# Milwaukee Road Corridor Study





# Technical Appendix G

**Title:** SCENIC INVENTORY OF THE
MILWAUKEE ROAD CORRIDOR FROM
SPRING VALLEY TO LA CRESCENT, MINNESOTA

**By:** .TION
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.. OF NATURAL RESOURCES

## Department of Natural Resources

Abstract

Study attempts to evaluate the visual attractiveness of the abandoned railroad Right-of-Way between Spring Valley and LaCrescent junction. Results are based on quarter-mile interval measurements of the following qualities:

- complexity of the visual field,
- complexity of the visual edge,
- enclosure,
- distance of views,
- orientation to water,
- landform ruggedness, and
- important views of SE Minnesota.

Results show that the lowest visual values can be found on the predominantly agricultural lands between Spring Valley and Fountain. Almost immediately values begin to rise dramatically as the railroad grade begins its descent into the Root River Valley. Scenic quality peaks near Lanesboro with its rock faced bluffs towering over both river and town. Although scenic quality remains relatively high as one travels eastward, values peak again after Houston as the RoW encounters the beginnings of the Mississippi River backwaters.

## Purpose

The intent of this study was to look at the railroad right-of-way (RoW) throughout its entirety from Spring Valley to La Crescent, Minnesota and identify portions having greater or lesser visual quality. (see Map 1, and Photos 1-8, pages 4 to 11). The purpose was not to compare this potential trail with others around the midwest (although the chosen methodology might allow that in the future).

## Introduction

In an exhaustive study of conversions of railroad right-of-ways to recreational trails, Macdonald (1979) identified important ingredients of successful projects. They included:

1. scenic quality;
2. historical or technological interest;
3. recreation potential;
4. connections with a larger park and trail system;
5. useability as a transportation corridor; and,
6. proximity to users.

Intuitively, it makes sense that visual quality would rank high on such a list. But, how do you evaluate it? Is there any way to compare one area's attributes with another? As might be expected, the relative nature of beauty is at the heart of the problem.

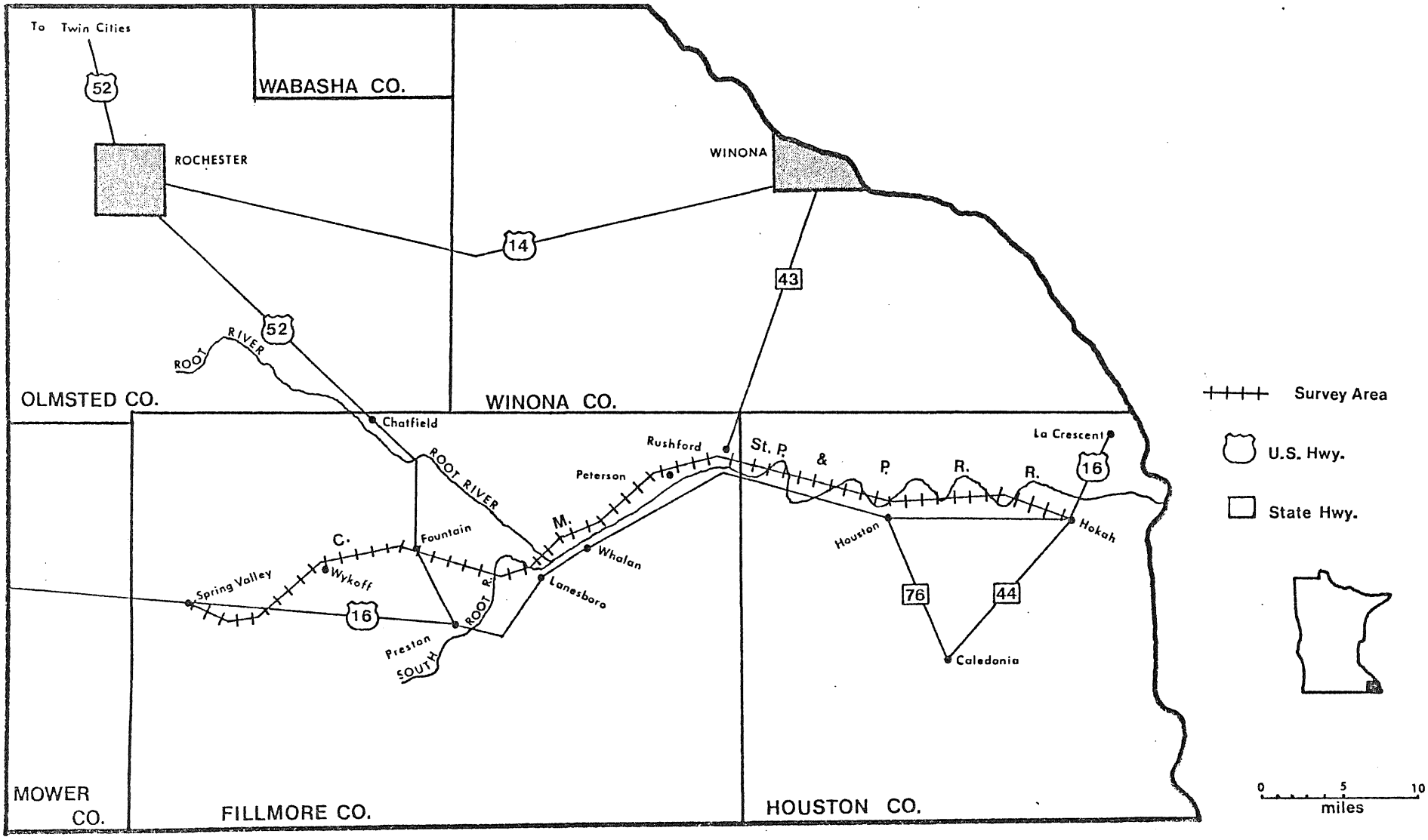
Webster's dictionary defines beauty as "the quality attributed to whatever pleases in certain ways, as by line, color, form, tone, behavior, etc." Clearly there are a number of factors which contribute to create the whole. The absence or presence of these factors will have a bearing on the overall visual quality of an area.

What are these factors? Macdonald (1979) has stated that "scenic quality means a balance between coherence and complexity." For example, a landscape that is dotted with a number of agricultural crops organized into some pattern whether it be by the contour or 40 acre lines is a pleasing site. Compare this to a rural junkyard. Both have a certain amount of complexity, but in the case of the rural junkyard, the landscapes quality is detracted from by this incoherent element.

Macdonald (1979) also states that "water features have high scenic quality" and "scenic trails have both enclosure and distant views." He cites the dramatic effect of the tunnels on the users of the Sparta-Elroy Trail in Wisconsin. Furthermore, he states that "dramatic topography is always a major attraction to the public..." In both cases, proper management can enhance the existing situation. Views can be modulated by encouraging vegetative cover in some areas while retaining vistas in others.

A study by Hornbeck and Okerlund (1973) examined visual values for highway users. Assuming automobile tourists have similar visual likes and dislikes as trail users, additional factors appear appropriate to add to the list begun above. They "hypothesized that the desire and opportunities to see important views, the degree of complexity created by other areas and features, the impact of the roadside edge, and elements created as a direct result of the highway facilities are components to be measured."

# MILWAUKEE ROAD CORRIDOR STUDY AREA




Map 1

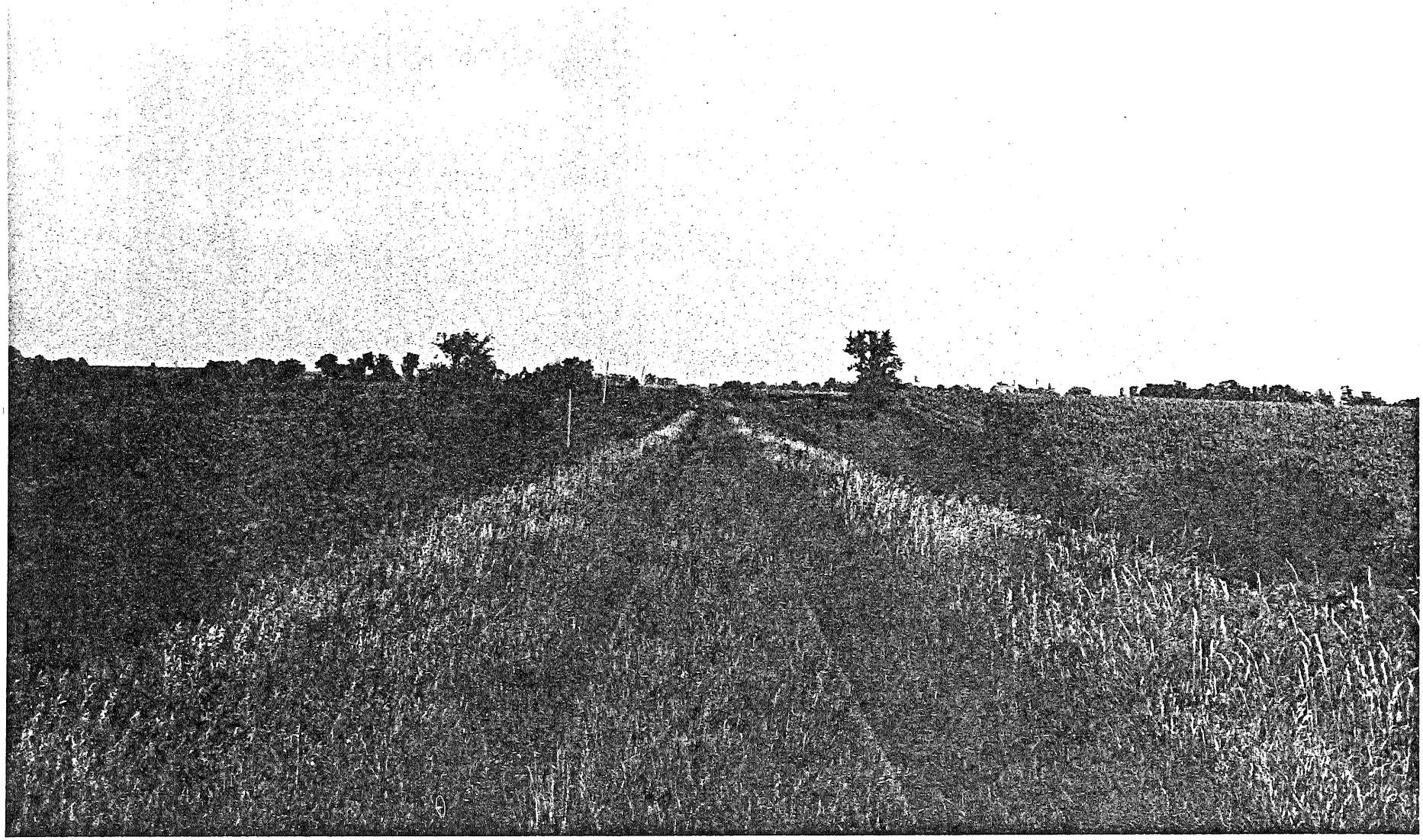


PHOTO ONE: Milwaukee Road Right-of-Way Between Spring Valley and Wycoff, Minnesota

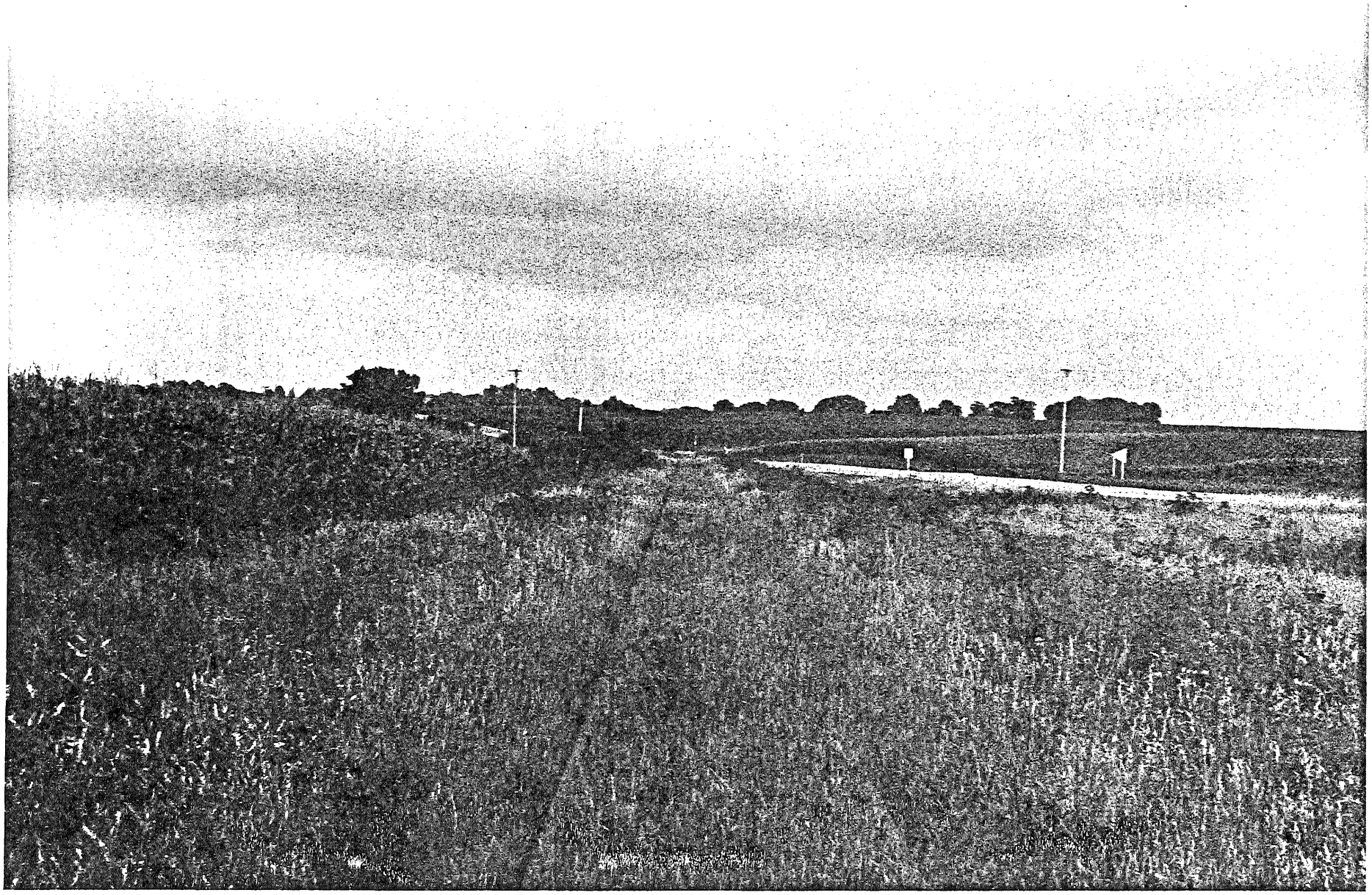


PHOTO TWO: Milwaukee Road Right-of-Way Between Wycoff and Fountain, Minnesota

PHOTO THREE: Milwaukee Road Right-of-Way Between Fountain and Lanesboro, Minnesota

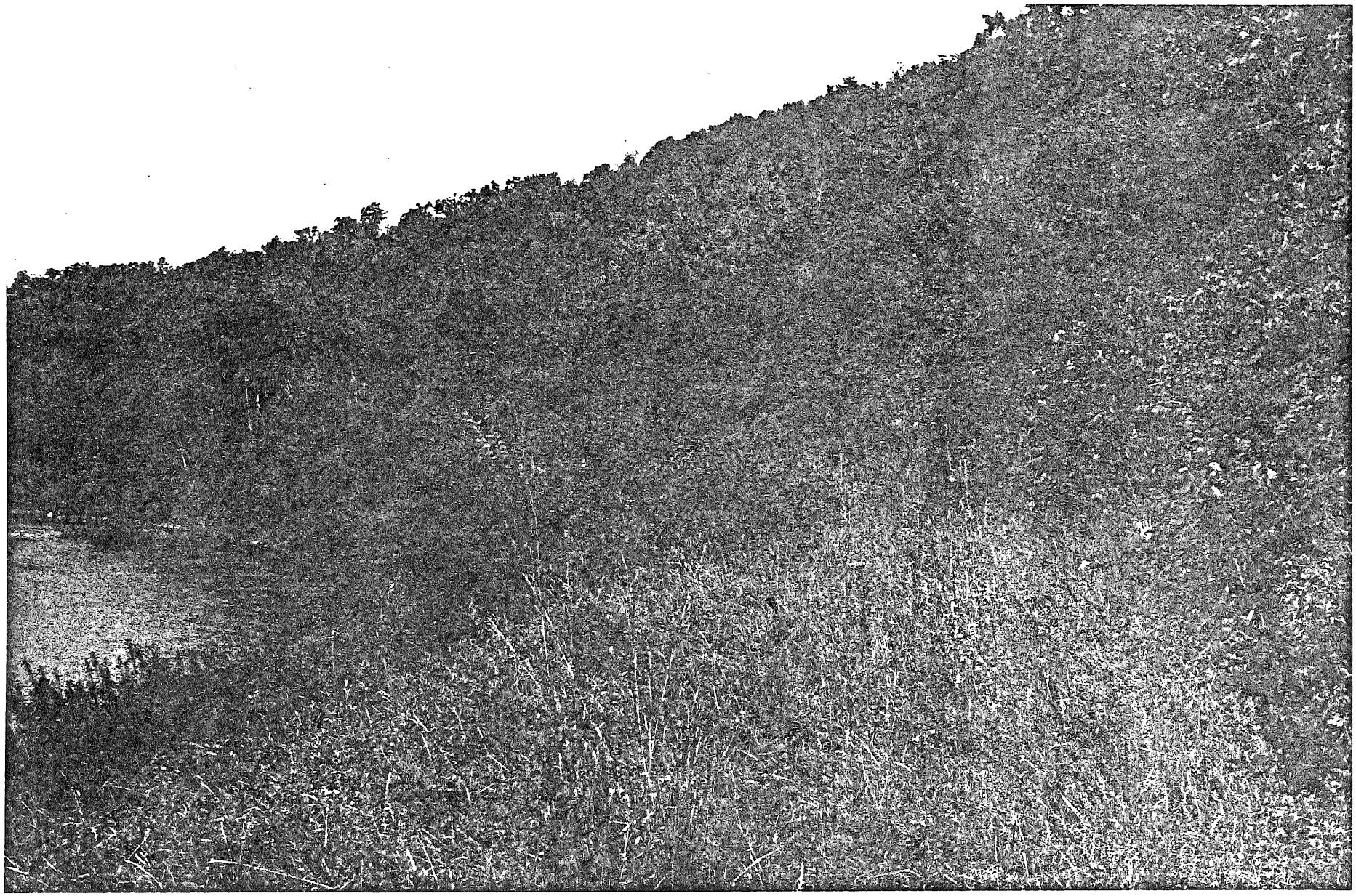


PHOTO FOUR: Milwaukee Road Right-of-Way Between Lanesboro and Whalan, Minnesota

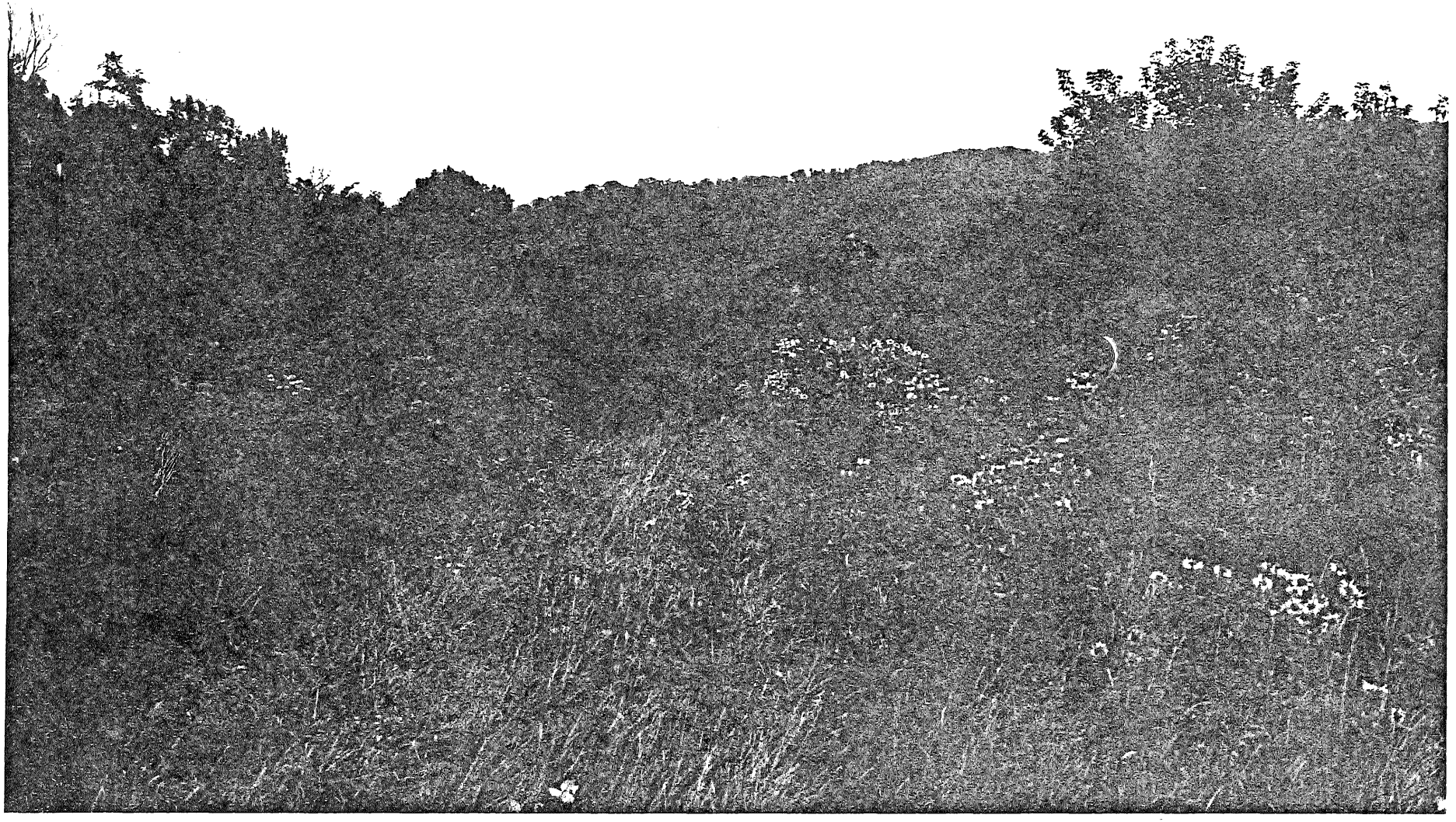


PHOTO FIVE: Milwaukee Road Right-of-Way Between Whalan and Peterson, Minnesota

PHOTO SIX: Milwaukee Road Right-of-Way Between Peterson and Rushford, Minnesota

PHOTO SEVEN: Milwaukee Road Right-of-Way Between Rushford and Houston, Minnesota

PHOTO EIGHT: Milwaukee Road Right-of-Way Between Houston and Hokah, Minnesota

Methodology Discussion

It was determined that a sampling plan would have to be applied consistently over the entire trail. An interval of one quarter mile was chosen because a user can see that far in an unobstructed landscape. It was felt that any interval less than that might jeopardize completion of the task by takin too much time, and any interval greater than that might miss abrupt changes in the potential users viewshed.

There was an early desire to keep a running log of visual values between the interval points, and them simply to summarize them. However, this method has to be dismissed largely because of anticipated problems with footing caused by the still in place railroad tracks. Therefore, the inventory consisted of reaching the interval point, and then rating separately in both directions the visual quality of the right-of-way based on a set of criteria. Factors included:

-complexity of the visual field;
-complexity of the visual edge;
-enclosure;
-distance of views;
-orientation to water;
-landform ruggedness, and
-important views of Southeast Minnesota.

These factors will be described in the following section. From the outset, it is important to note that the rater based the scores purely on existing conditions. That is to say, no management modifications were considered such as maintaining or enhancing vistas by selective vegetative cutting. Because each site would have had to be thoroughly explored as to options, given the time constraints and nature of this study, it was judged a difficult, if not an impossible task.

Limitations to Chosen Methodology

There is no implication made that this procedure is faultless. Although the chosen methodology provided a set of information about each particular site, it does not address the interrelationships between the sites. It is assumed that a trail users experience is enhanced by having a modulation of views, vegetative overstory, microclimate and visual field complexity. In addition, the speed that the user travels through a landscape will have an effect on perceptions. For example, it is assumed that the bicyclist would be less aware of subtle variations in the environment then the hiker. In other words, the faster the travel mode, the more the rider is forced to combine visual stimuli into a single impression; whereas, the slower one moves the greater the opportunity to concentrate on individual aspects of the landscape.

Findings

Complexity of the visual field is a measure of the amount of visual stimuli a user would find looking straight ahead on the RoW. Figure One summarizes this component throughout the study area. In general, the primary element of field complexity between Spring Valley and Fountain is the checkerboard pattern of farms superimposed on the slightly rolling landscape. In addition, there are occasional wooded areas surrounding homesteads and areas of poor drainage.

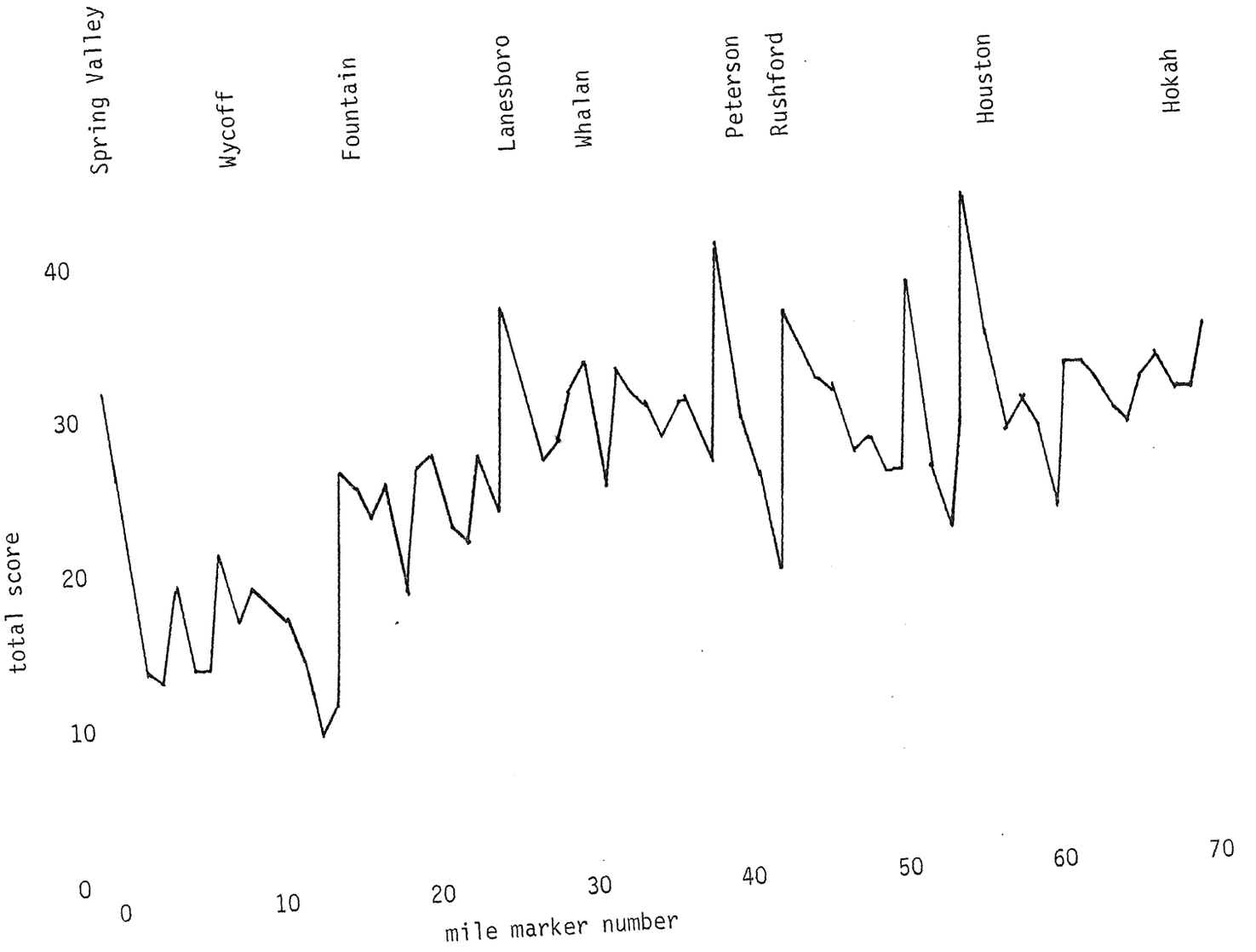



FIGURE ONE: Field of View Complexity Along Milwaukee Road Right-of-Way

However, as the RoW begins to descend into the Root River Valley just east of Fountain, the complexity of field increase dramatically. Although there are segments where the RoW travels through a relatively wide floodplain and is flanked by agricultural crops, these are not of long duration. Some of the peaks in score reflect the entrance into small towns where there is a great deal of visual stimulation.

As was stated in the Introduction, visual complexity can have either positive or negative values. This would depend on the nature of the complexity. The example used earlier was that a junkyard can be complex, but actually detract from the scenic stretch of 72 miles, perhaps only 6 sites which were of this negative quality. These occured largely at the entrance into towns where often the RoW was considered something of a depository for items not wanted on the streets by area residents. In addition, the lack of grass cutting in many instances presented a disheveled appearance. It was assumed that the appearance would definately improve as a result of routine maintenance if the RoW were used as a trail. Therefore these select negative aspects were discounted.

Complexity of the visual edge is a measure of the amount of visual stimuli immediately adjacent to the railroad tracks. Figure Two summarizes this component throughout the study area. A primary difference of edge as compared with visual field is the volatility of the scores.

Whereas the landscape views unfold somewhat gradually, the edge was dependant on more site specific factors. For example, if the RoW were left unused by the adjoining landowners, pioneer saplings might be seen. On the other hand where the adjoining landowners either tilled the soil or allowed grazing, it tended to reduce complexity and consequently received a somewhat lower score.

In general, the scores were lower in the predominantly agricultural lands between Spring Valley and Fountain, and also in other smaller areas where the floodplain widened out considerably.

Enclosure is how much the landscape encircles or surrounds the user. Figure Three summarizes this component throughout the study area. As might be expected, the amount of enclosure a user perceives would increase dramatically once away from the predominantly agricultural lands between Spring Valley and Fountain. Values for this component peak in areas of relative wilderness where the overstory practically encloses the right-of-way.

Distance of views measures the length one can see straight ahead. This component is summarized in Figure Four. Although there is a great deal of fluctuation throughout the trail, no clearcut pattern is discernable. This is probably because relatively flat land does not encumber one's sightlines, but does not provide any focus for judging distance either.

On the other hand, as the RoW proceeds through the river valley, some views are obstructed while others are enhanced by the vantage point provided by topographical change.

Orientation to water from the trail was evaluated and is summarized in Figure Five. There are no segments of the RoW (greater than ½ mile) where the Root River can be viewed continuously. Even the best areas for viewing are often screened by a line of bankside vegetation. Evaluation for this component considered all surface waters.

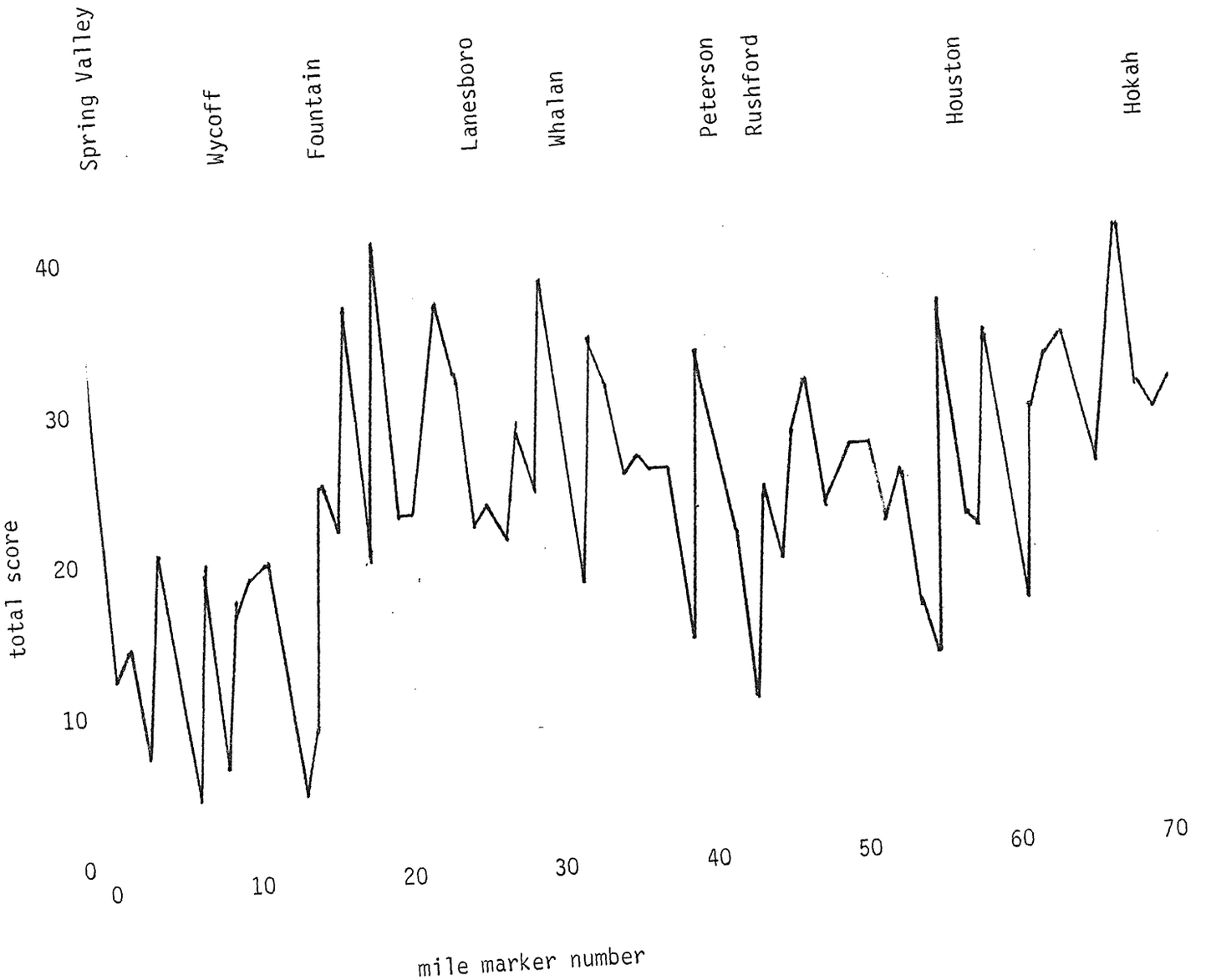



FIGURE TWO: Visual Edge Complexity Along Milwaukee Road Right-of-Way

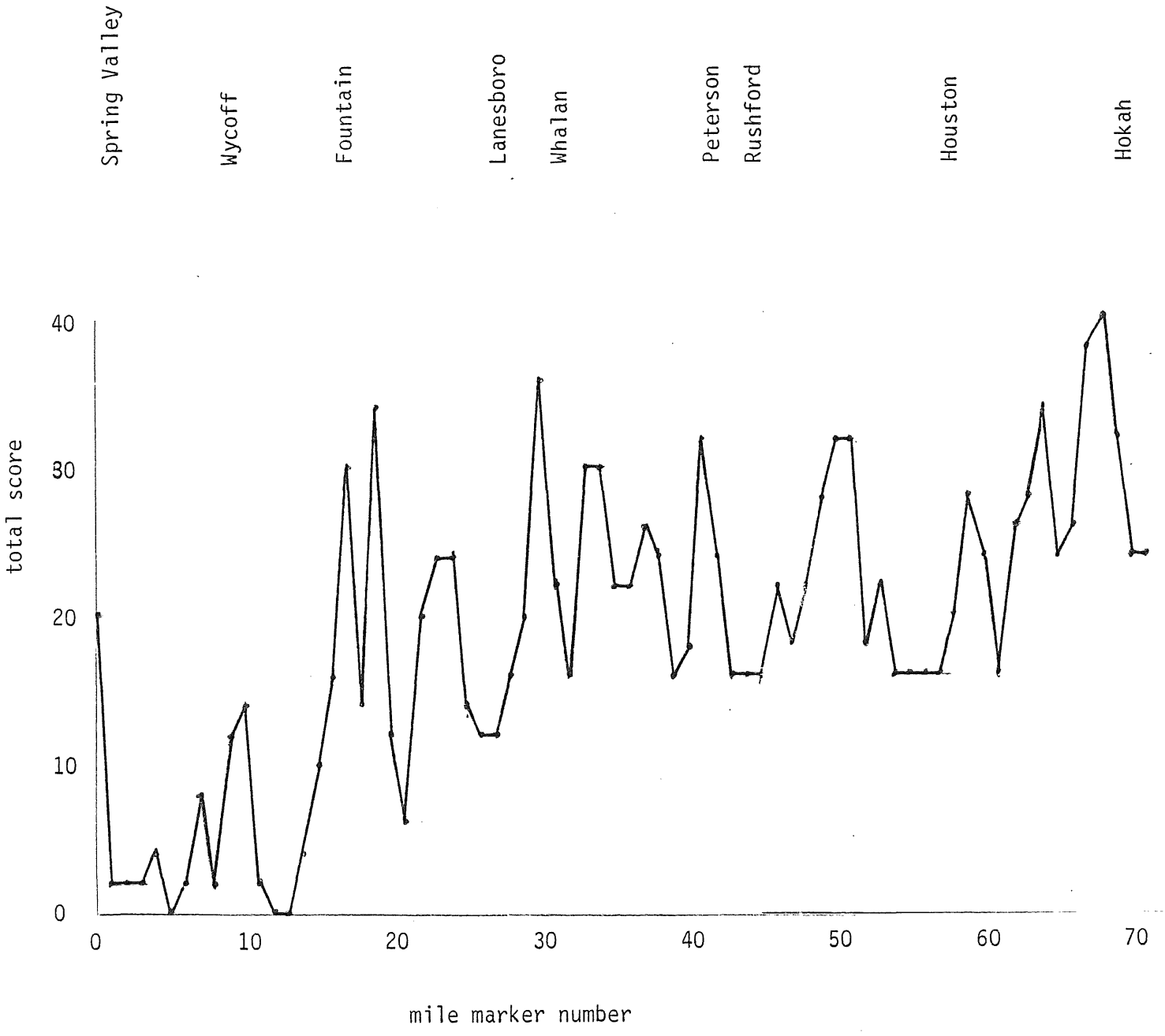



FIGURE THREE: Landform and/or Vegetation Enclosure
Along Milwaukee Road Right-of-Way

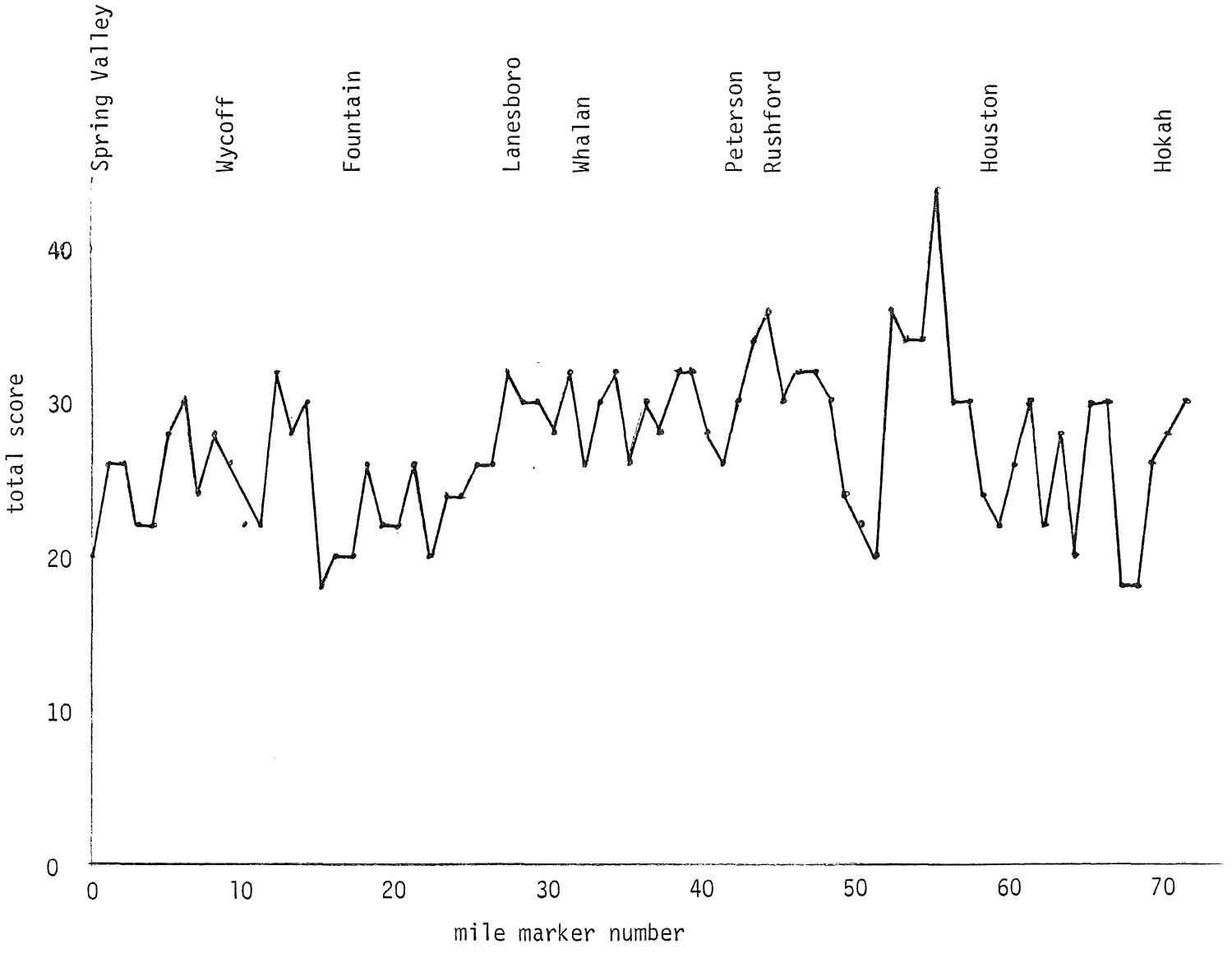



FIGURE FOUR: Distance of Views Along Milwaukee Road Right-of-Way

Principal areas for water viewing are between a point 5 miles east of Fountain and 4 miles west of Houston, and then again, almost immediately outside the eastern end of Houston until its termination near La Crescent. This last segment includes a number of backwater swamps as well as the Root River and other small creeks.

Landform ruggedness measures dramatic character of the topography. This component is summarized in Figure Six. West of Fountain, values for this component were low, but as with many of the other components, they begin to increase dramatically as the RoW descends into the valley. This value reaches something of a sustained peak between Lanesboro and Rushford where exposed rock bluff walls predominate. From Rushford to the end of the proposed trail near La Crescent, the floodplain becomes increasingly wide with the bluffs appearing more rounded and fully vegetated.

Important views consist of sights that the analyst thought users would bring to a trail within southeastern Minnesota. It is clearly a subjective judgment. They included such things as small towns, streams and rivers as well as scenic valleys and dramatic bluffs. This component is summarized in Figure Seven.

Except for a few small peaks at the towns between Spring Valley and Fountain, this value ranks relatively low. Important views increase until just west of Lanesboro, and thereafter the RoW achieves a relatively sustained peak until its termination near La Crescent.

Facility-related visual impact consists of bridges constructed for the railroad. They are somewhat consistently distributed across the RoW between Fountain and the eastern RoW terminus.

Summary

Four major landscapes were identified in the process of this study: the relatively flat agricultural lands between Spring Valley and Fountain; the descending transition zone into the Root River Valley until near Lanesboro; the relatively swift moving waterways continuing on to Houston through a number of valley floor farms, and finally terminating with the onset of Mississippi River backwater ponds and swamps (see Map 2, page 21).

As it was the purpose of this study to look at the railroad RoW throughout its entirety from Spring Valley to La Crescent and identify portions having greater or lesser visual quality, some aggregation of the data was necessary to make sense out of the different factors. It was assumed that each of the factors were equally important, and that most varied in the same direction (lower west of Fountain, higher east of Fountain). Therefore they were weighed the same and simply totaled up.

Figure Eight displays score totals and summarizes the results of the individual site inventory. It can be seen that the lowest values can be found between the towns of Spring Valley and Wycoff. This is to be expected, since the right-of-way in that area crosses predominately agricultural land that rolls very slightly. At Fountain, this begins to rapidly change. The right-of-way almost immediately begins to descend into the Root River Valley. Scenic quality reaches a peak as it nears Lanesboro with its rock-faced bluff towering over the river and the town. Although the scenic value remains relatively high as the right-of-way continues in an easterly direction, it peaks again after the RoW leaves Houston and begins to encounter backwaters of the Mississippi River.

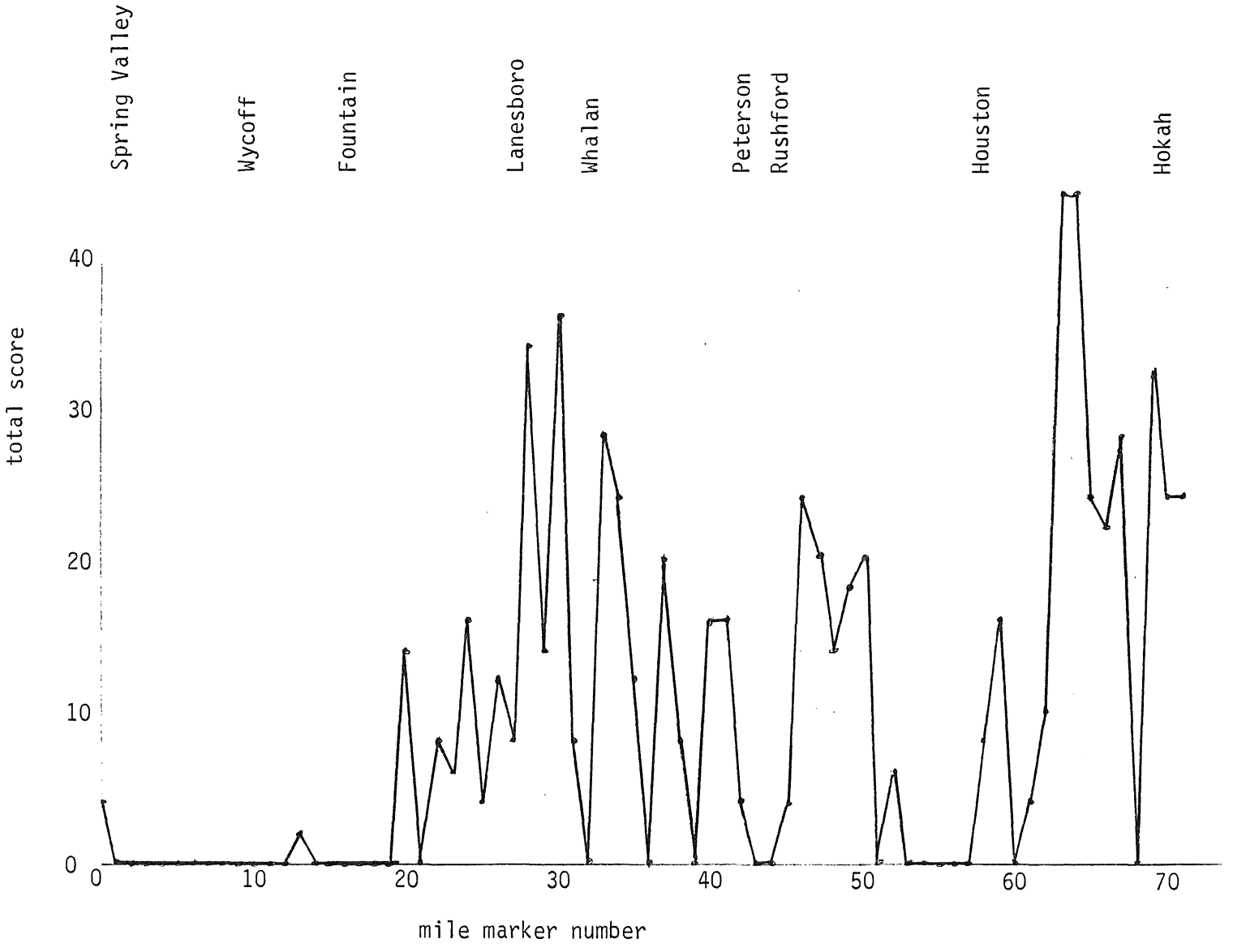



FIGURE FIVE: Orientation to Water Along Milwaukee Road Right-of-Way

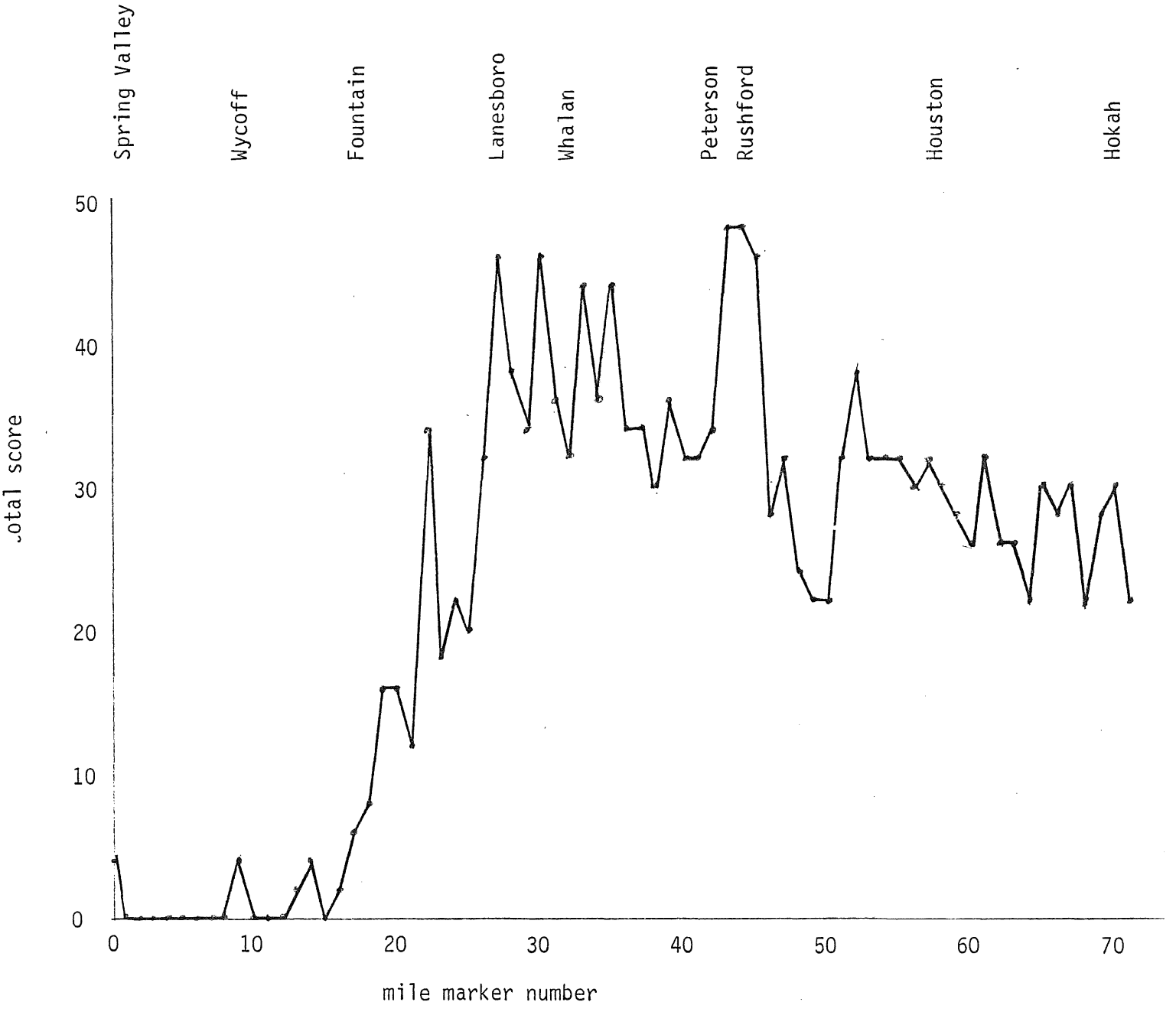



FIGURE SIX: Topographical Ruggedness Along Milwaukee Road Right-of-Way

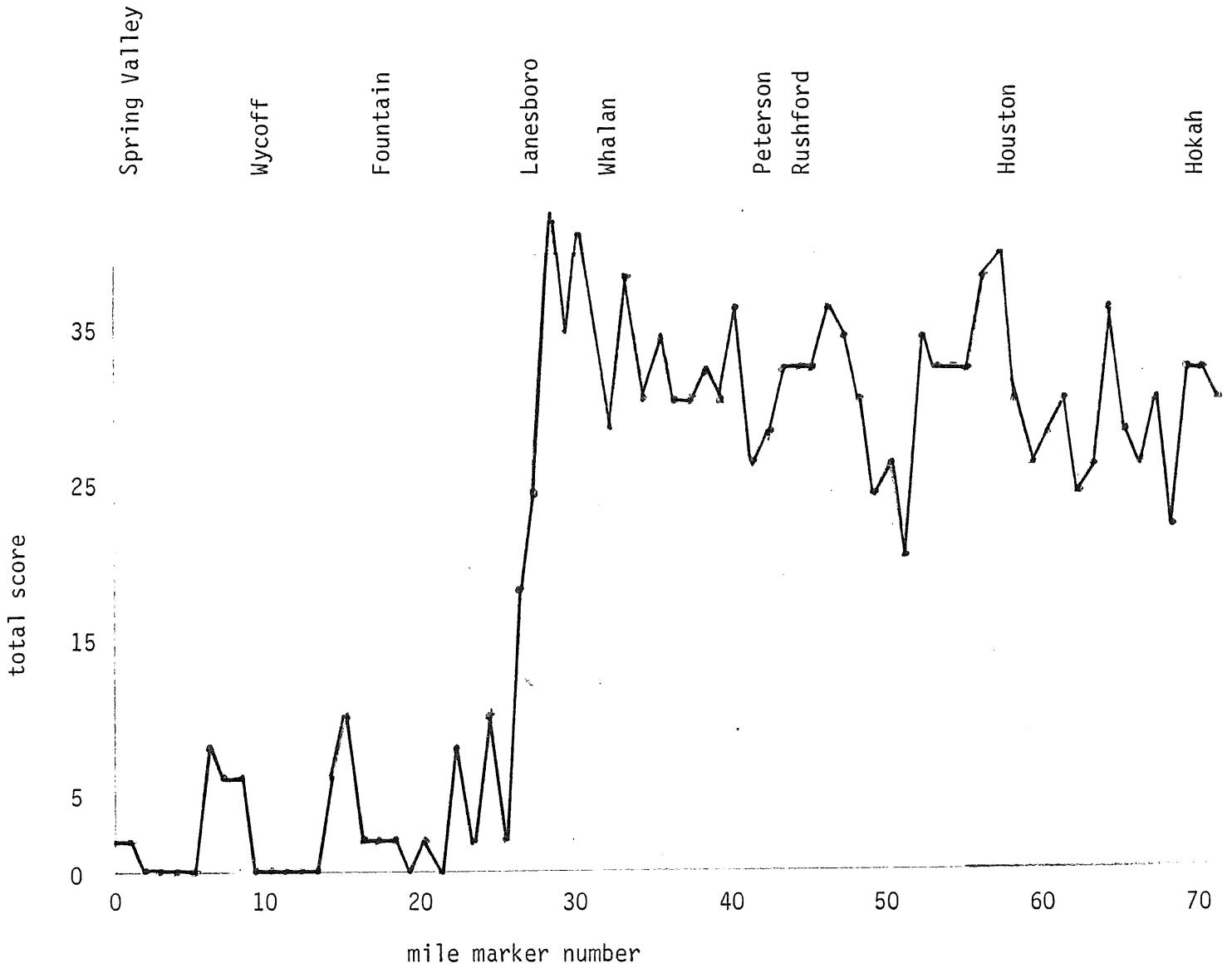



FIGURE SEVEN: Important Views Along Milwaukee Road Right-of-Way

# Milwaukee Road - Study Area

# VISUAL INVENTORY

GOOD VISUAL VALUE

BETTER VISUAL VALUE

BEST VISUAL VALUE

MILEMARKER

#

Physiographic Map of Root River Area

Original Cartography by Ramesh Venkatakrishnan

Minnesota Geological Survey, University of Minnesota

Southeast Minnesota Karst Project

funded through

Legislative Commission on Minnesota Resources, 1979

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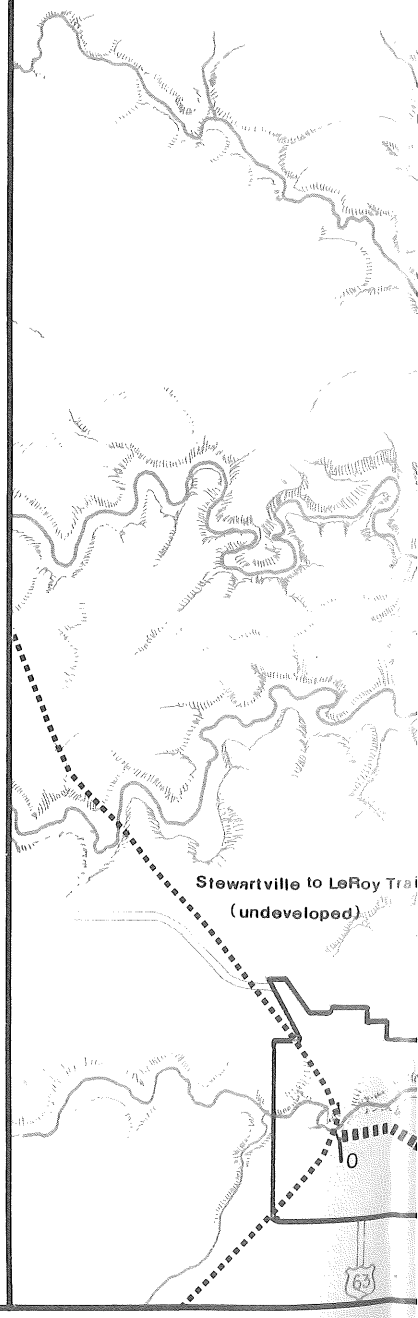
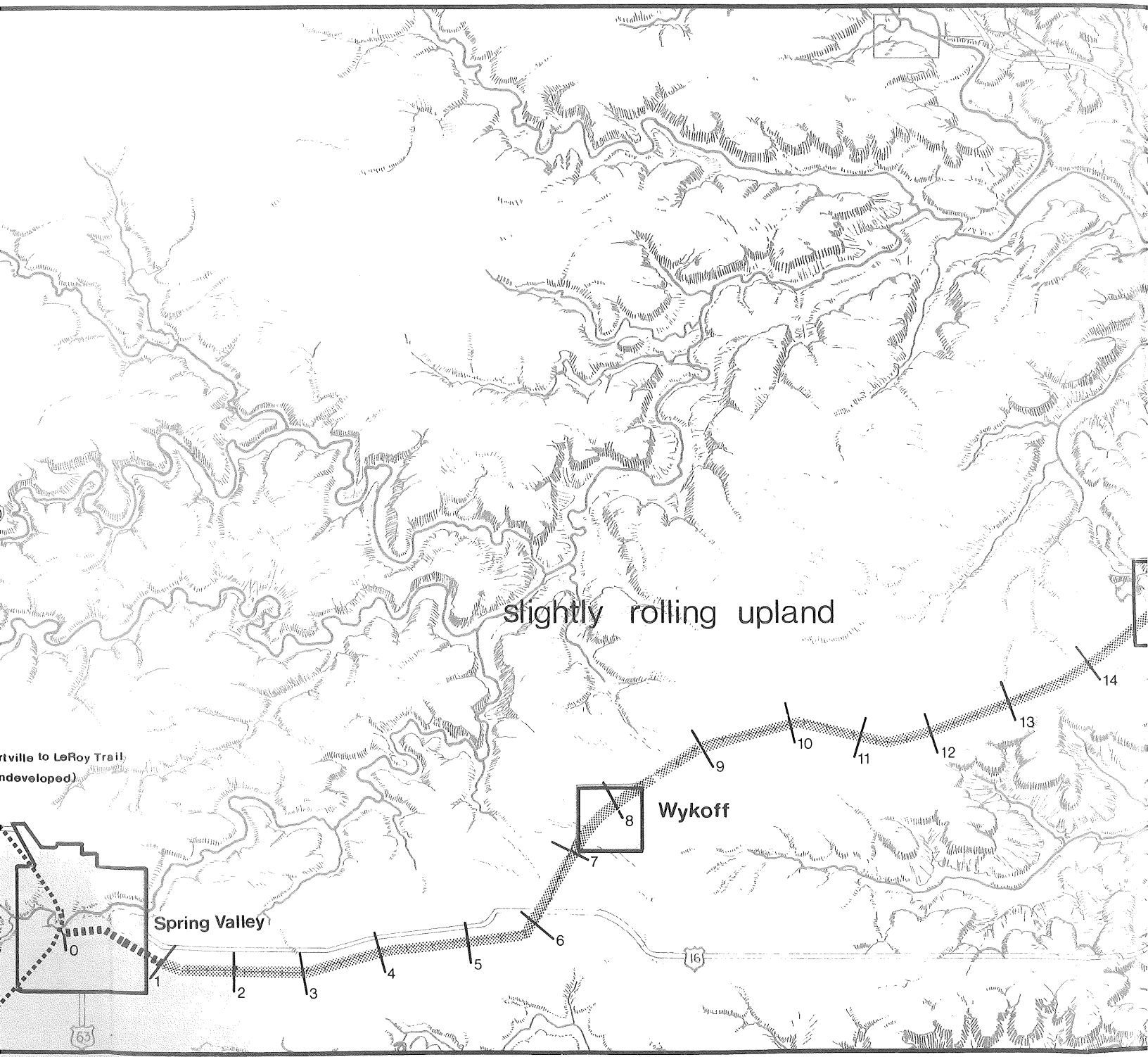
Approximate Scale 1:100,000

1 1/2 0 1 2 mile

Source: DNR Study - Trails and Waterways, October 1979




slightly rolling upland
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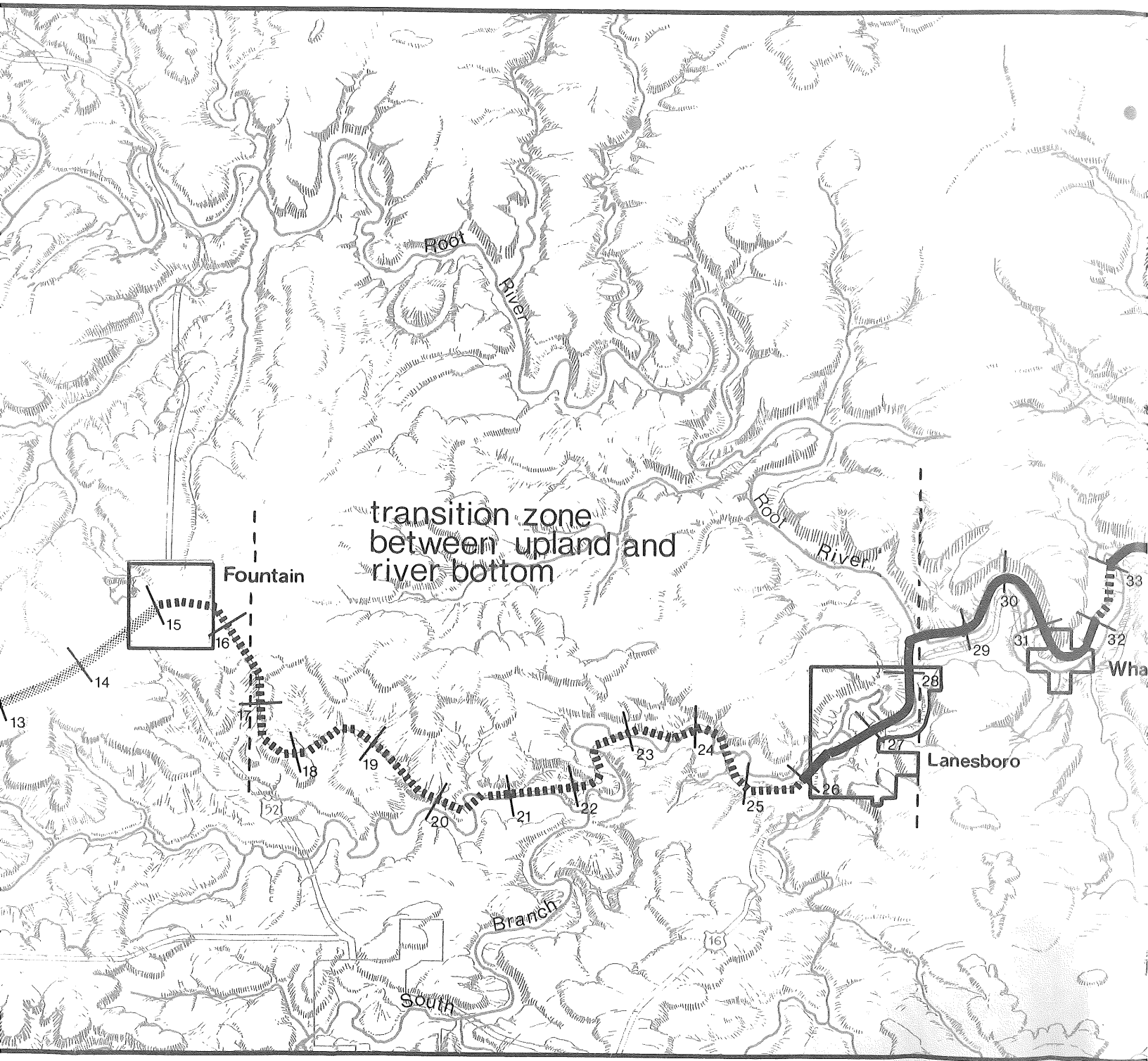
transition zone
between upland and
river bottom
Root
River
Root
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Lanesboro
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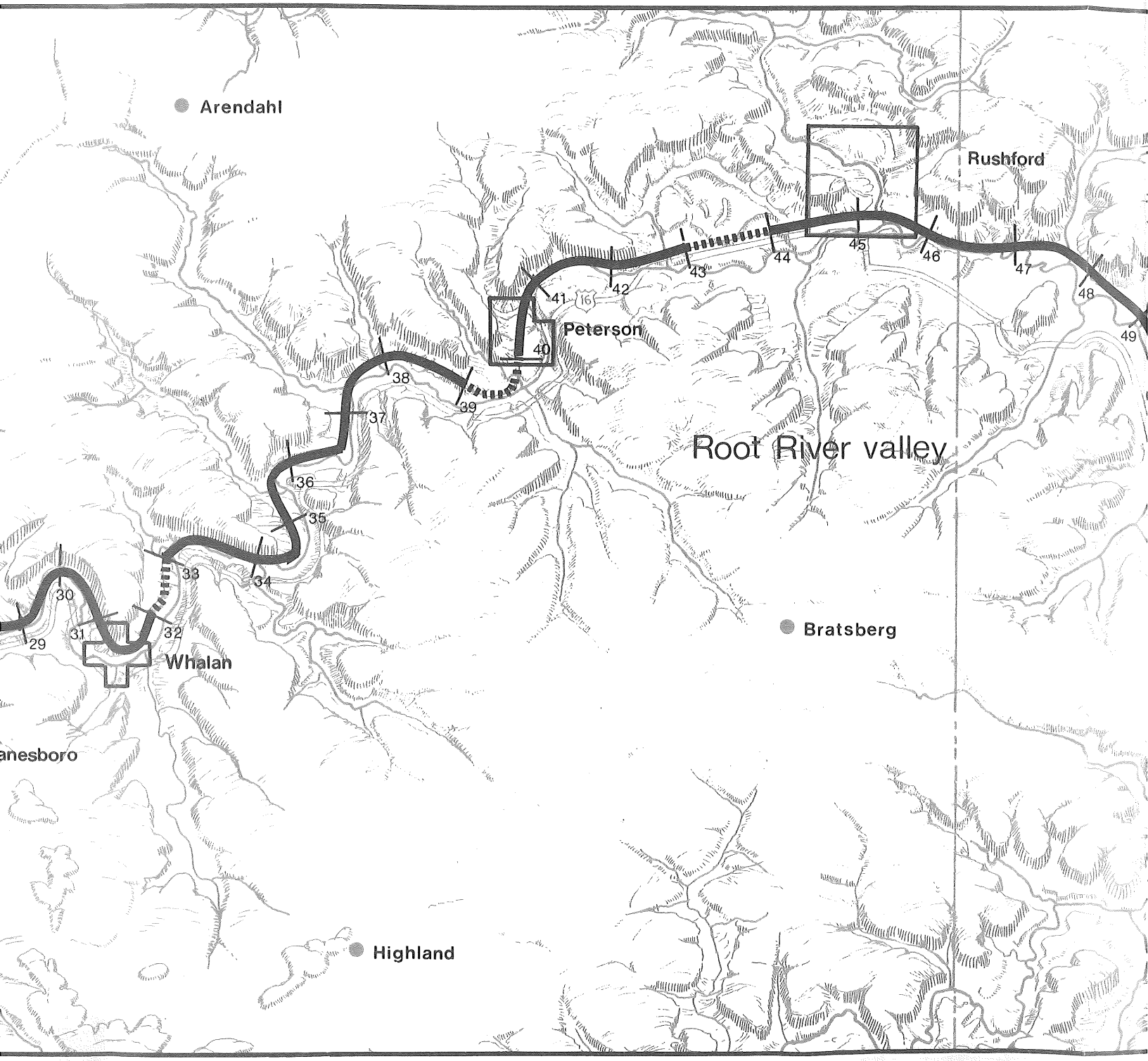
Arendahl
Rushford
Peterson
Root River valley
Bratsberg
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Highland
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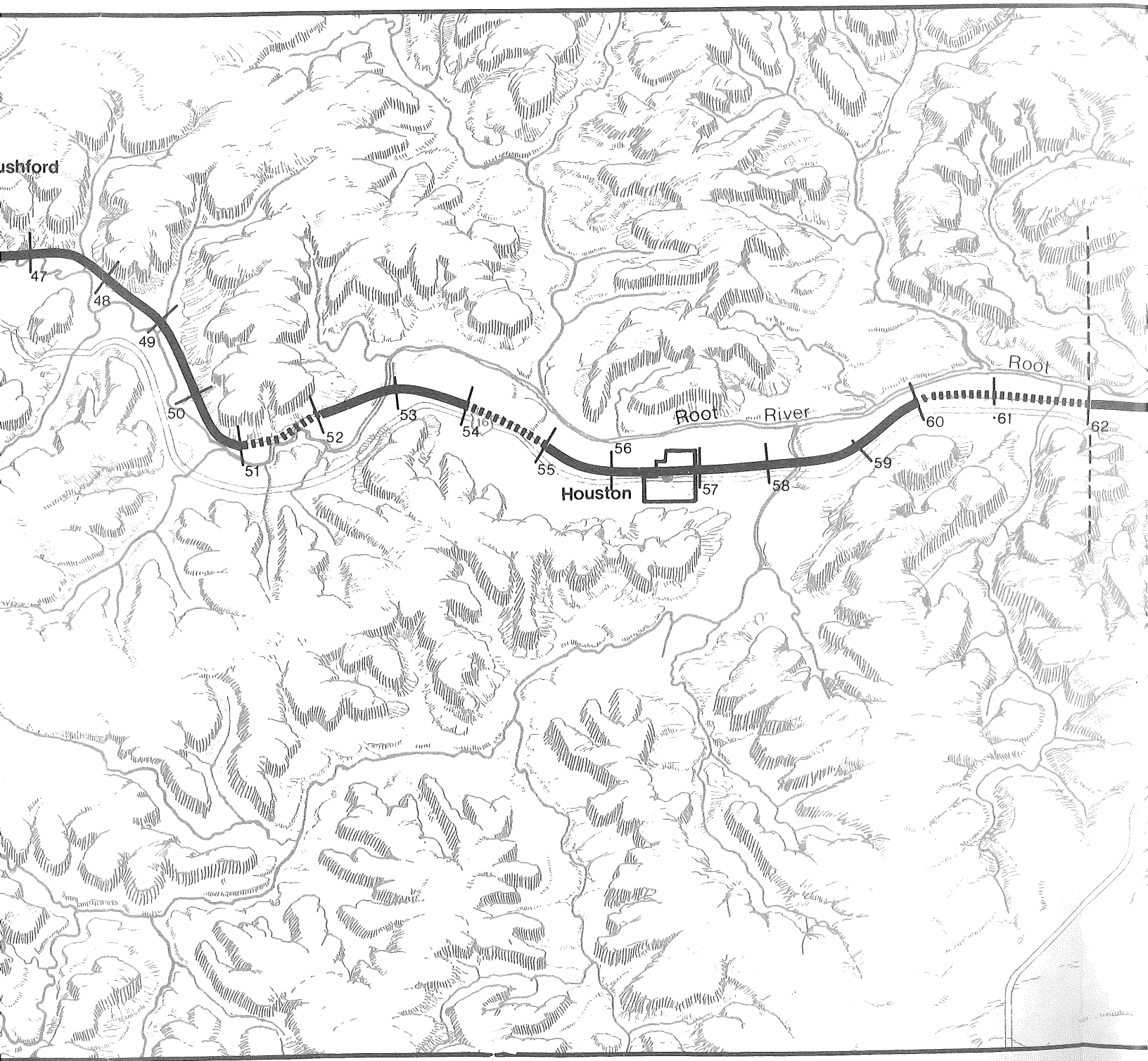
ushford
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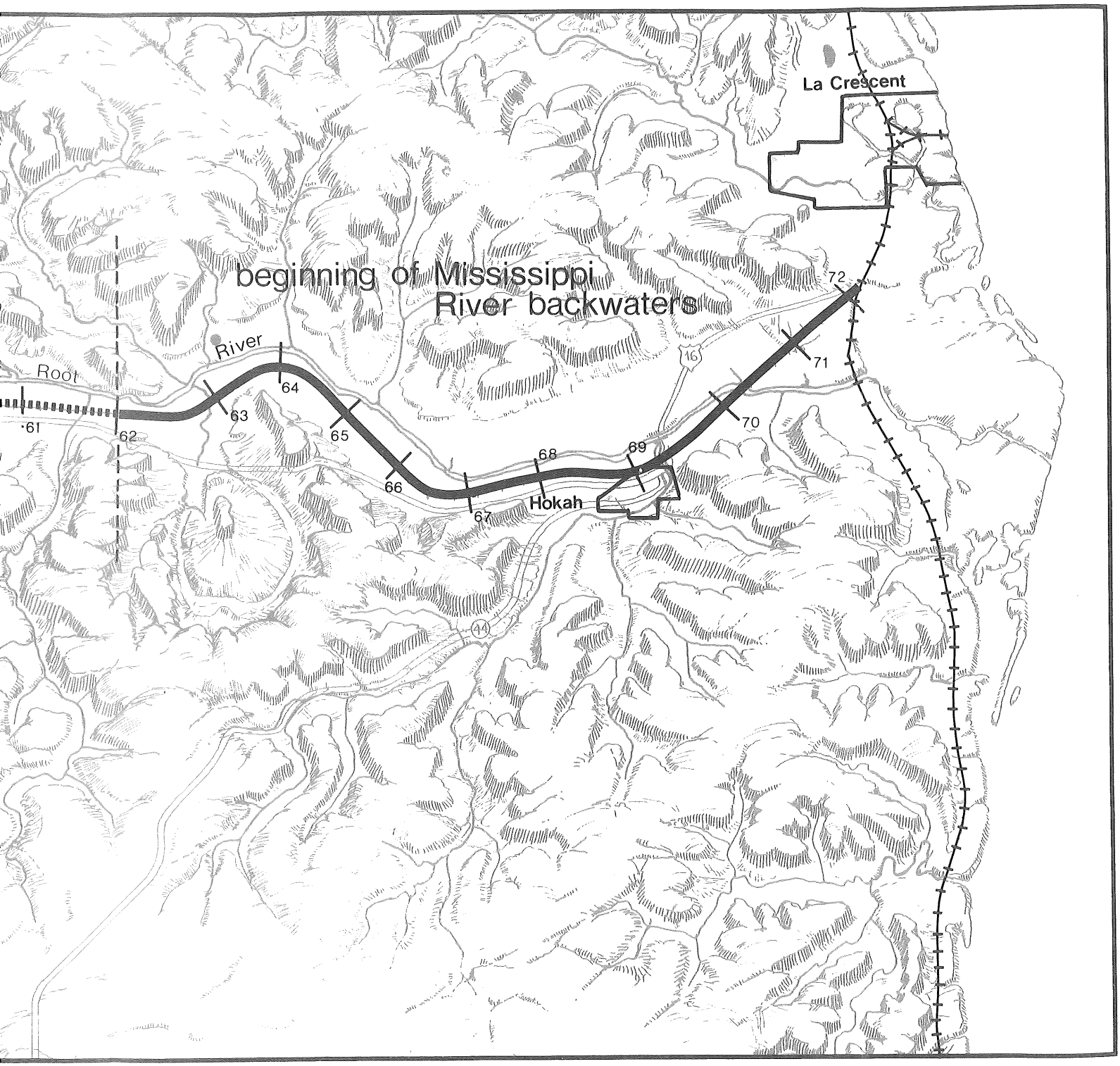
Houston
Root River
Root


La Crescent
beginning of Mississippi River backwaters
Root River
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Hokah
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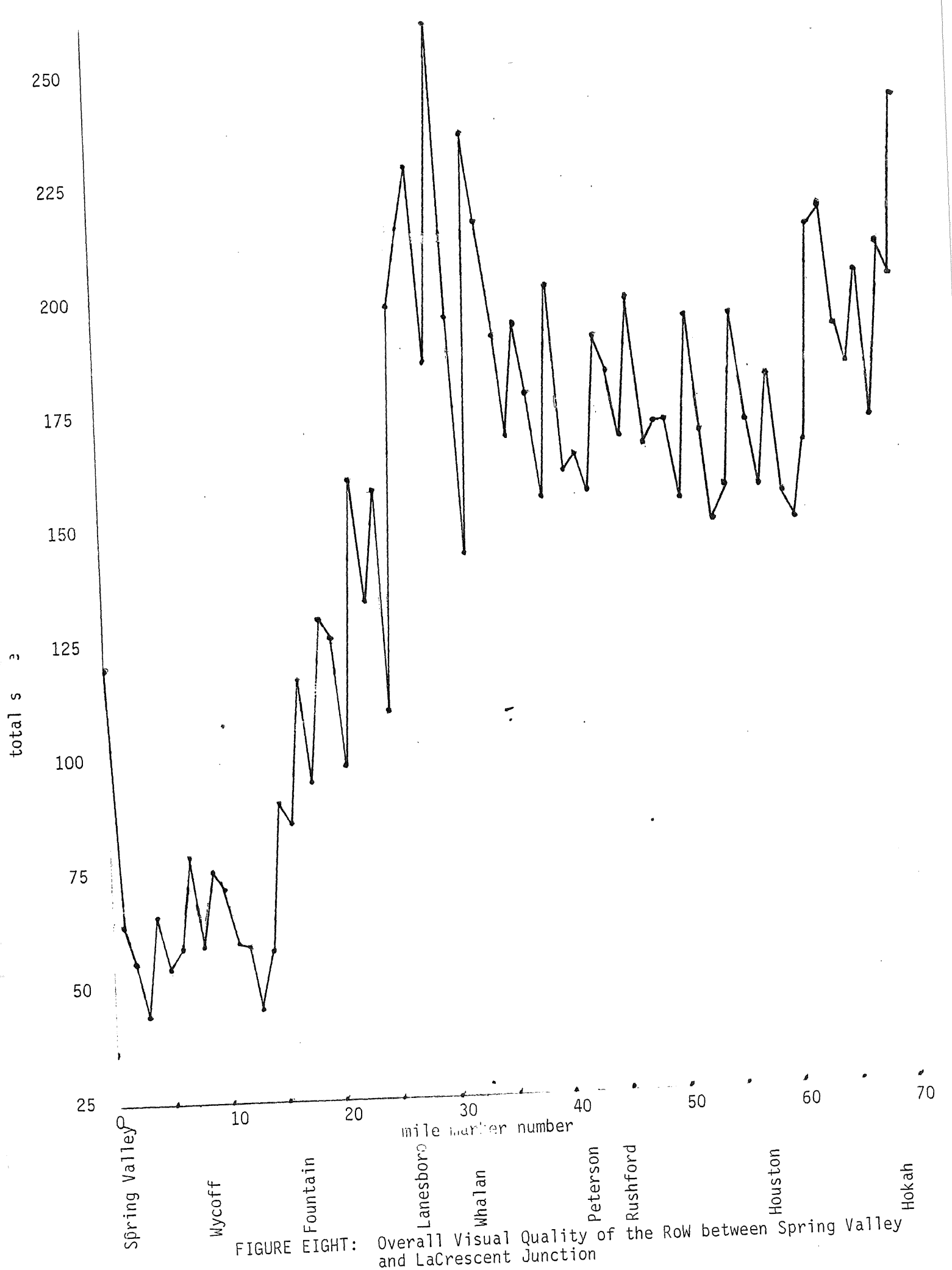


FIGURE EIGHT: Overall Visual Quality of the RoW between Spring Valley and LaCrescent Junction

## Relevance to users and Recommendations

From the scores alone it appears that the better scenery on the trail can be found between Fountain and La Crescent, with the highest scores being located between Lanesboro and La Crescent. This would provide the trail user an opportunity to experience the last two of the four major landscapes identified in the process of this study. (i.e. the valley floor and the Mississippi backwater) On the other hand, if greater weight is put on the need to expose the user to as many different aspects of the region, it would be necessary to continue the trail further west up out of the valley onto the agricultural lands near Fountain or Wycoff. This would provide the trail user an opportunity to experience all four of the major landscapes in the area.

Assuming that it would not be possible to acquire the entire railroad grade between Wycoff to near Hokah, from a visual appreciation point of view it is believed that the stretch between Fountain and Rushford is the best combination of individual site characteristics and maximum environment variety. The user would be exposed briefly to the upland agricultural lands, the entire transition zone and finally a sizable portion of valley floor environment. The only major landscape missed would be the onset of the Mississippi backwaters.

## Information Sources

Macdonald, S.H., Evaluation of Recreational Reuse of Abandoned Railroad Rights-of-Way. Master in Landscape Architechure Thesis. Logan; Utah State University, 1979.

Hornbech, P.L. & Okerlund, G.A. Visual Values for the Highway User. U.S. Department of Transportation, Federal Highway Administration, Washington, DC, 1973.