

# OFFICE MEMORANDUM

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MICHIGAN  
STATE HIGHWAY DEPARTMENT

JOHN C. MACKIE, COMMISSIONER

May 1, 1963

To: E. A. Finney, Director  
Research Laboratory Division

From: B. W. Pocock

Subject: Right-of-Way Fence Sagging Investigation. Research Project R-63 G-126.  
Research Report No. R-422.

This is in response to a verbal request to investigate reports coming to the attention of R. L. Greenman concerning two areas where right-of-way fencing was said to have undergone considerable sagging. One of these areas was on I 96 near Fowlerville, the other on the west side of US 131 south of Wayland. The tie wires were alleged to have become stretched, permitting slippage over the post lugs, and it was suggested that this could have been caused by a heavy snow load. I was requested to inspect the areas involved in order to determine the seriousness of the problem.

Both areas were inspected on April 15. No evidence of sagging fence wire could be found on either side of I 96 between Okemos Rd. and Howell, but several fence posts had been installed with the wire not yet attached. A few places were found where wiring had been removed for construction purposes and not yet replaced, as on the south side at 470+00. Here a section of fencing had been removed by a work crew in order to fill in a pot hole. Again at a creek site on the south side at 434+00 some fencing was out and four posts were lying on the ground, but the spot was staked for a new anchor post. One crew was observed installing new posts on the north side east of Williamston. I talked with three different construction and maintenance crews in the area and no one could recall any instance of wire sagging.

Sagging was apparent, however, on the west side of US 131 both north and south of Wayland. The areas were intermittent and the sections of fence involved were few in number. Also, this is older fencing--several years old judging by the appearance.

The first area noted involved two posts at the top of a hill. Several tie clips were missing. It is difficult to see how snow could have been involved at the top of a hill, unless pressure of snow further along toward the adjacent ravine created sufficient tension on the wires to pull the clips off. As shown in the accompanying photograph, the evidence suggests that damage may have been caused by farm machinery colliding with the fence. Note that a wire has been attached between the barbed wire and the upper wire of the fencing mat, to help hold the fencing up.

E. A. Finney

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A little further south at 102+00 a section of 8 posts had most of the tie clips missing, with considerable sagging of the wire.

At Wayland at 980+00 sagging was noted at one post. The tie clips were gone. There was no bulging here, the evidence suggesting that someone had climbed over the fence. Note that the fence wires appear to have been stretched from the top. This explanation appears reasonable in view of the higher population density of the Wayland area compared with that of areas farther from Wayland.

Just south of Wayland at 918+00 area several adjacent sections of wire were sagging greatly between the posts, but not at the posts. There was evidence of great force bulging the bottom of the fencing wire eastward, with one post actually bent toward the east at the ground line. One tie clip was found that had been pulled away from the fence at one end of the clip, and the wire itself had been broken. This was in the area having a ditch just west of the fence, and the old highway just west of the ditch. A maintenance crew operating out of Moline told me that this bulging is caused by snow, that it happens every year, that the fence is repaired every year, but had not been repaired yet this year.

The accompanying photographs illustrate the worst conditions I could find. These areas seem to be very few in number. The problem as I see it is not so much redesigning the right-of-way fence as one of doing something about the snow.

OFFICE OF TESTING AND RESEARCH

B. W. Pocock, Supervisor  
New Materials and Methods Section  
Research Laboratory Division

BWP:js



Sagging of fence wire of right-of-way fence on west side of US 131 about 10 miles north of Wayland. Note wire attached to barbed wire holding fence wire up, also type of bulging suggestive of collision with farm machinery.



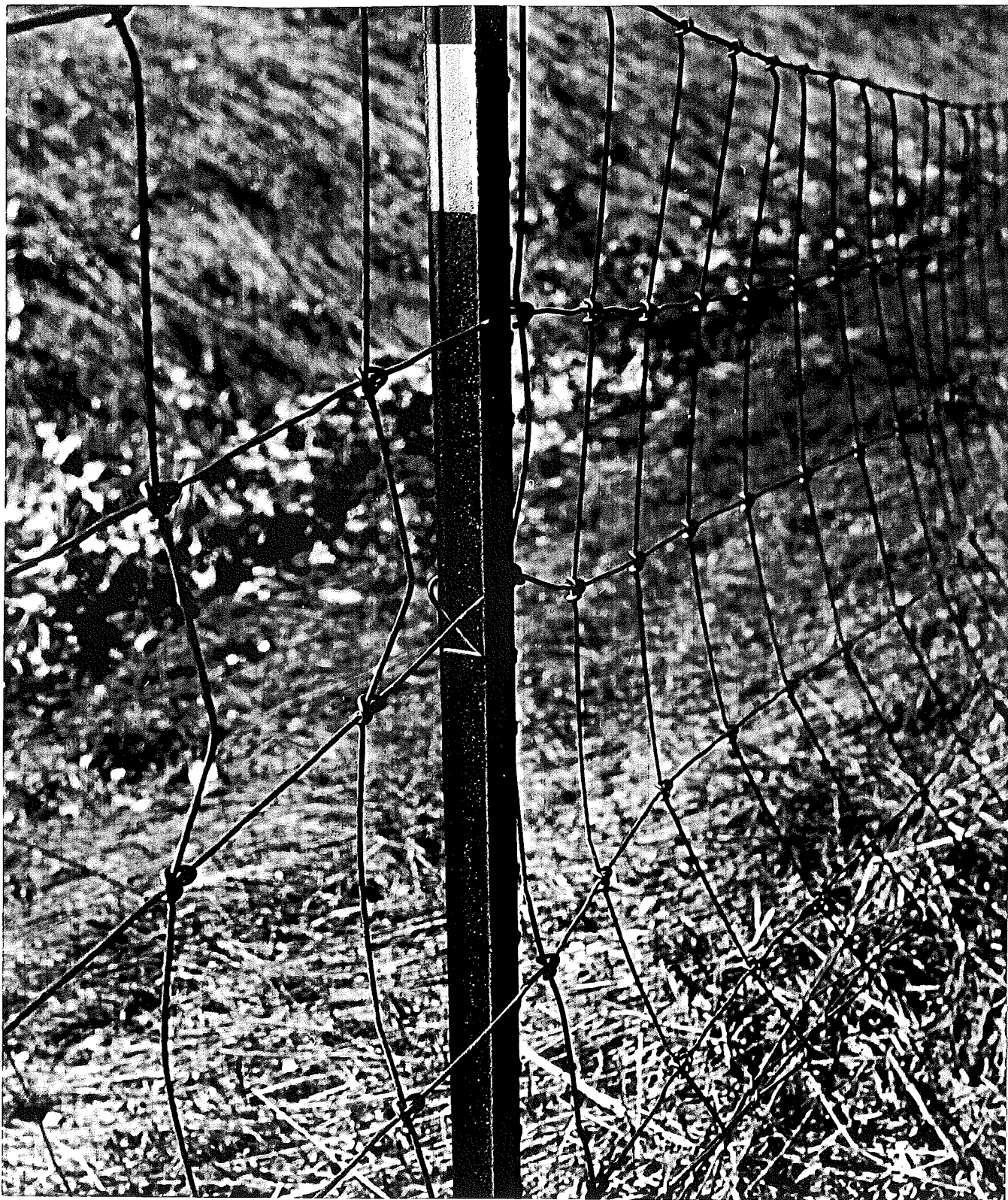
Enlargement made from preceding photograph to illustrate tie clips missing from posts.



Severe sagging of fence wire involving 8 posts of right-of-way fence on west side of US 131 about 5 miles north of Wayland. Although this damage could have resulted from impact with farm machinery, the gradual contour of the bulges plus the ground slope suggest that movement of heavy snow masses may have been responsible.



Close-up of post shown in preceding photograph shows that the tie clips are missing.



Right-of-way fence post on west side of US 131 just south of Wayland. Note broken fence wire where tie clip is loose at one end.



View of fence facing north from post shown in preceding photograph. Note bulging of fence wire at bottom, suggesting movement of heavy snow masses; also that post lugs in general have served their purpose well.