

REPORT NUMBER: FHWA-MD-EA-84-01-D

FEDERAL HIGHWAY ADMINISTRATION

REGION III

Interstate Route 270
From Interstate Route 270 Spur
To Maryland Route 121

ADMINISTRATIVE ACTION

ENVIRONMENTAL ASSESSMENT

4(f) Evaluation

U.S. Department of Transportation
Federal Highway Administration

and

State of Maryland
Department of Transportation
State Highway Administration

Submitted pursuant to 42 U.S.C. 4332 (s) (C) 23 U.S.C. 128 (a)
49 U.S.C. 1653 (f), 16 U.S.C. 470 (f)
CEQ Regulations (40 CFR 1500 et Seq.)

M. S. Caltrider
State Highway Administrator

1/13/84
Date

by:

Hal Kassoff
Hal Kassoff, Director
Office of Planning and
Preliminary Engineering

1/13/84
Date

by:

Emil Elinich
Federal Highway Administration
Division Federal Highway
Administrator

2

1. Administrative Action

- () Environmental Impact Statement
- (X) Environmental Assessment/4(f) Considerations
- () Finding of No Significant Impact
- (X) Section 4(f) Evaluation

2. Additional Information

Additional information concerning this action may be obtained by contacting:

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3. Description of Action

The I-270 studies were initiated to investigate improvement alternates to increase the capacity of the I-270 roadway to satisfy the traffic demand for the design year

2010. The project area extends from the Y-Spur south of Montrose Road to just north of MD 121 at Clarksburg, a distance of approximately 16 miles.

Improvements to I-270 would decrease travel time in the corridor on both I-270 and other routes in the corridor such as Rockville Pike. These improvements are consistent with State and local transportation and land use development plans.

4. Alternates Description

A. No-Build Alternate: This alternate would consist of normal maintenance and safety improvements but would not include any improvement to increase capacity either on the I-270 roadway or the interchanges serving I-270 within the project limits.

B. Continuous collector-distributor (c-d) road: This alternate would include widening the I-270 roadway by one lane in each direction and providing two-lane c-d

3

roads on both sides of the I-270 roadway from south of Montrose Road to the area of I-370 and MD 124 interchanges.

The ultimate lane configurations would be as follows:

1. NB and SB Main Roadways: 4 lanes from Y to MD 118
3 lanes from MD 118 to MD 121
2. NB c-d Road: A minimum of two lanes from Montrose Road interchange to the c-d road at MD 117
3. SB c-d Road: A minimum of two lanes from Montrose Road interchange to the c-d at Shady Grove Road
- C. Interchange alternates: Improvements were studied at Montrose Road, MD 28, MD 118 and Middlebrook Roads to increase the capacity of these interchanges.

The interchanges at Falls Road, Shady Grove Road, I-370 and MD 117/124 were reviewed to assure compatibility with the improvements proposed on I-270.

See figures 15-35 for the proposed typical sections, plans and sketches of the alternates proposed.

5. Summary of Impacts

The No Build and the Build Alternate (Continuous Collector-Distributor (C-D) Road) were analyzed for their impacts on the environment of the project corridor. These effects are shown in Table S-1. Explanations of the information on Table S-1 are described below:

- A. Residential Displacement: Seven families are to be relocated from the MD 28 interchange under the Build Alternate due to the improvements to the interchange. Two of these homes are presently owned by MD SHA. Three relocations are required by the relocation of Waring Station Road for the Middlebrook Road interchange. These three families are minorities.

Where the proposed grading for the improvements to I-270 would require the relocation of residences, retaining walls will be used to avoid relocation. The relocation of 120 apartments and 15 single family homes was avoided through the use of retaining walls.

- B. Consistency with Master Plans: All the master plans in the I-270 corridor have recognized the need for increasing the capacity of the I-270 roadway to meet the transportation needs for the development planned. Therefore, the Build Alternate is consistent with all master plans in the area.
- C. Parklands: Several parks abut I-270 within the project limits. Retaining walls could be constructed to avoid any right of way acquisition from all the parks except Wootten Mill for the Build Alternate. See the Section 4(f) Considerations section.

The parcel affected in Wootten Mill Park is located between Watts Branch Parkway and the ramp to southbound I-270 and is isolated from the rest of the park. There are no plans for developing this parcel for recreational purposes. The encroachment created by the proposed improvements is 2600 square feet or 0.06 acre. A retaining wall of 500 linear feet may be provided to reduce the right of way acquisition from 0.17 to .06 acres.

Noise barriers were not considered at the park boundaries because there are no existing or proposed activities within several hundred feet of the highway in all cases except Metro Grove Road Park which is being analyzed under the MD 124 project. (See discussion in 4(f) Section p. 82)

- D. Historic Sites: No historic sites would be affected by the Build Alternate since the closest site is over 300 feet from the right of way of the highway. Access to these sites would not be changed significantly by any proposed improvements.
- E. Archeological Sites: Three prehistoric sites could be affected by the Build Alternate. It has been determined that the artifacts are of possible importance but not the site, therefore, it is possible that the artifacts could be removed if they are found to be significant. Coordination with the Maryland Geological Survey will be maintained and additional investigations to determine the significance of the sites will be performed when a final alternate is selected.
- F. Transportation System: The proposed improvements would increase the capacity of the I-270 roadway by 60%. The Build Alternate would also reduce the accident potential on I-270 by removing many of the weaves, diverges, and merges from the main highway onto a separate collector-distributor road.

The Build Alternate would also improve the level of traffic service on all roads serving radial traffic in the I-270 corridor by diverting some of the traffic from these roadways to the expressway.

- G. Water Quality: The improvements to I-270 proposed in the Build Alternate will have a negligible effect on the water quality in the streams crossing I-270. Sedimentation during construction could adversely affect the populations and diversities of some aquatic species sensitive to sedimentation. Erosion and sediment control methods developed by the MD S.H.A. will be used to minimize the effects of the construction on the water quality of the streams.

6

H. Ecology: The amount of terrestrial habitat lost due to the construction of the Build Alternate would result in an insignificant reduction in the populations of the various wildlife species inhabiting these various habitats. This reduction is minimized by the fact that the habitats lost are adjacent to an existing highway and therefore have reduced populations. - 12

I. Noise Levels: Fourteen of the thirty-three noise sensitive areas (NSA) studied have ambient noise levels higher than the FHWA Noise Abatement Criteria (70 dBA). The predicted noise levels for the No Build Alternate exceed this level at twenty-one NSA's. The Build Alternate would produce noise levels greater than 70 dBA at twenty-four NSA's.

Noise barriers were studied at eighteen sites where the Build Alternate would produce noise levels greater than the FHWA standards. It was determined that noise barriers would not be justified at 13 of these sites, since the benefits gained do not justify the expense of the barriers. The total cost of the barriers proposed is \$3,750,000.

J. Air Quality: The thirty-three receptors used in the noise analysis were also studied to determine the effects due to the Build Alternate on the air quality in the project area. It was found that the Build Alternate would produce concentrations of carbon monoxide (CO) slightly higher than the No Build Alternate (1-2 parts per million (ppm)). There would be no violations of the National Ambient Air Quality Standards under either alternate for either analysis year 1990, 2010.

TABLE S-1
COMPARISON OF ALTERNATES

EFFECT	NO BUILD	BUILD
I. Socio-Economic		
A. Residences displaced		
1. Tenant occupied	--	3
2. Owner occupied	--	7
B. Total people relocated	--	24
C. Minority families relocated	--	3
D. Businesses displaced	--	--
E. Farms displaced	--	--
F. Access to community facilities	No change	Improved
G. Effect on neighborhoods and communities	No change	No change
H. Effects on minority groups	No communities identified in the project area	
I. Development potential	No change	Increased
J. Consistency with Master plans	No	Yes
II. Parks	No effect	Minor
III. Historic and Archeological sites		
A. Historic sites	None	None
B. Archeological sites	None	Possibly 3
IV. Transportation		
A. I-270	Capacity has been reached	Capacity will be reached after 2010
B. MD 355 and other routes	Congestion will increase	Congestion will decrease
V. Prime and Unique Farmland	None	None
VI. Air Quality		
Sites exceeding standards	--	--
VII. Noise Levels		
A. Number of sites exceeding noise abatement criteria	21	24
B. Ranges predicted (dBA)	66-78	66-82

TABLE S-1 (cont.)

EFFECT	NO BUILD	BUILD
VIII. Water Quality		
A. Water Quality	No change	Negligible effect
B. Aquatic Life	No change	Slight decreased diversity
IX. Ecology		
A. Rare or endangered species affected	None	None
B. Loss of habitat (acres)	None	75.5
C. Effect on wildlife populations	None	Negligible
D. Wetlands affected (acres)	None	10.5 acres
E. Floodplains affected (acres)	None	6 acres
F. Stream crossings	None	7
X. Costs (\$1,000)		
Construction	--	\$110,000,000
Right of way	--	\$ 15,000,000
Relocation Assistance	--	\$ 150,000
Utility relocation	--	\$ 4,000,000

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

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

ENVIRONMENTAL ASSESSMENT FORM

10

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
A. Land Use Considerations			
1. Will the action be within the 100 year flood plain?	<u>X</u>	<u> </u>	<u>SEE PAGE 55</u>
2. Will the action require a permit for construction or alteration within the 50 year flood plain?	<u>X</u>	<u> </u>	<u> </u>
3. Will the action require a permit for dredging, filling, draining or alteration of a wetland?	<u>X</u>	<u> </u>	<u>SEE PAGES 57-58</u>
4. Will the action require a permit for the construction or operation of facilities for solid waste disposal including dredge and excavation spoil?	<u> </u>	<u>X</u>	<u> </u>
5. Will the action occur on slopes exceeding 15%?	<u>X</u>	<u> </u>	<u> </u>
6. Will the action require a grading plan or a sediment control permit?	<u>X</u>	<u> </u>	<u> </u>
7. Will the action require a mining permit for deep or surface mining?	<u> </u>	<u>X</u>	<u> </u>
8. Will the action require a permit for drilling a gas or oil well?	<u> </u>	<u>X</u>	<u> </u>
9. Will the action require a permit for airport construction?	<u> </u>	<u>X</u>	<u> </u>
10. Will the action require a permit for the crossing of the Potomac River by conduits, cables or other like devices?	<u> </u>	<u>X</u>	<u> </u>
11. Will the action affect the use of a public recreation area, park, forest, wildlife management area, scenic river or wildland?	<u>X</u>	<u> </u>	<u>SEE PAGES iii, 77-82</u>

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
12. Will the action affect the use of any natural or man-made features that are unique to the county, state, or nation?	<u> </u>	<u> X </u>	<u> </u>
13. Will the action affect the use of an archeological or historical site or structure?	<u> X </u>	<u> </u>	<u>SEE PAGES iv, 51</u>
B. Water Use Considerations			
14. Will the action require a permit for the change of the course, current, or cross-section of a stream or other body of water?	<u> X </u>	<u> </u>	<u>SEE PAGE 55</u>
15. Will the action require the construction, alteration, or removal of a dam, reservoir, or waterway obstruction?	<u> X </u>	<u> </u>	<u>SEE PAGE 55</u>
16. Will the action change the overland flow of storm water or reduce the absorption capacity of the ground?	<u> X </u>	<u> </u>	<u>SEE PAGE 55</u>
17. Will the action require a permit for the drilling of a water well?	<u> </u>	<u> X </u>	<u> </u>
18. Will the action require a permit for water appropriation?	<u> </u>	<u> X </u>	<u> </u>
19. Will the action require a permit for the construction and operation of facilities for treatment or distribution of water?	<u> </u>	<u> X </u>	<u> </u>
20. Will the project require a permit for the construction and operation of facilities for sewage treatment and/or land disposal of liquid waste derivatives?	<u> </u>	<u> X </u>	<u> </u>

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
21. Will the action result in any discharge into surface or sub-surface water?	<u>X</u>	<u> </u>	<u>SEE PAGE 55</u>
22. If so, will the discharge affect ambient water quality parameters and/or require a discharge permit?	<u>X</u>	<u> </u>	<u>SEE PAGE 55</u>
C. Air Use Considerations			
23. Will the action result in any discharge into the air?	<u>X</u>	<u> </u>	<u>SEE PAGES v,70-76</u>
24. If so, will the discharge affect ambient air quality parameters or produce a disagreeable odor?	<u> </u>	<u>X</u>	<u>SEE PAGES v,70-76</u>
25. Will the action generate additional noise which differs in character or level from present conditions?	<u>X</u>	<u> </u>	<u>SEE PAGES v,62-68</u>
26. Will the action preclude future use of related air space?	<u> </u>	<u>X</u>	<u> </u>
27. Will the action generate any radiological, electrical, magnetic, or light influences?	<u> </u>	<u>X</u>	<u> </u>
D. Plants and Animals			
28. Will the action cause the disturbance, reduction or loss of any rare, unique or valuable plant or animal?	<u> </u>	<u>X</u>	<u>SEE PAGES v,58-59</u>
29. Will the action result in the significant reduction or loss of any fish or wildlife habitats?	<u> </u>	<u>X</u>	<u>SEE PAGES v,58-59</u>
30. Will the action require a permit for the use of pesticides, herbicides or other biological, chemical or radiological control agents?	<u> </u>	<u>X</u>	<u> </u>

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
E. Socio-Economic			
31. Will the action result in a pre-emption or division of properties or impair their economic use?	<u> </u>	<u> X </u>	<u> </u>
32. Will the action cause relocation of activities, structures, or result in a change in the population density or distribution?	<u> X </u>	<u> </u>	<u>SEE PAGES iii, 47</u>
33. Will the action alter land values?	<u> X </u>	<u> </u>	<u>SEE PAGES iii, 47</u>
34. Will the action affect traffic flow and volume?	<u> X </u>	<u> </u>	<u>SEE PAGES iv, 51</u>
35. Will the action affect the production, extraction, harvest or potential use of a scarce or economically important resource?	<u> </u>	<u> X </u>	<u> </u>
36. Will the action require a license to construct a sawmill or other plant for the manufacture of forest products?	<u> </u>	<u> X </u>	<u> </u>
37. Is the action in accord with federal, state, regional and local comprehensive or functional plans--including zoning?	<u> X </u>	<u> </u>	<u>SEE PAGES 46-47</u>
38. Will the action affect the employment opportunities for persons in the area?	<u> X </u>	<u> </u>	<u>SEE PAGE 47</u>
39. Will the action affect the ability of the area to attract new sources of tax revenue?	<u> X </u>	<u> </u>	<u>SEE PAGE 47</u>
40. Will the action discourage present sources of tax revenue from remaining in the area, or affirmatively encourage them to relocate elsewhere?	<u> </u>	<u> X </u>	<u> </u>

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

*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.

TABLE OF CONTENTS

	<u>PAGE NUMBER</u>
SUMMARY	i
ENVIRONMENTAL ASSESSMENT FORM	viii
DESCRIPTION OF PROPOSED ACTION	1
I. PROJECT LOCATION	1
II. PROJECT DESCRIPTION	1
PURPOSE AND NEED	2
I. PURPOSE	2
II. NEED	2
A. PROJECT BACKGROUND	2
B. TRAFFIC SERVICE	3
C. ACCIDENT RECORDS	4
EXISTING MAN-MADE ENVIRONMENT	6
I. SOCIO ECONOMIC CHARACTERISTICS	6
A. DEMOGRAPHICS	6
B. EMPLOYMENT	8
C. ECONOMY	10
II. LAND USES	10
A. EXISTING LAND USES	10
B. PLANNING AND PROPOSED LAND USES	11
III. COMMUNITY FACILITIES AND SERVICES	13
A. SCHOOLS	13
B. EMERGENCY SERVICES	13
C. POLICE STATIONS	14
D. MEDICAL FACILITIES	14
E. CHURCHES	14
IV. PARKLANDS AND OPEN SPACE	14

	<u>PAGE NUMBER</u>
V. HISTORIC AND ARCHEOLOGICAL SITES	15
A. HISTORIC SITES	15
B. ARCHEOLOGICAL SITES	17
VI. TRANSPORTATION SYSTEM	17
A. I-270	17
B. MD 355	17
C. WEST OF I-270	18
D. METRO	18
E. COMMUTER RAIL	18
F. BUS SERVICE	19
G. SHARE-A-RIDE	19
EXISTING NATURAL ENVIRONMENT	20
I. GEOMORPHOLOGICAL CONDITIONS	20
A. TOPOGRAPHY	20
B. GEOLOGY	20
C. SOIL TYPES	20
D. PRIME AND UNIQUE AGRICULTURAL LAND	21
II. WATER QUALITY	21
III. ECOLOGY	22
A. WETLANDS	22
B. AREAS RECOMMENDED FOR PROTECTION	23
C. RARE OR ENDANGERED SPECIES	23
D. FAUNA	24
IV. EXISTING NOISE CONDITIONS	25
V. EXISTING AIR QUALITY	29
ALTERNATES STUDIED	31
I. GENERAL	31
II. MAIN LINE ALTERNATES	31
A. NO BUILD	31
B. WIDENING TO 8 LANES	32
C. EXPRESS LANES	32
D. CONTINUOUS COLLECTOR-DISTRIBUTOR ROADS	34
E. RAMP METERING	36
F. RESULTS OF STUDIES	37

	<u>PAGE NUMBER</u>
III. INTERCHANGE ALTERNATES	39
A. GENERAL	39
B. MONTROSE ROAD	40
C. MD 28	41
D. MD 118	42
E. MIDDLEBROOK ROAD	43
F. MD 121	45
ENVIRONMENTAL EFFECTS - MAN-MADE ENVIRONMENT	46
I. SOCIAL AND ECONOMIC EFFECTS	46
A. RESIDENTIAL DISPLACEMENT	46
B. BUSINESS DISPLACEMENT	47
C. ACCESS TO COMMUNITY FACILITIES	48
D. EFFECTS ON NEIGHBORHOODS AND COMMUNITIES	49
E. EFFECTS ON MINORITY GROUPS	49
F. CONSISTENCY WITH LOCAL AND REGIONAL PLANS	49
II. HISTORIC AND ARCHEOLOGICAL SITES	50
A. HISTORIC SITES	50
B. ARCHEOLOGICAL SITES	50
III. TRANSPORTATION SYSTEM	51
ENVIRONMENTAL EFFECTS - NATURAL ENVIRONMENT	52
I. GEOMORPHOLOGICAL CONDITIONS	52
A. GEOLOGY, TOPOGRAPHY, SOILS	52
B. PRIME AND UNIQUE FARMLANDS	52
II. EFFECTS ON WATER QUALITY	54
A. IMPACTS ON WATER QUALITY AND AQUATIC FAUNA	54
B. METHODS TO MINIMIZE IMPACTS	55
III. EFFECTS ON ECOLOGY	56
A. GENERAL	56
B. WETLANDS	57
C. RARE OR ENDANGERED SPECIES	58
D. WILDLIFE HABITAT	58
E. AREAS RECOMMENDED FOR PROTECTION	59

	<u>PAGE NUMBER</u>
IV. EFFECTS ON NOISE LEVELS	60
A. GENERAL	60
B. RESULTS OF ANALYSIS	62
C. MITIGATION MEASURES	62
D. TECHNICAL ANALYSIS	68
V. EFFECTS ON AIR QUALITY	70
A. GENERAL	70
B. RESULTS OF ANALYSIS	70
C. TECHNICAL ANALYSIS	74
SECTION 4(f) CONSIDERATIONS	77
I. INTRODUCTION	77
II. PARKLANDS AFFECTED	78
A. TILDEN PARK	78
B. CABIN JOHN REGIONAL PARK	78
C. ROCKMEAD PARK	79
D. WOOTTEN MILL PARK	80
E. MIDDLEBROOK HILL CONSERVATION AREA	81
F. METROPOLITAN GROVE ROAD PARK	81
G. SENECA CREEK STATE PARK	82
III. AIR AND NOISE IMPACTS ON PARKLANDS	82
A. AIR QUALITY	82
B. NOISE LEVELS	82
IV. MITIGATION MEASURES	84
V. CONSULTATION AND COORDINATION	85
FOOTNOTES	86
COMMENTS AND COORDINATION	88
APPENDICES	
A. BIBLIOGRAPHY	A-1
B. SUMMARY OF RELOCATION ASSISTANCE PROGRAM	B-1
C. CORRESPONDENCE	C-1

LIST OF TABLES

	<u>PAGE NUMBER</u>
S-1. COMPARISON OF ENVIRONMENTAL EFFECTS	vi
1. POPULATION TRENDS I-270 CORRIDOR AND MONT. COUNTY	7
2. MINORITY POPULATIONS ALONG I-270	8
3. EMPLOYMENT FORECASTS	9
4. INCOME TRENDS	10
5. HISTORIC SITES	15
6. WATER QUALITY	22
7. TYPICAL NOISE LEVELS	25
8. AMBIENT NOISE LEVELS	27
9. EXISTING AIR QUALITY	30
10. MAINLINE ALTERNATES	38
11. TERRESTRIAL HABITAT DISTURBED	56
12. NOISE ABATEMENT CRITERIA	61
13. AMBIENT AND PREDICTED NOISE LEVELS	63
14. CO CONCENTRATIONS	72
15. NATIONAL AMBIENT AIR QUALITY STANDARDS	74
16. EMISSION FACTORS	75
17. SUMMARY OF PARK EFFECTS	84

FIGURES

<u>PLATE</u>		<u>FOLLOWING PAGE</u>
1	LOCATION MAP	1
2	STUDY AREA	1
3	EXISTING ZONING	11
4	EXISTING LAND USE	11
5	PROPOSED LAND USE	13
6-8	ENVIRONMENTAL FEATURES	13
9	SOILS TYPES	21
10	PRIME FARMLAND	21
11-13	NOISE AND AIR RECEPTORS	26
14	TRAFFIC DATA, 1980 AND 2010 ADT	32
15	TYPICAL SECTIONS	32
16	MONTROSE ROAD INTERCHANGE IMPROVEMENTS	40
17	MD 28 INTERCHANGE IMPROVEMENTS	42
18	MD 118 INTERCHANGE IMPROVEMENTS	42
19	MIDDLEBROOK ROAD INTERCHANGE IMPROVEMENTS	44
20-35	PLANS OF BUILD ALTERNATE	45

DESCRIPTION OF PROPOSED ACTION

DESCRIPTION OF PROPOSED ACTION

I PROJECT LOCATION

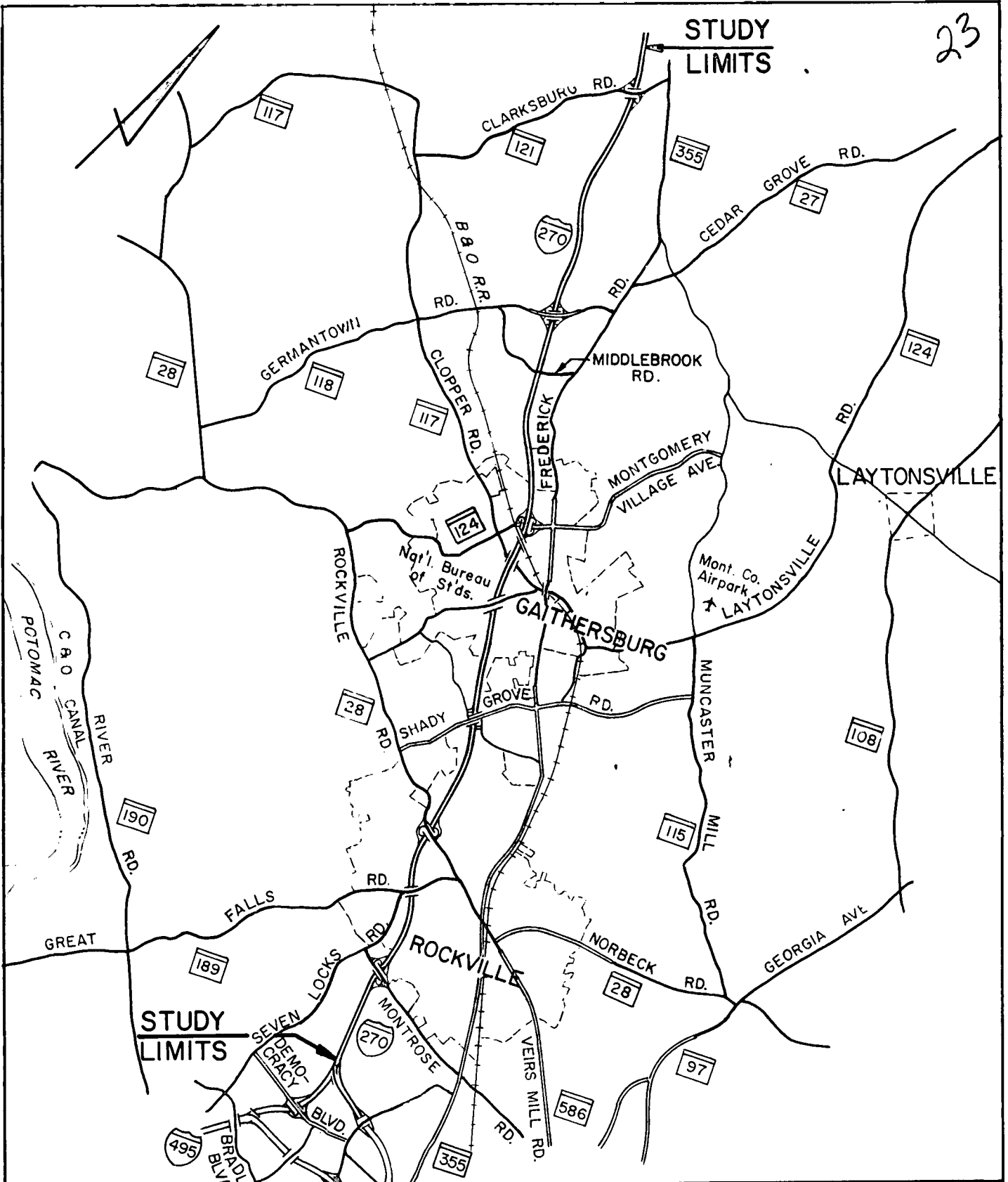
The proposed improvements to I-270 extend from the I-270 Y (SPUR) to just north of the interchange of MD 121 and I-270, a distance of approximately sixteen miles in Montgomery County . (See Plate 1.)

The project area is part of the Washington, D.C. Standard Metropolitan Statistical Area (SMSA) and is one of the fastest growing corridors in Maryland with respect to residential, commercial, and industrial development and has been designated a growth area in regional master plans. The corridor has been nicknamed "Satellite Alley" due to its concentrations of telecommunications, electronics, genetics, biomedical, and environmental expertise.¹

II PROJECT DESCRIPTION

The project follows a northwesterly direction from the Capital Beltway towards Frederick through the center of Montgomery County and serves as one of the major radial routes to Washington, D.C., thereby serving large volumes of commuters to the city as well as interstate traffic passing through the region. The 1980 daily traffic was 122,000 vehicles and the design year 2010 traffic is projected as 190,000 vehicles.

The Build Alternate for the project consists of various improvements designed to increase the capacity of the I-270 roadway and interchanges. These improvements include widening the main line, providing collector-distributor roads, and providing interchange improvements at Montrose Road, MD 28, Middlebrook Road, and MD 118. Improvements to Falls Road, I-370, Shady Grove Road, MD 117, and MD 124 are being designed under separate projects and are being coordinated to assure compatibility with the I-270 improvements.

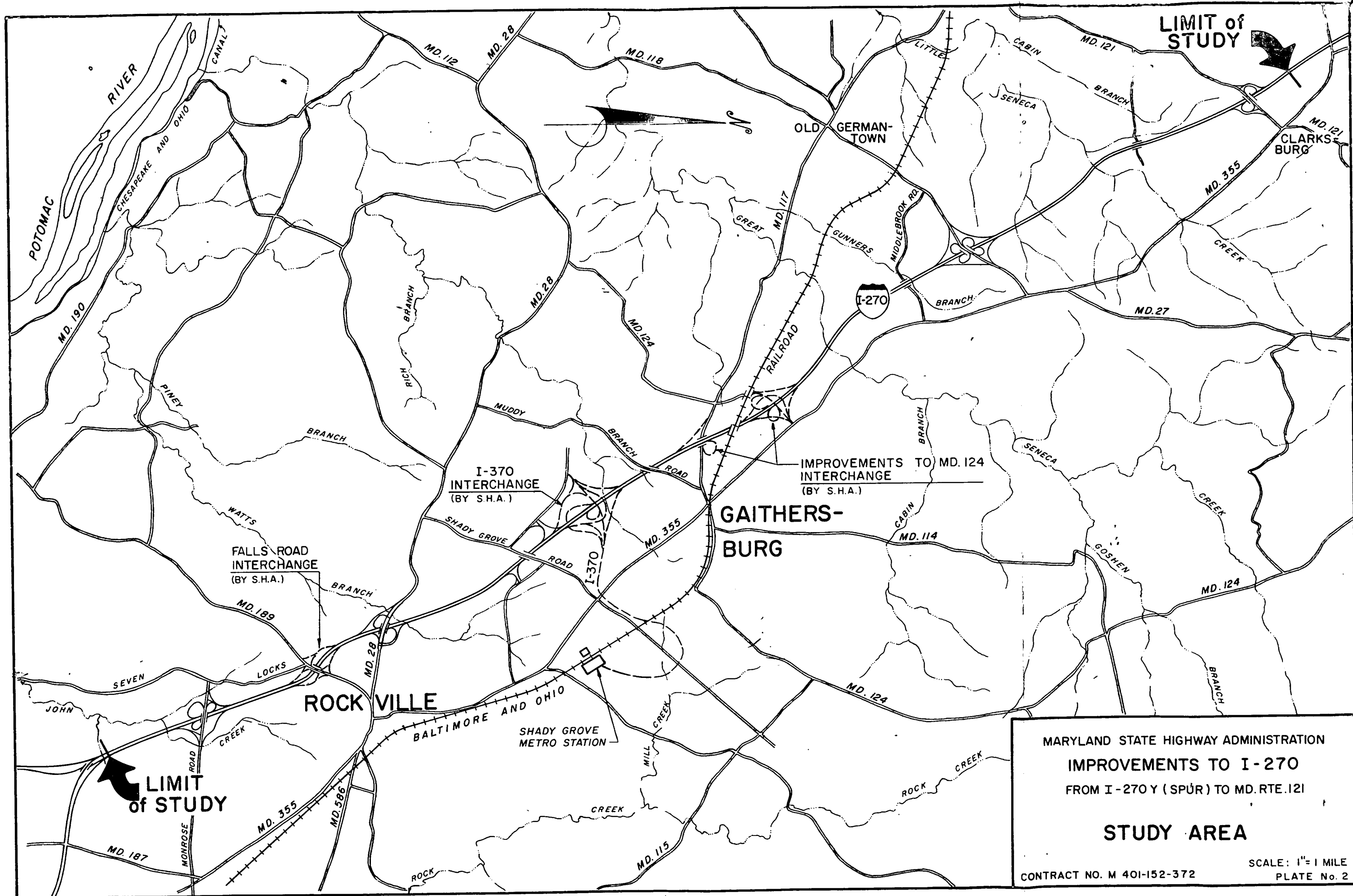


MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270

FROM I-270 Y (SPUR) TO MD. RTE. 12

LOCATION PLAN

SCALE: 1" = APPROX. 2.1 MI.
CONTRACT NO. M40I-152-372
PLATE 1



PURPOSE AND NEED

PURPOSE AND NEED

I PURPOSE

The purpose of this study is to develop alternates for improvements to the I-270 roadway including interchanges, in order to increase the capacity of the roadway between the Y spur and MD 121. In this way, capacity and safety problems that presently exist on I-270 could be reduced now and through the design year 2010. Also, the increase in capacity on I-270 would result in lower levels of congestion experienced on both I-270 and the other roadways in the area. Improvements to increase the capacity of I-270 south of the Y split and the Capital Beltway will be studied under a separate project to begin in the near future.

II NEED

A. Project Background

Interstate 270 is an expressway between Frederick and Washington, D.C. and consequently serves as a major radial highway carrying regional, state, and local traffic into and through the Washington, D.C. region.

Montgomery County and the Maryland-National Capital Park and Planning Commission have identified the I-270 corridor as one of the major growth areas in the county. In the 1960's this corridor experienced a growth rate more than three times that of the total county. The population of the corridor increased by more than 100% between 1970 and 1974 and by more than 33 percent from 1974 to 1978. The county growth in population was less than 3% between 1974 and 1978.²

The I-270 corridor contains approximately 24% of the total office and research and development space, 12% of the total retail commercial space, and 30% of the total manufacturing and warehouse space in the County.³ The potential for additional commercial, industrial, and research development in the corridor is great. Considering the zoning, amount of vacant land, and transportation facilities including Metro, the I-270 corridor could capture 30 to 40% of the total county 10-year market.⁴

The population projection for the I-270 corridor represents 32% of the projected County-wide population growth between 1980 and 2000. This projection is based on the forecasted growth in employment opportunities in the corridor and Washington, D.C. Metropolitan Area. See Table 1 in the Socio-Economic Section, page 7.

Improvements to I-270 are an integral part of and consistent with the Master Plans in the area. The following Master Plans all indicate the need for Improvements to I-270:

1. Master Plan Clarksburg and Vicinity.
2. Master Plan Gaithersburg and Vicinity.
3. Master Plan Germantown and Amendments.
4. Master Plan Rockville and Amendments.
5. Master Plan North Bethesda - Garrett Park.
6. Transportation Plan for the National Capital Region.
7. 1981 Report on Comprehensive Planning Policies.
8. 5th Growth Policy Report, Planning, Staging, and Regulating.

B. Traffic Service

A comparison between the present levels of development in the I-270 corridor and that proposed in the various master plans indicates a substantial increase in traffic demand for I-270 as a major access to Washington, D.C. and other employment centers in the corridor during the next twenty years.

The present traffic conditions on I-270 in the peak hours indicate volumes beyond the capacity of the existing roadway in some areas. The major congestion is occurring in the southern sections of I-270 and at various interchanges such as Montrose Road, Shady Grove Road, MD 28, and MD 124. Congestion is especially heavy in the areas of merges, diverges, and weaves at the interchanges along the route from MD 124 to the south. Throughout the corridor there is considerable queuing at the ramps during the peak periods, which indicates a need for interchange improvements to increase the capacity of the ramps. The congestion on the ramps also affects the roads serving I-270 and creates blocks and congestion at the intersections adjacent to I-270. Level of Service E operation exists in all segments south of MD 124 with the ramps operating at E or F.

The directional distribution becomes more pronounced proceeding north from the spur. For example, between Montrose and MD 28 the split is 55% in the peak direction and 45% in the off-peak direction, while between MD 124 and MD 118 the split is 76% in the peak direction and 24% in the off-peak direction.

As development continues in the corridor, the traffic demand will continue to increase. Also the directional distribution will become more even throughout the corridor because metro rail will accommodate more commuters to Washington and more development in Gaithersburg and Germantown will distribute the employment opportunities throughout the corridor.

Plate 14 shows the Average Daily Traffic (ADT) for the I-270 corridor for the years 1980 and the design year 2010. The traffic projections for 2010 were prepared by the Maryland S.H.A. using traffic forecasts developed by the Washington Council of Governments reflecting Round 2 of the Cooperative Land Use Forecasts. These projections were based on planned ultimate development in the corridor. The capacities on the roads serving I-270 will determine the volumes that can reach I-270. These projections were used in analyzing the traffic operations on the c-d road, determining the location of the slip ramps, and the air and noise analyses.

Interchange improvements are presently being designed for Falls Road, I-370, Shady Grove Road, and MD 124/117 interchanges. These projects are being coordinated with the I-270 studies to insure compatibility.

C. Accident Records

The accident data available for I-270 shows that the study section experienced 67 reported accidents per 100 million vehicle miles of travel, (acc./100mvm), which is lower than the current statewide rate of 107 acc/100mvm for all interstate highways under State maintenance. The percentage of the accidents involving fatalities was 32% which is the same as the statewide rate for this type highway.

When the accident data was analyzed by type of accident and frequency it was found that the rates of congestion related accidents, (sideswipes and rear end collisions) were significantly higher during the peak hours and were at least as high as the state-wide averages. This tendency would indicate that these types of accidents would increase as traffic volumes and congestion increase. As congestion is reduced by capacity improvement, these rates of accidents should be reduced.

EXISTING MAN-MADE ENVIRONMENT

EXISTING MAN-MADE ENVIRONMENT

I SOCIO ECONOMIC CHARACTERISTICS

A. Demographics

As mentioned earlier, the I-270 corridor is one of the fastest growing corridors in Maryland. Commercial, industrial, and residential development is occurring throughout the corridor. Included in this area are three satellite cities; Rockville, Gaithersburg, and Germantown. Table 1 describes the population trends in the corridor and Montgomery County from 1960 to 1988.

The area defined as the I-270 Area encompasses Planning Areas 19 and 20 and the City of Gaithersburg which extends from Little Seneca Regional Park north of Germantown to the city limits of Rockville. Therefore, projections are also shown for Rockville, N. Bethesda and Potomac Planning Areas which contribute the remaining portions of the I-270 corridor.

As shown by Table 1, the rate of increase in population in the I-270 area has been much greater than that in the County and this trend is expected to continue. Between 70 and 80 percent of the growth in the I-270 area is attributed to in-migration. Intermediate growth rates were assumed in the projections shown.

Table 1 also shows that the development potential in Rockville and the areas at the southern end of the corridor is significantly less than those areas north of Rockville. In fact, N. Bethesda showed a net decline in population between 1970 and 1978 due to a reduction in household size and low housing growth. Clarksburg is expected to develop rapidly between 1988 and 2000.

TABLE 1
POPULATION TRENDS
I-270 Area, Montgomery County

	1970	1978	% Incr.	1988 ⁶	% Incr.	2000 ⁶	% Incr.
Mont. Co.	522,810	593,500	14	671,500	13	790,000	18
I-270 Area	24,900 ⁵	65,700 ⁵	164	98,100	49	128,200	31
Rockville	44,850	46,000 ⁶	2.0	46,200	0.4	46,500	0.6
N. Bethesda	33,700	33,000 ⁶	-3.0	37,500	14	44,300	18
Potomac	23,100	37,100 ⁶	60.0	40,200	8	46,500	16
Clarksburg	2,100	2,100 ⁶	0	2,400	14	4,400	83
Total I-270 Corridor	128,650	183,900		224,400	22	269,900	17
Percent I-270 to County	24%	31%		33%		34%	

52

The minority population in the I-270 corridor is shown in Table 2 as obtained from the 1980 census data. There have been no minority neighborhoods identified adjacent to the I-270 right of way. As shown in Table 2, the percentage of minorities is greater county-wide than that shown for the I-270 corridor.

TABLE 2
MINORITY POPULATIONS ALONG I-270

	White	Black	Spanish Origin	Others	Total
Population	34,826	1,869	1,264	1,854	39,813
Percent	87	5	3	5	100
County Percent	81	9	4	6	100

B. Employment

As stated earlier the I-270 corridor has been targeted as a growth area for commercial and industrial development. The area has become oriented to the high technology, research, and government areas of employment. Table 3 describes the employment projections through 1995 assuming intermediate growth rates,

TABLE 3
EMPLOYMENT FORECASTS I-270 CORRIDOR³

	1978	1983	% Incr.	1988	% Incr.	1995*	% Incr.
I-270 Market Area	38,100	49,100	29	62,300	27	68,400	10
Rockville	28,000	31,300	12	34,700	11	46,100	32
N. Bethesda	35,000	40,100	15	47,500	18	54,500	14
Total I-270 Corridor	101,100	120,500	19	144,500	20	169,000	16
Montgomery County	270,500	310,500	15	352,500	14	385,000	10

*1995 projections are based on Round 3 of the Cooperative Land Use forecasts utilizing intermediate growth rates.

and shows that about 50% of the total employment growth in the county will take place within the I-270 corridor.

C. Economy

The median household income in the project corridor has been increasing steadily in the past decade. Table 4 shows this trend and compares the I-270 area to Montgomery County. As development continues in the project, the income levels should increase more rapidly and in proportion to the County increases.

TABLE 4
INCOME TRENDS²

	Median Household Income (\$)		
	<u>1969</u>	<u>1976</u>	<u>% Incr.</u>
I-270 Area	13,300	20,900	57
Montgomery Co.	14,100	23,800	69

The property tax rate in Montgomery County is one of the highest in the state. In 1982, the General County Tax was \$2.27 per \$100 assessed value. The other add-on taxes including state tax, district, fire, recreation, etc. increased the total tax bill along I-270 to between \$3.165 and \$3.744 per \$100 assessment.

The value of property along I-270 varies according to land use and development potential from \$20,000 per acre for R-150 zoning in the area of the MD 28 interchange to \$435,600 per acre for C-1 zoning in the area of Shady Grove Road.

II LAND USES

A. Existing Land Uses

The I-270 corridor passes through suburban areas, parks, the cities of Rockville and Gaithersburg, commercial and industrial, residential, and rural/agricultural areas. There are existing residential developments immediately adjacent to the I-270 right of way for a length of approximately four miles. The remaining 28 miles of adjacent property are either developed as commercial or industrial uses with substantial setbacks from the right of way, undeveloped, or used for agricultural purposes.

36

The following parks abut the I-270 right of way within the study limits: Cabin John Regional Park, Tilden Park, Muddy Branch Park, Summit Hall Park, Metro. Grove Road Park, Seneca Creek State Park, Little Seneca Regional Park and Rockmead Park.

See Plates 3 and 4 for existing zoning and land uses. As seen by a comparison of these plates, much of the land is being used at a lower level of development than the zoning allows. This would indicate a strong potential for development in the near future.

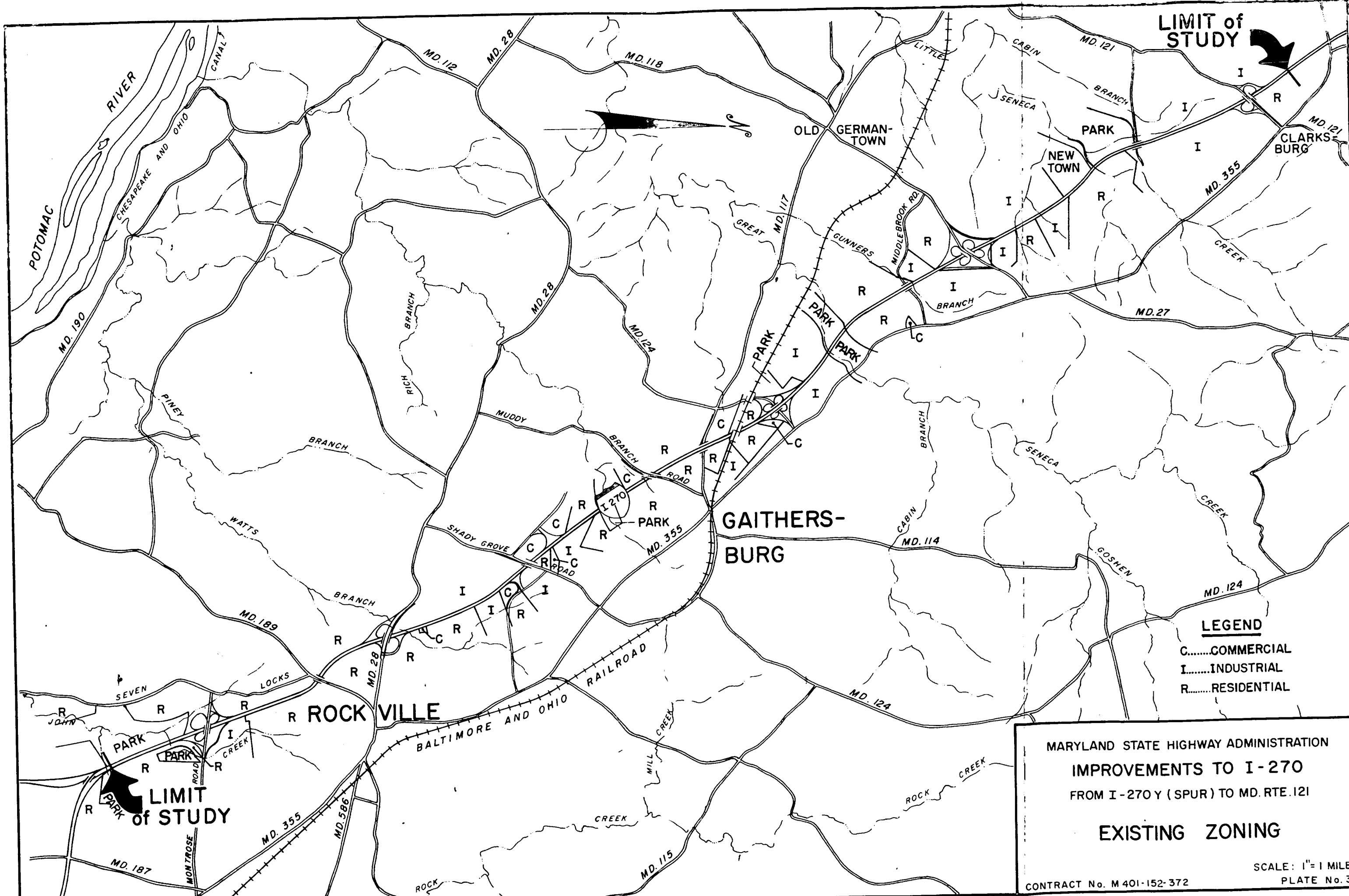
Some land in the corridor has been designated Prime Farmland. In accordance with the definition of prime farmland used by the Soil Conservation Service, this land must be available for farming uses. As mentioned above, the zoning along the corridor allows higher development uses than presently exist. This is especially true of agricultural land since there is no agricultural zoning within the project limits along I-270. Therefore, the future of these existing farmlands is in question considering the zoning and development pressure in the corridor. See Plate 10 for the location of the Prime Farmland.

B. Planning and Proposed Land Uses

The 1964 General Plan for the Washington Metropolitan Area, "On Wedges and Corridors" and its subsequent update of 1969¹⁷ established the basic concept for development in the Capital region. Radial corridors would be developed along major transportation lines such as I-270 and Metro. Both residential and employment development could be directed to these corridors through zoning and the provision of water and sewer.

Specific locations would be developed as corridor cities such as Rockville, Gaithersburg, and Germantown. These cities could provide employment opportunities, complete community services and a full range of housing opportunities. The areas between these corridors would be maintained as less developed and recreational areas.

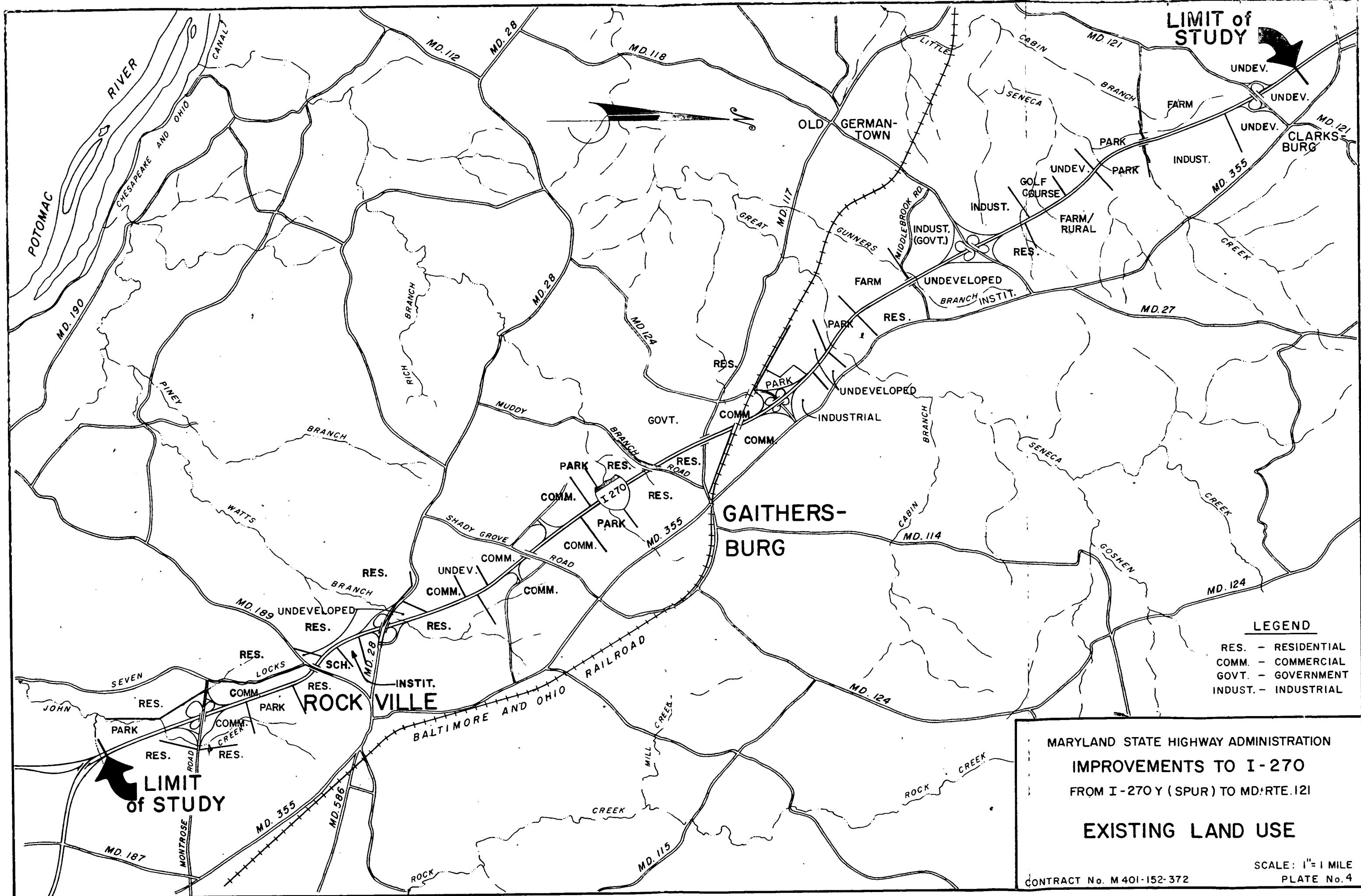
This trend can be seen in the I-270 corridor as shown by Tables 1 and 2 and in the Master Plans for the areas including Clarksburg, Gaithersburg, Germantown, Rockville, and Potomac.



LIMIT of STUDY

LEGEND
C.....COMMERCIAL
I.....INDUSTRIAL
R.....RESIDENTIAL

MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270 Y (SPUR) TO MD. RTE. 121
EXISTING ZONING
SCALE: 1" = 1 MILE
CONTRACT No. M 401-152-372
PLATE No. 3



LIMIT of STUDY

LEGEND

- RES. - RESIDENTIAL
- COMM. - COMMERCIAL
- GOVT. - GOVERNMENT
- INDUST. - INDUSTRIAL

MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270 Y (SPUR) TO MD RTE. 121

EXISTING LAND USE

SCALE: 1" = 1 MILE
CONTRACT No. M 401-152-372
PLATE No. 4

The Master Plans also reinforce this policy with the planning of satellite communities, and zoning of areas for industrial and commercial development. The proposed land uses described in the Master Plans are shown on Plate 5.

Approximately 40% of the land abutting I-270 is zoned industrial or commercial. The remainder is various residential zones and parkland. Much of this land is presently undeveloped which creates a large potential for development.

A study performed by the Maryland National Capital Park and Planning Commission has indicated that there is potential for the development within the next 10 years of 3 to 4 million square feet of additional office, research, and development space and 450-600 thousand square feet of industrial/warehouse space. An additional 300,000 square feet of additional commercial retail space could also be added in this 10-year period.

The feasibility of such development depends to a large degree on the transportation network available. This is made clear by the policy now in effect in Montgomery County for evaluating the feasibility of additional residential or employment development.

The 1981 Report on Comprehensive Planning Policies divides the County into policy areas which are composed of "traffic sheds" in which traffic follows a predominant pattern. The maximum development that each policy area can handle, considering the capacity of the transportation network, is determined and called the threshold. In areas where the existing development plus the new development presently approved is greater than the threshold, no new subdivisions would be approved until either the threshold is changed or new road projects are programmed in accordance with the Adequate Public Facilities Ordinance of 1973.

III COMMUNITY FACILITIES AND SERVICES

The residents of the I-270 corridor are served by many community facilities and services, including fire stations, police stations, schools, churches, and hospitals. These facilities located east of I-270 and west of Rockville Pike (MD Rte 355) and west of I-270 and east of MD 118, MD 28, Ritchie Parkway, and Falls Road are listed below. See Plates 6 through 8 for the location of these facilities.

A. Schools

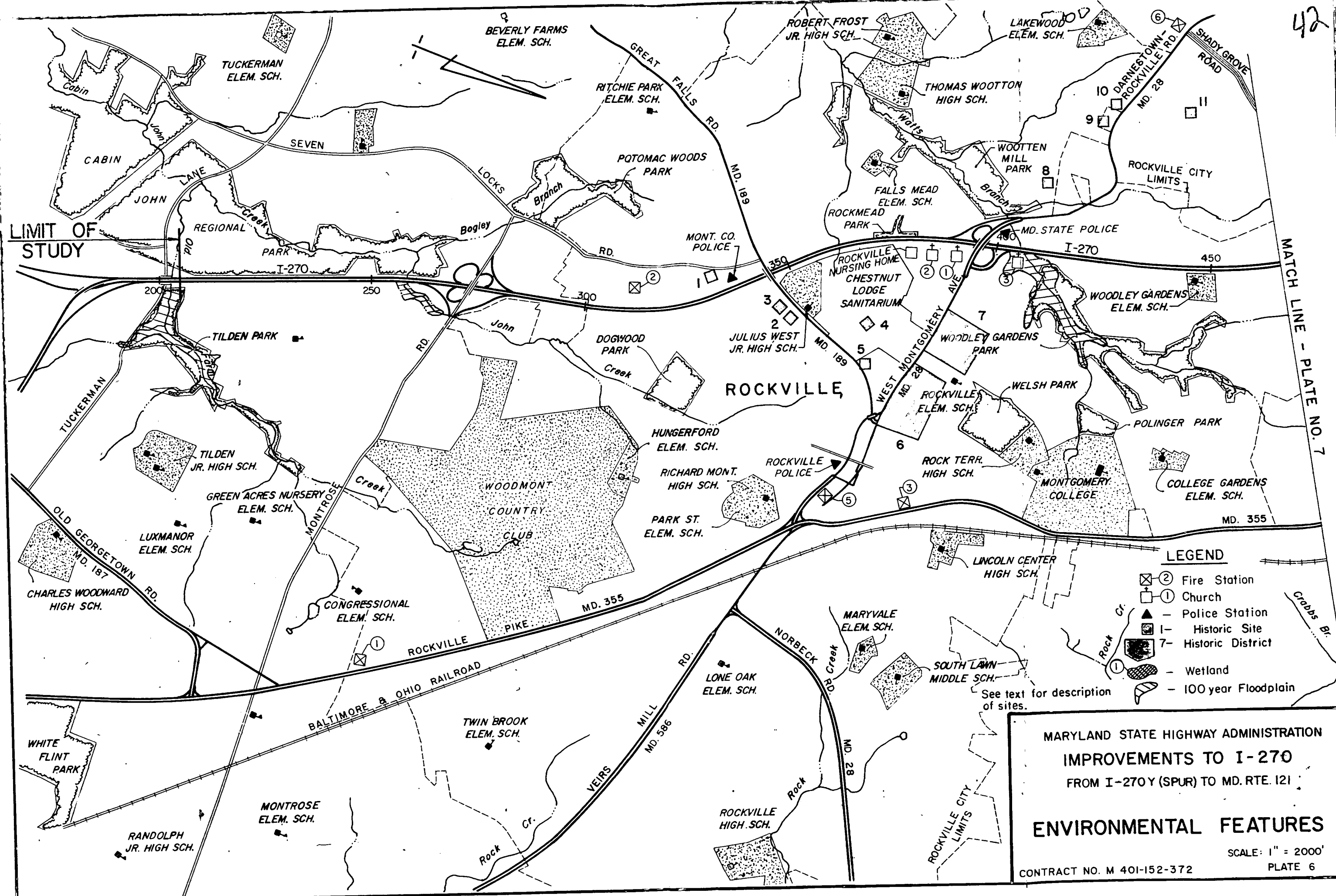
Most subdivisions have a neighborhood elementary school to which most students walk. These schools therefore, are not affected directly by improvements to I-270 unless they are adjacent to the right of way. Junior high schools also appear to be locally-oriented. For this reason, elementary and junior high schools are not listed below. Schools of high school level or higher are shown as schools where students could be affected by I-270. Julius West Junior High School on Falls Road at I-270 and Woodley Gardens Elementary School are included in the list due to their proximity to the project.

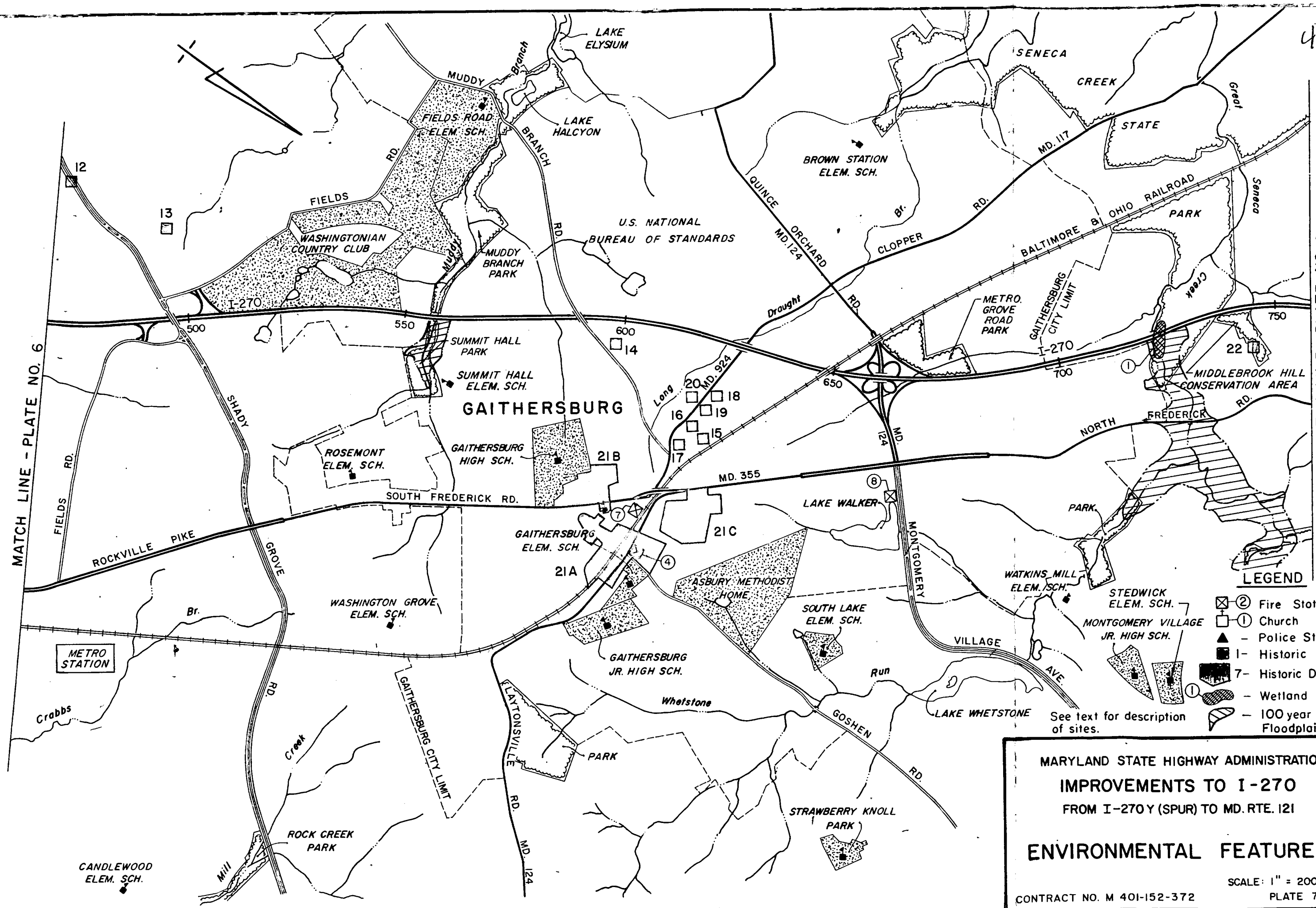
Gaithersburg High School	Seneca Valley High School
Rock Terrace High School	Montgomery College at Germantown
Montgomery College at Rockville	Richard Mont High School
Thomas Wootton High School	Woodley Gardens Elementary School
Julius West Junior High School	

B. Emergency Services

The fire and rescue stations within the same corridor described above are listed below:

- | | |
|----------------------------------|---------------------------------------|
| 1. Rollins Ave. at MD 355 | 5. Jefferson St. at Perry St. |
| 2. Seven Locks Rd. at Monroe St. | 6. MD 28 at Shady Grove Rd. |
| 3. MD 355 at Beall Ave. | 7. MD 355 at the B&O RR. |
| 4. E. Diamond Ave. at N. Summit | 8. Montgomery Village at Russell Ave. |

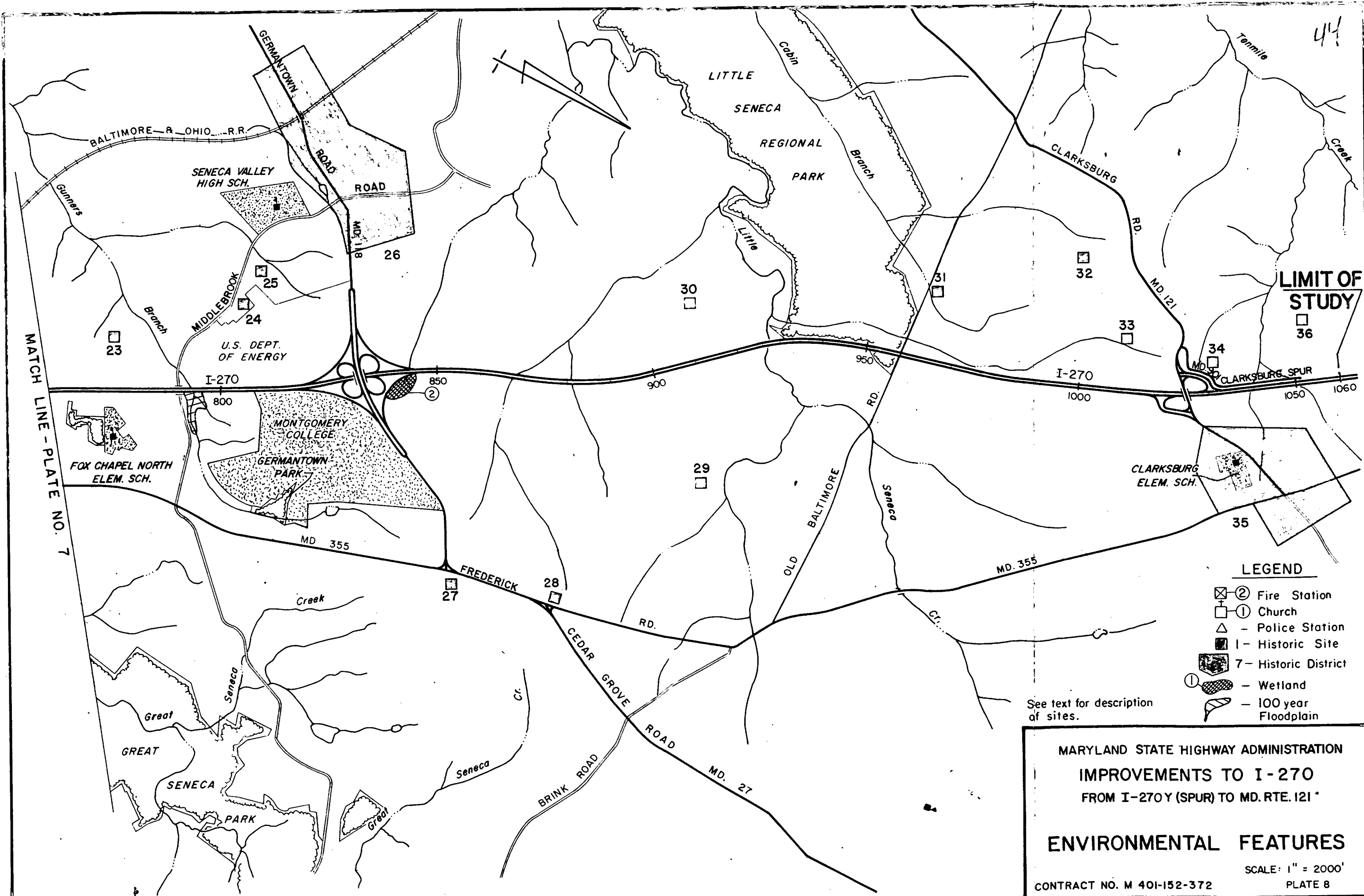




MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270 Y (SPUR) TO MD. RTE. 121

ENVIRONMENTAL FEATURES

SCALE: 1" = 2000'
CONTRACT NO. M 401-152-372
PLATE 7



C. Police Stations

The area is served by the Rockville City police station at Washington St. and the county police station at Seven Locks Road and Falls Road. The State Police station is located at the MD 28 interchange with I-270. This facility is scheduled to be relocated to Montrose Road at Seven Locks Road in the near future. The corridor is served by Montgomery County Police with supplemental service from Rockville and Gaithersburg.

D. Medical Facilities

The Montgomery County Medical Center located at Shady Grove Road and MD 28 serves the area's local medical needs. Chestnut Lodge Sanitarium located at Falls Road and I-270 and the Rockville Nursing Home at I-270 and Adclare Road also serve the medical needs in the corridor. These last two sites are located immediately adjacent to the I-270 right of way.

E. Churches

There are many churches scattered throughout the I-270 Corridor whose parishioners would be affected by improvements to I-270 with respect to travel times. Several have located in close proximity to the I-270 right of way and would be directly affected by the project. These churches are listed below:

1. Rockville Christian Church at I-270 and Adclare Road.
2. 1st Baptist Church at I-270 and Adclare Road.
3. 1st Baptist Church at Nelson Street.

IV PARKLANDS AND OPEN SPACE

Montgomery County has an extensive system of local, city, regional, and State parks, several of which abut the I-270 right of way. These parks are shown on Plates 6 through 8 and include Tilden, Cabin John Regional, Rockmead, Wootten Mill, Muddy Branch, Summit Hall, Metropolitan Grove, Seneca Creek State, Little Seneca Regional, and Middlebrook Hill Neighborhood Conservation Areas.

The potential effects on these parks of the Build Alternate are discussed in the 4(f) Considerations Section.

V HISTORIC AND ARCHAEOLOGICAL SITES

A. Historic Sites

A Preliminary field survey of the I-270 project corridor was conducted in September of 1980, to locate sites of local, state, or national historic significance. The sites identified are shown on Plates 6 through 8 and are listed in Table 5 along with their level of significance.

TABLE 5
HISTORIC SITES

<u>Site Number</u>	<u>Name</u>	<u>Level of Significance</u>
1	Poor Farm Site & Cemetery	Nothing Visible above ground
2	1½ story frame house and outbuildings SE corner Great Falls Rd. and MD Ave.	Maryland Hist. Trust Inventory (MHTI)
3	E.C. Smith house and out- buildings 636 Great Falls Rd.	MHTI
4	Rose Hill	MHTI
5	Bingham-Brewer House	Pending National Register (NR)
6	West Montgomery Avenue Historic District	NR
7	West End Park Historic Dist.	MHTI
8	Hurley House	MHTI
9	T.M. Viers House (Glen Haven)	MHTI
10	H.M. Cronise House	MHTI
11	Windy Knoll Farm	MHTI
12	Thrift House 14843 Shady Grove Lane	MHTI
13	Thompson House	MHTI
14	Mills House; boarded up partially demolished	MHTI
15	102 Chestnut Avenue Gaithersburg	MHTI
16	104 Chestnut Avenue Gaithersburg	MHTI
17	105 Chestnut Avenue Gaithersburg	MHTI

47

18	M.R. Boyd House, N side of W. Diamond Ave. Gaithersburg	MHTI
19	300 W. Diamond Ave.	MHTI
20	309 W. Diamond Ave.	MHTI
21	"Old Gaithersburg" Historic District (3) District 21A (includes NR B & O Station & Shed) District 21B (includes NRE Ascension Chapel and Thomas Fulks House) District 21C (includes NRE Grace Methodist Church)	Possible NRE MHTI MHTI
22	Cemetery Rambling Road, Germantown	MHTI
23	Waring/Crawford Farm Active, Good Condition	MHTI
24	Crawford/Lippart House 12401 Middlebrook Lane partially demolished zoned commercial	MHTI
25	Log Cabin Middlebrook Lane	Demolished
26	Germantown Historic District	National Register Eligible (NRE)
27	Old Neelsville Presbyterian Church (now Messiah Lutheran Church)	MHTI
28	Londonderry	MHTI
29	Dr. William Waters House	Pending NR
30	Waters Log House	MHTI
31	William Shaw House	MHTI
32	Byrne/Magee Farm	MHTI
33	Edward Waters House	MHTI
34	Elizabeth Powers House	Demolished
35	Clarksburg Historic Dist. (includes NR Clarksburg School)	MHTI
36	Moneysworth Farm	Possible NRE
37	Ed Lewis House	MHTI
38	J. Pickens House	MHTI

B. Archaeological Sites

An archaeological reconnaissance of I-270 from the Y(Spur) to MD 121 was conducted by the Maryland Geological Survey to identify potentially sensitive sites of archaeological remains. This report⁷ is available for review at the Maryland State Highway Administration.

Information concerning archaeological sites investigated under the I-370, MD 189, and MD 124/117 projects were also reviewed with respect to the applicability to the I-270 project.

Field reconnaissance and research indicated the presence of eight historic archaeological and five prehistoric archaeological sites, six prehistoric activity areas and one historic cemetery within the project corridor. Five of the eight historic archaeological sites, and the five prehistoric archaeological sites are possibly of National Register importance.

VI TRANSPORTATION SYSTEM

A. I-270

This roadway is an interstate highway with controlled access extending from Frederick to the Capital Beltway. It consists of three lanes in each direction from Montrose Road to MD 118. From MD 118 to Frederick, I-270 is a 4-lane divided highway.

B. MD 355

This major route runs parallel to I-270 from Washington to Frederick. It consists of a six lane divided urban roadway to Summit Street in Gaithersburg south of the railroad overpass. North of the overpass it consists of five lanes to Christopher Avenue. North of Gaithersburg it becomes a two lane rural roadway. MD 355 is the major arterial in the north-south direction passing through the downtown areas of Bethesda, Rockville, Gaithersburg, and Frederick. During peak hours this roadway operates at or near capacity and serves as an alternate route to I-270.

C. West of I-270

On the west side of I-270 there is no route parallel to I-270 except Seven Locks Road from MD 28 to River Road. However, several routes, including MD 121, MD 117, MD 124, MD 118, MD 28, and Falls Road serve as reliefs for I-270. All these routes except MD 121 are included in the MD SHA Highway Needs Inventory for reconstruction or widening from 4 to 6 lanes. MD 121 is shown as a 2 lane reconstruct. The Great Seneca Highway is being studied by Montgomery County and would consist of a 4 lane divided highway from Middlebrook Road to MD 28.

D. Metro

The Washington Metro, regional rapid rail transit system, is being constructed to a terminal at Shady Grove Road, which is scheduled for completion in 1984. These facilities are located parallel to the B & O Railroad tracks to the north of Fields Road. This Metro station will be served by I-270 through the I-370 interchange as well as by MD 355, Shady Grove Road and other local roads. The patronage anticipated for Metro will reduce the number of person-trips utilizing the highways in the corridor. These patronage figures were used in the I-270 traffic projections for the design year 2010. It is estimated that approximately 22,000 people will use the Shady Grove Station per day in 1984. It is expected that most of these trips will be destined to downtown Washington, D.C.

E. Commuter Rail

Commuter rail service is provided by the Chessie System between Germantown, Gaithersburg, and Washington, D.C., with stations at Washington Grove, Rockville, and Silver Spring. Approximately 700 people use this rail line with 90% destined to Union Station, downtown Washington. No changes are anticipated in the existing service.

AMTRAK also provides inbound service in the morning with stops at Gaithersburg and Rockville. There is no return service in the evening on AMTRAK.

F. Bus Service

METROBUS serves suburban Montgomery County from Montgomery College in Rockville to the Silver Spring or Dupont Circle Metro Station or to downtown Washington. The major routes in the I-270 corridor include MD 355 or Old Georgetown Road.

It is anticipated that when the Shady Grove Metro Station is open, feeder bus service will be provided to the station to improve access to the Metro and encourage ridership.

Montgomery County operates a bus service called RIDE-ON in the Gaithersburg and Rockville areas. Transfers are provided between RIDE-ON and METROBUS. Service will be extended to the Shady Grove Metro Station upon initiation of service.

G. Share-a-Ride

Montgomery County operates a ridesharing program in Silver Spring which promotes the use of public, mass transit, and carpooling. The program will be expanded to Bethesda in the near future. The services include computer matching of people interested in carpooling in coordination with the Metro Washington Council of Governments. The county DOT also helps to establish private car pools through the major employers in the county.

Share-a-Ride presently has 580 people enrolled in carpools, vanpools, and transit in Silver Springs. There are expectations of an even greater response in the Bethesda area.

EXISTING NATURAL ENVIRONMENT

EXISTING NATURAL ENVIRONMENT

I GEOMORPHOLOGICAL CONDITIONS

A. Topography

The project corridor is located within the Eastern Division of the Piedmont Plateau Physiographic Province with surface elevations ranging from approximately 250 to 640 feet above sea level.⁸ Existing slopes are within a range of 0% to 25%.

B. Geology

The Piedmont Plateau consists of schistose metamorphosed rocks of both igneous and sedimentary origin.⁹ Depths to hard bedrock in uplands are generally greater than 50 feet. In depressions and draws the depths to hard bedrock are generally between 20 to 50 feet. Overburden over floodplains is thin, and is generally less than 20 feet. Types of rock include gneiss, phyllite, serpentine, and schist. Overburden can generally be removed directly with power shovels, whereas bedrock generally requires ripping or blasting before removal.

C. Soil Types

Upland areas are predominantly silt loams, channery silt loams, silty clay loams, and channery silty clay loam. Depressions and draws are generally silt loams. Floodplains are mostly silt loams. The various soils types are shown on Plate 9.

53

D. Prime and Unique Agricultural Land

The US Department of Agriculture has defined Prime Farmlands as that which "has the best physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses." ¹⁰ Unique Farmland is defined as land other than prime farmland that is used for the production of specific high value food and fiber crops.

Through discussions with the Soil Conservation Service maps were obtained showing the Prime and Unique Farmland in the project corridor. As can be seen by Plate 10, the majority of the prime farmland is located in the northern portion of the corridor.¹¹ This is due more to the development that has occurred than to the soils conditions. All the land shown on Plate 10 is defined as Prime Farmlands; there is no unique farmland in the project corridor.

II WATER QUALITY

As part of the analysis of the natural environment, the water quality in the existing streams was studied.¹² The results are shown in Table 6.

The parameters used to assess water quality are: dissolved oxygen, pH, biochemical oxygen demand, total phosphhte, total nitrate-nitrite, turbidity, fecal coliform bacteria, total coliform bacteria and water temperature. A Water Quality Index (WQI) was developed by the National Sanitary Foundation and is used to describe water quality of each stream. This WQI expresses water quality in one numerical value based on the parameters previously stated. The scale ranges from 0 to 100, with ideal water having an index of 100. From 0 to 25 represents bad water quality; from 25 to 50 poor quality; from 50 to 70 permissible; from 70 to 90 good; and from 90 to 100 as excellent water quality.

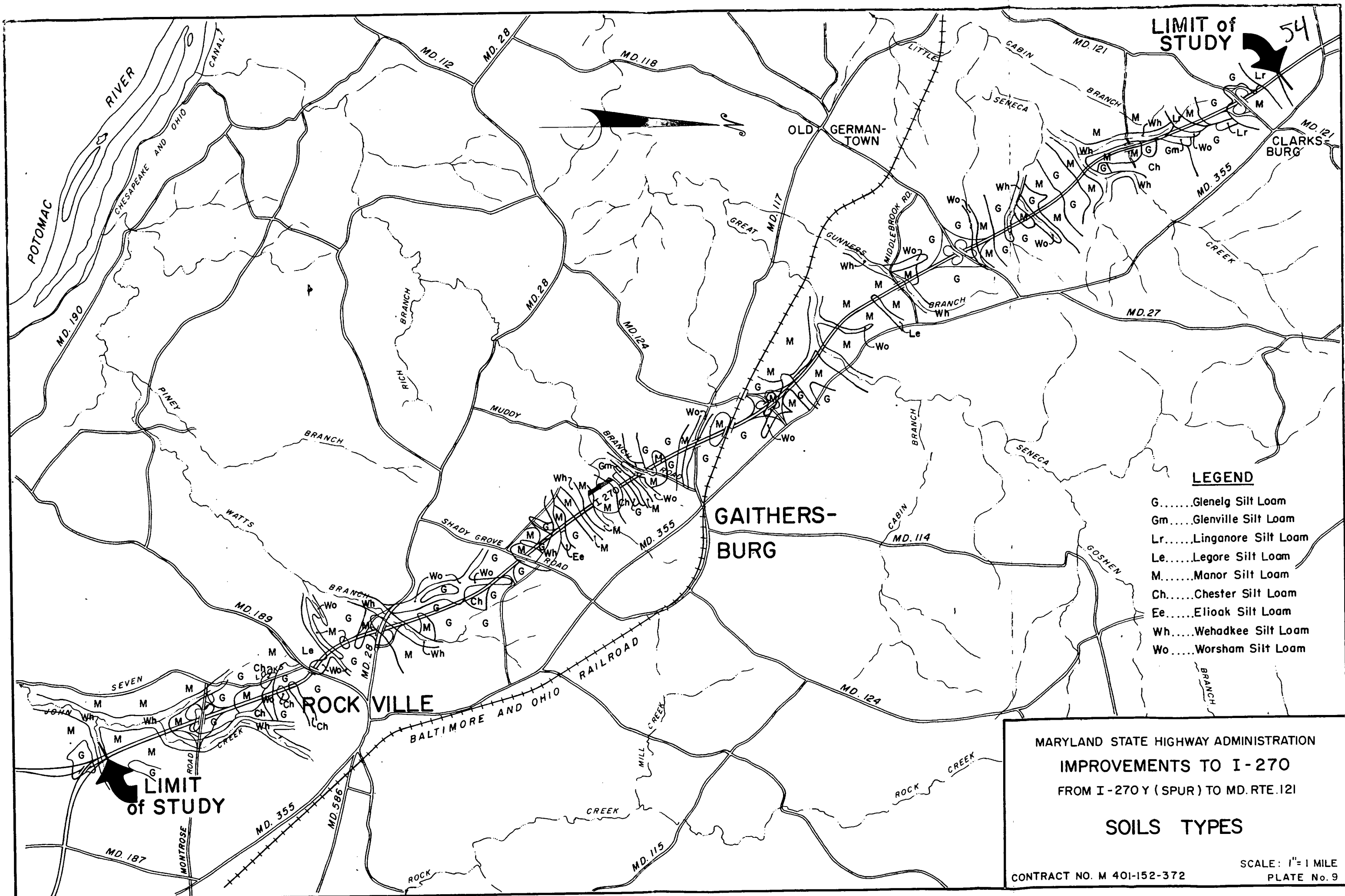


TABLE 6
WATER QUALITY

STREAM	WATER QUALITY INDEX RATING			DESCRIPTIVE RATING 1979
	1977	1978	1979	
Ten Mile Creek	62.4	66.0	65.8	Permissible
Upper Little Seneca Creek	65.0	68.6	70.0	Good
Long Draught Branch	69.1	73.4	74.9	Good
Gunners Branch	65.8	68.8	66.7	Permissible
Upper Great Seneca Creek	63.4	68.7	63.3	Permissible
Muddy Branch	65.7	73.2	64.6	Permissible
Watts Branch	64.5	69.7	67.3	Permissible
Cabin John Creek	66.5	76.6	69.2	Permissible

III ECOLOGY

A complete inventory of the existing ecological environment was prepared.¹³ The complete list of flora and fauna found in the project area is not provided in this report but can be obtained from the MD State Highway Administration. A summary of the findings is presented.

A. Wetlands

1. At the crossing of Game Preserve Road, (Plate 29) with I-270 there are several small ponds in the floodplain of Great Seneca Creek which fill during flood periods of the stream. These ponds have been designated Type 5 Wetland which is an inland open fresh water area. One of these ponds has been managed for years as a wildlife sanctuary.

2. A type 2 Wetland, Inland Fresh Meadow, consisting primarily of a cattail marsh of about 8 acres is located in the northeastern quadrant of I-270/MD 118 intersection.

3. Numerous Type 1 Wetland, Seasonally Flooded Basins, occur in the floodplain areas along the major stream valleys. The largest of these occurs along Great Seneca Creek at its crossing of I-270.

B. Areas Recommended for Protection

The Maryland National Capital Park and Planning Commission, Environmental Planning Division, has recommended that several areas in the project corridor be protected due to their unique natural environmental features. These areas are described below:

1. The wooded stream (Little Seneca Creek) valley containing the large breeding population of red bellied woodpeckers. This tract is located at the crossing of Little Seneca Creek by I-270.

2. The area containing several ponds at the crossing of Great Seneca Creek by I-270. Great horned owls are frequently seen in this area which offers an important variety of habitat for flora and fauna.

C. Rare or Endangered Species

No endangered species were found in the Project Corridor. Several rare species are reported to be in the area, however. The Bog Turtle, *Clemmys muhlenbergi*, includes the Seneca Creek area as part of its expected range.

The U.S. Department of the Interior has stated that the endangered small whorled pogonia may be present in the project area. (See letter in Appendix C.) No evidence was found of the pogonia in the areas affected by the project.

The Comely Shiner (*Notropis amoenus*), listed as rare in Maryland, is found in Ten Mile Creek.

The Greenside Darter (*Etheostoma blennioides*) has a limited distribution in Maryland. It is known to occur in only 10 locations throughout the state. This species occurs in Watts Branch, Muddy Branch, and Seneca Creek. This is the outhernmost distribution for the Greenside Darter in Maryland.

D. Fauna

Little Seneca Creek and its tributary, Ten Mile Creek, are Class III trout streams (stocked by the Fishery Administration for recreational fishing). Little Seneca Creek is reputed to be one of the most heavily fished streams in Maryland. Some recreational fishing for warm water species such as bass and sunfish occurs in Watts Branch, Muddy Branch, and Seneca Creek. Ten Mile Creek is said to have the highest diversity of fish species of all small streams in Montgomery County and is described by DNR as the only Washington Metropolitan Basin stream capable of supporting natural trout populations.

Mammalian diversity has remained high in the study area over the past several decades. Currently, about 42 species are found in the Project area.

About 120 species of birds breed in the Project area.

Amphibian and reptile diversity and numbers are believed to have declined over the past 50 years in the Project area.

The number and diversity of fish in Cabin John Creek has declined in the last several decades. Eighteen fish species, all of which have at least fair tolerance for water pollution, are found in Cabin John Creek. Likewise, Long Draught Branch, Eastern Watts Branch, and Gunners Branch have recently experienced reduced fish diversity and numbers due to increased urbanization. Long Draught Branch has significantly deteriorated since 1971; fish populations in this stream are poor.

Seneca Creek, Muddy Branch, Ten Mile Creek, and most of Watts Branch have large fish diversities and numbers. The distribution of fish species in these streams and their tributaries has remained fairly constant for the last 60 years.

Ten Mile Creek has an unusually high diversity of fish. Muddy Branch has shown no significant reduction of fish populations in the last twenty years.

Upper Seneca Creek supports 24 fish species and provides good recreational fishing.

Lower Great Seneca Creek has had no reduction in fish species diversity since 1949.

IV EXISTING NOISE CONDITIONS

Thirty-three noise sensitive areas (NSA) were identified along the I-270 corridor. See Plates 11 thru 13. Detailed descriptions and locations of the noise levels are contained in the Technical Noise Analysis Report available at the Maryland State Highway Administration, 707 N. Calvert St., Baltimore, Maryland.

Noise is usually measured on the "A" weighted decibel scale "dBA" which emphasizes the high frequency noise content and rejects some of the low frequency noise content. This A scale approximates the response of the human ear which finds higher frequency noise more annoying than low frequency noises. In order to give some significance to the noise levels discussed, Table 7 was prepared giving some typical everyday conditions and their corresponding noise levels.

TABLE 7
TYPICAL NOISE LEVELS

<u>Condition</u>	<u>Noise Level</u>
Quiet Suburban Area (night time)	30-40 dBA
Normal Conversations (3-6 feet apart)	60-65 dBA
Television	70 dBA

The ambient noise levels in the area were measured, using an ANSI Type 2 sound level meter, to determine the existing levels of

66

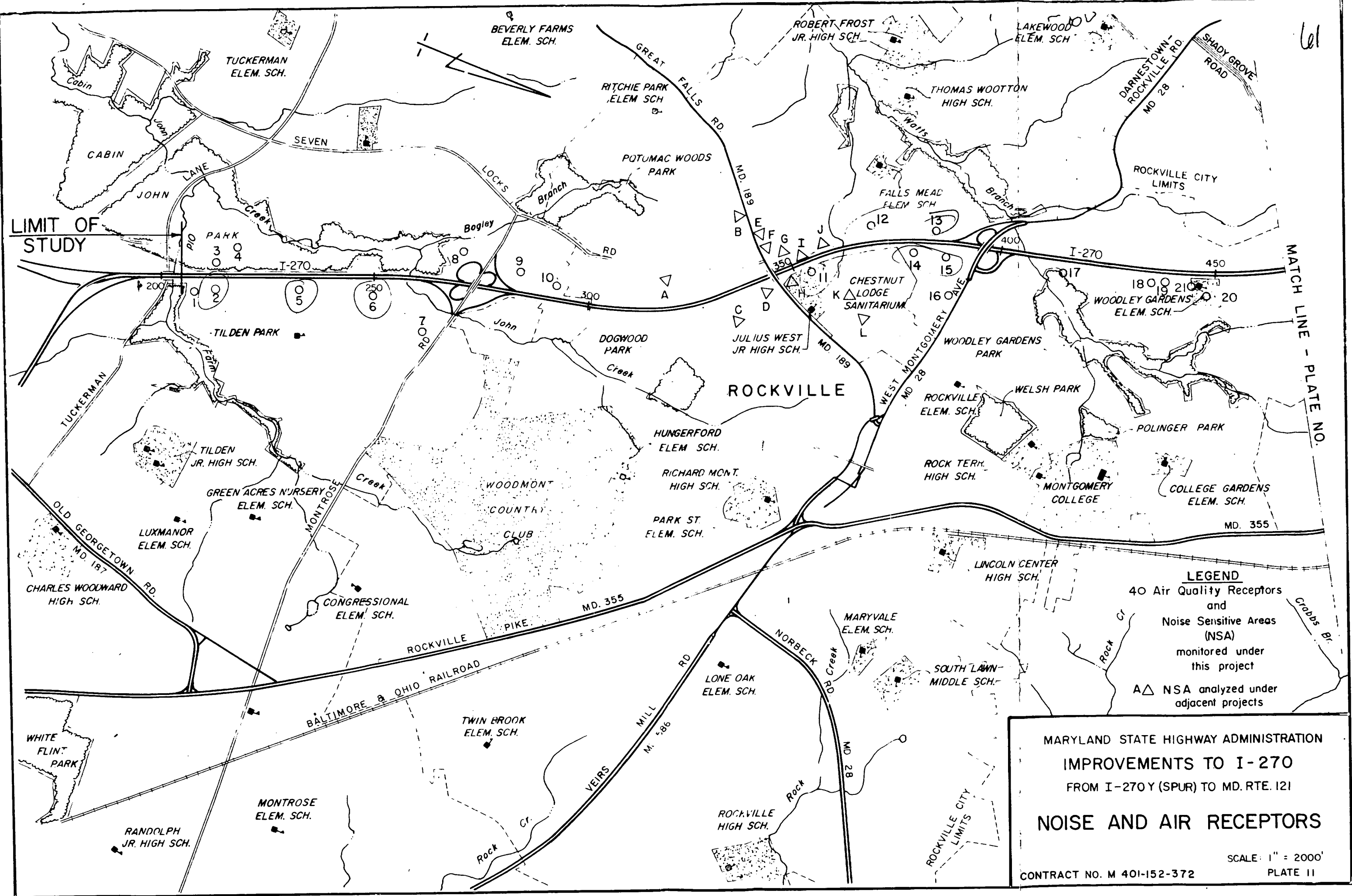
noise resulting from both natural and man-made sources including existing traffic on I-270.

Noise measurements were taken at the sensitive receptors shown on Plates 11 - 13. The measurement program took place on weekdays between the hours of 6:00 a.m. and 8:30 p.m. in order to include both morning and afternoon peaks and off-peak traffic conditions.

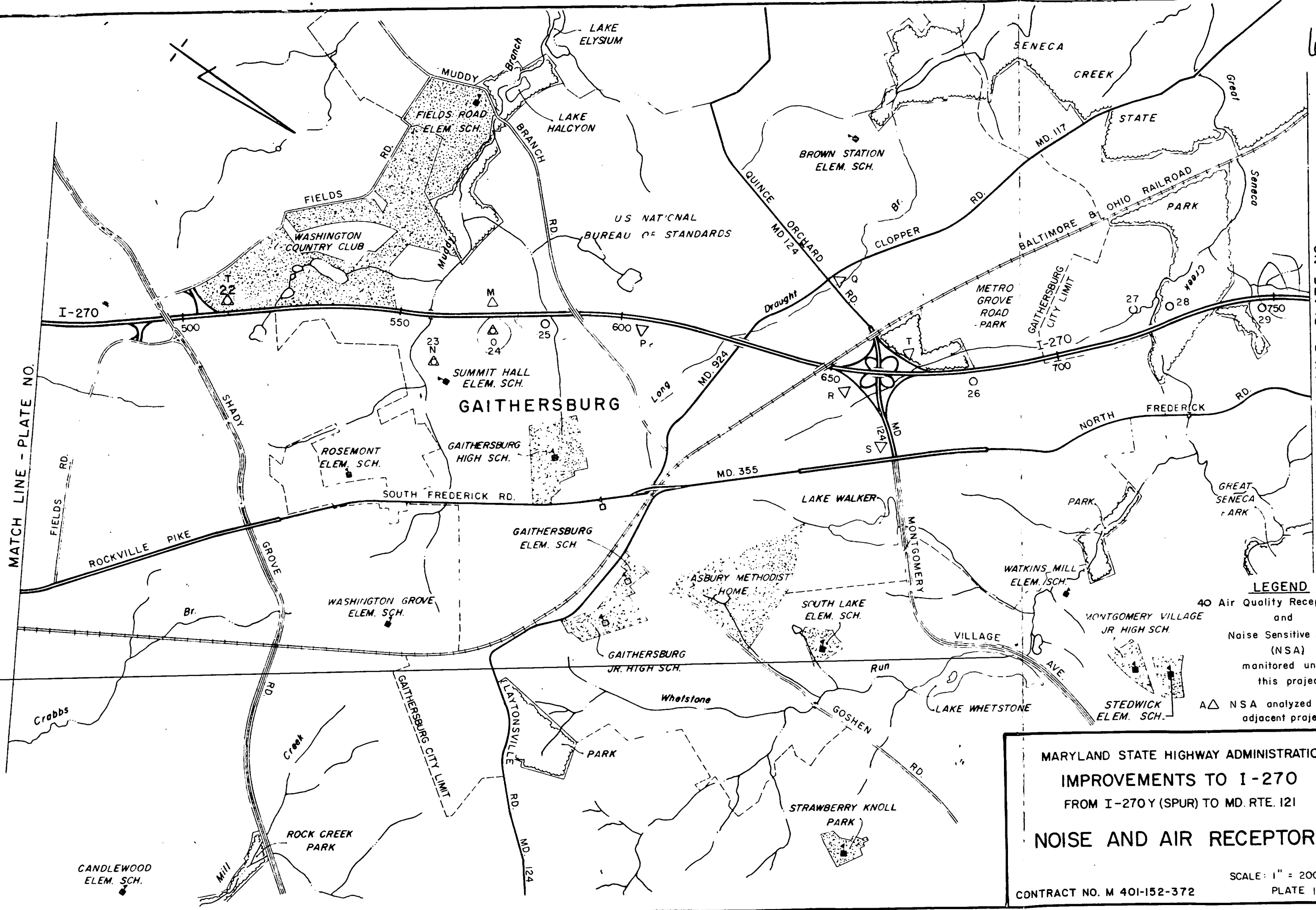
The measurement method is a statistical approach designed to obtain the L_{10} noise level which is that noise level which is exceeded 10% of the measured time period.¹⁴

The ambient noise levels represent a general picture of the present noise levels in the project area. Since much of the noise along I-270 results from the traffic on the roadway, variations will occur due to fluctuation in traffic volumes, speeds, and truck traffic. It was found that the off-peak traffic conditions created the higher noise levels due to higher percentages of trucks and the higher speeds of the traffic.

The Federal Highway Administration has established noise abatement criteria for various land uses. Of the 33 receptors monitored, 14 were experiencing noise levels in excess of the Design Abatement Criterion of 70 dBA for residential land uses. Table 8 shows the ambient noise levels at the noise sensitive areas.

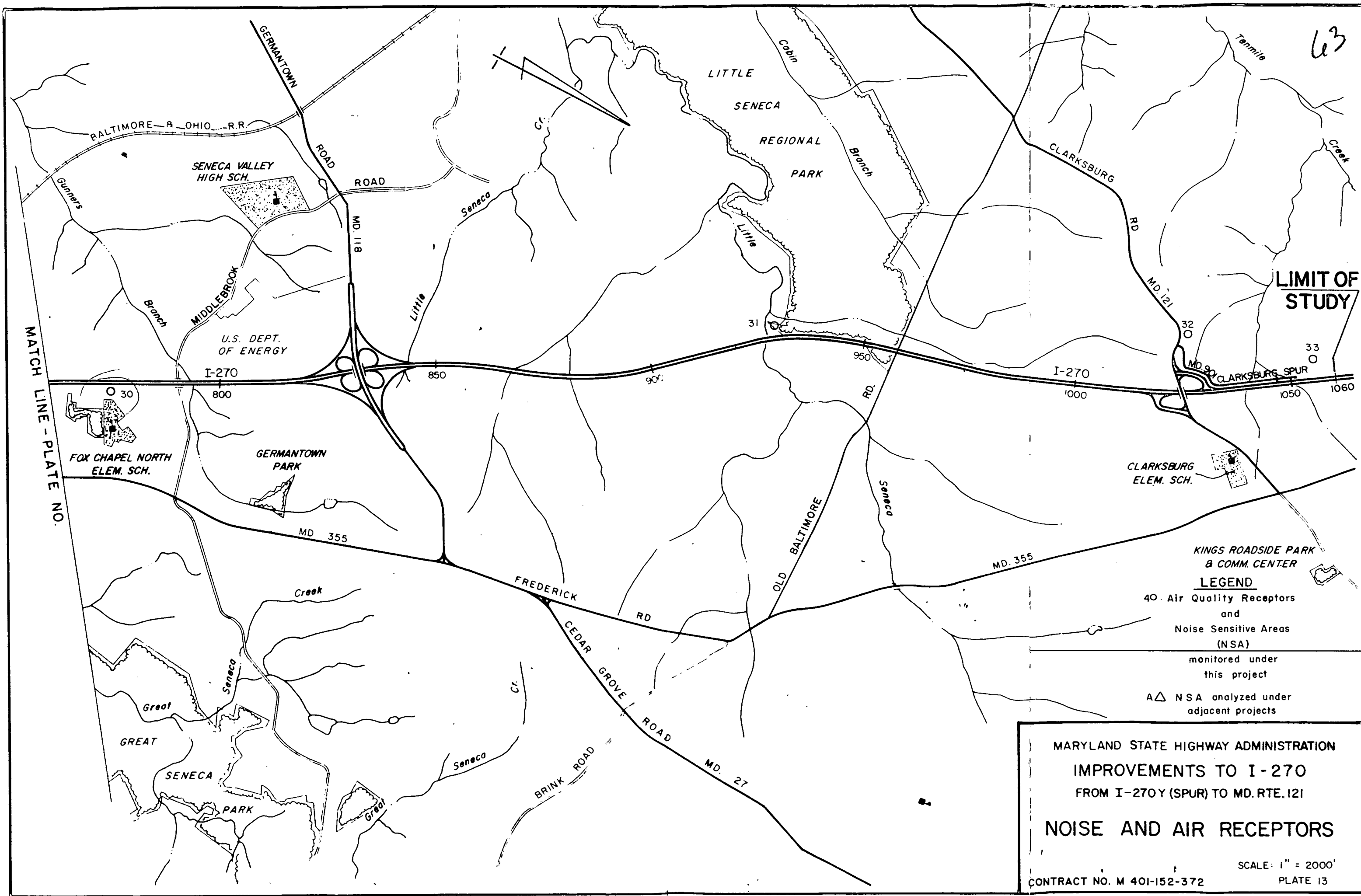


62



MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270 Y (SPUR) TO MD. RTE. 121
NOISE AND AIR RECEPTORS
SCALE: 1" = 2000'
CONTRACT NO. M 401-152-372
PLATE 12

63



LIMIT OF STUDY

LEGEND
40. Air Quality Receptors
and
Noise Sensitive Areas
(NSA)
monitored under
this project
A△ NSA analyzed under
adjacent projects

MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270 Y (SPUR) TO MD. RTE. 121
NOISE AND AIR RECEPTORS
SCALE: 1" = 2000'
CONTRACT NO. M 401-152-372
PLATE 13

64

TABLE 8

AMBIENT NOISE LEVELS

<u>NSA</u>	<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>AMBIENT NOISE</u> (dBA)
1	207+50RT ^{at 200 (34)}	3 Residences 11200 FARMLAND DR	72
2	210+50RT	20 Residences 11302 HOWDS WAY	72
3	213+00LT	Cabin John Park Right-of-way	80
4	215+25LT	Park Trail	--
5	233+00RT	13 Residences 11612 SPLIT RAIL CT	73
6	244+00RT ³⁰⁵	18 Residences	70
7	56+50RT	9 Residences (Montrose Rd)	65
8	35+20RT	5 Apartment Bldgs. (Montrose Rd)	53
9	285+50LT	1 Residence	60
10	293+25LT	2 Residences	77
11	351+50RT	Julius West Middle School ballfield	72
12	367+50LT	25 Residences	68
13	385+00LT	7 Apartment Buildings	71
14	380+00RT	Rockville Nursing Home	70
15	389+00RT	Church	66
16	7+00LT	1 Residence (MD 28)	62
17	414+00RT	Playground	67
18	422+20RT	9 Apartment Buildings	70
19	438+50RT	10 Residences	--
20	448+20RT	School Bldg.	62
21	446+20RT	School Field	67
22	507+00LT	Washingtonian Motel	72
23	556+00RT	Park Tennis Courts	71
24	571+50RT	5 Apartment Bldgs.	77

65

<u>NSA</u>	<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>AMBIENT NOISE</u> (dBA)
25	583+00RT	Apt. Tennis Courts	72
26	681+00RT	Playground	70
27	720+50LT	1 Residence	72
28	726+00LT	Seneca Creek Park Right-of-Way	69
29	749+00RT	8 Residences	72
30	773+00RT	36 Residences	77
31	930+00LT	Little Seneca Park Right-of-Way	70
32	9+00LT	1 Residence (MD 121)	56
33	1063+30LT	1 Residence	63

V EXISTING AIR QUALITY

The Maryland Department of Health and Mental Hygiene, Environmental Health Administration, has established an air quality control program which conforms to the State Implementation Plan and regulations of the U.S. Environmental Protection Agency. The State is divided into six air quality control regions, depending on the existing air quality. Montgomery County is located in Area IV, which is designated Priority I for particulates, sulfur dioxide, carbon monoxide, and photochemical oxidants. Priority I indicates that present ambient air quality levels exceed the National Ambient Air Quality Standards (NAAQS). Area IV is designated Priority III for nitrogen oxide which means ambient levels are below NAAQS.

The ambient pollutant levels are determined by sampling at various locations throughout the State. The results from the Bethesda monitoring station were taken as representative of the project area. This data is shown on Table 9.

Regarding most air pollutants for which national or state air quality standards have been established, the air quality of the study area can be characterized as generally acceptable.

While carbon monoxide levels in the Washington area continue to exceed national standards, no air quality alert due to carbon monoxide has been declared in the study area since January 1973. Carbon monoxide data for recent years from an established air quality monitoring station in the general vicinity within Montgomery County are shown in Table 9. These data were obtained from annual published reports of the Maryland Department of Health and Mental Hygiene and indicate a trend of decreasing concentrations.

The Maryland State Implementation Plan (SIP) includes several basic strategies for the attainment and maintenance of ambient CO air quality standards within the National Capital Interstate Air

67

Quality Control Region (AQCR). These include: 1) the continued construction of the transit system in the metropolitan Washington area, 2) the continued reduction of vehicular emissions as a result of the Federal Motor Vehicle Control Program, 3) The implementation of an inspection and maintenance program for motor vehicles in the Maryland portion of the National Capital Interstate AQCR, and 4) the further analysis and implementation of alternative transportation control measures to reduce pollution from the over-all regional transportation system.

TABLE 9
EXISTING AIR QUALITY
CARBON MONOXIDE *

Sampling Frequency:	Continuous		Units: mg/m^3			
Measurement Method:	Non-Dispersive Infrared		Standards: 1-hr max.= $40\text{mg}/\text{m}^3$ 8-hr max.= $10\text{mg}/\text{m}^3$			
	<u>1-Hour Average</u>			<u>8-Hour Average</u>		
		Second	No Obs.		Second	No. Days
	<u>Maximum</u>	<u>Highest</u>	over		<u>Highest</u>	over
			<u>$40 \text{ mg}/\text{m}^3$</u>	<u>Maximum</u>		<u>$10 \text{ mg}/\text{m}^3$</u>
1975	33	22	0	15	14	9
1976	35	33	0	25	14	2
1977	17	16	0	11	10	1
1978	17	17	0	12	11	2
1979	15	12	0	9	8	0
1980	8	7	0	6	5	0

* This data was received from the MD Dept.of Health and Mental Hygiene.

68

ALTERNATES STUDIED

ALTERNATES STUDIED

I GENERAL

Two alternates were selected for detailed environmental and engineering analysis in this document:

1. No Build

2. Continuous Collector Distributor (C-D) Road (Build Alt.)

Typical sections of the Build Alt. are shown on Plate 15. Plans of the proposed alternate are shown on Plates 20 through 35.

The goal of this study was to determine the most feasible roadway and interchange improvements to increase the capacity of I-270. Several alternates were studied for the mainline improvements and at each interchange. The following sections describe the studies performed to develop the various alternates and explain why some alternates were eliminated from further consideration.

II MAINLINE ALTERNATES

In order to determine the traffic needs of the corridor, a preliminary traffic analysis was performed using the traffic projections developed by Maryland State Highway Administration. Alternates for widening the mainline of I-270 were analyzed as described below:

A. No-Build Alternate

Under this alternate, no widening of the I-270 roadway is provided. Only normal maintenance such as resurfacing and safety improvements are continued. Also, no improvements would be provided at the interchanges at Montrose Road, MD 28, Middlebrook Road, and MD 118.

As the traffic volumes increase, congestion would intensify and the duration of congestion would increase. Also, as stated above, as congestion increases, the accident rate would increase. As the traffic demand continues to increase beyond the capacity

70

of the I-270 roadway, more traffic would be diverted to other routes in the area, thereby increasing congestion in these other roadways.

This alternate was retained for further study as a basis for comparison of the Build Alternate.

B. Widening to 8-Lanes

Since the traffic projections developed by the Maryland SHA for the 8-lane alternate do not satisfy the expected traffic demand in the design year, the traffic analysis shows that the roadway would operate at traffic Level of Service E/F, or capacity in the southern segments. It was found that traffic projections north of MD 118 would justify reducing the roadway to 6-lanes at the MD 118 interchange.

The typical section used for the 8-lane alternate is shown on Plate 15. Preliminary construction cost estimates were also developed for this alternate.

1. Advantages

a. Increases the capacity of the I-270 roadway thereby reducing the severity and length of the congested periods over that anticipated for the No-Build Alternate.

b. The right-of-way acquisition and construction costs would be the least of all improvement alternates studied.

2. Disadvantages

a. This alternate would not satisfy the traffic demand in the design year.

b. Wherever acceleration or deceleration or weaving lanes are required adjacent to the through lanes under the existing bridges, complete new bridges must be built.

Since this alternate does not satisfy the traffic projections for the design year, it was dropped from further study.

C. Express Lanes

The provision of additional lanes to operate as express lanes or travel lanes for the exclusive use of high-occupancy vehicles (HOV) including buses during peak hours was investigated.

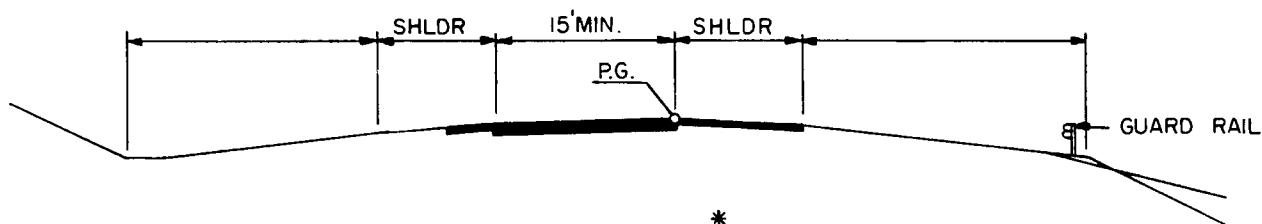
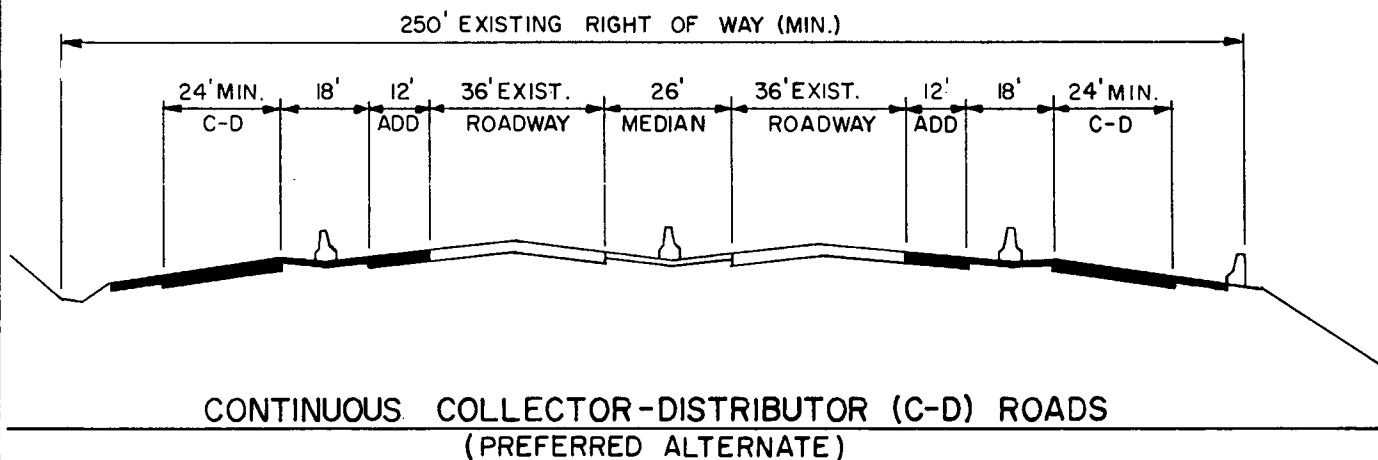
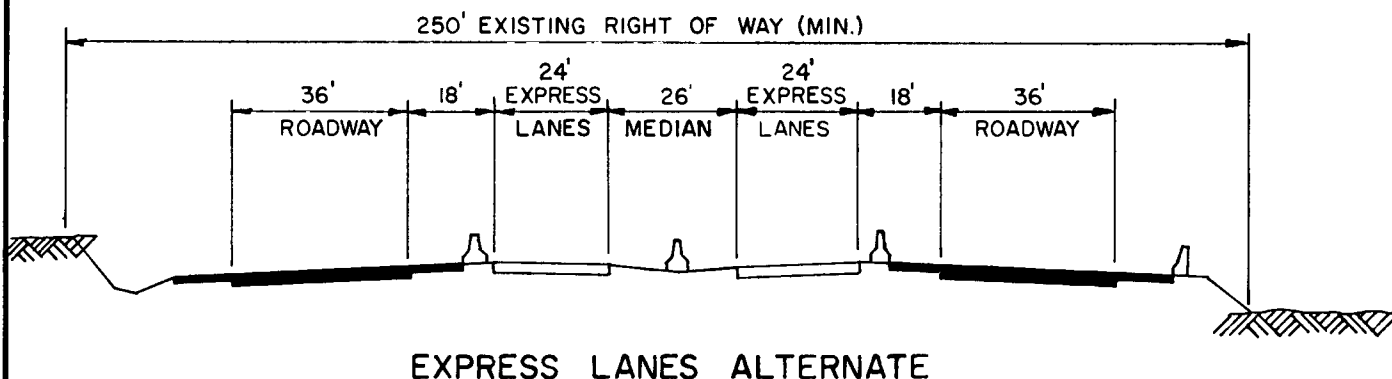
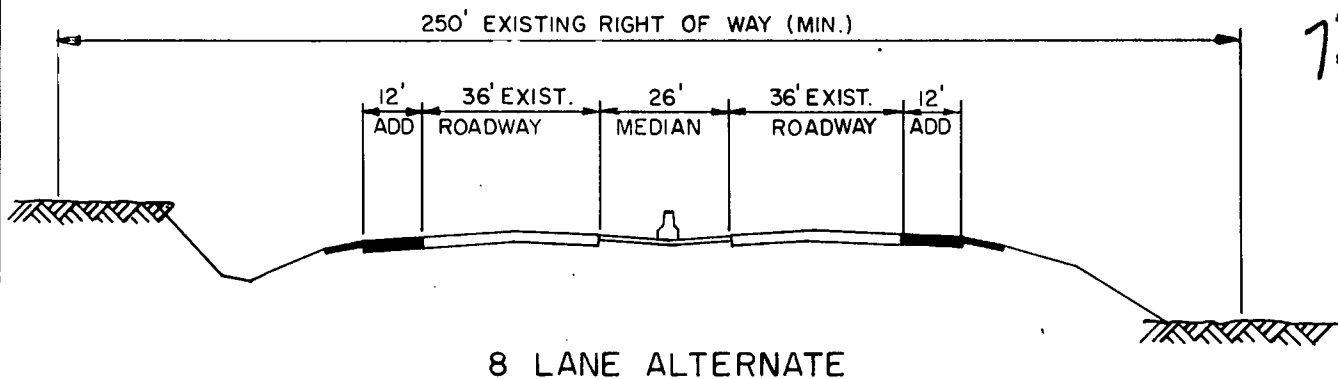
	800	33,700	700		
1,400	1,500	58,200	2,000	3,500	
3,600	2,400	81,400	2,300	11,100	MD. 121
6,600	300		2,500	20,200	
	1,600	35,000	8,600		
	3,400	64,900	16,100		
		95,200			
	3,600		1,100		
16,400	8,000		6,600	13,800	
46,300	10,200		7,100	37,300	MD. 118
47,900	8,400		8,300	41,600	
	21,000		13,400		
	9,100		5,900		
		47,000			
		84,700			
		92,900			
52,000				40,400	MIDDLEBROOK RD.
	20,100		8,500		
		47,000			
	4,600		4,000		
30,300	11,400		12,300	37,700	
46,100	12,100		13,000	46,800	MD. 124
52,500	15,200		23,200	53,000	
	23,700		23,500		
	27,900		27,500		
		76,800			
		108,200			
		151,800			
	16,800		21,000		
57,300	18,700		24,400	58,300	I - 370
69,700				70,000	
	22,800		19,600		
	28,800		23,400		
		76,800			
	5,700		6,400		
25,600	17,600		8,100	45,000	
46,300	17,800		7,800	39,600	SHADY GROVE
55,100	6,400		24,600	60,000	
	16,700		19,500		
	18,700		33,600		
		95,200			
	9,500		10,000		
27,000	9,500		10,200	27,500	
33,500	11,300		12,000	28,700	MD. 28
52,000	11,700		11,700	42,800	
	10,000		5,000		
	18,200		8,300		
		99,100			
		118,600			
		190,800			
	2,300		3,600		
29,600	2,800		4,400	40,100	MD. 189
39,000				52,000	
	5,700		14,900		
	8,300		19,700		
		99,100			
	3,600		9,500		
25,800	3,100		16,000	38,000	
36,300	3,200		17,400	40,400	
38,700	15,200		21,500	52,200	
	13,300		12,500		
	14,500		13,800		
		122,700			
		140,000			
		219,300			
					MONTROSE

LEGEND

1980 A.D.T.
2010 NO BUILD
2010 BUILD

MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I - 270
FROM I - 270 Y (SPUR) TO MD. RTE. 121
TRAFFIC DATA
1980 AND 2010 A.D.T.

72



* WHERE RIGHT OF WAY IS RESTRICTED, THE GRADING ON THE RAMPS IS REDUCED TO BE CONSISTENT WITH THE C-D GRADING.

THE DIMENSIONS SHOWN ARE FOR THE PURPOSE OF DETERMINING COST ESTIMATES AND ENVIRONMENTAL IMPACT, AND ARE SUBJECT TO CHANGE DURING THE FINAL DESIGN PHASE.

MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270

FROM I-270 Y (SPUR) TO MD. RTE. 121

TYPICAL SECTIONS

CONTRACT NO. M40I-152-372

NOT TO SCALE
PLATE 15

Traffic projections were developed for various HOV lane configurations. The amount of traffic that would be diverted to the HOV lanes is related to the time savings realized by the use of the HOV lanes and the distribution of the employment and residence locations. In the I-270 corridor, employment centers are scattered throughout the corridor as are residential areas. As shown by the origin-destination matrix developed, a relatively small percentage of traffic in the corridor is destined for the Washington central business district; therefore, a small percentage of traffic would be diverted to the HOV lanes. Commonality of origins and destinations is an important factor in the number of car pools formed and in the number of patrons utilizing mass transportation. When the Metro Line is opened to Shady Grove, a large number of CBD-oriented trips will be diverted to the rail line, further reducing the number of commuters that would be diverted to HOV lanes. Also, as development continues in the corridor and Metro is opened, the directional distribution of traffic will tend to become more evenly divided. Therefore, this alternate was eliminated from further study because the traffic service and capacity was not increased significantly due to the lack of demand for the express lanes.

A lane configuration of 3-2-2-3 was selected as the HOV alternate to be studied in more detail. Preliminary construction costs were developed for this alternate. The typical section proposed for this alternate is shown on the Typical Sections, Plate 15.

1. Advantages

a. Separates the long-distance travel from the existing and entering traffic at the interchanges, thereby increasing the efficiency of the through travel lanes.

b. Can be adapted easily to an HOV roadway treatment if it becomes suitable.

c. Increases the capacity of the I-270 roadway over the No Build Alternate, thereby reducing the severity and length of the congested periods.

74

2. Disadvantages

a. None of the existing bridges over I-270 can be utilized with this alternate due to the span lengths required.

b. There would not be sufficient demand for the express lanes to justify the construction of this alternate.

c. It is not easily adaptable to staged construction.

d. The use of the express lanes would create weaving and merging maneuvers necessary to gain access to these lanes.

e. Only four (4) lanes of the existing roadway could be utilized.

D. Continuous Collector-Distributor Roads (Preferred Alternate)

Collector-distributor (c-d) roads were studied at Montrose Road, MD 28, and MD 118 as a means of increasing the capacity of the interchanges and reducing the accident potential by removing the weaves, merges, and diverges from the main roadway. The lower design speed of the collector-distributor road (50 mph) allows the use of the 25 mph design ramps according to AASHTO criteria.

The Continuous Collector-Distributor Road Alternate was developed as a means of providing a relief roadway and connecting the various separate (c-d) roads at the individual interchanges. Access to and from the collector-distributor (c-d) roads and the I-270 roadways would be provided through the use of slip ramps at several locations along the route. The locations of these proposed slip ramps are shown on the Plan sheets, Plates 20 through 35.

Traffic projections for the Continuous C-D Alternate were developed by MD SHA. It was found that this Build Alternate would satisfy the demand anticipated from the master plans in the design year taking into consideration all proposed improvements to roads serving I-270.

A matrix of origins and destinations for the interchanges along I-270 was developed by the MD SHA for use in analyzing the operation of the collector-distributor roads. The locations of the slip ramps were determined through a traffic assignment and analysis of the weaves, merges, and diverges created both on the main roadways and the c-d roads. As much redundancy as possible

was built into the system to allow for driver error and to allow the traffic volumes to balance between the mainline and the c-d's.

It was determined from studying the traffic that the c-d roads would not be justified north of the MD 124/117 interchange; therefore, north of MD 124 this alternate would be identical to the 8 lane alternate.

The typical section used for the Continuous C-D Alternate is shown on the Typical Sections, Plate 15. Retaining walls will be studied wherever the grading limits extend beyond the existing right of way. Wherever parkland would be encroached on or existing structures would be affected by the grading, retaining walls could be provided except for Wooten Mill Park. See Section 4(f) Considerations.

Preliminary construction cost estimates were developed for this alternate.

1. Advantages

a. Separates the through travel from the existing and entering traffic at the interchanges. Most weaving, merge, and diverge maneuvers are removed from the through traffic, thereby increasing the efficiency of the through travel lanes.

b. Increases the capacity of I-270 to serve the traffic demand for the design year.

c. Can easily be adapted to staged construction.

d. The problem of maintaining traffic on I-270 is reduced under this alternate relative to the 8-Lane or Express Lane Alternates.

e. All of the existing roadways can be utilized.

f. The existing ramps can be utilized due to the lower design speed of the c-d roads.

2. Disadvantages

a. The typical section for this alternate is the widest section of the mainline alternates being considered, therefore

76

the roadway approaches closer to existing development than any other alternate. This alternate was retained for further study due to the increase in traffic capacity provided.

E. Ramp Metering

As the traffic volumes on an expressway increase to capacity, the travel speeds drop and traffic flow becomes unstable. The flow could break down at any time and become jammed flow in which the capacity drops significantly. The worst theoretical condition would occur when all traffic is stopped and the flow is 0 vehicles per hour. It has been found that the flow on the main roadway can be maintained at capacity by metering the on-ramps to a predetermined or continuously determined rate. The results of this metering are: 1) a main roadway that operates at capacity with a minimum of breakdowns in flow; 2) vehicles queuing on the ramp waiting to get onto the expressway since the demand exceeds the rate of flow at the ramps; 3) traffic diversions to alternate routes.

The feasibility of ramp metering was determined by studying the net results of the Metering Alternate in terms of vehicle hours of travel as compared to the unmetered alternates (8 lane alternate, No-Build or any other alternate). The total travel time in vehicle-hours produced by the metered and the unmetered alternates include expressway travel, queuing delays and travel diversions.

A computer model was used to analyze these various alternates involving ramp metering. The model has the capabilities of determining the maximum queue that will develop at each ramp, the traffic diverted, the metered rates at the ramps, the travel speeds on the expressway and the overall travel times for any metering and expressway scenerio.

1. Advantages

a. The main roadway will operate at capacity during the peak hours and congestion will be minimized.

b. The costs of a metering system will be considerably less than the construction of any of the build alternates described.

2. Disadvantages

a. Traffic will be diverted to other routes in the corridor, thereby increasing the traffic volumes and consequent congestion on those routes.

b. Traffic will be queued at the ramp signals waiting to enter the main roadway of I-270.

c. Overall travel time in vehicle hours will not be reduced in the corridor.

It was found that ramp metering was not feasible for the following reasons:

1. There are no net savings in vehicle hours of travel in the corridor with metering the 8-lane alternate under the design year traffic.
2. There is no excess demand on I-270 under the continuous collector-distributor road alternate, therefore ramp metering provides no advantage for the C-D Alternate.
3. There are significant benefits accrued to the highway users in the design year if the existing 6-lane roadway (No Build Alt.) were metered. There are no savings accrued when the existing 1980 traffic is analyzed. Therefore, the usefulness of ramp metering would begin sometime after 1985. Metering allows the roadway to operate efficiently but does not increase the capacity. When the 8-lane alternate without metering is compared to the 6-lane metered condition, there is a significant saving in vehicle hours with widening the roadway.
4. If all on-ramps from MD 118 to Montrose Road were metered, affecting all drivers from Montgomery County using I-270, while the traffic using I-270 from north of MD 118 would be unrestricted, all drivers from the north would benefit from the ramp metering with no consequential offsetting diversions or queuing delays such as those confronting the Montgomery County drivers.

F. Results of Studies

Table 10 describes the main characteristics of the various main line alternates and compares the alternates. The entry for

78

the "with retaining walls" condition indicates the right of way and construction costs for the alternate in which retaining walls are used wherever the grading would extend beyond the existing right of way. A site by site analysis is being performed to determine where retaining walls will be recommended.

The "without retaining walls" condition indicates the costs where no retaining walls would be provided except where they are needed to avoid relocation of residences.

TABLE 10
MAINLINE ALTERNATES

	<u>No Build</u>	<u>Eight Lanes</u>	<u>Express Lanes</u>	<u>Continuous C - D</u>
Use of Existing Roadway	6 Lanes	6 Lanes	4 Lanes	6 Lanes
Right-of-Way With Retaining Walls (acres)	-	30	52	39
Right-of-Way Required Without Retaining Walls	-	85	107	94
Total Construction Cost With Retaining Walls* (\$1000)	-	\$98,000	\$110,000	\$125,000
Total Construction Cost Without Retaining Walls* (\$1000)	-	\$81,000	\$ 96,000	\$110,000

*These estimates do not include costs of utility relocations, approach roadways, or storm water management facilities.

III INTERCHANGE ALTERNATES

A. General

Within the limits of our study there are eight interchanges, all of which would be affected by improvements to I-270. These effects are analyzed for each mainline alternate studied. In addition, several interchanges are analyzed with respect to projected traffic to determine possible means of improving the operation and increasing the capacity of the interchanges.

The interchanges at MD Rte. 189, I-370, Shady Grove Road and MD 124/117 are being designed under separate projects. The interchanges at Montrose Road, MD Rte. 28, MD Rte. 118, and MD Rte. 121 were analyzed with respect to possible improvements. In addition, studies were made to determine the feasibility of providing an interchange at Middlebrook Road and its effect on the MD Rte. 118 interchange.

American Association of State Highway and Transportation Officials (AASHTO) desirable standards will be used whenever possible. However if the use of these standards results in excessive property damage, right of way acquisition and construction costs then minimum AASHTO standards will be utilized. Wherever AASHTO desirable criteria are not met, the use of lesser criteria will be documented and methods to ameliorate the effects of the lesser design such as signing and increased acceleration or deceleration lanes will be addressed. The maximum feasible design criteria will be used at all locations.

Various alternates were studied at the interchanges listed above in order to improve traffic service, capacity, and safety. In all cases, completion of the interchanges was considered to relieve weaving and ramp congestion.

80

B. Montrose Road Interchange

The existing interchange of Montrose Road with I-270 is a cloverleaf interchange with two movements missing; northbound I-270 to westbound Montrose Road (Ramp C) and the return eastbound Montrose Road to southbound I-270 (Ramp G). These movements were anticipated in the original design plans and right-of-way was purchased but the ramps were not built initially. These missing movements are now accommodated by the use of left turns on Montrose Road.

1. Northbound Roadway (See Plate 16)

Provide a collector-distributor road separate from the northbound roadway. Complete the cloverleaf interchange by providing Ramp C.

a. Advantages:

1. Relieves Ramp F.
2. Eliminates left turn from Ramp F to westbound Montrose Rd.
3. Improves Level of Service of ramp and intersections.
4. Most weaving maneuvers and ramp merges and diverges are removed from the main roadway.
5. Ramp design speeds of 25 mph can be used for the loop ramps, thereby minimizing right of way acquisition and construction costs.

b. Disadvantages:

1. Additional right of way will be required.

2. Southbound roadway (See Plate 16)

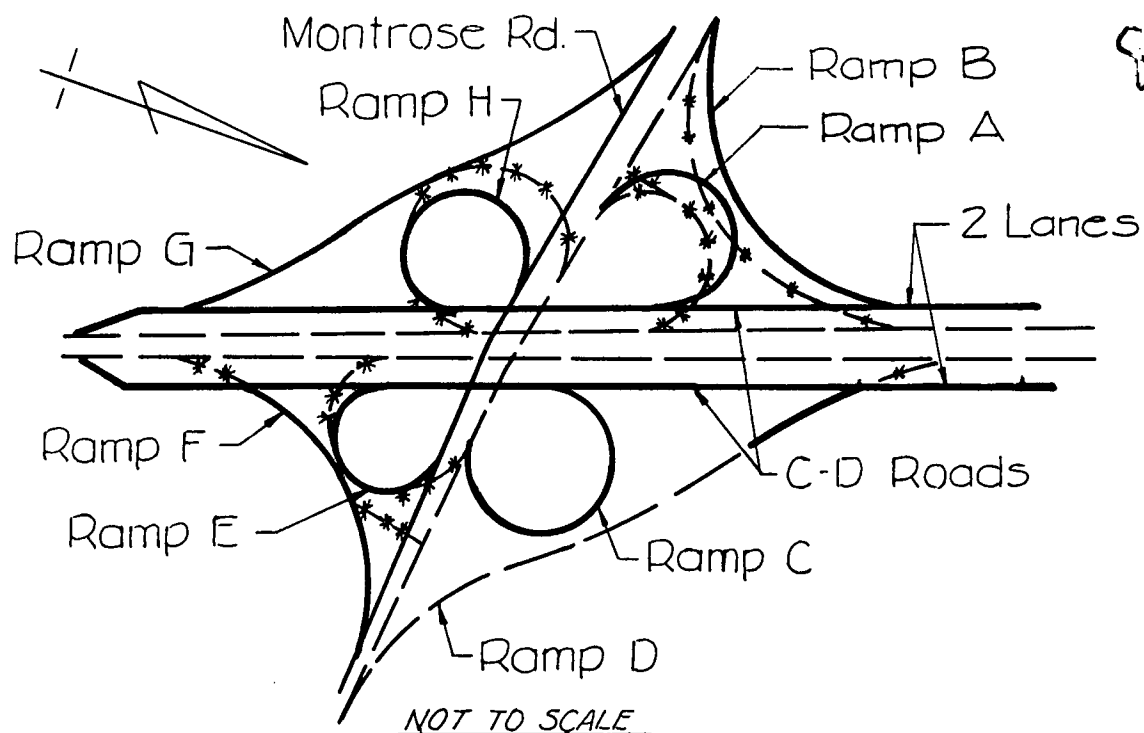
Provide a collector-distributor road separate from the southbound roadway and complete the full cloverleaf interchange by providing Ramp G. The existing ramps are rebuilt with larger radii.

a. Advantages:

1. Relieves Ramp A.
2. Eliminates the left turn from eastbound Montrose Road onto Ramp A.
3. Improves the Level of Service of the ramps, weaves, and intersections.
4. Most weaving maneuvers and ramp merges and diverges are removed from the main roadway.

b. Disadvantages:

1. Additional right of way will be required.
2. None of the existing ramps can be used.



	NO BUILD	BUILD
1. DESIGN SPEEDS	25/40	25/40
2. LEVEL OF SERVICE		
A) MERGE / DIVERGE	E/F	D/C
B) WEAVE	—	A/C
C) INTERSECTIONS	C	A
3. R/W REQUIRED (ACRE) W/RET. WALLS	—	6.3
4. R/W REQUIRED (ACRE) W/O RET. WALLS	—	16.6
5. RETAINING WALLS (LF)	—	14,900
6. TOTAL CONSTR COST W/RET. WALLS (\$1,000)	—	24,500
7. TOTAL CONSTR COST W/O RET WALLS (\$1,000)	—	17,000

LEGEND

- — — — — EXISTING ROADWAYS
- RAMP C IMPROVEMENTS TO INTERCHANGE
- *** EXISTING ROADWAYS TO BE REMOVED

MARYLAND STATE HIGHWAY ADMINISTRATION

IMPROVEMENTS TO I - 270

FROM I - 270 Y (SPUR) TO MD. RTE. 121

**INTERCHANGE ALTERNATE
MONTROSE ROAD**

CONTRACT NO. M 401-152-372

PLATE 16

82

C. MD Rte. 28 Interchange

The existing interchange of MD Rte. 28 with I-270 is a partial cloverleaf with no movements provided in the northwest or southeast quadrants. Right-of-way for the future provision of the movements needed to complete the cloverleaf interchange was provided.

1. Northbound Roadway (See Plate 17)

Provide a collector-distributor road separate from the northbound roadway and behind the piers of the existing bridge. Construct the missing ramps E and F to provide a full cloverleaf interchange.

a. Advantages:

1. Relieves Ramps A and B.
2. Left turns are eliminated on MD Rte. 28, east of I-270.
3. Levels of Service on I-270 and MD Rte. 28 are improved.
4. Access can be provided from Ramp E to Nelson Street at a signalized intersection.
5. The weaving maneuvers and ramp merges/diverges are removed from the northbound roadway, thereby providing higher Levels of Service
6. The spans of the existing bridge over I-270 can be utilized.

b. Disadvantages:

1. Seven residences must be acquired in order to eliminate access points along Ramps A and B.
2. Additional right-of-way will be required.
3. Almost none of the existing ramps can be utilized.
4. The lateral clearances and shoulder widths under the existing spans of the bridges over I-270 will be less than standard with the 8 lane roadway.

2. Southbound Roadway (See Plate 17)

Provide a collector-distributor road separate from the southbound roadway. A full cloverleaf interchange is provided by constructing Ramps G and H.

a. Advantages:

1. Ramps C and D are relieved by Ramps G and H.
2. Two left turns are eliminated on MD Rte. 28, thereby improving the Levels of Service both on MD Rte 28 and the ramps.
3. All weaving maneuvers and ramp merges/diverges are removed from the southbound roadway of I-270, thereby improving the Level of Service on I-270.
4. The mainline spans of the existing bridge can be used.

83

b. Disadvantages:

1. Additional right of way is required.
2. Ramps G and H encroach on the floodplain of Watts Branch.
3. If the bridge spans over I-270 are utilized, the lateral clearances and shoulder widths under the bridge for the 8-lane roadway would be less than standard.

D. MD Rte. 118 Interchange

1. Northbound Roadway (See Plate 18)

Provide a collector-distributor (C-D) road separate from the northbound roadway of I-270. The C-D road can be provided behind the existing pier adjacent to the northbound roadway. The fourth lane of I-270 northbound can be eliminated approximately 2,000 feet north of the two-lane exit to the C-D road.

a. Advantages:

1. The weaving maneuver, ramp merges, and diverges are removed from the northbound roadway, thereby improving the Level of Service on I-270.
2. The existing bridge over I-270 can be used.

b. Disadvantages:

1. The design of all the ramps are below AASHTO desirable criteria of 30 mph.
2. If the existing bridge is used, the lateral clearances and shoulder widths for the 8-lane roadway under the bridge would be less than standard.
3. Additional right of way is required.

2. Southbound Roadway (See Plate 18)

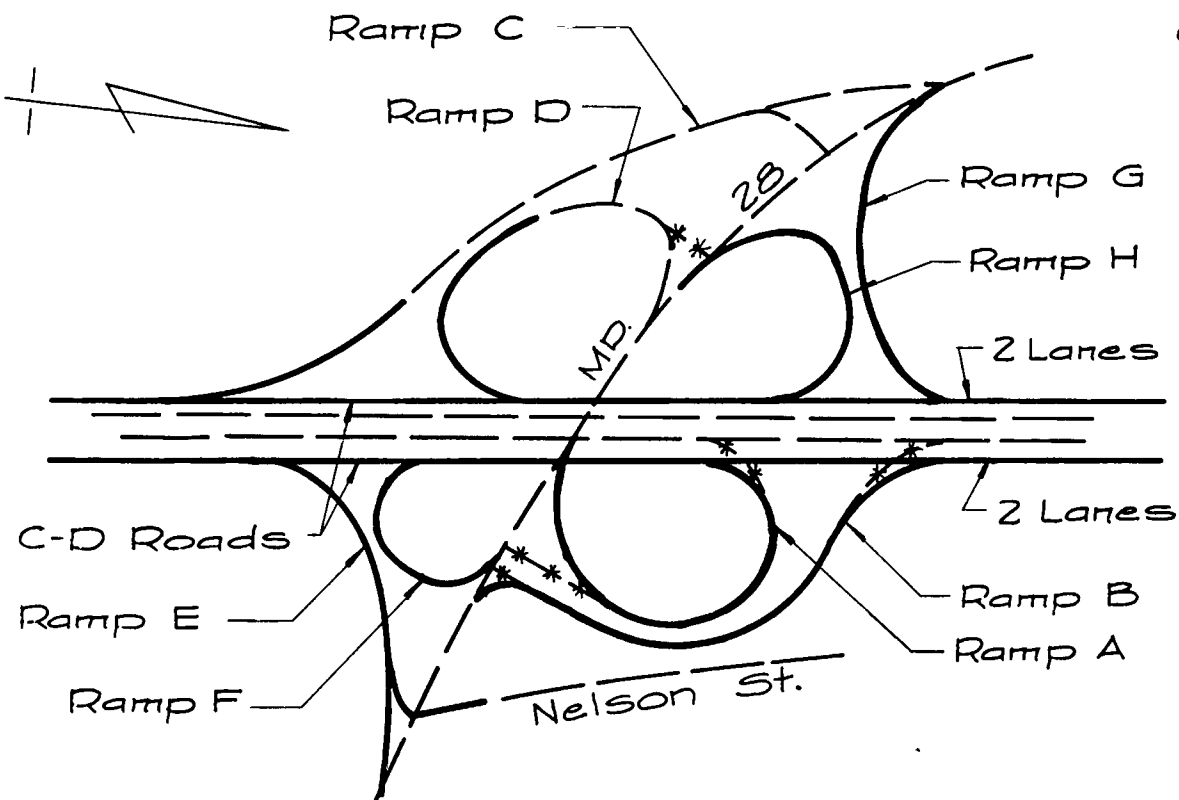
Provide a collector-distributor road separate from the southbound roadway. Utilize existing ramps.

a. Advantages

1. The weaving maneuver, ramp merges, and diverges are removed from the southbound roadway, thereby improving the Level of Service on I-270.
2. The fourth lane can be added south of the interchange.
3. The existing bridge can be used.

b. Disadvantages:

1. Additional right of way is required.
2. The design of the ramps is less than AASHTO desirable criteria of 30 mph.



	NO BUILD	BUILD
1. DESIGN SPEEDS	25/40	25/40
2. LEVEL OF SERVICE		
A) MERGE / DIVERGE	F/E	C/D
B) WEAVE	-	B/C
C) INTERSECTIONS	D	A/D
3. R/W REQUIRED (ACRE) W/RET. WALLS	0	8.1
4. R/W REQUIRED (ACRE) W/O RET. WALLS	-	18.7
5. RETAINING WALLS (L.F.)	-	16,600
6. TOTAL CONSTR COST W/RET. WALLS (\$1,000)	-	26,000
7. TOTAL CONSTR COST W/O RET. WALLS (\$1,000)	-	23,500

LEGEND

- EXISTING ROADWAYS
 IMPROVEMENTS TO INTERCHANGE
 EXISTING ROADWAYS TO BE REMOVED

MARYLAND STATE HIGHWAY ADMINISTRATION

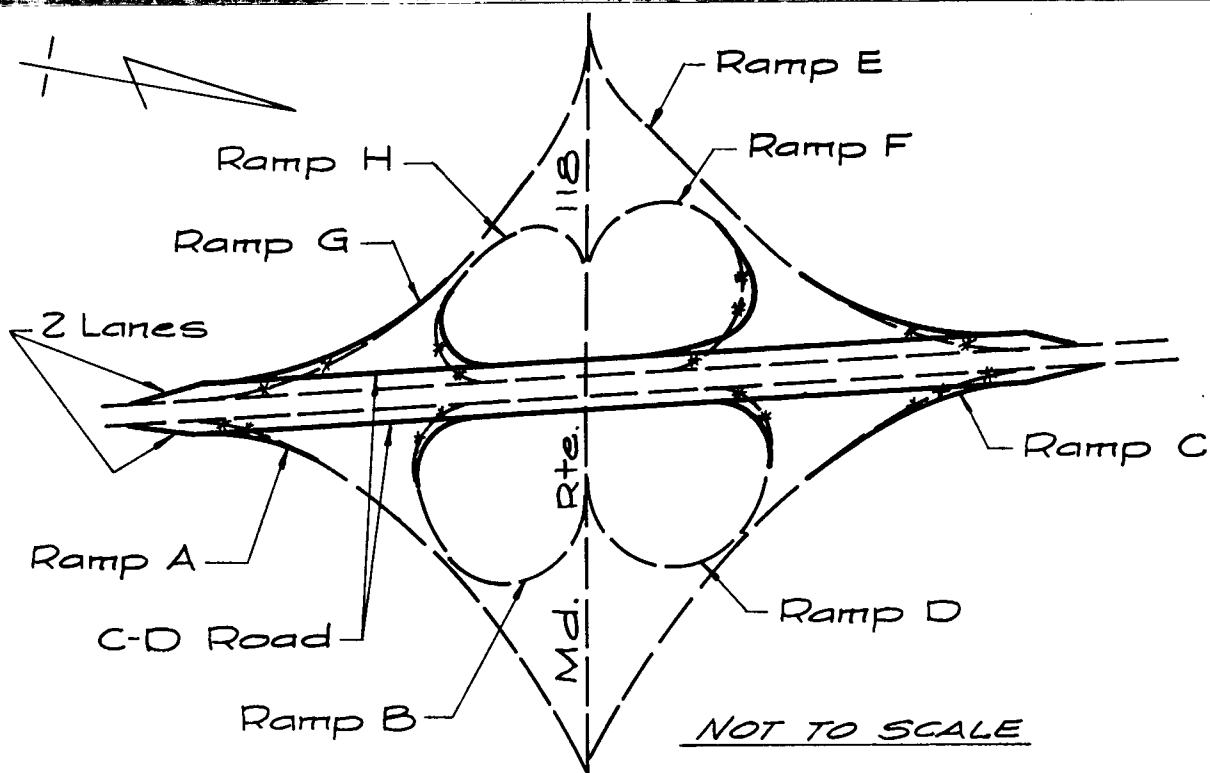
IMPROVEMENTS TO I-270

FROM I-270Y (SPUR) TO MD. RTE. 121

INTERCHANGE ALTERNATE
MD. 28

CONTRACT NO. M 40I-152-372

PLATE 17



	NO BUILD	BUILD
1. DESIGN SPEEDS	25/50	25/50
2. LEVEL OF SERVICE		
A) MERGE/DIVERGE	C/F	D/D
B) WEAVE	F	D
C) INTERSECTIONS	C/D	C/D
3. R/W REQUIRED (ACRE) W/ RET. WALLS	0	0.3
4. R/W REQUIRED (ACRE) W/O RET. WALLS	0	5.0
5. RETAINING WALLS (LF)	—	10,000
6. TOTAL CONSTR. COST W/ RET. WALLS (\$1,000)	—	21,000
7. TOTAL CONSTR. COST W/O RET. WALLS (\$1,000)	—	15,000

LEGEND

- EXISTING ROADWAYS
- IMPROVEMENTS TO INTERCHANGE
- RAMP C
- *** EXISTING ROADWAYS TO BE REMOVED

MARYLAND STATE HIGHWAY ADMINISTRATION

IMPROVEMENTS TO I-270

FROM I-270Y (SPUR) TO MD. RTE. 121

INTERCHANGE ALTERNATE
MD. 118

CONTRACT NO. M 401-152-372

PLATE 1B

86

E. Middlebrook Road

A possible interchange at Middlebrook Road was studied as a means of relieving the MD Rte. 118 interchange and improving traffic circulation within Germantown. By providing an additional access to I-270 at Middlebrook Road, traffic on MD Rte. 118 in the area of the interchange would decrease. It was found that with the Middlebrook Road interchange, significantly more traffic could be accommodated in Germantown than with only the MD Rte. 118 interchange.

The spacing between Middlebrook Road and MD Rte. 118 is 4,000 feet, below the desirable spacing of interchanges on an interstate highway. Therefore, the alternates studied are partial interchanges at Middlebrook Road oriented to the south. In this way there would be no weaving movements created between the Middlebrook Road and MD Rte. 118 interchanges along I-270.

The traffic operation of MD Rte. 118 was reviewed with the provision of the interchange at Middlebrook Road. It was found that the fourth lane on I-270 is not needed north of Middlebrook Road and the existing interchange at MD Rte. 118 would operate at an acceptable Level of Service when an interchange is introduced at Middlebrook Road. Montgomery County has programmed Middlebrook Road to be widened to a four-lane facility between MD 118 and MD 355.

1. Northbound Roadway (See Plate 19)

Alternate 7: Provide access from the northbound roadway to Middlebrook Road east and westbound. The traffic for both Ramps K and L at Middlebrook Road are taken off the northbound roadway together on a 2-lane roadway separate from the mainline.

The fourth lane is carried 2,000 feet downstream from the takeoff at the ramps and then dropped.

a. Advantages:

1. Relieves both Ramps A and D at the MD Rte. 118 interchange.
2. Improves the operation of the weave at MD Rte. 118.

87

3. Relieves MD Rte. 118 as a major artery of Germantown by providing another access to I-270.
4. No construction is needed at the MD Rte. 118 interchange.
5. The ramp traffic is separated from the northbound traffic on a partial collector-distributor road, thereby reducing confusion at this diverge point.
6. The fourth lane of the northbound roadway can be dropped just north of Middlebrook Road.

b. Disadvantages:

1. Additional right of way is required.
2. Middlebrook Road must be constructed as a 4-lane divided roadway from MD Rte. 118 to MD Rte. 355.

2. Southbound Roadway (See Plate 19)

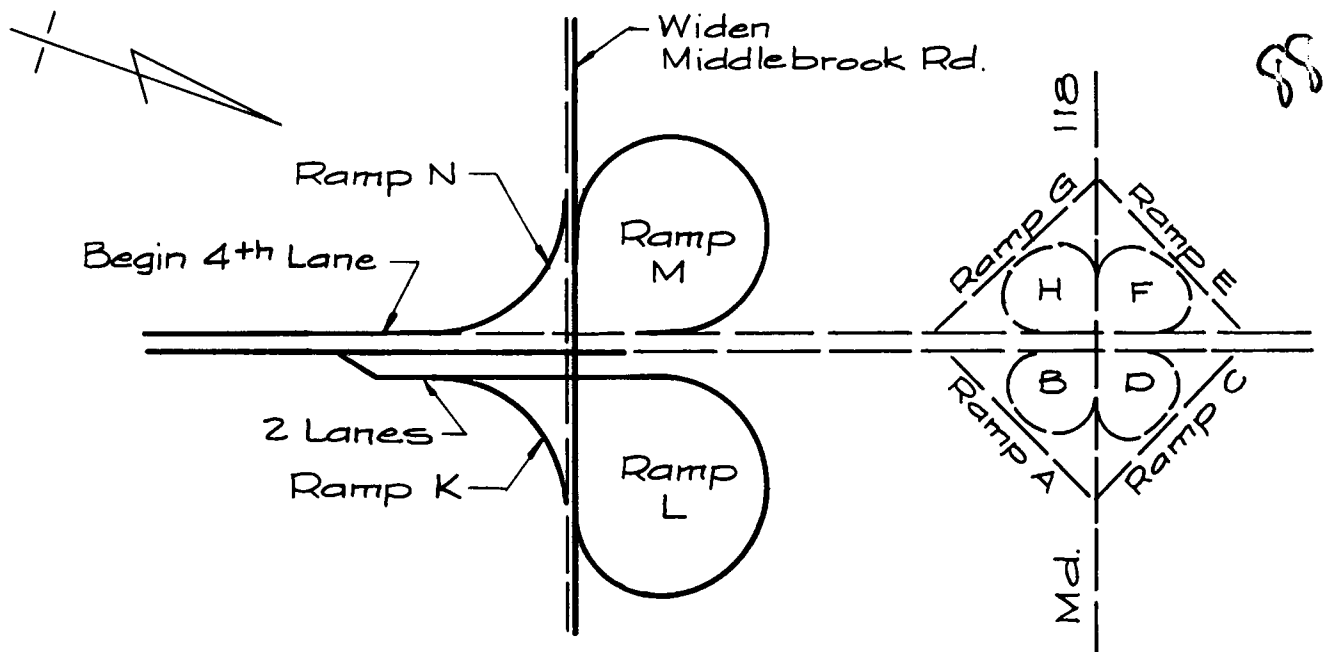
Provide access from east and westbound Middlebrook Road to southbound I-270 by means of loop Ramp M and Ramp N. The fourth lane on the southbound roadway will begin as the acceleration lane for Ramp N. Waring Station Road will be relocated outside Ramp N to connect Middlebrook Road west of Ramp N.

a. Advantages:

1. Relieves Ramps G and F at MD Rte. 118.
2. Improves the operation of the weave at MD Rte. 118.
3. Relieves MD Rte. 118 by providing another access to I-270.
4. No construction is needed at the MD Rte. 118 interchange.
5. The fourth lane on I-270 begins south of Middlebrook Road.

b. Disadvantages:

1. Additional right of way is required.
2. Middlebrook Road must be constructed as a 4-lane divided roadway from MD Rte. 118 to MD Rte. 355.
3. The power substation in the southwest quadrant may have to be relocated.
4. Waring Station Road must be relocated.



NOT TO SCALE

	NO BUILD	BUILD
1. DESIGN SPEEDS	—	30/60
2. LEVEL OF SERVICE	—	C/C
A) MERGE/DIVERGE	—	D/E
B) WEAVE	—	C
C) INTERSECTIONS = AT MIDDLEBROOK RD.	—	C
AT MD. 118	—	C
3. R/W REQUIRED (ACRE) W/RET. WALLS	—	23.0
4. R/W REQUIRED (ACRE) W/O RET. WALLS	—	34.6
5. RETAINING WALLS (LF)	—	15,500
6. TOTAL CONSTR. COST W/RET. WALLS (\$1,000)	—	26,500
7. TOTAL CONSTR. COST W/O RET. WALLS (\$1,000)	—	21,500

LEGEND

— — — — — EXISTING ROADWAYS

 IMPROVEMENTS TO INTERCHANGE

RAMP K

MARYLAND STATE HIGHWAY ADMINISTRATION

IMPROVEMENTS TO I-270

FROM I-270Y (SPUR) TO MD. RTE 121

INTERCHANGE ALTERNATE
MIDDLEBROOK RD./ MD. 118





CONTRACT NO. M 40I-152-372

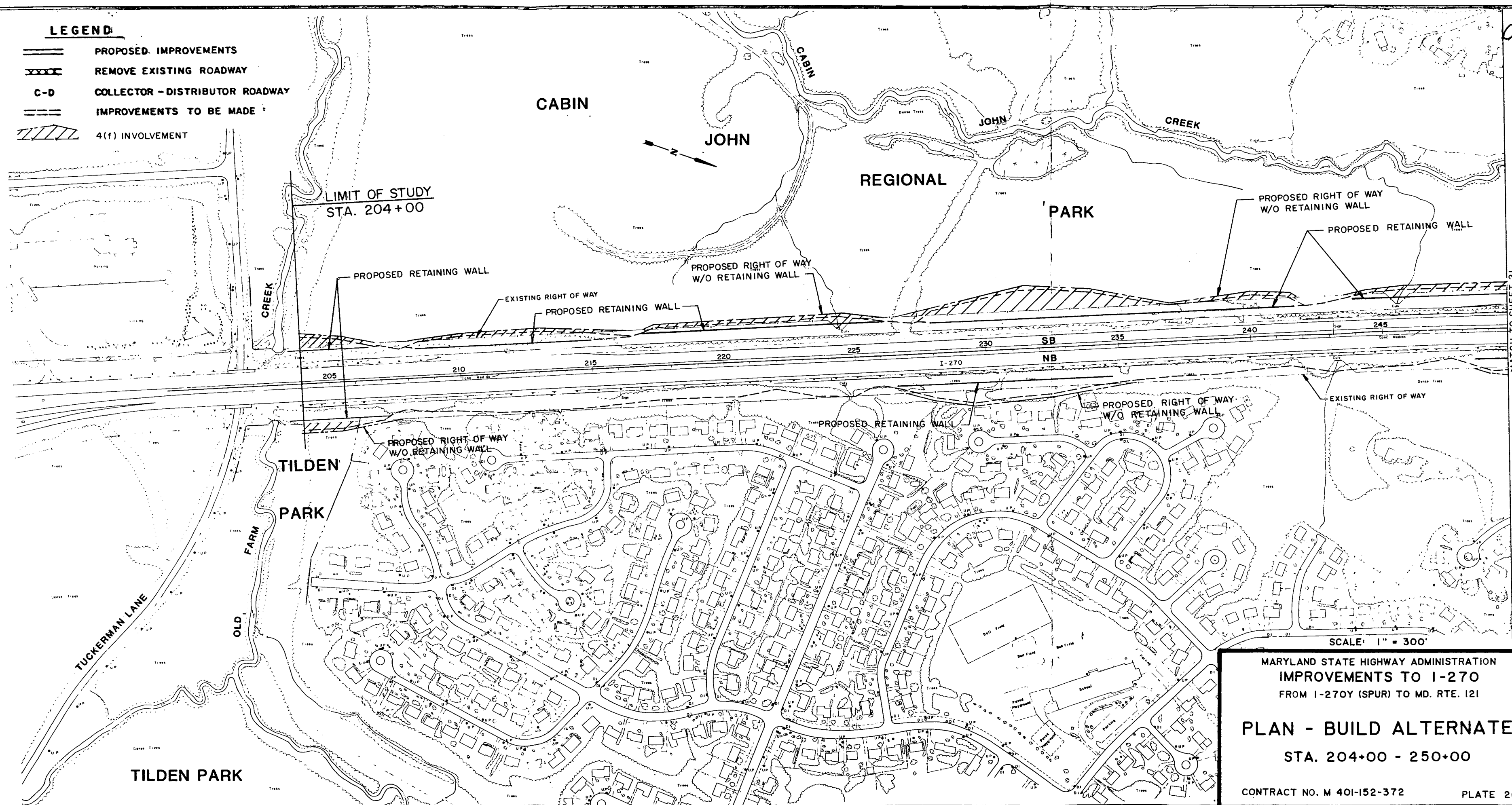
PLATE 19

F. MD Rte. 121 Interchange

Traffic analysis indicates that the existing interchange would operate at an acceptable Level of Service through the design year. Therefore, no improvements are required to provide an acceptable Level of Service.

LEGEND

-  PROPOSED IMPROVEMENTS
-  REMOVE EXISTING ROADWAY
- C-D** COLLECTOR - DISTRIBUTOR ROADWAY
-  IMPROVEMENTS TO BE MADE
-  4(f) INVOLVEMENT

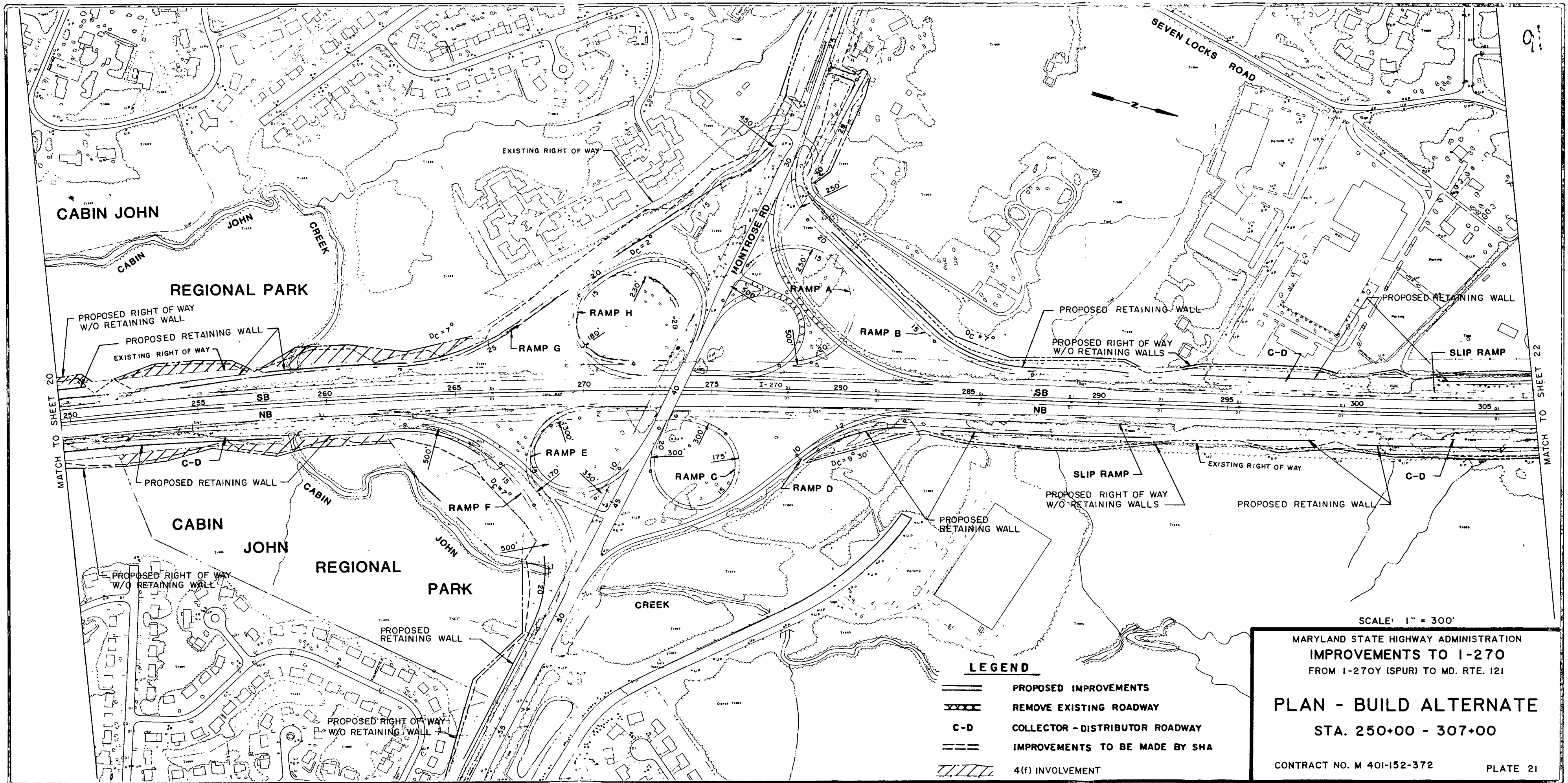


MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270Y (SPUR) TO MD. RTE. 121

PLAN - BUILD ALTERNATE
STA. 204+00 - 250+00

CONTRACT NO. M 40I-152-372

PLATE 20

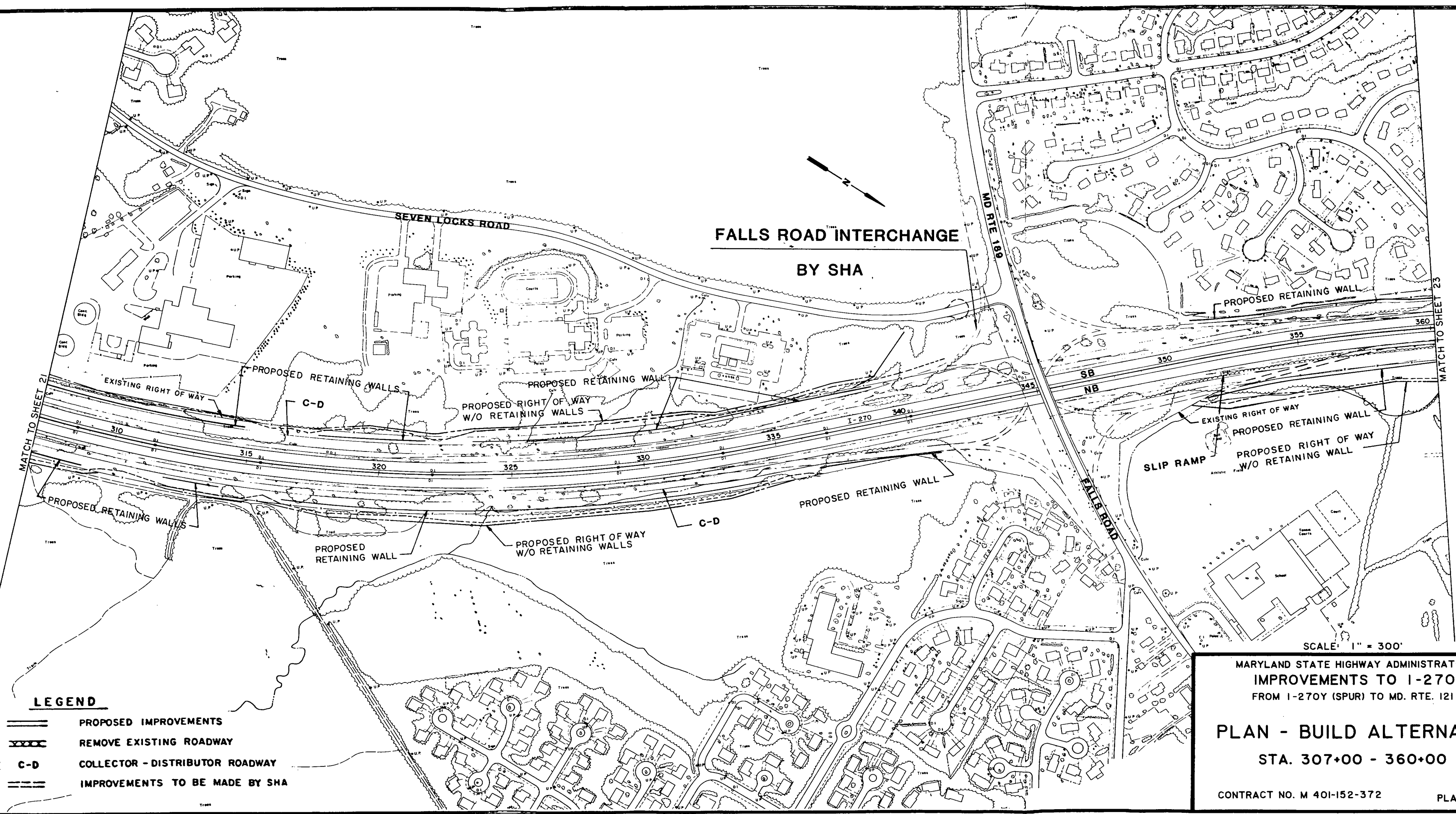


MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270Y (SPUR) TO MD. RTE. 121

PLAN - BUILD ALTERNATE
STA. 250+00 - 307+00

CONTRACT NO. M 401-152-372

PLATE 21



LEGEND

- PROPOSED IMPROVEMENTS
- REMOVE EXISTING ROADWAY
- C-D COLLECTOR - DISTRIBUTOR ROADWAY
- IMPROVEMENTS TO BE MADE BY SHA

MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270Y (SPUR) TO MD. RTE. 121

PLAN - BUILD ALTERNATE
STA. 307+00 - 360+00

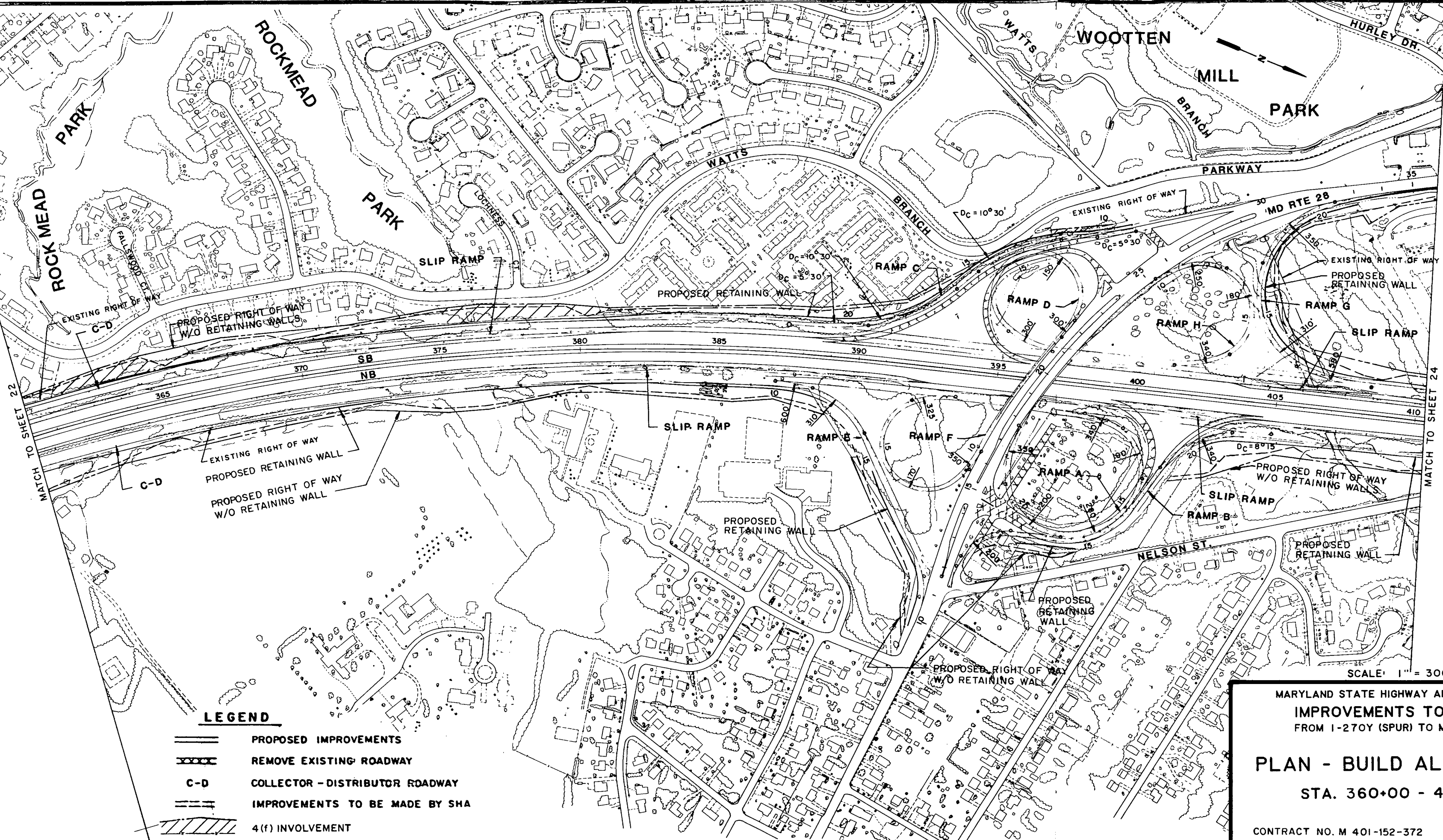
CONTRACT NO. M 401-152-372

PLATE 22

93

MATCH TO SHEET 22

MATCH TO SHEET 24



LEGEND

- PROPOSED IMPROVEMENTS
- REMOVE EXISTING ROADWAY
- COLLECTOR - DISTRIBUTOR ROADWAY
- IMPROVEMENTS TO BE MADE BY SHA
- 4(f) INVOLVEMENT

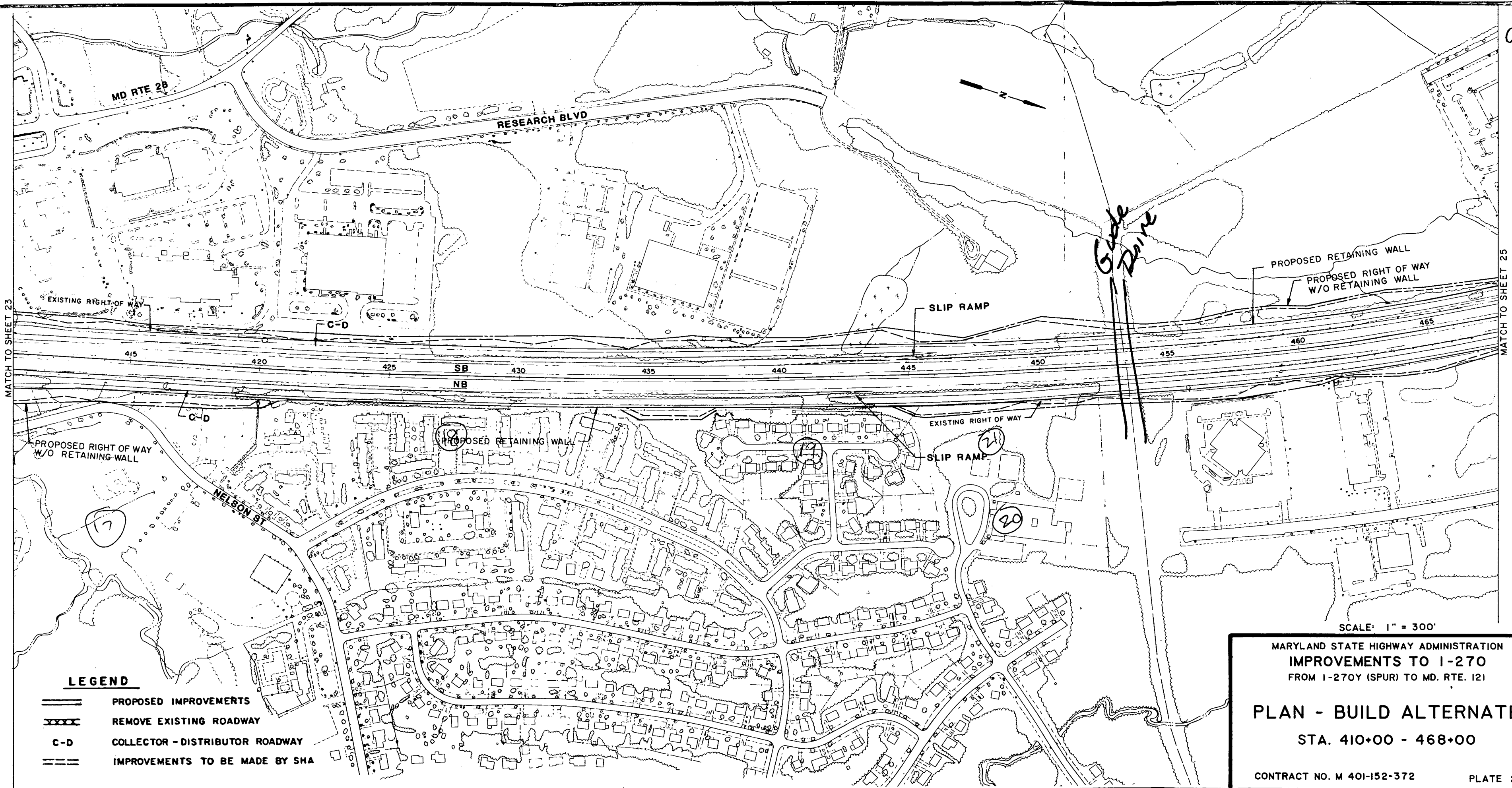
SCALE: 1" = 300'

MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270Y (SPUR) TO MD. RTE. 121

PLAN - BUILD ALTERNATE
STA. 360+00 - 410+00

CONTRACT NO. M 401-152-372

PLATE 23



LEGEND

- ===== PROPOSED IMPROVEMENTS
- REMOVE EXISTING ROADWAY
- C-D COLLECTOR - DISTRIBUTOR ROADWAY
- ===== IMPROVEMENTS TO BE MADE BY SHA

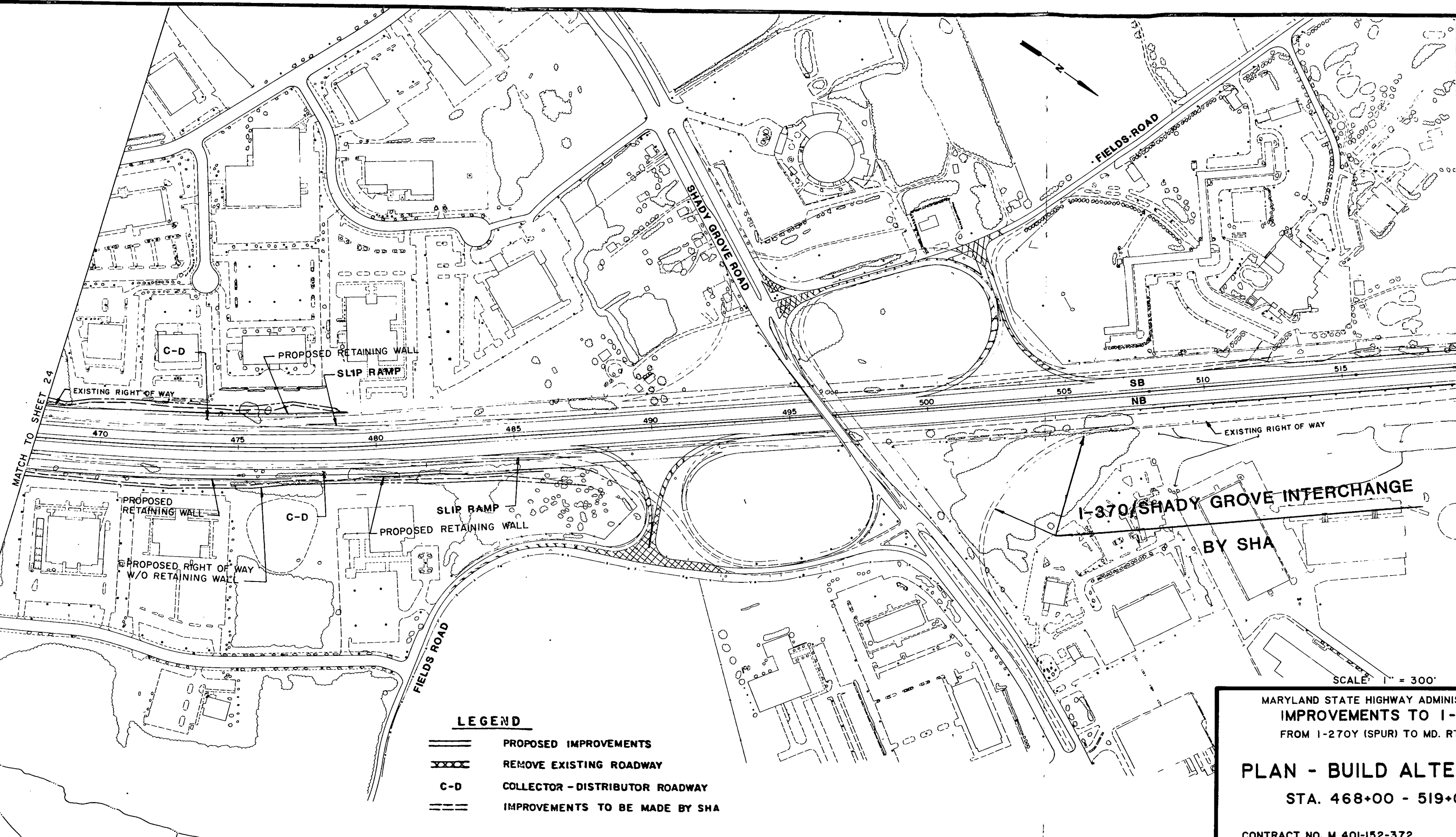
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MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270Y (SPUR) TO MD. RTE. 121

PLAN - BUILD ALTERNATE
STA. 410+00 - 468+00

MATCH TO SHEET 24

MATCH TO SHEET 26



LEGEND

- PROPOSED IMPROVEMENTS
- REMOVE EXISTING ROADWAY
- C-D COLLECTOR - DISTRIBUTOR ROADWAY
- IMPROVEMENTS TO BE MADE BY SHA

SCALE: 1" = 300'

MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270Y (SPUR) TO MD. RTE. 121

PLAN - BUILD ALTERNATE
STA. 468+00 - 519+00

CONTRACT NO. M 401-152-372

PLATE 25

96

MUDDY BRANCH PARK

PROPOSED RETAINING WALL
FOR I-370 INTERCHANGE

I-370 INTERCHANGE

BY SHA

SLIP RAMP

PROPOSED RETAINING WALL

SUMMIT

HALL

PARK

SCALE: 1" = 300'

LEGEND

- ==== PROPOSED IMPROVEMENTS
- XXXX REMOVE EXISTING ROADWAY
- C-D COLLECTOR - DISTRIBUTOR ROADWAY
- == IMPROVEMENTS TO BE MADE BY SHA

MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270Y (SPUR) TO MD. RTE. 121

PLAN - BUILD ALTERNATE
STA. 519+00 - 576+00

CONTRACT NO. M 401-152-372

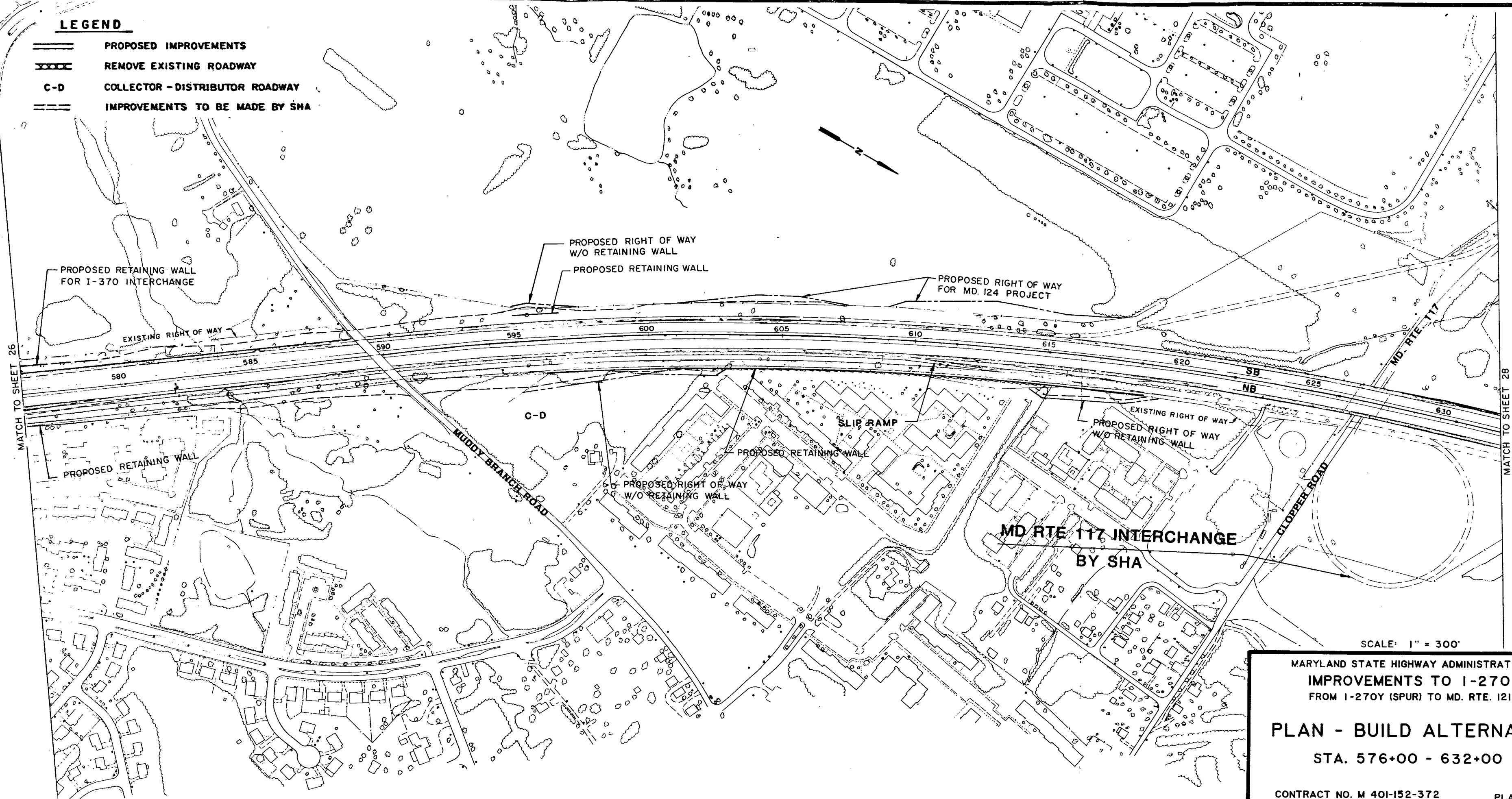
PLATE 26

MATCH TO SHEET 25

MATCH TO SHEET 27

LEGEND

- ===== PROPOSED IMPROVEMENTS
- REMOVE EXISTING ROADWAY
- C-D COLLECTOR - DISTRIBUTOR ROADWAY
- ===== IMPROVEMENTS TO BE MADE BY SHA



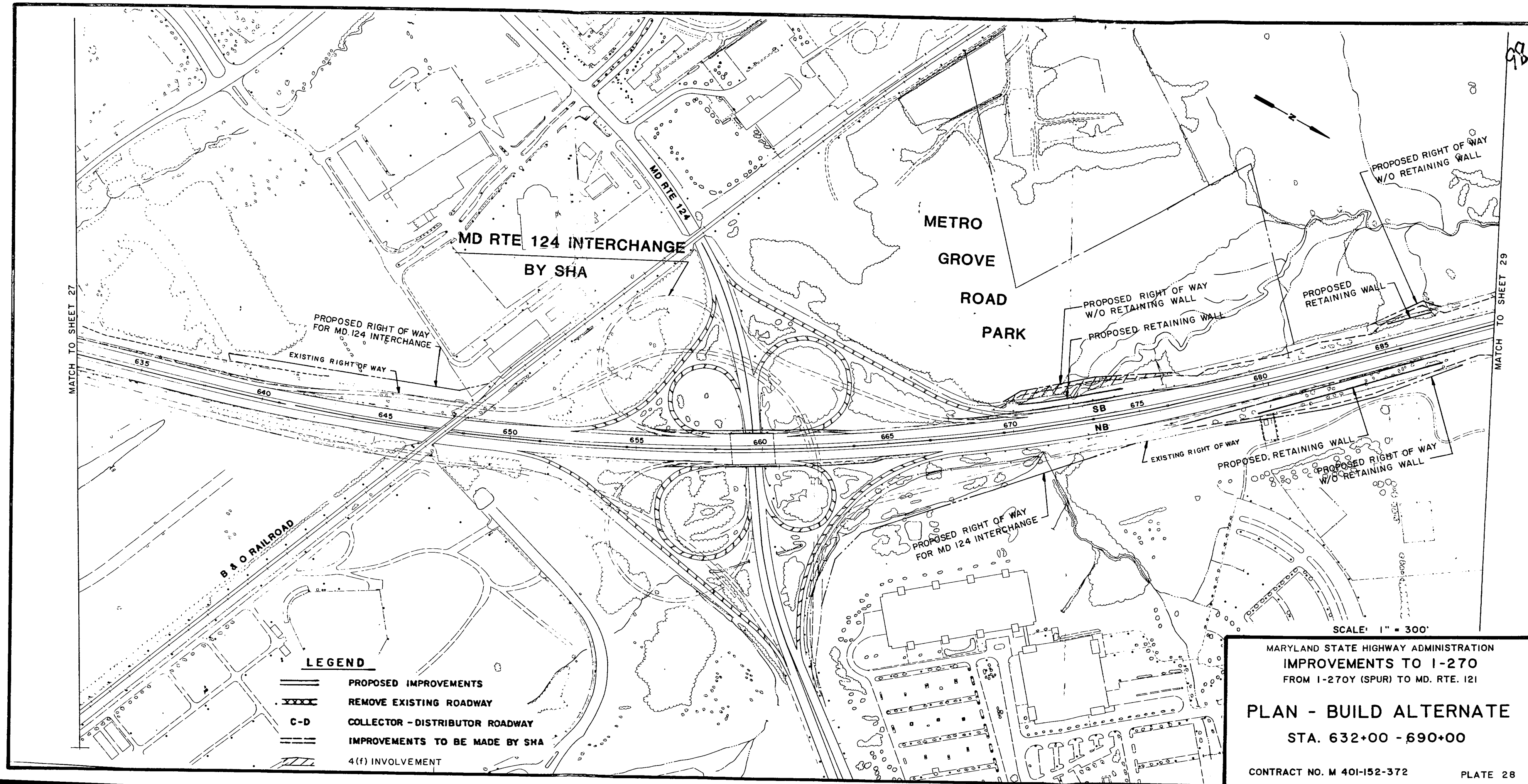
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MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270Y (SPUR) TO MD. RTE. 121

PLAN - BUILD ALTERNATE
STA. 576+00 - 632+00

CONTRACT NO. M 40I-152-372

PLATE 27



LEGEND

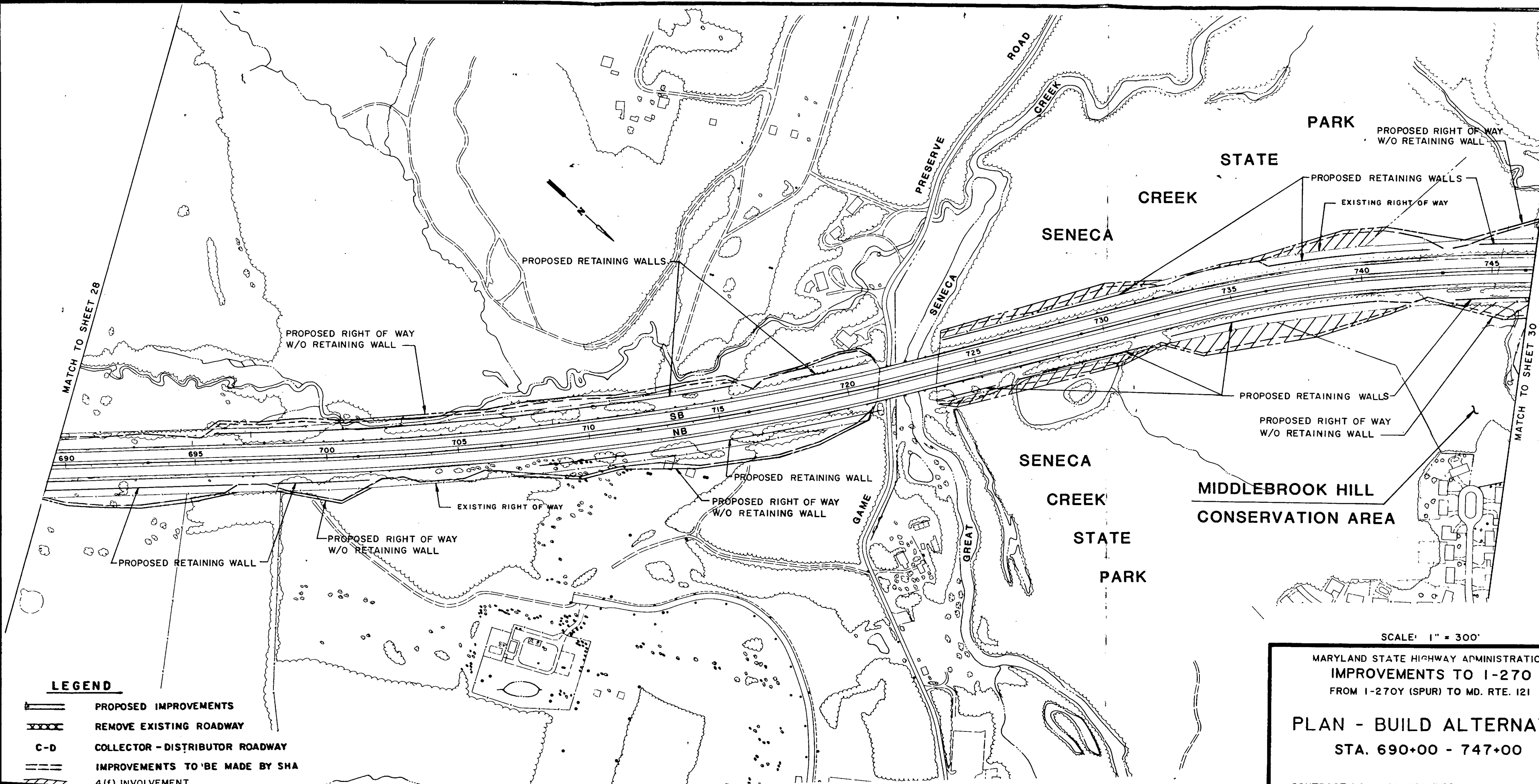
- ===== PROPOSED IMPROVEMENTS
- REMOVE EXISTING ROADWAY
- C-D COLLECTOR - DISTRIBUTOR ROADWAY
- ===== IMPROVEMENTS TO BE MADE BY SHA
- ////// 4(f) INVOLVEMENT

MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270Y (SPUR) TO MD. RTE. 121




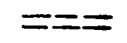

PLAN - BUILD ALTERNATE
STA. 632+00 - 690+00

CONTRACT NO. M 401-152-372

PLATE 28



LEGEND

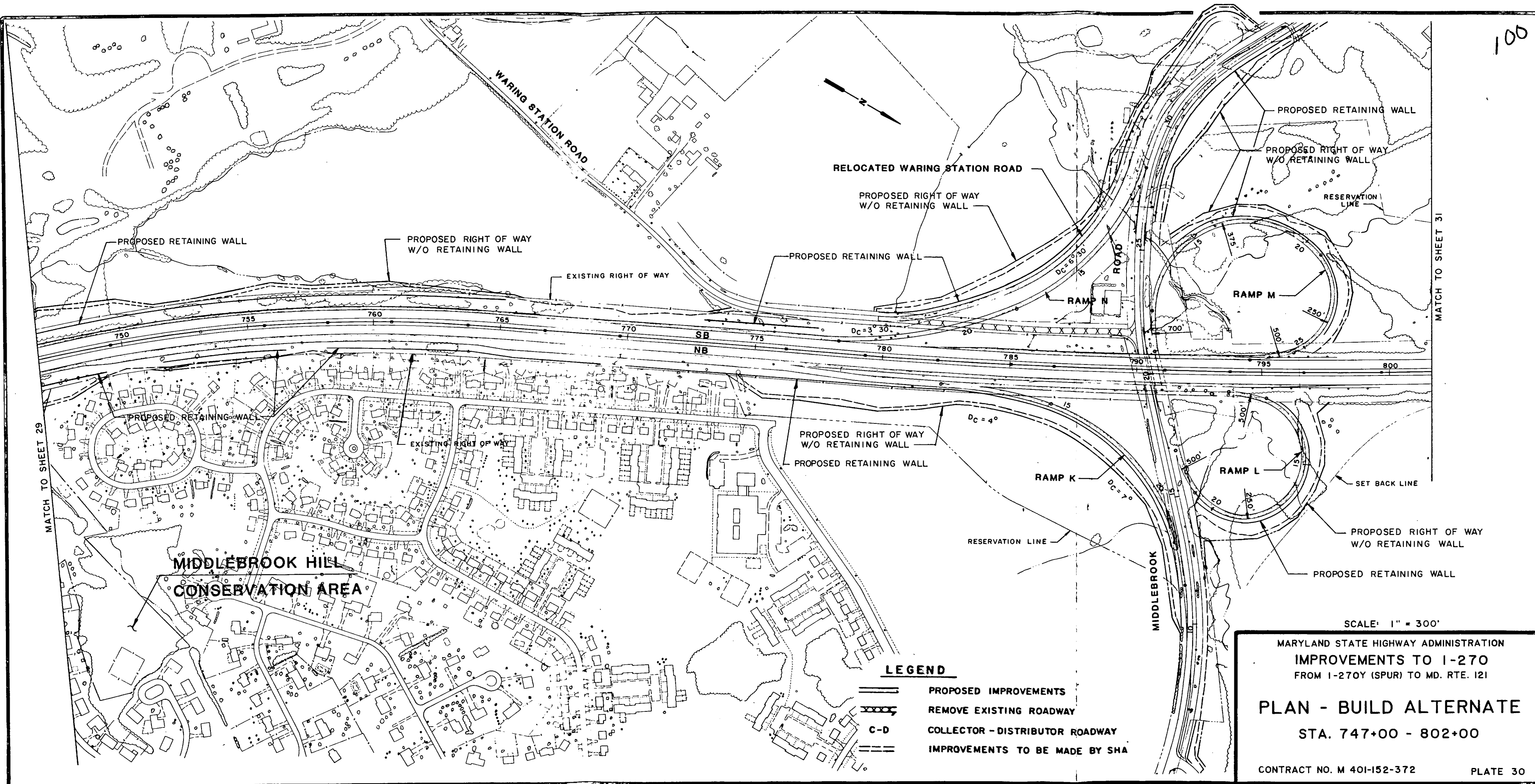
-  PROPOSED IMPROVEMENTS
-  REMOVE EXISTING ROADWAY
-  C-D COLLECTOR - DISTRIBUTOR ROADWAY
-  IMPROVEMENTS TO BE MADE BY SHA
-  4(f) INVOLVEMENT

SCALE: 1" = 300'

MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270Y (SPUR) TO MD. RTE. 121

PLAN - BUILD ALTERNATE
STA. 690+00 - 747+00

CONTRACT NO. M 401-152-372



LEGEND

- PROPOSED IMPROVEMENTS
- REMOVE EXISTING ROADWAY
- COLLECTOR - DISTRIBUTOR ROADWAY
- IMPROVEMENTS TO BE MADE BY SHA

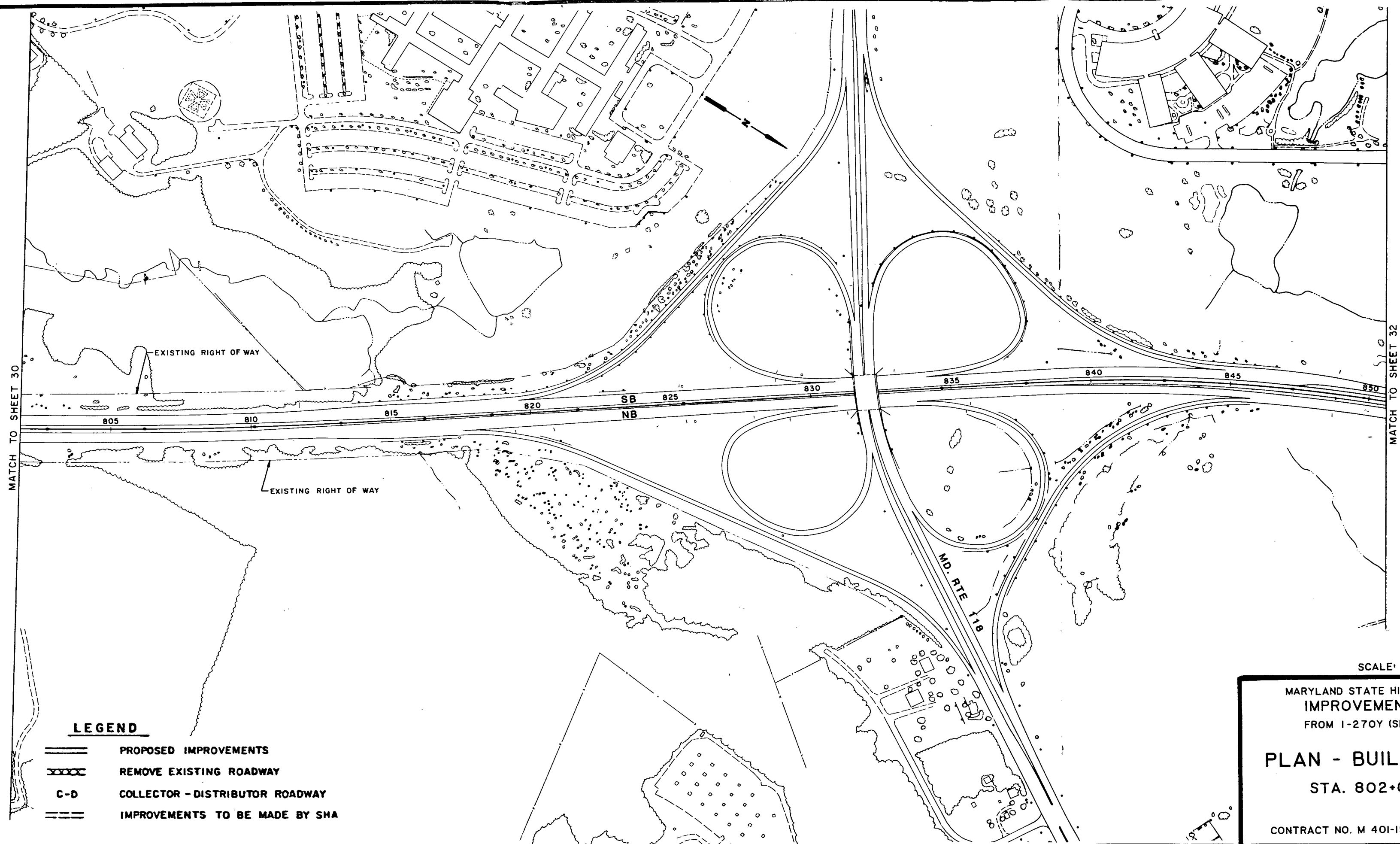
SCALE: 1" = 300'

MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270Y (SPUR) TO MD. RTE. 121

PLAN - BUILD ALTERNATE
STA. 747+00 - 802+00

CONTRACT NO. M 401-152-372

PLATE 30



LEGEND

- ==== PROPOSED IMPROVEMENTS
- XXXX REMOVE EXISTING ROADWAY
- C-D COLLECTOR - DISTRIBUTOR ROADWAY
- ==== IMPROVEMENTS TO BE MADE BY SHA

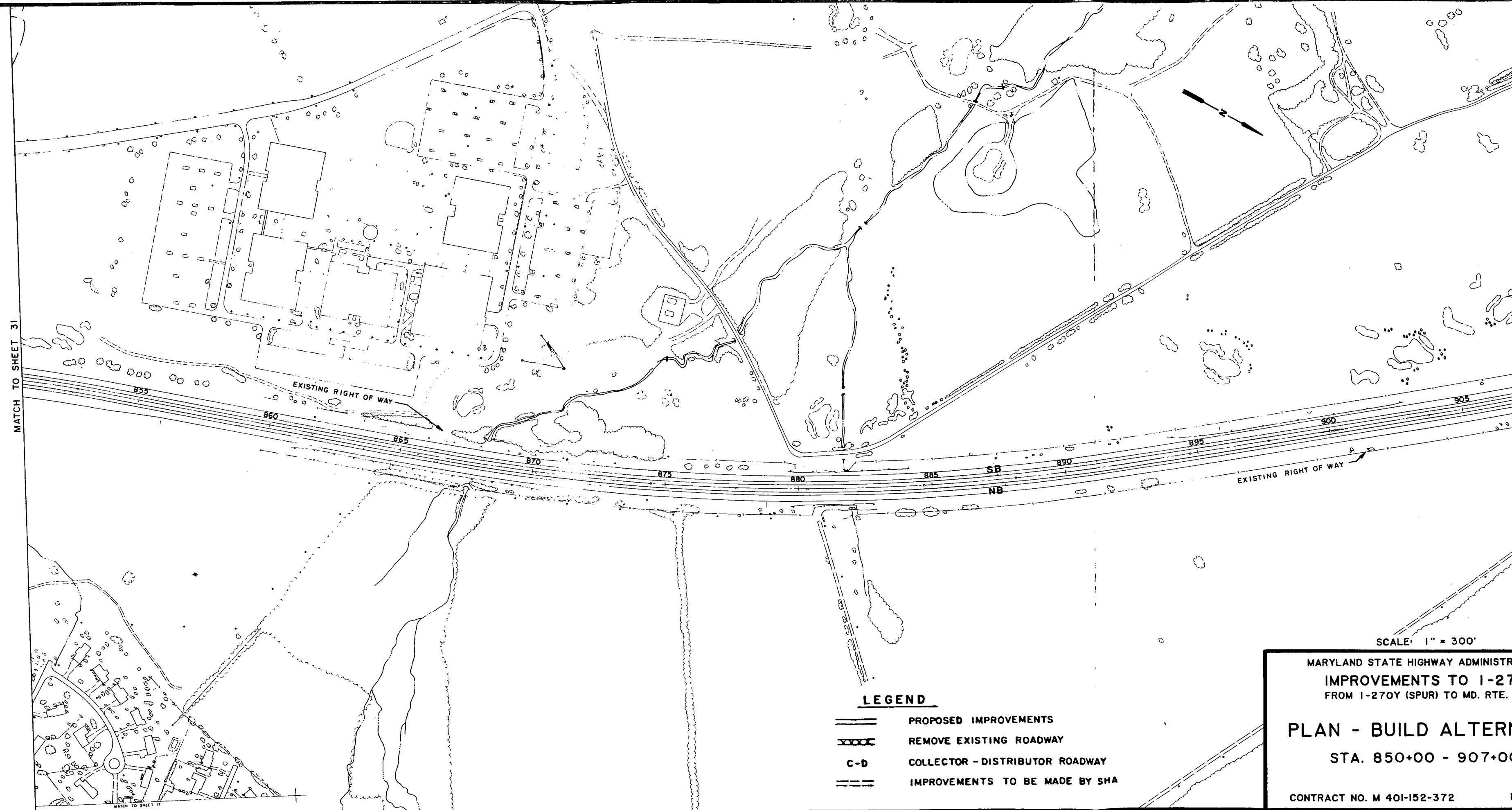
SCALE: 1" = 300'

MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270Y (SPUR) TO MD. RTE. 121

PLAN - BUILD ALTERNATE
STA. 802+00 - 850+00

CONTRACT NO. M 401-152-372

PLATE 31



LEGEND

- ===== PROPOSED IMPROVEMENTS
- REMOVE EXISTING ROADWAY
- C-D COLLECTOR - DISTRIBUTOR ROADWAY
- ===== IMPROVEMENTS TO BE MADE BY SHA

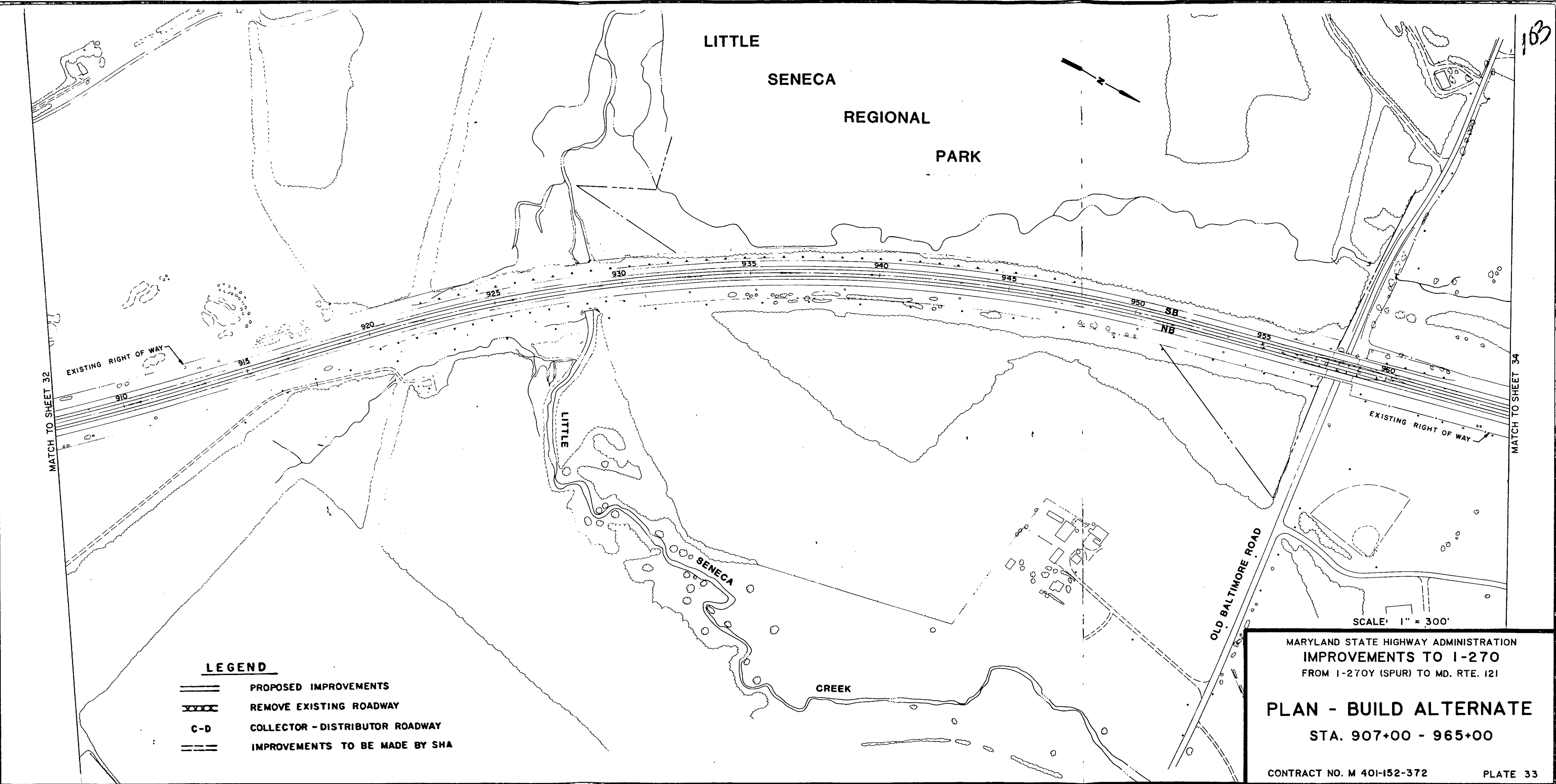
SCALE: 1" = 300'

MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270Y (SPUR) TO MD. RTE. 121

PLAN - BUILD ALTERNATE
STA. 850+00 - 907+00

CONTRACT NO. M 401-152-372

PLATE 32



LEGEND

- ===== PROPOSED IMPROVEMENTS
- REMOVE EXISTING ROADWAY
- C-D COLLECTOR - DISTRIBUTOR ROADWAY
- ===== IMPROVEMENTS TO BE MADE BY SHA

MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270Y (SPUR) TO MD. RTE. 121

PLAN - BUILD ALTERNATE
STA. 907+00 - 965+00

CONTRACT NO. M 40I-152-372 PLATE 33

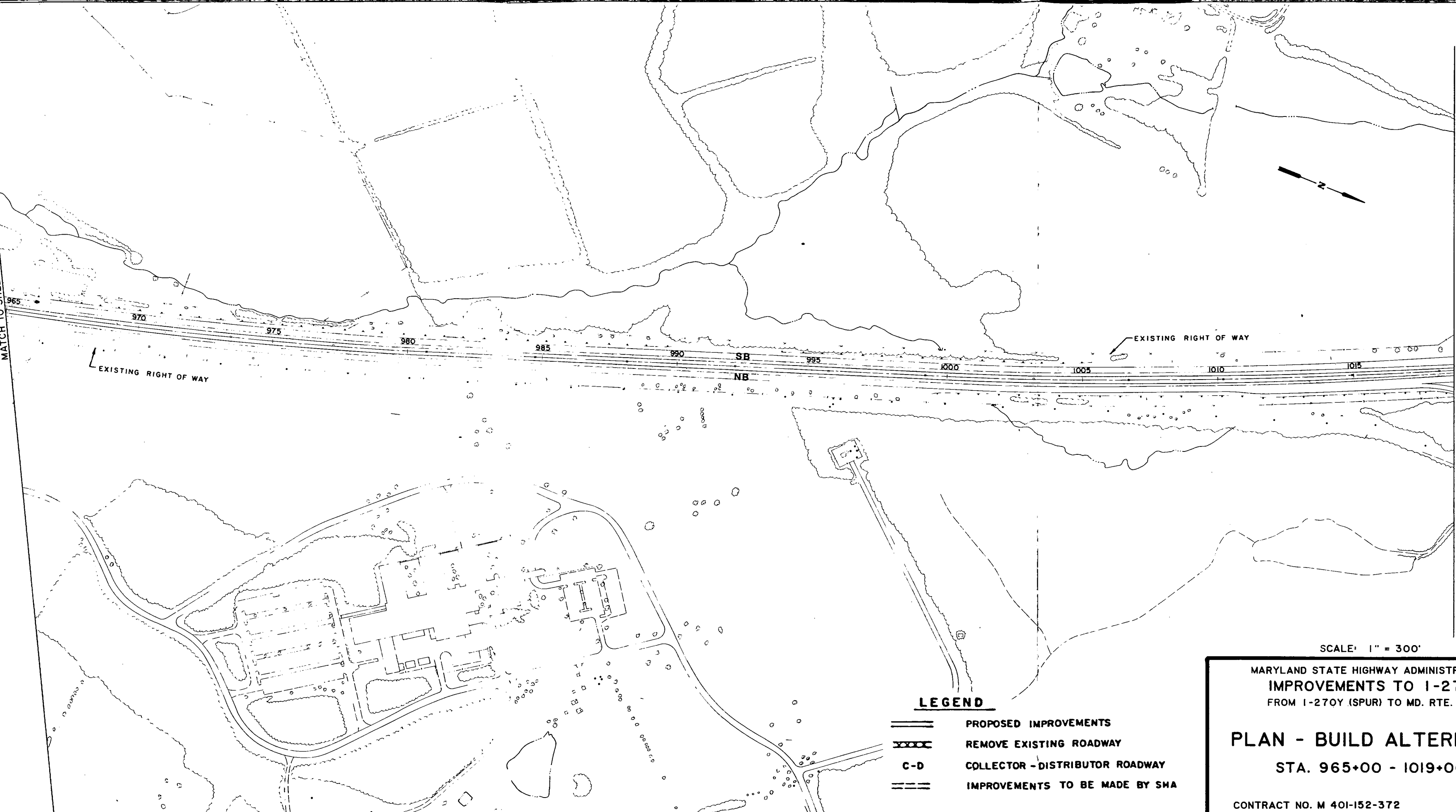


MATCH TO SHEET 33

MATCH TO SHEET 35

EXISTING RIGHT OF WAY

EXISTING RIGHT OF WAY



LEGEND

- == PROPOSED IMPROVEMENTS
- XXX REMOVE EXISTING ROADWAY
- C-D COLLECTOR-DISTRIBUTOR ROADWAY
- == IMPROVEMENTS TO BE MADE BY SHA

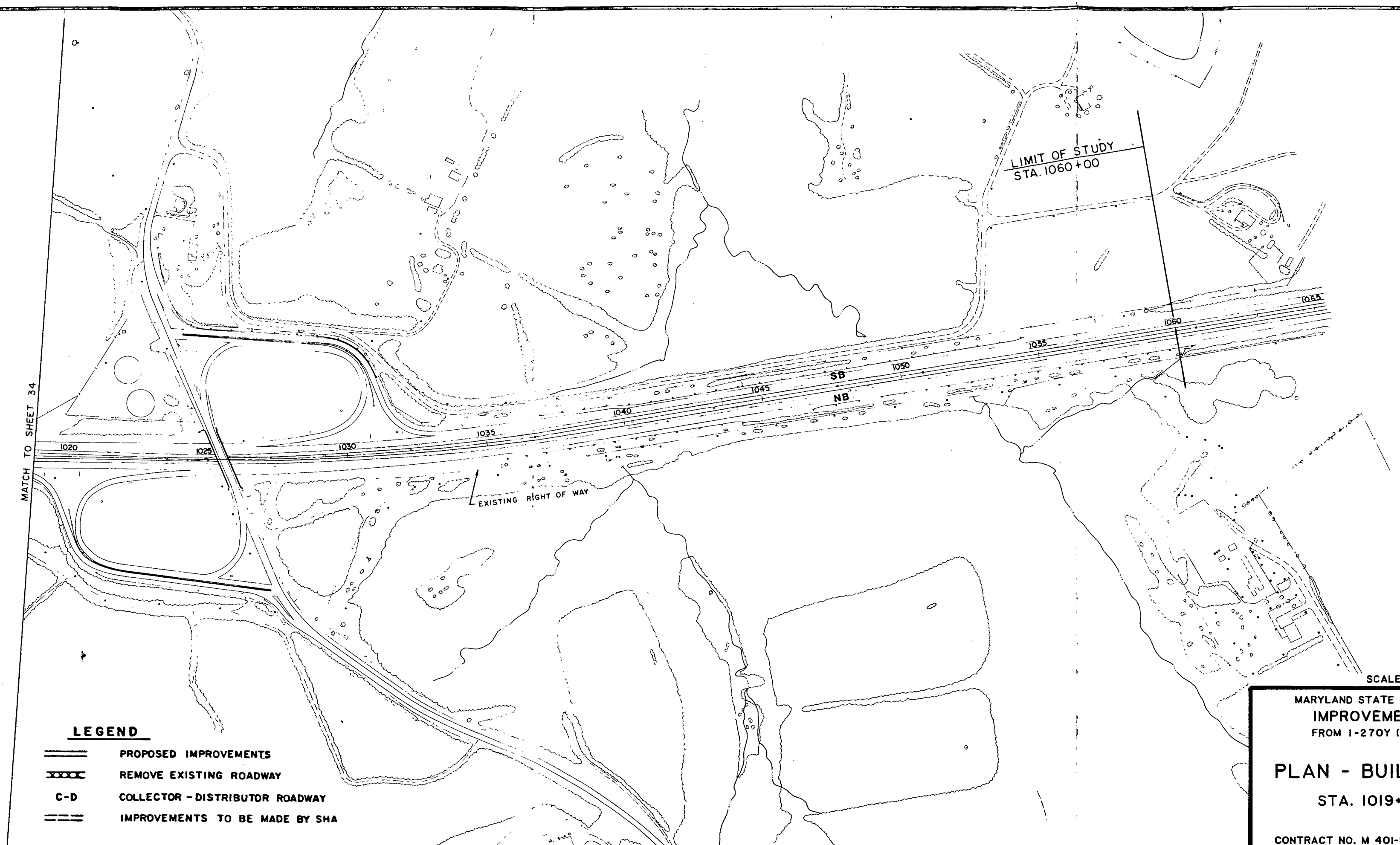
SCALE: 1" = 300'

MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270Y (SPUR) TO MD. RTE. 121

PLAN - BUILD ALTERNATE
STA. 965+00 - 1019+00

CONTRACT NO. M 401-152-372

PLATE 34



LEGEND

- == PROPOSED IMPROVEMENTS
- REMOVE EXISTING ROADWAY
- C-D COLLECTOR - DISTRIBUTOR ROADWAY
- == IMPROVEMENTS TO BE MADE BY SHA

SCALE: 1" = 300'

MARYLAND STATE HIGHWAY ADMINISTRATION
IMPROVEMENTS TO I-270
FROM I-270Y (SPUR) TO MD. RTE. 121

PLAN - BUILD ALTERNATE
STA. 1019+00 - 1060+00

CONTRACT NO. M 401-152-372

PLATE 35

100

ENVIRONMENTAL EFFECTS - MAN-MADE ENVIRONMENT

ENVIRONMENTAL EFFECTS

MAN-MADE ENVIRONMENT

I SOCIAL AND ECONOMIC EFFECTS

A. Residential Displacement and Relocation Availability

Preliminary relocation studies were conducted by SHA. The preliminary relocation report is available for examination at the offices of the State Highway Administration, 707 North Calvert Street, Baltimore, Maryland. An analysis of the probable residential displacement that would be caused by the Build Alternate has been made by the State Highway Administration, Bureau of Relocation Assistance. Relocation of families and individuals displaced by the proposed project would be accomplished in accordance with the Uniform Relocation Assistance and Land Acquisition Policies Act of 1970 (P.L. 91-446). A summary of the Relocation Assistance Program of the State of Maryland is given in Appendix B.

1. Alternate 1 - No Build Alternate

This alternate would involve no residential displacement since no new construction would occur under this alternate.

2. Alternate 2 - Continuous Collector-Distributor Road (C-D)

This alternate would require the displacement of seven residences, five owner occupied and two tenant occupied, in the MD 28 interchange area, two of which are presently owned by the Maryland State Highway Administration. A total of 14 individuals would have to be relocated. The need to relocate these residences is caused by the improvements proposed to the interchange rather than widening of I-270. All Build Alternates studied at MD 28 required the same relocations. None of the relocations at MD 28 involves minorities.

The proposed alternate for Middlebrook Road interchange would require the relocation of three residences, two owner occupied and one tenant occupied, along Middlebrook Road. These relocations would result from the relocation of Waring Station Road outside the proposed ramp. All three of the relocations required

108

at Middlebrook Road are minority households. A total of ten individuals would be displaced.

Retaining walls were proposed in several areas where the proposed grading limits without walls would encroach on existing dwellings. The relocations of approximately 120 apartments and 15 single family homes can be avoided by the use of retaining walls.

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 in 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.

3. Housing Availability

The Relocation Assistance report indicates that there is sufficient housing available on the market for the owner-occupants to be relocated from the MD 28 area. It is estimated that a lead time of 18 months will be needed to accomplish the relocations from MD 28. A study indicates that there is not adequate decent, safe, and sanitary housing available within the financial means of the residents displaced from Middlebrook Road. Therefore, housing as a last resort is indicated. A lead time of 18 months is needed for these displacements.

B. Business Displacements

No businesses will be displaced by either the No Build or Build Alternate.

C. Access to Community Facilities

The study area is served by numerous neighborhood-oriented public facilities such as schools, parks, churches, and playfields, all of which would experience an improvement in accessibility under the Build Alternate. In few instances temporary inconvenience would be felt during the construction stage at selected locations.

1. Alternate 1 - No-Build

Since the existing transportation system is already overburdened by the present traffic during peak periods, the continuation of this situation with no improvement beyond normal maintenance would have an aggravating effect on accessibility to community facilities within the study area.

2. Alternate 2 - Continuous C-D Alternate (Build Alternate)

As mentioned above, the community facilities in the I-270 corridor are scattered throughout the project corridor and are affected to different degrees by the I-270 roadway.

In general, the increased capacity provided on I-270 would improve the Level of Service on I-270 and divert some traffic from the other roads in the corridor that are already experiencing congestion such as MD 355. This improvement in traffic operations will improve the accessibility to all facilities in the area including fire stations, police, churches, hospitals, and schools.

Those facilities located immediately adjacent to I-270 will probably experience the greatest improvement in accessibility if the Build Alternate is constructed. These facilities include the following:

- Woodley Gardens Elementary School
- Rockville Nursing Home
- Rockville Christian Church
- 1st Baptist Church at Adclare Road
- 1st Baptist Church at Nelson Road
- Fire Station at Seven Locks Road
- Maryland State Police Station at MD 28
- Montgomery County Police Station at Seven Locks Road.

110

These facilities, by being located immediately adjacent to the I-270 roadway, could also suffer some temporary inconvenience during the construction phase of the Build Alternate. This inconvenience would take the form of slightly longer travel times, noise, and dust due to construction along I-270 and at the interchanges.

D. Effects on Neighborhoods and Communities

Existing I-270 has created a boundary for neighborhoods and communities that have developed in the corridor along the right of way of the expressway. Since the proposed improvements would be built almost entirely within the right of way of existing I-270, there would be no severance of neighborhoods or communities. The integrity of all communities would be maintained.

E. Effects on Minority Groups

As mentioed in the Existing Man-Made Environment section, no minority neighborhoods were identified adjacent to the I-270 right of way. However, the three residence relocations along Middlebrook Road are minorities involving the displacement of 10 minority individuals.

F. Consistency With Local and Regional Plans

Several Master Plans were developed for the various planning areas in the corridor. All of these plans have cited the need for improvements to I-270. The spccific concerns in each area are described below:

1. Clarksburg Master Plan - Recommends widening of I-270 to 6-lanes from Little Seneca Creek to north of Comus Road. "Public services are needed to improve rural roads, and Interstate 70-S is already overcrowded in peak hours as far north as Germantown."¹⁶
2. Germantown Comprehensive Amendment - Recommends widening of I-270 to 8-lanes north of MD 118. The plan also recommends that two interchanges be built to handle development in Germantown.¹⁷

3. Gaithersburg Vicinity Master Plan - States that the widening of I-270 from 6 to 8-lanes is important to the implementation of the Plan.¹⁸
4. Master Plan Rockville - This plan states that the Montrose Road and MD 28 interchanges are substandard and must be upgraded to handle the projected traffic volumes.¹⁹ The widening of I-270 to 8-lanes is also recommended.
5. North Bethesda - Garrett Park Master Plan - Provision should be made for the addition of 2 more lanes on I-270 from the Y Split to the Montrose Road interchange.
6. Transportation Plan for the National Capital Region - The widening of I-270 from the Frederick County line to the Y Split is shown as a long range element of the transportation plan for the region.²¹

As shown above, the Master Plans prepared for the I-270 planning areas all recommend increasing the capacity of the I-270 roadway in order to handle the expected and planned residential and commercial development. Therefore, to implement the No Build Alternate would be inconsistent with the Master Plans for the regions.

II HISTORIC AND ARCHEOLOGICAL SITES

A. Historic Sites

The sites located during the field survey are listed in the Existing Man-Made Environment section. None of the sites is close enough to the I-270 roadway to be affected by the proposed improvements. The closest site is approximately 300 feet from the right of way. (See letter from MD Historical Trust in Appendix C.)

B. Archeological Sites

As described in the Existing Environment section five historic sites and five archeological sites have been identified in the corridor as possibly eligible for National Register.

112

The I-270 improvements being analyzed in this report would affect none of the historic sites identified. Three of the pre-historic sites could be affected and therefore, coordination with the Maryland Geological Survey will be maintained and additional investigations will be performed when a final alternate is selected. It has been stated that the prehistoric sites could contain significant artifacts but that the sites are not significant. Therefore, the resources could be retrievable.

III TRANSPORTATION SYSTEM

The capacity of the existing I-270 6-lane roadway is approximately 140,000 vehicles per day. The existing roadway operates over capacity during the peak periods in several sections due to weaving, merging, and diverging including Montrose Road, Shady Grove Road, MD 28, and MD 124. Level of Service E operation exists in all segments south of MD 124 in the peak hours with the ramps operating at Level of Service E or F.

In the design year the level of service for the No Build Alternate will deteriorate further to Level of Service F south of MD 124 with the operation of the ramps at Level of Service F also. The period of congestion will be longer than at present and the levels of service on the parallel routes such as 355 will also deteriorate.

The traffic projections for the Build Alternate are 220,000 ADT. The section of I-270 south of Montrose Road will operate at Level of Service E, near capacity. All other sections including the c-d roads and ramps will operate at Level of Service D or better. By reducing the congestion, the Build Alternate also has the potential of reducing the congestion-related accidents such as rear-enders and sideswipes.

The traffic projections for the Build Alternate represent ultimate development according to the master plans in the area. By providing the additional capacity the levels of service on the other routes in the area will not deteriorate as much as under the No Build Alternate.

ENVIRONMENTAL EFFECTS - NATURAL ENVIRONMENT

ENVIRONMENTAL EFFECTS

NATURAL ENVIRONMENT

I GEOMORPHOLOGICAL CONDITIONS

A. Geology, Topography, and Soils

The improvements proposed for the I-270 roadway consist mainly of widening the existing roadway and providing some additional ramps at Montrose Road, MD 28, and Middlebrook Road. Therefore, the effect on the existing topography would be insignificant. There will be some minor changes in runoff characteristics caused by the widening and ramp construction, but the existing drainage pattern will not be affected.

There could be some minor rock excavation in the deeper cuts along the roadway, but generally the depth of bedrock below the surface is greater than 50 feet in the upland areas where the major cuts are located.

The susceptibility to wind and water erosion varies from moderate to severe. Any construction can cause erosion and sedimentation. Therefore, measures will be implemented to minimize erosion and control sedimentation. These measures have been developed by the Maryland State Highway Administration in coordination with the Maryland Water Resources Administration and the United States Soil Conservation Service. These methods could include, but not be limited to, sediment traps and basins, straw bales, revegetation, and dust control procedures.

B. Prime and Unique Farmlands

Plate 10 describes the location of prime farmland along the I-270 corridor. One criterion for defining prime farmland is that it be available for use as farmland. Much of the agricultural land along the I-270 corridor is being developed for residential, industrial, and commercial uses. In fact, there are no areas along the project corridor within the limits of this study that are zoned agricultural. Therefore, it appears that farming in this corridor will be preempted by commercial or residential development.

115

No prime farmland would be acquired as right of way under the Build Alternate since the prime farmland adjacent to the I-270 right of way is located north of MD 118 where the only improvement proposed is widening in the median. The small parcel at MD 124 will not be affected by the widening of I-270 under this project.

Those parcels of land designated as prime agricultural land adjacent to I-270 south of MD 118 have been developed for residential, commercial, or industrial uses and therefore are not available for agricultural uses. No unique farmlands were found in the project corridor.

116

II EFFECTS ON WATER QUALITY

A. Impacts on Water Quality and Aquatic Fauna

The most significant effect that the project will have on the water quality of the streams crossing I-270 is sedimentation during construction. Several species of fish especially sensitive to water pollution or sedimentation could decline in population or disappear from adjacent sections of Great Seneca and Little Seneca Creeks during the construction period.

Adverse impacts on Watts Branch related to relocation or piping of the section of stream within the project limits may have moderate degrading influence. The water quality of the stream in this area has already declined significantly due to urbanization. Relocation would have greater adverse effects due to sedimentation, however piping could increase velocity, causing greater erosion and bank destabilization. Methods to reduce velocity such as riprap, baffles, gabions, and energy dissipators will be studied in final design.

The long term effects on the water quality from the proposed improvements will be minimal. Water quality indices for all streams affected should remain in the permissible range. The increase in runoff to the streams caused by the increase in impervious area due to additional pavement will be negligible. The increase in runoff of pollutants such as lead, petroleum, and other highway salts due to the increase in traffic should be negligible. The reduction in populations and diversity of species due to the project will be minimal.

The existing culverts carrying the streams under I-270 will be lengthened to accommodate the widening proposed under the Build Alternate. There will be no increase in size or construction of new culverts. This lengthening of the existing culverts will have an insignificant effect on the 100-year floodplains. Where the slopes on the streams are fairly steep, depressed or improved inlets could be utilized to maintain the 100-year floodplain elevation.

117

In the smaller drainage areas, storm water management facilities will be studied during the design phase in order to maintain the discharges leaving the highway right of way at preconstruction levels.

B. Methods to Minimize Impacts

The Maryland State Highway Administration, in consultation with the Maryland Department of Natural Resources, has developed methods of controlling erosion and sedimentation during both the construction and operational phases of highway projects. These procedures are committed to all construction projects and a set of erosion and sediment control plans prepared as part of the construction plans are subject to the review and approval of the Soil Conservation Service and Department of Natural Resources.

Standard methods of prompt reseeding and revegetation minimize erosion and sedimentation and would provide for recolonization by wildlife.

Standard sedimentation control techniques and devices would be employed wherever necessary and especially near all waterways. Sedimentation basins, rip-rap, gabions, and other water velocity control devices would be used to prevent excessive siltation of streams.

Major construction activities near perennial streams should be scheduled for periods other than Spring and Fall, which are primary fish reproductive periods.

The construction improvements proposed were discussed with the Maryland Department of Natural Resources, Water Resource Administration to obtain their comments at an early stage of the studies. It was felt that no major problems would be encountered with the improvements proposed with respect to water quality. However more detailed studies will be made during design and methods to minimize the effects on the streams would be utilized.

Construction permits from the Maryland Department of Natural Resources, Water Resources Administration would be required for the crossing of streams draining more than 400 acres. Nine crossings are affected by this requirement. The Corp of Engineers will require permits for the construction affecting any wetlands.

III EFFECTS ON ECOLOGY

A. General

The project would have a slight impact on the ecology of the area through the loss or disturbance of the various habitats. The severity of this impact is reduced somewhat in that all the habitat areas affected are along an existing expressway and, therefore, are used to a much lesser degree by wildlife than if they were isolated from development or the highway. Table 11 lists the acreage disturbed of the various types of terrestrial habitat. Since the area within the existing right of way fence is of marginal use as wildlife habitat, the acreages shown are the areas beyond existing right of way disturbed by construction.

TABLE 11
TERRESTRIAL HABITAT DISTURBED

<u>Type</u>	<u>Acreage Disturbed</u>
Hardwoods	14
Coniferous Woods	1
Pioneer Woods	20
Old Fields	27
Agricultural Fields	2
Mowed Grass	10
Wetlands Type I	6
Wetlands Type II	0.5
Wetlands Type V	<u>4</u>
TOTAL	84.5 acres

119

B. Wetlands

1. Type 1 - Seasonally Flooded Basins or Flats

These types of wetlands occur along the major stream valleys in the project area, the largest of which occurs along Great Seneca Creek. The disturbance of the wetlands would be caused by the widening of the roadway and grading into the floodplain. There are no longitudinal encroachments along floodplains. The greatest amounts lost would be along Watts Branch due to improvements to the MD 28 interchange and along Gunner Branch due to the proposed Middlebrook Road interchange.

The total amount of this habitat that would be lost due to the Build Alternate would be approximately six acres which represents a negligible reduction in Wetland Type 1 available in the project area.

2. Type II - Inland Fresh Meadow

This type of wetland exists at several locations in the project area. Approximately 0.5 acres would be lost due to the proposed improvements. This acreage represents about 10% of the meadow at the site of encroachment. This reduction produces a negligible reduction in the populations of the species inhabiting these areas.

3. Type V - Inland Open Fresh Water

This type of wetland, which is either ponds or streams, occurs along the major stream crossings. The major effects on these areas would occur through sedimentation during the construction phase as mentioned in the Water Quality section. Approximately 4 acres would be lost as a result of construction, mostly at Watts Branch at the MD 28 interchange and Gunner Branch at the proposed Middlebrook Road interchange. This loss of habitat would create a negligible impact on the populations and diversities of wildlife inhabiting this type of area since the proportion of the amount lost to the total acreage available along the streams in the project area is negligible.

The effects on the species inhabiting the wetlands in the project area will be miniscule when considered in the context of the amount of habitat lost to that available in the corridor. For example, wetland type 1 (wooded floodplain) exists along all the streams in the area throughout their length. Therefore, a reduction of 6 acres will have no appreciable effect on the wildlife. This same comparison can be made with the other types of wetland affected.

These specific wetland areas will be discussed with the appropriate agencies to determine any mitigation measures that would help minimize the effects of the project and to discuss the possibility of replacements for those wetlands lost to the construction.

C. Rare or Endangered Species

As stated in the Existing Environment section, no endangered species are known to inhabit the project area. No rare species were found within the project limits.

During construction, sediments could temporarily degrade aquatic habitats in the streams which could adversely affect adult population, eggs or spawn of the fish mentioned; specifically the Comely Shiner and the Greenside Darter. As mentioned in the Water Quality section the Maryland State Highway Administration has developed methods of controlling erosion and sedimentation and would apply these methods in this project. Also construction schedules could be adjusted to avoid sedimentation during spawning periods.

D. Wildlife Habitat

As shown by Table 11, various terrestrial habitats would be reduced due to the proposed improvements. This loss of natural habitat would result in a consequent reduction in populations of the species inhabiting these areas. The acreages of habitat lost represents a negligible proportion of that habitat available

121

contiguous to those areas affected, thereby creating a negligible effect on wildlife. Also, due to the proximity to the existing highway of the disturbed habitat, the reduction in populations would be less than the proportion of habitat affected would indicate since these areas would be less densely populated than other areas at a distance from the highway.

E. Areas Recommended for Protection

The areas shown in the Existing Environment section as being recommended for protection were reviewed with respect to the impacts of the project.

1. The wooded stream at Little Seneca Creek will not be affected by the construction since all improvements will occur in the median area. Some sedimentation and erosion could occur during construction but will be minimized through the methods used by Maryland State Highway Administration.
2. The area containing ponds at the crossing of I-270 of the Great Seneca Creek will be affected to a negligible degree by construction. The loss of habitat in the area will be negligible and should, therefore, not affect the great horned owl population in the area. A retaining wall would be used to avoid encroachment on a pond located at the right of way in this location.

IV EFFECTS ON NOISE LEVELS

A. General

As described in the Existing Natural Environment Section, thirty-three noise sensitive areas (NSA) were identified and were characterized by the noise levels at specific receptors within each NSA as shown in Table 8. The ambient noise levels at each site were measured as described in the section cited above.

Two sets of criteria have been established for analyzing the effects of a project on noise levels by the Federal Highway Administration.

1. The Federal Highway Administration has established Noise Abatement Criteria based on the specific land uses being analyzed.²² If the noise levels produced by the project improvements in the design year are higher than these Noise Abatement Criteria, mitigation measures must be studied. See Table 12.

123

TABLE 12
NOISE ABATEMENT CRITERIA AND LAND USE RELATIONSHIPS
SPECIFIED IN FHPM 7-7-3

<u>Land Use Category</u>	<u>Design Noise Level - L 10</u>	<u>Description of Land Use Category</u>
A	60 dBA (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, or open spaces which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B	70 dBA (Exterior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, picnic areas, recreation areas, playgrounds, active sport areas, and parks.
C	75 dBA (Exterior)	Developed lands, properties or activities not included in categories A and B above.
D	None Prescribed	Land which is undeveloped on the date of public knowledge of the project, and for which no known future development is planned.
E	55 dBA (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

2. A comparison is made between the ambient noise levels and the levels produced by the Build Alternate to determine the effects of providing the improvements. If there is an increase of 10 dBA or greater between the ambient levels and the Build Alternate levels, noise mitigation measures must be investigated.

B. Results of Analysis

The predicted noise levels were analyzed for the design year 2010 for the preferred alternate (continuous collector-distributor). Table 13 shows these noise levels and a comparison among the ambient, predicted, and Noise Abatement Criteria. Also, the results of providing noise barriers in certain developed areas are also shown.

C. Mitigation Measures

As explained above, mitigation measures are investigated where the increase in noise levels is greater than 10 dBA or where the projected noise levels exceed the Noise Abatement Criteria. The results of these investigations are shown on Table 13 and are described in detail below:

Several methods of noise abatement are possible: noise attenuation through a barrier placed between the source and the receptor; traffic flow restrictions or controls; attenuation of the noise reaching the receptor; attenuation of noise generated by the vehicles.

Since truck traffic is a major contributor to the noise produced by highway traffic, means of controlling or restricting truck traffic would be needed to reduce noise through traffic control measures. Since the interstate system was designed to accommodate long distance trucking, the possibility of restricting trucks on I-270 is not considered. Also, the truck traffic diverted to other routes would create noise problems at other sensitive areas.

The possibility of reducing the noise generated by the traffic through the use of quieter types of pavement has been studied recently. Again, trucks create a major portion of the noise, much of which is engine noise, not affected by quieter pavements. Therefore, the net reduction in noise levels gained through the use of quieter pavements would be minimal.

Several types of noise barriers including reflective (walls) or absorptive (berms) can be used to reduce noise levels at sensitive receptors. Berms can be effective and practical where right

TABLE 13
AMBIENT AND PREDICTED NOISE LEVELS

NSA	Ambient Levels (dBA)	No Build Alt. 2010 (dBA)	Build Alt. 2010 No Barrier (dBA)	(Build) Increase over ambient (dBA)	(Build) Exceeds Design Noise Levels (dBA)	Build Alt. 2010 with barrier (dBA)	Length of Barrier (LF)	Average Height Barrier (FT)	Cost of Barrier (\$)	
1	72	75	76	+4	+6	68	4600	14	\$1,350,000	Site 1
2	72	74	76	+4	+6	67 NSA's 1,2,5, 6 comprise Barrier Site 1				
3	80	75	78	-2	+8	Site 2 No activities located near park				
4	-	66	66	-	-	boundary, therefore no barrier is proposed.				
5	73	73	75	+2	+5	65	Barrier	Site	1	
6	70	69	72	+2	+2	66	Barrier	Site	1	
7	65	69	71	+6	+1	Site 3	No	barrier	proposed.	
8	53	61	61	+8	-	--	--	--	--	
9	60	66	67	+7	-	--	--	--	--	
10	77	74	73	-4	+3	69	Site 4	Barrier	not proposed.	
11	72	71	71	-1	+1	Site 5	Barrier	not	proposed.	
12	68	71	73	+5	+3	67	2600	8	\$440,000	Site 6
13	71	75	81	+10	+11	68	1500	9	\$300,000	Site 7
14	70	72	73	+3	+3	68	Site 8	Barrier	not considered.	
15	66	67	67	+1	-	--	Barrier	Site	8	
16	62	67	66	+4	-	--	--	--	--	
17	67	70	71	+4	+1	Site 9	Barrier	not	considered.	

Federal Highway Administration L₁₀ Noise Abatement Criteria of 70 dBA applies to all sites

125

TABLE 13 (cont.)
AMBIENT AND PREDICTED NOISE LEVELS

NSA	Ambient Levels (dBA)	No Build Alt. 2010 (dBA)	Build Alt. 2010 No Barriers (dBA)	(Build) Increase over ambient (dBA)	(Build) Exceeds Design Noise Levels (dBA)	Build Alt. 2010 with barrier (dBA)	Length of Barrier (LF)	Average Height Barrier (FT)	Cost of Barrier
18	70	76	78	+8	+8	68	2600	11	\$620,000 Site 10
19	-	75	76	-	+6	68	Barrier	Site	10
20	62	65	65	+3	-	--	--	--	--
21	67	72	72	+5	+2	--	Site 10	Barrier	not extended.
22	72	72	73	+1	+3	Site 11-	Barrier	not proposed.	(I-370)
23	71	67	65	-6	-	--	--	--	I-370 Study
24	77	77	75	-	+5	66	1650	10	\$360,000 Site 12
25	72	75	75	+3	+5		Barrier	Site	12
26	70	71	71	+1	+1	Site 13	No	barrier	proposed.
27	72	74	74	+2	+4	Site 14	No	barrier	proposed.
28	69	76	76	+7	+6	Site 15	No	barrier	proposed.
29	72	74	74	+1	+4		Barrier	Site	16
30	77	76	75	-2	+5	67	3600	9	\$680,000 Site 16
31	70	78	79	+9	+9	Site 17	No	barrier	proposed.
32	56	67	68	+12	-	Site 18	Barrier	not	proposed
33	63	67	67	+4	-	--	--	--	--

Federal Highway Administration L₁₀ Noise Abatement Criteria of 70 dBA applies to all sites

126

of way is not restricted and development is set back a considerable distance. Along the I-270 right of way, the sensitive noise areas consist generally of residential communities located close to the right of way. Therefore, reflective type noise walls are those analyzed in the study.

In some cases the costs of the noise abatement measures cannot be justified by the benefits gained.

Table 13 summarizes the noise analyses including the abatement measures studied. Below is a description of the specific sites analyzed for barriers and the noise reduction gained. Detailed analysis of the barriers to be constructed will be performed under the final design phase of the project. A cost of \$16 per square foot in place was used for the cost estimates of the barriers.

Site 1, including NSA 1,2,5,6, is located on the east side of I-270 south of Montrose Road along the right of way to reduce the noise levels in the homes along the west side of Hounds Way, Split Rail Court and Dinwiddie Drive. Approximately 45 residences would realize an average reduction in noise level of 8 dBA. These residences are single family homes, most of which are centrally air-conditioned.

Site 2, defined by NSA 3 is the Cabin John Regional Park boundary at the right of way of I-270. There are no existing or proposed activities in this area. The nearest activity area is a trail (NSA 4) 300 feet from the boundary. Therefore, no barrier was proposed at this site.

Site 3, is a residence located on Whippoorwill Lane off Montrose Road approximately 1500 feet from I-270. The contribution of I-270 to the noise levels at this residence is negligible. The major contribution of noise is from Montrose Road. The differences in noise levels between the No Build and Build Alternates are caused by the increase in traffic on Montrose Road, not I-270. Therefore, any barrier necessary at this site would be provided under the county project for widening Montrose Road.

Site 4, defined by NSA 10, is located on the west side of I-270 north of the Montrose Road interchange. Two residences would experience a reduction of 4 dBA. Since these two residences are isolated and no other residential development is proposed in that area, it appears that the cost of the wall is not justified by the benefits gained.

Site 5, defined by NSA 11, is the playground area for the Julius West Middle School in the northeast quadrant of the Falls Road interchange. The baseball diamond is the nearest activity area and was used as the receptor. A barrier 500 feet long with an average height of 10 feet would be required to reduce the noise levels at the baseball diamond below 70 dBA at a cost of \$120,000. No barrier is proposed at this site since the benefits gained are not justified by the cost of the barrier.

w Site 6, defined by NSA 12, is located on the west side of I-270 north of the Falls Road interchange and would provide an average noise level reduction of 8 dBA for approximately 25 air-conditioned residences along Watts Branch Parkway.

w Site 7, defined by NSA 13, is located on the west side of I-270 just south of the MD 28 interchange behind the apartment community between Watts Branch Parkway and I-270. This barrier is just north of barrier 3 described above. The average noise level reduction provided by this barrier is ~~11~~ dBA. Approximately 50 apartments in 7 air-conditioned buildings would be directly affected by this barrier.

Ext Site 8, defined by NSA 14, 15, is located on the east side of I-270 south of the MD 28 interchange and would reduce noise levels for the Rockville Nursing Home and Rockville Christian Church. The nursing home and church are centrally air-conditioned structures. The church utilizes the area behind the church for outdoor nursery school activities. The barrier would provide an average reduction of 6 dBA for the play area. The interior noise levels would be about 51 dBA without a barrier. The reduction of noise obtained and the predicted noise levels do not justify a barrier at this location.

129

Site 9, defined by NSA 17, is the playground at the Woodley Gardens Park on the east side of Nelson Street north of the MD 28 interchange. In order to reduce the noise levels to below the FHWA Noise Abatement Criteria a barrier 500 feet long with an average height of 9 feet would be needed at a cost of \$100,000. The cost of the barrier was considered excessive with respect to the noise reductions gained (5 to 6 dBA) and the type of use of the land (intermittent use as a ballfield).

Site 10, defined by NSA 18, 19, is located on the east side of I-270 just north of the MD 28 interchange along the condominiums on Azalea Drive and the single family homes on Hawthorne Court. Approximately 60 dwelling units would be directly affected by the barrier which would provide an average reduction in noise levels of 10 dBA. Extending this barrier to reduce the noise levels at the school playing field (NSA 21) is not cost effective.

Site 11, defined by NSA 22 at the Washingtonian Motel, just north of Shady Grove Road on the west side of I-270, was analyzed for noise levels under the I-370 project. It was found that a barrier would not be justified at this site since there are no outside activities and the interior noise levels would be less than 55 dBA.

Site 12, defined by NSA 24, 25, is located just north of the I-370 interchange on the east side of I-270 and defines the noise levels for the outdoor activities at the apartment buildings. The average noise level reduction provided by this barrier is 9 dBA. Approximately 9 air-conditioned apartment buildings would be directly affected by this barrier.

Site 13, defined by NSA 26, located on the east side of I-270 north of MD 124 interchange is a group of tennis and basket ball courts. The barrier required for this NSA would be 300' long and cost \$65,000 to effect a reduction of 3 dBA at the playing court nearest to I-270. The barrier is not cost effective in this area.

Site 14, defined by NSA 27, is a residence located on the south side of Game Preserve Road west of I-270. A noise barrier to reduce the levels below 70 dBA would have to be 700 feet long at a cost of \$160,000 which is not cost effective.

Site 15, defined by NSA 28, is the park boundary of Seneca Creek State Park. Since there are no activities either existing or planned within 0.9 miles of the I-270 right of way a noise barrier was not considered.

Site 16, located on the east side of I-270 north of Great Seneca Creek, defined by NSA 29, 30, consists of a community of single family homes and townhouses in Fox Chapel and Middlebrook Commons. A barrier would provide a reduction in noise levels of 9 dBA.

Site 17, located on the west side of I-270 at the crossing of Little Seneca Creek, defined by NSA 31, is the boundary of the Little Seneca Regional Park. Since there are no existing or planned activities in the park in this area, a barrier was not considered.

Site 18, defined by NSA 32, is a single family residence located on MD 121 west of the interchange with I-270. There would be a 14 dBA increase over ambient noise levels with the Build Alternate in the design year. The traffic on MD 121 will increase to about four times the existing volumes by the design year which represents an increase of 13 dBA. Therefore, the increase is not due to the I-270 project and a barrier is not considered at this site.

D. Technical Analysis

1. Traffic Data

The traffic data utilized in this analysis were developed by the Maryland State Highway Administration. The projections for the No Build were constrained by the capacity of a 6-lane I-270 roadway with no improvements to the interchanges at Montrose Road, MD 28, and Middlebrook Road. The projections for the Build Alternate considered ultimate development in the corridor and capacity constraints on the roads serving I-270. The capacity of the Build Alternate I-270 roadway was not a constraint on the projections.

It has been found that the worst noise condition does not occur at the peak hours but rather during the off-peak hours when the roadway is operating at Level of Service C. This phenomenon occurs since the travel speeds are higher in the off-peak periods and the percentage of trucks is higher; both conditions causing higher noise levels than the peak period. The analysis was therefore performed for the off-peak, Level of Service C condition and the design year traffic volumes were adjusted to create this condition.

2. Prediction Methods

The method used to predict the future noise levels produced by the Build, No Build alternates was developed by the Federal Highway Administration. The computer model derived from this method, called STAMINA 2.0, 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 vehicle speed, and a specific time period of consideration; and 2) an adjustment for various types of physical barriers that would reduce noise transmission from source (roadway) to receiver.

The model assumes constant speed traffic conditions and, as an option, includes highway grade as a parameter in the traffic noise generation. Traffic speeds are limited to the range of 50 to 100 km/h (30 to 65 mph) due to the data limitations upon which vehicle noise emissions calculations are based.

The highway is defined as straight line sections, approximating the proposed or existing roadway. A coordinate system is established to define both the highway sections and the receptors, or locations to be tested for noise levels. The roadway is broken into sections of similar traffic volumes and travel speeds.

A second program available with STAMINA 2.0 is OPTIMA which was used to check incremental increases in barrier height with respect to noise reduction.

IV EFFECTS ON AIR QUALITY

A. General

In accordance with the guidelines of the Maryland State Highway Administration and the Federal Highway Administration, a technical air quality analysis was prepared for this project in order to analyze the effects of the proposed Build Alternate on the ambient air quality of the project area. These effects were analyzed for two time periods; the year of completion (1990) and the design year 2010. A microscale carbon monoxide (CO) pollution diffusion analysis was performed utilizing the CALINE 3 computer model developed by the California Department of Transportation.

Projections of CO concentrations at 33 receptors were made for both the Build and No Build Alternates. See Plates 11-13 for the locations of the receptors. These projections were compared to the National Ambient Air Quality Standards to determine if there would be any violations of these standards with the Build or No Build Alternate.

Two conditions were analyzed; highest one hour concentrations, and the highest 8-hour average. Background concentrations developed by the Maryland State Highway Administration were added to the concentrations projected by the computer model to arrive at the total concentrations expected. These background concentrations were 1.6 ppm for the one-hour condition and 1.0 ppm for the 8-hour case.

B. Results of Analysis

The microscale analysis of CO concentrations in the project corridor showed that the C-D alternate would produce, overall, slightly higher (1-2 ppm) concentrations than the No-Build alternate for both study years 1990 and 2010. The increase is due to the shorter distances to the receptors and the higher traffic volumes with the C-D alternate. See Table 14.

There will be no violations of the National Ambient Air Quality Standards by either alternate as analyzed for the one (1) or the eight (8) hour concentrations. See Table 15.

133

All concentrations of CO noted for both the one (1) hour and eight (8) hour periods include background concentrations.

This project is in an air quality nonattainment 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.

None of the projected CO concentrations approaches the maximum allowed under National Standards, and therefore, all conform to the Maryland State Implementation Plan within the National Capital Interstate Air Quality Control Region.

Copies of the technical air analysis have been submitted to the Environmental Protection Agency and Maryland Air Management Administration.

TABLE 14
CO CONCENTRATIONS (PPM)

Receptor	1990				2010			
	1 Hour		8 Hours		1 Hour		8 Hours	
	No Build	Build	No Build	Build	No Build	Build	No Build	Build
1. Residence	2.5	2.8	1.8	2.6	2.8	4.2	2.0	3.2
2. Residence	2.4	2.7	1.7	2.5	2.6	3.8	1.8	2.8
3. Park	2.6	3.0	1.9	2.8	3.1	4.4	2.2	3.3
4. Park	2.0	2.0	1.3	1.9	2.1	2.5	1.4	1.7
5. Residence	2.3	2.6	1.6	2.4	2.6	3.6	1.8	2.7
6. Trailer Park	2.1	2.4	1.4	2.3	2.4	3.2	1.7	2.3
7. Residence	2.0	2.0	1.3	1.9	2.0	2.2	1.3	1.5
8. Apartment	2.1	2.0	1.4	1.9	2.2	2.3	1.5	1.6
9. Residence	2.4	2.3	1.7	1.6	2.5	2.5	1.7	1.7
10. Residence	2.2	2.3	1.5	2.2	2.5	2.6	1.7	1.8
11. School	2.1	2.3	1.4	2.2	2.1	2.7	1.4	1.9
12. Residence	2.7	2.8	1.9	2.6	3.1	3.6	2.2	2.7
13. Apartment	2.6	3.1	1.9	2.9	2.8	3.7	2.0	2.7
14. Nursing Home	2.2	2.3	1.5	2.2	2.2	2.6	1.5	1.8
15. Church	2.1	2.3	1.4	2.2	2.3	2.3	1.6	1.6
16. Residence	1.8	1.9	1.2	1.9	1.9	2.2	1.2	1.5
17. Park	2.2	2.4	1.5	2.3	2.4	3.0	1.7	2.2
18. Apartment	2.0	2.2	1.3	2.1	2.3	2.6	1.6	1.8
19. Residence	2.9	2.6	2.1	2.4	3.5	3.2	2.6	2.3

TABLE 14 (cont.)
CO CONCENTRATIONS (PPM)

Receptor	1990				2010			
	1 Hour		8 Hours		1 Hour		8 Hours	
	No Build	Build	No Build	Build	No Build	Build	No Build	Build
20. School	2.3	2.0	1.6	1.9	2.4	2.2	1.7	1.5
21. School	3.0	2.2	2.2	2.1	3.1	3.0	2.2	2.2
22. Motel	2.3	2.2	1.6	2.1	2.7	2.8	1.9	2.0
23. Tennis Court	2.0	2.0	1.3	1.9	2.1	2.5	1.4	1.7
24. Apartment	2.2	2.4	1.5	2.3	2.4	3.2	1.7	2.3
25. Tennis Court	2.2	2.7	1.5	2.5	2.5	3.3	1.7	2.4
26. Playground	1.9	2.2	1.3	2.1	2.1	2.6	1.4	1.8
27. Residence	1.9	2.4	1.3	2.3	2.4	3.0	1.7	2.2
28. Park	2.0	2.4	1.3	2.3	2.2	2.8	1.5	2.0
29. Residence	1.9	2.2	1.3	2.1	2.0	2.5	1.3	1.7
30. Residence	1.9	2.0	1.3	1.9	2.0	2.4	1.3	1.7
31. Park	1.8	2.5	1.2	2.4	2.1	3.0	1.4	2.2
32. Residence	1.6	1.8	1.0	1.8	1.7	1.9	1.1	1.2
33. Residence	1.6	1.9	1.0	1.9	1.8	2.0	1.2	1.3

National Ambient Air Quality Standards are: 1 hr. Peak - 35 ppm
8 hr. Peak - 9 ppm

Concentrations shown include background concentrations: 1 hr. - 1.6 ppm
8 hr. - 1.0 ppm

TABLE 15
NATIONAL AMBIENT AIR QUALITY STANDARDS
FOR CO*

One Hour Peak	40 mg/m ³ or 35 ppm
Eight Hour Average	10 mg/m ³ or 9 ppm

*These standards are not to be exceeded more than once per year.

C. Technical Analysis

1. Traffic Data

The traffic data used in the analysis have been developed by the Maryland State Highway Administration, Bureau of Highway Statistics. The data reflects the ultimate development in the corridor and capacity constraints on the the roadways serving I-270 as described in the section on Purpose and Need. Travel speeds were determined through traffic analysis procedures specified in the Highway Capacity Manual, 1965.

2. Emission Factors

Traffic emissions data used in CALINE 3 were established using the computer program MOBILE 1, developed by the Environmental Protection Agency.

The following assumptions were made in the analysis:

- a. Vehicle mix percentages were held constant for the two analysis years.
- b. The vehicles were 100% hot starting.
- c. The national averages for age distributions were used for all vehicle types.
- d. Inspection maintenance program was assumed starting January, 1984 with a 30% stringency factor and applied to model years 1972-1989; terminated 1989.
- e. Ambient air temperature of 20 degrees Fahrenheit was used for peak hours and 35 degrees Fahrenheit was used for off-peak conditions.
- f. Those assumptions inherent in the MOBILE 1 program.

- g. The travel speeds estimated for the peak hours were used for the off-peak periods as well. This is a conservative assumption since the emissions decrease with increases in speed.

The MOBILE 1 program uses the 1999 composite emission factors for later calendar year calculations. The assumption is that by 1999 virtually all vehicles will be meeting final new vehicle emission standards and that emission standard timetables will not be significantly extended. Based on this assumption, 1999 emission factors were used for calendar year 2010 CALINE 3 runs.

Table 16 is a summary of the emission factors obtained from MOBILE 1. Advances in emission control technology account for the difference in emission factors between the two study years. Emission factors were assumed to be consistent throughout I-270 and adjacent roadways as well as between alternates for either calendar year.

TABLE 16
EMISSION FACTORS (GMS/VEH-MI)
I-270 AND ADJACENT ROADWAYS

CONDITION	SPEEDS (MPH)							
	25	30	35	40	45	50	55	60
1990 Peak	3.75	3.07	2.57	2.27	2.17	2.16	1.98	1.34
1990 Off-Peak	4.34	3.56	2.97	2.63	2.50	2.48	2.28	1.60
2010 (1990) Peak	4.13	3.38	2.82	2.50	2.40	2.41	2.20	1.42
2010 Off-Peak	4.59	3.75	3.13	2.77	2.65	2.65	2.43	1.62

3. Meteorological Data

The dispersion of pollutants is largely controlled by local meteorological conditions such as wind speed, direction and atmospheric stability. The wind speed determines the amount of dispersion. The higher the wind speed the greater the dispersion. The wind direction determines the dispersion pattern and the stability of the atmosphere determines the amount of vertical diffusion and lateral mixing. To define stability, six classes are designated, ranging from very unstable (class A) to very stable

(class F). Generally, the more stable the atmosphere, the higher the pollutant concentrations.

The computer program CALINE 3 was used to compute the pollutant (CO) concentrations at each receptor for each increment of 15.0 degrees in wind angle from 0 to 360 degrees. One meter per second and stability class F were assumed as the worst condition and were used for all conditions of analysis.

4(f) CONSIDERATIONS

SECTION 4(f) CONSIDERATIONS

I INTRODUCTION

Section 4(f) of the Department of Transportation Act, as amended by Section 18 of the Federal Aid Highway Act of 1968, states that utilizing land from a significant publicly-owned park, recreation area, wildlife refuge, or any significant historic site for a federally funded transportation project is permissible only if there is no feasible and prudent alternative and if all possible planning to minimize harm is included as part of the project.

The Build Alternate would require land from several parks along the I-270 right of way.

The only complete avoidance alternate available is the No Build which is not considered feasible since it would not be consistent with master planning in the area and would not increase the traffic capacity in the corridor. Since the Build Alternate involves the widening of an existing expressway with development along both sides of the highway in many locations, a relocation of the facility to avoid the parks is not a feasible option.

In all but one case (Wootten Mill Park), the alternative to taking parkland would be the provision of retaining walls within the existing right of way. The effects on each park and the alternative retaining walls are described below.

It was mentioned that Muddy Branch, Summit Hall, and Little Seneca Regional Parks abut the I-270 right of way. However, no encroachment into any of these parks would be necessary under the Build Alternate.

II PARKLANDS AFFECTED

A. Tilden Park

This park under the jurisdiction of Maryland National Capital Park and Planning Commission is located on the east side of I-270 just north of Tuckerman Lane along the floodplain of Old Farm Creek and contains 79 acres of woodlands. See Plate 6. There are picnic areas, playground equipment, playing fields, tennis and basketball courts, and a recreational center. None of these facilities are located within 2000 feet of the right of way of I-270.

The Build Alternate would require 0.1 acre of parklands at a cost of \$2000. This acquisition could be avoided by constructing 200 feet of retaining walls at a cost of \$175,000. The encroachment would be a strip of land 200 feet long with a width varying from 30 to 40 feet. See Plate 20.

If no retaining walls are constructed along the northbound roadway the existing 20' x 10' box culvert carrying Old Farm Creek under I-270 would have to be lengthened approximately 25' on each end to accommodate the widening of I-270. The effects on the floodplain would be minimal due to the negligible encroachment on the floodplain.

B. Cabin John Regional Park

This park under the jurisdiction of Maryland National Capital Park and Planning Commission is located on both sides of I-270 between the Y Split and Montrose Road and contains 525 acres of woods and recreational facilities. See Plate 6. Cabin John Creek passes through the park. The facilities include primitive camping areas, picnic grounds, playgrounds, nature trails, skating, scenic railroad, and tennis courts. The closest facility to the I-270 right of way is a trail in the primitive camping area which comes within 300 feet of the right of way. There are no plans to develop any area of the park closer to I-270. From August 1981 to August 1982, 579,000 people used the park.

If no retaining walls are constructed along I-270 to avoid right of way encroachment, the 16' x 8' box culvert carrying Cabin John Creek under I-270 would have to be lengthened approximately 50' on each end to accommodate the widening of I-270. The effects on the floodplain would be minimal due to the negligible encroachment on the floodplain. Any erosion and sedimentation during construction will be handled by the control method developed by the Maryland State Highway Administration as described under the Water Quality section.

Noise impacts were studied both at the park boundary and at the nearest site of activities which is a trail approximately 300 feet from the right of way. No barriers are considered along the park boundaries because the predicted noise levels at the nearest activity area are below the FHWA Noise Abatement Criteria.

The Build Alternate would require the acquisition of 7.0 acres of land in a strip along the I-270 right of way varying in width from 30 to 100 feet at a cost of \$362,000. See plates 20 and 21. An alternative to this acquisition of parkland would be the provision of 6200 linear feet of retaining walls at a total cost of \$4,460,000. See plates 20 and 21.

C. Rockmead Park

This park of 28 acres is located on the west side of I-270 just south of the MD 28 interchange in the Fallsmead Subdivision and contains walkways and playgrounds. See Plate 6. The two parcels affected are located between Watts Branch Parkway and I-270 and are designated as open space. There are no plans for utilizing these parcels for any recreational activities since they are isolated parcels and separated from the major portion of the park by Watts Branch Parkway. Both of these parcels were dedicated by developers to the city as park property because they were not developable as residential uses. If the land is not used for parkland, the parcels revert back to the developer. See the letter from the City of Rockville in Appendix C.

143

Parcel 1, located across from Lockness Court contains 1 acre. See plate 23. Three hundred linear feet of retaining walls at a cost of \$340,000 would be needed along the right of way to avoid the acquisition of 0.4 acre of open space. The acquisition would be a strip of land about 350 feet long with an average width of 50 feet.

Parcel 2, located just south of Fallswood Court contains approximately 1 acre. See Plate 23. Six hundred and twenty-five linear feet of retaining walls at a cost of \$620,000 would be needed to avoid the acquisition of 0.7 acre of open space. This acquisition would be a strip of land about 550 feet long with an average width of 50 feet.

D. Wootten Mill Park

This park of approximately 80 acres, under the jurisdiction of the City of Rockville, is located in the Fallsmead Subdivision along the Watts Branch floodplain. See Plate 6. The park consists of walking trails, playground equipment, and picnic areas for the use of local residents. A portion of the land dedicated to the City of Rockville is located between Watts Branch Parkway and the ramp to southbound I-270 and contains about 3 acres. This parcel was undevelopable for residential uses and, therefore, was deeded to the City of Rockville. It is designated as open space with no plans for development for recreational facilities due to its isolation from the rest of the parkland and the residences. See the letter from the City of Rockville in Appendix C.

The design criteria currently in effect requires that the improvements to Ramp D at the MD 28 interchange provide a maximum design speed of 25 mph. This requirement creates the need to expand both Ramps D and C. This expansion would encroach into the portion of Wootten Mill Park between Watts Branch Parkway and I-270 and require the acquisition of 0.2 acre located on the extreme west end of the parcel. A retaining wall could be used to reduce the acquisition to 2600 square feet, or 0.06 acre at a cost of \$100,000. See Plate 23.

E. Middlebrook Hill Neighborhood Conservation Area

As part of the development of Fox Chapel North and Middlebrook Hill subdivisions, a parcel of 11.5 acres was deeded to the Maryland National Capital Park and Planning Commission along the floodplain of a tributary to Great Seneca Creek. See plate 7. This parcel is located on the east side of I-270 abutting the north boundary of Seneca Creek State Park and the I-270 right of way. There are no plans for developing this parcel and no existing recreational facilities.

The grading of the improvements to I-270 would require the acquisition of about 0.5 acre from two encroachments of about 60 feet wide each. The alternative to this acquisition of parkland would be the provision of 950 linear feet of retaining walls at a cost of \$550,000. See Plate 29.

If no retaining walls were constructed along I-270 to avoid right of way encroachment the 84" diameter multiplate pipe would have to be lengthened approximately 20 feet on the upstream end. This extension would create minimal effects on the floodplain.

F. Metropolitan Grove Road Park

This park, consisting of 31 acres, is under the jurisdiction of the City of Gaithersburg and is located in the northwest quadrant of the MD 124 interchange. See Plate 7. There are plans for a lake, primitive camping areas, nature trails, ballfields, picnic area, and tennis courts. The proposed lake and trails are the closest facilities to I-270. One proposed trail approaches to within approximately 40 feet of the right of way and the proposed lake is a minimum of 130 feet from the right of way.

The Build Alternate would require the acquisition of about 0.2 acre in a strip of land 600 feet long by a maximum width of 40 feet. This acquisition would reduce the minimum distance to the proposed lake to 100 feet. The proposed trail nearest the right of way would have to be relocated if this additional right of way were required. See Plate 28.

The alternative to this acquisition of parkland would be the provision of 500 linear feet of retaining walls at a cost of \$240,000.

145

G. Seneca Creek State Park

This park is under the jurisdiction of the Maryland Forest Service and is located south of Middlebrook Road and north of Game Reserve Road along the floodplain of Great Seneca Creek. See plate 7. It extends on both sides of I-270 for a length of approximately 1500 feet along the right of way.

The total acreage of the park is approximately 5800 acres including a 90 acre lake. The recreational facilities include hiking trails, boating facilities, picnic areas, and shelters. There are no plans for development in the park upstream of Clopper Road except for possible foot paths; however, canoes could use the stream in this area. The park opened in 1980 and the patronage figures have increased from 68,000 in 1980 to 104,500 in 1982. No recreational facilities are planned within 0.9 mile of the the I-270 right of way. The nearest activity areas are the visitor center and picnic facilities.

The Build Alternate would require the acquisition of 2.0 acres of land in strips varying in width from 10 to 80 feet. The alternative to this acquisition of parkland would be the provision of 2750 feet of retaining walls at a cost of \$1,650,000. See plate 29.

III AIR AND NOISE IMPACTS ON PARKLANDS

A. Air Quality

An air quality analysis was performed to determine the effects of the Build Alternate on the air quality along the project route including parks. It was found that the Build Alternate would provide slightly higher CO concentrations (1-2 ppm) than the No Build Alternate. (See the Effects on Air Quality section). There were no violations of the National Ambient Air Quality Standards at any receptor, including parklands.

B. Noise Levels

Noise Levels were studied at the various parks along the I-270 roadway. Below is a discussion of the various parks and

the effects of the project on the activity areas.

1. Tilden Park - There are no activities within 2000 feet of the I-270 right of way and, therefore, the project would have no effect on noise levels at these areas.
2. Cabin John Regional Park - The nearest activity area to the I-270 right of way is a trail which comes within 300 feet of the right of way. The noise levels at this trail are not above the FHWA Noise Abatement Criteria; therefore, no noise barrier was considered at this site.
3. Rockmead, Wootten Mill Parks and Middlebrook Hill Conservation Area - No activities exist in the open space parcels adjacent to the I-270 right of way at Rockmead or Wootten Mill. The noise levels at the nearest activity center would not be above the FHWA Noise Abatement Criteria. No activities are located in the Middlebrook Hill Conservation Area. Therefore, no noise barriers were considered along I-270 at any of these parks.
4. Metropolitan Grove Road Park - The noise levels at this park were studied under the MD 124 interchange project and it was found that there would be a negligible increase (+2 dBA) in noise levels over the ambient and over the FHWA Noise Abatement Criteria. This project would increase the noise levels at the park by about 1 dBA. In the Environmental Assessment for MD 124 it was stated that noise barriers would be studied in the design phase and include cost effectiveness analysis and involve public input.
5. Seneca Creek State Park - The nearest existing or proposed activities to I-270 are 0.9 mile away south of Clopper Road; therefore, no noise barrier was considered along this park boundary.

TABLE 17
SUMMARY OF PARK EFFECTS

Park	Total Acreage	Encroachment (acres)		Wall Costs (\$1000)
		Without Walls	With Walls	
Tilden Park	79	0.1	---	175
Cabin John Regional	525	7.0	---	4460
Rockmead	28	1.1	---	960
Wooten Mill	80	0.2	.06	100
Middlebrook Hill Conserv.	11.5	0.5	---	330
Metro. Grove Road	31	0.4	---	250
Seneca Creek State	5800	3.0	---	1850

IV MITIGATION MEASURES

All means will be employed to reduce the impacts on the various parklands of the encroachments described above. Revegetation, landscaping modifications of the grading areas will be investigated in coordination with the Bureau of Landscape Architecture at the MD SHA.

Encroachments will be minimized by steepening the slopes where feasible. Landscaping of the embankments will be studied to reduce the visual impact on the park users. The proposed cut slopes will not be visible to the park users. As stated previously, in no case are recreational facilities directly affected by the encroachments. Means of reducing the effects on the streams and floodplains will be studied as described in the Water Quality section including erosion and sediment control procedures. Encroachments onto the floodplain are negligible and are not considered to have a significant effect on the floodplains from a hydraulic standpoint.

Discussions will be held with the agencies with jurisdiction over the various parks to obtain their comments on ways to reduce the impacts on the parks.

V CONSULTATION AND COORDINATION

The various agencies with jurisdiction over the parks along I-270 were contacted to obtain plans of existing facilities and to discuss development plans for each park. These agencies include the Cities of Rockville and Gaithersburg, MD National Capital Park and Planning Commission and MD Department of Natural Resources Forest Service.

Continuing coordination with these agencies will be maintained during project development in order to develop mitigation or avoidance alternatives to the encroachments on the parks compatible with the plans of the agencies involved.

FOOTNOTES

FOOTNOTES

1. Maryland Magazine, October, 1982.
2. Maryland-National Capital Park and Planning Commission, (MNCPPC), "I-270 Market Area", Montgomery County Planning Board, Research Division, November 1980, p. 5.
3. Ibid, p. 38.
4. Ibid, p. 43.
5. Ibid, p. 6.
6. Montgomery County Planning Board, "Long Range Forecasts, People, Jobs, Housing," MNCPPC, August 1979, pp. 40, 43.
7. Maryland Department of Natural Resources, Maryland Geological Survey, "Archeological Reconnaissance of Interstate 270 from Miles Corner North of MD Rte. 121 to the I-270 Spur, Montgomery County, Maryland", File Report #166, Division of Archeology, June 2, 1981.
8. Maryland State Highway Administration (MDSHA), "Geomorphological Conditions, I-270-Tuckerman Lane to MD 121," August 13, 1980.
9. U.S. Department of Agriculture, Soil Conservation Service, "Soil Survey - Montgomery County" U.S. Government Printing Office, Washington, D.C. October, 1961. p. 1.
10. U.S. Department of Agriculture "Identification of Important Farmlands", Federal Register Vol. 43, January 31, 1978, p. 4030.
11. U.S. Department of Agriculture "Map of Important Farmlands, Montgomery County, Maryland", Soil Conservation Service, November 1979.
12. Environmental Services, Inc, "Environmental Inventory, I-270 from Y (Spur) to MD 121," July 28, 1981, pp. 56-59.
13. Ibid, pp. 50-54
14. U.S. Department of Transportation, Federal Highway Administration, "Fundamentals and Abatement of Highway Traffic Noise," Report No. FHWA-HH1-HEV-73-7976-1, June 1973, pp 2-10.
- 15. Level of Service E represents traffic operations at or near capacity with travel speeds of about 30 mpg. Flow is unstable and there could be stoppages of momentary duration. Level of Service F

represents forced flow at low speeds. Operation is characterized by stop and go conditions. National Academy of Sciences, "Highway Capacity Manual, 1965", Highway Research Board Special Report No. 87., National Research Council, Washington, D.C., 1965, p. 81.

16. MNCPPC, "Master Plan Clarksburg and Vicinity," September, 1968. p. 16.
17. MNCPPC, "Comprehensive Amendment to the Master Plan for Germantown," January, 1974, p.33.
18. MNCPPC, "Preliminary Draft, Gaithersburg Vicinity Master Plan", March, 1983, p. 144.
19. City of Rockville Planning Commission, "Master Plan, Rockville, Maryland", January, 1970, p.88.
20. MNCPPC, "Master Plan for North Bethesda - Garrett Park, January, 1979, p. 13.
21. Metro Washington Council of Governments, "The Transportation Plan for the National Capital Region", National Capital Region Transportation Planning Board, May, 1980, p.25.
22. U.S. Department of Transportation, Federal Highway Administration, "Federal Aid Program Manual 7-7-3", August 9, 1982.

COMMENTS AND COORDINATION

COMMENTS AND COORDINATION

As part of the Project Planning study for improvements to I-270, various community associations, public agencies, and private organizations were contacted for their comments and information pertinent to their area of expertise. A list of the contacts made is shown below:

Community Associations

Burgundy Knolls Neighborhood Alliance
Clarksburg Community Association
College Gardens Citizens Association
Fallsmead Citizens Association
Fallswood Civic Association
Germantown Area Businesses
Germantown Citizens Association
Glenora Hills Citizens Association
Hungerford Stoneridge Civic Association
Luxmanor Citizens Association
Montgomery County Civic Federation
New Mark Commons Citizens Association
North Farm Citizens Association
Plymouth Woods Condominium Association
Regency Square Condominium Association
Saddlebrook Citizens Association

Public Agencies

City of Gaithersburg
City of Rockville
Maryland Department of Economic and Community Development
Maryland Department of Natural Resources, Water Resources Administration
Maryland Forest Service
Maryland Geological Survey, Division of Archeology
Maryland Historic Trust
Maryland-National Capital Park and Planning Commission

Public Agencies (cont.)

Montgomery County Department of Transportation

United States Department of Agriculture, Soil Conservation Service,
Montgomery County Maryland

United States Department of the Interior, Wildlife Service

Minutes of the meetings with the civic associations are included in this section along with a summary of the Alternates Meeting held on June 11, 1985.



Maryland Department of Transportation

State Highway Administration

Lowell K. Bridwell
Secretary

M. S. Caltrider
Administrator

July 14, 1983

MEMORANDUM

TO: Mr. Wm. F. Schneider, Jr., Chief
Bureau of Project Planning

FROM: Jim Helm
Project Manager
Bureau of Project Planning

SUBJECT: Contract No. M 401-152-372
From Y-Split to Maryland Route 121

RECEIVED

JUL 25 1983

THE WILSON T. BALLARD CO.

BY

100-130

On June 11, 1983, we conducted an "Open House" type of public meeting which was intended to satisfy requirements for an alternates public meeting. Previous to this meeting, a team comprised of Neil Pedersen, Wilson Ballard, Gary Hitchcock, and myself conducted a series of meetings with selected community organizations adjacent to the I-270 corridor. This effort is still ongoing.

The Open House was conducted in a workshop atmosphere with an introductory slide presentation and stations representing the study disciplines. The following listed people supported in the conduct of the meeting.

STATE HIGHWAY ADMINISTRATION STAFF:

Mr. Bill Carlson	District #3 Traffic
Ms. Gloria Dolan	District #3 Right of Way
Mr. John Ketchum	District #3 Right of Way
Mr. Doug Mills	District #3 Right of Way
Mr. John Schneider	Bureau of Landscape Architecture
Mr. Ken Polcak	Bureau of Landscape Architecture
Mr. Neil J. Pedersen	Office of Planning & Preliminary Engineering
Mr. Don Ayres	Bureau of Highway Design
Mr. Louis H. Ege, Jr.	Bureau of Project Planning
Mr. Wm. D. Ermer	Bureau of Project Planning
Mr. Foster T. Hoffman	Bureau of Project Planning
Mr. Jim Helm	Bureau of Project Planning
Mr. Joseph W. Langley	Bureau of Project Planning

WILSON T. BALLARD COMPANY STAFF:

Mr. Wilson T. Ballard, Jr.	President
Mr. Garrett R. Hitchcock	Project Engineer
Mr. Paul Ramey	
Mr. Scott Caples	

90

My telephone number is _____

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156

LOCAL GOVERNMENT:

Mr. Jeffrey Riese
Ms. Sue Richards

Montgomery County DOT
City of Rockville

FEDERAL HIGHWAY ADMINISTRATION:

Mr. Steve Rapley

The meeting was attended by approximately 70 people including several representatives of the press and several members of the House of Delegates, namely Gene Coumihan, Jeannie Forehand, and Judith C. Toth. SHA staff was available from 10:00 a.m. until 4:00 p.m.

The following information is intended to serve as a record of public input. Copies of this summary will be forwarded along with requests for follow-up action to appropriate elements within the SHA.

1. Edgar Neal
Germantown Citizens Association
11809 Collins Drive
Germantown, Maryland 20874
PHONE: Work: 840-3089 - Home: 972-3919

- a. See letter concerning Maryland Routes 118/355 intersection (Attachment #1)
- b. He felt that the best way to improve traffic operation on I-270 would be to adjust traffic signals on the roads serving I-270 to prevent the traffic from reaching the highway.

It was explained that this was the premise utilized in ramp metering but the controls were at the ramps. He felt it would be better to adjust the existing signals. He was encouraged to write his comment on the mailer provided. Mr. Neal also noted that left turning traffic south of Maryland Route 118 on Maryland Route 355 was creating a hazard.

2. Mr. and Mrs. Schreiber
PHONE: 424-8404

Wanted information on Falls Road. She was shown the FONSI and Draft EA. However, there was no one available to answer her detailed questions concerning the project. They were told that someone from the design team would contact them.

3. Mr. Ken Yednock
10 Manus Court
Rockville, Maryland 20850
PHONE: Work: 279-7039 - Home: 566-3199

He had suggested utilizing the north side of Falls Road rather than the south side to reduce impacts. He had raised these points at the public hearing but had received no reply. He was told that someone from the design team would contact him.

4. There were several questions on the Intercounty Connector project that could not be answered since no one was there from the project.

5. Mr. Morton Levine
Imperial Development Company

Mr. Levine favors an interchange of Middlebrook Road with I-270. He also suggested we consider an urban diamond similar to that being designed at Maryland Route 189 and I-270.

Study Limits: improvements to I-270 are ok but will create a bottleneck at the beltway.

Mr. Levine feels that the capacity of the proposed improvements will be reached and that development should be spread more equally through a larger area of the state.

6. A citizen remarked that it did not seem to him that any attention was being paid to overall planning in the job, i.e. that coordination of the I-270 project with other projects and the master plans were being ignored.
7. A citizen was disturbed about noise. Her property abuts I-270 south of Montrose and she is trying to sell it. Currently, no one will get out of their car to look at it when they see where it is located.
8. A citizen was disturbed about noise because it prevented her from using her back yard. She had seen the sound walls on Georgia Avenue and says that they look like ###* and don't do a ###* bit of good. She was informed that, in order to be effective, noise barriers need to be at least at the level of the 2nd floor windows.
9. State Delegate Jeannie Forehand
712 Smallwood Road
Rockville, Maryland 20850

Requested that she be furnished a copy of the L₁₀ noise data for the receptors in her district. She also wants to know when decisions are made about noise barriers at Regents Square, Woodley Gardens, Watts Branch, Rockville Nursing Home and the area of 10 or 12 houses directly across I-270. It was indicated that we would comply with this request.
10. A citizen expressed concern about the signal timing between Georgetown Road and Wildewood/Tuckerman Lane intersection.
11. Ross Capon
417 New Jersey Avenue, S. E.
Washington, D. C. 20003
PHONE: (202) 546-1550

Presented a paper on rotary intersections. This information has been forwarded to the Division of Traffic (Attachment 2).

138

12. A citizen requested an a.m. congestion sign similar to those in other areas, in advance of the Montrose Road Interchange. Signing on the Capital Beltway at the Y-Split could be improved.

13. Ms. Gail Herzenberg
11920 Tildenwood Drive
Rockville, Maryland 20852
PHONE: 984-6220

Expressed concern about impacts of the proposed Rockville Facility/Intercounty Connector Project. She is a member of the Tildenwoods Community Association.

14. A citizen pointed out an apparent improper phasing of the traffic signal at Glen Mill Road and Maryland Route 28. Support for improving the Montrose Road Interchange by constructing larger ramps on the southbound side in conjunction with a C/D road was expressed. Displeasure with left turns within the Montrose Road Interchange was also expressed.

15. Mrs. Lee Warren Shipman
6403 East Halbert Road
Bethesda, Maryland

Suggested that reflective paint be applied to the median divider on Maryland Route 28 at the ramp terminal of northbound I-270 to eastbound Maryland Route 28 in order to better define the turn. Choices for interchange improvements at Montrose Road were also presented (See attachment 3).

Additional input from those attending this meeting is welcome. Please forward input to Jim Helm telephone 659-1139.

JH:mcr

cc: Mr. Edward H. Meehan
Mr. Hal Kassoff
Mr. Neil J. Pedersen
Support Staff (listed above)

Maryland Department of Transportation

State Highway Administration

159
Lowell K. Bridwell
Secretary

M. S. Caltrider
Administrator

RE: Contract No. M 401-152-372
I-270
I-495 (Capital Beltway)
To Maryland Route 121

The Maryland State Highway Administration (SHA) is conducting a study of long term alternatives for improving travel conditions along the Interstate 270 corridor. To date, SHA has investigated the feasibility of adding lanes, upgrading existing interchanges, constructing exclusive high occupancy vehicle lanes, and implementing ramp signals to control the rate of traffic entering the facility.

The study is addressing the serious problem of traffic congestion along I-270, taking into careful account the residences and businesses located adjacent to the existing highway.

Before proceeding to the final stages of the study, we would like to meet with the governing boards of as many interested civic groups in the corridor as possible. We would like to explain the findings of the study to date, and receive comments from those who live and work in this corridor regarding the alternatives being considered. I would like to emphasize that the purpose of the meetings will be a two-way exchange of information.

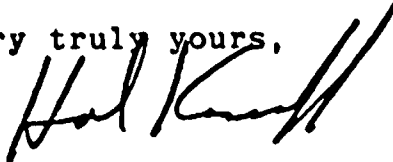
Mr. Jim Helm, Project Manager for this study, will be contacting you in the next few weeks to arrange a meeting at your convenience. If you wish to talk with Mr. Helm in the interim, you may call collect, (301) 659-1139.

160

Your name has been provided to us as the contact person for your community organization. If our information is outdated, please forward this letter to the proper individual.

We look forward to working with you on this very important project.

Very truly yours,



Hal Kassoff, Director
Office of Planning and
Preliminary Engineering

HK:cms

cc: Mr. M. S. Caltrider
The Honorable Melvin Steinberg
The Honorable Ida G. Ruben
The Honorable Charles Gilcrest
The Honorable David Scull
Mr. Norman Christeller
Mr. Gerald Cichy
Ms. Ioanna T. Morfessis

DISTRIBUTION LIST

Mr. John Chirtea, President
Colony Apartments
20000 Aircraft Drive
Germantown, MD 20874
Phone: 428-0002

Ms. Kay Morrison, President
Fallsmead Citizens Association
1215 Fallsmead Way
Rockville, MD 20854
Phone: 762-0972

Mr. Daniel Albert, Jr., President
Clarksburg Community Association
Post Office Box 325
Clarksburg, MD 20871
Phone: 972-1503

Mr. Ben Gitnick, President
West End Civic Association
151 S. Adamas Street
Rockville, MD 20850
Phone: 424-2976

Mr. Eugene F. Callaghan, President
Mid County Citizens Association
11916 Coldstream Drive
Potomac, MD 20854
Phone: 983-0169

Mr. Lee LaChat, President
Regents Square Condominium
890 Azalea Drive
Rockville, MD 20850
Phone: 762-1061

Ms. Gwendolyn Edsall, President
Montgomery County Civic Federation
321 Olney-Sandy Spring Road
Sandy Spring, MD 20860
Phone: 774-7132

Mr. Richard H. Tubbs, President
Fox Chapel North Homes Association
19209 Fox Chapel Drive
Germantown, MD 20874
Phone: 972-0236

Mr. Charles Challostrom, Chairman
Washington Grove Planning Commission
Post Office Box 271
Washington Grove, MD 20880
Phone: (H) 926-4498 (O) 443-8684

Ms. Janet DeSantis, Secretary
Fox Chapel Civic Association
19000 Plummer Drive
Germantown, MD 20874
Phone: 972-2268

Mr. David Neumann
Gaithersburg Coalition
Post Office Box 190
Washington Grove, MD 20880
Phone: (H) 869-3691 (O) 921-3632

Mr. Charles Ippolito
Meadowbrook Estates
12205 Major Drive
Germantown, MD 20874
Phone: Unlisted

Mr. Jerry R. Goldstein, President
Fallswood Civic Association
1418 Fallswood Drive
Rockville, MD 20854
Phone: (H) 279-0828 (L) 251-9525

Mr. Allan Noble, President
Boyds Civic Association
15410 Barnesville Road
Boyds, MD 20841
Phone: 972-3839

Mr. Jerry Leszkiewicz, President
Woodley Gardens Homeowners Assoc.
813 Woodley Drive
Rockville, MD 20850
Phone: 340-3397

Ms. Linda Bell, Co-President
Germantown Citizens Association
19240 Liberty Heights Lane
Germantown, MD 20874
Phone: (H) 972-1654 (W) 340-0840

162

I-270 DISTRIBUTION LIST (Cont'd)

Mr. Dick Studley, President
Willerburn Acres Citizens Assoc.
11900 Gainsborough Road
Potomac, MD 20854
Phone: 279-9059

Mr. James Suggs, President
Walnut Woods Citizens Association
7219 Old Gate Road
Rockville, MD 20852
Phone: 468-2174

Mr. Allan S. Cohen, President
West Montgomery County Citizens Assoc.
11109 Broad Green Drive
Potomac, MD 20854
Phone: 299-2118

Mr. Charles Bier, M.D., President
Luxmanor Citizens Association
6543 Windemere Circle
Rockville, MD 20852
Phone: 897-8585

Dr. Arthur Katz, President
New Mark Commons Homeowners Assoc.
1418 Fallswood Drive
Rockville, MD 20850
Phone: (H) 279-9306 (W) 353-3649

Mr. Paul Tierney, President
Hungerfordtown/Stoneridge Civic Assoc.
412 Ritchie Parkway
Rockville, MD 20852
Phone: (H) 762-1409 (W) 279-9363

THE WILSON T. BALLARD COMPANY

Owings Mills, Maryland

MINUTES OF MEETING

Date Typed: April 15, 1983

Project: I-270

File: 100-130

Subject: Meeting with Germantown Citizens Association

A meeting was held at the home of Mr. and Mrs. House on April 13, 1983 to discuss the proposed improvements to I-270 and the MD 118 and Middlebrook Road Interchanges. Those present included the Board of Directors of the Germantown Citizens Association and other interested citizens as listed below:

Ms. Linda Bell	Germantown Citizens Association
Mr. Howard Mitchell	Germantown Citizens Association
Mr. & Mrs. Donald House	Germantown Citizens Association
Mr. John Mathias	Montgomery County Planning Department
Ms. Mary Beth Smith	Gaithersburg Gazette
Mr. Craig Wilson	Germantown Citizens Association
Ms. Janice Lindsay	Germantown Citizens Association
Ms. Ellyn Cottingham	Cinnamon Woods Representative to Germantown Citizens Association
Ms. Elaine Huly	Germantown Citizens Association
Mr. Bill Soderberg	Germantown Citizens Association
Mr. Lawrence Levitan	Maryland State Senate
Mr. Austin Leake	Germantown Citizens Association
Mr. Dan Golas	Germantown Citizens Association
Mr. Gene Counihan	Maryland State Delegate
Ms. Mary Lou Miller	Office of Mr. Levitan
Mr. Neil Pedersen	State Highway Administration
Mr. James Helm	State Highway Administration
Mr. Wilson T. Ballard, Jr.	The Wilson T. Ballard Company
Mr. Garrett Hitchcock	The Wilson T. Ballard Company

The purpose of the meeting was to present the studies that have been performed to date on the I-270 corridor and specifically, the MD 118 and Middlebrook Road Interchange areas and answer any questions the citizens might have concerning the study process.

Before the I-270 discussions began, Mr. Helm reported to the group on the construction under way on Clopper Road, South of MD 118. He stated that the vertical alignment was being improved to reduce the sharp vertical curve and increase sight distance. In addition, the roadway was being widened at the intersections in the area to provide a left turning lane.

164

Mr. Pedersen began the I-270 discussions by providing a brief history of the project and a description of the need for improvement to I-270 based on the anticipated growth in the corridor, both employment and residential. Mr. Pedersen also briefly discussed the environmental effects anticipated with the improvements, mentioning that noise would most likely be one of the major issues.

Mr. Helm discussed the various mainline alternates being considered. He mentioned that the characteristics of the traffic circulation in the I-270 corridor do not lend themselves to the application of special lanes for high occupancy vehicles (HOV). Since employment and residences are scattered along the corridor, a large percentage of traffic enters and leaves I-270 at the various interchanges along I-270 rather than continuing to the south end. Therefore, it appears at this stage in the studies that the HOV alternate will not prove feasible.

Both the 8 Lane and Continuous Collector-Distributor (C-D) Road Alternates were reviewed with respect to their advantages and disadvantages. The operation of the C-D road was explained and the advantage of removing the weaving, merging, and diverging maneuvers from the main roadway was discussed.

The ramp metering alternate was described and the parameters used to analyze its feasibility were explained. Mr. Pedersen mentioned the political implications of ramp metering.

Mr. Hitchcock presented the various interchange alternates being studied. The concerns of providing an interchange at Middlebrook Road, such as proximity to MD 118 Interchange, right-of-way requirements, and relocation of Waring Station Road were described. The improvement to traffic circulation in the Germantown area provided by the interchange at Middlebrook Road was mentioned. Mr. Pedersen mentioned that these studies are preliminary and have not yet received the approval of the Federal Highway Administration; therefore, the Middlebrook Road Interchange should not be taken as definite improvement to be made.

Generally, there appeared to be favorable response to the improvement alternates presented. Some concern was expressed on the improvements needed to Middlebrook Road if an interchange is to be provided. It was stated that no interchange would be built without the widening of Middlebrook Road to a four-lane facility between MD 355 and MD 118.

It was asked whether any interim improvements are planned to improve the operations of I-270 in the Montrose Road area in the near future. Mr. Pedersen stated that considering the schedule of this project and the time needed for design, it is unlikely that anything could be built before 1986.

The use of existing bridges over I-270 was questioned. It was stated the alternates which included C-D roads could salvage the main spans of the bridges providing the C-D roads and weaving lanes behind the existing piers. Any alternate requiring more than a total of four contiguous lanes in each direction including weaving lanes would require complete new bridges over I-270.

The Wilson T. Ballard Company
Minutes of Meeting
April 13, 1983
Page 3

Questions were asked about the MD 124 and I-370 interchanges with respect to their scheduling and operation.

In concluding the meeting, it was stated the Alternates Meeting is scheduled for June 11, 1983 from 10:00 am to 4:00 pm at the Julius West Junior High School on Falls Road. At that time, the entire project will be presented and comments taken from the public.

By James R. Helm

GRH:dcl

cc: Mr. James R. Helm

THE WILSON T. BALLARD COMPANY

Owings Mills, Maryland

MINUTES OF MEETING

Date Typed: April 25, 1983
Project: I-270 Improvements
File: 100-130
Subject: Meeting with Montgomery County Civic Federation

A meeting was held at the home of Ms. Gwendolyn Edsall on April 21, 1983 to discuss the proposed improvements to I-270. Those present were as follows:

Ms. Gwendolyn Edsall	Montgomery County Civic Federation
Mr. George Siehl	Montgomery County Civic Federation
Mr. A. Chester Flather	Montgomery County Civic Federation
Mr. Lawrence Glassman	Montgomery County Civic Federation
Mr. George Sauer	Montgomery County Civic Federation
Mr. R. E. Simpson	Montgomery County Civic Federation
Mr. Harold W. Howard	Montgomery County Civic Federation
Ms. Marcella Petree	Montgomery County Civic Federation
Mr. Neil Pedersen	Maryland State Highway Administration
Mr. James R. Helm	Maryland State Highway Administration
Mr. Wilson T. Ballard	The Wilson T. Ballard Company
Mr. Garrett Hitchcock	The Wilson T. Ballard Company

The purpose of the meeting was to present the studies that have been performed to date on the I-270 corridor, and answer any questions the citizens had concerning the study process.

Mr. Pedersen began the I-270 discussions by providing a brief history of the project and a description of the need for improvement to I-270 based on the anticipated growth in the corridor, both employment and residential. Mr. Pedersen also briefly discussed the environmental effects anticipated with the improvements, mentioning that noise would most likely be one of the major issues.

Mr. Helm discussed the various mainline alternates being considered. He mentioned that the characteristics of the traffic circulation in the I-270 corridor do not lend themselves to the application of special lanes for high occupancy vehicles (HOV). Since employment and residences are scattered along the corridor, a large percentage of traffic enters and leaves I-270 at the various interchanges along I-270 rather than continuing to the south end. Therefore, it appears at this stage in the studies that the HOV Alternate will not prove feasible.

167

The Wilson T. Ballard Company
Minutes of Meeting
April 25, 1983
Page 2

Both the 8 Lane and Continuous Collector-Distributor (C-D) Road Alternates were reviewed with respect to their advantages and disadvantages. The operation of the C-D road was explained and the advantage of removing the weaving, merging, and diverging maneuvers from the main roadway was discussed.

The ramp metering alternate was described and the parameters used to analyze its feasibility were explained. The political implications of ramp metering were mentioned.

Mr. Hitchcock presented a brief overview of the various interchange alternates being studied. The concerns of providing an interchange at Middlebrook Road, such as proximity to MD 118 Interchange, and right-of-way requirements were described. The improvement to traffic circulation in the Germantown area provided by the interchange at Middlebrook Road was mentioned.

Some concern was expressed with regard to maintenance of traffic during construction. Mr. Pedersen stated that the State Highway Administration is committed to providing the same number of lanes through the construction site as exists before construction.

Questions were asked about the MD 124 and I-370 interchanges with respect to the scheduling of construction. Dates for construction of the I-270 project were also requested. Mr. Pedersen stated that at the earliest some construction could begin in 1986 on the I-270 project. The MD 124 and I-370 interchanges are in final design.

Ms. Edsall asked about the relocation of Muddy Branch Road as shown in the Gaithersburg Master Plan. Mr. Helm stated he would call with the name of the person to contact in Gaithersburg to answer that question.

In concluding the meeting, it was stated the Alternates Meeting is scheduled for June 11, 1983 from 10:00 am to 4:00 pm at the Julius West Junior High School on Falls Road. At that time, the entire project will be presented and comments taken from the public.

By 

GRH:dcl
cc: Mr. James R. Helm

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R
LMB
M

THE WILSON T. BALLARD COMPANY
Owings Mills, Maryland

MINUTES OF MEETING

Date Typed: May 4, 1983
Project: I-270
File: 100-130
Subject: Public meeting with members of the New Mark Commons Civic Association

A meeting was held on May 2, 1983 at the clubhouse of New Mark Commons to discuss the proposed improvements to I-270 with members of the New Mark Commons Civic Association. Those present were:

Ms. Diane Ducar	New Mark Commons Civic Association
Ms. Judy Eagle	New Mark Commons Civic Association
Ms. Marcia Glasser	New Mark Commons Civic Association
Dr. Arthur Katz	New Mark Commons Civic Association
Ms. Judy Mermilstein	New Mark Commons Civic Association
Mr. Marty Reiss	New Mark Commons Civic Association
Ms. Lucille Shriver	New Mark Commons Civic Association
Mr. Neil Pedersen	MD State Highway Administration
Mr. James Helm	MD State Highway Administration
Mr. Wilson T. Ballard, Jr.	The Wilson T. Ballard Company
Mr. Garrett Hitchcock	The Wilson T. Ballard Company

The purpose of the meeting was to present the studies that have been performed to date on the I-270 corridor and, specifically, the Montrose and MD 28 interchange areas and answer any questions the citizens might have concerning the study process.

Mr. Pedersen began the I-270 discussions by providing a brief history of the project and a description of the need for improvement to I-270 based on the anticipated growth in the corridor, both employment and residential. Mr. Pedersen also briefly discussed the environmental effects anticipated with the improvements, mentioning that noise would most likely be one of the major issues.

Mr. Helm discussed the various mainline alternates being considered. He mentioned that the characteristics of the traffic circulation in the I-270 corridor do not lend themselves to the application of special lanes for high occupancy vehicles (HOV). Since employment and residences are scattered along the corridor, a large percentage of traffic enters and leaves I-270 at the various interchanges along I-270 rather than continuing to the south end. Therefore, it appears at this stage in the studies that the HOV alternate will not prove feasible.

Both the 8-lane and Continuous Collector-Distributor (C-D) Road Alternates were reviewed with respect to their advantages and disadvantages. The operation of the C-D road was explained and the advantage of removing the weaving, merging, and diverging maneuvers from the main roadway was discussed.

The ramp metering alternate was described and the parameters used to analyze its feasibility were explained. Mr. Pedersen mentioned the political implications of ramp metering.

Mr. Hitchcock presented the various interchange alternates being studied at Montrose Road and MD 28.

The use of existing bridges over I-270 was discussed. It was stated the alternates which include C-D roads could salvage the main spans of the bridges providing the C-D roads and weaving lanes behind the existing piers. Any alternate requiring more than a total of four contiguous lanes in each direction, including weaving lanes, would require complete new bridges over I-270.

Several questions were raised concerning the project and its effects on the Falls Road interchange area. These questions and the responses are described below:

1. Ms. Eagle asked how much of the traffic destined for downtown Washington would use the metro.

Mr. Pedersen stated he did not have the number at hand but that a large proportion of the trips to downtown Washington would use the metro. However, due to the employment and residential distribution along the I-270 corridor, a relatively small percentage of total travel is to downtown Washington.

2. Dr. Katz was concerned about the signing along I-270 south of MD 124, assigning through traffic to the left two lanes during peak hours. He felt this could create additional lane changes or weaves which could aggravate the problem of congestion.

Mr. Pedersen stated that procedure was adopted in that area because the traffic volumes were low enough that the through traffic could be accommodated in two lanes. The volumes in the southern sections of I-270 could not be carried in two lanes so that treatment is not an option in this area.

3. It was asked whether the Collector-Distributor Road Alternate would generate additional traffic for local circulation between interchanges.

Mr. Pedersen stated that this would be the case and this situation was included in the traffic projections for the Collector-Distributor Road Alternate.

170

4. Dr. Katz asked if independent traffic projections were made for the Collector-Distributor Road Alternate and the other mainline alternates.

Mr. Pedersen stated that projections were made for each mainline alternate. However, the projections for the Falls Road interchange were essentially the same for all mainline alternates due to the capacity restraints on Falls Road. This condition also applies to Montrose Road and MD 28. As you go north in the corridor there is excess capacity on the roads feeding I-270 so the projections would be different for the mainline alternates at these locations.

5. Mr. Reiss asked to see the traffic data and analysis for the interchanges at Falls Road, Montrose Road and MD 28 when they are complete.
6. Dr. Katz showed some concern over the alternates requiring extensive construction beyond the existing edge of pavement and the impacts on adjacent land uses. He stated, even if retaining walls are used, the provision of roadways close to the right of way will have impacts on the adjacent development through noise effects, grading and right of way acquisition.
7. Mr. Reiss asked about the effect of ramp metering on the operation of the acceleration lanes at the interchanges.

Mr. Pedersen stated that the signals are placed far enough back from the beginning of the acceleration lane to allow for full acceleration after the signal.

8. Dr. Katz expressed concern over whether the Falls Road interchange was included in the studies being performed on I-270. He stated that the effects on the Falls Road interchange by improvements at Montrose Road and MD 28 interchanges must be addressed. He also stated that the impacts of improvements to I-270 on all roadways in the network must be explicitly described. The assumptions concerning other projects in the corridor used in developing the traffic projections must be stated.

Mr. Pedersen assured Dr. Katz that the provision of an interchange at Falls Road was included in the conditions used for the traffic projections and analysis for I-270. The requirements with respect to weaving and auxiliary lanes between the Falls Road and Montrose Road and MD 28 interchanges were specifically analyzed for each improvement alternate studied. Also, during the Falls Road interchange studies, improvements to Montrose Road and MD 28 were analyzed as possible substitutions for improvements at Falls Road and were found to be insufficient. These improvements at Montrose Road and MD 28 were not explicitly addressed at any public meetings as alternates but were analyzed in the traffic studies. Mr. Pedersen also stated that the assumptions used in the development of the traffic projections can be described.

171

9. Ms. Eagle stated some concern over the operation of the left turn on Montrose Road west of I-270 for eastbound traffic to enter the ramp to southbound I-270. She feels that possibly a flashing light would help the operation of that movement.

Mr. Pedersen stated that he would look into this and respond. See note 1 below.

10. Dr. Katz was interested in the noise levels monitored in the Falls Road area and along I-270.

Mr. Hitchcock described to Dr. Katz the areas being analyzed and those studied in the Falls Road interchange studies. The ambient levels at the Falls Road receptors were shown to Dr. Katz.

11. Mr. Reiss asked what time of day the monitoring was done and how the monitoring was performed.

Mr. Hitchcock explained the monitoring procedures to develop the L_{10} level, or that noise level exceeded 10% of the time. He also explained why the worst-case noise conditions are often not during the time of heaviest traffic (or peak hours).

12. Dr. Katz suggested that we meet with the West End Civic Association and Potomac Springs Association.

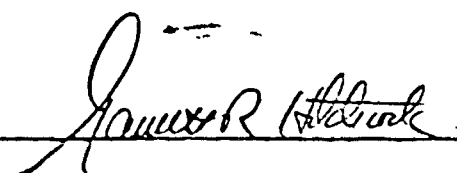
Mr. Helm stated he would make sure these groups were notified.

Notes:

1. In answer to Ms. Eagle's concern over the left turn at Montrose Road described in number 9 above, Mr. Majid Shakib was contacted on May 3, 1983 at the District 3 office of the State Highway Administration. The concerns were explained to Mr. Shakib and he stated that he would study the problem and report his findings to Mr. Pedersen.
2. In answer to Dr. Katz's request, included below are the names, addresses and phone numbers for the contacts at the S.H.A. for this project:

Mr. Neil Pedersen, Deputy Director of the Office of Planning and Preliminary Engineering
707 North Calvert Street
Baltimore, MD 21202
659-1121

Mr. James Helm, Project Manager, Bureau of Project Planning
707 North Calvert Street
Baltimore, MD 21202
659-1139



THE WILSON T. BALLARD COMPANY

Owings Mills, Maryland

MINUTES OF MEETING

Date Typed: May 6, 1983
Project: I-270
File: 100-130
Subject: Meeting with Luxmanor Civic Association

A meeting was held on Wednesday, May 4, 1983 at St. Mark's Presbyterian Church to discuss the proposed improvements to I-270. Those present were:

Mr. Jerome Baylin	Trustee	Luxmanor Civic Assoc.
Ms. Susan G. Walker	Board Member	Luxmanor Civic Assoc.
Dr. Charles J. Bier	President	Luxmanor Civic Assoc.
Ms. Cynthia W. Mead	Treasurer	Luxmanor Civic Assoc.
Ms. Elinor Blackstone	Secretary	Luxmanor Civic Assoc.
Mr. Neil Pedersen	Deputy Director	MD State Highway Admin.
Mr. Wilson T. Ballard, Jr.		The Wilson T. Ballard Co.
Mr. Garrett Hitchcock		The Wilson T. Ballard Co.

The purpose of the meeting was to present the studies that have been performed to date on the I-270 corridor and specifically, the Montrose Road Interchange area and answer any questions the citizens might have concerning the study process.

Before the I-270 discussions began, Mr. Pedersen reported to the group on the status of the studies for the Intercounty Connector Project.

Mr. Pederson began the I-270 discussions by providing a brief history of the project and mentioned the need for improvement to I-270 based on the anticipated growth in the corridor. Mr. Pedersen also briefly mentioned the environmental effects to be studied with the improvements, especially noise.

Mr. Pederson discussed the various mainline alternates being considered. He mentioned that the characteristics of the traffic circulation in the I-270 corridor do not lend themselves to the application of special lanes for high occupancy vehicles (HOV). Since employment and residences are scattered along the corridor, a large percentage of traffic enters and leaves I-270 at the various interchanges along I-270 rather than continuing to the south end. Therefore, it appears at this state in the studies that the HOV alternate will not prove feasible.

Both the 8 Lane and Continuous Collector-Distributor (C-D) Road Alternates were reviewed with respect to their advantages and disadvantages. The operation of the C-D road was explained and the advantage of removing the weaving, merging, and diverging maneuvers from the main roadway was discussed.

173

The ramp metering alternate was described and the parameters used to analyze its feasibility were explained. Mr. Pedersen mentioned the political implications of ramp metering.

Mr. Hitchcock presented the various interchange alternates being studied at Montrose Road. The characteristics of the various alternates with respect to traffic operation, safety, capacity, right-of-way acquisition and costs were discussed. The use of existing bridges over I-270 was described. It was stated the alternates which include C-D roads could salvage the main spans of the bridges providing the C-D roads and weaving lanes behind the existing piers. Any alternate requiring more than a total of four contiguous lanes in each direction, including weaving lanes, would require complete new bridges over I-270.

Generally, there was favorable response to the improvement alternates presented. All those present recognize the need for capacity improvement on I-270. Of the alternates at Montrose Road and throughout I-270, the unanimous favorite was the continuous collector-distributor road. The safety and capacity features of this alternate were cited as the reasons for favoring this alternate.

Several questions were raised during the discussions. The questions and their responses are described below:

1. Access to and from the collector-distributor (C-D) roads was questioned.

The use of slip ramps to obtain access to and egress from the C-D road was explained. It was stated the location of these slip ramps is presently under study and will be determined through the analysis of entering and exiting traffic and traffic operation on the C-D roads.

2. The effects of these improvements on the Old Georgetown Road and Democracy Boulevard interchanges were questioned.

Mr. Pedersen stated the effects of the project on the east and west legs of the Y to the Capital Beltway will be studied when the alternates along I-270 are determined.

3. Ms. Blackstone described the merge onto Democracy Boulevard from the loop ramps at I-270 as extremely hazardous due to the lack of a merging area on Democracy Boulevard. She asked what could be done to remedy this situation.

Mr. Pedersen gave Ms. Blackstone the name of the person at Montgomery County to contact to request a review of this condition.

4. Ms. Blackstone also expressed concern over the operation of the weaves both at Montrose Road Interchange between the loops on the southbound roadway and between Montrose Road and the Y split on the southbound roadway.

174
The Wilson T. Ballard Company
Minutes of Meeting
May 6, 1983
Page 3

Mr. Hitchcock explained that all alternates studied at Montrose Road address the weaving situation between the loops. The provision of the outer ramp from eastbound Montrose Road to southbound I-270 will greatly alleviate this condition by removing significant traffic volumes from the on-ramp loop, thereby reducing considerably the weaving volumes. The collector-distributor road alternate removes the weaving maneuver from the high-speed roadway and allows it to operate on a lower-speed C-D road, thereby improving its operation. The other alternate presented provides considerably longer weaving length to improve the operation of the weaving section.

It was also stated the weaving maneuver between the end of the C-D road and the Y split was analyzed and will operate at an acceptable level of service in the design year, 2010. There are 7,000 feet between the end of the C-D road and the Y split.

By *Garrett L. Hitchcock*

GH:dl
cc: File

175

THE WILSON T. BALLARD COMPANY

Owings Mills, Maryland

MINUTES OF MEETING

WSTV. K

Date Typed: Wednesday, May 18, 1983

Project: I-270

File: 100-130

Subject: Meeting with Willerburn Acres Residents

A meeting was held in the home of Mr. and Mrs. Henry Kramer on May 17, 1983 to discuss the proposed improvements to I-270. Those present were:

Mr. Richard Studley	Willerburn Acres Civic Association
Mr. and Mrs. Henry Kramer	Willerburn Acres Civic Association
Mr. Thomas Lewis	Willerburn Acres Civic Association
Mr. Thomas Lawrence	Willerburn Acres Civic Association
Mr. James Helm	Maryland State Highway Administration
Mr. Wilson T. Ballard, Jr.	The Wilson T. Ballard Company
Mr. Garrett Hitchcock	The Wilson T. Ballard Company

The purpose of the meeting was to present the studies that have been performed to date on the I-270 corridor and specifically, the Montrose Road interchange area and answer any questions the citizens might have concerning the study process.

Mr. Helm began the I-270 discussions by providing a brief history of the project and mentioned the need for improvement to I-270 based on the anticipated growth in the corridor. Mr. Helm also briefly mentioned the environmental effects to be studied with the improvements, especially noise.

Mr. Hitchcock discussed the various mainline alternates being considered. He mentioned that the characteristics of the traffic circulation in the I-270 corridor do not lend themselves to the application of special lanes for high occupancy vehicles (HOV). Since employment and residences are scattered along the corridor, a large percentage of traffic enters and leaves I-270 at the various interchanges along I-270 rather than continuing to the south end. Therefore, it appears at this stage of the studies that the HOV alternate will not prove feasible.

Both the 8 Lane and Continuous Collector-Distributor (C-D) Road Alternates were reviewed with respect to their advantages and disadvantages. The operation of the C-D road was explained and the advantage of removing the weaving, merging, and diverging maneuvers from the main roadway was discussed.

176

The Wilson T. Ballard Company
Minutes of Meeting
May 18, 1983
Page Two

The ramp metering alternate was described and the parameters used to analyze its feasibility were explained. Mr. Hitchcock mentioned the political implications of ramp metering.

Mr. Hitchcock presented the various interchange alternates being studied at Montrose Road. The characteristics of the various alternates with respect to traffic operation, safety, capacity, right-of-way acquisition and costs were discussed. The use of existing bridges over I-270 was described. It was stated the alternates which include C-D roads could salvage the main spans of the bridges providing the C-D roads and weaving lanes behind the existing piers. Any alternate requiring more than a total of four contiguous lanes in each direction, including weaving lanes, would require complete new bridges over I-270.

Several questions were raised during the discussions. The questions and their responses are described below:

1. Access to and from the collector-distributor (C-D) roads was questioned.

The use of slip ramps to obtain access to and egress from the C-D road was explained. It was stated the location of these slip ramps is presently under study and will be determined through the analysis of entering and exiting traffic and traffic operation on the C-D roads.

2. Mrs. Kramer asked whether the effect of these improvements on the legs of the Y split and the Capital Beltway was being investigated in this study.

Mr. Helm explained that the analyses of the legs of the Y and the Capital Beltway will be performed under a separate study.

3. The schedule of construction of the various projects in the I-270 corridor was questioned.

Mr. Helm described the schedule of construction for the Falls Road, I-370 and MD 124 interchanges. He stated also that the improvements proposed for I-270 will be included in the construction program.

4. Mr. Kramer asked for a description of the operation of the interchange proposed at Falls Road.

Mr. Helm explained the operation of the interchange and stated that he would determine the location of a similar existing urban diamond interchange in Richmond, VA.

177

5. Mr. Lewis asked about the difference in radii on the loop ramps on Alternates B and F at Montrose Road.

It was explained that the weaving lengths and the radii requirements for ramps serving a collector-distributor (C-D) road are less than that required to access directly to a high-speed freeway. Hence, the alternate with the C-D road can utilize the existing ramps; whereas Alternate F requires larger radii and longer weaving length.

In concluding the meeting, it was stated the Alternates Meeting is scheduled for June 11, 1983 from 10:00 am to 4:00 pm at the Julius West Junior High School on Falls Road. At that time, the entire project will be presented and comments taken from the public.

By *James R. Helm*

GRH:dcl
cc: Mr. James R. Helm

THE WILSON T. BALLARD COMPANY

Owings Mills, Maryland

MINUTES OF MEETING

Date Typed: May 26, 1983
Project: I-270
File: 100-130
Subject: Meeting with Rockville Civic Federation

A meeting was held at the Administration Building of Montgomery College on Thursday, May 19, 1983 to discuss the improvements proposed for I-270.

Mr. Paul B. Tierney	Hungerford Stoneridge Civic Association
Mr. Roger McArthur	Plymouth Woods Condominiums
Mr. Jerry R. Goldstein	Fallswood Civic Association
Mr. Stephen H. Fisher	Burgundy Knolls Neighborhood Alliance
Mr. Norm Clark	Burgundy Knolls Neighborhood Alliance
Mr. Wally Blackwell	Glenora Hills Citizens Association
Ms. Mary Conley	College Gardens Community Association
Mr. Neil Pedersen	Maryland State Highway Administration
Mr. James R. Helm	Maryland State Highway Administration
Mr. Garrett R. Hitchcock	The Wilson T. Ballard Company

The purpose of the meeting was to present the studies that have been performed to date on the I-270 corridor and specifically, the MD 28 Interchange area and answer any questions the citizens might have concerning the study process.

Mr. Pedersen began the I-270 discussions by providing a brief history of the project and a description of the need for improvement to I-270 based on the anticipated growth in the corridor, both employment and residential. Mr. Pedersen also briefly discussed the environmental effects anticipated with the improvements, mentioning that noise would most likely be one of the major issues.

Mr. Helm discussed the various mainline alternates being considered. He mentioned that the characteristics of the traffic circulation in the I-270 corridor do not lend themselves to the application of special lanes for high occupancy vehicles (HOV). Since employment and residences are scattered along the corridor, a large percentage of traffic enters and leaves I-270 at the various interchanges along I-270 rather than continuing to the south end. Therefore, it appears at this stage in the studies that the HOV alternate will not prove feasible.

Both the eight lane and Continuous Collector-Distributor (C-D) Road Alternates were reviewed with respect to their advantages and disadvantages. The operation of the C-D road was explained and the advantage of removing the weaving, merging, and diverging maneuvers from the main roadway was discussed.

The ramp metering alternate was described and the parameters used to analyze its feasibility were explained. Mr. Pedersen mentioned the political implications of ramp metering.

Mr. Hitchcock presented the various interchange alternates being studied at MD 28. The operations of each alternate were discussed with respect to weaving maneuvers, signalized intersections at MD 28, auxiliary lane requirements and maintenance of existing bridges.

Several questions were raised concerning the project. These questions and their responses are described below:

1. Mr. Blackwell asked how long these improvements will provide better conditions on I-270.

Mr. Pedersen stated that the volumes used for the design of the Collector-Distributor road alternate were the maximum that could reach I-270 due to the capacity of the cross roads feeding the interchanges. All programmed improvements to the cross roads were taken into consideration in this analysis.

2. Mr. Goldstein asked about the use of ramp metering in the area and the storage needed on the ramps.

Mr. Pedersen stated that metering has been used successfully in several other cities and is being installed on the Shirley Highway in Virginia. It was also stated since metering could increase the volumes moved on I-270, the queues on the ramps could be shorter than without metering.

3. Ms. Conley asked if any advisory and surveillance systems were being proposed for I-270.

Mr. Pedersen stated that these systems have not proven to be effective means of reducing congestion. Often the messages given are out-dated. Also, often the messages are not specific enough to give drivers diversion information necessary to avoid sites of accidents or congestion. Many drivers ignore these messages and remain on the roadway.

4. Ms. Conley asked about the construction schedule of the various projects in the corridor.

Mr. Pedersen gave the anticipated construction schedules for the I-370, Falls Road, Shady Grove Road, MD 124, and MD 28 projects.

180

The Wilson T. Ballard Company
Minutes of Meeting
May 26, 1983
Page Three

5. It was asked if the county has any input into the studies being performed on I-270.

Mr. Pedersen stated that the county is consulted on the project and county plans were coordinated with the I-270 improvements, but decisions were made by the State Highway Administration.

6. Mr. Blackwell asked if it was state policy to let developers provide some improvements to state roads. This questions was raised due to the relocation of MD 28.

Mr. Pedersen stated that it is more a county policy, but that the State Highway Administration is sometimes asking developers to perform some construction due to the limitations on state funds for improvements.

7. Mr. Fisher asked whether the provision of collector-distributor roads would promote additional connections to the I-270 roadway.

Mr. Pedersen stated that the Federal Highway Administration has studied requirements with respect to spacing on interchanges and these would be adhered to with or without collector-distributor roads.

Mr. Hitchcock stated that these parallel roadways would be collector-distributor roads and not frontage roads. No access to these roads would be permitted from adjacent properties and the only access would be provided at the interchanges.

8. Mr. Fisher also asked about the operation and spacing of the slip ramps to and from the collector-distributor roads.

Mr. Pedersen stated that studies are being performed to locate these slip ramps. They would operate as any ramp connection with the necessary acceleration and deceleration lengths provided.

9. Ms. Conley expressed concern with the safety of providing weaving maneuvers under the alternates proposed for MD 28.

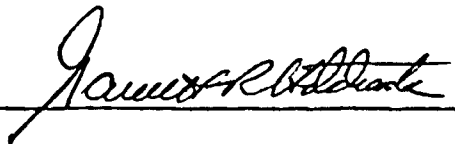
Mr. Hitchcock stated that these movements are possibly one of the more hazardous movements provided at interchanges but that the lengths of weaving lanes proposed would provide an acceptable level of the traffic service. Also, these weaves would operate at lower speeds under the alternates containing collector-distributor roads which would be an advantage for these alternates.

10. Mr. Goldstein suggested that we contact the City of Rockville Newsletter in order to advertise the Public Meeting on June 11, 1983.

181

The Wilson T. Ballard Company
Minutes of Meeting
May 26, 1983
Page Four

In concluding the meeting, it was stated the Alternates Workshop is scheduled for Saturday, June 11, 1983 from 10:00 am to 4:00 pm at the Julius West Middle School on Falls Road. At that time, the entire project will be presented and comments taken from the public.

By 

GRH:dcl
cc: Mr. James R. Helm

182

THE WILSON T. BALLARD COMPANY

Owings Mills, Maryland

MINUTES OF MEETING

Date Typed: May 26, 1983

Project: I-270

File: 100-130

Subject: Proposed Improvements

A meeting was held at the Clarksburg Recreation Center on May 23, 1983 to discuss the proposed improvements to I-270. Those present included members of the Clarksburg Community Association as listed below:

Mr. Daniel Albert, Jr.	Clarksburg Community Association
Mr. Calvin Burdette	Clarksburg Community Association
Delegate Gene Counihan	
Mr. Charles B. Ellis	Clarksburg Community Association
Mrs. Elizabeth Ellis	Clarksburg Community Association
Ms. Ethel L. Foreman	Clarksburg Community Association
Mr. Stephen Gunnulfsen	Clarksburg Community Association
Ms. Jean Marks	Clarksburg Community Association
Ms. Margaret F. Williams	Clarksburg Community Association
Mr. James R. Helm	Maryland State Highway Administration
Mr. Wilson T. Ballard, Jr.	The Wilson T. Ballard Company
Mr. Garrett R. Hitchcock	The Wilson T. Ballard Company

The purpose of the meeting was to present the studies that have been performed to date on the I-270 corridor and specifically the MD 121, MD 118 and Middlebrook Road Interchange areas and answer any questions the citizens might have concerning the study process.

Mr. Helm began the I-270 discussions by providing a brief history of the project and a description of the need for improvement to I-270 based on the anticipated growth in the corridor, both employment and residential. Mr. Helm also briefly discussed the environmental effects anticipated with the improvements, mentioning that noise would most likely be one of the major issues.

Mr. Helm discussed the various mainline alternates being considered.

Both the Express Lane Alternate, the 8 Lane and Continuous Collector-Distributor (C-D) Road Alternates were reviewed with respect to their advantages and disadvantages. The operation of the C-D road was explained and the advantage of removing the weaving, merging, and diverging maneuvers from the main roadway was discussed.

The Wilson T. Ballard Company
Minutes of Meeting
May 26, 1983
Page Two

The ramp metering alternate was described and the parameters used to analyze its feasibility were explained. Mr. Helm mentioned the political implications of ramp metering.

Mr. Hitchcock presented the various interchange alternates being studied. It was stated that the traffic projections for the design year of 2010 showed that no improvements were required at the MD 121 Interchange, however, improvement alternates to complete the interchange as suggested in the original construction plans were prepared.

The improvements proposed at MD 118 were discussed. The need for these improvements as a result of development in Germantown was explained.

The proposed improvements at Middlebrook Road as an alternate to improvements at MD 118 were explained.

The concerns of providing an interchange at Middlebrook Road, such as proximity to MD 118 Interchange and right-of-way requirements were discussed. The improvement to traffic circulation in the Germantown area provided by the interchange at Middlebrook Road was described.

The use of existing bridges over I-270 was explained. It was stated the alternates which included C-D roads could salvage the main spans of the bridges providing the C-D roads and weaving lanes behind the existing piers. Any alternate requiring more than a total of four contiguous lanes in each direction including weaving lanes would require complete new bridges over I-270.

Mr. Gunnulfsen asked about the funding for these improvements. Mr. Helm stated that these improvements are not in the existing construction schedule but could appear in the 1984-1989 schedule.

Mr. Ellis asked about improvements being made to the ramp at MD 121 from northbound I-270. It was stated that the proposed improvement was being done as a safety project and did not represent a capacity improvement. Therefore, it was not included in the studies being performed for I-270 at this location.

It was asked whether the project to extend Stringtown Road across MD 355 to intersect with MD 121 at I-270 was included in our studies. It was stated that this project was not a part of the improvement studies, but it would be consistent with any improvements at the MD 121 interchange.

The schedule for construction of these improvements was questioned. Mr. Helm explained the schedule as it exists today.

184

The Wilson T. Ballard Company
Minutes of Meeting
May 26, 1983
Page Three

The proposed plan to allow tandem trailer trucks on MD highways was questioned. Mr. Helm explained the negotiations now underway between the State of MD and the federal government concerning the designation of routes available to these trucks.

Mr. Ellis questioned plans for I-270 north of MD 121 since he has noticed this segment operating at "bumper-to-bumper" conditions in the afternoon peak period. It was explained that the limit of this study is the MD 121 interchange and that the possible widening of I-270 north of MD 121 would be part of a future study.

In concluding the meeting, it was stated the Alternates Meeting is scheduled for Saturday, June 11, 1983 from 10:00 am to 4:00 pm at the Julius West Middle School on Falls Road. At that time, the entire project will be presented and comments taken from the public.

By James R. Helm

GRH:dcl
cc: File
Mr. James R. Helm

185

THE WILSON T. BALLARD COMPANY

Owings Mills, Maryland

MINUTES OF MEETING

Date Typed: May 27, 1983

Project: I-270

File: 100-130

Subject: Meeting with Residents' Association of Regency Square Condominiums

A meeting was held in the Management Offices of the Regency Square Condominiums on Thursday, May 26, 1983 to discuss the improvements proposed for I-270. Those present included members of the Residents' Association of the Regency Square Condominiums and are listed below:

Mr. Lee Lachat	Residents' Association of the Regency Sq. Condo.
Ms. Joan Glass	Residents' Association of the Regency Sq. Condo.
Mr. Andy Gallant	Residents' Association of the Regency Sq. Condo.
Mr. Robert M. Meehan	Residents' Association of the Regency Sq. Condo.
Mr. Lou Diodato	Residents' Association of the Regency Sq. Condo.
Mr. Charles Smallwood, III	Residents' Association of the Regency Sq. Condo.
Mr. F. R. Hoyt	Residents' Association of the Regency Sq. Condo.
Ms. Phyllis Courlander	Residents' Association of the Regency Sq. Condo.
Mr. Bruce Blumberg	Regency Square Condominiums Property Manager
Ms. Tina Burack	Residents' Association of the Regency Sq. Condo.
Ms. Diana Chain	Residents' Association of the Regency Sq. Condo.
Ms. Lois Renfer	Residents' Association of the Regency Sq. Condo.
Mr. Neil Pedersen	Maryland State Highway Administration
Mr. James R. Helm	Maryland State Highway Administration
Mr. Wilson T. Ballard, Jr.	The Wilson T. Ballard Company
Mr. Garrett R. Hitchcock	The Wilson T. Ballard Company

The purpose of the meeting was to present the studies that have been performed to date on the I-270 corridor and specifically, the MD 28 Interchange area and answer any questions the citizens might have concerning the study process.

Mr. Pedersen began the I-270 discussions by providing a brief history of the project and a description of the need for improvement to I-270 based on the anticipated growth in the corridor, both employment and residential. Mr. Pedersen also briefly discussed the environmental effects anticipated with the improvements, mentioning that noise would most likely be one of the major issues.

Mr. Helm discussed the various mainline alternates being considered. He mentioned that the characteristics of the traffic circulation in the I-270 corridor do not lend themselves to the application of special lanes for high occupancy vehicles (HOV). Since employment and residences are scattered along the corridor,

a large percentage of traffic enters and leaves I-270 at the various interchanges along I-270 rather than continuing to the south end. Therefore, it appears at this stage in the studies that the HOV alternate will not prove feasible.

Both the 8 Lane and Continuous Collector-Distributor (C-D) Road Alternates were reviewed with respect to their advantages and disadvantages. The operation of the C-D road was explained and the advantage of removing the weaving, merging, and diverging maneuvers from the main roadway was discussed.

The ramp metering alternate was described and the parameters used to analyze its feasibility were explained. Mr. Pedersen mentioned the political implications of ramp metering.

Mr. Hitchcock presented the various interchange alternates being studied at MD 28. The specific characteristics of each alternate were explained with respect to right-of-way acquisition widths of roadways and operation of the intersections at MD 28.

Several questions were raised concerning the impacts of the various alternates on adjacent properties. These questions and the responses are described below:

1. Ms. Courlander asked whether an alternate was considered that utilizes reversible lanes.

It was explained that the characteristics of the traffic along I-270 that make the use of HOV lanes unfeasible (described above) also make the use of reversible lanes unfeasible. The balance of traffic in both directions does not create excess capacity in one direction during the peak periods, thereby allowing the use of a reversible lane.

2. Mr. Gallant asked whether any additional right-of-way would be required for these improvements.

It was explained that in most cases the improvements could be contained within the existing right-of-way. Where grading requirements extended beyond the right-of-way, retaining walls could be provided to avoid right-of-way acquisition and property damage. These conditions were discussed for each alternate interchange at MD 28.

3. Mr. Lachat asked whether the express lanes would be designed to handle the new larger trailer trucks.

Mr. Pedersen described the status of the negotiations under way

The Wilson T. Ballard Company
Minutes of Meeting
May 27, 1983
Page Three

with the federal government concerning the highways in Maryland that would allow these trucks. In any case, the interstate system would permit these trucks.

4. Ms. Courlander asked whether the ramp metering system is one that could be used for a period of time and then removed if it doesn't work.

It was explained that most of the ramp metering systems in existence throughout the United States were initiated as demonstration type projects. The systems were so successful that they have been continued and expanded.

It was stated that ramp metering could be utilized with the No-Build or any Build Alternate proposed to improve the efficiency of the operation of I-270.

5. Several questions were raised concerning noise impacts:

a. Mr. Blumberg asked about the increases in noise levels expected with the Build Alternates.

b. Mr. Lachat stated it appears that the worst noise case exists in the early evening.

c. Mr. Glass asked about the worst case condition.

d. Mr. Diodato asked whether the expected increase in truck traffic was considered in the modeling of the predicted noise levels.

Mr. Hitchcock explained the monitoring procedures and described the noise levels presently existing along I-270. The worse case conditions were described. It was stated increases of from 5 to 10 dBA were anticipated under the Build Alternates. The increased truck traffic has been included in the projected traffic data used in the modeling.

Noise barriers were described with respect to their aesthetic treatments and effectiveness.

6. Ms. Courlander asked about the remaining steps in the study process.

Mr. Pedersen described the schedule of activities remaining.

7. Mr. Lachat asked about the construction schedule for I-270.

Mr. Pedersen explained the schedule and stated that the improvements being studied would probably be staged according to their need.

188

The Wilson T. Ballard Company
Minutes of Meeting
May 27, 1983
Page Four

In concluding the meeting, it was stated the Alternates Workshop is scheduled for Saturday, June 11, 1983 from 10:00 am to 4:00 pm at the Julius West Middle School on Falls Road. At that time, the entire project will be presented and comments taken from the public.

By *James R. Helm*

GRH:dcl
cc: Mr. James R. Helm

189

per. v.

THE WILSON T. BALLARD COMPANY
Owings Mills, Maryland

MINUTES OF MEETING

Date Typed: June 17, 1983
Project: I-270
File: 100-130
Subject: Meeting with North Farm and Walnut Woods Civic Association

A meeting was held in the home of Mr. Terry Gans on June 8, 1983 to discuss the proposed improvements to I-270 and the Montrose Road interchanges. Those present are as follows:

Mr. Terry Gans	North Farm	Mr. James Helm	SHA
Mr. Glenn Watts	Walnut Woods	Mr. Wilson T. Ballard, Jr.	The Wilson T. Ballard Co
Ms. Phyllis Tobin	Walnut Woods	Mr. Garrett Hitchcock	The Wilson T. Ballard Co

The purpose of the meeting was to present the studies that have been performed to date on the I-270 corridor and, specifically, the Montrose Road interchange area and answer any questions the citizens might have concerning the study process.

Mr. Helm began the I-270 discussions by providing a brief history of the project and a description of the need for improvement to I-270 based on the anticipated growth in the corridor, both employment and residential. Mr. Helm also briefly discussed the environmental effects anticipated with the improvements, mentioning that noise would most likely be one of the major issues.

Mr. Hitchcock discussed the various mainline alternates being considered. He mentioned that the characteristics of the traffic circulation in the I-270 corridor do not lend themselves to the application of special lanes for high occupancy vehicles (HOV). Since employment and residences are scattered along the corridor, a large percentage of traffic enters and leaves I-270 at the various interchanges along I-270 rather than continuing to the south end. Therefore, it appears at this stage in the studies that the HOV alternate will not prove feasible.

Both the 8-lane and continuous collector-distributor (c-d) road alternates were reviewed with respect to their advantages and disadvantages. The operation of the c-d road was explained and the advantage of removing the weaving, merging, and diverging maneuvers from the main roadway was discussed.

The ramp metering alternate was described and the parameters used to analyze its feasibility were explained.

Mr. Hitchcock presented the various interchange alternates being studied at Montrose Road.

The use of existing bridges over I-270 was explained. It was stated the alternates which include b-d roads could salvage the main spans of the bridges providing the c-d roads and weaving lanes behind the existing piers. Any alternate requiring more than a total of four contiguous lanes in each direction, including weaving lanes, would require complete new bridges over I-270.

Several questions were raised concerning the project and are described below:

Ms. Tobin, whose property abuts the I-270 right-of-way, raised her concern over noise mitigation along the route. She stated that the existing noise levels were higher than acceptable now.

Mr. Hitchcock explained the noise monitoring that has been performed and stated that the results showed many of the receptors are experiencing noise levels greater than the Federal Design Noise Standard of 70 dBA for residential uses.

The criteria as to when noise barriers would be studied were also explained.

Mr. Gans asked how the noise studies for the interchange proposed under the Rockville Facility would be coordinated with the I-270 studies.

Mr. Hitchcock explained that noise studies are being performed for the Rockville Facility with the traffic data generated for this project including truck percentages. These studies will be summarized in the Draft EIS due to be published in July 1983. Our studies assume local traffic generation from Montrose Road and the "No Build" alternate for the Rockville Facility.

Mr. Gans asked about the status of the Rockville Facility project.

Mr. Hitchcock stated that the Draft EIS will be published in July 1983 and the Public Hearing will be held in September 1985. To date the Rockville Facility alternate is still being considered even though it is very controversial.

Mr. Watts asked about plans for an interchange at Falls Road.

Mr. Helm stated that an interchange planned for Falls Road is now in final design.

Mr. Gans stated some concern over Monroe Street and stated that their association is trying to obtain a restriction of through trucks and a stop sign on Monroe Street.

Mr. Helm gave Mr. Gans the name of the official to contact in the City of Rockville to discuss this issue. He also stated that there would be a presentation to the City on the Ritchie Parkway project on June 23, 1983.

The general conclusions were that the collector-distributor road would be the preferred alternate due to its increased capacity and better traffic service provided. There was some concern shown by the homeowners regarding the widening of the roadway to within 22-feet of the right-of-way line. The use of retaining walls was explained.

In concluding the meeting, it was stated the Alternates Meeting is scheduled for June 11, 1983 from 10:00 am to 4:00 pm at the Julius West Junior High School on Falls Road. At that time the entire project will be presented and comments taken from the public.

By James R. Helm

GRH:mv

cc: Mr. James R. Helm (2)



Maryland Department of Transportation

State Highway Administration

Lowell K. Bridwell
Secretary

M. S. Caltrider
Administrator

July 14, 1983

MEMORANDUM

TO: Mr. Wm. F. Schneider, Jr., Chief
Bureau of Project Planning

FROM: Jim Helm, Project Manager
Bureau of Project Planning

SUBJECT: I-270 - Meeting with Citizens'
Advisory Committee

RE: Minutes of Meeting

A meeting was held in the Hungerford Elementary School on Tuesday, June 21, 1983 to discuss the proposed improvements for I-270, provide a status briefing on the City of Rockville's Ritchie Parkway study, and solicit input for both projects. Those present are listed below:

Alan Blandamer	Hungerford - Stoneridge Civic Assoc.
John Hull	" " " "
Paul Tierney	" " " "
Tony Kalica	N.P.A.G.
Sue Richards	City of Rockville
Jim Helm	S.H.A., Bureau of Project Planning
Wesley Glass	" " " "
Dennis Lew	" " " "
Everett Amaral	" " " "
Wilson T. Ballard	The Wilson T. Ballard Company
Garrett Hitchcock	" " " "

The purpose of the meeting was to present the studies that have been performed to date on the I-270 corridor and specifically, the Montrose Interchange area and answer any questions the citizens might have concerning the study process.

Mr. Helm began the discussions by showing the slide presentation used at the Alternates Meeting as a means of introducing the project.

Mr. Hitchcock discussed the various mainline alternates being considered. He mentioned that the characteristics of the traffic circulation in the I-270 corridor do not lend themselves to the application of special lanes for high occupancy vehicles (HOV). Since employment and residences are scattered along the corridor, a large percentage of traffic enters and leaves I-270 at the various interchanges along I-270 rather than continuing to the south end. Therefore, it appears at this stage in the studies that the HOV alternate will not prove feasible.

193
Mr. Wm. F. Schneider, Jr.
July 14, 1983
Page 2

Both the 8 Lane and Continuous Collector-Distributor (C-D) Road Alternates were reviewed with respect to their advantages and disadvantages. The operation of the C-D road was explained and the advantage of removing the weaving, merging, and diverging maneuvers from the main roadway was discussed.

The ramp metering alternate was described and the parameters used to analyze its feasibility were explained.

Mr. Hitchcock presented the various interchange alternates being studied at Montrose Road. The specific characteristics of each alternate were explained with respect to right-of-way acquisition and widths of roadways.

Several questions were raised concerning the various alternates. These questions and the responses are described below:

1. Mr. Blandamer suggested that an overall map of the corridor be prepared showing all the projects underway in the corridor including the Falls Road, I-370, and Md. 124 projects.
2. Mr. Hull asked about the study of noise barriers and the use of retaining walls.

The studies concerning the use of retaining walls to avoid right-of-way acquisition were explained with the aid of the sketch prepared for this purpose.

The use of noise barriers and how they would function was described. It was explained that the line of sight between the receptor and the vehicles must be broken in order for the barrier to be effective. Therefore, the noise barriers would cause a visual barrier between the homes and the roadway.

3. Mr. Hull asked what California was doing to increase capacity on roadways similar to I-270 since California appears to be one of the more innovative states with regard to highway improvements.

Mr. Hitchcock stated that California has been using ramp metering for some time as well as 10 lane freeways.

It was stated that similar interchange alternates to those shown at Montrose Road were studied at Maryland Route 28. Attention was then shifted to the Ritchie Parkway project.

194
Mr. Wm. F. Schneider, Jr.
July 14, 1983
Page 3

Mr. Dennis Lew of State Highway Administration staff presented a brief slide presentation in which the engineering and environmental concerns of the project were highlighted. The environmental base map, which graphically depicts the alignment under consideration, and the environmental data base were reviewed. It was pointed out that plans for the stormwater management lake were in the very preliminary stages. The City of Rockville will investigate several options for tying Ritchie Parkway into Maryland Route 355. Alignment for the bike path will be considered along Cabin John Parkway or Old Ritchie Parkway. A copy of the environmental base map and aerial photograph was left with Sue Richards for use of the City of Rockville and the Citizens' Advisory Committee.

The City was requested to have traffic forecasts developed to reflect the proposed development and change of zoning in the area around Cabin John. It was agreed that this scenario could be developed. Mr. Helm stated that traffic forecasts and analyses, infrared photography, and ambient noise levels would be available before our next meeting.

At the conclusion of the briefing it was agreed that another meeting with the Citizens' Advisory Committee would be held prior to any advertised public meetings; probably early fall.

JH:bh

cc: File

195

THE WILSON T. BALLARD COMPANY
Owings Mills, Maryland

MINUTES OF MEETING

Date Typed: July 21, 1983

Project: I-270

Feb. 1983

File: 100-130

Subject: Meeting with Businessmen in the Germantown Area

A meeting was held in Digital Communications office on Thursday, July 21, 1983 to discuss the proposed improvements for I-270. Those present are listed below:

William Kaht	DCC
Ray Mauk	DCC
Jim Muir	DCC
Dan Hahn	Fairchild Space Co.
Joe Chrison	U.S. Dept. of Energy
Louis A. D'Angelo, III	U.S. Dept. of Energy
Melvin Schick	General Services Administration
John Matthias	Montgomery County Planning Department
Neil Pedersen	State Highway Administration
Jim Helm	State Highway Administration
Wilson T. Ballard, Jr.	The Wilson T. Ballard Company
Garrett Hitchcock	The Wilson T. Ballard Company

The purpose of the meeting was to present the studies that have been performed to date on the I-270 corridor and, specifically, the MD 118/Middlebrook Road Interchange area and answer any questions concerning the study process.

Mr. Pedersen began the discussions by describing the project study process and the other projects occurring in the area.

Mr. Helm discussed the various mainline alternates being considered. He mentioned that the characteristics of the traffic circulation in the I-270 corridor do not lend themselves to the application of special lanes for high occupancy vehicles (HOV). Since employment and residences are scattered along the corridor, a large percentage of traffic enters and leaves I-270 at the various interchanges along I-270 rather than continuing to the south end. Therefore, it appears at this stage in the studies that the HOV alternate will not prove feasible.

198

Both the 8-lane and Continuous Collector-Distributor (C-D) Road Alternates were reviewed with respect to their advantages and disadvantages. The operation of the C-D road was explained and the advantage of removing the weaving, merging and diverging maneuvers from the main roadway was discussed.

The ramp metering alternate was described and the parameters used to analyze its feasibility were explained.

Mr. Hitchcock presented the various interchange alternates being studied at MD 118 and Middlebrook Road. The specific characteristics of each alternate were explained with respect to right-of-way acquisition and widths of roadways.

Several questions were raised concerning the various alternates. These questions and the responses are described below:

1. The construction schedule for Falls Road, MD 189, I-370 and Montgomery Village Avenue interchanges was requested.

Mr. Pedersen stated that the construction on these projects would take place within 2 to 4 years. He also stated that the proposed improvements to I-270 would probably not be constructed before the late 1980s.

2. Mr. Hahn of Fairchild Space Company asked about the status of the Gude Drive and Research Boulevard projects.

Mr. Matthias of Montgomery County Planning Department stated that he would investigate these projects and contact Mr. Hahn. Mr. Helm stated that Gude Drive would be built probably within the next year.

3. Mr. Hahn asked about the interchange originally proposed north of MD 118.

Mr. Matthias stated that a future study could include the investigation of a partial interchange oriented to the north at the interchange of County Rd. 27 and I-270. However, it was explained that no interchange at this location is a part of the I-270 studies since the interchanges at Middlebrook Road and MD 118 would satisfy the traffic needs through the design year.

4. Mr. Schick asked whether any east/west routes were being studied.

Mr. Pedersen stated that the Public Hearing on the Inter-County Connector project is scheduled for October.

Mr. Matthias described the status of various projects in the Germantown area.

By *James R. H. H. H. H.*

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198

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260

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B. SUMMARY OF RELOCATION ASSISTANCE PROGRAM

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

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

The provisions of the Federal and State Law require the State Highway Administration to provide payments and services to persons displaced by a public project. Payments 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-costs 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 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 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' vehicles or equipment, wages paid to persons who physically participate in the move, and the cost of the actual supervision of the move.

206

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

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

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

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

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

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

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

203

C. CORRESPONDENCE



ROCKVILLE

City of Rockville □ Maryland Avenue at Vinson □ Rockville, Maryland 20850 □ (301) 424-8000

210

November 16, 1983

RECEIVED

NOV 21 1983

Mr. Garrett R. Hitchcock
The Wilson T. Ballard Company
Consulting Engineers
17 Gwynns Mill Court
Owings Mills, MD 21117

THE WILSON T. BALLARD CO.

BY

Dear Mr. Hitchcock:

100-130

This is a follow up to our meeting of November 2 concerning three specific parcels of open space land that are under the jurisdiction of the City of Rockville. These parcels abut the I-270 corridor. During our meeting you pointed out that a portion of the three parcels is needed for the expansion plans for the right-of-way.

I asked our Real Estate Specialist, Bernie Fitzgerald, to review the matter as I was concerned that the property was acquired through dedication. Attached is a copy of the memo from Mr. Fitzgerald dated November 10 concerning this property, with his suggestions as to how the land could be obtained for the purposes stated. This information is for your research material only and is not construed as an official approval which must be granted by the Mayor and Council of the City of Rockville.

I respectfully request that should you desire to pursue this matter, a formal request in writing be forwarded to me. Should you have any questions regarding the details of the property do not hesitate to contact Mr. Fitzgerald at 424-8000, ext. 244.

Sincerely,

Ronald A. Olson
Director of Recreation and Parks

Attachment

cc: City Manager
Public Works Dept.
Planning Dept.
B. Fitzgerald
L. Ege - Jim Helms

C-1

211

November 10, 1983

MEMO TO: Director of Recreation and Parks

FROM: Department of Community Development and Housing Assistance

RE: I-270 Widening

I have preliminarily researched the background of the three properties noted in your memo of November 3, 1983. These properties, as you mentioned, came to the City via plat dedication by developers of adjacent subdivisions.

Our research on past matters of this nature indicate that the City does not have fee simple title. Plat dedication limits the City's right to the property for specified uses (parkland) so the property cannot be used for any other purpose such as road widening. The City, therefore, cannot arbitrarily dispose of the property to the SHA for right-of-way purposes.

I would suggest that the SHA do the following things should they wish to follow-up on this:

1. Ask the City to quitclaim or surrender its interest in the land.
2. Work with the owner of the underlying fee for grant of an easement or conveyance of fee simple title.
3. Consider a condemnation suit to clear the matter up.

The parkland could be used for right-of-way if the City is willing to give up parkland and if the fee owner is willing to convey title to the SHA.

I would suggest that the SHA conduct a thorough research of this situation which should naturally be their responsibility. A title search, for example, should be made by SHA to confirm the title status. A City administrative review would then follow once the SHA has done the "leg work".

Let me know if I can be of any further assistance.



Bernard A. Fitzgerald, Jr.
Real Estate Specialist

BAF:JR/shv



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

DIVISION OF ECOLOGICAL SERVICES

1825B Virginia Street
Annapolis, Maryland 21401

November 23, 1983

212
RECEIVED

NOV 29 1983

THE WILSON T. BALLARD CO.

BY

Mr. Garrett R. Hitchcock
The Wilson T. Ballard Company
Consulting Engineers
17 Gwynns Mill Court
Owings Mills, Maryland 21117

Re: I-270, SHA No. M 401-152-372

Dear Mr. Hitchcock:

100-152
This responds to your October 26, 1983, request for information on the presence of species which are Federally listed as endangered or threatened species within the impact area of improvements to I-270 from the I-270 spur to MD 121 in Montgomery County, Maryland.

One Federally listed species, the endangered small whorled pogonia (Isotria medeloides) may be present in the project impact area. This plant species occurred historically in Montgomery County and may still be extant there.

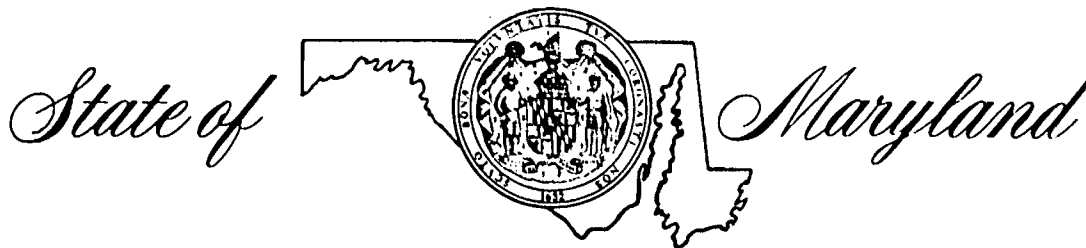
The small whorled pogonia occurs in a broad spectrum of conifer/hardwood habitat types, but is most often found in mixed second growth hardwoods with a relatively open canopy and little shrub or herbaceous cover. Additional information on the species and its potential distribution may be available from D. Daniel Boone, Maryland Heritage Program botanist (301-269-3656) or Donna Ware of the College of William and Mary Herbarium (804-293-4240).

This response relates only to Endangered Species Act requirements. It is our understanding that we will be given an opportunity to address Fish and Wildlife Coordination Act concerns at a later time.

If you have any questions concerning this letter, please contact Andy Moser of my Endangered Species staff (301-269-6324).

Sincerely yours,

Glenn Kinser
Supervisor
Annapolis Field Office



OFFICE OF ENVIRONMENTAL PROGRAMS
DEPARTMENT OF HEALTH AND MENTAL HYGIENE

201 WEST PRESTON STREET • BALTIMORE, MARYLAND 21201 • AREA CODE 301 • 383-

TTY FOR DEAF: Balto. Area 383-7555
D.C. Metro 565-0451

Adele Wilzack, R.N., M.S., Secretary

William M. Eichbaum, Assistant Secretary
December 1, 1983

Re: Contract No. M 401-152-372
F.A.P. No. 1 270-7(86)
I-270
Maryland Route 121
to I-270 Spur
Draft Air Quality Analysis

Mr. Louis H. Ege, Jr., Chief
Environmental Management
Bureau of Project Planning (RM. 310)
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21202

Dear Mr. Ege:

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

Thank you for the opportunity to review this analysis.

Sincerely yours,

Edward L. Carter

Edward L. Carter, Chief
Division of Air Quality Planning
and Data Systems
Air Management Administration

ELC:hs

cc: Gary Hitchcock ✓

214



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

December 2, 1983

Mr. Louis Ege, Jr., Chief
Environmental Management
Bureau of Project Planning (Rm 310)
State Highway Administration
707 N. Calvert Street
Baltimore, Maryland 21202

Re: Air Analysis, I-270 Improvements from Md. Rte 121 to I-270
Spur, Montgomery Co., MD (A-FHW-D40184-MD)

Dear Mr. Ege:

Thank you for the opportunity to review the above referenced document. Based upon the use of appropriate modeling procedures and the resultant carbon monoxide concentrations, which are well within National Ambient Air Quality Standards, we have no objection to further development of the project from an air quality standpoint.

We have rated this document LO-1 in EPA's rating system. However, while we have no objection to the project from an air quality standpoint, we do reserve the right to comment on other environmental aspects of the project when presented for our review. If we can be of further assistance, or if you have any questions, please contact Mr. William J. Hoffman of my staff at 215-597-7880.

Sincerely,

A handwritten signature in cursive script that reads "Henry P. Brubaker".

Henry P. Brubaker
Chief
Planning & Analysis Section