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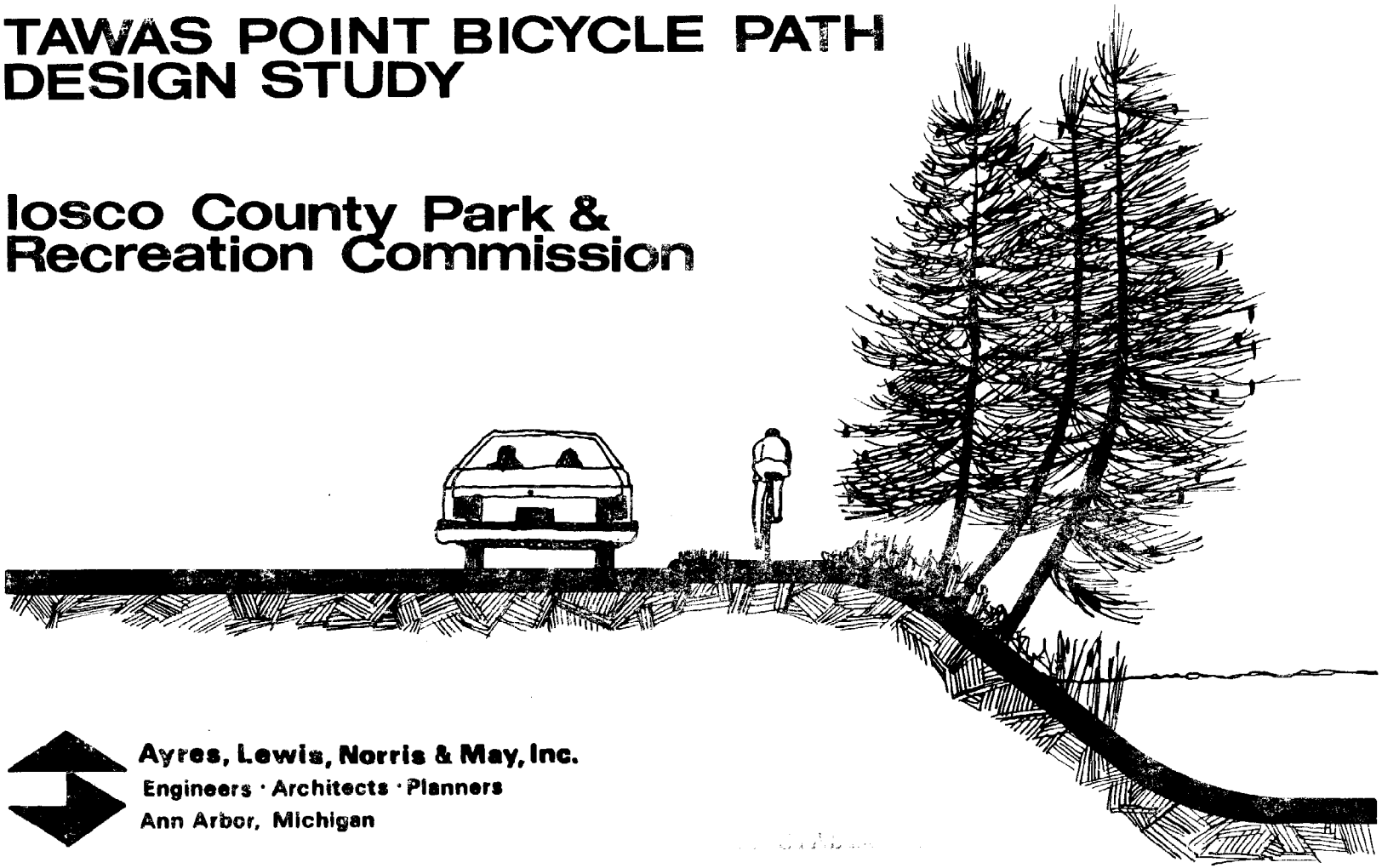
SUBTASK

TAWAS POINT BICYCLE PATH DESIGN STUDY

Iosco County Park & Recreation Commission



Ayres, Lewis, Norris & May, Inc.
Engineers · Architects · Planners
Ann Arbor, Michigan

Michigan Department of Natural Resources

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Iosco County Park & Recreation Commission

August 1981

U.S. DEPARTMENT OF COMMERCE NOAA
COASTAL SERVICES CENTER
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CHARLESTON, SC 29405-2413

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Prepared for:

Iosco County Park & Recreation Commission
and The Tawas Point Bicycle Path Committee
Iosco County, Michigan

Prepared by:

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INTRODUCTION

Purpose

In 1981, the Iosco County Parks and Recreation Commission received funds from the Michigan Coastal Zone Management Program to conduct a study concerning the Tawas Bay Area Bicycle Path. The path has been considered by local officials and residents for a number of years. Unfortunately, a lack of funds and a lack of committment have stalled any attempts to develop a pathway. The Coastal Zone Grant is intended to provide initial funding and establish a framework for study and implementation of the project.

The purpose of this study is to analyze the coastal conditions for a bicycle route, explore alternative design schemes, develop design plans and details, and explore implementation programs and potential funding sources. A preliminary report is presented with specific site designs, cost estimates and implementation programs.

Objectives

Given the overall purpose of the study, a detailed set of work objectives can be developed for the Tawas Point Bicycle Path Study. The objectives are as follows:

- Actively solicit input form the community so that the Plan reflects the desires of Tawas area residents and local officials.

- Establish a framework and community organization for the long-term implementation of the pathway.

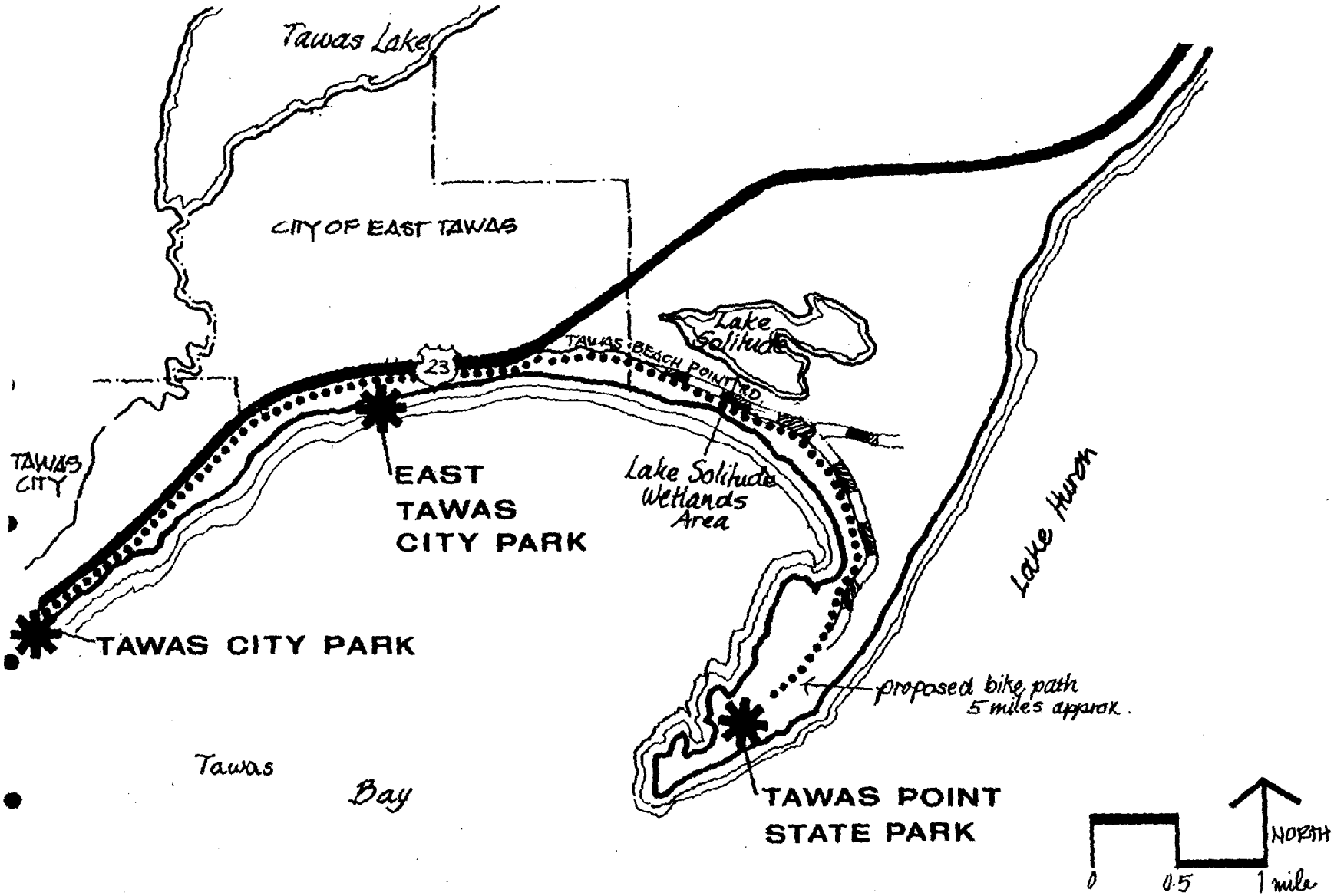
- Determine the most suitable bicycle path route between the Tawas River and Tawas Point State Park.

- Develop design details which are feasible, realistic, and easily implemented.

- Develop cost estimates and determine future funding sources.

- Link the points of interest and enhance the coastal resources along the Tawas Bay.

- Promote the economic benefits of the bike path for tourism and enhancement of waterfront commercial areas.



Location Map

Tawas Point Bicycle Path

Study Process

The study process involved four major work elements. The first element is community involvement and organization. It was important that local citizens and officials review all aspects of planning and design. Three public meetings were held which were advertised by newspaper coverage and direct mailing to the Bicycle Path Committee Members. Designs were presented at these meetings for review, and public comment has been incorporated within this study.

The second work element involved site analysis of the proposed route. Utilities right-of-way and existing structures were inventoried and mapped. This was followed by development of route alternatives. Three possible routes were examined and a most suitable route was selected for proposed development.

The last work element was development of the final plan. This included the selected route, design and construction details, costs, phasing, and funding sources and preparation of the final report.

Site Conditions

The concept of a bicycle path running from Tawas City to Tawas Point State Park has a number of aspects which would be beneficial to the local community. First, waterfront attractions and points of interest such as the parks, museum, and boat facilities would be linked. A pathway would ease auto congestion, provide economic stimulus to commercial areas, and provide a recreation attraction for the entire Tawas area. Perhaps most importantly, it would link three separate communities with a common design element and reveal the scenic beauty of Tawas Bay.

Site conditions along the route present an ideal bicycle corridor. The overall length would be an easy and enjoyable ride for people of all ages. There are numerous attractions, points of interest, and rest areas along the route and the route passes through wooded and natural areas which provide scenic views of Tawas Bay.

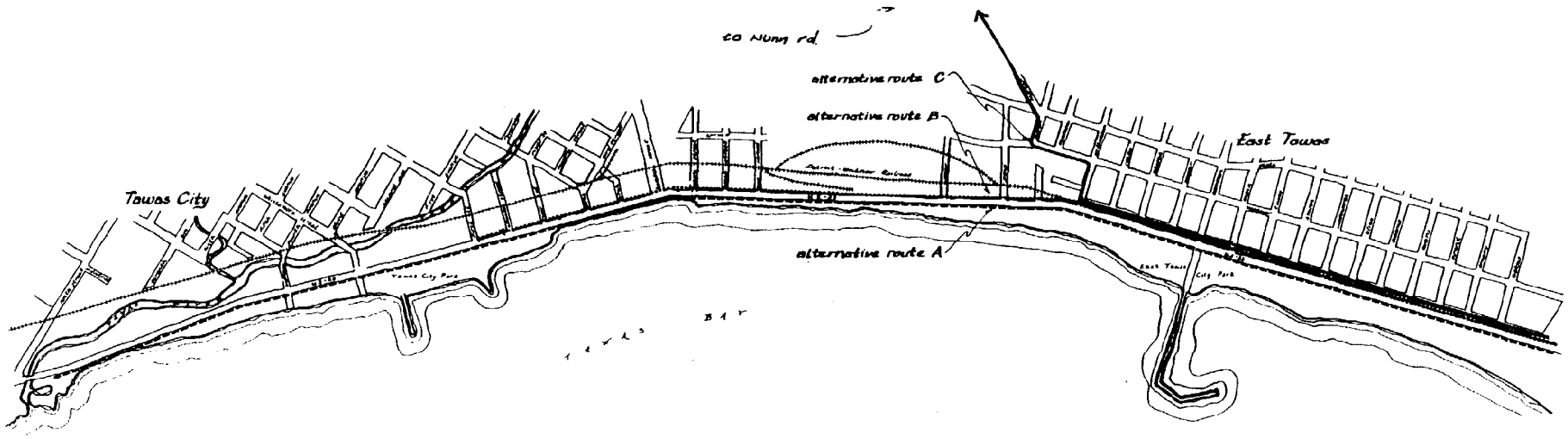
Specific points of interest along the route includes:

- Tawas City Gateway Park
- Tawas City Park
- Iosco County Historical Museum
- East Tawas City Park & Boat Dock
- East Tawas Community Center

The specific study area was determined to be a corridor along the Tawas Bay shoreline from the mouth of the Tawas Bay River to the Tawas Point State Park. The U.S. 23 Corridor and the Tawas Beach Road right-of-way was carefully studied in terms of existing physical conditions. Detailed site analysis included pavement widths of existing roadways, curbs, utilities, buildings and right-of-way information. All of this information is presented on the design plans and included within this report.

Route Location

Four alternative routes for location of the bike path are considered within the Tawas Bay Corridor. The first route, Route A, is within the U.S. 23 right-of-way and along the shoreline. The second route, Route B, is also within the U.S. 23 right-of-way but on the opposite side of the street or on the inland side. The third route, Route C, utilizes a right-of way further inland along residential streets. These three possible routes are illustrated in the following map.



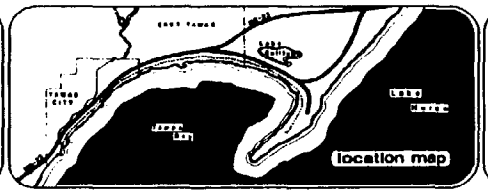
NOTES

- ----- ROUTE A
- ..... ROUTE B
- ——— ROUTE C

SHEET

SCALE

0' 150' 500' 950' 1500'



Tawas Point Bicycle Path

ALTERNATIVE ROUTE LOCATIONS

AYRES, LEWIS, NORRIS & MAY, INC.
engineers architects planners

A fourth route along the Detroit and Mackinaw Railroad right-of-way was considered during the early stages of the study. However the route was determined to be unacceptable because of limited room within the right-of-way and potential risks to bicycle riders.

Alternative A, B and C was assessed for its relative merit and reviewed for safety, available right-of-way, construction costs and bicycling attractiveness. Route C is located away from the shoreline and within residential areas. It could connect with the Nunn Road bicycle path but would bypass the Tawas City neighborhoods. It is considered safe and would have low construction costs but is considered undesirable because it is too far removed from the shoreline and would require crossing U.S. 23. The second route, Route B is along the inland side of U.S. 23, is a possibility because it could utilize much of the existing sidewalk. However, bicyclists and pedestrians would be forced to cross U.S. 23 if they wished access to the water and the viewing attractiveness of the bay would be diminished from the other side.

Because of these disadvantages with Routes B and C and because of the desirability of a shoreline route, Route A is the recommended alternative. The route along U.S. 23 would be separated from traffic and set back 4-8 feet from the curb. While construction costs will not be inexpensive, the attractiveness of the bay and linkage with coastal features will offset the added expenses.

Recommended Route

The recommended route is indicated on the design plans (see appendix) and included within this report. The route extends along the U.S. 23 right-of-way from the Tawas River to Tawas Beach Road. The route then follows Tawas Beach Road and terminates at the Tawas Point State Park.

Right of Way

While sufficient right-of-way does exist between the curb of U.S. 23 and the east right-of-way limit, a few right-of-way use problems do exist. The first problem is along existing sidewalks within downtown Tawas City. The main area of concern is a 300' stretch east of Mathews Street. The area includes four retail stores and an office where bicycling traffic could interfere with pedestrians entering or leaving these establishments. It is recommended that signs be posted near the limits of the downtown area requiring bicyclists to walk their bicycles through the downtown area. Signs could be posted near Cholger's Pro Gas and across from Ladd's Padd which would read "Bicyclists are Required to Walk Their Bicycles for the Next 300 Feet." Bicyclists could also elect to ride the street along this stretch, however, parking lanes and traffic on U. S. 23 creates a less desirable route for bicyclists.

Another problem along this shoreline route is encroachment of buildings within the right-of-way. Two areas will present minor problems. Fletcher's Service Station located in Tawas City has gas pumps within close proximity of the proposed bicycle path. The pathway could, however, skirt around this pump area. It is also possible that the site will be re-developed and additional right-of-way may be obtained. The other area of encroachment is at the Fraternal Order of the Elks Club in East Tawas. The building edge is located within the right-of-way, however, sufficient room for a bicycle path is still available between the building and curb.

The final problem will be the location of utility poles, signs, and guard rails within the right-of-way. Field analysis indicates that most utility poles will not interfere with the proposed pathway. Preliminary designs were submitted to Consumers Power Company for their review, and it was determined that if the pathway can meander around certain poles or be located near the edge of certain poles, the location of these overhead utilities will not pose a serious problem or require relocation.

An assortment of no parking signs, speed limit signs and city entrance signs are located within the right-of-way. A few of these will require relocation. In addition to these signs, two sections of guard rail will likely require relocation. The guard

rail sections are located in Tawas City near the mouth of the Tawas River and near the intersection of M-55 and U.S. 23. Both sections could be moved a few feet closer to the lake to allow sufficient space for the pathway.

Safety

During the three public meetings, a primary concern voiced by many participants was bicycle safety. Potential safety problems between autos and bicycles along U.S. 23 and Tawas Beach Road were discussed. While the proposed pathway along U.S. 23 is separated by a curb, potential safety problems will be present at driveway intersections. An even more discussed problem was the potential safety problem along Tawas Beach Road. Original designs called for a paved shoulder, however, after review by the Iosco County Road Commission and other members of the Bicycle Path Committee, a separated bicycle path was felt to be more desirable. With this design scheme, the bicycle path would be located near the lakeside limits of the right-of-way or as far from the road edge as possible to provide an extra margin of safety from passing autos.

Design solutions to these safety issues will focus on two major safety measures. The first is traffic separation. Wherever possible, the pathway should be separated from the roadway. The second measure is visibility. The pathway should be posted

to inform motorists that bicycle riders are sharing the right-of-way. At the same time bicycle riders should be informed that they have a responsibility to ride in a safe manner. Information concerning bicycle safety and rules of the road could be posted at proposed information boards along the route and in bike route brochures.

With any public facility, safety issues will be present. Design must, however, minimize all possible safety hazards especially between bicycle riders and autos. It should be noted, however, that the vast majority of bicycle accidents are not auto-bicycle mishaps. The National Safety Council reports that among elementary age cyclists, moving motor vehicle collisions account for five percent of all bicycle accidents. The majority of accidents are due to the fault of individual riders, faulty equipment, or poor road surface. In summary, the safety issues along the Tawas Point Bicycle Route are a concern but they are not so significant that the project should be cancelled or declared not feasible. Proper design, visibility, and responsible riding habits will insure a safe and enjoyable pathway for the Bay area.

Shoreline Erosion

Over the years significant shoreline erosion has occurred with the Tawas Bay Area. The Michigan Department of Natural Resources has identified much of the Tawas

Bay as a high risk erosion area and has recommended minimum setbacks for the area. Minimum setbacks average 84 feet. While most of the bicycle path is beyond this limit, certain areas near the intersection of U. S. 23 and M-55 are approximately 40 feet from the shoreline. This would potentially endanger U.S. 23 and a number of establishments. It should be noted however that the Michigan Department of Transportation has armored the shoreline with rip-rap and slowed the rate of recession. The Department is also committed to maintaining U.S. 23 and since the proposed bike path is within the right-of-way and within a few feet of the curb, it can be assumed that the pathway will be protected.

State Requirements

Prior to construction, permits must be secured from at least two State agencies. A right-of-way permit must be secured from the Michigan Department of Transportation - Utilities and Permits Section for use of the right-of-way along U.S. 23. In addition, permits from the Department of Natural Resources must be secured prior to construction of a pathway along Tawas Beach Road. These permits are required for any alteration of the wetland area adjacent to the roadway, as well as alteration of the shoreline.

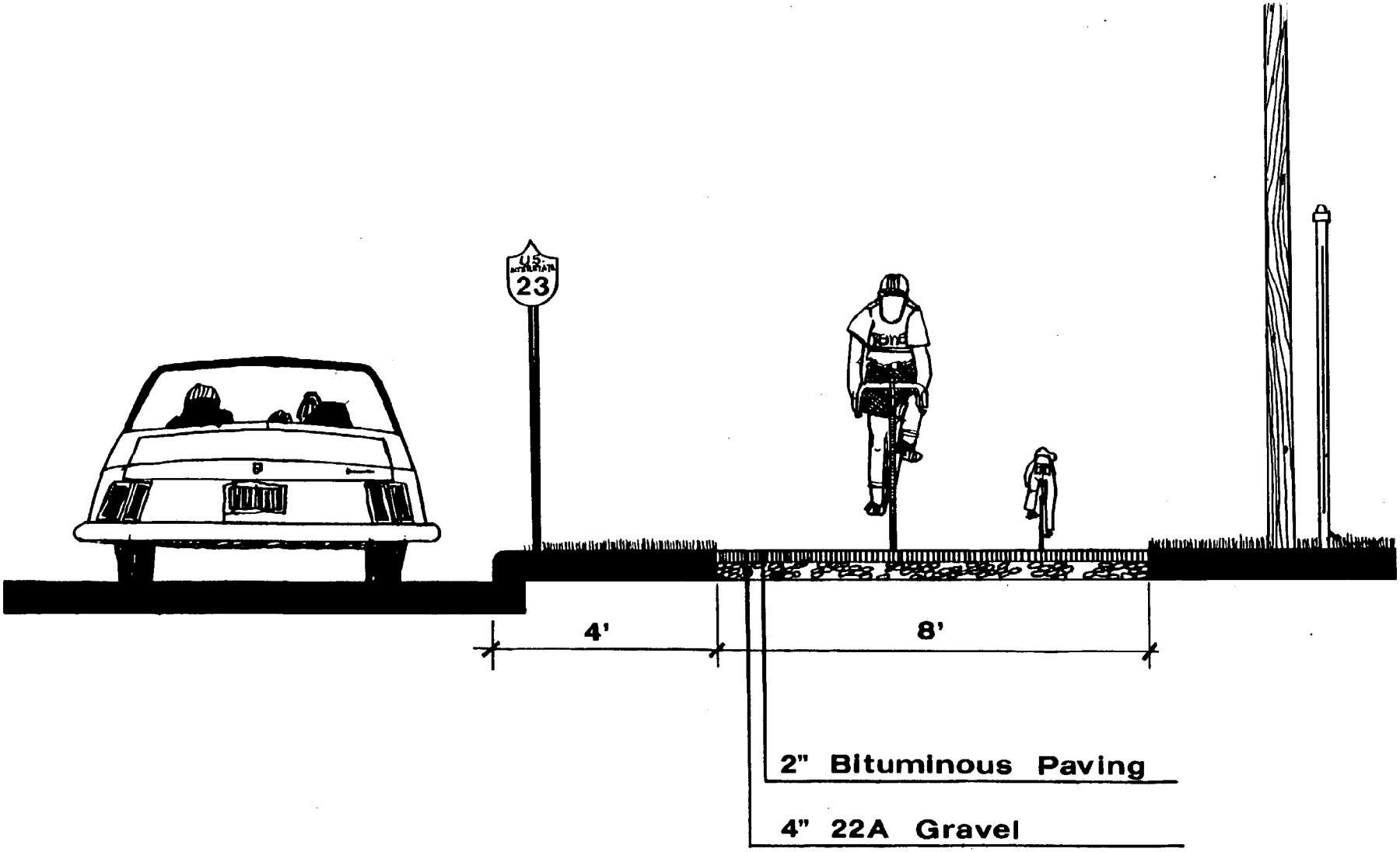
Tawas River to Tawas Beach Road

Design of the bicycle path is divided into three elements; paving, signage and information kiosks and bicycle racks. Each element will be discussed individually with accompanying detail sketches.

Paving

Recommended paving depths and widths for portions of the bicycle path along U.S. 23 are presented in the accompanying detail. This detail illustrates a typical asphalt paving surface of two inches bituminous paving. Base material shall be four inches of gravel on a compacted sub-base.

The recommended bicycle path width should be eight feet for two-way bicycle and pedestrian traffic. A minimum separation distance of four feet from the curb along U.S. 23 should also be maintained. As mentioned earlier, some signs and guard rails will have to be relocated prior to construction.



Section - US-23 at East Tawas City Park

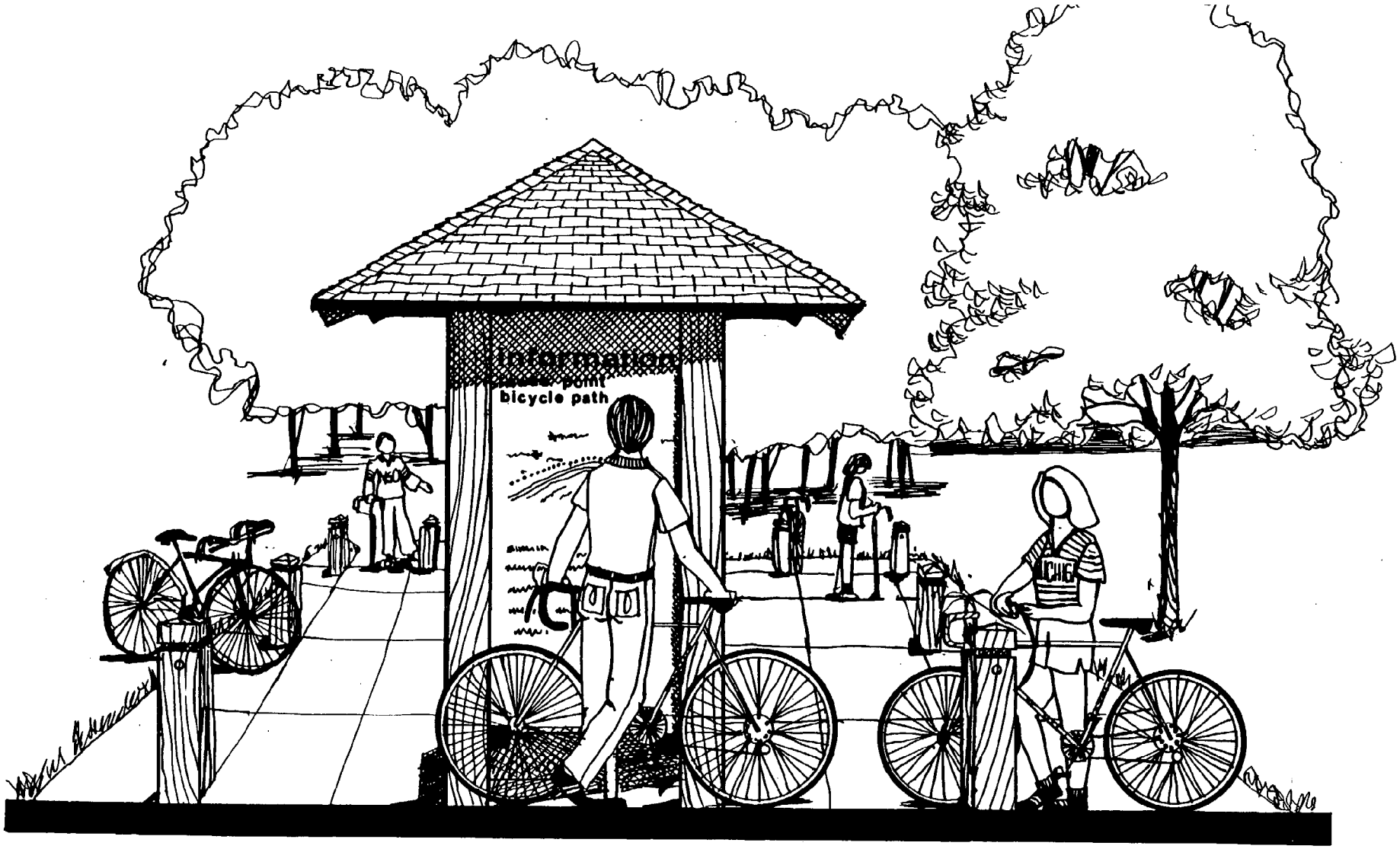
Information Kiosk and Bicycle Racks

Two information kiosks and bicycle racks are recommended along the route. One kiosk and rack is proposed for the Tawas City Park, as well as a kiosk and rack for the East Tawas City Park. The kiosk would contain information concerning the pathway, as well as information concerning community activities, coastal features and history of the shoreline area.

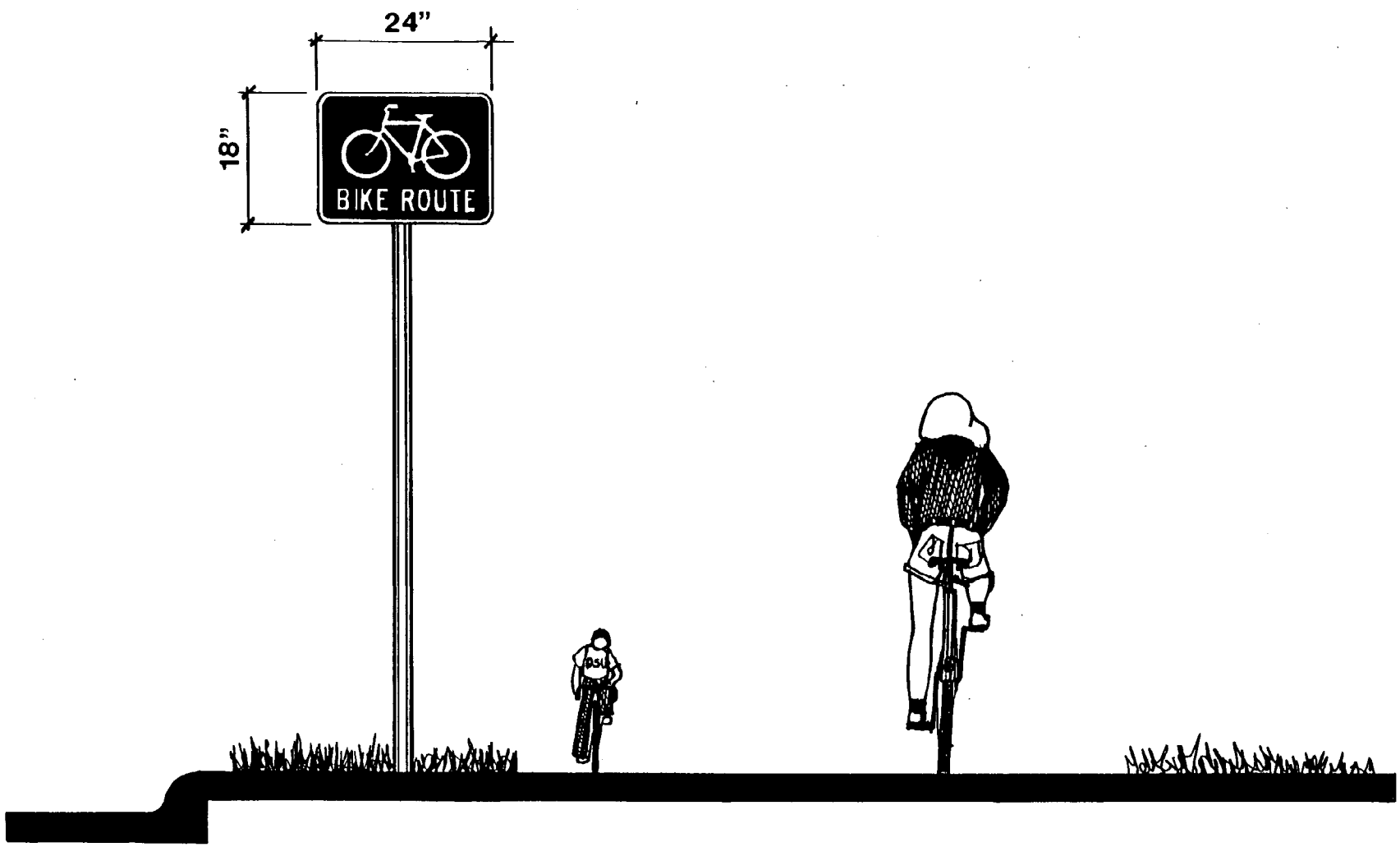
The kiosk is surrounded by bollards which will also serve as a bicycle rack. The bollards (or wooden posts) will be fitted with eye bolts for fastening bicycles. As currently considered, the kiosks, racks, and park paving would be proposed under Phase I construction.

Signage

Bicycle route signs shall be standard signs as designated by the Michigan Department of Transportation and conform to the Uniform Traffic Control Manual. The sign shall be 24 inches by 18 inches with white letters on a green background.



Information Kiosk and Bicycle Racks



Bicycle Route Signage

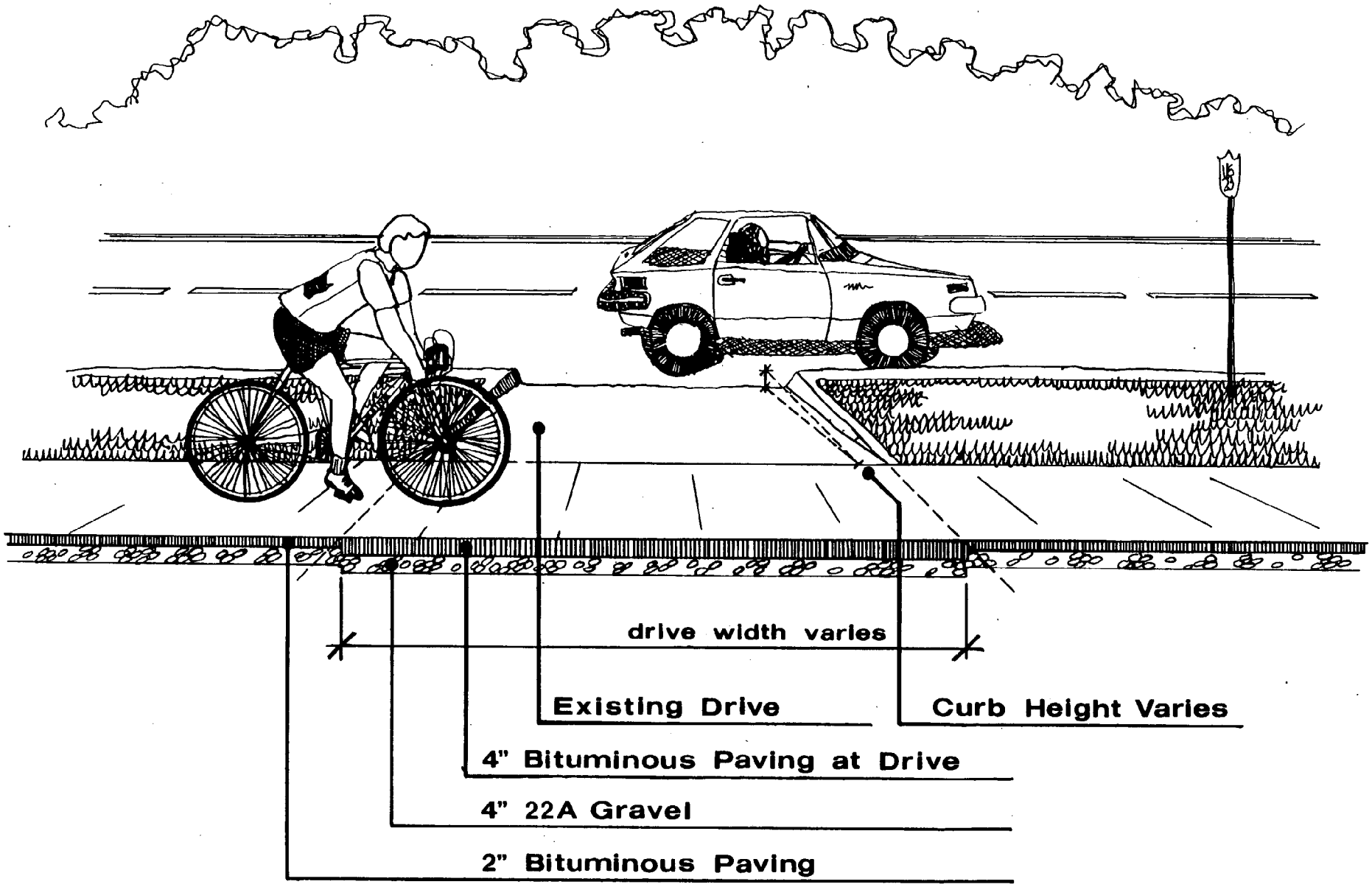
Driveway and Pathway Intersections

At driveway intersections, the pathway paving depth must be increased from two inches to four inches. This is to accommodate car or light truck traffic without damaging the pathway surface. Where possible, gravel entrance drives should be paved between the pathway and the street to minimize loose gravel being spread on the pathway surface.

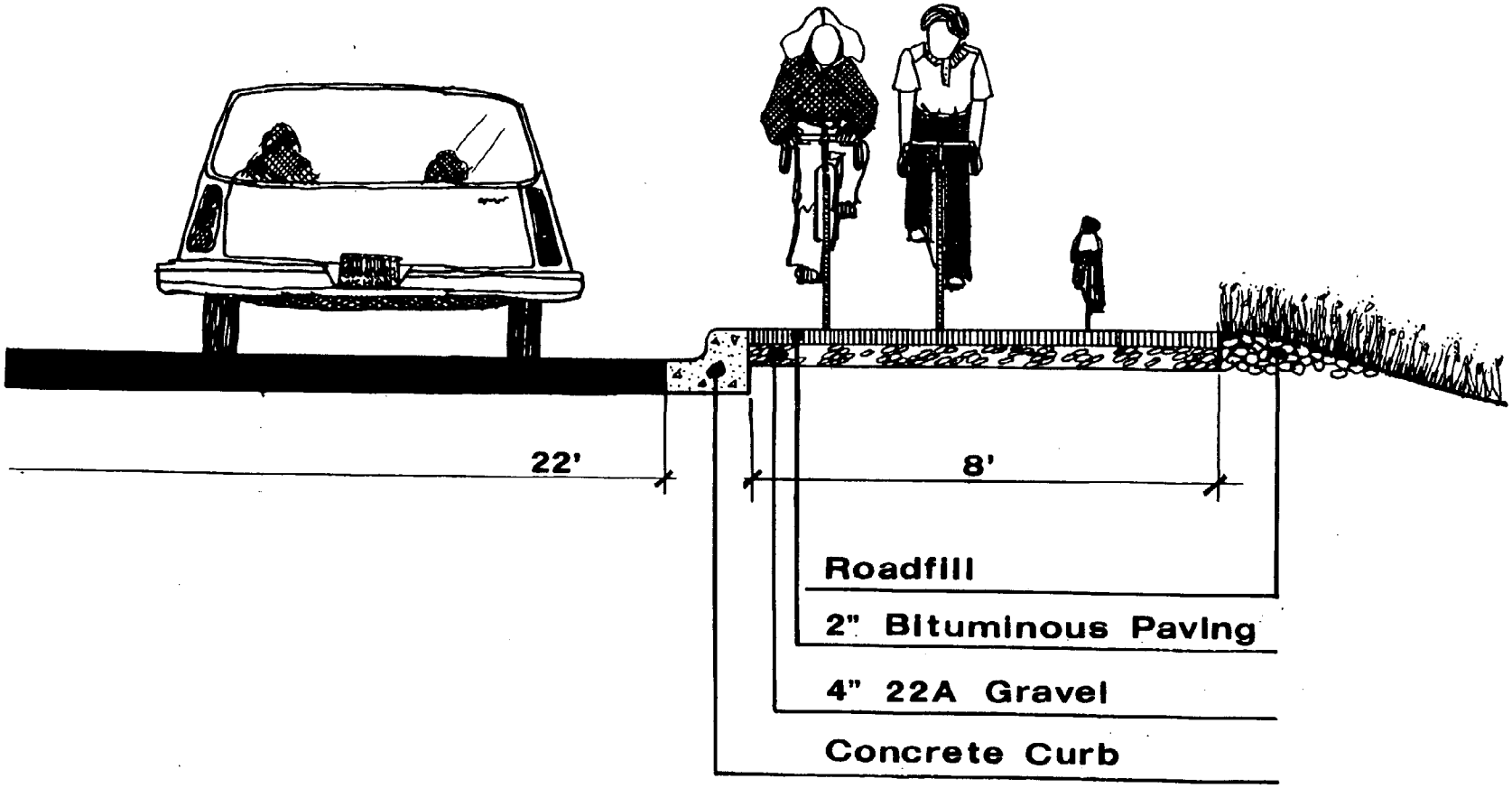
Tawas Beach Road

A total of five alternative designs were presented for Tawas Beach Road. After much discussion at the public meetings, the alternatives which provided the greatest separation between autos and bicyclists were preferred. Shoulder paving alternatives (A and B) were considered unacceptable because of safety factors. Graphic illustrations of these two alternatives are presented in the appendix. Alternatives C, D, and E are illustrated on the following pages.

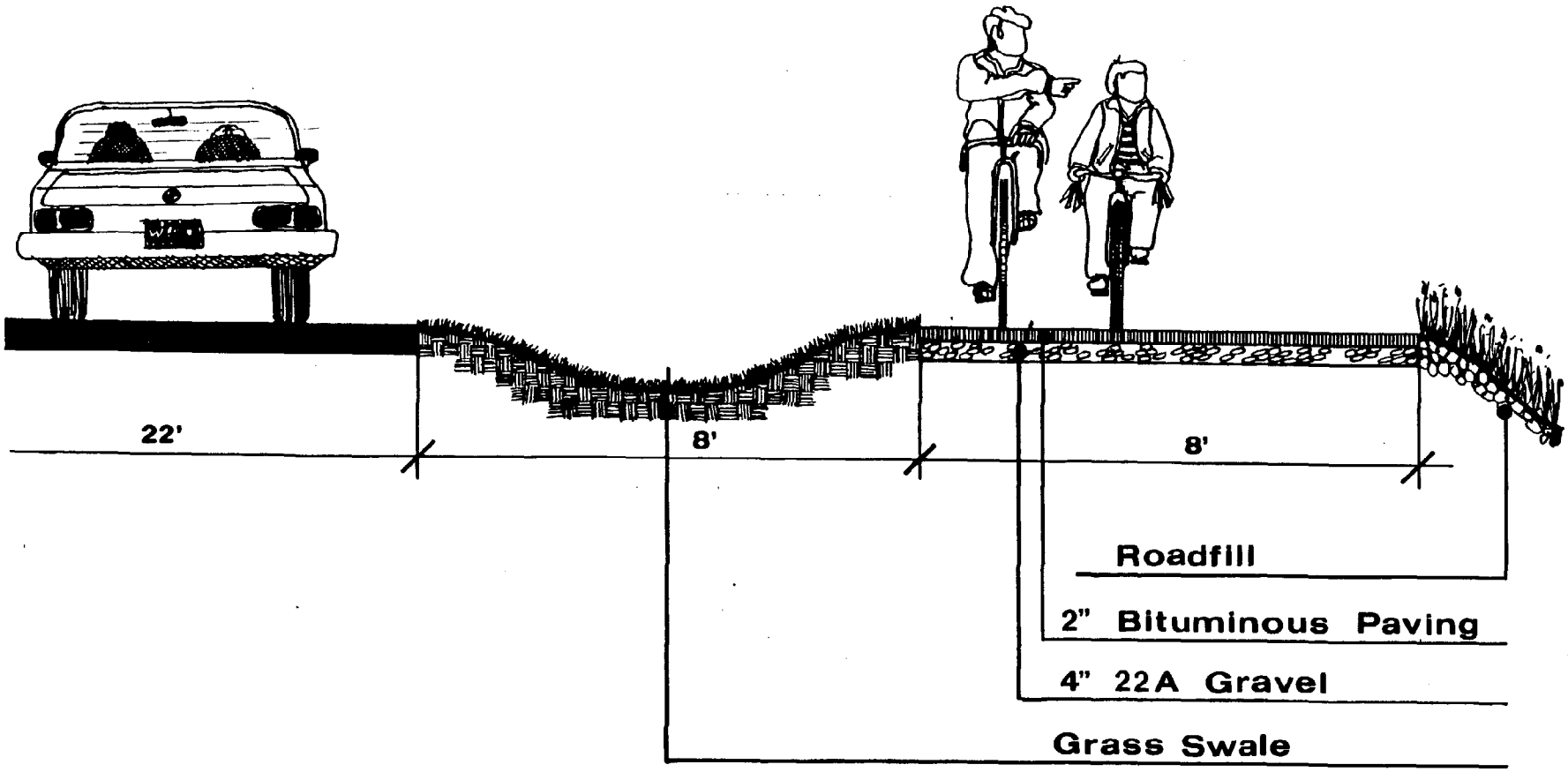
Alternative C, illustrates a two-way separated bicycle path. The pathway is separated by a six-inch curb and would also include underground drainage. This alternative presents a safer design; however, higher costs are anticipated with this



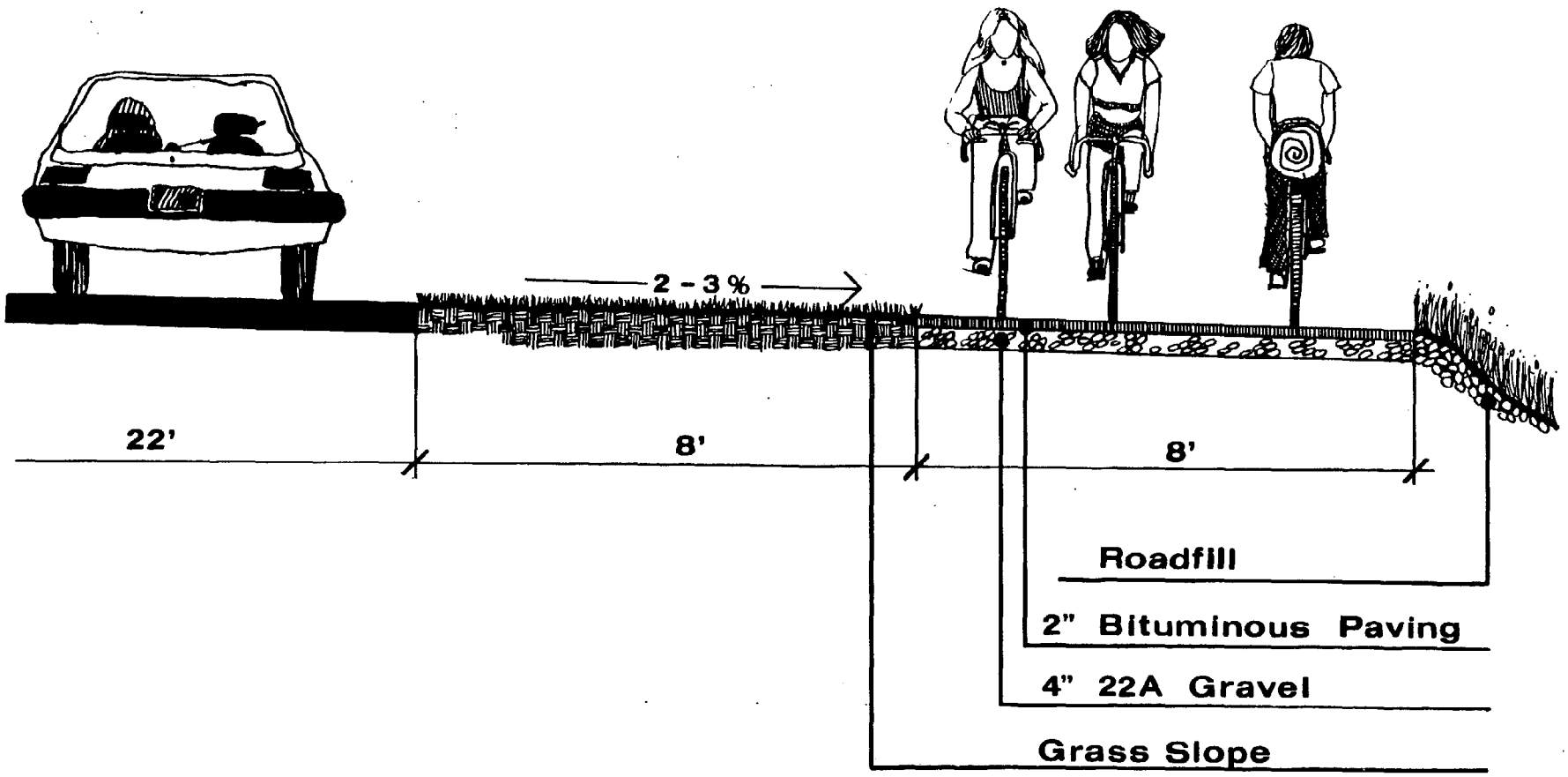
Typical Bicycle Path Section at Drives



Section - Tawas Beach Road - Alternative C



Section - Tawas Beach Road - Alternative D



Section - Tawas Beach Road - Alternative E

design. Alternative D provides a ditched grass separator strip while Alternative E provides a sloped grass separator ditch. Both of these provide adequate separation at lower prices than curbing. It should be pointed out, however, that Alternatives D and E would require filling along the shoreline areas. The disadvantages of this will be offset by safety considerations.

Considering all the alternatives, Alternative E is recommended for its lower costs, ease of maintenance, and traffic separation.

Costs

Cost estimates for the various bicycle path segments have been calculated. They are based on 1981 labor and material costs and have been tabulated from actual construction costs from similar projects. The cost estimates are presented as follows:

Quantities and Costs

U.S. 23

Tawas River to Tawas Beach Road: 14,730 lft (excluding 1860 existing sidewalk)

14,730 lft 2-inch paving	1460 ton #12 MDOT	$ 51,100
4-inch #22-A MDOT	1450 cyd @ $8/cyd	11,638
Sign & Guard Rail Relocation		10,000
Kiosks, Bicycle Racks, and Park Paving		15,000
		$ 87,738

Tawas Beach Road

U.S. 23 and Tawas Beach Road Intersection to the entrance of Tawas Point State Park: 14,540 lft

Alternative C: 8-ft-wide shoulder paving on one side with separator curb 14,540 lft of paving

1421 tons #12 MDOT	$ 49,764
1436 cyd #22-A MDOT	11,488
2816 cyd Class III MDOT	21,120
14,540 lft Curb & Gutter	101,780
Storm Drainage	24,200
Ditching	15,000
	$233,352

Alternative D: 8-ft-wide paving separated by a grass swale 14,540 lft of paving

1421 tons #12 MDOT	$ 49,764
1436 cyd #22-A MDOT	11,488
5333 cyd Class III MDOT	40,000
Storm Drainage	8,000
Ditching	15,000
	$124,252

Alternative E: 8-ft-wide paving separated by a grass strip (sloped) 14,540 lft of paving

1421 tons #12 MDOT	$ 49,764
1436 cyd #22-A MDOT	11,488
5333 cyd Class III MDOT	40,000
Ditching	15,000
	$116,252

Phasing

Phasing will be dependent upon available funds and priorities from local units of government. A suggested phasing program is presented based upon anticipated funding.

Phase I:

- information kiosk and bicycle racks at Tawas City Park and East Tawas City Park
- approximately 900 linear feet of paving within each park area (8 ft wide asphalt)
- funding source: Michigan Coastal Zone Management Program

Approximate Cost: $15,000

Phase II:

- shoreline paving adjacent to U.S. 23 between Tawas City Park and East Tawas City Park (approximately 1.3 miles)
- funding source: Gas & Weight Tax (Section 10 K of Act 51)

Approximate Cost: $42,000

Phase III: – completion of paving along U.S. 23 between Tawas River and Tawas Beach Road (approximately 1.4 miles)
– funding source: Gas & Weight Tax and other sources

Approximate Cost: $30,738

Phase IV: – initiate paving along Tawas Beach Road
– costs and funding sources to be determined

Maintenance

There are three major maintenance items which will require attention. These are asphalt deterioration, pathway sweeping, and vandalism. Occasional potholes and cracks will occur and will require repair. However, proper design and construction plus low load weight should minimize these problems. A more important concern is the sweeping of the pathway. It is recommended that the route be swept twice a year (spring and late summer) to remove debris and loose gravel. The sweeping is typically done by a mechanical disc broom mounted on the front of a jeep. Finally, vandalism to route signs, information boards, and bicycle racks must be anticipated and included within maintenance fees.

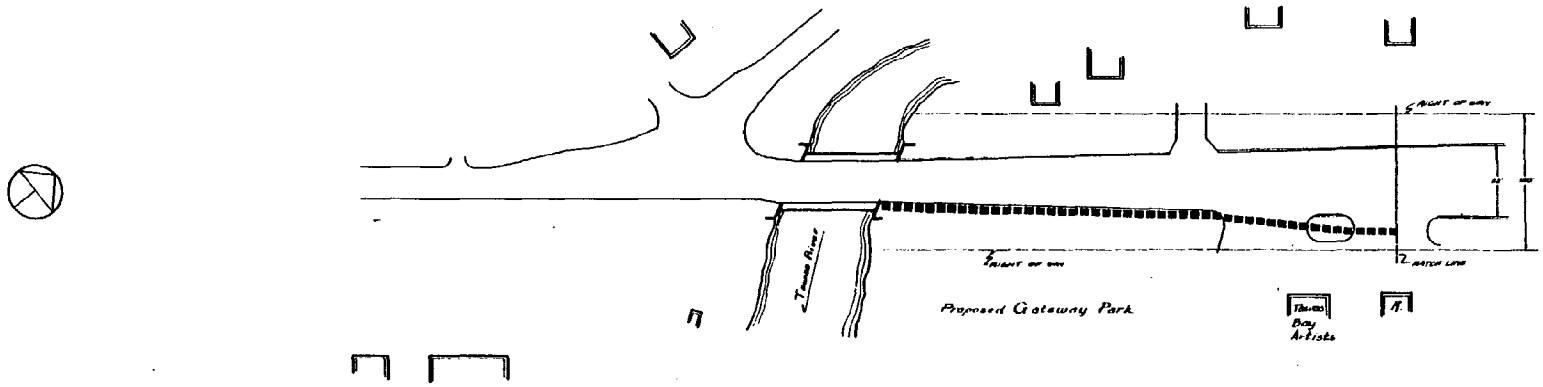
Based upon these needs, a yearly maintenance cost per mile can be estimated. The costs include asphalt repair, two sweepings per year, and anticipated vandalism. The costs are estimated at $120 per mile per year or roughly $800 per year.

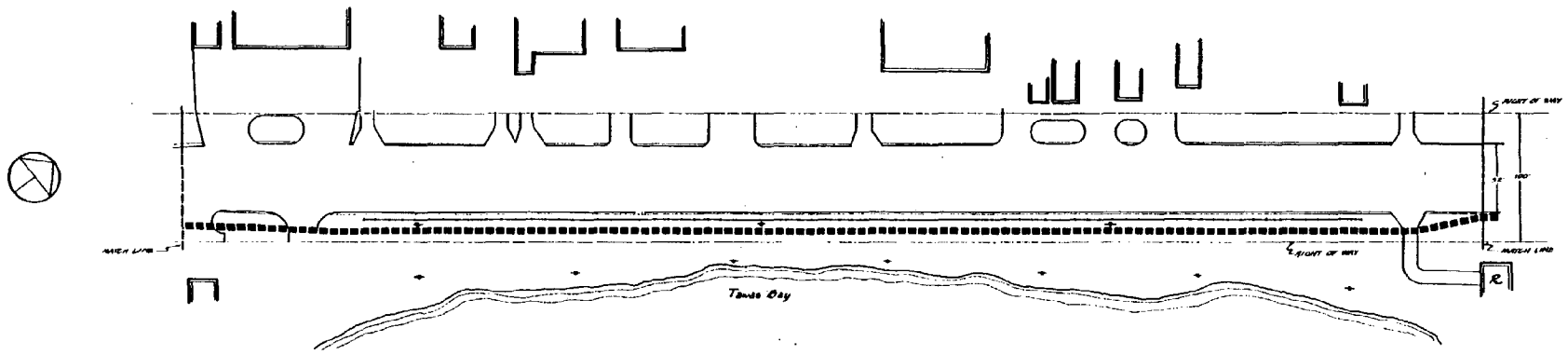
Implementation

Recent economic conditions place the likelihood of funding from federal and state grant programs in jeopardy. However the Coastal Zone Management Program and the State Gas and Weight Tax allocation are two likely sources for funding. Phase I and II applications have been submitted requesting funds from these sources. The results of these applications should be known by late Fall of 1981 and construction of early phases could begin in the Spring of 1982.

While these grant applications are a start, it should be noted that continued support and initiative from local citizens is needed to construct the entire pathway. It is recommended that the Bicycle Path Committee continue to seek funds from federal, state and local sources. It is also hoped that the Bicycle Path project will receive the continued support from the committee as well as from citizens from the entire Tawas area communities.

APPENDIX





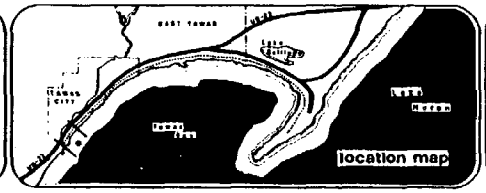
NOTES:

- PROPOSED ROUTE
- RIGHT OF WAY
- UTILITY POLES
- GUARDRAIL

SHEET 1

SCALE

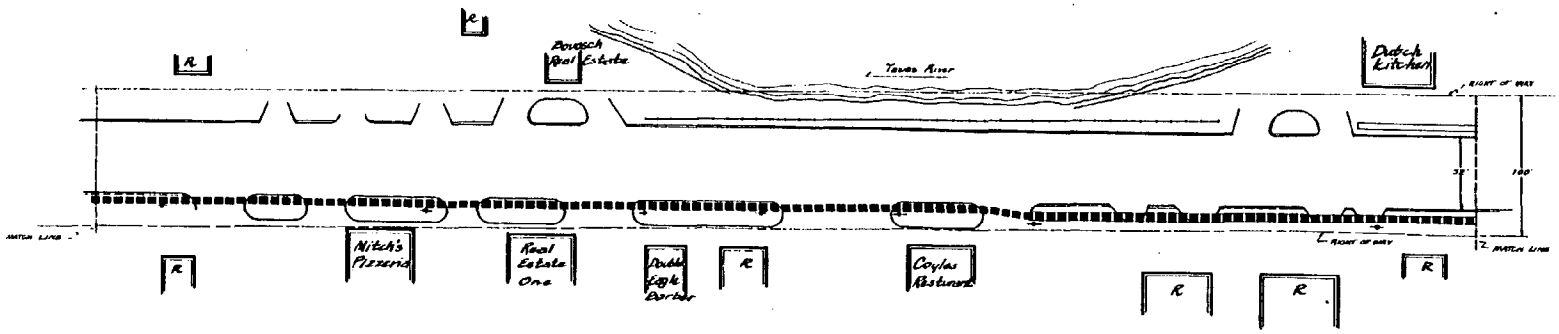
0' 10' 20' 40' 75' 120'

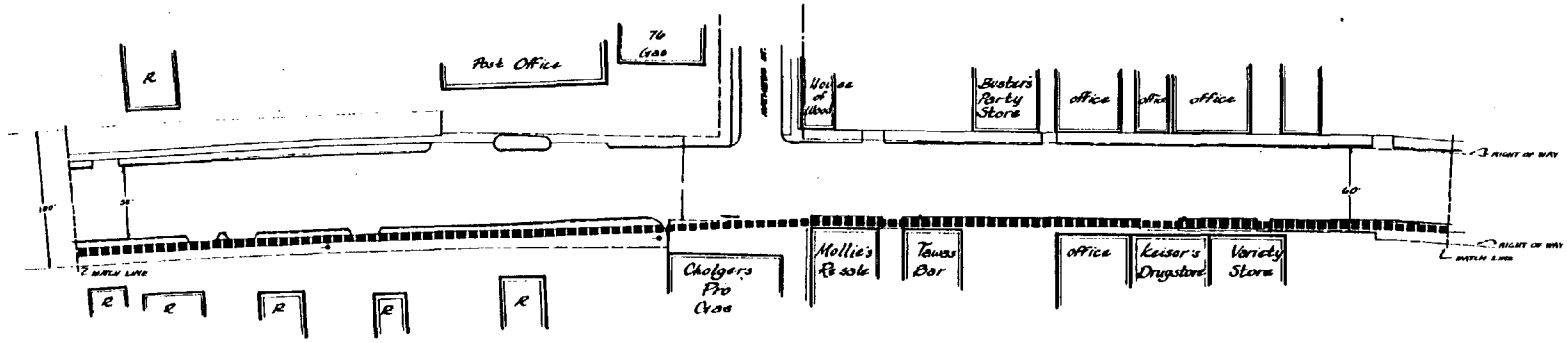


Tawas Point Bicycle Path

PRELIMINARY DESIGN

AYRES, LEWIS, NORRIS & MAY, INC.
engineers architects planners





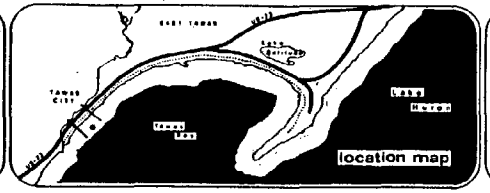
NOTES:

- PROPOSED ROUTE
- RIGHT-OF-WAY
- UTILITY POLES

SHEET 2

SCALE

0' 10' 20' 40' 75' 120'



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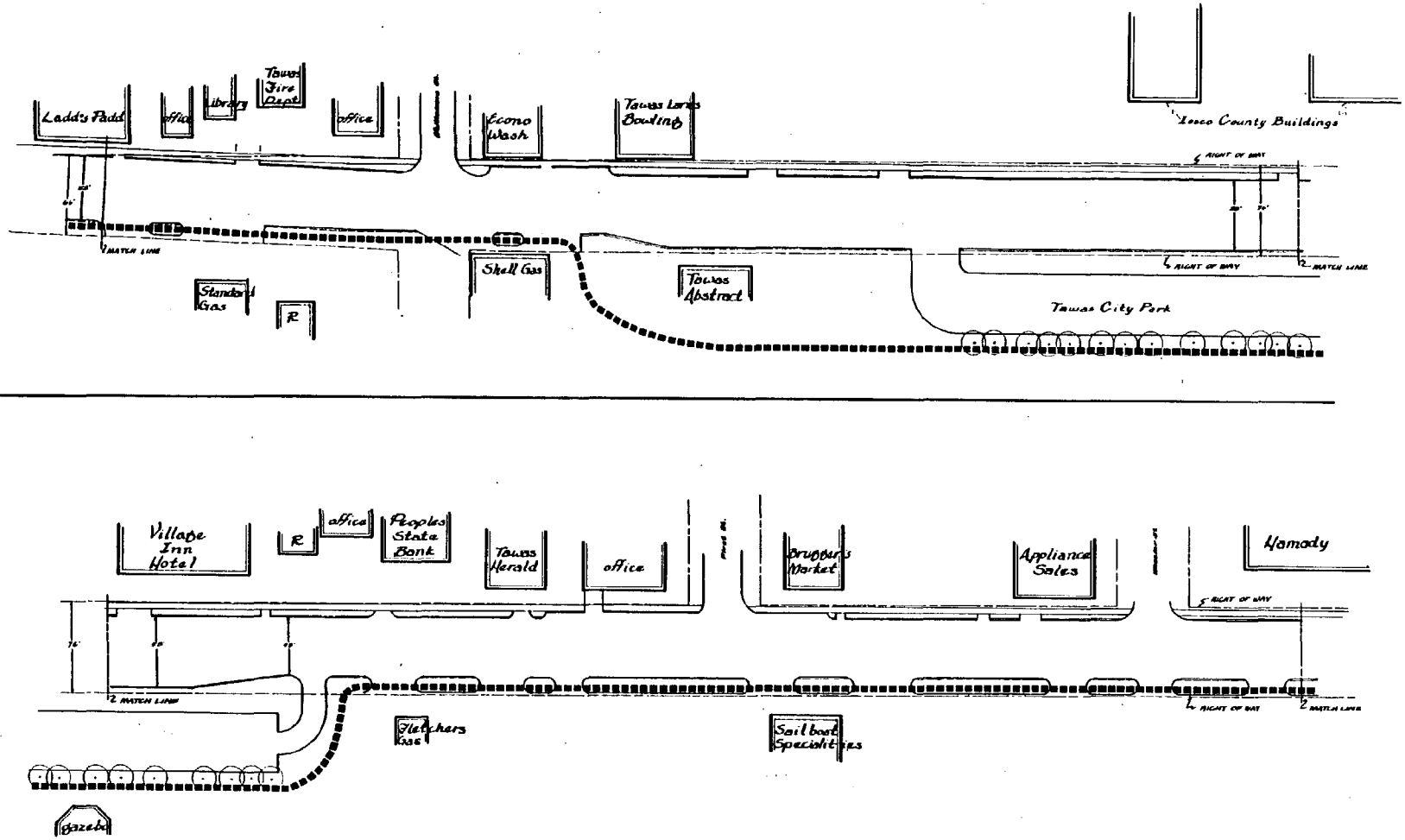


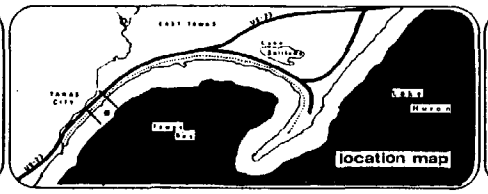
NOTES:

- PROPOSED ROUTE
- RIGHT-OF-WAY
- UTILITY POLES

SHEET 3

SCALE

0 10' 20' 40' 75' 120'



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AYRES, LEWIS, NORRIS & MAY, INC.

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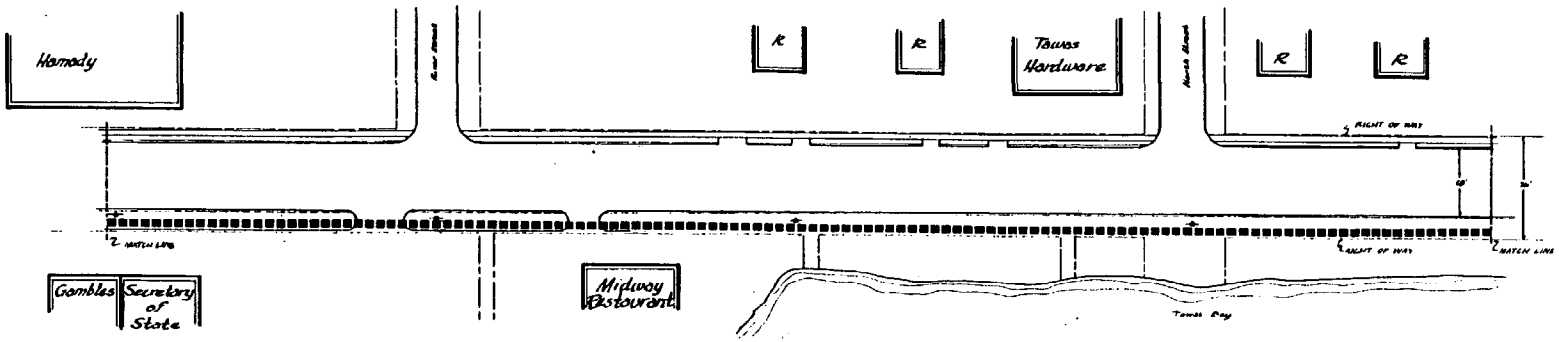
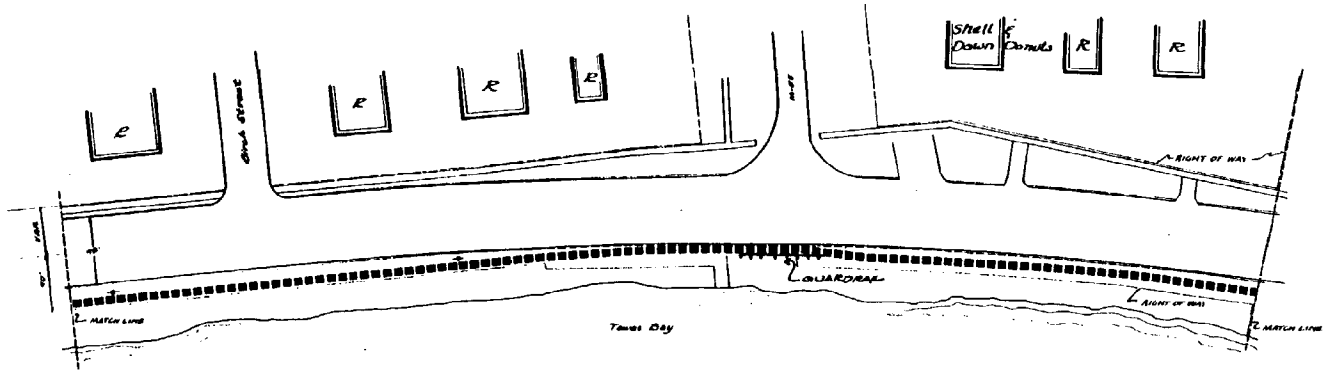




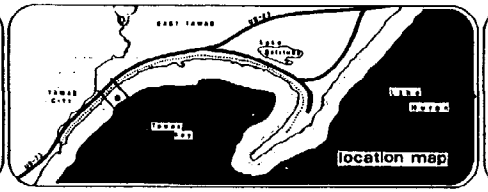
NOTES:

- PROPOSED ROUTE
- RIGHT-OF-WAY
- UTILITY POLES

SHEET 4

SCALE

0' 10' 20' 40' 75' 120'



Tawas Point Bicycle Path

PRELIMINARY DESIGN

AYRES, LEWIS, NORRIS & MAY, INC.
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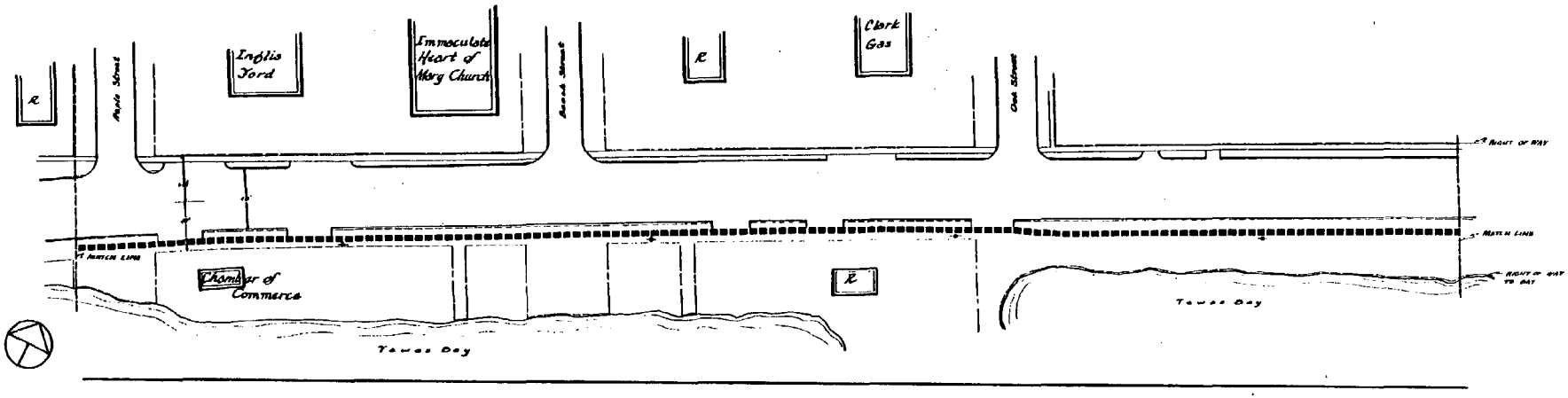
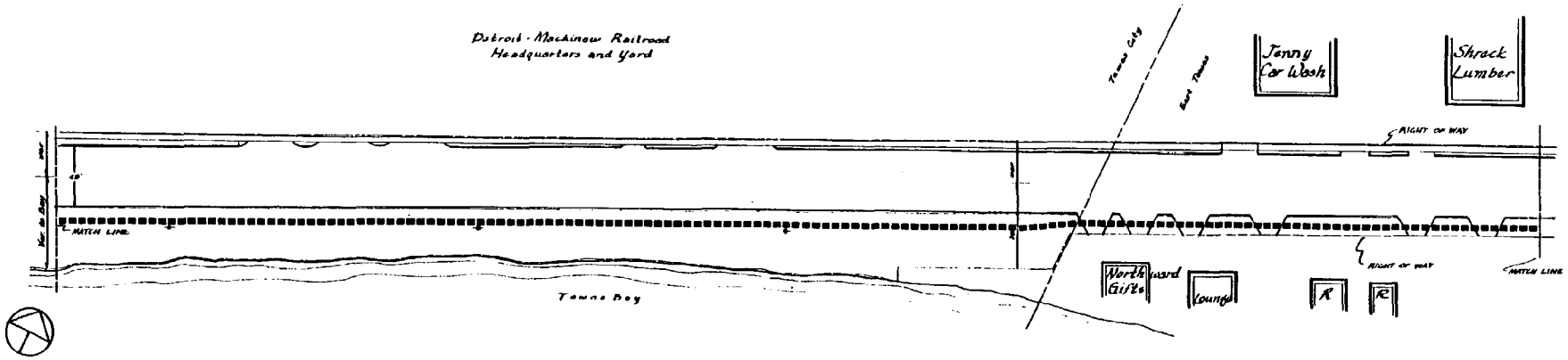




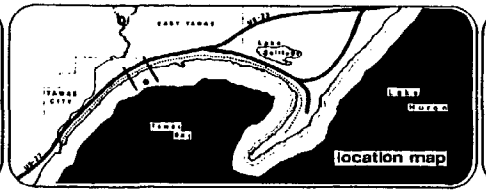
NOTES:

- PROPOSED ROUTE
- RIGHT-OF-WAY
- UTILITY POLES

SHEET 5

SCALE

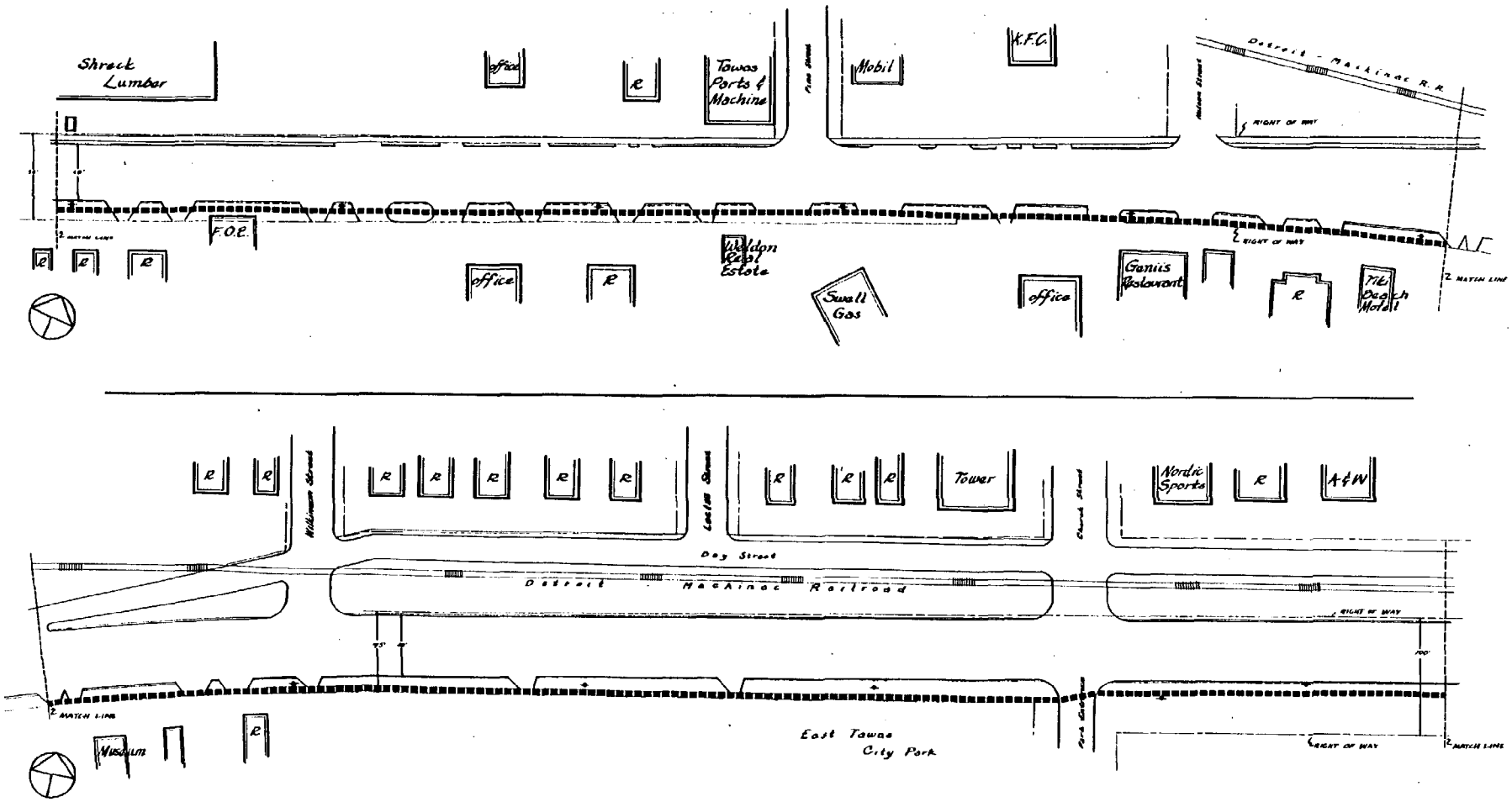
0' 10' 20' 40' 75' 120'



Tawas Point Bicycle Path

PRELIMINARY DESIGN

AYRES, LEWIS, NORRIS & MAY, INC.
engineers architects planners



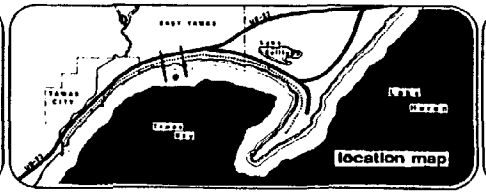
NOTES:

- PROPOSED ROUTE
- RIGHT-OF-WAY
- UTILITY POLES

SHEET 6

SCALE

0' 10' 20' 40' 75' 120'

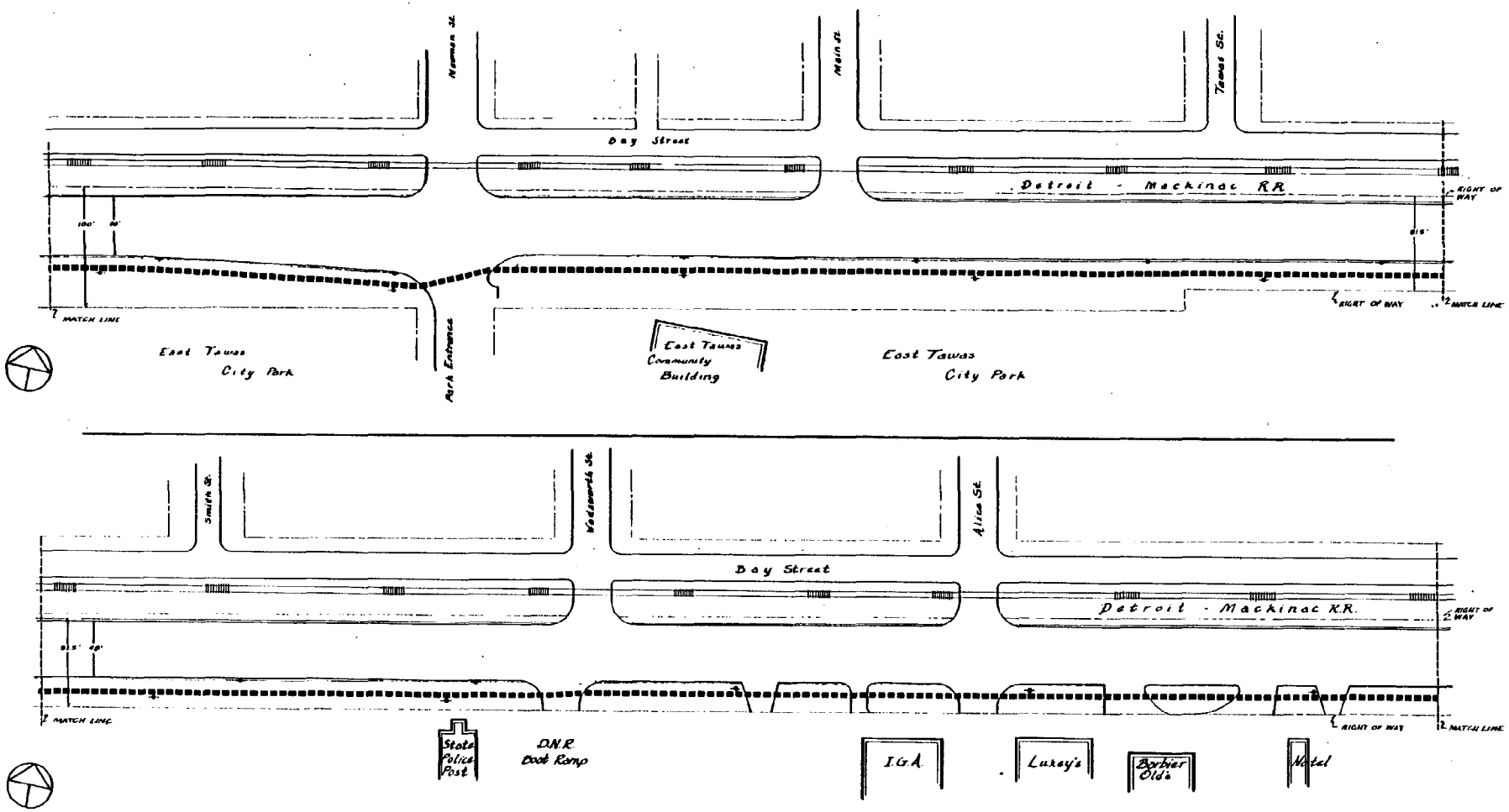


Tawas Point Bicycle Path

PRELIMINARY DESIGN

AYRES, LEWIS, NORRIS & MAY, INC.

engineers architects planners



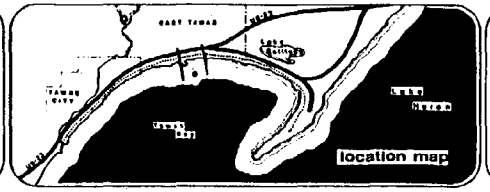
NOTES:

- PROPOSED ROUTE
- RIGHT-OF-WAY
- UTILITY POLES

SHEET 7

SCALE

0' 10' 20' 40' 75' 120'



Tawas Point Bicycle Path

PRELIMINARY DESIGN

AYRES, LEWIS, NORRIS & MAY, INC.
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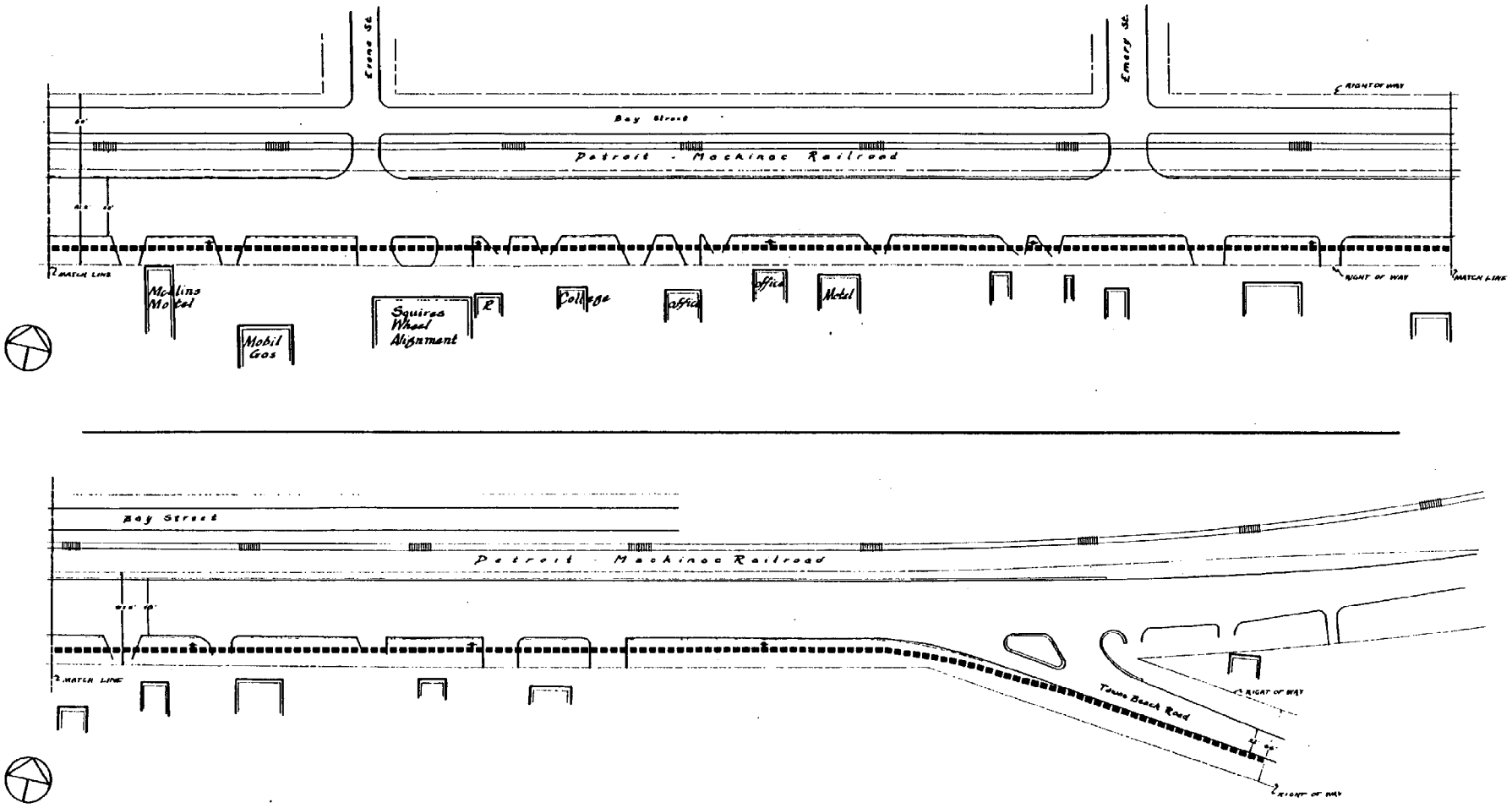


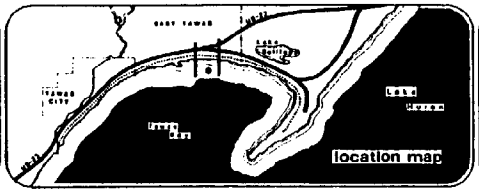
NOTES:

- PROPOSED ROUTE
- RIGHT OF WAY
- UTILITY POLE

SHEET 8

SCALE

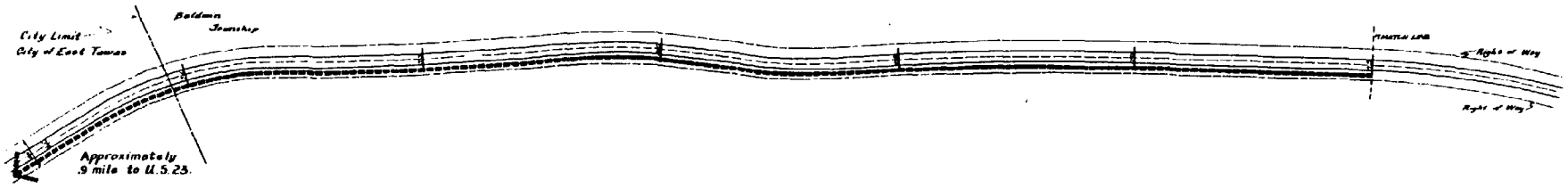
0' 10' 30' 40' 75' 120'

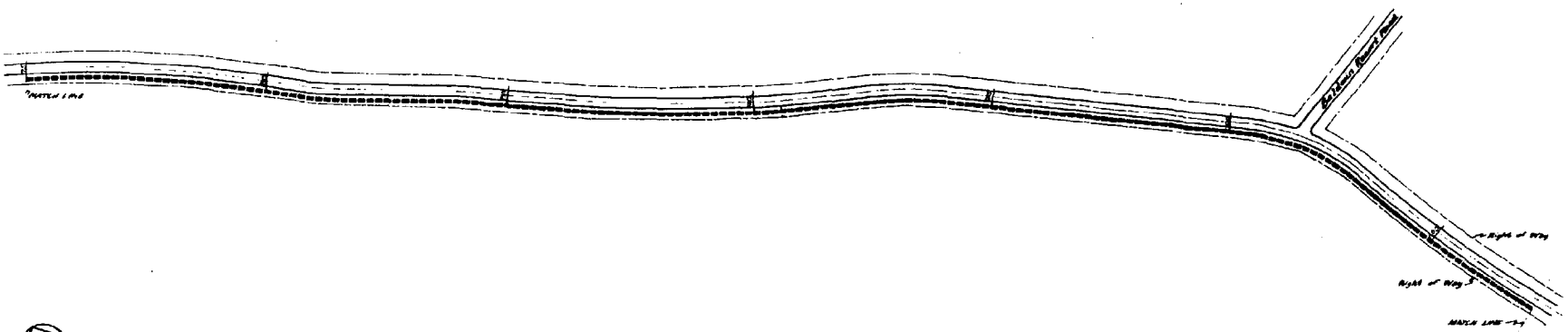


Tawas Point Bicycle Path

PRELIMINARY DESIGN

AYRES, LEWIS, NORRIS & MAY, INC.
engineers architects planners





NOTES

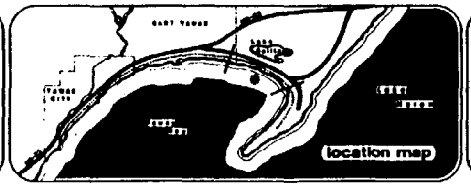
PROPOSED ROUTE

RIGHT OF WAY

SHEET 9

SCALE

0' 50' 100' 200' 300'



Tawas Point Bicycle Path

PRELIMINARY DESIGN

AYRES, LEWIS, NORRIS & MAY, INC.

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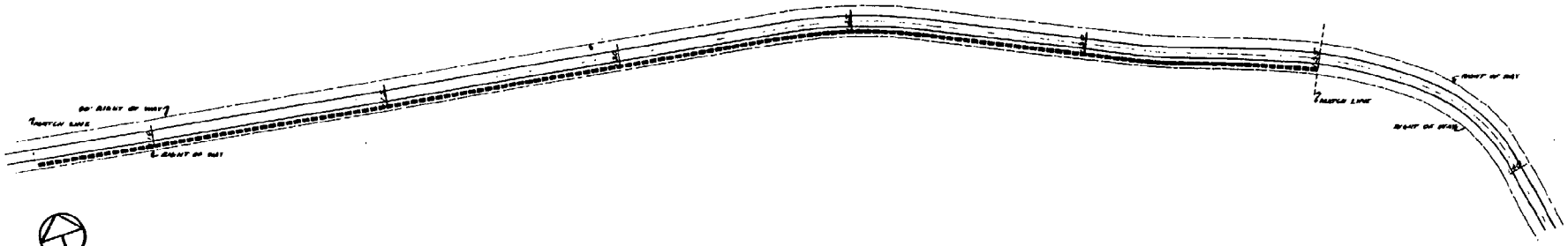


Note: Pathway to extend into Tawas Point State Park and terminate at Beach Area Parking Lot. Pathway could proceed along existing park roadway or on a separate pathway. Final design configuration to be determined during later phases by the Michigan Department of Natural Resources.

NOTES

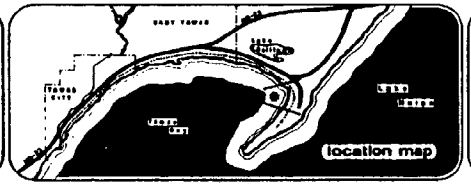
PROPOSED ROUTE

RIGHT OF WAY

SHEET 10

SCALE

0' 50' 100' 200' 300'

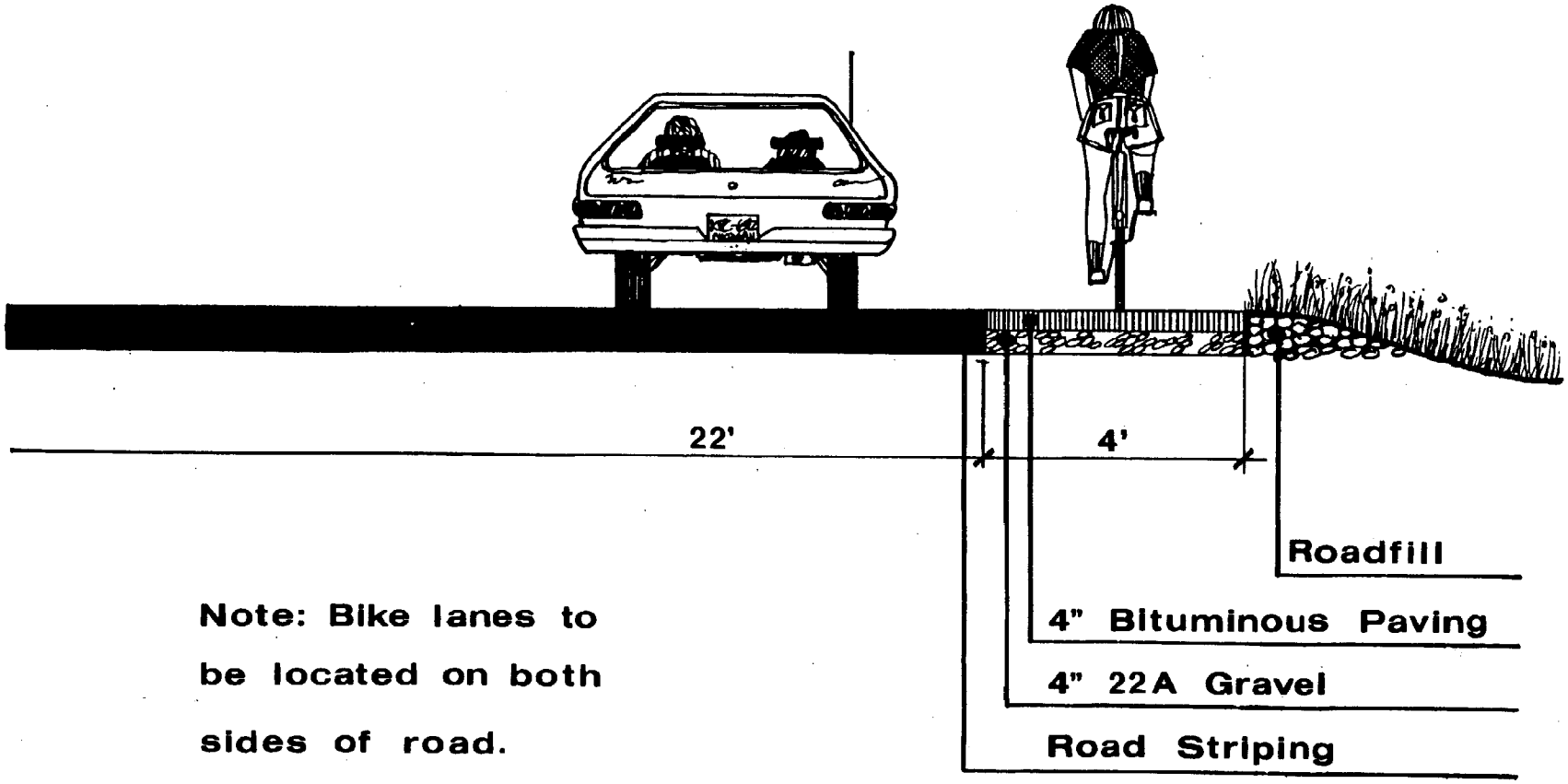


Tawas Point Bicycle Path

PRELIMINARY DESIGN

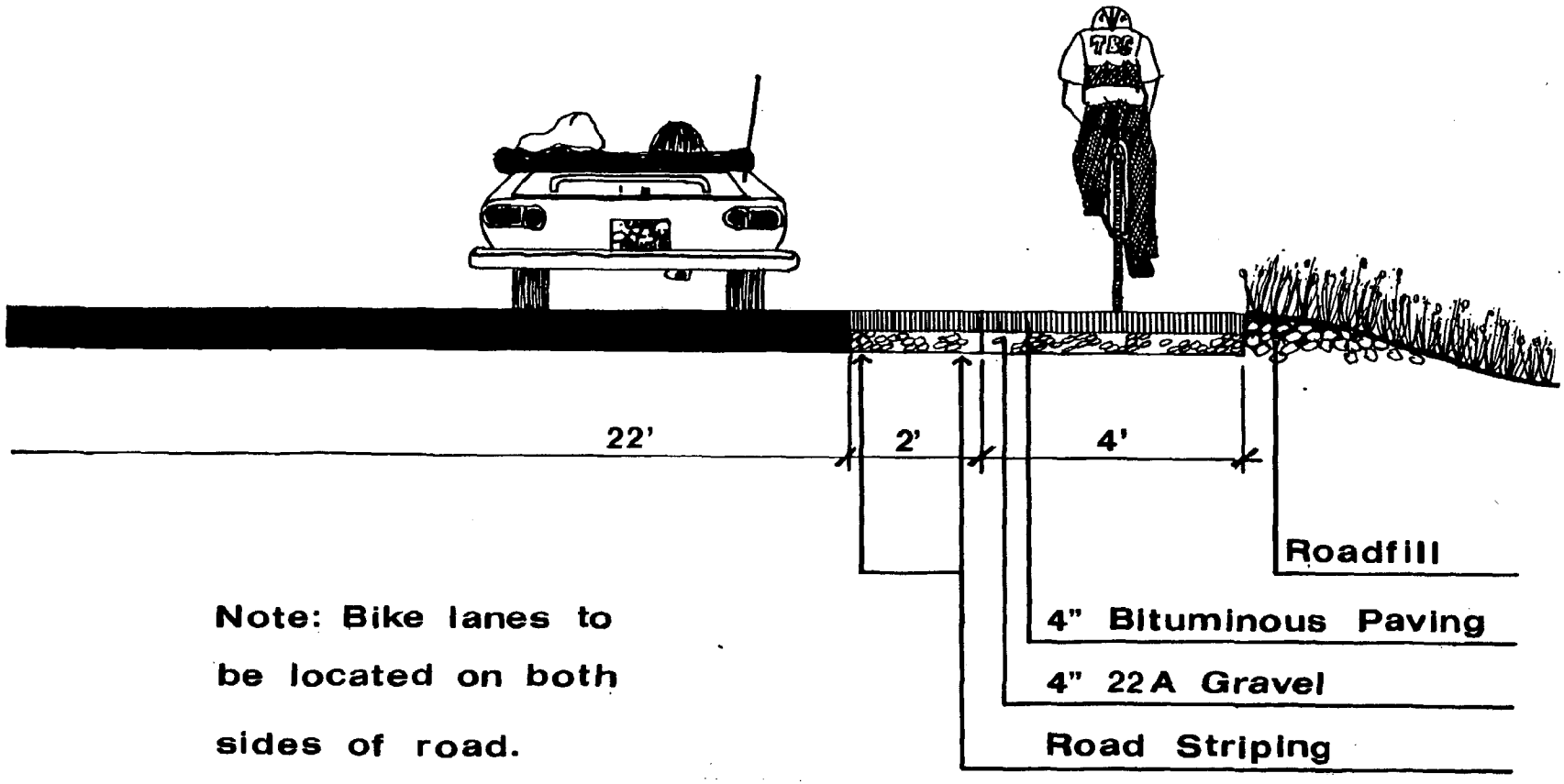
AYRES, LEWIS, NORRIS & MAY, INC.

engineers architects planners



Note: Bike lanes to be located on both sides of road.

Section - Tawas Beach Road - Alternative A



Note: Bike lanes to be located on both sides of road.

Section - Tawas Beach Road - Alternative B

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