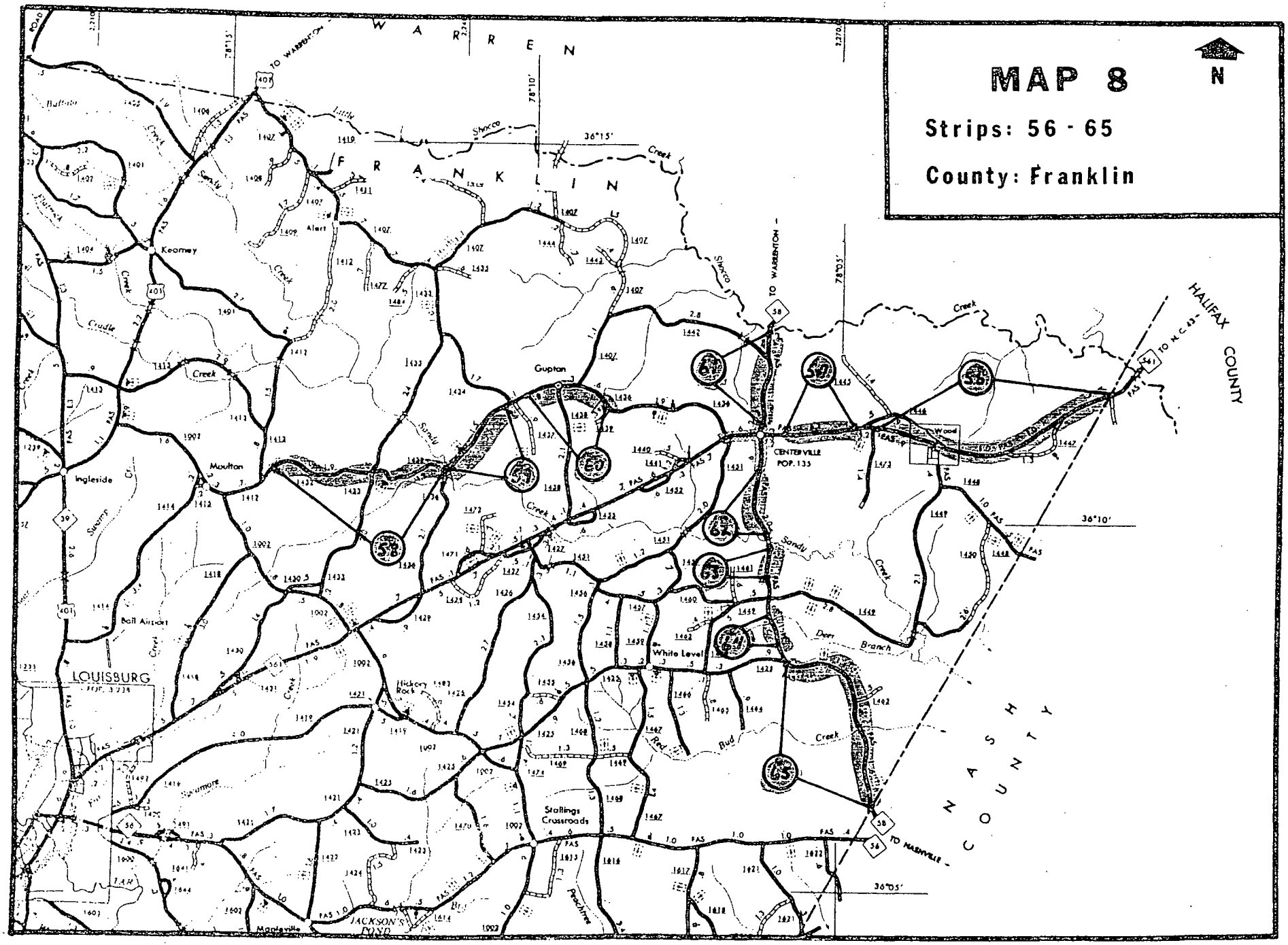
Counties: Wilson, Edgecombe



MAP 7

Strips: 39 - 55

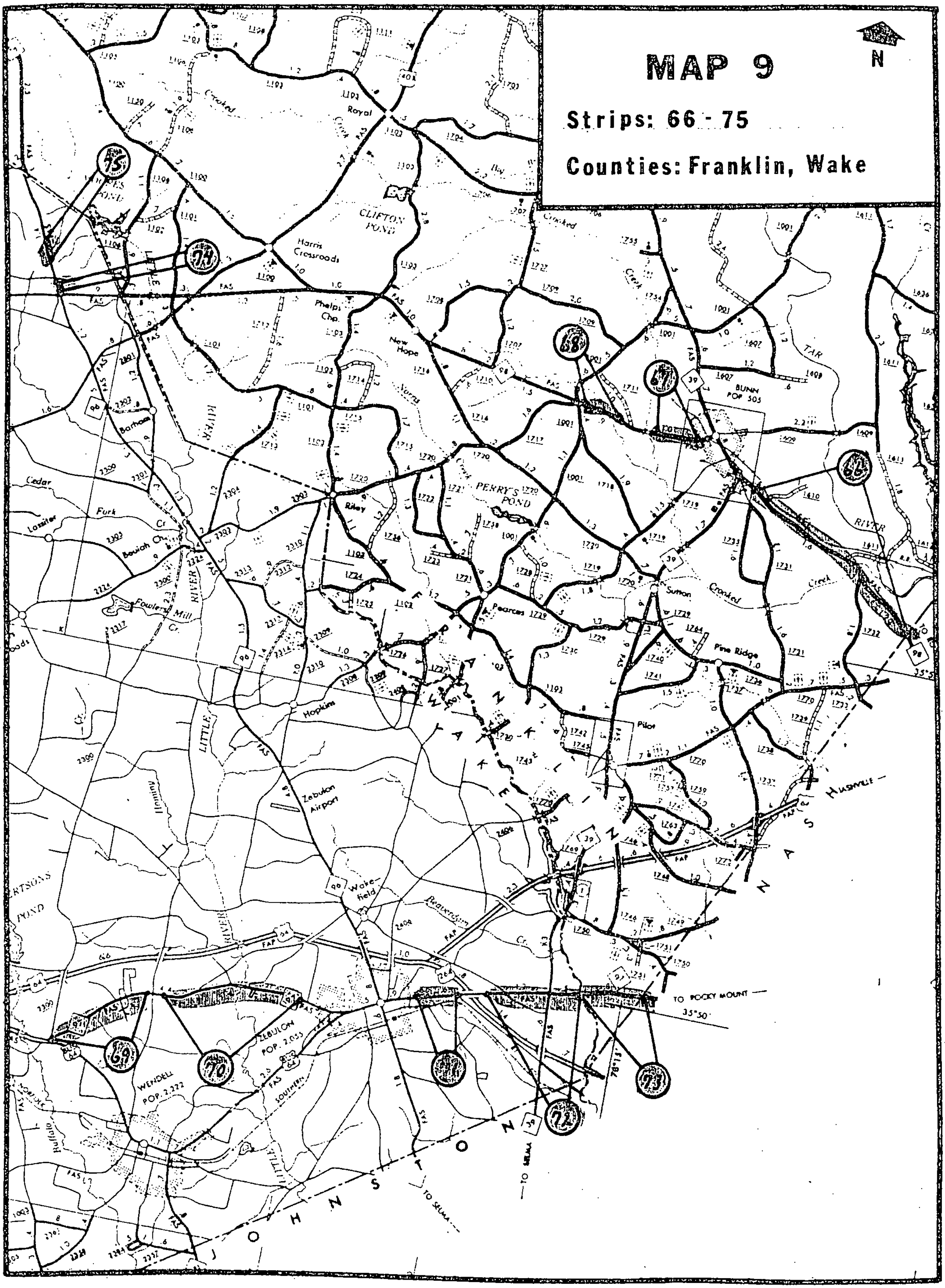
County: Warren

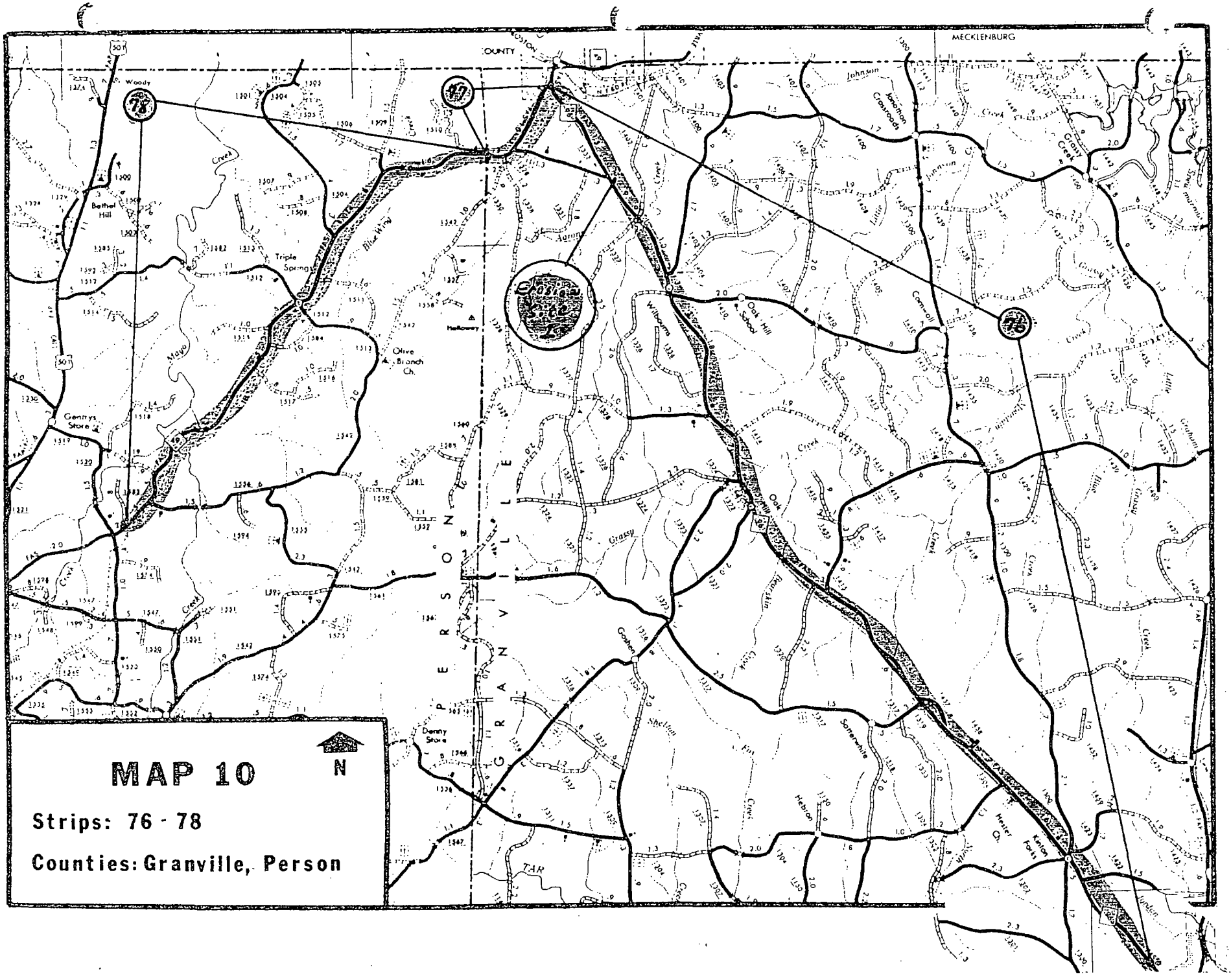

MAP 8
Strips: 56 - 65
County: Franklin
N
WARREN
FRANKLIN
HALIFAX COUNTY
NASH COUNTY
LOUISBURG
POP. 3,228
CENTERVILLE
POP. 135
Gupton
Keamey
Alert
Moulton
Ingleside
Bell Airport
White Level
Stallings Crossroads
Jackson's Pond
Manlyville
Hickory Rock
Wood
TO WARRENTON
TO NASHVILLE
TO N.C. 43
Little Shocco Creek
Shocco Creek
Sandy Creek
Cradle Creek
Swamp Creek
Deer Branch
Red Bud Creek
Peachtree
36°15'
36°10'
36°05'
78°15'
78°10'
78°05'

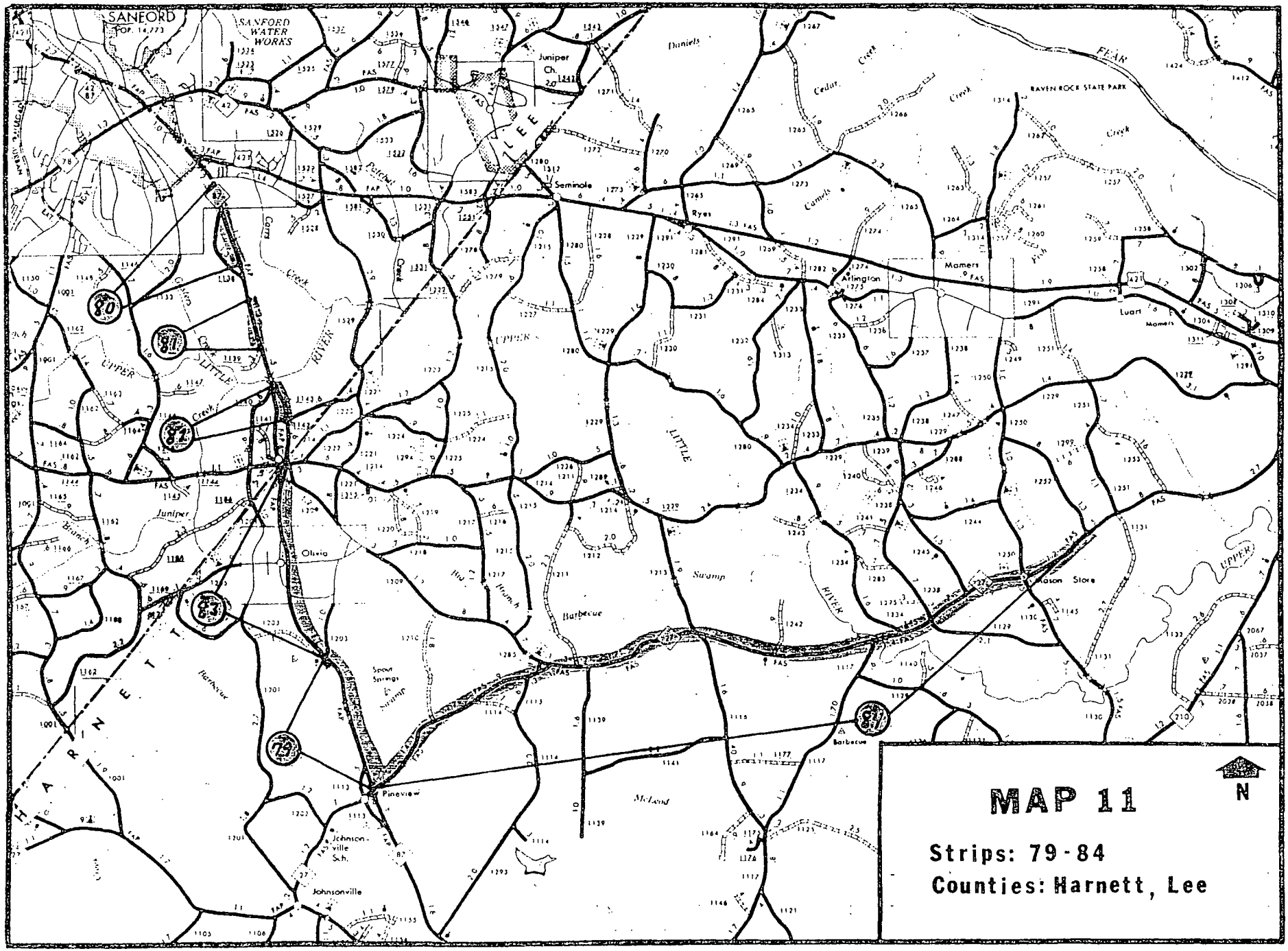
MAP 9

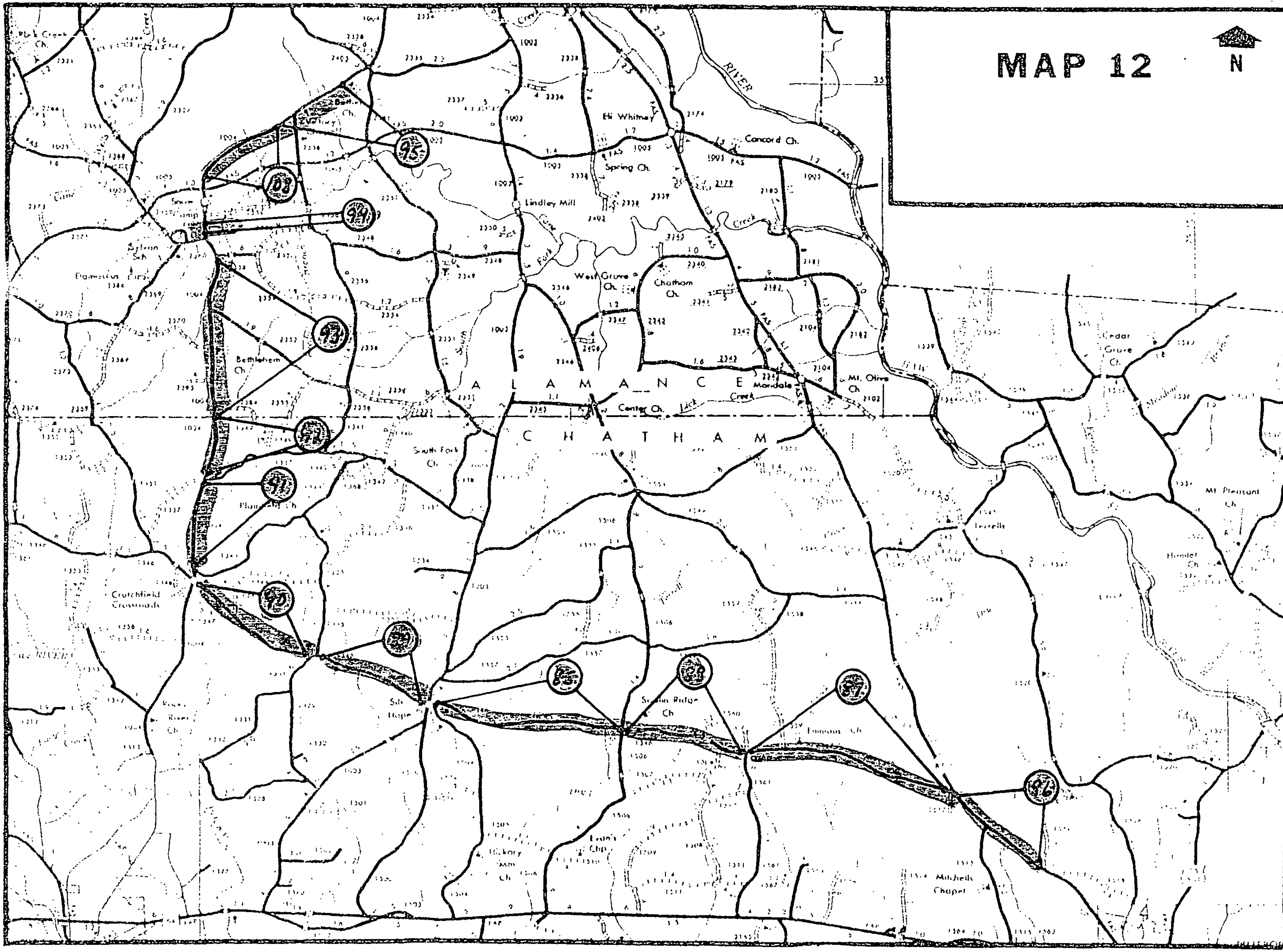
Strips: 66 - 75

Counties: Franklin, Wake




MAP 10
N
Strips: 76 - 78
Counties: Granville, Person
PERSON
GRANVILLE
MECKLENBURG
COUNTY
Woody
Bethel Hill
Triple Springs
Olive Branch Ch.
Gentry's Store
Oak Hill School
Johnson Crossroads
Gentry Store
Goshen
Sheldon
Somerville
Hebron
Heater Ch.
Kenton Forks
Blue Wing
Maple
Grassy
Oak
Tar


SANFORD
POP. 14,773
SANFORD WATER WORKS
Juniper Ch.
Daniels
Cedar Creek
FEAR
RAVEN ROCK STATE PARK
Seminole
Ryes
Camels
Mamers
Arlington
Luart
Carrs Creek
Creek
UPPER LITTLE RIVER
Juniper Branch
Olivia
Barbecue
Swamp
Mason Store
Spout Springs Swamp
Northeast
Pineview
Johnsonville
Johnsonville S.H.
Midland
HARNETT
LEE
MAP 11
Strips: 79-84
Counties: Harnett, Lee
N


MAP 12
N
RIVER
Eli Whitney
Concord Ch.
Spring Ch.
Lindley Mill
West Grove Ch.
Chatham Ch.
Bethlehem Ch.
Cedar Grove Ch.
Mt. Olive Ch.
Mandale
Center Ch.
A L A M A N C E
C H A T H A M
Lick Creek
South Fork Ch.
Crutchfield Crossroads
Mt. Pleasant Ch.
Terrells
Mitchells Chapel
Hickory Mtn Ch.
Evan's Chp.
Sil. Hope
95
103
94
93
92
91
90
89
88
87
86

MAP 13

Strips: 96 - 107

Counties: Chatham, Lee