

MICHIGAN
STATE HIGHWAY DEPARTMENT
Charles M. Ziegler
State Highway Commissioner

MID-WINTER INSPECTION
OF
PAPER SNOW FENCE INSTALLATIONS
1951-1952

Joint Investigation between Maintenance Division
and Testing and Research Division

Snow Fence Material Investigation
Research Project 36 G-3(10)
Progress Report No. 2

Research Laboratory
Testing and Research Division
Report No. 174
March 1952

MID-WINTER INSPECTION OF
PAPER SNOW FENCE INSTALLATIONS

During the winter of 1949-1950 the Maintenance Division, in cooperation with the Research Laboratory of the Testing and Research Division, experimented in a small way with snow fences made of paper strips as a substitute for the common vertical wood slat type. This experimental work was done on M-100 about four miles south of Grand Ledge. The results of this work will be found in Research Laboratory Report No. 150, dated June 1, 1950.

The performance of one type of paper snow fence included in this study was so encouraging that in 1951 the Maintenance Division, at the direction of Mr. B. R. Downey, Maintenance Engineer, authorized the erection of approximately five miles of similar paper snow fence at strategic locations throughout the Lower Peninsula for further study under more natural operating conditions. The erection in all cases was done by local county help after careful instruction by the representatives of the Sisalkraft Corporation, who furnished the snow fence paper. The location of the snow fence installations are shown in Figure 1. The paper strips are 12 inches wide.

The experimental installations located near Cadillac, Roscommon, and Saginaw were inspected on January 29 and 30, 1952, by Messrs. W. C. Broughton and T. C. Holmes of the Research Laboratory, and Mr. R. Anderson of the Sisalkraft Corporation. The Alpena installation was left for later. On February 7, 1952, Mr. Broughton and Mr. Holmes inspected the installations in Jackson and Van Buren Counties. This report covers a pictorial sketch of the various installations as they appeared at the time of inspection. A final inspection tour will be made of all experimental snow fence installations at the end of the winter season. Then a final report will be submitted, including special studies being continued this winter on M-100.

On M-144, Roscommon County

Pictures in Figures 2, 3, and 4 show the paper fence installed by Roscommon County Maintenance forces. Interviews with maintenance men brought out the fact that they have had snowfalls up to 18 inches this winter but no appreciable blowing has occurred to date (1-29-52). They also have had sleet and rain storms since putting up this fence, and all stretches are in excellent shape at the present time.

On US-131, Wexford County

Pictures in Figures 5 to 15 inclusive show paper and wooden snow fences installed along US-131 north of Cadillac. The pictures in Figures 14 and 15 show picket fences which have stopped functioning, and the County expects to experiment here by installing a 12" strip of paper above the fence. The County Superintendent stated that the paper fence is functioning better than picket fences had in previous years. Several breaks shown in this group of fences have definitely been caused by children.

On M-46 and M-47, Saginaw County

Pictures in Figures 16 to 25 inclusive, show various installations in Saginaw County on M-46 and M-47 near the city of Saginaw. These installations were all in excellent condition and had gone through several bad sleet and rain storms having had at times a half-inch layer of ice on the strips. Maintenance men state that the fence has performed excellently although the storms have come from the opposite direction to normal, causing the drifts to be formed on the field side of the fence rather than on the road side. Breaks shown in these stretches are believed to have been caused by persons crawling through the fence rather than walking to the end of it.

On US-127, Jackson County

Pictures in Figures 26 to 33 inclusive show installations in Jackson County. One stretch of fence along US-12, west of Ludlow Road, had several panels broken but the two pictures taken of this fence did not turn out. Maintenance men stated that livestock had gotten loose and damaged this stretch of fence.

On M-40, VanBuren County

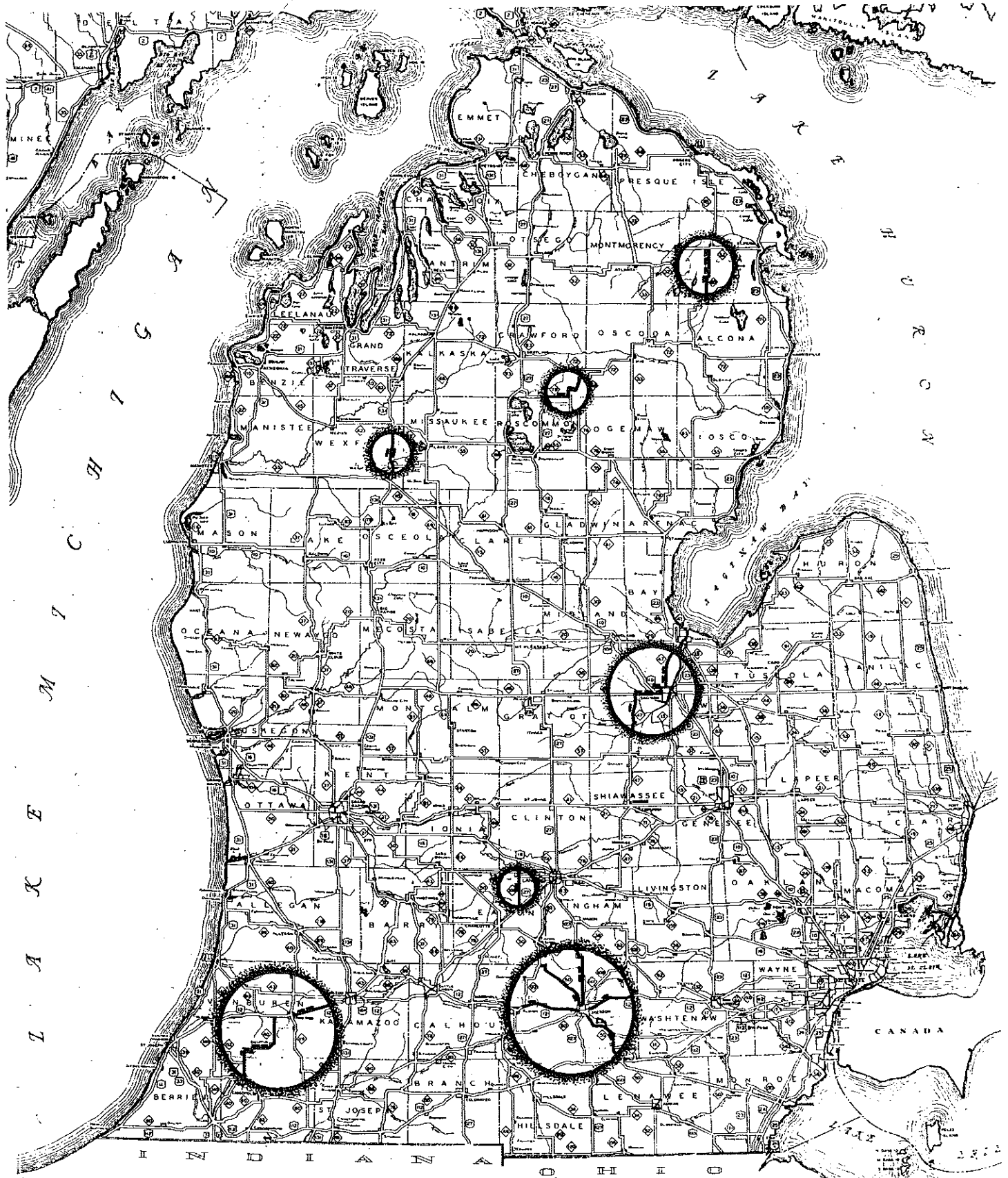
Pictures in Figures 34 and 35 show installations on the west side of M-40 between Dowagiac and Decatur. Because of darkness, pictures were not taken of the several stretches of paper fence along US-12 between Paw Paw and the East county line. These were, however, all in good condition.

SUMMARY

The Sisalkraft paper snow fencing has withstood bad sleeting, heavy rain, and high winds in good shape, but has been damaged in certain instances by loose stock and thoughtless persons, especially school children. This difficulty can be overcome, to a large extent, by providing a gap in the fence at definite intervals to permit passage through the barrier.

It was quite obvious from the inspection trip, that careful workmanship will be required in order to realize satisfactory performance. The results from the various installations indicate that this work can be done satisfactorily by the counties, if careful attention is paid to certain erection details.

Of the five miles of fence installed approximately 300 feet was found to be damaged. Any damaged panel could have been readily repaired by replacement with new material.



MAP SHOWING LOCATION
OF PAPER SNOW FENCE INSTALLATIONS

WINTER 1951 - 1952

FIGURE 1

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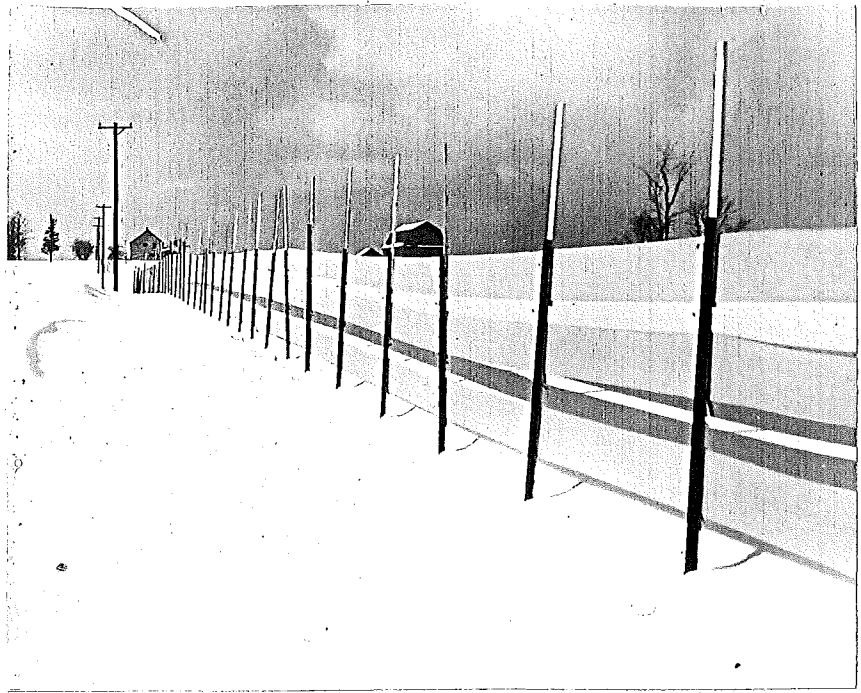


Figure 2. On north side of M-144 N.E. of Roscommon - 3-panel fence with provision for raising. Roscommon 1-29-52

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Figure 3. On north side of M-144 N.E. of Roscommon - 2- and 3-panel fence with provision for raising. Roscommon 1-29-52

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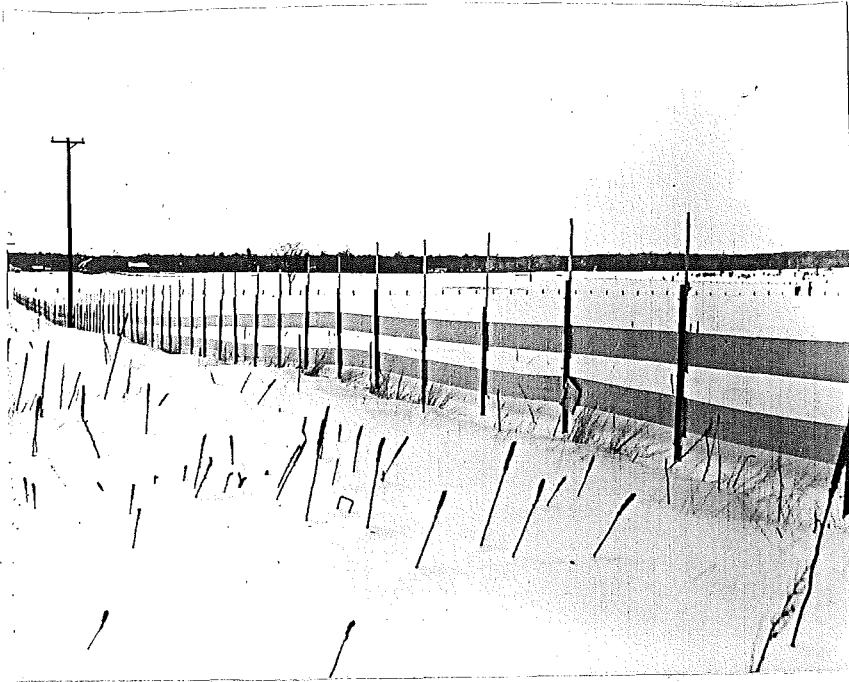


Figure 4. North side of M-144, N.E. of Roscommon.
Roscommon County, 1-29-52

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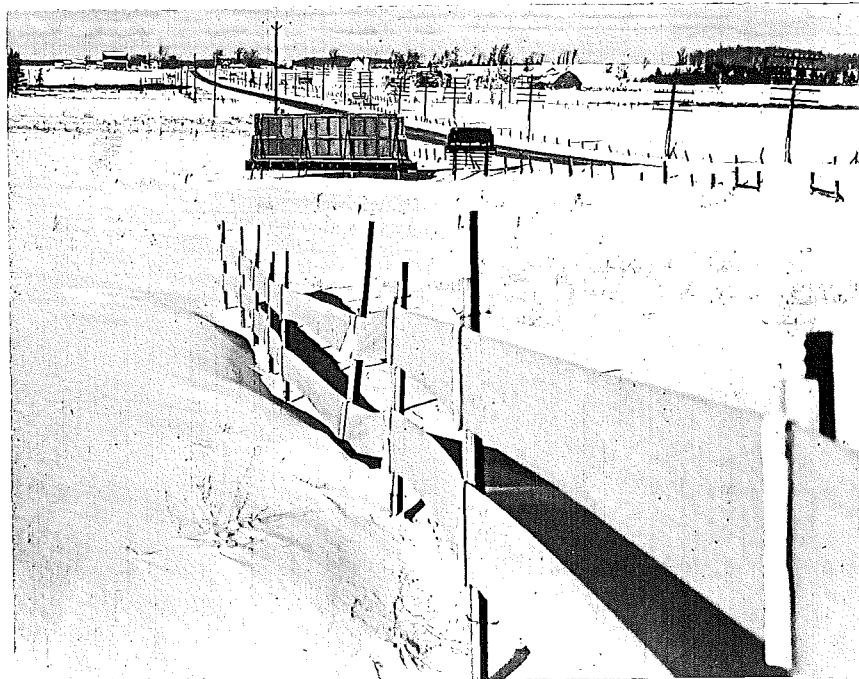


Figure 5. 2-panel fence on west side of US-131, N. of Cadillac.
Note uneven setting of posts.
Wexford County, 1-29-52

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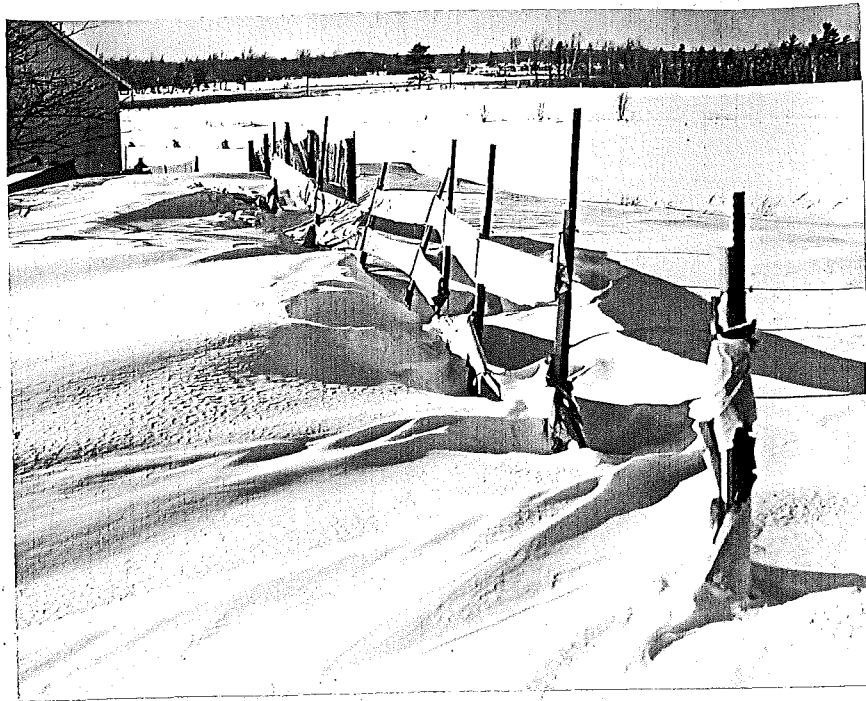


Figure 6. 2-panel fence, west side US-131 N. of Cadillac. Posts used were very badly bent at time of use. Wexford County, 1-29-52

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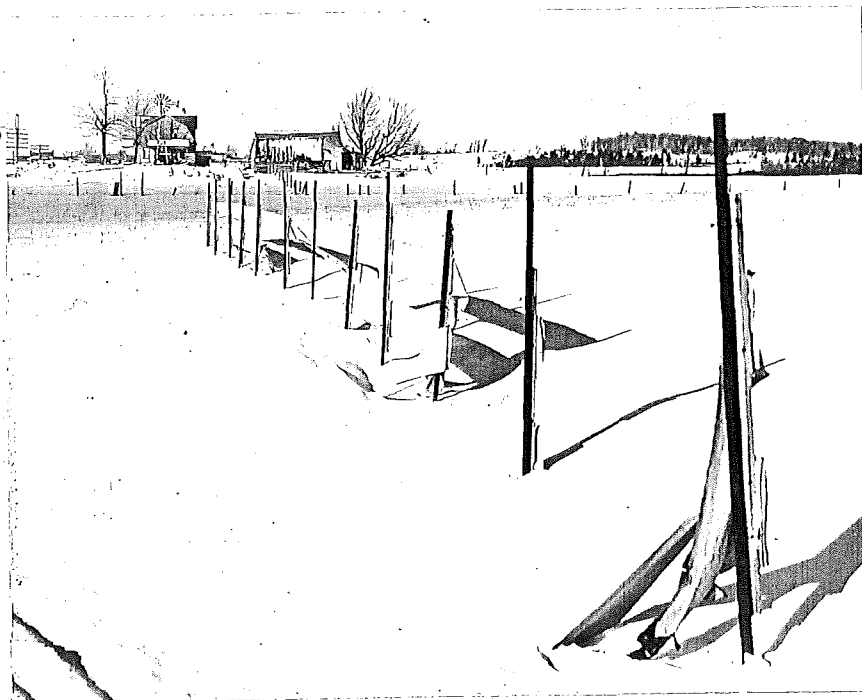


Figure 7. 2-panel fence, east side US-131 N. of Cadillac, showing damage done by children. Wexford County, 1-29-52

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Figure 8. Another view of 2-panel fence on east side of US-131 N. of Cadillac, showing damage caused by children. Wexford County, 1-29-52

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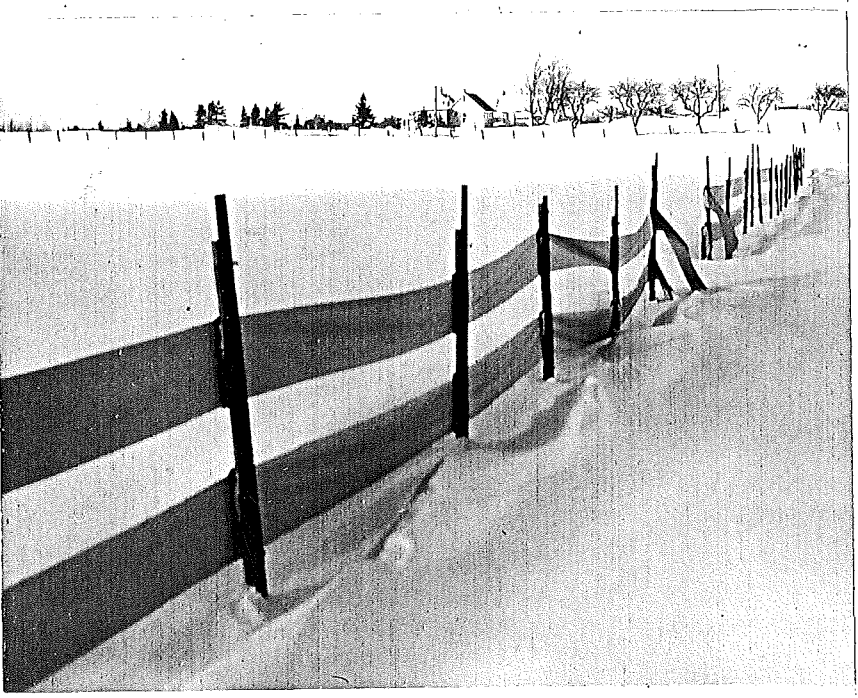


Figure 9. 2-panel fence on west side of US-131 N. of Cadillac, one post gone and fence broken, but functioning well.

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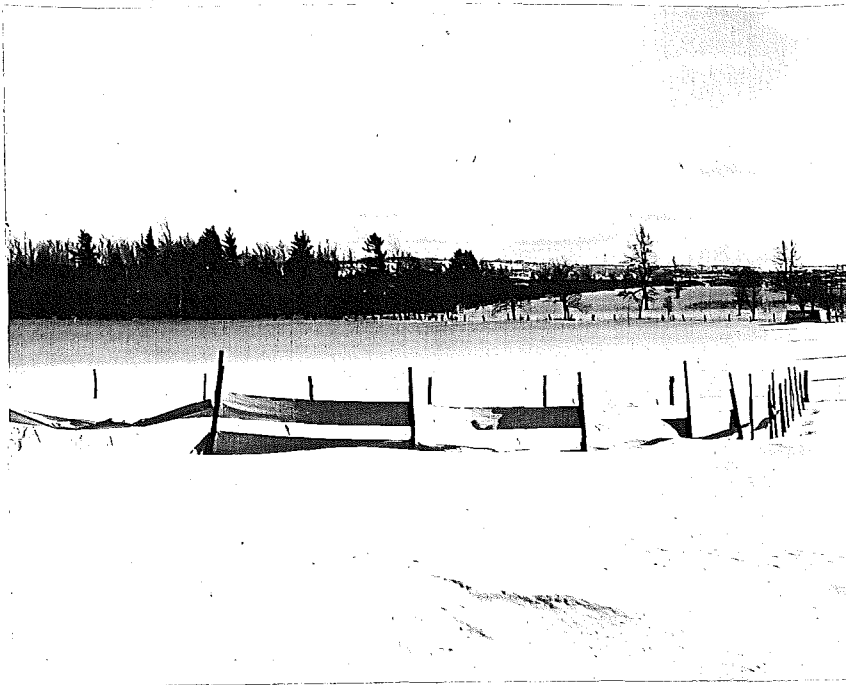


Figure 10. 2-panel fence on E. side of US-131 N. of Cadillac, posts unevenly spaced but fence functioning well.

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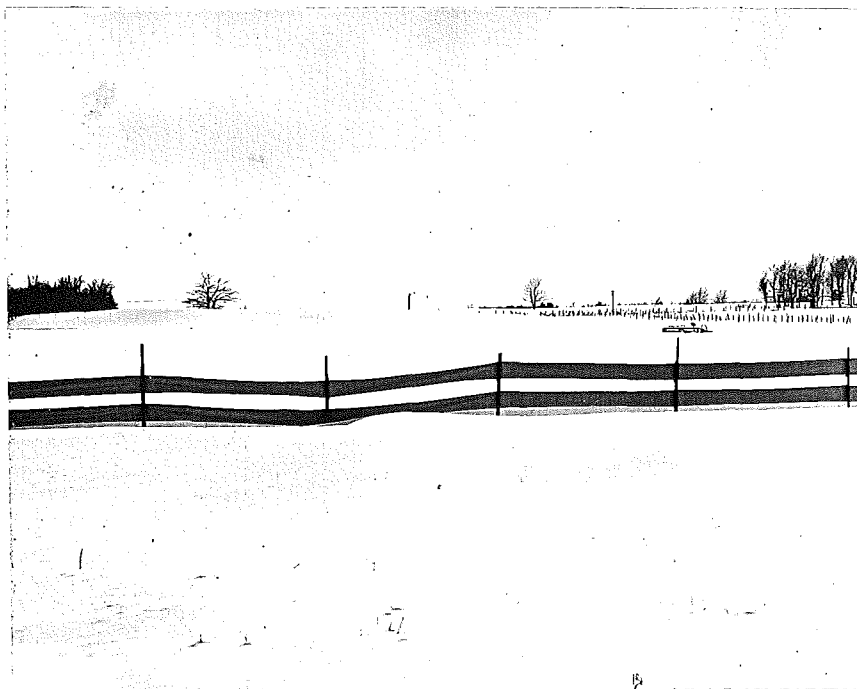


Figure 11. 2-panel fence on west side of US-131 N. of Cadillac, functioning well. Wexford County, 1-29-52

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Figure 12. 2-panel fence on west side of US-131 N. of Cadillac;
reported broken by children.
Wexford County, 1-29-52

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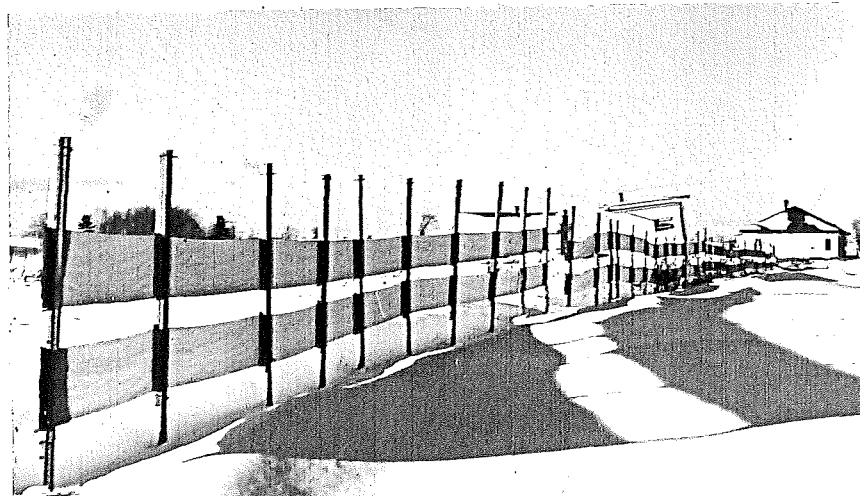


Figure 13. Fence on west side US-131 North of Cadillac, installed under
supervision of Sisalcraft Co. representative. This has been
up 60 days longer than strips shown in Figures 6 to 11, inc.
Wexford County, 1-29-52

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Figure 14. Picket fence on west side of US-131 N. of Cadillac, in same general location as paper fence.
Wexford County, 1-29-52

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Figure 15. Picket fence that has stopped functioning, along US-131 N. of Cadillac.
Wexford County, 1-29-52

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Figure 16. 3-panel fence on north side of M-46 just west of Saginaw. Excellent condition. Saginaw County, 1-30-52

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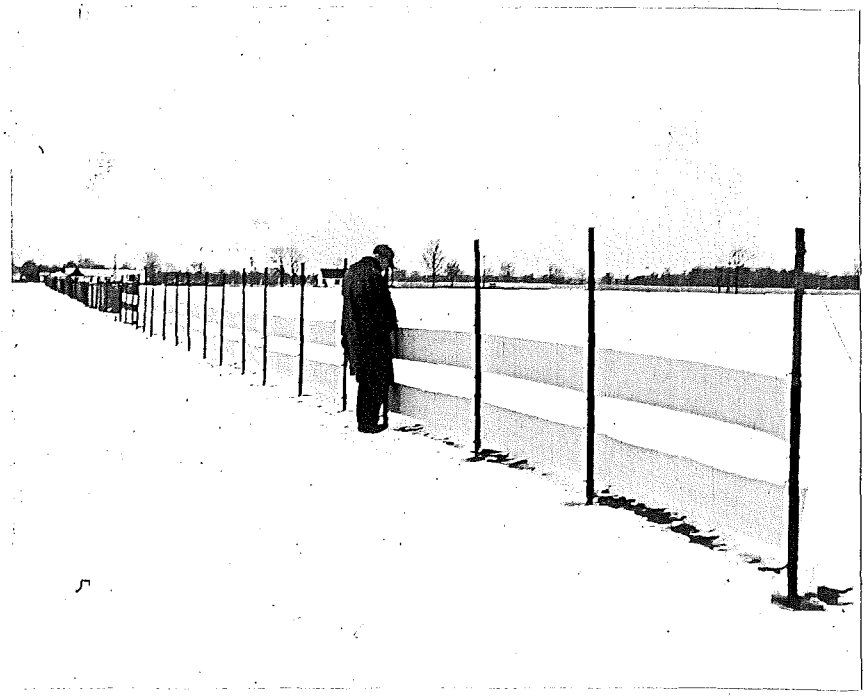


Figure 17. Special method of installing paper used here on north side of US-10 and M-47 in Saginaw. See Figure 18 for close-up. Excellent condition. Saginaw County, 1-30-52

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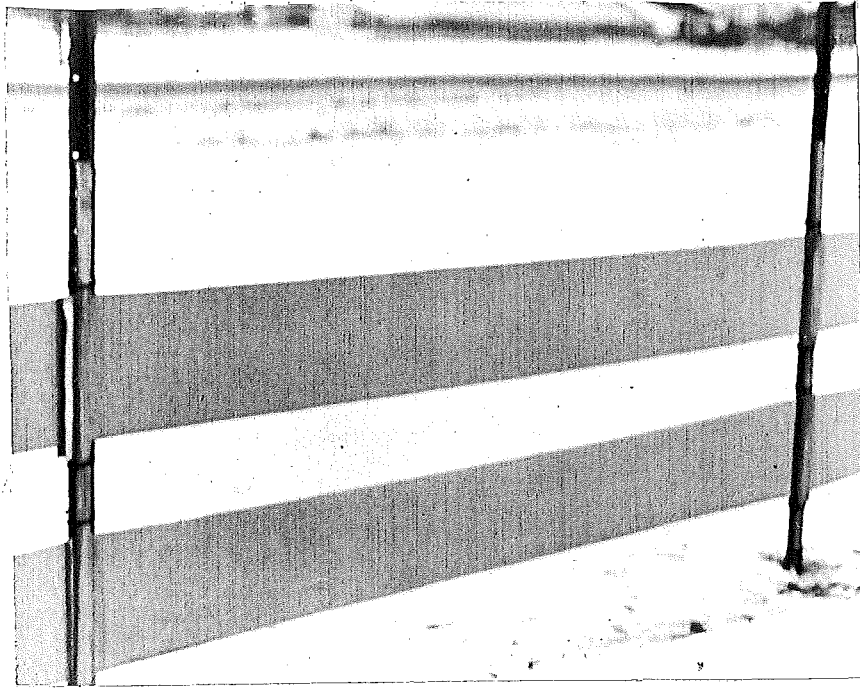


Figure 18. Paper installed between metal post and wooden strip without using staples.
Saginaw County, 1-30-52

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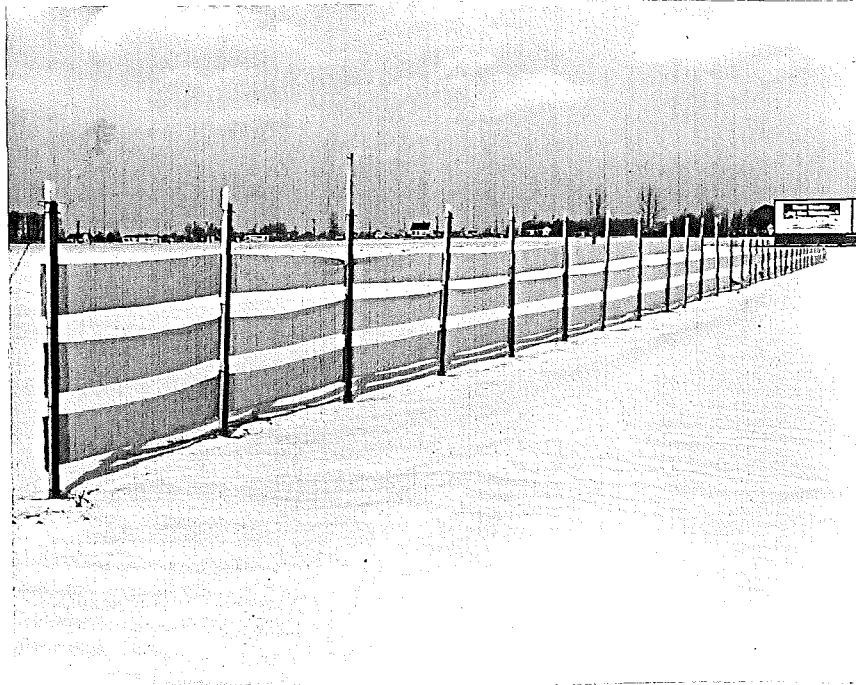


Figure 19. 2-and 3-panel fence on west side of M-47 just N. of Saginaw.
Saginaw County, 1-30-52

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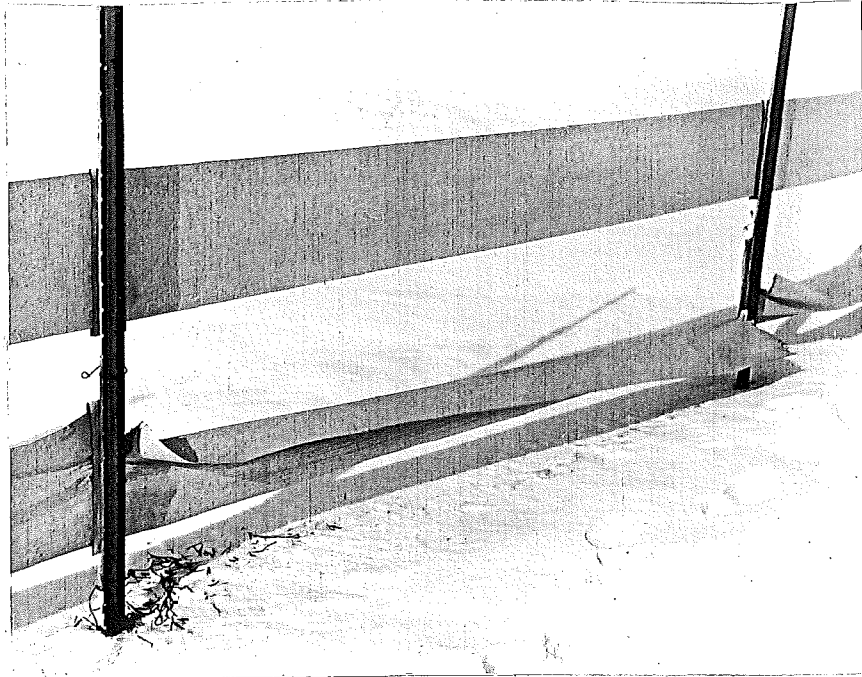


Figure 20. Detail of break shown in distance, Figure 19. 2-panel fence. Saginaw County, 1-30-52

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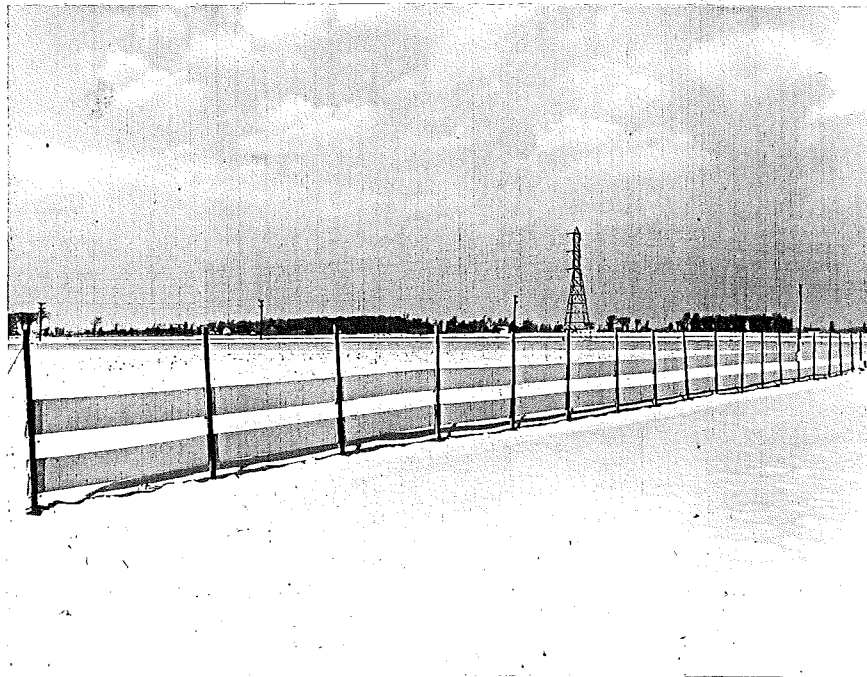


Figure 21. 2-panel fence on west side of M-47. N. of Saginaw. Saginaw County, 1-30-52

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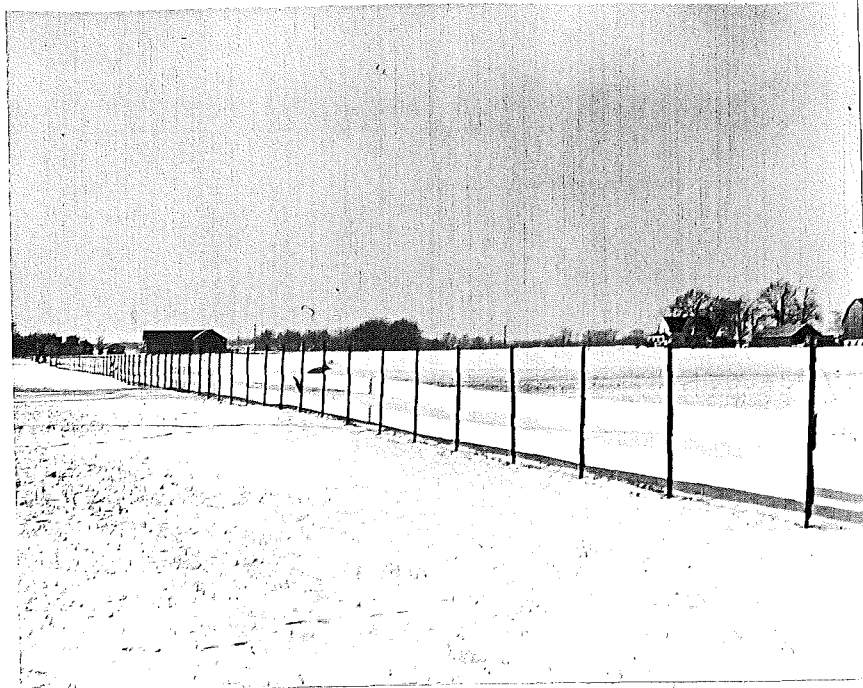


Figure 22. Long stretch of fence on north side of M-46 W. of Saginaw.
 Excellent condition.
 Saginaw County, 1-30-52

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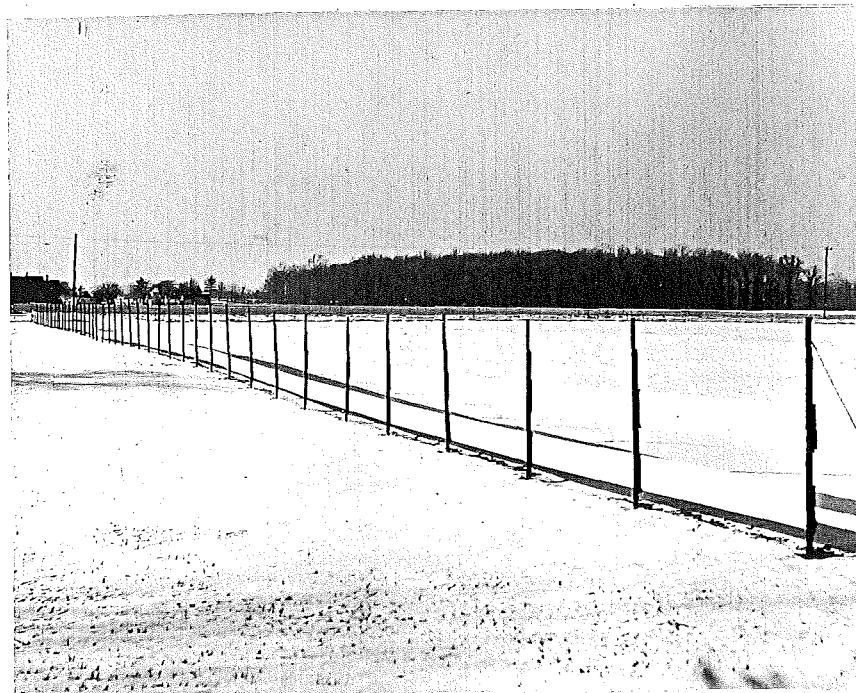


Figure 23. Long stretch of fence on north side of M-46 west of Saginaw
 at junction with M-47 to south. In excellent condition.
 Saginaw County, 1-30-52

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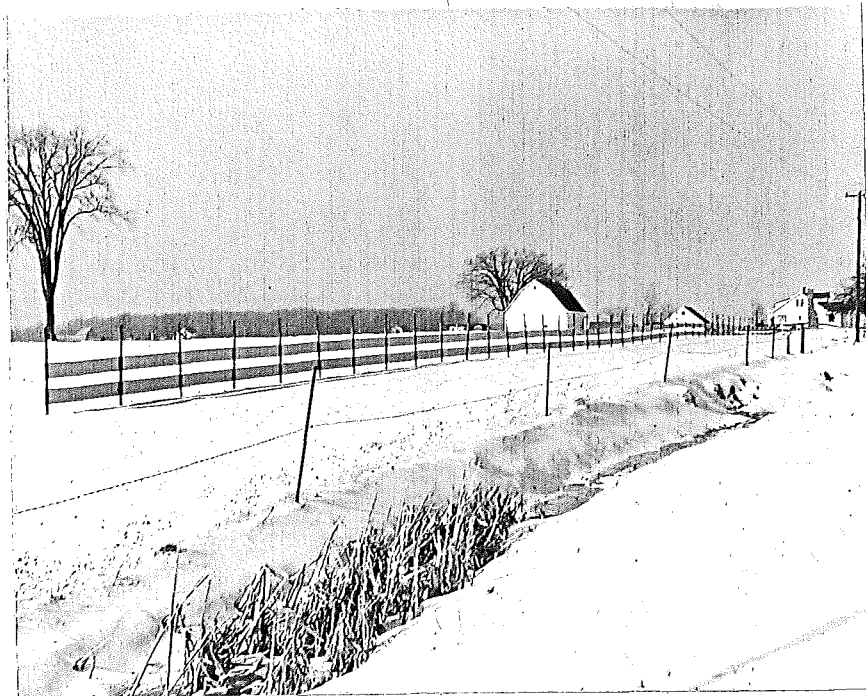


Figure 24. 2-panel fence on west side of M-47 just south of junction with M-46. Saginaw County, 1-30-52

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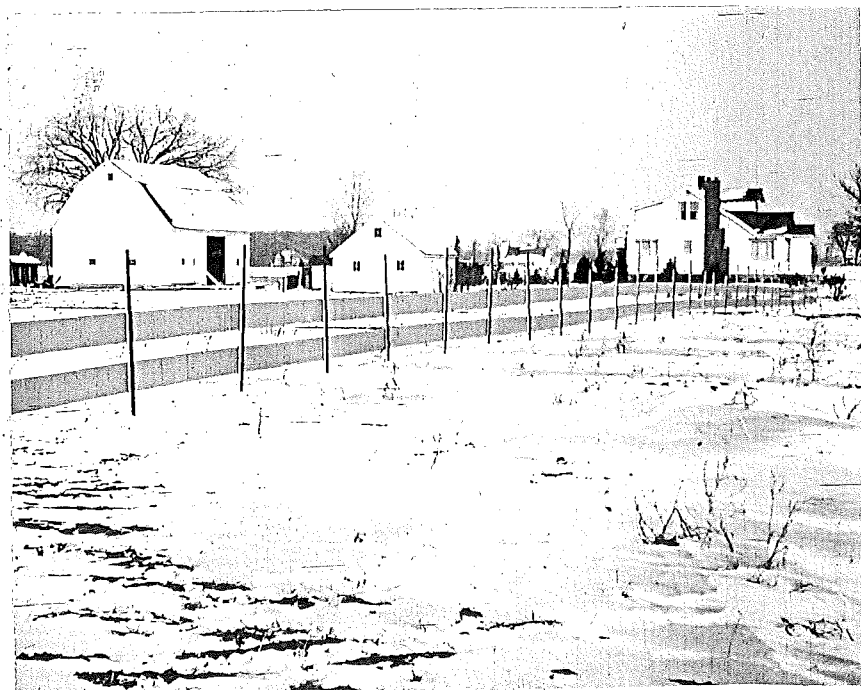


Figure 25. Picture taken 11-29-51 while crew was erecting fence shown in Figure 23. Saginaw County.

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Figure 26. North section of 2-panel fence on west side of US-127 in Jackson County just south of Ingham County line, showing installation in rolling topography.
2-7-52

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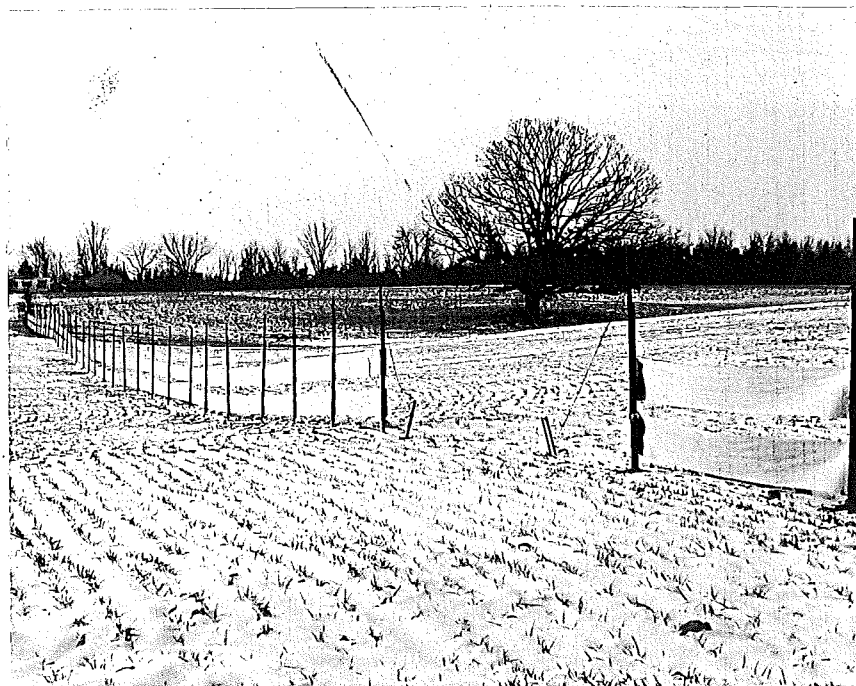


Figure 27. Shows gap in 2-panel section on west side of US-127 in Jackson County, just south of Rives Junction Road. Fence follows ground contour very well.
2-7-52

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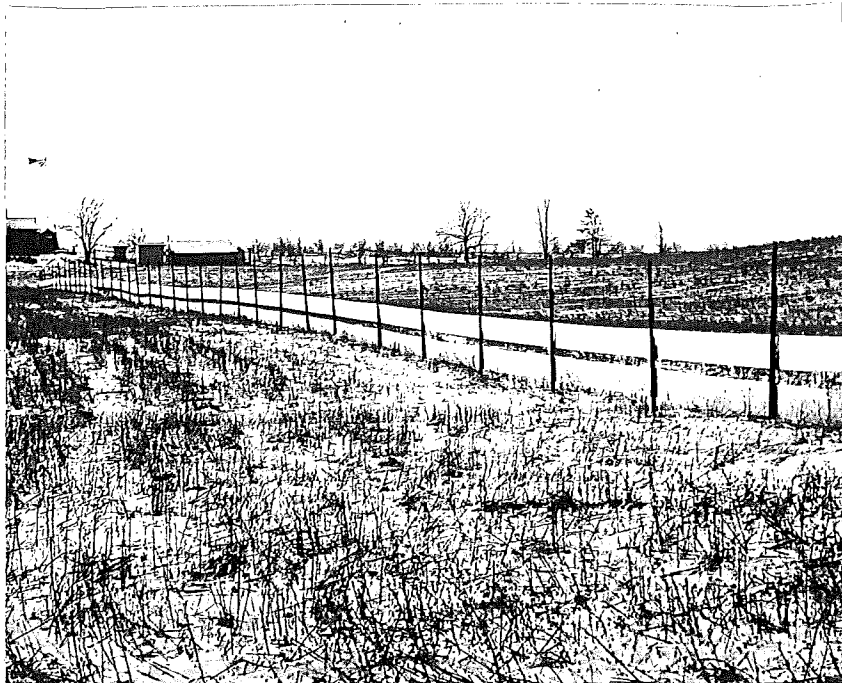


Figure 28. 2-panel fence on west side of M-50 in Jackson County,
south of Cunningham Road.
2-7-52

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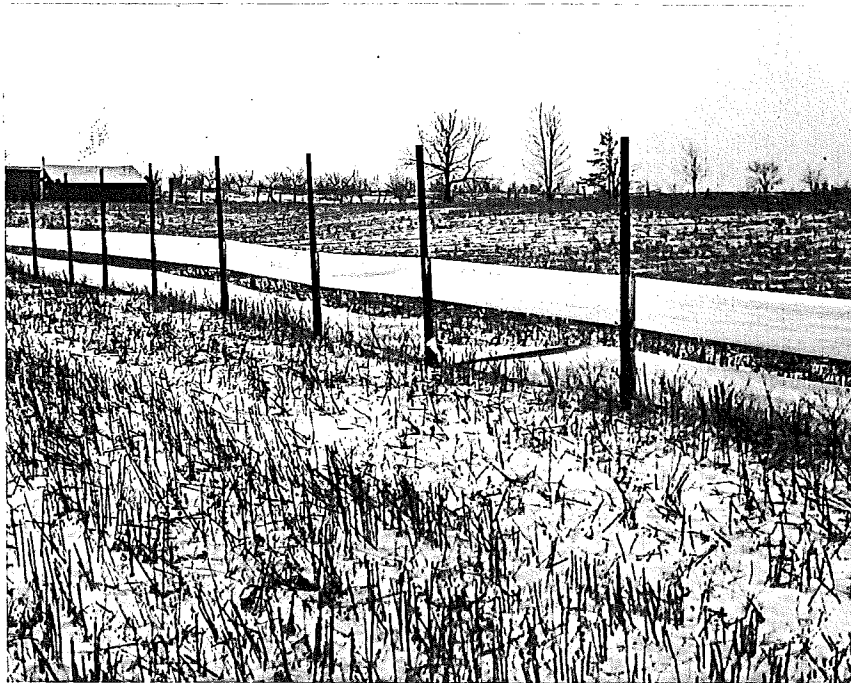


Figure 29. Close-up of break in stretch of fence shown in Figure 28.
Jackson County, 2-7-52

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Figure 30. 2- and 3-panel stretch of fence on north side of US-12 in Jackson County east of Ludlow Road, showing method of taking fence around corners.
2-7-52

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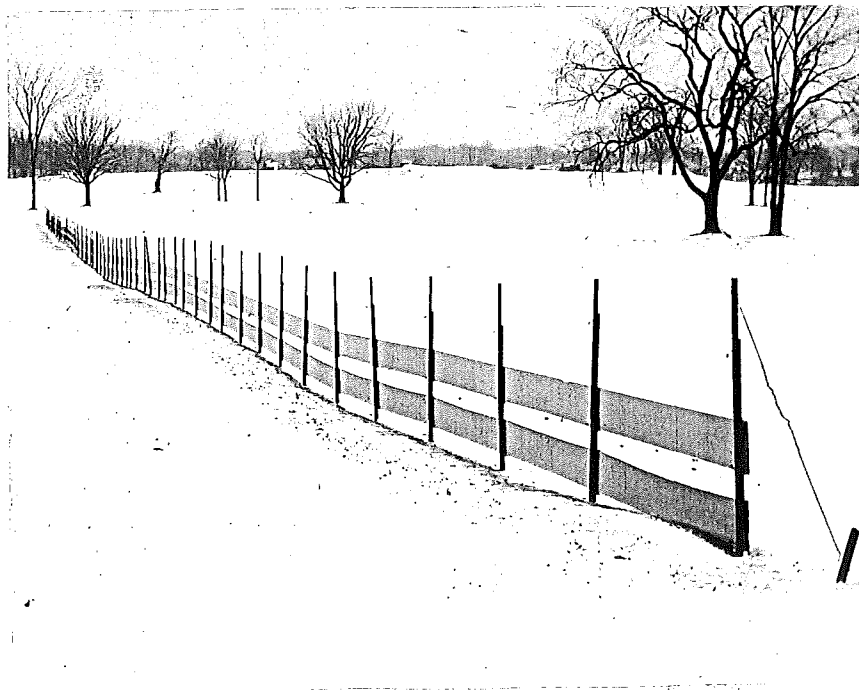


Figure 31. 2-panel fence on north side of M-60 in Jackson County east of Reynolds Road.
2-7-52

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Figure 32. 2-panel fence on S.W. side of M-50 near Napoleon, in Jackson County.
2-7-52

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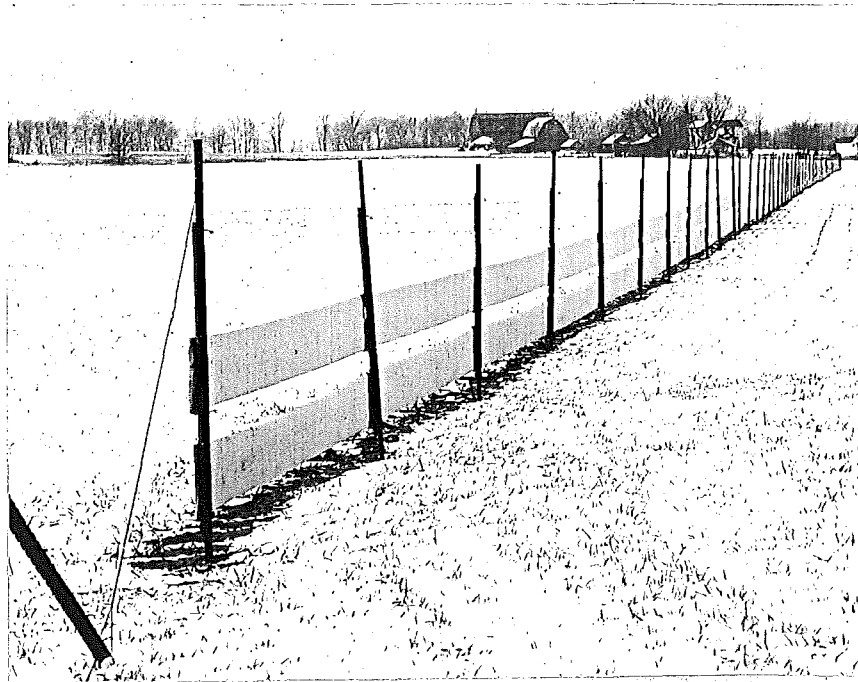


Figure 33. Another view of fence shown in Figure 32.
2-7-52

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Figure 34. Long stretch of 2-panel fence on west side of M-40 between Dowagiac and Decatur. Van Buren County, 2-7-52

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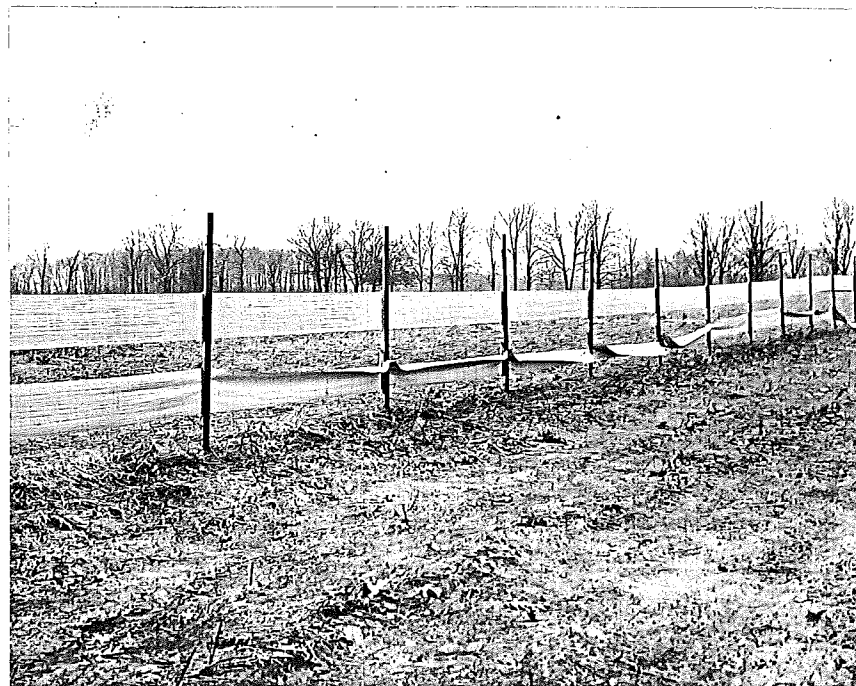


Figure 35. Next stretch north on west side of M-40 near Decatur. Van Buren County, 2-7-52