

ENVIRONMENTAL ASSESSMENT

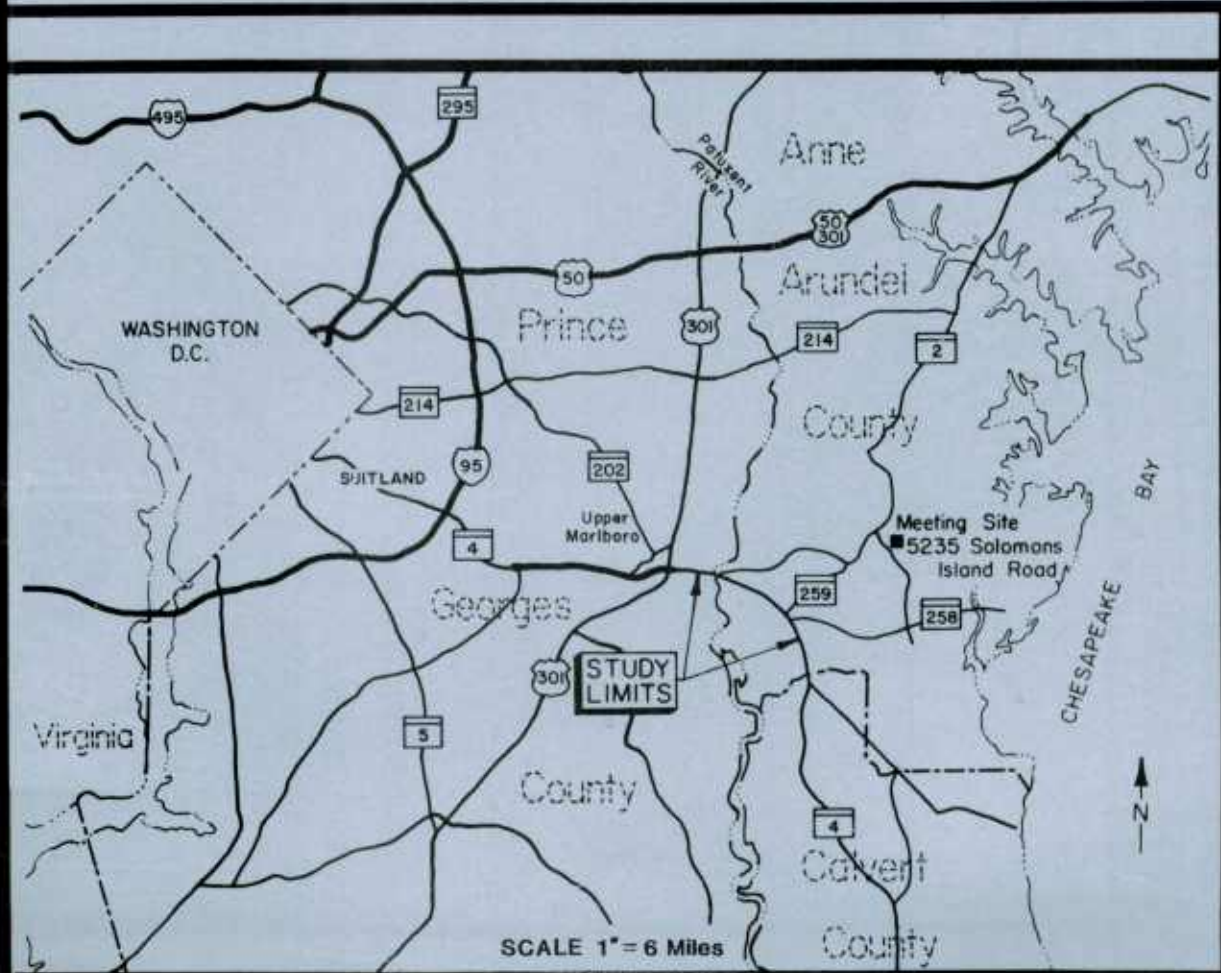
FOR

Contract No. AA 376-101-570

MARYLAND ROUTE 4:

FROM SOUTH OF MD. 258 TO MD. 726
SOUTHERN MARYLAND BOULEVARD

**ANNE ARUNDEL COUNTY and
PRINCE GEORGE'S COUNTY, MARYLAND**



prepared by
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

and
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

REPORT NUMBER: FHWA MD-EA-85-07-D

FEDERAL HIGHWAY ADMINISTRATION

REGION III

Maryland Route 4 from
south of Maryland Route 258
to Maryland Route 726 Southern
Maryland Boulevard
Anne Arundel and
Prince George's County Maryland

Administrative Action

ENVIRONMENTAL ASSESSMENT

U.S. Department of Transportation
Federal Highway Administration

and

State of Maryland
Department of Transportation
State Highway Administration

Submitted pursuant to 42 U.S.C. (s) (C) 23 U.S.C. 128 (a)
49 U.S.C. 303 (c) CEQ Regulations (40 CFR 1500 seq.)

HAL KASSOFF
ADMINISTRATOR

11/1/85

DATE

by:

Neil J. Pedersen

Neil J. Pedersen, Director
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11/4/85

DATE

by:

Emil E. Lynch

Federal Highway Administration
Division Administrator

SUMMARY

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SUMMARY

1. ADMINISTRATIVE ACTION

- (x) Environmental Assessment
- () Environmental Impact Statement
- () Section 4 (f) Evaluation

2. ADDITIONAL INFORMATION:

Additional information concerning this action may be obtained by contacting:

Mr. Louis H. Ege, Jr. Acting Chief Bureau of Project Planning State Highway Administration 707 North Calvert Street Baltimore, Maryland 21202 Telephone: (301) 659-1130 Hours: 8:15 a.m. - 4:15 p.m.	Mr. Edward Terry District Engineer Federal Highway Administration The Rotunda - Suite 220 711 East 40th Street Baltimore, Maryland 21211 Telephone: (301) 962-4010 Hours: 7:45 a.m. - 4:15 p.m.
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3. DESCRIPTION OF PROPOSED ACTION

This project consists of improvements to Maryland Route 4 between Maryland Route 258 in Anne Arundel County and Maryland Route 726 in Prince Georges County, a distance of approximately 3.5 miles (see figure I-1 and I-2).

4. ALTERNATES CONSIDERED

Construction of a new northbound roadway is proposed within the existing median of Maryland Route 4 in order to improve safety conditions and design deficiencies of the existing roadway. These improvements are necessary in order for this roadway to meet currently acceptable design standards for a partially controlled access highway.

Because of the access adjustments required by this project the corridor was divided into four sections:

Bristol: (Alternates B-1, B-2, B-4) two build alternates are proposed to improve the existing MD 258 interchange.

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Plummer Lane/Sands Road: (Alternates P-1, P-3, P-4)
Two build alternates are proposed to improve the existing intersection.

Wayson's Corner: (Alternates W-1, W-2, W-3, W-5)
Three build alternates are proposed to improve the existing MD 408 interchange.

Patuxent River Bridge: (Alternates R-1, R-2) Replacement of the existing, deteriorated bridge structure carrying Maryland Route 4 over the Patuxent River is also recommended. Realignment of the connection to Old Marlboro Pike, south of the river would be required with replacement of the bridge.

The No-Build Alternates (B-1, P-1, W-1, R-1) would limit changes to the corridor sections to routine maintenance and safety improvements.

5. ENVIRONMENTAL SUMMARY

A comparison of impacts for all proposed build alternates is displayed numerically in table 1.

Beneficial impacts associated with reconstructing Maryland Route 4 include improved roadway geometrics and improvement of traffic flow, resulting in safer conditions for vehicular traffic.

One residential structure housing two families would be relocated under Alternates P-3 and P-4 and two minority businesses would be acquired for construction of Alternate W-5. Relocation assistance would be provided for those affected.

None of the proposed build alternates require property from a historic site or district, public park or recreational area. No impacts to any known archeological sites are anticipated.

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All proposed alternates would impact woodlands and non-tidal wetlands, many within existing right-of-way. No threatened or endangered species are known to inhabit the study area. Prime farmland soils would be required under all build alternates except those at Waysons Corner.

Floodplain encroachment and tidal wetlands would be required for the Patuxent River bridge replacement and improvements at Waysons Corner. No new stream crossings would occur, but pipe and culvert extensions would be required at several locations. Construction permits, stormwater management and sediment/erosion control approvals would be obtained as required.

No violations of the State or National Ambient Air Quality Standards (S/NAAQS) for carbon monoxide are predicted to occur with any build alternate in the project completion year (1990) or design year (2010). FHWA Noise Abatement Criteria would be exceeded at the Bristol and Plummer Lane sites either build alternate considered. These same sites would also experience levels in excess of the Design Noise Abatement Criteria under the No-Build Alternate.

The proposed action is consistent with the latest Anne Arundel County General Development Plan published in 1978.

Table 1
Comparison of Alternates

<u>No-Build Alternates</u>	<u>Displacements</u>				
	<u>Farm</u>	<u>Parks</u>	<u>Residential</u>	<u>Business</u>	<u>Minority</u>
(R,1, W-1, P-1, B-1)	0	0	0	0	0
R-2	0	0	0	0	0
W-2	0	0	0	0	0
W-3	0	0	0	0	0
W-5	0	0	0	2	2
P-3	0	0	1 (2 Families)	0	0
P-4	0	0	1 (2 Families)	0	0
B-2	0	0	0	0	0
B-4	0	0	0	0	0

<u>No-Build Alternates</u>	<u>Historic (sites adversely Affected</u>	<u>Consistency w/Land Use Plans</u>	<u>Air Quality Impacts (sites exceeding criteria</u>	<u>Noise Level Impacts (sites exceeding criteria or 10 dBA increase over ambient</u>
(R-1, W-1, P-1, B-1)	0	NO	0	2
R-2	0	YES	0	0
W-2	0	YES	0	0
W-3	0	YES	0	0
W-5	0	YES	0	0
P-3	0	YES	0	1
P-4	0	YES	0	1
B-2	0	YES	0	1
B-4	0	YES	0	1

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TABLE 1
Comparison of Alternates

<u>No-Build Alternates</u>	<u>Endangered Species</u>	<u>Floodplain Encroachment</u>	<u>Stream X-ing</u>	<u>Prime Farmland</u>	<u>Woodland Loss</u>
(B-1, P-1, W-1, R-1)	0	0	0	0	0
R-2	0	3.2 ac.	1	1 ac.	2.5 ac.
W-2	0	6.0 ac.	1	0	8.1 ac.
W-3	0	7.8 ac.	1	0	13.8 ac.
W-5	0	5.9 ac.	1	0	9.2 ac.
P-3	0	0	5	5.6 ac.	30.5 ac.
P-4	0	0	5	3.8 ac.	23.7 ac.
B-2	0	0	1	3.8 ac.	8.5 ac.
B-4	0	0	2	9.9 ac.	20.9 ac.

<u>No-Build Alternates</u>	<u>Wetland Impacts</u>		<u>Costs (x 1,000,000)</u>			
	<u>Non-Tidal</u>	<u>Tidal</u>	<u>Prelim. Enginr.</u>	<u>ROW</u>	<u>Construction</u>	<u>Total</u>
(B-1, P-1, W-1, R-1)	0	0	0	0	0	0
R-2	2.0	.3	.2	.03	2.35	2.58
W-2	2.9	.3	.71	.23	8.49	9.43
W-3	4.5	.3	.41	.45	4.95	5.81
W-5	4.6	.3	.42	.69	4.98	6.09
P-3	.3	0	.24	.15	2.92	3.31
P-4	.3	0	.22	.02	2.68	2.92
B-2	0	0	.1	.09	1.21	1.4
B-4	.4	0	.28	.16	3.3	3.74

The following Environmental Assessment Form is a requirement of the Maryland Environmental Policy Act and Maryland Department of Transportation Order 11.01.06.02. Its use is in keeping with the provisions of 1500.4 (k) and 1506.2 and .6 of the Council of Environmental Quality Regulations, effective July 31, 1979, which recommend that duplication of Federal, State, and Local procedures be integrated into a single process.

The checklist identifies specific areas of the natural and social-economic environment which have been considered while preparing this environmental assessment. The reviewer can refer to the appropriate sections of the document, as indicated in the "Comment" column of the form, for a description of specific characteristics of the natural or social-economic environment within the proposed project area. It will also highlight any potential impacts, beneficial or adverse, that the action may incur. The "No" column indicates that during the scoping and early coordination processes, that specific area of the environment was not identified to be within the project area or would not be impacted by the proposed action.

ENVIRONMENTAL ASSESSMENT FORM

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
A. Land Use Considerations			
1. Will the action be within the 100 year flood plain?	<u>X</u>	___	<u>Section IV-E-2</u>
2. Will the action require a permit for construction or alteration within the 50 year flood plain?	___	<u>X</u>	_____
3. Will the action require a permit for dredging, filling, draining or alteration of a wetland?	<u>X</u>	___	<u>Section IV-E-4b</u>
4. Will the action require a permit for the construction or operation of facilities for solid waste disposal including dredge and excavation spoil?	___	<u>X</u>	_____
5. Will the action occur on slopes exceeding 15%?	___	<u>X</u>	_____
6. Will the action require a grading plan or a sediment control permit?	<u>X</u>	___	<u>Section IV-E-3</u>
7. Will the action require a mining permit for deep or surface mining?	___	<u>X</u>	_____
8. Will the action require a permit for drilling a gas or oil well?	___	<u>X</u>	_____
9. Will the action require a permit for airport construction?	___	<u>X</u>	_____
10. Will the action require a permit for the crossing of the Potomac River by conduits, cables or other like devices?	___	<u>X</u>	_____
11. Will the action affect the use of a public recreation area, park, forest, wildlife management area, scenic river or wildland?	___	<u>X</u>	_____

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
12. Will the action affect the use of any natural or man-made features that are unique to the county, state, or nation?	_____	<u>X</u>	_____
13. Will the action affect the use of an archeological or historical site or structure?	_____	<u>X</u>	_____
B. Water Use Considerations			
14. Will the action require a permit for the change of the course, current, or cross-section of a stream or other body of water?	_____	<u>X</u>	_____
15. Will the action require the construction, alteration, or removal of a dam, reservoir, or waterway obstruction?	_____	<u>X</u>	_____
16. Will the action change the overland flow of storm water or reduce the absorption capacity of the ground?	<u>X</u>	_____	<u>Section IV-E-3</u>
17. Will the action require a permit for the drilling of a water well?	_____	<u>X</u>	_____
18. Will the action require a permit for water appropriation?	_____	<u>X</u>	_____
19. Will the action require a permit for the construction and operation of facilities for treatment or distribution of water?	_____	<u>X</u>	_____
20. Will the project require a permit for the construction and operation of facilities for sewage treatment and/or land disposal of liquid waste derivatives?	_____	<u>X</u>	_____

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
21. Will the action result in any discharge into surface or sub-surface water?	<u>X</u>	_____	<u>Section IV-E-3</u>
22. If so, will the discharge affect ambient water quality parameters and/or require a discharge permit?	_____	<u>X</u>	_____
C. Air Use Considerations			
23. Will the action result in any discharge into the air?	<u>X</u>	_____	<u>Section IV-G</u>
24. If so, will the discharge affect ambient air quality parameters or produce a disagreeable odor?	_____	<u>X</u>	_____
25. Will the action generate additional noise which differs in character or level from present conditions?	<u>X</u>	_____	<u>Section IV-F</u>
26. Will the action preclude future use of related air space?	_____	<u>X</u>	_____
27. Will the action generate any radiological, electrical, magnetic, or light influences?	_____	<u>X</u>	_____
D. Plants and Animals			
28. Will the action cause the disturbance, reduction or loss of any rare, unique or valuable plant or animal?	_____	<u>X</u>	_____
29. Will the action result in the significant reduction or loss of any fish or wildlife habitats?	_____	<u>X</u>	_____
30. Will the action require a permit for the use of pesticides, herbicides or other biological, chemical or radiological control agents?	_____	<u>X</u>	_____

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	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
E. Socio-Economic			
31. Will the action result in a pre-emption or division of properties or impair their economic use?	<u>X</u>	<u> </u>	<u>Section IV-A-1</u>
32. Will the action cause relocation of activities, structures, or result in a change in the population density or distribution?	<u>X</u>	<u> </u>	<u>Section IV-A-1</u>
33. Will the action alter land values?	<u> </u>	<u>X</u>	<u> </u>
34. Will the action affect traffic flow and volume?	<u>X</u>	<u> </u>	<u>Section II-D</u>
35. Will the action affect the production, extraction, harvest or potential use of a scarce or economically important resource?	<u> </u>	<u>X</u>	<u> </u>
36. Will the action require a license to construct a sawmill or other plant for the manufacture of forest products?	<u> </u>	<u>X</u>	<u> </u>
37. Is the action in accord with federal, state, regional and local comprehensive or functional plans-- including zoning?	<u>X</u>	<u> </u>	<u>Section I-3-B</u>
38. Will the action affect the employment opportunities for persons in the area?	<u>X</u>	<u> </u>	<u>Section IV-A-1</u>
39. Will the action affect the ability of the area to attract new sources of tax revenue?	<u> </u>	<u>X</u>	<u> </u>
40. Will the action discourage present sources of tax revenue from remaining in the area, or affirmatively encourage them to relocate elsewhere?	<u> </u>	<u>X</u>	<u> </u>

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
41. Will the action affect the ability of the area to attract tourism?	_____	<u>X</u>	_____
F. Other Considerations			
42. Could the action endanger the public health, safety or welfare?	_____	<u>X</u>	_____
43. Could the action be eliminated without deleterious affects to the public health, safety, welfare or the natural environment?	_____	<u>X</u>	_____
44. Will the action be of statewide significance?	_____	<u>X</u>	_____
45. Are there any other plans or actions (federal, state, county or private) that, in conjunction with the subject action could result in a cumulative or synergistic impact on the public health, safety, welfare, or environment?	_____	<u>X</u>	_____
46. Will the action require additional power generation or transmission capacity?	_____	<u>X</u>	_____
47. This agency will develop a complete environmental effects report on the proposed action.	_____	<u>X*</u>	_____

*An environmental document satisfying the requirements of the National Environmental Policy Act will be prepared.

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**I. DESCRIPTION
OF PROPOSED ACTION**

I. DESCRIPTION OF PROPOSED ACTION

A. Project Location

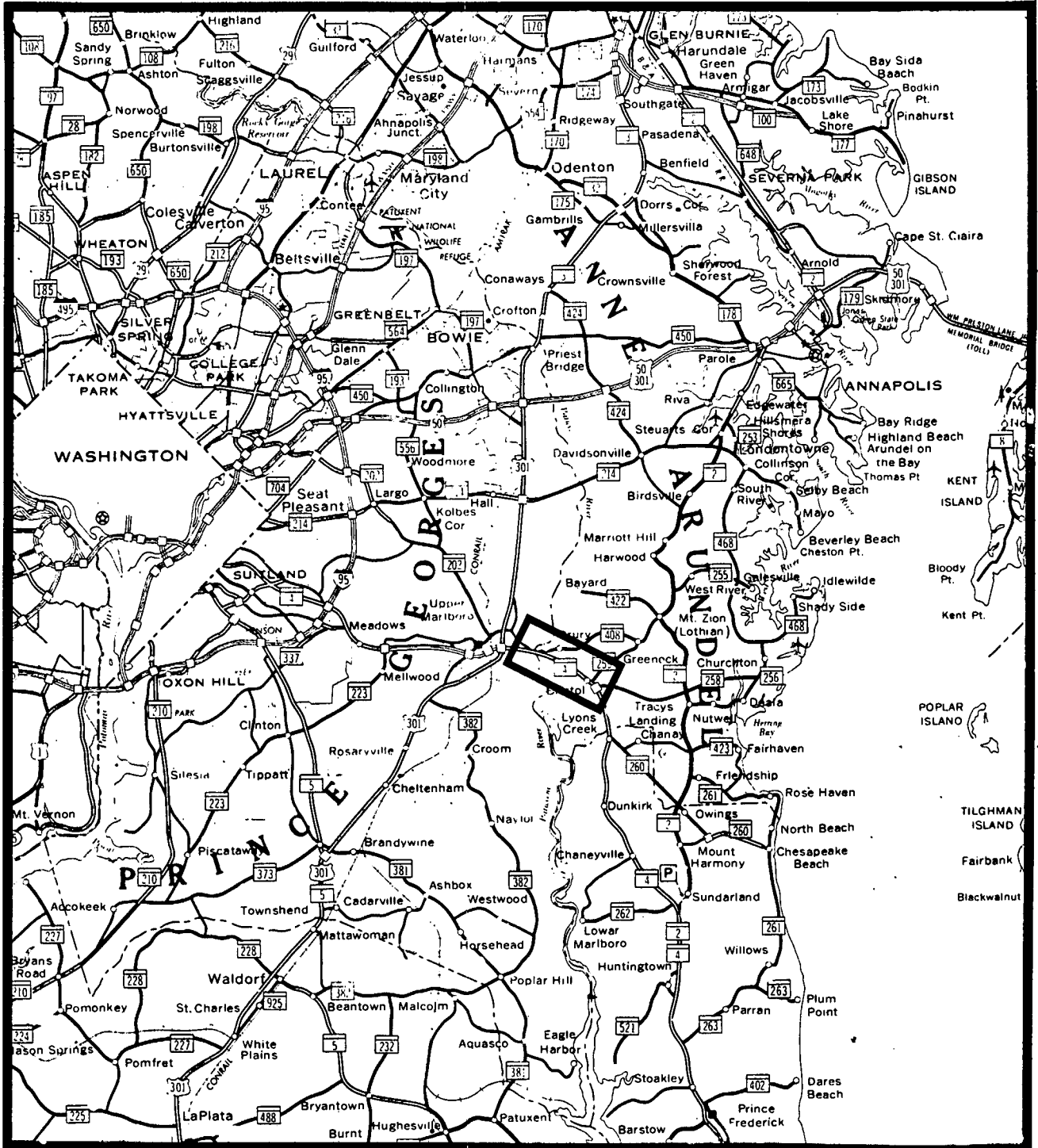
Maryland Route 4 is an Intermediate Arterial which serves as the primary commuter route for residents of Calvert and southern Anne Arundel Counties traveling to Washington, D.C. The project study area is located in the southwest corner of Anne Arundel County and extends into eastern Prince Georges County on Maryland's western shore (see figure I-1).

The project area begins approximately 400 feet north of Talbot Road, which is south of the Maryland Route 258 overpass at Bristol. The project area follows Maryland Route 4 northward and then curves west into Prince Georges County after crossing the Patuxent River. On the northern end of the project the improvements will transition into existing Maryland Route 4 approximately 1400 feet west of Maryland Route 726. The total length of the study area is approximately 3.5 miles. (See figure I-2)

B. Project Description

The purpose of the project is to improve the geometrics, sight distance, and control of access on the two lane northbound roadway to provide a safer and more effecient highway. A new two lane roadway would be constructed in the existing median, and the existing northbound roadway would function as a bi-directional service road.

Through-traffic would bypass the Wayson's Corner intersection where conflicts with Maryland Route 408 traffic and the many commercial entrances presently result in LOS F in the morning rush hour.

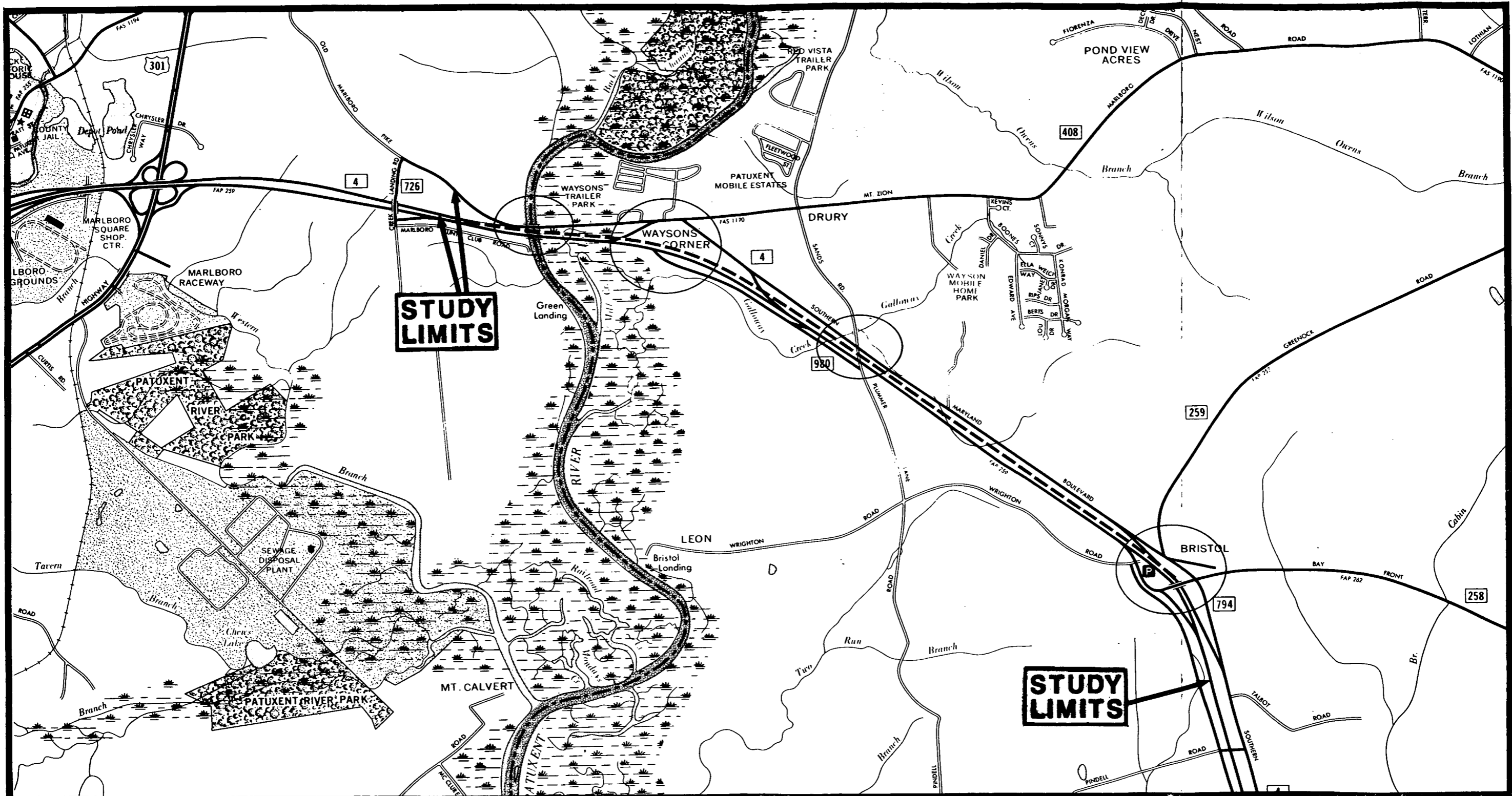


MARYLAND ROUTE 4

PROJECT AREA

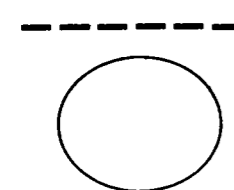
SCALE: 1" = 12 MI.

FIGURE 1-1



STUDY LIMITS

STUDY LIMITS



--- PROPOSED IMPROVEMENTS



○ INTERSECTION IMPROVEMENT/BRIDGE REPLACEMENT

MARYLAND ROUTE 4
STUDY AREA MAP

0 ————— 2000'

FIGURE I-2

The deteriorating 52 year old Patuxent River Bridge carrying northbound Route 4 would be reconstructed to safely handle increasing traffic demands and to raise the approaches above flood levels.

C. Description of Existing Environment

1. Social Environment

a. Population

The study area includes rural portions of Anne Arundel and Prince George's Counties, with the major portion situated in Anne Arundel County. According to the U.S. Bureau of Census, Prince George's County experienced a 0.5% increase in population in the period from 1970 to 1980, while Anne Arundel County's population grew by 19.6%. Population projections for the year 2000 indicate that population growth in Anne Arundel and Prince George's Counties will increase 22.6% and 10.1%, respectively.

More specifically, the proposed project is located within portions of Census Tract #7080 in Anne Arundel County and Census Tract #8006.1 in Prince Georges County (Figure I-3). The figures indicate that these census tracts base experienced significant population growth in the last decade. Growth in this area is due in large part to its location near Washington D.C.

During the last decade (1970 to 1980), the population in Census Tract #7080 increased by 29.8% (5538 to 7196 people) and by 41.7% in Census Tracts #8006.1 and 8006.2 (4451 to 6307).*

*For accurate population comparisons between 1970 and 1980, these latter two census tracts must be combined. Together, they comprise an area equivalent to the dimensions of 1970 Census Tract #8006 (split after the 1970 census).

An analysis of 1980 census data reveals that 79.6% of the population in Census Tract #7080 are white, 20.2% are black, 0.1% are American Indian, and 0.1% are Japanese. Approximately 14% of this population are age 60 and older. Of the 4875 people in Census Tract #8006.01, 48.2% were white, 50.9% were black, 0.1% were American Indian, 0.5% were of Oriental origin, and 0.2% were of other ethnic backgrounds. The number of elderly accounted for 4.4% of this population.

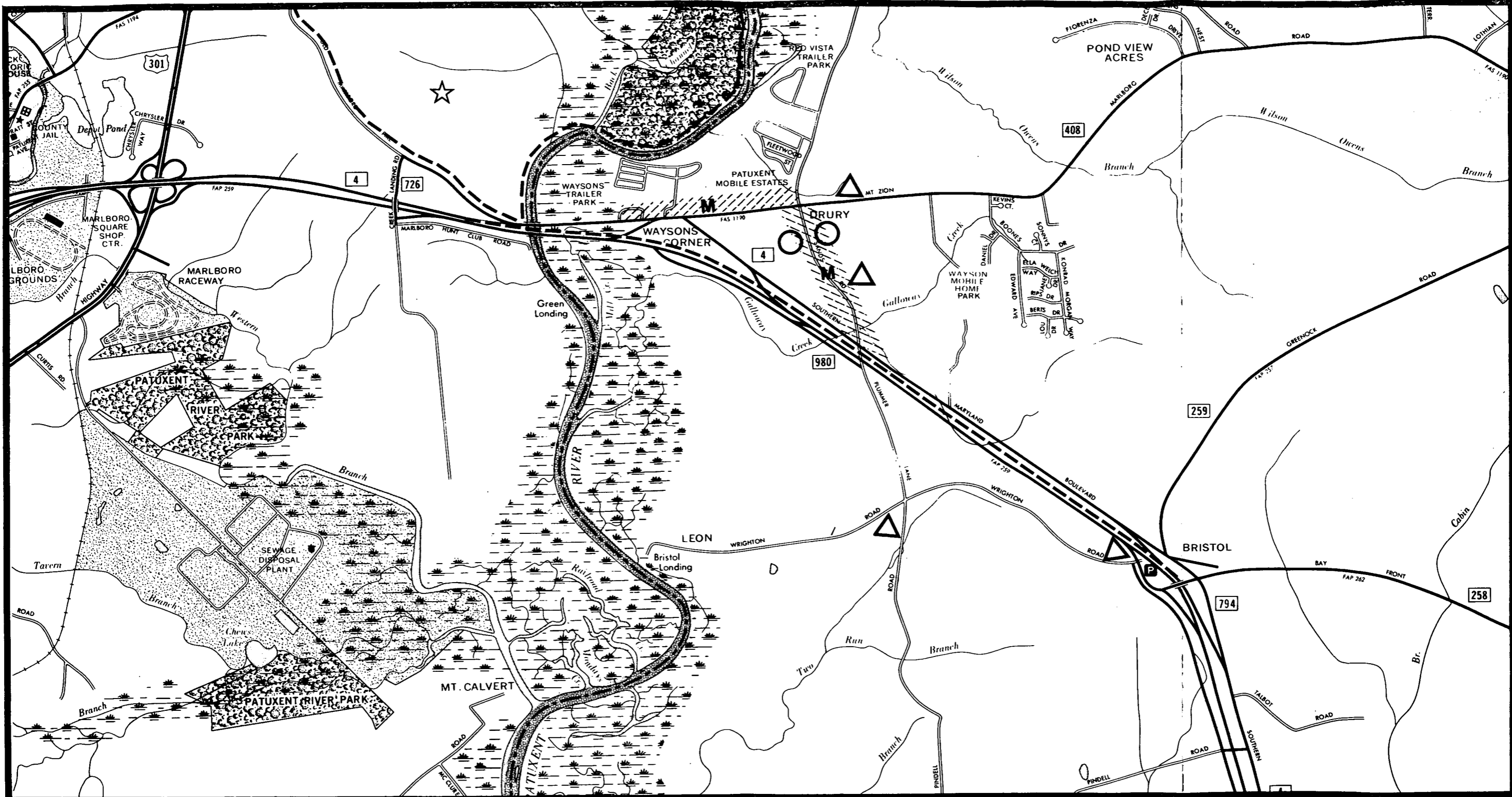
These populations were defined by the Census as living in rural areas, of which 5% lived on farms. The area is not intensively developed at this time.

Minority communities have been identified in the vicinity of Sands Road above Maryland Route 4, along Maryland Route 408 east of Waysons Corner, and on Maryland Route 4, west of Waysons Corner.

b. Community Facilities Figure I-4

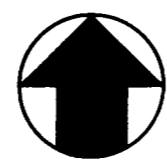
- Situated in the project study are the following:
 Park and Ride lot
 -Churches: Sollers Methodist
 Wesley Chapel United Methodist
 Miracle Temple
 Church of God
 -Lily of the Valley - Tabernacle Cemetery

Other community facilities are located outside of the study area, but provide service to local residents. Police protection is provided by the Maryland State Police, Forestville Barracks and county police departments in their respective counties. Fire and ambulance services are provided by the Anne Arundel County Fire Department, Deale



LEGEND

----- PROPOSED IMPROVEMENTS



▲ CHURCH

○ CEMETERY

P PARK & RIDE LOT

☆ NATIONAL REGISTER SITE

M MINORITY COMMUNITY

MARYLAND ROUTE 4

COMMUNITY FACILITIES AND HISTORIC SITES

0 2000'

FIGURE I-4

Station and the Prince George's County Fire Department, Upper Marlboro station. Schools and the post offices are located in Upper Marlboro and along Maryland Route 2, below the town of Mt. Zion. Parks are nearby along the Patuxent River. The closest hospitals are the Clinton Community Hospital, Southern Maryland Hospital Center in Clinton, the Bowie Health Center in Bowie, and the Prince Georges General Hospital in Cheverly.

The study area lacks public water and sewage facilities and none are planned for the area in the foreseeable future. Development in the area will continue to be served by on-site disposal systems and wells.

3. Economic Environment

Agriculture and several clusters of commercial and retail activity comprise the major economic element in the study area. Some of the area's most important agricultural lands are located here and tobacco, soybeans, hay and corn are the predominant agricultural products. Commercial areas are located at intersections at Bristol and Waysons Corner. These commercial areas typically consist of grocery stores, produce stands, gas stations, restaurants, and tobacco warehouses. Several other businesses are scattered around the area. Much of this retail activity is oriented to the local community needs.

According to the 1980 Census, the majority of the working population in Census Tracts #7080 and 8006.01 were employed in wholesale and retail trade, construction, public administration, and educational services. Of those workers 16 years and older, in Census Tract #7080, nearly 70% worked outside of Anne Arundel County. Approximately 41% of the

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workers in Census Tract #8006.01 worked outside of Prince George's County. Major employment areas near the project corridor are located at Upper Marlboro, Waldorf, Annapolis, and the Washington D.C. metropolitan area.

In 1979 median household income of the population in Census Tract #8006.01 was \$31,226 which was higher than the Prince George's County median figure of \$22,395. For Census Tract #7080, this figure was \$20,055. This is slightly less than the Anne Arundel County median household income of \$22,676.

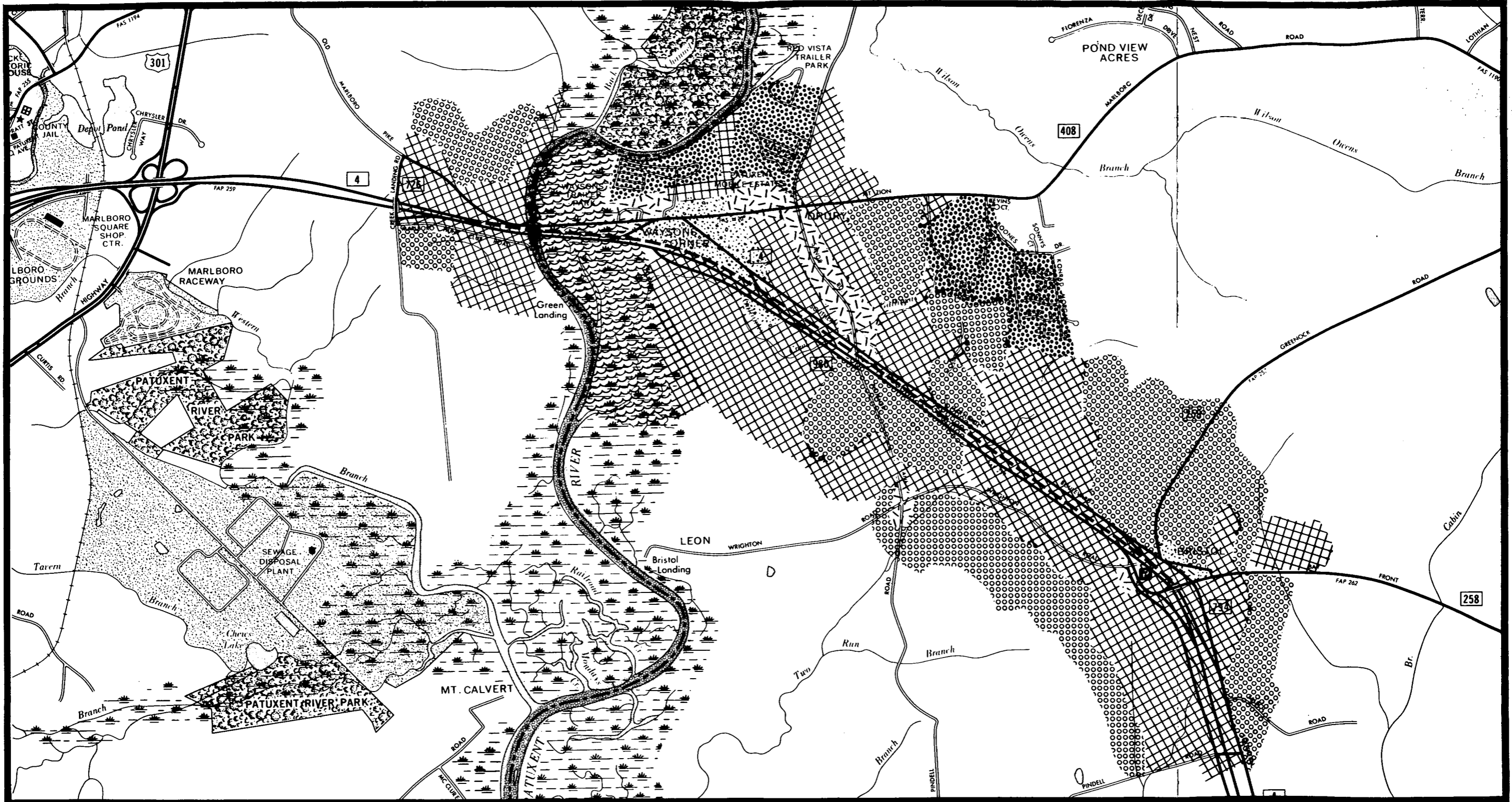
4. Land Use (Figure I-5)

a. Existing







Predominant land use in the study area is agriculture and woodland. High density residential development in the form of trailer parks are situated on the north and south side of Maryland Route 408 east of Waysons Corner. Medium density residential uses are located along Sands Road and near major intersections. The major commercial areas are found at Waysons Corner and along Maryland Route 259, at Bristol. The majority of the land in the study area is undeveloped and outside of both counties planned water and sewer service areas.

b. Future

The Prince George's County General Plan (1982) and the Anne Arundel County General Development and Land Use Plan (1978) project no significant changes from the existing land use in the study area. There is no impending extension of urban services, such as water and sewage. The policies for these outlying rural areas of the counties would be:



LEGEND

-  WETLANDS
-  HIGH DENSITY RESIDENTIAL
-  MEDIUM DENSITY RESIDENTIAL
-  FOREST/BRUSH
-  COMMERCIAL
-  AGRICULTURAL/RURAL RESIDENTIAL

----- PROPOSED IMPROVEMENTS



MARYLAND ROUTE 4

EXISTING AND FUTURE LAND USE

0 _____ 2000'

FIGURE 1-5

- 1) to retain and encourage the existence of agricultural and forested lands as the primary land use and promote an agricultural-based economy and
- 2) to encourage non-agricultural uses such as very low density rural residential uses. Natural areas along the Patuxent River are to be conserved and maintained. Outside of the residential/commercial cluster at Waysons Corner, zoning in both counties is primarily rural agriculture.

5. Historic and Archeological Sites (Figure I-4)

The project area was reconnoitered for both historic and archeological sites. Only one National Register listed or eligible historic site, Compton Bassett, is located within the area of possible environmental impacts.

The State Historic Preservation Officer, in his December 19, 1984 letter, (see appedix) suggested additional analysis for a house at Hills Landing to determine significance. However, as the site is located well south of and on the opposite side of the road from where improvements will occur, it was determined that it was too far away to warrant additional work.

The Maryland Geological Survey, in its September 23, 1985 letter, (see appendix) reports that there are no archeological resources in the study area.

6. Natural Environment

a. Topography/Physiography

The study area lies on the western shore of the Coastal Plain physiographic province. Terrain in the area is generally flat to gently rolling with elevations ranging from sea level to approximately 200 feet above sea level. Generally, existing slopes are within a range of 0% to 10%.

b. Geology

The Coastal Plain Province is underlain by a crystalline basement composed of mica, gneiss, gabbro and other rocks which outcrop on the Piedmont Plateau. This basement is covered by a series of sedimentary rocks. These cretaceous rocks form the Potomac Group of interbedded quartzite gravels, protoquartzitic to orthoquartzitic argillaceous sands and multicolored silts and clays. The Potomac Group is composed of three distinct formations:

Raritan and Patapsco Formations - gray, brown, and red variegated silts and clays; lenticular, cross-bedded, argillaceous, subrounded sands, minor gravels; thickness 0 to 400 feet.

Patuxent Formation - white or light gray to orange-brown, moderately sorted, cross bedded, argillaceous, angular sands and subrounded quartz gravels; silts and clays subordinate, predominantly pale gray; thickness 0 to 250 feet.

Groundwater supplies in the study area primarily originate from two major water-bearing formations, the Magothy and Patapsco-Raritan. The Patapsco-Raritan is an extremely productive groundwater source, yielding 3 to 2160 gpm. The major water-bearing sands of this formation lie approximately 400 to 500 below the surface. The Magothy aquifer lies approximately 300 to 400 feet below the surface within

within the study area. This formation also has high potential for yielding from 5 to 400 gpm.

c. Soils

Soils in the study area belong to three major soil associations:

Marr-Westphalia - Sassafrass association - Composed of gently sloping to steep, dominantly severely eroded, well drained, loamy soils that contain much fine sand.

Galestown - Evesboro - Rumford association - consists of mostly nearly level and gently sloping, sandy soils.

Collington - Matapeake - Galestown association: Contains deep, well drained to excessively drained, nearly level to strongly sloping soils along the Patuxent River.

Prime Farmland Soils - A small portion of the study area has been classified by the U.S. Department of Agriculture, Soil Conservation Service as Prime Farmland Soils (see figure I-6). There is no indication of any unique farmland within the study area.

d. Surface Water

The Patuxent River and tributaries, Galloway Creek, Deep Creek and Mill Creek provide drainage within the study area.

The Maryland Department of Health and Mental Hygiene has classified all surface waters of the state into four (4) categories according to desired use. All waters of the state are Class I, with additional protection provided by higher classifications. All surface waters in the study area are designated Class I.

e. Floodplains

The 100 year floodplain within the study area is

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located in the vicinity of the Patuxent River crossing. The floodplain limits, shown on the Alternates mapping are based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM).

f. Ecology

1.) Terrestrial Habitat

The Maryland Route 4 study area consists of two major terrestrial habitat types. Woodland or forested areas can be identified and subdivided into the vegetation associations listed below:

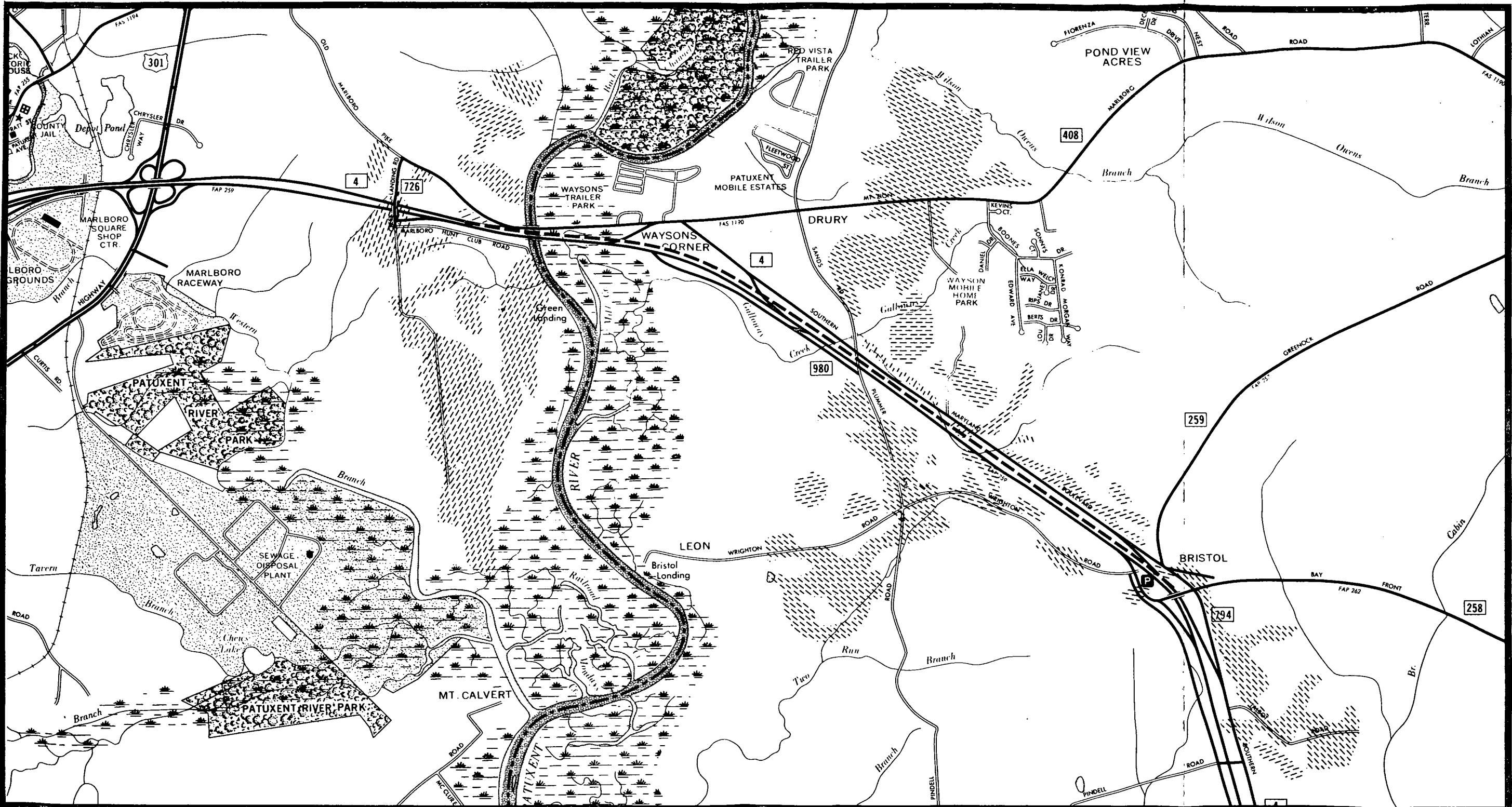
Tulip Poplar Association: This association is characterized by the presence of tulip poplar in the absence of any other characteristic species. Common associated species include red maple, flowering dogwood, Virginia creeper, black gum, white oak, sassafrass, black cherry, grape, mockernut hickory, southern arrowwood, black locust, ironwood and poison ivy.



River Birch - Sycamore Association: Besides river birch and/or sycamore, representative species include slippery elm, green ash, spicebush, and poison ivy. This association is found mainly in the Coastal Plain province along most of the higher order of streams.

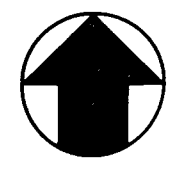
2.) Aquatic Habitat (see Alternates mapping)

Wetland areas potentially affected by the proposed project were investigated using National Wetland Inventory Maps (U.S. Fish and Wildlife). Numerous Palustrine tidal wetlands are located in the Maryland Route 4 study area in the vicinity of the Patuxent River crossing. These wetlands are subdivided into four classifications by the U.S. Department of Interior, Fish and Wildlife Service as follows:

Emergent - narrow leaved persistent, seasonally tidal
Scrub Shrub - broad leaved deciduous, seasonally tidal
Forested - broad leaved deciduous, seasonally tidal
Open Water - permanently tidal



 PRIME FARMLAND SOILS
 PROPOSED IMPROVEMENTS



MARYLAND ROUTE 4
PRIME FARMLAND SOILS MAP

0 2000'

FIGURE I-6

Predominant vegetation found in these types of wetlands include cattails, bullrushes, saw grass, sedges, and grasses in the emergent wetland areas. These give way to species such as sea myrtle, marsh elder, willows, button bush, alders, spirea and long birch in scrub shrub areas and red maple, American elm, black gum, swamp white oak and basket oak in forested areas closer to uplands.

Non-tidal wetlands have also been identified within the study area and are generally found in areas providing local drainage. These wetlands are classified by the U.S. Fish and Wildlife Service as follows:

- Palustrine Forested - Broad leaved deciduous
- Palustrine Emergent - Narrow leaved persistent
- Riverine - Upper Perennial - open water

g. Endangered Species

Coordinations with the U.S. Fish and Wildlife Service and the Maryland Department of Natural Resources indicates that no known federally listed endangered species have been recorded in the project area. See letters dated August 6, 1984 and August 16, 1984 in the correspondence section.

7. Air Quality

The Maryland Route 4 project is within the Metropolitan Baltimore and the National Capital Interstate Air Quality Control Region. Both regions do not meet the primary standards for carbon monoxide (CO) and are subject to transportation control measures such as Vehicle Emissions Inspections Program.

A detailed microscale air quality analysis has been performed to determine the CO impact of the proposed project which is described in further detail in Section IV.

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8. Existing Noise Conditions

Four (4) noise sensitive areas (NSA) have been identified in the Maryland Route 4 study area. Descriptions of the noise sensitive areas are provided in Table 2. The location of the NSA's are shown on the Alternates mapping. A copy of the technical analysis report is available at the State Highway Administration, 707 North Calvert Street, Baltimore, Maryland 21202.

Highway traffic noise is usually measured on the "A" weighted decibel scale "dba", which is the scale that has a frequency range closest to that of the human ear. In order to give a sense of perspective, a quiet rural night would register about 60 dbA, and a very noisy urban daytime about 80 dbA. Under typical field conditions, noise level changes of a 2-3 dbA can barely be detected, with a 5 dbA change readily noticeable. A 10 dbA increase is judged by most people as a doubling of sound and loudness. (This information is presented in the "Fundamentals and Abatement of Highway Traffic Noise" by Bolt, Beranek & Newman, Inc. for FHWA, 1980).

The Federal Highway Administration has established, through Federal-Aid Highway Program Manual (FHPM) 7-7-3, noise abatement criteria for various land uses. (See Table 3).

Table 2
Noise Sensitive Areas
Maryland Route 4

<u>Noise Sensitive Area</u>	<u>Activity Category</u>	<u>Description</u>
1	B	1400 Maryland Route 4, 1 story single family frame residence
2	B	Maryland Route 4, intersection of Sands Road edge of right-of-way
3	B	1002 Wrigton Road, 2 story single family frame residence
4	B	5761 Greenock Road, 1 story single family brick residence

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Table 3

NOISE ABATEMENT CRITERIA AND LAND USE RELATIONSHIPS
SPECIFIED IN FHPM 7-7-3

<u>ACTIVITY CATEGORY</u>	<u>Leq (h)</u>	<u>L 10 (h)</u>	<u>DESCRIPTION OF ACTIVITY CATEGORY</u>
A	57 (Exterior)	60 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	70 (Exterior)	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals
C	72 (Exterior)	75 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	--	--	Undeveloped lands.
E	52 (Interior)	55 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.

These levels are expressed in terms of an Leq noise level which is the energy-averaged noise level for a one-hour time period. All ambient and predicted levels in this report are Leq exterior noise levels unless otherwise noted.

Measurement of ambient noise levels is intended to establish the basis for impact analysis. The ambient noise levels as recorded represent a generalized view of present noise levels. Variations with time of total traffic volume, truck traffic volume, speed, etc., may cause fluctuations in ambient noise levels of several decibels. However, for the purposes of impact assessment, these fluctuations are not sufficient to significantly affect the assessment. Ambient noise levels were measured at noise sensitive areas in the Maryland Route 4 study area during the non-rush hour period based on the diurnal traffic curve.

It was determined for all noise sensitive areas, the most typical noise conditions occur during the non-rush hour period (9:00 a.m. - 4:00 p.m.). During this time, the highest noise levels are experienced for the greatest length of time.

The results of the ambient measurements are included in Table 6 along with the predicated noise levels; also see the Alternates mapping for NSA receptor locations.

II. NEED FOR THE PROJECT

II. NEED FOR THE PROJECT

A. Purpose

The purpose of this study is to evaluate alternatives to eliminate the unsafe operating conditions of a portion of northbound Maryland 4 between Maryland Route 258 at Bristol in Anne Arundel County and Maryland 726, just north of the Patuxent River crossing, in Prince George's County, a distance of approximately 3.5 miles.

Maryland Route 4 serves regional travel needs and is the primary roadway in Calvert County. Rush hour traffic on Maryland Route 4 within the study limits is typically commuter oriented, with residents from Calvert and southern Anne Arundel Counties traveling primarily to and from the Washington D.C. metropolitan area. The distance from Waysons Corner to the Capital Beltway (I-95) is approximately 10 miles. Maryland Route 4 also carries extensive weekend resort traffic to and from the southern Maryland/ Chesapeake Bay beach and resort areas.

Calvert County is experiencing development pressure as the demand for housing around Washington D.C. area increases. The Calvert County population increased by 67.5% between 1970 and 1980 and is projected to grow by another 35.7% by the year 1990. Increasing population demands are likely to result in a proportionate increase in commuter traffic.

The proposed improvement would include a new two lane northbound roadway with full control of access except at the Sands Road/Plummer Lane intersection to provide a safer and more efficient highway.

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Proposed improvements at Bristol are needed to correct geometric deficiencies and provide a safer interchange with better traffic flow and full control of access.

Realignment of the Sands Road/Plummer Lane intersection is required with the relocation of northbound Maryland Route 4. This crossover is essential for local circulation but will be designed with improved geometrics and sight distance creating a safer intersection.

Improvements at Waysons Corner will eliminate the need for signalized intersections on mainline Route 4, facilitating the flow of traffic and improving safety in the Waysons Corner commercial area. Providing convenient access to this area is one of the goals of the interchange design.

Replacement of the deteriorating Patuxent River bridge is necessary in order to safely handle increasing traffic demands. The northbound approach road to the bridge, currently experiencing occasional flooding, will be redesigned to eliminate this problem.

B. History

The State's Primary Highway System for purposes of access control improvements indicates that Maryland Route 4 from Maryland Route 260 in Calvert County to Interstate Route 95 in Prince George's County should be pursued as a freeway.

Maryland Route 4 is an element of the Primary Highway System of Maryland and serves as an Intermediate Arterial. Northbound Maryland Route 4 within study limits is the only unimproved segment of this highway in the corridor. Improvements to the level of control of access are consistent with the highway's inclusion in the Primary System.

The proposed improvements to Maryland Route 4 are consistent with the current Anne Arundel County Development Plan adopted in 1978. The plan refers to Maryland Route 4 as "a transportation corridor that should be upgraded to provide a safe and effecient roadway." When the existing southbound lane of Maryland Route 4 was constructed in the 1960's sufficient right-of-way was purchased to allow for construction of a new northbound lane to achieve the unltimate goal of a freeway with controlled access.

Since 1968, the need to improve Maryland Route 4 in the Wayson's Corner area has ben identified in the Department's Highway Needs Inventory (HNI). It is included as a line item in the 1984 HNI Update.

Original project limits for Maryland Route 4, identi- fied in the 1984-1989 CTP, were "MD 258 to the Prince George's County Line". The project has been revised to extend from just south of Maryland Route 258 to Maryland Route 726 to include reconstruction of the span over the Patuxent River.

C. Existing Roadway

Within the study area the existing road is a four lane divided highway separated by a predominantly wooded median which varies in width. The southbound roadway, reconstruc- ted in the 1960's, has two twelve foot lanes with ten foot outer shoulders, four foot inner shoulders and full control of access with a break at the Plummer lane intersection. The northbound roadway is comprised of two ten foot lanes, no shoulders and no access controls. The posted speed on

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southbound Maryland 4 is 55 mph throughout the project area. The posted speed on northbound Maryland 4 between Bristol and Sands Road is also 55 mph but decreases to 50 mph north of Sands Road and down to 30 mph in the vicinity of Waysons Corner due to traffic stoppages at signalized intersections in the area and pedestrian traffic.

D. Traffic Conditions

The growing need for additional housing within commuting distance to the Washington D.C. metropolitan area is spurring new development in areas of southern Anne Arundel and Calvert Counties. This development is placing increasing traffic demands on Maryland Route 4, the primary roadway connecting Washington D.C. and communities in these areas.

Average daily traffic (ADT) on Maryland Route 4 was 29,600 vehicles per day in 1984 with an estimated increase of 70% or approximately 42,000 vehicles per day in the design year 2010. Figure II-1 shows the average daily traffic volume within the study area. Approximately 40% of the present ADT is occurring between 6 a.m. to 8 a.m. and 4 p.m. to 6 p.m. indicating a heavy directional flow of commuter traffic.

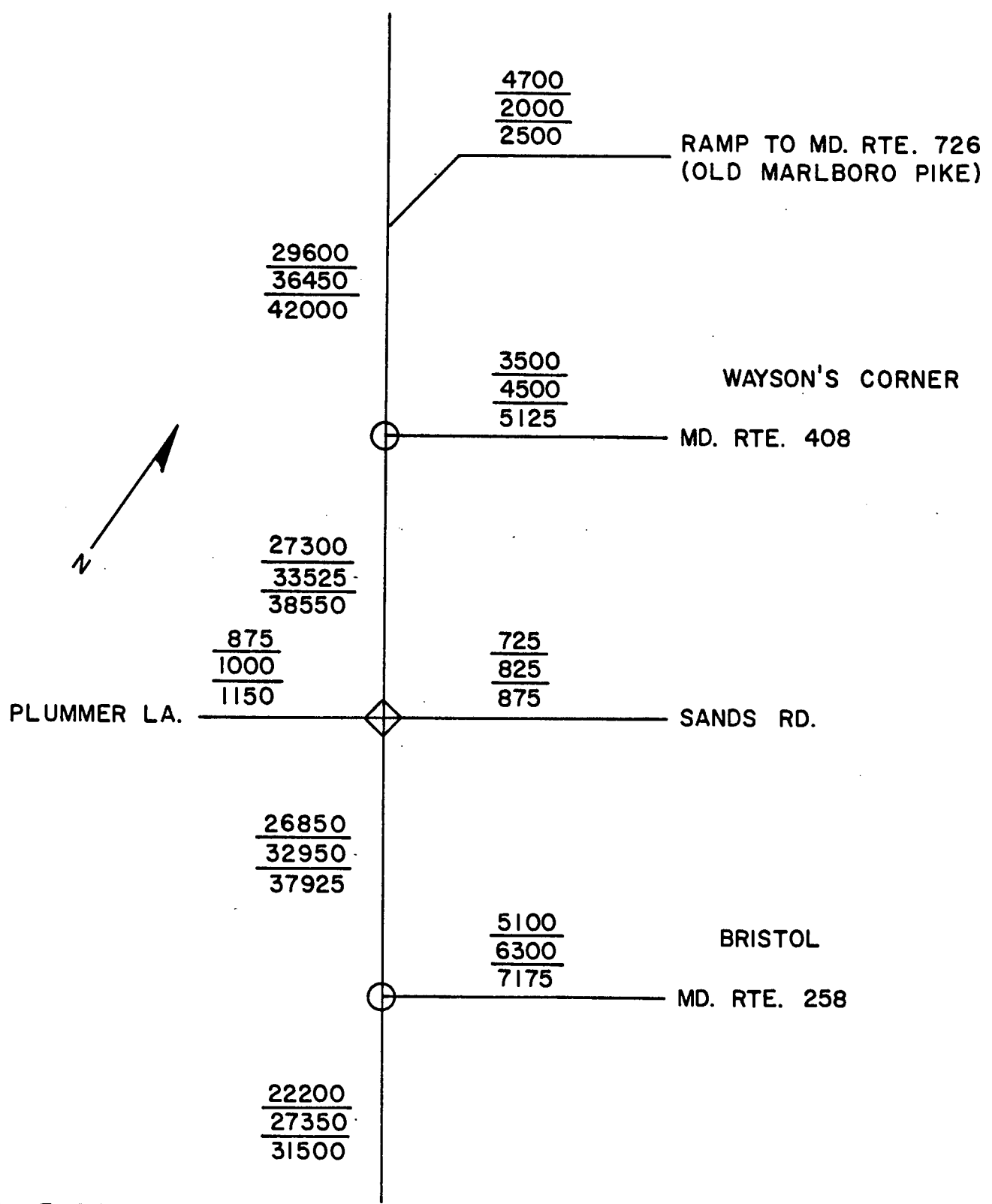
Quality of traffic flow along a highway is measured in terms of level of service (LOS). This measure is dependent upon highway geometry and traffic characteristics and ranges from LOS "A" (Best) to LOS "C" (Minimum Desirable), to LOS "E" (Capacity), and LOS "F" (Worst or forced flow). An analysis of traffic operations on Maryland Route 4 indicates that the roadway operates at level of service "A"

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MD. RTE. 4

AVERAGE DAILY TRAFFIC

FIGURE II-1



○ INTERCHANGE
◇ INTERSECTION

EXISTING	1984	ADT
BUILD	1990	ADT
DESIGN	2010	ADT

under normal off-peak conditions. During peak hour traffic flow, the roadway operates at LOS "C" except for the Maryland Route 408 intersection at Waysons Corner which operates at LOS "F" during morning rush hour. If no improvements are made, the roadway will operate at LOS "D", approaching LOS "E" by the design year 2010. Severe congestion would continue in the Waysons Corner vicinity which would probably remain a high accident section.

E. Safety Conditions

Within the project study area, Maryland Route 4 has experienced 89 reported accidents in the three year period for the years 1981 through 1983. This results in an accident rate of 99 accidents per one hundred million vehicle miles of travel (acc/100 mvm). This rate is significantly lower than the statewide average rate of 162 acc/100mvm for all highways of similar design now under state maintenance. The corresponding cost to the motoring and general public as a result of these accidents is approximately \$1,900,000/100 mvm.

There have been four fatal accidents during the study period with three occurring at the intersection of Sands Road and northbound Maryland Route 4. The other fatality occurred at the Maryland Route 408 intersection with Maryland Route 4. A 0.5 mile segment of Maryland Route 4, encompassing the two-way traffic at Waysons Corner and the Maryland Route 408 intersection is identified as a 1982 high accident section (HAS). Also, the first 0.5 mile segment of Maryland Route 408 from Maryland Route 4 Eastward is likewise designated.

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The existing northbound Maryland Route 4 roadway between Bristol and Wayson's Corner lacks adequate shoulders, which contributes to the existing hazardous condition. The two-way operation through the signalized Maryland Route 4/Maryland Route 408 intersection causes queuing conflicts and delays during the morning peak hours.

Although the rate for all collision types falls within the expected range for highways of similar design, many accidents can be attributed to poor sight distance and geometric deficiencies on northbound Maryland Route 4 and intersecting roadways.

III. ALTERNATES CONSIDERED

III. ALTERNATES CONSIDERED

A. Alternates No Longer Under Consideration

The following preliminary alternates were presented at the Alternates Public Meeting held on April 17, 1985, but were dropped from further consideration by the project team for the reasons explained below:

Alternate B-3 at Bristol proposed the same improvements for the northeast and northwest quadrants of the Maryland Route 4/Maryland Route 258 interchange as Alternate B-4, a lesser improvement to the westside frontage road (MD 980) than proposed for Alternate B-4, and the same improvement for the southeast quadrant as described for Alternate B-2. This alternate was dropped from further development because the proposed improvements were already covered by a combination of the other build alternates.

Alternate P-2 at Plummers Lane/Sands Road eliminated the existing skewed intersection by relocating Plummers lane to the south, intersecting with Maryland Route 4 and ending at a T-intersection with the eastside frontage road (existing northbound Maryland Route 4). This alternate was dropped from further development because it did not improve the inadequate sight distance problem at the intersection of Sands Road and the eastside frontage road (existing northbound Maryland Route 4) and severe vertical geometry problems would not have permitted the extension of relocated Plummer Lane to the eastside frontage road.

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Wayson's Corner proposed the same Maryland Route 4/MD 408 interchange as that the southbound MD 4 exit and replaced by a loop ramp and a directional (southeast) quadrant and Maryland connect with Maryland Route 980. This from further development because of on to the 100 year floodplain limits rison with Alternate W-3, the lack of a Maryland Route 408 and Maryland Route d travel distance necessary to gain ute 980 from southbound Maryland Route

Wayson's Corner proposed the same Maryland Route 4/Maryland Route 408 ate W-5 except that the southbound and entrance ramps are replaced by a a loop ramp in the northwest and Maryland Route 408 does not connect 80. This alternate was dropped from ecause of the increased intrusions to in limits and wetlands in comparison he lack of a connection between d Maryland Route 980, and the increased sary to gain access to Maryland Route Maryland Route 4.

B. Alternates Retained for Detailed Studies

The major improvement under consideration for the Maryland Route 4 corridor is the relocation of the northbound roadway within the existing median. The dual highway would consist of the new northbound roadway, located east of the existing southbound roadway and separated from it by a 58 foot wide depressed median. The existing northbound roadway would become a two-way frontage road from Bristol to north of Wayson's Corner.

Because of the access adjustments required for the relocation of the northbound roadway, the Maryland Route 4 study corridor has be subdivided into four sections. The project alternates have been letter-coded so that a set of project alternates could be developed by combining alternates:

<u>Alternate Identification</u>	<u>Alternate Location</u>
Alternates B-1, B-2, and B-4	Bristol Vicinity (MD 258)
Alternates P-1, P-3, and P-4	Plummer Lane/Sands Road
Alternates W-1, W-2, W-3 and W-5	Wayson's Corner Vicinity (MD 408)
Alternates R-1 and R-2	Patuxent River Crossing

1. No-Build Alternate

The first alternate for each section (B-1, P-1, W-1 and R-1) is the No-Build Alternate. No major construction or changes to existing traffic movements would result. This does not preclude the future implementation of maintenance or safety improvements by the State Highway Administration. Daily operational problems can be expected to become compounded due to traffic volume growth if the No-Build Alternate were to be selected.

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2. Build Alternates

The relocation of northbound Maryland Route 4, is common to all build alternates. Access to Maryland Route 4 would be improved at Bristol (MD 258), Plummer Lane/Sands Road, and Wayson's Corner (MD 408). While both the Bristol and Plummer Lane/Sands Road alternate locations would require relatively minor modifications to existing travel patterns, the Wayson's Corner interchange alternates would require extensive construction to provide acceptable access to Wayson's Corner.

a. Bristol

The Build Alternates in the Bristol segment include construction of a new two lane northbound Maryland Route 4 roadway. Improvements to northbound Maryland Route 4 would begin north of the Maryland Route 258 overpass. The existing northbound Maryland Route 4 would become a two-way frontage road. The existing connection between the northbound Maryland Route 4 and the proposed two-way frontage road (existing Maryland Route 4 northbound) would be removed. Ramp improvements in the Bristol vicinity begin north of Talbot Road.

Alternate B-2 (Figures III-1)

Alternate B-2 involves operational improvements that include relocation of the existing Park'n'Ride Facility entrance and realignment of the left turn movement from Maryland Route 258 to Wrighton Road, improving the geometric design of that intersection. A new ramp would be added

LEGEND



PROPOSED ROADWAY IMPROVEMENTS



EXISTING PAVING TO BE REMOVED



PROPOSED GUARD RAIL BARRICADE



PROPOSED RETAINING WALL



PROPOSED BRIDGE



100 YR. FLOODPLAIN



TIDAL WETLANDS



NON-TIDAL WETLANDS



NOISE SENSITIVE AREA



AIR QUALITY RECEPTOR



REQUIRED RELOCATION

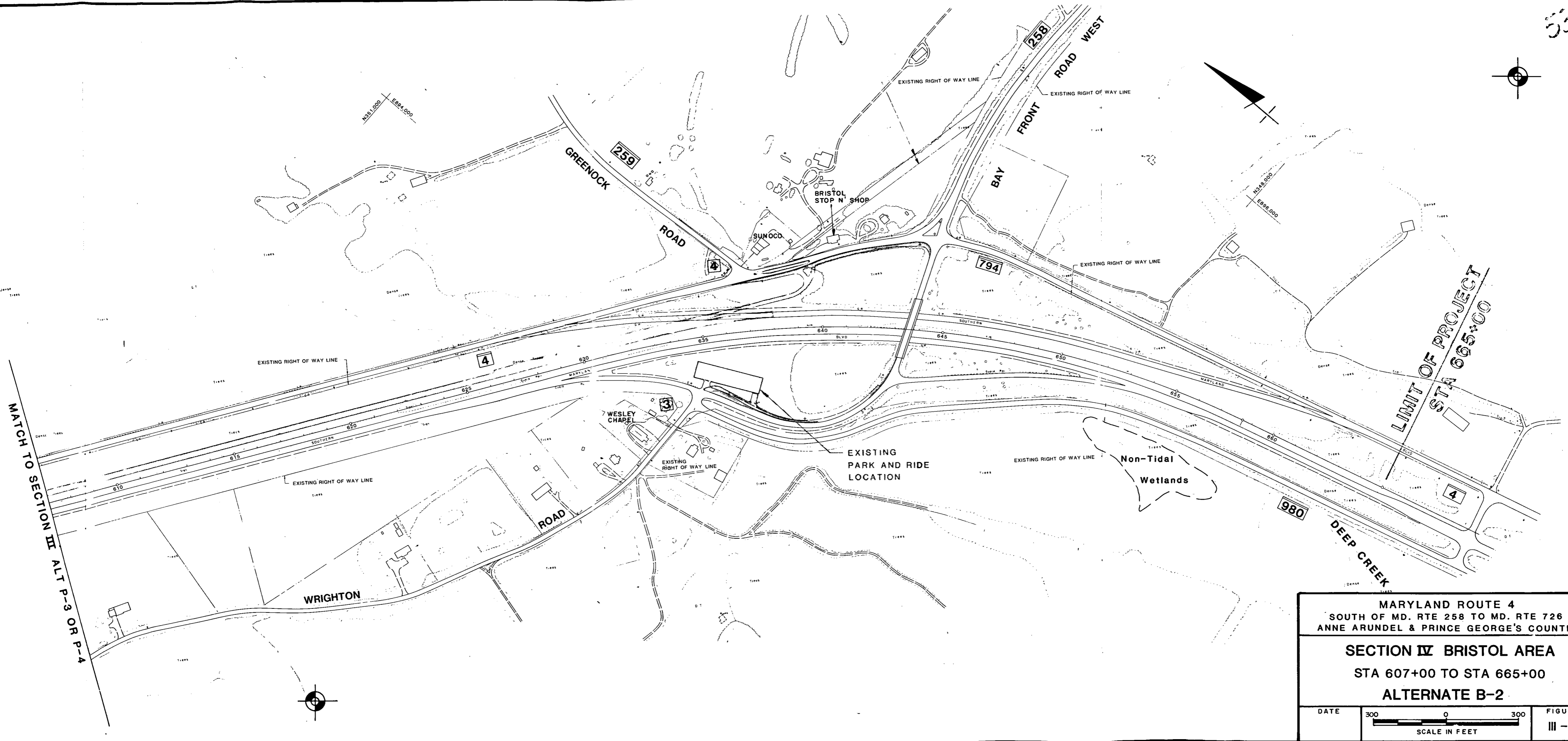


EXISTING RIGHT-OF-WAY LINE OR
PROPERTY LINE



APPROXIMATE PROPOSED
RIGHT-OF-WAY LINE

MD. ROUTE 4
FROM SOUTH OF MD. 258 TO MD. 726
AA 376-101-570



MATCH TO SECTION III ALL P-3 OR P-4

LIMIT OF PROJECT
STA 665+00

MARYLAND ROUTE 4 SOUTH OF MD. RTE 258 TO MD. RTE 726 ANNE ARUNDEL & PRINCE GEORGE'S COUNTIES		
SECTION IV BRISTOL AREA STA 607+00 TO STA 665+00 ALTERNATE B-2		
DATE	 SCALE IN FEET	FIGURE III - 1

from Maryland Route 794 to the proposed Maryland Route 4 northbound in Bristol. Access controls along Maryland Route 794, south of Maryland Route 258 would be purchased and the roadway would become a one-way ramp from northbound Maryland Route 4 to Maryland Route 258.














Alternate B-4 (Figure III-2)

Alternate B-4 features the relocation of the three diamond ramps in the northwest, northeast and southeast quadrants. The existing southeast quadrant ramp (Maryland Route 794) would be closed to access from northbound Maryland Route 4. The existing northeast quadrant ramp (Maryland Route 794) would tie into the two-way frontage road (existing northbound Maryland Route 4), and its intersection with Maryland Route 258 would be relocated to the east to provide room for the new ramp from Maryland Route 258 to northbound Maryland Route 4. A segment of the westside frontage road (Maryland Route 980) would be reconstructed, and Maryland Route 258 would be realigned to end at a T-intersection at relocated Maryland Route 980. The new northwest quadrant ramp would end at Maryland Route 258 directly opposite the existing southwest quadrant ramp. The existing northwest quadrant ramp would be removed, and the existing Park'n'Ride lot would be relocated.

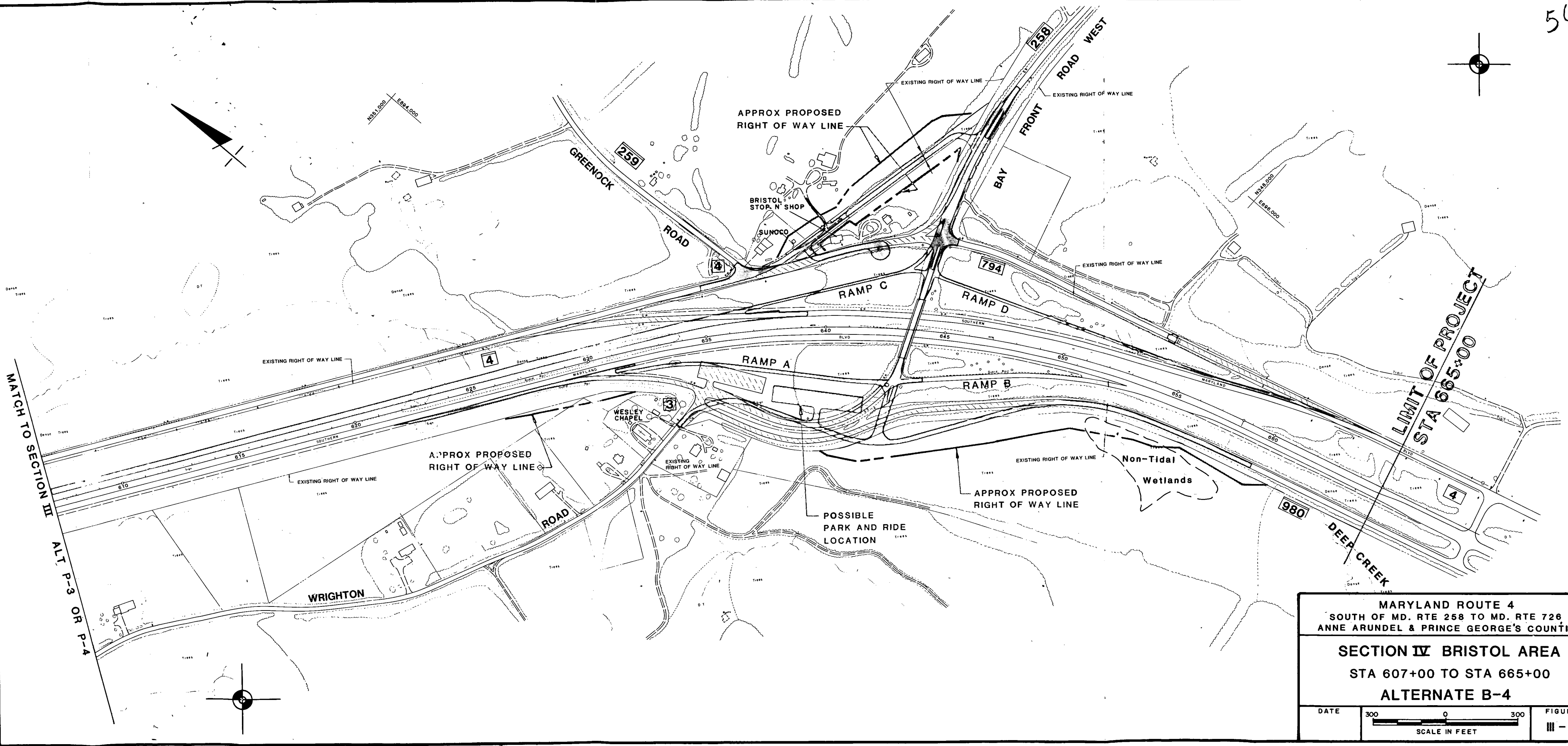
b. Plummer Lane/Sands Road

The Build Alternates in this segment include construction of a new two-lane northbound Maryland Route 4 roadway. The existing northbound Maryland Route 4 would become a two-way frontage road. Intersection improvements here are related to Build Alternates in the Wayson's Corner segment.

LEGEND

	PROPOSED ROADWAY IMPROVEMENTS
	EXISTING PAVING TO BE REMOVED
	PROPOSED GUARD RAIL BARRICADE
	PROPOSED RETAINING WALL
	PROPOSED BRIDGE
	100 YR. FLOODPLAIN
	TIDAL WETLANDS
	NON-TIDAL WETLANDS
	NOISE SENSITIVE AREA
	AIR QUALITY RECEPTOR
	REQUIRED RELOCATION
	EXISTING RIGHT-OF-WAY LINE OR PROPERTY LINE
	APPROXIMATE PROPOSED RIGHT-OF-WAY LINE

MD. ROUTE 4
 FROM SOUTH OF MD. 258 TO MD. 726
 AA 376-101-570



MARYLAND ROUTE 4 SOUTH OF MD. RTE 258 TO MD. RTE 726 ANNE ARUNDEL & PRINCE GEORGE'S COUNTIES		
SECTION IV BRISTOL AREA STA 607+00 TO STA 665+00 ALTERNATE B-4		
DATE	SCALE IN FEET	FIGURE III - 2






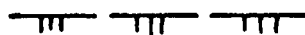







Alternate P-3 (Figure III-3)

Alternate P-3 involves a northbound relocation of the existing Maryland Route 4 to provide improved geometrics and sight distance. The Sands Road approach is relocated to the north, intersecting the eastside frontage road (existing northbound Maryland Route 4), then intersecting Maryland 4, and ending at a T-intersection with Maryland Route 980. The existing intersection would be removed.

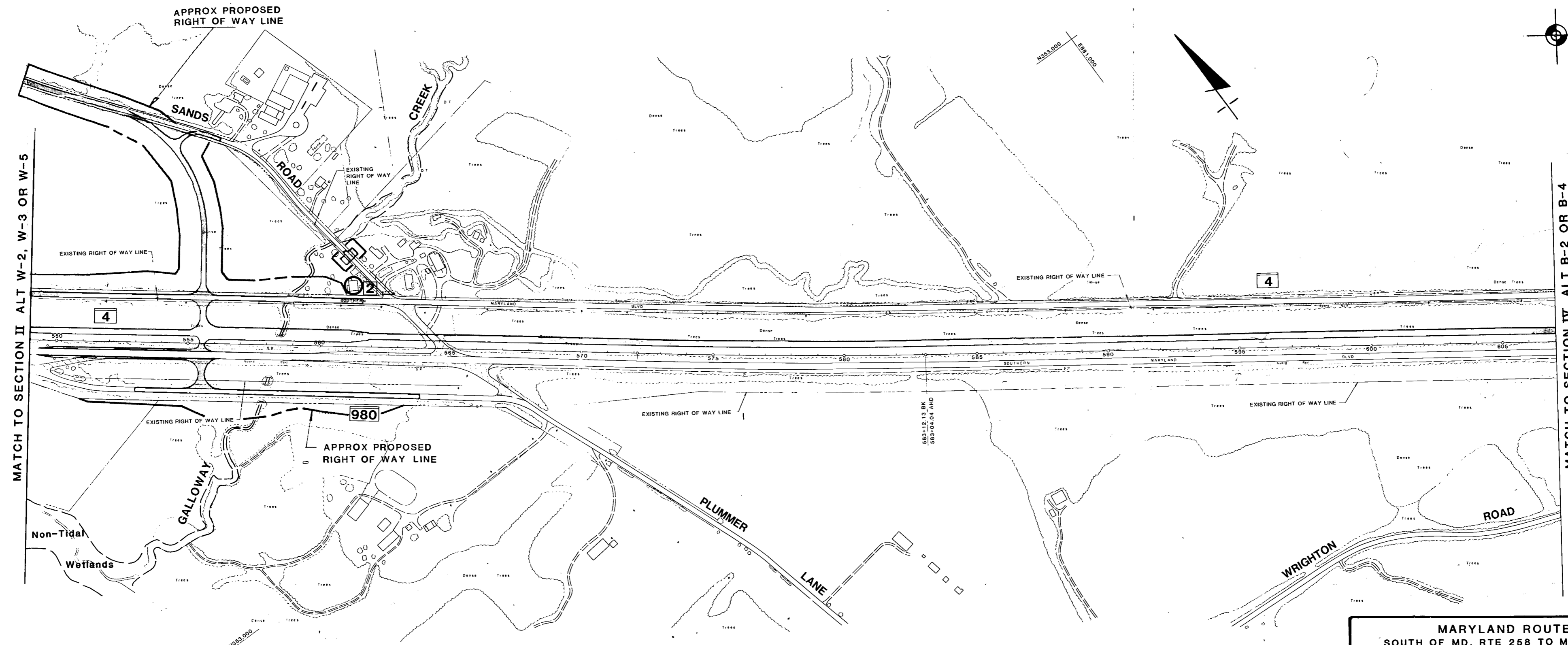
Alternate P-4 (Figure III-4)

Alternate P-4 was developed following the Alternates Public Meeting, for use in conjunction with Wayson's Corner Alternates W-3 and W-5, because they could provide adequate traffic circulation without a full intersection at Plummer Lane/Sands Road. The Sands Road approach would be relocated to the north as in Alternate P-3 to provide improved geometrics and sight distance. It would intersect with the eastside frontage road (existing northbound Maryland Route 4), but end at a right-turn-only intersection with relocated northbound Maryland Route 4. The Plummer Lane approach would have minor geometric improvements and end at a right-turn-only intersection with southbound Maryland Route 4. The existing median cross-over and the Sands Road intersection with the eastside frontage road (existing northbound Maryland Route 4) would be removed.

LEGEND

	PROPOSED ROADWAY IMPROVEMENTS
	EXISTING PAVING TO BE REMOVED
	PROPOSED GUARD RAIL BARRICADE
	PROPOSED RETAINING WALL
	PROPOSED BRIDGE
	100 YR. FLOODPLAIN
	TIDAL WETLANDS
	NON-TIDAL WETLANDS
	NOISE SENSITIVE AREA
	AIR QUALITY RECEPTOR
	REQUIRED RELOCATION
	EXISTING RIGHT-OF-WAY LINE OR PROPERTY LINE
	APPROXIMATE PROPOSED RIGHT-OF-WAY LINE

MD. ROUTE 4
FROM SOUTH OF MD. 258 TO MD. 726
 AA 376-101-570

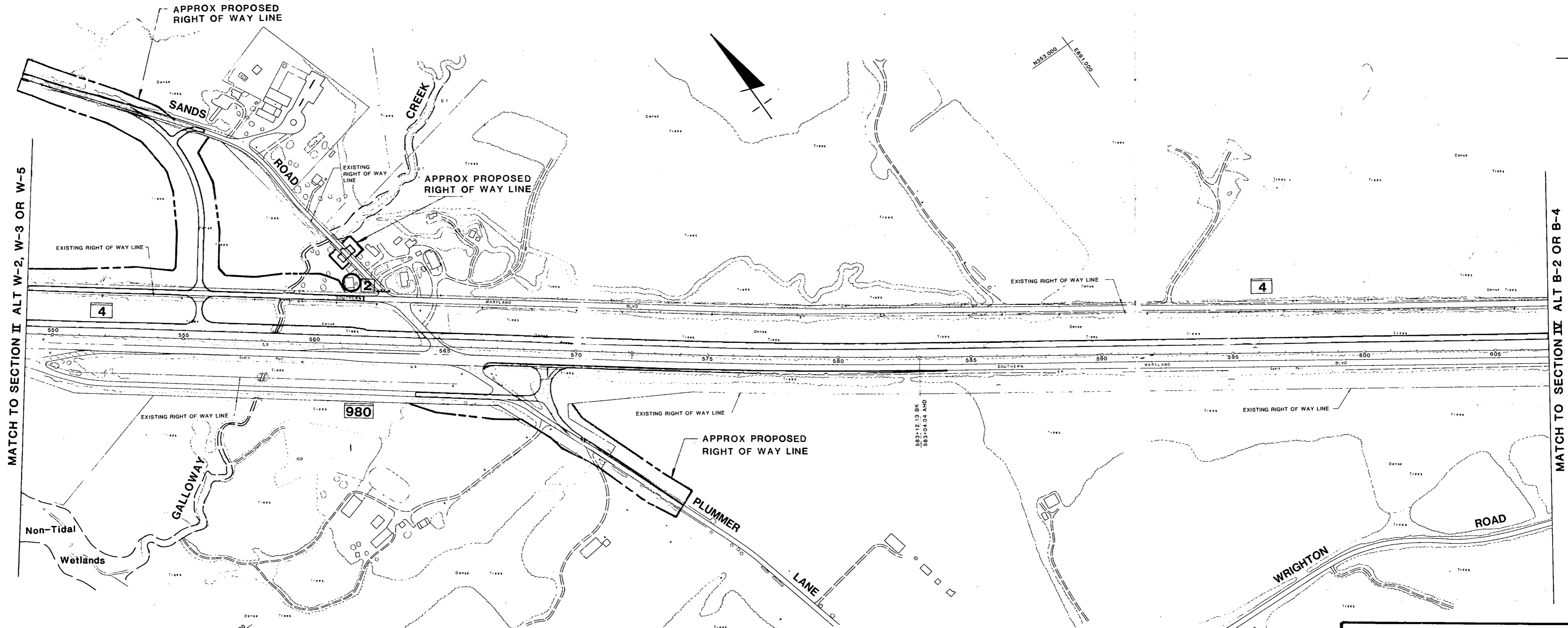


MATCH TO SECTION II ALT W-2, W-3 OR W-5

MATCH TO SECTION IV ALT B-2 OR B-4

<p>MARYLAND ROUTE 4 SOUTH OF MD. RTE 258 TO MD. RTE 726 ANNE ARUNDEL & PRINCE GEORGE'S COUNTIES</p>		
<p>SECTION III PLUMMER LANE/SANDS ROAD AREA STA 549+00 TO STA 607+00 ALTERNATE P-3</p>		
DATE	<p>SCALE IN FEET</p>	FIGURE III - 3

6b



MARYLAND ROUTE 4
 SOUTH OF MD. RTE 258 TO MD. RTE 726
 ANNE ARUNDEL & PRINCE GEORGE'S COUNTIES

SECTION III
 PLUMMER LANE/SANDS ROAD AREA
 STA 549+00 TO STA 607+00
 ALTERNATE P-4

DATE	300 0 300	FIGURE
	SCALE IN FEET	III - 4

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c. Waysons Corner

The Build Alternates in this segment include construction of a new two-lane northbound Maryland Route 4 roadway. The existing northbound Maryland Route 4 would become a two-way frontage road to north of Wayson's Corner. The three-lane segment would contain a center left-turn lane. A new Park'n'Ride lot would be located in the Wayson's Corner vicinity.

Alternate W-2 (Figure III-5)














Alternate W-2 proposes the retention of the existing southbound Maryland Route 4 left exit and entrance ramps to and from Wayson's Corner. The new northbound roadway would be aligned to provide a wider median and bridge the existing ramps. Right side ramps adjacent to the existing ones would be provided for access from northbound Maryland Route 4 to the Wayson's Corner vicinity and the return movement to northbound (westbound) Maryland Route 4. The first of these new ramps would require a relocation of a segment of the eastside frontage road for a compatible tie-in with the existing ramp to southbound Maryland Route 4 and the proposed ramp from northbound Maryland Route 4.

Alternate W-3 (Figures III-6)

Alternate W-3 proposes the extension of Maryland Route 408 to bridge Maryland Route 4 and tie into Maryland Route 980. A diamond-type interchange would be provided for access between Maryland Route 4 and Maryland Route 408, except that the southeast quadrant exit ramp from northbound Maryland Route 4 would end at a T-intersection with the

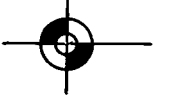
62

LEGEND

	PROPOSED ROADWAY IMPROVEMENTS
	EXISTING PAVING TO BE REMOVED
	PROPOSED GUARD RAIL BARRICADE
	PROPOSED RETAINING WALL
	PROPOSED BRIDGE
	100 YR. FLOODPLAIN
	TIDAL WETLANDS
	NON-TIDAL WETLANDS
	NOISE SENSITIVE AREA
	AIR QUALITY RECEPTOR
	REQUIRED RELOCATION
	EXISTING RIGHT-OF-WAY LINE OR PROPERTY LINE
	APPROXIMATE PROPOSED RIGHT-OF-WAY LINE

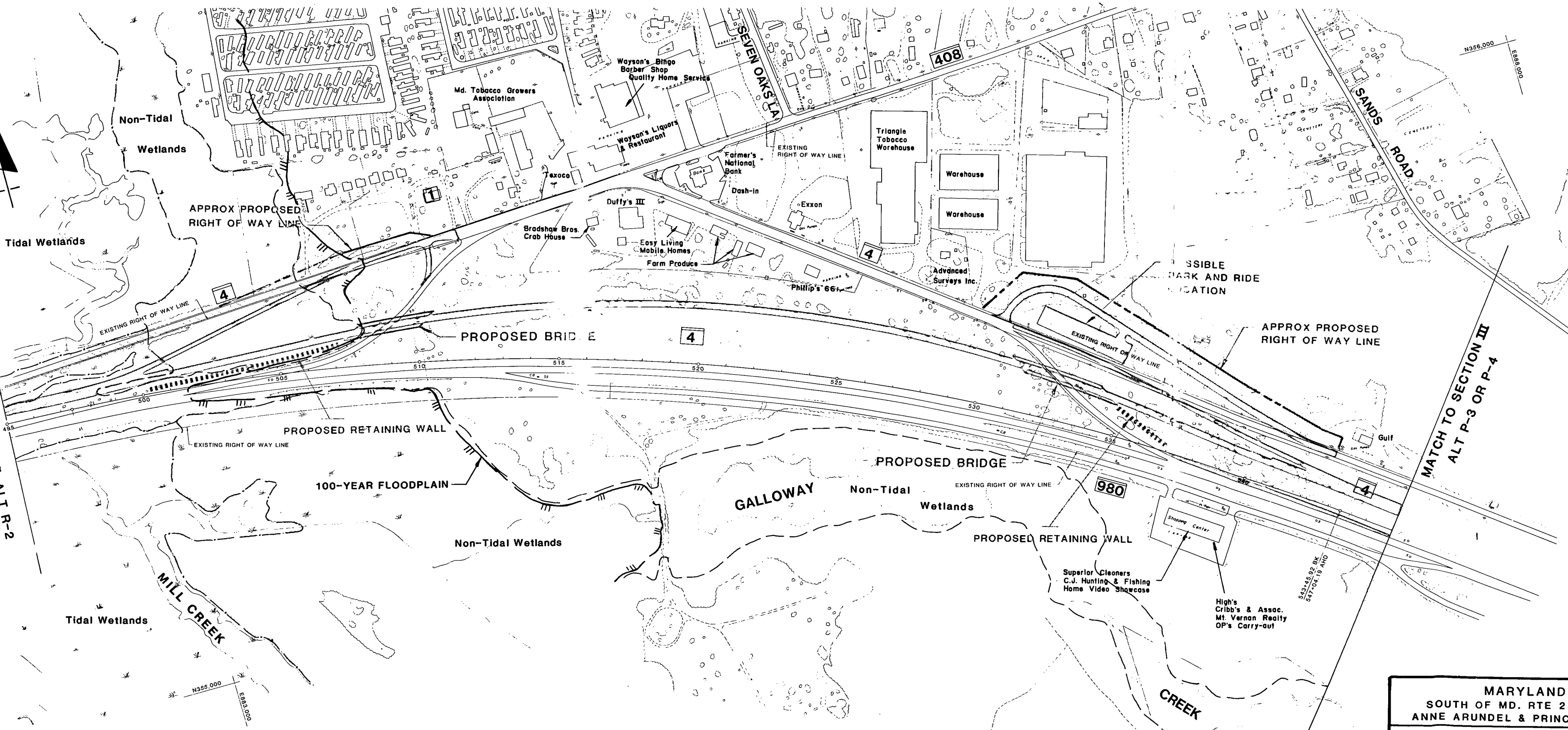
MD. ROUTE 4
FROM SOUTH OF MD. 258 TO MD. 726
AA 376-101-570

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MATCH TO SECTION I ALT R-2

MATCH TO SECTION III ALT P-3 OR P-4



MARYLAND ROUTE 4
 SOUTH OF MD. RTE 258 TO MD. RTE 726
 ANNE ARUNDEL & PRINCE GEORGE'S COUNTIES

SECTION II
 WAYSON'S CORNER AREA
 STA 495+00 TO STA 549+00
 ALTERNATE W-2

DATE	300 0 300	FIGURE
	SCALE IN FEET	III - 5

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MATCH TO SECTION I
ALT R-2

MATCH TO SECTION III
ALT P-3 OR P-4

Non-Tidal
Wetlands

Tidal Wetlands

POSSIBLE
PARK AND RIDE
LOCATION

APPROX PROPOSED
RIGHT OF WAY LINE

PROPOSED BRIDGE

EXISTING RIGHT OF WAY LINE

GALLOWAY

100-YEAR FLOODPLAIN

APPROX PROPOSED
RIGHT OF WAY LINE

Tidal Wetlands

MILL CREEK

Non-Tidal Wetlands

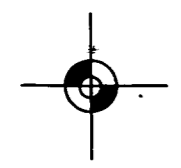
Non-Tidal

Wetlands

Superior Cleaners
C.J. Hunting & Fishing
Home Video Showcase

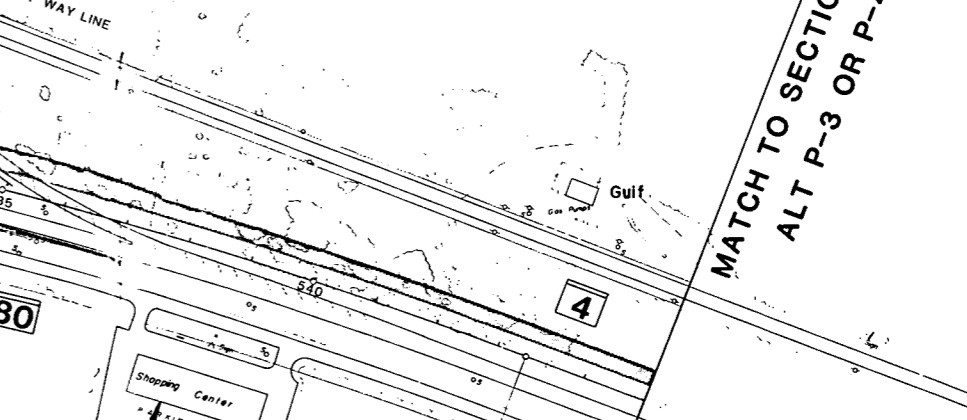
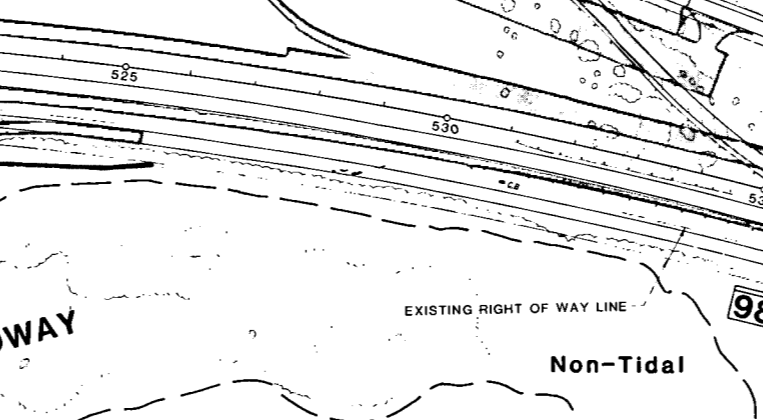
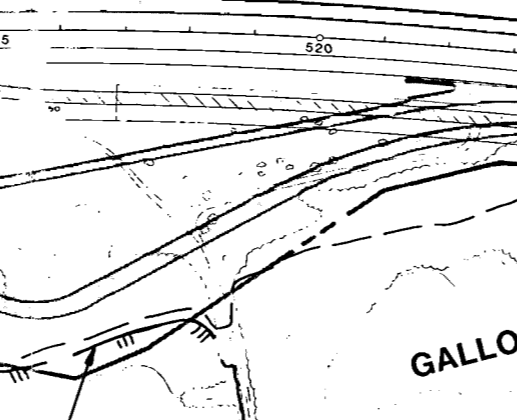
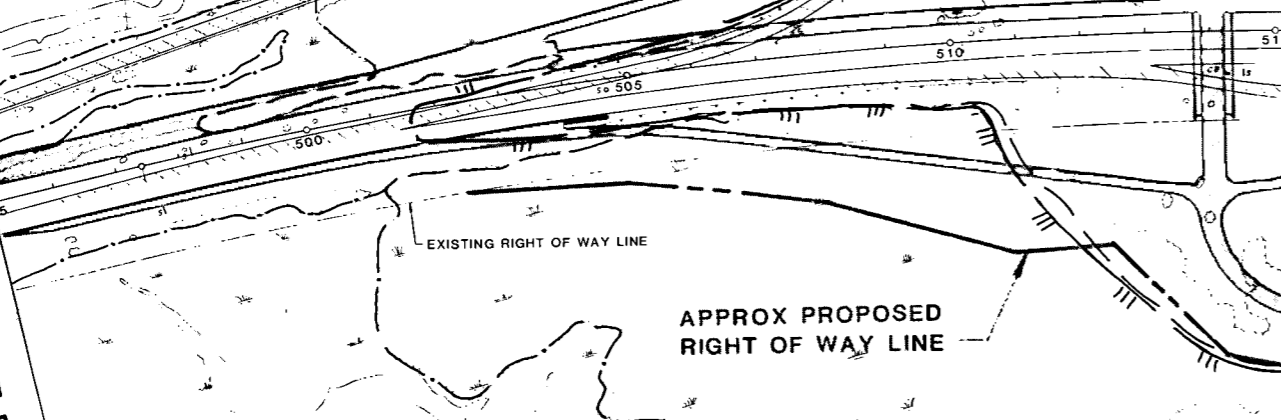
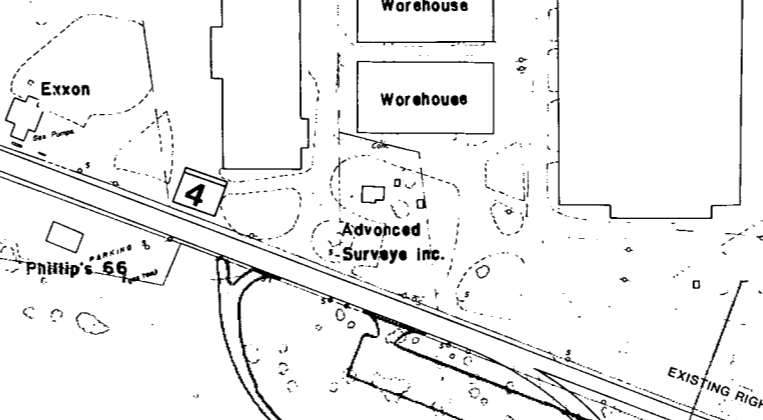
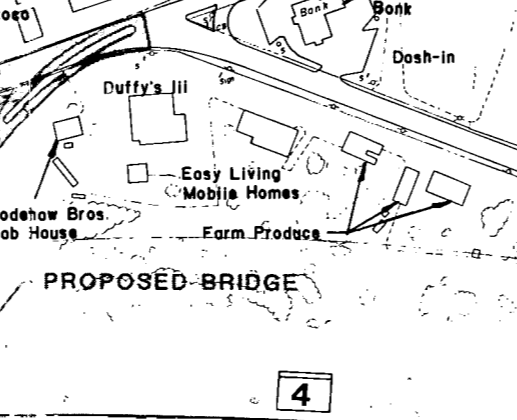
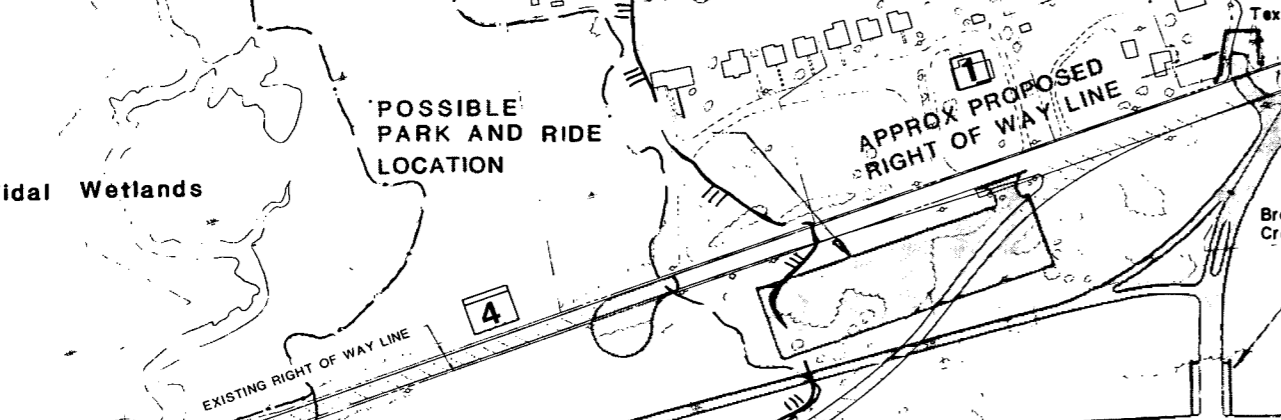
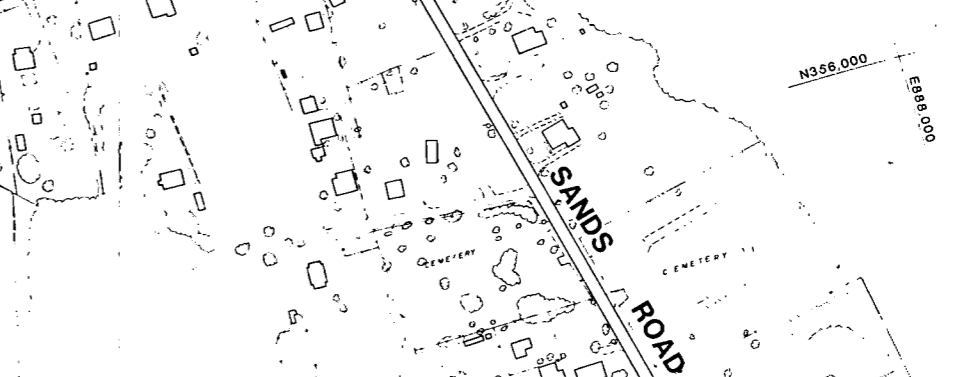
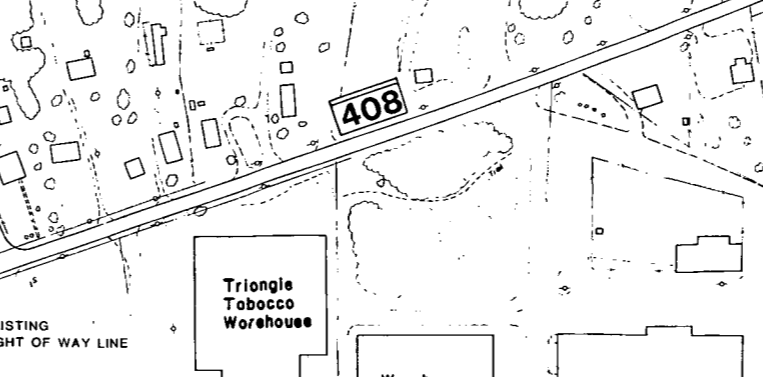
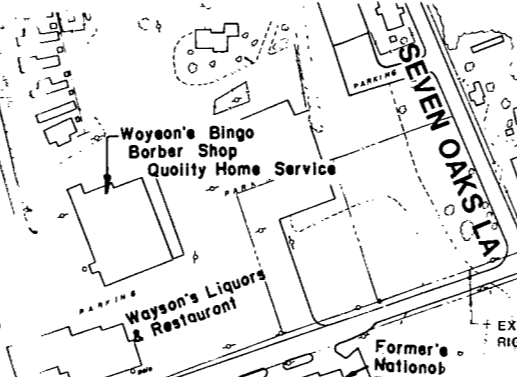
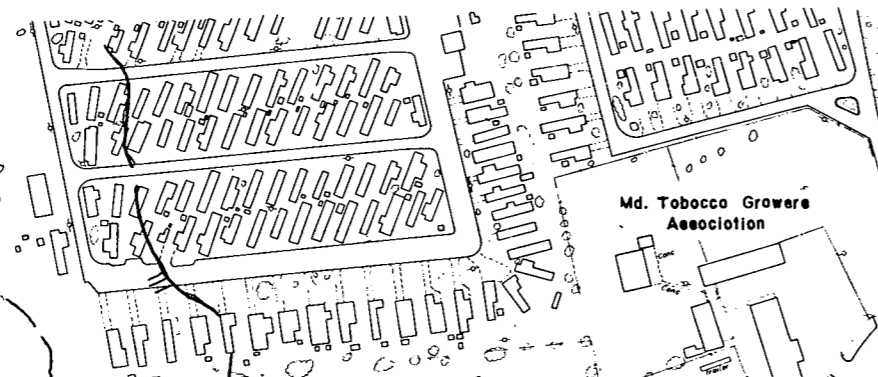
CREEK

High's
Cribb's & Assoc.
Mt. Vernon Realty
OP's Carry-out



N355,000
E839,000

N356,000
E848,000



<p>MARYLAND ROUTE 4 SOUTH OF MD. RTE 258 TO MD. RTE 726 ANNE ARUNDEL & PRINCE GEORGE'S COUNTIES</p>		
<p>SECTION II WAYSON'S CORNER AREA STA 495+00 TO STA 549+00 ALTERNATE W-3</p>		
DATE	<p>SCALE IN FEET</p>	FIGURE III - 6

eastside frontage road (existing northbound Maryland Route 4), south of Wayson's Corner. The three existing ramps exiting and entering southbound Maryland Route 4 would be removed, and a segment of Maryland Route 980 would be relocated.

Alternate W-5 (Figures III-7)

Alternate W-5 proposes the same improvements as Alternate W-3 except that Maryland Route 408 is relocated to intersect with the eastside frontage road (existing northbound Maryland Route 4) somewhat south of the existing intersection. Maryland Route 408 is then extended to bridge Maryland Route 4 and connect with Maryland Route 980. The same interchange configuration is proposed as for Alternate W-3.














d. Patuxent River Bridge

Alternate R-2 (Figures III-8)

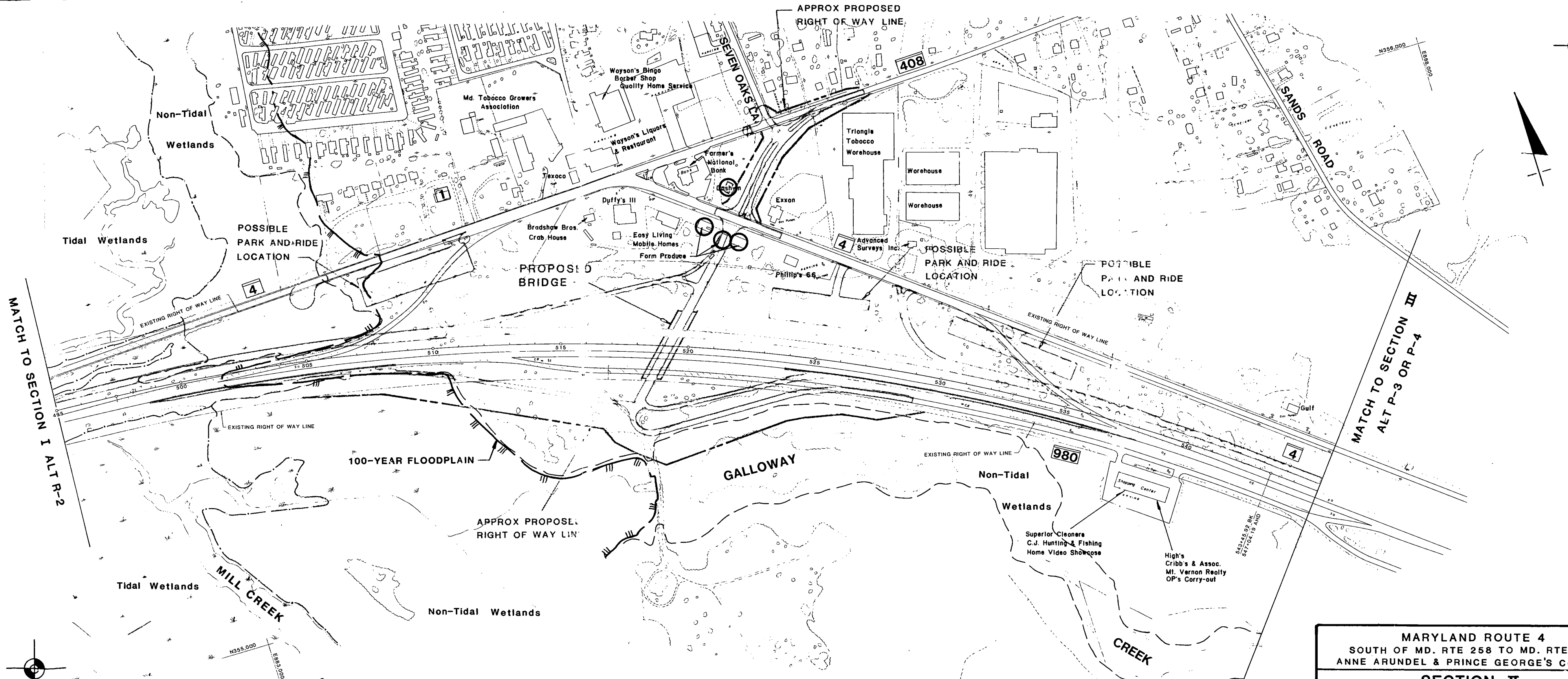
Alternate R-2 would include the construction of a new two-lane northbound (westbound) Maryland Route 4 roadway within the existing median and a new bridge across the Patuxent River. The new roadway would transition back to the existing paving south (east) of the Maryland Route 726 overpass. The new bridge would be approximately the height and length of the existing southbound (eastbound) structure, or as determined by ongoing Hydrologic/Hydraulic Analyses. Alignment adjustments would be necessary for the ramp from northbound (westbound) Maryland Route 4 to Maryland Route 726 (via Old Marlboro Pike). The existing northbound (westbound) bridge and approach roadways, and a portion of the ramp to Maryland Route 726 would be removed.

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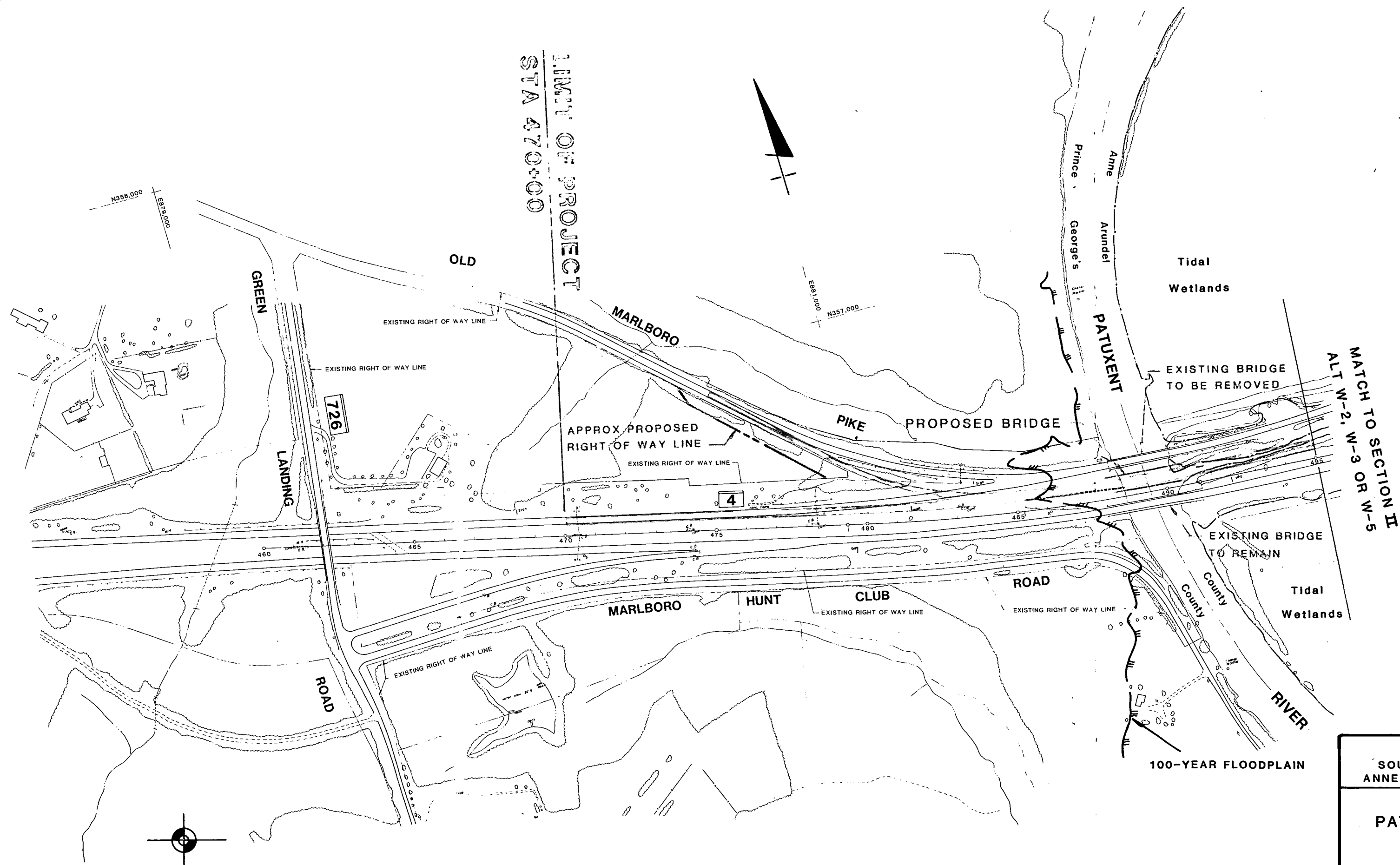
LEGEND

	PROPOSED ROADWAY IMPROVEMENTS
	EXISTING PAVING TO BE REMOVED
	PROPOSED GUARD RAIL BARRICADE
	PROPOSED RETAINING WALL
	PROPOSED BRIDGE
	100 YR. FLOODPLAIN
	TIDAL WETLANDS
	NON-TIDAL WETLANDS
	NOISE SENSITIVE AREA
	AIR QUALITY RECEPTOR
	REQUIRED RELOCATION
	EXISTING RIGHT-OF-WAY LINE OR PROPERTY LINE
	APPROXIMATE PROPOSED RIGHT-OF-WAY LINE

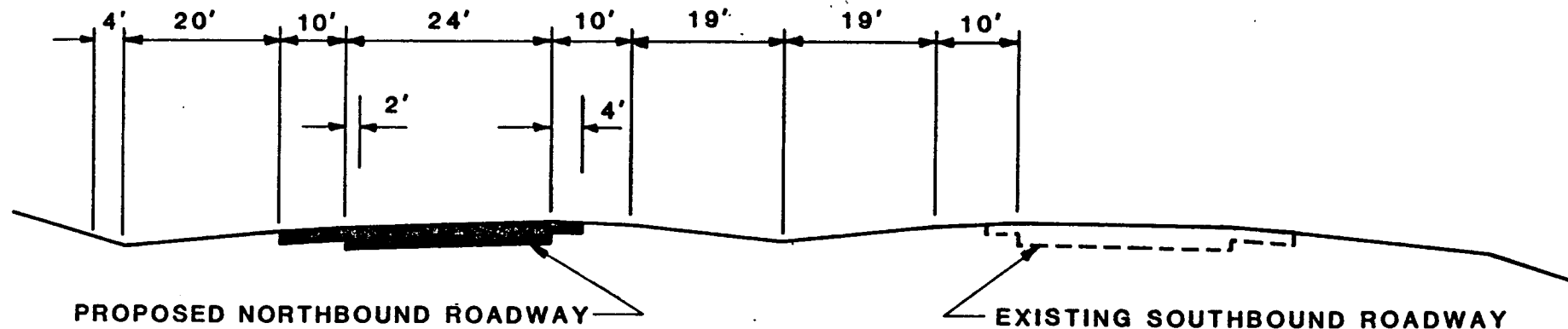
MD. ROUTE 4
FROM SOUTH OF MD. 258 TO MD. 726
AA 376-101-570



<p>MARYLAND ROUTE 4 SOUTH OF MD. RTE 258 TO MD. RTE 726 ANNE ARUNDEL & PRINCE GEORGE'S COUNTIES</p>		
<p>SECTION II WAYSON'S CORNER AREA STA 495+00 TO STA 549+00 ALTERNATE W-5</p>		
DATE	<p>SCALE IN FEET</p>	FIGURE
		III - 7



MARYLAND ROUTE 4 SOUTH OF MD. RTE 258 TO MD. RTE 726 ANNE ARUNDEL & PRINCE GEORGE'S COUNTIES		
SECTION I PATUXENT RIVER TO MD RTE 726 STA 470+00 TO STA 495+00 ALTERNATE R-2		
DATE	 SCALE IN FEET	FIGURE
		III - 8



MAIN LINE - MD. 4

NOTE:

The dimensions shown are for the purpose of determining cost estimates and environmental impacts, and are subject to change during the final design phase.

FIGURE III-9

TYPICAL SECTIONS

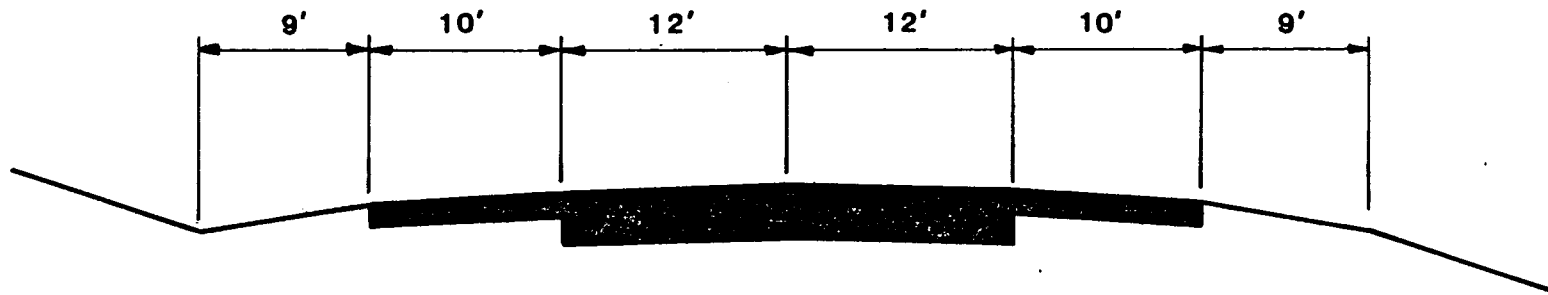
MD. ROUTE 4

CONTRACT AA 376-101-570

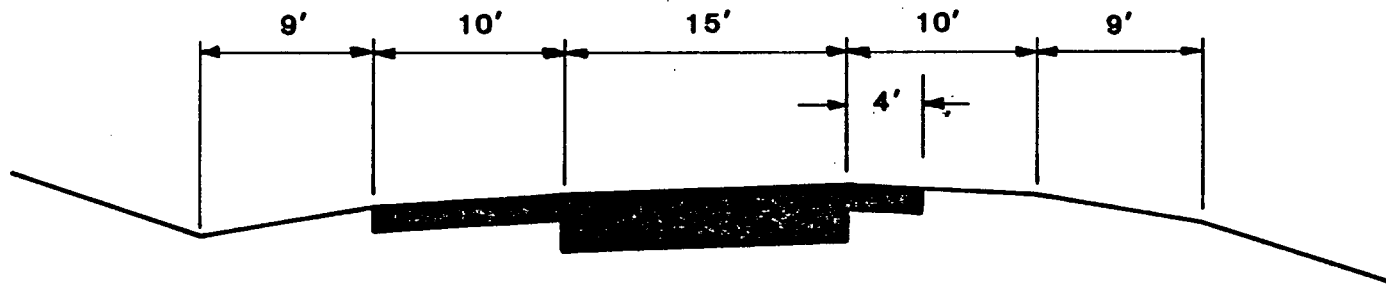
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7D



CONNECTING ROADS



RAMPS

NOTE:

The dimensions shown are for the purpose of determining cost estimates and environmental impacts, and are subject to change during the final design phase.

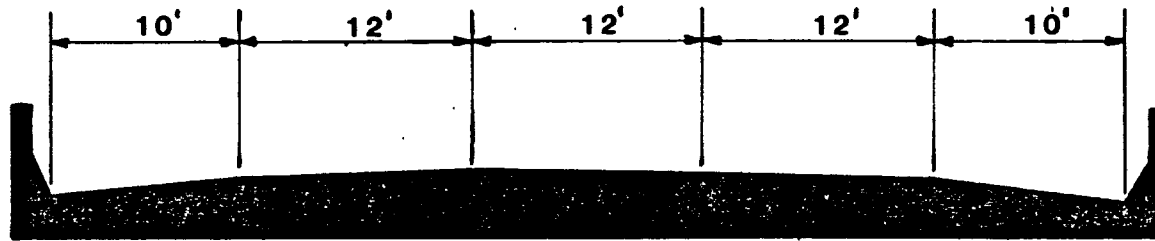
FIGURE III-10

TYPICAL SECTIONS

MD. ROUTE 4

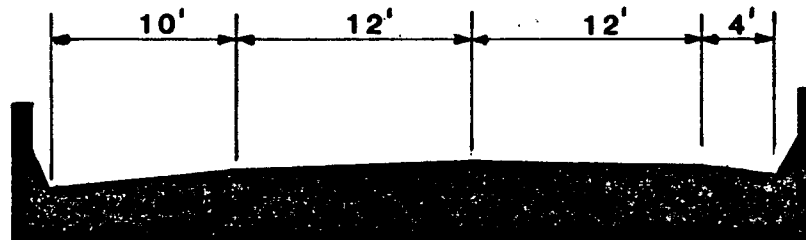
CONTRACT AA 376-101-570

NOT TO SCALE



MD. RTE. 408 OVERPASS

(ALT. W-3 & W-5)



NB MD. RTE. 4 OVERPASS

(ALT. W-2)

NOTE:

The dimensions shown are for the purpose of determining cost estimates and environmental impacts, and are subject to change during final design phase.

FIGURE III-11

TYPICAL BRIDGE SECTIONS

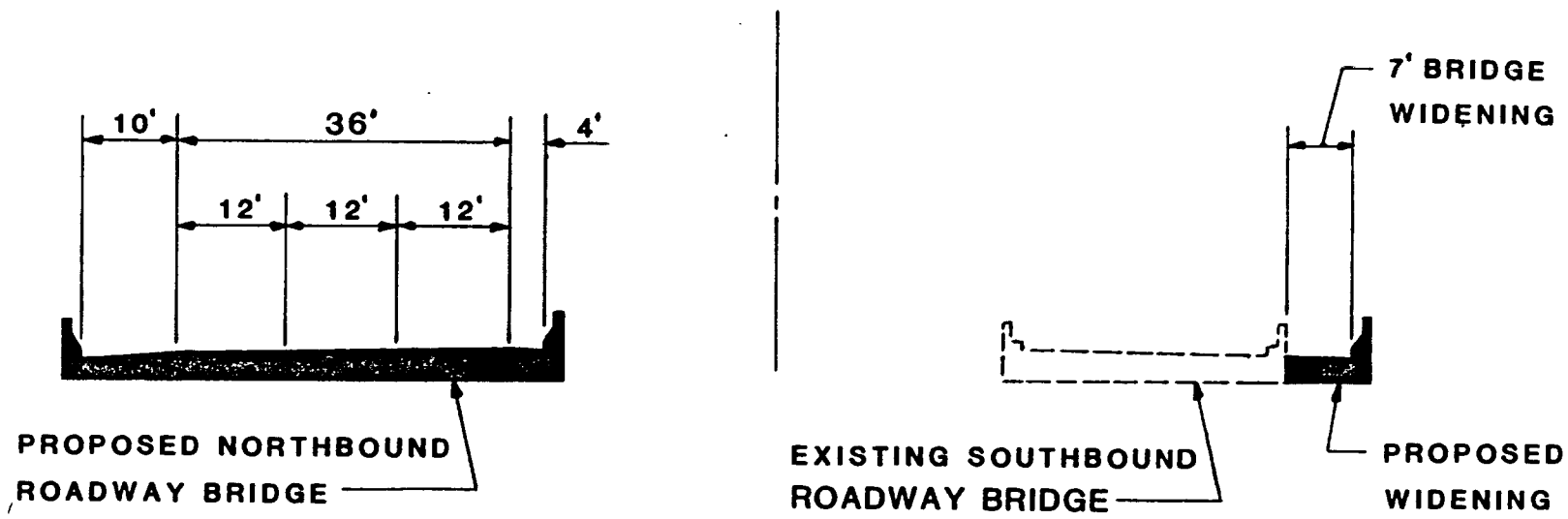
MD. ROUTE 4

CONTRACT AA 376-101-570

NOT TO SCALE

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PATUXENT RIVER BRIDGES

NOTE:
 The dimensions shown are for the purpose of determining cost estimates and environmental impacts, and are subject to change during the final design phase.

FIGURE III-12

TYPICAL BRIDGE SECTIONS

MD. ROUTE 4

CONTRACT AA 376-101-570

NOT TO SCALE

IV. ENVIRONMENTAL IMPACTS

IV. ENVIRONMENTAL IMPACTS

A. Social

1. Relocation

The proposed improvements would occur, for the most part, within existing right-of-way. However, Alternates P-3 and P-4 will require the acquisition of one residence (occupied by two families) and alternate W-5 will require acquisition of two business properties (see alternates mapping). The subject residence is occupied by the owner and a tenant who are believed to be in the middle to lower income range. Both businesses are tenant occupied, one of which is operated by minorities. No other minority individuals would be affected.

All families and businesses will be relocated in accordance with the requirements of the "Uniform Relocation Assistance and Land Acquisition Policies Act of 1970" (see Appendix). All relocations would be accomplished within a 12-18 month period and completed in a timely, orderly, and humane manner. A survey of the local real estate market reveals that the availability of housing for sale and rent in the study area appears to be only marginally adequate. A scarcity of business space for lease will also make such relocations in the immediate study area difficult. Housing As A Last Resort will be used if necessary.

In addition, minimal amounts of right-of-way would be required from other properties fronting the proposed alignments. This acreage will vary depending upon the choice of alternates selected. Among all the possible combination of Build alternates, a maximum of 2 1/2 acres of

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land would be required. Only the No-Build Alternate, and Alternates B-2 and R-2 would not require the acquisition of additional right-of-way.

Title VI Statement:

It is the policy of the Maryland State Highway Administration to ensure compliance with the provisions of Title VI of the Civil Rights Act of 1964, and related civil rights laws and regulations which prohibit discrimination on the grounds of race, color, sex, national origin, age religion, physical or mental handicap in all State Highway Administration program projects funded in whole or in part by the Federal Highway Administration. The State Highway Administration will not discriminate in highway planning, highway design, highway construction, the acquisition of right-of-way, or the provision of relocation advisory assistance.

This policy has been incorporated into all levels of the highway planning process in order that proper consideration may be given to the social, economic, and environmental effects of all highway projects. Alleged discriminatory actions should be addressed to the Equal Opportunity Section of the Maryland State Highway Administration for investigation.

2. Access to Facilities and Services

All the build alternates will improve traffic service and safety along that section of Maryland Route 4 in the study area. Alternates W-2, W-3, and W-5 will reduce traffic congestion and travel time through the Wayson's Corner (Maryland Route 4/408 intersection) area. These benefits would accrue to both local residents and commuter travelers. A large portion of this commuter traffic passes through Wayson's Corner during morning and evening rush hours. The proposed improvements would also make travel along this section safer and more direct.

Alternates P-3, B-2 and B-4 will improve access to and from as well as across Maryland Route 4 in the area of Bristol and Sands Road/Plummer Lane. At these locations movement across Maryland Route 4 would be more direct, safer, and result in less circuitry of travel. Alternate P-4 would change existing travel patterns by denying access across Maryland Route 4 between Sands Road and Plummers Lane. This will result in slightly more circuitry of access but should not significantly increase response times for emergency vehicles. Circulation between Wayson's Corner and mainline Maryland Route 4 will be slightly more circuitous but the additional travel time would not be significant.

Community integrity and cohesion would not be affected. Emergency service provision would likewise not be impacted, and may improve in Wayson's Corner during the morning rush hour.

The No-Build Alternate is not acceptable because it will result in increased congestion, longer delays, and continued unsafe travel conditions on Maryland Route 4.

B. Economic

The most severe economic impacts associated with the build alternates are the potential disruptions to local business in the study area. As discussed previously, Alternate W-5 will result in the acquisition of two retail businesses. In addition, the major traffic movement in Wayson's Corner is through commuter traffic. The removal of that traffic to the relocated northbound roadway will have some impact on local businesses in this area. Although

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these businesses are generally oriented to the local community, some patronage is derived from through traffic, especially during the morning rush hour.

All build alternates will result in a change in existing circulation patterns. However, the proposed alternates (W, B, P) provide for ramps or frontage roadways which will give through and local traffic adequate, easy and safe access to the businesses in Wayson's Corner, Bristol, and along Maryland Route 980. To minimize impacts, proper signing on Maryland Route 4 will be important to the service oriented businesses in these areas. Circulation patterns with the small, unnamed shopping center on Maryland Route 980 also would be maintained. Alternates W-3 and W-5 will actually improve access to this area from the area east of the existing mainline Maryland Route 4. Impacts to income producing agricultural lands would be minor.

C. Land Use

All the Build Alternates are consistent with the future land use plans for these areas. These plans indicate that the study area is to retain its existing character. No significant development is anticipated. These alternates would not significantly increase future traffic volumes which could spur additional growth incompatible with that planned.

D. Historic and Archeological Sites

Compton Bassett, the only historic site in the study area listed on or eligible for listing on the National Register of Historic Places, is located north of Maryland Route 4. Alternate R-2 proposes the replacement of the

existing northbound roadway within the existing right-of-way. The proposed replacement of roadway and ramp to Old Marlboro will be slightly shifted south of and further away from the historic site.

The State Historic Preservation Officer concurred with the SHA evaluation of no effect for this site on October 9, 1985 (See letter in Section V). According to the State Archeologist there is no evidence of archeological resources within the study area. (See letter dated 9/23/85 in Section V.)

E. Natural Environment

1. Prime Farmland Soils (See figure I-6)

All proposed build alternates, except for those in the Waysons Corner vicinity would affect Prime Farmland Soils. A comparison of approximate amounts of Prime Farmland Soils required for the proposed improvements is shown below:

Prime Farmland Soils Required

No-Build Alternates (B-1, P-1, W-1, R-1)	0 ac.
R-2	1 ac.
W-2	0 ac.
W-3	0 ac.
W-5	0 ac.
P-3	5.6 ac.
P-4	5.6 ac.
B-2	3.8 ac.
B-4	9.9 ac.

The replacement of the Maryland Route 4 bridge over the Patuxent River and subsequent realignment of Maryland Route 726 would require approximately one acre of prime farmland soils located between the divergence of the two roads. This area is partly wooded and not currently under cultivation. Land use plans for this area indicate no change from existing use.

Realignment of the Sands Road/Plummer Lane Intersection will require approximately .4 acre of Prime Farmland Soils in the vicinity of the tie in point with existing Sands Road. Land use in this area is a combination of wooded areas and medium density residential. No changes in land use in this area are planned.

Improvements to the Bristol interchange would require Prime Farmland Soils in the vicinity east of Maryland Route 258. Both, alternates B-2 and B-4 require approximately 1 acre of Prime Farmland Soils within existing right-of-way. Due to the more extensive improvements proposed under Alternate B-4, additional Prime Farmland Soils both north and south of the interchange would also be required. Land use in the area north of the interchange is primarily commercial and south of the interchange is medium density residential surrounded by wooded areas. No changes in land use are planned for this area. Other areas of Prime Farmland Soils, totaling approximately 8 acres are located within the

existing median of Maryland Route 4 and are not under cultivation.

None of the prime farmland soils affected are planned for future agricultural use according to land use plans.

There is no indication that any unique farmland soils are present within the study area.

This project is being coordinated with the Soil Conservation Service in accordance with the National Farmland Protection Act.

2. Floodplains (see Alternates mapping)

Due to the generally low elevations and flat topography in the vicinity of the Patuxent River, replacement of the Patuxent River Bridge and all improvements at Wayson's Corner will require encroachment on the 100 year floodplain associated with the Patuxent River.

A comparison of amounts of fill required for the alternates considered is shown below:

<u>Floodplain Encroachment Required</u>	
No Build Alternates (B-1, P-1, W-1, R-1)	0
R-2	3.2 ac.
W-2	6.0 ac.
W-3	7.8 ac.
W-5	5.9 ac.
P-3	0
P-4	0
B-2	0
B-4	0

Placement of any fill material within 100 year floodplain will require a section 404 permit from the Army Corps

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of Engineers. Most of the floodplain encroachment will occur within the existing median.

In accordance with the requirements of FHPM 6-7-3-2, each encroachment is being evaluated to determine its significance. A significant encroachment would involve one of the following:

- a significant potential for interruption or termination of a transportation facility which is needed for emergency vehicles or provides a community's only evacuation route,
- a significant risk, or
- a significant adverse impact on natural and beneficial floodplain values

The use of standard hydraulic design techniques for all waterway openings which limit upstream flood level increases and approximate existing downstream flow rates will be utilized where feasible.

Use of state-of-the-art sediment and erosion control techniques and stormwater management controls will ensure that none of the encroachments would result in risks or impacts to the beneficial floodplain values or provide direct or indirect support to further development within the floodplain. Preliminary analysis indicates that no significant floodplain impacts are expected to occur as a result of any proposed Build Alternates. A floodplain finding, if required, will be presented in the final environmental document.

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3. Surface Water

The Patuxent River, Galloway Creek, Deep Creek, Mill Creek, and several unnamed drainage tributaries comprise the surface water resources in the study area.

The Patuxent River is classified by the Department of Health and Mental Hygiene as Class I waters and provide spawning and nursery habitat for such anadromous fish species as Blueback Herring (*Alosa Aestivalis*) and Alewife (*Alosa Pseudoharengus*).

Alternate R-2 proposes replacement of the bridge across the Patuxent River. As such, all in-stream construction will be prohibited from October through June 15 inclusive.

A U.S. Coast Guard Permit will be required for construction of a new Patuxent River Bridge. Results of the hydraulic analysis and coordination with the U.S. Coast Guard during the design phase will determine the final clearance requirements for the bridge.

Relocation of Maryland Route 4 will require reconstruction over an existing stream crossing at Galloway Creek. Culvert and pipe extensions will be provided for several unnamed tributaries flowing into Mill, Galloway and Deep Creeks which provide roadway drainage. Some realignment of drainage swales may also be required. The loss of stream bottom will be minimal. Methods of reducing the impact of this loss, such as bottomless culverts and depressing the

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pipes to reestablish a productive substrate will be investigated during the design of the culverts. A comparison of stream crossings required for each alternate can be found in below:

Stream Crossings Required

No Build Alternates (B-1, P-1, W-1, R-1)	0
R-2	1
W-2	1
W-3	1
W-5	1
P-3	5
P-4	5
B-2	1
B-4	2

The increase of impervious surfaces resulting from the proposed improvements would produce a proportionate increase in the amount of roadway runoff. Stormwater runoff would be managed under the Department of Natural Resources' Stormwater Management Regulations. These regulations will require stormwater management practices in the following order of preference:

- on site infiltration
- flow attenuation by open vegetated swales and natural depressions

- stormwater retention structures
- stormwater detention structures

It has been demonstrated that these measures can significantly reduce pollutant loads and control runoff.

Final design for the proposed improvements will include plans for grading, erosion and sediment control, and stormwater management, in accordance with State and Federal laws and regulations. They will require review and approval by the Maryland Department of Natural Resources-Water Resources Administration (WRA) and the Department of Health and Mental Hygiene-Office of Environmental Programs (OEP). A waterway construction permit will also be required from the Department of Natural Resources.

This project proposes construction within the Chesapeake Bay Critical Area and will be reviewed by Coastal Zone Management of the Department of Natural Resources to ensure consistency with the goals and objectives of the program.

4. Habitat - (see Alternates mapping)

Both terrestrial and aquatic habitats would be affected by the proposed action. A comparison of the amounts of woodland and wetland habitats required for right-of-way, is shown below:

	<u>Habitat Required</u>		
	<u>Wooded</u>	<u>Wetland</u>	
		<u>Tidal</u>	<u>Non Tidal</u>
No Build Alternates (B-1, P-1, W-1, R-1)	0 ac.	0 ac.	0 ac.
R-2	2.5 ac.	.3 ac.	2.0 ac.
W-2	8.1 ac.	.3 ac.	2.9 ac.

W-3	13.8 ac.	.3 ac.	4.5 ac.
W-5	9.2 ac.	.3 ac.	4.6 ac.
P-3	30.5 ac.	0 ac.	.3 ac.
P-4	23.7 ac.	0 ac.	.3 ac.
B-2	8.5 ac.	0 ac.	0 ac.
B-4	20.9 ac.	0 ac.	.4 ac.

a.) Terrestrial

Species such as deer, rabbit, squirrel, racoon, dove, waterfowl, reptiles, amphibians, and fish are representative of the wildlife populations in the study area. Coordination with DNR, Wildlife Administration, and U.S. Fish and Wildlife Service indicates that there are no known populations of threatened or endangered plant or animal species in the study area: (See correspondence from these agencies in Section V).

The loss of habitat is generally accompanied by a proportional loss in animal populations inhabiting the study area. Much of the wooded habitat required lies within the existing Maryland Route 4 median. Since the habitat value of median buffers is somewhat limited, no significant loss of habitat is anticipated.

b.) Aquatic

Replacement of the Patuxent River bridge (Alternate R-2) and any of the Alternates proposed for Waysons Corner (Alternates W-2, W-3, W-5) would require filling approximately .3 acre of a tidal gut located in the existing median of Maryland Route 4, east of the River. Avoidance of this

gle

area was not feasible due to the right of way constraints in relocating Maryland Route 4 within the existing median. None of the other proposed improvements will affect any tidal wetlands.

Efforts were made to minimize impacts to non-tidal wetlands. However, due to the generally flat topography and low elevations between the Patuxent River and Waysons Corner avoidance of all non-tidal wetlands was not feasible.

In the vicinity of the Patuxent River, east to the Waysons Corner area, non-tidal wetlands occur frequently within the existing median area where reconstruction of Maryland Route 4 is proposed. These Palustrine non-tidal wetlands also occur within the 100 year floodplain of the Patuxent River (see Alternates mapping). Also required under alternates W-3 and W-5 is an area of non-tidal wetlands bordering southbound Maryland Route 4 and also within the 100 year floodplain.

In the vicinity of the Plummer Lane/Sands Road intersection, the non-tidal Riverine wetlands along the banks of Galloway Creek would be affected.

The non-tidal Palustrine wetland required under alternate B-4 is located in the southwest quadrant of the Bristol interchange. It is generally a low spot which collects roadway runoff and ultimately flows into Deep Creek.

Suitable replacement sites for tidal and non-tidal wetlands will be coordinated with the Department of Natural Resources and selected during the design phase.

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Potential impacts resulting from construction of the proposed roadway and bridge include sedimentation, pollution by roadway runoff and loss of vegetative cover. Construction of a bridge across the Patuxent River, as proposed under Alternate R-2, would result in increased siltation and turbidity.

Sediment and erosion control plans will help minimize the adverse effects of construction activities, and proper stormwater management will reduce the amount of roadway pollutants which enter the Patuxent River and its tributaries. These control measures, in addition to the time of year restrictions previously discussed should minimize the potential adverse impacts to aquatic life.

F. Noise

Predicted Noise

The method used to predict the future noise levels in the Maryland Route 4 study area was developed by the Federal Highway Administration of the U.S. Department of Transportation. The FHWA Highway Traffic Noise Prediction Model (FHWA Model) incorporates data pertaining to normal traffic volume increases over time as predicted by the Maryland State Highway Administration, utilizes an experimentally and statistically determined reference sound level for three (3) classes of vehicles (auto, medium duty trucks, and heavy duty trucks) and applies a series of adjustments to each reference level to arrive at the predicted sound level. The adjustments include: 1) traffic flow corrections, taking into account the number of vehicles, average vehicle speed,

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and specifies a time period of consideration; 2) distance adjustment comparing a reference distance and actual distance between receiver and roadway, including roadway width and number of traffic lanes; and 3) adjustment for various types of physical barriers that would reduce noise transmission from source (roadway) to receiver.

The prediction calculations were performed utilizing a computer program adaption of the FHWA MODEL, Stamina 2.0/Optima. Noise levels projected for the design year (2010) for the "Build" and "No Build alternates are shown in Table 4.

Impacts and Mitigation

The determination of environmental noise impacts is based on the relationship between the predicted noise levels, the established noise abatement criteria, and the ambient noise levels in the project area. The applicable standard is the Federal Highway Administration's noise abatement criteria/activity relationship (See table 3, page I-13) published in FHPM 7.7.3.

When design year Leq noise levels are projected to exceed the abatement criteria (Table 4) or increases ambient conditions by more than 10 dbA, noise abatement measures (in general, noise barriers) are considered to minimize impacts. Consideration is based on the size of the impacted area (number of structures, special distribution of structures, etc.), the predominant activities carried on within the area, the visual impact of the control measure, practically of construction, and economic feasibility.

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Economic assessment is based on the following assumptions. An effective barrier should, in general, extend in both directions to four (4) times the distance between receiver and roadway (source). In addition, an effective barrier should provide a 10 dbA reduction in the noise level, as a preliminary design goal. For the purpose of comparison, a total cost of \$23 per square foot is assumed to estimate total barrier cost.

This cost figure is based on current costs experienced by the Maryland State Highway Administration and includes the costs of panels, footings, drainage, landscaping, and overhead. In addition, the upset limit for determining barrier cost-effectiveness is \$40,000 per residence. This is an average cost figure based on current and projected barrier costs by the Maryland State Highway Administration.

1. Wayson's Corner

One (1) noise sensitive area is associated with the alternates developed for Wayson's Corner. The predicted Leq noise levels would vary -4 to +3 dbA from present noise levels, with the No-Build Alternate predicted to result in the highest noise levels. None of the alternates would result in noise levels exceeding the noise abatement criteria of 67 dba nor in an increase in excess of 10 dbA. Therefore, noise mitigation measures are not recommended for these alternates.

2. Plummer Lane/Sands Road

One (1) noise sensitive area is associated with the alternates developed for Plummer Lane/Sands Road. The

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predicted Leq noise levels would increase 0 to 5 dbA over present noise levels, with the No-Build Alternate predicted to result in the highest noise levels. All of the alternates would result in noise levels exceeding the noise abatement criteria of 67 dba, but none would result in an increase in excess of 10 dba.

A noise barrier 1200 feet long and 10 feet high would provide a minimum 10 dba noise reduction at a cost of \$276,000 (\$92,000 per residence) for all Build Alternates. This barrier is not considered reasonable or feasible.

3. Bristol Area

Two (2) noise sensitive areas are associated with the alternates developed for the Bristol area. The predicted Leq noise levels would increase 3 to 10 dbA over present noise levels. All of the alternates would result in noise levels exceeding the noise abatement criteria of 67 dbA at NSA 3 but none would result in an increase in excess of 10 dbA at either NSA.

A noise barrier 2,000 feet long and 10 feet high would provide a maximum 4 dbA noise reduction at NSA 3 at a cost of \$460,000 (\$115,000 per residence) for all alternates. This barrier is not physically effective because local roads are the principal noise generators for NSA 3. The barrier's physical effectiveness would be reduced for Alternate B-2 by the segmentation required for local road and driveway access. This barrier is not recommended because is not considered reasonable or feasible.

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Construction Noise

As with any major construction project, areas around the construction site are likely to experience varied periods and degrees of noise impact. This type of project would probably employ the following pieces of equipment which would likely be sources of construction noise:

- Bulldozers and Earthquake Movers
- Graders
- Front End Loaders
- Dump and Other Diesel Trucks
- Compressors

Generally construction activity would occur during normal working hours on weekdays. Therefore, noise intrusion from construction activities probably would not occur during critical sleep or outdoor recreation periods.

Maintenance of construction equipment will be regular and thorough to minimize noise emissions because of inefficiently tuned engines, poorly lubricated moving parts, poor or ineffective muffling systems, etc.

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Table 4

Ambient and Projected Noise Levels

Maryland Route 4

	NSA 1	NSA 2	NSA 3	NSA 4
Ambient	64	69	60	63
Alternates				
Design Year (2010)				
Wayson's Corner				
No Build	67	-	-	-
W-2	64	-	-	-
W-3	61	-	-	-
W-5	60	-	-	-
Plummer Lane/Sands Road				
No Build	-	74*	-	-
P-3	-	69*	-	-
P-4	-	69*	-	-
Bristol Area				
No Build	-	-	69*	66
B-2	-	-	70*	66
B-4	-	-	69*	66

*Exceeds Federal Noise Abatement Criteria

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G. Air Quality Impacts

1. Analysis Objectives, Methodology, and Results

The objective of the air quality analysis is to compare the carbon monoxide (CO) concentrations estimated to result from traffic configurations and volumes of each alternate with the State and National Ambient Air Quality Standards (S/NAAQS). The NAAQS and SAAQS are identical for CO: 35PPM (parts per million) for the maximum one-hour period and 9 PPM for the maximum consecutive eight-hour period.

A microscale CO pollution diffusion analysis was conducted using the third generation California Line Source Dispersion Model, CALINE 3. This microscale analysis consisted of projections of one-hour and eight-hour CO concentrations at sensitive receptor sites under worst case meteorological conditions for the No-Build and the Build Alternates for the design year (2010) and the estimated year of completion (1990).

a. Analysis Inputs

A summary of analysis inputs is given below. More detailed information concerning these inputs is contained in the Maryland Route 4 Air Quality Analysis which is available for review at the Maryland State Highway Administration, 707 North Calvert Street, Baltimore, Maryland 21202.

Background CO Concentrations

In order to calculate the total concentration of CO which occurs at a particular receptor site during worst case meteorological conditions, the background CO concentrations are considered in addition to the levels directly

attributable to the facility under consideration. The background CO concentrations were derived from the application of rollback methodology to on-site monitoring conducted by the Maryland Department of Health and Mental Hygiene, Air Management Administration. At their Airmon 3 - Suitland Monitoring site during the period of 1984. The resulting background concentrations are as follows: The background concentration resulting from area-wide emissions from both mobile and stationary sources was calculated to be the following:

	CO, PPM	
	1 Hour	8 Hour
1990	9.3	5.5
2010	7.0	4.2

Traffic Data, Emission Factors, and Speeds

The appropriate traffic data was utilized as supplied by the Bureau of Highway Statistics (April and June 1985) of the Maryland State Highway Administration.

The composite emission factors used in the analysis were derived from the Environmental Protection Agency (EPA) Compilation of Air Pollutant Emission Factors: Highway Mobile Sources, and the Modification to MOBILE 2 which were used by the EPA to Respond to Congressional Inquiries on the Clean Air Act, and were calculated using the EPA MOBILE 2.5 computer program. An ambient air temperature of 20° F was assumed in calculating the emission factors for both the 1 hour and 8 hour analysis case. Credit for a vehicle

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inspection maintenance (I/M) emission control program beginning in 1984 was included in the emission factor calculations.

Average vehicle operating speeds used in the calculating emission factors were based on the capacity of each roadway link considered, the applicable speed limit, and external influences on speed through the link from immediately adjacent links. Average operating speeds ranged from 25 mph to 55 mph depending upon the roadways and alternate under consideration.

Meteorological Data

Worst-case meteorological conditions of 1 meter/second for wind speed and atmospheric stability class F were assumed for both the 1 hour and 8 hour classifications. In addition, as stated above, a worst-case temperature of 20° F was assumed.

The wind directions utilized as part of the analysis were rotated to maximize CO concentrations at each receptor location. Wind directions varied for each receptor and were selected through a systematic scan of CO concentrations associated with different wind angles.

b. Sensitive Receptors

Site selection of sensitive receptors were made on the basis of proximity to the roadway, type of adjacent land use, and changes in traffic patterns on the roadway network. Three (3) residential receptor sites and one (1) edge of right of site were chosen for this analysis. The receptor

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site locations were verified during study area visits by the analysis team. The receptor sites are shown on the Alternates mapping.

Table 5
Air Receptor Sites
Maryland Route 4

<u>Site No.</u>	<u>Description/Location</u>
1	Residence, 1 story brick 1400 Southern Maryland Blvd. (MD 4)
2	Edge-of-right-of-way site Sands Road/Mary- land Route 4
3	Residence, 2 story frame 1002 Wrighton Road
4	Residence, 1 story brick 5671 Greenock Road

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c. Results of Microscale Analysis

The results of the calculations of CO concentrations at each of the sensitive receptor sites for the No-Build and Build alternates are shown on Tables 5 and 6. The values shown consist of predicted CO concentration attributable to traffic on various roadway links plus projected background levels. A comparison of the values in Tables 5 and 6 with the S/NAAQS shows that no violations will occur for the No-Build or Build Alternates in 1990 or 2010 for the one-hour or eight-hour concentration of CO. The projected CO concentrations vary between alternates depending on receptor locations as a function of the roadway locations and traffic patterns associated with each alternate.

The No-Build Alternate generally results in the highest CO concentrations in 1990 and 2010 while the Build Alternates result in slightly lower CO concentrations. In all cases, the background concentrations are greater than the CO contributions from the roadway network associated with the Alternates. The concentrations remain well below the S/NAAQS for all alternates under consideration.

In conclusion, the No-Build Alternate and Build Alternates will not result in violations of the 1 hour or 8 hour S/NAAQS in 1990 or 2010.

2. Construction Impacts

The construction phase of the proposes project has the potential of impacting the ambient air quality through such means as fugitive dust from grading operations and materials handling. The State Highway Administration has addressed this possibility by establishing Specifications for Materials, Highways, Bridges and Incidental Structures which specifies procedures to be followed by contractors involved in state work.

The Maryland Bureau of Air Quality Control was consulted to determine the adequacy of the Specifications in terms of satisfying the requirements of the Regulations Governing the Control of Air Pollution in the State of Maryland. The Maryland Bureau of Air Quality Control found that the specifications are consistent with the requirements of these regulations. Therefore, during the construction period, all appropriate measures will be taken to minimize the impact on the air quality of the area.

3. Conformity with Regional Air Quality Planning

The project is within air quality nonattainment areas which have transportation control measures in the State Implementation Plan (SIP). This project conforms with SIP since it originates from conforming transportation improvement program.

4. Agency Coordination

Copies of the technical Air Quality Analysis are being circulated to the U.S. Environmental Protection Agency and the Maryland Air Management Administration for review and comment.

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TABLE 6

1990

CO CONCENTRATIONS* AT EACH RECEPTOR SITE, PPM

Receptors	No-Build		Alt. W-2		Alt. W-3		Alt. W-5		Alts. P-3 and P-4		Alt. B-2		Alt. B-4	
	1 Hr.	8 Hr.	1 Hr.	8 Hr.	1 Hr.	8 Hr.	1 Hr.	8 Hr.	1 Hr.	8 Hr.	1 Hr.	8 Hr.	1 Hr.	8 Hr.
1	10.4	6.2	10.5	6.1	10.0	5.8	10.1	5.8	-	-	-	-	-	-
2	10.4	6.2	-	-	-	-	-	-	9.8	5.7	-	-	-	-
3	10.5	6.1	-	-	-	-	-	-	-	-	10.3	6.0	10.3	6.2
4	10.3	6.2	-	-	-	-	-	-	-	-	10.1	6.0	10.0	6.1

*Including Background Concentrations

The S/NAAQS for CO: 1 Hr. Maximum = 35 PPM

8 Hr. Maximum = 9 PPM

TABLE 7

2010

CO CONCENTRATIONS* AT EACH RECEPTOR SITE, PPM

Receptors	No-Build		Alt. W-2		Alt. W-3		Alt. W-5		Alts. P-3 and P-4		Alt. B-2		Alt. B-4	
	1 Hr.	8 Hr.	1 Hr.	8 Hr.	1 Hr.	8 Hr.	1 Hr.	8 Hr.	1 Hr.	8 Hr.	1 Hr.	8 Hr.	1 Hr.	8 Hr.
1	8.3	5.1	8.4	4.8	8.0	4.8	8.0	4.8	-	-	-	-	-	-
2	8.3	4.9	-	-	-	-	-	-	7.6	4.6	-	-	-	-
3	8.6	4.8	-	-	-	-	-	-	-	-	8.3	4.9	8.4	5.0
4	8.4	4.9	-	-	-	-	-	-	-	-	7.9	4.8	8.2	5.1

*Including Background Concentrations

The S/NAAQS for CO: 1 Hr. Maximum = 35 PPM

8 Hr. Maximum = 9 PPM

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V. COMMENTS AND COORDINATION

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V. COMMENTS AND COORDINATION

A. Coordination

In addition to correspondence with appropriate resource agencies, this project has been coordinated with representatives of the U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, the Environmental Protection Agency and the Maryland Department of Natural Resources - Water Resources Administration (DNR-WRA) at the State Highway Administration Quarterly Interagency Review Meeting on June 12, 1985.

An Alternates Public Meeting was held at the Southern Middle School on April 17, 1985 to present preliminary study alternates for public comment. The comments received as a result of this meeting were considered in developing the alternates for detailed study.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
DIVISION OF ECOLOGICAL SERVICES
1825B VIRGINIA STREET
ANNAPOLIS, MARYLAND 21401

August 16, 1984

Ms. Cynthia D. Simpson
State Highway Administration
P.O. Box 717
707 N. Calvert Street
Baltimore, MD 21203

Re: Contract No. AA 376-101-570
Md. Rt. 4 from Md. Rt. 258
to Prince George's County Line

Dear Ms. Simpson:

This responds to your July 30, 1984, request for information on the presence of Federally listed endangered or threatened species within the impact area of the subject highway project in Anne Arundel County.

Except for occasional transient individuals, no Federally listed or proposed endangered or threatened species are known to exist in the project impact area. Therefore, no Biological Assessment or further Section 7 Consultation is required with the Fish and Wildlife Service (FWS). Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

The following "Candidate" species (those placed under review in the Federal Register to determine suitability for listing) may be present in the project impact area:

Swamp pink	<u>Hellonias bullata</u>
Sensitive jointvetch	<u>Aeschynomene virginica</u>
Barrett's sedge	<u>Carex barratti</u>
(no common name)	<u>Juncus caesariensis</u>

Candidate species are not legally protected under the Endangered Species Act and biological assessment and consultation requirements pursuant to that legislation do not apply to them. They are included here for the purpose of notifying you of possible future proposals and listings in advance, for consideration in your NEPA review process, and to encourage efforts to avoid adverse impacts to them. Additional information on these candidate species may be obtained by contacting the Maryland Natural Heritage Program (269-3656).

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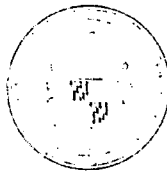
This response relates only to endangered species under our jurisdiction. It does not address other FWS concerns under the Fish and Wildlife Coordination Act or other legislation.

Thank you for your interest in endangered species. If you have any questions or need further assistance, please contact Andy Moser of our Endangered Species staff at (301) 269-6324.

Sincerely yours,

Glenn Kinser
Supervisor
Annapolis Field Office

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GAREY C. BROWN, M.D.
SECRETARY
JOHN R. GREEN
DEPUTY SECRETARY

STATE OF MARYLAND
DEPARTMENT OF NATURAL RESOURCES
CAPITAL PROGRAMS ADMINISTRATION
TAWES STATE OFFICE BUILDING
ANNAPOLIS, MARYLAND 21401

FRED L. ESKEW
ASSISTANT SECRETARY
FOR CAPITAL PROGRAMS

August 7, 1984

Mr. Louis H. Ege, Jr.
Bureau of Project Planning
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21203

Subject: Maryland Route 4 from Maryland Route 258 to
the Prince Georges County Line
Contract No. AA 376-101-570

Dear Mr. Ege:

We have no record of any species presently on the State or Federal Endangered Species Lists within the study area of this project, as delineated in your transmittal of July 30, 1984. However, the Heritage Program data base does include historic records for four state-rare plants (Chelone obliqua, Carex hyalinolepis, Habenaria flava, Potamogeton foliosus) from the Patuxent River and its adjacent wetlands, above the Route 4 Bridge.

If the scope of this project should include any construction activities beyond the existing right-of-way, I recommend a site survey to determine if any of these species are present within the area to be potentially disturbed.

Sincerely,

Arnold W. Norden
Md. Natural Heritage Program

AWN:mcs

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DEPARTMENT OF NATURAL RESOURCES
Maryland Forest, Park & Wildlife Service
TAWES OFFICE BUILDING
ANNAPOLIS, MARYLAND 21401

TORREY C. BROWN, M.D.
SECRETARY

RONALD E. McLAUCHLAN
DIRECTOR

August 6, 1984

Mr. Louis H. Ege, Jr.
Bureau of Project Planning
State Highway Administration
P.O. Box 717/707 N. Calvert Street
Baltimore, Maryland 21203-0717

Dear Mr. Ege:

There are no known populations of listed threatened or endangered species within the area of project limits for improvements along MD Route 4 from MD Route 258 to the Prince George's county line, as described to me in your letter of July 30, 1984.

Sincerely,

Gary J. Taylor
Nongame & Endangered
Species Program Manager

GJT:ba
cc: Carlo Brunori

(301) 827-8612

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FORREST BROWN, M.O.
SECRETARY
JOHN R. GRIFFIN
DEPUTY SECRETARY

STATE OF MARYLAND
DEPARTMENT OF NATURAL RESOURCES
MARYLAND GEOLOGICAL SURVEY

KENNETH N. WEAVER
DIRECTOR
MARYLAND GEOLOGICAL SURVEY
EMERY T. CLEAVES
DEPUTY DIRECTOR

THE ROTUNDA
711 W. 40TH STREET, SUITE 440
BALTIMORE, MARYLAND 21211

Division of Archeology
338-7236

26 September 1984

Ms. Rita Suffness
Environmental Evaluation
State Highway Administration
707 North Calvert Street, Room 314
Baltimore, Maryland 21202

RE: Maryland Route 4
Green Landing Road to Talbot Road

Dear Rita:

As per your request, enclosed is a map showing the location of known archeological sites relative to the subject project. A brief description of each is presented below.

18AN19 (Dorr) - primarily Middle Woodland (Mockley ceramics), although Late Woodland Potomac Creek ware also recorded; shell; rhyolite and quartzite projectiles; part of site destroyed by gravel operations

18AN84 (Wayson) - Selby Bay (Middle Woodland) component; also Late Woodland component with Potomac Creek cord-impressed pottery; platform pipe reported

18AN382 (Galloway) - complete Accokeek pot recovered from bulldozed area; only ten flakes in association per collector

18PR9 (Billingsley) - gorget fragment, celt, 5 axes, "cut slate", points, steatite sherds; may be site visited by Capt. John Smith in 1607; reported to be last site occupied by the Patuxent Indians

18PR151 (Green Landing) - no information

18PR198 (Brooks) - Accokeek, Smallwood, Late Woodland, Selby Bay, and Archaic components

18PR226 (Turtle Shell Wreck) - probable remains of the Scorpion, part of Commodore Joshua Barney's Flotilla; scuttled 22 August 1814

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Area A - reported perhistoric site

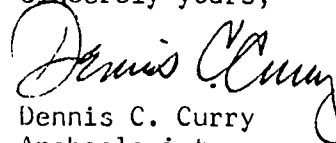
Area B - 1812 gun barge - part of Barney's Flotilla

Area C - two boats from Barney's flotilla

Two previous archeological surveys are also indicated on the map. In 1979, Donald Shomette conducted an underwater archeological survey in the Patuxent River and located remains of Commodore Barney's flotilla (18PR226, Areas B & C). H/DOT Transect #8-004 failed to locate any archeological remains.

In sum, the archeological potential in the project vicinity is fairly high, especially in the area of the proposed Green Landing Road and Waysons Corner interchanges. If I can be of further assistance, please let me know.

Sincerely yours,


Dennis C. Curry
Archeologist

DCC:lw

Enclosure

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TORREY C. BROWN M.D.
SECRETARY
JOHN R. GRIFFIN
DEPUTY SECRETARY

STATE OF MARYLAND
DEPARTMENT OF NATURAL RESOURCES
MARYLAND GEOLOGICAL SURVEY
THE ROTUNDA
711 W. 40TH STREET SUITE 440
BALTIMORE, MARYLAND 21211

KENNETH N. WEAVER
DIRECTOR
MARYLAND GEOLOGICAL SURVEY
EMERY T. CLEAVES
DEPUTY DIRECTOR

Division of Archeology
338-7236

23 September 1985

Mr. Louis H. Ege, Jr.
Bureau of Project Planning
State Highway Administration
P.O. Box 717/707 North Calvert Street
Baltimore, Maryland 21203-0717

RE: Maryland Route 4 (Patuxent River
Bridge to MD 258)
Prince Georges and Anne Arundel Cos.

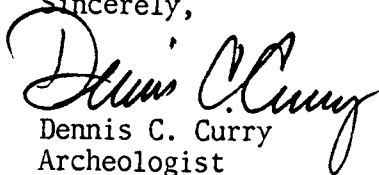
Dear Mr. Ege:

On 6 September 1985, I conducted a field assessment of the subject project relative to archeological resources. Since almost all of the project area lies within existing right-of-way lines, and much of the proposed roadwork would occur between existing lanes of Maryland Route 4, the archeological potential was believed to be low due to probable prior disturbance.

While extensively disturbed, the study area did not exhibit the near total disturbance anticipated, especially in the median area between the existing lanes of Maryland Route 4. As a result, the entire project area was traversed on foot and three primary areas were subjected to concentrated examination (surface examination and shovel test pits): the proposed interchange area at Waysons Corner in an area overlooking the Patuxent River swamp, and two segments of Maryland Route 4 crossed by Galloway Creek or its major unnamed tributary. As with M/DOT Transect #8-004 (located at the eastern end of the project limits), my inspection found no evidence of archeological resources. As a result, no further archeological involvement on this project is warranted.

If I may be of further assistance on this matter, please let me know.

Sincerely,

A handwritten signature in cursive script that reads "Dennis C. Curry". The signature is written in black ink and is positioned above the printed name and title.

Dennis C. Curry
Archeologist

DCC:lw

cc: Cynthia Simpson
Rita Suffness



Maryland Historical Trust

October 9, 1985

Ms. Cynthia D. Simpson
Acting Chief, Environmental Management
P. O. Box 717
707 North Calvert Street
Baltimore, Maryland 21203-0717

RE: Maryland Route 4
Southern Maryland Boulevard
from South of Maryland Route 258
to Maryland Route 726
Contract No. AA 376-101-570
P.D.M.S. No. 022132

Dear Ms. Simpson:

Thank you for your letter of September 20, 1985, regarding this project. Our office agrees with your determination that there will be no effect on historic properties.

Sincerely,

George J. Andreve
Environmental Review
Administrator

GJA/hec

cc: Ms. Rita Suffness
Mrs. Sara Walton
Mr. W. Dickerson Charlton
Mr. Anthony F. Christhilf
Ms. Linda Collins

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Maryland Historical Trust

December 19, 1984

Ms. Cynthia D. Simpson, Acting Chief
Environmental Management
State Highway Administration
PO Box 717, 707 N. Calvert St.
Baltimore, Maryland 21203-0717

Re: MD 4, Creek Landing Road to
Talbot Road
AA 376-101-570
P.D.M.S. No. 022132

AM 8 14

Dear Ms. Simpson:

Thank you for your letter of September 24, 1984 regarding historic sites in the vicinity of the above-referenced project.

We concur with your opinion that the following sites are Maryland Inventory quality and not eligible for the National Register:

Marlborough Hunt Club	PG 82-B-2
Hills Bridge	PG 79-39
Walch House	AA 249

Our office consulted with the Maryland-National Capital Park and Planning Commission (M-NCPPC) regarding the significance of the House at Hills Landing (PG 82-B-1). Three members of the M-NCPPC staff visited the house earlier this month. They report that the older part of the house contains historic materials which suggest a pre-1830 construction date. Based on this information, the house's historical use as a tenant house, and its probable association with the history of the landing, we believe that additional research is necessary to determine its level of significance.

If you have any questions, please call Ms. Kim Kimlin at 269-2438.

Sincerely,

George J. Andrevé
Environmental Review
Administrator

GJA/KEK/hec

cc: Ms. Gail Rothrock
Mrs. Sara Walton
Mr. W. Dickerson Charlton
Ms. Rita Suffness



Maryland Historical Trust

October 24, 1985

Mr. Louis H. Ege, Jr., Action Chief
Bureau of Project Planning
State Highway Administration
Maryland Department of Transportation
PO Box 717
707 North Calvert Street
Baltimore, Maryland 21203-0717

Re: MD Rt. 4 from South of
MD Rt. 258 to MD Rt. 726
Contact No. AA 376-101-570
P.D.M.S. No. 022132
Prince George's County, Maryland

Dear Mr. Ege:

Based upon the results of the Phase I archeological reconnaissance conducted of the project area, we concur that the above-referenced project should have no effect upon significant archeological resources. Therefore, additional archeological investigations are not warranted for this particular project.

Sincerely,

Richard B. Hughes
State Administrator of Archeology

RBH/cs

cc: Mr. W. Dickerson Charlton
Mrs. Sara Walton

Ms. Rita Suffness
Mr. Tyler Bastian

VI. APPENDICES

"SUMMARY OF THE RELOCATION ASSISTANCE PROGRAM OF THE
STATE HIGHWAY ADMINISTRATION OF MARYLAND"

All State Highway Administration projects must comply with the provisions of the "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970" (Public Law 91-646) and/or the Annotated Code of Maryland, Real Property, Title 12, Subtitle 2, Sections 12-201 thru 12-212. The Maryland Department of Transportation, State Highway Administration, Bureau of Relocation Assistance, administers the Relocation Assistance Program in the State of Maryland.

The provisions of the Federal and State Law require the State Highway Administration to provide payments and services to persons displaced by a public project. The payments that are provided include replacement housing payments and/or moving costs. The maximum limits of the replacement housing payments are \$15,000 for owner-occupants and \$4,000 for tenant-occupants. In addition, but within the above limits, certain payments may be made for increased mortgage interest costs and/or incidental expenses. In order to receive these payments, the displaced person must occupy decent, safe and sanitary replacement housing. In addition to the replacement housing payments described above, there are also moving cost payments to persons, businesses, farms and non-profit organizations. Actual moving costs for residences include actual moving costs up to 50 miles or a schedule moving cost payment, including a dislocation allowance, up to \$500.

The moving cost payments to businesses are broken down into several categories, which include actual moving expenses and payments "in lieu of" actual moving expenses. The owner of a displaced business is entitled to receive a payment for actual reasonable moving and related expenses in moving his business, or personal property; actual direct losses of tangible personal property; and actual reasonable expenses for searching for a replacement site.

The actual reasonable moving expenses may be paid for a move by a commercial mover or for a self-move. Generally, payments for the actual reasonable moving expenses are limited

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to a 50 mile radius. In both cases, the expenses must be supported by receipted bills. An inventory of the items to be moved must be prepared, and estimates of the cost may be obtained. The owner may be paid an amount equal to the low bid or estimate. In some circumstances, the State may negotiate an amount not to exceed the lower of the two bids. The allowable expenses of a self-move may include amounts paid for equipment hired, the cost of using the business's vehicles or equipment, wages paid to persons who physically participate in the move, and the cost of the actual supervision of the move.

When personal property of a displaced business is of low value and high bulk, and the estimated cost of moving would be disproportionate in relation to the value, the State may negotiate for an amount not to exceed the difference between the cost of replacement and the amount that could be realized from the sale of the personal property.

In addition to the actual moving expenses mentioned above, the displaced business is entitled to receive a payment for the actual direct losses of tangible personal property that the business is entitled to relocate but elects not to move. These payments may only be made after an effort by the owner to sell the personal property involved. The costs of the sale are also reimbursable moving expenses. If the business is to be reestablished, and personal property is not moved but is replaced at the new location, the payment would be the lesser of the replacement costs minus the net proceeds of the sale or the estimated cost of moving the item. If the business is being discontinued or the item is not to be replaced in the reestablished business, the payment will be the lesser of the difference between the value of the item for continued use in place and the net proceeds of the sale or the estimated cost of moving the item.

If no offer is received for the personal property and the property is abandoned, the owner is entitled to receive the lesser of the value for continued use of the item in place or the estimated cost of moving the item and the reasonable expenses of the sale. When personal property is abandoned without an effort by the owner to dispose of the property by sale, the owner will not be entitled to moving expenses, or losses for the item involved.

The owner of a displaced business may be reimbursed for the actual reasonable expenses in searching for a replacement business up to \$500. All expenses must be supported by receipted bills. Time spent in the actual search may be reimbursed on an hourly basis, but such rate may not exceed \$10 per hour.

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In lieu of the payments described above, the State may determine that the owner of a displaced business is eligible to receive a payment equal to the average annual net earnings of the business. Such payment shall not be less than \$2,500 nor more than \$10,000. In order to be entitled to this payment, the State must determine that the business cannot be relocated without a substantial loss of its existing patronage, the business is not part of a commercial enterprise having at least one other establishment in the same or similar business that is not being acquired, and the business contributes materially to the income of a displaced owner.

Considerations in the State's determination of loss of existing patronage are the type of business conducted by the displaced business and the nature of the clientele. The relative importance of the present and proposed locations to the displaced business, and the availability of suitable replacement sites are also factors.

In order to determine the amount of the "in lieu of" moving expenses payment, the average annual net earnings of the business is considered to be one-half of the net earnings before taxes, during the two taxable years immediately preceding the taxable year in which the business is relocated. If the two taxable years are not representative, the State, with approval of the Federal Highway Administration, may use another two-year period that would be more representative. Average annual net earnings include any compensation paid by the business to the owner, his spouse, or his dependents during the period. Should a business be in operation less than two years, but for twelve consecutive months during the two taxable years prior to the taxable year in which it is required to relocate, the owner of the business is eligible to receive the "in lieu of" payment. In all cases, the owner of the business must provide information to support its net earnings, such as income tax returns, for the tax years in question.

For displaced farms and non-profit organizations, actual reasonable moving costs generally up to 50 miles, actual direct losses of tangible personal property, and searching costs are paid. The "in lieu of" actual moving cost payments provide that the State may determine that a displaced farm may be paid a minimum of \$2,500 to a maximum of \$10,000 based upon the net income of the farm, provided that the farm has been discontinued or relocated. In some cases, payments "in lieu of" actual moving costs may be made to farm operations that are affected by a partial acquisition. A non-profit organization is eligible to receive "in lieu of" actual moving cost payments, in the amount of \$2,500.

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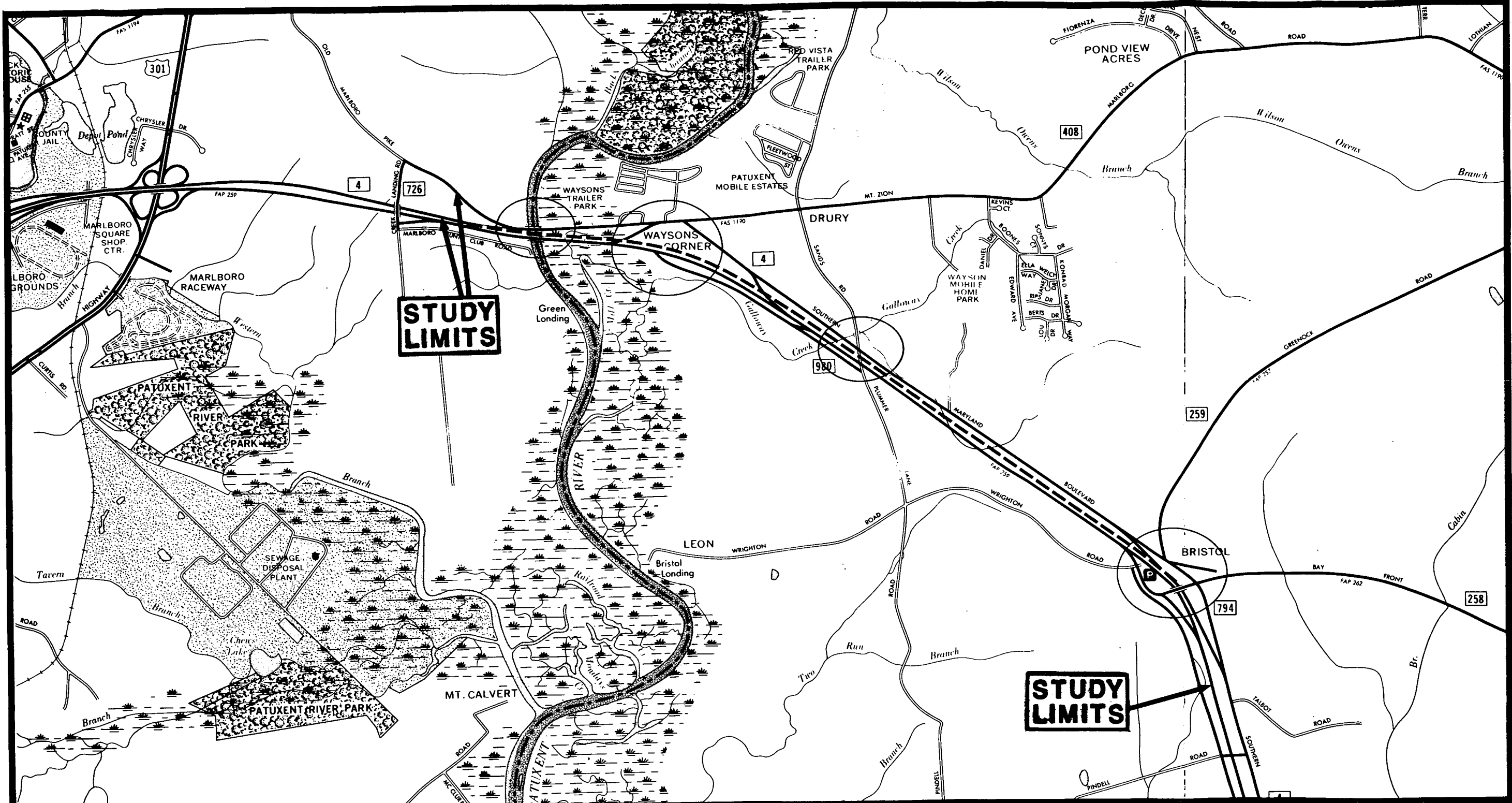
A more detailed explanation of the benefits and payments available to displaced persons, businesses, farms, and non-profit organizations is available in Relocation Brochures that will be distributed at the public hearings for this project and will also be given to displaced persons individually in the future.

In the event comparable replacement housing is not available to rehouse persons displaced by public projects or that available replacement housing is beyond their financial means, replacement "housing as a last resort" will be utilized to accomplish the rehousing. Detailed studies will be completed by the State Highway Administration and approved by the Federal Highway Administration before "housing as a last resort" could be utilized. "Housing as a last resort" could be provided to displaced persons in several different ways although not limited to the following:

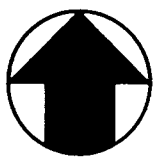
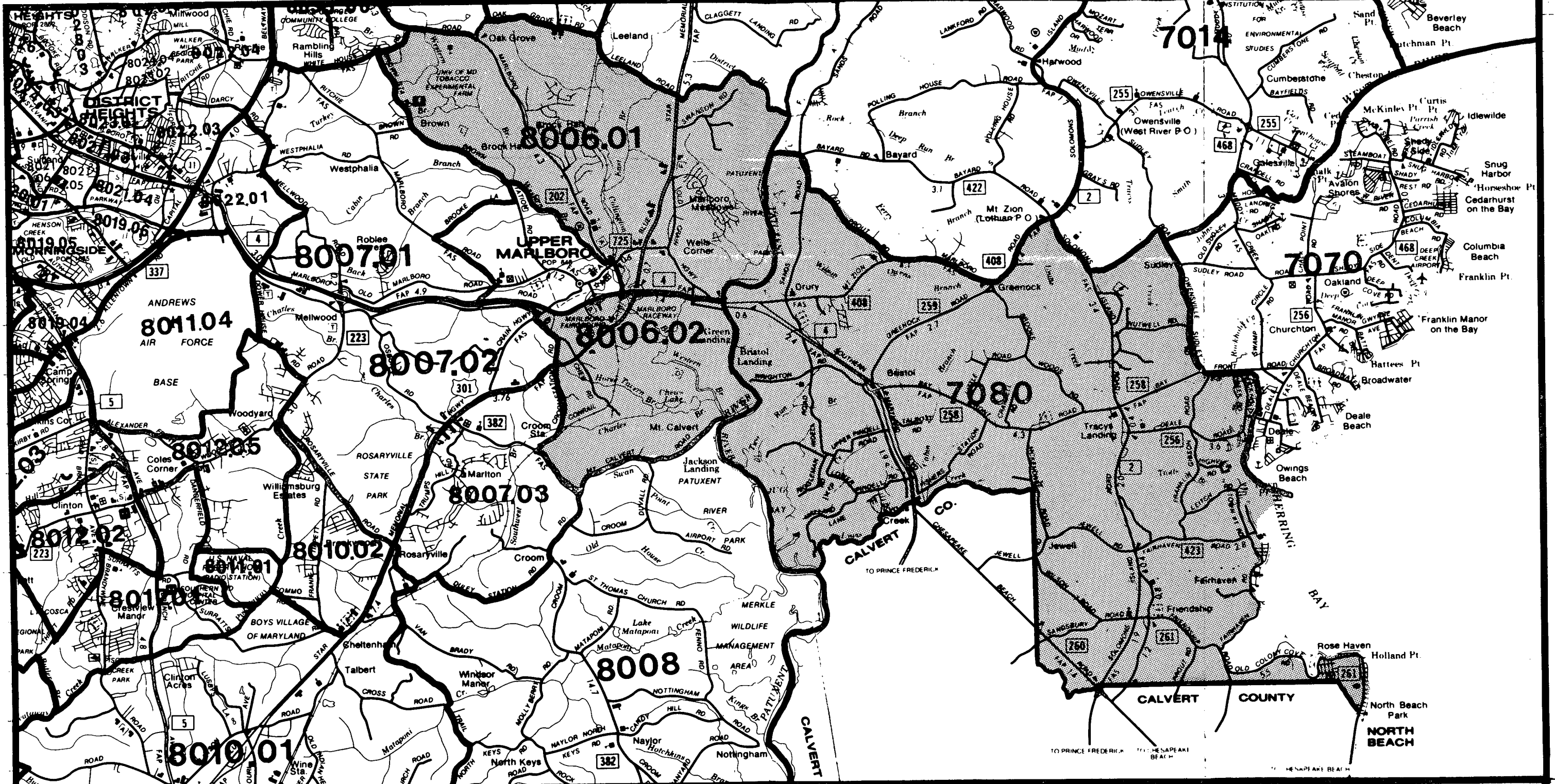
1. An improved property can be purchased or leased.
2. Dwelling units can be rehabilitated and purchased or leased.
3. New dwelling units can be constructed.
4. State acquired dwellings can be relocated, rehabilitated, and purchased or leased.

Any of these methods could be utilized by the State Highway Administration and such housing would be made available to displaced persons. In addition to the above procedure, individual replacement housing payments can be increased beyond the statutory limits in order to allow a displaced person to purchase or rent a dwelling unit that is within his financial means.

The "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970" requires that the State Highway Administration shall not proceed with any phase of any project which will cause the relocation of any person, or proceed with any construction project until it has furnished satisfactory assurances that the above payments will be provided and that all displaced persons will be satisfactorily relocated to comparable decent, safe and sanitary housing within their financial means or that such housing is in place and has been made available to the displaced person.



MARYLAND ROUTE 4
STUDY AREA MAP
 0 2000'
FIGURE I-2

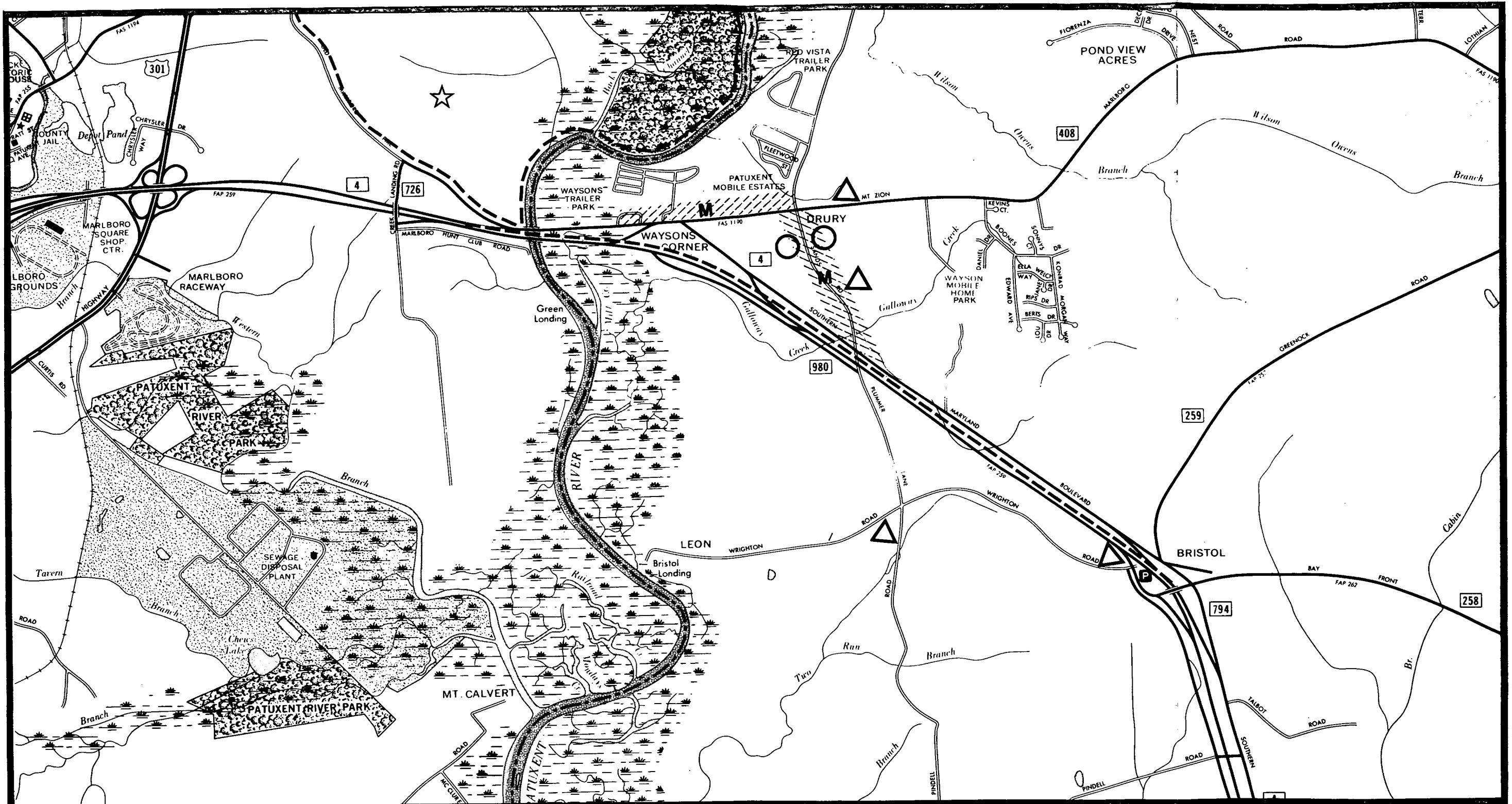


MARYLAND ROUTE 4

CENSUS TRACTS

1" = 1 mi.

FIGURE I-3



LEGEND



- ▲ CHURCH
- CEMETERY
- Ⓟ PARK & RIDE LOT
- ☆ NATIONAL REGISTER SITE

--- PROPOSED IMPROVEMENTS

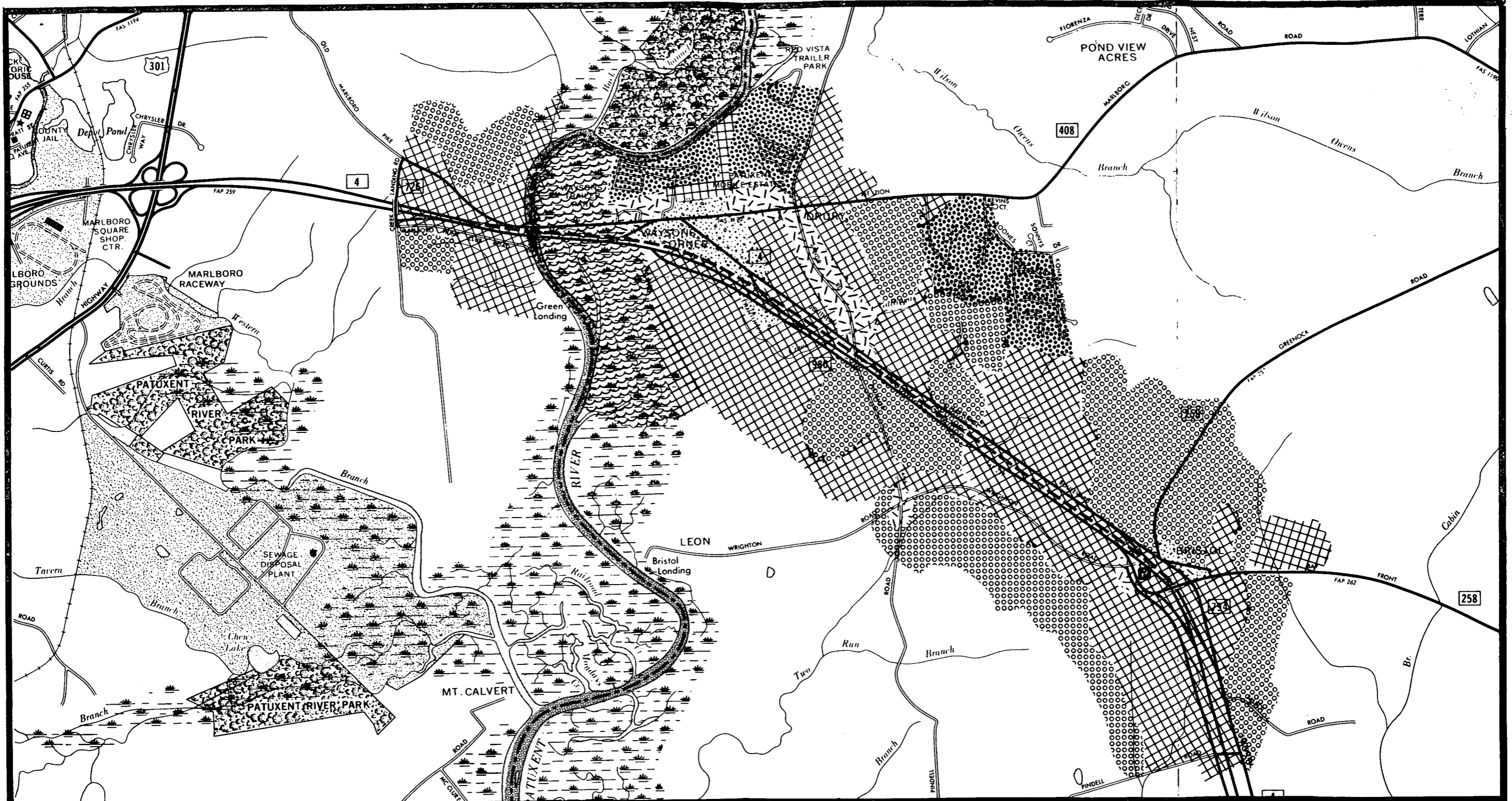
▲ MINORITY COMMUNITY

MARYLAND ROUTE 4

COMMUNITY FACILITIES AND HISTORIC SITES

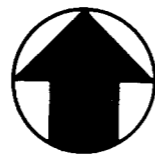
0 2000'







FIGURE I-4



LEGEND

----- PROPOSED IMPROVEMENTS



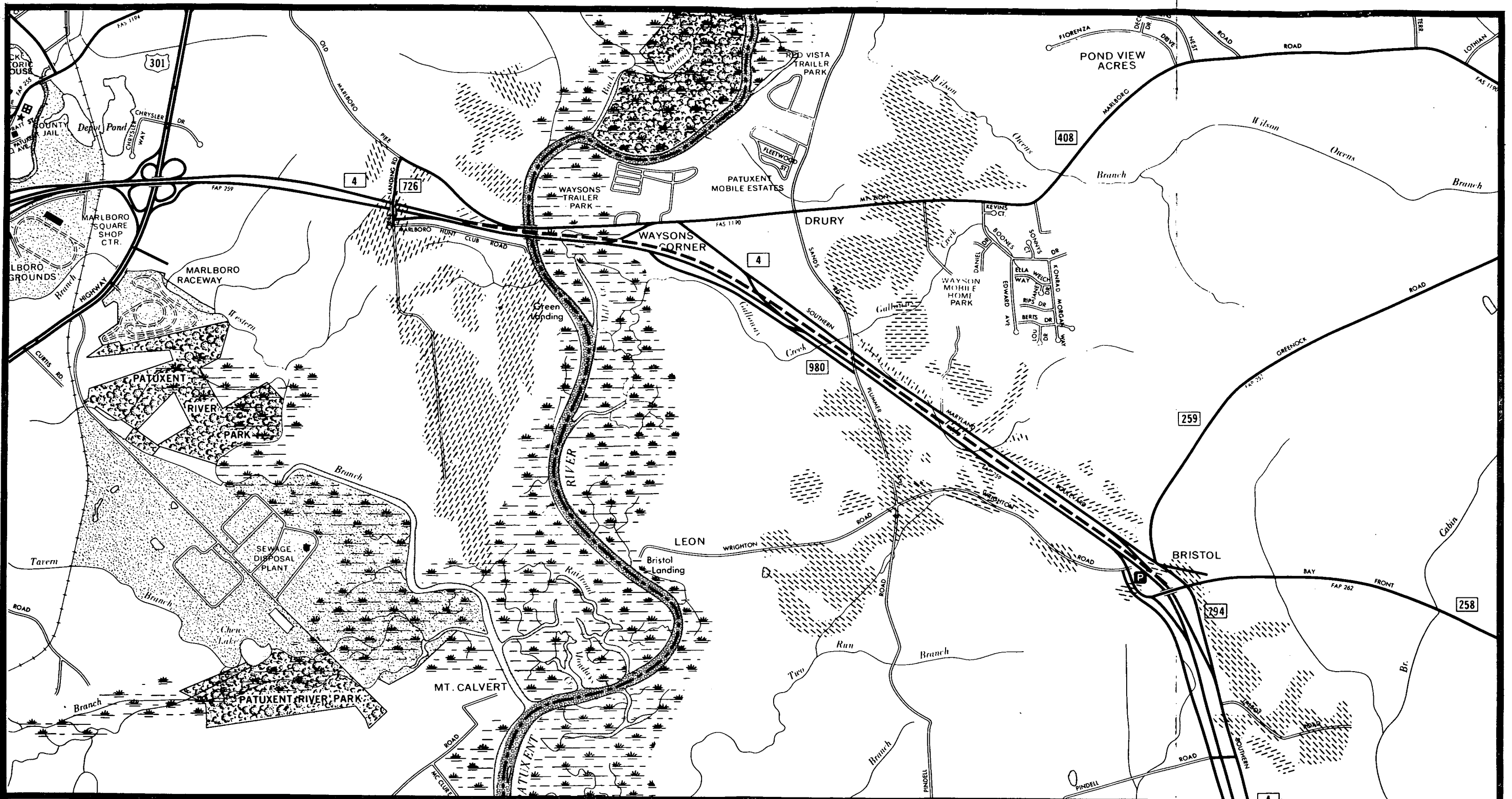
-  WETLANDS
-  HIGH DENSITY RESIDENTIAL
-  MEDIUM DENSITY RESIDENTIAL
-  FOREST/BRUSH
-  COMMERCIAL
-  AGRICULTURAL/RURAL RESIDENTIAL



MARYLAND ROUTE 4

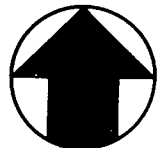
EXISTING AND FUTURE LAND USE

0 2000'

FIGURE I-5



 PRIME FARMLAND SOILS
 PROPOSED IMPROVEMENTS



MARYLAND ROUTE 4
PRIME FARMLAND SOILS MAP

0 ————— 2000'

FIGURE I-6