ENVIRONMENTAL ASSESSMENT

State Contract No: P 695-101-371

F.A.P. M 5114-1

MARYLAND ROUTE 214 FROM WEST OF I-95 TO WEST OF U.S. ROUTE 301, & ADDITIONAL RAMPS AT THE I-95/MARYLAND ROUTE 202 INTERCHANGE IN PRINCE GEORGE'S COUNTY

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

and
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

REPORT NUMBER: FHWA-MD-EA-82-03-D

FEDERAL HIGHWAY ADMINISTRATION
REGION III

Maryland Route 214
From West of I-95 to west of
U.S. Route 301 and additional ramps
at the I-95/Maryland Route 202 Interchange
in Prince George's County, Maryland

ADMINISTRATIVE ACTION

ENVIRONMENTAL ASSESSMENT

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

SUBMITTED PURSUENT TO 42 U.S.C. 4332 (2) (C) and 23 U.S.C. 128(a), CEQ Regulations (40 CFR 1500 et sec)

11/3/82
DATE

For Maryland State Highway Administration

11/4/82
DATE

For Federal Highway Administration

SUMMARY

4

1. Administrative Action

( ) Environmental Impact Statement

(X) Environmental Assessment

( ) Finding of No Significant Impact

( ) Section 4(f) Evaluation

2. Additional Information:

Additional information concerning this action may be obtained by contacting:

Mr. Wm. F. Schneider, Jr.
Chief, Bureau of Project Planning, State Highway Administration, Room 310
707 North Calvert Street
Baltimore, Maryland 21202
Phone: (301) 659-1130
Hours: 8:15 A.M. - 4:15 P.M.

Mr. Roy Gingrich
District Engineer
Federal Highway Administration
The Rotunda - Suite 220
711 West 40th Street
Baltimore, Maryland 21211
Phone: (301) 962-4011
Hours: 7:45 A.M. - 4:15 P.M.

3. Description of Action

The Maryland Route 214 (Central Avenue) study was initiated to investigate highway improvement alternates for satisfying design year (2005) arterial highway capacity and safety needs. (See Figure 1, page I-2) . The project area extends from just west of the I-95 (Capital Beltway) interchange at Brightseat Road to U.S. Route 301 in Prince George's County, a total distance of 7.2 miles.

The proposed Maryland Route 214 project would improve access to public facilities, including the proposed Largo Town Center and the Regional Metrorail System terminal at Addison Road. Commuting time would be reduced as would response time for emergency services. This proposal is consistent with State and local transportation and land use development plans.

4. Alternates Description

The No-Build alternate would consist of normal maintenance and safety improvements. Signals may be installed at selected intersections as warranted by the design year (2005). Other improvements include minor widenings and shoulder improvements at the intersections with Maryland Route 202, Campus Way, and Kettering Drive/Newbridge Way. Widening would also provide left turn vehicle storage lanes for the Maryland Route 202, Maryland Route 556 intersections and right turn channelization for some intersections. The highway would still contain geometric and capacity deficiencies and collision rates may increase.

Alternate 1 proposes reconstruction of the facility from the west limit of I-95 to west of U.S. 301 as a four (4) lane divided highway. It requires the spanning of three creeks with two structures on the present alignment of Maryland Route 214, and a third structure north of Maryland Route 214 on Maryland Route 556. A structure carrying Harry S. Truman Drive over Maryland Route 214 is also proposed. The improvement would utilize several areas dedicated or reserved for highway purposes.

Several options are being considered with Alternate 1. Both an interchange and an at-grade intersection are being considered at the existing Maryland Route 214/Maryland Route 202 intersection. The configuration of the interchange is a partial cloverleaf with ramps in three of the four quadrants (See Figure 2, page I-3). In addition to improvements to the Maryland Route 214/Maryland Route 202 intersection; additional ramps (Option 1 or Option 2) are proposed at the existing I-95/Maryland Route 202 interchange (approximately 1.7 miles north of Maryland Route 214) to relieve projected traffic congestion along Maryland Route 214.

In addition to these options, there are also two design options being considered for mainline Maryland Route 214. Option A is a dual rural roadway section with safety recovery areas. Option B is a dual urban roadway section which contains curbed outer shoulders. Various degrees of access control are being considered for both options. Although roadway Options A and B have been studied separately for the entire length of the proposed improvement; they are interchangeable in any combination east of Maryland Route 556 to U.S. Route 301.

Fringe parking and bicycle accommodations were added to the study but subsequently deleted from further consideration beause fringe parking experiments by local government in the Largo area failed to attract sufficient patronage to warrant consideration. Specific bicycle accommodations were deleted from the Project Planning study due to inconsistency with local master plans.

5. Summary of Impacts

Beneficial impacts of the build alternate include improved traffic operation; improved access to the proposed Largo Town Center and to community facilities (Capital Centre, Prince George's Community College, churches, etc.), conservation of energy through more efficient operating speeds, and improved access to the Washington, D.C. Metrorail System.

Adverse impacts are related to the acquisition of additional right of way for the proposed improvements. Alternate 1 would displace up to 5 businesses. No homes would be acquired under either alternate. No known minority businesses would be impacted by the project.

No endangered or threatened plant or animal species would be affected. Under Alternate No. 1, undeveloped land, woodland, agricultural land, and commercial property, would be acquired for completion of the project (See Section IV, Environmental Impacts

page IV-3). Minor loss of habitat for both vegetation and wildlife would result from right of way acquisition. Alternate 1 would require approximately 0.35 acres of wetlands.

FHWA Design noise levels would be exceeded at eight sites under Alternate 1. One site would experience levels in excess of Design Noise Levels under the No-Build alternate. A detailed explanation of noise impacts is included in Section IV, Environmental Impacts.

No violation of the State or National Ambient Air Quality Standards (S/NAAQS) for carbon monoxide is predicted to occur with the build alternate in the project completion year (1985) or design year (2005). In 1985, violation of the 8 hour carbon monoxide (CO) standard is predicted to occur at one air receptor under the No-Build Alternate.

Hydrologic studies have been performed to determine the extent of the floodplain and the effects of the proposed improvements on the floodplains. With proper hydraulic design, no significant impacts to the 100 year floodplain are expected to occur. Construction permits will be obtained from the Maryland Department of Natural Resources and the Army Corps of Engineers.

The proposed project would have generally favorable social and economic impacts on the area due to consistency with planned land use. Reconstruction of Maryland Route 214 is in accordance with the Prince George's County Area Master Plans and General Plan. This development would enhance the economic base of the County. No historic site on or eligible for the National Register would be affected. One archeological site may be affected. No public parks or recreational areas would be affected.

A comparison of impacts resulting from each alternate follows in the Comparison Table (Table 1, page vi). No area of controversy has been identified within the study limits of this project. No other government projects are being considered within the project study limits.

TABLE 1

COMPARISON OF ALTERNATES

IMPACT CATEGORY	NO-BUILD ALTERNATE	ALTERNATE 1					
		OPT.A RURAL TYPICAL	OPT. B URBAN TYPICAL	MARYLAND ROUTE 202 CONNECTIONS			
				MD. RTE. 214		I-95	
				AT-GRADE OPT. E	INTER. OPT. F	INTER. OPT. 1	INTER. OPT. 2
SOCIO-ECONOMIC IMPACTS							
1. Residences displaced	0	0	0	0	0	0	0
2. Number of people relocated	0	0	0	0	0	0	0
3. Minority families relocated	0	0	0	0	0	0	0
4. Businesses displaced	0	Up to 5	Up to 5	0	0	0	0
5. Farms displaced	0	0	0	0	0	0	0
6. Historic & Archeological Sites Affected	0	0	0	0	0	0	0
7. Public Recreational Lands Affected	0	0	0	0	0	0	0
8. Effect on Residential Access	None	Improved	Improved	None	None	None	None
9. Consistent with Land Use Plans	No	Yes	Yes	Yes	Yes	Yes	Yes
NOISE IMPACTS							
1. Range Predicted (dBA)	48 to 71	60 to 74	60 to 74	N/A	60 to 74	N/A	N/A
2. Number of sites exceeding design noise levels	1	8	8		8		
AIR QUALITY IMPACTS							
1. Sites exceeding National Ambient Air Quality Standards for Carbon Monoxide	1	None	None	None	None	None	None
TRAFFIC LEVEL OF SERVICE (LOS)	LOS F	LOS D	LOS D	LOS F	LOS F	LOS F	LOS E

TABLE 1

COMPARISON OF ALTERNATES

IMPACT CATEGORY	NO-BUILD ALTERNATE	ALTERNATE 1					
				MARYLAND ROUTE 202 CONNECTIONS			
				MD. RTE. 214		I-95	
		OPT. A RURAL TYPICAL	OPT. B URBAN TYPICAL	AT-GRADE OPT. E	INTER. OPT. F	INTER. OPT. 1	INTER. OPT. 2
NATURAL ENVIRONMENTAL IMPACTS							
1. Loss of Natural Habitat	None	Yes	Yes	None	Yes	Yes	Yes
2. Effect on Wildlife Populations	None	Minimal	Minimal	None	Minimal	Minimal	Minimal
3. Effect on Threatened or Endangered Species	None	None	None	None	None	None	None
4. Wetland Areas Affected (acres)	0	0.35 acres	0.35 acres	0	0	0	0
5. Floodplain Areas Affected (acres)	0	14	14	0	0	0	0
6. Stream Crossings	0	3	3	0	0	5	1
7. Effect on prime agricultural land	0	56.8 acres	56.8 acres	0	0	0	0
SECTION 4(F) IMPACTS							
Impact on Publicly owned park, recreation area, wildlife or waterfowl refuge, historic or archeological site of National Significance.	None	None	None	None	None	None	None

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The following Environmental Assessment Form is a requirement of the Maryland Environmental Policy Act and Maryland Department of Transportation Order 11.01.06.02. It's 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

	YES	NO	COMMENTS
A. Land Use Considerations			
1. Will the action be within the 100 year flood plain?	X		SEE PAGES iv, IV-21
2. Will the action require a permit for construction or alteration within the 50 year flood plain?	X		
3. Will the action require a permit for dredging, filling, draining or alteration of a wetland?	X		SEE PAGES iv, IV-26
4. Will the action require a permit for the construction or operation of facilities for solid waste disposal including dredge and excavation spoil?		X	
5. Will the action occur on slopes exceeding 15%?		X	
6. Will the action require a grading plan or a sediment control permit?	X		
7. Will the action require a mining permit for deep or surface mining?		X	
8. Will the action require a permit for drilling a gas or oil well?		X	
9. Will the action require a permit for airport construction?		X	
10. Will the action require a permit for the crossing of the Potomac River by conduits, cables or other like devices?		X	
11. Will the action affect the use of a public recreation area, park, forest, wildlife management area, scenic river or wildland?		X	

	YES	NO	COMMENTS
12. Will the action affect the use of any natural or man-made features that are unique to the county, state, or nation?	___	X	_____
13. Will the action affect the use of an archeological or historical site or structure?	___	X	_____
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?	___	X	_____
15. Will the action require the construction, alteration, or removal of a dam, reservoir, or waterway obstruction?	___	X	_____
16. Will the action change the overland flow of storm water or reduce the absorption capacity of the ground?	X	___	SEE PAGE IV-28
17. Will the action require a permit for the drilling of a water well?	___	X	_____
18. Will the action require a permit for water appropriation?	___	X	_____
19. Will the action require a permit for the construction and operation of facilities for treatment or distribution of water?	___	X	_____
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?	___	X	_____

	YES	NO	COMMENTS
21. Will the action result in any discharge into surface or sub-surface water?	X		SEE PAGE IV-27
22. If so, will the discharge affect ambient water quality parameters and/or require a discharge permit?		X	
C. Air Use Considerations			
23. Will the action result in any discharge into the air?	X		SEE PAGES IV-15-IV-24
24. If so, will the discharge affect ambient air quality parameters or produce a disagreeable odor?		X	SEE PAGES IV-15 to IV-24
25. Will the action generate additional noise which differs in character or level from present conditions?	X		SEE PAGE IV-12
26. Will the action preclude future use of related air space?		X	
27. Will the action generate any radiological, electrical, magnetic, or light influences?		X	
D. Plants and Animals			
28. Will the action cause the disturbance, reduction or loss of any rare, unique or valuable plant or animal?		X	
29. Will the action result in the significant reduction or loss of any fish or wildlife habitats?		X	
30. Will the action require a permit for the use of pesticides, herbicides or other biological, chemical or radiological control agents?		X	

	YES	NO	COMMENTS
E. Socio-Economic			
31. Will the action result in a pre-emption or division of properties or impair their economic use?	___	X	_____
32. Will the action cause relocation of activities, structures, or result in a change in the population density or distribution?	X	___	SEE PAGES iii, IV-1
33. Will the action alter land values?	X	___	SEE PAGE IV-2
34. Will the action affect traffic flow and volume?	X	___	SEE PAGES II-1, IV-5
35. Will the action affect the production, extraction, harvest or potential use of a scarce or economically important resource?	___	X	_____
36. Will the action require a license to construct a sawmill or other plant for the manufacture of forest products?	___	X	_____
37. Is the action in accord with federal, state, regional and local comprehensive or functional plans--including zoning?	X	___	SEE PAGE iv
38. Will the action affect the employment opportunities for persons in the area?	X	___	SEE PAGES I-6, IV-1
39. Will the action affect the ability of the area to attract new sources of tax revenue?	X	___	_____
40. Will the action discourage present sources of tax revenue from remaining in the area, or affirmatively encourage them to relocate elsewhere?	___	X	_____

	YES	NO	COMMENTS
41. Will the action affect the ability of the area to attract tourism?	___	X	_____
F. Other Considerations			
42. Could the action endanger the public health, safety or welfare?	___	X	_____
43. Could the action be eliminated without deleterious affects to the public health, safety, welfare or the natural environment?	___	X	_____
44. Will the action be of statewide significance?	___	X	_____
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?	___	X	_____
46. Will the action require additional power generation or transmission capacity?	___	X	_____
47. This agency will develop a complete environmental effects report on the proposed action.	___	X*	_____

*In accordance with the National Environmental Policy Act, and the Federal-Aid Highway Program Manual, Volume 7, Chapter 7, Section 2, this Environmental Assessment has been prepared. This document satisfies all the requirements of the Maryland Environmental Policy Act.

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LIST OF TABLES

I. DESCRIPTION OF PROPOSED ACTION

I. Description of Proposed Action

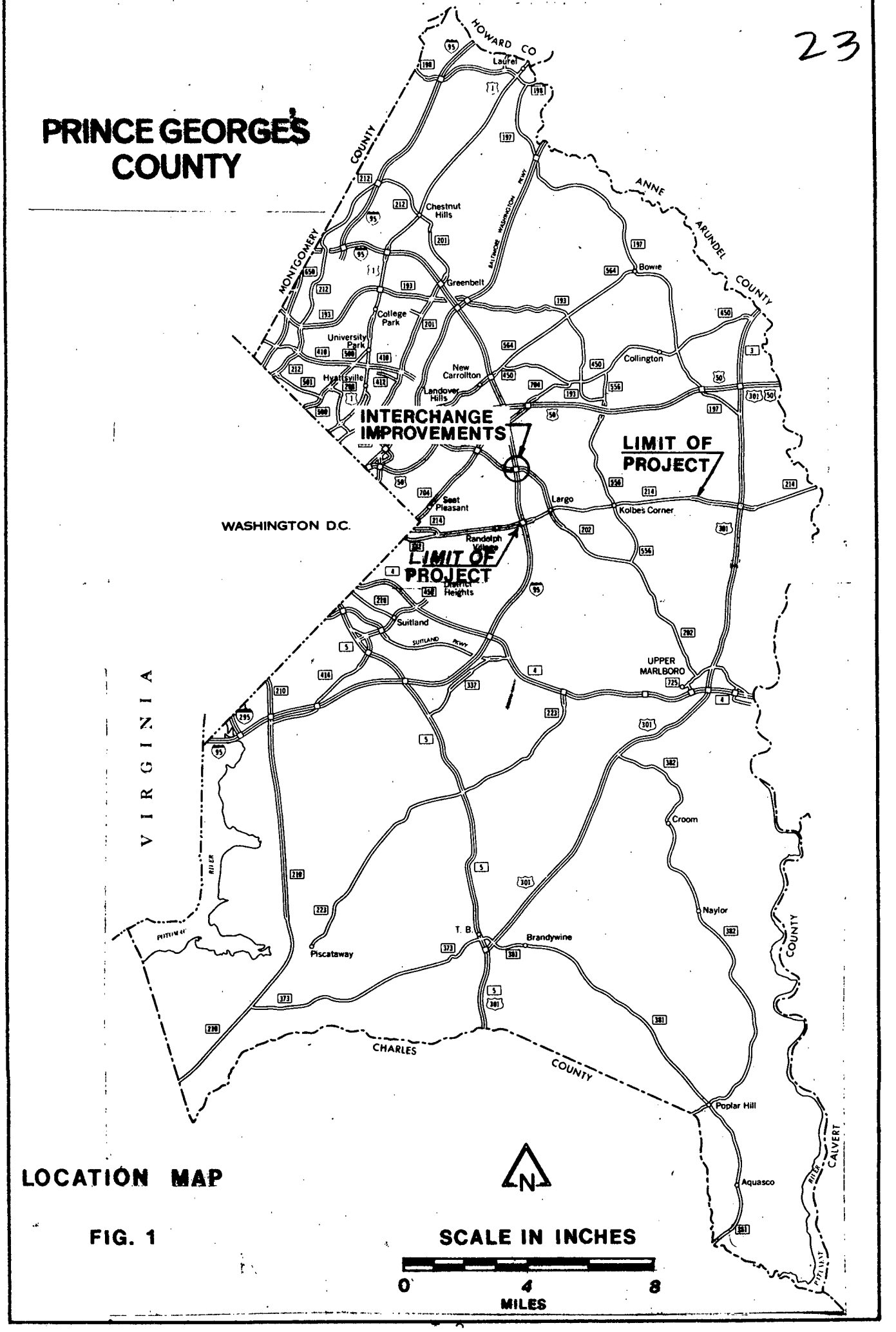
A. Project Location

The proposed improvement of Maryland Route 214 (Central Avenue) is located in Central Prince George's County (See Figure 1).

The project area is part of the Washington, D. C. Standard Metropolitan Statistical Area (SMSA). Areas along Maryland Route 214 west and east of Interstate Route 95 (Capital Beltway) are experiencing vigorous urbanization. The Capital Beltway which constitutes a portion of I-95, is, perhaps, the most important highway in the vicinity of the Nation's Capital. In the vicinity of Maryland Route 214, I-95 accommodates approximately 100,000 vehicle trips during an average day. To the east, Maryland Route 214 intersects U.S. Route 301, a major north-south arterial highway.

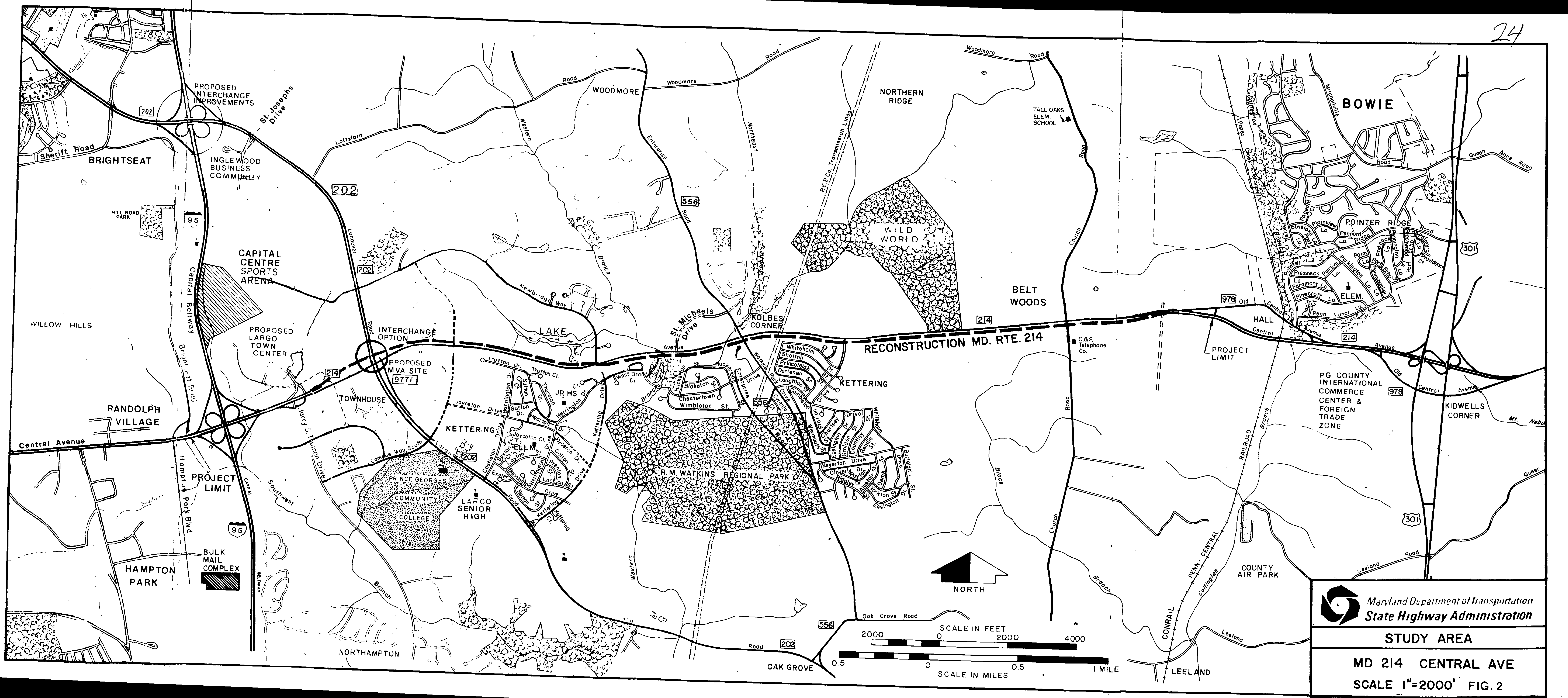
B. Project Description

The project traverses a course almost due east from west of I-95 (Capital Beltway) to west of U.S. Route 301 (See Figure 2, page I-3). Maryland Route 214 (Central Avenue) provides access to the proposed Largo Town Center, the Capital Centre Arena, Prince George's County Community College, several churches, and various commercial businesses. The roadway serves as both a radial route to Washington, and a connector between the Beltway and U.S. Route 301.



LOCATION MAP

FIG. 1



STUDY AREA

MD 214 CENTRAL AVE

SCALE 1"=2000' FIG. 2

C. Description of Existing Environment

1. Social and Economic Characteristics

a. Demographics

Washington Suburban Region

The population of the Washington Suburban Region, which includes Montgomery and Prince George's Counties, grew by 69.5% (485,044 people) from 1960-1970[1]. This accounted for 59% of the entire state's population increase in that decade. Growth slowed drastically from 1970 to 1980; however, the region grew only 11.3% during the past decade.

Prince George's County

Between 1960 and 1970, Prince George's County grew more rapidly than any other county in the state with a population increase of 84.8%. 66.2% of this growth was due to in-migration. However, 1980 Census data indicate that this trend has leveled off with only a 0.7% increase since 1970.

PRINCE GEORGE'S COUNTY POPULATION 1960-1980

1960	357,395
1970	660,567
1975	680,100
1980	665,071

[1]All demographic statistics are derived from the U.S. Bureau of Census figures, unless otherwise indicated.

Bowie, Seat Pleasant, Largo, Enterprise, and Northampton

Bowie and Seat Pleasant, which are at the easternmost and westernmost edges of the proposed project, lost population from 1970-1980. However, Largo, which lies within the project boundaries, has gained population. In 1970, Largo had less than 1,000 persons and was not listed in the Census. By 1980, however, Largo's population had increased to 5,485 persons and is now listed as a "Census designated place."

POPULATION

	1960	1970	1980
Bowie	1,072	35,028	33,695
Seat Pleasant	5,365	7,217	5,217
Largo	-	less than 1,000	5,485

The Maryland Route 214 study area lies in the Maryland National Capital Park and Planning Commission (MNCPPC) Subregion III in Planning Areas 73 and 74A. The 18 neighborhoods in the area are grouped into three communities: Enterprise, Northampton, and Largo. The first two are not listed in the census, but the MNCPPC Master Plan estimates that the three planning areas had a 1977 combined population of 11,200 persons.

The County's median income level is considerably higher than the state's average. The County's non-white population is also considerably higher than the State's averages.

MEDIAN INCOME IN DOLLARS

	1970	1977	1978	1980
Prince George's County	$12,450	$19,477	$20,899	$24,597
State of Maryland	11,063	16,403	17,446	20,658
United States		15,016	16,231	19,146

However, no identified minority neighborhoods exist within the project area.

NON-WHITE POPULATION

	1970	1980
Prince George's County	28%	41.2%
State of Maryland	18.4%	25.1%

b. Employment and Industry

In the first quarter of 1981, retail trade produced 23.2% of the total personal income in Prince George's County. Other activities including construction, manufacturing, transportation, communication, and utilities, produced 41% of total personal income. Federal, state, and local government employees received the remaining 35.8%[2].

The unemployment rate in July 1982 was 6.2%, considerably lower than Maryland's rate of 8.6% at that time[3].

The residential real estate tax is one of the highest rates of any county in Maryland - $2.60 per $100 of assessed value.

Within the project area, there are several small commercial areas -Kettering Plaza Shopping Center (east of

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[2]Brief Industrial Facts, Prince George's County, Maryland Department of Economic and Community Development, January, 1982

[3]Labor Force, Employment and Unemployment, State of Maryland, Department of Human Resources, July, 1982.

Maryland Route 202) and five small businesses at Maryland Route 202/214 intersection, two gas stations, the C&P Telephone building, the Northampton Corporation building, and the Prince George's County International Commerce Center and Foreign Trade Zone (at Maryland Route 214 east of Church Road).

A business community, called Inglewood, is under construction in the southeast quadrant of the I-95/Maryland Route 202 interchange. The southeast quadrant contains the Landover Road K-Mart in the Inglewood-Brightseat Business Center. A regional shopping center (Landover Mall) lies northwest of the interchange.

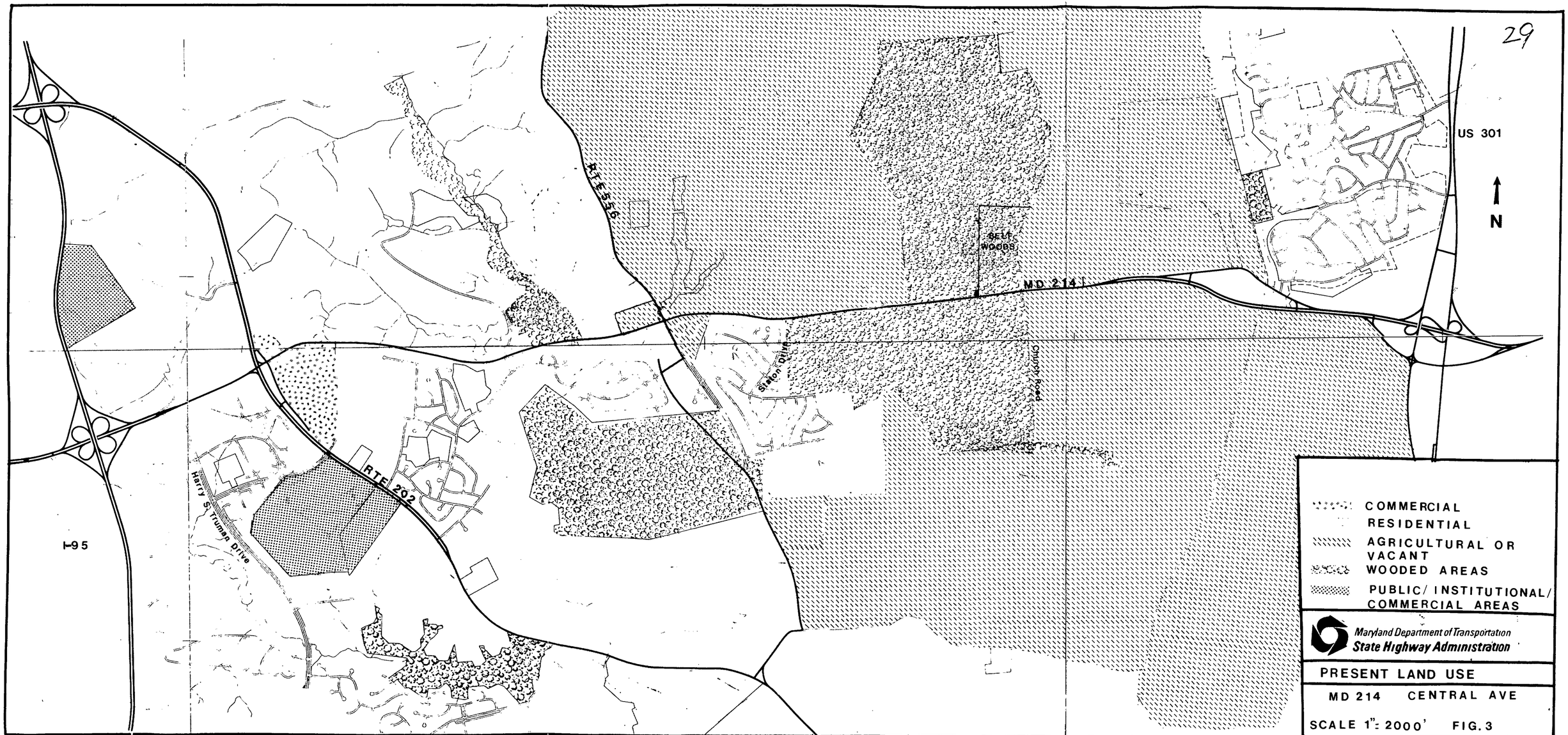
c. Land Use

1.) Present Land Use

Land use in the study area is a mixture of rural to medium-density uses, combining agricultural and apartments. A considerable amount of wooded land dominates the rolling terrain. Sporadic commercial and residential development dot the corridor.

Residential zoning ranges from Truman Drive to Staton Drive and only about 9% of this area (890 acres) had been developed by 1977 (see Figure 3). Additional development in this area has recently begun.

Most of the area west of Maryland Route 202 (about 256 acres) is zoned for commercial use and another 554 acres have


US 301
N
RTE 556
MD 214
SELF WOODS
Station Drive
Church Road
RTE 202
Harry S Truman Drive
I-95
COMMERCIAL
RESIDENTIAL
AGRICULTURAL OR VACANT
WOODED AREAS
PUBLIC/ INSTITUTIONAL/ COMMERCIAL AREAS
Maryland Department of Transportation
State Highway Administration
PRESENT LAND USE
MD 214 CENTRAL AVE
SCALE 1"= 2000' FIG. 3

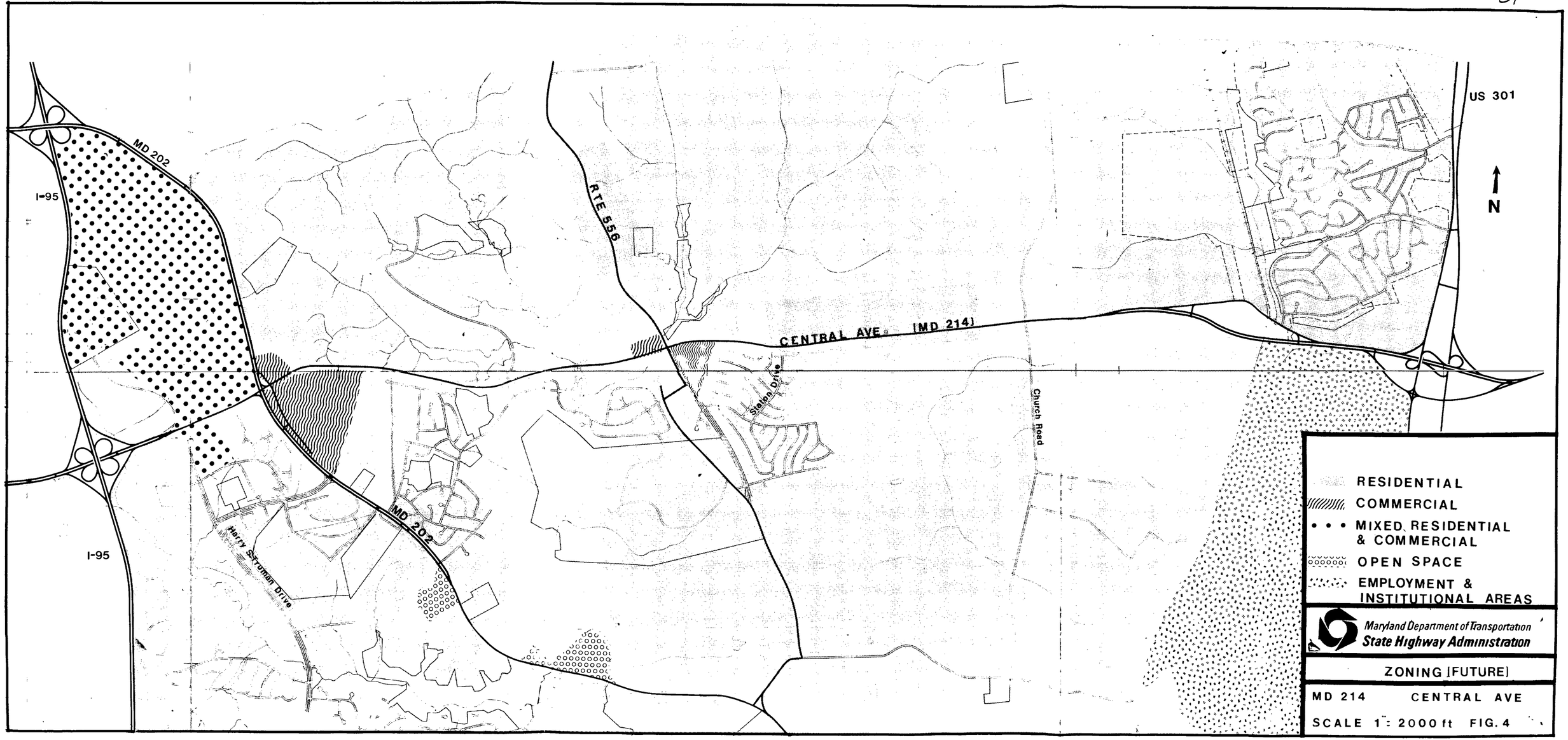
been requested for commercial zoning. While much of the existing and requested commercial zoning is adjacent to Central Avenue, only 15 acres of that had been developed by 1977. No significant commercial growth has occurred since 1977. 370 acres are recommended for light industrial use that will minimize detrimental effects to residential areas. Most of the land east of Staton Drive is zoned for residential use.

Over one-half of the floodplain, about 11% of the planning area, has been set aside as permanent open space. This includes portions of Watkins Regional Park, the Enterprise Farm, Kettering Park, Northampton Golf Course and lake and Northeast Branch Stream Valley Park.

2.) Future Land Use

The Maryland National Capital Park and Planning Commission's Master Plan estimates that this area will absorb a disproportionately high percentage of the County's residential and employment growth in the next decade. It is located near the geographic center of the County, provides direct access to the Capital Beltway, and is within the growth corridor between Washington, D.C. and Bowie. Residential areas are proposed as the dominant land use within the area (see Figure 4,).

The Ten-Year Water and Sewerage Plan is the County's principal tool for controlling the pace of development. The Western Branch Advanced Waste Water Treatment Plant currently has a capacity of 30 million gallons per day.


MD 202
I-95
RTE 556
US 301
N
CENTRAL AVE (MD 214)
Station Drive
Church Road
I-95
Harry S Truman Drive
MD 202
RESIDENTIAL
COMMERCIAL
MIXED RESIDENTIAL & COMMERCIAL
OPEN SPACE
EMPLOYMENT & INSTITUTIONAL AREAS
Maryland Department of Transportation
State Highway Administration
ZONING (FUTURE)
MD 214 CENTRAL AVE
SCALE 1" = 2000 ft FIG. 4

The Prince George's County General Plan and Adopted Master Plan supports the expansion of Maryland Route 214. The County Planning Board, recognizing the dependency of well-planned growth on adequate transportation facilities, has made many of the subdivision approvals near Central Avenue conditional to the expansion of that highway.

2. Community Facilities and Services

Project area facilities and services are shown on Table 2.

The project area has excellent transportation services, including the Capital Beltway, which provides easy access to most of the suburban Washington area. Central Avenue is a direct link to downtown Washington. Two bus lines, T-10 and T-11, serve the project area during rush hour. All buses interface with the Metrorail terminal at Addison Road and Central Avenue.

Fire protection is provided primarily by a single station located south of Central Avenue at Campus Way. The planning area is also served by two fire stations outside of the area. The planning area is served by Prince George's County Police from the district station in Upper Marlboro. The nearest State Police facility is located at Interstate Route I-95 and Maryland Route 4.

TABLE 2
PROJECT AREA FACILITIES AND SERVICES

A. Residential Areas

1. Kettering (townhouse) (South of Maryland Route 214/202) - Figure 2
2. Town of Hall (East of Maryland 214/Church Road Interchange). - Figure 2
3. Largo (Between I-95/Maryland Route 214 interchange and the Maryland Route 214/Maryland Route 202 Intersection) - Figure 2.

B. Commercial/Industrial Areas

1. Inglewood Business Community (Southeast quadrant at the I-95/Maryland Route 202 Interchange) - Figure 2
2. Proposed MVA site (Southeast quadrant Maryland Route 214/202 intersection) - Figure 2
3. C & P Telephone Building (South on Church Road). - Figure 2
4. P. G. County International Commerce Center and Foreign Trade Zone(Maryland Route 214 East of Church Road). - Figure 2

C. Churches

1. Saint Michael's Lutheran Church (at Saint Michael's Drive). - Figure 6
2. Kettering Baptist Church (Kettering Drive). - Figure 6
3. Ridgely Church of God (North of Maryland Route 214 from Hampton Mall, West of I-95.) - Figure 6

D. Community Facilities

1. Capital Christian Academy - Figure 6
2. Kettering Junior High School (65 Herrington Drive) - Figure 6
3. Prince George's Community College (south on Maryland Route 202). - Figure 6
4. Capital Centre Arena (north of I-95/214 interchange). - Figure 2
5. Thomas J. Pullen, Jr. High School (Brightseat Road). - Figure 6
6. Phyllis E. Williams Elementary School (Prince Place). - Figure 6
7. Largo Senior High School (505 Largo Road). - Figure 6

E. Parks and Recreational Facilities

1. R.M. Watkins Regional Park (south on Maryland Route 556). (MNCPPC Camping Facility). - Figure 2
2. Northeast Branch Park (Northeast corner of Maryland Route 556/214). - Figure 6
3. Kettering Lake (Westbranch Drive at Maryland 214). - Figure 6
4. Wild World (east of Maryland Route 556 on Maryland Route 214). - Figure 2
6. Northampton Country Club (Golf Course Drive north of Maryland Route 214). - Figure 6

Presently there are no health or hospital facilities in the planning area. The nearest public hospital is Prince George's General Hospital in Cheverly.

Prince George's County has acquired 1,195 acres of parkland in the vicinity of the project area and 464 acres are currently developed. There are 63 acres of vacant parkland in the project area.

The publicly-owned Enterprise Farm (595 acres) is slated for development as a family recreation, cultural arts, and conference center facility.

Privately-owned recreational facilities include the Wild World, the Capital Centre Arena, Kettering Park (57 acres), the Northampton Country Club, and the Pines Swimming Pool Club.

The Washington Suburban Sanitary Commission (WSSC) is responsible for providing adequate water supply for Prince George's County. WSSC has proposed and is studying two sites for water storage facilities in the project area.

The County has traditionally attracted a high rate of residential growth and a rather limited rate of employment growth. Local Master Plans recommend the development of five major employment centers:

- The New Largo Town Center.
- A 355 acre industrial park on the northern one-third of the Largo Town Center (includes Inglewood Business Community, presently under construction).

- A commercial employment area on the parcels directly south and west of Kettering Plaza Shopping Center.
- An office complex south of Central Avenue on both sides of Harry S. Truman Drive.
- An office complex west of Harry S. Truman Drive and north of Central Avenue.

In addition, the first stage of a 1,282 acre planned business community (The Prince George's County International Commerce Center and Foreign Trade Zone) has been initiated and is scheduled for completion by 1985.

3. Historic and Archeological Resources

In September, 1979, an archeological reconnaissance of Central Avenue (Maryland Route 214) from the Capital Beltway (I-495) to Hall, Prince George's County, Maryland, was completed by the Maryland Geological Survey, Division of Archeology of the Maryland Department of Natural Resources. The report identifies three prehistoric sites and four areas of negligible archeological potential in or near the study area. One historic archeological site was identified.

A survey to identify historic sites in the vicinity of the subject project was performed by the Maryland Historical Trust (see letter dated January 16, 1980). Five (5) historical sites were identified within the vicinity of the project area (See Environmental Map, Figure 6). They are:

(1) Graden (residence between Capital Beltway and Maryland Route 202) - Probable National Register Eligible.

(2) Farm adjacent to Wild World - Probable National Register Eligible

(3) Joseph Knott Farm Complex (between Maryland Route 556 and Church Road) - Probable National Register Eligible

(4) Robinson Farm (east of Church Road; northern side of Maryland Route 214) - Local

(5) Bowie Family Cemetery (removed by developer and Maryland National Capital Park and Planning Commission) - Local

4. Natural Environment

a. Physiography - Topography

The Maryland Route 214 study area is located on the western coastal plain of the Chesapeake Bay in central Prince George's County. The topography of this area is generally flat to rolling with slopes of less than 20%. Average slopes are approximately 5%, with elevations ranging from 150 to 200 feet above sea level.

b. Geology

The Coastal Plain Province consists of unconsolidated sands, silts, and clays mixed with and then changing to unconsolidated layers of sedimentary rocks. These strata overlie an crystalline basement complex.

The Maryland Route 214 study area crosses four geologic formations. The Aquia formation is the first encountered on the east end of the project. It has a generally sandy surface and varies in thickness from 100 to 200 feet. The Chesapeake group, a thin and dark colored fine sand with some clayey material is located in the vicinity of Church Road (Belt Woods). River alluvium (sand and gravel) is predominant in the areas surrounding Western Branch and Northeast Branch. This area is poorly drained and subject to frequent flooding. A small area of the Brightseat formation is near Kettering. It is similar to the Aquia formation with micaceous rather than quartzitic sand.

Groundwater supplies in the study area come from two major geologic formations, the Patuxent, and the Patapsco and Raritan. The major water-bearing sand in the Patuxent formation lies from 150 to 1200 feet deep, generally getting deeper from

west to east. The Patapsco and Raritan formation is more widely used for wells on the Coastal Plain. Water-bearing sand and gravel outcrops near the District of Columbia and dips down to approximately 500 feet below the surface at the eastern end of the project.

Mineral resources in the study area include sand, clay, and greensand (a soil conditioner). No mining activity is in progress within the study area.

c. Soils

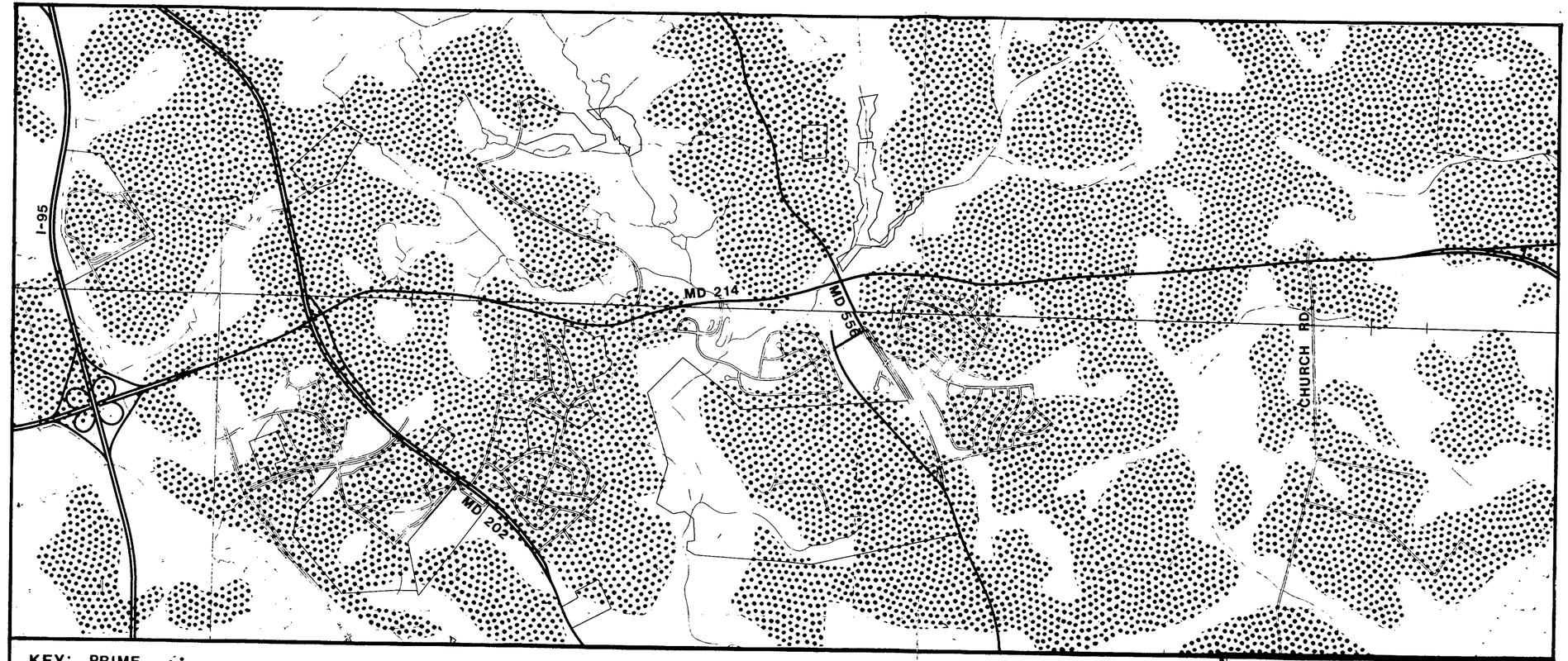
The soils in the study area belong to two major soil associations:

Collington-Adelphia-Monmouth association consists of deep, nearly level to strongly sloping, well-drained and moderately well-drained soils of the uplands that developed in sediments containing glauconite.
These soils generally have a sandy substratum, and occupy the higher elevations. The soils of this association are among the most agriculturally productive in Prince George's County.

Bibb-Tidal marsh association contains poorly drained soils of the floodplains and soils in marshes that are subject to tidal flooding.
Poorly drained Bibb and Alluvial soils are predominant in the study area floodplains. These areas have only limited value for farming, due to frequent flooding.

Prime Soils

A large portion of the study area has been classified by the U.S. Department of Agriculture, Soil Conservation Service as Prime Farmland Soils (refer to Figure 5).



KEY: PRIME SOIL

Maryland Department of Transportation
State Highway Administration

PRIME FARMLAND SOILS

MD 214 CENTRAL AVE

SOILS MAP FIG. 6

d. Surface Water

The study area lies within the Patuxent River water-shed, and is crossed by two major streams, Western Branch and Northeast Branch (refer to Figure 6). Both streams cross Maryland Route 214 west of Maryland Route 556 and combine south of the roadway to become Western Branch to its confluence with the Patuxent River.

Western Branch drains approximately 110 square miles of the areas of District Heights, Lanham, Seabrook, and Bowie. Its waters are designated Class I, water contact recreation and aquatic life. Eight wastewater sources discharge approximately 12 million gallons per day (mgd) into Western Branch. Non-point sources of pollution include agricultural and urban runoff, and failing septic systems. Water quality studies conducted by the Maryland Department of Natural Resources, Water Resources Administration in 1966 and 1978 revealed violations of dissolved oxygen and bacteria standards. These results reflect the effects of wastewater and failing septic systems on oxygen demand and coliform bacteria populations. High sediment loads were evident due to runoff from urbanizing areas.

Three ponds on the south side of Maryland Route 214 and a lake on the north side are located in the vicinity of Kettering. All are artificial and water quality is undetermined.

e. Floodplains

The U.S. Army Corps of Engineers delineated approximate floodplain boundaries for Western and Northeast Branches. Their work is used for the existing FIA-HUD floodplain

KEY:

SCHOOLS

1. Ridgely Elementary School
2. Ritchie Elementary School
3. H. Winship Wheatley High School
4. Thomas G. Pullen Jr. High School
5. Prince George's Community College
6. Largo High School
7. Kettering Elementary School
8. Kettering Jr. High School
9. Capitol Christian Academy
10. Queen Anne's Elementary School
11. Tall Oaks Elementary School
12. Rieg Special Education Center
13. Pointer Ridge Elementary School
14. Phyllis E. Williams Elementary School
15. Randolph Village Elementary (closed)

CHURCHES

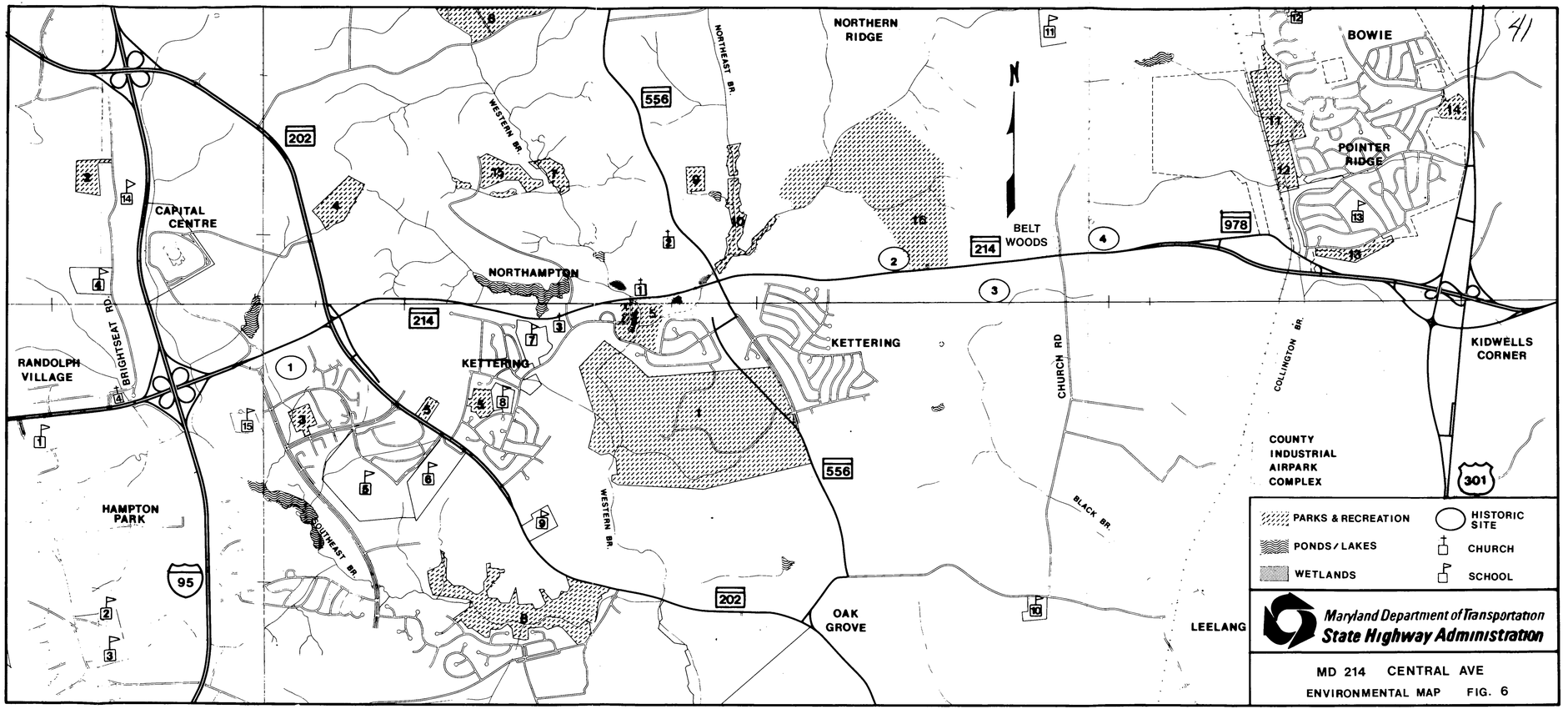
1. St. Michael's Evangelical Luthern Church
2. National Capital Union Presbytery Church
3. Kettering Baptist Church
4. Ridgely Chur[illegible]

HISTORIC SITES

1. Graden
2. Farm
3. Joseph Knott Farm
4. Robinson Farm

PARKS AND RECREATION

1. R. M. Watkins Regional Park
2. Hill Road Park
3. Largo Northampton Park
4. Largo-Lottsford Park
5. Kettering Park
6. Enterprise Golf Course
7. Western Branch Park
8. Northampton Park
9. Enterprise East Park
10. Northeast Branch Park
11. Collington Branch Park
12. Pointer Ridge Recreation Area
13. Pointer Ridge Park
14. South Bowie Park
15. Northampton Country Club
16. Wild World - Wildlife Park



Maryland Department of Transportation
State Highway Administration

MD 214 CENTRAL AVE
ENVIRONMENTAL MAP FIG. 6

boundary maps. Maryland National Capital Park and Planning Commission has subsequently performed detailed studies of these two streams. This information has been used to develop the floodplain impact analysis for this project (Reference Floodplain Analysis, Maryland Route 214 over Western and Northeastern Branches of Patuxent River, June, 1981, available at State Highway Administration, 707 North Calvert Street, Baltimore, Maryland). None of the proposed alternatives has a significant impact to either of these floodplains.

An extensive floodplain (refer to Figure 14) exists along Western and Northeast Branches, covering the lower elevations which are generally surrounded by steep slopes. The existing roadway is inundated between Western and Northeast Branches by any storm of greater magnitude than the 3-year. This floodplain is widest on the south side of Maryland Route 214 where Western Branch and Northeast Branch converge.

f. Ecology

1) Terrestrial

The Maryland Route 214 corridor contains a mix of several distinct terrestrial habitats. These are briefly discussed below:

Upland deciduous woodland - generally belongs to the Tulip Poplar Association (Brush, et. al., 1977). In addition to Tulip Poplar (Liriodendron tulipifera), associated species include Red Oak (Quercus rubra), White Oak (Quercus alba), and Sweet Gum (Liquidambar styraciflua). These wooded areas are generally relatively mature, and occupy areas unsuitable for agriculture or development (steep slopes, floodplains).

Understory vegetation is diverse and varied, depending on the wetness of the soils and includes Christmas Fern (Polystichum acrostichoides), May Apple (Podophyllum peltatum), Honeysuckle (Lonicera japonica), and Greenbriar (Smilax sp.)

Floodplain deciduous woodland - also includes species of the Tulip Poplar Association, but is dominated by the River Birch-Sycamore Association. This habitat is generally confined to a small area of floodplain/ wetlands in the northwest quadrant of the Maryland Routes 214/556 intersection. This area is predominantly River Birch (Betula nigra), with scattered sycamores (Plantanus occidentalis).

Cultivated fields - are scattered along the roadway and include plantings of corn, wheat, and sod. These cultivated areas are generally surrounded by woodlands.

Old Field - is a younger successional stage of forest communities. The flora of these areas is varied, but typically contains numerous grasses, asters, golden-rods, sumac, various shrubs, and saplings. This habitat is distributed throughout the study area. One large tract is located on the south side of Maryland Route 214, west of Maryland Route 556 in Kettering Community Park. This habitat lies within the 100 year floodplain and contains grasses, brushy vegetation, and some small trees. It provides a source of food and cover for numerous birds and small mammals.

2) Aquatic

The study area is dissected by several streams which

feed Western Branch and Northeast Branch. Most of these are low flow, or ephemeral and do not support significant fish populations.

Detailed studies of the fauna in Western Branch and Northeast Branch are not available. However, studies farther downstream in Western Branch indicate that Fallfish (Semotilus corporalis), Dace (Rhynichthys sp.), Shiners (Notropis sp.), Tessellated Darter (Etheostoma olmstedi), and Pumpkinseed (Lepomis gibbosus) are probable inhabitants of study area streams. No anadromous fish migrations occur in the study area due to downstream blockages.

The artificial improvements discussed previously in the Surface Water section support some fish populations as well as amphibians, crayfish, and waterfowl. One pond in the Kettering Community Park has been stocked for recreational fishing.

Numerous species of wildlife occur in the study area. A list of representative species is included in Appendix of this document. The variety of habitats in the area supports a diverse wildlife community.

g. Endangered Species

Coordination with the Maryland Department of Natural Resources and U.S. Fish and Wildlife Service (See letter in Appendix) indicated there are no known populations of threatened or endangered species within the project area.

h. Unique/Sensitive Natural Areas

The Department of Natural Resources (Coastal Zone Administration) initiated a study which resulted in an inventory

of natural upland areas within the State of Maryland. Two such sites occur along the Maryland Route 214 corridor (refer to Figure 6).

1) Northeast Branch

Northeast Branch is a 31 acre wooded swamp located in the northeast quadrant of the intersection of Maryland Routes 214 and 556. This area is a thin strip of lowland woods surrounding a secondary river (Northeast Branch). This area serves as a buffer between the river and contiguous areas plus habitat for wildlife.

2) Belt Woods

Belt Woods is a unique area of mature Tulip Poplar. It is owned by the Washington Diocese of the Episcopal Church. Oaks are interspersed among the poplars with White Oak, Black Oak, and Northern Red Oak being the order of dominance. The understory is dominated by Flowering Dogwood, Black Gum and Hickory. The shrub layer consists of spicebush, dogwood, and hickory. The herbaceous layer consists of mayapple, jack-in-the-pulpit, Impatiens, and ferns.

Bird species sighted at Belt Woods (Maryland Upland Natural Areas Inventory) include vireos, warblers, fly-catchers, and woodpeckers. Most notable are Kentucky Warbler, Blackpoll Warbler, Red-shouldered hawk, Black Vulture, and Hooded Warbler. Yellow-bellied sapsucker drillings are evident throughout the tract.

This area has been designated as a National Natural Landmark by the U.S. Department of Interior. Only five (5) such national landmarks have been designated in Maryland. The edges have become acclimated to climatic conditions and act

as a buffer for the less exposed trees found in the interior. The root systems of the interior trees may not be developed enough to stand sudden exposure to wind. Therefore, care will be exercised not to disrupt the edges of this area.

3) Other Areas

In addition to these areas, two privately owned parks, or open space areas, are located in the study area:

Kettering Park is owned and maintained by the residents of the Kettering Subdivision.

The Wild World is a commercial zoological park/attraction.

i. Existing Noise Conditions

Twenty-five noise sensitive areas (NSA) have been identified along the Maryland Route 214 corridor. Detailed descriptions and locations of the noise sensitive areas along with their individual ambient noise levels are contained in the Technical Noise Analysis Report available at the State Highway Administration, 707 North Calvert Street, Baltimore, Maryland.

Noise is usually measured on the "A" weighted decibel scale "dB(A)", which mainly measures mid-frequency noise levels, deemphasizing low and high frequencies. In order to give a sense of perspective, a quiet rural area at night would register about 25 dB(A), a quiet suburban nightime about 35 dB(A), a commercial area about 60 dB(A), and a noisy urban daytime about 80 dB(A).

The Federal Highway Administration has established, through Federal-Aid Highway Program Manual (FHPM) 7-7-3, maximum

design noise levels for various land uses (see Table 3).

These levels are expressed in terms of an L_{10} noise level which describes a noise level that is exceeded for 10% of a given time period. All ambient and predicted levels in this report are L_{10} exterior noise levels unless otherwise noted.

Measurement for ambient noise levels is intended to establish a basis for impact analysis. The ambient noise levels represent a generalized view of present noise levels. Variations with time of total traffic volume, truck traffic volume, speeds, etc. may cause fluctuations in ambient noise levels of several decibels. However, on Maryland Route 214, these fluctuations are not sufficient to significantly affect the assessment.

The results of the ambient measurements are included in Table 3 along with the predicted noise levels; also see NSA map 7.

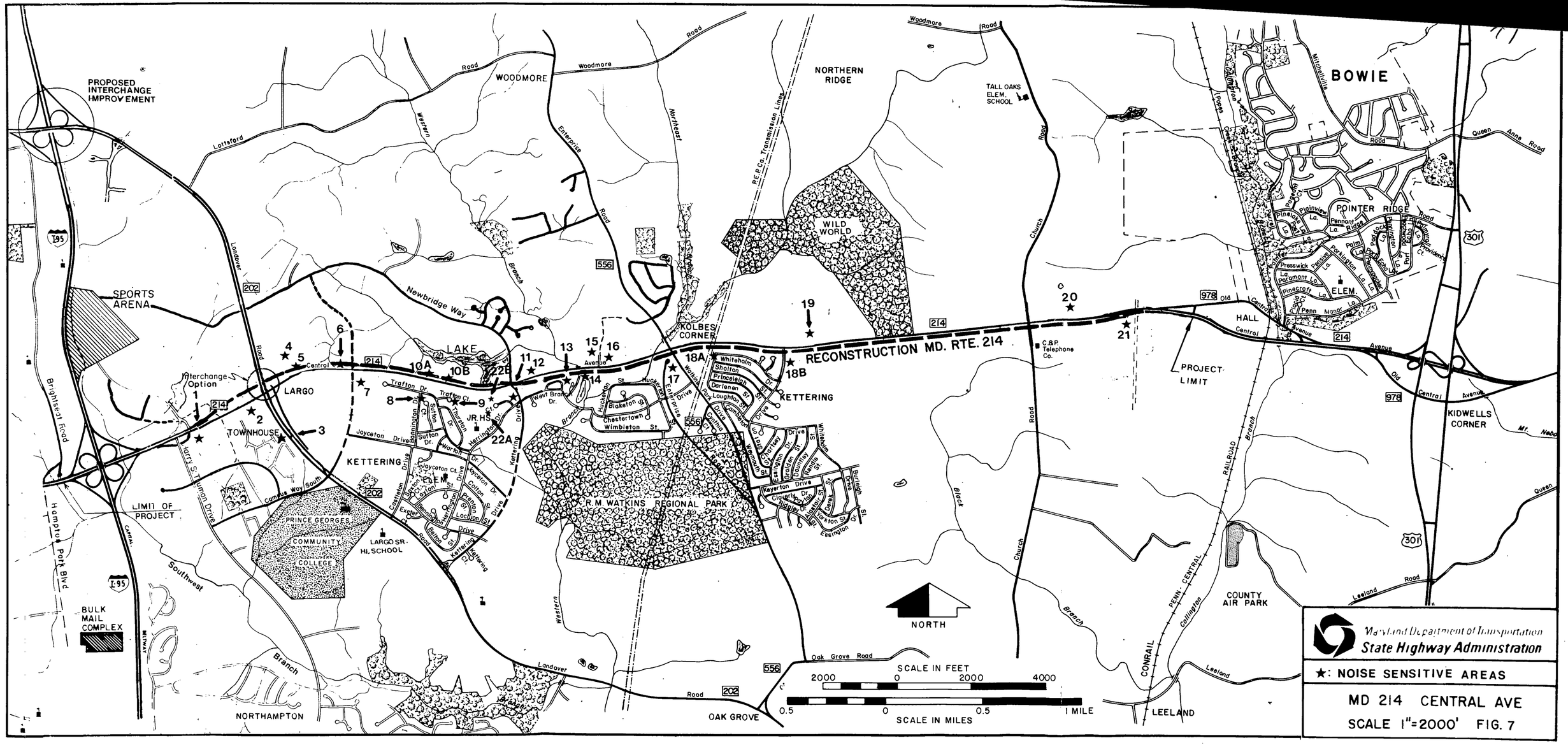
TABLE 3

PROJECT NOISE LEVELS

(Design Year L_{10}'s)

NOISE SENSITIVE AREA	*DESIGN NOISE LEVEL (L_{10})	AMBIENT LEVEL	NO-BUILD ALTERNATE	ALTERNATE 1
1	75	60	48	66
2	70	61	51	66
3	70	62	71*	74*
4	70	52	61	64
5	70	58	55	73*
6	70	63	56	72*
7	70	63	61	74*
8	70	63	57	68
9	70	63	56	67
10A	70	58	56	69
10B	70	58	56	69
11	70	60	55	67
12	70	61	58	72*
13	70	64	58	71*
14	70	59	57	71*
15	70	62	57	66
16	70	64	60	65
17	70 (67)	65 (67)	68 (65)	72* (69)
18A	70	60	58	69
18B	70	60	59	70
19	70	54	53	65
20	70	53	48	60
21	70	63	54	69
22A	70	52	49	60
22B	70	63	57	67

NOTES: *1. All Noise Levels are L_{10} expressed in dBA.
2. Design Noise Level exceeded.


PROPOSED INTERCHANGE IMPROVEMENT
WOODMORE
NORTHERN RIDGE
TALL OAKS ELEM. SCHOOL
BOWIE
SPORTS ARENA
WILD WORLD
KOLBES CORNER
RECONSTRUCTION MD. RTE. 214
C&P Telephone Co.
PROJECT LIMIT
HALL
KIDWELLS CORNER
Interchange Option 1
LARGO
TOWNHOUSE
KETTERING
JR. HS.
ELEM.
LAKE
R.M. WATKINS REGIONAL PARK
LIMIT OF PROJECT
PRINCE GEORGES COMMUNITY COLLEGE
LARGO SR. HI. SCHOOL
BULK MAIL COMPLEX
NORTHAMPTON
OAK GROVE
LEELAND
COUNTY AIR PARK
POINTER RIDGE
NORTH
SCALE IN FEET
2000 0 2000 4000
0.5 0 0.5 1 MILE
SCALE IN MILES
Maryland Department of Transportation
State Highway Administration
★: NOISE SENSITIVE AREAS
MD 214 CENTRAL AVE
SCALE 1"=2000' FIG. 7

5. Existing Roadway

Existing Maryland Route 214 from Brightseat Road west of Interstate Route 95 to the vicinity of Harry S. Truman Drive east of Interstate Route 95 is a four lane divided highway with good geometrics and full control of access.

From Truman Drive to east of Maryland Route 202 (Landover Road), Maryland Route 214 was recently (1981) rehabilitated to a four (4) lane street with substandard sight distance and no access control. The existing intersection at Maryland Route 214 and Maryland Route 202 includes left turn phase signals for north and southbound Maryland Route 202. Left turn storage lanes also exist at this intersection.

From east of Maryland Route 202 to the dual highway 1.2 miles west of U.S. Route 301, Maryland Route 214 is an uncontrolled 24 foot rural roadway with geometric and functional deficiencies. The existing alignment contains short, sharp horizontal curves and relatively steep grades. Due to these geometric deficiencies, sight distances are substandard and there are few opportunities to pass slower vehicles. Many roadside hazards exist such as mailboxes, signs, utility poles, trees, and bridge parapet walls. Hidden entrances intersect the roadway. Little or no shoulder area is available for breakdowns or roadside recovery.

From the interchange at U.S. Route 301 westerly 1-1/2 miles, Maryland Route 214 is a four lane divided controlled access arterial highway with good geometrics and adequate capacity.

Two (2) bridges constructed in 1930 and 1921 cross the Western and Northeast branches, respectively, of the Patuxent River west of Maryland Route 556 (Enterprise Road). The existing roadway is flooded at these crossings by moderate storms. Associated with the Northeast branch crossing and 450 feet upstream is the bridge carrying Maryland Route 556 over Northeast Branch.

The currently posted speeds are 45 mph west of Truman Drive; 30 mph between Truman Drive and Campus Way, and 50 mph east of Campus Way.

The existing interchange at I-95/Maryland Route 202 is a partial cloverleaf. Figures 21 and 22 show the existing interchange configuration and Section III B-3a includes a written description.

II. NEED FOR THE PROJECT

II. NEED FOR THE PROJECT

A. PURPOSE

The purpose of this study is to develop alternates for improvement of Maryland Route 214 as an intermediate arterial highway from west of I-95 (Capital Beltway) to west of U.S. Route 301 that will relieve the capacity and safety problems occuring now and in the Design Year 2005.

Existing Maryland Route 214 does not conform to current American Association of State Highway Transportation Officials (AASHTO) standards for intermediate arterial highways.

An improved facility would provide a safer and more efficient transportation facility consistent with local Master Plans prepared by the Maryland National Capital Park and Planning Commission, specifically the 1977 Largo-Lottsford Plan and the 1970 Bowie-Collington Plan.

Maryland Route 214 (Central Avenue) is one of the more important arterial highways in the Washington, D. C. area. As an extension of East Capital Street, it serves intrastate travel, and traverses Prince George's County connecting the core of the Nation's capital with resorts in Anne Arundel County along the western shore of the Chesapeake Bay. Along this route, connections are made with major north-south arterials including Interstate Route 95 (Capital Beltway), U.S. Route 301, and Maryland Route 2.

The Maryland Route 214 corridor is presently one of the most rapidly growing sections of the Washington metropolitan

area. Despite poor economic conditions during recent times, a large number of residential and employment center developments (including the proposed Largo Town Center, Capital Centre Sports Arena, and Inglewood Business Community) are under construction or have recently been completed in the corridor.

Maryland Route 214 also serves as a direct route to the Wild World (a wildlife and entertainment park), the Prince George's County International Commerce Center and Foreign Trade Zone, Prince George's Community College, and the Addison Road Metro Station. Various other businesses, residential (including South River community in Anne Arundel County), religious, recreational, and community facilities/areas are also served by Maryland Route 214.

A number of other potential developments have received subdivision or site plan approval and are expected to develop as soon as economic conditions improve.

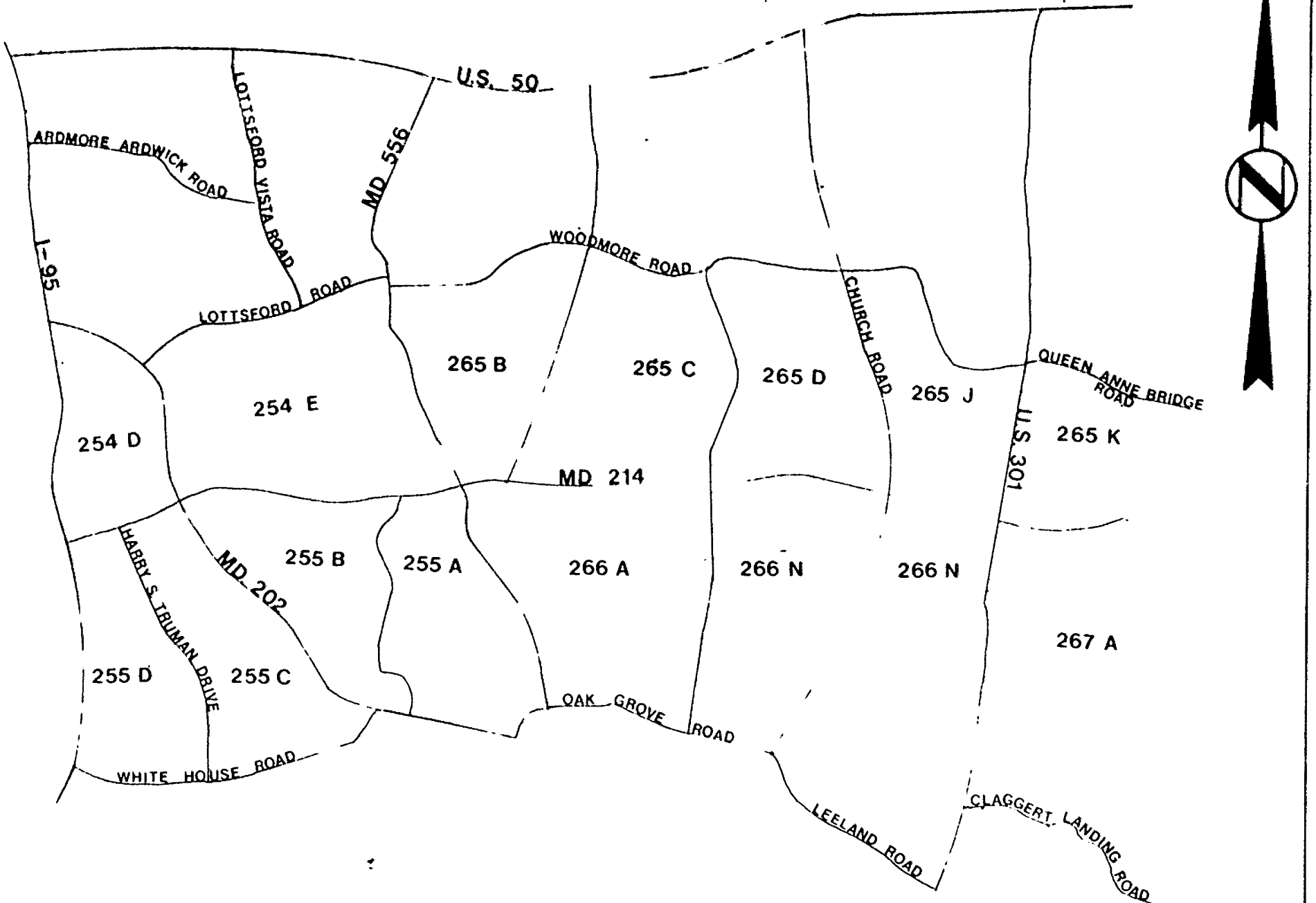
Land use projections received from the Metropolitan Washington Council of Governments (COG) and the Maryland National Capital Park and Planning Commission (MNCPPC) show more than a tripling of the number of dwelling units (4,333 to 14,301) and an eight-fold increase in employment (2,475 to 20,153) in the Maryland Route 214 corridor between 1980 and 2000 (See Table 4, Land Use Data and Figure 8). The largest concentration of growth will be in the triangle formed by I-95 (Capital Beltway), Maryland Route 214, and Maryland Route 202 where 1,200 new dwelling units and almost 10,000 new jobs are projected between 1980 and 2000. A high concentration of both residential and employment growth is also forecast along Maryland Route 202 south of Maryland Route 214. A large increase in employment is forecast at the east end of the corridor in the vicinity of the Maryland Route 214/U.S. Route 301 interchange. The area between

TABLE 4

MARYLAND ROUTE 214 CORRIDOR

Land Use Data

C.O.G. Zone	1980 D.U.	2000 D.U.	1980 Employment	2000 Employment
254 D	9	1,209	43	9,778
254 E	23	3,350	---	---
255 B	1,070	2,467	293	2,793
255 C	1,459	2,767	917	2,167
255 D	215	888	171	171
255 A	175	379	117	117
265 B	91	279	26	26
265 C	38	200	41	41
265 D	16	190	7	7
265 K	139	328	109	521
266 A	935	1,663	544	544
266 N	22	200	---	100
266 M	28	78	109	3,790
267 A	113	302	98	98
TOTALS	4,333	14,301	2,475	20,153
		+230%		+700%

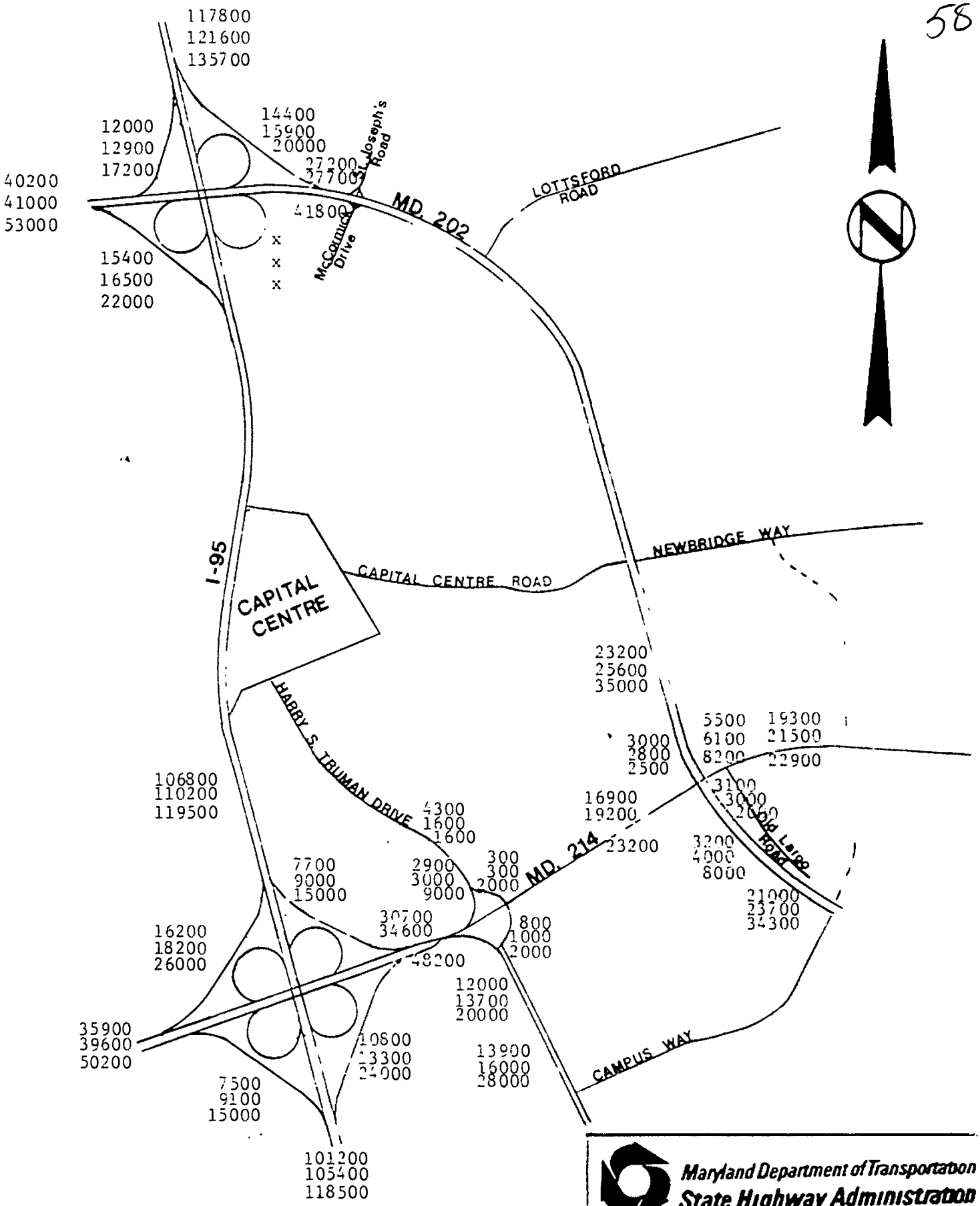


STATE HIGHWAY ADMINISTRATION
MD 214 CENTRAL AVE
C.O.G. ZONES FIG. 8

U.S. Route 301 and Maryland Route 202 is expected to show significant growth in residential units during the next 20 years. 57

This expected growth in both residential and employment land uses will translate into a significant increase in traffic demand in the corridor as shown in Figures 9, 10, 11, and 12. Average Daily Traffic demand on the link of Maryland Route 214 just east of the I-95 is projected to more than double from 30,700 to 68,300 between 1981 and 2005. Traffic east of Maryland Route 202 on Maryland Route 214 is also expected to increase significantly (e.g. west of Maryland Route 556 volumes are forecast to increase from 15,800 to 37,300 between 1981 and 2005).

Traffic on Maryland Route 214 is presently approaching the capacity of the roadway, particularly east of Maryland Route 202. Serious congestion problems will occur in the corridor if roadway improvements are not made, which provide additional capacity to support the projected development in the corridor. Traffic now reaches existing development in the triangle by travelling east or west along Maryland Route 214 to Maryland Route 202 north. In order to accommodate the projected traffic volumes in an acceptable level of service, Maryland Route 214 will need to be widened to six lanes west of Maryland Route 202 and four lanes east of Maryland Route 202. Due to the large increases in traffic projected along Maryland Route 202 both north and south of Maryland Route 214 as well as the large increases in traffic on Maryland Route 214, it will be necessary that an interchange be built at the intersection of these two roadways by the design year of 2005, if an acceptable level of service is to be maintained. In addition, with the rapid



1981 ADT

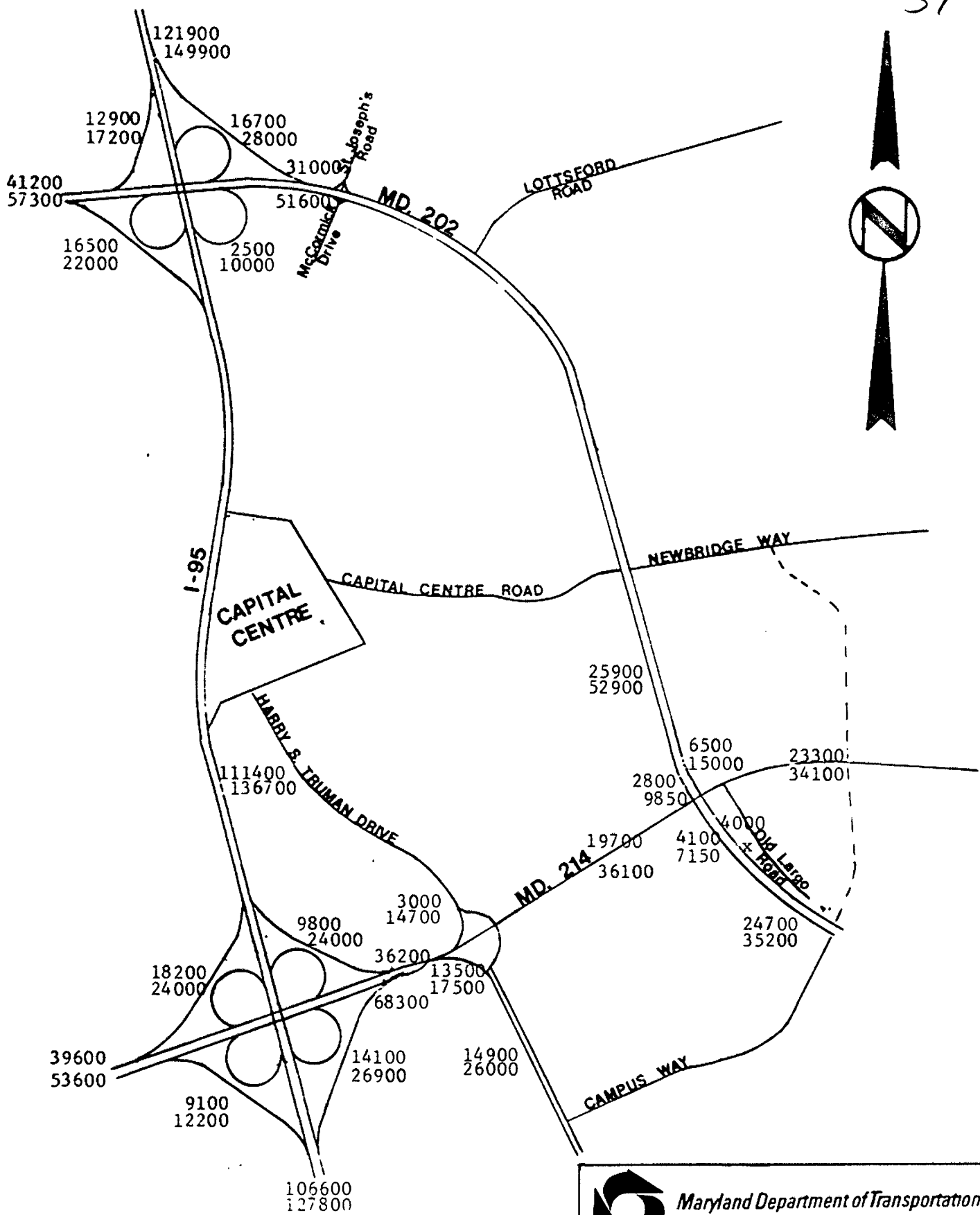
1985 ADT No Build

2005 ADT No Build

Maryland Department of Transportation
State Highway Administration

AVERAGE DAILY TRAFFIC

NO BUILD FIGURE 9



1985 ADT BUILD

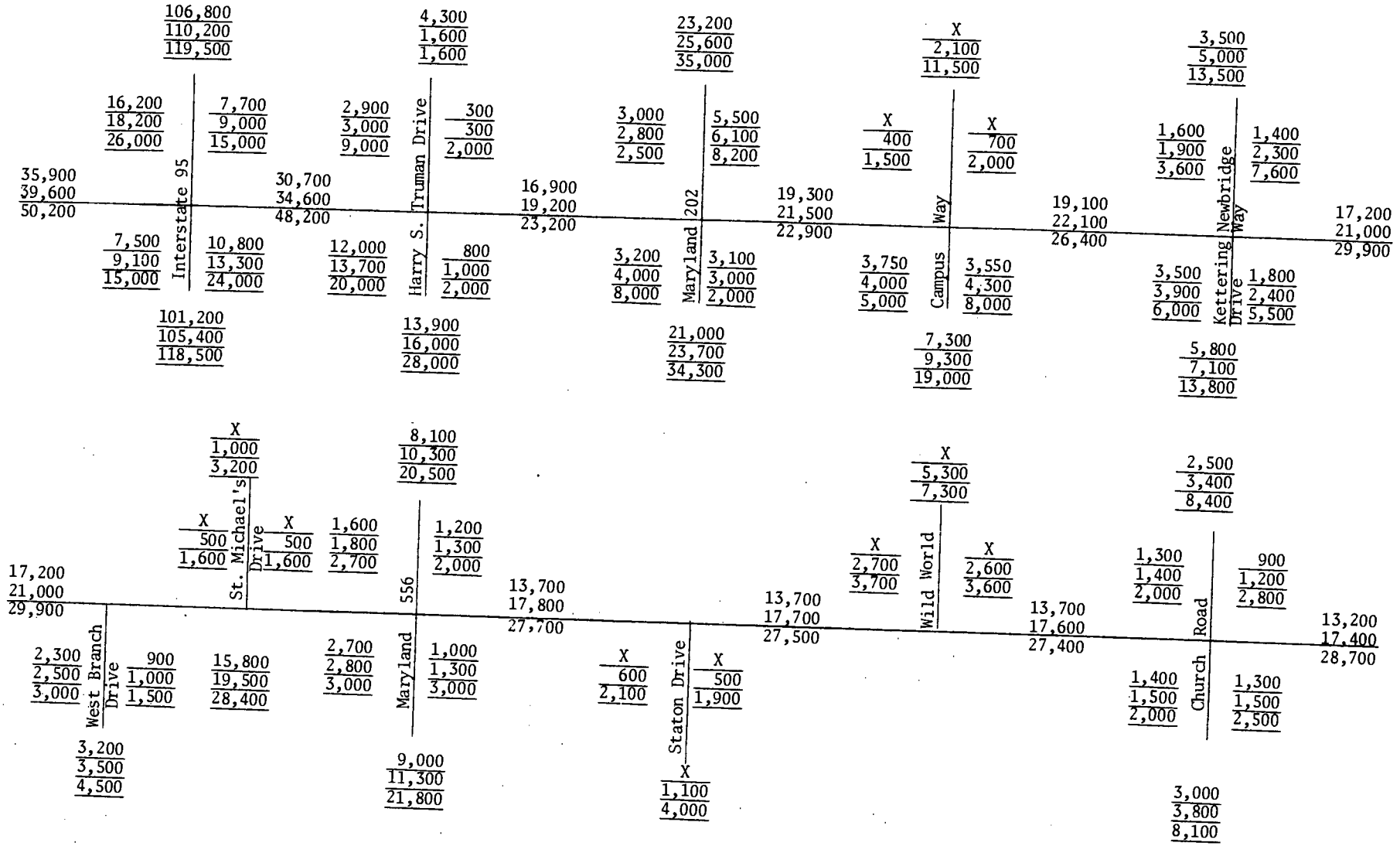
2005 ADT BUILD

Maryland Department of Transportation
State Highway Administration

AVERAGE DAILY TRAFFIC

1985 AND 2005 BUILD

FIGURE 10



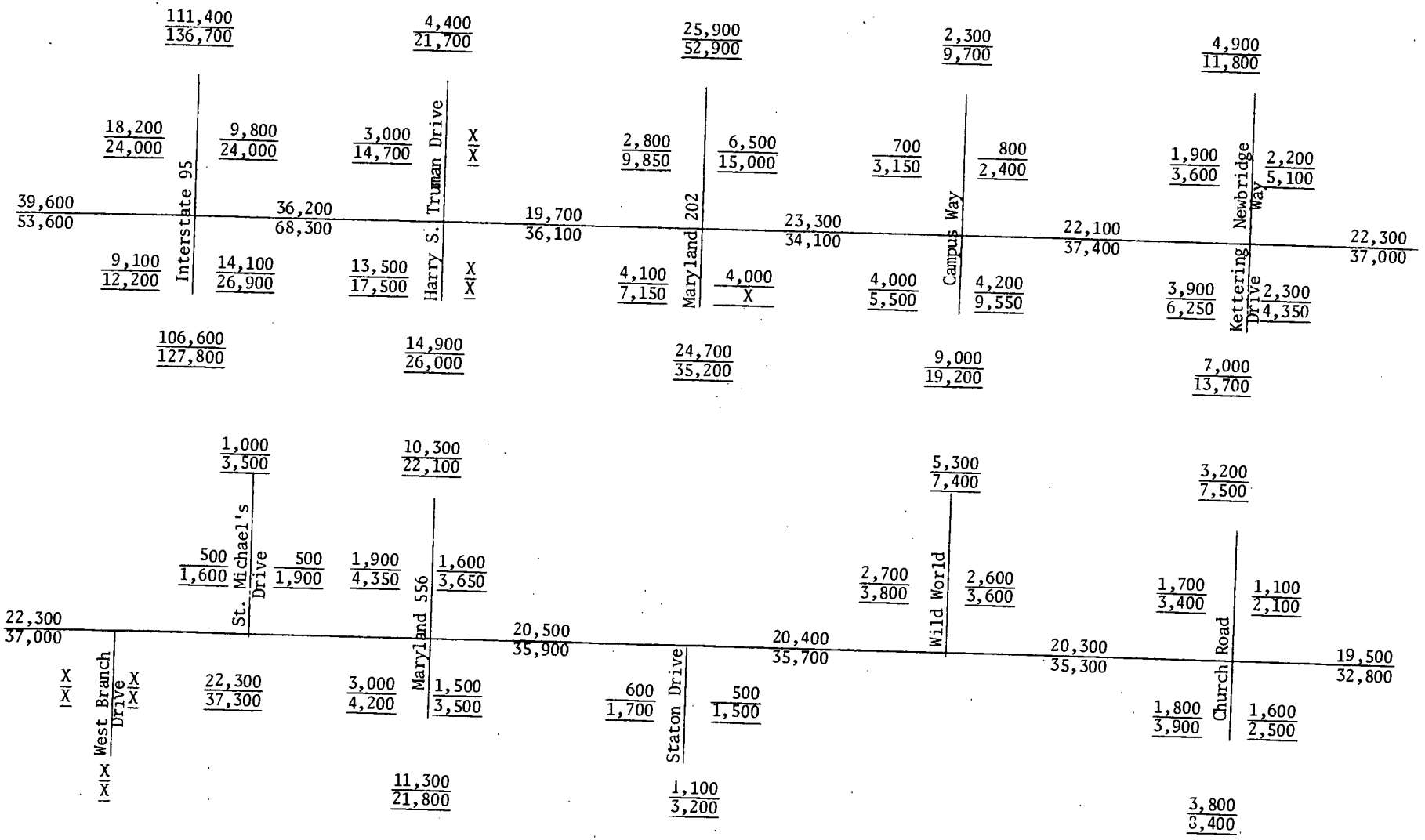
1981 ADT
1985 ADT No Build
2005 ADT No Build

Maryland Department of Transportation
State Highway Administration

AVERAGE DAILY TRAFFIC

MD 214 CENTRAL AVE

NO-BUILD FIG. 11



1985 ADT Build
2005 ADT Build

Maryland Department of Transportation
State Highway Administration

AVERAGE DAILY TRAFFIC

MD 214 CENTRAL AVE

1985 & 2005 BUILD

FIG. 12

development of the triangle formed by the I-95 Capital Beltway and Maryland Routes 214 and 202, it will be necessary that traffic travelling between the northern end of the triangle and the I-95 toward the south be able to make a direct connection in the I-95/Maryland Route 202 interchange. Otherwise this traffic will have to use the Maryland Route 214 interchange with I-95 and the Maryland Route 202 interchange with I-95 which would degrade the traffic operations in these interchanges to an unacceptable level of service.

Rapidly increasing automobile travel along Maryland Route 214 is resulting in moderate peak hour delays to motorists and unsafe traffic conditions, particularly in the segment from Maryland Route 202 to Maryland Route 556. Projected traffic volumes indicate that the roadway segment east of Maryland Route 556 will have reached or exceeded its capacity by the year 1995. Within the segment from Maryland Route 202 to Maryland Route 556, occassional flooding occurs at the crossing with Western Branch and Northeast Branch interrrupting the flow of traffic and constituting a hazard to motorists. This flooding is disruptive to commerce and public transit, resulting in increased mileage travelled and additional time and costs to the motorist.

B. Project Background

The need to improve Maryland Route 214 between the Capital Beltway and U.S. Route 301 was first documented in 1968 in the Maryland State Highway Administration's Twenty Year Highway Needs Study. Formal studies for this project began during 1969 as a design feasibility study and proceeded to the preparation of preliminary construction drawings in 1972. Current work on the project is continued from the 1969 feasibility studies.

The proposed reconstruction is consistent with and

included in local and regional transportation improvement programs, and needs inventories of the Maryland State Highway Administration including the 1982-1987 Secondary Development and Evaluation Program of the Consolidated Transportation Plan (CTP) and the 1983-1987 Transportation Improvement Programs (TIP).

The project is also consistent with the proposed improvements in the following Maryland National Capital Park and Planning Commission's Area Master Plans:

- Adopted and Approved Master Plan for Bowie-Collington and vicinity, October, 1970
- Adopted and Approved Master Plan for Largo-Lottsford, May, 1977
- Proposed Amendment to General Plan for Maryland-Washington, Regional District within Prince George's County, 1977

Improvements to Maryland Route 214 are also consistent with the Metropolitan Washington Council of Government (COG) Plans of November, 1974.

C. Existing and Projected Traffic Conditions

Rapid growth in Prince George's County has resulted in increasing vehicular traffic along Maryland Route 214. Although the existing road functions adequately during off-peak hours, capacity is reached during the AM and PM Peaks between Maryland Route 202 and Maryland route 556 with bottlenecks occurring at the Campus Way and Kettering Drive/Newbridge Way intersections. The segment between I-95 and Harry S. Truman Drive sometimes becomes severely congested before and after major events at the

Capital Centre.

Traffic conditions along Maryland Route 214 can best be expressed by comparing quality of traffic flow on individual roadway links. 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 E (Capacity), to LOS "F" (Worst or forced flow). It is projected that the entire roadway from Maryland Route 202 to the existing dual highway, west of U.S. Route 301 will reach a peak hour service level of "F" (worst case) by the design year 1995 under the "No-Build" Alternate. Table 5 and Figures 11 and 12 indicate the 2005 "Level of Service" conditions for different roadway links along Maryland Route 214, and shows the average daily traffic volumes along major routes within the study area. These traffic volumes result in delays to motorists during periods of peak travel demand, and potentially hazardous traffic operational conditions.

Low capacity intersections are major factors in limiting service along Maryland Route 214. Vehicles making left turns at intersections cause minor delays in traffic, however, the peak hours are the only times of the day when moderate queuing at intersections occurs. Queuing would be expected to increase by the design year, 2005, due to the increase in traffic volumes.

D. Existing and Projected Safety Conditions

An analysis of reported collisions over a three year period (1976 through 1978) has determined the extent of safety problems along Maryland Route 214. Collisions occur within the study limits of Maryland Route 214 at a rate apparently 25

TABLE 5
MARYLAND ROUTE 214 TRAFFIC SUMMARY

Highway Network Assumptions for Design Year Traffic are: No interchange on I-95 for Ritchie-Marlboro Road or Capital Centre Sports Arena; all movements provided at I-95/Md. Route 202 interchange; Largo Ring Road System (Campus Way) completed; Maryland Route 556 not continuously reconstructed between Maryland Route 202 and U.S. Route 50; and no continuous major County highway on location of former Intercounty Connector. (2005 Design Year)

(Percent Saturation if Level of Service F)

Segments / Intersections	1981 (ADT) Volume	1981 (ADT) L/S	2005 NO-BUILD Volume	2005 NO-BUILD L/S	2005 NO-BUILD % Increase	2005 ALTERNATE 1 Intersection Option Volume	2005 ALTERNATE 1 Intersection Option L/S	2005 ALTERNATE 1 Intersection Option % Increase	2005 ALTERNATE 1 Interchange Option Volume	2005 ALTERNATE 1 Interchange Option L/S	2005 ALTERNATE 1 Interchange Option % Increase
I-95 to Md. 202	30,700	D	48,200	E/F	57	68,300	F[1]	122	68,300	D[1]	122
I-95 Interchange		B		E			E			-	
Truman Drive		A		E/F			-			-	
Md. 202 (Landover Rd.)		D		C/D			F(104)			D	
Md. 202 to Md. 556	17,200	F(104)	29,900	F(150)	74	37,400	D	117			
Campus Way		D		F(113)			D				
Kettering Dr./Newbridge Way		D		F(137)			D				
West Branch Drive		A		F(113)			-				
St. Michael Drive		A		F(100)			B				
Md. 556 (Enterprise Rd.)		D		F(135)			D				
Md. 556 to Church Road	13,700	D	27,700	F(137)	102	35,900	D	162			
Staton Drive		-		-			B				
Wild World		A		D			A				
Church Road		D		F(128)			B				
Church Road to U.S. 301	13,200	D	28,700	F(139)	117	32,800	D	148			
Proposed County Highway		-		-			-				
Md. 978 (Old Central Ave.)		B		A			A				

Level of Service along the various segments is determined by operating characteristics at the intersections and along the mainline within the segment.

L/S C: Speeds and maneuverability closely controlled by volumes. Most drivers restricted from selecting speeds, changing lanes or passing. Relatively satisfactory operating speeds.

L/S D: Beginning to tax capabilities of street section. Approaching unstable flow. Average overall speed 15 miles per hour. Delays at intersection.

L/S E: Volumes at capacity. Unstable flow. Speeds near 15 miles per hour. Continuous back-up at intersection approaches.

L/S F: Volumes near capacity. Forced flow. Speeds below 15 miles per hour. Continuous back-up at intersection approaches and extending back with excess distributed through the section.

[1] 6 lanes from Brightseat Road to Md. 202 plus an auxiliary lane in each direction from I-95 east limit to local road connections.

percent less than the Statewide average for similar design state highways.

Maryland Route 214, from I-95 to west of U.S. Route 301, experienced an average accident rate of 370 accidents for every hundred million vehicle miles of travel (100 MVM) for the three year period, 1976 through 1978. This accident rate is considerably lower than our weighted Statewide average accident rate of 495/100 MVM for all similar design highways under State maintenance. Because this route is used largely for repetitive (commuter) trips, motorists in the Kettering Area probably anticipate the more hazardous areas of this highway and exercise greater caution. Two parameters were used to measure the extent of potentially unsafe conditions, number of accidents by severity, and accident rate.

The study also identified different types of collisions to assist in determining major causes of accidents. For meaningful comparison with Statewide accident rates, an accident rate was also developed for the route. The accident rate is the number of accidents per hundred (100) million vehicle miles of travel (MVM). Thus, the accident rate accounts for traffic exposure and is unique to each route.

During 1976 to 1978, a total of 304 accidents were reported. Three of these accidents took the lives of four persons. Table 6 lists the number of accidents by severity and year, and Table 7 lists the types of accidents compared to the Statewide averages for a similar facility. The proportion of rear-end collisions on Maryland Route 214 is considerably higher than the Statewide average, and is attributable to the congestion

TABLE 6

ACCIDENTS BY SEVERITY

*A total of 304 accidents was reported on this highway during the three year period (1976-1978) of which three were fatal accidents taking the lives of four persons. The monetary loss to the motoring and general public resulting from these 304 accidents is estimated at approximately $1,5800,000 for every one hundred million vehicle miles of travel. These accidents are listed below by severity indicating persons killed and injured.

SEVERITY	1976	1977	1978	TOTAL
Fatal Accidents	1	2	0	3
Persons Killed	1	3	0	4
Injury Accidents	49	39	39	119
Persons Injured	88	73	59	220
Property Damage	57	65	60	182
Total Accidents	107	106	91	304

Two of the above fatal accidents occurred between Northampton Way and Church Road, an area of approximately one mile. The other fatal accident happened just west of Maryland Route 556. The roadway characteristics in these areas consist of rolling terrian, slight curves, and numerous trees with utility poles paralleling the travelway. These roadway conditions may have been a contributing factor since all of the fatal accidents occurred as a result of vehicles crossing the center line. Two were opposite direction (head on) type collisions, while the other struck a tree on the opposing side of the roadway.

*During 1979, the Maryland Motor Vehicle Administration amended its interpretation of accident reporting policies. The policy changes affected how the general public reported accidents and the actual number of accidents reported by the police. Additionally, statistical information from 1979 and 1980 may be subject to misinterpretation if conjunctively used with the above table.

TABLE 7

TYPES OF ACCIDENTS VERSUS STATEWIDE AVERAGE

The existing collision types experienced on Maryland Route 214 throughout the entire study limits, in comparison to the weighted statewide averages for this design highway are:

COLLISION TYPE	1976-1978 % STUDY SECTION	% STATEWIDE
Angle	18.09	16.00
Rear End	31.91	23.74
Fixed Object	17.11	22.88
Opposite Direction	5.59	6.47
Sideswipe	6.25	8.81
Left Turn	12.83	4.68
Other	8.22	13.95

The type collisions that exceed our statewide expectations are the Angle, Rear End, and Left Turn type encounters. These collisions are mainly associated with congestion.

More important than the monetary savings to be realized by construction of the proposed highway is the corresponding anticipated decrease in the loss of life and human misery brought about by the reduction of the more severe accidents.

common at the intersections along the roadway. The angle and left-turn type encounters also exceed expectations for similar design highways.

Traffic forecasts for Maryland Route 214 range from 40 to 160 percent increase in vehicular volume by the design year 2005. Under a "No-Build" alternate, operating conditions will continue to deteriorate as traffic volumes increase. As these volumes increase accidents are expected to proportionately increase.

The build alternate provides for a four lane divided highway. This alternate institutes a safer type highway by providing more lanes, thus reducing congestion. Also by construction of an open median, the generally severe opposite direction accidents should be greatly reduced. Our studies indicate that the proposed four lane divided highway with partial access control options should experience an accident rate of approximately 220 accidents/100 mvm of travel. The corresponding accident cost is estimated at approximately $804,000/100 mvm, and would result in an estimated societal savings of $776,000/100 mvm over the existing roadway.

The accident cost as indicated, include present worth of future earnings of persons killed or permanently disabled, as well as monetary losses resulting from injury and property damage accidents. The unit costs utilized in the above computations were based on actual cost values obtained from three independent accident cost studies conducted in Washington, D. C., Illinois, and the California Division of Highways and were updated to 1978 prices.

III. ALTERNATES CONSIDERED

III. ALTERNATES CONSIDERED

As a result of engineering and environmental studies, coordination with agencies and public involvement; a single alternate with option features has been developed. This alternate and the No-Build alternate are discussed below.

A. No-Build Alternate

1. Normal maintenance activities such as resurfacing would continue along the roadway as required. Additional traffic signals would be added as warranted. Occasional flooding of the roadway west of Maryland Route 556 would continue to disrupt travel patterns and present potential hazards. Operating conditions along the roadway are expected to continue to deteriorate as traffic volumes increase.

As the predicted traffic volume increases are realized, congestion will intensify and the duration of congestion periods will increase. Additionally, increasing congestion may result in increased collision rates.

2. Several improvements between Maryland Route 202 and Church Road (included in Transportation Systems Management Study for Maryland Route 214 prepared by District #3) are planned for implementation by Fiscal Year 1986. These improvements are necessary to adequately handle the traffic generated by the present and short term projected residential and commercial development and to accommodate traffic destined for the proposed Motor Vehicle Administration facility at the southeast corner of Maryland Route 214 and Old Largo Road.

Maryland Route 214 improvements recommended for implementation include:

-construct double left turn lanes both in the northbound and southbound direction on Maryland Route 202 at Maryland Route

214.

92

-widen Maryland Route 214 between Maryland Route 202 and Campus Way to four (4) lanes.

-construct intersection between Old Largo Road and New Maryland Route 202.

-addition of lanes at the Kettering Drive/Newbridge Way intersection will provide two through lanes eastbound and one thru lane and a left turn lane westbound.

-addition of a single lane in each direction at Maryland Route 556 (Enterprise Road) intersection will provide a left turn lane and two through lanes both east and westbound. An improved right turn lane from northbound Maryland Route 556 to eastbound Maryland Route 214 will also be provided.

Even with these localized improvements, the highway would still contain a number of basic geometric and capacity deficiencies. These nearly continuous deficiencies render the No-Build Alternate incapable of satisfying design year capacity requirements.

B. Alternate 1 (Build Alternate)

Alternate 1 is the reconstruction of mainline Maryland Route 214 based on a 60 mph design speed and is consistent with State Highway Administration and American Association of State Highway and Transportation Officials (AASHTO) design criteria. Posted speed limits would probably range from 30 to 50 mph.

From Brightseat Road west of the I-95 interchange to Campus Way east of Maryland Route 202, Alternate 1 would consist of two 36 foot roadways with auxiliary lanes separated by a 6 to

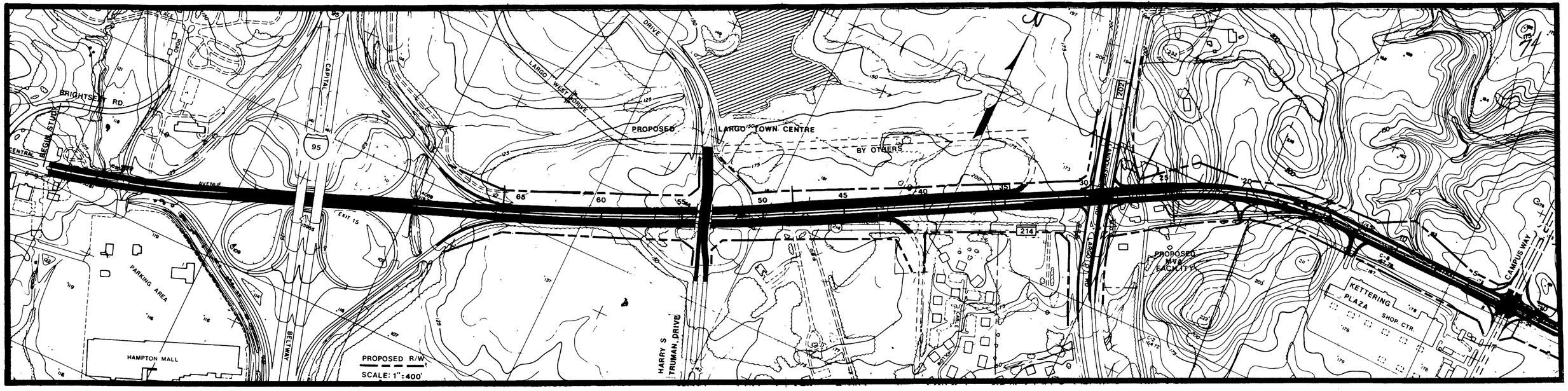
30 foot median (See Figure 13, page III-4). The highway would be widened in the median and shoulder to provide six (6) through lanes; the median would be narrowest through the interchange area. A bridge would grade separate Harry S. Truman Drive over Maryland Route 214. From I-95 to Kettering Drive/Newbridge Way, the reconstructed highway would run on relocation north of the existing road. From east of Campus Way, Alternate 1 consists of a four lane divided highway, separated by a 30 foot rural median.

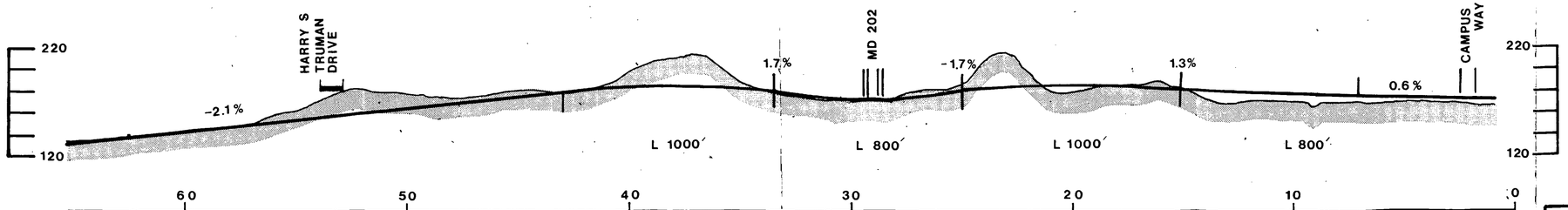
A major watermain located just north of Central Avenue dictates the alignment of Alternate 1, from Campus Way easterly. From Kettering Drive/Newbridge Way to U.S. Route 301 the proposed westbound roadway generally follows the existing roadway whereas the eastbound roadway would be constructed to the south of the present roadway. A small retaining wall on the south side of the roadway may be required to reduce encroachment upon Middleham Drive properties. Continuous grade improvements are required.

The profile grade would be significantly improved including a 10 feet raise in elevation through the floodplain area from West Branch Drive to Maryland Route 556. Structures would bridge Western Branch and Northeast Branch, as well as Northeast Branch at Maryland Route 556. High capacity at-grade intersections with cross-overs and free right turning lanes are proposed. West Branch Drive would be severed from its intersection with Maryland Route 214.

Alternate 1 is shown on figures 13 through 16; figures 17 and 18 show the Maryland Route 202 interchange.

Six (6) options are available with Alternate 1. These options would provide a safer and more efficient roadway with





SCALE: 1"= 400'/80'

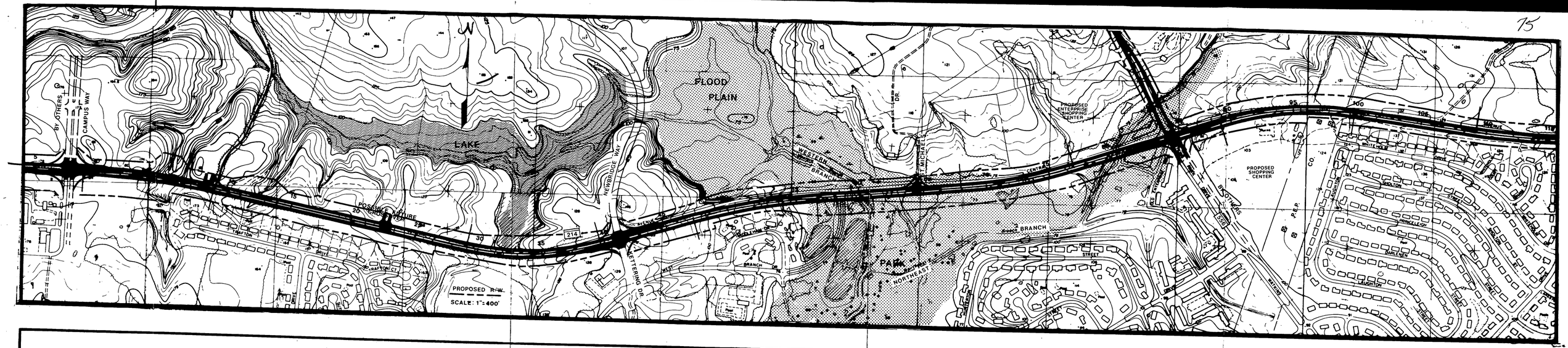
ALTERNATE I

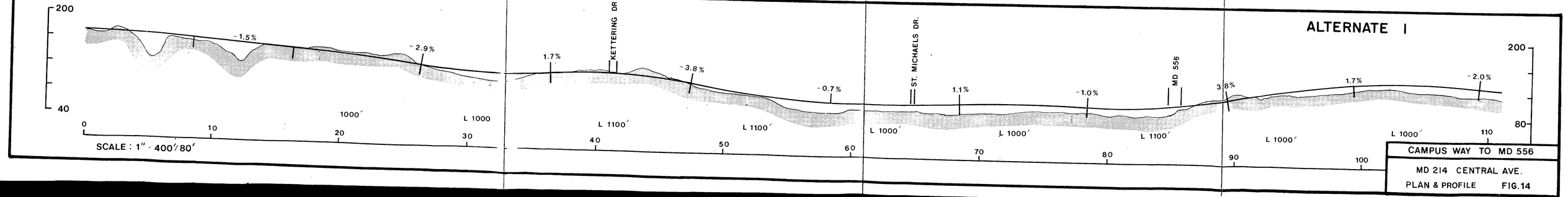
OPTION E

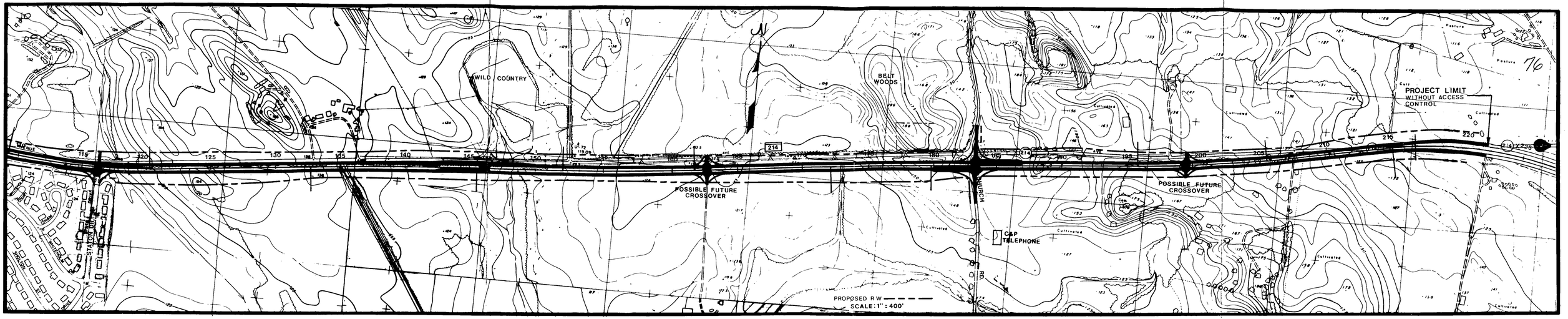
AT-GRADE INTERSECTION
AT MD 202

I-95 TO CAMPUS WAY

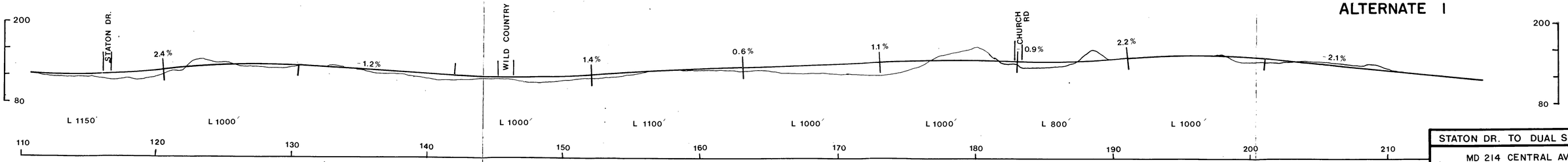
MD 214 CENTRAL AVE.
PLAN & PROFILE FIG. 13


BY OTHERS
CAMPUS WAY
LAKE
POSSIBLE FUTURE CROSS VENTURE
TAFTON
TAFTON CT.
HEBRIDGE WAY
KETTERING DR.
FLOOD PLAIN
WESTERN BRANCH
ST. MICHAELS DR.
PROPOSED ENTERPRISE SHOPPING CENTER
PROPOSED SHOPPING CENTER
MD 556
WHITE HOUSE
LAUGHTON
PROPOSED R/W
SCALE: 1"=400'

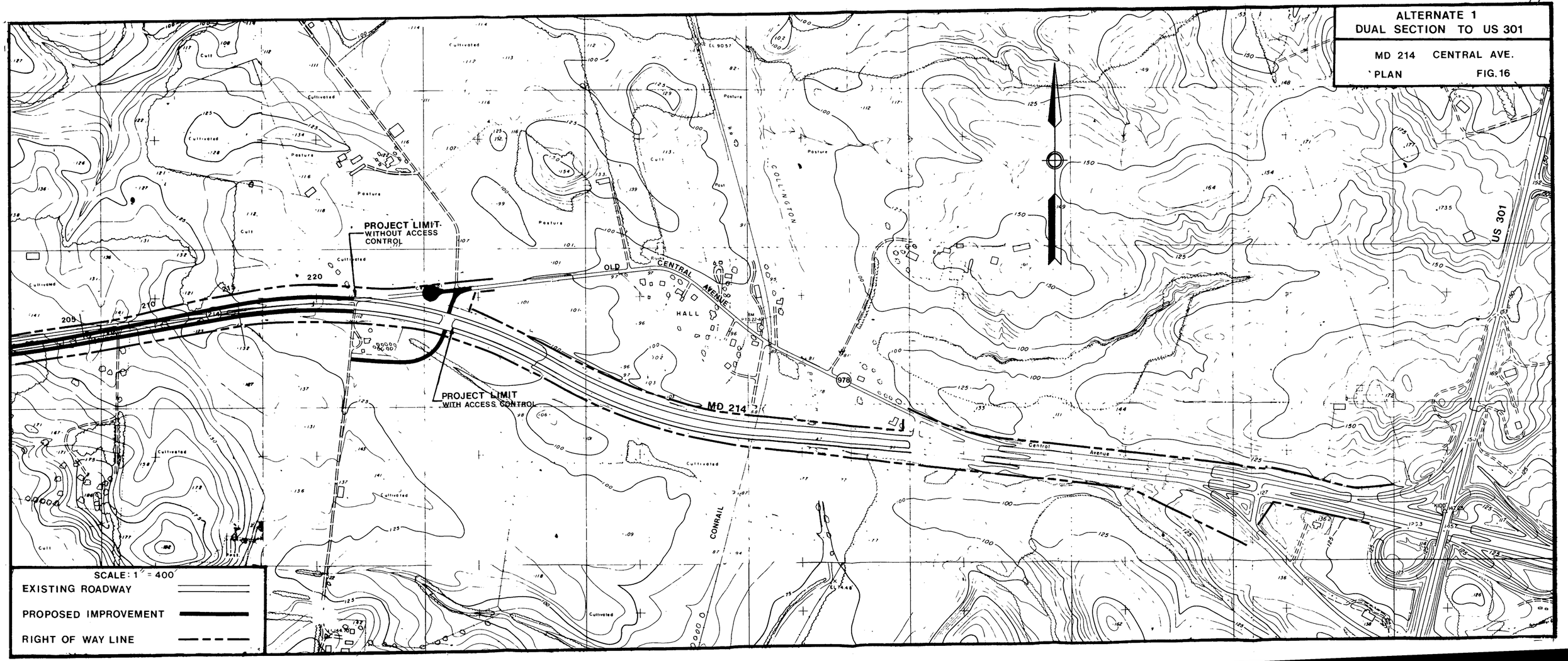

200
40
-1.5%
-2.9%
1000'
L 1000
0
10
20
30
SCALE : 1" - 400'/80'
KETTERING DR.
1.7%
-3.8%
-0.7%
L 1100'
L 1100'
40
50
60
ST. MICHAELS DR.
1.1%
-1.0%
L 1000'
L 1000'
L 1100'
70
80
ALTERNATE I
MD 556
3.8%
1.7%
-2.0%
200
80
L 1000'
L 1000'
90
100
110
CAMPUS WAY TO MD 556
MD 214 CENTRAL AVE.
PLAN & PROFILE FIG.14

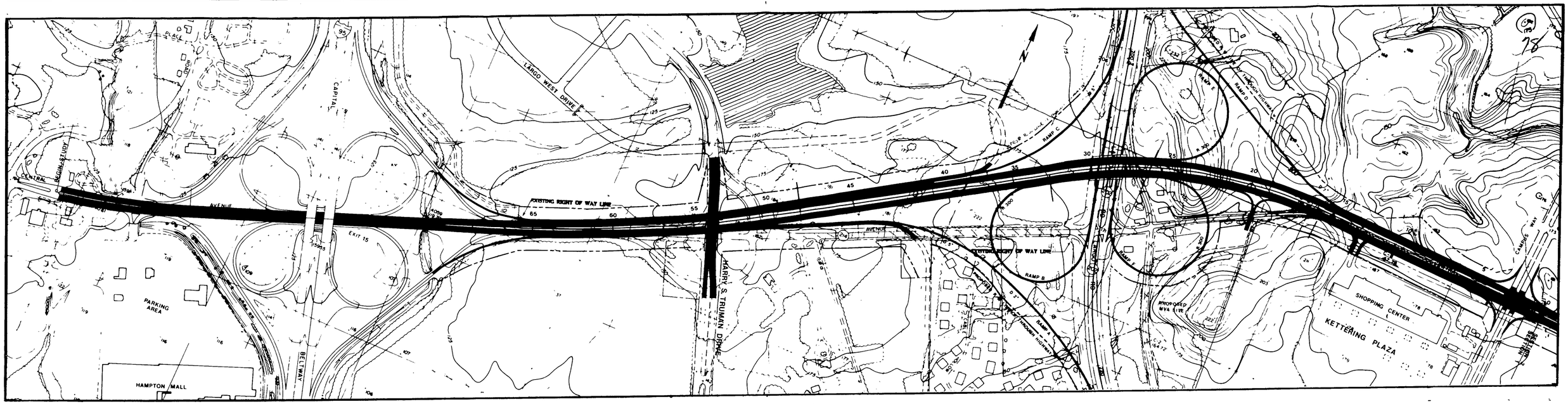


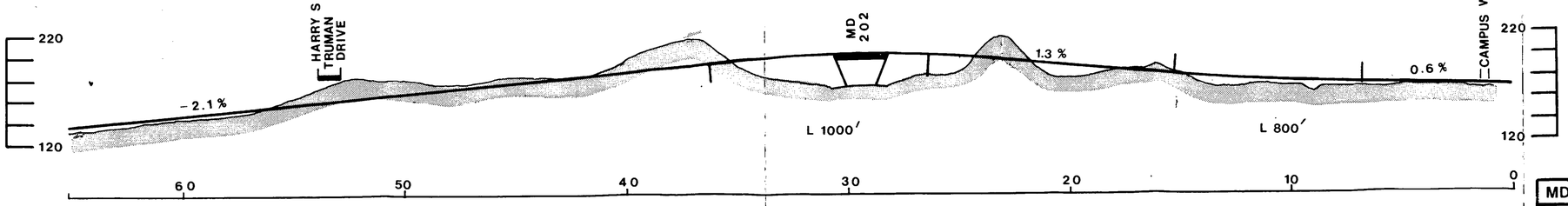
ALTERNATE I



STATON DR. TO DUAL SECTION
MD 214 CENTRAL AVE.
PLAN & PROFILE FIG. 15


ALTERNATE 1
DUAL SECTION TO US 301
MD 214 CENTRAL AVE.
PLAN FIG. 16
PROJECT LIMIT WITHOUT ACCESS CONTROL
PROJECT LIMIT WITH ACCESS CONTROL
OLD CENTRAL AVENUE
MD 214
Central Avenue
US 301
COLLINGTON
CONRAIL
HALL
EL 9057
EL 144.8
SCALE: 1" = 400
EXISTING ROADWAY
PROPOSED IMPROVEMENT
RIGHT OF WAY LINE



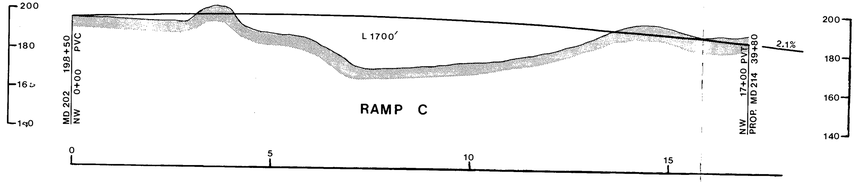


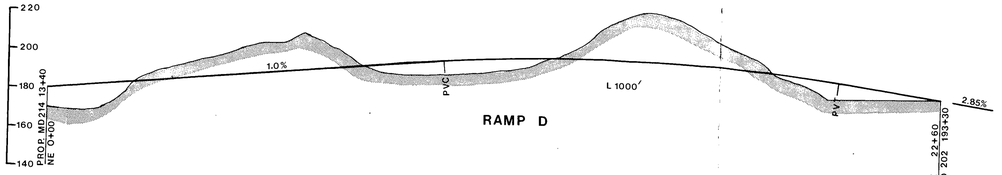
ALTERNATE 1

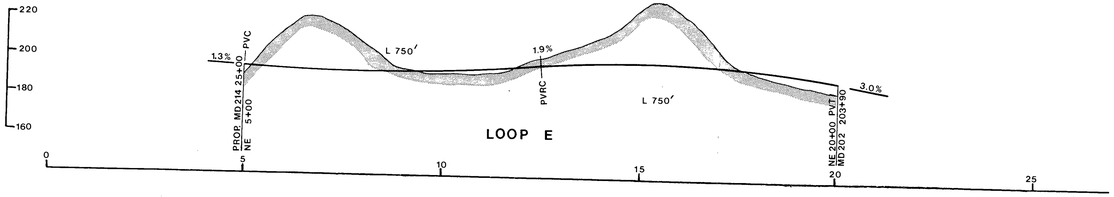
SCALE : 1" = 400'/80'

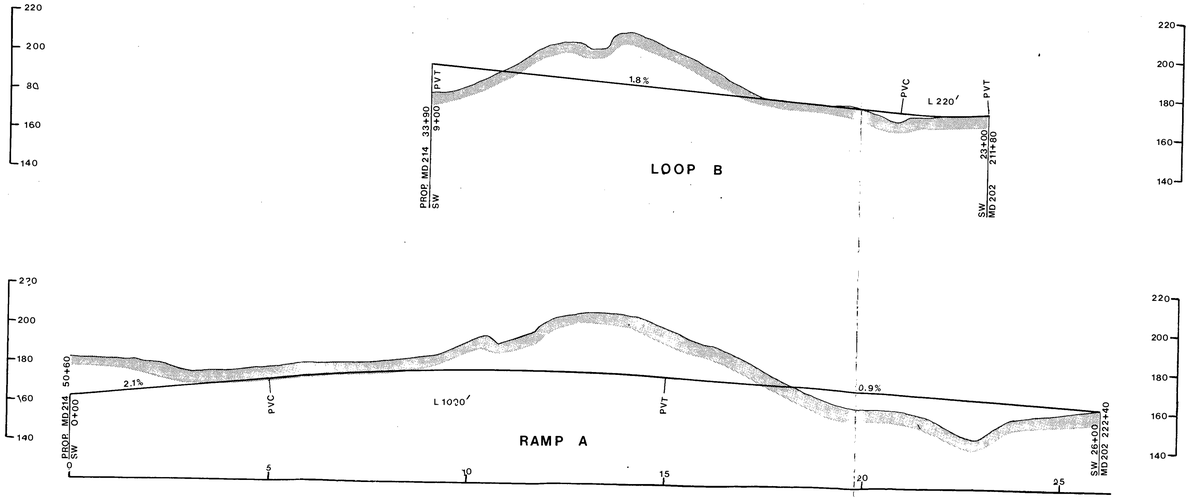
MD 202 INTERCHANGE OPTION F

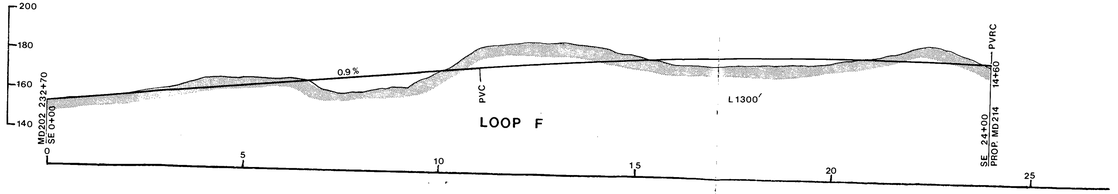
MD 214 CENTRAL AVE.
PLAN & PROFILE FIG. 17











SCALE: HORIZ. 1"= 200' VERT. 1"= 40'	Maryland Department of Transportation State Highway Administration	MD 214/202 INTERCHANGE MD 214 CENTRAL AVE. RAMP PROFILES FIG. 18

reasonable traffic service along the study corridor. 80

1. Typical Section Options

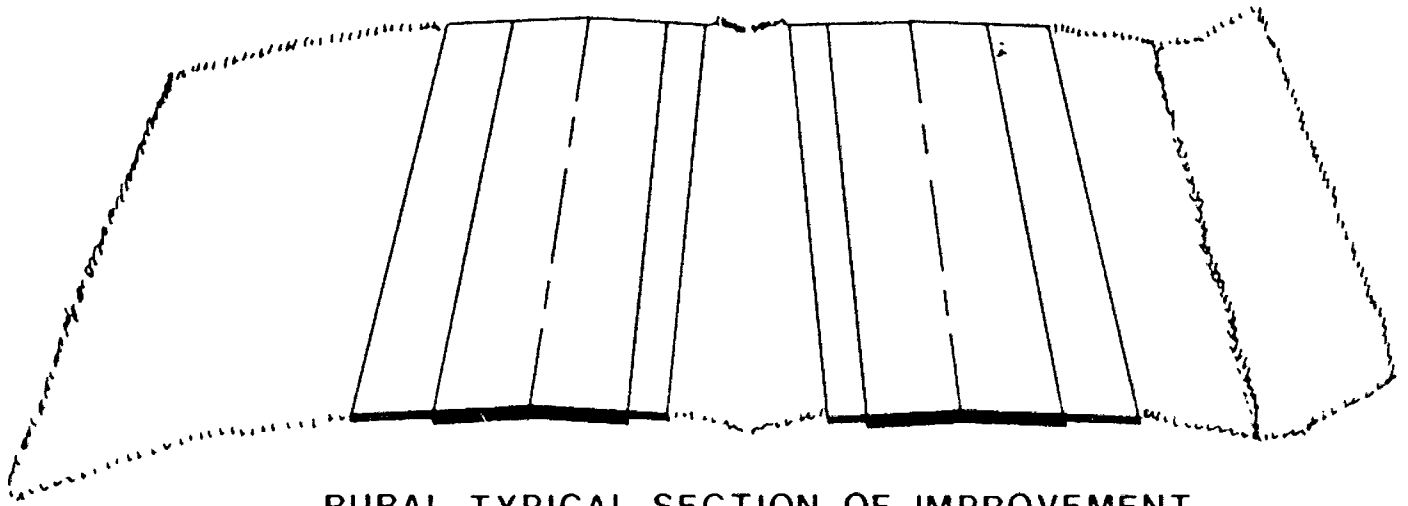
Option A (Figure 19) is a rural highway typical section featuring a safety recovery area beyond the outer shoulder. It is considered the safer of the optional roadway sections but requires a greater right of way width. Option A requires a 260 foot minimum right of way from I-95 to Campus Way and a 170 foot minimum right of way east of Campus Way.

Option B (Figure 20) is an urban typical section with 10 foot curbed shoulders requiring a minimum right of way of 250 feet west of Campus Way and a minimum right of way of 150 feet east of Campus Way.

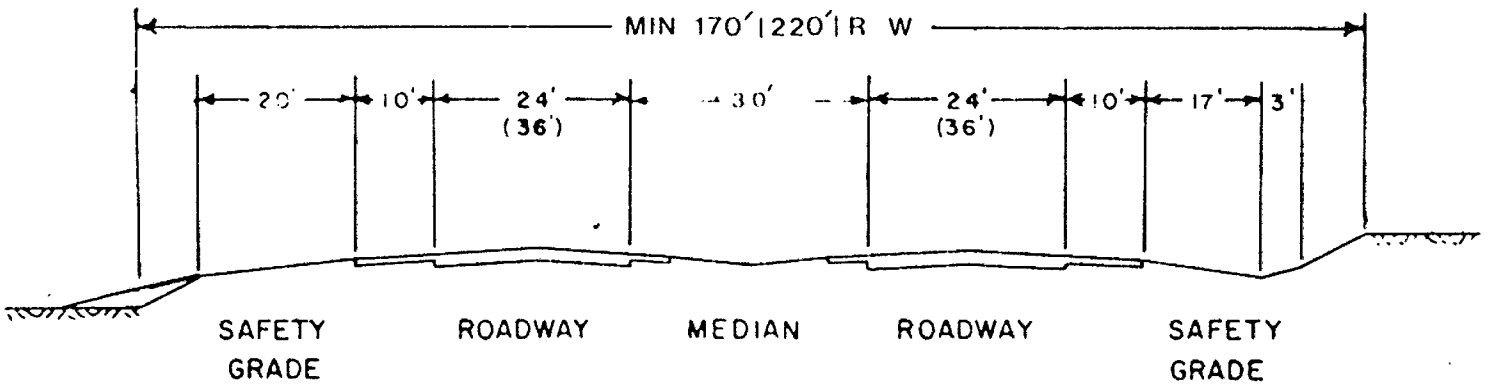
2. Access Control Options

Two additional options are applicable to Alternate 1. Option C permits access to remain uncontrolled, and, Option D permits the acquisition of access controls. With Option C, (access uncontrolled) the State Highway Administration would regulate the location of commercial and residential entrances directly to the arterial State Highway. The Maryland National Capital Park and Planning Commission would continue to exercise its authority to prohibit residential subdivisions from directly accessing the state highway. The designation of the route as a controlled access arterial highway would result in the prohibition of any new direct access to the State Highway except by means of public roads and the purchase of rights and removal of all present direct access from properties with direct frontage. Exceptions may be granted.

Median crossovers would be provided in accordance



RURAL TYPICAL SECTION OF IMPROVEMENT



DIMENSIONS SHOWN ARE APPROXIMATE AND ARE FOR THE PURPOSE OF DETERMINING COST ESTIMATES AND ENVIRONMENTAL IMPACTS, AND ARE SUBJECT TO CHANGE DURING THE DESIGN PHASE. ROADWAY DIMENSIONS WEST OF MD 202 ARE IN PARENTHESIS.

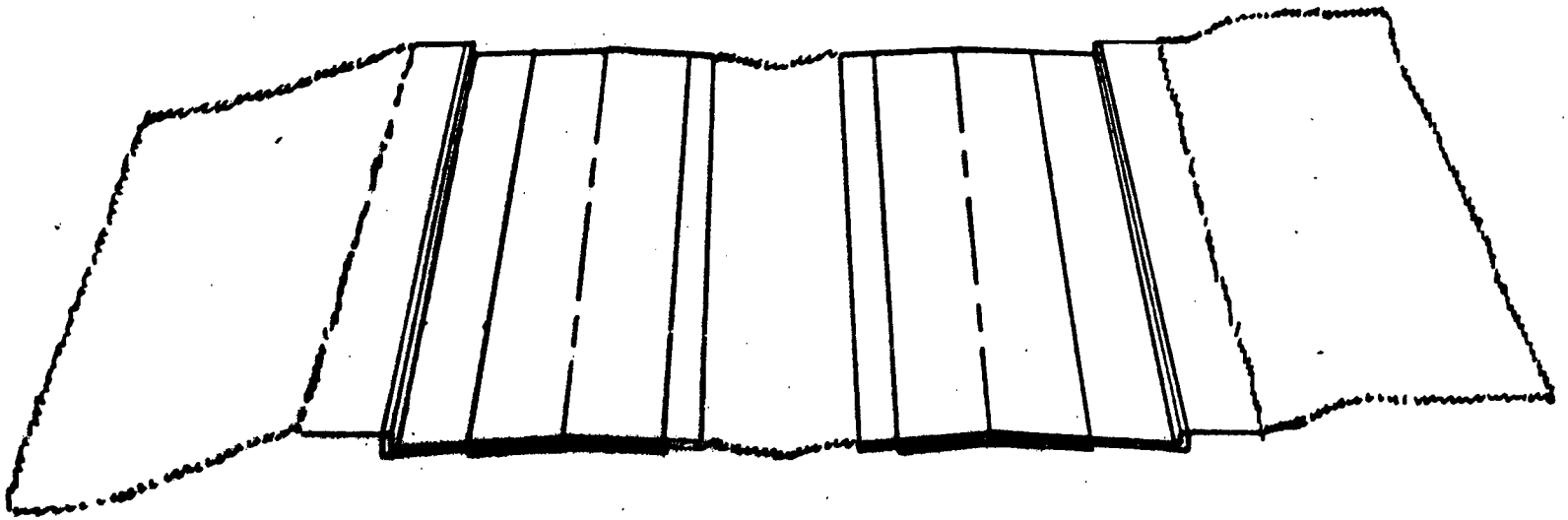
State Highway Administration

OPTION – A

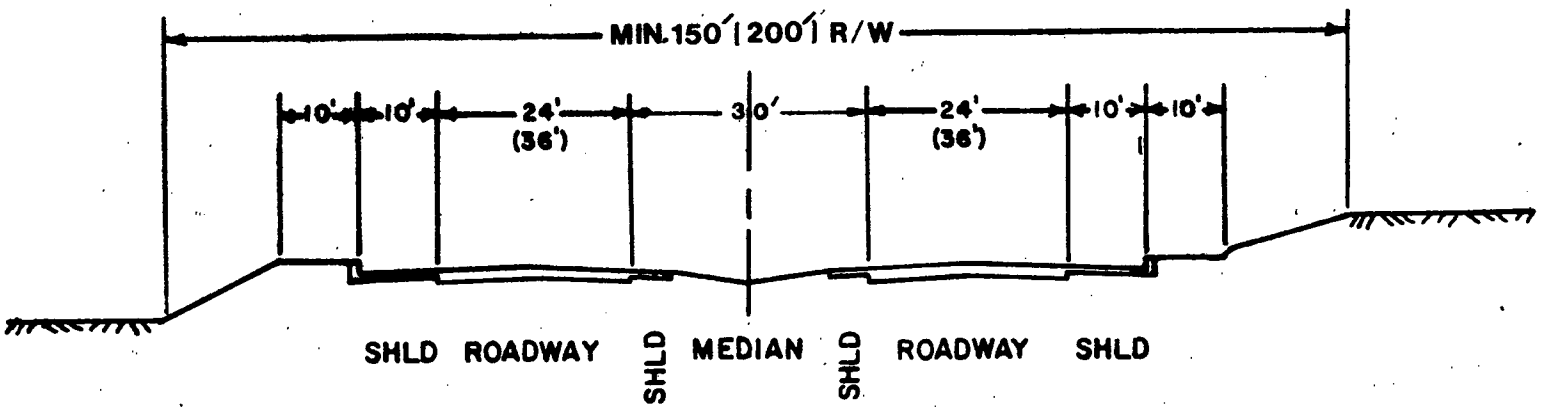
MD 214 CENTRAL AVE

TYPICAL SECTION FIG. 19

18



URBAN TYPICAL SECTION OF IMPROVEMENT



DIMENSIONS SHOWN ARE APPROXIMATE AND ARE FOR THE PURPOSE OF DETERMINING COST ESTIMATES AND ENVIRONMENTAL IMPACTS, AND ARE SUBJECT TO CHANGE DURING THE DESIGN PHASE. ROADWAY DIMENSIONS WEST OF MD 202 ARE IN PARENTHESIS.

State Highway Administration
OPTION–B
MD 214 CENTRAL AVE
TYPICAL SECTION FIG. 20

with the State Highway Administration Directive 5841.1.1 entitled Crossovers on Divided Highways. Median crossovers would be provided only at public roads spaced not closer than 1,500 feet without access controls or not closer than 1,300 feet should the facility be designated a controlled access arterial highway. Exceptions could be granted where deemed necessary to provide adequate traffic circulation.

Significant reductions in collision rates can be expected if access controls are implemented. This benefit will be weighed against the cost of acquiring access controls.

3. Maryland Route 202 Connections

a. Ramp Additions at the I-95/Maryland Route 202 Interchange

Traffic forecast studies reveal that future travel desires between the I-95/Maryland Route 214 interchange and the existing Maryland Route 214/Maryland Route 202 intersection, and the environs of the proposed Largo Town Center along Maryland Route 202 are of a magnitude to warrant partial diversion of traffic volumes from Maryland Route 214 to Maryland Route 202.

Presently, the environs of the proposed Largo Town Center are reached by travelling east or west along Maryland Route 214 to Maryland Route 202 north or via Harry S. Truman Drive. Improvements to the I-95/Maryland Route 202 interchange would relieve the increased traffic congestion forecasted along Maryland Route 214 between the I-95 interchange and Maryland Route 202.

This diversion of traffic from the

I-95/Maryland Route 214 area, can be achieved by the addition of missing ramp movements at the I-95/Maryland Route 202 partial cloverleaf interchange (located approximately 1.7 miles north of Maryland Route 214). Two alternative methods of providing these missing movements are shown on Figures 21 and 22. Both of these are compatible with Maryland Route 214 improvements.

1.) No-Build Alternate

Not improving the existing interchange would result in the earlier attainment of capacity (LOS "E") traffic operational conditions on Maryland Route 214 between I-95 and Maryland Route 202. Thus travel efficiency would be further reduced within a significant portion of the study area.

2.) Option 1

Option 1 proposes the addition of an outer directional ramp in the southeast quadrant outside of the existing loop ramp for northbound I-95 to eastbound Maryland Route 202 traffic exiting I-95. The proposed directional ramp would occupy an easement containing recently installed water and sewer mains. The returning westbound Maryland Route 202 to southbound I-95 movement would be achieved by means of a signal controlled dual left turn storage lane along Maryland Route 202 and a dual lane spur ramp connecting to a widened outer directional ramp (2 lanes) in the southwest quadrant. Appropriate acceleration and deceleration lanes would be provided along I-95 south of Maryland Route 202.

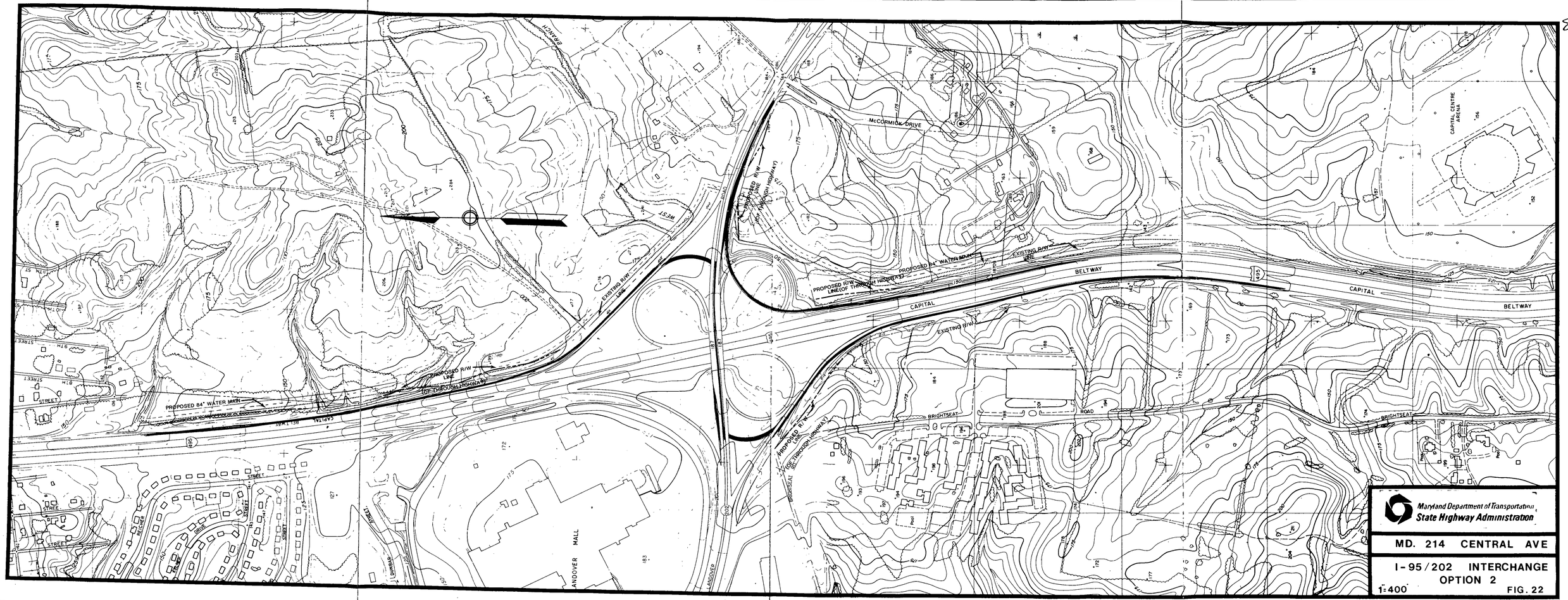
Maryland Department of Transportation
State Highway Administration

MD. 214 CENTRAL AVE

I-95 / 202 INTERCHANGE
OPTION 1

1"=400'

FIG. 21



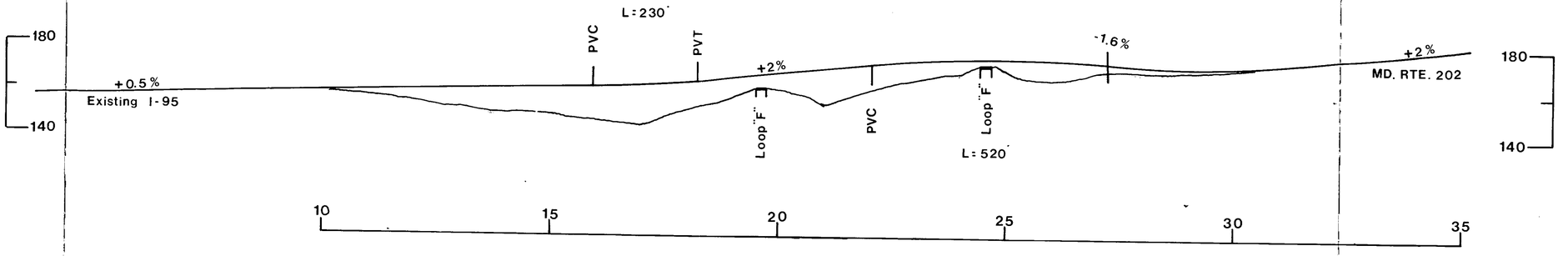
Maryland Department of Transportation
State Highway Administration

MD. 214 CENTRAL AVE

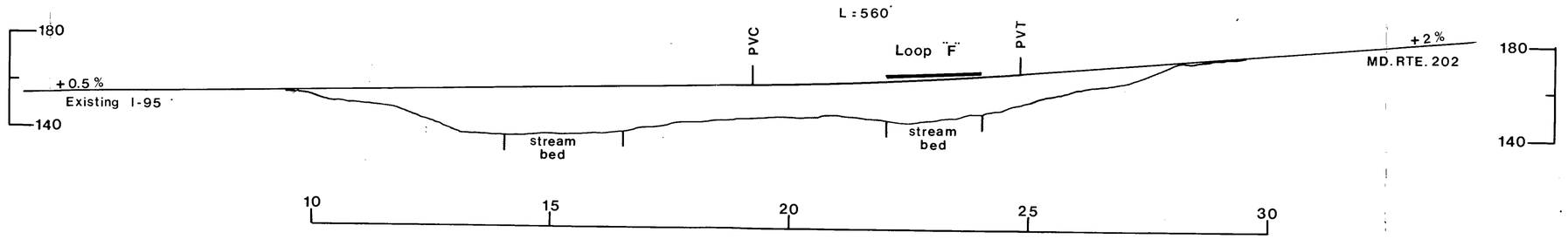
I-95/202 INTERCHANGE
OPTION 2

1:400

FIG. 22



OPTION 2



OPTION 1

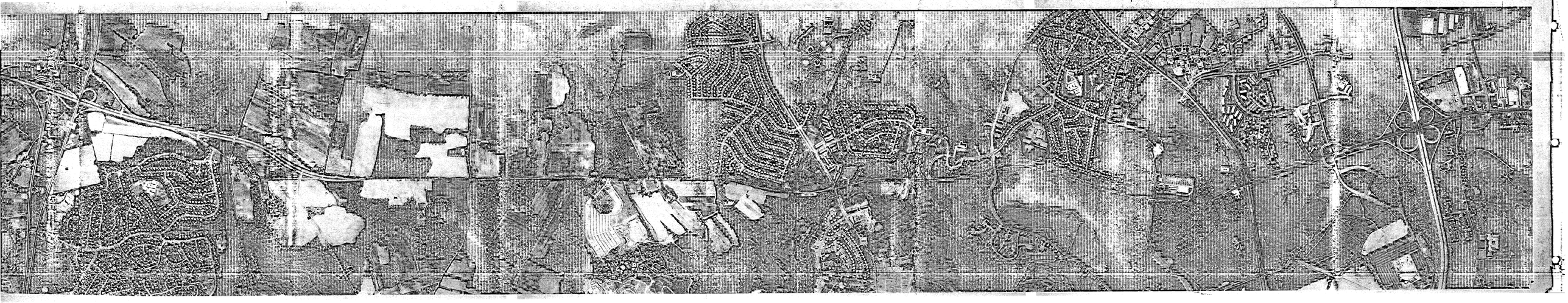
HORIZ. 1"= 200'
VERT. 1"= 40'

Maryland Department of Transportation
State Highway Administration

MD. 214 CENTRAL AVE

I-95/202 INTERCHANGE

PROFILE FIG. 23



3.) Option 2

Option 2 proposes adding the missing ramp movements at the I-95/Maryland Route 202 interchange by locating a proposed outer directional ramp for the northbound I-95 to eastbound (southeast) Maryland Route 202 movement in the southeast quadrant in the present location of the loop ramp. The loop ramp (which provides the eastbound Maryland Route 202 to northbound I-95 movement) would be replaced with a signal controlled two lane left turn and spur ramp into a widened (2 lane) outer directional connection in the northeast quadrant. As with Option 1, the returning westbound Maryland Route 202 to southbound I-95 movement would be achieved by providing a single controlled dual left turn storage lane along Maryland Route 202 and a dual lane spur ramp connecting to a widened outer directional ramp (2 lanes) in the southwest quadrant. Appropriate acceleration and deceleration lanes would be provided along I-95 both north and south of Maryland Route 202.

This option has the advantages of reducing utility impacts, eliminating a weaving section along I-95, and improving (longer) weaving and merging conditions along Maryland Route 202 approaching St. Joseph/McCormick Drive from the west. ~~These advantages should be weighed against higher capital investment.~~

b. Studies at Maryland Route 214/Maryland Route 202

An interchange, Option F, or an at-grade intersection, Option E (Figures 17 & 18), are the two options at

the crossing of Maryland Route 202. Access controls would be extended from I-95 to include the interchange limits.

The proposed Maryland Route 202 interchange is a partial cloverleaf which would satisfy design year (2005) capacity requirements. The interchange provides ramps in all four quadrants for six of the eight possible turning movements. These movements include:

-eastbound Maryland Route 214 to southbound Maryland Route 202.

-southbound Maryland Route 202 to eastbound Maryland Route 214.

-southbound Maryland Route 202 to westbound Maryland Route 214.

-westbound Maryland Route 214 to northbound Maryland Route 202.

-northbound Maryland Route 202 to westbound Maryland Route 214.

-eastbound Maryland Route 214 to northbound Maryland Route 202.

The northbound Maryland Route 202 to eastbound Maryland Route 214 and the westbound Maryland Route 214 to southbound Maryland Route 202 movements, not provided at the interchange, can be executed via proposed Campus Way. No turning movements within the interchange require left turns across the through lanes of either Maryland Route 214 or Maryland Route 202.

As with the typical section, Option A and B, six (6) continuous through lanes would be provided from west of I-95 to Campus Way. Outer auxiliary lanes would be provided between I-95 and Maryland Route 202 ramp junctions.

The interchange option requires higher elevations (up to 22 feet) and more right of way acquisition for Maryland Route 214 from 1,400' west to 1,400' east of Maryland Route 202 than the at-grade intersection option. The level of service (LOS) with the interchange option would be largely determined by the LOS on Maryland Route 214 at the ramp junctions. Movements at the at-grade intersection would determine level of service with the at-grade intersection option. The horizontal alignment of the interchange option is slightly farther north than the at-grade intersection option.

IV. ENVIRONMENTAL IMPACTS

IV. ENVIRONMENTAL IMPACTS

A. SOCIAL AND ECONOMIC IMPACTS

1. No-Build Alternate

The No-Build Alternate would result in serious deterioration of traffic operating conditions in the project area. Central Avenue traffic demand is already near capacity during rush hour and will continue to slow commuting time and limit convenient access to community facilities. Driving hazards would continue and accident costs are likely to increase. This alternate is inconsistent with local land use plans.

The No-Build Alternate would tend to slow development, both residential and commercial, in the area. If the County Planning Board continues to limit development in the area until Central Avenue is expanded, the community may retain some portions of its undeveloped land and some measure of its remaining rural character for many years under the No-Build Alternate.

2. Alternate 1

Alternate 1 would have generally positive social and economic impacts on the area. Access to community facilities, including the Metrorail System, would be improved, bus service would be more efficient, commuting time will be shortened and both driving hazards and associated accident costs (estimated at $1,580,000 per 100 million vehicle miles of travel) would be reduced (a societal savings of $776,000/100 MVM should result). Improvement of the road would make possible the development of new housing developments and encourage the development of major planned employment centers in the area.

Since the Prince George's County Planning Board has

made approval of many subdivisions in the area conditional to expansion of Maryland Route 214, extensive development is likely to follow completion of the project. Therefore, it is likely, that as the area is developed, property values and tax assessments will rise and the community will become increasingly urban in character. Expanding Maryland Route 214 would ease the transition from a relatively rural community to a suburban community.

One of the County's long-range goals is to encourage development of employment centers (such as the proposed Largo Town Center) to balance the high rate of residential growth. Improvement of Maryland Route 214 would improve access to the area, and thus, make the project area more attractive to business. This should benefit the community in several ways. New employment opportunities would be available, allowing more people to find work in the county, thereby shortening commuting time for local residents. An increased commercial tax base could, in the long run, help to correct the high residential tax rate in Prince George's County.

Improvement of Maryland Route 214 probably would encourage an increased development rate in the study area. Current land use plans and zoning favor low-to-medium density residential and commercial development which would minimize costly sprawl of public services and facilities. Improvement of Maryland Route 214 may even discourage urban sprawl by allowing the County to proceed with plans for concentration of housing, employment, and other services within the project area.

Option A, the rural typical section, would require 97 acres of right of way. Option B, the urban typical section,

would require 77 acres of right of way. The Maryland Route 202 Interchange Option F would require approximately +18.2 acres of additional right of way.

95

Construction of any of the Alternate 1 options would require acreage from undeveloped land, woodland, agricultural land, and commercial property. Of the land required; 77 acres are zoned for residential use, 42 acres are zoned for commercial use, 20 acres are zoned for agricultural use, and 3 acres for private community use. (Acreage figures include options of Alternate 1).

Alternate 1, mainline, would require 56.8 acres of prime farmland. 13.1 acres of the right of way are adjacent to land that is already developed and 31.6 acres are adjacent to land that is proposed for development.

The I-95/Maryland Route 202 interchange, Option 1 requires 5.49 acres of residential and commercial land and Option 2 requires 0.91 acres of residential and commercial land for right of way.

A small portion of Kettering Park (3 acres), a private recreation area would be acquired for right of way. No right of way would be acquired from presently developed portions of the Wild Country. Maryland Route 214 improvements are located to the south in the vicinity of Belt Woods; therefore, the edge of the woods would not be disturbed and no right of way would be acquired.

The Maryland Route 202 Interchange Option F would require additional right of way of approximately 8.2 acres of commercial property and 9.5 acres of residential properties.

The proposed improvements to Maryland Route 214 would not require the acquisition of homes. The Maryland Route 214/Maryland Route 202 Interchange would require the displacement of up to 5 businesses. Adequate replacement sites are available within the general area of this project for all displaced businesses. They should be able to relocate within the community without adverse disruption of the area economy.

Businesses which would be displaced by the construction of a partial interchange at Maryland Routes 214/202 include the Largo Exxon Gas Station, Largo Liquors, Largo Garden Center, Bergmann's Cleaners, and Fat Daddy's Record and Tape Shop.

A lead time of 18 months would be necessary to properly administer the relocation assistance program as required by the "Uniform Relocation Assistance and Land Acquisition Policies Act of 1970" (See Appendix A). The right of way report is available for review at the State Highway Administration, 707 North Calvert Street, Baltimore, Maryland.

No displacement of the elderly, the handicapped, or minorities would occur.

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 constructions, 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.

B. Net Effect of Proposed Improvements on Travel Patterns in Maryland Route 214 Corridor

The proposed improvements along Maryland Route 214 and at the I-95 (Capital Beltway) Maryland Route 202 interchange will not contribute to any significant disruption of travel patterns and no serious degradation of traffic operations on other roadways in the corridor. The provision of additional capacity along Maryland Route 214 may lead to some travellers using Maryland Route 214 rather than seeking alternative routes to avoid the serious congestion problems, which would exist along Maryland Route 214 under a no-build alternate. However, by doing so, travel will be reduced on corridor roadways not designed to serve as arterial roadways, overall level of service will be improved both on Maryland Route 214 and on other corridor roadways, and travel times and delay and gasoline consumption and air pollution emissions will be reduced.

The provision of additional ramps in the I-95/Maryland Route 202 interchange is expected to result in diversion of approximately 10,000 one-way trips from the I-95/Maryland Route 214 interchange and from portions of Maryland Routes 214 and 202. The net effect of this diversion will be to significantly improve traffic operations both for the vehicles using these ramps and for other vehicles using Maryland Route 214. No significant degradation in level of service is forecast for vehicles using the I-95/Maryland Route 202 interchange.

Thus, it can be concluded that the overall effect of the proposed improvements to improve traffic operations and efficiency on Maryland Route 214 and on roadways throughout the corridor so that no significant negative impact on travel patterns will occur anywhere in the corridor.

C. Historical/Cultural Impacts

Three historic sites of probable National Register eligiblity and one of local significance are located in the project vicinity. The historic sites are shown on Figure 6. The letter from the Maryland Historical Trust dated February 1, 1980 indicates that the proposed project would have no effect on these sites (See Correspondence Section).

Three prehistoric archeological sites, potentially eligible for the National Register, were identified in the study area. However, as a precaution, the State Historic Preservation Officer, the State Archeologist, and the State Highway Administration agree to maintain the right of way 60 feet or less north of the present right of way of two of these sites, 18 PR 116 and 18 PR 132. The State Archeologist has stated there will be no effect on these sites if they are avoided. Alternate 1 will impact one site 18 PR 174. A Phase II examination will be performed to determine its eligibility status.

D. Noise Levels and Noise Impacts

The method used to predict the future noise levels from the proposed improvement of Maryland Route 214, plus normal traffic volume increases with time, was developed by the Federal Highway Administration of the U.S. Department of Transportation. The FHWA Highway Traffic Noise Prediction Model (FHWA Model) utilizes an experimentally and statistically determined reference sound level for three classes of vehicles (autos, 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 number of vehicles average,

vehicles speed, 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 adaptation of the FHWA MODEL, STAMINA 1.0.

The determination of environmental noise impacts is based on the relationship between the predicted noise levels, the established design noise levels and the ambient noise levels in the project area. The applicable standard is the Federal Highway Administration's Design Noise Level/Activity Relationship (see Table 8) published in FHPM 7.7.3.

Ambient noise levels were measured at noise sensitive areas along existing Maryland Route 214 and its connecting roadways during two different periods of the "typical" day based on the diurnal traffic curve; 1) non-rush hour (7:00 a.m. - 4:00 p.m.) and 2) evening rush hour (4:00 p.m. - 6:00 p.m.). This was done to establish and quantify any diurnal variations in noise levels resulting from changes in traffic volumes or vehicle mix. It was determined that the most typical noise conditions occur during the non-rush hour period (7:00 a.m. - 4:00 p.m.). During this time, the highest noise levels are experienced for the greatest length of time.

1. No-Build Alternate

A total of twenty-five (25) noise sensitive areas are associated with this Alternate (See Table 9). L_{10} noise levels

TABLE 8

DESIGN NOISE LEVEL/ACTIVITY RELATIONSHIP
(FROM FHPM 7.7.3)

100

DESIGN NOISE LEVELS - dBA

$L_{10}(h)^2$ 60 (Exterior)	Tracts of land in 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. Such areas could include amphitheaters, particular parks or portions of parks, open spaces, or hiostoric districts which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
70 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, and parks which are not included in Category A, and residences, motels, hotels, public meeting rooms, schools, churches, libraries, and hospitals.
75 (Exterior)	Developed lands, properties or activities not included in Categories A or B above.
----	For requirements on undeveloped lands see below.
55 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.

NOISE ABATEMENT MEASURES FOR LANDS WHICH ARE UNDEVELOPED ON THE DATE OF PUBLIC KNOWLEDGE OF THE PROPOSED HIGHWAY PROJECT.

a. Noise abatement measures are not required for lands which are undeveloped on the date of public knowledge of the proposed highway project (except as provided in paragraph b).

$^2L_{10}(h)$ - The sound level that is exceeded 10 percent of a one hour period.

NOISE SENSITIVE AREAS

TABLE #9

The NSA's were chosen to be representative of the area surrounding the NSA's with respect to land use, traffic volumes and travel speeds in the design year 2005.

NOISE SENSITIVE AREAS	DESCRIPTION
1	South side of Maryland Route 214, east of Harry S. Truman Drive zoned C-S-C. The study site is the temporary bank building.
2 & 3	Existing residential development in the southwest quadrant of the Maryland Route 214/202 intersection zoned R-30. Two residences are used as representative NSA's 2 and 3.
4	Northeast quadrant of the Maryland Route 214/202 intersection, zoned R-S. The site used for study is an isolated dwelling.
5	Northeast quadrant of the Maryland Route 214/202 intersection zoned R-S. The site chosen is a proposed single family dwelling located in Newbridge Park, an approved subdivision. The midpoint of the nearest lot was used as the location of the NSA.
6	Northwest quadrant of the Campus Way intersection with Maryland Route 214 zoned R-S. The NSA is a proposed townhouse.
7	Southeast quadrant of the Campus Way intersection zoned R-T. The NSA is a proposed townhouse.
8 & 9	Existing residential development on the south side of Maryland Route 214 east of Campus Way zoned R-80. Two dwellings, 8 and 9, were selected as representative of the area.

TABLE 9 CONTINUED

NOISE SENSITIVE AREAS	DESCRIPTION
10A & 10B	Proposed residential subdivision called Southlake zoned R-M. Two sites 10A and 10B were selected as representative of the area. These NSA's are proposed townhouses.
11	Existing church in the southwest quadrant of the Northampton Way intersection of Maryland Route 214. The area is zoned R-80.
12	Northeast quadrant of Northampton Way intersection of Maryland Route 214 zoned R-R. The area is a proposed residential development of single family homes. The site chosen is the midpoint of the nearest parcel.
13	Existing residential area on the south side of Maryland Route 214 west of Kettering Park zoned R-R. The NSA is an existing dwelling.
14	Kettering Park
15	Existing Lutheran Church on the north side of Maryland Route 214 opposite Kettering Park.
16	Northeast quadrant of St. Michael's Drive intersection with Maryland Route 214 zoned R-30. The NSA is a proposed townhouse.
17	Southwest quadrant of Maryland Route 556 intersection with Maryland Route 214 zoned R-18. The NSA is an existing townhouse.
18A & 18B	Existing residential area zoned R-80 on the south side of Maryland Route 214 approximately one-quarter mile east of Maryland Route 556. Two dwellings, 18A and 18B, were chosen as representative of the area.
19	Existing farm dwelling west of the Wild World entrance on the north side of Maryland Route 214. The zoning is R-A.

TABLE 9 CONTINUED

NOISE SENSITIVE AREAS	DESCRIPTION
20	Existing dwelling on the north side of Maryland Route 214, east of the Church Road intersection. The zoning is R-R.
21	Existing isolated dwelling located on the south side of Maryland Route 214, approximately 1,200 feet west of the limits of work.
22A & B	Kettering Junior High School. The building was taken as an NSA (22A) and the playing field between the school and Maryland Route 214 was also studied (22B). There are no windows on the side of the school facing Maryland Route 214.

would increase 1-9 dBA over present levels. Noise Sensitive Areas 3, 4, and 17 would experience increases over ambient levels due to increased traffic volumes on the roadways in the design year. NSA 3 would be the only site where the design noise level criteria would be exceeded.

2. Build Alternate

The same twenty-five (25) noise sensitive areas are associated with this alternate (see Table 8). L_{10} noise levels would increase 1-15 dBA over present levels. Noise Sensitive Areas 3, 5-7, 12-14, and 17 exceed the Federal Design Noise Level Criteria. NSA 3 is located approximately 80-100 feet west of Maryland route 202 and is projected to exceed the design noise level by 4dBA. Maryland Route 202 is the dominant source of to the noise at this location and Maryland Route 214 does not contribute significantly to the noise levels at this site. Therefore, no mitigation is warranted at this NSA.

Noise sensitive area 5 is a proposed single family residential development. Although the predicted level at this NSA exceeds design level criteria by 3dBA, no mitigation is proposed for this undeveloped area. Noise sensitive areas 6 and 7 are proposed for development as townhouse multi-family dwellings. These two NSA's exceed the design criteria by 2 and 4dBA, respectively. Again, no mitigation is proposed for these two undeveloped areas. Noise sensitive area 12 is also a proposed single-family residential area. Since none of this proposed development has occurred, it is not feasible to recommend any type of noise mitigation at this receptor.

NSA 13 is an existing residential area that is predicted to exceed the design noise level by 1dBA. To

effectively mitigate this location, a barrier length of ±900 feet at the approximate cost of $180,000 would be required. However, it would not be cost-effective mitigation to provide a barrier at this location that would protect only 3 residences. It appears that some partial mitigation through the use of additional landscaping and plantings may be feasible and will be studied further during the design phase of this project.

Noise sensitive area 14 is the Kettering Community Park which has projected noise levels that exceed the design noise level criteria by 1dBA. Since this receptor is an outdoor park-recreation area, partial mitigation measures such as landscaping and plantings may be the only effective mitigation measure. Again, this will be studied further during the design phase of the project.

NSA 17 is an existing townhouse, which has a projected noise level that exceeds the design criteria by 2dBA. Only one (1) townhouse building is in close proximity to proposed Maryland Route 214 and exceeds the design criteria, therefore, mitigation at this site is not ~~feasbile~~ feasible. Due to physical constraints, any type of berm/barrier at this NSA would have to be segmented, producing an ineffecient mitigation measure.

At the Maryland Route 202/I-95 interchange, the addition of several directional ramps has been included as part of this study. However, with the existing high traffic volumes, as well as projected traffic increases on Maryland Route 202 and I-95, it is evident that the addition of ramps at this interchange would not affect the noise environment. Maryland Route 202 and I-95 are, and will remain, the major contributors to the

noise quality in this area. Therefore, the low traffic volumes and speeds on these proposed ramps does not make a significant contribution to the noise levels in this interchange area. For these reasons, any detailed analysis of this interchange was omitted.

The noise analysis report for this project was distributed to local jurisdiction for their use in zoning and permit activities.

3. Construction Impacts

As with any major construction projects, 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 Earth Movers

Graders

Front End Loaders

Dump and Other Diesel Trucks

Compressors

It is improbable that construction activity would occur during evenings or weekends. Therefore, critical time periods during which sleep or outdoor recreation would occur should not be subject to noise intrusion from construction activities.

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

E. Air Quality Impacts

An air quality analysis has been completed for the proposed action. The Technical Air Quality Report (dated April, 1980) summarized below is available for review at the Maryland Department of Transportation, State Highway Administration, 707 North Calvert Street, Baltimore, Maryland 21202.

1. Microscale Analysis

The objective of this analysis is to compare

the carbon monoxide (CO) concentrations estimated to result from the traffic configurations and volumes of each alternative with the State and National Ambient Air Quality Standards (S/NAAQS). The NAAQS and SAAQS are identical for CO: 40 mg/m^3 for the maximum one hour period, and 10 mg/m^3 for the maximum consecutive eight hour average.

A microscale CO pollutant diffusion simulation analysis, based on free-flow traffic conditions, was conducted for all options and a combined free-flow and interrupted flow was conducted for typical section options. This analysis consisted of calculating one and eight hour CO concentrations resulting from automobile emissions at various receptor sites. All calculations were performed for 1985 (year of completion) and 2005 (year of design). The emission factors were obtained from the Environmental Protection Agency (EPA) program MOBILE 1, and line source CO dispersion estimates were calculated using the EPA program HIWAY (a Gaussian dispersion-statistics model) for the mainline Maryland Route 214 analysis. For the Maryland Route 214/Maryland Route 202 (Option F) and I-95/Maryland Route 202 interchanges (Options 1 and 2), the Environmental Protection Agency program MOBILE 1 and the improved state-of-the-art FHWA MODEL CALINE 3 was utilized to predict CO concentrations.

Appropriate traffic data was utilized with the assumption of an I/M (Inspection/Maintenance of emission controls) program in effect during both years of the analysis. Mechanic training and a 20 percent stringency level were also assumed under the conditions of I/M. The stringency parameter reflects how rigorously the inspection program is carried out (a

higher stringency factor means lower emissions).

The light duty vehicle (LDV) engine operating modes were all assumed to be FTP (Federal Test Procedure).

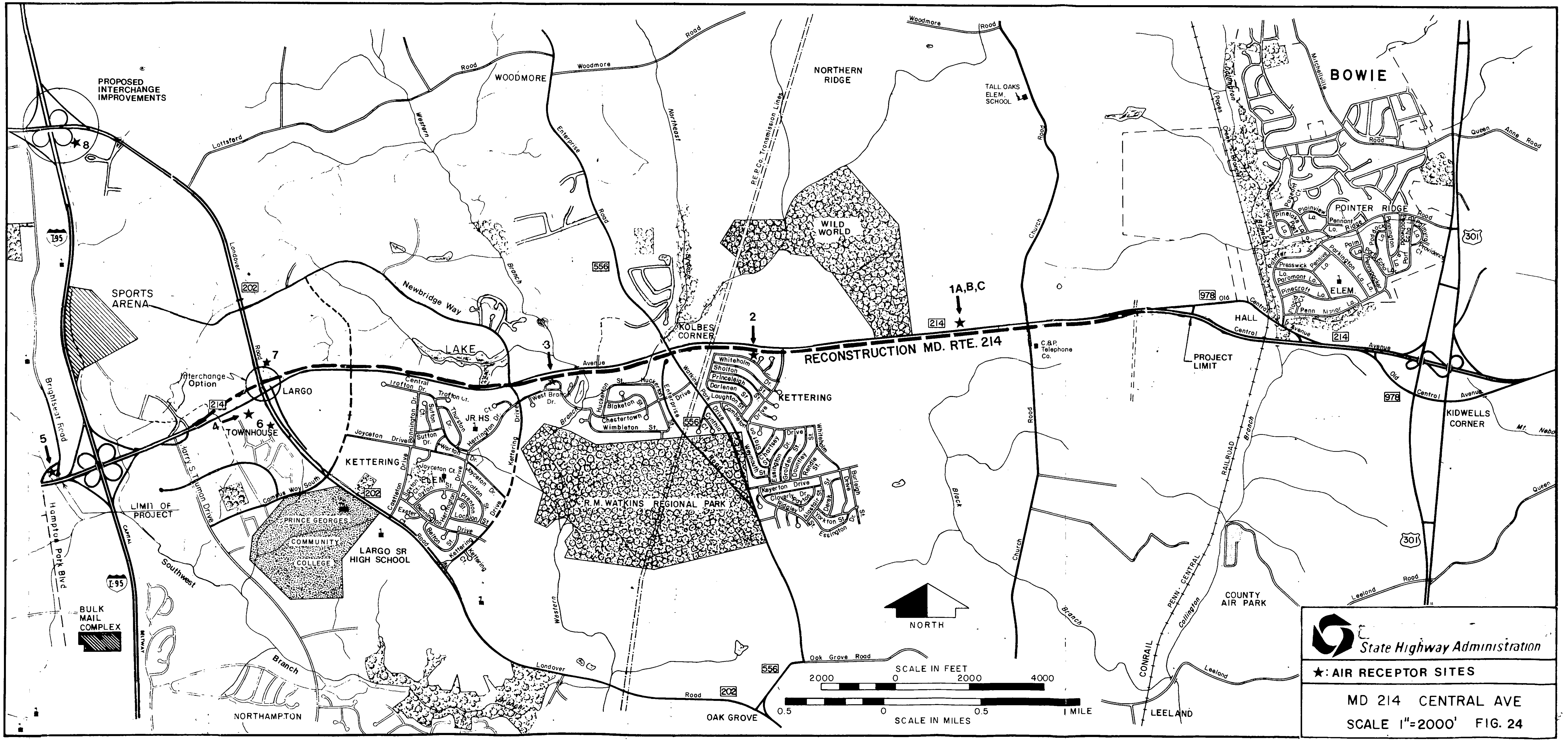
The meteorology assumed in each simulation was derived in part from historical measurements for the area and in part from worst-case guidelines.

Temperatures used for the simulation consisted of 20 degrees F for all peak-hour modeling runs, and 35 degrees F for all eight hour modeling runs for mainline Maryland Route 214 (Options A-E). The Maryland Route 214/Maryland Route 202 (Option F) and I-95/Maryland Route 202 (Options 1 and 2) interchange analyses utilized a worst case temperature of 20 degres F for all peak and eight hour modeling runs. Wind directions were rotated to maximize receptor concentrations of CO.

Eight receptor sites were chosen for this analysis and are described below. Figure 24 shows the locations of the sites. Three of the receptors are dwellings; one is a church, and one is an Edge-of-Right-of-Way (EROW) receptor. All receptors are at-grade relative to existing roadway unless otherwise noted. The receptor site locations were verified during study area visits by the analysis team.

Site 1, W. Seton Belt property is an EROW receptor located on the north side of Maryland Route 214 and approximately 1,700 feet west of Church Road. Receptors 1a, 1b, and 1c were located 8, 16, and 24 meters respectively from the EROW.

Site 2 is a one story brick and frame dwelling at 12700 Whiteholm Road, (Kettering subdivision) approximately 200 feet south of Route 214.



MD 214 CENTRAL AVE
SCALE 1"=2000' FIG. 24

Site 3 is a two story brick and frame dwelling at 11612 Middleham Drive (off Kettering Drive) and approximately 200 feet south of Route 214. The receptor is elevated approximately 30 feet above the roadway.

Site 4 is a one and one-half story frame dwelling at 24 Cable Hollow Way, 800 feet southwest of the junction of Maryland 214 and Maryland 202. It is elevated approximately 20 feet above the grade of Route 214.

Site 5 is the single story Ridgely Zion United Methodist Church across Route 214 from Hampton Mall, west of I-95. It is approximately 30 feet from and elevated 10 feet above the grade of Route 214.

Site 6 is a two story duplex dwelling at 10163 and 10165 Scotch Hill Drive, located approximately 40 feet west of Maryland Route 202 and approximately 1350 feet south of the Maryland Route 214/Maryland Route 202 interchange.

Site 7 is a one story dwelling at 10300 Landover Road and is located approximately 500 feet east of Maryland Route 202 and 1400 feet north of existing Maryland Route 214.

Site 8 is an EROW receptor located in the southeast quadrant of the I-95/Maryland Route 202 interchange and is located approximately 400 feet south of Maryland Route 202 and 500 feet east of I-95.

Background CO levels were projected based upon historical monitoring conducted at the Maryland Department of Health and Mental Hygiene's AIRMON 3 Station located a few miles to the southwest of the study area.

The following projected background CO levels were

calculated using the rollback procedure as adapted to this area:

CO, mg/m^3

	one hour	eight hour
1985	8.9	5.7
2005	6.4	4.9

A free flow analysis was performed for mainline Maryland Route 214 (Options A-E) and the Maryland Route 214/ Maryland Route 202 partial interchange (Option F). Receptors were determined to be significantly affected only by moving vehicles. Therefore, contributions from queued vehicles were not calculated. At the I-95/Maryland Route 202 interchange, a free flow analysis and an interrupted flow analysis was conducted for Options 1 and 2 based on signalization for turning movements, as appropriate.

The results were added to the corresponding area CO background levels to produce total concentrations which are displayed in Table 10 for mainline Maryland Route 214 (Options A-E). Examination of this table reveals that:

- In 1985, violation of the eight hour CO standard is predicted to occur at receptor 5 for the No-Build Alternate.

The results for the Maryland Route 214/Maryland Route 202 partial interchange (Option F) including background levels are shown on Table 11. The I-95/Maryland Route 202 interchange (Options 1 and 2) results including the background levels are shown on Table 12.

TABLE #10

MARYLAND ROUTE 214 MAINLINE (Options A-E)
CO CONCENTRATIONS AT EACH RECEPTOR SITE, mg/m^3

	1985				2005			
	NO-BUILD		BUILD		NO-BUILD		BUILD	
Receptors	1 hour	8 hour	1 hour	8 hour	1 hour	8 hour	1 hour	8 hour
R1a	13.0	6.9	9.7	6.2	7.8	4.5	6.5	4.9
1b	11.1	6.4	9.3	6.0	6.7	4.1	6.3	4.7
1c	9.3	5.5	8.7	5.8	5.8	3.8	6.0	4.5
R2	7.9	5.0	9.3	6.2	5.0	3.5	6.2	4.5
R3	7.2	4.8	8.4	5.7	4.4	3.3	5.5	4.3
R4	6.2	4.5	4.3	3.4	4.6	3.4	4.1	3.1
R5	26.3	10.1	13.0	8.2	13.8	5.9	8.4	5.5

The S/NAAQS for CO are: one-hour maximum = 40 mg/m^3

eight-hour maximum = 10 mg/m^3

TABLE 11

Maryland Route 214/Maryland Route 202 Interchange (Option F)

CO CONCENTRATION AT EACH RECEPTOR SITE mg/m^3

	1985		2005	
Receptor	1 hour	8 hour	1 hour	8 hour
4	10.7	6.7	7.1	5.4
6	10.5	6.3	6.9	5.4
7	9.5	6.5	6.5	5.1

TABLE 12

I-95/Maryland Route 202 Interchange (Options 1 and 2)

CO CONCENTRATION AT EACH RECEPTOR SITE, mg/m^3

	1985						2005					
	No Build		Option 1		Option 2		No Build		Option 1		Option 2	
Receptor	1hr	8hr	1hr	8hr	1hr	8hr	1hr	8hr	1hr	8hr	1hr	8hr
R8	10.8	6.9	10.3	6.4	10.1	6.3	7.3	5.4	7.4	5.5	7.3	5.4

Examination of Tables 11 and 12 reveals that there will be no violations of either the one-hour or eight-hour standards in 1985 or 2005.

Copies of the draft air quality analysis were forwarded to the U.S. EPA and the Maryland Department of Health and Mental Hygiene for review and comment. See the letters dated May 2, 1980 and April 23, 1980 in the Correspondence Section for their response.

2. Air Quality Conformity Statement

The subject project is located within the National Interstate Air Quality Control Region. The project is in an air quality non-attainment area which has transportation control

measures in the State Implementation Plan (SIP). This project conforms with the SIP since it comes from a conforming transportation improvement program.

a. Microscale Carbon Monoxide Levels

The results of this analysis indicate that violations of the eight hour CO air quality standard would occur due to configuration of the No-Build Alternate in 1985. The No-Build Alternate generally produces levels of CO at the receptor sites which are elevated relative to the Build Alternate, due to lower vehicle running speeds. No violation of either standard is predicted if the Build Alternate is implemented.

b. Construction Impacts

The construction phase of the proposed project has the potential of impacting the ambient air quality through such means as fugitive dust from grading operations, materials handling, and through the possible burning of land clearing debris. 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.

Each of the aforementioned elements of project consistency with the State Implementation Plan have been evaluated as noted and through this evaluation the determination has been made that this project is consistent with the State Implementation Plan for Air Quality.

F. Natural Environment

1. Water Resources Impacts

a. Introduction

The proposed highway improvements for Alternate 1 would include construction within the Western Branch and Northeast Branch watersheds. Construction could adversely affect the surface and groundwater resources in the study area by:

- erosion
- siltation
- generation of polluted roadway runoff
- changes in surface and subsurface flow characteristics
- reduction of pervious area available for groundwater recharge.

These potential problems and possible mitigation measures are discussed in the following sections. Because the No-Build Alternate would require little or no construction, these discussions are not generally applicable to that alternate.

b. Erosion - Siltation

Sedimentation is an ongoing problem in any area where commercial, residential, or agricultural activity occurs. Both Western Branch and Northeast Branch carry relatively high sediment loads, primarily due to human activities.

Construction activities associated with the proposed roadway improvements would temporarily expose unstable soil surfaces and increase erosion in various portions of the study area during construction. While it is unrealistic to expect the complete avoidance of siltation, every effort would be made to minimize the generation and transport of silt.

Appropriate placement of hay bales and silt fences would be required to prevent silt runoff from exposed surfaces from directly entering streams. Sediment ponds and basins would be used to trap and remove silt from runoff before it enters streams.

As soon as final grading has been completed, exposed surfaces would be seeded and mulched to provide slope stabilization. Erosion control and energy dissipation techniques would be used to prevent erosion in undisturbed areas affected by runoff.

The potential adverse effects of sedimentation would be greatest around study area streams, where conscientious application of sediment control techniques and stringent enforcement measures would be used to prevent impact to the aquatic system. Construction of new structures over Western Branch and Northeast Branch would require extreme care to minimize sedimentation and streambank erosion. Extensive coordination with the Maryland Department of Natural Resources will be maintained during the final design phase to incorporate all necessary erosion control measures needed for Sediment Control and Waterway Construction Permits. The Department of Natural Resources, Water Resources Administration would also oversee construction to ensure adherence to the Sediment Control Plan.

Effective site restoration and revegetation with native plants would be included to prevent erosion and siltation after construction is completed. Particular attention would be given to areas around the stormwater outfalls. These areas will be designed to stabilize the surrounding streambanks and reduce the velocity of the runoff, before entering the stream system.

c. Contamination of Surface and Groundwater by Polluted Runoff

Storm and melt water runoff from roadway surfaces contains a wide variety of foreign materials including particles worn from pavement surfaces, litter thrown from vehicles or dropped by pedestrians, de-icing compounds and materials deposited by vehicles. Those deposited by vehicles include fuel, lubricants, coolants, exhaust emissions, rust, glass, plastic, rubber, metals and particles worn from tires, clutch and brake linings. Many of these materials are relatively inert and serve only to add minutely to sediment loads. Others are toxic to aquatic organisms and can be serious pollutants if present in sufficient concentrations. These toxic substances can be separated into two groups according to their origin and method of deposition; de-icers and materials deposited by vehicles.

To reduce the volume of storm and melt water runoff directly entering the streams, proper stormwater management features would be incorporated into the design of the roadway. Grassed or vegetated strips would be maintained along the open sections of the roadway to provide filtration of roadway pollutants. Vegetated or mechanical energy dissipation features would be included at the stormwater outlets. To reduce run-off velocity and allow some particulate to filter out before reaching the streams.

The use of infiltration systems to store stormwater, allowing it to percolate into the soil, and natural filtration via runoff over vegetated areas provide natural means to reduce the introduction of pollutants directly into streams. In addition, the presence of vegetation slows the rate of overland flow, permitting particles to settle out of suspension. Minimum disturbance to vegetation and immediate replanting in affected

areas, will enhance stormwater management and reduce impacts to water quality. Approval of a Stormwater Management Plan from the Maryland Department of Natural Resources would be required prior to construction.

Roadway pollutants could adversely affect aquatic organisms if their concentrations reach toxic levels. These contaminants would enter the stream system primarily during storms and other periods of high water flow. Under these conditions, the volume of receiving water is greatest and streams are being flushed more rapidly. This natural purging effect, combined with proper stormwater management, prevents significant reduction of water quality.

d. Changes in Surface Flow

Care has been taken to avoid significant alteration of existing drainage patterns. Some changes would result from construction and sheet flow would be reduced along the roadway. Instead, runoff would be channeled to out-falls where it would enter the existing drainage pattern. These changes would not significantly alter the existing pattern of overland flow.

e. Groundwater Recharge

Alternate 1 would have no significant impact on groundwater supplies in the study area. There are no known sole source aquifers in the study area. Supplies are abundant and, since no deep cuts would be necessary, no interruption of aquifers or changes in groundwater levels are expected. Conversion of surface area available for groundwater recharge to impermeable road surface would produce no significant reduction in recharge area.

2. Flood Hazard Evaluation

a. Introduction

In accordance with FHPM 6-7-3-2 and rules and regulations established by the Maryland Department of Natural Resources and other Federal, State, and local agencies, considerable attention has been directed toward minimizing the impacts of the build altenrate, and restoring and preserving the impacted floodplain values.

The extent of the 100-year floodplain within the study area is shown on Figure 14, page III-5. The methodology used to establish these boundaries is also discussed in Section I, C-4. As the plans show, the extent of the floodplain makes it impossible to improve the roadway in existing location without floodplain encroachment. The construction of Alternate 1 would require filling approximately 14 acres of floodplain.

b. Evaluation of Impact

The proposed floodplain encroachment has been reviewed to determine if it would be "significant" as defined by the Federal Highway Administration (FHPM 6-7-3-2, Location and Hydraulic Design of Encroachments on Floodplains, November 15, 1979). According to this definition, a significant encroachment would occur if one of the following were to result from the proposed improvements:

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

The proposed improvements, as envisioned with Alternate 1, would require fill to elevate the roadway above the 100 year flood elevations.

Adequate storage would be maintained upstream of the roadway and, using standard hydraulic design techniques, all waterway openings incorporated in drainage structures would be developed to minimize increases in upstream water surface elevation and approximate present flow rates. The results of this study indicate that there will be no significant floodplain encroachments, nor will any significant impacts result from the encroachments that do occur.

3. Ecology

a. Impacts to Terrestrial Ecology

Impacts to the terrestrial ecosystem in the study area would generally be limited to habitat loss and disturbance caused by construction activities. Alternate 1 would require 53.7 acres of woodland and 43.5 acres of old field habitat.

Both community types are vital to the biotic diversity of the study area, since each provides specific environmental conditions and support different associations of plants and animals. However, old field communities generally develop rapidly after a disturbance, and if left alone, eventually succeed to forest communities after a number of years.

b. Impacts to Aquatic Ecology

The study area contains three basic types of aquatic environments; streams, palustrine open water (ponds), and

palustrine emergent wetlands. Alternate 1 would require 0.35 acres of wetlands. This wetland acreage is composed of portions of two wetlands (refer to Figure 6). This loss of wetland habitat should not significantly reduce the populations of aquatic species or the availability of aquatic habitat. Although it does not seem to be a major area, a small emergent wetland is present in the southeast quadrant of the I-95/Maryland Route 202 interchange.

In addition to the loss of habitat, other impacts to water quality can adversely affect the aquatic community.

1. Polluted Roadway Runoff is discussed in Section I-C 4-d.
2. Sedimentation - caused by construction activities would be a temporary concern with Alternate 1. Application of proper erosion-siltation control measures would minimize this problem. Additional discussion is provided in Section I-C, 4-d.
3. Disturbance Caused by Construction Activities
   Alternate 1 would require the removal of old structures and construction of new structures at Western Branch and Northeast Branch. Demolition and removal of existing structures would cause some disturbance to the local aquatic community. It would also result in some turbidity due to disturbance of the existing substrate. Disturbance would continue through the construction stage of new structures. The impacts would be temporary. Addition of the ramp in the southeast quadrant of the I-95/Maryland Route 202

interchange would probably require a realignment of West Branch, a tributary of Southwest Branch.

4. Impacts to Wildlife

Although a field survey of wildlife populations was not done as part of this study, prime habitat areas were identified with the assumption that they would support the greatest diversity of species, and highest population densities. Areas considered to be of greatest value to wildlife were wetlands and woodlands. Of particular importance are larger tracts of undisturbed deciduous woodland, or woodland broken up by cultivated fields or areas of old field habitat.

The majority of the improvements proposed for Alternate 1 are along the existing roadway, and would require 53.7 acres of woodlands, 43.5 acres of old field habitat, and 0.35 acres of wetlands. Although these acreages appear to be substantial, they are relatively thin strips along the project. These losses of habitat would not significantly affect wildlife populations in the study area.

Impacts to Endangered Species

Pursuant to Section 7 of the Endangered Species Act, (16 U.S.C. §§ 1531 - 1541) coordination concerning the potential impact of this project on endangered species was undertaken with the Maryland Department of Natural Resources (June 18, 1980) and the U.S. Fish and Wildlife Service (September 23, 1981). They determined there are no known populations of threatened or endangered species within the study area; therefore, impacts to such species are not anticipated.

5. Impacts to Belt Woods

As described previously in this document (Section I-C

4-h, page I-24), Belt Woods has been designated as a National Natural Landmark by the U.S. Department of the Interior.

Alternate 1 does not require any land from the area designated Belt Woods. If Alternate 1 is constructed, the contractor will be required to avoid the area.

V. COMMENTS AND COORDINATION

V. Comments and Coordination

A. Public Information Meeting, Summary

The first Public Information Meeting was held at the Largo Senior High School in their Multi-Purpose Room on August 7, 1975. The school is located at 505 Largo Road (next to the Prince George's Community College) in Prince George's County, Maryland. During this meeting, the State Highway Administration informed concerned citizens and attending officials of study activities. At the conclusion of the informational part of the Public Information Meeting, the audience was invited to voice any comments or suggestions. Many of the comments were simply questions concerning clarifications of the presentation or were concerned with specific problems directly related to their residential areas and either directly or indirectly related to the project action. There were also major comments specific to Maryland Route 214 which included concern about traffic congestion and lighting, primarily in the Kettering area, the impact of the project on the Kettering community area and properties in the vicinity of the Capital Beltway.

The second Public Informational Meeting for this project was held on the evening of January 20, 1982, at the Largo Senior High School. Approximately 60 citizens were in attendance. The formal presentation included a description of the project

planning process and a description of the alternates. At the conclusion of the formal presentation, the audience visited five informational stations to obtain additional information and later had an opportunity to voice comments or suggestions.

Environmental matters, such as reduction of flood water levels, and mitigation measures to reduce noise levels, were cited as areas of concern by the citizenry. In addition to these issues concerns were expressed by several residents regarding the project's proximity to their properties. The need to connect Staton Drive to Maryland Route 214 was questioned. A few developers were interested in the construction schedule.

Two persons, Ms. Sonia G. Goebel, Zoning Chairman, Kingsford/Smithfield Homeowners Association, and Mr. David L. Hildebrand, Planning Office, City of Bowie, expressed their respective organization's support for the project. Ms. Goebel urged provision of left turn storage lanes for entrances to proposed sub-divisions between Campus Way and Kettering Drive; requested a traffic signal at Newbridge Way/Kettering Drive; and requested addition of a left turn phase to the signal at Maryland Route 556 (Enterprise Road). Mr. Hildebrand, on behalf of his office, expressed support of a four lane divided highway improvement.

VI. APPENDICES

APPENDICES

Appendix A

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

All State Highway Administration projects myst 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, Article 21, Sections 12-201 through 12-209. 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 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 re-established, 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 re-established 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.

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 clintele. 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, acutal 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.

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.

Appendix B

BIBLIOGRAPHY

1. Brown, R. G. and M. L. Brown; Woody Plants of Maryland, University of Maryland, College Park, Md., 1972.

2. U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Prince George's County, Maryland, 1967.

3. Volces, H. E., and J. Edwards, Jr., Geography and Geology of Maryland, Maryland Geological Survey, Bulletin 19, Baltimore, Maryland, 1957.

4. Brush, G. S., et. al., The Natural Forests of Maryland; An Explanation of the Vegetation Map of Maryland, the Johns Hopkins University, Baltimore, Maryland, 1977.

5. Rogers, J. et. al., Maryland Upland Natural Areas Study, Maryland Department of Natural Resources, 1976.

6. Maryland Department of State Planning, Forest Vegetation in Maryland, 1974.

7. Lee, D. S. et. al., A List of the Freshwater Fishes of Maryland and Delaware, Chesapeake Science, 17(3): 205-211, 1976.

8. Robbins, C. S., Braun, B. and Zim, H. S., Birds of North America, Golden Press, New York, 1966.

9. Mansueti, R., An Ecological and Distributional Study of the Fishes of the Patuxent River Watershed, Maryland, M. S. Thesis, University of Maryland, College Park, Md., 1950.

10. Census of Population and Housing, Preliminary Report, U.S. Bureau of Census, 1980.

11. Maryland Population and Housing Statistics: 1970 Census, Maryland Department of State Planning, August 1971.

12. Master Plan for Largo-Lottsford; Maryland National Capital Park and Planning Commission, May 1977.

13. Prince George's County, Maryland - Brief Industrial Facts; Maryland Department of Economic and Community Development, January 1980.

14. Proposed Amendment to the General Plan for Prince George's County, Maryland National Capital Park and Planning Commission, November 1977.

15. Social and Economic Effects of Highways, U.S. Department of Transportation, Federal Highway Administration, 1976.

16. U.S. Census - Number of Inhabitants, U.S. Bureau of Census, 1970 (includes 1950 and 1960).

17. U.S. Census - Population Estimates and Projections, U.S. Bureau of Census, 1970 (includes 1975 and 1976).

18. The Technical Air Quality Report, State Highway Administration, Baltimore, Maryland, April 1980.

19. Noise Analysis: Improvements to Maryland Route 214, Wilson T. Ballard Company, Owings Mills, Maryland, February 1981.

20. Air Quality Analysis: Maryland Route 214, Reotec Inc., Bethesda, Maryland, Report No. R-105, April, 1980.

21. Archeological Reconnaissance of Central Avenue (Maryland Route 214) from the Capital Beltway (I-495) to Hall, Prince George's County, Maryland, Maryland Geological Survey, Department of Natural Resources, File Report No. 150, Epperson, Terrence W., September 1979.

22. Floodplain Analysis: Maryland Route 214 over Western and Northeast Branches of Patuxent River, Greiner Engineering Sciences, Inc., Baltimore, Maryland, March 1981.

23. Capital Centre Study (Draft), Prince George's County, Maryland, Street Traffic Studies, Ltd., Gaithersburg, Maryland, February 1981.

24. The Comprehensive Design Plan for Collington Center (Prince George's International Commerce Center), November 1978.

APPENDIX C

PLANTS

Alder, Alnus sp.
American Holly, Ilex opaca
Peltandra Virginica
Arrowhead, Sagittaria sp.
Arrowwood, Vaccinium dentatum
Ash, Fraxinus sp.
Begger-tick, Bidens sp.
Spartina Cynosuroides
Black Cherry, Prunus seotina
Black gum, Nyssa Sylvatica
Blackjack oak, Quercus marilandica
Black Willow, Salix Nigra
Bramble, Rubus sp.
Burrweed, Sparganium sp.
Cattail, Typha sp.
Chestnut oak, Quercus prinus
Duckweed, Lemna sp.
Elderberry, Sambucus canadensis
Elodea, Elodea sp.
Flowering dogwood, Cornus florida
Gaint reed, Phragmites communis
Goldenrod, Solidago sp.
Grape, Vitis sp.
Green ash, Fraxinus pennsylvanica
Greenbrier, Smilax sp.
Hickory, Carya sp.
Honeysuckle, Lonicera japonica
Ironwood, Carpinus caroliniana
Jewelweed, Impatiens capensis
Joe-pye-weed, Eupatorium dubium
Lizard's tail, Saururus cernuus
Loosetrife, Lythrum sp.
Magnolia, Magnolia sp.
Neetle, Urtica dioica
Oaks, Quercus sp.
Panic grass, Panicum clandestinum
Poison ivy, Rhus radicans
Pondweed, Potamogeton
Post Oak, Quercus stellata
Red maple, Acer rubrum
River Birch, Betula nigra
Rose mallow, Hibiscus moscheutos
Spartina patens
Sassafras, Sassafras albidum
Sedges, Carex sp.
Smartweed, Polygonum punctatum
Southern red oad, Quercus falcata
Spatterdock, Nuphar advena
Spicebush, Lindera benzoin
Spikerrush, Eloecharis
Sumac, Rhus sp.
Swamp rose, Rosa palustrus
Sweet gum, Liquidambar styraciflua
Sycamore, Plantanus occidentalis
Tear thumb, Polygonum sagittatum
Three square, Scirpus americanus
Tulip poplar, Liriodendron tulipifera
Virginia creeper, Parthenocissus quinquefolia
Water Lily, Nymphaea odorata
White oak, Quercus alba

ANIMALS

FISH

Blacknose dace, Rhinichthys atratulus
Bluegill, Lepomis macrochirus
Bluespotted sunfish, Enneacanthus gioriousus
Brown bullhead, Ictalurus nebulosus
Carp, Cyprinus carpio
Common Shiner, Notrpois cornutus
Creet Chub, Semotilus atromaculatus
Fallfish, Semotilus corporalis
Glassy Darter, Etheostoma ntreum
Golden Shiner, Notemigonus crysoleucas
Longnose Dace, Rhinichthys cataractae
Pumpkenseed, Lepomis gibbosus
Redbreast sunfish, Lepomis auritus
Rosyface Shiner, Natropis rubellus
Rosyside Dace, clinostomus funduloides
Satinfin Shiner, Notropis analostanus
Swallowtail Shiner, Natropis procne
Tesc1lated darter, Etheustoma elmstedi
Yellowperch, Perca flavescens

Frogs

Bullfrog, Rana catesbeiana
Cricket frog, Acris crepitans
Fowler's toad, Bufo Woodhousei
Green frog, Rana clamitans
Green tree frog, Hyla cinerea
Leopard frog, Rana pipiens
Spring peeper, Hyla crucifer

Salamanders

Red-backed salamander, Plethodeon cinereus
Red salamander, Pseudotriton ruber
Two-lined salamander, Eurycea bislineata

Turtles

Box turtle, Terrapene carolina
Mud turtle, Kinosternon subrubrum
Painted turtle, Chrysemys picta

Lizards

Fence lizard, Sceloporus undulatus
Five-lined skink, Eumeces fasciatus
Six-lined racerunner, Cnemidophorus sexlineatus

Snakes

Black racer, Coluber constrictor
Copperhead, Agkistrodum contortrix
Carter snake, Thamnophis sirtalis
Hognose snake, Heterodon platyrhiros
King snake, Lamoropeltis netulus
Black rat snake, Elaphe obssieta
Ringneck snake, Diadophis oanctatus
Ribbon snake, Thamnophis sauritus
Water snake, Matrix sipedon

ANIMALS

Lizards

Broad-headed skink, Eumeces laticeps
Fence lizard, Sceloporus undulatus
Five-lined skink, Eumeces fasciatus
Six-lined racerunner, Cnemidophorus sexlineatus

Mammals

Cottontail rabbit, Sylvilagus floridanus
Eastern mole, Scalopus aquaticus
Flying squirrel, Glamcomy's volans
Grey squirrel, Sciurus carolinensis
House mouse, Mus musculus
Muskrat, Ondatra zibethica
Opossum, Didelphis virginiana
Racoon, Procyon lotor
Red fox, Vulpes vulpes
Shrew, Blarina brevicauda
Striped skink, Mephitis mephitis
Virginia deer, Odocoileus virginianus
White flooted mouse, Peromyscus leucopus

Birds

American egret, *Casmerodius albus*
Barn owl, *Tyto alba*
Barred owl, *Strix varia*
Blue bird, *Sialia sialis*
Blue jay, *Cyanocitta cristata*
Cardinal, *Richmondena cardinalis*
Cattle egret, *Bubulcus ibis*
Common crow, *Corvus brachyrhynchos*
Fish crow, *Crovus ossifragus*
Great blue heron, *Ardea herodias*
Green heron, *Butorides virescens*
Herring gull, *Larus argentatus*
Least tern, *Sterna albifrons*
Laughing gull, *Larus atricilla*
Mocking bird, *Mimus polyglottos*
Mourning dove, *Zenaidura macroura*
Pheasant, *Phasianus colchicus*
Quail, *Colinus virginianus*
Red-tailed hawk, *Buteo jamaicensis*
Redwing blackbird, *Agelaius phoeniceus*
Sparrow hawk, *Falco sparverius*
Turkey vulture, *Cathartes aura*

VII. LETTERS

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Maryland Historical Trust

January 16, 1980

Mr. Eugene T. Camponeschi
Bureau of Project Planning
State Highway Administration
Maryland Department of Transportation
300 West Preston St.
P.O. Box 717
Baltimore, Maryland 21203

Re: Md. Rte. 214 from I-95
to 1.6 mi. west of
U.S. 301
Contract No. P 732-015/
018-372

Dear Mr. Camponeschi:

The following list enumerates historic sites in the vicinity of the subject project:

P-73-13	Graden	Probable National Register eligible
A	Farm adjacent to Wild-life Preserve	Probable National Register eligible
B	Joseph Knott farm com-plex	Probable National Register eligible
C	Robinson farm	Local
*P-74-16	Bowie Family Cemetery	Local (Removed by developer & MNCPPC)

The accompanying map indicates the location of these sites, their historic boundaries, and the limits of the area surveyed. Please contact us if further information is required.

Sincerely,

Peter C. Kurtze

Peter Kurtze

PK/PBW/rst

Peggy Bruns Weissman
Historic Site Surveyors

cc: Mark Edwards, Richard Krolak, Rita Suffness

Shaw House, 21 State Circle, Annapolis, Maryland 21401 (301 269 2212, 269-2438

Maryland Historical Trust

February 1, 1980

Mr. Eugene P. Camponeschi, Chief
Bureau of Project Planning
State Highway Administration
300 West Preston Street
Baltimore, Maryland 21203

Re: Md. Rte. 214 from I-95 to 1.6 mi. west of U.S. 301 Contract No. P732-015/018-372

Dear Mr. Camponeschi;

This is in regard to three historic sites in the vicinity of the subject project which were recently identified by my staff as probably eligible for the National Register of Historic Places: (P73-13) Graden; (A) Farm adjacent to Wildlife Preserve; and (B) Joseph Knott farm complex. It is my preliminary determination that proposed construction will have no effect on any of these three properties.

Sincerely,

J. Rodney Little
State Historic
Preservation Officer

JRL/plw

c.c. Mark Edwards
Richard Krolak
Rita Suffness

State House, 21 State Circle, Annapolis, Maryland 21401 (301)269-2212, 269-2438
Department of Economic and Community Development

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Maryland Historical Trust

OCT 22 11 29

October 18, 1979

ADMINISTRATION
PROJECTS PLANNING

Mr. Richard S. Krolak, Chief
Environmental Evaluation Section
State Highway Administration
P.O. Box 717
300 West Preston Street
Baltimore, Maryland 21203

RE: Maryland Route 214 (Central Avenue), from Capital Beltway to Hall, Prince George's County P732-015-018-371

Dear Mr. Krolak:

Wayne Clark has provided the following review of the above referenced survey by Terry Epperson:

"Terry Epperson's report on the resurvey of the Route 214 project contains several significant improvements over previous reports. Greater detail is given to describing the field methodology and survey results as well as to assessing the effect on and significance of sites. As a goal in Maryland, archeology is to record where sites are not located as well as are located, the recording of the survey boundaries, field conditions, and sampling methodology is essential to long range planning and immediate research needs.

The author has begun to deal with these issues by marking the areas intensively surveyed on the topographic maps. However, Figures 5 and 6 do not note the areas which were intensively surveyed. This should be done. Areas severely altered by urban or other forms of development should also be noted with a different symbol. Recording of survey data needs to be standardized for all contractors so that comparable information is generated and can be utilized as a planning tool. At least one plate showing the artifacts recovered during the excavations should be provided. The artifacts listings on pages 7-8 should contain type names (when identifiable) for the projectile points and pottery.

The four areas of low density artifact scatters lack sufficient density or research value to be significant and, therefore, will not require additional investigations. For sites 18 Pr 116 and 18 Pr 132, the project will not affect the sites if the zone of impact is limited to an area less than 60 feet or less of the existing highway. Additional investigations of these sites will not be warrented unless subsequent planning determines that the sites will be affected.

Shaw House, 21 State Circle, Annapolis, Maryland 21401 (301)269-2212, 269-2438

Site 18 Pr 174 is currently within the proposed area of impact, is potentially eligible to nomination to the National Register and does require phase II testing to determine eligibility. The budget for the phase II testing is generally acceptable although it contains several errors and oversights which need correcting. An estimate for overhead should be included in the budget as should an item for publication of results. Funds for radio carbon dates should be included. We encourage SHA to include a publication cost item for all phase II and III surveys as these investigations should contribute significantly to our knowledge. The assumptions call for a crew of four although the cost breakdown calculates for only three positions. The mileage estimate should be doubled to more accurately reflect anticipated commuting distances."

Having discussed this review with Wayne Clark, I concur that phase II investigations of site 18 Pr 174 are necessary to determine the eligibility of the site to the National Register. Additional investigations of the four random areas are not necessary.

Sites 18 Pr 116 and 18 Pr 132 will not require additional investigations unless the engineering plans indicate that they will be affected. I would appreciate the Division of Archeology supplying the additional information requested in Wayne Clark's review. We look forward to receiving this data.

Sincerely,

Wayne E. Clark for

J. Rodney Little
State Historic Preservation
Officer

JRL/njm

cc: Tyler Bastian
Amy Schlagel
Rita Suffness

State of Maryland

ENVIRONMENTAL HEALTH ADMINISTRATION
DEPARTMENT OF HEALTH AND MENTAL HYGIENE
201 WEST PRESTON STREET • BALTIMORE, MARYLAND 21201 • Area Code 301 • 383-3245

Harry Hughes, Governor

Charles R. Buck, Jr., Sc.D. Secretary

April 23, 1980

Mr. Charles R. Anderson, Chief
Bureau of Landscape Architecture
Joppa & Falls Roads
Brooklandville, Maryland 21022

Dear Mr. Anderson:

RE: State Contract No. P 732-015-371
Maryland Route 214
I-95 to U.S. Route 301

We have reviewed the Air Quality Analysis for the above subject project and have found that it is not inconsistent with the Programs' plans and objectives.

Thank you for the opportunity to review this analysis.

Sincerely yours,

WKB

William K. Bonta, Chief
Division of Program Planning & Analysis
Air Quality Programs

WKB:bab

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
6TH AND WALNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106

MAY 2 1980

Mr. Charles R. Anderson, Chief
Bureau of Landscape Architecture
State Highway Administration
2323 West Joppa Road
Brooklandville, Maryland 21022

Re: Maryland Route 214, I-95 to U.S. Route 301

Dear Mr. Anderson:

We have reviewed the Draft Air Quality Analysis for Maryland Rt. 214, and we have no objections to the proposed project from an air quality standpoint at this time. We are concerned, however, that the 1985 projected 8-hour CO concentration at Receptor #5 may exceed the NAAQS if Maryland's Inspection/Maintenance program is not as effective as this analysis anticipates. Should it become apparent that the I/M program will not have the results assumed here, we believe that this analysis should be revised to reflect that situation.

Sincerely yours,

John R. Pomponio
Chief
EIS & Wetlands Review Section

1981 FEB 20 PM 2 37
STATE HIGHWAY ADMINISTRATION
PROJECT PLANNING

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
DELMARVA AREA OFFICE
1825 VIRGINIA STREET
ANNAPOLIS, MD 21401

September 23, 1981

Mr. Richard S. Krolak
Environmental Management
Maryland Department of Transportation
P.O. Box 717
707 North Calvert Street
Baltimore, MD 21203

RE: Contract No. P-695-101-371
F.A.P. No. M 5114-(1)
Maryland Route 214 from I-95
to 1.6 miles west of U.S.
Route 301

Dear Mr. Krolak:

This responds to your August 26, 1981, request for information on the presence of Federally listed or proposed endangered or threatened species within the impact area of the cited project in Prince George's County, Maryland.

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 new species be listed or proposed, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

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.

A list of Federally listed endangered and threatened species in Maryland is enclosed for your information. Please contact Andy Moser or Martha Carlisle (301-269-6324), of our Endangered Species staff, if you need further assistance.

Sincerely yours,

John D. Green
Area Manager

Enclosure

MARYLAND DEPARTMENT OF NATURAL RESOURCES
WILDLIFE ADMINISTRATION

BERNARD F. HALLA
DIRECTOR
EARL H. HODIL
DEPUTY DIRECTOR

TAWES STATE OFFICE BUILDING
ANNAPOLIS, MARYLAND 21401
(301) 269-3195

June 18, 1980

Ms. Patricia A. Burke
State Highway Administration
Bureau of Landscape Architecture
Joppa and Falls Roads
Brooklandville, Maryland 21022

Dear Patti:

There are no known populations of threatened or endangered species within the areas of project influence for the improvements to MD Rt. 70 and MD Rt. 214 as described in your letter to me of June 13, 1980.

Sincerely,

Gary J. Taylor
Nongame & Endangered
Species Program Manager

GJT:bw
cc: Carlo Brunori

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT. CORPS OF ENGINEERS
P O BOX 1715
BALTIMORE. MARYLAND 21203

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REPLY TO ATTENTION OF:
NABOP-FR

30 September 1982

Mr. Louis H. Ege, Jr., Chief
Environmental Management
Maryland Department of Transportation
P.O. Box 717
707 North Calvert Street
Baltimore, Maryland 21203

Dear Mr. Ege:

This is in reply to your letter of 23 September 1982 regarding Department of the Army permit authorization for the relocation of a portion of West Branch, in conjunction with the construction of a proposed highway ramp, near Brightseat, Prince George's County, Maryland.

This waterway has been determined to be waters of the United States and is subject to the regulatory authority of this office under Section 404 of the Clean Water Act.

This office has determined that the proposed work is authorized under the provisions of a Department of the Army Nationwide Permit , as published in the 22 July 1982 issue of the Federal Register (33 CFR, Part 330.4). The Nationwide Permit has been established to permit discharges of dredged or fill material into certain waters of the United States and to permit certain specific categories of activities. Inclosed is a list of conditions which must be satisfied and the management practices which must be followed in performing the work. All required State and local approvals must be obtained before starting the project.

Sincerely,

JAMES A. DURKAY
Chief, River Basin Permits Section
Regulatory Functions Branch

Incl
Nationwide Permit Conditions
& Management Practices

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JAMES B. COULTER
SECRETARY
LOUIS N. PHIPPS, JR.
DEPUTY SECRETARY

STATE OF MARYLAND
DEPARTMENT OF NATURAL RESOURCES
CAPITAL PROGRAMS ADMINISTRATION
TAWES STATE OFFICE BUILDING
ANNAPOLIS, MARYLAND 21401
(301-269-3659)

FRED L. ESKEW
ASSISTANT SECRETARY
FOR CAPITAL PROGRAMS

February 2, 1982

Mr. Nathaniel Brown
Environmental Manager
State Highway Administration,
Bureau of Project Planning
P.O. Box 717
Baltimore, Maryland 21203

Dear Mr. Brown:

I have reviewed the Central Avenue plan, and have compared the route of the proposed reconstruction with the Maryland Natural Heritage Program's data base. Our inventory shows only one important natural area along the Route 214 corridor. This area is known as Belt Woods.

I believe you may be familiar with this landmark as it is located in the NW corner of Church Road, Route 214. However, I will give you the information that we have concerning it. Belt Woods was listed as a National Natural Landmark by the Smithsonian Institute and was catalogued in the State's Upland Natural Areas Inventory. The Maryland Natural Heritage data base lists this woods as the best example of mature Piedmont forest still extant in Maryland today.

Should the build alternative be selected, our recommendation is that there be no perterbations to the south end of these woods.

If you have any questions about this matter, or about the Heritage Program, please feel free to call.

Sincerely,

Dan Boone

D. Daniel Boone
Natural Heritage and
Environmental Review

DDB:mcs