

BICYCLE SAFETY STUDY
CAPE COD NATIONAL SEASHORE BIKE TRAIL
AT
TRANSFER STATION ROAD
PROVINCETOWN, MASSACHUSETTS



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TRANSPORTATION STAFF

APRIL 2000



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TRANSFER STATION ROAD

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CAPE COD COMMISSION

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EXECUTIVE SUMMARY

At the request of the Cape Cod National Seashore and the Town of Provincetown, the Cape Cod Commission transportation staff has conducted a Bicycle Safety Study. The study has been performed to improve bicycle access to/from the Province Lands Bicycle Trail located near the Provincetown Transfer Station Road. The study provides an evaluation of existing transportation conditions and makes recommendations to improve safety at the above location. In general, the study includes a presentation of the following areas:

- Existing Transportation Conditions
- Problem Identification
- Preferred Alternatives
- Other Considerations
- Recommendations and Conclusion

The proposed improvements in this report were based on a thorough evaluation of data collection and field observations. With assistance from Kevin Fitzgerald, Chief Ranger, Cape Cod National Seashore, and Robert Anthony, Provincetown Chief of Police, Commission staff was able to develop two preferred alternatives that were deemed most beneficial and appropriate for the specific study area. Staff recommends Alternative 2 since it provides bicyclists better separation from vehicles and is more consistent with the natural surrounding of the existing Bike Trail. Both alternatives as well as other considerations are discussed in detail in this study. Staff is available to assist in the evaluation and implementation of any improvements the Cape Cod National Seashore and the Town of Provincetown would like to advance.

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INTRODUCTION

The Cape Cod Commission transportation staff has performed a Bicycle Safety Study for the Cape Cod National Seashore (CCNS) and the Town of Provincetown. The study area encompasses the intersection of Race Point Road at the Transfer Station Road to the beginning of the CCNS Bike Trail (a.k.a. Province Lands Trail). The study area is shown in Figure 1. The purpose of this study is to improve bicycle safety through this active area used by both bicyclists and vehicles. Staff has performed data collection and observed traffic patterns of vehicles and bicyclists in the study area. Based on this effort, staff has identified safety related problems and recommends measures to improve bicycle access to the Bike Trail from Race Point Road. While the report focusses on bicycle safety, it is expected that improved bicycle access will also enhance pedestrian safety at this location. The following report discusses data collection, problem identification and recommended improvement alternatives.

DATA COLLECTION

Traffic counts were performed manually and with counting machines to record traffic volumes and speeds near the study area. Manual counts were conducted to record bicycles and vehicles by direction and volume at the Race Point Road/Transfer Station Road intersection. An Automatic Traffic Recorder (ATR) was installed on Race Point Road to record daily traffic volumes and speeds. The intersection counts (manual) and daily counts (ATR) are discussed below. Detailed traffic count data is included in Appendix A. Field observations and measurements of roadway geometry were also performed at the study area.

Intersection Traffic Volumes (Manual Counts)

Manual counts were performed on Thursday July 22, 1999 and Saturday July 24, 1999 from 11:30 AM to 12:30 PM at the intersection of Race Point Road/Transfer Station Road. The counts recorded the turning movements of both vehicles and bicyclists. The midday traffic volumes at this intersection are shown in Figure 2 and Table 1 below. Observations were also made of travel patterns to identify conflicts between vehicles and bicyclists.

Table 1: Intersection Traffic Volumes (11:30-12:30 PM)

| <u>Date</u> | <u>Entering Traffic Volumes</u> | | | <u>Percent Bicyclists</u> |
|---------------|---------------------------------|---------------|-------------------|---------------------------|
| | <u>Cars</u> | <u>Trucks</u> | <u>Bicyclists</u> | |
| Thurs 7/22/99 | 305 | 11 | 79 | 20% |
| Sat 7/2/99 | 320 | 7 | 74 | 18% |

As shown in Table 1 above, bicyclists accounted for a significant portion (up to 20%) of the total traffic entering this intersection.

Daily Traffic Volumes and Speeds (ATR Count)

An ATR was installed on Race Point Road (just north of Transfer Station Road) from

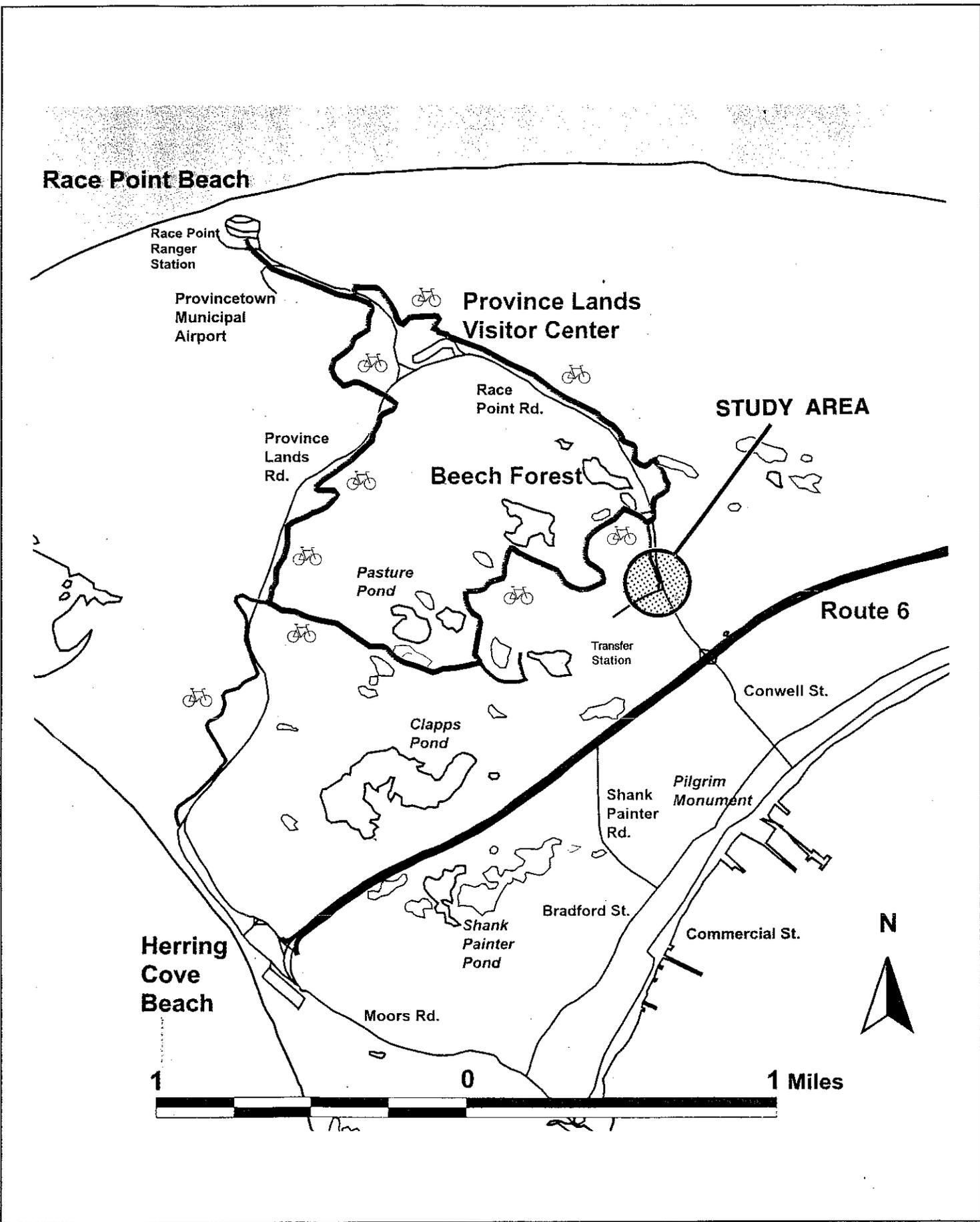


Figure 1: Study Area

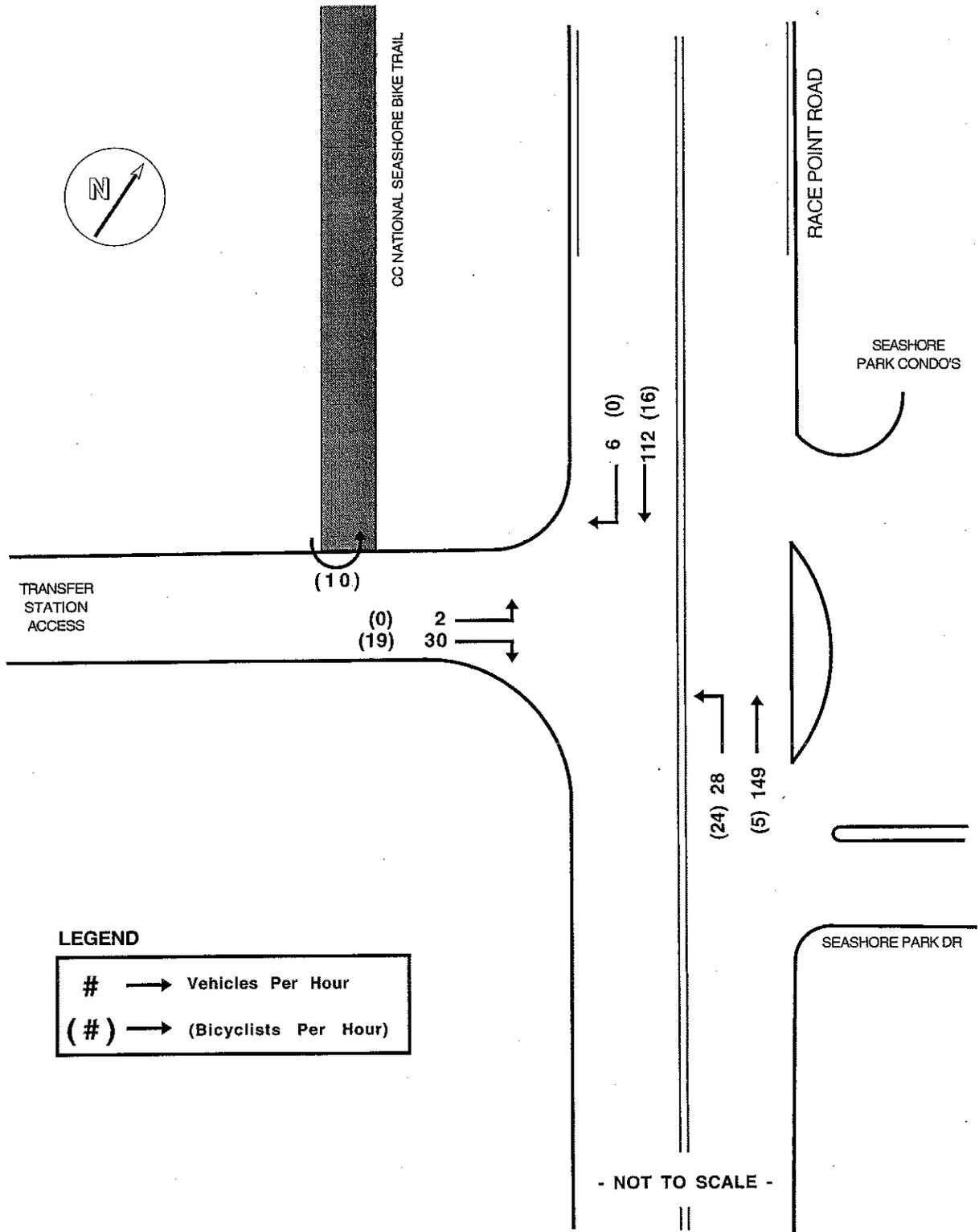


Figure 2: Midday Intersection Traffic Volumes (July 24, 1999)

Thursday July 22, 1999 to Monday July 26, 1999 to obtain continuous daily traffic volume and speed data. The daily traffic information is shown in Table 2 below for Saturday and Sunday conditions.

Table 2: Weekend Volume and Speed Counts on Race Point Road

| <u>Date</u> | <u>Daily Traffic Volumes</u> | | | <u>Average Daily Speeds (MPH)</u> | |
|-------------|------------------------------|-----------|--------------|-----------------------------------|-----------|
| | <u>NB</u> | <u>SB</u> | <u>Total</u> | <u>NB</u> | <u>SB</u> |
| Sat 7/22/99 | 1,490 | 1,665 | 3,155 | 33 | 32 |
| Sun 7/23/99 | 1,531 | 1,868 | 3,399 | 33 | 32 |

NB = Northbound, SB = Southbound

As shown in Table 2 above, the weekend traffic volumes on Race Point Road were 3,155 vehicles per day on a Saturday and 3,399 vehicles per day on a Sunday. The average speed on Race Point Road was 33 miles per hour in the northbound direction and 32 miles per hour in the southbound direction. The posted speed limit on Race Point Road in the vicinity of the study area is 25 miles per hour (near Route 6) and 30 miles per hour (within the CCNS).

PROBLEM IDENTIFICATION

Based on field observations and evaluation of the data collection, staff has identified safety related problems for bicyclists within the study area. Specific problem areas are discussed in detail below and shown in Illustrations 1 through 3.

Speeds

There are two posted speeds near the Transfer Station Road. The posted speeds are 25 miles per hour (south of the Transfer Station) and 30 miles per hour (north of the Transfer Station). A speed count was conducted north of the Transfer Station Road. Based on the average speeds of 32 to 33 miles per hour shown in Table 2, the majority of motorists drive slightly above the speed limit. Occasionally there were excessively high speeds along Race Point Road. Recommendations presented in this report are expected to minimize excessive speeds along Race Point Road near the proposed bicycle crossings.

Vehicular/Bicycle Conflict Areas

Based on field observations, staff identified a number of conflict areas where vehicles cross the paths of bicyclists and create unsafe conditions. The main conflict areas are discussed below:

Race Point Road Crossing

The most obvious conflict area is where bicyclists cross Race Point Road to access the Bike Trail. This occurs anywhere within the Race Point Road/Transfer Station Road intersection because there is no designated crossing location. This, in turn, creates confusion for drivers since they don't know where or when the bicyclists will turn. A

similar crossing conflict occurs on Race Point Road near Nelson's which generates a lot of bicycle traffic from the bike rental shop.

Bike Trail Entrance/Exit at the Transfer Station Road

Some bicyclists continue beyond the Bike Trail and travel into the Transfer Station Road without looking or stopping. Illustration 1 shows this conflict where the bicyclist rode out in front of the vehicle without stopping. Without proper signage or warning, bicyclists will continue to perform this hazardous maneuver.

At this same location, bicyclists occasionally stopped in the middle of the Transfer Station Road to determine what to do next since the Bike Trail ends. This is shown in Illustration 2. Without a sufficient warning or an area to stop, bicyclists will continue to stop in the road.

Seashore Condominiums at Race Point Road

Three driveways along the west side of Race Point Road create conflict areas for bicyclists. These residential driveways are not well defined and bicyclists may ignore any traffic entering/exiting these drives as they try to cross Race Point Road to/from the Bike Trail. These conflict areas are shown in Illustration 3.

Inadequate Bicycle Accommodations

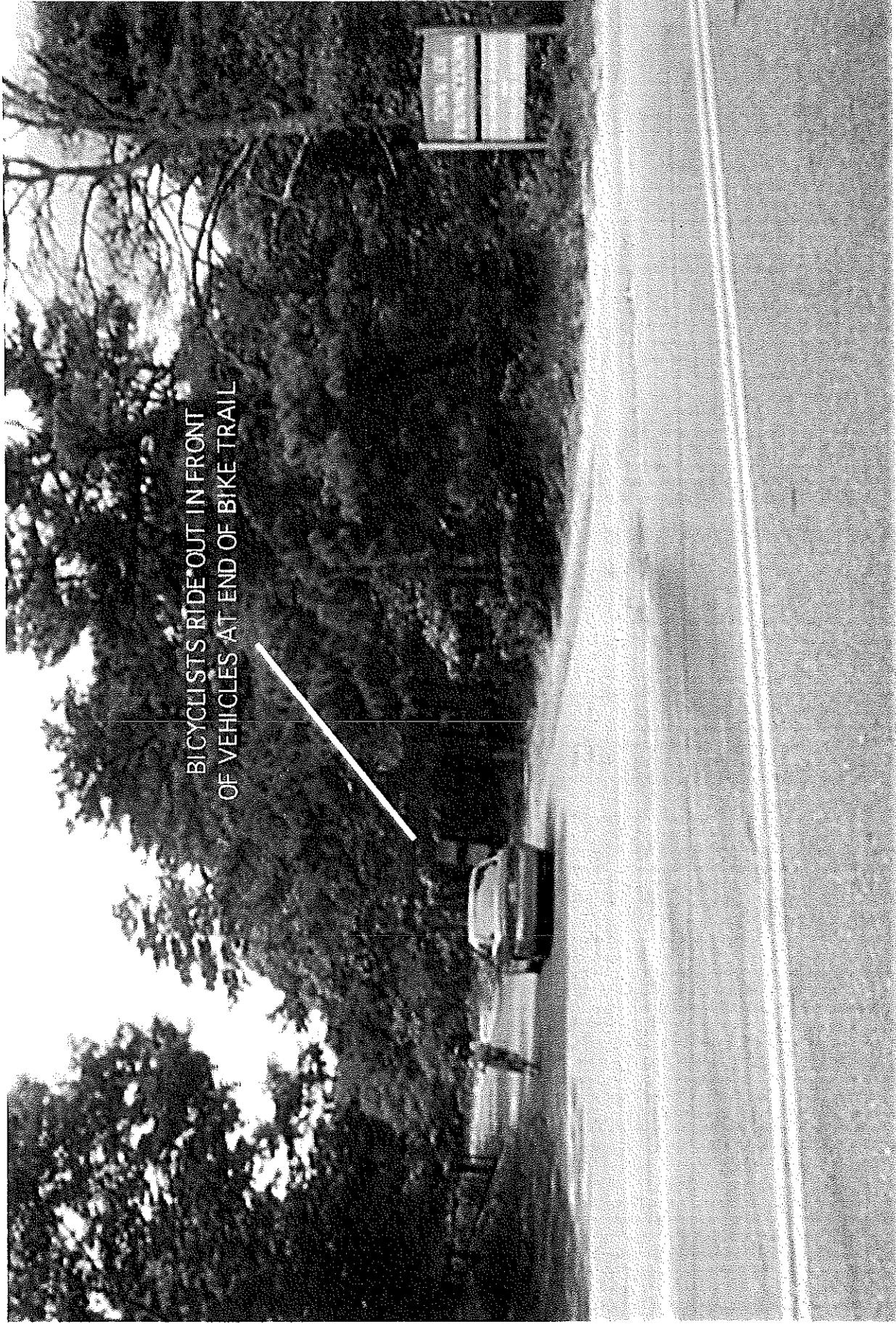
Race Point Road does not provide bikeway accommodations (e.g., lanes, paths, shoulders) to separate bicyclists from vehicles. Bicyclists travelling from Route 6 to the Bike Trail must share the same lane with motorists. Consequently, motorists are forced to use the opposing travel lane as shown in Illustration 3. This creates an unsafe situation for motorists and bicyclists, especially considering the amount of Group B/C bicyclists (inexperienced and children) riding on Race Point Road. The turning conflicts at the Transfer Station Road make it even more important to provide safe accommodations for bicyclists at this location.

Roadway Condition

Due to the region's sandy soil, the edges of Race Point Road are frequently covered with loose sand and gravel. This condition, which also occurs on the CCNS Bike Trails, creates a slippery surface for bicyclists. A further hazard is created on Race Point Road when bicyclists try to avoid the sand by riding into the vehicular travel lane.

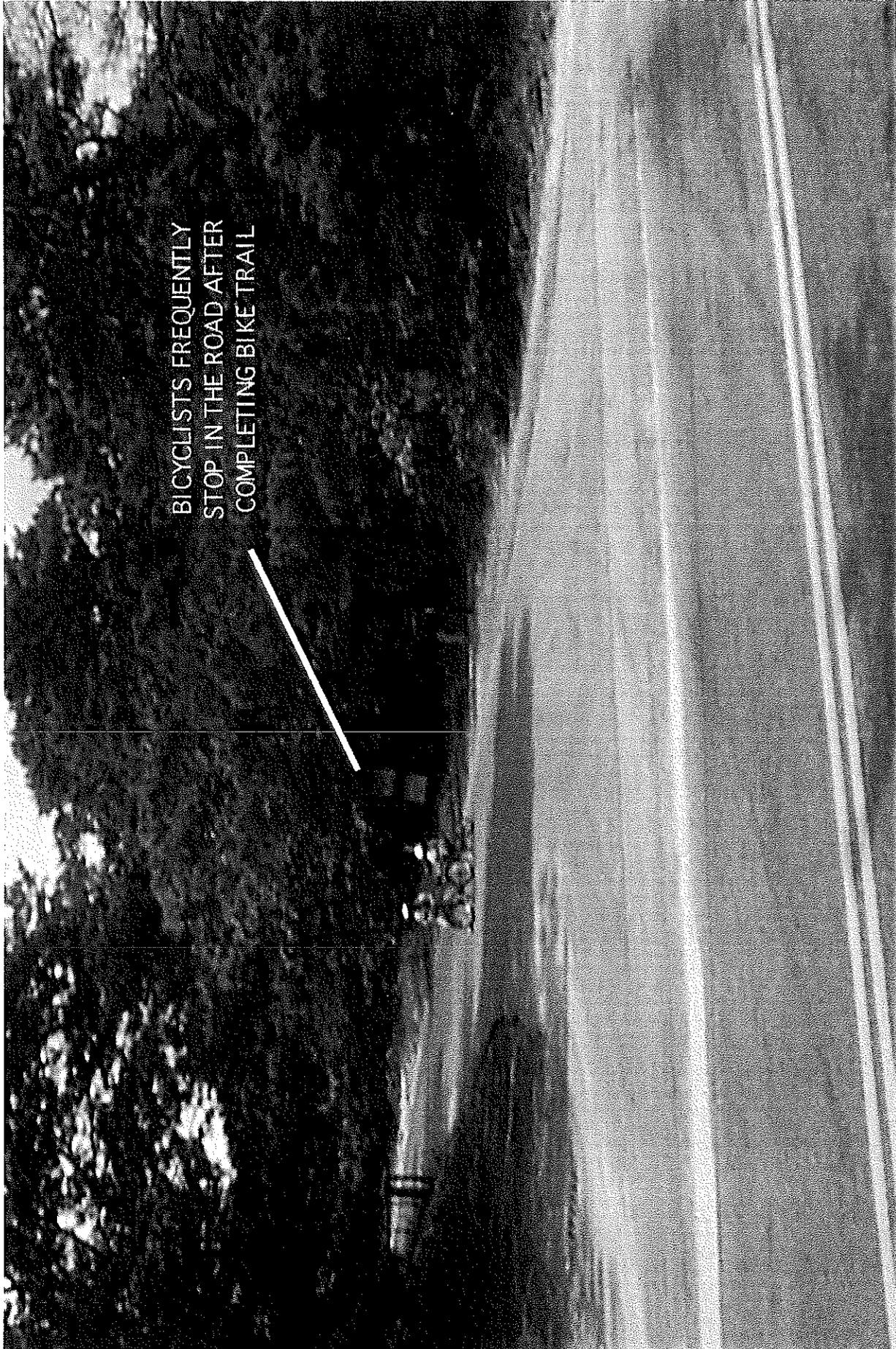
Trucks

Trucks travelling to/from the Transfer Station can create hazardous conditions for bicyclists. Operating characteristics (e.g., acceleration and deceleration) of trucks are different than cars. Therefore, trucks do not respond as fast as cars when drivers try to avoid an incident such as a bicyclist cutting in front of the vehicle. The turning maneuvers of trucks are also wider than cars and cause them to encroach bicycle travel areas (e.g., side of road).



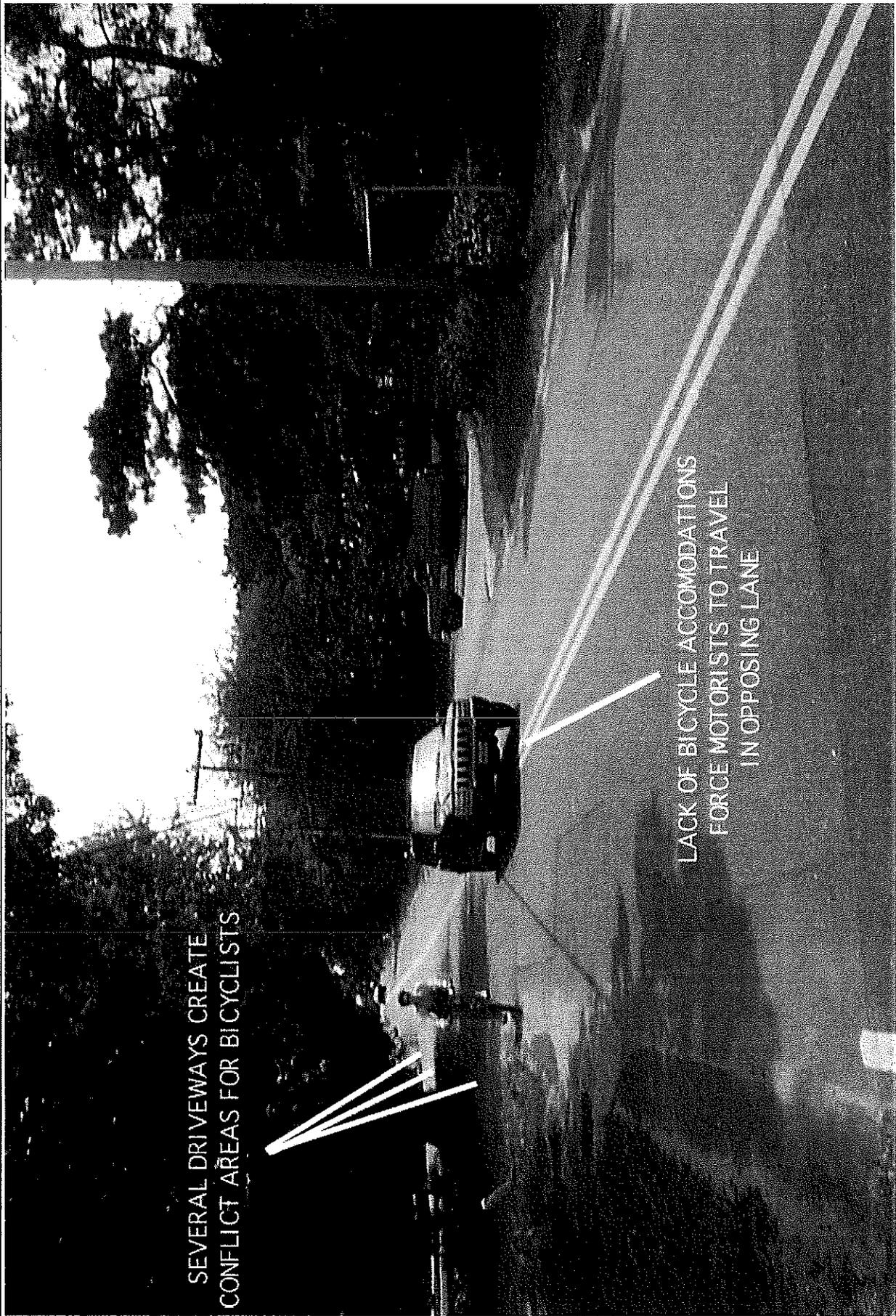
BICYCLISTS RIDE OUT IN FRONT
OF VEHICLES AT END OF BIKE TRAIL

Illustration 1: Identified Problem Areas



BICYCLISTS FREQUENTLY
STOP IN THE ROAD AFTER
COMPLETING BIKE TRAIL

Illustration 2: Identified Problem Areas



SEVERAL DRIVEWAYS CREATE
CONFLICT AREAS FOR BICYCLISTS

LACK OF BICYCLE ACCOMODATIONS
FORCE MOTORISTS TO TRAVEL
IN OPPOSING LANE

Illustration 3: Identified Problem Areas

Poor Signage

Currently there are no signs on Race Point Road indicating the location of the Bike Trail or where bicyclists should cross the road. Without clear direction, many bicyclists pass the Bike Trail and turn around upon realization of their mistake. This creates confusion and safety hazards as bicyclists hastily turn around on Race Point Road.

Crashes

Staff obtained crash data from the Provincetown Police Department for the period 01/01/97 through 08/31/99. The data included vehicular, bicyclist and pedestrian crashes along Race Point Road near the site. This data was reviewed to identify high crash areas and if there were any patterns to the crashes. During this time period there were a total of 13 crashes. Of the 13 crashes, one was bicycle related (slid on sand) and the others were vehicular crashes. The crashes occurred at a number of locations along Race Point Road: Route 6, Nelson's, Transfer Station Road and at the Beech Forest entrance. While there were no specific high crash areas, the location of the crashes indicates that conflicts exist where vehicular turning movements occur (e.g., at intersections). Recommended improvements in this report are intended to minimize or eliminate bicycle exposure to these potential vehicular conflict areas. The crash data can be seen in Appendix B.

Roadway Right-Of-Way and Easement Constraints

Race Point Road has a state highway right-of-way of approximately 50 feet near the study area and gradually widens as it approaches Route 6. The Transfer Station Road has an easement width of approximately 25 feet at its narrowest and expands to 75 feet at its opening with Race Point Road. Within the CCNS property, the Transfer Station Road is 52 feet wide. Figure 3 shows the right-of-way and easement measurements for these roads.

A bicycle facility (path, lane or shoulder) can probably be accommodated within the right-of-way on either side of Race Point Road. A bicycle path, requires at least a 10 foot (3 meter) path and 2 foot (0.6 meter) graded area. While narrow bicycle shoulders could be constructed within the Transfer Station Road easement, they are not recommended since they do not provide positive separation from the vehicles. A bicycle path would likely extend beyond the easement by a minimum of 8.5 feet. The maximum required width beyond the easement would be 12 feet for a bicycle path. Therefore, a bicycle path along either side of the Transfer Station Road may require a land purchase up to the CCNS property.

It is important to note that these estimates are based on assessors maps and old state layouts which may have been altered over the years. Actual right-of-way widths should be determined by surveying the roads and property lines.

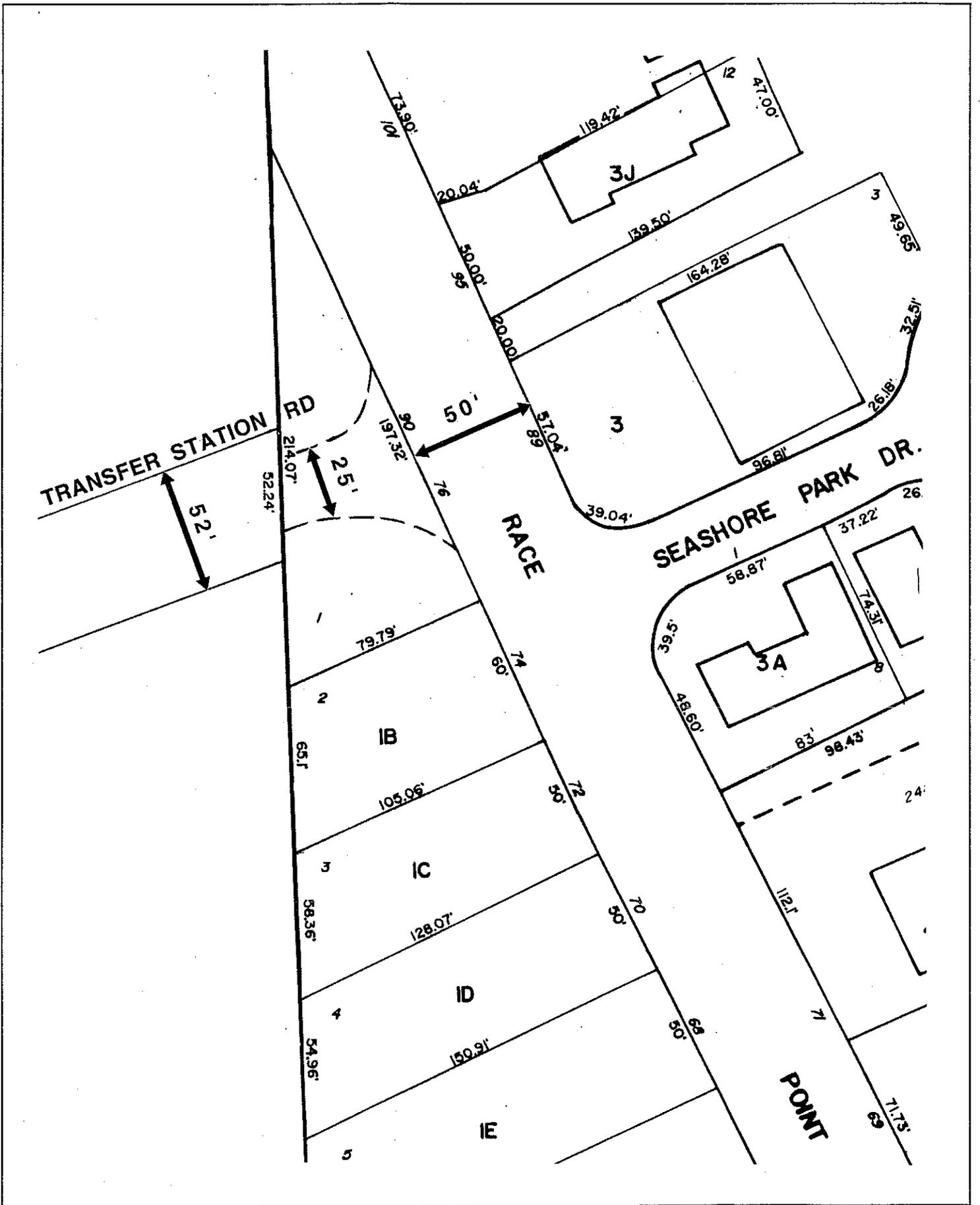


Figure 3: Right-of-Way and Easement Measurements

IMPROVEMENT ALTERNATIVES

Based on extensive data collection and field observations, staff developed a number of potential improvements to enhance the safety for vehicles and bicyclists within the study location. Several alternatives were presented to the Cape Cod National Seashore and the Provincetown Police Department. With assistance from Kevin Fitzgerald, Chief Ranger, and Robert Anthony, Chief of Police, staff revised and "fine-tuned" several of the alternatives. This process resulted in two preferred alternatives. The preferred alternatives were deemed the most beneficial and appropriate for the specific study area.

General Descriptions

The main objective in developing the preferred alternatives was to remove or minimize existing conflicts between vehicles and bicyclists. Both alternatives provide new bike paths to separate the bicyclists from vehicles. Where bicyclists and vehicles must cross paths, crosswalks have been proposed. (Note: the Massachusetts Highway Department generally allows only two horizontal stripes for crosswalks. However, vertical stripes as shown in the Alternatives 1 and 2 are also proposed to be consistent with other crosswalks on Race Point Road within CCNS jurisdiction.) Proper signing, pavement markings and physical barriers have been located where appropriate. While this study focusses on bicycle improvements, these measures are expected to enhance pedestrian safety as well.

Alternative 1 involves less construction and less potential land purchases required for the bike trail. Alternative 2 requires more construction and potential land purchases but provides a safer route for bicyclists. Each alternative is discussed in detail below. The advantages and disadvantages of each alternative versus the other is included for comparison. Other alternatives considered for this study can be seen in Appendix C.

Alternative 1

Alternative 1 provides an extension of the existing Bike Trail along the two roads (see Figure 4). This design minimizes the pavement required for a new bicycle path and the need for potential land purchase. It removes the bicyclists from the road and provides crosswalks where the bicyclists must cross the road. While it provides good direction for bicyclists it does not completely remove them from the conflicts associated with the Race Point Road/Transfer Station Road intersection. Two to five foot buffers (graded areas) are proposed to separate the bicycle path from the roads. A divider (e.g., split rail fence) is proposed along the Transfer Station Road to reinforce the concept that the bicycle path is a separate facility. Alternative 1 will likely cost less than Alternative 2 and will also require less potential land purchase since most of the path is located within the right-of-way on Race Point Road.

Advantages

- Based on right-of-way and easement constraints, 300 to 425 square feet

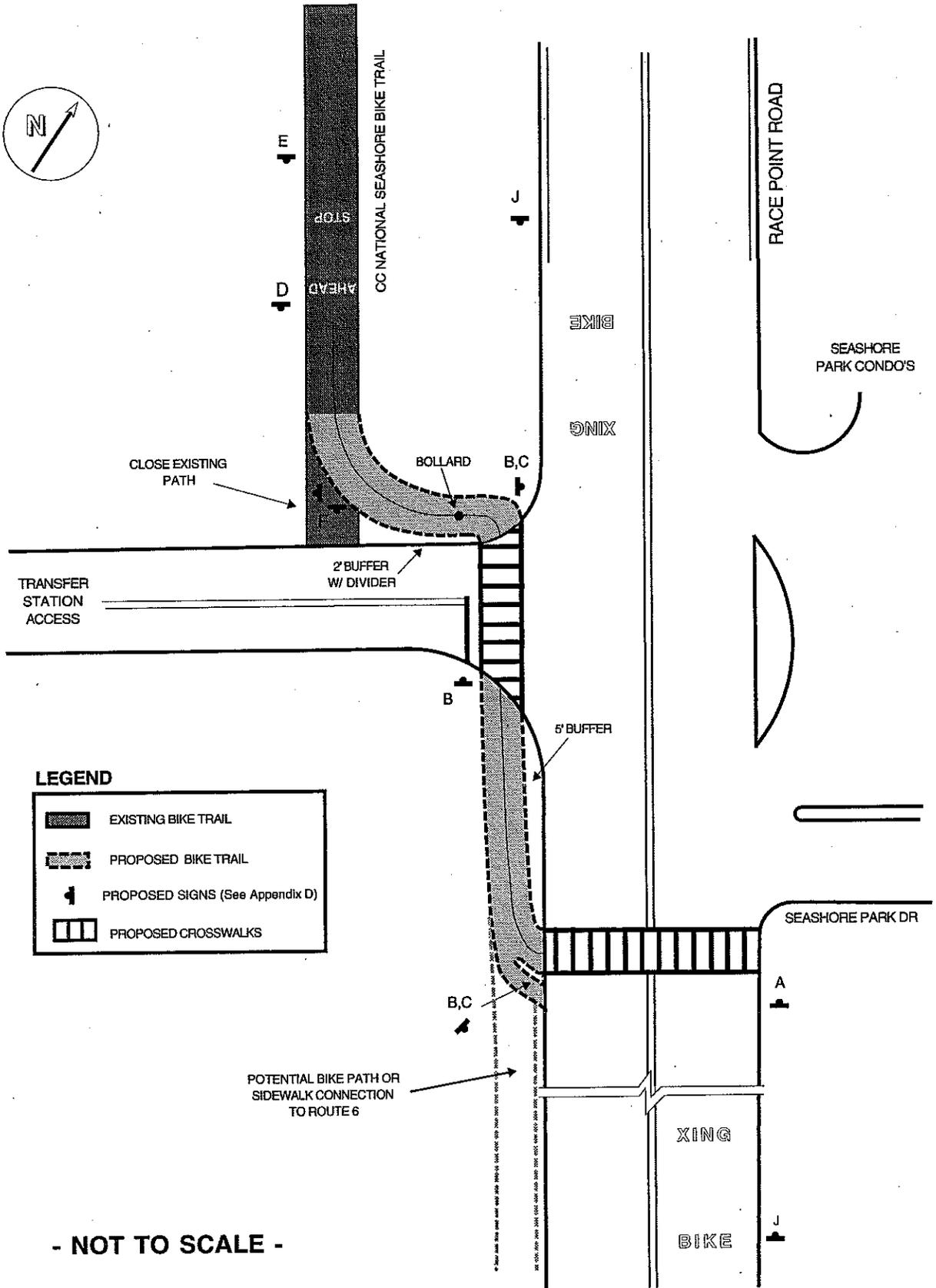


Figure 4: Bicycle Improvements - Alternative 1

may be required for land purchase. This is less than Alternative 2.

- Vegetation removal and land alteration would be minimal since the proposed path travels near the road.
- There is less pavement required for this design minimizing the cost of construction.
- The curved bicycle path may help to slow bicyclists as they approach the roads.

Disadvantages

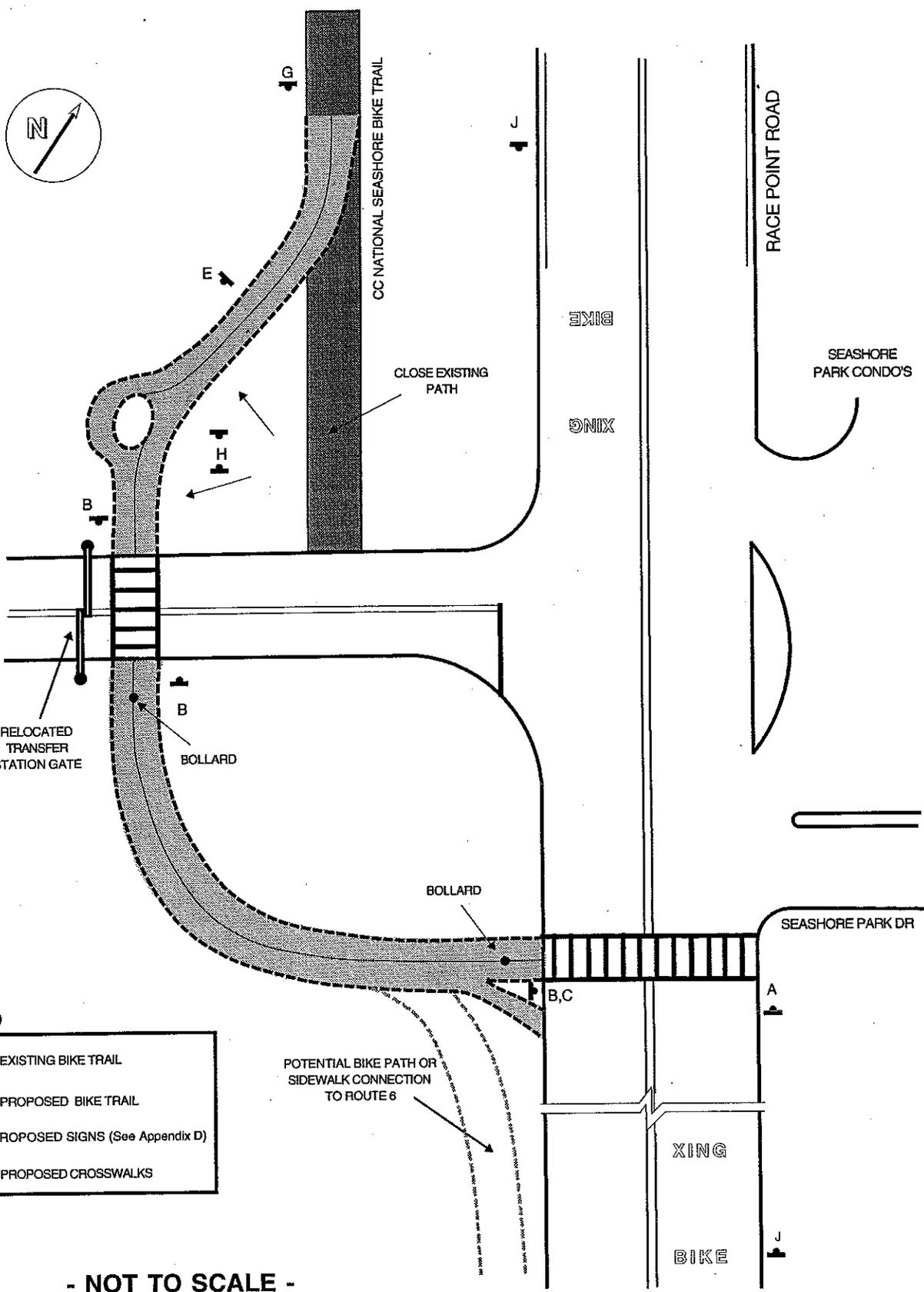
- Bicyclists still must cross near the intersection which exposes them to vehicular turning movements. Motorists and bicyclists must monitor more conflict points (i.e., where paths cross) compared to Alternative 2.
- This proposed path does not provide as much separation from vehicles as Alternative 2 does.
- There is no area for bicyclists to conveniently turn around to travel back to the CC National Seashore Trail.
- The curved bicycle path does not provide a smooth transition from the crosswalks to the paths.
- Northbound bicyclists may be more apt to avoid the crosswalk on Race Point Road and cross diagonally across the intersection to the Bike Trail entrance.

Estimated Cost

The cost of alternative 1 is approximately \$14,000. This cost includes the construction of the bicycle path, split-rail fence and installation of necessary signs and pavement markings. The cost does not include any potential land purchases for the bicycle path. Routine maintenance (e.g., repainting pavement markings) is also not included in the estimated cost.

Alternative 2

Alternative 2 also provides an extension of the existing Bike Trail while removing conflicts at the Race Point Road/Transfer Station Road intersection by realigning the proposed path to the west (see Figure 5). This separation from the vehicles will enhance safety for bicyclists. This separation will require relocation of the Transfer Station gate to the west. Alternative 2 includes a mini-roundabout to both slow bicyclists as they approach the road and to allow a safe and convenient turn-around at the end of the CC National Seashore Bike Trail. Illustration 4 shows an example of a mini-roundabout on the CC Rail Trail located prior to a roadway. While alternative 2 may be safer for bicyclists, it would likely be more expensive and require more potential land purchase.



LEGEND

-  EXISTING BIKE TRAIL
-  PROPOSED BIKE TRAIL
-  PROPOSED SIGNS (See Appendix D)
-  PROPOSED CROSSWALKS

- NOT TO SCALE -

Figure 5: Bicycle Improvements - Alternative 2

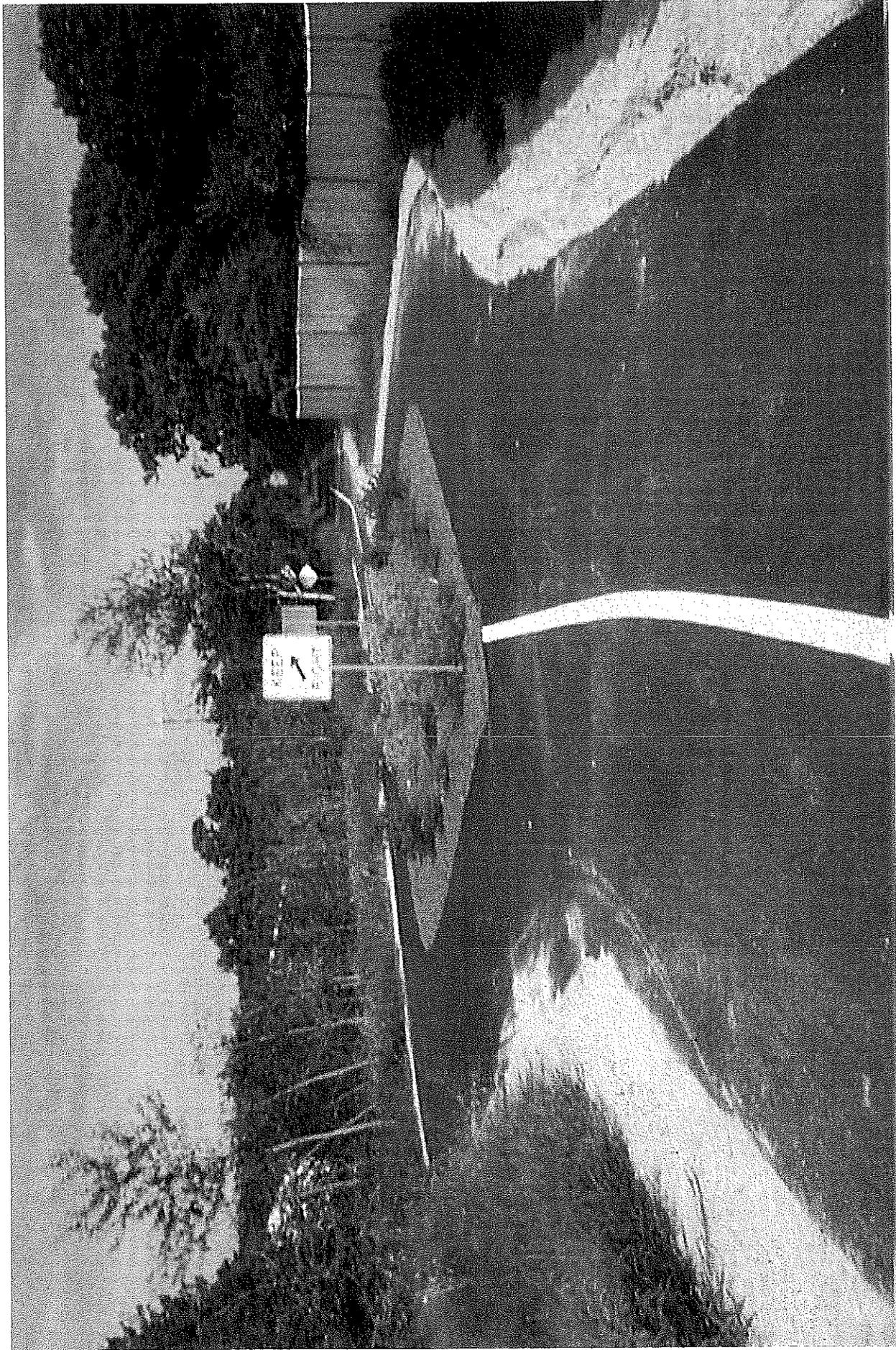


Illustration 4: Bicycle Path With Mini-Roundabout (Cape Cod Rail Trail, Rt 39 in Harwich)

Advantages

- Realignment to the west separates bicyclists from the road. This creates a safer link to/from the existing Bike Trail.
- The path travels through the woods which is consistent with the existing bike trail and provides a more pleasurable ride.
- The mini-roundabout provides a convenient and safe turnaround for bicyclists to turn back to the Bike Trail.
- This design provides a smooth transition for bicyclists from the crosswalks to the proposed paths.

Disadvantages

- This design requires more pavement which could increase the cost of construction.
- The potential land purchase required for this proposed path would be approximately 1,200 square feet of Parcel 1B (Figure 3 shows this parcel).
- More vegetation would have to be removed to construct the proposed path.
- Requires relocation of the Transfer Station gate.

Estimated Cost

The cost of alternative 1 is approximately \$27,000. This cost includes the construction of the bicycle path, relocation of the gate and installation of necessary signs and pavement markings. The cost does not include any land purchases required for the bicycle path. Routine maintenance (e.g., repainting pavement markings) is also not included in the estimated cost.

Signage

Both of the alternatives above would include signs to improve safety. Sign symbols (A through J) shown in Figures 4 and 5 are explained in detail in Appendix D. The signs provide warning, directional and traffic control (e.g., stop sign) information for both bicyclists and motorists. The roadway signs alert motorists of the bicycle activity and the bicycle path signs provide information to guide bicyclist safely to their destinations. Illustrations of the proposed signs as well as other potential bicycle signs can be seen in Appendix E.

Pavement Markings

To complement warning signs, pavement markings have been proposed for both the bicycle path and the roadway. These markings alert bicyclists and motorists of potential crossings ahead. The pavement markings are shown in Figures 4 and 5 and illustrated in Appendix F.

OTHER CONSIDERATIONS

Staff has evaluated other improvement options that complement the preferred alternatives discussed above. These options range from short term to long term measures which are consistent with improving bicycle safety. These options are discussed below:

Additional Design Treatments

Other design treatments can be implemented to enhance the safety for all modes of transportation within the study area. For instance, changes to the pavement surface on the bike path as well as on the roadway can warn bicyclists and motorists of potential conflict areas ahead. Prior to a roadway crossing, the bicycle path surface can be raised to slow bicyclists as they approach the road. On the roadway, "scarred" pavement can alert motorists of a bicyclist crossing ahead. These treatments as well as other additional enhancements are shown in Appendix G. Many of these techniques are used on the Cape Cod Rail Trail. The cost of these techniques would be in addition to the estimated cost for each alternative.

Fencing

The National Seashore uses split rail fencing along portions of the existing trail to provide separation from roadways and steep slopes. To maintain the character of the existing trail, fencing could be installed along the proposed bicycle path where appropriate. Fencing can help to provide a clear distinction between the bicycle path and roadway. Caution should be taken to avoid potential safety hazards with fences. There should be adequate clear distance between the path and fence to allow bicyclists to recover from loss of control.

Horse Path Options

Since there is a possibility that horses may use the bike trail in the future, staff researched methods to accommodate the horses on the existing Bike Trail. Preferably, horses would use a separate trail to avoid conflicts with bicyclists. However, this may create environmental concerns regarding the need to construct another path. If the path is to be shared, it is best to provide a horse path adjacent to the bicycle path (see Illustration 5). The dirt path shown on Illustration 5 allows horses to use the side of the bicycle path without the need for extensive widening. While this design allows shared use, it is recommended that horse rides be scheduled to avoid heavy bicycle activity periods.

Staff also researched possible locations for horses to cross Race Point Road in order to get back to the existing horse trail network. Based on the needed sight distance, there are a few of locations where the horses could safely cross Race Point Road. As with the bicycle crossings, these areas should be well signed to warn motorists. Staff can provide further assistance with these potential horse crossings if the need arrives.



Illustration 5: Bicycle Path With Adjacent Horse Path (CC Rail Trail)

Future Race Point Road Bicycle Connection

To further enhance the safety of the proposed bicycle path improvements, serious consideration should be given to providing safer accommodations along Race Point Road to/from Route 6. A bicycle facility (e.g., path, shoulder or lane) on the western side of Race Point Road would provide a contiguous facility from the Route 6 crosswalks to the proposed path. Removing bicyclists from the vehicular travel lane will improve safety for both bicyclists and motorists. While a steep slope may limit the length of a bicycle path, other options including bicycle shoulders or lanes should be considered.

A bicycle facility on Race Point Road is consistent with the "Conwell Street Corridor Safety Study" performed by the CCC which recommends bicycle improvements along the west side of Conwell Street to Route 6. Furthermore, the CCC will be studying alternative bicycle routes from Provincetown Village to the CC National Seashore which will look at providing safe and continuous bicycle connections including this link.

It is recommended that the Town of Provincetown and the CCNS form a partnership and coordinate future bicycle plans to make this connection work. One advantage of forming a partnership is that state and/or federal funding may be more accessible when the applicant seeking funds is a group rather than a single entity.

Future Provincetown Village - National Seashore Connection

As discussed above, the CCC will be studying alternatives to provide a bicycle connection from Provincetown Village to the National Seashore. This study will include potential signs to designate this bicycle route. A symbol that represents both Provincetown Village and the National Seashore would be appropriate for a bicycle route sign. Therefore, as part of this project, the CC National Seashore should consider installing signs consistent with this theme. For example, at the end of the Bike Trail, signs showing direction and/or distance to Provincetown Village should be made of a symbol easily recognizable for a future bicycle route. The design of the signs should be coordinated between the CC National Seashore and Town officials.

Improve Existing Bike Trail to Meet Standards

The existing Bike Trail is outdated and in need of repair. Over time, tree roots, sandy soil and poor weather conditions have deteriorated the surface of the trail. Upgrades should be considered to meet new standards for bicycle paths (e.g., 10-foot path).

Shuttle Bus Option

Another option for future consideration is to provide bus service equipped with bicycle racks to the CCNS. These busses could transport bicyclists from Provincetown Village (e.g., MacMillan Wharf) to the CCNS Bike Trails and back so bicyclists could avoid riding on the busy roads. The CCNS may want to consider this option as part of their proposal for the alternate fuel mini-busses.

RECOMMENDATIONS AND CONCLUSION

The Cape Cod Commission transportation staff has developed alternatives to improve safety for bicyclists where the Cape Cod National Seashore Bike Trail meets the Transfer Station Road. The evaluation of alternatives were based on extensive traffic data collection and observation of existing traffic patterns of vehicles and bicyclists. With assistance from the Town of Provincetown and the National Seashore, two alternatives were selected. These alternatives were deemed most beneficial and appropriate for the study area. Alternative 1 represents a lower cost solution with less construction and less potential land purchase. Alternative 2, while providing a safer route for bicyclists, requires more construction and potential land purchases resulting in a higher cost. Staff recommends Alternative 2 since it provides a safer route for bicyclists and is more consistent with the naturally surrounding of the existing Bike Trail.

To further enhance the alternatives presented in this study, staff recommends that some type of bicycle facility be extended to Route 6. A contiguous bicycle facility from the CCNS Bike Trail to Route 6 will vastly improve the safety for bicyclists and motorists along Race Point Road.

This study, along with the "Conwell Street Corridor Safety Study" performed by the CCC, attempts to provide a safer and more comfortable environment for pedestrians and bicyclists in Provincetown. A third study, to be performed in the summer of 2000, will further these goals by researching ways to provide a designated bicycle route from Provincetown Village to the CC National Seashore Bike Trails.

APPENDIX A: TRAFFIC COUNT DATA

Appendix A1: Intersection Traffic Counts

Appendix A2: Daily Volume and Speed Counts

Appendix A1: Intersection Traffic Counts

Cape Cod Commission

3225 Main Street

Barnstable MA 02630

File Name : 1241W

Site Code : 12410000

Start Date : 07/24/1999

Page : 1

Location : Race Point/Transfer Station

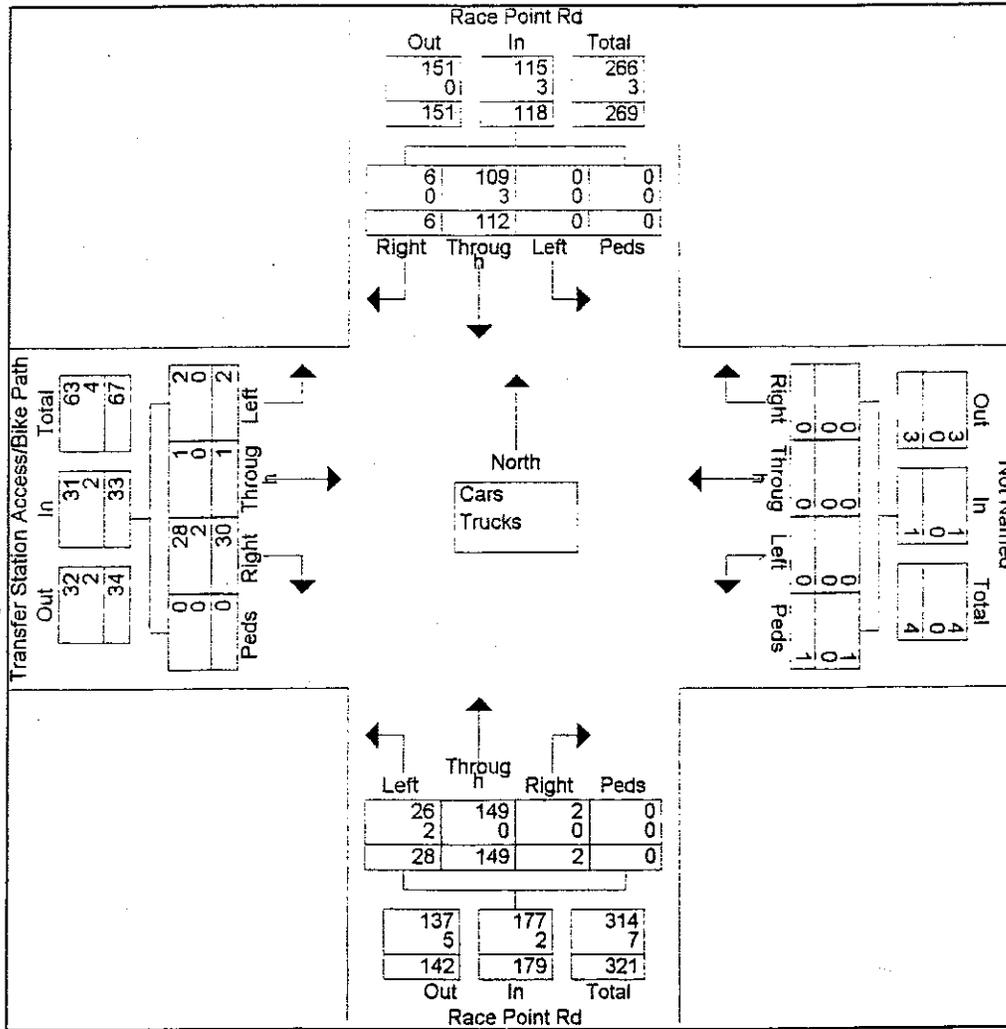
Town : Provincetown

Timeframe : 11:30 am to 12:30 pm 1999 Turning Movement Counts

Counter Number : Old #2

Groups Printed: Cars - Trucks

| Start Time | Race Point Rd From North | | | | Not Named From East | | | | Race Point Rd From South | | | | Transfer Station Access/Bike Path From West | | | | Int. Total |
|-------------|--------------------------|----------|------|------|---------------------|----------|------|-------|--------------------------|----------|------|------|---|----------|------|------|------------|
| | Right | Throu gh | Left | Peds | Right | Throu gh | Left | Peds | Right | Throu gh | Left | Peds | Right | Throu gh | Left | Peds | |
| Factor | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 11:30 AM | 3 | 28 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 32 | 9 | 0 | 8 | 0 | 0 | 0 | 82 |
| 11:45 AM | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 8 | 0 | 8 | 0 | 0 | 0 | 82 |
| Total | 3 | 55 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 71 | 17 | 0 | 16 | 0 | 0 | 0 | 164 |
| 12:00 PM | 2 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 40 | 5 | 0 | 8 | 1 | 1 | 0 | 78 |
| 12:15 PM | 1 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 6 | 0 | 6 | 0 | 1 | 0 | 89 |
| Grand Total | 6 | 112 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 149 | 28 | 0 | 30 | 1 | 2 | 0 | 331 |
| Apprch % | 5.1 | 94.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 1.1 | 83.2 | 15.6 | 0.0 | 90.9 | 3.0 | 6.1 | 0.0 | |
| Total % | 1.8 | 33.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.6 | 45.0 | 8.5 | 0.0 | 9.1 | 0.3 | 0.6 | 0.0 | |



Cape Cod Commission

3225 Main Street

Barnstable MA 02630

Location : Race Point/Transfer Station

Town : Provincetown

Timeframe : 11:30 am to 12:30 pm 1999 Turning Movement Counts

Counter Number : Old #2

File Name : untitled2

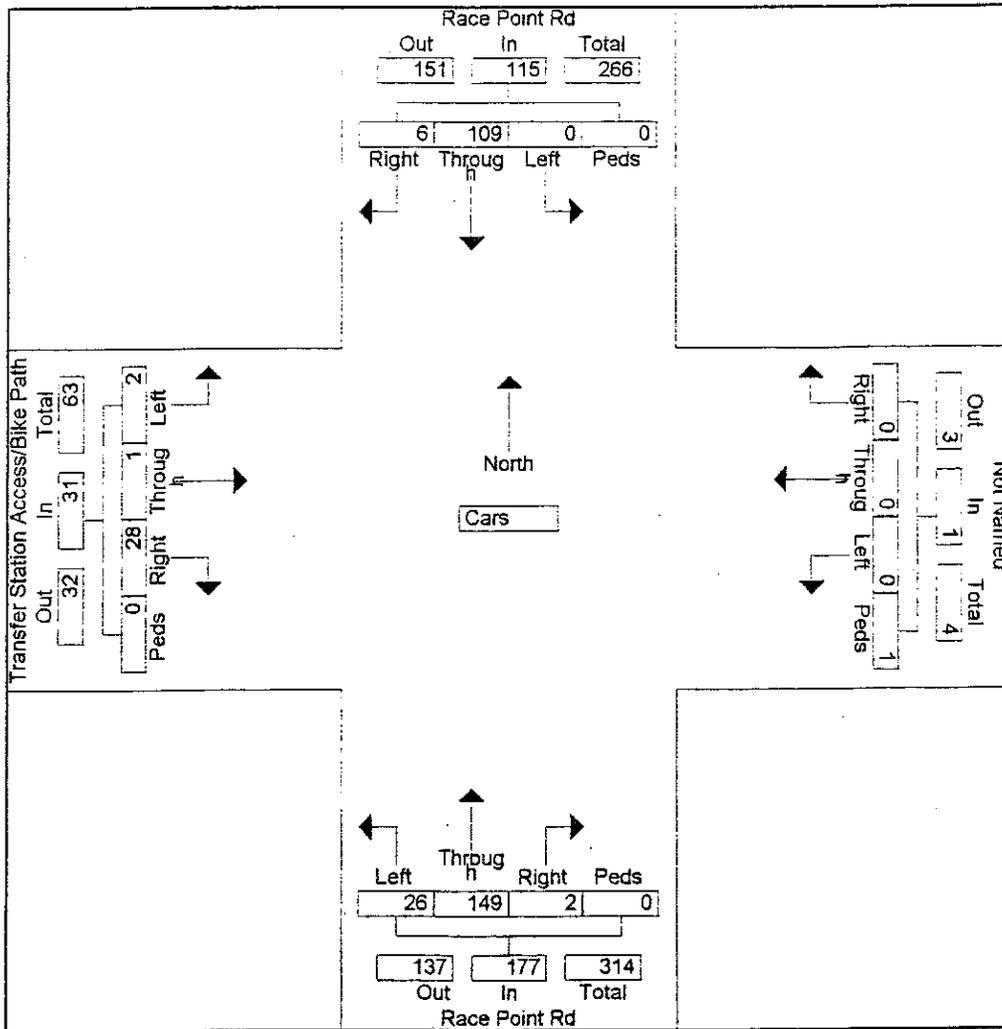
Site Code : 12410000

Start Date : 07/24/1999

Page : 1

Groups Printed: Cars

| Start Time | Race Point Rd From North | | | | Not Named From East | | | | Race Point Rd From South | | | | Transfer Station Access/Bike Path From West | | | | Int. Total |
|-------------|--------------------------|----------|------|------|---------------------|----------|------|-------|--------------------------|----------|------|------|---|----------|------|------|------------|
| | Right | Throug h | Left | Peds | Right | Throug h | Left | Peds | Right | Throug h | Left | Peds | Right | Throug h | Left | Peds | |
| Factor | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 11:30 AM | 3 | 27 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 32 | 9 | 0 | 7 | 0 | 0 | 0 | 80 |
| 11:45 AM | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 8 | 0 | 8 | 0 | 0 | 0 | 81 |
| Total | 3 | 53 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 71 | 17 | 0 | 15 | 0 | 0 | 0 | 161 |
| 12:00 PM | 2 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 40 | 4 | 0 | 7 | 1 | 1 | 0 | 76 |
| 12:15 PM | 1 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 5 | 0 | 6 | 0 | 1 | 0 | 87 |
| Grand Total | 6 | 109 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 149 | 26 | 0 | 28 | 1 | 2 | 0 | 324 |
| Approch % | 5.2 | 94.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 1.1 | 84.2 | 14.7 | 0.0 | 90.3 | 3.2 | 6.5 | 0.0 | |
| Total % | 1.9 | 33.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.6 | 46.0 | 8.0 | 0.0 | 8.6 | 0.3 | 0.6 | 0.0 | |



Cape Cod Commission

3225 Main Street
Barnstable MA 02630

Location : Race Point/Transfer Station

Town : Provincetown

Timeframe : 11:30 am to 12:30 pm 1999 Turning Movement Counts

Counter Number : Old #2

File Name : untitled2

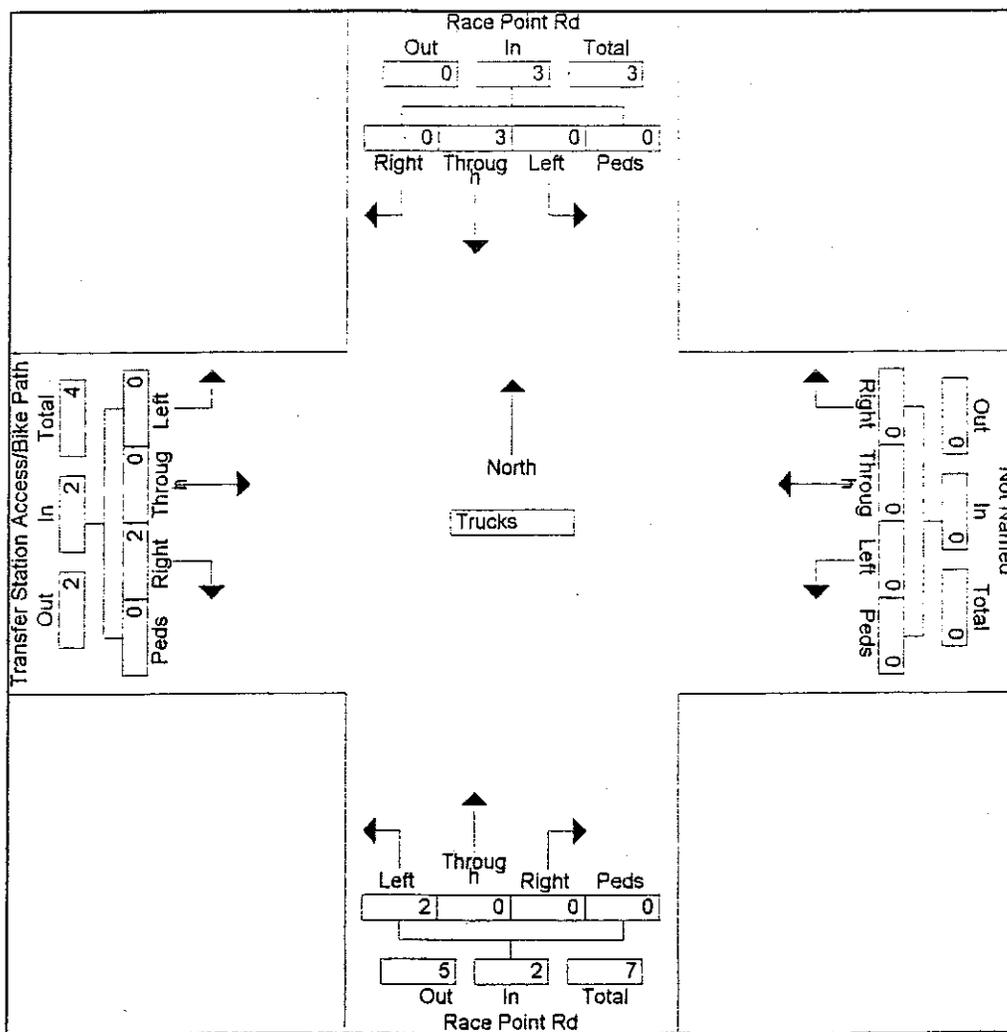
Site Code : 12410000

Start Date : 07/24/1999

Page : 1

Groups Printed: Trucks

| Start Time | Race Point Rd From North | | | | Not Named From East | | | | Race Point Rd From South | | | | Transfer Station Access/Bike Path From West | | | | Int. Total |
|-------------|--------------------------|----------|------|------|---------------------|----------|------|------|--------------------------|----------|-------|------|---|----------|------|------|------------|
| | Right | Throug h | Left | Peds | Right | Throug h | Left | Peds | Right | Throug h | Left | Peds | Right | Throug h | Left | Peds | |
| Factor | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | |
| 11:30 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 11:45 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 |
| 12:15 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Grand Total | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 7 |
| Apprch % | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | |
| Total % | 0.0 | 42.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 28.6 | 0.0 | 28.6 | 0.0 | 0.0 | 0.0 | |



Cape Cod Commission

3225 Main Street
Barnstable MA 02630

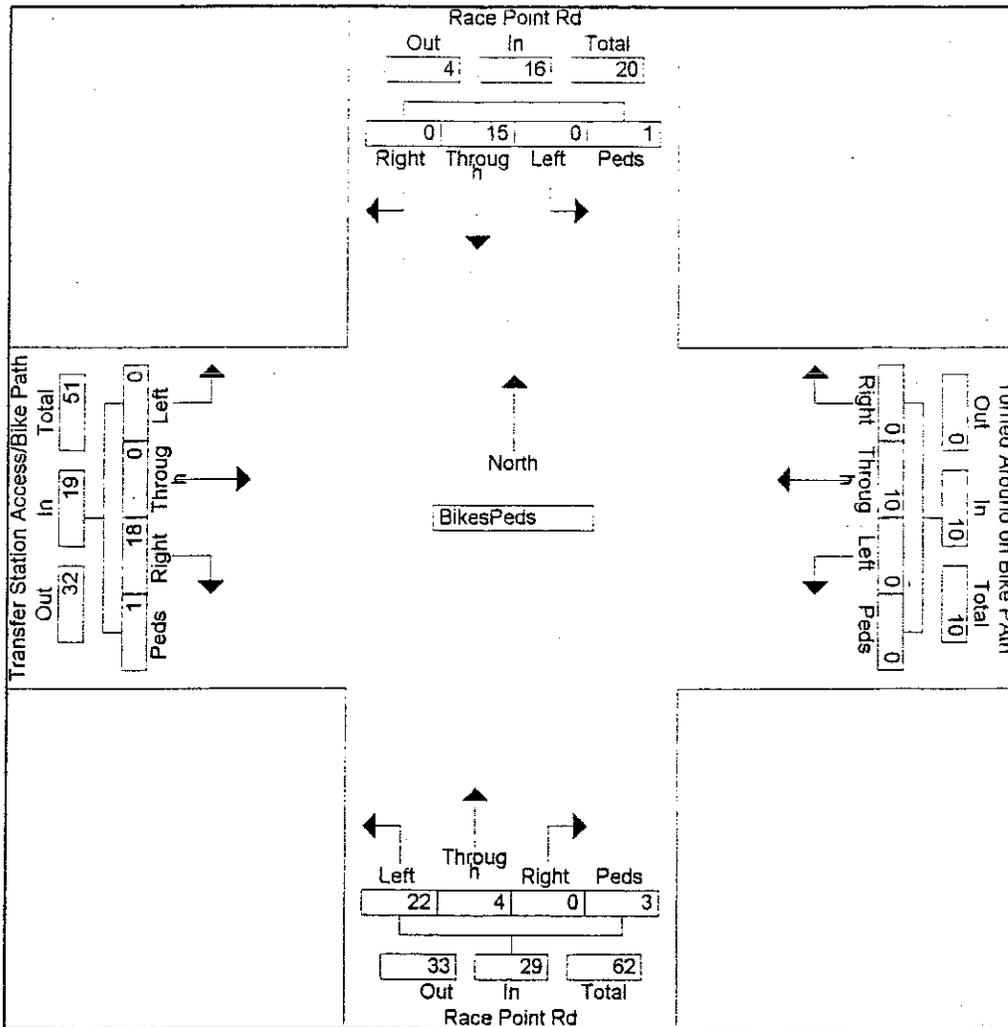
File Name : 1241W
Site Code : 12410000
Start Date : 07/24/1999
Page : 1

Location : Race Point/Transfer Station
Town : Provincetown
Timeframe : 11:30 am to 12:30 pm
Counter Number : Old #2

1999 Turning Movement Counts

Groups Printed: BikesPeds

| Start Time | Race Point Rd From North | | | | Turned Around on Bike PATH From East | | | | Race Point Rd From South | | | | Transfer Station Access/Bike Path From West | | | | Int. Total | |
|-------------|--------------------------|----------|------|------|--------------------------------------|----------|------|------|--------------------------|----------|------|------|---|----------|------|------|------------|----|
| | Right | Throug h | Left | Peds | Right | Throug h | Left | Peds | Right | Throug h | Left | Peds | Right | Throug h | Left | Peds | | |
| Factor | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | |
| 11:30 AM | 0 | 5 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 14 | 2 | 2 | 0 | 0 | 0 | 1 | 26 |
| 11:45 AM | 0 | 3 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 4 | 3 | 0 | 7 | 0 | 0 | 0 | 0 | 21 |
| Total | 0 | 8 | 0 | 1 | 0 | 5 | 0 | 0 | 0 | 4 | 17 | 2 | 9 | 0 | 0 | 1 | 47 | |
| 12:00 PM | 0 | 4 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 9 |
| 12:15 PM | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 4 | 1 | 7 | 0 | 0 | 0 | 0 | 18 |
| Grand Total | 0 | 15 | 0 | 1 | 0 | 10 | 0 | 0 | 0 | 4 | 22 | 3 | 18 | 0 | 0 | 1 | 74 | |
| Apprch % | 0.0 | 93.8 | 0.0 | 6.3 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 13.8 | 75.9 | 10.3 | 94.7 | 0.0 | 0.0 | 5.3 | | |
| Total % | 0.0 | 20.3 | 0.0 | 1.4 | 0.0 | 13.5 | 0.0 | 0.0 | 0.0 | 5.4 | 29.7 | 4.1 | 24.3 | 0.0 | 0.0 | 1.4 | | |



TURNING MOVEMENT DATA SHEET

Town: P-TOWN Town No. 15

Intersection Code: 22222 **12412**

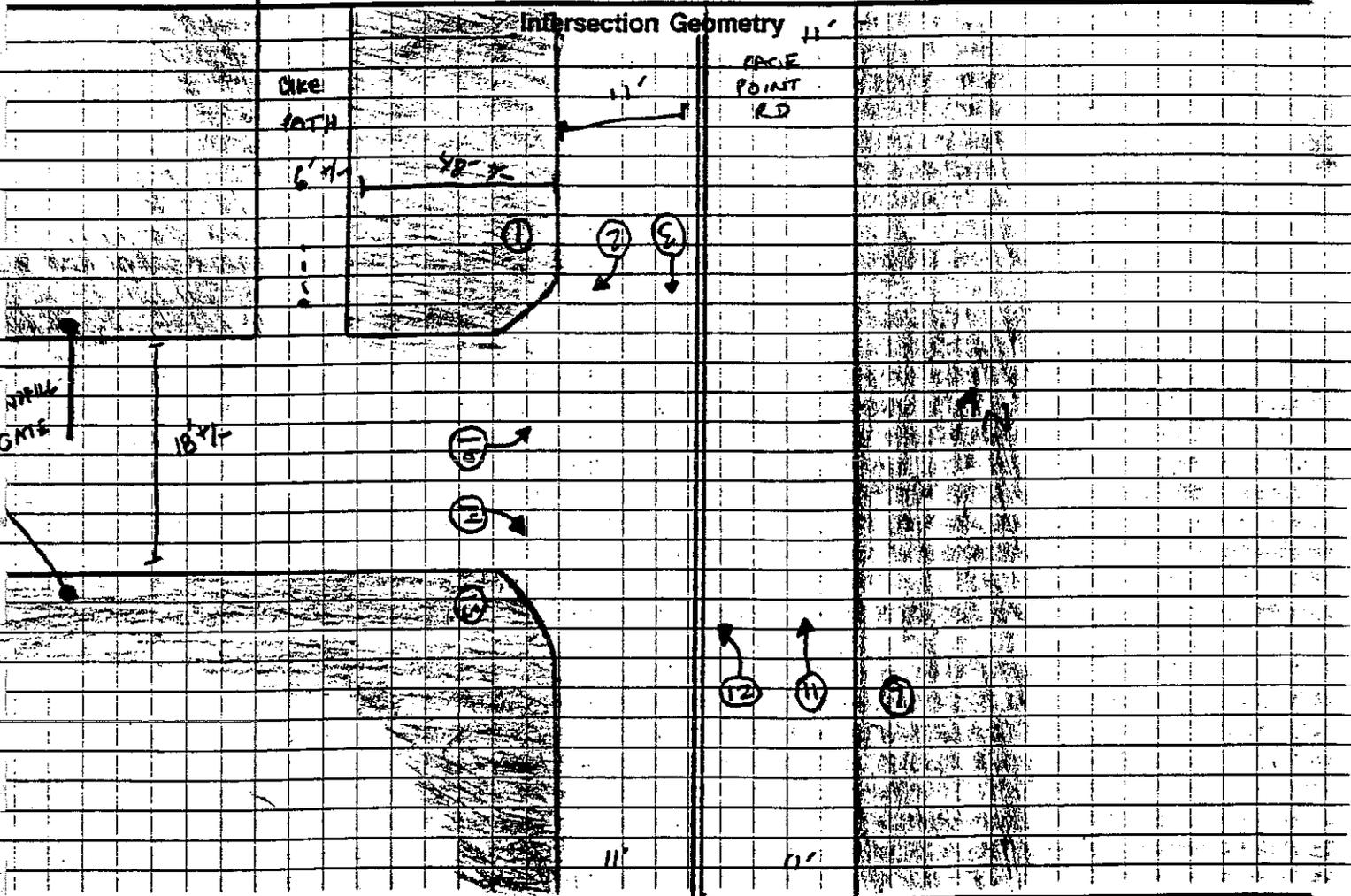
Major Road (N-S) or E-W Minor Road _____ Date: 7-22-99

Location: RACE POINT RD / LAND FILL SITE DR. Counted By: JS

Other Legs: BIKE PATH → adds to Landfill Access traffic Counter No. 4

Start Time: 11:30 End Time: 12:30 File Name: _____

Weather: CLEAR Control: Signalized
Unsignalized



PEDESTRIAN & BICYCLE COUNTS

| Time | WEST | | EAST | | NORTH | | SOUTH | | OTHER | |
|------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| | Peds | Bikes | Peds | Bikes | Peds | Bikes | Peds | Bikes | Peds | Bikes |
| | | | | | | | | | | |
| | | | | | | | | | | |
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| | | | | | | | | | | |
| | | | | | | | | | | |

COMMENTS:

- Bike path dumps out on landfill access rd. adding to bike/peds counted on # 16/14/13.
- Bike movement # 12 entering bike path NOT dumped.
- Lots of bikes turned wrong way MISSING DUMP ROAD

Cape Cod Commission

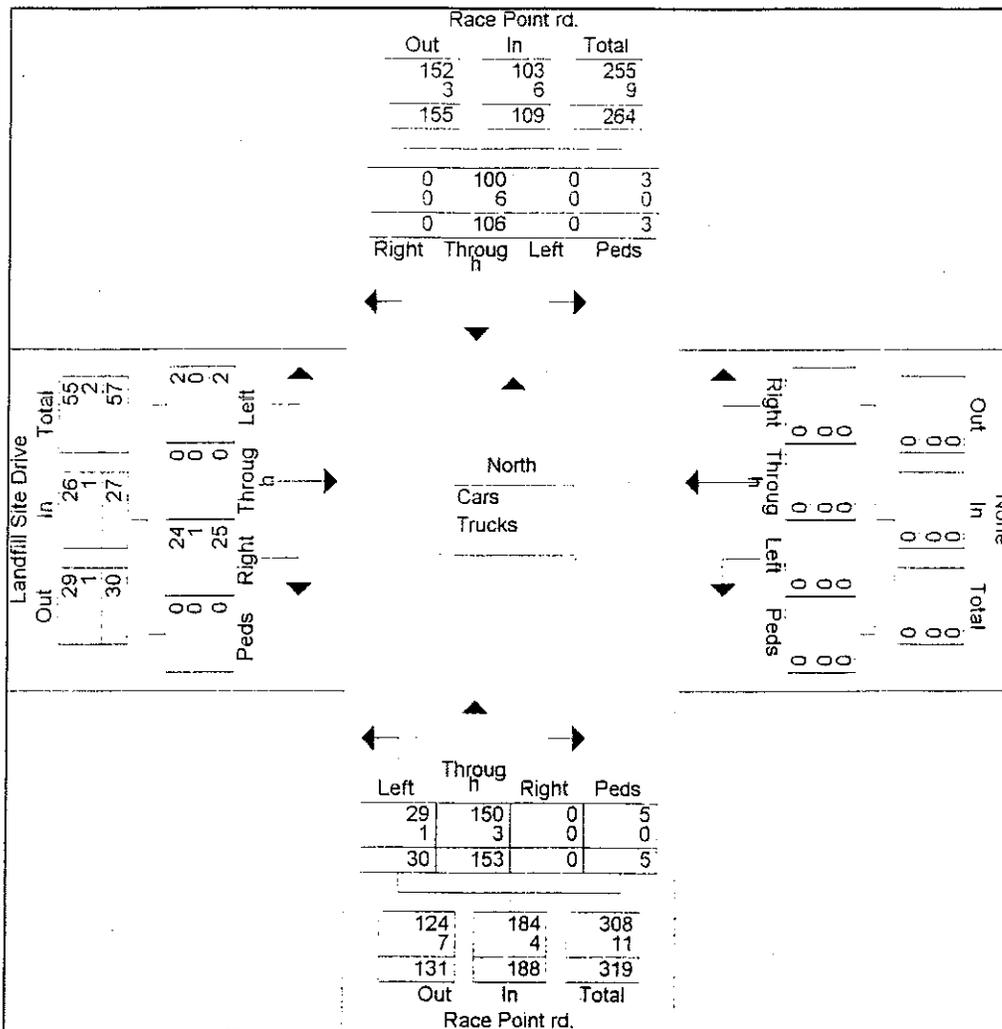
Location : Race Point Rd/Landfill Site Dr
 Town : Provincetown
 Timeframe : 11:30-12:30
 Counter Number : 4

3225 Main Street
 Barnstable MA 02630
 1999 Turning Movement Counts

File Name : 12410722
 Site Code : 00001241
 Start Date : 07/22/1999
 Page : 1

Groups Printed: Cars - Trucks

| Start Time | Race Point rd. From North | | | | None From East | | | | Race Point rd. From South | | | | Landfill Site Drive From West | | | | Int. Total | |
|-------------|---------------------------|----------|------|------|----------------|----------|------|------|---------------------------|----------|------|------|-------------------------------|----------|------|------|------------|-----|
| | Right | Throug h | Left | Peds | Right | Throug h | Left | Peds | Right | Throug h | Left | Peds | Right | Throug h | Left | Peds | | |
| Factor | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | |
| 11:30 AM | 0 | 29 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 41 | 8 | 2 | 10 | 0 | 1 | 0 | 0 | 94 |
| 11:45 AM | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 7 | 3 | 5 | 0 | 0 | 0 | 0 | 83 |
| Total | 0 | 58 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 80 | 15 | 5 | 15 | 0 | 1 | 0 | 0 | 177 |
| 12:00 PM | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 6 | 0 | 7 | 0 | 0 | 0 | 0 | 73 |
| 12:15 PM | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 9 | 0 | 3 | 0 | 1 | 0 | 0 | 74 |
| Grand Total | 0 | 106 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 153 | 30 | 5 | 25 | 0 | 2 | 0 | 0 | 324 |
| Apprch % | 0.0 | 97.2 | 0.0 | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 81.4 | 16.0 | 2.7 | 92.6 | 0.0 | 7.4 | 0.0 | 0.0 | |
| Total % | 0.0 | 32.7 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 47.2 | 9.3 | 1.5 | 7.7 | 0.0 | 0.6 | 0.0 | 0.0 | |



Cape Cod Commission

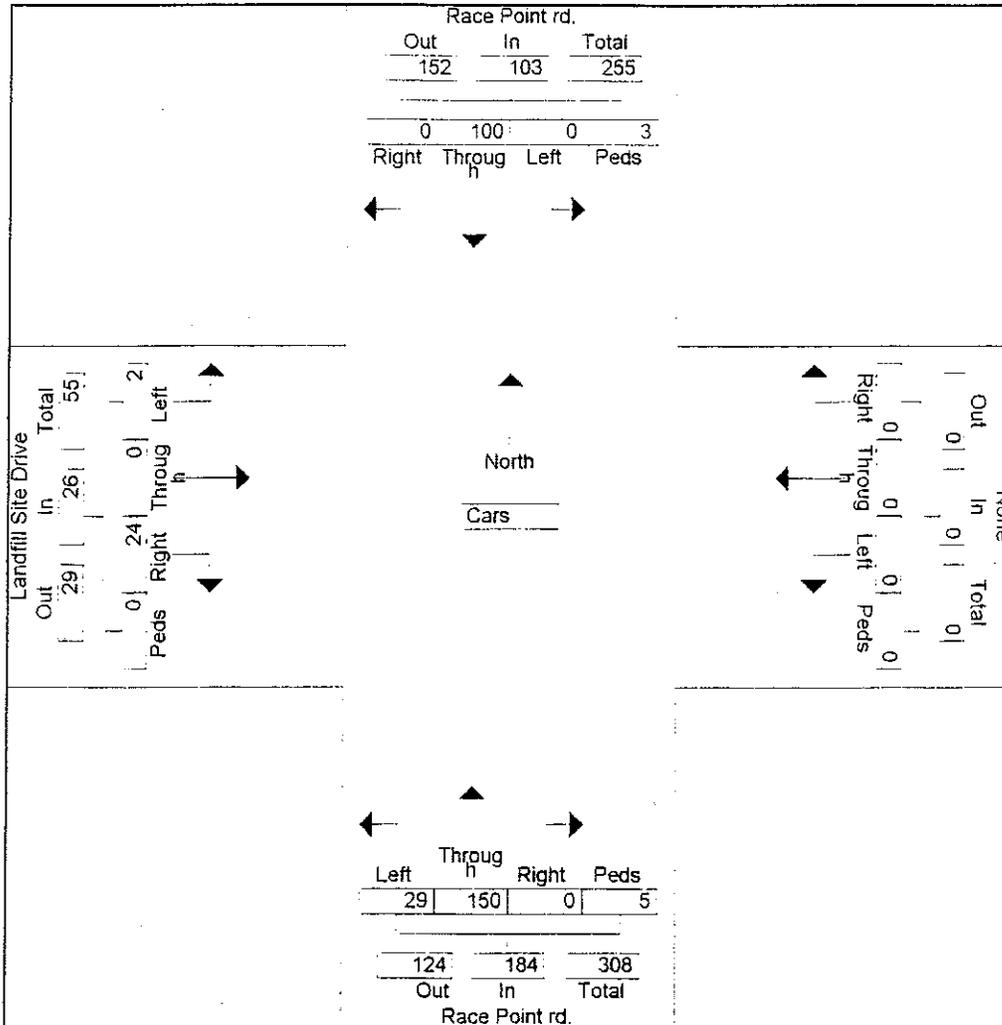
Location : Race Point Rd/Landfill Site Dr
 Town : Provincetown
 Timeframe : 11:30-12:30
 Counter Number : 4

3225 Main Street
 Barnstable MA 02630
 1999 Turning Movement Counts

File Name : 12410722
 Site Code : 00001241
 Start Date : 07/22/1999
 Page : 1

Groups Printed: Cars

| Start Time | Race Point rd. From North | | | None From East | | | Race Point rd. From South | | | Landfill Site Drive From West | | | Int. Total | | | |
|--------------------|------------------------------|--------------|----------|-------------------|----------|--------------|------------------------------|----------|------------|----------------------------------|----------|-----------|---------------|----------|----------|------------|
| | Right | Throu g h | Left | Peds | Right | Throu g h | Left | Peds | Right | Throu g h | Left | Peds | | | | |
| Factor | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | | | |
| 11:30 AM | 0 | 27 | 0 | 3 | 0 | 0 | 0 | 0 | 40 | 8 | 2 | 9 | 0 | 1 | 0 | 90 |
| 11:45 AM | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 7 | 3 | 5 | 0 | 0 | 0 | 83 |
| Total | 0 | 56 | 0 | 3 | 0 | 0 | 0 | 0 | 79 | 15 | 5 | 14 | 0 | 1 | 0 | 173 |
| 12:00 PM | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 5 | 0 | 7 | 0 | 0 | 0 | 69 |
| 12:15 PM | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 9 | 0 | 3 | 0 | 1 | 0 | 71 |
| Grand Total | 0 | 100 | 0 | 3 | 0 | 0 | 0 | 0 | 150 | 29 | 5 | 24 | 0 | 2 | 0 | 313 |
| Apprch % | 0.0 | 97.1 | 0.0 | 2.9 | 0.0 | 0.0 | 0.0 | 0.0 | 81.5 | 15.8 | 2.7 | 92.3 | 0.0 | 7.7 | 0.0 | |
| Total % | 0.0 | 31.9 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 47.9 | 9.3 | 1.6 | 7.7 | 0.0 | 0.6 | 0.0 | |



Cape Cod Commission

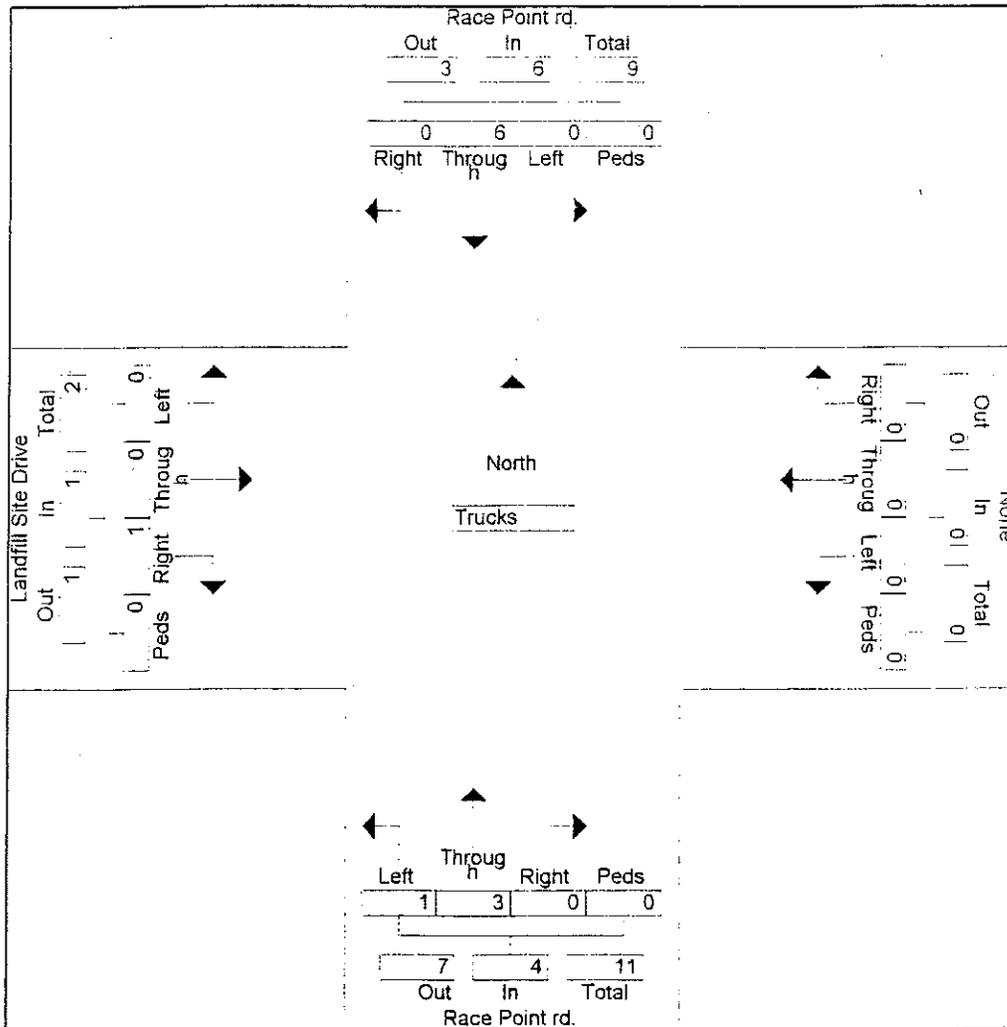
Location : Race Point Rd/Landfill Site Dr
 Town : Provincetown
 Timeframe : 11:30-12:30
 Counter Number : 4

3225 Main Street
 Barnstable MA 02630
 1999 Turning Movement Counts

File Name : 12410722
 Site Code : 00001241
 Start Date : 07/22/1999
 Page : 1

Groups Printed: Trucks

| Start Time | Race Point rd. From North | | | | None From East | | | | Race Point rd. From South | | | | Landfill Site Drive From West | | | | Int. Total |
|-------------|------------------------------|-------------|------|------|-------------------|-------------|------|------|------------------------------|-------------|------|------|----------------------------------|-------------|------|------|---------------|
| | Right | Throu gh | Left | Peds | Right | Throu gh | Left | Peds | Right | Throu gh | Left | Peds | Right | Throu gh | Left | Peds | |
| Factor | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | |
| 11:30 AM | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | |
| 12:00 PM | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | |
| 12:15 PM | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Grand Total | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | |
| Apprch % | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 75.0 | 25.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | |
| Total % | 0.0 | 54.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 27.3 | 9.1 | 0.0 | 9.1 | 0.0 | 0.0 | 0.0 | |



Cape Cod Commission

3225 Main Street

Barnstable MA 02630

1999 Turning Movement Counts

File Name : 12410722

Site Code : 00001241

Start Date : 07/22/1999

Page : 1

Location : Race Point Rd/Landfill Site Dr

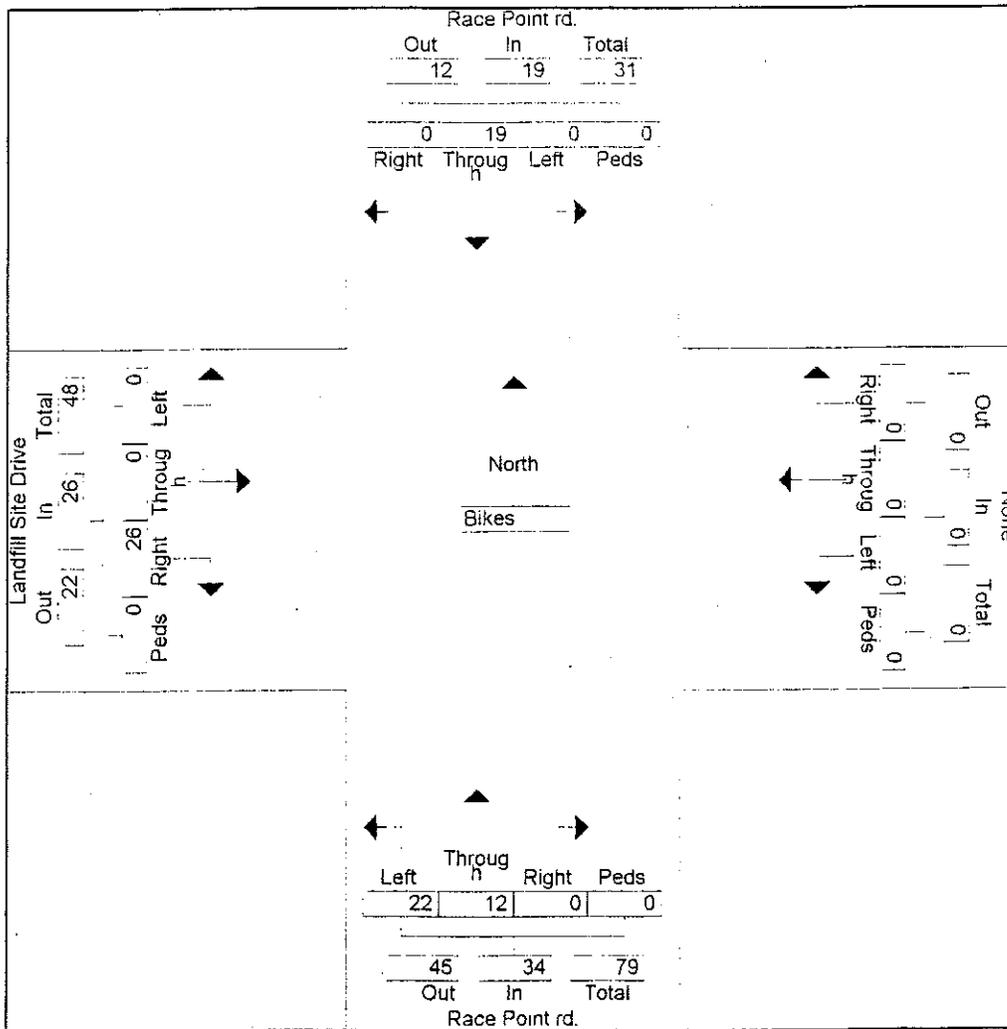
Town : Provincetown

Timeframe : 11:30-12:30

Counter Number : 4

Groups Printed: Bikes

| Start Time | Race Point rd. From North | | | | None From East | | | | Race Point rd. From South | | | | Landfill Site Drive From West | | | | Int. Total | |
|-------------|---------------------------|----------|------|------|----------------|----------|------|------|---------------------------|----------|------|------|-------------------------------|----------|------|------|------------|----|
| | Right | Throug h | Left | Peds | Right | Throug h | Left | Peds | Right | Throug h | Left | Peds | Right | Throug h | Left | Peds | | |
| Factor | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | |
| 11:30 AM | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 6 | 0 | 0 | 0 | 0 | 16 |
| 11:45 AM | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 0 | 5 | 0 | 0 | 0 | 0 | 18 |
| Total | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 34 |
| 12:00 PM | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 6 | 0 | 0 | 0 | 0 | 15 |
| 12:15 PM | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 7 | 0 | 9 | 0 | 0 | 0 | 0 | 30 |
| Grand Total | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 22 | 0 | 26 | 0 | 0 | 0 | 0 | 79 |
| Approch % | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 35.3 | 64.7 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total % | 0.0 | 24.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15.2 | 27.8 | 0.0 | 32.9 | 0.0 | 0.0 | 0.0 | 0.0 | |



Appendix A2: Daily Volume and Speed Counts

SITE NO. 20742

TECHS: JO/JJ

FIELD SHEET

LOCATION: Race Pt Rd N of Landfill

TOWN: Provincetown

COUNTER NUMBER: T M 2

START TIME: 10:00 END TIME: 1:00

DIRECTION: CHANNEL 1 NB CHANNEL 2 SB

PAVEMENT WIDTH: 18 TUBE LENGTH: 27

| | SET UP | CHECK | PICK UP |
|--------------|---------|-------|----------|
| DATE | 7/22/99 | | 7/26/99 |
| TIME | 9:50 | | 1:12 |
| WEATHER | clear | | overcast |
| VOLTAGE | 6.4 | | |
| WORKING? Y/N | y | | y |

NOTES:

Changed to speed count on Saturday
9999

Volume Count 10:00 -> 10:00

Speed Count 11:00 -> 1:00

Location : RACE POINT RD N OF LANDFILL
 Path : PROVINCETOWN
 Counter : TM2
 NUS File: \$TM\$0001

Cape Cod Commission
 3225 Main Street
 Barnstable, MA 02630
 (508) 362- 3828

Site Code : 20742
 Start Date: 07/19/99
 File I.D. : 20742#2
 Page : 1

| Bin | Mon. 07/19 | | Tues. | | Wed. | | Thur. | | Fri. | | Weekday | | Avg. | | Sat. | | Sun. | |
|-----|------------|----|-------|----|------|----|-------|----|------|------|---------|------|------|------|------|------|------|------|
| | NB | SB | NB | SB | NB | SB | NB | SB | NB | SB | NB | SB | NB | SB | NB | SB | NB | SB |
| 00 | * | * | * | * | * | * | * | * | 2 | 7 | 2 | 7 | 3 | 6 | 7 | 11 | | |
| 00 | * | * | * | * | * | * | * | * | 2 | 6 | 2 | 6 | 3 | 4 | 2 | 8 | | |
| 00 | * | * | * | * | * | * | * | * | 1 | 4 | 1 | 4 | 5 | 4 | 4 | 14 | | |
| 00 | * | * | * | * | * | * | * | * | 1 | 0 | 1 | 0 | 0 | 2 | 1 | 3 | | |
| 00 | * | * | * | * | * | * | * | * | 5 | 0 | 5 | 0 | 7 | 1 | 6 | 1 | | |
| 00 | * | * | * | * | * | * | * | * | 10 | 4 | 10 | 4 | 9 | 3 | 15 | 3 | | |
| 00 | * | * | * | * | * | * | * | * | 26 | 22 | 26 | 22 | 23 | 22 | 12 | 20 | | |
| 00 | * | * | * | * | * | * | * | * | 35 | 37 | 35 | 37 | 24 | 27 | 31 | 32 | | |
| 00 | * | * | * | * | * | * | * | * | 57 | 45 | 57 | 45 | 70 | 39 | 62 | 46 | | |
| 00 | * | * | * | * | * | * | * | * | 104 | 64 | 104 | 64 | 101 | 71 | 94 | 56 | | |
| 00 | * | * | * | * | * | * | * | * | 156 | 72 | 178 | 67 | 167 | 70 | 160 | 81 | | |
| 00 | * | * | * | * | * | * | * | * | 177 | 104 | 167 | 113 | 172 | 108 | 162 | 117 | 190 | 104 |
| 00 | * | * | * | * | * | * | * | * | 168 | 136 | 171 | 106 | 170 | 121 | 157 | 130 | 185 | 122 |
| 00 | * | * | * | * | * | * | * | * | 157 | 115 | 170 | 125 | 164 | 120 | 126 | 135 | 162 | 124 |
| 00 | * | * | * | * | * | * | * | * | 128 | 159 | 139 | 151 | 134 | 155 | 108 | 122 | 141 | 164 |
| 00 | * | * | * | * | * | * | * | * | 128 | 172 | 134 | 210 | 131 | 191 | 127 | 175 | 107 | 307 |
| 00 | * | * | * | * | * | * | * | * | 87 | 217 | 94 | 305 | 90 | 261 | 92 | 167 | 100 | 266 |
| 00 | * | * | * | * | * | * | * | * | 86 | 157 | 95 | 154 | 90 | 156 | 92 | 161 | 68 | 190 |
| 00 | * | * | * | * | * | * | * | * | 64 | 125 | 88 | 111 | 76 | 118 | 68 | 141 | 59 | 87 |
| 00 | * | * | * | * | * | * | * | * | 102 | 97 | 97 | 104 | 100 | 100 | 74 | 97 | 56 | 92 |
| 00 | * | * | * | * | * | * | * | * | 48 | 140 | 61 | 111 | 54 | 126 | 34 | 105 | 41 | 72 |
| 00 | * | * | * | * | * | * | * | * | 16 | 52 | 27 | 62 | 22 | 57 | 20 | 32 | 10 | 37 |
| 00 | * | * | * | * | * | * | * | * | 7 | 22 | 20 | 36 | 14 | 29 | 11 | 23 | 10 | 20 |
| 00 | * | * | * | * | * | * | * | * | 9 | 12 | 15 | 18 | 12 | 15 | 7 | 11 | 8 | 8 |
| als | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1333 | 1580 | 1699 | 1862 | 1639 | 1816 | 1490 | 1665 | 1531 | 1868 |
| bin | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2913 | 3561 | 3455 | 3155 | 3399 | | | | | |

W-day .0% .0% .0% .0% .0% .0% 81.3% 87.0% 103.6% 102.5% 90.9% 91.6% 93.4% 102.8%

Peaks 11:00 11:00 10:00 11:00 11:00 11:00 10:00 11:00 11:00 11:00
 177 104 178 113 172 108 167 117 190 104

Peaks 12:00 04:00 12:00 04:00 12:00 04:00 12:00 03:00 12:00 03:00
 168 217 171 305 170 261 157 175 185 307

Location : RACE POINT RD N OF LANDFILL
 Path : PROVINCETOWN
 Counter : TM2
 NUS File: \$TM\$0001

Cape Cod Commission
 3225 Main Street
 Barnstable, MA 02630
 (508) 362- 3828

Site Code : 20742
 Start Date: 07/19/99
 File I.D. : 20742#2
 Page : 1

| Bin | 07/19 | Mon. | 07/20 | Tues. | 07/21 | Wed. | 07/22 | Thur. | 07/23 | Fri. | Weekday | 07/24 | Sat. | 07/25 | Sun. |
|---------------|-------|------|-------|-------|-------|------|-------|-------|-------|------|---------|-------|-----------------|-------|------|
| ne | | Totl | | Totl | | Totl | | Totl | | Totl | Avg. | | Totl | | Totl |
| 00 | * | * | * | * | * | * | * | * | 9 | 9 | 9 | 9 | 9 | 18 | |
| 00 | * | * | * | * | * | * | * | * | 8 | 8 | 8 | 7 | 7 | 10 | |
| 00 | * | * | * | * | * | * | * | * | 5 | 5 | 5 | 9 | 9 | 18 | |
| 00 | * | * | * | * | * | * | * | * | 1 | 1 | 1 | 2 | 2 | 4 | |
| 00 | * | * | * | * | * | * | * | * | 5 | 5 | 5 | 8 | 8 | 7 | |
| 00 | * | * | * | * | * | * | * | * | 14 | 14 | 14 | 12 | 12 | 18 | |
| 00 | * | * | * | * | * | * | * | * | 48 | 48 | 48 | 45 | 45 | 32 | |
| 00 | * | * | * | * | * | * | * | * | 72 | 72 | 72 | 51 | 51 | 63 | |
| 00 | * | * | * | * | * | * | * | * | 102 | 102 | 102 | 109 | 109 | 108 | |
| 00 | * | * | * | * | * | * | * | * | 168 | 168 | 168 | 172 | 172 | 150 | |
| 00 | * | * | * | * | * | * | * | * | 228 | 245 | 236 | 237 | 237 | 241 | |
| 00 | * | * | * | * | * | * | * | * | 281 | 280 | 280 | 279 | 279 | 294 | |
| 00 | * | * | * | * | * | * | * | * | 304 | 277 | 290 | 287 | 287 | 307 | |
| 00 | * | * | * | * | * | * | * | * | 272 | 295 | 284 | 261 | 261 | 286 | |
| 00 | * | * | * | * | * | * | * | * | 287 | 290 | 288 | 230 | 230 | 305 | |
| 00 | * | * | * | * | * | * | * | * | 300 | 344 | 322 | 302 | 302 | 414 | |
| 00 | * | * | * | * | * | * | * | * | 304 | 399 | 352 | 259 | 259 | 366 | |
| 00 | * | * | * | * | * | * | * | * | 243 | 249 | 246 | 253 | 253 | 258 | |
| 00 | * | * | * | * | * | * | * | * | 189 | 199 | 194 | 209 | 209 | 146 | |
| 00 | * | * | * | * | * | * | * | * | 199 | 201 | 200 | 171 | 171 | 148 | |
| 00 | * | * | * | * | * | * | * | * | 188 | 172 | 180 | 139 | 139 | 113 | |
| 00 | * | * | * | * | * | * | * | * | 68 | 89 | 78 | 52 | 52 | 47 | |
| 00 | * | * | * | * | * | * | * | * | 29 | 56 | 42 | 34 | 34 | 30 | |
| 00 | * | * | * | * | * | * | * | * | 21 | 33 | 27 | 18 | 18 | 16 | |
| Totals | | 0 | | 0 | | 0 | | 2913 | | 3561 | | 3451 | 3155 | | 3399 |

| Way | 07/19 | 07/20 | 07/21 | 07/22 | 07/23 | 07/24 | 07/25 | 07/26 |
|-------|-------|-------|-------|--------------|--------------|--------------|--------------|--------------|
| Way | .0% | .0% | .0% | 84.4% | 103.1% | 91.4% | 98.4% | |
| Peaks | | | | 11:00 281 | 11:00 280 | 11:00 280 | 11:00 279 | 11:00 294 |
| Peaks | | | | 12:00 304 | 04:00 399 | 04:00 352 | 03:00 302 | 03:00 414 |

Cape Cod Commission

3225 Main Street
Barnstable, MA. 02630

RACE POINT RD N OF LANDFILL
PROVINCETOWN
TM2

Site: 20742
Date: 07/24/99

Direction: NB

| Time | Total | 1-14 MPH | 15-19 MPH | 20-24 MPH | 25-29 MPH | 30-34 MPH | 35-39 MPH | 40-44 MPH | 45-49 MPH | 50-54 MPH | 55-59 MPH | 60-64 MPH | 65-69 MPH | 70-99 MPH | Avg |
|----------------------|--------------|------------|------------|------------|-------------|-------------|-------------|------------|------------|------------|------------|------------|------------|------------|-----------|
| 00:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 01:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | 162 | 0 | 0 | 5 | 27 | 85 | 39 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 12:00 | 157 | 0 | 0 | 6 | 36 | 76 | 32 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 32 |
| 01:00 | 125 | 0 | 0 | 2 | 27 | 57 | 33 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 33 |
| 02:00 | 108 | 0 | 3 | 1 | 21 | 52 | 24 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 32 |
| 03:00 | 126 | 0 | 0 | 5 | 26 | 55 | 22 | 17 | 1 | 0 | 0 | 0 | 0 | 0 | 33 |
| 04:00 | 92 | 0 | 1 | 3 | 12 | 35 | 37 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 33 |
| 05:00 | 90 | 0 | 1 | 3 | 23 | 38 | 17 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 32 |
| 06:00 | 67 | 0 | 0 | 1 | 11 | 23 | 25 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 34 |
| 07:00 | 74 | 0 | 0 | 1 | 7 | 32 | 18 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 35 |
| 08:00 | 33 | 0 | 0 | 0 | 4 | 18 | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 09:00 | 20 | 0 | 0 | 0 | 5 | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 10:00 | 11 | 0 | 0 | 0 | 1 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 11:00 | 7 | 0 | 0 | 0 | 1 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| Total | 1,072 | 0 | 5 | 27 | 201 | 489 | 267 | 73 | 9 | 1 | 0 | 0 | 0 | 0 | 33 |
| Percent Total | | 0.0 | 0.5 | 2.5 | 18.8 | 45.6 | 24.9 | 6.8 | 0.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | |

| | | | | | |
|-------------------|------------|------------|------------|------------|------------|
| Percentile Speeds | <u>10%</u> | <u>15%</u> | <u>50%</u> | <u>85%</u> | <u>90%</u> |
| | 26.9 | 28.2 | 33.1 | 38.6 | 39.6 |

MPH in pace : 30 - 40
 Number in pace : 756
 Average in pace : 70.5

Exceeded
 Percentage : 45 MPH 55 MPH 65 MPH
 : 0.9 0.0 0.0
 : 10 0 0

Cape Cod Commission

3225 Main Street
Barnstable, MA. 02630

RACE POIT RD N OF LANDFILL
PROVINCETOWN
TM2

Site: 20742
Date: 07/25/99

Direction: NB

| Time | Total | 1-14 MPH | 15-19 MPH | 20-24 MPH | 25-29 MPH | 30-34 MPH | 35-39 MPH | 40-44 MPH | 45-49 MPH | 50-54 MPH | 55-59 MPH | 60-64 MPH | 65-69 MPH | 70-99 MPH | Avg |
|----------------------|--------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-----------|
| 07:00 AM | 7 | 0 | 0 | 0 | 2 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 08:00 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| 09:00 | 4 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 10:00 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 11:00 | 6 | 0 | 0 | 3 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 12:00 | 15 | 0 | 0 | 0 | 3 | 5 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 35 |
| 13:00 | 12 | 0 | 0 | 1 | 3 | 6 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 14:00 | 31 | 0 | 0 | 1 | 7 | 16 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 15:00 | 62 | 0 | 0 | 1 | 8 | 33 | 14 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 33 |
| 16:00 | 94 | 0 | 2 | 2 | 17 | 39 | 24 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 17:00 | 160 | 0 | 0 | 3 | 27 | 77 | 46 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 33 |
| 18:00 | 189 | 1 | 0 | 3 | 23 | 110 | 42 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 19:00 | 185 | 0 | 0 | 8 | 33 | 83 | 45 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 20:00 | 162 | 0 | 0 | 4 | 33 | 80 | 37 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 21:00 | 140 | 0 | 0 | 8 | 27 | 65 | 32 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 22:00 | 106 | 0 | 3 | 1 | 18 | 55 | 23 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 32 |
| 23:00 | 100 | 0 | 0 | 2 | 9 | 57 | 21 | 9 | 1 | 1 | 0 | 0 | 0 | 0 | 34 |
| 00:00 | 67 | 0 | 0 | 2 | 12 | 29 | 18 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 33 |
| 01:00 | 59 | 0 | 0 | 0 | 9 | 25 | 14 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 35 |
| 02:00 | 56 | 0 | 0 | 3 | 12 | 17 | 15 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 34 |
| 03:00 | 41 | 0 | 0 | 0 | 13 | 17 | 5 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 33 |
| 04:00 | 10 | 0 | 0 | 0 | 4 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 05:00 | 10 | 0 | 0 | 0 | 2 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 06:00 | 8 | 0 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| Daily Total | 1,527 | 1 | 5 | 45 | 264 | 731 | 355 | 112 | 12 | 2 | 0 | 0 | 0 | 0 | 33 |
| Percent Total | | 0.1 | 0.3 | 2.9 | 17.3 | 47.9 | 23.2 | 7.3 | 0.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | |

| Percentile Speeds | 10% | 15% | 50% | 85% | 90% |
|-------------------|------|------|------|------|------|
| | 26.9 | 28.4 | 33.1 | 38.5 | 39.6 |

MPH Face Speed : 30 - 40
Number in Pace : 1,086
Average Pace : 71.1

Speed Exceeded : 45 MPH 55 MPH 65 MPH
Percentage : 0.9 0.0 0.0
Count : 14 0 0

Cape Cod Commission

3225 Main Street
Barnstable, MA. 02630

RACE POINT RD N OF LANDFILL
PROVINCETOWN
TM2

Site: 20742
Date: 07/26/99

Direction: NB

| Time | Total | 1-14 MPH | 15-19 MPH | 20-24 MPH | 25-29 MPH | 30-34 MPH | 35-39 MPH | 40-44 MPH | 45-49 MPH | 50-54 MPH | 55-59 MPH | 60-64 MPH | 65-69 MPH | 70-99 MPH | Avg |
|---------------|-------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----|
| 00:00 | 3 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 01:00 | 3 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:00 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 04:00 | 6 | 0 | 0 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 05:00 | 34 | 0 | 0 | 2 | 1 | 13 | 12 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 35 |
| 06:00 | 30 | 0 | 0 | 4 | 4 | 11 | 9 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 32 |
| 07:00 | 45 | 0 | 1 | 1 | 4 | 18 | 14 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 08:00 | 69 | 0 | 0 | 2 | 10 | 27 | 22 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 34 |
| 09:00 | 65 | 0 | 0 | 1 | 15 | 30 | 12 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 10:00 | 119 | 0 | 0 | 5 | 30 | 64 | 18 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 11:00 | 113 | 0 | 0 | 7 | 31 | 54 | 18 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 12:00 | 153 | 0 | 0 | 8 | 30 | 82 | 27 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 01:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Summary | 642 | 0 | 1 | 32 | 130 | 304 | 134 | 38 | 3 | 0 | 0 | 0 | 0 | 0 | 32 |
| Percent Total | | 0.0 | 0.2 | 5.0 | 20.2 | 47.4 | 20.9 | 5.9 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |

| | | | | | |
|-------------------|------------|------------|------------|------------|------------|
| Percentile Speeds | <u>10%</u> | <u>15%</u> | <u>50%</u> | <u>85%</u> | <u>90%</u> |
| | 26.2 | 27.5 | 32.6 | 37.9 | 39.1 |

MPH Face Speed : 30 - 40
Number in pace : 438
In pace : 68.2

| | | | |
|----------------|---------------|---------------|---------------|
| Speed Exceeded | <u>45 MPH</u> | <u>55 MPH</u> | <u>65 MPH</u> |
| Percentage | 0.5 | 0.0 | 0.0 |
| Count | 3 | 0 | 0 |

Cape Cod Commission

3225 Main Street

Barnstable, MA. 02630

RACE POINT RD N OF LANDFILL

PROVINCETOWN

TM2

Site: 20742

Date: 07/24/99

Direction: SB

| | Total | 1-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70-99 | Avg |
|-----|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| | | MPH | MPH | MPH | MPH | MPH | MPH | MPH | MPH | MPH | MPH | MPH | MPH | MPH | |
| AM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| :00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| :00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| :00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| :00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| :00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| :00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| :00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| :00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| :00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| :00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| :00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| :00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| :00 | 117 | 0 | 1 | 1 | 28 | 56 | 25 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| PM | 130 | 0 | 0 | 3 | 22 | 75 | 25 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 32 |
| :00 | 134 | 0 | 1 | 8 | 19 | 66 | 35 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| :00 | 121 | 0 | 0 | 6 | 16 | 62 | 30 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 33 |
| :00 | 175 | 0 | 1 | 6 | 32 | 84 | 36 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| :00 | 167 | 2 | 0 | 5 | 32 | 83 | 35 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 32 |
| :00 | 161 | 1 | 0 | 2 | 39 | 79 | 34 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| :00 | 141 | 0 | 0 | 5 | 24 | 69 | 39 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| :00 | 97 | 0 | 0 | 4 | 7 | 52 | 30 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| :00 | 105 | 0 | 0 | 2 | 14 | 53 | 30 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 33 |
| :00 | 32 | 0 | 0 | 2 | 9 | 12 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| :00 | 22 | 0 | 0 | 0 | 5 | 10 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 33 |
| :00 | 11 | 0 | 0 | 0 | 3 | 6 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 33 |
| | 1,413 | 3 | 3 | 44 | 250 | 707 | 331 | 66 | 6 | 3 | 0 | 0 | 0 | 0 | 32 |

| ntal | 0.2 | 0.2 | 3.1 | 17.7 | 50.0 | 23.4 | 4.7 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|------|-----|-----|-----|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|
|------|-----|-----|-----|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|

| ntile | peeds | 10% | 15% | 50% | 85% | 90% |
|-------|-------|------|------|------|------|------|
| | | 26.8 | 28.2 | 32.9 | 37.9 | 39.0 |

PH Speed : 30 - 40
 per pace : 1,038
 pace : 73.5

l Ex ded : 45 MPH 55 MPH 65 MPH
 nt ag : 0.6 0.0 0.0
 s : 9 0 0

Cape Cod Commission

3225 Main Street
Barnstable, MA. 02630

RACE POINT RD N OF LANDFILL
PROVINCETOWN
TM2

Site: 20742
Date: 07/25/99

Direction: SB

| Time | Total | 1-14 MPH | 15-19 MPH | 20-24 MPH | 25-29 MPH | 30-34 MPH | 35-39 MPH | 40-44 MPH | 45-49 MPH | 50-54 MPH | 55-59 MPH | 60-64 MPH | 65-69 MPH | 70-99 MPH | Avg |
|---------------|-------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-----|
| 12:00 | 11 | 0 | 1 | 0 | 1 | 6 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 01:00 | 8 | 0 | 0 | 0 | 1 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 02:00 | 14 | 0 | 0 | 1 | 3 | 7 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 03:00 | 3 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 04:00 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| 05:00 | 3 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 06:00 | 20 | 0 | 0 | 1 | 2 | 9 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 34 |
| 07:00 | 32 | 0 | 0 | 0 | 3 | 21 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 08:00 | 46 | 0 | 0 | 2 | 6 | 23 | 9 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 34 |
| 09:00 | 56 | 0 | 0 | 9 | 8 | 22 | 12 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 10:00 | 81 | 0 | 0 | 1 | 14 | 45 | 16 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 33 |
| 11:00 | 104 | 0 | 0 | 3 | 23 | 48 | 19 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 33 |
| 12:00 PM | 122 | 0 | 0 | 3 | 26 | 62 | 18 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 01:00 | 123 | 0 | 0 | 2 | 39 | 54 | 23 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 02:00 | 163 | 0 | 1 | 2 | 38 | 72 | 41 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 33 |
| 03:00 | 307 | 0 | 0 | 8 | 101 | 158 | 36 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 04:00 | 266 | 1 | 4 | 12 | 79 | 112 | 48 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 05:00 | 190 | 0 | 0 | 14 | 36 | 86 | 41 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 32 |
| 06:00 | 87 | 0 | 0 | 1 | 10 | 45 | 25 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 33 |
| 07:00 | 91 | 0 | 0 | 2 | 15 | 32 | 28 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 34 |
| 08:00 | 72 | 0 | 0 | 1 | 15 | 35 | 11 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 33 |
| 09:00 | 37 | 0 | 0 | 0 | 9 | 15 | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 10:00 | 20 | 0 | 0 | 0 | 2 | 14 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 11:00 | 8 | 0 | 0 | 0 | 3 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 12:00 PM | 1,865 | 1 | 6 | 62 | 435 | 877 | 362 | 107 | 14 | 1 | 0 | 0 | 0 | 0 | 32 |
| Percent Total | | 0.1 | 0.3 | 3.3 | 23.3 | 47.0 | 19.4 | 5.7 | 0.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | |

| | | | | | |
|-------------------|------------|------------|------------|------------|------------|
| Percentile Speeds | <u>10%</u> | <u>15%</u> | <u>50%</u> | <u>85%</u> | <u>90%</u> |
| | 26.4 | 27.4 | 32.4 | 37.8 | 39.1 |

MPE Pace Speed : 25 - 35
 Number in pace : 1,312
 Mean pace : 70.3

| | | | |
|------------------|---------------|---------------|---------------|
| Percent Exceeded | <u>45 MPH</u> | <u>55 MPH</u> | <u>65 MPH</u> |
| Percentage | 0.8 | 0.0 | 0.0 |
| Units | 15 | 0 | 0 |

Cape Cod Commission

3225 Main Street
Barnstable, MA. 02630

RACE POINT RD N OF LANDFILL
PROVINCETOWN
FM2

Site: 20742
Date: 07/26/99

Direction: SB

| Time | Total | 1-14 MPH | 15-19 MPH | 20-24 MPH | 25-29 MPH | 30-34 MPH | 35-39 MPH | 40-44 MPH | 45-49 MPH | 50-54 MPH | 55-59 MPH | 60-64 MPH | 65-69 MPH | 70-99 MPH | Avg |
|----------|-------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----|
| 7:00 AM | 7 | 0 | 0 | 0 | 2 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 8:00 AM | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 9:00 AM | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 10:00 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 11:00 AM | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 12:00 PM | 12 | 0 | 0 | 0 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| 1:00 PM | 28 | 0 | 0 | 3 | 2 | 11 | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 2:00 PM | 45 | 0 | 0 | 1 | 7 | 15 | 11 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 35 |
| 3:00 PM | 40 | 0 | 0 | 2 | 6 | 14 | 10 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 34 |
| 4:00 PM | 61 | 0 | 0 | 0 | 12 | 20 | 21 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 34 |
| 5:00 PM | 75 | 0 | 0 | 3 | 15 | 35 | 15 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 6:00 PM | 108 | 0 | 2 | 2 | 20 | 48 | 25 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 33 |
| 7:00 PM | 127 | 0 | 0 | 2 | 31 | 64 | 21 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 8:00 PM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 9:00 PM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 PM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 PM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 12:00 AM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 1:00 AM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 2:00 AM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 3:00 AM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 4:00 AM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 5:00 AM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 6:00 AM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 7:00 AM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 8:00 AM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 9:00 AM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 AM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 AM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 12:00 PM | 511 | 0 | 2 | 13 | 100 | 217 | 113 | 56 | 9 | 1 | 0 | 0 | 0 | 0 | 33 |
| Percent | | 0.0 | 0.4 | 2.5 | 19.6 | 42.5 | 22.1 | 11.0 | 1.8 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | |

| Percentile Speeds | 10% | 15% | 50% | 85% | 90% |
|-------------------|------|------|------|------|------|
| | 26.9 | 28.1 | 33.2 | 39.6 | 41.3 |

MPH 50th Percentile Speed : 30 - 40
 Number of Vehicles : 330
 Average Speed : 64.6

Exceeding Speeds : 45 MPH 55 MPH 65 MPH
 Percentages : 2.0 0.0 0.0
 Counts : 10 0 0

APPENDIX B: CRASH DATA



Provincetown Police Department

SHANKPAINTER ROAD
PROVINCETOWN, MASS. 02657

ROBERT P. ANTHONY
CHIEF OF POLICE

November 4, 1999

To: Paul S. Tilton, Traffic Engineer
Cape Cod Commission

From: Paul M. Hatch, Administrative Secretary
Provincetown Police Department

Re: Traffic Accident Data – Race Point Road

Dear Paul,

Please find below a summary of the traffic accident data that you requested pertaining to the vicinity of Race Point Road and the Transfer Station access road. This data was researched from our in-house computer system for the period 01/01/97 through 08/31/99 (covering 32 months and some total 30,649 incident records). The 3-digit numbers in the left column are the action codes in our computer system to classify the nature or type of incident. Incidents shown in **bold** type actually occurred at the intersection being studied by your agency.

| Incident Type | Results / Description |
|--|---|
| 036 – MV Traffic Problem | No complaints reported. |
| 058 – Bike, Pedestrian & All Other Accidents | 1 bicyclist fallen due to loose sand/gravel at trail entrance. Not a MV accident, no other parties/vehicles involved. |
| 208 – MV Complaint / Violation | 2 complaints of speeding vehicles along Race Point Rd between Beech Forest and Route 6, such that caller's believed there was a hazard to bicyclists and horse riders using the road shoulders. |
| 210 – Major MV Accident | None at the Transfer Station road. 2 by Beech Forest parking area, 1 at Nelson Ave intersection, 2 at Route 6 traffic lights. |
| 211 – Minor MV Accident | 1 at the Transfer Station road (involving 2 vehicles slid on ice, not related to bike trail entrance). 3 at Nelson Ave intersection, 2 at Route 6 traffic lights. |
| 212 – MV Hit & Run Accident | None at the Transfer Station road. 1 at Nelson Ave intersection. |

"IN PARTNERSHIP WITH THE COMMUNITY"

PHONE: 508-487-1213

FAX: 508-487-4077

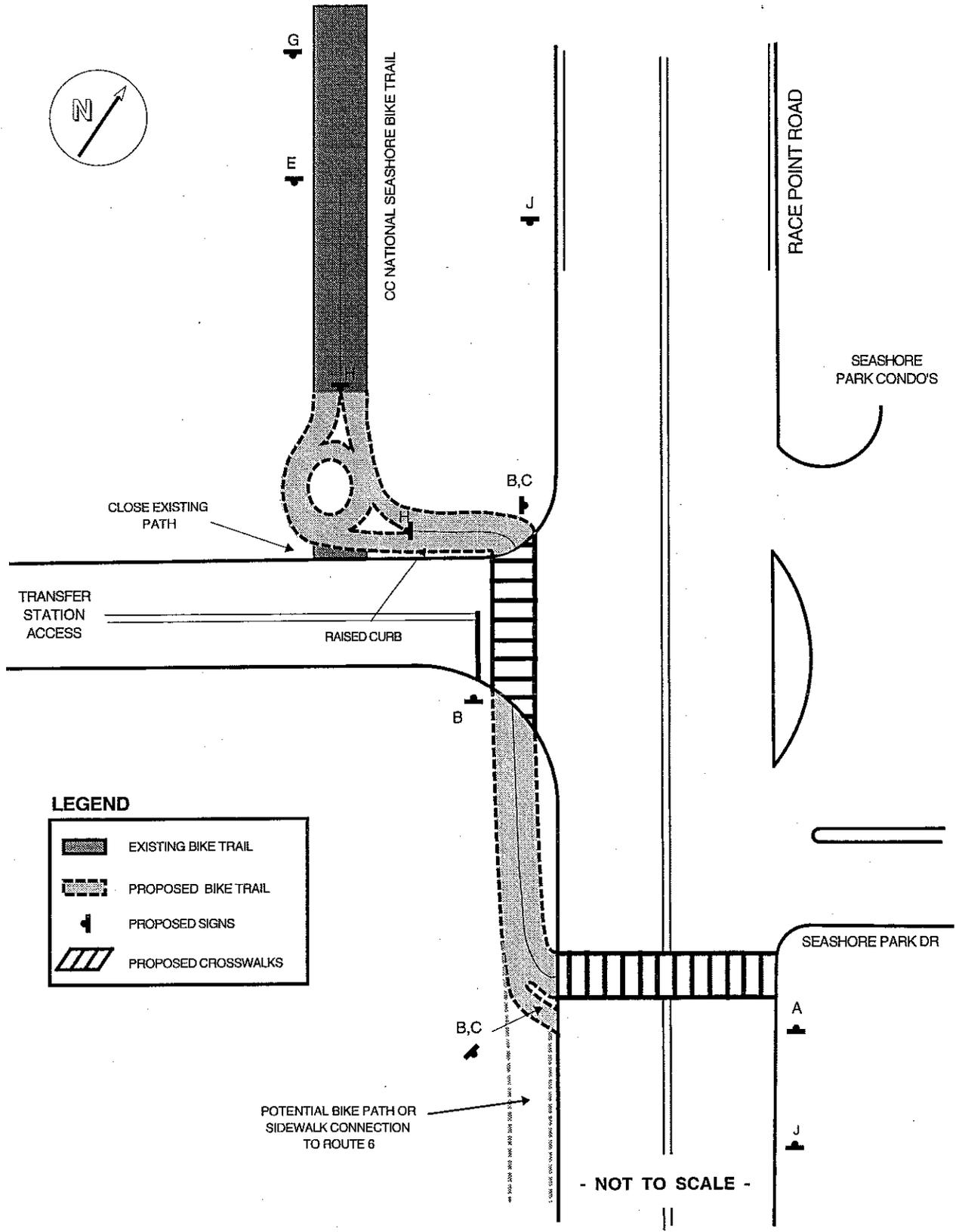
Please let me know if you need any further information or explanation of the material presented above. Thank you very much.

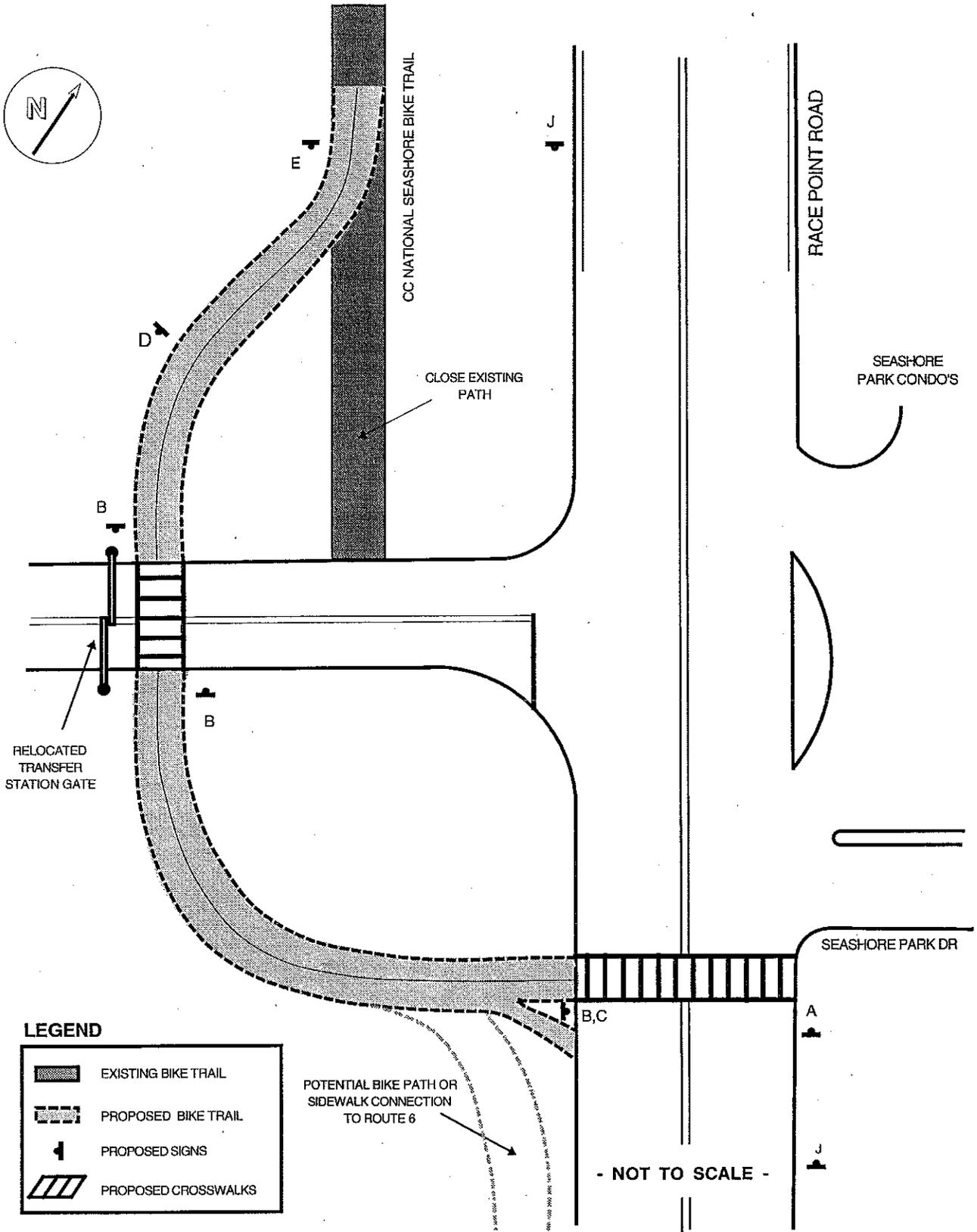
Sincerely,



(Paul M. Hatch,
Administrative Secretary)

APPENDIX C: OTHER ALTERNATIVES CONSIDERED FOR STUDY AREA



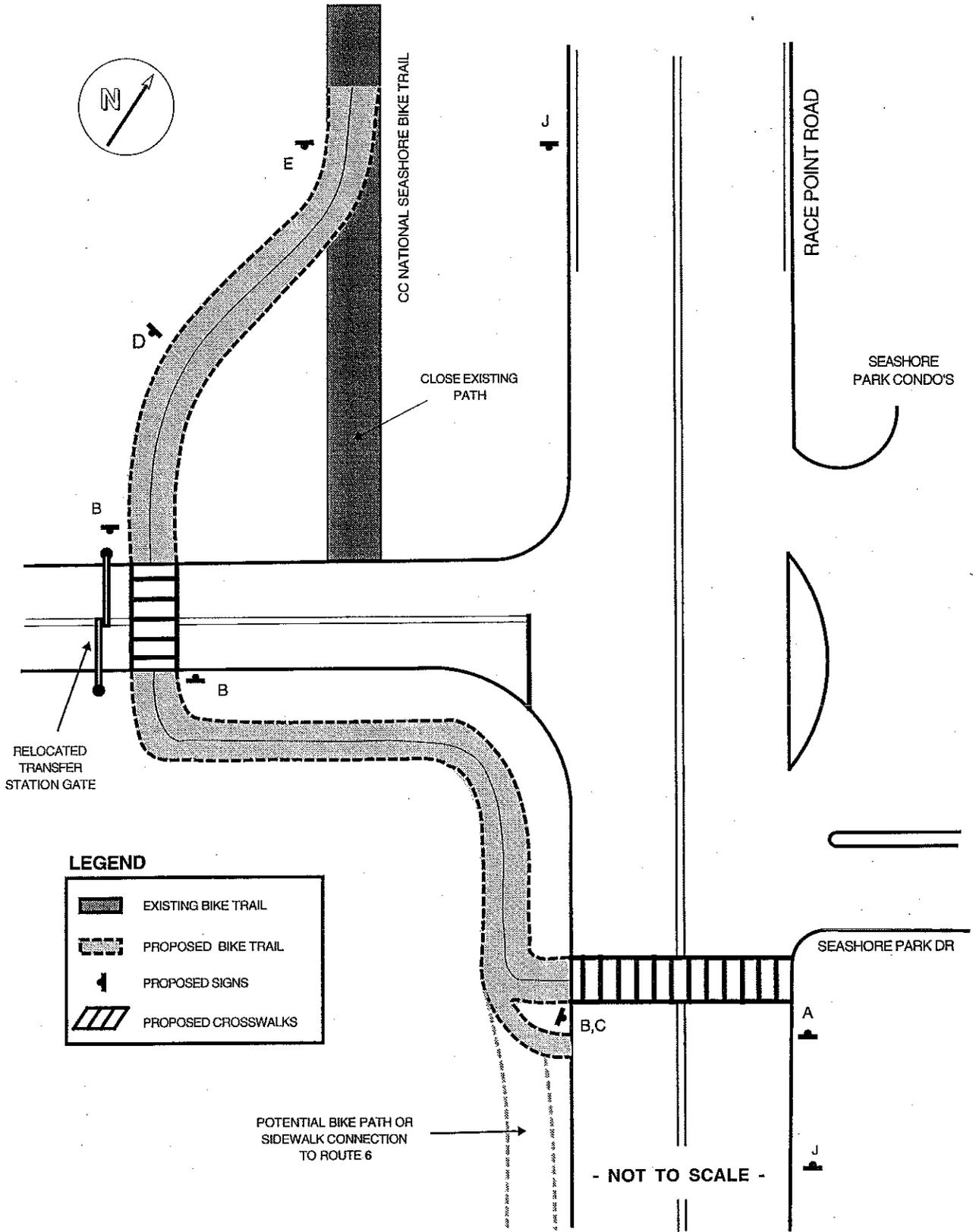


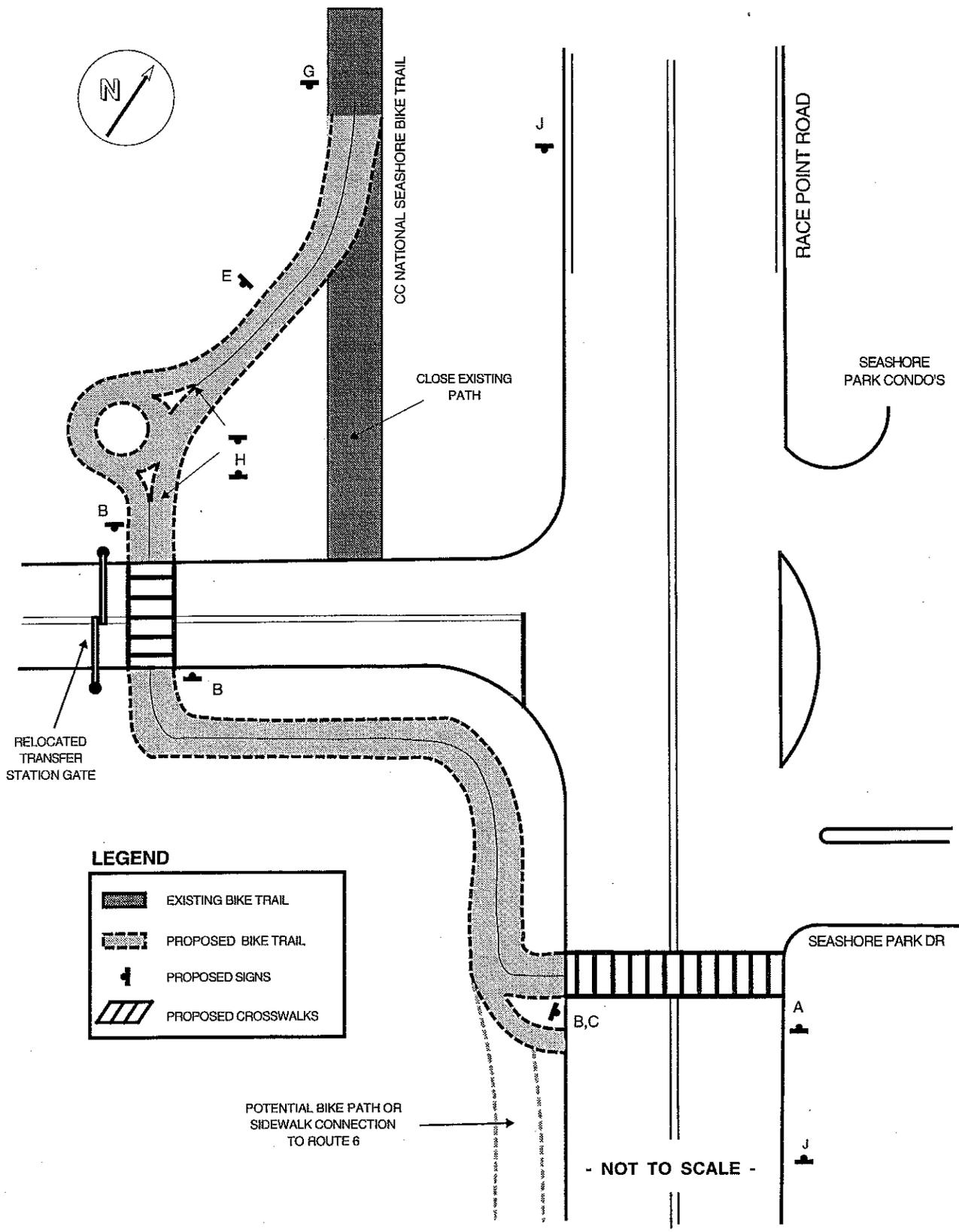
LEGEND

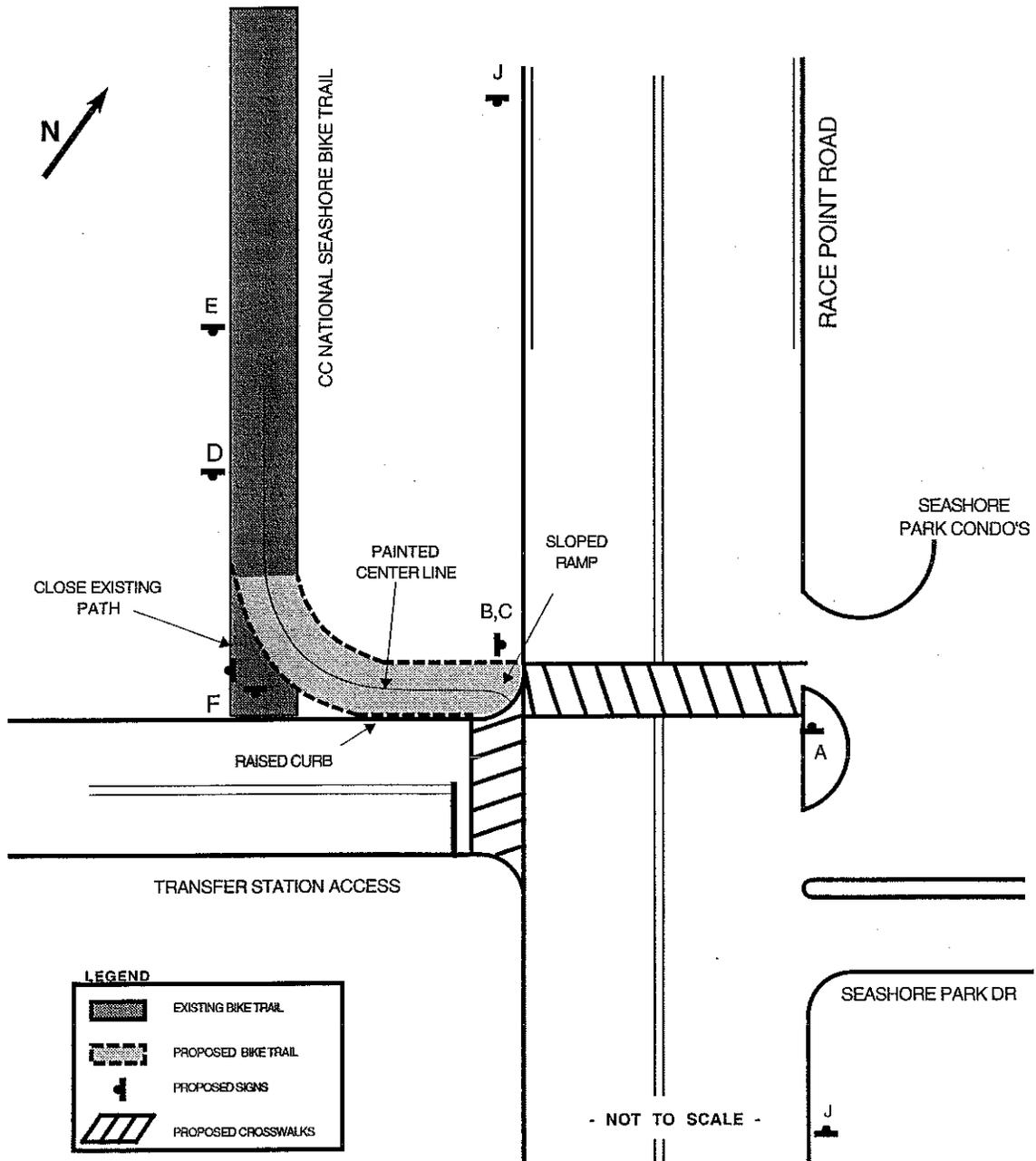
-  EXISTING BIKE TRAIL
-  PROPOSED BIKE TRAIL
-  PROPOSED SIGNS
-  PROPOSED CROSSWALKS

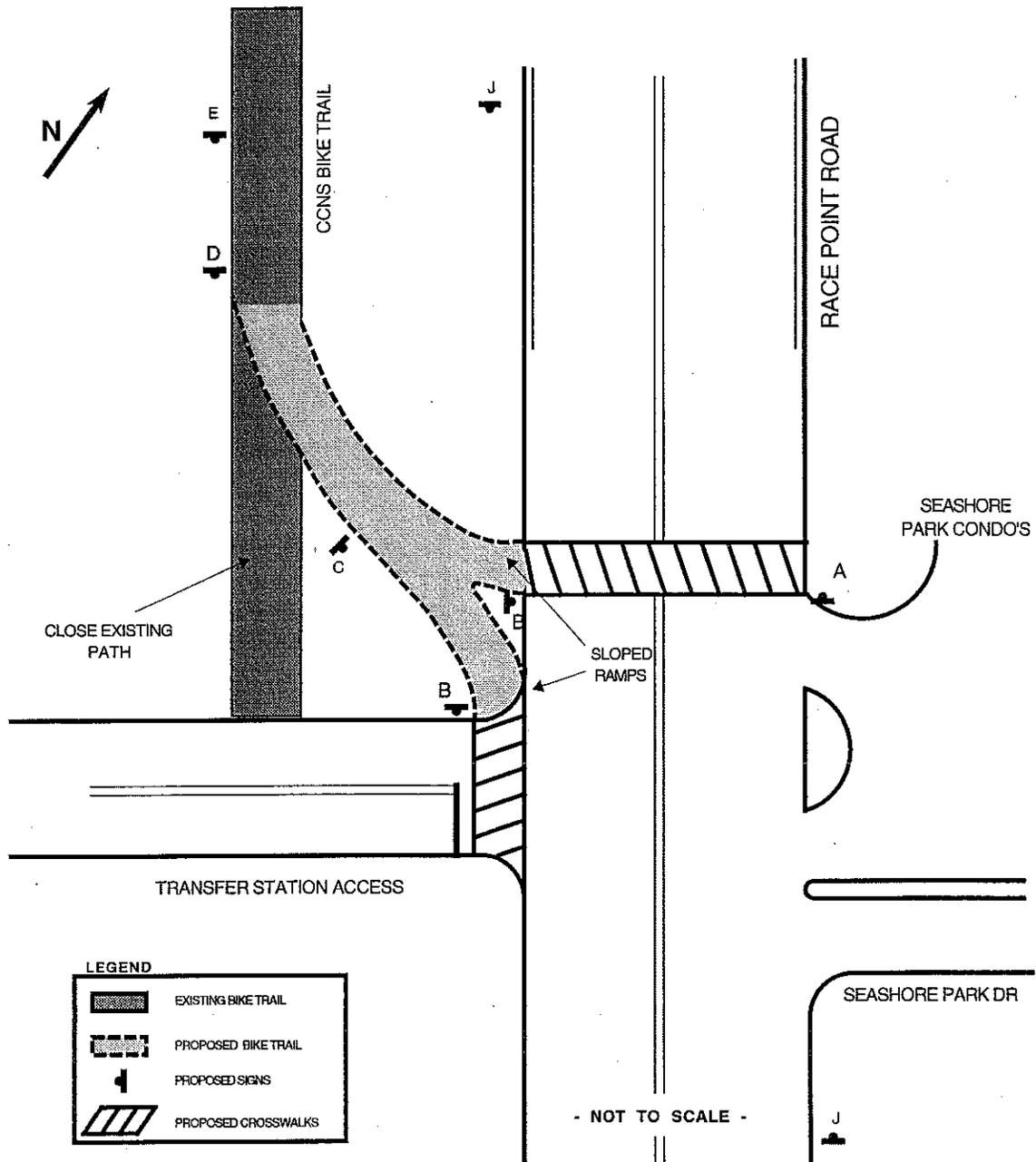
POTENTIAL BIKE PATH OR
SIDEWALK CONNECTION
TO ROUTE 6

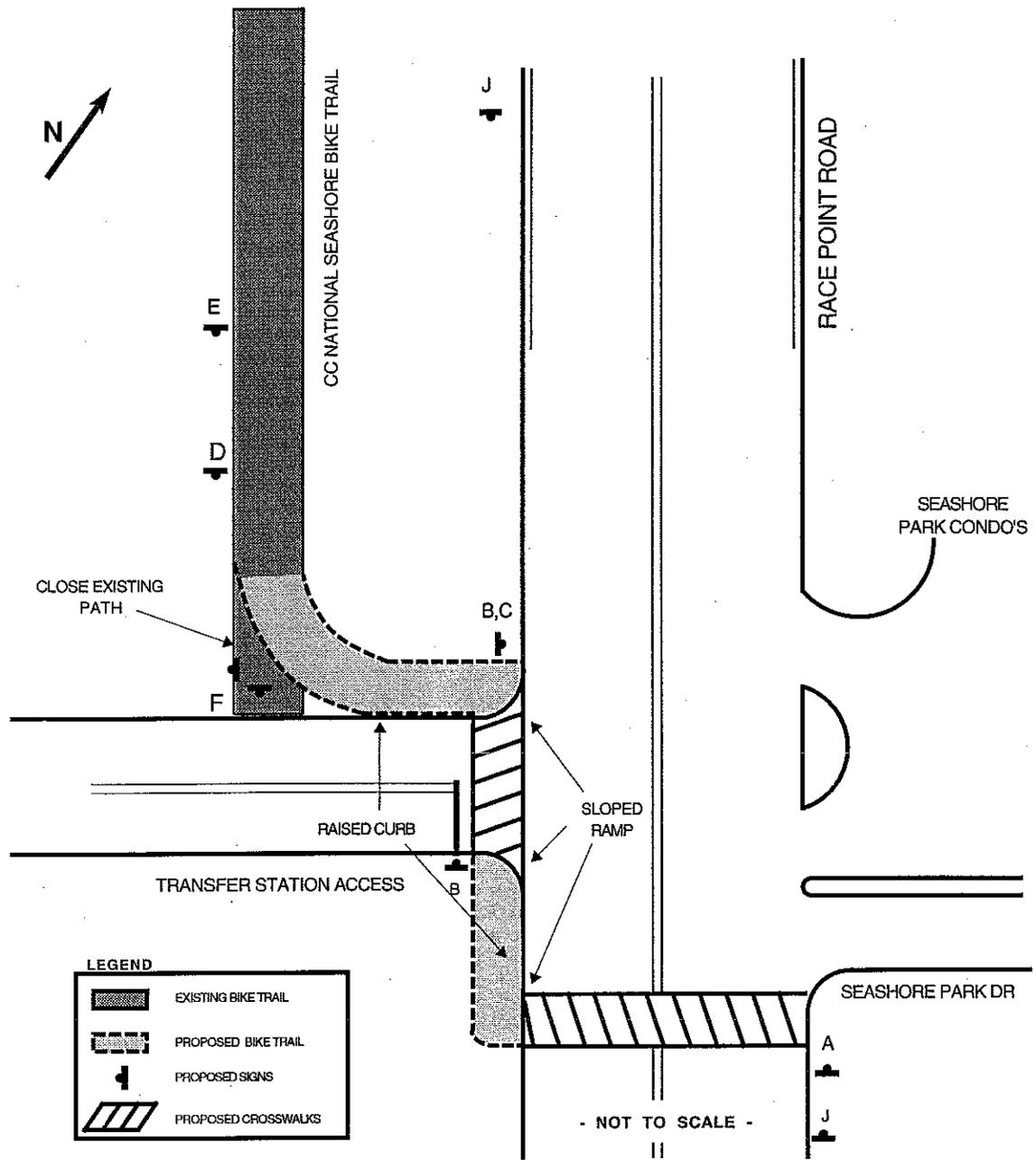
- NOT TO SCALE -



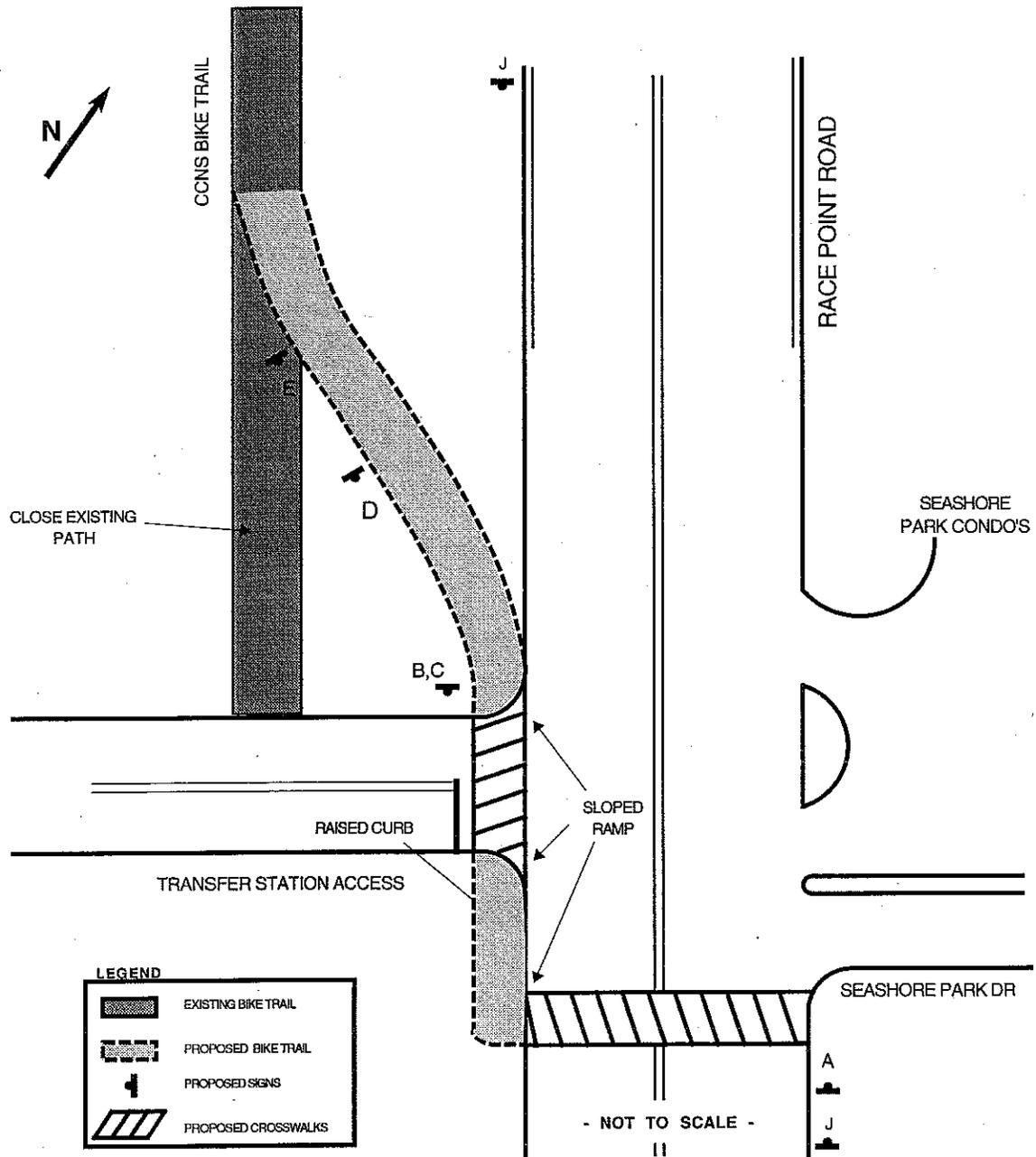


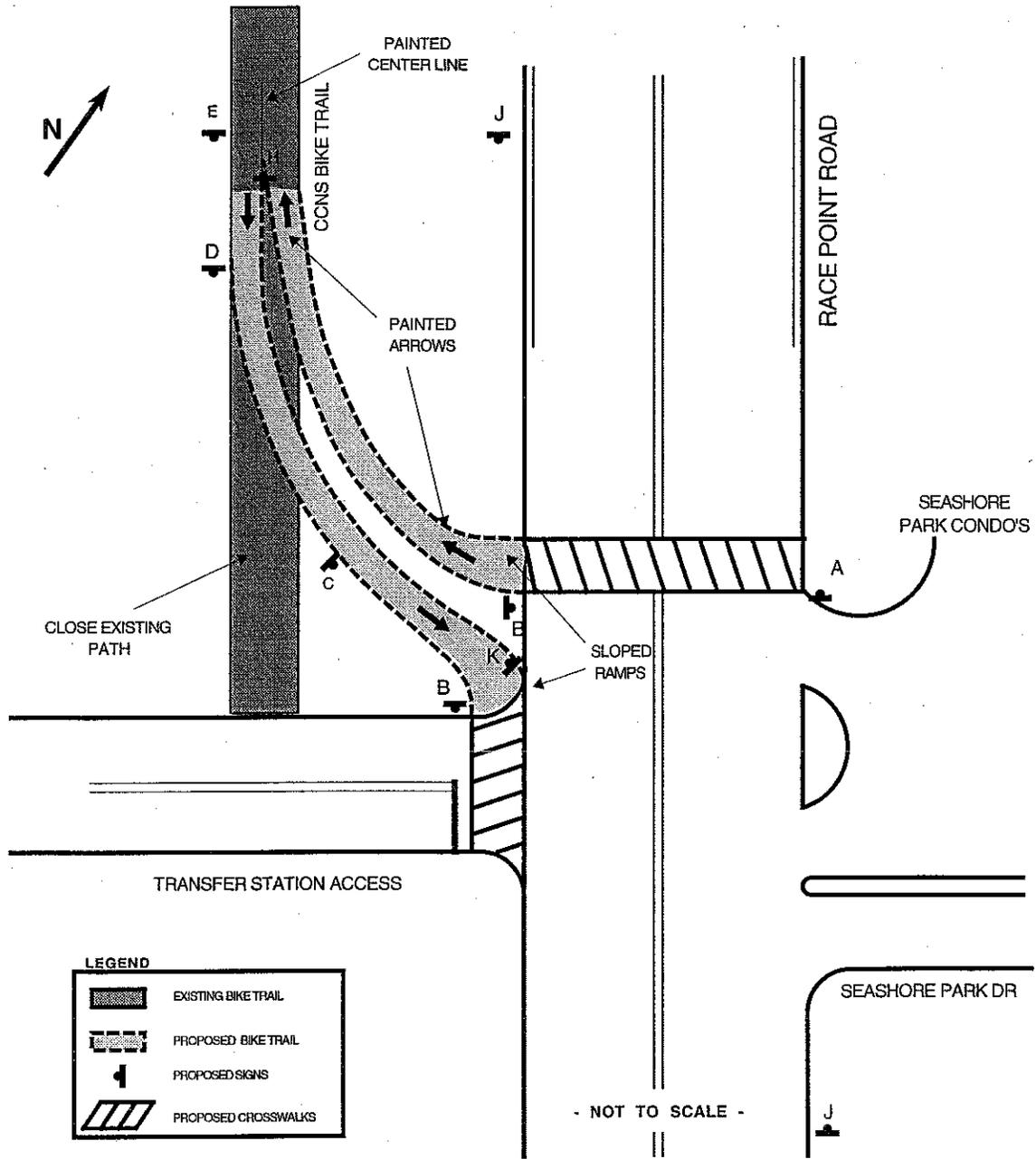






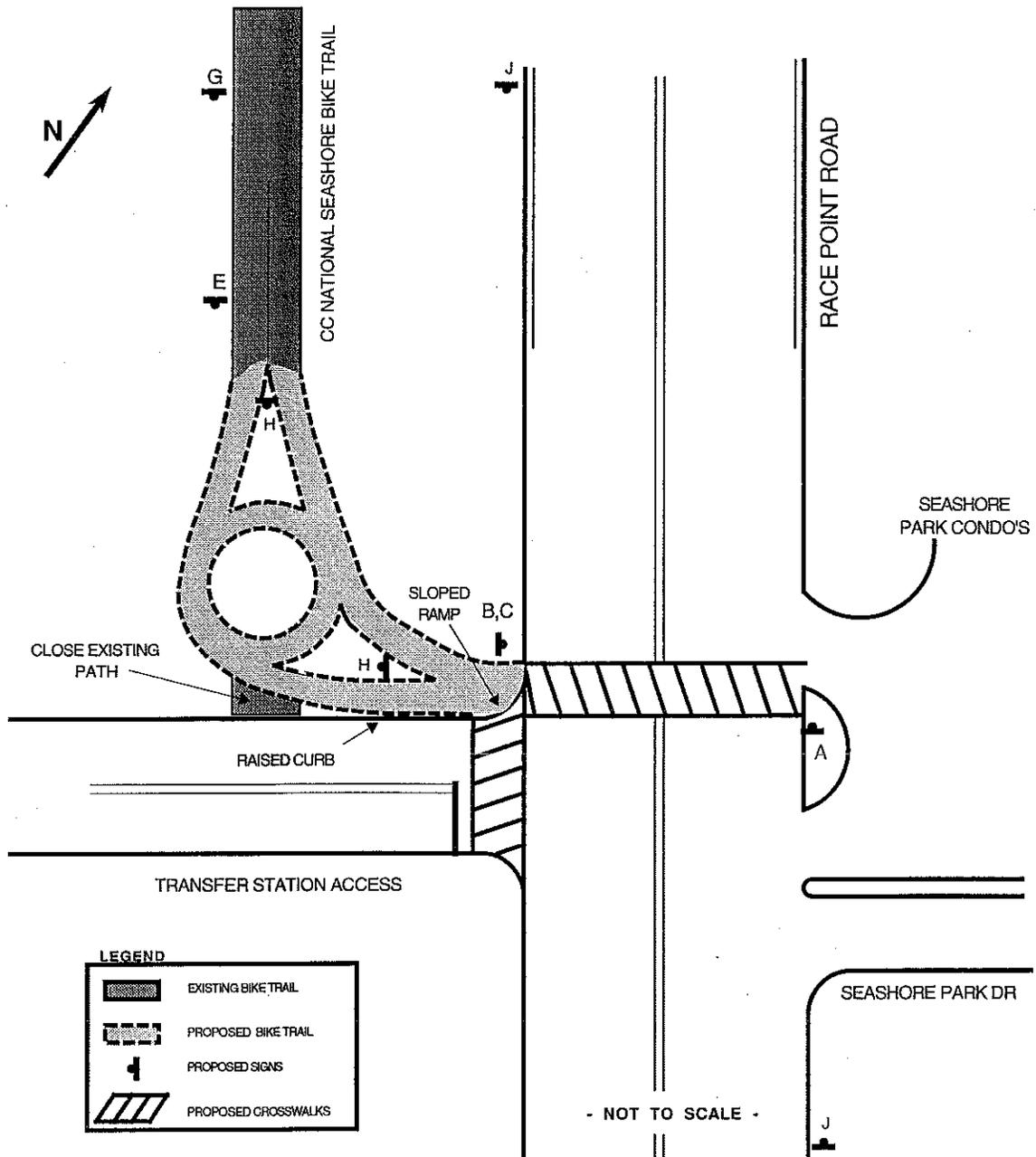
| LEGEND | |
|---|---------------------|
|  | EXISTING BIKE TRAIL |
|  | PROPOSED BIKE TRAIL |
|  | PROPOSED SIGNS |
|  | PROPOSED CROSSWALKS |

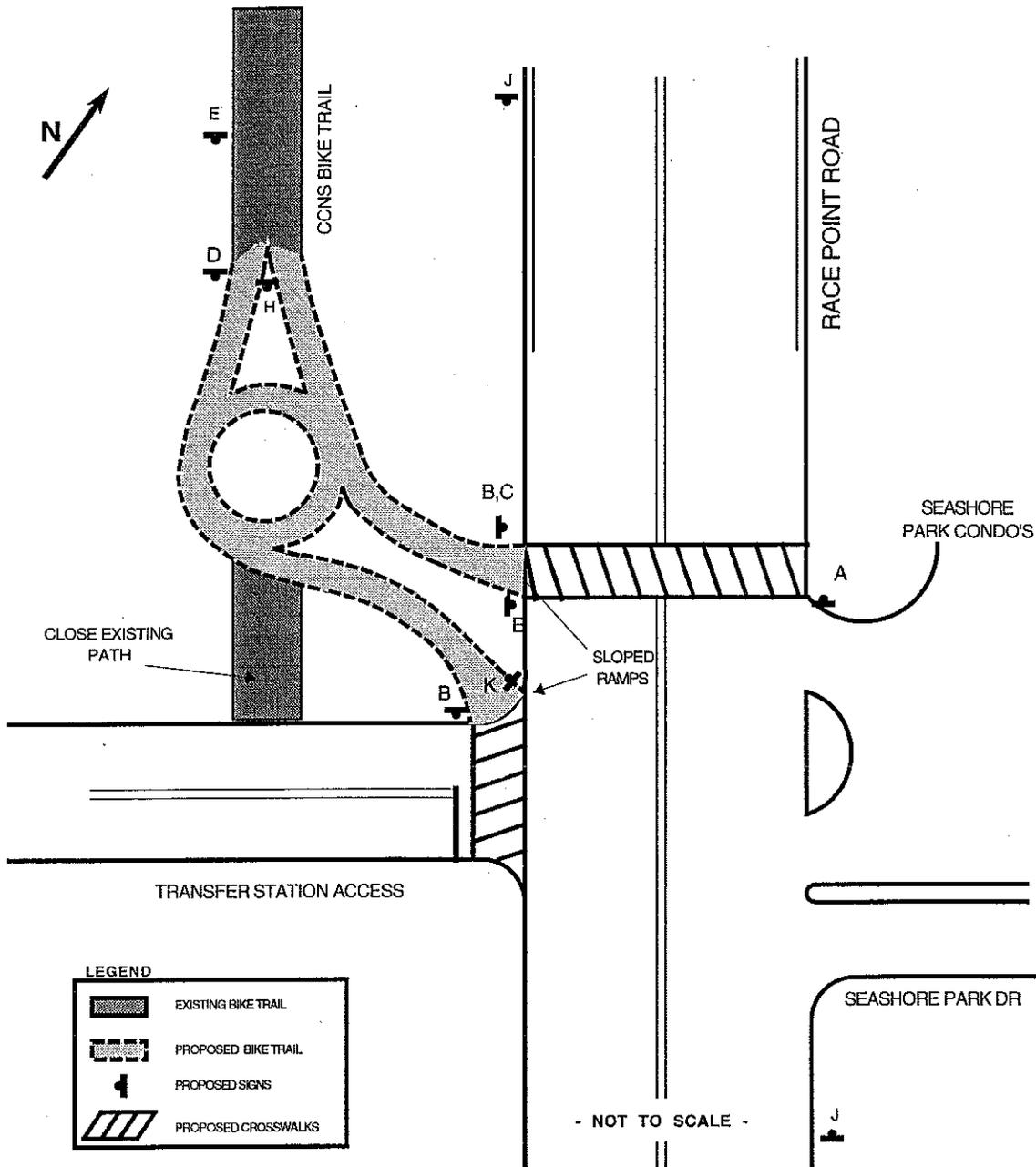




LEGEND

| | |
|--|---------------------|
| | EXISTING BIKE TRAIL |
| | PROPOSED BIKE TRAIL |
| | PROPOSED SIGNS |
| | PROPOSED CROSSWALKS |



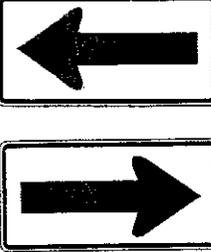
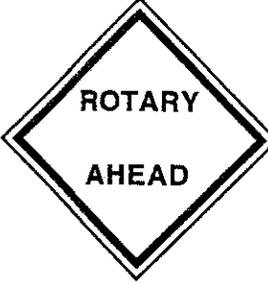
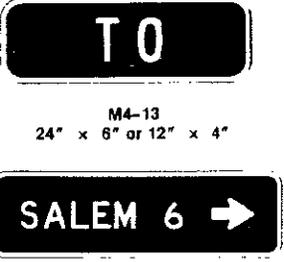


LEGEND

| | |
|---|---------------------|
|  | EXISTING BIKE TRAIL |
|  | PROPOSED BIKE TRAIL |
|  | PROPOSED SIGNS |
|  | PROPOSED CROSSWALKS |

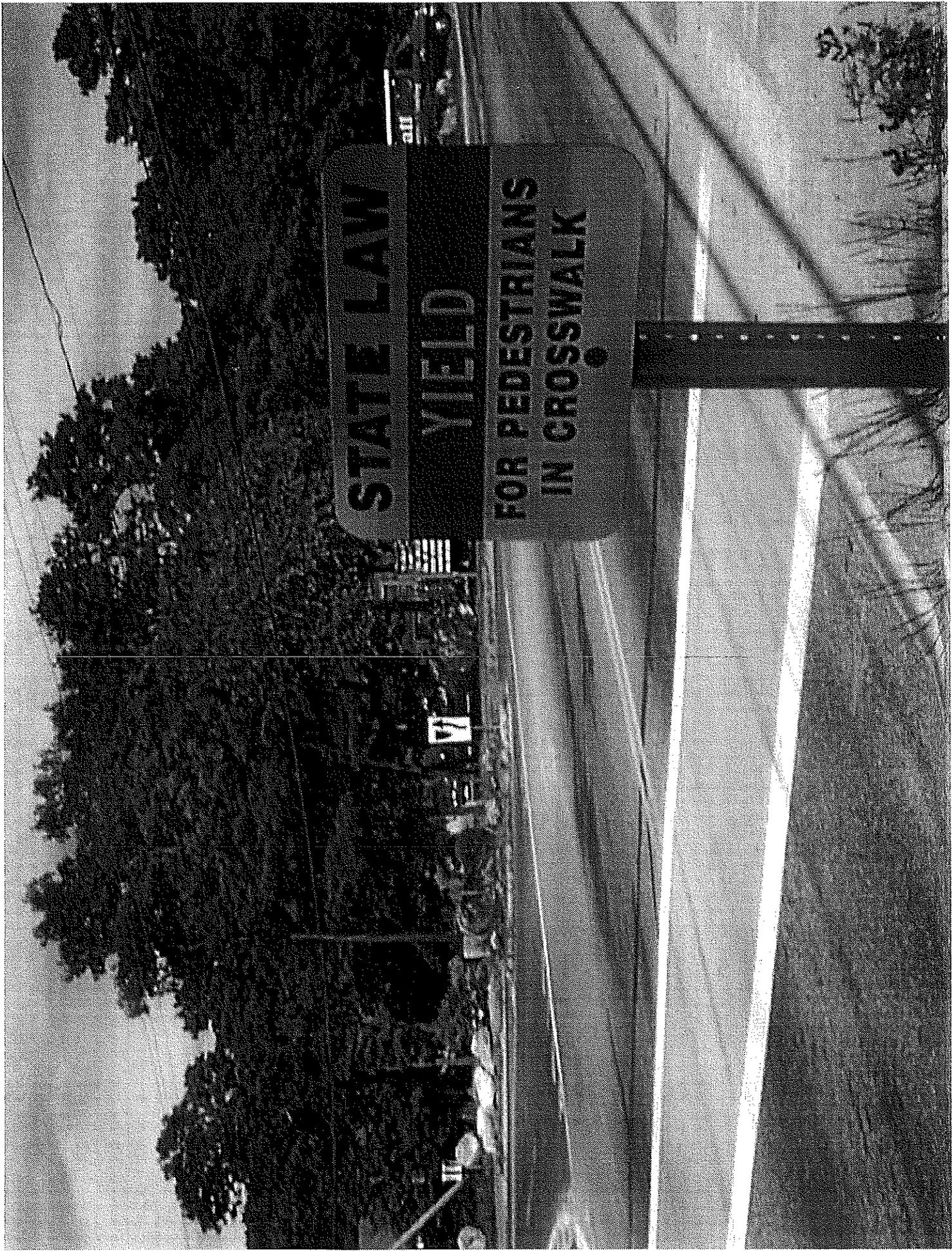
- NOT TO SCALE -

APPENDIX D: TRAFFIC SIGN DESCRIPTIONS

| | |
|---|---|
| <p>A</p>  <p>BICYCLE ROUTE SIGN CCNS BIKE TRAIL SYMBOL OR PROVINCETOWN/CCNS SYMBOL</p> <p>M1-8 12" x 18"</p> | <p>F</p>  <p>TURN OR CURVE SIGNS</p> <p>W1-6 24" x 12"</p> |
| <p>B</p>  <p>BICYCLE STOP SIGN</p> <p>R1-1 18" x 18"</p> | <p>G</p>  <p>ROTARY AHEAD SIGN</p> |
| <p>C</p>  <p>M4-13 24" x 6" or 12" x 4"</p> <p>SUPPLEMENTAL PLAQUES FOR BICYCLE ROUTE SIGN "TO PROVINCETOWN"</p> <p>D1-1b(R) 24" x 6"</p> | <p>H</p>  <p>KEEP RIGHT SIGN</p> <p>R4-7 24" x 30"</p> |
| <p>D</p>  <p>STOP AHEAD SIGN</p> <p>W3-1 18" x 18"</p> | <p>J</p>  <p>BICYCLE CROSSING SIGN</p> <p>W11-1 30" x 30"</p> |
| <p>E</p>  <p>SUPPLEMENTAL "END" PLAQUE WITH ROUTE MARKER SIGN</p> <p>M4-12 24" x 6" or 12" x 4"</p> <p>M1-8 12" x 18"</p> | |

Proposed Sign Plan

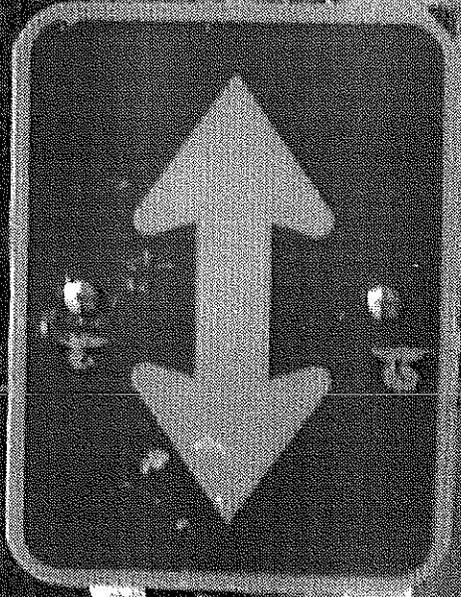
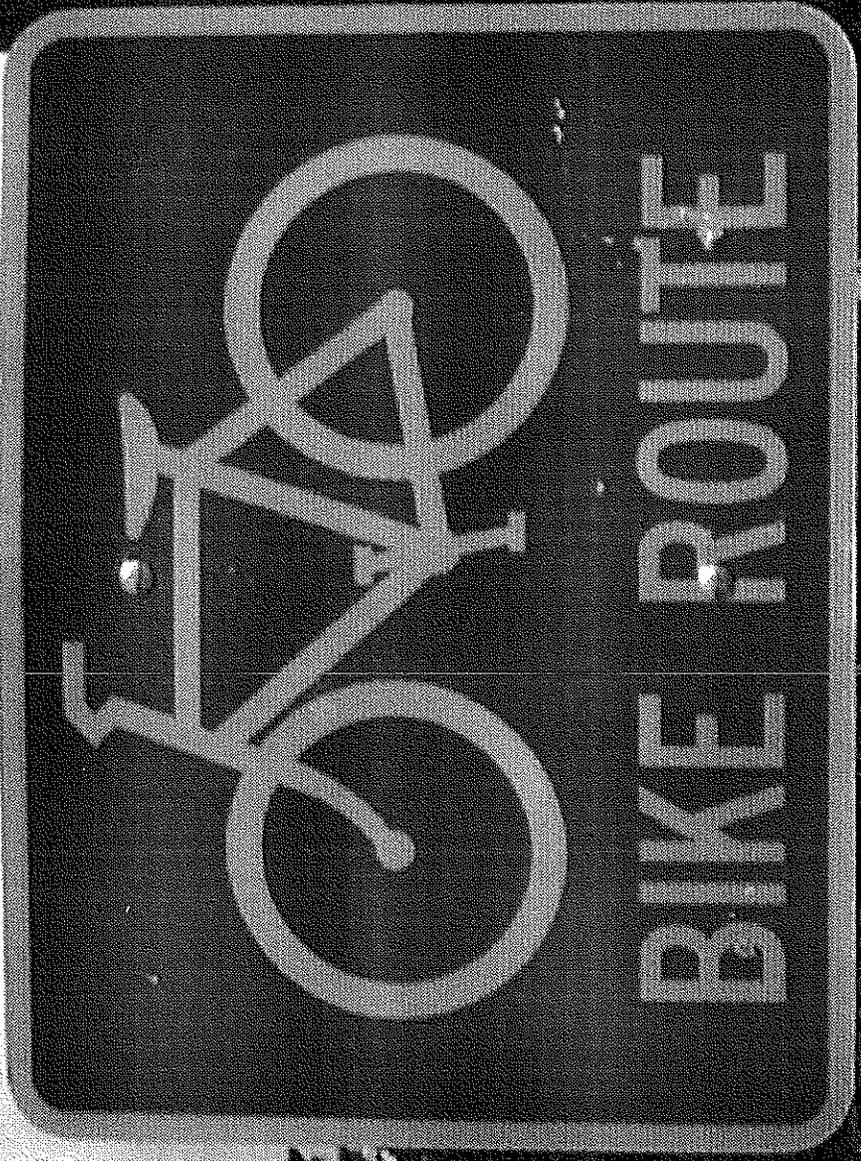
APPENDIX E: OTHER POTENTIAL TRAFFIC SIGNS



STATE LAW

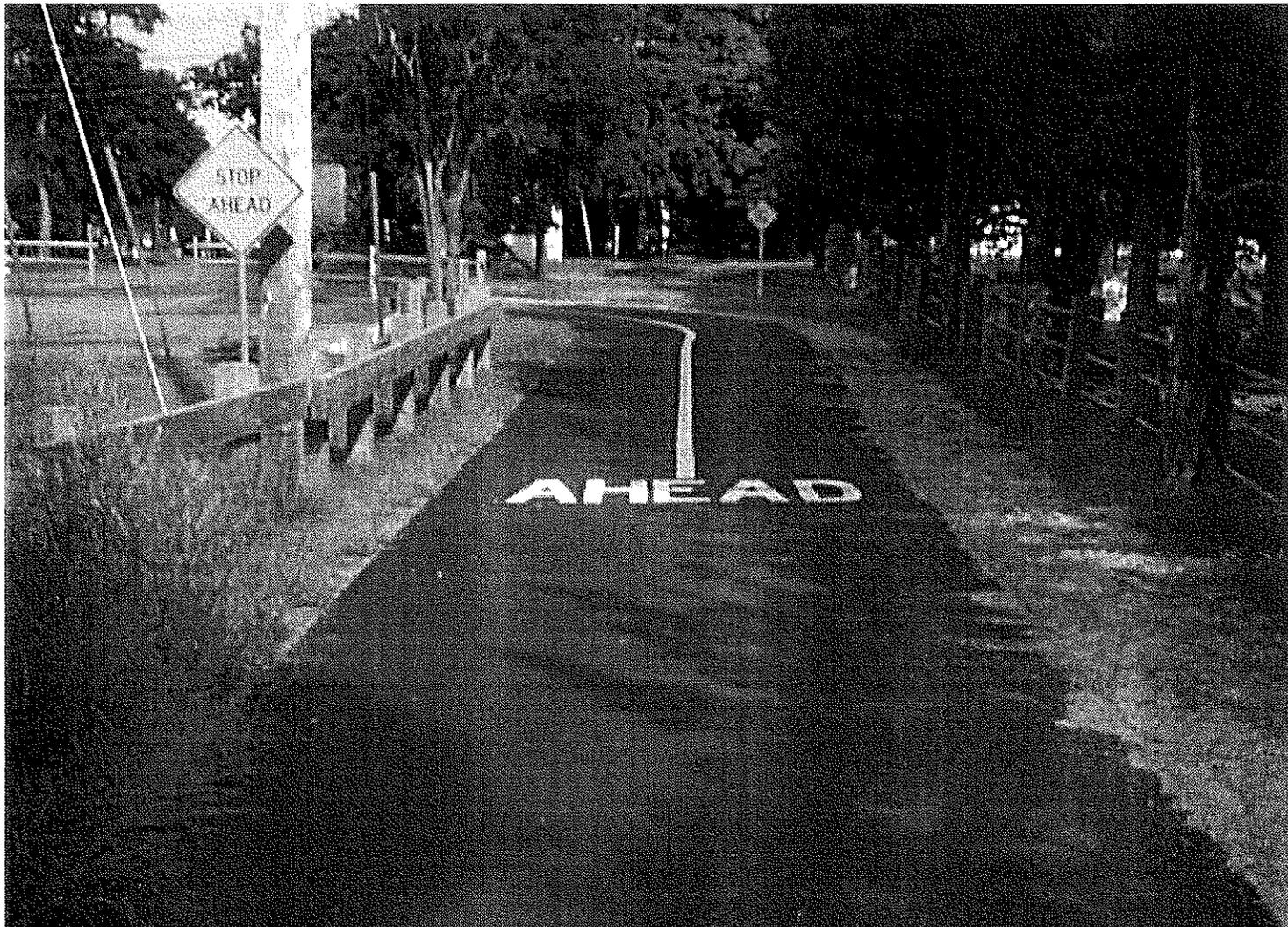
YIELD

FOR PEDESTRIANS
IN CROSSWALK





APPENDIX F: EXAMPLES OF PROPOSED PAVEMENT MARKINGS



STOP

XING

BIKE



APPENDIX G: BICYCLE PATH & ROADWAY SURFACE ALTERATIONS

