



**SALUDA**

Grade  
An Introduction and Overview

by Tom Garren 05/18/2023

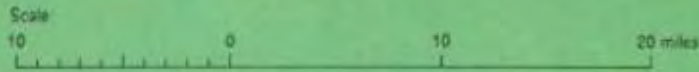
# Saluda Grade Facts

- Saluda grade was the steepest mainline grade in America when it was in use.
- The grade averages 4.7% with a short stretch of 5.1% grade.
- The grade is on the Southern Railway line between Asheville, NC and Spartanburg (Hayne), SC.

# Why So Steep

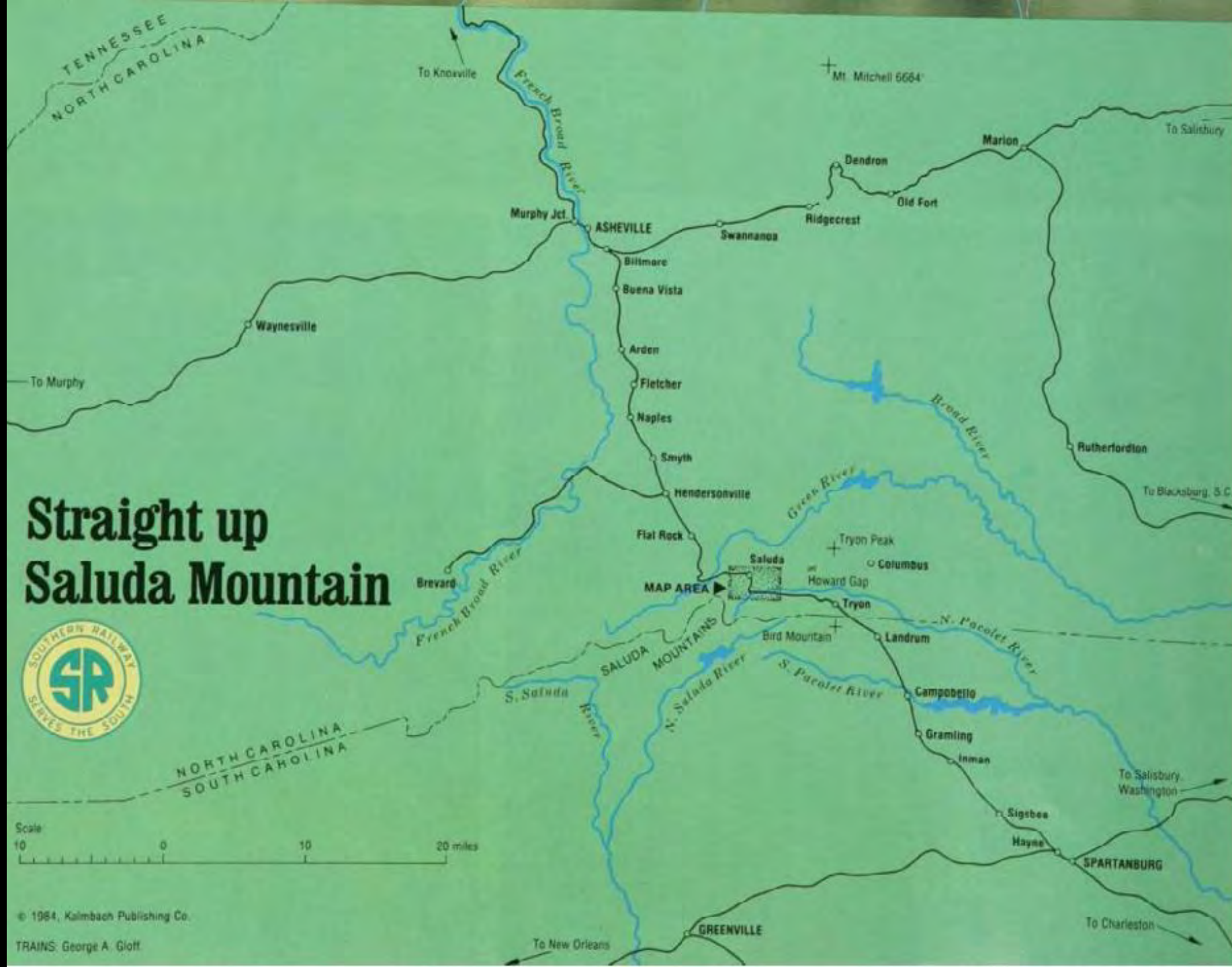
- There are no foothills between the rolling country around Landrum, SC and Saluda, NC.
- The only way up was to attack Saluda mountain itself.
- An alternative path was considered up Tryon mountain, but the land was deemed too unstable.
- This was proven true when I-26 was built there many years later.
- The soil conditions caused years of delay completing the highway and added millions of dollars to the cost.

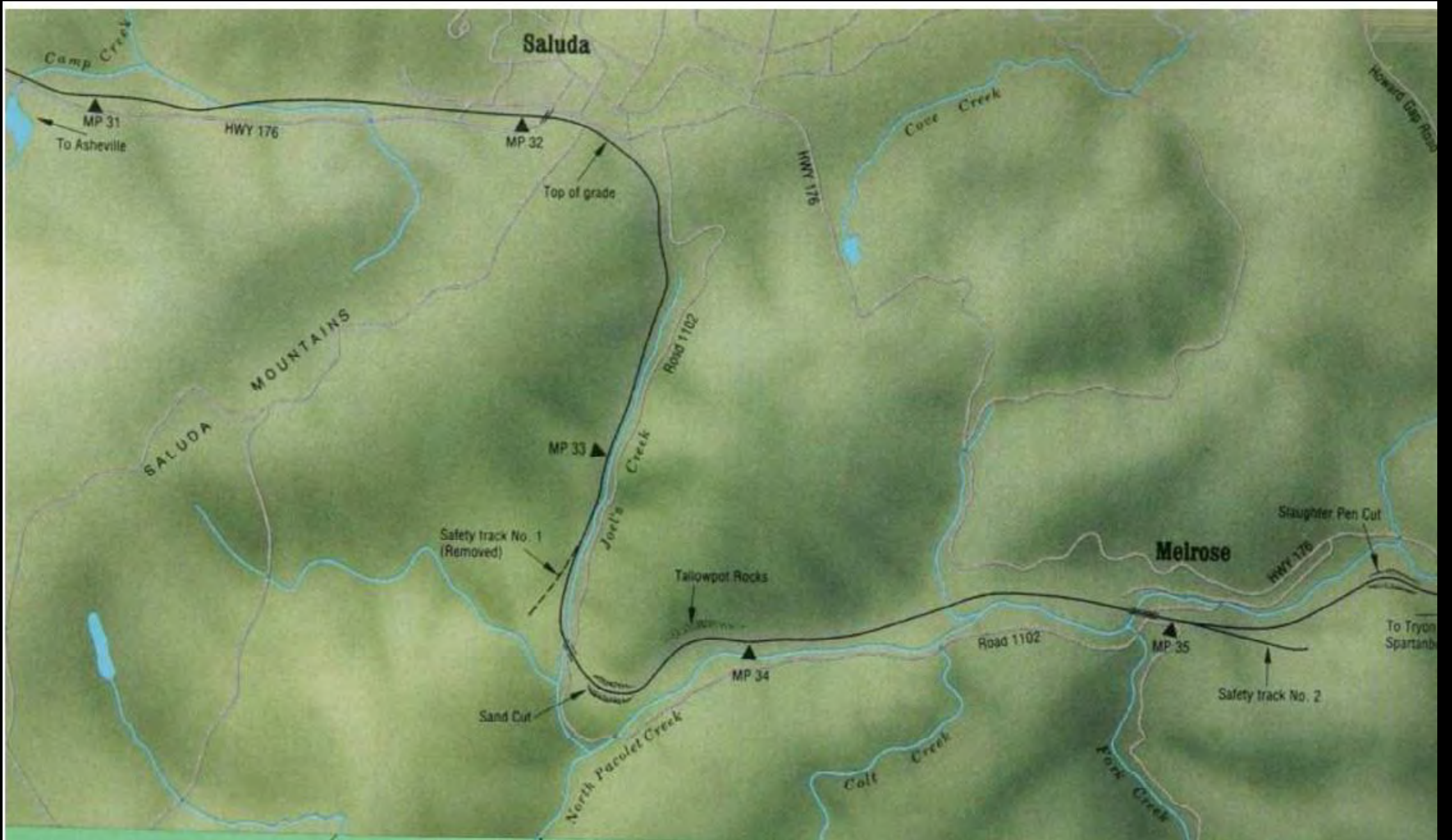
# Straight up Saluda Mountain



© 1964, Kalmbach Publishing Co.

TRAINS: George A. Gloff



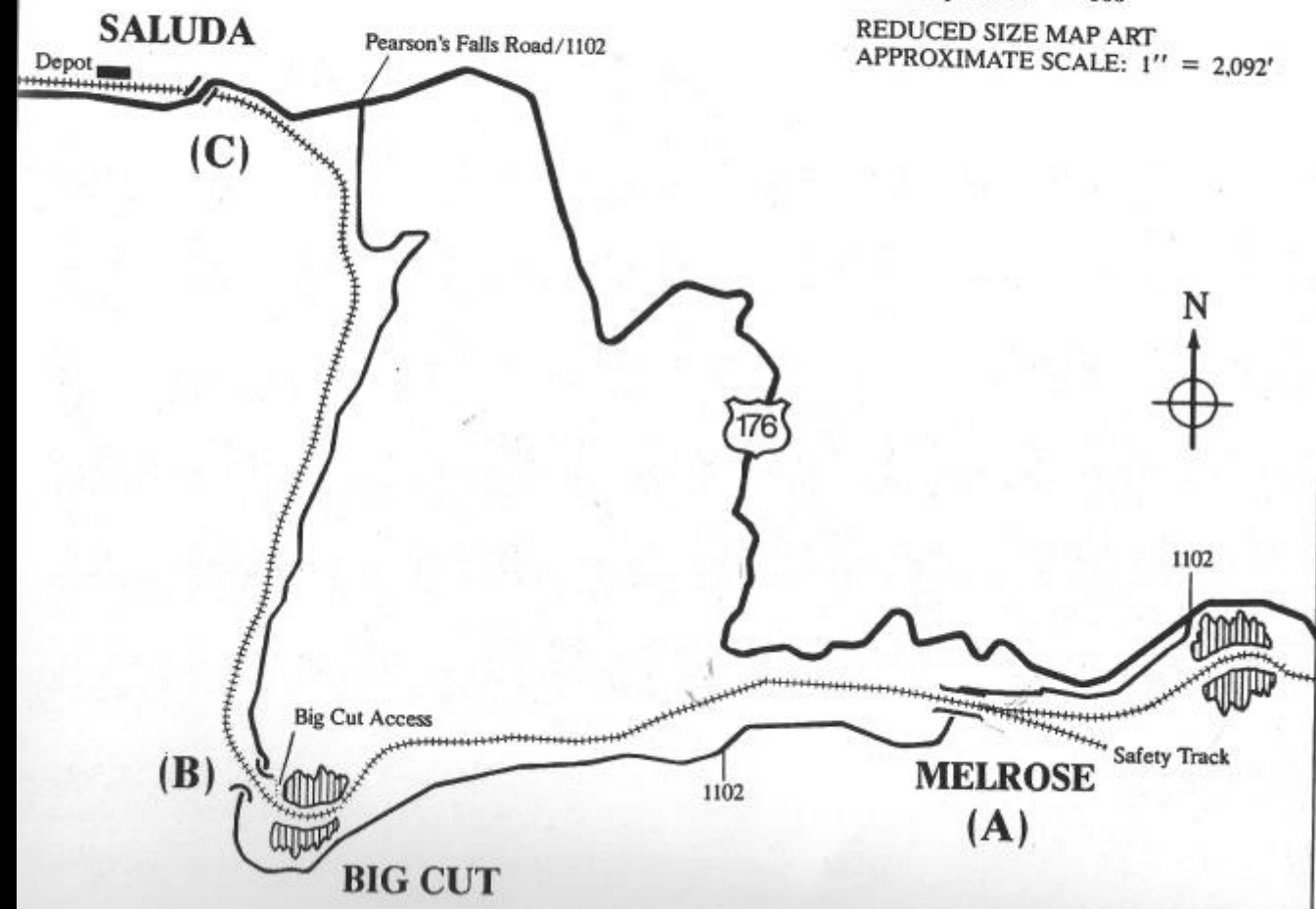


**SALUDA GRADE**  
ON THE SOUTHERN RAILWAY  
BETWEEN MELROSE & SALUDA, N. C.

Map prepared from an aerial photo of a section of Polk County, North Carolina. Photo by The Aerial Photography Field Office, Agricultural Stabilization & Conservation Service, U. S. Department of Agriculture, Salt Lake City, Utah 84130. Negative No. BOR-2JJ-316. 11-9-67.

Scale of photo: 1" = 660'

REDUCED SIZE MAP ART  
APPROXIMATE SCALE: 1" = 2,092'





# A Bit of Saluda Grade History

- The line from Spartanburg, SC to Asheville, NC was opened on July 4, 1878
- At that time, the railroad was called the Spartanburg and Asheville.
- Runaway trains were a problem on Saluda grade.
- Between 1880 and 1893 29 men lost their lives.
- An 1893 wreck occurred at the first steep curve east of Melrose.
- Since that wreck, the area has been called Slaughter Pen Cut.
- Alternative routes were explored again, but none were found.



# Solutions for Safer Operation

- Engineer Pit Ballew was the engineer of the first runaway in 1903.
- While recovering from his injuries in an Asheville hospital he conceived a solution: Safety Tracks.
- He shared the idea with Superintendent G. R. Loyall.
- Build two safety tracks, Safety Track One at the sharp curve near Sand Cut (also called Big Cut.)
- Safety Track Two at Melrose at the bottom of the grade.
- Both safety tracks were built and were in service before the end of 1903.

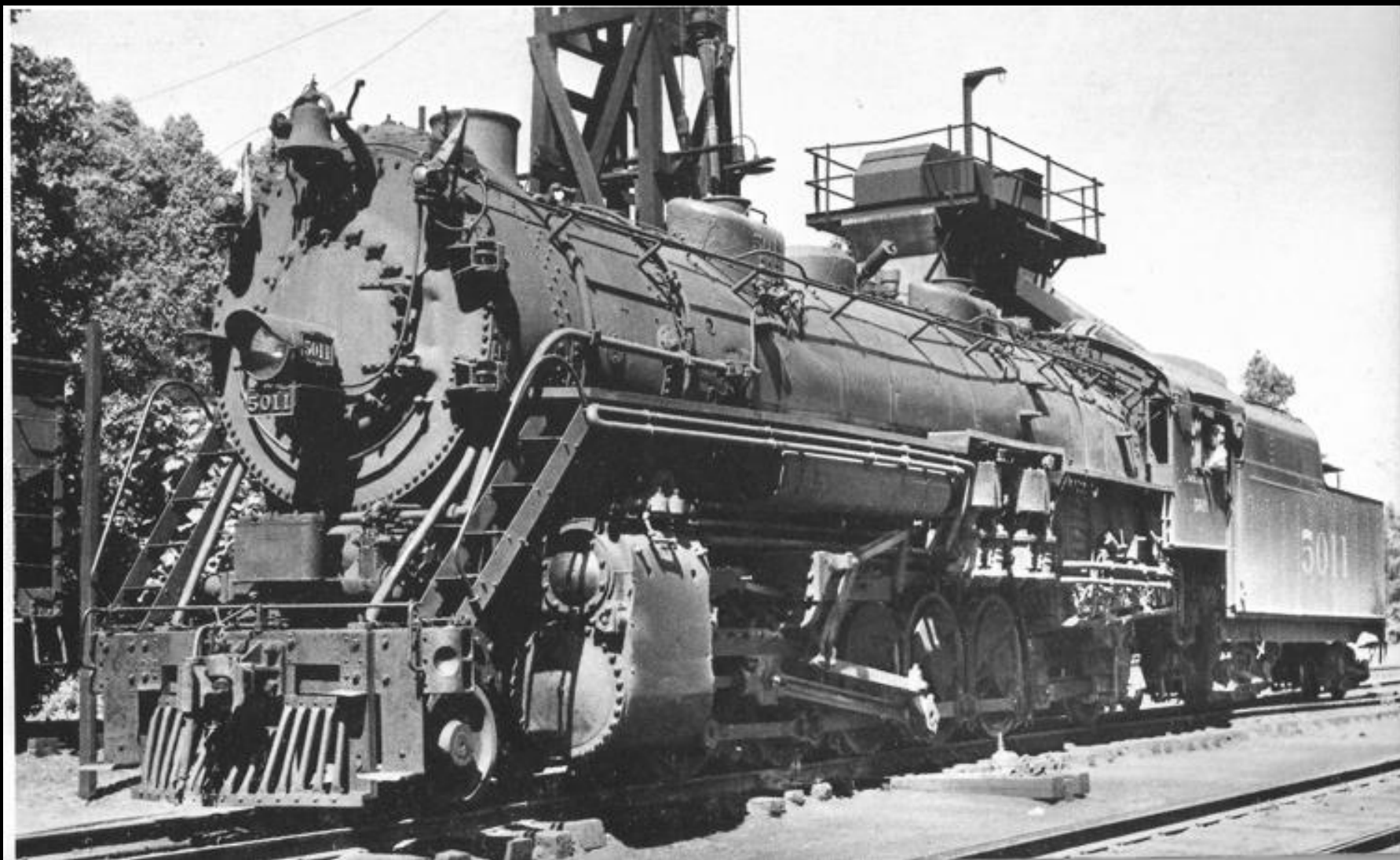
# Safety Track Specs and Procedures

- Safety Track One was 1080 feet long and heavily sanded.
- The grade was from 4.3 to 9.87 per cent with a mound of dirt and chained timbers at the end.
- Safety Track Number Two was cut out of the side of the mountain.
- It was 1464 feet long and heavily sanded.
- The grade varied from 5.7 to 10.27 per cent.
- Both safety tracks were tended 24 hours a day.
- Trains descending blew one long, one short and one long at a board 800 feet from the safety track indicating the train was under control.
- The switch tender would then line the switch for the main.

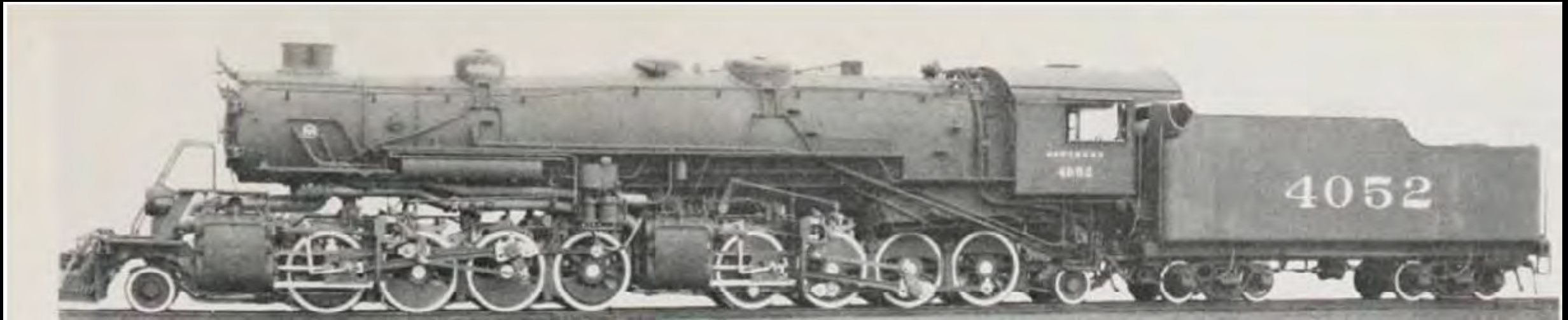




# Favorite Power Ss 2-10-2



# Favorite Power: LS2 2-8-8-2



# After the Runaway























ENDING  
TIMING SECTION











6313

6313

6313

SOUTHERN

881

N

70 FT. 2070  
10 UNIV. STL. WLS. 1 2 4  
10 UNIV. STL. WLS. 3  
NO SPRG. TRAVEL

957 11-55



Small white cylindrical vent or marker on the roof of the first car.

SAVANNAH & ATLANTA

SOUTHERN  
30868

128700  
47300

SOUTHERN 41010

SOUTHERN

1172

25

187

SOUTHERN

1172

25

187



SOUTHERN

X590

ITS



# A Walk Down Safety Track 2

















# Epilogue

- Norfolk Southern will sell 31 miles of the Saluda Grade route to The Saluda Grade Trail Conservancy.
- This will include 16 miles in South Carolina and 15 miles in North Carolina.



