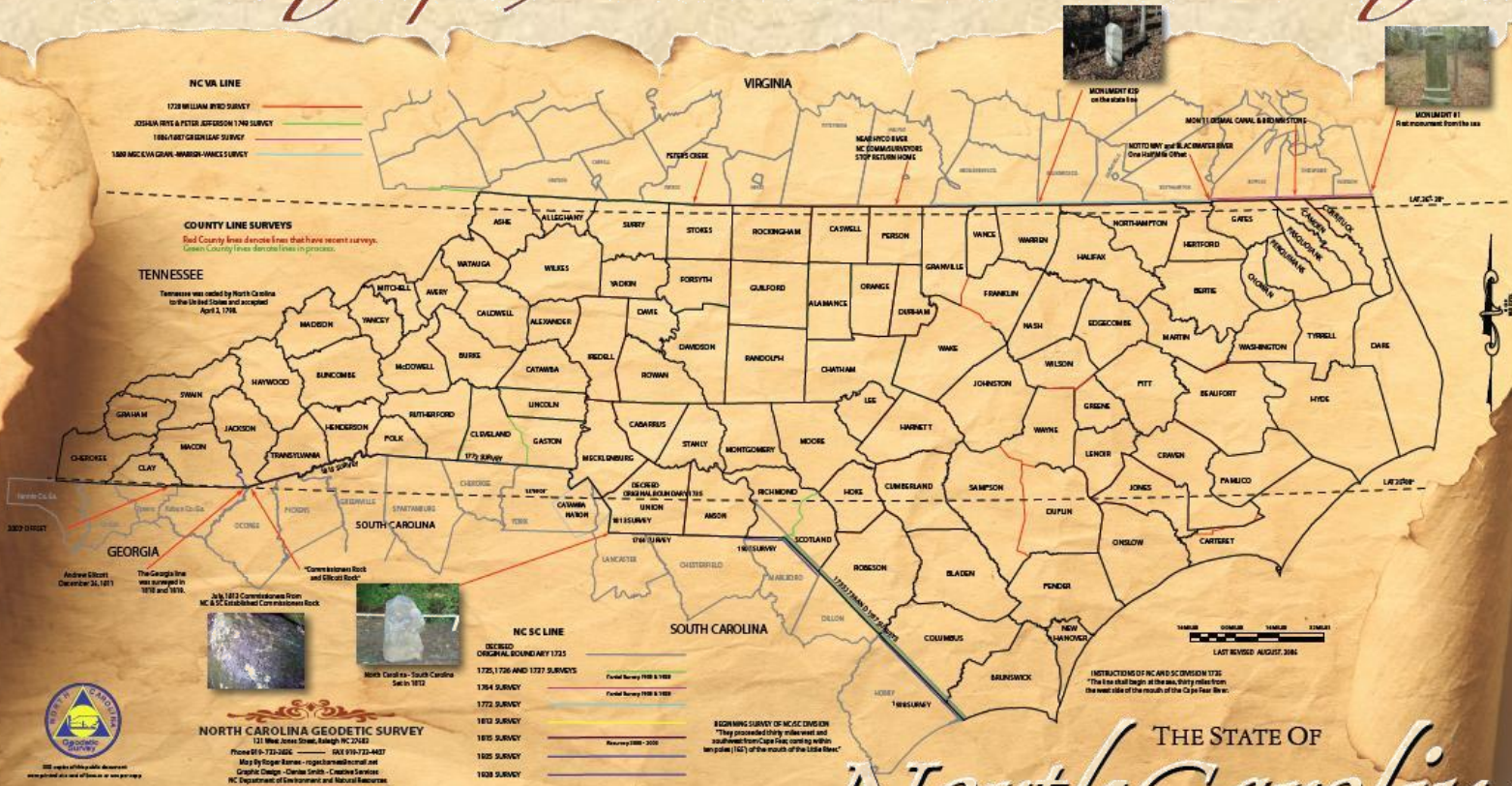




# How did North Carolina get its shape?

## *A History of the Boundaries Surveyed*



100 copies of this public document are printed and of them 5 are per page

**NORTH CAROLINA GEODETIC SURVEY**

111 West Jones Street, Raleigh, NC 27603  
Phone 919-733-2400 FAX 919-733-4457  
Map by Roger Barnes - rjb@ncgs.ncs.state.nc.us  
Graphic Design - Clarissa Smith - Clarissa@ncgs.ncs.state.nc.us  
NC Department of Environment and Natural Resources



# How did North Carolina get its shape?



- **North Carolina/South Carolina boundary**
  - **King George II issued a decree in 1735 that:**

*"The line shall begin at the sea, thirty miles from the west side of the mouth of the Cape Fear River. From thence, it shall run on a northwest course to the thirty-fifth parallel of north latitude [35° North latitude], and from thence due west to the South Seas."*





# How did North Carolina get its shape?



LEGEND	
---	Boundary agreed upon by the provinces of South Carolina and North Carolina and approved by Crown
<b>Surveys</b>	
Red line	1735 - 1737
Purple line	1764
Green line	1772
Orange line	1813
Dark blue line	1815
Light green line	1905
Cyan line	1928

The line shall:

1. Begin at the sea, 30 miles from the west side of the mouth of the Cape Fear River
2. From thence, it shall run on a northwest course to 35° N latitude
3. From thence due west to the South Seas



# Chapter 141

## State Boundaries

---

### § 141-1. Governor to cause boundaries to be established and protected.

The Governor of North Carolina is hereby authorized to appoint two competent commissioners and a surveyor and a sufficient number of chainbearers, on the part of the State of North Carolina, to act with the commissioners or surveyors appointed or to be appointed by any of the contiguous states of Virginia, Tennessee, South Carolina, and Georgia, to return and remark, by some permanent monuments at convenient intervals, not greater than five miles, the boundary lines between this State and any of the said states.

The Governor is also authorized, whenever in his judgment it shall be deemed necessary to protect or establish the boundary lines between this State and any other state, to institute and prosecute in the name of the State of North Carolina any and all such actions, suits, or proceedings at law or in equity, and to direct the Attorney General or such other person as he may designate to conduct and prosecute such actions, suits, or proceedings. (1881, c. 347, s. 1; Code, s. 2289; 1889, c. 475, s. 1; Rev., s. 5315; 1909, c. 51, s. 1; C.S., s. 7396.)

### § 141-2. Payment of expenses of establishing boundaries.

When the line has been rerun and remarked as above provided between this State and any of the contiguous states, or such portion of said lines as shall be mutually agreed by the commissioners, the Governor is authorized to issue his warrant upon the State Treasurer for such portion of the expenses as shall fall to the share of this State. (1881, c. 347, s. 2; Code, s. 2290; 1889, c. 475, s. 2; Rev., s. 5316; C.S., s. 7397.)

### § 141-3. Appointment of arbitrators.

If any disagreement shall arise between the commissioners, the Governor of this State is hereby authorized to appoint arbitrators to act with similar officers to be appointed by the other states in the settlement of the exact boundary. (1881, c. 347, s. 3; Code, s. 2291; 1889, c. 475, s. 3; Rev., s. 5317; C.S., s. 7398.)

### § 141-4. Disagreement of arbitrators reported to General Assembly.

In case of any serious disagreement and inability on the part of the said arbitrators to agree upon said boundary, such fact shall be reported by the Governor to the next General Assembly for their action. (1881, c. 347, s. 4; Code, s. 2292; 1889, c. 475, s. 4; Rev., s. 5318; C.S., s. 7399.)

### § 141-5. Approval of survey.

When the commissioners shall have completed the survey, or so much as shall be necessary, they shall report the same to the Governor, who shall lay the same before the Council of State; and when the Governor and the Council of State shall have approved the same the Governor shall issue his proclamation, declaring said lines to be the true boundary line or lines, and the same shall be the true boundary line or lines between this and the states above referred to. (1881, c. 347, s. 5; Code, s. 2293; 1889, c. 475, s. 5; Rev., s. 5319; C.S., s. 7400.)

### § 141-6. Eastern boundary of State; jurisdiction over territory within littoral waters and lands under same.

- (a) The Constitution of the State of North Carolina, adopted in 1868, having provided in Article I, Sec. 34, that the "limits and boundaries of the State shall be and remain as they now are," and the eastern limit and boundary of the State of North Carolina on the Atlantic seaboard having always been, since the Treaty of Peace with Great Britain in 1783 and the Declaration of Independence of July 4, 1776, one marine league eastward from the Atlantic seashore, measured from the extreme low-water mark, the eastern boundary of the State of North Carolina is hereby declared to be fixed as it has always been at one marine league eastward from the seashore of the Atlantic Ocean bordering the State of North Carolina, measured from the extreme low-water mark of the Atlantic Ocean seashore aforesaid.
- (b) The State of North Carolina shall continue as it always has to exercise jurisdiction over the territory within the littoral waters and ownership of the lands under the same within the boundaries of the State, subject only to the jurisdiction of the federal government over navigation within such territorial waters.
- (c) The Governor and the Attorney General are hereby directed to take all such action as may be found appropriate to defend the jurisdiction of the State over its littoral waters and the ownership of the lands beneath the same. (1947, c. 1031, ss. 1-3; 1969, c. 541, s. 1.)

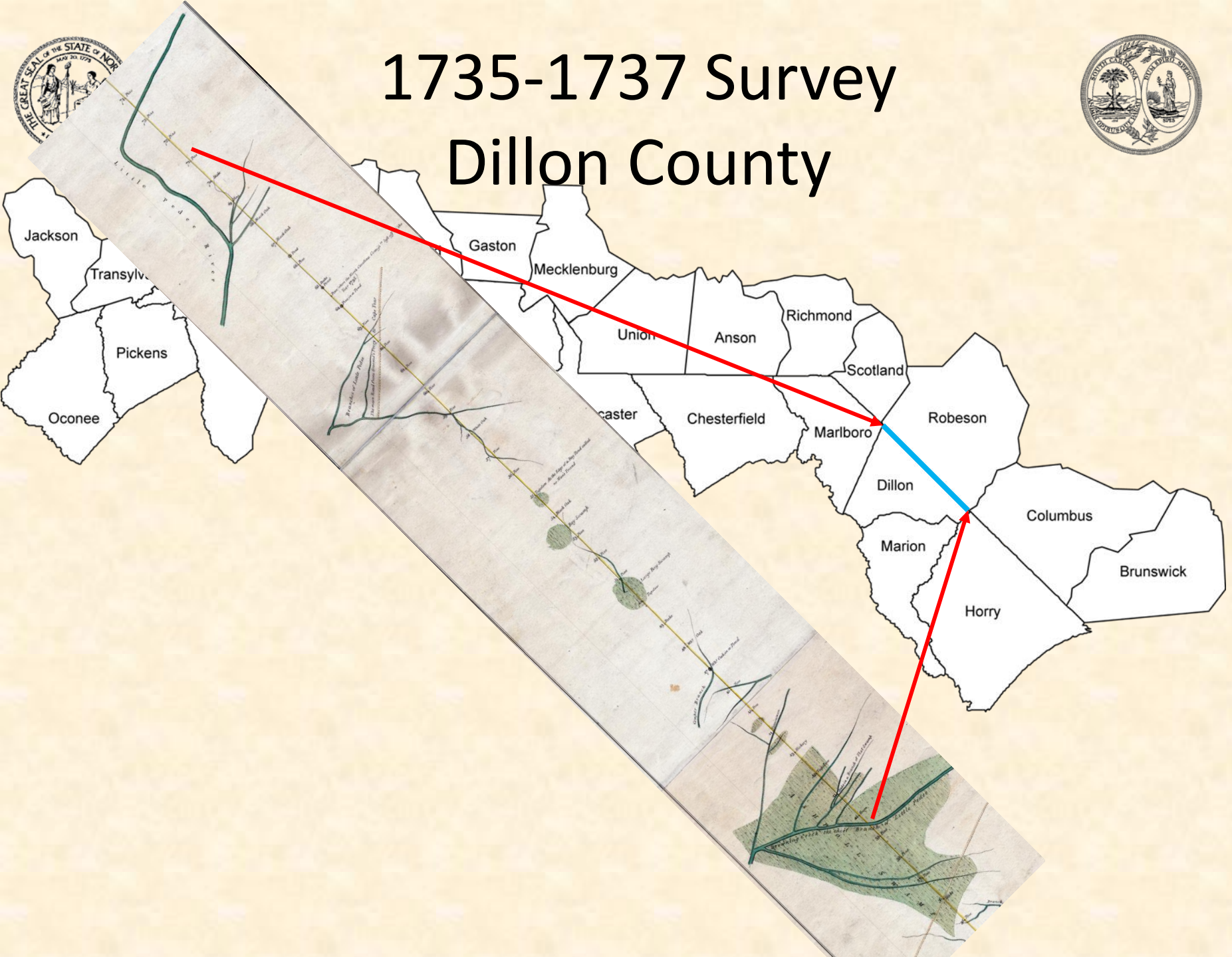


# 1735-1737 Survey





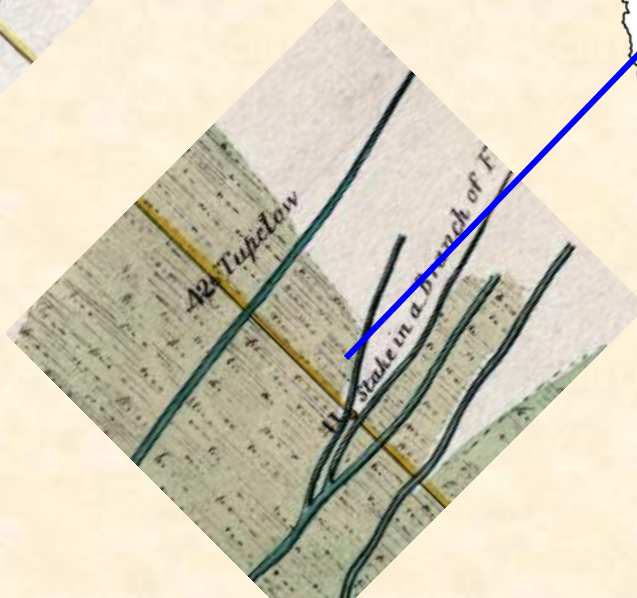
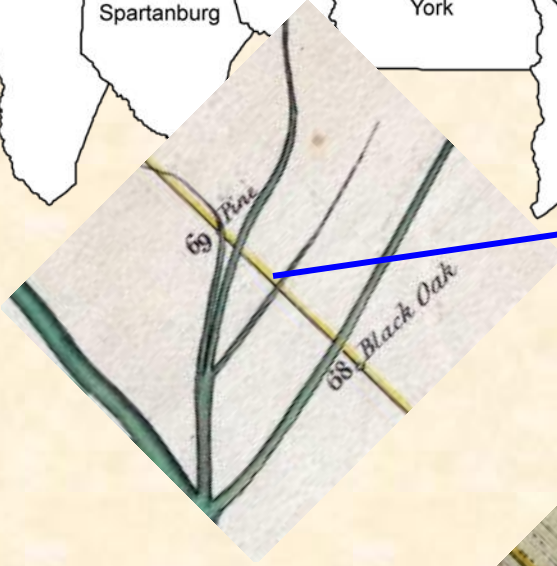
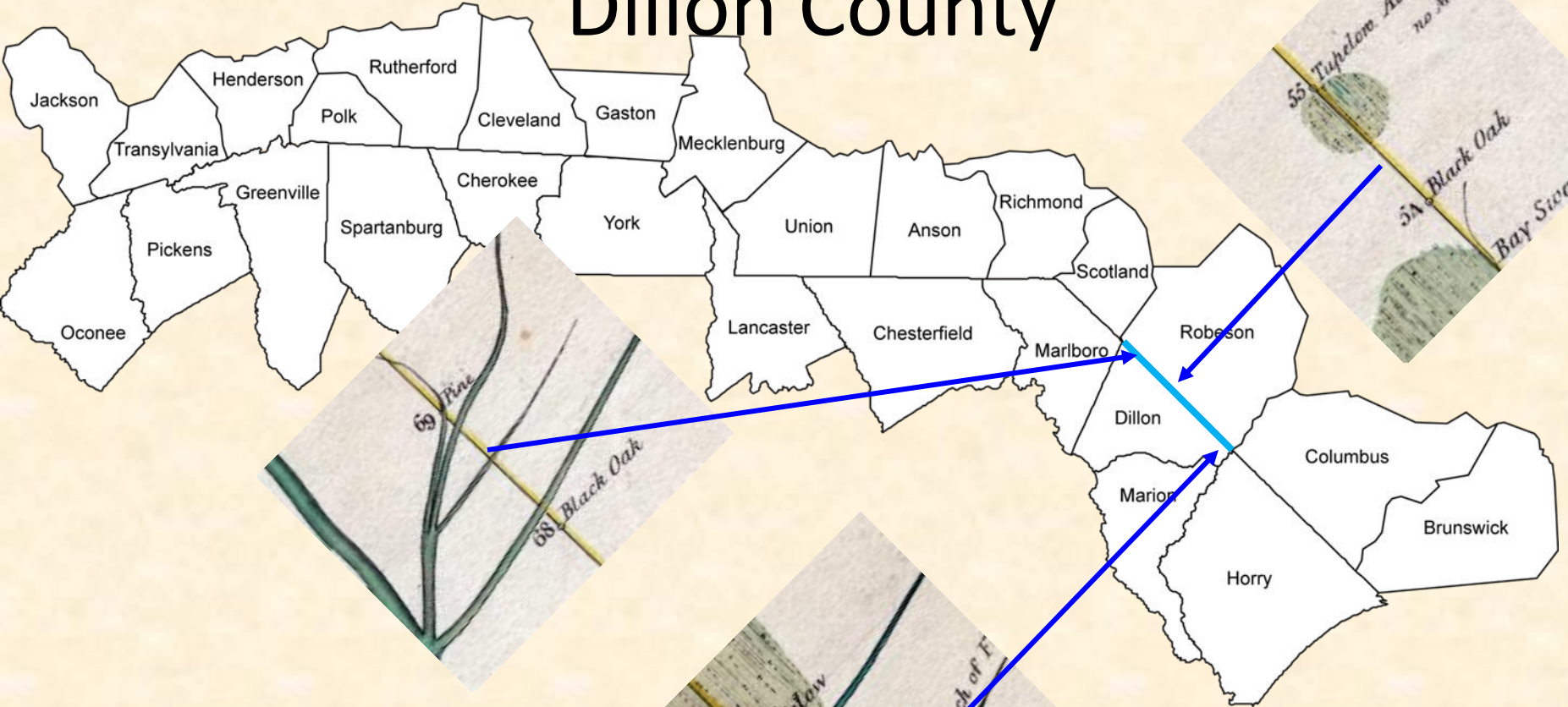
# 1735-1737 Survey Dillon County



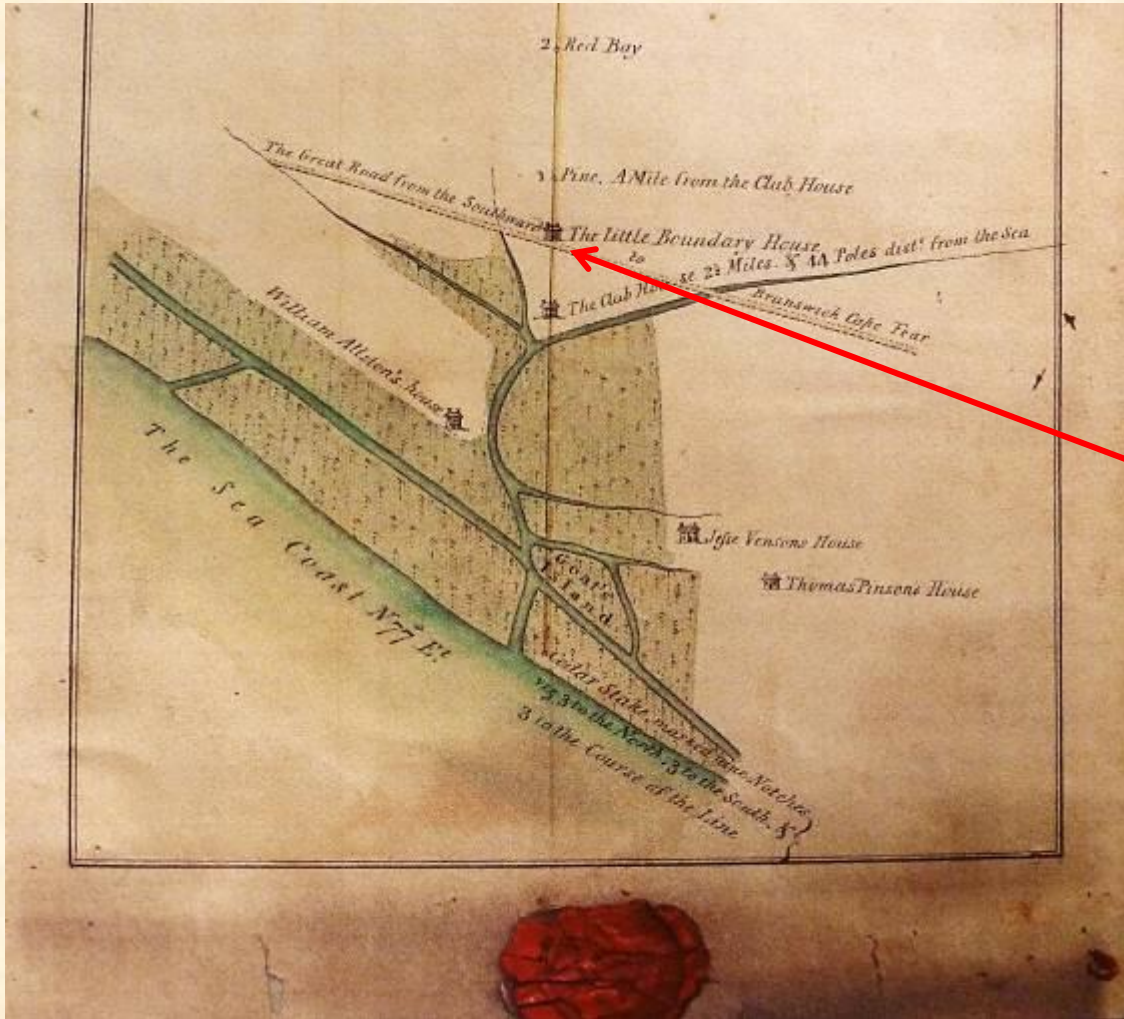




# 1735-1737 Survey Dillon County



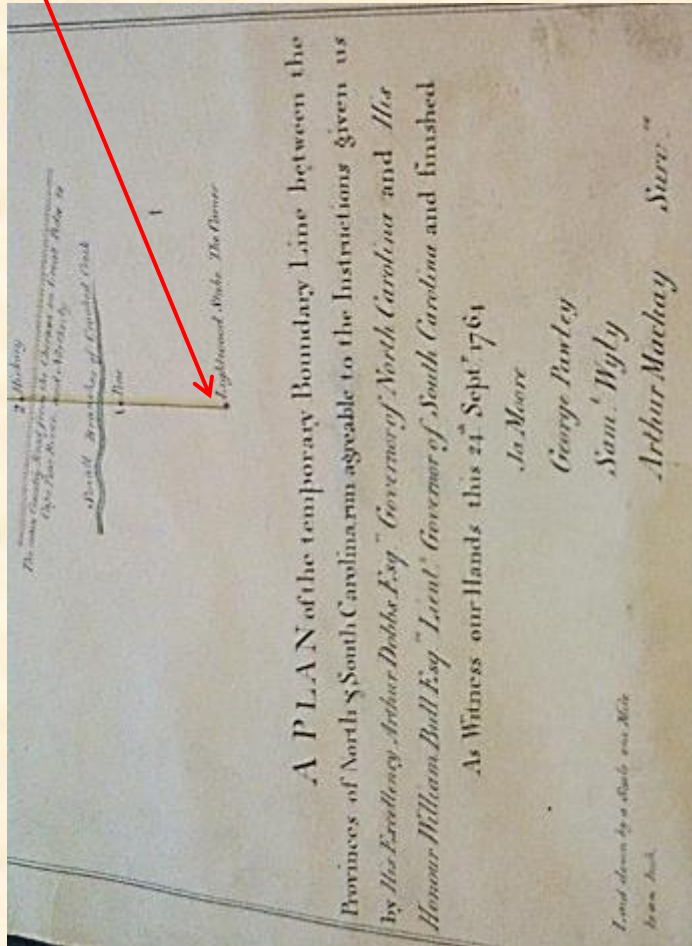
# THE LITTLE BOUNDARY HOUSE



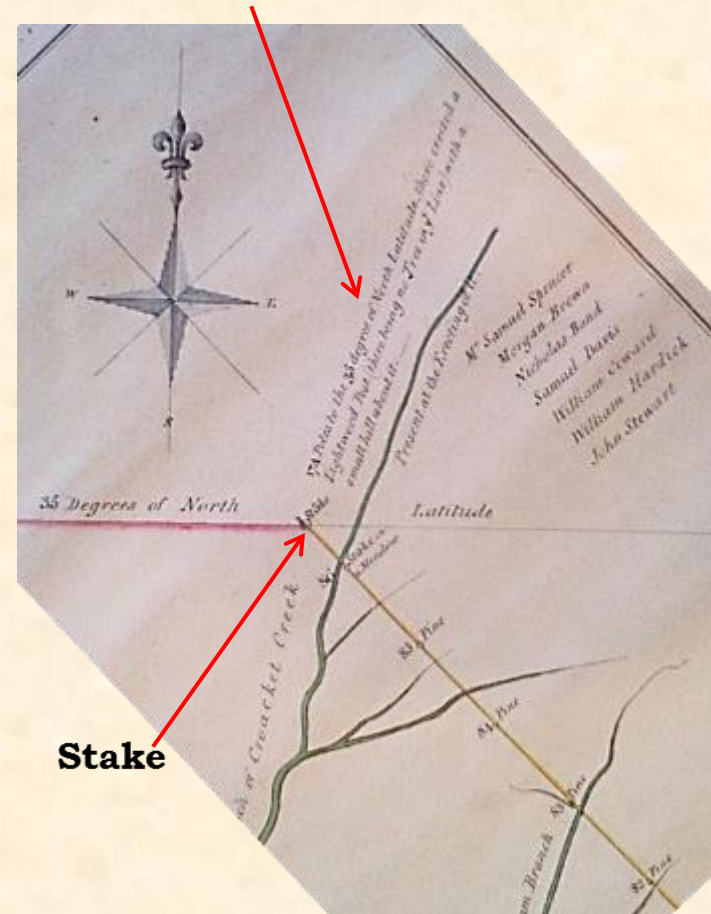


# EASTERN ENDPOINT OF THE 1764 SURVEY

Lightwood Stake The Corner

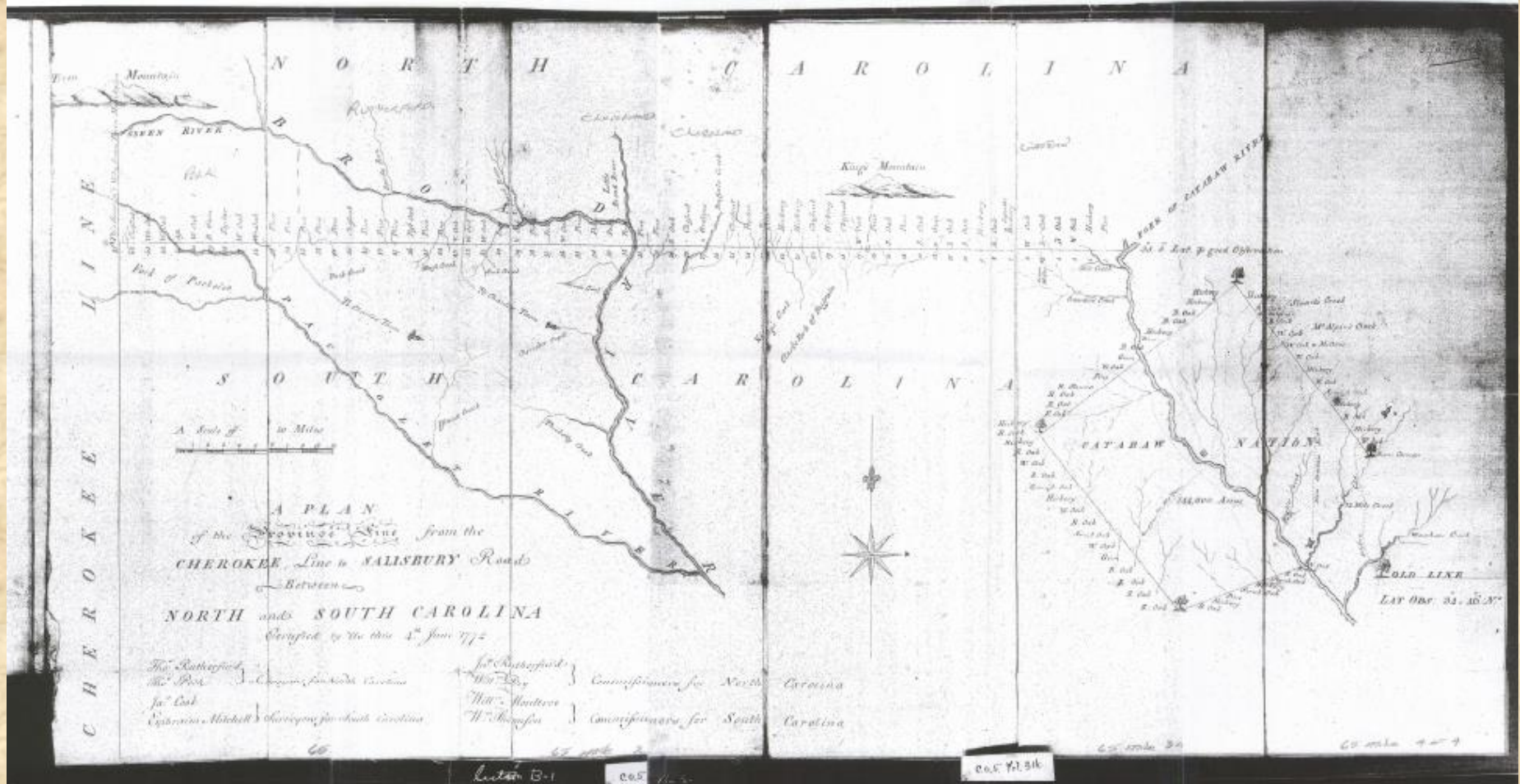


174 Poles to the 35 degree of North Latitude, there erected a Lightwood Post (there being no Tree in y<sup>e</sup> line) with a small hill about it.



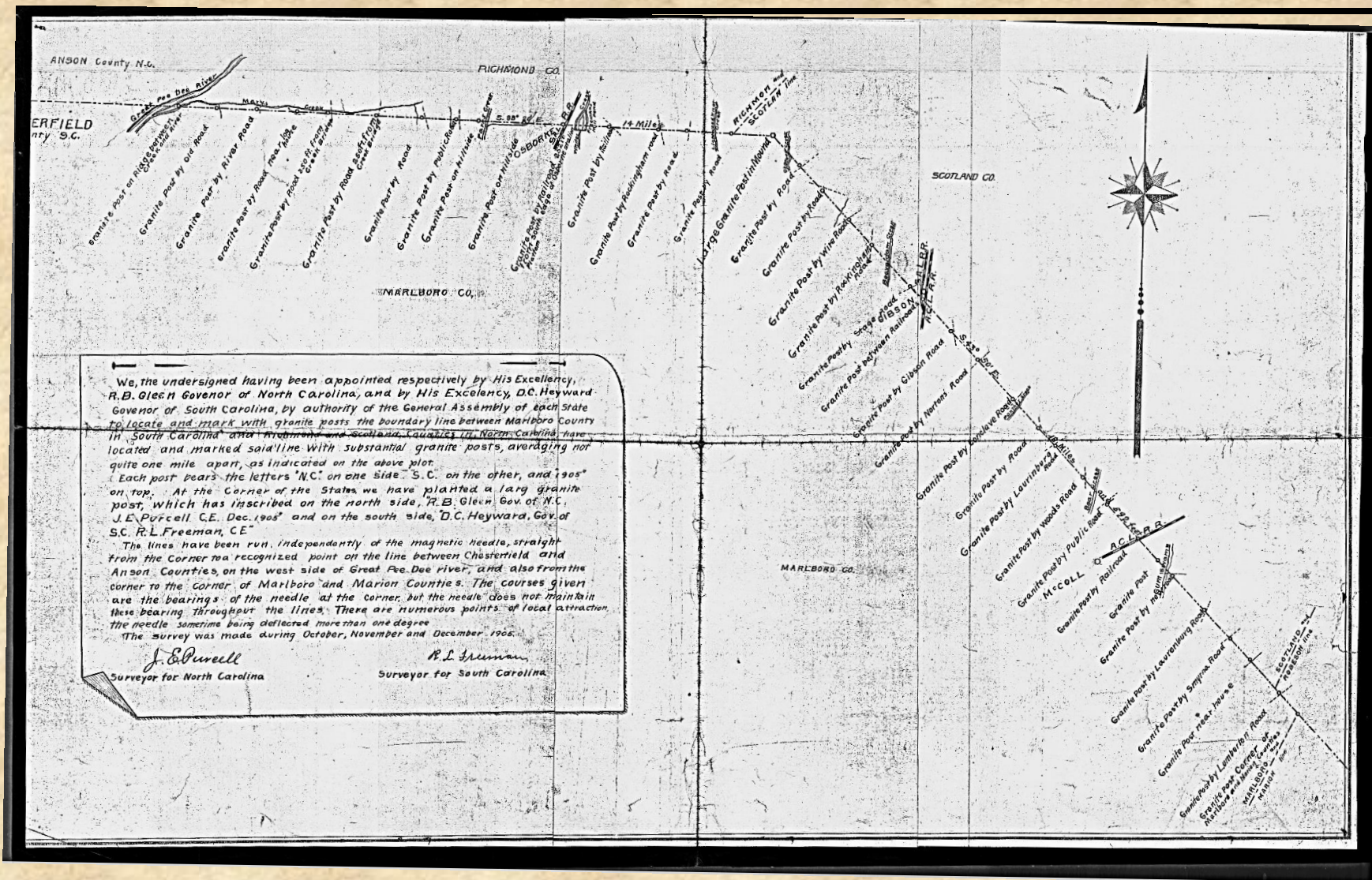
# NORTHWESTERN ENDPOINT OF THE 1735-1737 SURVEY

# 1772 Survey



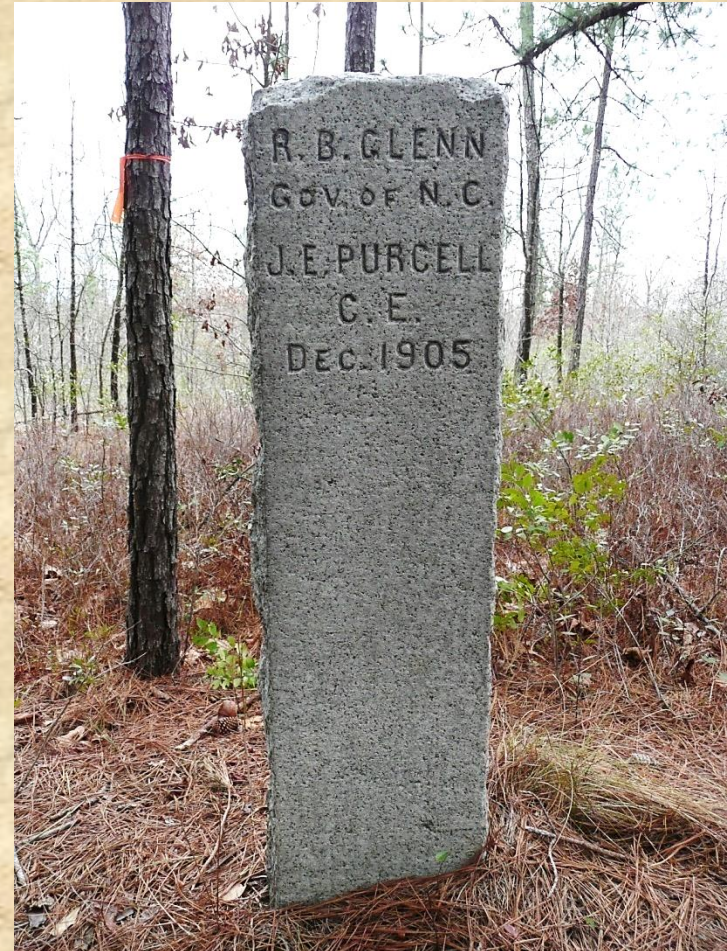


# 1905 SURVEY TO RE-ESTABLISH THE SC - NC BOUNDARY BETWEEN MARLBORO COUNTY, SC AND RICHMOND AND SCOTLAND COUNTIES, NC





# NC-SC Boundary 1905 Survey



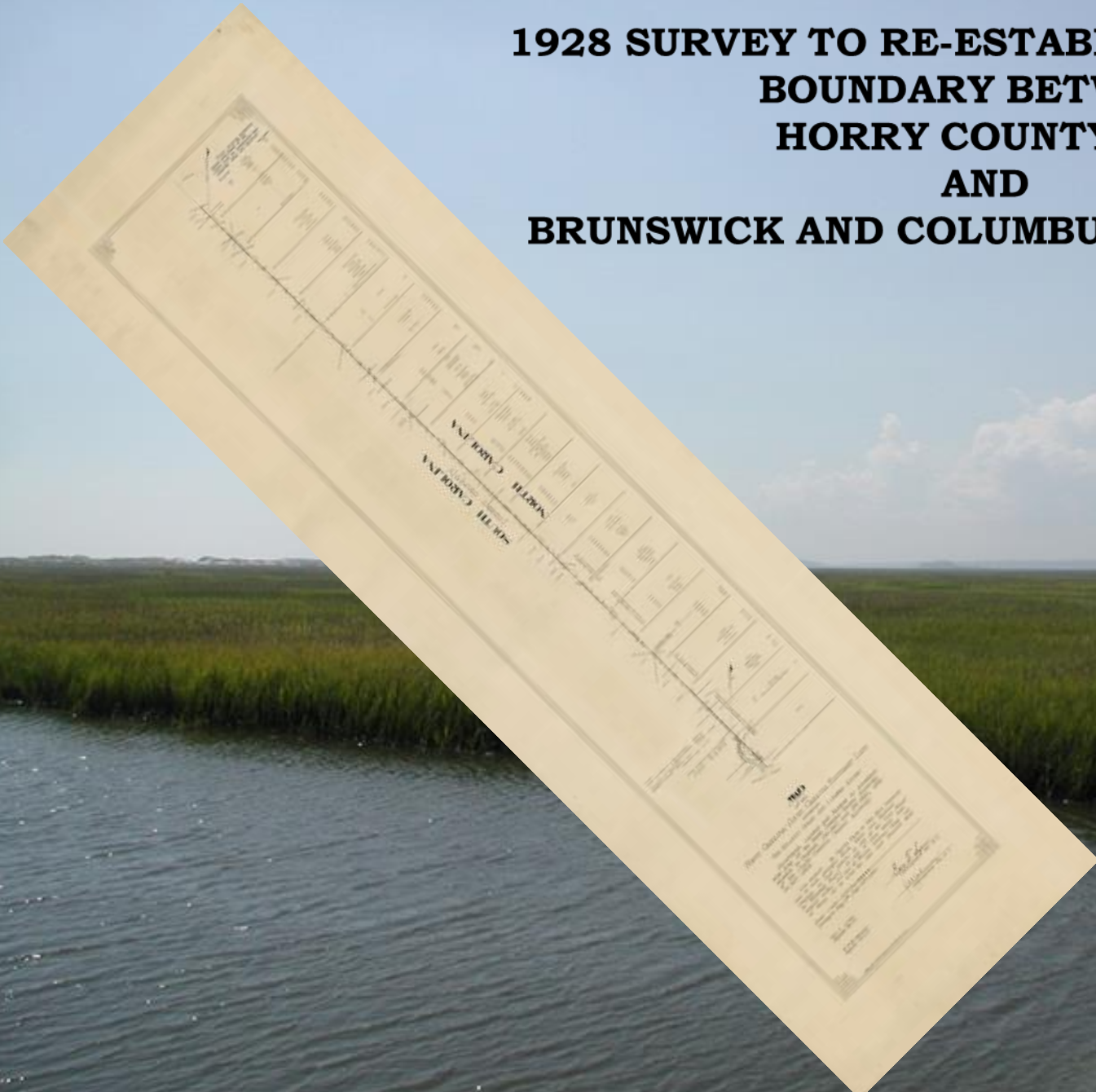


# NC-SC Boundary 1905 Survey



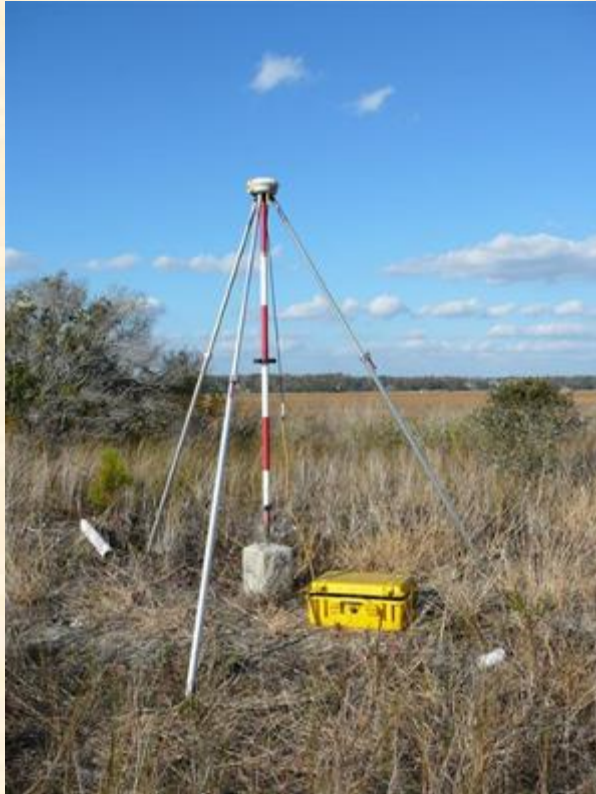


**1928 SURVEY TO RE-ESTABLISH THE SC – NC  
BOUNDARY BETWEEN  
HORRY COUNTY, SC  
AND  
BRUNSWICK AND COLUMBUS COUNTIES, NC**





## **GOAT ISLAND**



**BOUNDARY MON 1 GRANITE NC SC**

**SOUTHEASTERMOST  
1928 GRANITE MONUMENT**

## **MARSH BETWEEN GOAT ISLAND AND MAINLAND**



**BOUNDARY MON 2 GRANITE NC SC**

# GRANITE MONUMENTS SET AT TWO-MILE INTERVALS

## 6 MILE STONE



## 26 MILE STONE







# How did North Carolina get its shape?

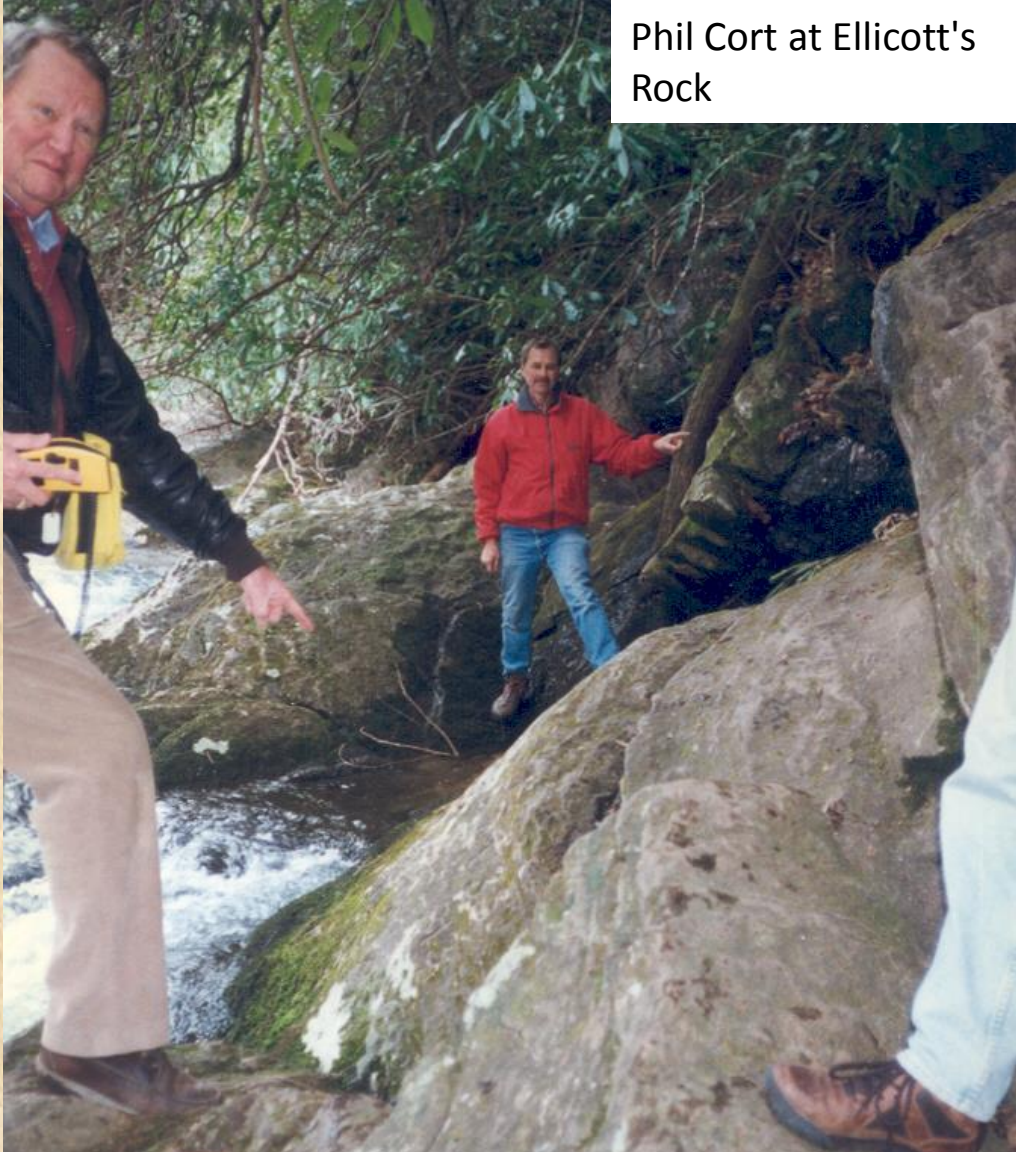


LEGEND	
---	Boundary agreed upon by the provinces of South Carolina and North Carolina and approved by Crown
<b>Surveys</b>	
Red line	1735 - 1737
Purple line	1764
Green line	1772
Orange line	1813
Dark blue line	1815
Light green line	1905
Cyan line	1928

The line shall:

1. Begin at the sea, 30 miles from the west side of the mouth of the Cape Fear River
2. From thence, it shall run on a northwest course to 35° N latitude
3. From thence due west to the South Seas

Phil Cort at Ellicott's  
Rock



Sid Miller at Commissioner's  
Rock







# How did North Carolina get its shape?



- **North Carolina/South Carolina boundary**
  - **1815 survey**

- Proceeded from the terminus of the 1772 survey



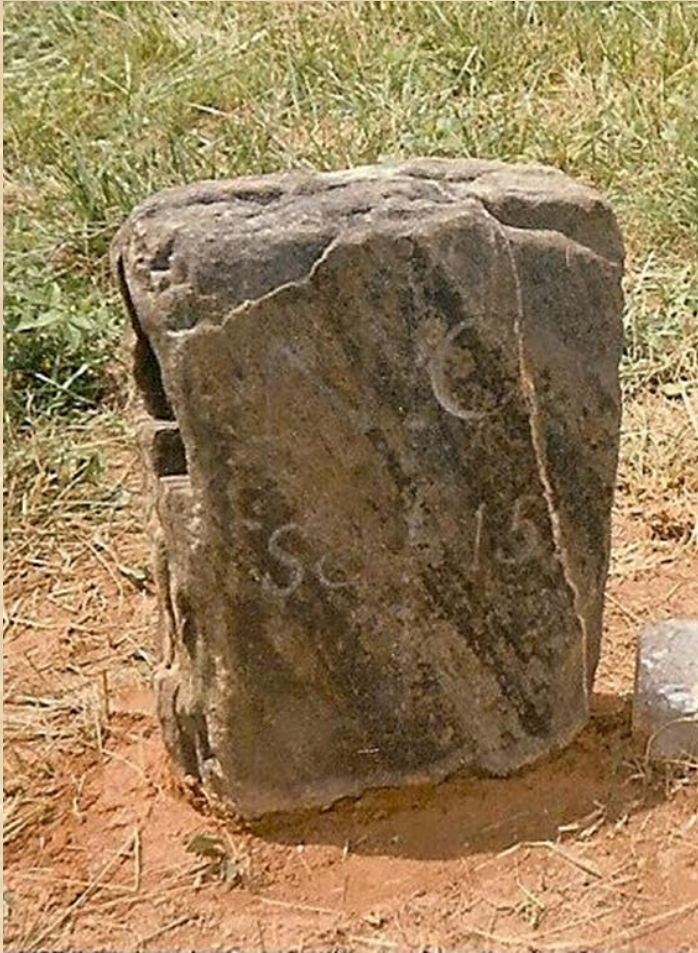
- Along a ridgeline separating two watersheds
- West-southwest to “Commissioners Rock”, which is a rock outcrop on the east bank of the Chattooga River that the NC & SC boundary commissioners had inscribed thinking that it was on the 35<sup>th</sup> parallel

Although Commissioners Rock is 493 ft north of the 35th parallel, it defines a tri-state/quad-county corner:

- **North Carolina:** Henderson and Transylvania counties
- **South Carolina:** Oconee County
- **Georgia:** Rabun County



# Block House Stone







Alex at the NC/SC stones



S C .

A . D . 1815

SC rock



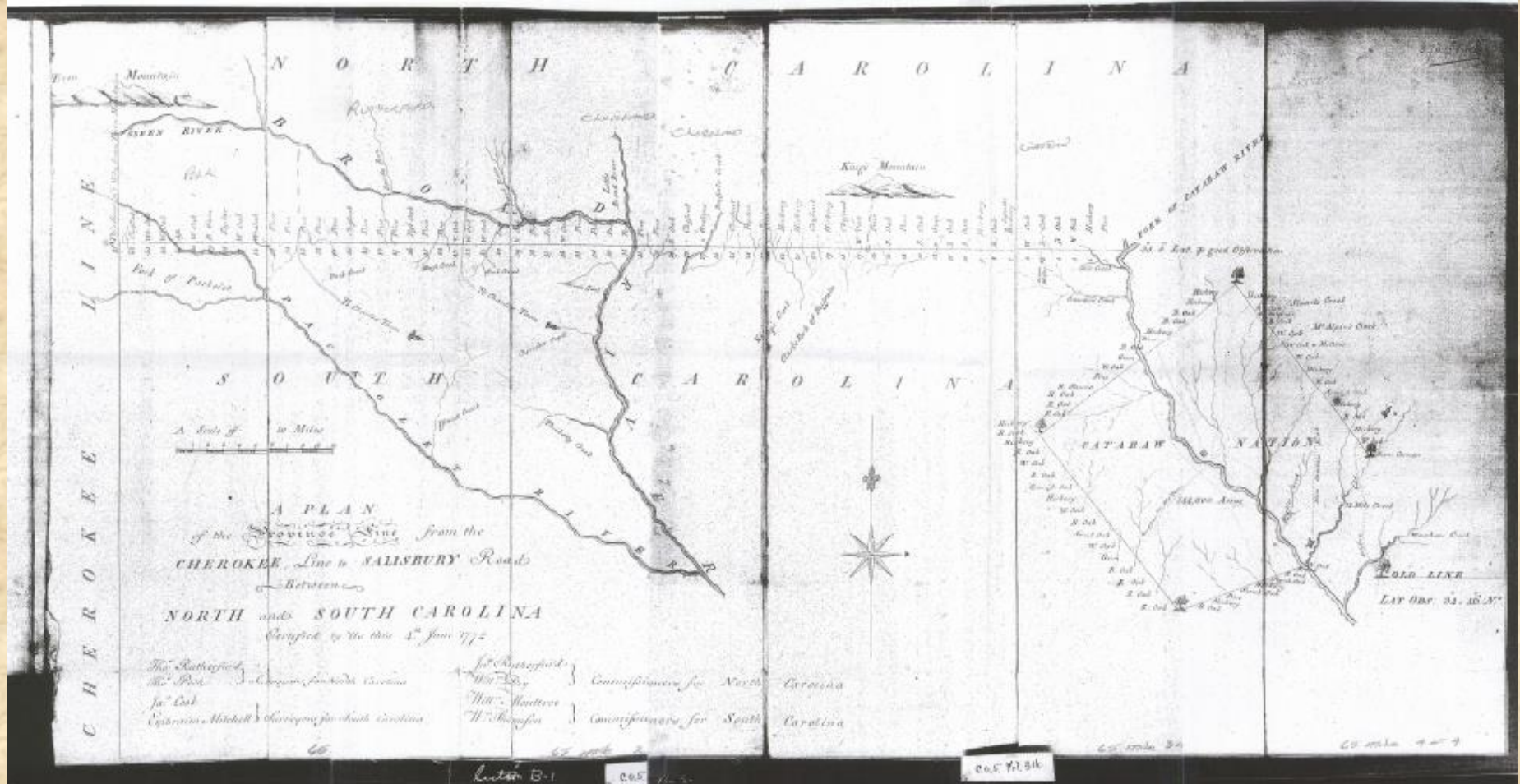


N C

NC rock



# 1772 Survey







# Concurrent Boundary Surveys – Tree 19-22



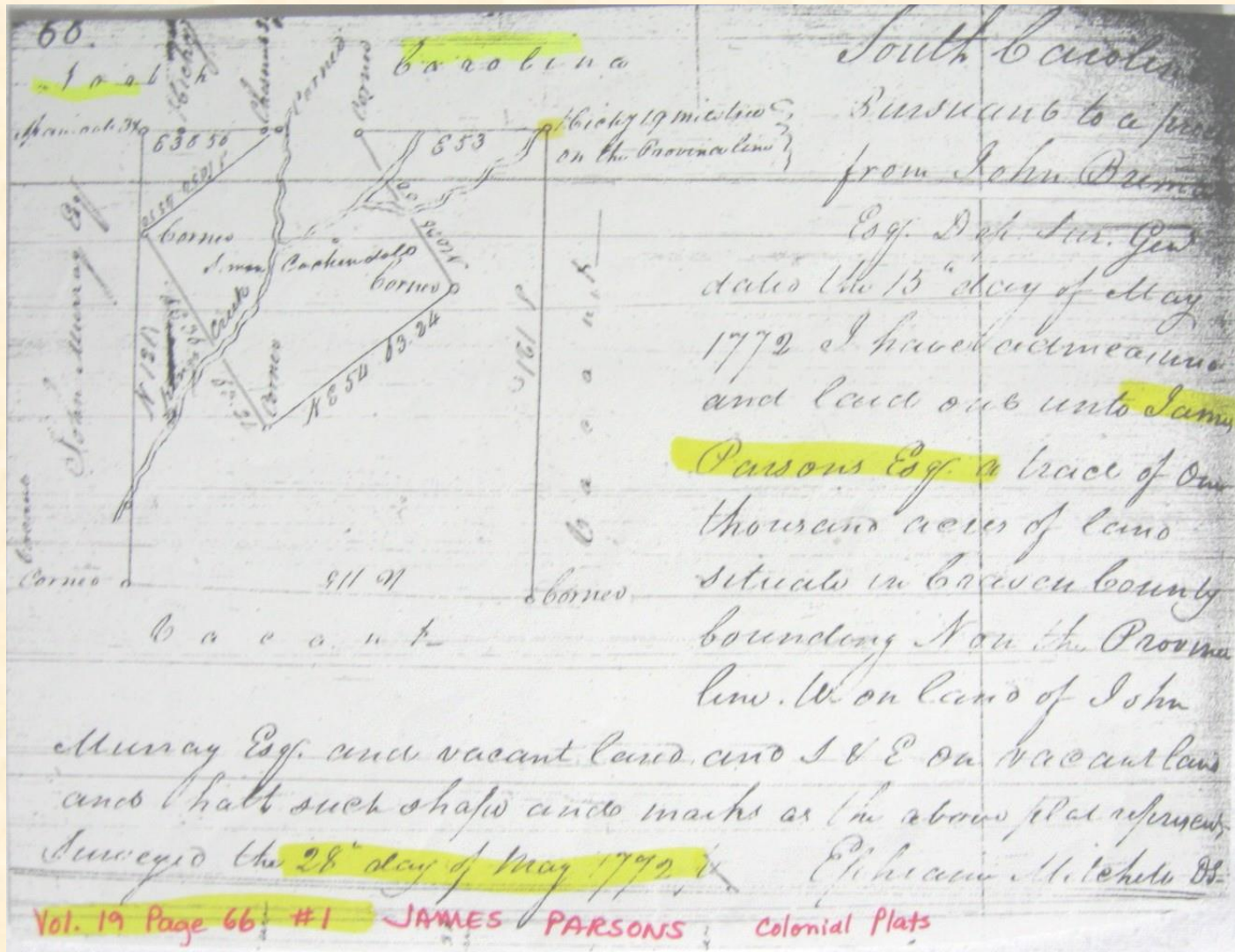
22 Mile Tree



19 Mile Tree



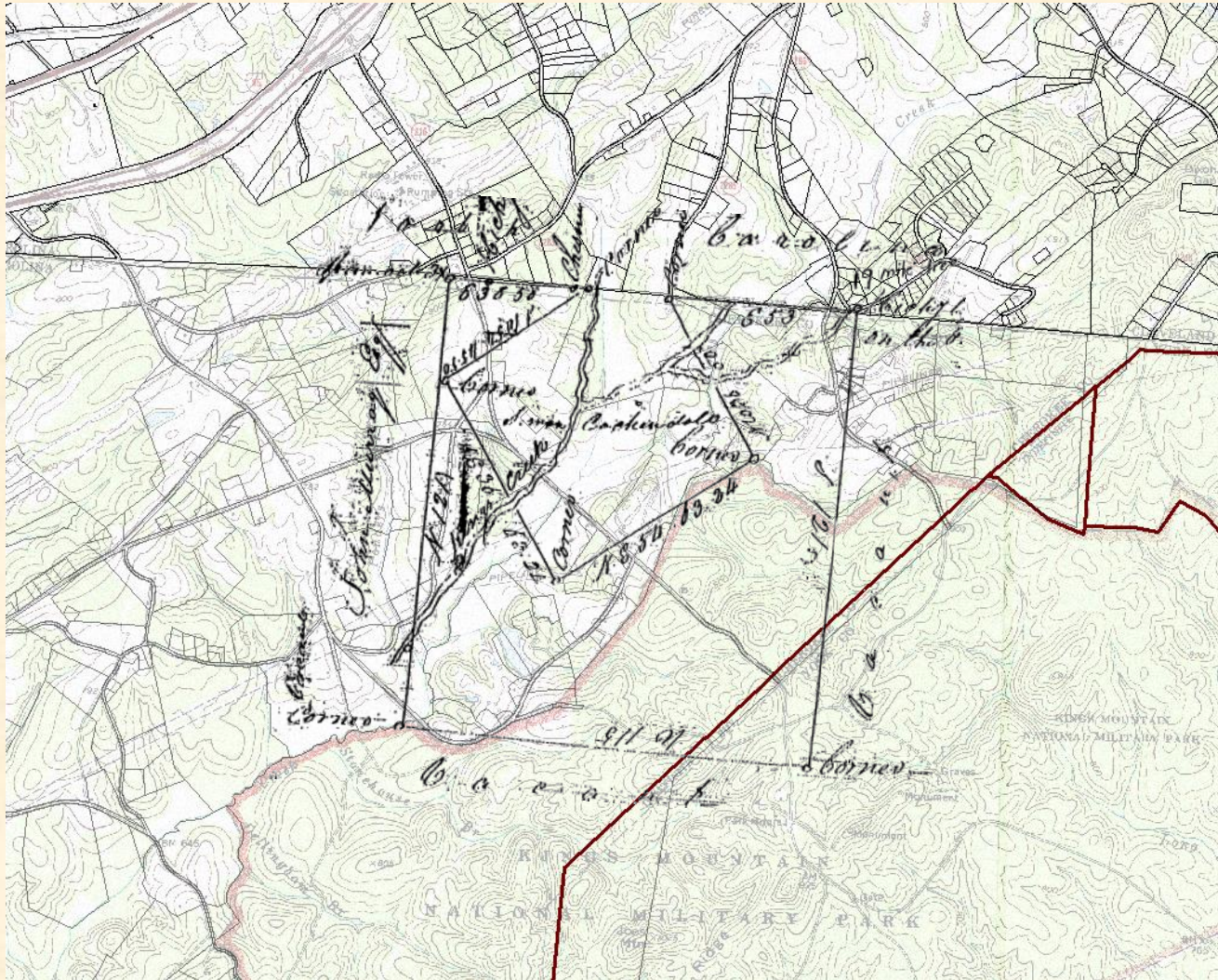
# James Parsons – 19 Mile Tree







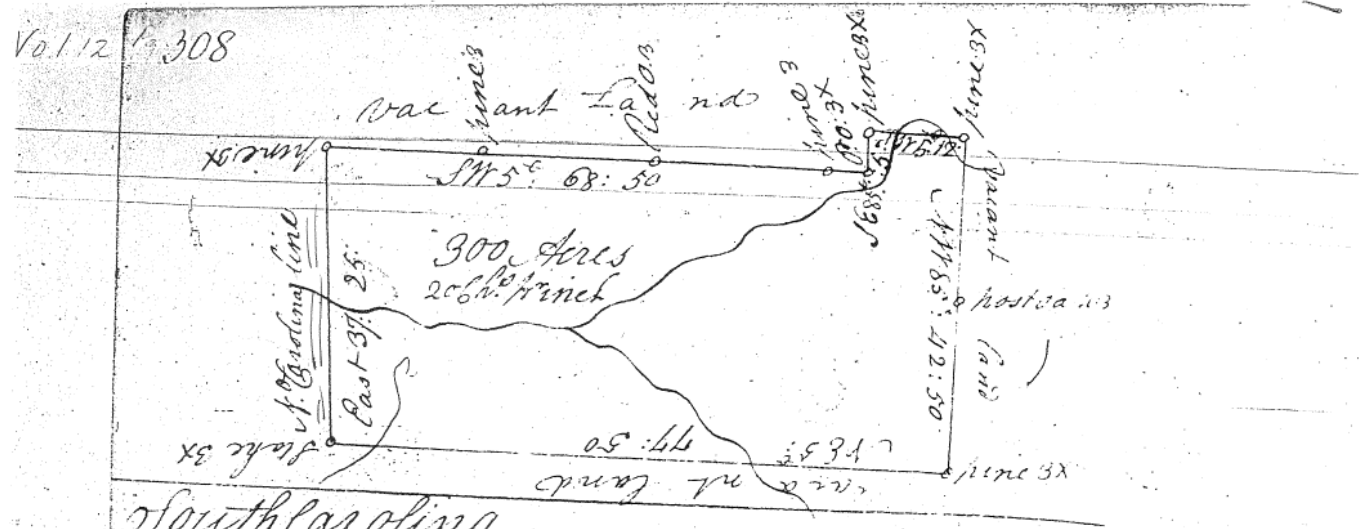
# Linking Historical and Current







# Joseph Warren – 44 Mile Tree



South Carolina

I have caused to be admeasured  
and laid out unto Joseph Warren a tract of land  
Containing three hundred acres situate in the  
District of Ninety six on both sides of Horse Creek  
of Broad River and hath such form and marks  
buttings and boundings as the above plat represents  
Certified for the 12<sup>th</sup> Day of October 1784.

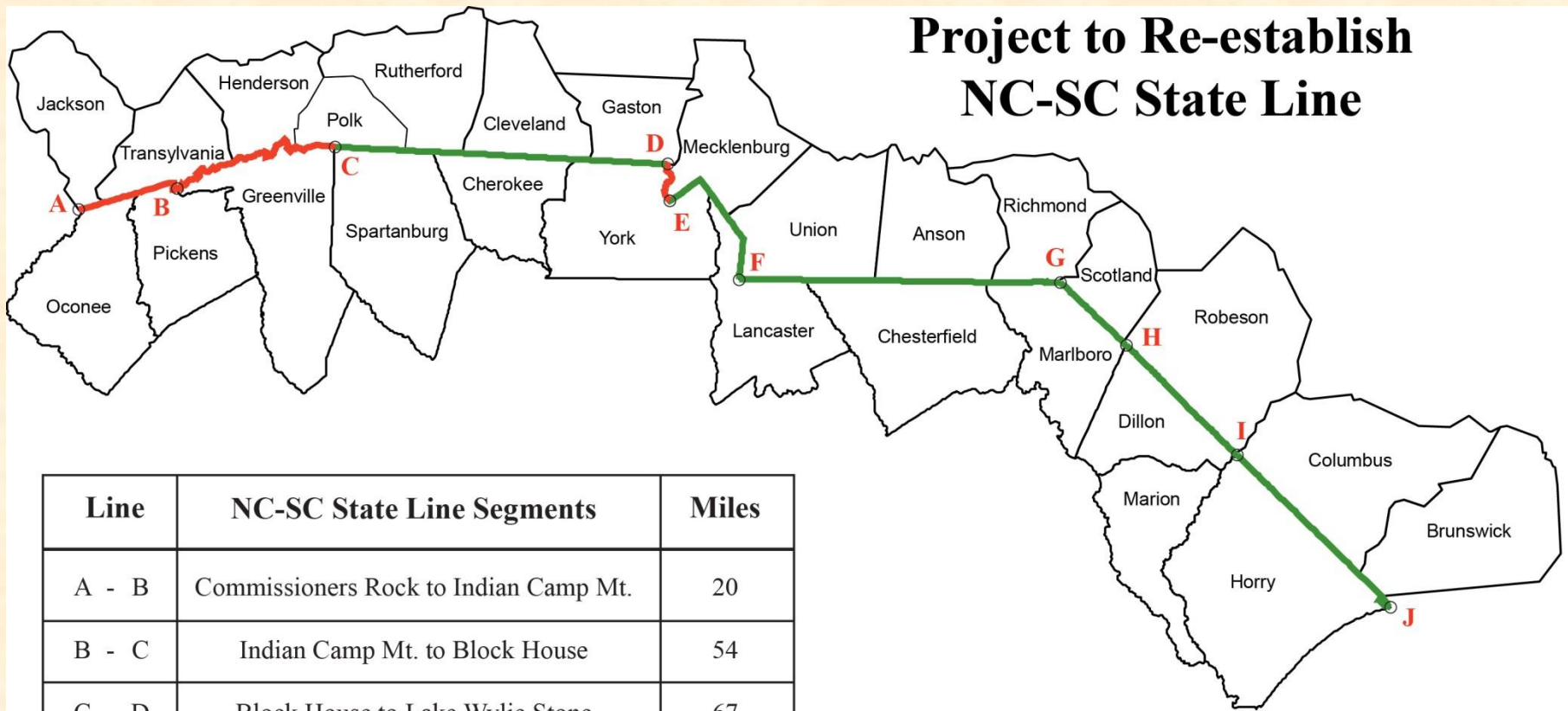
George Salmon D.S. } Ephraim Mitchell Agent

1784  
106





# Project to Re-establish NC-SC State Line



Line	NC-SC State Line Segments	Miles
A - B	Commissioners Rock to Indian Camp Mt.	20
B - C	Indian Camp Mt. to Block House	54
C - D	Block House to Lake Wylie Stone	67
D - E	Center Line of Old Catawba River Bed	8
E - F	Lake Wylie to North Corner	30
F - G	North Corner to 1905 Marlboro County Break Point Monument	64
G - H	Marlboro County SE - NW Line	18
H - I	Dillon County Line	31
I - J	Horry County Line	42

## May 6, 2013 Status

- Re-established boundary approved by the NC-SC Joint Boundary Commission 82 miles
- Re-established boundary tentatively approved by the NC-SC Joint Boundary Commission 252 miles

Total 334 miles





# How did North Carolina get its shape?

---

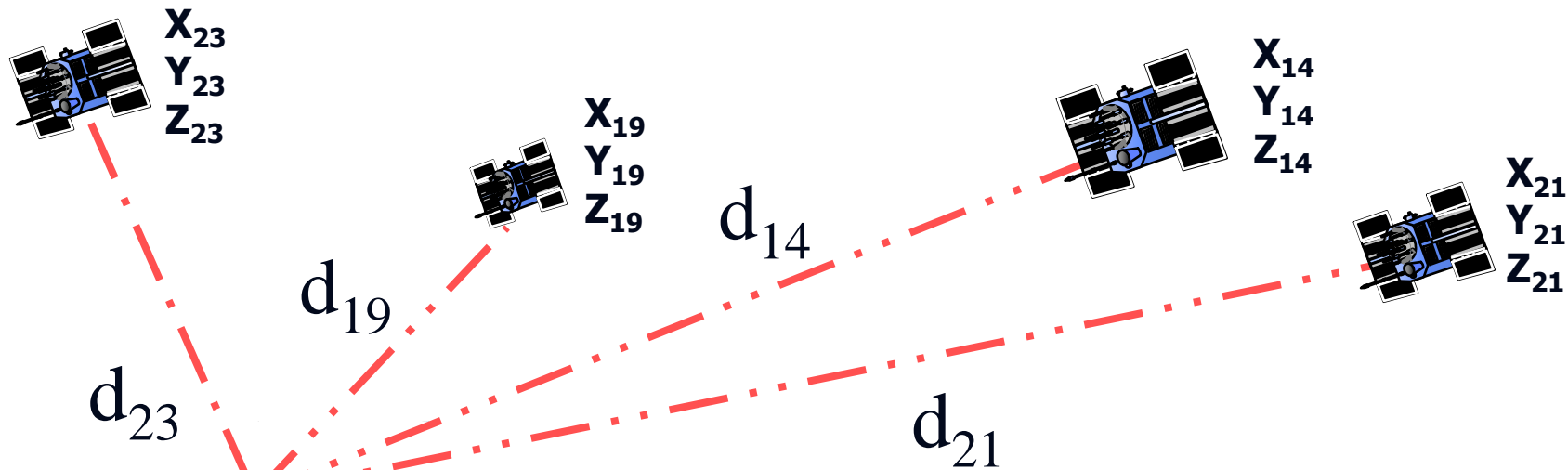


- What tools did we use to reestablish the NC-SC boundary?
  - Historical documents
  - GIS and CAD mapping tools
  - Global Navigation Satellite Systems
    - GPS
    - GLONASS
  - Total station



# Non-Differential GPS

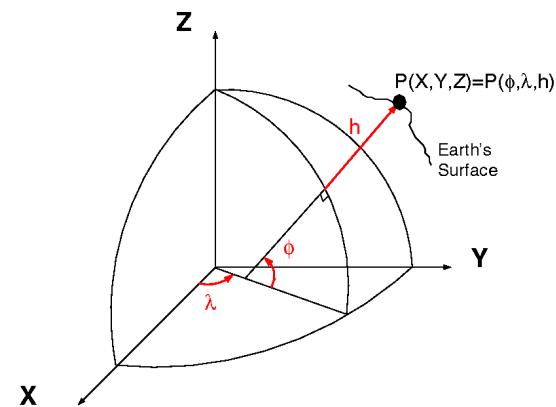
(Autonomous or Stand-alone)



Rover unit  
at an unknown  
location

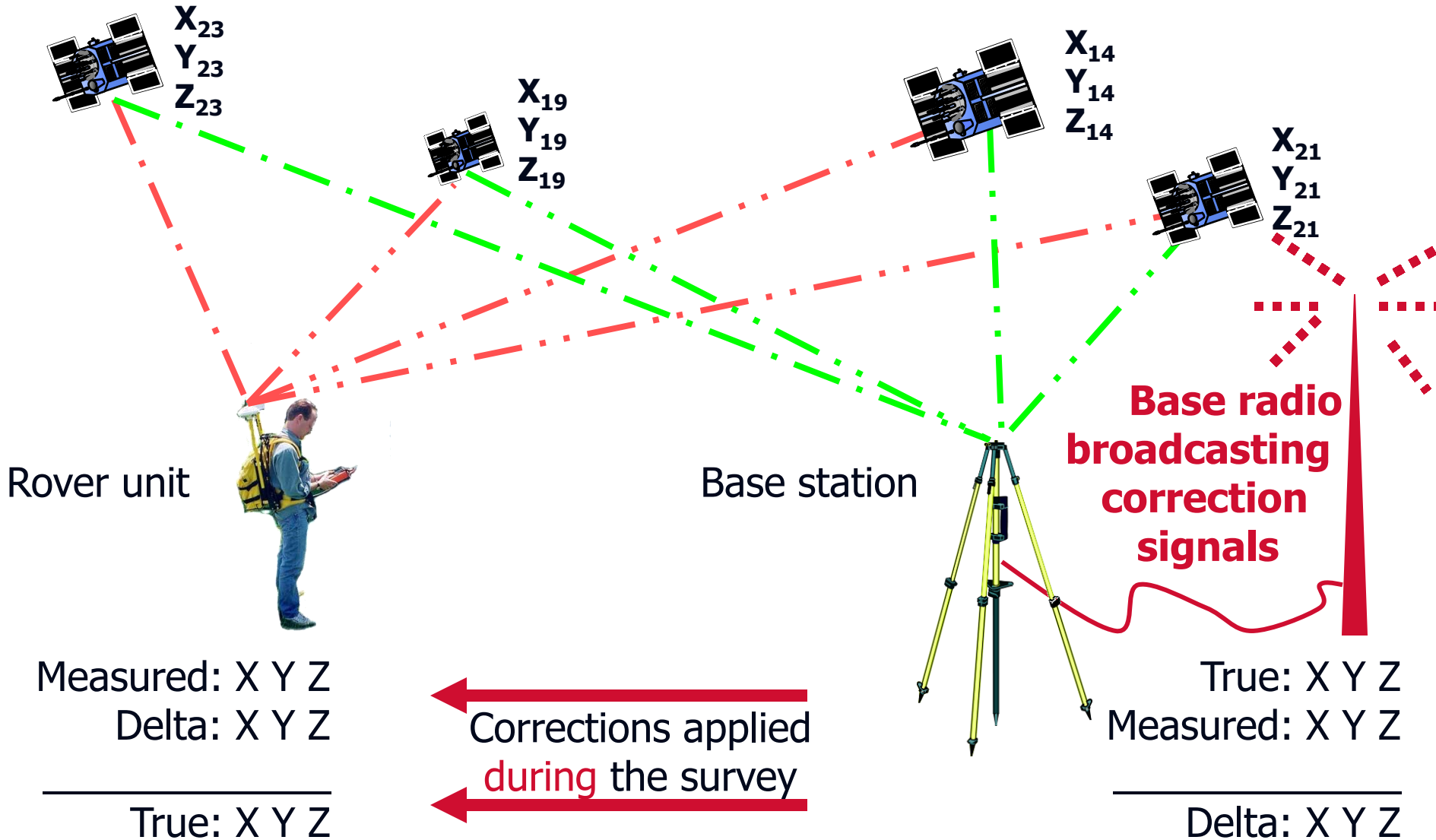


Measured: X Y Z

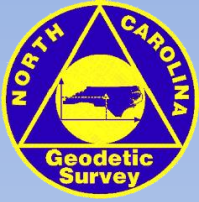




# Real-Time Differential GPS





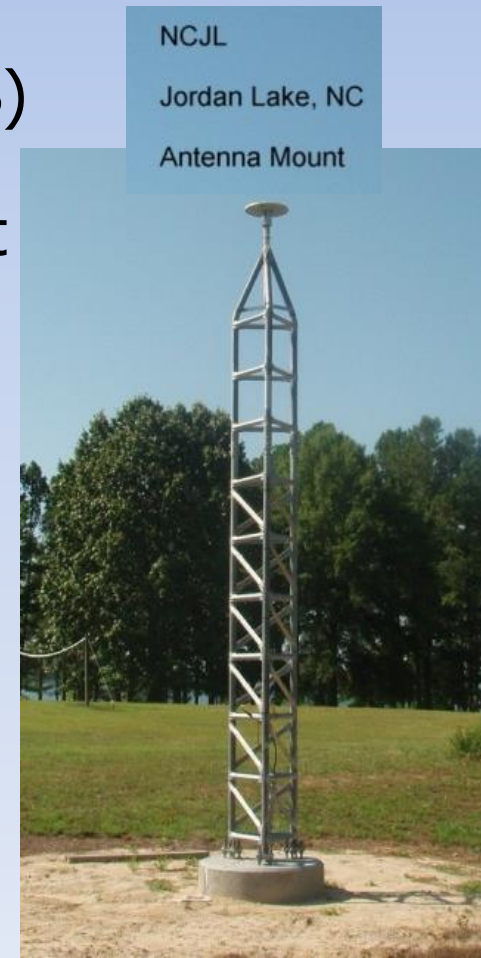


# NC CORS Network



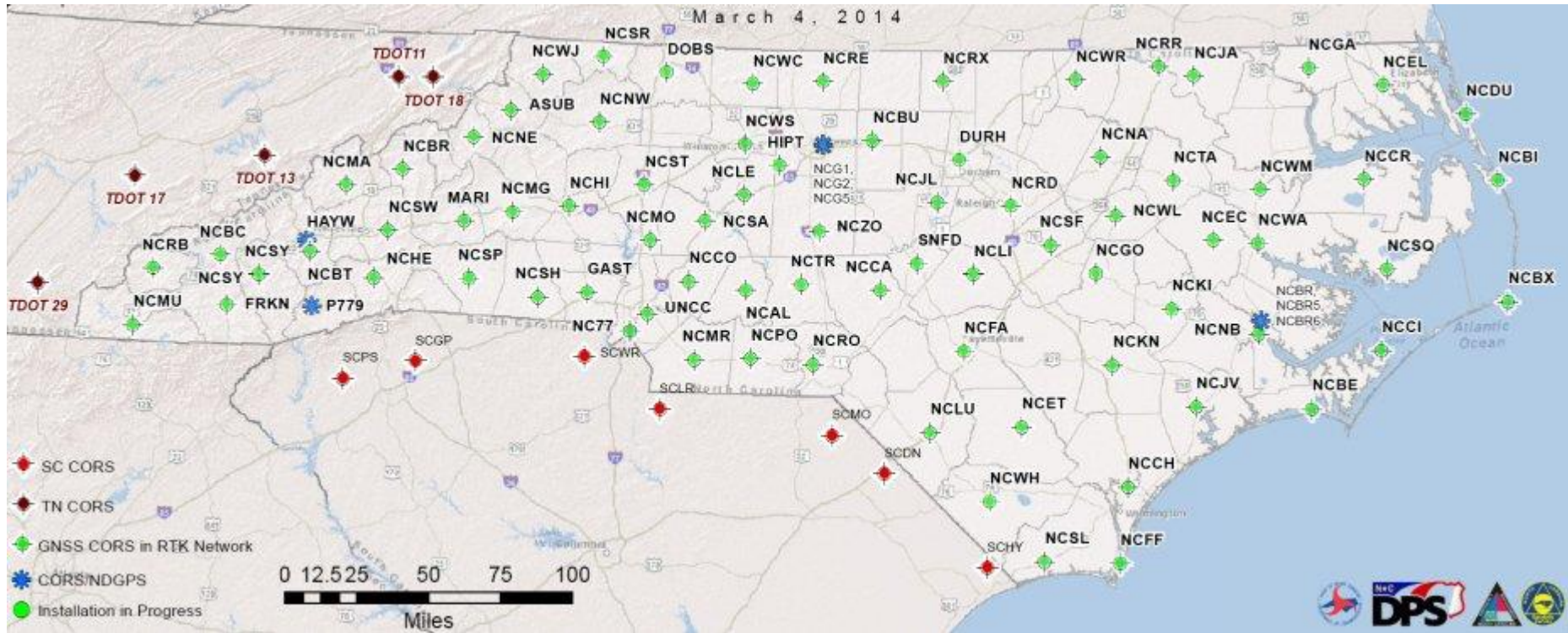
- Continuously Operating Reference Station (CORS)
  - A permanent and continuously recording Global Navigation Satellite System (GNSS) receiver, antenna (with a surveyed reference position), & support equipment
  - NC CORS Network
    - Composed of 91 CORS
      - 2 new CORS have been installed
        - Bethel (NCBT)\*
        - UNCC (NC49)\*
      - 1 decommissioned
        - Clinton (NCCL

\* = Not accepted by NGS



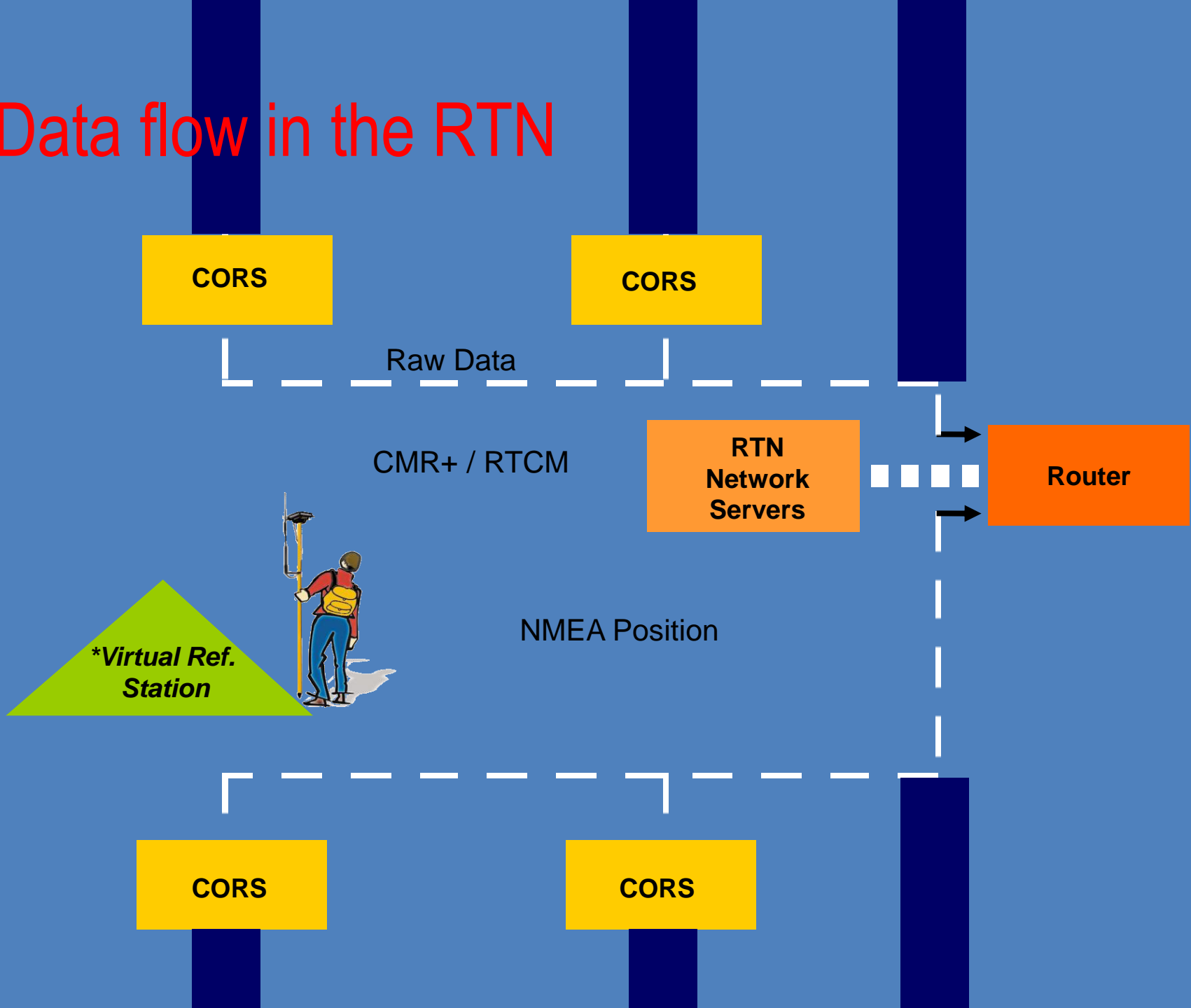


# NC CORS Network





# Data flow in the RTN





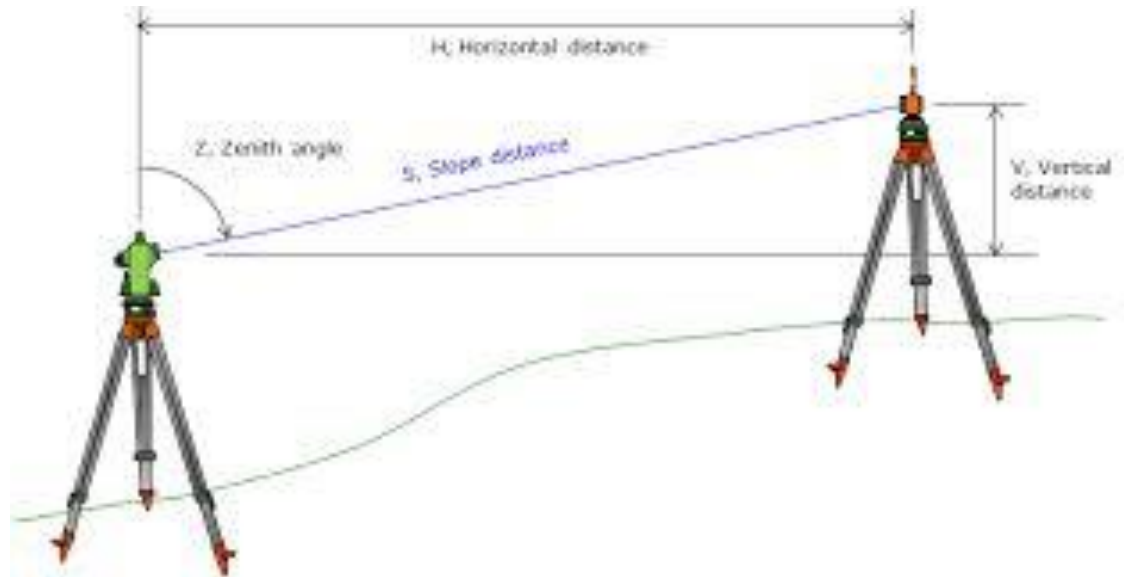
# NC CORS Supports Surveying & Mapping



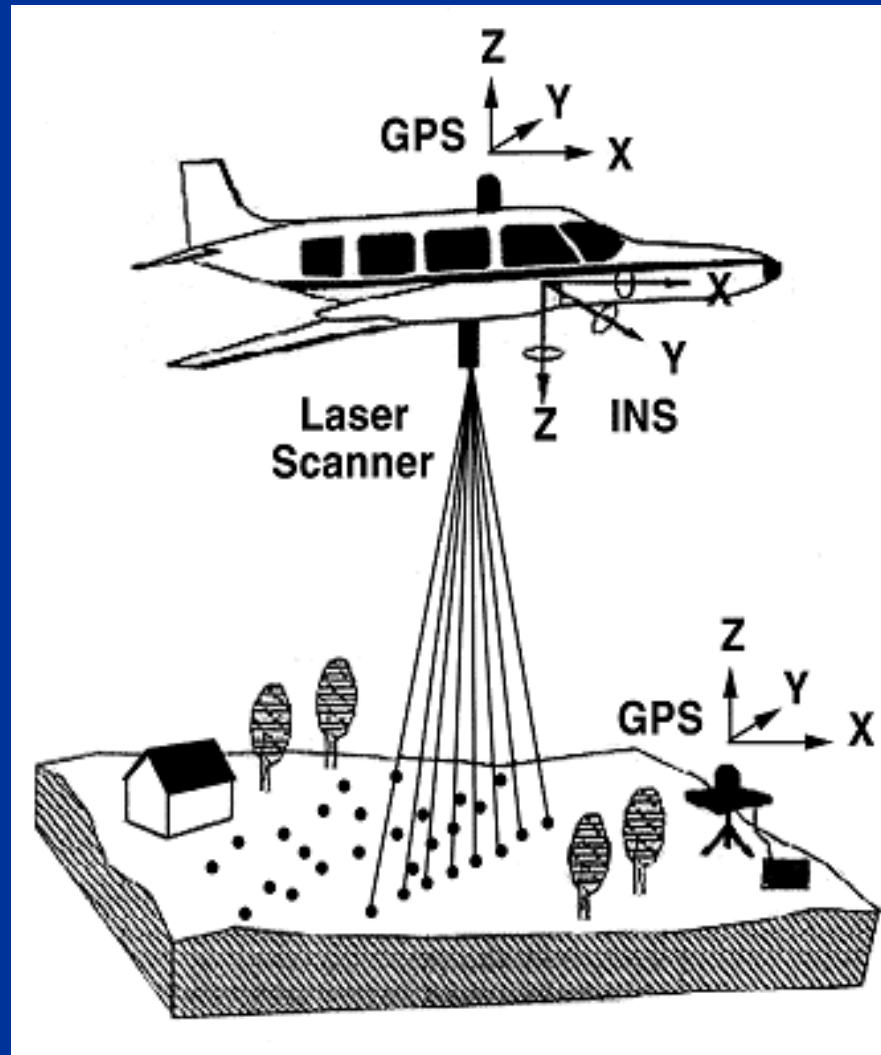




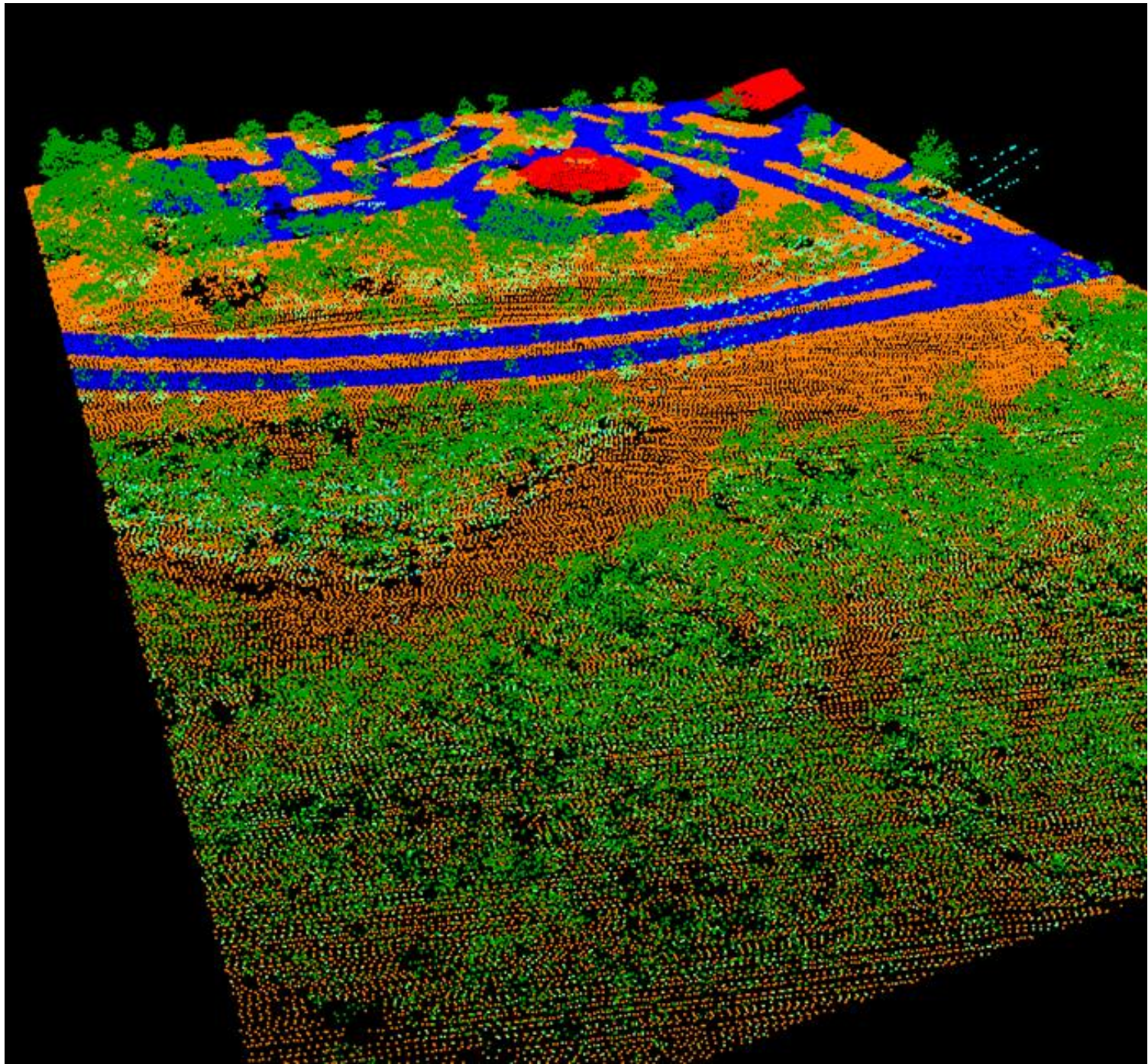
# Total Station



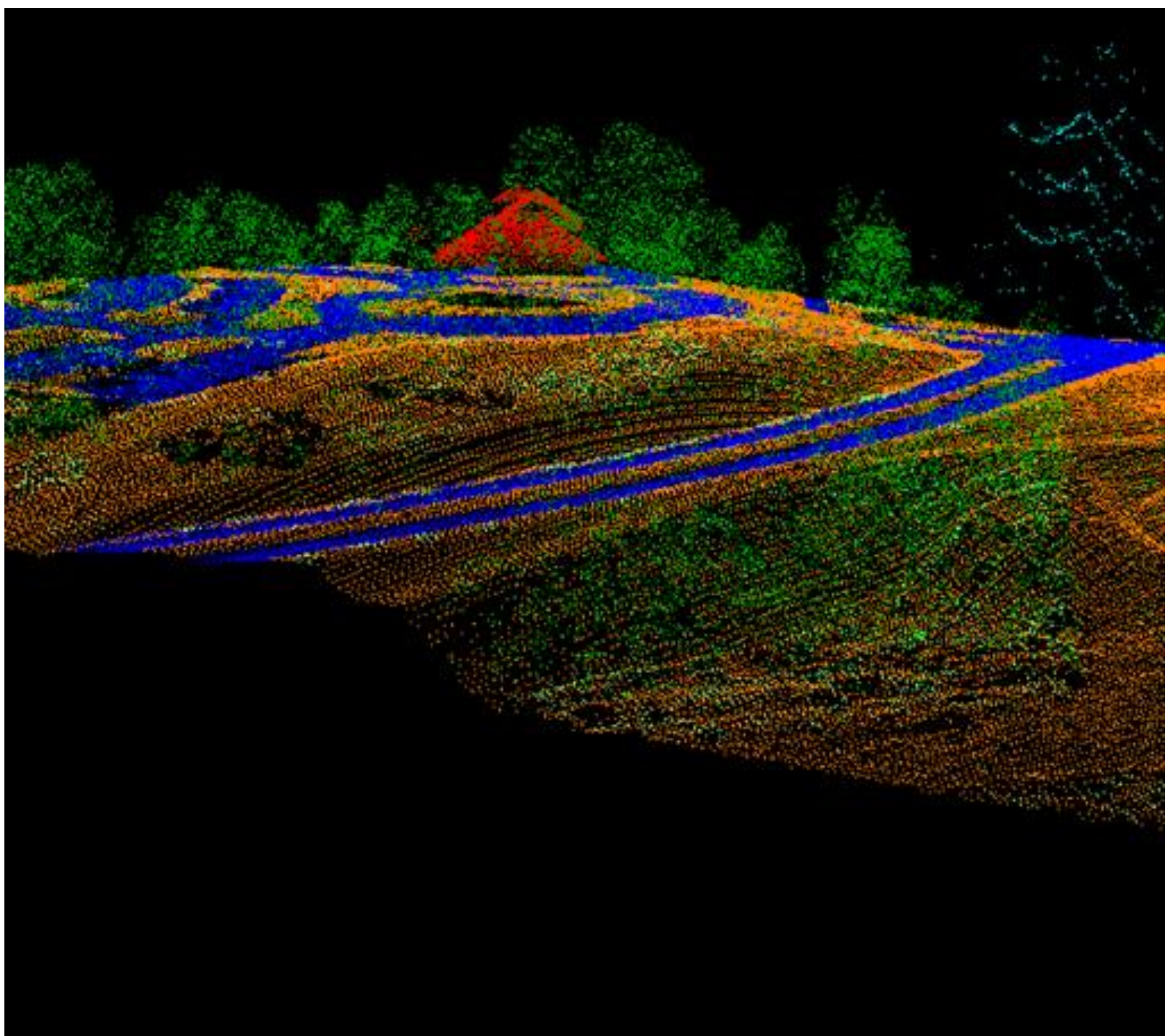
# LIDAR laser sensor



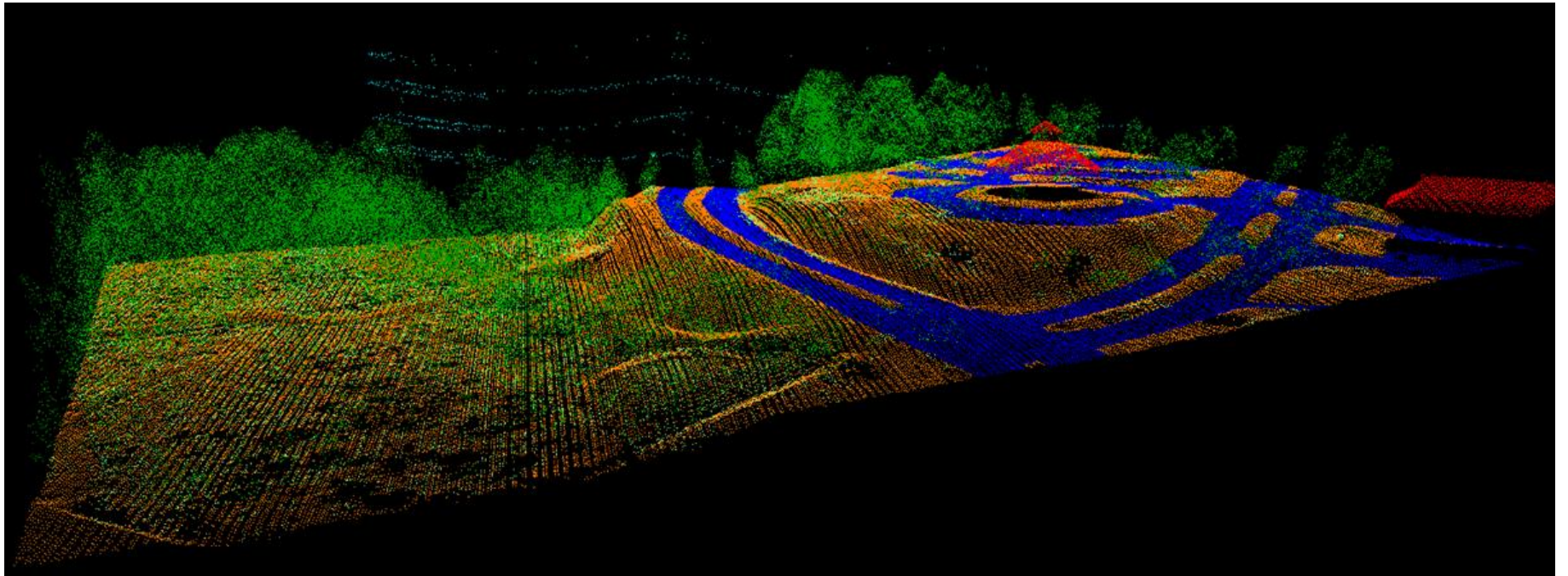












# Mobile Scanning Applications

---

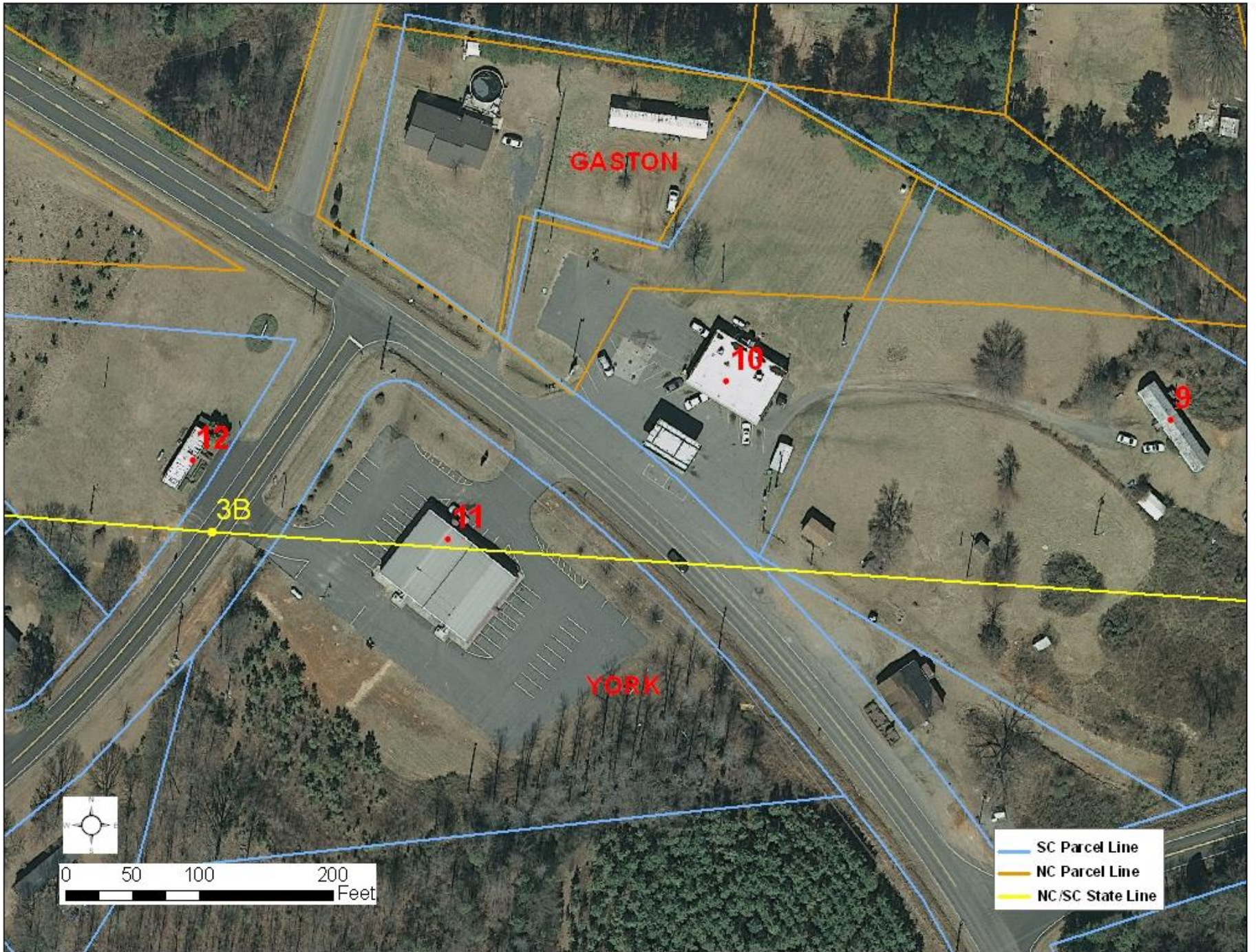
## NC Railroad Company's Hy-Rail vehicle



- Mobile scanners and positioning equipment installed on vehicle
- NC CORS provides real-time positioning info to support the Hy-Rail vehicle's GNSS equipment







GASTON

YORK

12

3B

11

10

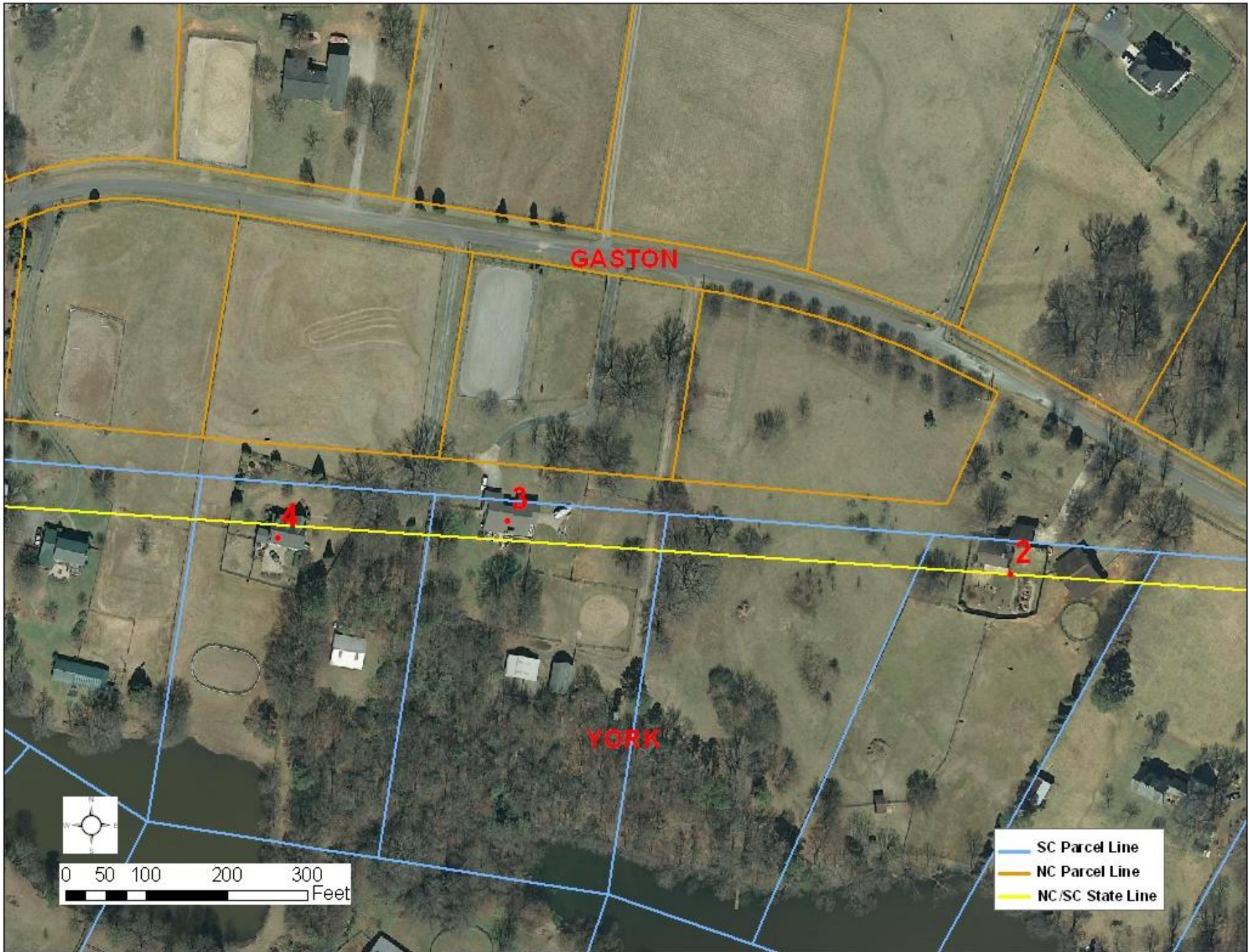
9



0 50 100 200 Feet

- SC Parcel Line
- NC Parcel Line
- NC/SC State Line





GASTON

YORK

4

3

2



0 50 100 200 300 Feet

- SC Parcel Line
- NC Parcel Line
- NC/SC State Line



# South of the Border



# Questions?

Gary W. Thompson, PLS

Office: 919-733-3836

Direct: 919-948-7844

Email: [gary.thompson@ncdps.gov](mailto:gary.thompson@ncdps.gov)



<b>Mailing address:</b>	<b>Building (shipping) address:</b>
Gary W. Thompson, PLS NC Geodetic Survey 4298 Mail Service Center Raleigh, NC 27699-4298	Gary W. Thompson, PLS NC Geodetic Survey Bowers Building NC National Guard complex 4105 Reedy Creek Rd Raleigh, NC 27607

